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

GB/T 5264-2022

Plunger of diesel fuel injection pump - Specifications

柴油机喷油泵柱塞偶件 技术条件

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Foreword

This document is in accordance with the provisions of GB/T 1.1-2020 "Guidelines for Standardization Work Part

1. Structure and Drafting Rules of Standardization Documents" drafted. This document replaces GB/T 5264-2010 "Technical Conditions for Piston Parts of Fuel Injection Pumps for Diesel Engines", compared with GB/T 5264-2010, In addition to structural adjustments and editorial changes, the main technical changes are as follows:

- a) terms and definitions are added (see Chapter 3);
- b) Added material requirements for flanged plunger sleeves in plunger couplers (see 4.2);
- c) Added the hardness requirements for plunger sleeves made of 20CrMo alloy structural steel (see 4.4);
- d) Changed the flaw detection requirements of the plunger pair (see 4.5, 3.5 of the.2010 edition);
- e) The requirements for cracks in the plunger coupler are deleted (see 3.5 of the.2010 edition);
- f) Added the geometrical tolerance dimension drawing of flanged plunger sleeve (see 4.6);
- g) Added the verticality tolerance item of the plunger sleeve in Table 1 (see Table 1);
- h) Changed the data range of the second file in Table 2 (see Table 2, Table 2 of the.2010 edition);
- i) Changed the surface treatment requirements of the plunger pair (see 4.11.2, 3.4 of the.2010 edition);

1 Scope

China's national specification for the plunger and barrel assemblies of diesel fuel injection

pumps for medium and small power engines. The plunger couple is among the most precisely made components in series production anywhere: a hardened steel plunger lapped into its barrel to a diametral clearance of one or two micrometres, with no seal of any kind - the fit itself is the seal, and it must hold against injection pressures of hundreds of bar while sliding at engine speed. The clearance is what the pump's whole behaviour rests on. Too much and the fuel leaks past instead of being injected, which shows first as hard starting; too little and the plunger seizes. Because the two parts are lapped as a pair they are never separable, and the assembly's life is measured in the fuel's cleanliness, since a particle a few micrometres across scores the surfaces. The standard specifies the technical requirements, test methods, inspection rules, marking, packaging, transport and storage of such couples.

2 Normative references

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

GB/T 1031 Product Geometric Specifications (GPS) Surface Structure Profile Method Surface Roughness Parameters and Their Values

GB/T 1958 Product Geometric Specifications (GPS) Geometric Tolerance Detection and Verification

GB/T 2828.1 Counting Sampling Inspection Procedure Part

GB/T 18254 High carbon chromium bearing steel GB 19147 Vehicle Diesel

JB/T 9730 Metallographic Inspection of Diesel Engine Fuel Injector Couplings, Plunger Couplings, and Oil Outlet Valve Couplings

JB/T 9736 Magnetic particle inspection method for fuel injector coupler, plunger coupler and oil outlet valve coupler

JB/T 12033 Reliability assessment method, bench test method and failure determination of fuel injection pump plunger pair

3 Terms and Definitions

Terms and definitions defined in GB/T 10826.1 apply to this document.

4 Technical requirements

4.1 Manufacturing Diesel engine fuel injection pump plunger parts (hereinafter referred to as plunger parts) shall be manufactured according to the product drawings and technical

documents approved by the prescribed procedures.

4.2 Materials The plunger and the split plunger sleeve shall be made of GCr15 high carbon chromium bearing steel specified in GB/T 18254, and the flanged plunger sleeve shall be made of GCr15 high carbon chromium bearing steel specified in GB/T 18254. Made of 20CrMo alloy structural steel specified in GB/T 3077. Plunger and plunger sleeve allow other grades to meet material requirements Made of steel.

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