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

GB/T 25366-2022

Replacing GB/T 25366-2010

**Electronically controlled common rail systems for diesel
engines - Rail assembly**

柴油机电控共轨系统 共轨管总成

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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 25366-2010 "Technical Conditions for Common Rail Pipe Assembly of Diesel Electro-controlled Common Rail Fuel Injection System", and Compared with GB/T 25366-2010, in addition to structural adjustment and editorial changes, the main technical changes are as follows:

- a) The specific expression of the performance requirements of the pressure limiting valve has been changed (see 4.7, 4.7 of the.2010 edition);
- b) Changed the opening pressure test requirements for the pressure limiting valve (see 4.8, 4.8 of the.2010 edition);
- c) Changed the particle size requirements of impurities in the cleanliness limit (see 4.9, 4.9 of the.2010 edition);
- d) Added the appearance requirements of the common rail tube assembly (see 4.10);
- e) The accuracy requirements of the test fuel injection quantity tester are deleted (see 5.1.2 of the.2010 edition);
- f) Changed the test requirements of the sealing test method 1 of the common rail pipe assembly (see 5.2, 5.2 of the.2010 edition);
- g) The sealing test method 2 of the common rail pipe assembly has been added (see 5.2);

1 Scope

China's national standard for the common rail assembly of an electronically controlled diesel injection system. It specifies the requirements, the test methods, the inspection rules and the marking, packaging, transport and storage of the rail. Common rail is what allowed the diesel engine to meet modern emission limits, and the rail is the component the architecture is named after. In the older systems the pump generated the injection pressure at the moment of injection, so the pressure and the timing were mechanically linked and both were tied to engine speed. Common rail separates them: a pump keeps a shared accumulator at a pressure the control unit chooses, and each injector opens electrically for as long as the control unit decides. That decoupling is what makes multiple injections per cycle possible - a pilot injection to soften combustion noise, the main event, and a post injection to manage the exhaust aftertreatment - and it is how noise, particulates and nitrogen oxides were brought down together. The rail is therefore a pressure vessel holding fuel at between fifteen hundred and over two thousand five hundred bar, on an engine, permanently, with the pressure fluctuating at injection frequency. It is a fatigue component of the most demanding kind, and a rail failure sprays diesel at those pressures over a hot engine. So the standard specifies the burst and fatigue pressure requirements, the material and the forging or drilling of the body, the port and fitting threads and their sealing at pressure, the pressure sensor and pressure limiting valve interfaces, the internal cleanliness - since a particle in the rail reaches an injector whose clearances are a couple of micrometres - and the leak, endurance and vibration tests. Issued on 11 July 2022 and in force since 1 February 2023, it replaces GB/T 25366-2010.

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 2828.1 Counting Sampling Inspection Procedure Part

GB/T 25367 Diesel electronically controlled common rail fuel injection system fuel injector assembly specification

GB/T 25368 Technical conditions for high pressure fuel supply pump assembly of diesel electronically controlled common rail fuel injection system

JB/T 8121 High-pressure oil pipe assembly for diesel engine fuel injection pump test bench

JB/T 9734 Specifications of fuel injection pump test bench

JB/T 12850 Cleanliness inspection of diesel electronically controlled common rail fuel injection system (injection equipment) (terms)

3 Terms and Definitions

The terms and definitions defined in GB/T 10826.5 and GB/T 25365.1 and the following terms and definitions apply to this document.

3.1 nominal pressure The maximum working pressure of the common rail assembly.

4 Technical requirements

4.1 Parts The parts of the common rail tube assembly shall be manufactured according to the product drawings and technical documents approved by the prescribed procedures.

5 Common Rail Fuel Injection System GB 19147 Vehicle Diesel

GB/T 25365.1 Diesel Electronic Controlled Common Rail Fuel Injection System Assembly Specifications Part