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

GB/T 5770-2020

Jerk fuel injection pump for diesel engine - Specifications

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Foreword

This standard was drafted in accordance with the rules given in GB/T 1.1-2009. This standard replaces GB/T 5770-2008 "Technical Conditions for Diesel Engine Plunger Injection Pump Assembly". This standard and GB/T 5770- Compared with.2008, the main technical changes except for editorial changes are as follows:

- Modify the "calibration conditions" and "calibration speed" in the text to "rated conditions" and "rated speed" respectively;
- Added reference standards (see Chapter 2);
- Increase the requirements of fuel injection pump installation type and connection size (see 3.3);
- Increased the working speed of the fuel injection pump assembly governor (see 3.8.3);
- "The technical requirements for the injection pump with a top clearance for the plunger and coupler parts shall be implemented in accordance with the technical agreement for supply determined by the enterprise and the main engine manufacturer." Change to "For the fuel injection pump that uses hydraulic timing correction plunger and coupler, the relevant technical conditions comply with the provisions of JB/T 12043.1, and It can be executed according to the agreement signed between the user and the manufacturer. "(See 3.11, 3.11 in the.2008 edition);
- Deleted "The multi-cylinder fuel injection pump used to meet the national II and national III emission standards, the recommended value of the allowable pump end pressure is 100MPa And 120MPa "(see 3.12 in the.2008 edition);
- Deleted the service life requirements of the fuel injection pump (see 3.18 in the.2008 edition);
- Added "The measurement range of the injection pressure test instrument is 0MPa ~.200MPa, and the measurement error should be $\leq \pm 3\%$ " (see 4.1.5);
- Added "For the fuel injection pump that uses hydraulic timing correction plunger coupler, the pull rod should be at the maximum stroke position, that is, the The plunger is rotated to the end in the direction of increasing the oil supply, and the measurement is performed when the plunger sleeve is completely separated from the plunger top clearance groove. "

(See 4.2.1, 4.2.2);

--- Added the determination of the starting point of fuel injection of the fuel injection pump assembly (see 4.2.7);

1 Scope

China's national specification for jerk-type fuel injection pump assemblies for small and medium power diesel engines. The jerk pump is the classical mechanical injection system: a camshaft drives a plunger in a barrel for each cylinder, and each stroke delivers a precisely metered quantity of fuel at high pressure to its injector, with the quantity set by rotating the plunger to change where its helical edge uncovers the spill port. Everything the engine does follows from it - power, fuel consumption, smoke, noise and starting - and the governor fitted to the pump is what makes a diesel engine controllable at all, since a diesel has no throttle and will otherwise run away or stall. Electronic common rail has displaced it in road vehicles, but the jerk pump remains dominant in the small and medium engines that power agricultural machinery, generating sets and boats. The standard specifies the technical requirements, test conditions and methods, inspection rules, marking, packaging, transport and storage for such pump assemblies with or without governor.

This standard specifies the technical requirements, test conditions and test of the plunger type fuel injection pump assembly with or without speed governor for small and medium power diesel engines. Inspection methods, inspection rules, signs, packaging, transportation and storage requirements. This standard applies to the small and medium power diesel engine plunger fuel injection pump assembly (hereinafter referred to as fuel injection pump).

2 Normative references

The following documents are essential for the application of this document. For dated references, only the dated version applies to this article. For the cited documents without date, the latest version (including all amendments) applies to this document.

GB/T 2828.1-2012 Counting sampling inspection procedures Part

3 Technical conditions

3.1 Manufacturing The fuel injection pump shall be manufactured according to the product drawings and technical documents approved by the prescribed procedures, and shall comply with the requirements of this standard.

3.2 Oil When the fuel injection pump uses the fuel specified in GB 19147 and GJB3075, it should be able to ensure normal operation.