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Replacing GB/T 2940-2005

Springs for fuel pump, governor and injector of diesel engines - Technical specification

柴油机用喷油泵、调速器、喷油器弹簧 技术规范

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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 of standardization documents" Drafting.

This document replaces GB/T 2940-2005 "Technical Specifications for Fuel Injection Pumps, Governors and Injector Springs for Diesel Engines".

Compared with 2005, in addition to structural adjustments and editorial changes, the main technical changes are as follows.

- Changed the scope and added relevant provisions for electronic common rail (see Chapter 1, Chapter 1 of the 2005 edition);

- Added symbols, units and parameter names (see Chapter 4);

- Added spring types, names, schematics and structural types (see Chapter 5);

- Changed the material selection (see 6.1, 4.1 of the 2005 edition);

- Changed the spring characteristics (see 6.2, 4.2 of the 2005 edition);

- Changed the allowable deviation of the spring outer diameter or spring inner diameter (see 6.3, 4.3 of the 2005 edition);

- Changed the free length (see 6.4, 4.4 of the 2005 edition);

- Deleted the requirements on "spring pitch unevenness" (see 4.5 of the 2005 edition);

- Changed the verticality requirements (see 6.5, 4.6 of the 2005 edition);

- Changed the requirements for end ring clearance, grinding angle, end thickness and end surface roughness in end face grinding (see 6.6, 2005 edition 4.7, 4.8, 4.9);

- Changed the requirements for the hook and loop of the tension spring (see 6.7, 4.10, 4.11, 4.12 of the 2005 edition);

- Changed the relevant requirements for the torsion arm of the torsion spring (see 6.8, 4.13, 4.14, 4.15, 4.16, 4.17 of the 2005 edition);

- Added chamfer requirements (see 6.9);

- Changed the requirements for shot peening (see 6.10, 4.21 of the 2005 edition);

- Changed the requirements for permanent deformation of springs (see 6.11, 4.18 of the 2005 edition);

- Deleted the requirements for non-destructive testing to adapt to current technical requirements (see 4.19 of the 2005 edition);

- Deleted the setting or heat setting, and added the relaxation requirements (see 6.12, 4.18 and 4.20 of the 2005 edition);

- Changed the fatigue requirements (see 6.13, 4.22 of the 2005 edition);

- Increased the requirements for residual magnetism (see 6.14);

- Increased cleanliness requirements (see 6.15);

- Changed the surface treatment requirements (see 6.16, 4.23 of the 2005 edition);

- Changed the test method for spring characteristics (see 7.1, 5.2 of the 2005 edition);

- Changed the free length test method (see 7.3, 5.5 of the 2005 edition);

- Changed the test method for verticality (see 7.4, 5.6 of the 2005 edition);

- Added the test method for end ring clearance, grinding angle and end thickness in end face grinding (see 7.5);

- Added the test method for the hook of the tension spring (see 7.6);

- Added the test method for the torsion arm of the torsion spring (see 7.7);

- Changed the test method for shot peening (see 7.8, 5.7 of the 2005 edition);

- Added the test method for permanent deformation (see 7.9);

- Added relaxation test method (see 7.10);

- Changed the test method of fatigue test (see 7.11, 5.8 of the 2005 edition);

- Added the test method for residual magnetism (see 7.12);

- Added cleanliness test method (see 7.13);

- Changed the test method for surface quality (see 7.14, 5.3 of the 2005 edition);

- Changed the provisions on sampling acceptance of inspection rules (see 8.1, 6.4 of the 2005 edition);

- Deleted the provisions for spring inspection items (see 6.1 of the 2005 edition);

- Added spring defect level classification (see 8.2);

- Changed the marking, packaging, transportation and storage (see Chapter 9, Chapter 7 of the 2005 edition).

Please note that some of the contents of this document may involve patents. The issuing organization of this document does not assume the responsibility for identifying patents.

This document is proposed and coordinated by the National Technical Committee for Spring Standardization (SAC/TC235).

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This document was first issued in 1982, revised for the first time in 2005, and this is the second revision.

Diesel engine fuel injection pump, speed governor, Injector spring technical specifications

1 Scope

This document specifies the technical requirements for cylindrical coil springs used in diesel engine fuel injection pumps, speed governors, fuel injectors, etc., and describes the corresponding test methods. Law and inspection rules.

This document applies to diesel engine fuel injection pump plunger springs and oil delivery valve springs, governor springs, injector pressure regulating springs and electronically controlled common rail Cold-formed cylindrical helical springs with circular cross-sections are used as springs. Cold-formed cylindrical helical springs with other non-circular cross-sections are used for reference.