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**RAILWAY INDUSTRY STANDARD OF THE
PEOPLE'S REPUBLIC OF CHINA**

TB/T 2983-2000

**Magnetic particle inspection of railroad wheels
(English Translation)**

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1 Scope

This Standard specifies technical requirements, test methods, inspection rules as well as marks, packaging, transport, storage requirements for high-pressure fuel ejection pipe for diesel locomotive engine.

This Standard is applicable to design, manufacture and acceptance of high- pressure fuel ejection pipe for diesel locomotive engine. The high-pressure fuel ejection pipe for diesel internal combustion diesel engine shall refer to this

Standard for use.

2 Normative references

The following standards contain the provisions which, through reference in this

Standard, constitute the provisions of this Standard. For dated references, subsequent amendments (excluding corrections) or revisions do not apply to this Standard. However, the parties who enter into agreement based on this

Standard are encouraged to investigate whether the latest versions of these documents are applicable. For undated reference documents, the latest versions apply to this Standard.

JB/T 8120.1-2000, Compression-ignition engines - Steel tubes for high- pressure fuel injection pipes - Part 1. Requirements for seamless cold-drawn single-wall tubes

3 Technical requirements

3.1

The manufacture, acceptance of high-pressure fuel ejection pipe shall comply with this Standard. It shall be manufactured according to product drawings and technical documents approved by the specified programs.

3.2

The high-pressure fuel ejection pipe shall prefer to use 20A seamless steel pipe of which mechanical properties shall meet the requirements of Table

1. According to the requirements for working pressure of high-pressure fuel ejection pipe, low-alloy high-strength steel (such as Q345) and alloy structural steel (such as 12CrNi3, 35CrMo, 40Cr) and other higher strength materials are allowed to use for processing. Through appropriate thermal treatment, it shall

4 Test methods

4.1

When the high-pressure fuel ejection pipe is subjected to the hydraulic test, the pressure shall be 1.5 times working pressure (fluctuating pressure peak in high-pressure fuel ejection pipe of diesel engine is working under calibration conditions), the dwell time is not less than 5 min. Leakage, rupture or plastic deformation are not allowed for the pipe.

4.2 After bending, the inner diameter deformation of the high-pressure fuel

ejection pipe shall be detected with steel ball. Under the wind pressure not less than 300 kPa, the steel ball shall be able to pass through the tubing smoothly.

Requirements for steel ball used. when the pipe diameter $d \leq 1.8$ mm, the ball diameter $d - 0.2$ mm; when the pipe diameter $d > 1.8$ mm, the ball diameter $d - 0.3$ mm.

4.3 The cleanness inspection of inner surface of high-pressure fuel ejection

pipe. use a syringe to inject cleaning fluid that is more than 10 times the pipe volume into the pipe; make it through pipe bore, then filter with filter paper. The average mass of dried impurity on filter paper per tube length shall not exceed

15 mg.

5 Inspection rules

5.1

Each high-pressure fuel ejection pipe shall be inspected according to 4.1 provisions. 4.2 and 4.3 are random inspection items. The product shall leave factory when it is inspected qualified.

5.2

Sampling method and inspection item shall be agreed by the supplier and the purchaser.

6 Marks, packaging, transport and storage

6.1

The holes of both ends of high-pressure fuel ejection pipe shall take protective measures to maintain the inner hole clean and prevent pipe end being damaged.

6.2

There shall be manufacturer's mark, date of manufacture or product number on the high-pressure fuel ejection pipe.

6.3

The bandaged high-pressure fuel ejection pipe assembly shall be attached with product certificate of manufacturer's inspection department. The certificate shall at least indicate.

a) manufacturer name or logo;

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