

ICS 27.020

CCS J 92



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

GB/T 1150-2010

Replacing GB/T 1150-1993

**Internal combustion engines - Cast iron wet cylinder liners -
Specifications**

内燃机 湿式铸铁气缸套 技术条件

Issued on: November 10, 2010

Implemented on: March 1, 2011

**Issued by: General Administration of Quality Supervision, Inspection and
Quarantine;
Standardization Administration of the PRC**

Table of Contents

- 1 Scope
- 2 Normative references
- 3 Terms and Definitions

Foreword

This standard is GB/T 1150-1993 "internal combustion engine wet cast iron cylinder sleeve technical conditions" amendments. This standard compared with GB/T 1150-1993, major changes in the technical content as follows:

--- Improve the tensile strength, inner and outer diameter of the circle from the grouping set limits and size requirements;

--- Canceled magnetic detection requirements, an increase of non-destructive testing requirements;

--- Increase the special requirements specified in the product drawings and technical documents;

--- On the part of the test method made the necessary modifications and additions;

--- Modify the sample size on the tensile strength requirements;

--- On the hardness of the sample re-sampling position makes provision;

--- Increased chemical analysis methods;

--- To support the shoulder height measurement method has been modified;

--- Increased hydrostatic test, nondestructive testing and inspection methods special requirements specified in the product drawings and technical documents. From the date of implementation of this standard instead of GB/T 1150-1993. The standard proposed by China Machinery Industry Federation. The standard internal combustion engine by the National Standardization Technical Committee (SAC/TC177) centralized. This standard was drafted. Shanghai Internal Combustion Engine Research Institute, Central China Henan Province Hotels Co., Ltd., Jiangsu Aijisihai bead Machinery Limited Secretary, Zhejiang mountains Cylinder Co., Hunan Xinyuan cylinder limited liability company, Chengdu Galaxy Power Co., Ltd., Zhejiang three limited the company. The main drafters of this standard. Su Qing Hua, Liu Zhijun, ROCKETS, Yuhua Cheng, Tan country, Wen Jun, Chen Gangjiang. This standard replaces the standards previously issued as follows:

--- GB 1150-1982, GB/T 1150-1993. The internal combustion engine wet cast iron cylinder

liners -

1 Scope

China's national specification for cast iron wet cylinder liners for internal combustion engines - the replaceable sleeve that forms the bore, with the coolant in direct contact with its outer surface. The wet liner is what allows a heavy diesel to be rebuilt indefinitely: when the bore is worn the liner is pulled and replaced rather than the block being rebored or scrapped, which is why almost every truck, tractor, marine and generating engine is built this way. It specifies the terms, the technical requirements, the test methods and the inspection rules, and the marking, packaging, transport and storage of cast iron wet cylinder liners. The liner has to do three things at once and the requirements divide accordingly. It is a bearing surface: the material and its microstructure, the hardness, and the surface finish and honing pattern of the bore, which has to hold enough oil to lubricate the rings and be smooth enough not to wear them. It is a pressure boundary between the combustion chamber and the coolant, so the wall thickness, the material soundness and the freedom from porosity matter, and the flange and the sealing surfaces at both ends have to hold gas at one end and coolant at the other for the life of the engine. And it is a heat path: the fit in the block and the geometry of the coolant side govern how well the heat leaves the bore, and a liner that sits badly runs hot and distorts. To those are added the dimensional tolerances and the roundness and cylindricity, which are tight because the rings have to seal against the bore in every position, and the requirements against cavitation erosion on the coolant side - the failure mode peculiar to wet liners, in which vibration of the liner collapses bubbles against its outer wall and eats through it from the water side. Issued on 10 November 2010 and in force since 1 March 2011, it replaces GB/T 1150-1993.

This standard specifies the terms, the technical requirements of the internal combustion engine wet cast iron cylinder liners, test methods and inspection rules, marking, packaging, transport and Storage. This standard applies to not more than 200mm diameter cylinder reciprocating piston internal combustion engine wet cast iron cylinder liners (hereinafter referred to as gas Liner).

2 Normative references

The following documents contain provisions which, through reference in this standard and become the standard terms. For dated references, subsequent Amendments (not including errata content) or revisions do not apply to this standard, however, encourage the parties to the agreement are based on research Whether the latest versions of these documents. For undated reference documents, the latest versions apply to this standard.

GB/T 223 (all parts), steel and alloy chemical analysis method

GB/T 228 metal materials at room temperature tensile test method (GB/T 228-2002, eqv ISO 6892.1998)

GB/T 230.1 metallic materials - Rockwell hardness test - Part 1. Test methods (A, B, C, D, E, F, G, H, K, N, T standard Feet) (GB/T 230.1-2009, ISO 6508-1.2005, MOD)

GB/T 231.1 metallic materials Brinell hardness test - Part 1. Test method (GB/T 231.1-2009, ISO 6506-1. 2005, MOD)

GB/T 1031 Geometrical product specifications (GPS) Surface texture Profile method Surface roughness parameters and their values

GB/T 1182 Geometrical product specifications (GPS) geometric tolerances of form, orientation, location and runout tolerancing (GB/T 1182-2008,

ISO 1101.2004, IDT) Part 1

GB/T 1800.1 Geometrical product specifications (GPS) Limits and fits. Tolerances, deviations and fits basis (GB/T 1800.1-2009, ISO 286-1. 1988, MOD)

GB/T 1958 Geometrical Product Specifications (GPS) shape and position tolerance testing requirements

GB/T 2828.1 Sampling procedures for inspection - Part 1. by acceptance quality limit (AQL) retrieval batch inspection sampling plan (GB/T 2828.1-2003, ISO 2859-1.1999, IDT)

JB/T 2330 combustion engine high-phosphorus cast iron cylinder liners metallographic examination

JB/T 5082.1 Cylinder Liner Part 1. boron cast iron metallography

JB/T 9768 Cylinder Liner Honing textured platform technical specifications and testing methods

3 Terms and Definitions

The following terms and definitions apply to this standard.

3.1 Wet cylinder liners wetcylinderliners The engine coolant in direct contact with the outer surface of the cylinder liner of the cylinder liner. The main part of the wet cylinder liners typical structure shown in Figure 1.