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Technical Specifications for Remanufactured Automotive Components – Crankshaft

汽车零部件再制造产品技术规范 曲轴

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1 Scope

This document specifies the terms and definitions, process requirements, performance requirements, test methods, inspection rules, marking, packaging, transportation, and storage for the remanufactured products of automotive engine crankshaft.

This document is applicable to remanufactured products of automotive engine crankshafts.

2 Normative References

The following documents are essential to the application of this document. For the dated documents, only the versions with the dates indicated are applicable to this document; for the undated documents, only the latest version (including all the amendments) is applicable to this document.

GB/T 1031 Geometrical Product Specifications (GPS) - Surface Texture: Profile Method - Surface Roughness Parameters and their Values

GB/T 1184-1996 Geometrical Tolerancing - Geometrical Tolerance for Features without Individual Tolerance Indications

GB/T 1958 Geometrical Product Specifications (GPS) - Geometrical Tolerance - Verification

GB/T 6809.3 Reciprocating Internal Combustion Engines - Vocabulary of Components and Systems - Part 3: Main Running Gear

GB 22128 Technical Specifications for End-of-Life Vehicles Collecting and Dismantling Enterprises

GB/T 26989 Automobile Recovery - Terminology

GB/T 28675 Remanufacturing of Automotive Components - Disassembly

GB/T 28676-2012 Remanufacturing of Automotive Components – Classification

GB/T 28677 Remanufacturing of Automotive Components - Cleaning

classified, repaired and assembled, the performance indicators shall meet the requirements specified in Clause 5.

4.1.2 The production process of remanufactured products is shown in Figure A.1 of the Appendix.

4.2 Disassembly requirements

4.2.1 The disassembly of the crankshaft shall comply with the provisions of GB/T 28675.

4.2.2 Removable crankshaft accessories such as balance weights, oil plugs, flanges, gears, keys, etc. shall be removed to make them into a single part state.

4.2.3 Avoid damaging parts when disassembling.

4.2.4 When disassembling a crankshaft equipped with a separate balance weight, the corresponding mark shall be made before disassembling.

4.3 Cleaning requirements

The cleaning of the crankshaft after disassembly shall comply with the provisions of GB/T 28677; and the oil dirt and sediment in the oil passage shall be thoroughly removed.

4.4 Testing and classification requirements

4.4.1 Testing requirements

4.4.1.1 Appearance inspection

Visually inspect the surface condition of each journal of the crankshaft, and check whether there are defects such as cracks, scratches or strains, and threaded holes and thread wear.

4.4.1.2 Size inspection

According to the requirements of the original design drawings, use a general measuring tool or a three-coordinate measuring instrument to detect the geometric accuracy of the crankshaft journal dimensional tolerance and form and position tolerance; and make a record. The dimensions to be inspected are as follows:

a) Dimensions of crankshaft journals;

b) The amount of runout of the spindle centreline;

c) The parallelism of the main journal and the centreline of the connecting rod journal;

5.5 Magnetic particle testing

The remanufactured crankshaft shall be subjected to magnetic particle testing in accordance with the provisions of 6.5; and cracks shall not be detected.

5.6 Cleanliness

After removing metal chips and debris in the crankshaft lubricating oil passage and other positions, the cleanliness of the crankshaft shall meet the requirements of the manufacturer for the entire machine.

6 Test Methods

6.1 Surface hardness

The hardness of the remanufactured crankshaft shall be measured according to the method specified in QC/T 481.

6.2 Surface roughness

The surface roughness of the remanufactured crankshaft journal shall be measured according to the method specified in QC/T 481.

6.3 Dimensional and geometrical tolerances

6.3.1 When the length of the crankshaft is greater than 1.5m and the number of cranks is more than 6, intermediate auxiliary supports are allowed during the measurement process.

6.3.2 The geometric tolerances of the processed positions of the remanufactured crankshaft shall be inspected according to the methods specified in GB/T 1958.

6.4 Dynamic balance

The dynamic balance of the crankshaft shall be inspected according to the method specified in QC/T 481.

6.5 Magnetic particle testing

Magnetic particle testing of the crankshaft shall be carried out in accordance with the provisions of JB/T 6729.

6.6 Cleanliness

The cleanliness of the crankshaft shall be measured in accordance with the provisions of QC/T 481.

of GB/T 28678-2012.

8.1.2 The remanufactured product code shall be marked on the remanufactured crankshaft.

8.1.3 The remanufactured product mark shall be on the outer packaging of the remanufactured crankshaft that is sold separately.

8.2 Packaging

8.2.1 The packaging of the remanufactured crankshaft shall comply with the provisions of GB/T 28678-2012.

8.2.2 Before packaging the remanufacturing the crankshaft, it shall be cleaned again for anti-corrosion treatment.

8.2.3 Measures shall be taken to prevent moisture, and a fixing frame shall be set in the packing box to prevent the crankshaft from shaking and deforming.

8.3 Transportation

During transportation, rain-proof, moisture-proof and protective measures shall be taken to prevent the product from being damp, bumped, deformed, and damaged.

8.4 Storage

The storage and transportation environment of the remanufactured crankshaft shall be kept ventilated, dry, and clean. The unpackaged crankshaft shall be placed on the bracket or placed upright to prevent deformation and damage. The manufacturer shall ensure that the product shall not rust within 12 months from the date of leaving the factory.

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