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The technical specification for remanufacturing of automotive components - Oil pumps

汽车零部件再制造产品技术规范

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The technical specification for remanufacturing of automotive components - Oil pumps

1 Scope

This Standard specifies the terms and definitions, disassembly, classification and cleaning requirements, testing and repair requirements, assembly requirements, performance requirements, inspection requirements, marking and packaging requirements for remanufacturing of oil pumps.

This Standard is applicable to the remanufacturing of oil pumps for automotive engines.

2 Normative references

The following documents are essential to the application of this document. For dated references, only the editions with the dates indicated are applicable to this document. For undated references, only the latest editions (including all the amendments) are applicable to this document.

GB/T 6809.6 *Reciprocating internal combustion engines -- Vocabulary of components and systems -- Part 6: Lubricating systems*

GB/T 26989 *Automobile recovery -- Terminology*

GB/T 28675 *Remanufacturing of automotive components -- Disassembly*

GB/T 28676 *Remanufacturing of automotive components -- Classification*

GB/T 28677 *Remanufacturing of automotive components -- Cleaning*

GB/T 28678 *Remanufacturing of automotive components -- Pre-delivery inspection*

GB/T 28679 *Remanufacturing of automotive components -- Assembly*

JB/T 8413.2-2010 *Internal combustion engines -- Oil pumps -- Part 2: Assemblies -- Methods for test*

QC/T 289-2001 *Technical specifications for oil pump of automotive engine*

5.1.2.1 Defective pump bodies that are not affected by oil pressure or mechanical forces may be repaired using stitching, welding repair, special glue to bond the broken and cracked parts of castings, or other methods. After repair, it is required to make a smooth surface by grinding. If it is on the machined surface, APPLY grinding or cutting until it is flush with the reference surface.

5.1.2.2 Defects such as pores, blisters, etc. can be filled with professional repair agents; or metal plugs with the same quality as the castings can be embedded in plugs after the treatment is finished; or USE hot-melt materials for spraying; or USE a variety of other welding process to repair, through the addition of materials, followed by machining and cutting.

5.1.2.3 If the diameter of the pump body's inner cavity (gear chamber, and rotor chamber) is out of tolerance, it shall be repaired by the inner cavity inlaying method. Or USE laser cladding, cold welding, spraying, and other methods to restore the size.

5.1.2.4 Where the size of the shaft bore of the pump body is out of tolerance or worn, the reaming method is used to eliminate wear trace. Then PROVIDE an optional oversized lining. Or PROVIDE an oversized driven shaft after enlargement of the driven shaft hole. Or USE laser cladding, cold welding, spraying, and other methods to restore the inner hole size.

5.1.2.5 For the damages to machining plane, USE metal spraying or other welding repair methods to repair, through the addition of materials, followed by machining and cutting.

5.1.2.6 In the case that the remaining holes are damaged, the damaged mating holes are pretreated and repaired by welding repair. The damages to the threaded holes of non-high-strength bolts can be repaired by expanding the threaded holes and re-inserting the silk sleeve. High-strength bolt holes are not allowed to be repaired. If there is any damage, it shall be discarded.

5.1.2.7 If the above defects cannot be repaired, it shall be discarded.

5.2 Testing and repair of pump cover parts

5.2.1 Pump cover testing

5.2.1.1 Non-destructive testing methods can be used to detect whether the pump cover has cracks, pores, blisters, etc.

5.2.1.2 TEST the dimensional tolerance, geometric tolerance, surface structure, etc. of the pump cover.

5.2.2 Pump cover repair

5.2.2.1 If there are any defects such as cracks, pores, blisters, etc., the repair

7 Performance requirements

7.1 The basic performance requirements for remanufactured oil pumps shall comply with the provisions of Chapter 4 in QC/T 289-2001.

7.2 The reliability test time of remanufactured oil pumps shall not be less than 350h. After the test, the performance shall comply with the provisions of 4.7 in QC/T 289-2001.

8 Inspection requirements

8.1 Type inspection

8.1.1 The type inspection shall be carried out under one of the following circumstances:

- a) when finalizing the design for the first time, or the finalized products are transferred to another factory for production;
- b) after the formal production, there are major changes in process, etc., which may affect the product performance;
- c) after the formal production, PERFORM every two years;
- d) when there is a major difference between the exit-factory inspection results and the last type inspection results.

8.1.2 The type inspection items include:

- a) oil absorption performance;
- b) speed characteristics;
- c) pressure characteristics;
- d) pressure-limiting valve's operating characteristics;
- e) viscosity characteristics;
- f) sealing characteristics;
- g) reliability.

8.1.3 The pedestal performance test for remanufactured oil pumps shall be carried out in accordance with the provisions of Chapter 7 in JB/T 8413.2-2010. The reliability test shall be carried out in accordance with the provisions of 6.3 in QC/T 289-2001.

8.2 Exit-factory inspection

The remanufactured oil pumps shall be subject to exit-factory inspection in accordance with the technical requirements for remanufactured products. The inspection items include:

- a) oil absorption performance;

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