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THE TECHNICAL SPECIFICATION OF THE REMANUFACTURING OF AUTO BODY PARTS CAR DOOR, DECKLID, FENDER, BONNET

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CHANGZHOU HANKE VEHICLE TECHNOLOGY CO.,LTD

PROLOGUE

According to the fortieth clause of *Circular Economy Promotion Law of China*: The government supports the companies for the remanufacturing of auto body parts, engineering machinery, machine tools, etc. There is no standard so far for the remanufacturing of these auto body parts products, car door, deck lid, fender, bonnet, whether at the national level or in this industry or in local.

This standard is compiled according to the requirement of *GB/T 1.1 THE FIRST PART OF THE GUIDELINES FOR STANDARDIZATION*. This standard is proposed and drew up by CHANGZHOU HANKE VEHICLE TECHNOLOGY CO.,LTD. The chief draftsmen of this standard are: Ni Shengguang, Lu Xueping, Huang Zhen, Hu Jungui, Li Wenjun.

The period of validity of this standard is 5 years since the date of release. When 5 years are over, it needs reexamine.

THE TECHNICAL SPECIFICATION OF THE REMANUFACTURED PRODUCTS

AUTO BODY PARTS: CAR DOOR, DECKLID, FENDER, BONNET

1. Applicable Scope:

The standard specifies the technical requirements of remanufacturing of the auto body parts of M1 Vehicle.

This standard is appropriate for the remanufacturing of the car door, deck lid, fender, bonnet of the M1 Vehicle.

2. Normative Reference File

These documents are essential to the application of this document. If the reference is dated, only the dated version applies to this document. If not, the latest version (including all modification forms) applies to this document.

Car Side Door Strength	GB 15743
Vehicle and Its Auto Body Parts Identification Mark	GB 30509
Primer for Automobiles	GB/T 13493
Auto body Parts Terminology	GB/ T4780
Remanufacturing Terminology	GB/T 28619
Remanufacturing of Auto Body Parts Classification	GB/ T28676
Remanufacturing of Auto Body Parts Factory Acceptance	GB/T 28678
Primer for Automobiles	GB/T 13493
Cardboard	GB/T 22822-2008
Figure Blank and Tolerance Value of Automobile Body Panels.	QC/T 714-2004

3. Definitions and Terminology

The following terms and definitions apply to this standard:

3.1 THE REMANUFACTURED PRODUCT

The remarketed product which has gone through the remanufacturing progress and meets the remanufacturing requirements.

3.2 The remanufacturing of auto body parts

After being disassembled, cleaned, examine, classified, processed, painted, assembled, reexamined, and other process, the used automotive parts can be restored or exceed the technical performance and product quality of the original components.

3.3 AUTO BODY PARTS THAT COULD BE USED DIRECTLY

Those car doors, deck lids, fenders and bonnets who are determined by testing, do not need to be disassembled or repaired, and the technical performance and quality requirements of the original components can be satisfied only through cleaning, inspection, classification, coating and reexamination.

3.4 AUTO BODY PARTS THAT COULD BE REMANUFACTURED

After testing , if the car doors, deck lids, fenders, and bonnets can be satisfied with the technical performance and quality requirements of the original components, through disassembling, cleaning, inspection, classification, coating and reexamination.

3.5 ABANDONED AUTO BODY PARTS

Except auto body parts that could be used directly and auto body parts that could be remanufactured.

4. Classification

4.1 Classification Principle

4.1.1: The classification of the remanufactured car doors, deck lids, fenders and bonnets should meet the regulation of GB/T 28676, and it can be divided into three parts: auto body parts that could be used directly , auto body parts that could be remanufactured and abandoned auto body parts.

4.1.2: The detailed classification of names should meet the regulation of GB 30509, GB/T 4780.

4.2 The requirements of the auto body parts that can be remanufactured.

4.2.1: The auto body parts must be original loading parts.

4.2.2: The entire auto body parts have never been repaired and the second time coatings are not applied, either.

4.2.3: The frame is not deformed or damaged. (car door)

4.2.4: The bumper (non removable) is intact. (car door)

4.2.5: Overall frame without local hiatus.

4.2.6: The deformation area of the whole outer skin is less than 20% of the overall area.

4.2.7: The diameter of the damage in round or irregularly shaped in the entire outer skin is within 10 cm.

4.2.8: The linear damage of the entire outer skin is within 20 cm.

5. Technical requirement

5.1 Strength

5.1.1: The strength of the exterior surfaces of remanufactured car door meets the requirements of GB 15743-1955.

5.1.2: The strength of the exterior surfaces of deck lid, fender, bonnet meets the follow requirements:

A) The initial anti-extrusion force shall not be less than 10000N.

B) The intermediate anti-extrusion force shall not be less than 19450N.

C) The maximum anti-extrusion force shall not be less than the smaller value in both: 3.5 times the quality of the whole vehicle and

whole setup, 53340N.

5.1.3: The shock resistance of the exterior surface of remanufactured car door shall not be less than 1900N.

5.2 The position and shape tolerances before coating

5.2.1: The error of the flatness of overall shape, the straightness of the neckline, the roundness, and the radian of the remanufactured car door, deck lid, fender, and bonnet shall meet the following requirements.

A) The error of the flatness of overall shape shall be less than 0.3mm.

B) The error of the straightness of the neckline (waistline) should be less than 0.3mm.

C) The error of the roundness and radian should be less than 0.5mm.

5.2.2: The tolerance of the other shape and position of the remanufactured car door, deck lid, fender, and bonnet shall be in accordance with the regulations.

5.3 The coating thickness and material

5.3.1: For remanufactured car door, deck lid, fender, and bonnet surface repair, shall use 2355 Liquid Alloy and black 2K no sanding primer.

5.3.2: The coating thickness of remanufactured car door, deck lid, fender, and bonnet shall meet the regulations of GB/T13493.

6. Appearance inspection

6.1 Content

The content of the appearance inspection includes the inspection of the position and shape tolerances and the inspection of the coating thickness.

6.2 The inspection of the position and shape tolerances.

Shall test the position, profile, flatness, straightness of the outer surface of the remanufactured car door, deck lid, fender, and bonnet, if they do not meet the technical requirements, they should be repaired.

6.3 The inspection of the coating thickness.

Shall test the inspection of the coating thickness of the outer surface, if it does not meet technical requirements, it should be re burnished and coated.

7. Strength test method

7.1 The test method of the remanufactured car door, deck lid, fender, and bonnet shall be in accordance with the requirements of GB 15743-1995.

7.2 The strength test of the remanufactured car door, deck lid, fender, and bonnet

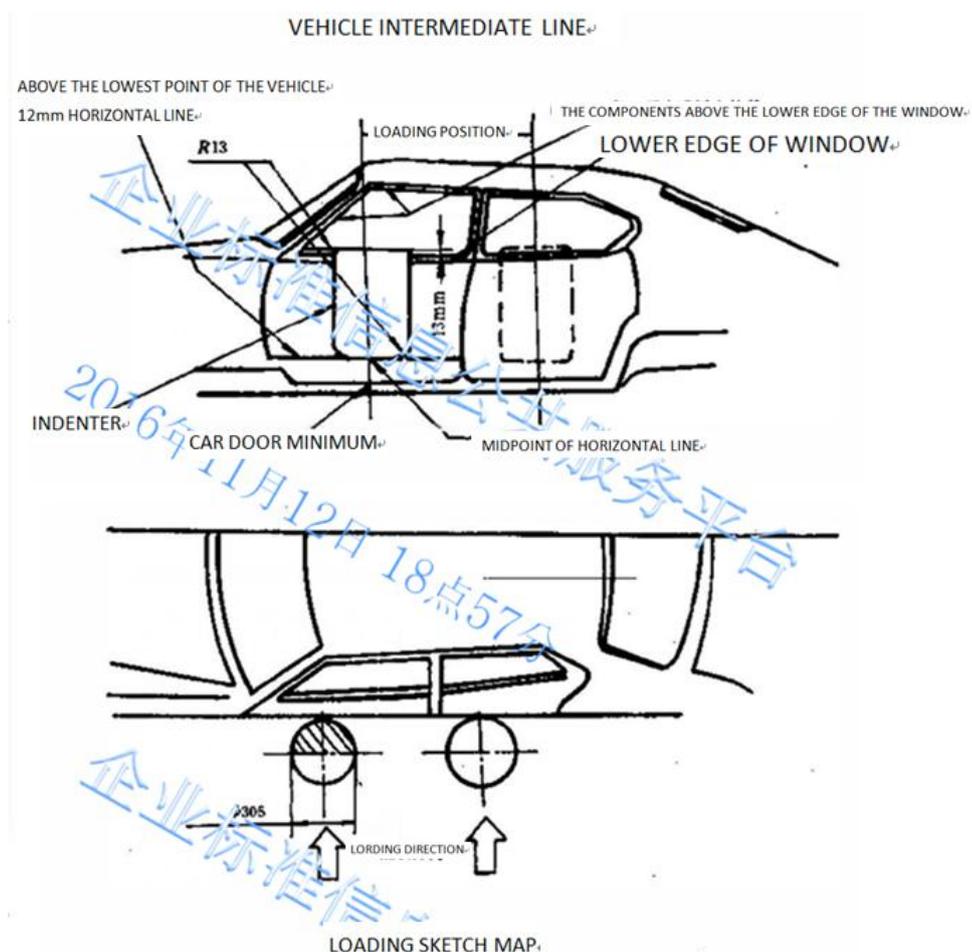
7.2.1: The car door, deck lid, fender, and bonnet should be locked. The opposite of the tested auto body skirt should lean against a strong rigid

vertical face. The vehicle should be secured with the fastening device. The fastening device should be installed at the center line of the front wheel or before the center line and the rear wheel center line or after the center line.

7.2.2: The indenter of the loading device is a steel cylinders or semi cylinders with a diameter of 305mm and an edge fillet radius of 13mm.

7.2.3: During the test, the direction of the indenter is perpendicular to the center of the longitudinal plane of the vehicle. It loads from the outside to the inside until the loading device moves 457mm. The speed of the loading shall not exceed 12.7mm/s during continuous loading, and it has to be finished in 120s. The continuously recorded load and the corresponding move will probably increase the numerical record of the test results (less than 25mm or 890N). The indenter must not be rotated or changed direction of movement.

7.3 7.2.4: With the record of results, the load curve with the extrusion distance as the variable could be drew, after obtaining the integral of the load relative extrusion distance, shall use this integral divide the corresponding extrusion distance, the result is the average force for deforming the deck lid, fender, and bonnet.



8. Environment requirements.

8.1 When the remanufactured car door, deck lid, fender, and bonnet are being coated, the baking temperature should be between 60°C-80°C and the baking time should be more than 20 min.

9. Factory inspection.

9.1 The inspection of the appearance

9.1.1 The whole auto body part is flawless, for example: residual rivet, traces of glue, label.

9.1.2 The appearance of the whole auto body part should be coated with black medium coating, smooth and dust-free, no-blowhole, no-defect.

Shall check the length, width, height, warp position, hole distance, and accessories in accordance with the original standard of auto body parts.

9.2 Others should be executed in accordance with the requirements of GB/T 28678-2012.

10. Packaging and marking

10.1 Packaging

10.1.1 The packaging of the remanufactured car door, deck lid, fender, and bonnet is made of five layers of cardboard. The thickness of cardboard is 3 ± 0.25 mm, the average value of the degree of the longitudinal and transverse tension resistance ≥ 47 kN/m, others should be in accordance with the requirements of GB/T 22822-2008.

10.1.2 The packing box has a substrate and an internal fixing accessory.

10.1.3 Shall apply the specialized glue for the bottom coating, and the glue position should not be less than 16, the diameter should not be smaller than 2cm, and the height should not be shorter than 5mm. The position of the specialized glue for sealing box should not be less than 12, and the diameter should not be smaller than 2mm and the height should not be shorter than 5mm.

10.2 Marking

10.2.1 The packing box of the remanufactured car door, deck lid, fender, and bonnet should have a distinct mark of the remanufacturing.

10.2.2 Others marks should be in accordance with the requirements of GB/T 28678-2012.