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Replacing JT/T 3139.1-1989 and JT/T 3139.2-1989

Trailer Axle

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Foreword

This Standard has been made by combining and revising JT/T 3139.1-1989 “Trailer Axle Assembly – Basic Parameter Series” and JT/T 3139.2-1989 “Trailer Axle – General Specifications”. Significant changes have been made on the technical content of the original standards: this Standard deletes the torsional strength test for trailer axle, improves the technical specifications of bending fatigue life, and adds the technical requirements and test methods for wheel brake.

JT/T 3139.1-1989 and JT/T 3139.2-1989 shall be abolished from the implementation date of this Standard.

This Standard was proposed by and shall be under the jurisdiction of the Highway Department of the Ministry of Communications.

The main drafting organization of this Standard: Ministry of Communications Highway Scientific Research Institute.

The organization participating in the drafting of this Standard: Guangdong Fuwa Engineering Group Ltd.

The main drafters of this Standard: Nie Yuming, Liu Jiannong, Wu Zhiqiang and Huang Bohua.

The standard JT/T 3139 replaced by this Standard was first issued in June, 1989.

Trailer Axle

1 Scope

This Standard specifies the types, basic parameters, technical requirements, test methods and inspection rules for trailer axles (including wheel brake assembly and chamber support).

This Standard applies to the axles used in the freight trailers with manufacturer's maximum total mass not exceeding 8 t.

2 Normative References

The provisions in following documents become the provisions of this Standard through reference in this Standard. For dated references, the subsequent amendments (excluding corrigendum) or revisions do not apply to this Standard, however, parties who reach an agreement based on this Standard are encouraged to study if the latest versions of these documents are applicable. For undated references, the latest edition of the referenced document applies.

JB/T 5000.3 Heavy Mechanical General Techniques and Standards – Part 3: Welding

QC/T 239 Performance Requirements for Truck & Bus Brakes

QC/T 479 Trucks and Buses Brake Bench Test Method

QC/T 484 Automobile Paint Coating

3 Types

3.1 The trailer axles can be divided into two types in accordance with the tyre mounting methods, including the single-tyre S (single) type and the double-tyre D (double) type.

Load slowly from zero to the maximum test load. Record the displacement of each measuring point by 8 levels (the displacement under the rated shaft load and the maximum test load must be recorded). Each axle shall be tested three times. At the beginning of each test, adjust the dial gauge (or displacement sensor) to zero.

6.3.4.2 Strength test

After the vertical bending rigidity test, remove the dial gauge (or displacement sensor) at each measuring point and load it continuously until the axle breaks. Record the load at that time (i.e. the axle's failure load).

6.3.5 Data processing

6.3.5.1 Calculate the numerical value of the ratio between the maximum displacement and track under the full load of the axle, draw the displacements at all measuring points under the full axle load and maximum test load, and connect these points into a polyline.

6.3.5.2 Calculate the axle bending backup coefficient

$$K_n = P_n / P$$

In the formula: P_n — vertical bending failure load, in kN;

P — rated axle load, in kN.

6.3.6 Result processing

Analyze the test sample data and write the test report or test result notice.

6.4 Vertical bending fatigue life test

6.4.1 Test objective

It is to determine the vertical bending fatigue life of axles.

6.4.2 Test apparatus

They include hydraulic fatigue tester, strain gauge, oscilloscope, strain foil and so on.

6.4.3 Test procedure

6.4.3.1 Mounting

The sample mounting method is the same as that in 6.3.3.1.

6.4.3.2 Loading

Make the loading direction perpendicular to the axle centre-line, preload to the maximum test load and repeat three times before unloading.

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