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ICS 43.040
CCS T 40

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ASSOCIATION STANDARD

T/CSAE 162-2020

Performance requirements and methods of bench test for suspension system of passenger car

乘用车悬架系统台架试验性能要求及方法

(English Translation)

Issued on: November 13, 2020

Issued by: China Society of Automotive Engineers

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1 Scope

This document specifies the performance requirements and methods for the bench test of passenger car suspension systems.

This document is applicable to the bench test of passenger car suspension system.

2 Normative references

The contents of the following documents constitute the indispensable clauses of this document through normative references in the text. Among them, dated reference documents, Only the version corresponding to that date is applicable to this document; for undated references, the latest version (including all amendments) is applicable to this document Pieces.

GB/T 3730.1-2001 Terms and definitions for types of cars and trailers

3 Terms and definitions

The following terms and definitions apply to this document.

Passenger car

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In terms of its design and technical characteristics, it is mainly used for cars that carry passengers and their carry-on luggage and/or temporary items, including the driver's seat no more than 9 seats.

Mcpherson suspension Suspension type consisting of hinged strut and lower cross arm (stroke link type).

Double wish-bone arm suspension A suspension type that connects the wheel (or axle) to the frame (or body) with upper and lower cross arms.

Multi-link suspension in a non-independent suspension, four (or three or five) thrust rods are used to control the position of the wheels.

Torsion beam rear suspension A structural type of automobile semi-independent suspension that uses a torsion beam to balance the up and down movement of the left and right wheels to reduce the shaking of the vehicle.

Maintain the stability of the vehicle.

Integral axle non independent suspension Automobile non-independent suspension is a structural type that is mostly used in SUV models that emphasize off-road in the field of passenger cars. Use a hard shaft to move the left and right the wheels are connected.

Centroid power mount A power suspension arrangement for pure electric vehicles. On the top view, the center of mass of the powertrain falls within a triangular area formed by three suspension points.

And it should be as close as possible to the center of the triangle, and there are not too many restrictions on the relative positions of the three suspension points.

4.1.1 Longitudinal durability

Carry out the test in accordance with 5.1.1, and the verification parts of the suspension system (except the rubber bushing) shall not show cracks after.200,000 tests; the fasteners There should be no loosening, and the loosening torque should be greater than 70% of the initial tightening torque; there should be no serious plastic deformation or fracture (crack exceeding 10 mm).

4.1.2 Lateral durability

Carry out the test in accordance with 5.1.2, and the verification parts of the suspension system (except the rubber bushing) shall not show cracks after.200,000 tests; the fasteners There should be no loosening, and the loosening torque should be greater than 70% of the initial tightening torque; there should be no serious plastic deformation or fracture (crack exceeding 10 mm).

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4.1.3 Same direction and vertical durability

Carry out the test in accordance with 5.1.3, and the verification parts of the suspension system (except the rubber bushing) shall not show cracks after.200,000 tests; fasteners There should be no loosening, and the loosening torque should be greater than 70% of the initial tightening torque; there should be no serious plastic deformation or fracture (crack exceeding 10 m).

4.1.4 Anti-Vertical Durability

For independent suspension structures such as Macpherson suspension, double wishbone suspension and multi-link suspension. test according to 5.1.4, suspension system all verification parts (except rubber bushings) should not show cracks after.200,000 tests; fasteners should not be loosened, and the loosening torque should be greater than the initial the tightening torque is 70%.

For the torsion beam rear suspension. test according to 5.1.4, the verification parts of the suspension system (except the rubber bushing) will not be tested after 500,000 times.

Cracks should appear; fasteners should not be loosened, and the loosening torque should be greater than 70% of the initial tightening torque.

For integral bridge non-independent suspensions, this test is not applicable.

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