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Passenger cars — Specifications for mechanical jacks

Voitures particulières — Spécifications des crics mécaniques

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Foreword

ISO (the International Organization for Standardization) is a worldwide federation of national standards bodies (ISO member bodies). The work of preparing International Standards is normally carried out through ISO technical committees. Each member body interested in a subject for which a technical committee has been established has the right to be represented on that committee. International organizations, governmental and non-governmental, in liaison with ISO, also take part in the work. ISO collaborates closely with the International Electrotechnical Commission (IEC) on all matters of electrotechnical standardization.

Draft International Standards adopted by the technical committees are circulated to the member bodies for voting. Publication as an International Standard requires approval by at least 75 % of the member bodies casting a vote.

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Passenger cars — Specifications for mechanical jacks

1 Scope

This International Standard specifies requirements to ensure the safety in use of original equipment mechanical jacks supplied with passenger cars (as defined in ISO 3833), in changing wheels and putting on chains.

2 Normative references

The following standards contain provisions which, through reference in this text, constitute provisions of this International Standard. At the time of publication, the editions indicated were valid. All standards are subject to revision, and parties to agreements based on this International Standard are encouraged to investigate the possibility of applying the most recent editions of the standards indicated below. Members of IEC and ISO maintain registers of currently valid International Standards.

ISO 1176 : 1990, *Road vehicles — Masses — Vocabulary and codes.*

ISO 3833 : 1977, *Road vehicles — Types — Terms and definitions.*

3 General requirements

3.1 Written instructions for the safe use of the jack shall be provided in the vehicle manufacturer's instruction manual.

3.2 The jack shall fit the jacking points specified by the vehicle manufacturer and shall be capable of being operated without damaging any part of the vehicle with the doors closed.

3.3 Means shall be provided to prevent over-travel of the jack.

4 Finish

On delivery, surfaces shall be adequately protected against corrosion and moving parts shall be lubricated as necessary.

All external surfaces shall be free of extraneous material, burrs, fins, and sharp edges which could cause injury in use.

5 Operational requirements

5.1 Dimensions

To establish the dimensional suitability of the jack for use on the vehicle with which it is supplied, the following requirements shall be met.

With the vehicle at the maximum manufacturer's total mass [ISO-M07 (see ISO 1176)], it shall be immobilized in accordance with the manufacturer's instructions, and standing on a level concrete surface or equivalent; it shall then be possible to locate the jack correctly at each jacking point with a flat tyre to give the least favourable conditions, and to lift the vehicle off the ground to give sufficient clearance between the ground and tyre to fit the spare wheel, for all tyre sizes specified by the vehicle manufacturer. The spare wheel tyre shall be inflated to the maximum specified pressure.

5.2 Operational effort

It shall be possible to perform the jacking operations described in 5.1 by applying a force that shall not exceed the following values:

- 360 N for jacks operated by up and down lever action;
- 120 N for all other types of jack operation.

5.3 Accidental operation

At any point over its full travel while raising or lowering the vehicle, the jack mechanism shall not operate independently when the operating force is removed.

6 Stability

6.1 With the vehicle in the conditions specified in 5.1 and using the jack extended to its upper limit as specified in clause 7 at each jacking point in turn, a longitudinal static force of 250 N shall be applied in each direction separately at a height of 44 cm above the road surface on the vehicle centreline. Furthermore a lateral static force of 250 N shall be applied in each direction separately to the middle of the wheels. The vehicle shall not come off the jack.

6.2 With the vehicle loaded as specified in 5.1 and parked on a surface having a gradient of (8 ± 1) % and a camber of (5,5 ± 0,5) % and with all other vehicle conditions as set by the manufacturer, the jacking procedure stipulated in 5.1 shall be carried out, first with the vehicle facing uphill and then facing downhill. The vehicle shall not come off the jack.

7 Durability

NOTE — During this test the jack manufacturer's instructions should be followed.

With a new jack and handle, 24 jacking cycles evenly distributed around the jacking points shall be performed in accordance with the procedure described in clause 5. The upper limit of the jacking cycle is defined as the point at which there is 25 mm ground clearance with the largest fully inflated tyre/wheel combination or at which the jack is fully extended, whichever occurs first. The lower limit is defined as the point at which the load is relieved from the jack with the smallest deflated tyre/wheel combination. The 24 jacking cycles shall be carried out with a 5 min interval between two cycles.

On completion of the test, the requirements of 5.2 shall continue to be met and on visual inspection there shall be no undue wear or permanent deformation of either jack or handle.

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