

Australian/New Zealand Standard™

Hydraulic trolley jacks



AS/NZS 2615:2004

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Australian Automobile Association
Australian Automotive Aftermarket Association
Australian Competition and Consumer Commission
Australian Industry Group
Australian Retailers Association
Certification Bodies (Australia)
Competition and Consumer Policy Division, Department of the Treasury
Consumer Affairs Victoria
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Hydraulic trolley jacks

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PREFACE

This Standard was prepared by the Joint Standards Australia/Standards New Zealand Committee CS-055, Car Jacks and Trolley Jacks to supersede AS/NZS 2615:1995.

The Standard was originally prepared in response to requests from the Victorian Automobile Chamber of Commerce and the Consumers Association of Victoria, which were concerned about the safety and quality of manufacture of hydraulic trolley jacks.

In this revision, Appendix F has been added, which sets out the method for determining the load which a hydraulic trolley jack can lift using an operating force on the handle of not more than 450 N.

Suppliers of hydraulic trolley jacks should take cognizance of the regulations under the Trade Practices Act relating to the supply of these products.

The term 'normative' has been used in this Standard to define the application of the appendix to which it applies. A 'normative' appendix is an integral part of a Standard.

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STANDARDS AUSTRALIA/STANDARDS NEW ZEALAND

Australian/New Zealand Standard**Hydraulic trolley jacks****1 SCOPE**

This Standard specifies requirements for the design, construction, performance and labelling of hydraulic trolley jacks designed to raise vehicles. It does not include devices that raise an entire vehicle.

Requirements for vehicle jacks, i.e. jacks in which the load is directly transferred from the head cap to the base, are specified in AS/NZS 2693.

2 OBJECTIVE

The objective of this Standard is to provide manufacturers, importers, consumers, retailers and testing bodies with a set of performance requirements which include technical specifications and test methods for hydraulic trolley jacks.

3 REFERENCED DOCUMENTS

The following documents are referred to in this Standard:

AS

- | | |
|------|---|
| 1192 | Electroplated coatings—Nickel and chromium |
| 1789 | Electroplated zinc (electrogalvanized) coatings on ferrous articles (batch process) |
| 2581 | Pressure-sensitive adhesive labels for general purpose use |

AS/NZS

- | | |
|---------|--|
| 2693 | Vehicle jacks |
| 3750 | Paints for steel structures |
| 3750.15 | Part 15: Inorganic zinc silicate paint |

4 DEFINITIONS

For the purpose of this Standard, the definitions below apply.

4.1 Base plane

The plane of contact between the wheels of the hydraulic trolley jack and the surface upon which the wheels rest (see Figure 1).

4.2 Head cap

The point of contact of the hydraulic trolley jack with the vehicle (see Figure 1).

4.3 Hydraulic trolley jack

A hydraulic trolley jack mounted on a chassis which may be provided with wheels (which may or may not be used to transmit the load) for manoeuvring the hydraulic trolley jack, and which has a handle to position the hydraulic trolley jack under the vehicle and has hydraulic cylinders filled with hydraulic fluid to lift the vehicle.

4.4 Lifting cycle

The operation of raising the head cap of the hydraulic trolley jack, using the handle provided, from its fully lowered position to its fully raised position and then returning it to its fully lowered position (see Figure 1).

4.5 Nominated capacity

The capacity nominated as the maximum load that is to be lifted by the hydraulic trolley jack.

NOTE: The nominated capacity has to be marked on the hydraulic trolley jack (see Clause 7).

4.6 Operating force

The force which has to be applied normal to the handle in order to perform a lifting cycle of the hydraulic trolley jack using the full range of travel of the operating handle and measuring the required operating force throughout the lifting cycle. This applies for all measurements of operating force. The force is measured at the centre of the handgrip or, if there is no handgrip, at a point 50 mm from the operator's end of the handle.

4.7 Vehicle

Any wheeled vehicle used on a road including any towed unit such as a caravan or trailer, except any vehicle used on a railway or tramway.

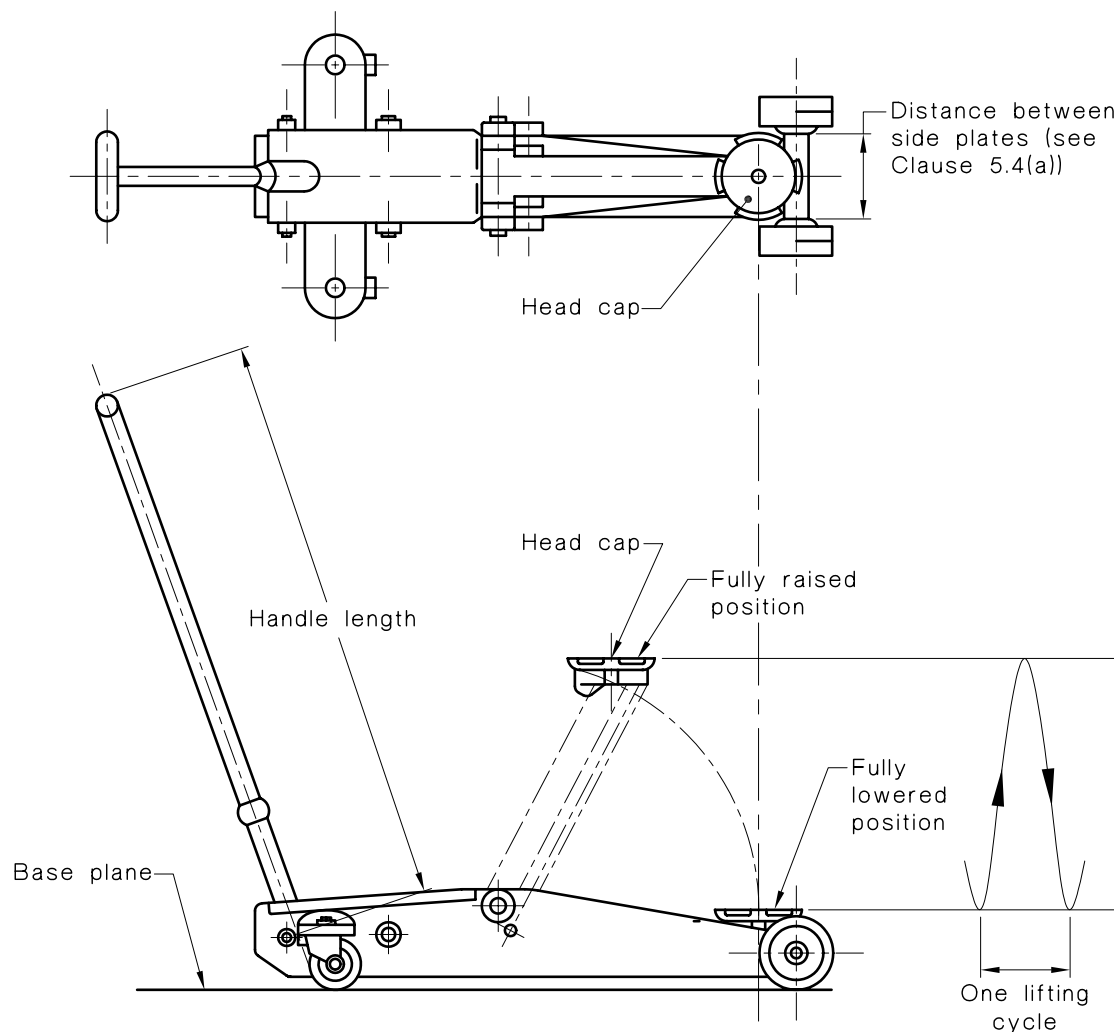


FIGURE 1 TERMINOLOGY FOR A TYPICAL HYDRAULIC TROLLEY JACK

5 DESIGN AND CONSTRUCTION

5.1 General

The hydraulic trolley jack shall be designed and constructed so as to comply with all the relevant requirements specified in this Standard. It shall be free from defects that would affect its durability or serviceability and all screws, pins, bolts and similar parts shall have effective means for preventing loss of proper tightness and adjustment. All bearings and moving parts requiring periodic lubrication shall be provided with readily accessible means of applying lubrication.

The hydraulic trolley jack's hydraulic cylinders shall be filled with correct hydraulic fluid to the recommended level.

If the hydraulic trolley jack supplied is not fully lubricated, necessary instructions for initial lubrication shall be supplied.

5.2 Materials

All materials used in the construction of the hydraulic trolley jack shall have properties to withstand the forces when tested in accordance with Appendices A to F.

5.3 Protective coating

A suitable protective coating shall be applied to the hydraulic trolley jack, except for mating surfaces or sliding parts.

NOTES:

- 1 The purpose of this requirement is to inhibit corrosion.
- 2 Although any suitable protective coating may be used, the protective coating is to be applied using good commercial practice.
- 3 Some examples of suitable protective coatings are specified in AS 1192, AS 1789 and AS/NZS 3750.15.

5.4 Head cap

The head cap of the hydraulic trolley jack shall comply with the following requirements:

- (a) The head cap diameter shall be no smaller than 78% of the width between the side plates of the hydraulic trolley jack measured across the front axle (see Figure 1).
- (b) The head cap shall be free to rotate about a vertical axis.
- (c) The head cap shall remain parallel to the base plane within ± 5 degrees during the lifting cycle at the nominated capacity.
- (d) The head cap shall be capable of retaining a horizontal cylindrical bar of 100 mm nominal diameter when the hydraulic trolley jack assembly is inclined 5 degrees to the horizontal and the head cap is inclined to its maximum out of parallel in the same direction.

NOTE: This is intended to provide a test of the shape of the head cap and its ability to retain a 100 mm diameter axle housing.

- (e) The head cap shall remain, throughout the lifting cycle, vertically above the figure described by joining the points of contact of the hydraulic trolley jack with the base plane.

5.5 Overload protection

The hydraulic trolley jack shall be provided with a means of protection against the raising of the head cap under a load in excess of 15% above its nominated capacity. This measurement shall be recorded when the top of the lifting arm is at the horizontal $\pm 2^\circ$.

5.6 Prevention of overtravel

The hydraulic trolley jack shall be provided with a positive stop to prevent overtravel or the design of the hydraulic trolley jack shall be such that overtravel is effectively prevented.

When the hydraulic trolley jack is tested in accordance with Appendix A, it shall not be possible to induce any overtravel.

NOTE: The provision of a relief port on a hydraulic trolley jack may be an effective means of preventing overtravel. Shear pins are not an adequate means of preventing overtravel as they are subject to sudden failure.

5.7 Minimum capacity

The nominated capacity of the hydraulic trolley jack shall be not less than 750 kg.

6 PERFORMANCE

6.1 Test procedure

The performance tests set out in Clauses 6.2 to 6.7 shall be carried out in such a manner that the forces imposed on the head cap of the hydraulic trolley jack are transmitted to the hydraulic trolley jack's hydraulic lifting system at all times. A new hydraulic trolley jack may be used for each test if required. Except for further testing, any hydraulic trolley jack subjected to tests in Clauses 6.2, 6.6 and 6.7 shall not be re-used.

6.2 Durability

When tested in accordance with Appendix A, the hydraulic trolley jack shall not fail, or become unserviceable.

6.3 Ease of operation

When the hydraulic trolley jack is tested in accordance with Appendix A, neither the initial operating force nor the operating force after conditioning shall be greater than 450 N. Where operating force exceeds 450 N, Appendix F shall be used to determine the maximum capacity of the hydraulic trolley jack to meet the 450 N requirement.

NOTE: The handle provided for operation of the hydraulic trolley jack should, at the area where the operator applies the operating force, be of such size and shape that undue discomfort is not caused.

6.4 Loss of height under load

When determined in accordance with Appendix B, the loss of height under load shall not exceed 5% of the original height of the head cap above the base plane. At the conclusion of 30 minutes, the loss of height shall not exceed 5 mm.

6.5 Lowering

The hydraulic trolley jacks shall provide an operator-activated, controlled lowering mechanism.

When the hydraulic trolley jack is tested in accordance with Appendix C, the operator shall be able to stop the head cap at a given point during the descent within a distance equal to 5% of the full range of travel of the head cap, without hazard to the operator or damage to the hydraulic trolley jack.

6.6 Overload capacity

When tested in accordance with Appendix D, a hydraulic trolley jack shall—

- (a) not collapse or become unstable;
- (b) not suffer a loss of height of the head cap greater than 5% of the original height of the head cap; and