



CD/K/039-4:2008
ICS 43.040.40

EAST AFRICAN STANDARD

**Motor vehicle safety specification — Braking — Part 4: Spring
brakes**

EAST AFRICAN COMMUNITY

Foreword

Development of the East African Standards has been necessitated by the need for harmonizing requirements governing quality of products and services in East Africa. It is envisaged that through harmonized standardization, trade barriers which are encountered when goods and services are exchanged within the Community will be removed.

In order to meet the above objectives, the EAC Partner States have enacted an East African Standardization, Quality Assurance, Metrology and Test Act, 2006 (EAC SQMT Act, 2006) to make provisions for ensuring standardization, quality assurance, metrology and testing of products produced or originating in a third country and traded in the Community in order to facilitate industrial development and trade as well as helping to protect the health and safety of society and the environment in the Community.

East African Standards are formulated in accordance with the procedures established by the East African Standards Committee. The East African Standards Committee is established under the provisions of Article 4 of the EAC SQMT Act, 2006. The Committee is composed of representatives of the National Standards Bodies in Partner States, together with the representatives from the private sectors and consumer organizations. Draft East African Standards are circulated to stakeholders through the National Standards Bodies in the Partner States. The comments received are discussed and incorporated before finalization of standards, in accordance with the procedures of the Community.

Article 15(1) of the EAC SQMT Act, 2006 provides that "Within six months of the declaration of an East African Standard, the Partner States shall adopt, without deviation from the approved text of the standard, the East African Standard as a national standard and withdraw any existing national standard with similar scope and purpose".

East African Standards are subject to review, to keep pace with technological advances. Users of the East African Standards are therefore expected to ensure that they always have the latest versions of the standards they are implementing.

© East African Community 2010 — All rights reserved

East African Community

P O Box 1096

Arusha

Tanzania

Tel: 255 27 2504253/8

Fax: 255-27-2504481/2504255

E-Mail: eac@eachq.org

Web: www.each.int

© 2010 EAC — All rights of exploitation in any form and by any means reserved worldwide for EAC Partner States' NSBs.

Contents

1	Scope	1
2	Definitions.....	1
3	Requirements	1
4	Inspection and methods of test.....	2

Draft for comments only — Not to be cited as East African Standard

Draft for comments only — Not to be cited as East African Standard

Motor vehicle safety specification — Braking — Part 4: Spring brakes

1 Scope

This part of the specification covers the requirements for spring brakes on vehicles of categories M, N, and O (see CD/K/039-1:2008) that have a maximum design speed exceeding 25 km/h.

2 Definitions

For the purposes of this part of the specification, the definitions given in CD/K/039-1:2008 and the following definition shall apply:

spring brake

brake in which the energy required for braking is supplied by one or more springs that act as an energy storage device

3 Requirements

3.1 Exclusion from use as a service brake

A spring brake shall not be used as the main service brake of a motor vehicle.

3.2 Variation of braking force with pressure

A spring brake shall be such that, whatever the pressure in the feed circuit to the spring compression chamber, a small change in that pressure does not cause a large variation in the braking force.

3.3 Energy reserve

- a) Except in the case of trailers, unless the springs can be kept compressed by the use of at least two mutually independent devices, the feed circuit to the spring compression chamber shall include an energy reserve that does not supply any other device or equipment.
- b) A spring brake device shall be such that, when the device is tested in accordance with 4.3(b) with the initial level of energy in the reservoirs at the level specified by the manufacturer and no fresh feed being supplied to the reservoirs, i.e. when the engine is stopped, it is possible to apply and release the brakes at least three times.

3.4 Pressure at which actuation commences

After the brakes have been adjusted as closely to their braking surface(s) as possible, the pressure in the spring compression chamber at which the brake rod begins to be actuated by the springs shall not exceed 80 % of the minimum normal operating pressure in the spring compression chamber.

3.5 Alarm

If the pressure in the spring compression chamber of a drawing vehicle falls to the level at which the brake rod is actuated, an alarm, optical or audible and so positioned that it can be readily detected by the driver, shall be activated. This alarm may be combined, fully or partially, with the alarm specified in CD/K/039-1:2008.

3.6 Automatic application of spring brakes

If a vehicle is a drawing vehicle for a trailer with continuous or semi-continuous braking and is fitted with spring brakes, automatic application of the spring brakes shall cause application of the towed vehicle's brakes.

3.7 Release after failure

A spring brake shall be so designed and constructed that, in the event of failure of the energy supply, it is possible to release the brake without the use of the normal control.

If such release involves the use of a tool or key, the tool or key shall be provided on the vehicle.

3.8 Spring brakes used as parking brakes on trailers and semi-trailers

In all cases where a spring brake is used as a parking brake on a category O vehicle, the parking brake control valve (when fitted) shall, when operated, apply or release the spring mechanism by exhausting or replenishing, as applicable, the energy in the spring compression chamber. The energy reserve of the trailer service brake may be used for this function.

4 Inspection and methods of test



4.1 Test conditions

Before starting testing, ensure that the brakes are adjusted as closely as possible to their braking surface(s).

4.2 Variation of braking force with pressure

- a) Run the engine until the energy reservoirs are fully charged and are at the initial level of energy specified by the manufacturer. Note the pressure in the spring chamber and note 80 % of this value.
- b) With the use of a roller type brake-testing machine, check for compliance with 3.1, 3.2, 3.4, 3.5, and, when relevant, 3.6.

4.3 Energy reserve

- a) Check, by inspection, that the feed circuit to the spring compression chamber, if fitted, includes an energy reserve or reserve that meet the requirements of 3.3(a).
- b) Run the engine until the reservoirs are at the initial level of energy specified by the manufacturer. Stop the engine. Apply and release the spring brakes three times, noting after each release if in fact the brakes have been fully released. Check for compliance with 3.3(b).

4.4 Test for release of spring brakes in the event of failure

Check, by inspection, that a means other than the normal control is provided for releasing the spring brakes after they have been brought into operation by failure of the energy supply.

4.5 Test for spring brakes used as parking brakes on category O vehicles

Check by observation that operation of the parking brake control valve exhausts and then replenishes the energy in the spring compression chamber(s) of the trailer.

Draft for

Draft for comments only — Not to be cited as East African Standard