

**Gaasiga töötavad akumulaatorid
pneumohüdrorakendustele**

Gas-loaded accumulators for fluid power applications

EESTI STANDARDI EESSÕNA

NATIONAL FOREWORD

Käesolev Eesti standard EVS-EN 14359:2006+A1:2010 sisaldab Euroopa standardi EN 14359:2006+A1:2010 ingliskeelset teksti.

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English Version

Gas-loaded accumulators for fluid power applications

Accumulateurs hydro-pneumatiques pour transmissions
hydrauliques

Hydrospeicher für Hydraulikanwendungen

This European Standard was approved by CEN on 18 September 2006 and includes Amendment 1 approved by CEN on 16 November 2010.

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Foreword

This document (EN 14359:2006+A1:2010) has been prepared by Technical Committee CEN/TC 54 "Unfired pressure vessels", the secretariat of which is held by BSI.

This European Standard shall be given the status of a national standard, either by publication of an identical text or by endorsement, at the latest by June 2011, and conflicting national standards shall be withdrawn at the latest by June 2011.

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. CEN [and/or CENELEC] shall not be held responsible for identifying any or all such patent rights.

This document includes Amendment 1, approved by CEN on 2010-11-16.

This document supersedes EN 14359:2006.

The start and finish of text introduced or altered by amendment is indicated in the text by tags $\boxed{A1}$ $\boxed{A1}$.

Where appropriate, equations and techniques are consistent with the requirements of EN 13445-3:2002 but this European Standard is presumed to satisfy the essential requirements of the Pressure Equipment Directive 97/23/EC in its own right.

NOTE If any matter of interpretation or doubt arises as to the meaning or effect of any normative part of this European Standard, or as to whether anything should be done or has been omitted to be done, in order that this European Standard should be complied with in full, the matter needs to be referred to the CEN/TC 54 Committee.

This document has been prepared under a mandate given to CEN by the European Commission and the European Free Trade Association, and supports essential requirements of EU Directive(s).

For relationship with EU Directive(s), see informative Annex ZA, which is an integral part of this document.

According to the CEN/CENELEC Internal Regulations, the national standards organizations of the following countries are bound to implement this European Standard: Austria, Belgium, Bulgaria, Croatia, Cyprus, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Romania, Slovakia, Slovenia, Spain, Sweden, Switzerland and United Kingdom.

1 Scope

1.1 This European Standard specifies the requirements for materials, design, manufacture, testing inspection, safety systems and documentation (including instructions for first operation), for commonly-used types of gas-loaded accumulators and gas bottles for fluid power applications (see 1.2).

1.2 This European Standard applies to the following types of components, defined as the pressure-containing envelope of gas-loaded accumulators:

- bladder type;
- diaphragm type;
- piston type;
- transfer type;
- gas bottles used to provide additional gas capacity.

They consist of one or several parts joined together by a variety of mechanical means and by welding.

1.3 This European Standard applies to gas-loaded accumulators which operate with the following conditions:

- subject to an internal gauge pressure greater than 0,5 bar;
- working temperature of not lower than $-50\text{ }^{\circ}\text{C}$ and not higher than $+200\text{ }^{\circ}\text{C}$;
- containing Group 2 liquids and gases as defined in the Pressure Equipment Directive 97/23/EC.

It does not apply to:

- accumulators for use with dangerous fluids (see NOTE 1).

NOTE 1 Fluid power applications utilize non-dangerous fluids as categorized in ISO 6743-4 in addition to an inert gas (e.g. nitrogen) which is used as the pre-charging medium.

NOTE 2 There are no design limits to the volume of the accumulator.

2 Normative references

The following referenced documents are indispensable for the application of this document. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

EN 1043-1, *Destructive tests on welds in metallic materials — Hardness testing — Part 1: Hardness test on arc welded joints*

EN 1968:2002, *Transportable gas cylinders — Periodic inspection and testing of seamless steel gas cylinders*

EN 10002-1, *Metallic materials — Tensile testing — Part 1: Method of test at ambient temperature*

EN 10045-1, *Metallic materials — Charpy impact test — Part 1: Test method*

EN 10204:2004, *Metallic products — Types of inspection documents*

EN 13018, *Non-destructive testing — Visual testing — General principles*

EN 13445-2:2002, *Unfired pressure vessels — Part 2: Materials*

EN 13445-3:2002, *Unfired pressure vessels — Part 3: Design*

EN 13445-4, *Unfired pressure vessels — Part 4: Fabrication*

EN ISO 898-1:1999, *Mechanical properties of fasteners made of carbon steel and alloy steel — Part 1: Bolts, screws and studs (ISO 898-1:1999)*

EN ISO 6506-1, *Metallic materials — Brinell hardness test — Part 1: Test method (ISO 6506-1:2005)*

EN ISO 6506-2, *Metallic materials — Brinell hardness test — Part 2: Verification and calibration of testing machines (ISO 6506-2:2005)*

EN ISO 6506-3, *Metallic materials — Brinell hardness test — Part 3: Calibration of reference blocks (ISO 6506-3:2005)*

EN ISO 15614-1, *Specification and qualification of welding procedures for metallic materials — Welding procedure test — Part 1: Arc and gas welding of steels and arc welding of nickel and nickel alloys (ISO 15614-1:2004)*

ISO 262, *ISO general-purpose metric screw threads — Selected sizes for screws, bolts and nuts*

ISO 9110-1, *Hydraulic fluid power — Measurement techniques — Part 1: General measurement principles*

ISO 9110-2, *Hydraulic fluid power — Measurement techniques — Part 2: Measurement of average steady-state pressure in a closed conduit*

ISO 10771-1, *Hydraulic fluid power — Fatigue pressure testing of metal pressure-containing envelopes — Part 1: Test method*