INTERNATIONAL STANDARD

ISO 8643

Second edition
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Earth-moving machinery — Hydraulic excavator and backhoe loader boom-lowering control device — Requirements and tests

Engins de terrassement — Dispositif de contrôle d'abaissement de la flèche des pelles et chargeuses-pelleteuses hydrauliques — Exigences et méthodes d'essai

Reference number
ISO 8643:1997(E)

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.

International Standard ISO 8643 was prepared by Technical Committee ISO/TC 127, *Earth-moving machinery*, Subcommittee SC 2, *Safety requirements and human factors.*

This second edition cancels and replaces the first edition (ISO 8643:1988), which has been technically revised.

International Organization for Standardization
Case postale 56 • CH-1211 Genève 20 • Switzerland
Internet central@iso.ch
X.400 c=ch; a=400net; p=iso; o=isocs; s=central

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Introduction

Where excavators or backhoe loaders are used for handling objects, a failure or rupture in the hydraulic boom circuit may endanger persons under raised loads.

This risk can be reduced by applying a control device, which ensures controlled lowering of the boom load in the case of a hydraulic line failure or rupture in the boom circuit.

Test procedures are based on the special design characteristics of the hydraulic systems of hydraulic excavators and the backhoe part of backhoe loaders, and conditions of use.

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Earth-moving machinery — Hydraulic excavator and backhoe loader boom-lowering control device — Requirements and tests

1 Scope

This International Standard establishes uniform requirements and test procedures for boom-lowering control devices fitted on boom-lift cylinders to control the rate of drop in the case of a hydraulic line failure or rupture.

This International Standard applies to boom-lowering control devices on hydraulic excavators and the backhoe part of backhoe loaders, when used for handling and lifting objects.

2 Normative reference

The following standard contains provisions which, through reference in this text, constitute provisions of this International Standard. At the time of publication, the edition indicated was 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 edition of the standard indicated below. Members of IEC and ISO maintain registers of currently valid International Standards.

ISO 6165:1997, *Earth-moving machinery — Basic types — Vocabulary.*

3 Definitions

For the purposes of this International Standard, the definitions given in ISO 6165 and the following definitions apply.

3.1 boom control system: Hydraulic control valve(s) (including pilot and slave valves) used for raising and lowering the boom.

3.2 boom-lowering control device: Hydraulic control valve(s) used for controlled boom lowering.

3.3 failure-simulating device: Hydraulic valve(s) used for simulating a hydraulic line rupture in the boom circuit.

3.4 rated lift capacity: The smaller of either the rated tipping capacity or the rated hydraulic lift capacity.[1)]

3.5 lift point: One point as defined by the manufacturer for the purpose of lifting. It is defined by the lift point height and the lift point radius.

3.6 lift point height: Vertical distance from the lift point to the ground reference plane (GRP).

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1) From: ISO 10567:1992, *Earth-moving machinery — Hydraulic excavators — Lift capacity.*