
**Earth-moving machinery — Loaders
and backhoe loaders —**

Part 2:

**Test method for measuring breakout forces
and lift capacity to maximum lift height**

Engins de terrassement — Chargeuses et chargeuses-pelleteuses—

*Partie 2: Méthode d'essai pour mesurer les forces d'arrachement et la
capacité de levage à la hauteur de levage maximale*



PDF disclaimer

This PDF file may contain embedded typefaces. In accordance with Adobe's licensing policy, this file may be printed or viewed but shall not be edited unless the typefaces which are embedded are licensed to and installed on the computer performing the editing. In downloading this file, parties accept therein the responsibility of not infringing Adobe's licensing policy. The ISO Central Secretariat accepts no liability in this area.

Adobe is a trademark of Adobe Systems Incorporated.

Details of the software products used to create this PDF file can be found in the General Info relative to the file; the PDF-creation parameters were optimized for printing. Every care has been taken to ensure that the file is suitable for use by ISO member bodies. In the unlikely event that a problem relating to it is found, please inform the Central Secretariat at the address given below.

© ISO 2002

All rights reserved. Unless otherwise specified, no part of this publication may be reproduced or utilized in any form or by any means, electronic or mechanical, including photocopying and microfilm, without permission in writing from either ISO at the address below or ISO's member body in the country of the requester.

ISO copyright office
Case postale 56 • CH-1211 Geneva 20
Tel. + 41 22 749 01 11
Fax + 41 22 749 09 47
E-mail copyright@iso.ch
Web www.iso.ch

Printed in Switzerland

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.

International Standards are drafted in accordance with the rules given in the ISO/IEC Directives, Part 3.

The main task of technical committees is to prepare International Standards. 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.

Attention is drawn to the possibility that some of the elements of this part of ISO 14397 may be the subject of patent rights. ISO shall not be held responsible for identifying any or all such patent rights.

ISO 14397-2 was prepared by Technical Committee ISO/TC 127, *Earth-moving machinery*, Subcommittee SC 1, *Test methods relating to machine performance*.

ISO 14397 consists of the following parts, under the general title *Earth-moving machinery — Loaders and backhoe loaders*:

- *Part 1: Calculation of rated operating capacity and test method for verifying calculated tipping load*
- *Part 2: Test method for measuring breakout forces and lift capacity to maximum lift height*

Earth-moving machinery — Loaders and backhoe loaders —

Part 2:

Test method for measuring breakout forces and lift capacity to maximum lift height

1 Scope

This part of ISO 14397 specifies a test method for measuring the breakout forces and the lift capacities to maximum lift height of wheel and crawler loaders and the loader portion of backhoe loaders, as these machine types are defined in ISO 6165.

2 Normative references

The following normative documents contain provisions which, through reference in this text, constitute provisions of this part of ISO 14397. For dated references, subsequent amendments to, or revisions of, any of these publications do not apply. However, parties to agreements based on this part of ISO 14397 are encouraged to investigate the possibility of applying the most recent editions of the normative documents indicated below. For undated references, the latest edition of the normative document referred to applies. Members of ISO and IEC maintain registers of currently valid International Standards.

ISO 6016:1998, *Earth-moving machinery — Methods of measuring the masses of whole machines, their equipment and components*

ISO 6165:2001, *Earth-moving machinery — Basic types — Vocabulary*

ISO 6746-1:1987, *Earth-moving machinery — Definitions of dimensions and symbols — Part 1: Base machine*

ISO 7546:1983, *Earth-moving machinery — Loader and front loading excavator buckets — Volumetric ratings*

ISO 9248:1992, *Earth-moving machinery — Units for dimensions, performance and capacities, and their measurement accuracies*

ISO 14397-1, *Earth-moving machinery — Loaders and backhoe loaders — Part 1: Calculation of rated operating capacity and test method for verifying calculated tipping load*

3 Terms, definitions and symbols

For the purposes of this part of ISO 14397, the terms, definitions and symbols given in ISO 6165, ISO 6746-1 and ISO 14397-1, and the following terms and definitions apply.

3.1

breakout force

maximum sustained upward vertical force, in newtons, generated at a point 100 mm behind the lip of the bucket of a loader by a lift or tilt cylinder, with the bottom of the bucket's cutting edge parallel to, and not more than 20 mm