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Australian STANDARD®

STANDARDS Australia

Earth-moving machinery — Loaders and backhoe loaders

Part 1: Calculation of rated operating capacity and test method for verifying calculated tipping load



AS ISO 14397.1:2021

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Institute of Instrumentation, Control &Automation Australia
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Preface

This Standard was prepared by the Standards Australia Committee ME-063, Earthmoving Equipment.

The objective of this document is to specify the means for determining the rated operating capacity of wheeled or crawler loaders or of the loader portion of backhoe loaders, having buckets and material handling forks, as defined in ISO 6165. It gives standard methods for the calculation and test verification of the tipping load (mass). It is applicable only to the use of buckets and forks on loaders.

This document is identical with, and has been reproduced from, ISO 14397-1:2007, *Earth-moving machinery — Loaders and backhoe loaders — Part 1: Calculation of rated operating capacity and test method for verifying calculated tipping load,* and its Amendment 1 (2019), which has been added at the end of the source text.

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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 2.

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 document may be the subject of patent rights. ISO shall not be held responsible for identifying any or all such patent rights.

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

This second edition cancels and replaces the first edition (ISO 14397-1:2002), which has been technically revised.

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*

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Earth-moving machinery — Loaders and backhoe loaders

Part 1: Calculation of rated operating capacity and test method for verifying calculated tipping load

1 Scope

This part of ISO 14397 specifies the means for determining the rated operating capacity of wheeled or crawler loaders or of the loader portion of backhoe loaders, having buckets and material handling forks, as defined in ISO 6165. It gives standard methods for the calculation and test verification of the tipping load (mass).

It is applicable only to the use of buckets and forks on loaders.

NOTE Certain attachments can exceed the normal operating capacity and will require restricted machine operating conditions, such as reduced machine speed or limited lifting height. Refer to the attachment manufacturer's instructions for the intended use of the attachment.

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.

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

ISO 6165:2006, *Earth-moving machinery — Basic types — Identification and terms and definitions*

ISO 6746-1:2003, *Earth-moving machinery — Definitions of dimensions and codes — 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 14397-2, *Earth-moving machinery — Loaders and backhoe loaders — Part 2: Test method for measuring breakout forces and lift capacity to maximum lift height*

3 Terms and definitions

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

3.1
rated operating capacity
N
calculated value, in kilograms, representing normal loading under typical operating conditions

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