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Australia



# Earth-moving machinery — Engine test code — Net power



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AS ISO 9249:2021

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Australian Industry Group  
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Department of Regional NSW  
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Institute of Instrumentation, Control & Automation Australia  
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# Earth-moving machinery — Engine test code — Net power

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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 a method for testing the net power of internal combustion engines intended for the propulsion of earth-moving machinery as defined in ISO 6165. It is intended to provide a standardized means of reporting net power values to the end user of the earth-moving machines. It is applicable to—

- (a) RIC spark- or compression-ignition engines but excluding free piston engines; and
- (b) rotary piston engines.

These engines may be naturally aspirated or pressure-charged using either a mechanical pressure-charger or turbocharger.

This document is identical with, and has been reproduced from, ISO 9249:2007, *Earth-moving machinery — Engine test code — Net power*.

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The terms “normative” and “informative” are used in Standards to define the application of the appendices or annexes to which they apply. A “normative” appendix or annex is an integral part of a Standard, whereas an “informative” appendix or annex is only for information and guidance.

## Contents

Preface .....	ii
Foreword .....	iv
Introduction .....	v
<b>1 Scope .....</b>	<b>1</b>
<b>2 Normative references .....</b>	<b>1</b>
<b>3 Terms, definitions, symbols and abbreviated terms .....</b>	<b>1</b>
<b>4 Standard reference conditions .....</b>	<b>3</b>
<b>5 Tests .....</b>	<b>3</b>
5.1 Test method .....	3
5.2 Test conditions .....	3
<b>6 Method of power correction .....</b>	<b>3</b>
<b>7 Test report .....</b>	<b>4</b>
<b>8 Statement of results as a function of engine speed .....</b>	<b>4</b>
<b>9 Measurement accuracy .....</b>	<b>5</b>
<b>Annex A (informative) Determination of net power using ISO 14396 .....</b>	<b>6</b>
<b>Bibliography .....</b>	<b>8</b>

## 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 9249 was prepared by Technical Committee ISO/TC 127, *Earth-moving machinery*, Subcommittee SC 1, *Test methods relating to machine performance*.

This third edition cancels and replaces the second edition (ISO 9249:1997), which has been technically revised. It also incorporates the Technical Corrigendum ISO 9249:1997, Cor 1:1999.

## Introduction

This International Standard is intended to be applied in conjunction with the “core” standard, ISO 15550, in order to define the net power ratings for earth-moving machinery where relevant equipment and accessories that absorb engine power (fan, pumps, air compressors and so forth) are deducted from the engine power rating. The “satellite” standard is therefore not a stand-alone document but is intended to be completed by the requirements laid down in ISO 15550.

ISO 15550 contains the requirements that are common to all engine applications, whereas this International Standard contains only those requirements that are necessary to tailor power measurement and declaration to suit the particular engine application defined in its Scope.

The relationship between this International Standard and ISO 14396 is explained in [Annex A](#).

NOTES

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# Australian Standard<sup>®</sup>

## Earth-moving machinery — Engine test code — Net power

### 1 Scope

This International Standard specifies a method for testing the net power of internal combustion engines intended for the propulsion of earth-moving machinery as defined in ISO 6165. It is intended to provide a standardized means of reporting net power values to the end user of the earth-moving machines. It is applicable to

- a) RIC spark- or compression-ignition engines but excluding free piston engines,
- b) rotary piston engines.

These engines may be naturally aspirated or pressure-charged using either a mechanical pressure-charger or a turbocharger.

NOTE This International Standard is a companion standard to ISO 14396. The principle differences between the two is the fitting of certain cooling equipment and pressure-charging equipment auxiliaries (fans) for the test. It is possible to deduct the power requirements of equipment and auxiliaries from the engine ratings of ISO 14396 by test or calculation methods. See [Annex A](#) for the preferred calculation method for obtaining the net power ratings according to this International Standard. Both the test and the calculation method comply with this International Standard.

### 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 6165, *Earth-moving machinery — Basic types — Identification and terms and definitions*

ISO 14396, *Reciprocating internal combustion engines — Determination and method for the measurement of engine power — Additional requirements for exhaust emission tests in accordance with ISO 8178*

ISO 15550:2002, *Internal combustion engines — Determination and method for the measurement of engine power — General requirements*

### 3 Terms, definitions, symbols and abbreviated terms

For the purposes of this document, the symbols and abbreviated terms given in ISO 15550 and the following terms and definitions apply.

#### 3.1

##### **declared engine speed**

engine speed corresponding to the declared power

Note 1 to entry: In some applications, the declared engine speed is named “rated speed”.

[SOURCE: ISO 15550:2002, definition 3.2.4]

#### 3.2

##### **declared power**

value of the power, declared by the manufacturer, which an engine will deliver under a given set of circumstances

Note 1 to entry: In some applications, the declared power is named “rated power”.

[SOURCE: ISO 15550:2002, definition 3.3.1]