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Dup.

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INTERNAL COMBUSTION ENGINES— PERFORMANCE

Part 7—ENGINES FOR ROAD VEHICLE USE— TEST CODE, NET POWER



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The following interests are represented on Committee ME/20:

Australian Assembly of Fire Authorities
Australian Chamber of Commerce
Building Owners and Managers Association of Australia Ltd
Confederation of Australian Industries
Construction Equipment Importers and Manufacturers of Australia
Department of Agriculture and Rural Affairs, Victoria
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This standard was issued in draft form for comment as DR 85248.

AS 2789 Parts 0-10 supersedes AS1501-1976

AS 2789 Parts 1-6 were published in May 1985 and in the May 1985 TAS they were given as superseding AS 1501-1976 which was withdrawn.

AS 2789 Parts 0 and 7-10 were published in May 1986. Information received from the technical officer, Peter Moore, is that they do supersede in part AS 1501-1976 but no information to that effect was given in the May 1986 TAS.

AUSTRALIAN STANDARD

INTERNAL COMBUSTION ENGINES—
PERFORMANCE

Part 7
ENGINES FOR ROAD VEHICLE
USE—
TEST CODE, NET POWER

AS 2789.7—1986

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PREFACE

This standard was prepared by the Association's Committee on Internal Combustion Engines. It supersedes (in part) AS 1501—1976, Method for Rating and Testing of Internal Combustion Engines. It is one of a series of 11 standards on the performance of internal combustion engines of which ten are identical with and have been reproduced from International Standards ISO 3046/1, ISO 3046/2, ISO 3046/3, ISO 3046/4, ISO 3046/5, ISO 3046/6, ISO 1585, ISO 2543, ISO 2288 and ISO 4106.

The complete series constitutes a replacement for AS 1501—1976.

The standards in the series are as follows:

- AS 2789.0 Internal Combustion Engines—Performance, Part 0—Application
- AS 2789.1 Internal Combustion Engines—Performance, Part 1—Engines for Land, Rail Traction, and Marine Use—Standard Reference Conditions and Declarations of Power, Fuel Consumption and Lubricating Oil Consumption
- AS 2789.2 Internal Combustion Engines—Performance, Part 2—Engines for Land, Rail Traction, and Marine Use—Test Methods
- AS 2789.3 Internal Combustion Engines—Performance, Part 3—Engines for Land, Rail Traction, and Marine Use—Test Measurements
- AS 2789.4 Internal Combustion Engines—Performance, Part 4—Engines for Land, Rail Traction, and Marine Use—Speed Governing
- AS 2789.5 Internal Combustion Engines—Performance, Part 5—Engines for Land, Rail Traction, and Marine Use—Torsional Vibrations
- AS 2789.6 Internal Combustion Engines—Performance, Part 6—Engines for Land, Rail Traction, and Marine Use—Overspeed Protection
- AS 2789.7 Internal Combustion Engines—Performance, Part 7—Engines for Road Vehicle Use—Test Code, Net Power
- AS 2789.8 Internal Combustion Engines—Performance, Part 8—Engines for Road Vehicle Use—Test Code, Gross Power
- AS 2789.9 Internal Combustion Engines—Performance, Part 9—Engines for Agricultural Tractor and Machine Use—Test Code, Net Power
- AS 2789.10 Internal Combustion Engines—Performance, Part 10—Engines for Motorcycle Use—Test Code, Net Power

The series of standards applies to internal combustion engines for land, rail-traction, and marine use, including engines used to propel agricultural tractors, road construction and earthmoving machines, road vehicles, and motor cycles.

For the purpose of this Australian standard, the text of the ISO standard used herein should be modified as follows:

- (a) *Terminology*: The words 'Australian Standard' should replace the words 'International Standard' wherever they appear.
- (b) *Decimal Sign*: A dot on the line should replace the comma wherever it appears as a decimal sign.
- (c) *Cross-references*: The references to the International Standards should be replaced by references to Australian Standards as follows:

<i>Reference to International Standard</i>	<i>Appropriate Australian Standard</i>
ISO 2288, Agricultural tractors and machines—Engine test code (bench test)— Net power	AS 2789.9, Internal Combustion Engines—Performance, Part 9—Engines for Agricultural Tractor and Machine Use—Test Code, Net Power
ISO 4106, Road Vehicles—Motorcycles—Engine test code—Net power	AS 2789.10, Internal Combustion Engines—Performance, Part 10—Engines for Motorcycle Use—Test Code, Net Power

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INTERNAL COMBUSTION ENGINES—PERFORMANCE

PART 7—ENGINES FOR ROAD VEHICLE USE—TEST CODE, NET POWER

1 Scope

This International Standard specifies a method for testing engines designed for automobile vehicles. It is applicable to the evaluation of their performances with a view, in particular, to presenting curves of power and specific fuel consumption at full load as a function of engine speed.

It applies only to the net power study.

2 Field of application

This International Standard concerns internal combustion engines used for propulsion of private cars and other motor vehicles [excluding motorcycles (see ISO 4106) and agricultural tractors (see ISO 2288)] normally travelling on roads and included in one of the following categories :

- reciprocating internal combustion engines (spark ignition or diesel) but excluding free piston engines;
- rotary piston engines.

These engines may be naturally aspirated or pressure-charged

3 References

ISO 2288, *Agricultural tractors and machines — Engine test code (bench test) — Net power.*

ISO 2710, *Reciprocating internal combustion engines — Vocabulary.*

ISO 3173, *Road vehicles — Apparatus for measurement of the opacity of exhaust gas from diesel engines operating under steady state conditions.*

ISO 4106, *Road vehicles — Motorcycles — Engine test code — Net power.*

4 Definitions

4.1 net power : The power obtained on a test bed at the end of the crankshaft or its equivalent¹⁾ at the corresponding engine speed with the auxiliaries listed in table 1.

4.2 standard production equipment : Any equipment provided by the manufacturer for a particular engine application.

5 Accuracy of measuring equipment and instruments

5.1 Torque

± 1 % of measured torque²⁾

5.2 Engine speed

± 0,5 % of measured speed

5.3 Fuel consumption

± 1 % of measured consumption

5.4 Fuel temperature

± 2 K

5.5 Air temperature

± 2 K

5.6 Barometric pressure

± 100 Pa*

5.7 Pressure in exhaust duct

[see note 1b) in table 1]

± 200 Pa

5.8 Pressure in intake duct

[see note 1a) in table 1]

± 50 Pa

1) If the power measurement can be carried out with a mounted gear box only, the efficiency of the gear box shall be taken into account.

2) The torque measuring system to be calibrated to take into account friction losses.

* 1 Pa = 1 N/m²