

Australian Standard™

**Internal combustion engines—
Performance**

**Part 1: Standard reference conditions,
declarations of power, fuel and
lubricating oil consumptions, and
test methods**

[ISO title: Reciprocating internal combustion engines—Performance
Part 1: Standard reference conditions, declarations of power, fuel and
lubricating oil consumptions, and test methods]

This Australian Standard was prepared by Committee ME/20, Internal Combustion Engines. It was approved on behalf of the Council of Standards Australia on 18 June 1999 and published on 5 August 1999.

The following interests are represented on Committee ME/20:

Australian Automobile Association
Australian Automotive Aftermarket Association
Australian Industry Group
Australian Institute of Petroleum
Construction & Mining Equipment Association of Australia
Electricity Supply Association of Australia
Environment Australia
Environment Protection Authority, N.S.W.
Federation of Automotive Products Manufacturers
Institution of Engineers Australia
University of Melbourne
Victoria Automobile Chamber of Commerce

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This Standard was issued in draft form for comment as DR 99059.

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Originated as part of AS B215—1966.
Final edition AS 2789.1—1985 and AS 2789.2—1985.
Revised, amalgamated and designated as AS 4594.1—1999.

PREFACE

This Standard was prepared by the Joint Standards Australia/Standards New Zealand Committee ME/20, Internal Combustion Engines to supersede AS 2789.1—1985, *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*, and AS 2789.2—1985, *Internal combustion engines—Performance, Part 2: Engines for land, rail-traction and marine use—Test methods*. It is identical with and has been reproduced from ISO 3046-1:1995, *Reciprocating internal combustion engines—Performance, Part 1: Standard reference conditions, declarations of power, fuel and lubricating oil consumptions, and test methods*.

This Standard is the result of a consensus among the representatives on the Joint Committee to produce it as an Australian Standard.

The Standards in the series are as follows:

AS

4594	Internal combustion engines—Performance
4594.0	Part 0: Application
4594.1	Part 1: Standard reference conditions, declarations of power, fuel and lubricating oil consumptions, and test methods (this Standard).
4594.3	Part 3: Engines for land, rail-traction and marine use—Test measurements
4594.4	Part 4: Engines for land, rail-traction and marine use—Speed governing
4594.5	Part 5: Engines for land, rail-traction and marine use—Torsional vibrations
4594.6	Part 6: Engines for land, rail-traction and marine use—Overspeed protection
4594.7	Part 7: Engines for land, rail-traction and marine use—Codes for engine power
4594.8	Part 8: Engines for road vehicle use—Test code, net power
4594.9	Part 9: Engines for road vehicle use—Test code, gross power
4594.10	Part 10: Engines for agricultural tractor and machine use—Test code, net power
4594.11	Part 11: Engines for motorcycle use—Test code, net power

An application Standard, AS 4594.0, has been produced to be read in conjunction with these Standards to indicate inconsistencies within the adopted ISO Standards.

As this Standard is reproduced from an International Standard the following applies:

- Terminology* The words ‘this Australian Standard’ should replace the words ‘this part of ISO 3046’ whenever they appear.
- Decimal comma* The decimal point should replace the decimal comma wherever it appears.
- Cross-references* The reference to International Standards should be replaced by references to Australian Standards as follows:

*Reference to International Standard**Australia Standard*

ISO

AS

1204	Reciprocating internal combustion engines—Designation of the direction of rotation and of cylinders and valves in cylinder heads, and definition of right-hand and left-hand in-line engines and locations on an engine	—
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ISO		AS	
3046	Reciprocating internal combustion engines—Performance	4594	Internal combustion engines—Performance
3046-3	Part 3: Test measurements	4594.3	Part 3: Engines for land, rail-traction and marine use—Test measurements
3046-4	Part 4: Speed governing	4594.4	Part 4: Engines for land, rail-traction and marine use—Speed governing
3046-5	Part 5: Torsional vibrations	4594.5	Part 5: Engines for land, rail-traction and marine use—Torsional vibration
3046-6	Part 6: Overspeed protection	4594.6	Part 6: Engines for land, rail-traction and marine use—Overspeed protection
3046-7	Part 7: Codes for engine power	4594.7	Part 7: Engines for land, rail-traction and marine use—Codes for engine power
8528	Reciprocating internal combustion engine driven alternating current generating sets		
8528-1	Part 1: Application, ratings and performance	—	

The terms ‘normative’ and ‘informative’ have been used in this Standard to define the application of the annex to which they apply. A ‘normative’ annex is an integral part of a Standard, whereas an ‘informative’ annex is only for information and guidance.

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AUSTRALIAN STANDARD

Internal combustion engines—Performance**Part 1:****Standard reference conditions, declarations of power, fuel and lubricating oil consumptions, and test methods****1 Scope**

This part of ISO 3046 specifies standard reference conditions and methods of declaring the power, fuel consumption, lubricating oil consumption and test methods for reciprocating internal combustion (RIC) engines in commercial production using liquid or gaseous fuels. Where necessary, individual requirements are given for particular engine applications.

This part of ISO 3046 covers RIC engines for land, rail-traction and marine use, excluding engines used to propel agricultural tractors, road vehicles and aircraft.

This part of ISO 3046 may be applied to engines used to propel road construction and earth-moving machines, industrial trucks, and for other applications where no suitable International Standard for these engines exists.

This part of ISO 3046 may be applied to tests on a test bed at the manufacturer's works and to tests on site (see 15.4.4).

2 Normative references

The following standards contain provisions which, through reference in this text, constitute provisions of this part of ISO 3046. At the time of publication, the editions indicated were valid. All standards are subject to revision, and parties to agreements based on this part of ISO 3046 are encouraged to investigate the

possibility of applying the most recent editions of the standards indicated below. Members of IEC and ISO maintain registers of currently valid International Standards.

ISO 1204:1990, *Reciprocating internal combustion engines — Designation of the direction of rotation and of cylinders and valves in cylinder heads, and definition of right-hand and left-hand in-line engines and locations on an engine.*

ISO 3046-3:1989, *Reciprocating internal combustion engines — Performance — Part 3: Test measurements.*

ISO 3046-4:—¹⁾, *Reciprocating internal combustion engines — Performance — Part 4: Speed governing.*

ISO 3046-5:1978, *Reciprocating internal combustion engines — Performance — Part 5: Torsional vibrations.*

ISO 3046-6:1990, *Reciprocating internal combustion engines — Performance — Part 6: Overspeed protection.*

ISO 3046-7:1995, *Reciprocating internal combustion engines — Performance — Part 7: Codes for engine power.*

ISO 8528-1:1993, *Reciprocating internal combustion engine driven alternating current generating sets — Part 1: Application, ratings and performance.*

1) To be published. (Revision of ISO 3046-4:1978)