

# INTERNATIONAL STANDARD

**ISO**  
**2534**

Second edition  
1998-08-15

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## Road vehicles — Engine test code — Gross power

*Véhicules routiers — Code d'essai des moteurs — Puissance brute*



Reference number  
ISO 2534:1998(E)

## 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.

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.

International Standard ISO 2534 was prepared by Technical Committee ISO/TC 22, *Road vehicles*, Subcommittee SC 5, *Engine tests*.

This second edition cancels and replaces the first edition (ISO 2534:1974), of which it constitutes a technical revision.

NOTE — This International Standard is consistent with ISO 1685:1992, *Road vehicles — Engine test code — Net power*.

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# Road vehicles — Engine test code — Gross power

## 1 Scope

This International Standard specifies a method for testing internal combustion engines for propulsion of road vehicles as defined in ISO 3833. It is applicable to the evaluation of their performance with a view, in particular, to presenting curves of power and specific fuel consumption at full load as a function of engine speed.

This International Standard is applicable to gross power assessment.

This International Standard concerns internal combustion engines used for propulsion of passenger cars, trucks and other motor vehicles, excluding motorcycles, mopeds and agricultural tractors normally travelling on roads, and included in one of the following categories:

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

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

This International Standard is primarily intended for the communication between the engine manufacturer and the manufacturer of the vehicle. If used for advertising purposes the ratings must clearly state that they are gross power in accordance with 9.2.

## 2 Normative references

The following standards contain provisions which, through reference in this text, constitute provisions of this International Standard. At the time of the publication, the editions indicated were valid. All standards are subject to revision, and parties to agreements based on the International Standard 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 2710-1:—<sup>1)</sup>, *Reciprocating internal combustion engines — Vocabulary — Part 1: Terms for engine design and operation*.

ISO 3104:1994, *Petroleum products — Transparent and opaque liquids — Determination of kinematic viscosity and calculation of dynamic viscosity*.

ISO 3173:1974, *Road vehicles — Apparatus for measurement of the opacity of exhaust gas from diesel engines operating under steady state conditions*.

ISO 3675:1998, *Crude petroleum and liquid petroleum products — Laboratory determination of density — Hydrometer method*.

1) To be published. (Revision of ISO 2710:1978)

ISO 3833:1977, *Road vehicles — Types — Terms and definitions.*

ISO 5163:1990, *Motor and aviation-type fuels — Determination of knock characteristics — Motor method.*

ISO 5164:1990, *Motor fuels — Determination of knock characteristics — Research method.*

ISO 5165:1998, *Petroleum products — Determination of the ignition quality of diesel fuels — Cetane engine method.*

ISO 7876-1:1990, *Fuel injection equipment — Vocabulary — Part 1: Fuel injection pumps.*

ISO 7967-1:1987, *Reciprocating internal combustion engines — Vocabulary of components and systems — Part 1: Structure and external covers.*

ISO 7967-2:1987, *Reciprocating internal combustion engines — Vocabulary of components and systems — Part 2: Main running gear.*

ISO 7967-3:1987, *Reciprocating internal combustion engines — Vocabulary of components and systems — Part 3: Valves, camshaft drive and actuating mechanisms.*

ISO 7967-4:1988, *Reciprocating internal combustion engines — Vocabulary of components and systems — Part 4: Pressure charging and air/exhaust gas ducting systems.*

ISO 7967-5:1992, *Reciprocating internal combustion engines — Vocabulary of components and systems — Part 5: Cooling systems.*

ISO 7967-8:1994, *Reciprocating internal combustion engines — Vocabulary of components and systems — Part 8: Starting systems.*

ISO 11614:—<sup>2)</sup>, *Reciprocating internal combustion compression-ignition engines — Apparatus for measurement of the opacity and for determination of the light absorption coefficient of exhaust gas.*

ASTM D 240-92e1, *Standard test method for heat of combustion of liquid hydrocarbon fuels by bomb calorimeter.*

ASTM D 3338-95, *Standard test method for estimation of net heat of combustion of aviation fuels.*

### 3 Definitions

For the purposes of this International Standard, the definitions given in ISO 2710-1, ISO 7876-1, ISO 7967-1, ISO 7967-2, ISO 7967-3, ISO 7967-4, ISO 7967-5 and ISO 7967-8, and the following definitions apply.

#### 3.1

##### **gross power**

power obtained on a test bed at the end of the crankshaft or its equivalent at the corresponding engine speed with the equipment and auxiliaries listed in table 1

NOTE — If the power measurement can only be carried out with a mounted gear-box, the losses in the gear-box should be added to the measured power to give the engine power.

#### 3.2

##### **standard production equipment**

any equipment provided by the manufacturer for a particular engine application

2) To be published. (Revision of ISO 3173:1974 and ISO/TR 4011:1976)