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Reciprocating internal combustion engines — Performance —

Part 6: Overspeed protection

*Moteurs alternatifs à combustion interne — Performances —
Partie 6: Protection contre la survitesse*



Reference number
ISO 3046-6:1990(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 3046-6 was prepared by Technical Committee ISO/TC 70, *Internal combustion engines*.

This third edition cancels and replaces the second edition (ISO 3046-6:1982), of which it is a technical revision.

ISO 3046 consists of the following parts, under the general title *Reciprocating internal combustion engines — Performance*:

- *Part 1: Standard reference conditions and declarations of power, fuel consumption and lubricating oil consumption*
- *Part 2: Test methods*
- *Part 3: Test measurements*
- *Part 4: Speed governing*
- *Part 5: Torsional vibrations*
- *Part 6: Overspeed protection*
- *Part 7: Codes for engine power*

Annex A of this part of ISO 3046 is for information only.

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Reciprocating internal combustion engines — Performance —

Part 6:

Overspeed protection

1 Scope

This part of ISO 3046 specifies general requirements and gives definitions for overspeed limiting devices used for the protection of reciprocating internal combustion engines and their driven machines.

It applies to reciprocating internal combustion engines for land, rail traction and marine use, excluding engines used to propel road construction and earth-moving machines, agricultural and industrial types of tractors, road vehicles and aircraft.

2 Normative reference

The following standard contains provisions which, through reference in this text, constitute provisions of this part of ISO 3046. At the time of publication, the edition indicated was 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 edition of the standard indicated below. Members of IEC and ISO maintain registers of currently valid International Standards.

ISO 3046-4:1978, *Reciprocating internal combustion engines — Performance — Part 4: Speed governing*.

3 Other regulations and requirements

3.1 For engines used on board ships and offshore installations which have to comply with rules of a classification society, the additional requirements of the classification society shall be observed. The classification society shall be stated by the customer prior to placing the order.

For non-classed engines, such additional requirements are in each case subject to agreement between the manufacturer and customer.

3.2 If special requirements from regulations of any other authority, for example inspecting and/or legislative authorities, have to be met, the authority shall be stated by the customer prior to placing the order.

Any further additional requirements shall be subject to agreement between the manufacturer and customer.

4 Definitions

For the purposes of this part of ISO 3046, the following definitions apply. Definitions relating to typical engine speeds are given in ISO 3046-4.

4.1 overspeed limiting device: Combination of speed sensing and actuating elements which control the fuel supply and/or the intake of air and/or the ignition system to the engine when a predetermined speed is exceeded.

4.2 setting speed of overspeed limiting device, n_{ds} : Speed at which the activation of the overspeed limiting device is initiated (see figure 1).

4.3 overspeed setting ratio, δ_{ds} : Difference between the setting speed of the overspeed limiting device and the declared speed divided by the declared speed, expressed as a percentage. It is given by

$$\delta_{ds} = \frac{n_{ds} - n_r}{n_r} \times 100$$

4.4 operating speed of overspeed limiting device, n_{do} : Speed at which, for a given setting speed, the overspeed limiting device starts to operate.

NOTE 1 For a given engine the operating speed is dependent on the total inertia of the RIC engine, the driven