

International Standard



3046/6

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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

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Foreword

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Draft International Standards adopted by the technical committees are circulated to the member bodies for approval before their acceptance as International Standards by the ISO Council.

International Standard ISO 3046/6 was developed by Technical Committee ISO/TC 70, *Internal combustion engines*,

The first edition (ISO 3046/6-1980) had been approved by the member bodies of the following countries :

Australia	Italy	Spain
Austria	Japan	Switzerland
Belgium	Korea, Dem. P. Rep. of	Turkey
Chile	Korea, Rep. of	United Kingdom
Czechoslovakia	Mexico	USA
Denmark	Netherlands	USSR
Germany, F. R.	Romania	Yugoslavia
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The member body of the following country had expressed disapproval of the document on technical grounds :

France

This second edition, which cancels and replaces ISO 3046/6-1980, incorporates draft Amendment 1, which was circulated to the member bodies in July 1981 and has been approved by the member bodies of the following countries :

Australia	France	Korea, Rep. of
Austria	Germany, F. R.	Netherlands
Belgium	India	Romania
Brazil	Italy	United Kingdom
Czechoslovakia	Japan	USA
Egypt, Arab Rep. of	Korea, Dem. P. Rep. of	USSR

The member body of the following country expressed disapproval of the document on technical grounds :

Switzerland

Reciprocating internal combustion engines — Performance — Part 6 : Overspeed protection

1 Scope

This part of ISO 3046 establishes general requirements and definitions for overspeed limiting devices used for the protection of reciprocating internal combustion engines. Where necessary, individual requirements can be given for particular engine applications.

2 Field of application

This part of ISO 3046 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.

3 Definitions

3.1 overspeed limiting device : A 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.

3.2 set point : The speed at which the overspeed limiting device is activated.

3.3 adjustment range : The range of speeds over which the set point can be adjusted.

3.4 response time : The time interval between the sensing of the overspeed condition and activation of the overspeed limiting device.

4 General requirements

4.1 Engines and their driven machinery have a limiting speed which cannot be exceeded without the risk of damage.

4.2 The use of an overspeed limiting device, and any special requirements for it (see notes 1 and 2 in 5.1), shall be determined by the application and/or by agreement between the manufacturer and the purchaser, and/or by inspecting and/or

legislative authorities, and/or by classification societies specified by the purchaser.

4.3 The supplier of the set shall be responsible for ensuring that the set point of the device is satisfactory with respect to the limiting speed described in 4.1.

4.4 The set point, the adjustment range and the response time of the overspeed limiting device (see figure) shall be chosen so that all parts of the engine and its driven machinery are protected from damage due to overspeed.

4.5 The overspeed limiting device shall function at all levels of power of the engine.

4.6 The engine manufacturer shall specify the method and frequency of checking the function of the overspeed limiting device.

5 Overspeed protection features

5.1 The overspeed limiting device shall not affect in any way the normal operation of the engine control systems. However, upon reaching an overspeed condition, the overspeed limiting device shall override the relevant engine control systems to correct the overspeed condition or to stop the engine.

NOTES

1 Depending on the engine application and if specially agreed between the manufacturer and the customer, a failure of the control system shall not affect the operation of the protection device.

2 Depending on the engine application and if specially agreed between the manufacturer and the customer, damage or a fault in the overspeed protection device shall not cause the engine to shut down but shall initiate an alarm.

5.2 An overspeed shutdown condition shall cause the overspeed limiting device to latch in the shutdown position. Generally, restarting the engine shall require manual reset of the latching mechanism. However, automatic reset may be permitted in special applications.

5.3 The overspeed limiting device shall give an indication of its activation.