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Safety devices for protection against excessive pressure —

Part 9:

Application and installation of safety devices excluding stand-alone bursting disc safety devices

Dispositifs de sécurité pour protection contre les pressions excessives —

Partie 9: Application et installation des dispositifs de sécurité autres que les dispositifs à disque de rupture installés seuls



Reference number
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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.

International Standards are drafted in accordance with the rules given in the ISO/IEC Directives, Part 2.

The main task of technical committees is to prepare International Standards. 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.

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. ISO shall not be held responsible for identifying any or all such patent rights.

ISO 4126-9 was prepared by Technical Committee ISO/TC 185, *Safety devices for protection against excessive pressure*.

ISO 4126 consists of the following parts, under the general title *Safety devices for protection against excessive pressure*:

- *Part 1: Safety valves*
- *Part 2: Bursting disc safety devices*
- *Part 3: Safety valves and bursting disc safety devices in combination*
- *Part 4: Pilot-operated safety valves*
- *Part 5: Controlled safety pressure relief systems (CSPRS)*
- *Part 6: Application, selection and installation of bursting disc safety devices*
- *Part 7: Common data*
- *Part 9: Application and installation of safety devices excluding stand-alone bursting disc safety devices*
- *Part 10: Sizing of safety valves and connected inlet and outlet lines for gas/liquid two-phase flow*

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Introduction

A safety device or system is the final element to protect pressure equipment from exceeding its allowable limits. Regulating and/or monitoring devices are not ultimate safety devices in the meaning of this International Standard. They become active in advance of an ultimate safety device (see Figure 1).

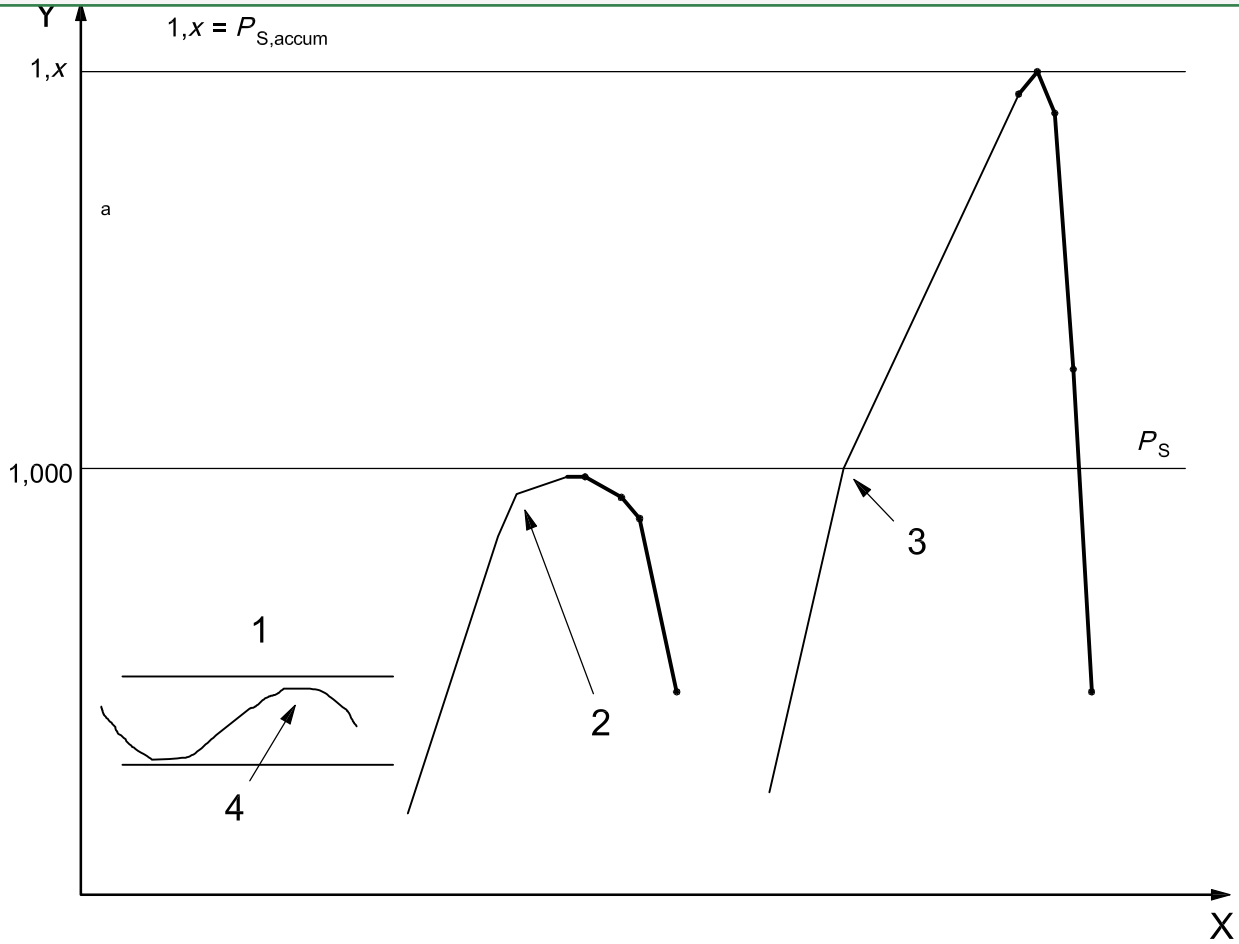
It is important to consider not only the pressure-relieving device but also the whole of the equipment protected, so as not to reduce the relieving capacity or adversely affect the proper operation of the pressure-relieving devices, in order to ensure that the relieving pressure is not exceeded. The value of the relieving pressure is $1,x$ times the maximum allowable pressure, P_S , where x is defined by a directive or national regulation. Operating problems can occur in pressure relief because of the selection of an inappropriate device or because a correctly selected device is adversely affected by improper handling, wrong installation or lack of maintenance.

In some cases, it can be necessary to determine the basic details of the equipment protected so as to ensure that the maximum relieving pressure is not exceeded.

NOTE 1 There can be requirements in a number of regulations to be respected and it is the responsibility of the user of this part of ISO 4126 to ensure compliance with these requirements. This part of ISO 4126 is also intended to draw attention to subjects that are not within its scope, but which are relevant to safety devices.

NOTE 2 To cover the essential requirements of the various regulations, a safety device needs to incorporate a whole range of products. Many of these products are covered by International Standards, but there are others that will either never be standardized or that will not be standardized within the foreseeable future. Where standards have already been produced, where work is known to be proceeding or where there is the intention of producing an applicable standard, reference is made to the standard concerned. Where there is no standard to which to refer, this part of ISO 4126 merely specifies the essential requirements of the device.

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Key

- X time
- Y pressure
- 1 reaction of regulating control system
- 2 reaction of monitoring system
- 3 reaction of safety system
- 4 normal operating range
- P_S maximum allowable pressure
- $P_{S,accum}$ maximum allowable accumulated pressure ($P_S \times 1,x$)
- a No continuous operation in this zone.

Figure 1 — Diagram of typical system relationship