
**Graphic technology — Safety
requirements for graphic technology
equipment and systems —**

**Part 5:
Stand-alone platen presses**

iTeh STANDARD PREVIEW
*Technologie graphique — Exigences de sécurité pour les systèmes
et l'équipement de technologie graphique —
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Partie 5. Presses à plateaux autonomes

ISO 12643-5:2010

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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 12643-5 was prepared by Technical Committee ISO/TC 130, *Graphic technology*.

It is the intent of ISO/TC 130 that this first edition of ISO 12643-5 become applicable to new equipment manufactured from 2012-01-01.

ISO 12643 consists of the following parts, under the general title *Graphic technology — Safety requirements for graphic technology equipment and systems*:

- *Part 1: General requirements*
- *Part 2: Prepress and press equipment and systems*
- *Part 3: Binding and finishing equipment and systems*
- *Part 4: Converting equipment and systems*
- *Part 5: Stand-alone platen presses*

Introduction

The purpose of this part of ISO 12643 is to reduce the risk of injury to operating personnel working on stand-alone platen presses.

This part of ISO 12643 provides requirements for controls and for guarding residual hazards and hazards created by point of operation of manually fed and automatically fed platen presses. It also provides requirements specific to the use of a flywheel, and specifies safe operating practices and training requirements.

During the development of this part of ISO 12643, existing relevant standards of other countries were taken into consideration. An effort has been made to harmonize the requirements of many countries, recognizing that national standards or laws may dictate national requirements. In cases where it was known that there is a national requirement that differs from this part of ISO 12643, that has been noted.

This part of ISO 12643 was developed to harmonize the following US and European safety standards:

- ANSI B65.5, *Safety standard — Stand-alone platen presses*
- EN 1010-5, *Safety of machinery — Safety requirements for the design and construction of printing and paper converting machines — Part 5: Machines for the production of corrugated board and machines for the conversion of flat and corrugated board*

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Graphic technology — Safety requirements for graphic technology equipment and systems —

Part 5: Stand-alone platen presses

1 Scope

This part of ISO 12643 provides safety requirements specific to stand-alone platen presses. It is intended to be used in conjunction with the general requirements given in ISO 12643-1.

This part of ISO 12643 provides additional press design safety requirements for the design and construction of new manually fed or automatic stand-alone platen press systems intended for die-cutting, creasing, embossing, foil stamping and/or the printing of paper, board and other materials processed in a similar manner.

This part of ISO 12643 is not applicable to presses designed to handle metal material other than foil.

2 Normative references

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The following referenced documents are indispensable for the application of this document. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

ISO 4414, *Pneumatic fluid power — General rules and safety requirements for systems and their components*

ISO 12643-1, *Graphic technology — Safety requirements for graphic technology equipment and systems — Part 1: General requirements*

ISO 13849-1, *Safety of machinery — Safety-related parts of control systems — Part 1: General principles for design*

ISO 13856-2, *Safety of machinery — Pressure-sensitive protective devices — Part 2: General principles for the design and testing of pressure-sensitive edges and pressure-sensitive bars*

ISO 14120, *Safety of machinery — Guards — General requirements for the design and construction of fixed and movable guards*

IEC 61496-1, *Safety of machinery — Electro-sensitive protective equipment — Part 1: General requirements and tests*

IEC 61496-3, *Safety of machinery — Electro-sensitive protective equipment — Part 3: Particular requirements for Active Opto-electronic Protective Devices responsive to Diffuse Reflection (AOPDDR)*

IEC 62061, *Safety of machinery — Functional safety of safety-related electrical, electronic and programmable electronic control systems*

3 Terms and definitions

For the purposes of this document, the terms and definitions given in ISO 12643-1 and the following apply.

3.1 point of operation

area of the press in which the process (such as die-cutting, embossing, foil stamping, printing, etc.) is being performed

3.2 protective device

safeguard other than a guard

EXAMPLE Examples include, but are not limited to, hold-to-run controls, two-hand controls, ESPDs, etc.

NOTE Adapted from ISO 12100.

3.3 stand-alone platen press

self-contained machine not intended to be used as part of an integrated manufacturing system

3.4 trip bar

protective bar that, when pushed, activates the interlocking safety system of the machine

NOTE A trip bar can be a metal bar or a pressure-sensitive edge.

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4 Safeguarding of significant hazards

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4.1 General

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Safeguarding shall be provided in those areas where it is recognized that operators are exposed to significant hazards. The guarding requirements of ISO 12643-1 apply. Guard construction shall meet the requirements of ISO 14120. All platen presses shall have trip bars (see 4.4) or other protective devices (see 4.5) located where access to a hazard is possible.

4.2 Additional safeguarding requirements

On machines wider than 1,6 m, the impact hazard created by the movable platen while opening shall be guarded by the use of a knee bar (see Figure 1, Item 7). The length of the knee bar shall be equal to or greater than the width of the movable platen. The knee bar shall be constructed such that it will retain its shape to ensure actuation of the trip function throughout its length. With the movable platen in the open position, the clearance between the knee bar and front surface of the movable platen shall be at least 120 mm. See Figure 1.

All trip bars shall be provided with a switch mounted on each end of the trip bar. The signals of the switches allocated to the individual trip device shall be processed separately. The conductor cables connecting the switches shall be physically separated and shall be located outside the electrical cabinet.

Trip functions using mechanical devices (including knee bars) shall satisfy the requirements of ISO 13856-2 and PL_re of ISO 13849-1 or SIL3 of IEC 62061. Trip functions or presence-sensing functions using laser scanners shall satisfy the requirements of PL_rd of ISO 13849-1 or SIL2 of IEC 62061.

The safety system that controls trip devices and their related signal processing, which safeguard routine and regular access to a hazard point on a manually fed device, shall comply with PL_re of ISO 13849-1 or SIL3 of IEC 62061.

4.3 Safeguarding side access

Various means may be used to prevent access from the sides of the press. These means include, but are not limited to, the following measures.

- a) Fixed protective barriers, interlocking guards and/or interlocking tables that prevent access, from any side of the press, to areas of significant hazard not otherwise guarded in accordance with this part of ISO 12643.

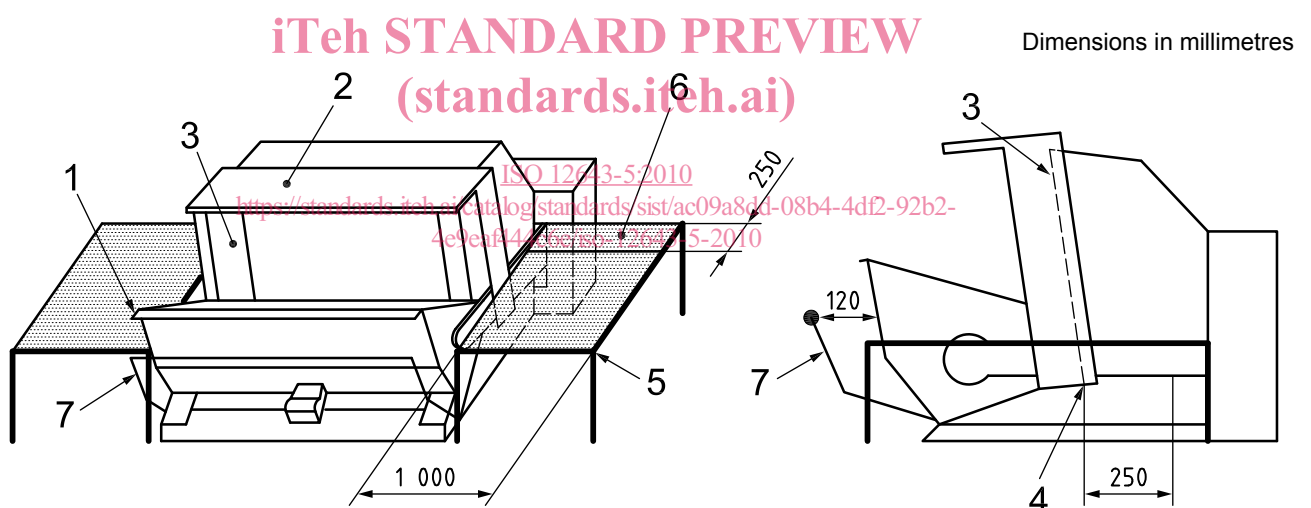
If interlocking tables are used, tables shall extend 1 000 mm from the side frame outward and over the length of the press, reaching from the front edge of the open position of the movable platen to at least 250 mm behind the backward edge of the trip device. See Figure 1.

- b) Laser scanners meeting the requirements of 4.5, provided on both sides of the platen, with the scanned area being at a distance of 200 mm minimum and 250 mm maximum (measured from the beginning of the scanned area).

The size and shape of the scanned areas on the sides shall be as shown in Figure 2 a).

Access from the front and rear of the platen press to hazards between the laser scanners and the machine housing shall be prevented by fixed guards [see Figure 2 b)].

Means of preventing access to the hazard zone between the movable platen and the punching plane, other than those defined in a) or b) above, shall provide an equivalent level of protection.



Key

- 1 trip bar on movable platen
- 2 U-shaped trip bar on fixed platen
- 3 punching plane
- 4 backward edge of punching plane
- 5 front edge of interlocking table
- 6 interlocking table
- 7 knee bar

Figure 1 — Interlocking tables