



SLOVENSKI STANDARD
SIST EN 13128:2002/A1:2006
01-september-2006

JUfbcghcVXYcj Ub]`gffc^j `E: fYnUb]gffc^fj _`f bc`n`j fHUb]a]gffc^L

Safety of machine tools - Milling machines (including boring machines)

Sicherheit von Werkzeugmaschinen - Fräsmaschinen (einschließlich Bohrmaschinen)

Sécurité des machines-outils - Fraiseuses (comprenant les aléseuses)

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Ta slovenski standard je istoveten z: EN 13128:2001/A1:2006

[SIST EN 13128:2002/A1:2006](https://standards.iteh.ai/catalog/standards/sist/9f851802-7b81-4a70-8a0d-9ac81f7c8e04/sist-en-13128-2002-a1-2006)

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ICS:

25.080.20

SIST EN 13128:2002/A1:2006

en

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ICS 25.080.20

English Version

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This amendment A1 modifies the European Standard EN 13128:2001; it was approved by CEN on 3 February 2006.

CEN members are bound to comply with the CEN/CENELEC Internal Regulations which stipulate the conditions for inclusion of this amendment into the relevant national standard without any alteration. Up-to-date lists and bibliographical references concerning such national standards may be obtained on application to the Central Secretariat or to any CEN member.

This amendment exists in three official versions (English, French, German). A version in any other language made by translation under the responsibility of a CEN member into its own language and notified to the Central Secretariat has the same status as the official versions.

CEN members are the national standards bodies of Austria, Belgium, Cyprus, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Romania, Slovakia, Slovenia, Spain, Sweden, Switzerland and United Kingdom.

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EUROPEAN COMMITTEE FOR STANDARDIZATION
COMITÉ EUROPÉEN DE NORMALISATION
EUROPÄISCHES KOMITEE FÜR NORMUNG

Management Centre: rue de Stassart, 36 B-1050 Brussels

Foreword

This European Standard (EN 13128:2001/A1:2006) has been prepared by Technical Committee CEN/TC 143 "Machine tools - Safety", the secretariat of which is held by SNV.

This Amendment to the European Standard EN 13128:2001 shall be given the status of a national standard, either by publication of an identical text or by endorsement, at the latest by September 2006, and conflicting national standards shall be withdrawn at the latest by September 2006.

This European Standard has been prepared under a mandate given to CEN by the European Commission and the European Free Trade Association, and supports essential requirements of EU Directive(s).

For relationship with EU Directive(s), see informative Annex ZA, which is an integral part of this European Standard.

According to the CEN/CENELEC Internal Regulations, the national standards organizations of the following countries are bound to implement this European Standard: Austria, Belgium, Cyprus, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Romania, Slovakia, Slovenia, Spain, Sweden, Switzerland and United Kingdom.

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Location of the proposed amendments (for EN 13128:2001):

Add in Clause 2:

EN ISO 15641, *Milling cutters for high speed machining — Safety requirements (ISO 15641:2001)*Insert the proposed amendment as a replacement and addition into Table 4 of 5.2, 1.1.6.4 – Mode 3.

Hazards	Safety requirement and/or protective measure	Verification
1 Mechanical (continued)	1.1.6.4 Mode 3 - Optional mode for manual intervention under restricted operating conditions When provided, this mode permits use of the machine under manual or numerical control with work zone guards open and/or protective devices suspended under the following conditions:	
	a) This mode shall only be provided when details of the intended application are known and the required skill level of operators shall be defined in the instruction handbook (see 7.2 f) and g) of this European Standard).	Visual inspection (of Instruction handbook)
	b) Single axis and multiple axis vector speeds shall be limited to 5m/min.	Measurement
	c) Spindle speed shall be limited by its stopping performance which shall not exceed 5 revolutions. NOTE 1 In order to achieve this stopping requirement it may be necessary to provide tool diameter identification or measurement systems to limit the permitted speed of the spindle for each tool used. NOTE 2 Alternative solutions to this clause have been considered during the development of this standard but no firm conclusions have been reached. This particular problem will be re-visited in a future revision of this European Standard.	Measurement
	d) Program execution shall be initiated by cycle start control device in conjunction with an enabling device;	Practical check
	e) Non-programmed movements shall be achieved as follows:	
	1) Spindle rotation shall be initiated and maintained by a spindle start control device together with an enabling device. Release of an enabling device shall initiate a category 1 stop in accordance with 9.2.2 of EN 60204-1:1997.	Examination of circuit diagrams, practical test
	2) Axis movements may be initiated and maintained by one of the following means: – a hold-to-run control device; – an electronic hand wheel; – manual data input (MDI) followed by cycle start together with an enabling device.	Practical check
	f) The limits of speed or incremental distance [defined in b) and c) above] shall be monitored and if exceeded, the power to the drives shall be removed by a controlled stop (category 1 – see 9.2.2 of EN 60204-1:1997).	Practical check
g) The requirements d), e), f) and g) of mode 2 in 1.1.6.3 also apply.	See 1.1.6.3 d), e), f) and g).	

	<p>Where ergonomic considerations in the application of Mode 3 make the use of an enabling device impractical (e.g. because the duration of necessary process observation/intervention exceeds an acceptable fatigue time for the machine operator to actuate the enabling device or the manipulation of multiple parameter control devices prevents the sustained operation of an enabling device) then a combination of alternative engineering control measures, to reduce entanglement and crushing risks, shall be substituted for the enabling device. Two examples of accepted alternative engineering control measure combinations are:</p> <p>h) A safe standing position for the operator that is monitored by an active optical protection device (AOPD) or other approved safety monitoring device (e.g. a scanning device or light curtain), but excluding the use of a pressure sensitive mat or similar easily defeated device, together with:</p> <ul style="list-style-type: none"> - a readily accessible emergency stop control device shall be provided plus, - safe edge emergency stop arrangements shall be applied to all moving machine elements that pose a crushing risk plus, - the monitoring for reduced spindle and axes speeds shall satisfy the requirements of EN 954-1:1996, Category 3, and - identification of appropriate personal protective equipment (PPE) shall be provided in the instructions for use (see clauses 7.2 n) and 7.2 o) of this European Standard). <p>i) Protection against entanglement risk by means of a fixed guard enclosing the rotating spindle and cutter or an AOPD (light curtain) around (or in front of) the rotating spindle and cutter (the position of AOPD shall fulfil the requirements of EN 999) together with:</p> <ul style="list-style-type: none"> - a readily accessible emergency stop control device shall be provided plus, - safe edge emergency stop arrangements shall be applied to all moving machine elements that pose a crushing risk plus, - the monitoring for reduced spindle and axes speeds shall satisfy the requirements of EN 954-1:1996, Category 3, and - identification of appropriate personnel protective equipment (PPE) shall be provided in the instructions for use (see clauses 7.2 n) and 7.2 o) of this European Standard). <p>NOTE 3 Other engineering control measures that provide the equivalent level of risk reduction, to those identified in h) and i) above, may be used.</p> <p>To reduce ejection risks, the cutting speed employed in any Mode 3 application shall be held below the scope of EN ISO 15641:2000.</p> <p>NOTE 4 The intended tool should preferably be a solid or one-piece milling cutter.</p>	<p>Evaluation of the need for Mode 3 operation without an enabling device plus examination of the machine and its circuit diagrams</p>
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