

SLOVENSKI STANDARD

SIST EN ISO 19085-6:2018

01-maj-2018

Nadomešča:

SIST EN 848-1:2007+A2:2012

Lesnoobdelovalni stroji - Varnost - 6. del: Enovretenski vertikalni rezkalni stroji (ISO 19085-6:2017)

Woodworking machines - Safety - Part 6: Single spindle vertical moulding machines
("toupies") (ISO 19085-6:2017)

Holzbearbeitungsmaschinen - Sicherheit - Teil 6: Einspindelige senkrechte
Tischfräsmaschinen (ISO 19085-6:2017)

Machines pour le travail du bois - Sécurité - Partie 6: Toupies monobroches à arbre
vertical (ISO 19085-6:2017)

Ta slovenski standard je istoveten z: **EN ISO 19085-6:2017**

ICS:

13.110	Varnost strojev	Safety of machinery
79.120.10	Lesnoobdelovalni stroji	Woodworking machines

SIST EN ISO 19085-6:2018

en,fr,de

iTeh STANDARD PREVIEW
(standards.iteh.ai)

SIST EN ISO 19085-6:2018

<https://standards.iteh.ai/catalog/standards/sist/892d8cf7-94cc-44ce-8b7c-b56a397706ef/sist-en-iso-19085-6-2018>

EUROPEAN STANDARD
NORME EUROPÉENNE
EUROPÄISCHE NORM

EN ISO 19085-6

December 2017

ICS 79.120.10

English Version

**Woodworking machines - Safety - Part 6: Single spindle
vertical moulding machines ("toupies") (ISO 19085-
6:2017)**

Machines à bois - Sécurité - Partie 6: Toupies
monobroches à arbre vertical (ISO 19085-6:2017)

Holzbearbeitungsmaschinen - Sicherheit - Teil 6:
Einspindelige senkrechte Tischfräsmaschinen (ISO
19085-6:2017)

This European Standard was approved by CEN on 11 October 2017.

CEN members are bound to comply with the CEN/CENELEC Internal Regulations which stipulate the conditions for giving this European Standard the status of a national standard without any alteration. Up-to-date lists and bibliographical references concerning such national standards may be obtained on application to the CEN-CENELEC Management Centre or to any CEN member.

iTeh STANDARD PREVIEW

This European Standard 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 CEN-CENELEC Management Centre has the same status as the official versions.

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



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

CEN-CENELEC Management Centre: Rue de la Science 23, B-1040 Brussels

Contents

Page

European foreword.....	3
Annex ZA (informative) Relationship between this European Standard and the essential requirements of Directive 2006/42/EC.....	4

iTeh STANDARD PREVIEW
(standards.iteh.ai)

SIST EN ISO 19085-6:2018

<https://standards.iteh.ai/catalog/standards/sist/892d8cf7-94cc-44ce-8b7c-b56a397706ef/sist-en-iso-19085-6-2018>

European foreword

This document (EN ISO 19085-6:2017) has been prepared by Technical Committee ISO/TC 39 “Machine tools” in collaboration with Technical Committee CEN/TC 142 “Woodworking machines - Safety” the secretariat of which is held by UNI.

This European Standard shall be given the status of a national standard, either by publication of an identical text or by endorsement, at the latest by June 2018 and conflicting national standards shall be withdrawn at the latest by June 2018.

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

This document supersedes EN 848-1:2007+A2:20012.

This document 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 document.

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

<https://standards.iteh.ai/catalog/standards/sist/892d8cf7-94cc-44ce-8b7c-b56a397706ef/sist-en-iso-19085-6-2018>

Endorsement notice

The text of ISO 19085-6:2017 has been approved by CEN as EN ISO 19085-6:2017 without any modification.

Annex ZA (informative)

Relationship between this European Standard and the essential requirements of Directive 2006/42/EC

This European standard has been prepared under a Commission's standardization request "M/396" to provide one voluntary means of conforming to essential requirements of the new approach Machinery Directive 2006/42/EC.

Once this standard is cited in the Official Journal of the European Union under that Directive, compliance with the normative clauses of this standard given in Table ZA.1 confers, within the limits of the scope of this standard, a presumption of conformity with the corresponding essential requirements of that Directive, and associated EFTA regulations.

Table ZA.1 — Correspondence between this European Standard and Directive 2006/42/EC

Essential Requirements (ERs) of Directive 2006/42/EC	Clauses/subclauses of this EN	Remarks/Notes
1.1.2 Principles of safety integration		
a) fitted for its function	Clauses 5, 6, 7, 8	
b) eliminate or reduce the risks, give measures, inform	Clauses 5, 6, 7, 8	
c) intended use and reasonably foreseeable misuse	Clause 5, 6, 7, 8	
d) constraints in use	7.5, 8.3	
e) equipment	6.1, 8.3	
1.1.3 Materials and products	6.2, 7.3	
1.1.4 Lighting	8.3	
1.1.5 Design of machinery to facilitate its handling	7.5	
1.1.6 Ergonomics	7.5	
1.1.7 Operating position	5.2	
1.2.1 Safety and reliability of control systems	5.1, 5.6, 5.7, 5.8, 5.11, 5.12, 5.13, 6.3.6, 6.5, 6.6, 7.7, 7.8	
1.2.2 Control devices	5.2, 5.3, 5.4, 5.7	
1.2.3 Starting	5.3	
1.2.4 Stopping	5.4, 5.5, 6.4	
1.2.4.1 Normal stop	5.4.2	
1.2.4.3 Emergency stop	5.4.4	
1.2.5 Selection of control or operating mode	5.6	
1.2.6 Failure of the power supply	5.8, 7.7, 7.8	

1.3.1 Risk of loss of stability	6.1, 8.3	
1.3.2 Risk of break-up during operation	6.2, 8.3	
1.3.3 Risks due to falling or ejected objects	6.2, 6.3, 6.5, 6.8, 6.9, 8.3	
1.3.4 Risk due to surfaces, edges or angles		Not significant, see ISO 12100:2010
1.3.6 Risks relating to variations in the operating conditions	5.7, 6.6	
1.3.7 Risks related to moving parts	6.5, 6.6, 6.7, 8.3	
1.3.8 Choice of protection against risks related to moving parts	6.6, 6.7, 6.8	
1.3.8.1 Moving transmission parts	6.6.3, 6.6.4	
1.3.8.2 Moving parts involved in the process	6.6.2	
1.3.9 Risk of uncontrolled movements	6.1.1	
1.4.1 General requirements	6.9	
1.4.2.1 Fixed guards	6.5.1	
1.4.2.2 Interlocking movable guards	6.5.2	
1.4.2.3 Adjustable guards restricting access	6.5.2	
1.4.3 Special requirements for protective devices	6.5.3, 6.5.6	
1.5.1 Electricity supply	7.4, 7.13	
1.5.2 Static electricity	7.11	
1.5.3 Energy supply other than electricity	7.7, 7.8	
1.5.4 Errors of fitting	7.12	
1.5.6 Fire	7.1	
1.5.8 Noise	7.2	
1.5.11 External radiation	7.9	
1.5.12 Laser equipment	7.10	
1.5.13 Emission of hazardous materials and substances	7.3	
1.6.1 Machinery maintenance	7.14, 8.3	
1.6.2 Access to operating position and servicing points	7.14, 8.3	
1.6.3 Isolation of energy sources	7.13, 8.3	
1.6.4 Operator intervention	7.14, 8.3	
1.6.5 Cleaning of internal parts	7.14, 8.3	
1.7.1 Information and warnings on the machinery	7.10, 8.1, 8.2	
1.7.2 Warning devices	7.10, 8.1	
1.7.3 Marking of machinery	8.2	

EN ISO 19085-6:2017 (E)

1.7.4 Instructions	7.10, 8.3	
2.3 Machinery for working wood and analogous materials		
a) guiding	6.10, 6.11	
b) ejection	6.2, 6.3, 6.5, 6.6, 6.8, 6.9, 8.3	
c) brake	5.5, 6.4	
d) accidental tool contact	6.6.2, 8.3	

WARNING 1 — Presumption of conformity stays valid only as long as a reference to this European standard is maintained in the list published in the Official Journal of the European Union. Users of this standard should consult frequently the latest list published in the Official Journal of the European Union.

WARNING 2 — Other Union legislation may be applicable to the product(s) falling within the scope of this standard.

iTeh STANDARD PREVIEW (standards.iteh.ai)

SIST EN ISO 19085-6:2018

<https://standards.iteh.ai/catalog/standards/sist/892d8cf7-94cc-44ce-8b7c-b56a397706ef/sist-en-iso-19085-6-2018>

INTERNATIONAL STANDARD

**ISO
19085-6**

First edition
2017-11

Woodworking machines — Safety — Part 6: Single spindle vertical moulding machines ("toupies")

Machines à bois — Sécurité —

Partie 6: Toupies monobroches à arbre vertical

iTeh STANDARD PREVIEW
(standards.iteh.ai)

SIST EN ISO 19085-6:2018

<https://standards.iteh.ai/catalog/standards/sist/892d8cf7-94cc-44ce-8b7c-b56a397706ef/sist-en-iso-19085-6-2018>



Reference number
ISO 19085-6:2017(E)

© ISO 2017

iTeh STANDARD PREVIEW (standards.iteh.ai)

SIST EN ISO 19085-6:2018

<https://standards.iteh.ai/catalog/standards/sist/892d8cf7-94cc-44ce-8b7c-b56a397706ef/sist-en-iso-19085-6-2018>



COPYRIGHT PROTECTED DOCUMENT

© ISO 2017, Published in Switzerland

All rights reserved. Unless otherwise specified, no part of this publication may be reproduced or utilized otherwise in any form or by any means, electronic or mechanical, including photocopying, or posting on the internet or an intranet, without prior written permission. Permission can be requested from either ISO at the address below or ISO's member body in the country of the requester.

ISO copyright office
Ch. de Blandonnet 8 • CP 401
CH-1214 Vernier, Geneva, Switzerland
Tel. +41 22 749 01 11
Fax +41 22 749 09 47
copyright@iso.org
www.iso.org

Contents

Page

Foreword	vi
Introduction	vii
1 Scope	1
2 Normative references	2
3 Terms and definitions	2
4 List of significant hazards	8
5 Safety requirements and measures for controls	10
5.1 Safety and reliability of control systems	10
5.2 Control devices	10
5.3 Start	11
5.4 Safe stops	11
5.4.1 General	11
5.4.2 Normal stop	11
5.4.3 Operational stop	11
5.4.4 Emergency stop	11
5.5 Braking function of tool spindles	12
5.6 Mode selection	12
5.7 Spindle speed changing	12
5.7.1 Spindle speed changing by changing belts on the pulleys	12
5.7.2 Spindle speed changing by incremental speed change motor	12
5.7.3 Infinitely variable speed by frequency inverter	12
5.7.4 Spindle speed limiting device for tenoning	12
5.7.5 Changing of the direction of spindle rotation	12
5.8 Failure of any power supply	13
5.9 Manual reset control	13
5.10 Enabling control	13
5.11 Machine moving parts speed monitoring	13
5.12 Time delay	14
5.13 Power driven adjustment of arbor, demountable power feed unit, fences and table insert	14
6 Safety requirements and measures for protection against mechanical hazards	14
6.1 Stability	14
6.1.1 Stationary machines	14
6.1.2 Displaceable machines	14
6.2 Risk of break-up during operation	15
6.3 Tool holder and tool design	15
6.3.1 General	15
6.3.2 Spindle locking	17
6.3.3 Circular saw blade fixing device	18
6.3.4 Flange dimension for circular saw blades	18
6.3.5 Arbor rings	18
6.3.6 Quick tool/arbor change system	18
6.3.7 Manual adjustment of arbor height	18
6.3.8 Manual adjustment of arbor inclination	19
6.4 Braking	19
6.4.1 Braking of tool spindles	19
6.4.2 Maximum run-down time	19
6.4.3 Brake release	20
6.5 Safeguards	20
6.5.1 Fixed guards	20
6.5.2 Interlocking movable guards	20
6.5.3 Hold-to-run control	20

ISO 19085-6:2017(E)

6.5.4	Two-hand control.....	20
6.5.5	Electro-sensitive protective equipment (ESPE).....	20
6.5.6	Pressure-sensitive protective equipment (PSPE).....	20
6.6	Prevention of access to moving parts.....	20
6.6.1	General.....	20
6.6.2	Guarding of tools.....	20
6.6.3	Guarding of drives.....	24
6.6.4	Guarding of shearing and/or crushing zones.....	24
6.7	Impact hazard.....	24
6.8	Clamping devices.....	24
6.9	Measures against ejection.....	25
6.9.1	General.....	25
6.9.2	Guards materials and characteristics.....	25
6.9.3	Anti-kickback devices.....	25
6.10	Work-piece supports and guides.....	27
6.10.1	Table.....	27
6.10.2	Work-piece guiding for straight work.....	30
6.10.3	Work-piece guiding for curved work.....	30
6.11	Safety appliances.....	31
7	Safety requirements and measures for protection against other hazards.....	32
7.1	Fire.....	32
7.2	Noise.....	32
7.2.1	Noise reduction at the design stage.....	32
7.2.2	Noise emission measurement.....	32
7.3	Emission of chips and dust.....	32
7.4	Electricity.....	33
7.4.1	General.....	33
7.4.2	Displaceable machines.....	33
7.5	Ergonomics and handling.....	33
7.6	Lighting.....	33
7.7	Pneumatics.....	33
7.8	Hydraulics.....	33
7.9	Electromagnetic compatibility.....	33
7.10	Laser.....	34
7.11	Static electricity.....	34
7.12	Errors of fitting.....	34
7.13	Isolation.....	34
7.14	Maintenance.....	34
8	Information for use.....	34
8.1	Warning devices.....	34
8.2	Marking.....	34
8.2.1	General.....	34
8.2.2	Additional markings.....	34
8.3	Instruction handbook.....	34
8.3.1	General.....	34
8.3.2	Additional information.....	34
	Annex A (informative) Performance level required.....	38
	Annex B (normative) Test for braking function.....	40
	Annex C (normative) Stability test for displaceable machines.....	41
	Annex D (normative) Impact test for guards.....	42
	Annex E (normative) Noise emission measurement for machines not in ISO 7960:1995.....	43
	Annex F (informative) Determination of maximum spindle speeds for single piece arbors.....	44
	Annex G (normative) Rigidity test for pressure pads, hand protectors and guiding steadies.....	48

Bibliography	53
---------------------------	-----------

iTeh STANDARD PREVIEW **(standards.iteh.ai)**

[SIST EN ISO 19085-6:2018](https://standards.iteh.ai/catalog/standards/sist/892d8cf7-94cc-44ce-8b7c-b56a397706ef/sist-en-iso-19085-6-2018)

<https://standards.iteh.ai/catalog/standards/sist/892d8cf7-94cc-44ce-8b7c-b56a397706ef/sist-en-iso-19085-6-2018>

ISO 19085-6:2017(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.

The procedures used to develop this document and those intended for its further maintenance are described in the ISO/IEC Directives, Part 1. In particular the different approval criteria needed for the different types of ISO documents should be noted. This document was drafted in accordance with the editorial rules of the ISO/IEC Directives, Part 2 (see www.iso.org/directives).

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. Details of any patent rights identified during the development of the document will be in the Introduction and/or on the ISO list of patent declarations received (see www.iso.org/patents).

Any trade name used in this document is information given for the convenience of users and does not constitute an endorsement.

For an explanation on the voluntary nature of standards, the meaning of ISO specific terms and expressions related to conformity assessment, as well as information about ISO's adherence to the World Trade Organization (WTO) principles in the Technical Barriers to Trade (TBT) see the following URL: www.iso.org/iso/foreword.html. (standards.iteh.ai)

This document was prepared by Technical Committee ISO/TC 39, *Machine tools*, Subcommittee SC 4 *Woodworking machines*. [SIST EN ISO 19085-6:2018](https://standards.iteh.ai/catalog/standards/sist/892d8cf7-94cc-44ce-8b7c-b56c397796c8/iso-19085-6-2017)

This document is intended to be used in conjunction with ISO 19085-1:2017, which gives requirements common to different machine types.

A list of all parts in the ISO 19085 series can be found on the ISO website.

Introduction

The ISO 19085 series of International Standards provides technical safety requirements for the design and construction of woodworking machinery. It concerns designers, manufacturers, suppliers and importers of the machines specified in the Scope. It also includes a list of informative items that the manufacturer will need to give to the user.

This document is a type-C standard as stated in ISO 12100.

The machinery concerned and the extent to which hazards, hazardous situations or hazardous events are covered are indicated in the Scope of this document.

When requirements of this type-C standard are different from those which are stated in type-A or type-B standards, the requirements of this type-C standard take precedence over the requirements of the other standards for machines that have been designed and built according to the requirements of this type-C standard.

The full set of requirements for a particular type of woodworking machine are those given in the part of ISO 19085 applicable to that type, together with the relevant requirements from ISO 19085-1:2017, to the extent specified in the Scope of the applicable part of ISO 19085.

As far as possible, in parts of ISO 19085 other than ISO 19085-1:2017, safety requirements are referenced to the relevant sections of ISO 19085-1:2017, to avoid repetition and reduce their length. The other parts contain replacements and additions to the common requirements given in ISO 19085-1:2017.

Thus, [Clauses 5, 6, 7 and 8](#), with their subclauses and the annexes of this document, can either

- confirm as a whole,
- confirm with additions,
- exclude in total, or
- replace with specific text

the corresponding subclauses or annexes of ISO 19085-1:2017.

This interrelation is indicated in the first paragraph of each subclause or annex right after the title by one of the following statements:

- “This subclause of ISO 19085-1:2017 applies.”;
- “This subclause of ISO 19085-1:2017 applies with the following additions.”, or “This subclause of ISO 19085-1:2017 applies with the following additions, subdivided into further specific subclauses.”;
- “This subclause of ISO 19085-1:2017 does not apply.”;
- “This subclause of ISO 19085-1:2017 is replaced by the following text.”, or “This subclause of ISO 19085-1:2017 is replaced by the following text, subdivided into further specific subclauses.”.

Specific subclauses and annexes in this part of ISO 19085 without correspondent in ISO 19085-1:2017 are indicated by the introductory sentence: “Subclause (or annex) specific to this part of ISO 19085.”

[Clauses 1, 2, 4](#) replace the correspondent clauses of ISO 19085-1:2017, with no need for indication since they are specific to each part of the series.

NOTE Requirements for tools are given in EN 847-1:2013 and EN 847-2:2013.