



SLOVENSKI STANDARD
oSIST prEN ISO 19085-6:2016
01-oktober-2016

**Lesnoobdelovalni stroji - Varnost - 6. del: Enovretenski vertikalni rezkalni stroji
(ISO/DIS 19085-6:2016)**

Woodworking machines - Safety - Part 6: Single spindle vertical moulding machines
("toupies") (ISO/DIS 19085-6:2016)

Holzbearbeitungsmaschinen - Sicherheit - Teil 6: Einspindelige senkrechte
Tischfräsmaschinen (ISO/DIS 19085-6:2016)

Machines pour le travail du bois - Sécurité - Partie 6: Toupies monobroches à arbre
vertical (ISO/DIS 19085-6:2016)

Ta slovenski standard je istoveten z: prEN ISO 19085-6

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79.120.10	Lesnoobdelovalni stroji	Woodworking machines

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Woodworking machines — Safety —

Part 6: Single spindle vertical moulding machines (“toupies”)

*Machines pour le travail du bois — Sécurité —**Partie 6: Toupies monobroches à arbre vertical*

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ISO/DIS 19085-6:2016(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 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.

The committee responsible for this document is ISO/TC 39/SC 4.

This second/third/... edition cancels and replaces the first/second/... edition (), [clause(s) / subclause(s) / table(s) / figure(s) / annex(es)] of which [has / have] been technically revised.

ISO 19085 consists of the following parts, under the general title *Woodworking machines — Safety*:

Part 1: Common requirements

Part 2: Horizontal beam panel sawing machines

Part 3: Numerically controlled (NC) boring and routing machines

Part 4: Vertical panel sawing machines

Part 5: Dimension saws

Part 6: Single spindle vertical moulding machines ("toupie")

Part 7: Surface, thicknessing, combined surface/thicknessing planing machines

Part 8: Wide belt calibrating and sanding machines

Part 9: Bench saws (with and without sliding table)

Part 10: Building site saws

All these parts have been prepared simultaneously by Technical Committee ISO/TC 39, *Machine tools*, Subcommittee SC 4, *Woodworking machines*.

Additional parts are to be developed in future to deal specific requirements for other woodworking machines.

Introduction

ISO 19085-6 was prepared by ISO/TC 39/SC 4 under the Vienna Agreement in order to obtain EN ISO standards on technical safety requirements for the design and construction of woodworking machinery.

ISO 19085 as a whole concern designers, manufacturers, suppliers and importers of machines described in the Scope. It also includes a list of informative items to be provided by the manufacturer to the user.

The machinery concerned and the extent to which hazards, hazardous situations and events are covered are indicated in the scope of this document. In addition machines shall be designed according with the principals of ISO 12100:2010 for relevant but not significant hazards which are not dealt with covered by this International Standard.

This document together with ISO 19085-1 is a type C standard as defined in ISO 12100:2010.

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

This part of ISO 19085 is intended to be used in conjunction with its part-1. As far as possible, the requirements of this part are treated by way of reference to the relevant subclauses of ISO 19085-1, thus reducing considerably the length of this document by avoiding many repetitions.

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

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

- “This subclause of ISO 19085-1 applies”;
- “This subclause of ISO 19085-1 applies with the following additions.” or

“This subclause of ISO 19085-1 applies with the following additions, subdivided into further specific subclauses.”;

- “Not applicable.”;
- “This subclause of ISO 19085-1 is replaced by the following text.” or

“This subclause of ISO 19085-1 is replaced by the following text, subdivided into further specific subclauses.”.

Specific subclauses and annexes in this part without correspondent in ISO 19085-1 are indicated by “Subclause (or Annex) specific to this part.”

[Clauses 1, 2, 4](#) are always replaced with no need for indication, since machine specific.

Common requirements for tooling are given in EN 847-1:2013.

Woodworking machines — Safety —

Part 6:

Single spindle vertical moulding machines (“toupies”)

1 Scope

This international standard deals with all significant hazards, hazardous situations and events as listed in [Clause 4](#) which are relevant to stationary and displaceable hand fed single spindle vertical moulding machines (with or without demountable power feed unit), herein after referred to as “machines”, designed to cut wood and materials with similar physical characteristics to wood, when they are operated, adjusted and maintained as intended and under the conditions foreseen by the manufacturer including reasonably foreseeable misuse. Also transport, assembly, dismantling, disabling and scrapping phases are taken into account.

NOTE 1 For the definition of stationary and displaceable machine see ISO 19085-1, 3.4 and 3.5.

The machines may also be fitted with one or more of the following devices/facilities, whose hazards have been dealt with:

- a) a facility for the spindle to be vertically adjustable relative to the table;
- b) a facility to tilt the spindle;
- c) a facility to fit a manually operated tenoning sliding table;
- d) a glass bead saw unit;
- e) an adjustable table insert.

This international standard does not apply to:

- 1) machines equipped with outboard bearings;
- 2) machines equipped with powered movements of front extension table and/or tenoning sliding table;
- 3) ~~hand held woodworking machines or any adaptation permitting their use in a different mode, i.e. bench mounting;~~

NOTE 2 Hand-held motor-operated electric tools are dealt with in IEC 60745-1:2009 together with IEC 60745-2-17:2010.

- 4) transportable/displaceable machines (machines set up on a bench or provided with extendable legs and intended to operate when stationary) having a rated input of less than or equal to 3700 W.

NOTE 3 Transportable motor-operated electric tools are dealt with in IEC 62841-1:2014 and parts of IEC 62841-3-XX.

This document is not applicable to machines:

- intended for use in potentially explosive atmosphere;
- manufactured before the date of its publication as an international standard.

ISO/DIS 19085-6:2016(E)**2 Normative references**

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

ISO 19085-1, *Woodworking machines — Safety — Part-1: common requirements*

ISO 12100:2010, *Safety of machinery — General principles for design — Risk assessment and risk reduction*

ISO 13849-1:2006, *Safety of machinery — Safety-related parts of control systems — Part 1: General principles for design*

ISO 13849-2:2003, *Safety of machinery — Safety-related parts of control systems — Part 2: Validation*

ISO 13850:2006, *Safety of machinery — Emergency stop — Principles for design*

ISO 13857:2008, *Safety of machinery — Safety distances to prevent hazard zones being reached by upper and lower limbs*

ISO 7960:1995, *Airborne noise emitted by machine tools — Operating conditions for woodworking machines*

EN 614-1:2006+A1:2009, *Safety of machinery — Ergonomic design principles — Part 1: Terminology and general principles*

EN 847-1:2013, *Tools for woodworking — Safety requirements — Part 1: Milling tools, circular saw blades*

ISO 14118:2000, *Safety of machinery — Prevention of unexpected start-up*

ISO 14119:1998+A1:2007, *Safety of machinery — Interlocking devices associated with guards — Principles for design and selection*

ISO 13856-3:2004+A1:2009, *Safety of machinery — Pressure sensitive protective devices — Part 3: General principles for the design and testing of pressure sensitive bumpers, plates, wires and similar devices*

EN 50178:1997, *Electronic equipment for use in power installations*

EN 50370-1:2005, *Electromagnetic compatibility (EMC) — Product family standard for machine-tools — Part 1: Emission*

EN 50370-2:2003, *Electromagnetic compatibility (EMC) — Product family standard for machine-tools — Part 2: Immunity*

IEC 60204-1:2005, *Safety of machinery — Electrical equipment of machines — Part 1: General requirements*

IEC 60439-1:1999, *Low-voltage switchgear and controlgear assemblies — Part 1: Type-tested and partially type-tested assemblies*

IEC 60529:1989, *Degrees of protection provided by enclosures (IP Code)*

IEC 60825-1:2007, *Safety of laser products — Part 1: Equipment classification and requirements*

IEC 61310-1:2007, *Safety of machinery — Indication, marking and actuation — Part 1: Requirements for visual, acoustic and tactile signals*

IEC 61496-1:2004, *Safety of machinery — Electro-sensitive protective equipment — Part 1: General requirements and tests*

IEC 61496-2:2006, *Safety of machinery — Electro-sensitive protective equipment — Part 2: Particular requirements for equipment using active opto-electronic protective devices (AOPDs)*

IEC 61800-5-2:2007, *Adjustable speed electrical power drive systems — Part 5-2: Safety requirements — Functional*

ISO 3746:2010, *Acoustics — Determination of sound power levels and sound energy levels of noise sources using sound pressure — Survey method using an enveloping measurement surface over a reflecting plane*

ISO 4414:2010, *Pneumatic fluid power — General rules and safety requirements for systems and their components*

ISO 9614-1:1993, *Acoustics — Determination of sound power levels of noise sources using sound intensity — Part 1: Measurement at discrete points*

ISO 11202:2010, *Acoustics — Noise emitted by machinery and equipment — Determination of emission sound pressure levels at a work station and at other specified positions applying approximate environmental corrections*

ISO 11204:2010, *Acoustics — Noise emitted by machinery and equipment — Determination of emission sound pressure levels at a work station and at other specified positions applying accurate environmental corrections*

3 Terms and definitions

For the purposes of this document, the terms and definitions given in ISO 12100:2010, in ISO 19085-1 and the following apply.

3.1

single spindle vertical moulding machine

hand fed machine fitted with a single vertical spindle (fixed or removable), the position of which is fixed during machining and a horizontal table, all or part of which are fixed during operation

Note 1 to entry: The spindle passes through the table and its drive motor is situated beneath the table. The machines may also be fitted with one or more of the following devices/facilities:

- a) a facility for the spindle to be vertically adjustable relative to the table;
- b) a facility to tilt the spindle;
- c) a facility to fit a manually operated tenoning sliding table;
- d) a glass bead saw unit;
- e) an adjustable table insert.

Note 2 to entry: The main parts of the machine and their terminology are shown in [Figure 6](#) and its key table and in [Figure 7](#).

Note 3 to entry: These machines are also known as shapers in the USA and toupie in Europe.

3.2

straight work

shaping of a work-piece with one face in contact with the table and a second with the fence, and where the work starts at one end of the work-piece and continues through to the other end

Note 1 to entry: See [Figure 1](#).

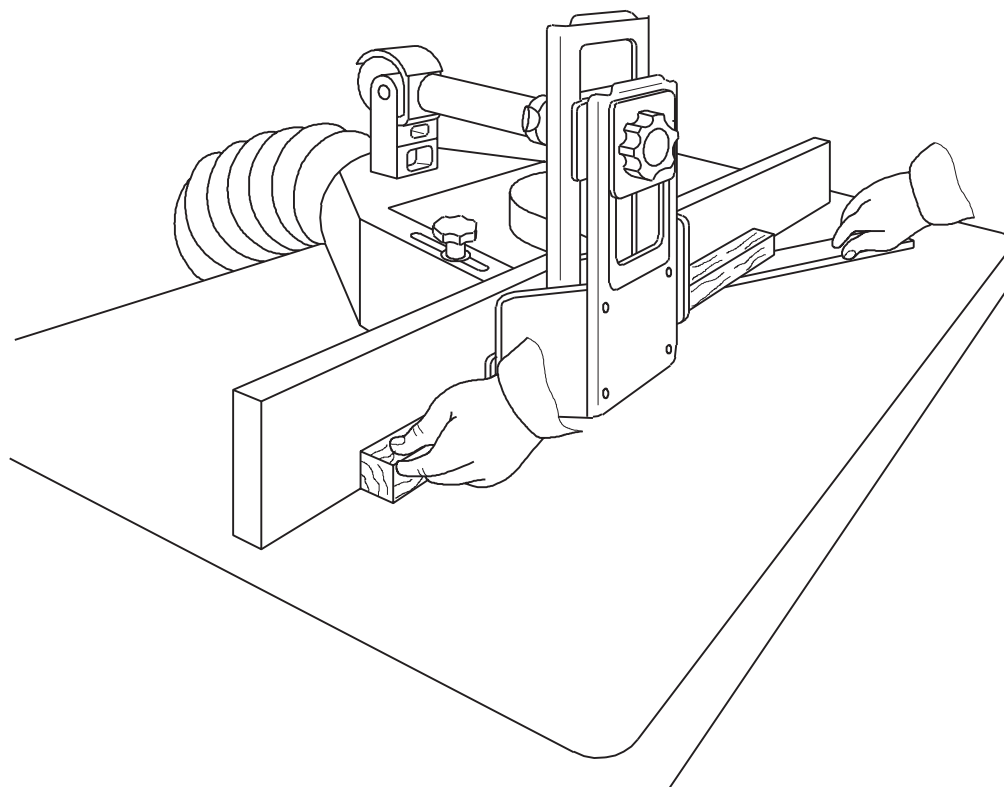


Figure 1 — Example of straight work

3.3 curved work

machining of a curve on a work-piece by having one side in contact with the table (or if held in a jig with the jig in contact with the table) and the other in contact with the vertical reference of a steady or ball ring guide when using a jig

Note 1 to entry: See [Figure 2](#).

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