

# SVENSK STANDARD

## SS-EN 847-3:2013

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### **Träbearbetningsverktyg – Säkerhetskrav – Del 3: Verktygshållare**

### **Tools for woodworking – Safety requirements – Part 3: Clamping devices**

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Denna standard ersätter SS-EN 847-3:2004, utgåva 1.

The European Standard EN 847-3:2013 has the status of a Swedish Standard. This document contains the official version of EN 847-3:2013.

This standard supersedes the Swedish Standard SS-EN 847-3:2004, edition 1.

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EUROPEAN STANDARD

**EN 847-3**

NORME EUROPÉENNE

EUROPÄISCHE NORM

October 2013

ICS 79.120.10

Supersedes EN 847-3:2004

English Version

## Tools for woodworking - Safety requirements - Part 3: Clamping devices

Outils pour le travail du bois - Prescriptions de sécurité -  
Partie 3: Outils de serrage

Maschinen-Werkzeuge für Holzbearbeitung -  
Sicherheitstechnische Anforderungen - Teil 3: Spannzeuge

This European Standard was approved by CEN on 10 August 2013.

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**CEN-CENELEC Management Centre: Avenue Marnix 17, B-1000 Brussels**

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## Foreword

This document (EN 847-3:2013) has been prepared by 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of an identical text or by endorsement, at the latest by April 2014, and conflicting national standards shall be withdrawn at the latest by April 2014.

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

This document supersedes EN 847-3:2004.

The following table contains a list of modifications from the previous edition.

EN 847-3:2004	EN 847-3:2013	Reason
3 Terms	3 Terms and definitions: new headline some new definitions	ed/te
5 Safety requirements	5 Design requirements: new numbering	ed
7 Information for use	7 Information for use; with 7.2 Safe working practice	ed
Annex A: Safe work practice	No Annex A	ed
	New: Bibliography	ed

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## **SS-EN 847-3:2013 (E)**

### **Introduction**

This European Standard specifies general requirements for the safety of clamping devices for machine tools for woodworking.

It is addressed to manufacturers and it is useful for end users.



## 1 Scope

This European Standard specifies all hazards arising from the use of clamping devices for the fastening of milling tools and circular saw blades on woodworking machines and specifies the methods for the elimination or reduction of these hazards by the design of the clamping device and by the provision of information.

This European Standard does not apply to arbors for spindle moulding machines in accordance with EN 848-1 or to clamping flanges for circular sawing blades to be used on circular sawing machines in accordance with the standard series EN 1870 and does not cover hazard related to the connection of the clamping device with the machine.

Bore mounted tools which are mounted on an interchangeable arbor should be considered as a shank mounted tool.

NOTE For definition of "woodworking machines", see EN 847-1.

## 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.

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

ISO 1940-1, *Mechanical vibration — Balance quality requirements for rotors in a constant (rigid) state — Part 1: Specification and verification of balance tolerances*

ISO 10897, *Collets for tool holders with taper ratio 1:10 — Collets, holders, nuts*

ISO 15488, *Collets with 8 degree setting angle for tool shanks — Collets, nuts and fitting dimensions*

## 3 Terms and definitions

For the purposes of this document, the terms and definitions given in EN 847-1:2013 and the following apply.

### 3.1

#### **shank**

part of the tool by which it is held

[SOURCE: ISO 3002-1:1982, 3.2.2]

### 3.2

#### **shank mounted tool**

tool with a shank

### 3.3

#### **bore mounted tool**

tool with a bore for mounting

### 3.4

#### **tool bore**

that bore in a tool by which it can be located and fixed by a spindle, arbour or mandrel

[SOURCE: ISO 3002-1:1982, 3.2.3]

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**3.5**  
**clamping device**  
element for fixing the tool on the driving spindle of the woodworking machine, for transferring the torque of the driving spindle and for positioning of the tool

**3.5.1**  
**friction lock clamping device**  
clamping device where the connection between tool and clamping device as well as the positioning of the tool is achieved by friction lock fixing elements (e.g. by spring tensions, gripping elements, hydrostatic clamping elements)

**3.5.1.1**  
**clamping device with mechanical clamping fixture**  
clamping device where gripping of the tool in the clamping device is performed mechanically, e.g. by spring tension, gripping elements

**3.5.1.2**  
**clamping device with hydrostatic clamping fixture**  
clamping device where gripping of the tool in the clamping device is performed hydrostatically, e.g. by hydrostatic clamping elements

**3.5.1.2.1**  
**hydrostatic clamping element**  
element which neutralises tolerances between the woodworking tool and the clamping device by elastic deformation

Note 1 to entry: The deformation is generated by hydrostatic pressure.

**3.5.1.2.2**  
**open system clamping device**  
clamping device where the clamping medium (incompressible fluid, e.g. oil, grease) can escape when released and is supplied from the outside when clamped

**3.5.1.2.3**  
**close system clamping device**  
clamping device where the clamping medium is permanently and pressure-tightly retained in the system

**3.5.1.3**  
**one piece clamping device**  
solid clamping device where the clamping force is generated by the elasticity of its material, e.g. shrink chuck

**3.5.2**  
**form lock clamping device**  
clamping device where the connection between tool and clamping device is achieved by form lock fixing elements, e.g. bayonet type clamping, flatted cylindrical shanks

**3.6**  
**maximum rotational speed**  
maximum rotational speed for the operation for which the clamping device is designed

## 4 List of significant hazards

Table 1 shows the list of significant hazards.

Table 1 — List of significant hazards

Hazard	Condition or causes of the hazard related to the clamping device	Corresponding clause of EN 847-3
Ejection of parts	Incorrect assembly of the clamping device	5.6
	Modification of tool position relative to the clamping device	7.2
	Dynamic unbalance of the clamping device while rotating	5.4
	Loosening of the tool in/on the clamping device during machining	7.2
	Fastening of the clamping device on the driving spindle	7.2
Vibrations	Dynamic unbalance of the clamping device	5.4

## 5 Design requirements

### 5.1 General

Clamping devices shall be designed and made of such materials that they withstand the forces and loads expected during operation.

Verification: By test procedure described in 5.5.3.

NOTE For the calculation of the shank strength, see EN 847-2.

In the area of the mounted surface, clamping devices shall be compatible to woodworking tools.

### 5.2 Hydrostatic clamping devices with open system

Hydrostatic clamping devices with open system shall be designed to retain the tool in the clamping device in the event of the loss of pressure, e.g. by an additional mechanical locking.

Verification: By checking the relevant drawings and visual inspection of the clamping device.

### 5.3 Shape

The cross-section of clamping devices shall have a circular form perpendicular to the axis of rotation.

The following exceptions of the circular form are permissible:

- thread holes for fixing, balancing screws and balancing holes;
- widths across flats;
- shape and dimensions according to the sizes of the wrenches;
- balancing flats for systems with flatted tool shanks.

Verification: By checking the relevant drawings, measurement and visual inspection of the clamping device.

### 5.4 Balance

Clamping devices having a mass greater than 0,5 kg shall be balanced.