



TD-OK500-001

RISK ASSESSMENT SUMMARY

OK-WINDER® 500

**Safety of Machinery
According to EN ISO 12100:2010**

OK-WINDER Oy

Finland

1. PURPOSE



This document provides a summary of the risk assessment carried out for the OK-WINDER® 500 torsion spring tensioning tool.

The assessment has been performed in accordance with EN ISO 12100:2010 – Safety of machinery – General principles for design – Risk assessment and risk reduction.

Its purpose is to identify hazards associated with the intended use of the product and to demonstrate how these risks have been reduced through engineering design, operating procedures and user information.

SCOPE

This document applies to the intended use of the OK-WINDER® 500 as a professional spring tensioning tool for industrial sectional doors.

It summarizes the principal hazards identified during the design process together with the measures implemented to reduce risks to an acceptable level.

INTENDED USERS

The OK-WINDER® 500 is intended exclusively for trained professional installers and maintenance personnel familiar with torsion spring systems.

Users are expected to read and follow the operating instructions before use. For the latest version of the OK-WINDER® 500 User Manual, please visit:

https://okwinder.fi/wp-content/uploads/OK_WINDER-Instruction-and-Safety-Manual.pdf

APPLICABLE STANDARD

The documented risk assessment has been carried out with reference to:

EN ISO 12100:2010

Safety of machinery – General principles for design – Risk assessment and risk reduction.

DESIGN BACKGROUND



The OK-WINDER® 500 was developed by Olli Kääriäinen, a professional industrial door installer and the founder of OK-WINDER Oy.

The development originated from first-hand experience of the physical demands and safety challenges associated with conventional winding bar methods used for tensioning torsion springs. The primary objective was to develop a safer, more controlled and less physically demanding method for professional installers.

DEVELOPMENT HISTORY

OK-WINDER® 500 WAS DEVELOPED BY OLLI KÄÄRIÄINEN,
A PROFESSIONAL INDUSTRIAL DOOR INSTALLER AND THE FOUNDER OF OK-WINDER OY.



The practical experience gained throughout this long-term development process has been reflected in the product's safety features, ergonomic design principles and documented risk assessment carried out in accordance with EN ISO 12100:2010.

2. PRODUCT DESCRIPTION



PRODUCT

OK-WINDER® 500

INTENDED USE

The OK-WINDER® 500 is a professional tool designed for tensioning and releasing torsion springs on industrial sectional doors by means of a cordless drill.

The mechanical operating principle enables controlled spring tensioning while reducing repetitive manual torque application.

TECHNICAL SPECIFICATIONS

Maximum rated torque

500 Nm

Suitable spring cone sizes

95-152 mm

Suitable Hörmann spring cone

182 mm

Minimum free space

97 mm from shaft centre to wall

Power source

Cordless drill

(without hammer function)

Professional use only.





3. RISK ASSESSMENT METHOD

The documented risk assessment has been carried out in accordance with EN ISO 12100:2010 – Safety of machinery – General principles for design – Risk assessment and risk reduction.

The assessment followed the methodology defined in EN ISO 12100:

- **Definition of the intended use and limits of the machine**
- **Hazard identification**
- **Risk estimation**
- **Risk evaluation**
- **Risk reduction**

The assessment considered hazards relevant to the intended use of the product, including:

- **Mechanical hazards**
- **Use-related hazards**
- **Ergonomic hazards**
- **Maintenance and inspection**
- **Reasonably foreseeable misuse**
- **User interaction**
- **Environmental operating conditions**

Where necessary, risks have been reduced through:



- **inherently safe design measures;**
- **protective features incorporated into the product;**
- **operating instructions and safety information;**
- **inspection and maintenance procedures.**

The operating instructions include requirements for routine inspection of the tool before each use, including removal of dirt and debris that could affect safe operation.

The product has also been evaluated for operation within the specified environmental conditions defined by the manufacturer.

Any residual risks identified during the assessment are communicated to the user through the operating instructions.

4. MAIN HAZARDS AND RISK REDUCTION

The following table summarises the principal hazards identified during the manufacturer's EN ISO 12100 risk assessment and the corresponding risk reduction measures incorporated into the product.

The complete risk assessment forms part of the manufacturer's technical documentation supporting the EU Declaration of Conformity.



PRINCIPAL HAZARD		IMPLEMENTED RISK REDUCTION MEASURES	
	Stored spring energy Hazard associated with the stored energy in torsion springs during tensioning and releasing operations.	✓	Self-holding mechanical design maintains secure engagement with the spring cone even when the cordless drill is removed.
	Moving and rotating parts Risk of entanglement, crushing or impact with moving or rotating parts.	✓	Use limited to trained professional operators.
	Pinch points Risk of finger or hand injury at mechanical interfaces.	✓	Clear operating instructions describe the correct procedure.
	Falling objects Risk of injury from falling tools or components.	✓	Use of a cordless drill without hammer function.
	Ergonomic strain Risk of musculoskeletal strain due to lifting, posture or repetitive actions.	✓	Tool design minimises exposed moving parts.
	Incorrect installation or use Risk of loss of control, tool damage or personal injury.	✓	Mechanical design guides the movement in a controlled manner.
		✓	Operating instructions and safety instructions provided.
		✓	Keep hands and other body parts away from moving parts.
		✓	Product design minimises accessible pinch points.
		✓	Clear instructions on correct positioning and use.
		✓	Maintain safe distance from pinch points during operation.
		✓	Correct handling procedure described in the operating instructions.
		✓	Inspection of the tool before every use.
		✓	Use in a clean and well-organised work area.
		✓	Design enables efficient operation with a cordless drill.
		✓	Reduces the need for repetitive manual force and awkward postures.
		✓	Improves working ergonomics and reduces physical strain.
		✓	Product intended for professional use only.
		✓	Detailed operating instructions and safety instructions provided.
		✓	Use of appropriate personal protective equipment (PPE).
		✓	Compliance with the instructions is mandatory.

5. SAFETY AND ERGONOMIC DESIGN

The OK-WINDER® 500 has been designed with particular attention to operator safety and ergonomics.

Compared with conventional winding bar methods, the product is intended to:

- reduce manual force required during spring tensioning
- reduce repetitive high-force arm movements
- improve operator control during the tensioning process
- allow controlled spring movement using a cordless drill
- reduce physical strain associated with repeated installations
- reduce musculoskeletal strain where installation conditions permit

The ergonomic characteristics of the product are achieved through its mechanical design and intended operating method.

6. RESIDUAL RISKS



Despite the implemented risk reduction measures, residual risks remain whenever torsion springs are tensioned or released.

Residual risks may arise if:

- **the product is used outside its intended application**
- **the operating instructions are not followed**
- **damaged or incompatible components are used**
- **incorrect installation procedures are applied**
- **suitable personal protective equipment is not used**

For these reasons the manufacturer requires:

- **trained operators**
- **compliance with the operating instructions**
- **appropriate personal protective equipment**
- **inspection of the tool before use**

The residual risks are considered acceptable only when the product is used in accordance with the operating instructions and by appropriately trained operators.

7. COMPLIANCE STATEMENT



The manufacturer's documented risk assessment concludes that:

- hazards associated with the intended use have been identified;
- identified risks have been evaluated;
- appropriate risk reduction measures have been implemented;
- residual risks have been reduced to an acceptable level through engineering design, operating procedures and user information.

The documented risk assessment has been carried out in accordance with the following reference documents:

EN ISO 12100:2010
EU Declaration of Conformity

The OK-WINDER® 500 is CE marked and supplied with an EU Declaration of Conformity. The documented risk assessment has been carried out in accordance with EN ISO 12100:2010 as part of the product's conformity assessment process.

When the OK-WINDER® 500 is used as intended and in accordance with the operating instructions, the remaining risks are considered acceptable.

RISK REDUCTION MEASURES

The following risk reduction measures have been implemented during the design and development of the OK-WINDER® 500.

RISK REDUCTION METHOD		IMPLEMENTED
	Inherently safe design Risks reduced through the product's mechanical design and construction.	✓
	Operating instructions Comprehensive instructions for safe and correct use provided with the product.	✓
	Safety warnings Important safety information and warnings clearly communicated to the user.	✓
	Inspection before use Tool must be inspected and cleaned before each use as described in the operating instructions.	✓
	Maintenance instructions Guidance for maintaining the tool in a safe condition.	✓
	Environmental operating limits defined Product has been tested and is intended for use within the specified environmental conditions.	✓
	Professional use only Product intended for trained professional installers and maintenance personnel.	✓



8. MANUFACTURER DECLARATION

This document is a summary of the manufacturer's documented risk assessment.

It is intended to provide customers and professional users with an overview of the risk assessment activities carried out during the development of the OK-WINDER® 500.

This document does not replace the operating instructions or other technical documentation supplied with the product.

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