

EDER - Crimping tool

EN Crimping tools for crimping steel wire ropes - Operating instructions



Schweigerstraße 6 – 38302 Wolfenbüttel - Germany

EN The original operating instructions were prepared in German.

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About this guide

Validity

These instructions apply to the EDER crimping tool in the versions with hand pump, battery-powered pump and air-hydraulic pump.

Various tool inserts are available for the crimping tool, depending on the rope diameter, for crimping steel wire ropes between 8mm and 16mm with an **aluminium ferrule**.

The instructions contain important information on how to use the EDER crimping tool safely, how to crimp in accordance with DIN EN13411-3 and the risks and dangers involved in using this system.

The operating instructions for the pump used apply in addition to this guide.

DANGER

Read and follow the instructions in this manual

This manual contains important information to prevent fire, property damage, injury and death.

Warranty

The crimping tool is covered by the statutory warranty period. The seller must be notified immediately of any defects that can be proven to be due to material or assembly errors. Proof of purchase of the crimping tool must be provided by presenting the invoice and receipt when making a claim under the warranty. The warranty is excluded with regard to the parts concerned if the defects are caused by natural wear and tear, temperature, weather conditions as well as defects resulting from faulty connection, installation, operation, lubrication or force. Furthermore, no warranty is given for damage caused by unsuitable improper use of the machine, e.g. improper modifications or repair work carried out by the owner or third parties under his or her own responsibility, or in the case of deliberate machine overload.

Guarantee

The warranty period shall be 12 months from the date of delivery for commercial or professional use or application. The statutory warranty remains unaffected. Warranty claims must always be proven by the buyer by means of the original purchase receipt. A copy of this is to be enclosed with the warranty application. The purchaser's address and serial number must be clearly identifiable. Any defects occurring within the warranty period due to material or manufacturing faults will be remedied by repair if they have occurred despite proper operation and care of the tool.

The manufacturer does not accept any warranty/guarantee for:

- Parts which are subject to natural wear and tear
- Non-compliance with the operating instructions and insufficient or incorrect care
- The consequences of improper maintenance and servicing
- Damage from improper handling and incorrect operation

Presentation of the warning notes

SIGNAL WORD
<p>Type and source of the danger! Consequences</p> <ul style="list-style-type: none"> ➤ Danger prevention

- The **signal word** indicates the severity of the danger.
- The paragraph "**Type and source of danger**" indicates the type or source of danger.
- The paragraph "**Consequences**" describes the possible consequences of not observing the warning.
- The paragraph "**Danger prevention**" indicates how to avoid the danger. It is imperative that you comply with these measures for averting danger!

The signal words have the following meaning:

Warning word	Meaning
DANGER!	Indicates a hazard that will certainly lead to death or serious injury if you do not avoid the danger.
WARNING!	Indicates a hazard that can lead to death or serious injury if you do not avoid the danger.
CAUTION!	Indicates a hazard that can lead to minor or moderate injury if you do not avoid the danger
ATTENTION!	Indicates possible damage to property. The environment, material assets or the plant itself can be damaged if you do not avoid the danger.

Safety instructions

The EDER crimping tool has been manufactured in accordance with the generally recognized rules of technology. Nevertheless, there is a risk of personal injury and damage to property if you do not observe the following basic safety instructions and the warnings preceding instructions in this manual.

- > Read this manual thoroughly and completely before operating the EDER crimping tool.
- > Keep the manual in a legible condition.
- > Make sure that the manual is always accessible to all users.
- > Always pass on the EDER crimping tool to third parties together with this manual.

Intended use

You may only use the EDER crimping tool for the activities described in this manual. You must always respect the performance limits of the system.

Crimping must be carried out in accordance with the instructions in this operating manual using the appropriate crimping jaws, rope diameters and ferrules.

Only aluminium ferrules may be used.

Ropes with crimped ends are not ready for use until all test criteria have been checked and fulfilled.

Intended use also implies that you have read and understood this manual in its entirety and in particular the chapter "Safety instructions".

Improper use

Any use not in accordance with the intended use is not permitted. The following is considered improper use:

- removing or modifying safety devices,
- using the EDER crimping tool in any other way than described in the chapter "Intended use",
- performing cleaning, maintenance and repair measures other than those listed in the chapters Cleaning and Maintenance,
- using the crimping tool under operating conditions that differ from those described in this manual.

If the crimping tool is not used as intended, all warranty claims will become void.

The manufacturer is not liable for damage to the device and for personal injury resulting from improper use.

Points to observe

General safety instructions

- > Always follow the instructions in this manual to avoid hazards and prevent damage.
- > Read these operating instructions and those for the pump used carefully before use.
- > Observe the relevant accident prevention regulations and other generally recognised safety and occupational health rules.
- > The crimping tool works with a hydraulic pressure of 700 bar. Before use, make sure that all connections are firmly screwed on and that the hoses are undamaged.
- > Never check the system for leaks with your bare hands.
- > The crimped connection must not be welded or modified in any other way.
- > Check the crimped connection and the rope before each use and replace the rope if necessary or renew the crimped connection.
- > The user is responsible for the use and proper application of ropes with crimped ends. Familiarise yourself with the applicable work regulations.
- > It is imperative that the instructions for use of all equipment used are followed.

Safety instructions for the workplace

- > Ensure adequate lighting at the workplace during the crimping process.
- > End connections made with the EDER crimping tool must not be exposed to temperatures below -40°C or above 100°C.
- > End connections made with the EDER crimping tool must not be exposed to salt water for long periods of time.

Safety devices

The EDER crimping tool may only be used with the protective and safety equipment (e.g. cover) provided for the intended use. Protective and safety equipment must never be disabled and must be cleaned if necessary.

Preparing the crimping process

Additional equipment

Hammer, file, calliper gauge, Allen key (size 2.5 for M5 grub screw)

Selecting the ferrule

When selecting the ferrule to be used, please observe the rope manufacturer's specifications. If no information is supplied with the rope, please ask the rope manufacturer or dealer for the size of the ferrule suitable for the rope.

The ferrule can also be selected according to Table A2 of DIN EN 13411-3.

Note:

Highly compacted steel wire ropes with a fill factor $F > 0.7805$ are generally used in forestry today:

- For highly compacted steel wire ropes with a fill factor $F > 0.7805$, the ferrule is usually selected two sizes larger than the rope diameter.
- For non-compacted steel wire ropes with a steel core with a fill factor $F < 0.7805$, the ferrule is usually selected 1 size larger than the rope diameter.

WARNING

- > The rope manufacturer's specifications must be observed.

Preparing the crimping device

Ensure that the crimping cylinder is stable. Insert the crimping jaws into the crimping cylinder and secure both crimping jaws with the Allen key.

ATTENTION

- > Ensure that the selected crimping jaws match the rope diameter and the selected ferrule.

Lubricate the crimping jaws with Eder crimping grease. Repeat this before each step of the crimping process.

ATTENTION

- > Insufficient lubrication of the crimping jaws can lead to damage to the crimping jaws.

Close the pressing cylinder and carry out an empty test crimping process. Use the pressure gauge to check that a minimum pressure of 700 bar is reached. Check that the crimping jaws close properly and are not misaligned.

Creating the crimped connection

Forming the loop

Place the ferrule corresponding to the wire rope over the rope and bend the rope into a loop. Pass the end of the loop through the ferrule again. The loose end of the rope should be at least $5xD$ (D =rope diameter) (see Fig. 1).

If you are also using a thimble, insert the thimble and pull the loop around the thimble. When using the Eder safety thimble, slide the ferrule onto the wire rope before bending the loop.

If you are not using a thimble, the distance between the ferrule and the inside of the loop must be at least $15xD$ (see Fig. 2).

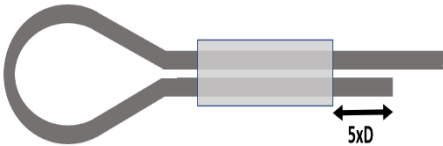


Figure 1

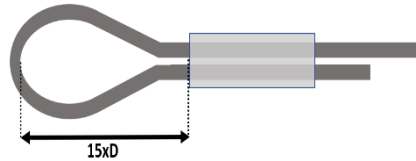


Figure 2

ATTENTION

- > Avoid any deformation of the ferrule before the crimping process.
- > The rope ends can be held with gripping pliers

When using a thimble, the distance between the ferrule and the inner end of the thimble should be approx. $1/3$ of the length of the ferrule (see Fig. 3).

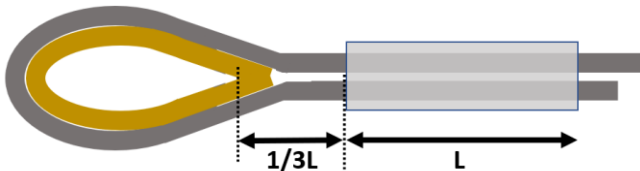


Figure 3

Inserting the ferrule into the crimping cylinder

The crimping process takes place in several steps. Start pressing on the loop / thimble side. To do this, insert the ferrule with the loop into the crimping cylinder so that the crimping jaws protrude by approx. 3-5 mm (see Fig. 4).

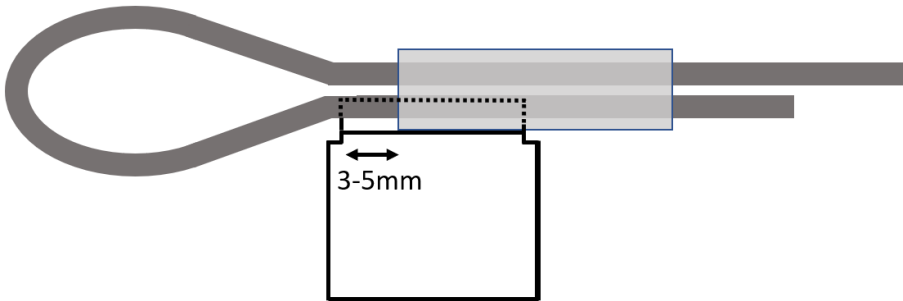
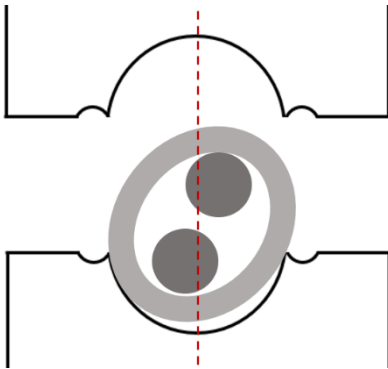


Figure 4

ATTENTION

- > Ensure that the ferrule is positioned vertically between the crimping jaws and does not tilt off axis when the crimping jaws are closed.



Crimping process for steel wire ropes 8-13mm

Grease the crimping jaws with Eder crimping grease before each crimping process. Crimping takes place in two stages and in several adjacent steps.

1. **stage:** Press the loop/thimble side up to $\frac{1}{2}$ the rope diameter - the jaws are still open up to $\frac{1}{2}$ the rope diameter (see Fig. 5). Carry out this process over the entire length of the ferrule, whereby the crimped segments must always overlap by at least 2 mm. If the ferrule no longer fits well between the jaws during the next adjacent crimping step, tap on the side of the ferrule with a hammer until it fits back into the crimping tool. Before each crimping process, check that the ferrule is correctly positioned between the jaws.
2. **stage:** Once the entire length of the ferrule has been pre-crimped, it is now crimped until the crimping jaws are fully closed. Do this over the entire length of the ferrule with an overlap of at least 2 mm. During each crimping process, check that 700 bar is reached on the pressure gauge and that the crimping jaws are fully closed.

Crimping process for steel wire ropes 14-16mm

Grease the crimping jaws with Eder crimping grease before each crimping process. Pressing takes place in three stages.

1. **stage:** Press the loop/thimble side up to the rope diameter - the jaws remain open at least up to the rope diameter (see Fig. 6). Carry out this process over the entire length of the ferrule, whereby the crimped segments must always overlap by at least 2 mm. If the ferrule no longer fits well between the jaws during the next adjacent crimping step, tap on the side of the ferrule with a hammer until it fits back into the crimping tool. Before each crimping process, check that the ferrule is correctly positioned between the jaws.
2. **stage:** Repeat the process on the loop/thimble side by pressing up to $\frac{1}{2}$ the rope diameter - the jaws are still open up to $\frac{1}{2}$ the rope diameter (see Fig. 5).
3. **stage:** Once the entire length of the ferrule has been pre-crimped, it is now crimped until the crimping jaws are fully closed. Do this over the entire length of the ferrule with an overlap of at least 2 mm. During each crimping process, check that 700 bar is reached on the pressure gauge and that the crimping jaws are fully closed.

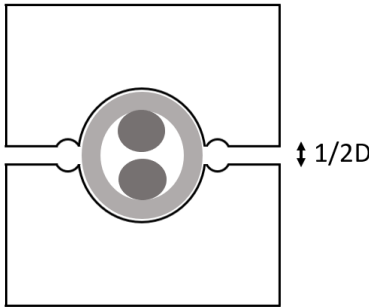


Figure 5

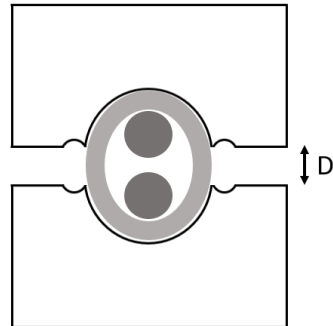


Figure 6

Finishing and checking

Remove the rope with the pressed-on ferrule from the crimping jaws and remove any burr with a file.

ATTENTION

- > Only file away the burr. Do not reduce the diameter of the ferrule by filing.

Check the crimping for roundness, misalignment, cracks or fractures.

Now measure the diameter and length of the crimped ferrule and compare the values with those in Table 1. The crimping has only been carried out successfully in accordance with DIN EN 13411-3 if there are no abnormalities and the dimensions of the crimped ferrule are within the tolerance specified in Table 1. Otherwise, the incorrect crimping must be cut off and the crimping carried out again after the rope has been shortened.

Ferrule size	Max. ferrule diameter after crimping [mm]	Max. ferrule length [mm]
10	20 +0.5	51.8
11	22 +0.5	57.5
12	24 +0.5	62.1
13	26 +0.5	67.9
14	28 +0.7	72.5
16	32 +0.7	82.8
18	36 +0.9	93.2

After crimping, the loose end should protrude approx. $0.5xD$ (see Fig. 7). If a thimble is used, the distance between the thimble and the ferrule should be at least $1xD$ (D =rope diameter) (see Fig. 7).

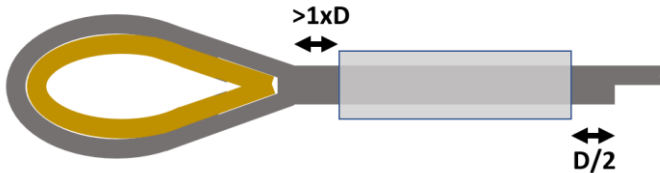


Figure 7

If necessary, the loose rope end must be shortened after crimping. Make absolutely sure that you do not damage the live rope during the cutting process. Therefore, place a suitable metal sheet between the two rope parts before cutting, e.g. with the aid of a grinder.

ATTENTION

- > If the live rope is damaged, the rope end connection must be cut off and the crimping carried out again!

Marking the ferrule

Once the crimping process has been successfully completed and the crimping has been carried out for commercial purposes, the ferrule must be labelled. To do this, use 3 mm punch marks and punch the marking you received from Eder Maschinenbau 0.5 mm deep.

Declaration of conformity

The manufacturer: Eder Mechanical Engineering GmbH
Schweigerstraße 6
38302 Wolfenbüttel
Germany

herewith declares that the machine designated below complies with the relevant essential safety and health requirements of the EC Machinery Directive 2006/42/EC due to its design and construction.

Main designation: EDER crimping tool

Type:	EPS-H	Serial no: EPS-H-01000	and following
	EPS-L	Serial no: EPS-L-01000	and following
	EPS-A	Serial no: EPS-A-01000	and following

To implement the safety and health requirements specified in the EC directives, the crimping tool was designed in accordance with the following standard:

DIN EN 12100

Internal measures have been taken to ensure that the serial production devices always meet the requirements of the current EC directives and the standards applied.

Authorized person for the technical documentation: Michael Pögel

Wolfenbüttel, 25.05.2023

Ulrich Schrader, Managing Director

EDER - Maschinenbau GmbH
Schweigerstraße 6
38302 Wolfenbüttel
Germany
www.eder-maschinenbau.de
info@eder-maschinenbau.de