Instruction manual

Original instructions



Mobile cutting ring pre-assembly machine

SPR-PRC-H

To prevent injury and damage, read this instruction manual carefully and attentively and retain it for future reference.

6010016757 Version 1

07/03/2019

More operating instructions in other languages can be found on www.stauff.com for download.

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1 Information on this manual

1.1 Structure of the warnings

Warning notices are made particularly obvious via colour-shaded signal word panels. Always read the complete text of the warning notice to ensure you are fully protected against hazards.

The following signal word panels use different colours and signal words to indicate different levels of danger:

⚠ DANGER

Failure to heed this warning notice will result in serious or fatal injury.

⚠ WARNING

Failure to heed this warning notice may result in serious or fatal injury.

⚠ CAUTION

Failure to heed this warning notice may result in slight or moderate injury.

ATTENTION

Failure to heed this warning notice may result in damage to property.

Warning notices always have the same structure. They contain the signal word, nature and source of the danger, the consequence of failure to heed the notice and measures designed to prevent/avoid the danger.

Example:

⚠ WARNING

Hazard of shearing off and crushing fingers

- ► Ensure before start-up that all safety equipment is properly installed and in working order!
- ► Make sure your fingers are not in the assembling area when operating the machine!

1.2 Structure of the operating instructions

Operating instructions request you to carry out an activity directly. They have an action-oriented structure. Always carry out the individual action steps in the specified order.

Operating instructions are structured as follows and are identified by corresponding symbols:

▶ Objective of the operating instruction

1. Action step

   ✓ Effect of the action step to check whether it has been carried out correctly.

2. Further action step

☑ Result of the complete operating instruction.

1.3 Structure of the additional information

The texts marked with an information symbol provide additional information and give you tips.

2 For your safety

2.1 Intended use

The cutting ring pre-assembly machine is solely for mechanical pre-assembly (50% pre-assembly) of cutting rings on light and heavy series tube ends for tube external diameters of between 6 mm and 42 mm.

The machine is used together with mounting sockets specially designed for this machine and the mechanical mounting operation.

The assembling parameters saved in the machine apply solely to the use of an original STAUFF cutting ring FI-DS-..-W3/W5 in combination with seamlessly drawn tube according to EN10305-4 from the E235+N and E355+N material as well as SS316Ti according to EN10216-5 and the original STAUFF cap nut FI-M-..-W3/W5. The stated pressure specifications apply either to the steel-steel or stainless steel-stainless steel combinations.

Pre-assemblies involving materials and material combinations at variance to the above need to be separately examined on the basis of the accumulated material and optimized, if necessary, with the aid of the setting wheel. The assembly outcome is then to be evaluated by the machine operator himself.

Modifications, extensions or conversions are not permitted without prior discussion with the manufacturer. Such modifications can jeopardise the operational safety of the machine and are considered as non-intended use.

Incorrect use

Any use other than that stated in the „Intended Use“ chapter is not permitted.

The cutting ring pre-assembly machine must not be used:

- Where high-voltage lines and gas piping is to be found
- In potentially explosive areas
- In rain or during thundery or humid ambient conditions
- Together with a rechargeable battery which the manufacturer has not authorised

2.2 General safety instructions

Safety instructions help you to prevent injuries and damage to property. Ensure that you have read and understood all safety instructions in this instruction manual.

For safe working, it is not sufficient to only read the general safety instructions in this section. You must also read and follow the special safety instructions in all sections concerning your work. Note and follow also the information and instructions in the reference documents.

The following safety instructions apply generally:

- Comply with the respective relevant national and international safety regulations regarding health and safety at work.
- Operate the machine only …
  - if it is in perfect technical condition,
  - safely and aware of the hazards,
  - as intended (Section 2.1, P. 7),
  - paying attention to this instruction manual,
  - with unchanged, fully installed, properly installed and fully functional safety devices and
  - with properly installed and functioning control.
- Respect all safety markings installed on the machine (Section 2.6, P. 10).
- Wear personal protective equipment (Section 2.8, P. 12).
- Correct immediately any faults that could have a negative effect on your safety or on safe operation of the machine. Shut down the machine until the fault is corrected and safeguard it against restarting.
- Work on electrical installations may only be carried out by qualified electricians. Work on live parts may only be carried out under the supervision of a second person.
- Be aware of the presence of possible residual energies in mechanical and electrical components.
- Use spare parts authorised by the manufacturer to replace components. Unauthorised spare parts can endanger the operating safety.

2.3 Specific safety instructions

The product is designed in line with the best technology available and the recognized safety-relevant regulations. Even so. its use can entail risks to the life and limb of the operator and third parties or damage to the product and its operating field.



Electric shock from live parts
- Switch off the machine before cleaning
- Shield the machine from moisture



Hand injuries between assembly stud and counter retainer
- Do not access the assembling area during the operation
- Wear protective gloves



Noise level up to 79 dB(A)
- Wear earmuffs during the operation.



Stress from constant strain imposed and an unhealthy posture
- Pay heed to an ergonomic posture and deployment of strength
- Use carrying strap or tripod
- Keep to the required break times

2.4 Tasks and duties of the operating company

In addition to the instructions and information in this instruction manual, the generally relevant, legal and other binding accident prevention and environmental protection regulations must also be noted and followed.

To ensure safe operation of the machine the operating company has at least the duty …

- to ensure that the machine is only operated according to its intended use, in a proper condition, with completely assembled safety equipment and without damage.
- to define the area of use and draw up corresponding operating instructions (standard operating procedures).
- procure the respective latest version of the regulations concerning operation and to familiarise the operating personnel with these regulations.
- train staff in working safely.
- to provide the necessary personal protective equipment.
- to ensure that the safety markings attached to the machine are always complete and fully legible.

2.5 Protective devices

Safety devices protect the operating personnel from hazards. The following is an overview of the installed safety devices.

Housing of the drive mechanisms

The electrical and mechanical drive mechanisms are inside the appliance housing and cannot be accessed by the operator.

Push button with immediate-stop function

The hydraulic cylinder is activated only when the push button is pressed. The drive is stopped when the button is released.

2.6 Safety markings

The following safety markings are attached in a clearly visible way and are legible:

Symbol	Description	Place of assembly	Number
	Warning of hand injuries on accessing the rotary head when running	Nameplate	1
	Wear protective gloves	Nameplate	1
	Wear earmuffs	Nameplate	1
	Observe the operating manual	Nameplate	1

2.7 Personnel qualification

Any work on the machine is only be carried out by qualified and authorised personnel. Personnel trained in the work involved as backed up by appropriate certificates are considered to be qualified.

Qualifications

The following qualifications are required for certain work on the machine:

- **Operating personnel** have been briefed in operating the machine and in its operation. They are authorised to undertake the following jobs:
  - Operating the machine
  - Changing over the tool
  - Cleaning the outside of the machine
- **The manufacturers service personnel** are to be drawn upon for all work exceeding the authorisations of the operating personnel.

Skilled jobs

Certain qualifications are needed for a number of jobs. Only those with the specified qualifications are allowed to perform the listed jobs.

Job	Qualification
Normal operation	Briefed operating personnel
Tool and rechargeable battery change	Briefed operating personnel
Maintenance and fault rectification on external parts	Briefed operating personnel
Maintenance and fault rectification on internal parts	Service personnel of the manufacturer

Safety briefing

All those working on the machine must be briefed as to safety at least once a year. Indispensable constituents of the briefing are:

- Personnel qualifications and authorisations
- Functionality and operating
- Area of application and ambient conditions
- Accessories for secure handling
- Personal protective equipment
- Change-over work
- Regular maintenance work

2.8 Personal protective equipment

To limit hazards during work, use the required personal protective equipment:

Symbol	PPE	Life phase	Job
	Close-fitting work clothing	all	all
	Safety shoes	all	all
	Protective gloves	Operation	All

3 Machine description

3.1 Machine overview



Fig. 1: Overview

Pos.	Designation	Function
1	Assembling area	Process workpiece
2	Carrying strap eyelet	Fasten carrying strap
3	Pressure table	Table for setting the pressure adjustment wheel
4	Operating panel	LED displays and power switch
5	Pressure adjustment wheel	Setting the pressure cylinder setting
6	Rechargeable battery	lithium ion (18 V / 5.0 Ah)
7	Push button	Extend pressure cylinder under pressure
8	Return button	Retract pressure cylinder

3.2 Function

The machine mechanically fits cutting rings onto tube ends (50% pre-assembly). Use can be made of light and heavy series tubes for tube diameters between 6 mm and 42 mm.

The machine is used together with mounting sockets which have been specially designed for mechanical assembly.

3.3 Technical data

General data	
Dimensions (L x H x W)	440 mm x 330 mm x 80 mm
Weight, incl. hydraulic oil and re-chargeable battery	6.8 kg
Max. pressure	115 kN

Operating conditions and emissions	
Operating temperature	+10° to +35° C
Sound pressure level according to EN ISO 11202:2009	79 dB(A)
Total oscillation value	1.5 m/s^2

3.4 Nameplate

The nameplate is at the top on the machine.

3.5 Tools and product

The cutting ring pre-assembly machine mounts cutting rings onto tube ends.



Fig. 2: Workpiece



1 Assembly stud
2 Cutting ring
3 Cap nut

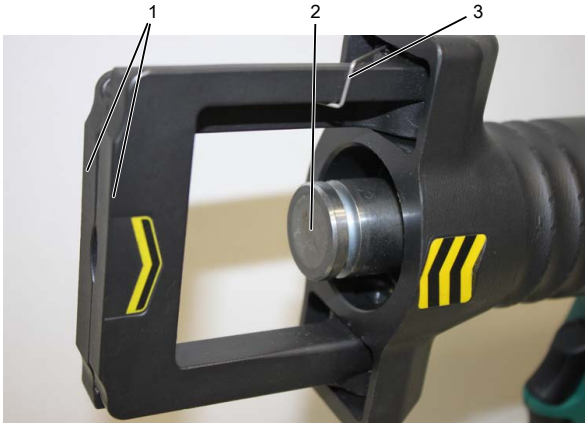
Fig. 3: Tools

Labelled on the mounting sockets is the construction size:

- The number corresponds to the tube external diameter
- L stands for the Light series
- S stands for the Heavy series

Please refer to the STAUFF Connect Product Catalogue for additional information on selection of the construction size.

3.6 Assembling area



1 Holding device
2 Pressure cylinder
3 Holding device spring

Fig. 4: Assembling area

The holding devices brace the cap nut against the cylinder being extended and can be pressed apart by hand.

At the pressure cylinder the required mounting socket is fastened with a clip.

3.7 Display and operating elements

3.7.1 Operating elements



1 Power switch
2 Push button
3 Return button

Fig. 5: Button on the operating panel and on the hand grip

The machine has the following operating elements:

- Power switch for switching on and off
- Push button for extending the pressure cylinder
- Return button for retracting the pressure cylinder (also possible when the machine is switched off)

3.7.2 LED displays

The LED displays on the hand grip and back of the housing indicate the machine status.



Fig. 6: LED displays (hand grip / operating panel)

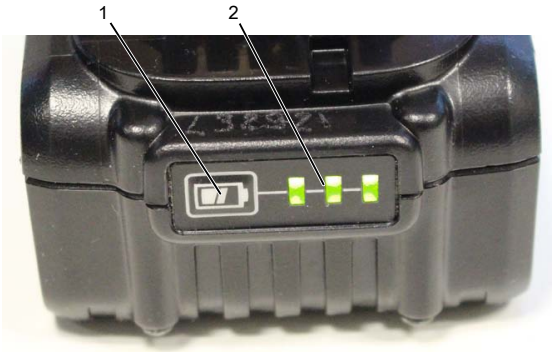
1 Operating display
2 Rechargeable battery display
3 Cycle display
4 Maintenance display

Meaning of the displays

Display	Switch-on / Operation	Switch-off	Downtime due to over-heating	Malfunction
Operation	Lights up con-tinuously	Goes out	Flashes	Does not light up
Rechargeable battery	Lights up con-tinuously GREEN / OR-ANGE	Light up for 1 second RED	No display	No display
Cycle	Light up for 1 second GREEN		Light up for 10 seconds ORANGE	No display
Maintenance				Flashes RED

3.7.3 Charging state display

The hand grip has its own display for the charging state of the rechargeable battery. It is activated by pressing the rechargeable battery symbol.



1 Battery symbol
2 Status display

Fig. 7: Charging state display on the battery

Meaning of the displays

Charging state	Full or almost full	Half full	Flat or practic-ally flat
Battery display on the operating panel	Green	Orange	Red
Charging state dis-play on the battery	Green	Yellow	Off

3.7.4 Pressure adjustment wheel



Fig. 8: Pressure adjustment wheel

The pressure adjustment wheel is located on the underside of the housing. It displays the pressure of the pressure cylinder in settings of 1 to 18.

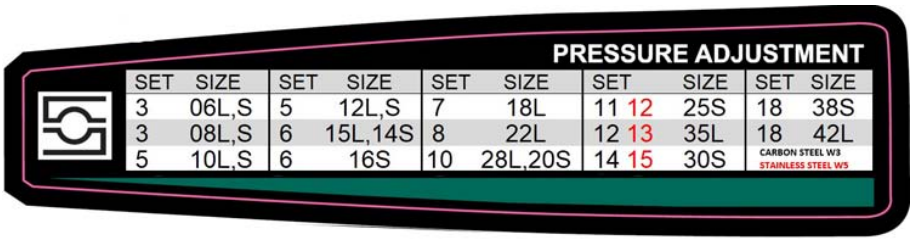


Fig. 9: Pressure table

> The values specified apply to materials W3 (carbon steel) and W5 (stainless steel).
> The extra red values must only be set for the W5.

The pressure table at the side with the following particulars is for establishing the required pressure:

- On the left: value to be set on the pressure adjustment wheel
- „L“: Cutting ring type of the light series
- „S“: Cutting ring type of the heavy series

3.8 Accessories

3.8.1 Case

In the case the machine together with its accessories can be securely stored an carried.



1 Mounting socket (small)
2 Assembly oil
3 Cutting ring pre-assembly machine
4 Replacement battery
5 Mounting socket (to be separately ordered)
6 Charger

Fig. 10: Case with accessories

3.8.2 Carrying strap

To help with the assembly, the carrying strap can be attached and mounted at the machine eyelets using the spring hooks.



1 Eyelet
2 Spring hook
3 Shoulder padding

Fig. 11: Carrying strap

3.8.3 Tripod (optional)

The machine can also be mounted on a tripod. For this, a holding ring is fixed at the cylinder housing.



1 Cutting ring pre-assembly machine
2 Holding ring
3 Cylinder housing
4 Tripod

Fig. 12: Assembly on a tripod

3.8.4 Table mount (optional)

The machine can also be installed on a workbench using a table mount. For this, a clamping screw is fastened to the table edge and the machine secured with a holding ring on the cylinder housing.



1 Cutting ring pre-assembly machine
2 Holding ring
3 Cylinder housing
4 Tripod
5 Clamping screw
6 Holding ring screw

Fig. 13: Assembly with table mount

4 Transport and storage

The machine is supplied with a case.

The machine should always be in the case when transporting or storing it. This avoids any damage to the machine and hazards to people.

Information on dimensions and weight is available in chapter „Technical Data“ (Section 3.3, P. 14).

5 Operation

To ensure safe operation, the machine may only be operated for its intended use (Section 2.1, P. 7).

5.1 Safety

⚠ WARNING

Accessing during the pressing

Shearing off and crushing of fingers

- ► Only operate the machine with the safety equipment installed and in working order.
- ► Keep fingers away from the assembling area during the operation.

⚠ CAUTION

Weight of the hand-held machine

Injury from the machine being dropped

- ► Before the start, attach the carrying strap or use the tripod or table mount.

5.2 Switching on/off



1 Power switch
2 Push button
3 Return button

Fig. 14: Button on the operating panel and on the hand grip

Switch on machine

▶ Switch on the machine as follows:

1. Ensure that the pressure adjustment wheel on the underside of the machine is on Step „1“.
2. Press power switch on the operating panel at the back.

✓ The cycle and maintenance display light up green for 1 second.

✓ Depending on the charging state, the battery display a steady light in green or orange.

3. Make certain the operating lamp on the hand grip displays a steady light.

☑ The machine is ready-to-operate.

Machine switch-off

▶ Switch off the machine as follows:

1. Keep actuating the return button until the pressure cylinder is fully retracted.
2. Set the pressure adjustment wheel on the underside of the machine to Step „1“.
3. Press power switch on the operating panel at the back.

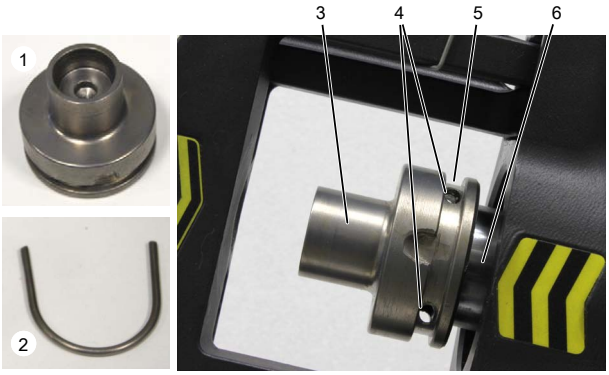
✓ The LED displays on the operating panel light up red for 1 second.

4. Make certain the operating lamp on the hand grip is off.
5. Depending on the battery charging state, connect the machine to the charging station and charge the rechargeable battery.
6. Put the machine in the case if it is to be transported or a lengthy storage is planned.

☑ Switching off is ended.

5.3 Cutting ring assembly preparation

Insert the assembly studs



1 Assembly stud
2 Clip
3 Assembly stud (mounted)
4 Drill holes
5 Groove
6 Pressure cylinder

Fig. 15: Assembly stud on the pressure cylinder

▶ This is the way to fit the assembly stud:

1. Select the right assembly stud for the tube. Note here the differences between the light (L) and heavy (S) series.
2. Ensure that the pressure adjustment wheel on the underside of the machine is on Step „1“.
3. Press power switch on the operating panel at the back.
4. Keep extending the pressure cylinder with the pressure button until the clip in the groove can be reached.
5. Pull out the clip.
6. Position the assembly stud on the pressure cylinder such that the drill holes point towards the operator and lie over each other.
7. Insert the clip through the drill holes.
8. Press the return button to fully retract the pressure cylinder.
9. Set the pressure needed at the pressure adjustment wheel. For this, consult the pressure table (Section 3.7.4, P. 18).

☑ The assembly stud is installed.

The assembly stud is to be lightly oiled at regular intervals with the supplied assembly oil. This protect the assembly stud from wear.

Also note the safety instructions on the oil bottle!

Fitting the workpiece



1 Cap nut
2 Cutting ring
3 Tube end
4 Holding jaws
5 Counter retainer
6 Assembly stud

Fig. 16: Fitting the workpiece

▶ This is the way to fit the assembly stud:

1. Slip cap nut onto the tube. The thread must point towards the tube end.
2. Then slip the cutting ring onto the tube end. In so doing, the cutting edge of the cutting ring must point towards the tube end.
3. Press apart the holding devices of the counter retaining plate.
4. Insert the tube from above into the counter retainer and place on the assembly stud. Cutting ring and cap nut are located between assembly stud and counter retainer.
5. Slip the optional pressure sleeve between the holding jaws.

☑ Workpiece is prepared for the mounting.

Fit reinforcing sleeves for thin-walled tubes in keeping with the STAUFF Product Catalogue!

5.4 Pre-assembling the cutting ring



Fig. 17: Cutting ring pre-assembly

▶ This is the way to pre-assemble the cutting ring with the machine switched on:

1. Keep hold of the machine at the hand grip with one hand and, with the other, the tube on the outside.
2. **CAUTION! Hand injury during the pressing.** Keep fingers or items away from the assembling area.
3. Keep actuating the push button until the setting pressure is obtained.

✓ You will hear a slight click and the pressure cylinder extending is stopped.

4. Keep actuating the return button until the pressure cylinder is back in the starting position.
5. Press apart the holding devices and remove the tube.
6. Check outcome of the cutting ring pre-assembly:
   - as to correct position of the cutting ring
   - as to a firm fit
   - as to no unwanted deformations

☑ The pre-assembly is over.



Fig. 18: Outcome of the cutting ring pre-assembly

5.5 Rechargeable battery charging



1 Locking key
2 Operating display
3 Rechargeable battery

Fig. 19: Hand grip

At the latest when the LED display of the battery is red, (▸Section 3.7.2, P. 16) the rechargeable battery then needs to be re-charged.

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i A replacement battery is included in the scope of delivery. To stop interruptions to operations, the recommendation is to immediately charge any flat rechargeable battery.

▶ This is the way to charge the rechargeable battery:

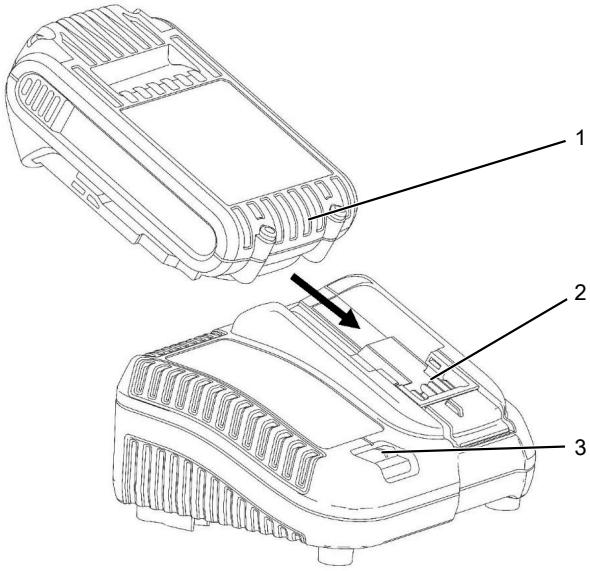
1. Ensure that the operation display does not light up and that, as a result, the machine is switched off (▸Section 5.2, P. 23).
2. Connect the charger to the power supply.
3. On the machine, release the locking key of the rechargeable battery and remove the battery.
4. Place the rechargeable battery into the charger.

☑ The red charging pilot lamp flashes during the charging.

1. Wait until the light of the charging pilot lamp is steady.

✓ The rechargeable battery is now fully charged.

2. Disconnect the charger from the power supply.
3. Remove rechargeable battery and insert into the machine such that its clicking into place is audible.



1 Rechargeable battery
2 Charger
3 Charging pilot lamp

Fig. 20: Charger

More information on the charger is in its separate instruction.

6 Fault rectification

6.1 Safety

⚠ WARNING

Inappropriate corrective maintenance

Serious injuries or machine damage

- ► Cleaning and corrective maintenance only with the machine switched off.
- ► Non non-authorised work on the machine.

6.2 Fault table

Fault	Possible reason	Troubleshooting
LED displays do not light up as expected	Rechargeable battery not properly inserted	Again insert the rechargeable battery
	Flat rechargeable battery	Charge the rechargeable battery
	LED defective	Contact the manufacturer
Operating lamp flashes; cycle and maintenance display light up orange for 10 seconds	Machine is over-heated	Switch off machine and allow to cool down. Machine must not come into contact with water.
Maintenance display flashes RED	Defect with internal parts	Contact the manufacturer
Pressure cylinder does not extend itself	Machine not switched on	Switch on machine
	Flat rechargeable battery	Charge the rechargeable battery
	Machine over-heated	Switch off machine and allow to cool down.
	Pressure cylinder is jammed	Move pressure cylinder back and forwards a number of times
	Another cause	Contact the manufacturer
Pressure cylinder does not retract	Pressure cylinder is jammed	Move pressure cylinder forwards and back a number of times
	Another cause	Contact the manufacturer
Holding devices do not adequately clamp the tube	Holding device spring	Contact the manufacturer
Hydraulic oil seeps out	Leakage in the hydraulic system	Place machine out of service and contact the manufacturer
Rechargeable battery does not charge or does so inadequately	Rechargeable battery or charging station defective	Read through the rechargeable battery instruction and/or contact its manufacturer

7 Maintenance

7.1 Safety

⚠ WARNING

Inappropriate corrective maintenance

Serious injuries or machine damage

- ► Cleaning and corrective maintenance only with the machine switched off.
- ► Non non-authorised work on the machine.

7.2 Inspection and maintenance work

The mobile cutting ring pre-assembly machine is largely maintenance-free and on being properly handled retains its functionality across the entire life cycle. However, the following jobs should be regularly carried out:

- Before use, examine the machine for any external damage
- Check LED displays
- Clean the machine after use

7.3 Cleaning the machine

The machine and its components have to be cleaned after each use.

► How to clean the machine:

1. Use a cotton cloth to clean the surfaces.
2. Employ water with a grease-dissolving, non-caustic cleaning agent. Do not allow any moisture to get into the cylinders.
3. Remove stubborn dirt with a suitable cleaning agent.
4. Apply corrosion protection to metallic component parts.

Corrosion protection

Apply a light oil film as corrosion protection to the moving machine parts after removing any stubborn dirt with a cleaning agent and after a lengthy stoppage.

8 Decommissioning

8.1 Safety

⚠ CAUTION

Work on the hydraulic system

Eye injuries from ejected hydraulic oil

- ► Depressurize the machine!
- ► Only Walter Stauffenberg GmbH&Co.KG is to carry out work involving opening up the machine!
- ► Wear your personal protective equipment incl. goggles for all work undertaken on the hydraulic system!

8.2 Disposal

Following final dismantling of the machine, the operating company has to dispose of all used materials and components in keeping with the provisions in force in the country where machine is operated.

Particular care is required for disposing of materials which are hazardous to the environment, e.g.:

- plastic parts
- rubber parts
- electrical parts
- metal parts
- operating fluids and additives

► How to handle substances hazardous to water:

1. Use appropriate containers to collect, store, transport and dispose of substances hazardous to water.
2. Dispose of all parts on a material basis at the places provided.
3. Always sort by materials for recycling.

9 EC declaration of conformity

according to EC directive 2006/42/EC on machinery, annex II 1.A

Manufacturer: Walter Stauffenberg GmbH & Co. KG

Im Ehrenfeld 4, 58791 Werdohl, Germany

Product: Mobile cutting ring pre-assembly machine

Type: SPR-PRC-H

The manufacturer declares that the product is in conformity with all applicable provisions as well as all relevant essential health and safety requirements as specified in the directive mentioned above.

The product also complies with Directive 2014/30/EU regarding electro-magnetic compatibility (Official Journal of the European Union L96/357 of 29.03.2014).

The protection objectives set forth in Low Voltage Directive 2014/35/EU (Official Journal of the European Union L96/357 of 29.03.2014) have been complied with in accordance with Annex I No. 1.5.1 of Machinery Directive 2006/42/EC.

The following harmonised standards were applied:

EN ISO 12100:2010-11	Safety of machinery – General principles for design – Risk assessment and risk reduction
EN ISO 4413:2010	Hydraulic fluid power – General rules and safety requirements for systems and their components
EN ISO 14118:2018	Safety of machinery – Prevention of unexpected start-up
EN 60204-1:2006/AC:2010	Safety of machinery – Electrical equipment of machines – Part 1: General requirements

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