

Battery rescue tools operating instructions

E-FORCE3



RSX 160 E-FORCE3, RSC 170 E-FORCE3, RSC 170 PLUS E-FORCE3, RSU 180 PLUS E-FORCE3, RSX 185 E-FORCE3, RSC 190 E-FORCE3, RSC 190 PLUS E-FORCE3, RSC 200 E-FORCE3, RSU 210 PLUS E-FORCE3, RSC F7 E-FORCE3,
SP 40 C E-FORCE3, SP 44 AS E-FORCE3, SP 54 AS E-FORCE3, SP 50 BS E-FORCE3
SPS 270 MK2 E-FORCE3, SPS 360 MK2 E-FORCE3, SPS 370 MK2 E-FORCE3,
SPS 400 MK2 E-FORCE3, SPS 480 MK 2 E-FORCE3, RIT-TOOL E-FORCE3
RZ 1-910 E-FORCE3, RZT 2-1170 E-FORCE3, RZT 2-1360 E-FORCE3, RZT 2-1500 E-FORCE3

1097468



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SYSTEMS

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1. General

1.1 Information on the operating instructions

These operating instructions provide important information on using E-FORCE appliances. To assure safety at the workplace, always observe all safety and handling instructions contained in this document.

Furthermore, the local accident prevention regulations and general safety determinations applicable to the operation site of the equipment must also be observed.

Before starting any work you must read these operating instructions thoroughly! They are a component of the product and must be stored in a known location that is accessible to personnel at all times.

This documentation contains information about the operation of your appliance, regardless of which type of appliance it is. For this reason, you will also find explanations that do not relate directly to your appliance.

All information, technical specifications, graphics and illustrations contained in these Operating Instructions are based on the most up-to-date data available at the time these instructions were created.

In addition to thoroughly reading the operating instructions, we also recommend that you undergo training and instruction in handling (possible uses, operational tactics, etc.) the rescue equipment from one of our qualified trainers.



NOTE!

The current version of the operating instructions can be found on our website
<https://www.weber-rescue.com/>
or by scanning the QR code.



1.2 Explanation of symbols

Warnings

In these operating instructions, warnings are identified by symbols.

The individual warnings are introduced by signal words expressing the degree of danger.

These warnings must be heeded to prevent accidents, injury and property damage .



DANGER!

... points out an immediately dangerous situation which can cause death or severe injury if it is not avoided.



WARNING!

...points out a potentially dangerous situation which can cause death or severe injury if it is not avoided.



CAUTION!

...points out a potentially dangerous situation which can cause minor or slight injury if it is not avoided.



ATTENTION!

...points out a potentially dangerous situation which can cause property damage if it is not avoided.

Tips and recommendations



NOTE!

...emphasises useful tips and information for efficient, trouble-free operation.

1.3 Limitation of liability

All information and instructions in these operating instructions were compiled under consideration of the applicable standards and regulations, the current state of technology and our long-standing knowledge and experience.

The manufacturer assumes no liability for damages due to:

- Non-observance of the operating instructions
- Improper use
- Assigning untrained personnel
- Unauthorised modifications
- Technical changes
- Use of impermissible replacement parts
- Use of non-original accessories

For special designs or due to technical changes, the actual scope of supply for may differ from the explanations and representations described.

1.4 Copyright

All texts, illustrations, drawings and images in these operating instructions may be used freely without prior authorisation.

**NOTE!**

Additional information, images and diagrams are available on our home page: www.weber-rescue.com.

1.5 Warranty provisions

The warranty provisions are included with the sales documentation as a separate document.

1.6 Customer Service

Our Customer Service would be happy to provide you with technical information.

Germany

Service Center, GÜGLINGEN
 Phone: +49 7135 71 10112
 E-mail: servicecenter@weber-rescue.com

Austria

Service Center, LOSENSTEIN
 Phone: +43 7255 6237-12473
 E-mail: ATL.Servicecenter@weber-rescue.com

International

For questions regarding spare parts, service and repair, please contact our certified local service partners. Scan the following QR code for an overview of our worldwide service and sales network.

**NOTE!**

When contacting our Customer Service, please provide the identification, type and year of manufacture of the appliance. This information can be found on the type plate.

For further processing, please complete the RMA document in



2 Safety

This section of the operating instructions provides a comprehensive overview of all important safety aspects to protect the operating personnel, as well as for safe, trouble-free operation.

Non-observance of the handling and safety instructions presented in these Operating Instructions can result in serious dangers.

2.1 Intended use

The hydraulic battery tools are designed and tested exclusively for the intended applications described here. All other activities are fundamentally prohibited.

All battery tools are designed as one-man appliances and are therefore to be operated by only one person.

Cutters

RSX 160 E-FORCE3, RSC 170 E-FORCE3, RSC 170 PLUS E-FORCE3, RSU 180 PLUS E-FORCE3, RSX 185 E-FORCE3, RSC 190 E-FORCE3, RSC 190 PLUS E-FORCE3, RSC 200 E-FORCE3, RSU 210 PLUS E-FORCE3, RSC F7 E-FORCE3

- The battery-powered cutting appliances are used exclusively for cutting doors and roof beams, pillars and door sills, the ring and the spokes of the steering wheel.
- If possible, for cutting solid material, always use the rear part of the cutter unit as it is equipped with special edges for cutting round material.
- In industrial application, the appliances can also be used to cut pipes, structural steels, profiles, sheets and cables.

Spreader

SP 40 C E-FORCE3, SP 44 AS E-FORCE3, SP 54 AS E-FORCE3, SP 50 BS E-FORCE3

- The battery-powered spreading appliances can be used for opening doors, lifting vehicles or other moveable loads, pushing away and moving vehicle parts and loads, and squeezing pipes and tie bars.
- If possible, always use the tips of the spreader for squeezing.
- The spreader tips can also be used as a peeling tool.
- The chain set is solely to be used for pulling.

Combi tools

SPS 270 MK2 E-FORCE3, SPS 360 MK2 E-FORCE3, SPS 370 MK2 E-FORCE3,
SPS 400 MK2 E-FORCE3, SPS 480 MK 2 E-FORCE3, RIT-TOOL E-FORCE3

- The battery-powered combi tools may be used for the specified purposes of both the cutters and the spreaders. The spreader tips can also be used as a peeling tool.

Accessories - chain sets

- Combi tools and spreaders may only be used with the appropriate chain set and pulling device. Pulling chains are exclusively for pulling away obstacles and loads and for enlarging openings to free trapped persons.

Rescue rams

RZ 1-910 E-FORCE3, RZT 2-1170 E-FORCE3, RZT 2-1360 E-FORCE3, RZT 2-1500 E-FORCE3

- The appliances are only used to push up steering columns, vehicle roofs and other obstacles, and to push away vehicle parts.
- In addition, in certain situations and whilst exercising particular care, it may also be possible to use them for support and stiffening.

**WARNING!****Danger caused by improper use!**

Any use other than intended use and/or other type of use of these appliances can cause dangerous situations!

Therefore, it is absolutely necessary to:

- » Only use the appliances for the intended uses described above.
- » Observe all other information regarding proper use of the appliances in Chapter 5 (Possible uses).

2.2 Operator responsibility

In addition to the occupational safety information in these operating instructions, the safety, accident prevention and environmental prevention regulations applicable to the operation site of the appliance must also be observed. Thereby, the following applies in particular:

- The operator must inform himself regarding the applicable occupational safety regulations and carry out a risk assessment to identify additional dangers arising from the special work conditions at the operation site of the appliance.
- The operator must clearly regulate and determine responsibility for installation, maintenance and cleaning.
- The operator must ensure that all persons engaged with the appliance have completely read and understood the operating instructions.
- Furthermore, he must train the personnel at regular intervals and inform them of the dangers associated with handling the appliance.

The operator is also responsible for ensuring that the equipment is always in a technically flawless condition. Therefore, the following applies:

- After each time the equipment is used, or at least once a year, a visual inspection of the appliance by an instructed person is required (per DGUV guideline 305-002 or country-specific rules).
- Every three years, or whenever a doubt is raised about the safety or reliability of the appliance, a function and load test must also be carried out (per DGUV guideline 305-002 or country-specific regulations).

2.3 Operating personnel

The following qualifications for different areas of activity are specified in the operating instructions:

- **Instructed persons**
Have been instructed by the operator regarding the tasks they have been assigned and the possible dangers caused by improper actions.
- **Expert personnel**
Because of their professional training, knowledge and experience as well as their knowledge of the applicable manufacturer's provisions, expert personnel are able to carry out the tasks they have been assigned and independently recognize potential dangers.



WARNING!

Danger of injury caused by insufficient qualifications!

Improper handling of these appliances can cause serious injury and property damage.

Therefore, it is absolutely necessary to:

- » Only permit the people specified in the respective chapters of these operating instructions to carry out the special activity.
- » In case of doubt, immediately call in expert personnel.



NOTE!

Never operate the appliance after consuming alcohol, medications or drugs!



NOTE!

Maintenance work can be carried out by instructed persons. Maintenance measures and repairs may only be carried out by the appliance manufacturer, or by specialist personnel trained by the appliance manufacturer and the authorised service partners. Continuous training and instruction by the appliance manufacturer is mandatory for a valid training certificate.

2.4 Personal protective equipment

To minimise danger for the operating personnel, wearing personal protective equipment (PPE) when handling the hydraulic rescue equipment is absolutely mandatory.

As a matter of principle, always wear the following protective clothing for all work:



Safety work clothing

Only wear closely fitting work clothing with narrow sleeves and without projecting pieces while working. This is primarily for protection against entanglement in moving parts of the equipment.



Safety shoes

Always wear steel-capped safety shoes to protect against heavy falling objects and slipping on slippery surfaces.



Work gloves

Wear safety work gloves to protect against sharp edges and glass splinters when operating the equipment.



Helmet with face shield

Wear a helmet with face shield to protect against flying or falling parts and glass splinters.



Protective goggles

In addition to a face mask, protective goggles should be worn to protect the eyes from projectile particles.

Also wear during any special kinds of work that cause noise:



Ear defenders

To protect your hearing, ear defenders should be worn in addition to personal protective equipment.

2.5 Particular hazards

The dangers resulting from the risk assessment are presented in the following section.

To minimize potential health hazards and prevent dangerous situations, the safety instructions listed below and the warning instructions in the following chapters of these Operating Instructions must be observed.

Electrical current



DANGER!

Danger of death due to electrical current!

There is an immediate danger of death if live parts are touched. Damage to insulation or individual components can be life-threatening.

Therefore:

- » If there is damage to the insulation, disconnect the power supply immediately and arrange for repairs.
- » Only allow electricians to carry out work on the electrical system.
- » When any work is being carried out on the electrical system, it must be disconnected from the mains supply and checked to ensure that it is not live.
- » Before carrying out maintenance, cleaning or repair work, the power supply must be switched off and secured to prevent it being switched on again.
- » Do not bypass or shut down any fuses. Use fuses with the correct amperage when replacing.
- » Keep live parts away from moisture. This can cause a short circuit.



WARNING!

The use of E-FORCE appliances in potentially explosive atmospheres is prohibited.

Noise



WARNING!

Damage to hearing caused by noise

The noise arising in the working area can cause serious damage to the hearing.

Therefore:

- » Also wear ear defenders during any special kinds of work that cause noise.
- » Only wear the ear defenders while you are in the danger area.

Hydraulic energy



WARNING!

Danger due to hydraulic energy!

The hydraulic forces that are released and escaping hydraulic fluid can cause severe injuries.

Therefore:

- » Always keep the appliance in sight while working and put it down if necessary.
- » Inspect hose lines and appliances for damage after each use.
- » Avoid skin contact with the hydraulic oil (wear safety gloves).
- » Remove hydraulic oil from wounds without delay and consult a doctor immediately.

2.6 Conduct in dangerous situations and accidents

Preventive measures

- Always be prepared for accidents
- Always have first-aid equipment (first-aid kit, blankets, etc.) within reach
- Familiarise personnel with accident reporting, first aid and rescue equipment
- Keep access routes for rescue vehicles open

In case of incidents

- Immediately shut down appliances
- Initiate first-aid measures
- Remove persons from the danger zone
- Inform responsible person at the operation site
- Alarm doctor and/or fire brigade
- Open access routes for rescue vehicles

2.7 Signage

The following symbols and instruction panels are located on the appliances. They refer to the immediate environment in which they are displayed.



Please note contents of operating instructions

Do not use the designated appliance until you have read the operating instructions from cover to cover.



WARNING!

Danger of injury due to illegible symbols!

As time goes by, adhesive labels and symbols on the appliance may get dirty, or be rendered illegible in some other manner.

Therefore, it is absolutely necessary to:

- » Maintain all safety, warning and operating instructions on the appliance in a readily legible condition.
- » Damaged signs and adhesive labels must be replaced immediately.

3 Technical specifications

3.1 Combi tools



SPS 270 MK 2 E-FORCE3



SPS 360 MK 2 E-FORCE3



SPS 370 MK 2 E-FORCE3



SPS 400 MK 2 E-FORCE



SPS 480 MK 2 E-FORCE3



RIT-TOOL E-FORCE3

	SPS 270 MK 2 E-FORCE3	SPS 360 MK 2 E-FORCE3	SPS 370 MK2 E-FORCE3	SPS 400 MK 2 E-FORCE3	SPS 480 MK 2 E-FORCE3	RIT-TOOL E-FORCE3
Length	811 mm	927 mm	933 mm	969 mm	1062 mm	773 mm
Width	192 mm	236 mm	236 mm	236 mm	263 mm	192 mm
Height	241 mm	241 mm	241 mm	241 mm	241 mm	241 mm
Weight (ready for use)	13,6 kg	18,1 kg	19,2 kg	20,0 kg	24,7 kg	13,3 kg
Opening width	270 mm	360 mm	370 mm	343 mm	402 mm	215 mm
Pulling width (with adapter)	395 mm	440 mm	405 mm	450 mm	525 mm	320 mm
Expansion force in the working area*	31 - 591 kN	36 - 783 kN	35 - 783 kN	35 - 1071 kN	45 - 1600	30 - 1.305 kN
Max. pulling force	36,0 kN	53,0 kN	57,0 kN	58 kN	78 kN	47,0 kN
Nominal pressure	700 bar	700 bar	700 bar	700 bar	700 bar	700 bar
EN class**	BK31/270G-13,6 1H-2G-3G-4H-5G	CK36/360I-18,1 1I-2K-3J-4K-5J	CK35/370H-19,2 1I-2J-3H-4J-5I	CK35/405I-21,0	CK45/480K-24,7 1K-2K-3K-4K-5K	AC140H-13,3 1H-2H-3H-4H-5H
NFPA class	A6-B7-C6-D7- E7-F3	A7-B8-C7-D9- E8-F5	A7-B8-C7-D8- E8-F5	A7-B9-C7-D9- E9-F6	A8-B9-C9-D9- E9-F7	A6-B7-C6- D7-E7-F3
ID no.	1093515	1096647	1096649	1092611	1099153	1093377

* in acc. with EN 13204

** in accordance with EN 13204

3.2 Cutters



RSX 160 E-FORCE3



RSC 170 E-FORCE3



RSC 170 PLUS E-FORCE3



RSU 180 PLUS E-FORCE3



RSX 185 E-FORCE3

	RSX 160 E-FORCE3	RSC 170 E-FORCE3	RSC 170 PLUS E-FORCE3	RSU 180 PLUS E-FORCE3	RSX 185 E-FORCE3
Length	879 mm	889 mm	889 mm	898 mm	1.029 mm
Width	236 mm	236 mm	236 mm	236 mm	298 mm
Height	241 mm	228 mm	228 mm	241 mm	241 mm
Weight (ready for use)	18,5 kg	18,1 kg	19,1 kg	20,6 kg	26,3 kg
Opening width	160 mm	175 mm	175 mm	185 mm	265 mm
Nominal pressure	700 bar	700 bar	700 bar	700 bar	700 bar
EN class*	BC160H-18,5 1J-2K-3H-4J-5H	BC166I-18,1 1J-2K-3I-4J-5J	BC166I-19,1 1J-2K-3I-4J-5J	BC185J-20,6 1J-2K-3K-4K-5K	CC240K-26,3 1K-2K-3K-4K-5K
NFPA class	A7-B8-C6-D7-E8	A7-B8-C6-D8-E9-F4	A7-B8-C6-D8-E9-F4	A8-B9-C7-D9-E9-F4	A9-B9-C9-D9-E9-F5
ID no.	1093508	1102148	1102149	1093512	1093510

* in accordance with EN 13204


RSC 190 E-FORCE3

RSC 190 PLUS E-FORCE3

RSC 200 E-FORCE3

RSC F7 E-FORCE3

	RSC 190 E-FORCE3	RSC 190 PLUS E-FORCE3	RSC 200 E-FORCE3	RSC F7 E-FORCE3
Length	936 mm	936 mm	989 mm	1064 mm
Width	236 mm	236 mm	296 mm	297 mm
Height	228 mm	228 mm	241 mm	228 mm
Weight (ready for use)	20,6 kg	21,9 kg	24,7 kg	25,9 kg
Opening width	187 mm	187 mm	202 mm	300 mm
Nominal pressure	700 bar	700 bar	700 bar	700 bar
EN class*	BC187K-20,6 1K-2K-3K-4K-5K	BC187K-21,9 1K-2K-3K-4K-5K	CC202K-24,7 1K-2K-3K-4K-5K	CC268K-26,9 1K-2K-3K-4K-5K
NFPA class	A8-B9-C7-D9-E9-F4	A8-B9-C7-D9-E9-F4	A9-B9-C9-D9-E9-F5	A9-B9-C9-D9-E9-F7
ID no.	1102150	1102151	1102152	1102153

* in accordance with EN 13204


RSX 185 E-FORCE3

RSU 210 PLUS E-FORCE3

	RSU 210 PLUS E-FORCE3	RSX 185 E-FORCE3
Length	994 mm	1029 mm
Width	260 mm	298 mm
Height	241 mm	241 mm
Weight (ready for use)	23,5 kg	26,3 kg
Opening width	210 mm	265 mm
Nominal pressure	700 bar	700 bar
EN class*	CC200K-23,5	CC240-K-26,3
NFPA class	A8-B9-C8-D9-E9-F4	A9-B9-C9-D9-E9-F5
ID no.	1093514	1093510

* in accordance with EN 13204

3.3 Spreaders



SP 40 C E-FORCE3

SP 44 AS E-FORCE3

SP 54 AS E-FORCE3

SP 50 AS E-FORCE3

	SP 40 C E-FORCE3	SP 44 AS E-FORCE3	SP 54 AS E-FORCE3	SP 50 BS E-FORCE3
Length	812 mm	877 mm	982 mm	1.015 mm
Width	233 mm	239 mm	282 mm	282 mm
Height	241 mm	241 mm	241 mm	241 mm
Weight (ready for use)	14,7 kg	17,3 kg	20,7 kg	20,9 kg
Spreading width	515 mm	610 mm	735 mm	805 mm
Pulling width	550 mm	465 mm	620 mm	680 mm
Spreading force in the working area*	41 - 173 kN	44 - 857 kN	55 - 501 kN	50 - 501 kN
Max. pulling force	47,0 kN	68,0 kN	70,0 kN	67,0 kN
Max. squeezing force*	54,0 kN	149,0 kN	144,0 kN	144,0 kN
Nominal pressure	700 bar	700 bar	700 bar	700 bar
EN class**	-	AS44/610-17,3	AS55/735-20,7	BS50/805-20,9
ID no.	1093832	1093703	1091736	1091735

* in acc. with EN 13204

** in accordance with EN 13204

3.4 Rescue rams



**RZ 1-910
E-FORCE3**



**RZT 2-1360 E-FORCE3/
RZT 2-1170 E-FORCE3**



**RZT 2-1500
E-FORCE3**

	RZ 1-910 E-FORCE3	RZT 2-1170 E-FORCE3	RZT 2-1360 E-FORCE3	RZT 2-1500 E-FORCE3
Length	540 mm	540 mm	587 mm	700 mm
Width	134 mm	134 mm	134 mm	134 mm
Height	340 mm	351 mm	365 mm	365 mm
Weight	17,3 kg	20,9 kg	20,5 kg	21,7 kg
Pressing force*	111,0 kN	189,0 kN	108,0 kN	108,0 kN
Starting length	540 mm	540 mm	587 mm	700 mm
End length	908 mm	1170 mm	1387 mm	1387 mm
Nominal pressure	55 bar	700 bar	550 bar	55 bar
EN class**	R111/368-17,3	TR189/360-99/270-20,9	TR108/428-62/372-20,5-E-I	TR108/428-62/372-20,5-E-I
ID No.	1094278	1094686	1094687	1094688

* in acc. with EN 13204

** in accordance with EN 13204

3.5 Operating conditions

The permissible temperature range of the E-FORCE appliances is between -20°C and +55°C. Reliable operation cannot be guaranteed outside of this range.

3.6 Type plate

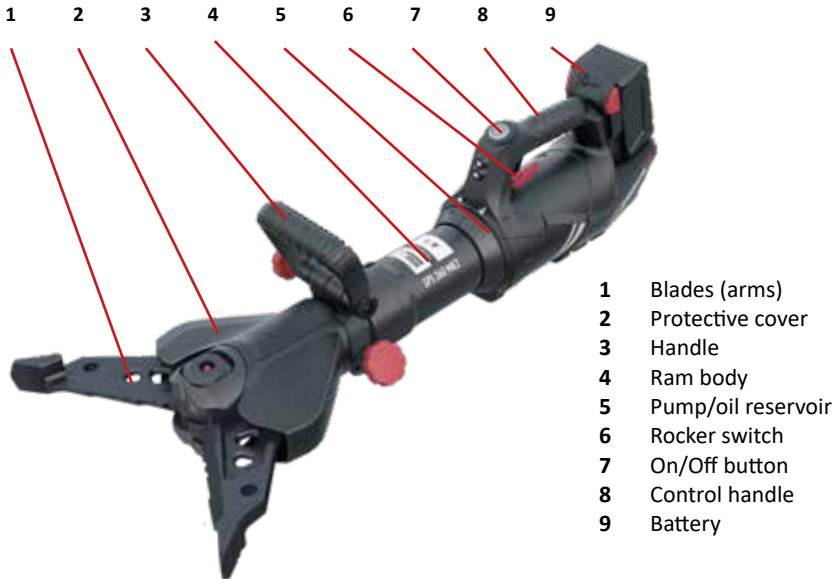
The type plate for all E-FORCE appliances is located on the bottom of the drive. It provides the serial number, production date, nominal pressure and appliance designation.

The TIN - "Tool Identification Number" is a 15-digit number and is assigned once. This is made up of the product ID and the serial number, and as such enables unique identification.

4 Structure and function

4.1 Overview of E-FORCE appliances

Combi tools



- 1 Blades (arms)
- 2 Protective cover
- 3 Handle
- 4 Ram body
- 5 Pump/oil reservoir
- 6 Rocker switch
- 7 On/Off button
- 8 Control handle
- 9 Battery

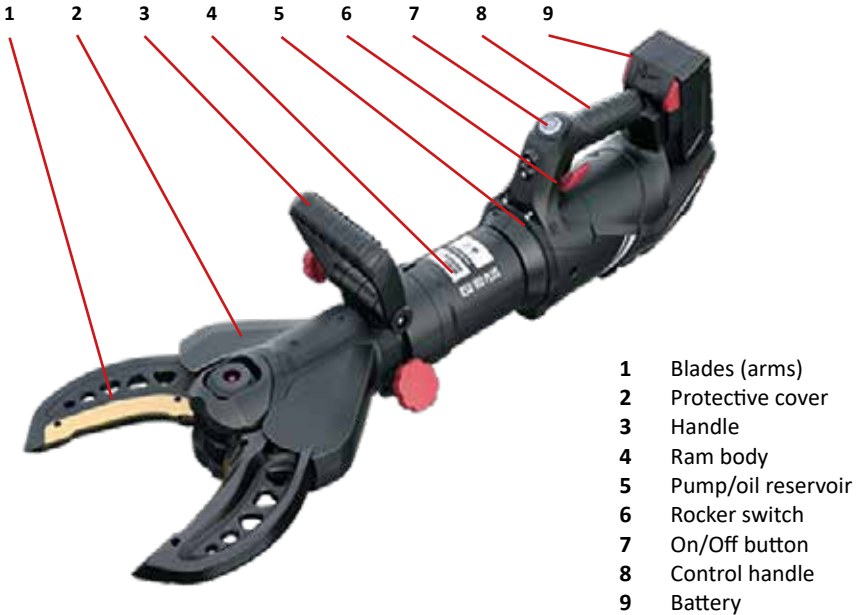
Brief description of combi tools

Battery-powered combi tools are specially designed rescue equipment for cutting and spreading vehicle body parts. They are used to rescue trapped or enclosed accident victims. The combi tool uses include cutting door and roof beams, columns and sills, as well as opening doors, lifting vehicle parts and loads, and squeezing pipes and tie bars.

Because the appliances are equipped with an internal electro-hydraulic drive, they are not linked to a power unit and can therefore be used in hard-to-reach locations.

The movement speed of the shear blades (arms) is affected by moving the rocker switch on the control handle with greater or lesser force. The maximum force is achieved only when the rocker switch is on full activation.

Cutters



Brief description of cutter

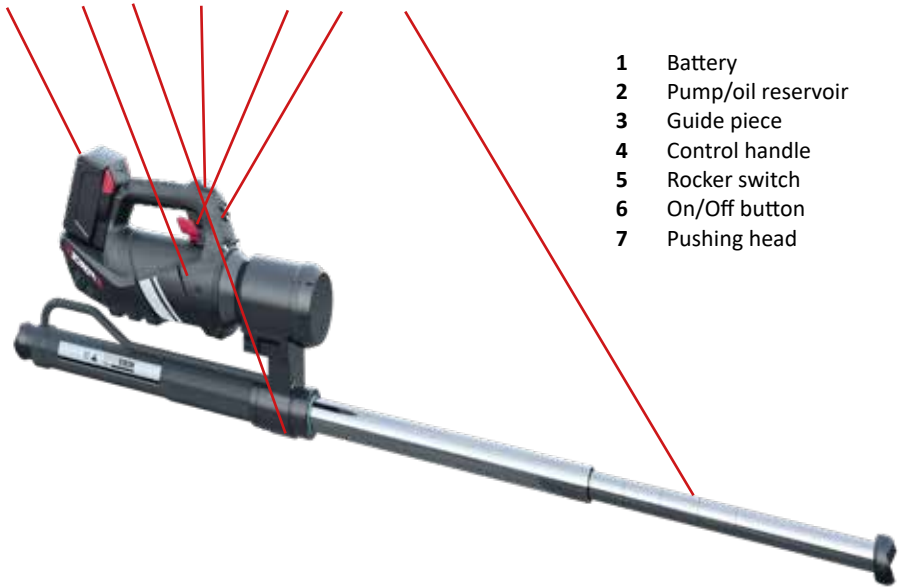
Battery-powered cutters are specially designed rescue equipment for cutting vehicle body parts. They are used to rescue trapped or enclosed accident victims. The cutter uses include cutting door and roof beams, columns and sills.

Because the appliances are equipped with an internal electrohydraulic drive, they are not linked to a power unit and can therefore be used in hard-to-reach locations.

The movement speed of the shear blades is affected by moving the rocker switch on the control handle with greater or lesser force. The maximum cutting force is achieved only when the rocker switch is on full activation.

Rescue rams

1 2 3 4 5 6 7



- 1 Battery
- 2 Pump/oil reservoir
- 3 Guide piece
- 4 Control handle
- 5 Rocker switch
- 6 On/Off button
- 7 Pushing head

Brief description of rescue ram

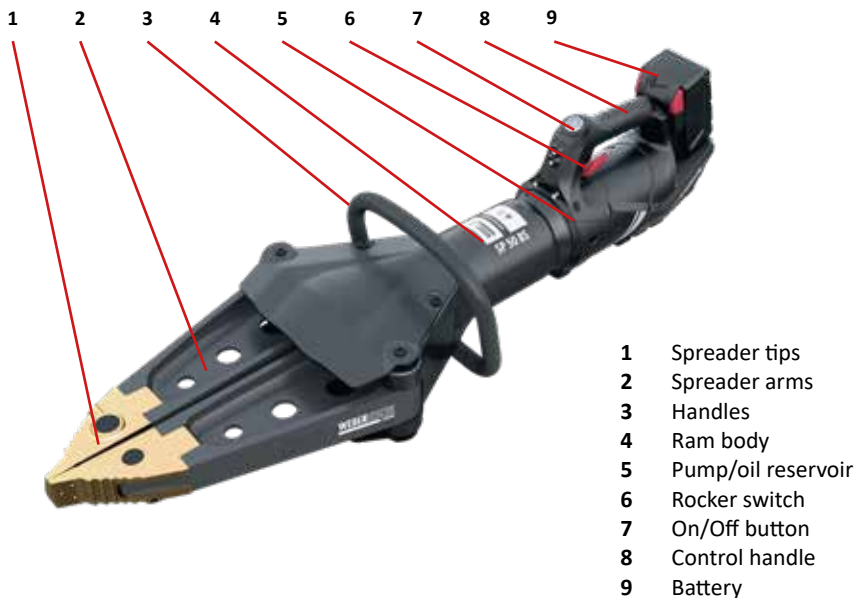
Battery-powered rescue rams are specially designed rescue appliances for pushing away parts of a vehicle body. They are used to rescue trapped or enclosed accident victims. The rescue ram is suitable for tasks such as pushing up steering columns, vehicle roofs and other obstacles.

Because the appliances are equipped with an internal electrohydraulic drive, they are not linked to a power unit and can therefore be used in hard-to-reach locations.

The rescue rams are an addition to the spreader and can be used, for example, if the spreading arm's spreading distance is no longer adequate.

The movement speed of the ram is affected by moving the rocker switch on the control handle with greater or lesser force. The maximum pushing force is achieved only when the rocker switch is on full activation.

Spreader



Brief description of spreader

Battery-powered spreaders are specially designed rescue appliances for spreading, pressing and pulling. They are used to rescue trapped or enclosed accident victims. The spreaders are mainly suitable for opening doors, and for lifting vehicles and other movable loads.

Because the appliances are equipped with an internal electrohydraulic drive, they are not linked to a power unit and can therefore be used in hard-to-reach locations.

The movement speed of the spreading arms is affected by moving the rocker switch on the control handle with greater or lesser force. The maximum spreading force is achieved only when the rocker switch is on full activation.

4.2 Hydraulic supply

Drive

The battery-operated appliances are powered by a 28 V DC motor. When the appliance is switched on, the motor idles. Only when the rocker switch is operated does the motor start to run at a higher speed.

Pump

The hydraulic pressure is generated by a high pressure hydraulic pump (in the pump unit). The pump is a radial piston pump with 3-4 pump elements. The pressure is applied directly to the working cylinder, which renders the connection lines redundant.

Oil tank

The oil volume for operation is taken from a tank. The entire hydraulic system is therefore completely closed and free of air. Any possible volume expansion caused by heat is compensated for by the tank.

Hydraulic oil

All battery-powered appliances should use a special hydraulic oil for rescue equipment in accordance with WN61000137. The oil does not usually need to be changed, but we recommend changing it after 10 years. An oil change can only be carried out by factory servicing at WEBER RESCUE Systems.



CAUTION!

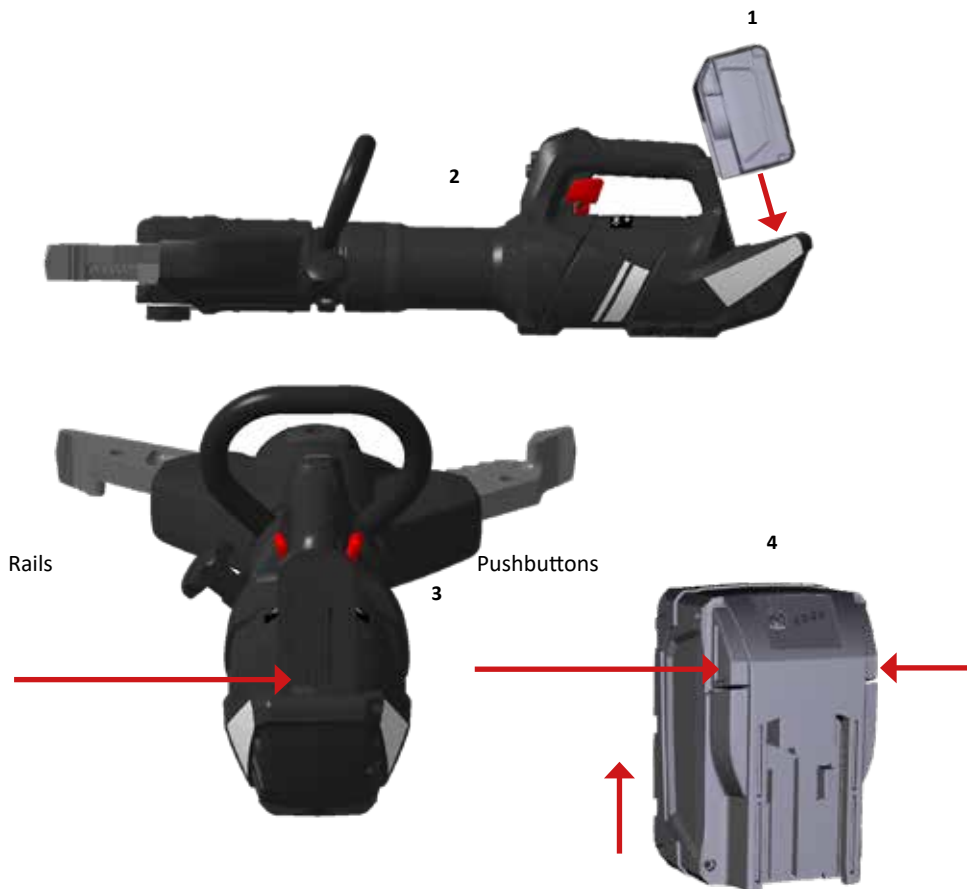
Do not attempt to carry out repairs on the hydraulic system!

The complete hydraulic system is designed as a closed circuit and must therefore be completely free of air. For this reason, do not attempt to carry out repairs on the drive, to ensure that no air can enter the system!

4.3 Electrical supply, using a combi tool as an example

Inserting the battery

Connect the battery (1) to the rescue appliance (2). Push the battery in on the rails (3) provided until it locks in place. To release, press the pushbuttons on both sides of the battery simultaneously (4). Then pull the battery upwards and out.



4.4 Operating E-FORCE appliances

To start the battery-operated appliance, press the on/off switch. The switch is illuminated white, the LEDs start to light up, and the motor idles. In this state, if the appliance is not operated using the rocker switch on the control handle, it switches off automatically after 30 seconds and must then be restarted.

Pressing the rocker switch on the control handle harder or less hard adjusts the movement speed exactly. The maximum cutting, expansion or pushing force is only obtained by pressing the rocker switch down completely.

Closing the cutter / Opening the spreaders / Extending the rescue ram

The tools' main direction of movement is triggered by pressing the rocker switch to the left with your index finger (grooved side of the rocker switch).

Opening the cutter / Closing the spreaders / Retracting the rescue ram

The opposite direction is triggered by pressing the control rocker to the right with your thumb (curved side of the rocker switch).

Dead man's circuit

When the rocker switch is released, it returns to the zero position automatically. This always brings the tool to a stop in any situation, including under load. After 30 seconds, the appliance switches off.



E-FORCE control unit



Example: cutter:
close to the left, open to the right

4.6 Accessories

Combi tools



Shear blades



Pulling device



Chain set



RZM CRT



Transport case

ID no.	SPS 270 MK2	SPS 360 MK2	SPS 370 MK2	RIT-TOOL	SPS 400 MK2	SPS 480 MK2
Shear blades	1101470	1101471	1101472	1101159	1100144	1085938
Tips	-	-	1050616			
Pulling device	1103553	2835746	2836033			
Chain set	2819139	2819139			1095147	
RZM	1094619		1094618 + 1094618BLK			-
Transport case	1058128					

Cutters



PLUS shear blade without insert



PLUS shear blade insert



PLUS shear blade with insert



PLUS shear blade inserts in case



Shear blade

ID no.	RSC 170 PLUS	RSC 190 PLUS
Shear blade without inserts	1099757	1099397
Shear blade insert	1099753	1099753
Shear blade with insert	1099758	1099396
Shear blade inserts in case	1103455	1103455
Shear blade for RSC 170	1099451	
Shear blade for RSC 190	1099309	
Shear blade for RSC 200	1099765	
Shear blade for RSC F 7	1101226	

Spreader



Replacement tips



Chain set

ID no.	SP 40 C / SP 44 AS	SP 54 AS / SP 50 BS
Replacement tips	1091176	1091849
Chain set	2819139	571415

Rescue rams



Extension

ID no.	RZ 1-910 E-FORCE 2
175 mm extension	1058482
250 mm extension	3838579

E-FORCE appliance accessories

	ID no.
Spare battery, 5.0 Ah, WEBER RESCUE	1072893
Spare battery, 5.0 Ah, MILWAUKEE	1075189
Battery case	1056921
Strap for battery case	1056920
230 V mains charger	1054097
110 V mains charger	1054099
On-vehicle charger	1060423
Continuous power supply / 230 V power adapter	1060422
Continuous power supply / 110 V power adapter	1060426

4.7 Replacing blade inserts (PLUS)

During a change of blades, the shear is fixed in place. Any slipping should be avoided. Changing the blade requires a soft-face hammer, the tensioning pins supplied, the punch and the blade inserts themselves. It is expedient to replace both blade inserts to continue enjoying optimum cutting performance.



NOTE!

The blade inserts should not be reground, simply cleaning off any soil is recommended. The change of blades for the RSU shears technology works identically but both clamping pins must be removed.

Procedure:



Fig. 1

When the blade insert is being changed, the battery must be removed from the shear. The shear blades are wide open (see Fig. 1) but the shear is not under load. This means that the shear is not completely open or closed. Now the blade insert can be changed on the shear blade with the smooth surface, using the punch to knock out the tensioning pin downwards (see Fig. 1 - Knocking out the tensioning pin).



Fig. 2

After the tensioning pin has been knocked out of its position, the blade insert can be pulled out. If the blade insert is stuck, it is advisable to lever it slightly with the punch in the holes and thereby loosen it. (see Fig. 2 - Loosening the blade insert)



Fig. 3

Carefully remove dirt and grime before inserting the new blade insert. (see Figure 3 - Removing dirt). When inserting, make sure that the blade insert does not tilt. To do this, approach with the rounded side of the insert first.



Fig. 4

If the blade insert cannot be inserted by hand, it is advisable to use lubricant and a soft-face hammer. (see Fig. 4 - Inserting the new blade insert)

After the new blade insert has been fully inserted, the shears are turned and the tensioning pin is driven in again from the rear. (see Figure 5 - Driving in the tensioning pin). Make sure that the tensioning pin is fully driven in again with the punch. (see Fig. 6 - Fully hammering in the tensioning pin)



Fig. 5



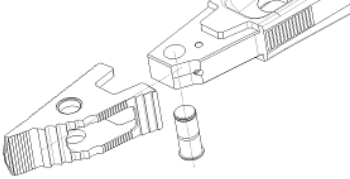
Fig. 6

4.8 Replacing the spreader tips

The spreader tips are secured with removable collar studs in the spreader arms. To replace them, the pin secured with a spring-loaded ball must be pushed out. After the tips have been replaced, the collar studs can be pushed back through. Check that the studs are seated correctly (pressed completely in).

The bracket for the chain set must be mounted in identical fashion. The chain lock must be installed with the latch facing upward.

The collar studs on the spreader tips can be pressed out of the spreader arms but have a



safeguard device to prevent them being lost and so they cannot be separated from the tips.

The SP 40 C and SP 44 AS spreader tips are not secured with removable collar studs but rather with a tensioning pin that must be knocked out when the tips are being changed. The chain set can be fastened in a separate hole without having to remove the tips beforehand.

CAUTION!

Ensure that the door opening tips always have full-surface contact!



If the optionally available door opening tips are attached to the combi tool or spreader, they must always be inserted into the gap while ensuring full-surface contact. Furthermore, reposition as often as possible to insert the teeth at least 20 mm into the gap. Otherwise, the tip may break when the combi tool is fully loaded.

5 Applications

5.1 Safety instructions

**WARNING!**

Never reach between the blade or spreader arms!

**WARNING!**

During any work with battery tools, tensioned parts can break or fly off, thereby endangering people.

Uninvolved parties must therefore remain a safe distance away or stay in the danger zone only as long as necessary.

5.2 Cutting (cutters, combi tools)

The cutting performance of the appliances can only be optimally utilised if they are placed as near as possible to the blades pivot point (Fig. 1).

The appliance may have to be moved back to do this.

The appliance only achieves full cutting performance when the rocker switch is fully depressed. Furthermore, it may take a few seconds until the hydraulic pump reaches the maximum working pressure.



Fig. 1

Always cut at a right angle to the cutting material, in order to prevent damage to the blades. Also, the tips of the shear blades must not be more than 5 mm apart during the cutting process. If this value is exceeded, the cutting process must be cancelled and then started again.

**CAUTION!**

Do not sever any parts with loose ends, as this can result in personal injury due to parts flying off.

**ATTENTION!**

When cutting high-strength vehicle body parts, such as shock absorbers, hinges or steering columns, the shear blades (arms) may cause severe damage.

5.3 Pressing (rescue rams)

In its closed state, the rescue ram is positioned for pushing away vehicle body parts. Therefore, make sure that the ram is placed as centrally as possible and at a right angle to the load. The pushing head can be rotated on the piston rod to guarantee better attachment options.

5.3.1 Pressing (combined appliances with RZM)

In order to further increase the spreading travel of the combination units, a mechanical rescue cylinder can be optionally mounted on these two units. This is inserted into the shear blades by means of spring-loaded bolts (see page 29, „4.6 Changing the spreader tips“). To make it easier to insert the RZM, the blades should be slightly open!

If the shear blades of the combi unit are now moved apart, the RZM also opens.

**NOTE!**

The use of the RZM in combination with the combi unit SPS 480 MK 2 is not permitted.

**ATTENTION!**

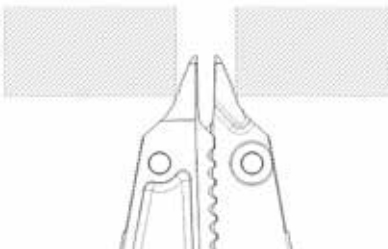
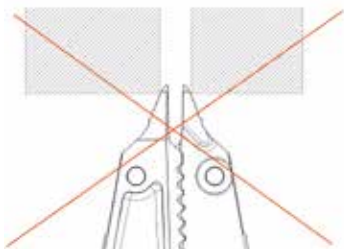
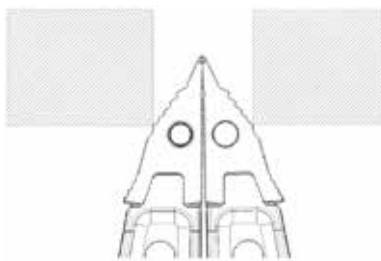
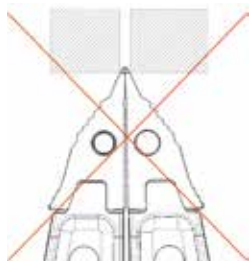
While pressing with the RZM, the combi unit moves in the direction of the vehicle. Therefore, do not stand in the direct working area of the combi unit!



5.4 Spreading (spreaders, combi tools)

The spreading functions can be used to open doors, lift vehicles and other movable loads, push vehicle parts away, and squeeze pipes and tie bars. For this, the vehicle must be stably positioned and supported.

To prevent any sliding during spreading, the arms and tips are fluted inside and out. Spreader tips also have spikes for particularly good grip. Slipping is additionally prevented through early repositioning of the spreader tip.



5.5 Pulling (spreaders, combi tools, rescue rams)

After the chain set (as explained in chapter 4.7) has been attached to the devices, spreaders and combo devices can also be used for pulling.

For this, the chains must be tightly tensioned and must be tensioned only in the pulling direction. To tension the chain, only one lock can be pressed in, so that the chain can be pulled through the bracket.

If the range of movement is insufficient, tension chains or other means must be used so that the appliance can be reopened and the chain tensioned again.



ATTENTION!

Store the pulling chains with chain locks installed approx. 10 – 20 cm from the end. Check the chain before every use. Check that the weight does not stress the tip of the hook, but lies in the middle of the hook instead.

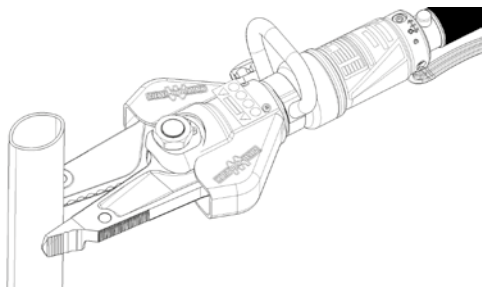
- » You must not undertake any repairs yourself.
- » Never load chains greater than the load capacity indicated.
- » Do not shock-load.
- » Do not galvanise or paint the chains.
- » Do not shorten the chains by knotting.
- » Do not apply heat to the chains.
- » Only use the chains and accessories between temperatures of – 40°C and +200°C.
- » When undertaking maintenance work on the chains, the Accident Prevention Regulations and the requirements of DIN EN 818-7 and DIN 685-5 must be observed.
- » Chains must only be used for lashing. Lifting loads is not permitted.

Chains may not be used again if:

- » They are deformed, cracked or exhibit corrosion pitting.
- » The diameter of the metal forming the chain link has reduced by 10% of the nominal thickness.
- » An individual chain link has been permanently stretched.
- » An individual link has been enlarged by more than 2%.
- » The internal chain pitch over a measuring distance of 11 chain links has increased by more than 2%.

5.6 Squeezing (spreaders, combi tools)

The squeezing of pipes and other hollow profiles takes place by closing the spreader arms. However, with the combi tools, squeezing can only be done in the area of the tips!

**ATTENTION!**

Material to be squeezed can suddenly spring away.
Do not remain in the working area of the spreading and combi tools!

5.7 Lifting (spreaders, combi tools, rescue rams)

Spreaders, combi tools and rescue rams can be used for lifting vehicles or other movable loads on one side. Care must be taken to secure the load against slipping away and to position the spreader tips far enough apart under the load to prevent slipping.

The load being lifted must be constantly monitored (tipping, rolling away or changing position). Furthermore, the lifted load must be immediately propped up and supported in a suitable way. Avoid remaining beneath loads!

Under special conditions, rescue rams can also be used to lift loads. When doing so, make especially sure that the ram is placed as centrally as possible and at a right angle beneath the load.



NOTE!

Before a rescue ram is used, the attachment point must be supported so that force develops in the desired direction.



NOTE!

Complete lifting of loads is not permitted with rescue appliances.

5.8 Peeling (spreaders, combi tools, rescue rams)

To create entry openings after bus and train accidents, in silos, etc., both the spreader tips and the peeling tool can be used.

6 Battery and charger

6.1 Charger technical specifications

Technical specifications	MCLi charger
Voltage range	28 V
Fast charge charging current	3.5 A
Charging time	Around 1 h
Weight without mains cable	700 g



Input voltage	ID no.
220/240V AC 50/60Hz (Europe)	1054097
240V AC (Australia)	1054098
110V AC (USA)	1054099

6.2 Special safety instructions



WARNING!

Do not throw used batteries into domestic waste or into the fire. Your specialist dealer can dispose of your old battery in an environmentally friendly manner.

The charger can be used to charge the following batteries:

Voltage	Battery type	Nominal capacity	Number of cells
28 V	M 28 BX	≥ 3.0 Ah	2 x 7
28 V	Li 28 V	≥ 3.0 Ah	2 x 7
28 V	Li-Ion 71NR	≥ 5.0 Ah	2 x 7

**WARNING!****Important safety instructions concerning the battery and the charger.**

- » The charger cannot be used to charge non-rechargeable batteries.
- » Do not store batteries together with metal items (risk of short circuit).
- » Metal parts must not get into the battery insertion slot on the chargers (risk of short circuit).
- » Do not open batteries or chargers, and only store in dry rooms. Protect against moisture.
- » Mains voltage is present at the charger. Do not reach into the appliance with objects that can conduct electricity.
- » Do not charge a damaged battery. Replace it immediately.
- » Check the appliance, connection cable, battery pack, extension lead and plug for damage and ageing. Have damaged parts repaired only by a specialist.
- » This appliance is not intended to be used by people (including children) with limited physical, sensory or mental capabilities, or who have a lack of experience and/or a lack of knowledge, unless they are supervised by a person responsible for their safety or have received instructions from him/her on how to use the appliance. Children must be supervised to ensure that they do not play with the appliance.

6.3 Intended use

This charger charges the 28 V Li-Ion battery that was supplied with the battery appliance for the M28/V28 system. This appliance may only be used as specified and intended.

6.4 Mains connection

Only connect to single-phase alternating current and only to the mains voltage specified on the rating plate. It can also be connected to sockets without an earth contact as it is built in accordance with protection category II.

6.5 Li-Ion-battery

For safety reasons, the batteries are discharged when they are delivered (air transport regulation). The battery must be charged completely before first use.

LED charging status indication



If the battery is not used for a longer period of time, it switches to idle mode. The battery must be re-activated (charged) in order to be used again.

The charging status can be checked by pressing the button on the battery (see illustration). The battery can remain in the battery tool for this but the battery tool must be switched off at least 1 minute before (otherwise the indication will be inaccurate). The number of illuminated LEDs indicates the charging status.

As a matter of principle, the following applies: If the battery tool does not work after inserting the battery, plug the battery into the charger to check it. The indications on the battery and the charger then provide information on the battery condition.

You can continue to work with reduced power at lower temperatures. To ensure that the appliance is ready to use, the battery must be fully charged after use.

6.6 Charging process

After the battery is inserted into the charger's insertion slot, it is charged automatically (the red LED illuminates continuously).



If the battery is too hot or too cold when it is inserted into the charger (red LED flashes) the charging process begins automatically as soon as the battery has reached the correct charging temperature (0°C - 65°C). The maximum charging current flows when the Li-Ion battery temperature is between 0 and 65°C.

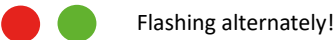


The charging time is between 1 min and 60 min depending on how full the battery was previously (for 3.0 Ah). The charging time for the 5.0 Ah battery is between 1 min and 90 min. Once the battery is fully charged, the LED on the charger switches from red to green.



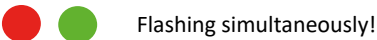
The battery does not have to be removed from the charger once charging is complete. The battery can remain in the charger permanently. This cannot over-charge it and so it is always ready for use.

If both LEDs flash alternately, either the battery is not inserted properly, or there is a fault on the battery or the charger. For safety reasons, take the charger and the battery out of operation immediately and have them checked by an authorised customer service location.



Flashing alternately!

If the power unit is overloaded, all LEDs flash 4x. To continue charging, unplug the power unit and plug it back in.



Flashing simultaneously!

6.7 Maintenance

If the mains connection line is damaged, it must be replaced by a customer service location.

Only use approved accessories and approved spare parts. If a replacement description is not provided for a component, have it replaced by an authorised customer service location.

6.8 Charging cycles

Information	Explanation
Charging cycles	Around 1000
Partial discharge	No effect as the battery always holds the capacity until it is discharged.
Partial discharge and subsequent recharge	Each recharging process is considered a complete charging cycle, which is why the battery should be used until it is fully discharged.
Protection against total discharge	Present

7 Transport, packaging and storage

7.1 Safety instructions

**CAUTION!****Damage due to improper transport!**

Improper transport can cause considerable property damage.

Therefore:

- » When unloading the packaged pieces, proceed with caution and pay attention to the symbols on the packaging.
- » Only completely open and remove packaging at the actual storage site.

7.2 Transport inspection

Check the delivery immediately after receiving it for completeness and possible transport damage so that, if needed, a remedy can be found quickly.

If there is any externally visible damage, proceed as follows:

- Refuse the delivery or accept it with reservation.
- State the extent of damage on the transport documents or the transporter's delivery receipt.
- Initiate complaint.

**NOTE!**

Report every deficiency as soon as it is recognised.

Damage claims can be directed to our Customer Service (see Chapter 1.6).

7.3 Symbols on the packaging



Caution - fragile!

Handle the package carefully, do not drop it, throw it, hit it or tie it down.



Facing upwards!

The package must always be transported and stored with the arrows pointing upwards. Do not roll or tilt.

7.4 Disposing of the packaging



Properly dispose of all packaging materials and parts that have been removed (transport protection) in accordance with local regulations.

7.5 Storage

To the greatest extent possible, store the appliances in a dry, dust-free area. Avoid exposing hose lines to direct UV radiation.



CAUTION!

To prevent damage to the equipment on the drive to the work site, store the equipment securely in the mounts provided for it.

8 Installation and commissioning

8.1 Safety instructions

**WARNING!****Danger of injury due to improper operation!**

Improper operation can cause severe injury or property damage.

Therefore, it is absolutely necessary to:

- » Carry out all work steps according to the information in these operating instructions.
- » Before starting work, ensure that all covers and guards are installed and that they work properly.

Personal protective equipment

Wear protective equipment as specified in Chapter 2.4 when performing all work!

**NOTE!**

Special attention is drawn to the need for further protective equipment to be used with certain items of work involving one or more of these appliances.

8.2 Checking

Inspect the E-FORCE appliance for damage. Never use the equipment unless it is in flawless condition!

In this case immediately notify your supplier.

E-FORCE combi tools, cutters and spreaders:

- Check the blades (for damage)
- Inspect the spreader tips (for damage)
- Check the control handle including the rocker switch (function)
- Check the handle (fastened securely)
- Check the protective housing (damage)

E-FORCE rescue ram:

- Check the piston rod (damage)
- Check the control handle including the rocker switch (function)
- Check the pressure elements (damage)
- Check the guide section (damage)

8.3 Shutdown (end of work)

Cutters:

After work is over, the blade tips must be placed one above the other to prevent injury. However, never close the cutter's blades completely, as this would generate tension in the appliance.

Rescue rams:

Once work has finished, the cylinder's piston rod must be retracted almost entirely in order to relieve the appliance's hydraulic pressure.

Combi tools and spreaders:

Once work has finished, the spreader arms must remain slightly open in order to relieve the appliance's hydraulic pressure.

9 Maintenance

9.1 Safety instructions

**WARNING!****Danger of injury due to defective maintenance work!**

Improper operation of the appliance can cause severe injury or property damage.

Therefore, it is absolutely necessary to:

- » Have all maintenance work carried out by trained specialists.
- » Ensure good housekeeping and cleanliness at the workplace! Loose components and tools left lying around constitute a potential hazard.
- » Wear protective gloves during all work!

9.2 Upkeep and maintenance

To be ready for operation at any time, the following measures are absolutely imperative:

- After every load, but at least once a year, visually check the appliance and its accessory parts.
Pay particular attention to spreader tips, joints, blades, hoses and coupling parts.
- Every three years, or whenever a doubt is raised about the safety or reliability of the appliance, a function and load test must also be carried out (per DGUV guideline 305-002 or country-specific regulations).
- After every load, check the lubrication of the movable parts and pins, and spray with suitable grease if necessary.
- Every 10 years we recommend a complete change of the hydraulic oil by our factory service to maintain full performance.

**ATTENTION!**

Prior to all maintenance work, the equipment must be cleaned of any dirt so that it does not get into the hydraulic system. Cleaning can be carried out using a conventional cleaner.

9.3 Maintenance after operation in humidity

- The appliance must be dried after being operated in damp conditions
- Browned parts (bolts, blades and clips) must be greased

**NOTE!**

If problems occur when maintaining the appliances, our customer service department is available to assist (see Chapter 1.6).

9.4 Maintenance schedule

For an exact maintenance schedule with inspection intervals, regulations and reports, see DGUV guideline 305-002, point 18 (hydraulically-actuated rescue appliances).

10 Malfunctions & faults

Combi tools & cutters:

Malfunction	Possible cause	Remedy
Appliance does not reach full performance	Rocker switches not completely pressed to the side	Press the rocker switches completely to the side
Combi tool moves in opposite direction under load	Check valve defective	Have the appliance checked by an authorised service centre.
Blades are loose and gape apart during cutting	Blade not attached to the shear head as specified	Repair work by an approved workshop
Blade opening below target value	Shearing head settings altered	Repair work by an approved workshop
Combi tool opening width below target value	Shearing head settings altered	Repair work by an approved workshop
Pressure build-up despite movement (open - closed) without a load	Hex nut / central bolt too tight	Repair work by an approved workshop
Blade chipping	Blades damaged e.g. from cutting high-strength materials	Re-sharpenable to about 2 mm (see repair manual) otherwise replace
Cracks in the blades	Blades damaged e.g. from cutting high-strength materials	Have the blades replaced by an authorised service centre
Rescue equipment does not function	Battery is dead	Place the battery on the charger. The displays on the battery and charger give information about the battery charge status

Rescue rams:

Malfunction	Possible cause	Remedy
Appliance does not reach full performance	Rocker switches not completely pressed to the side	Press the rocker switches completely to the side
Ram moves in opposite direction under load	Check valve defective	Have the appliance checked by an authorised service centre
Rescue equipment does not function	Battery is dead	Place the battery on the charger. The displays on the battery and charger give information about the battery charge status

Spreaders:

Malfunction	Possible cause	Remedy
Appliance does not reach full performance	Rocker switches not completely pressed to the side	Press the rocker switches completely to the side
Spreader moves in opposite direction under load	Check valve defective	Have the appliance checked by an authorised service centre
Rescue equipment does not function	Battery is dead	Place the battery on the charger. The displays on the battery and charger give information about the battery charge status

11 Decommissioning / recycling

After its operating life has expired, dispose of the appliance properly. However, individual parts can be reused.

The hydraulic oil must be drained completely and caught. Note that hydraulic oil must be disposed of separately!

The local disposal requirements are applicable to disposal of all equipment parts and packaging materials.

Do not dispose of electrical tools with domestic waste! In accordance with European Directive 2002/96/EC about old electrical and electrical appliances as implemented in national law, used electrical appliances must be separately collected and passed on for environmentally responsible recycling.



NOTE!

Please ask your supplier about disposal of the equipment.

12 EC Declaration of Conformity



WEBER-HYDRAULIK GMBH
Emil Weber Platz 1, A-4460 Losenstein, Austria



DECLARATION OF CONFORMITY

according to Directive 2006/42/EC

Herewith we declare, that our "Hydraulic rescue Equipment"

SPREADERS	SP 44 AS E-FORCE3, SP 50 BS E-FORCE3, SP 54 AS E-FORCE3
CUTTERS/COMBI-TOOLS	RSU 180 PLUS E-FORCE3, RSX 185 E-FORCE3, RSU 210 (PLUS) E-FORCE3, RSC 170 (PLUS) E-FORCE3, RSC 190 (PLUS) E-FORCE3, RSC 200 (PLUS) E-FORCE3, RSC F7 E-FORCE3, RIT- TOOL E-FORCE3, SPS 270 MK2 E-FORCE3, SPS 360 MK2 E-FORCE3, SPS 370 MK2 E-FORCE3, SPS 400 MK2 E-FORCE3, SPS 480 MK2 E-FORCE3
RAMS	RZ 1-910 E-FORCE(2/3), RZ 1-1095 E-FORCE(2/3), RZT 2-1170 E-FORCE(2/3), RZT 2-1360 E-FORCE(2/3), RZT 2-1500 E-FORCE(2/3)
SPECIAL TOOLS	BC 250 MK2 E-FORCE3, SPK 250 MK2 E-FORCE3, DO 140 MK2 E-FORCE3, C 120 MK2 E-FORCE3
POWERSUPPLY	Battery 3,0 Ah, Battery 5,0 Ah Battery charger's (tested by sub supplier- see separate CE- certificate's)
ACCESSORIES	and accessories to all tools

meets the relevant basic safety and health requirements of the Directive

EC-MACHINE DIRECTIVE 2006/42/EC

EC-LOW VOLTAGE DIRECTIVE 2014/35/EC

EC-ELECTROMAGNETIC COMPATIBILITY DIRECTIVE 2014/30/EU

EC-DIRECTIVE RoHS 2011/65/EU


For the relevant implementation of the safety and health requirements mentioned in the directives, the following standards and or technical specifications has been respected:


EN 13204 : 2016	EN 61000-6-1: 2019	EN ISO 13857 : 2019
NFPA 1936 : 2020	EN 61000-6-2: 2019	EN ISO 12100 : 2010
DIN 14751-4 : 2011-04	EN 61000-6-3: 2006 + A1:2010	EN ISO 13849-1 : 2008
DIN EN 62311:2008-09	EN 61000-6-4: 2019	
EN 60529 : 1991 + A1:2000 + A2:2014		

The tools are tested according to EN 13204:2016 and NFPA 1936:2020 through TÜV-Süd and SGS.
Authorised person to compile the technical file(s): Josef Eder - Head of Development

Losenstein, 09.01.2024

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