

# OPERATING INSTRUCTIONS

## **FreeSet®**

- Operating instructions -



NOTE

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**Battery blind rivet tool  
RK-777C-1(Q/STR)**

Issue date:

Tool Firmware:

FreeSet Manager:

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# 1 Operating principles

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Dear customers,

thank you for choosing a RivetKing product.

This quality product fulfils the highest requirements with regard to performance, quality and accuracy. When used correctly the product will undoubtedly perform very well for many years.

These operating instructions contain information on safety and for the operation of the tool. In addition it contains information on the dimensions and technical data. We would be happy to assist you with additional information or to answer your questions. Our technical support and our technicians would be happy to assist you.

## 1.1 Scope of delivery

- Cordless blind riveting tool
- USB Cable (Type A on Mini B)
- Operating instructions

## 1.2 General information

Read the tool operating instructions before initial operation. **Please pay particular attention to Chapter 2 „General Safety Notes“.**

This operating instruction should make it easier for the operator to get to know the tool and to use it for its intended purpose. The operating instructions include important information related to the safe and proper operation of the tool. Compliance with these instructions helps you to:

- Avoid hazards
- Avoid repair costs and downtimes
- Increase the reliability and the lifespan of the product.

This operating instructions must be read and applied by every person who is assigned to conduct work using this tool.

In addition to this operating instructions the applicable regulations on accident prevention and environmental protection should be observed.








**NOTE**

After reading, keep the operating instructions in a place accessible to every operator. If you have any further questions, please feel free to contact us.

### 1.3 Signs and symbols used

The following signs and symbols will be used in this operating instructions or on the product:

Symbol	Explanation
	Read this operating instructions
	Do not dispose with household waste
	Do not dispose the battery in a fire
	Do not throw the battery into water
	EU conformity marking
	Registered trademark
	Use only indoors
	Protection class II
	Intrinsically safe transformer
	Battery is charging
	Defective battery
	Battery fully charged
	Direct current
	Universal Recycling Symbol

## 1.4 Structure of the warnings

The warnings are structured as follows:



### **DANGER**

Indicates an immediate dangerous situation that can lead to serious or even deadly injuries and/or that could seriously damage or even destroy the tool.



### **WARNING**

Indicates a potentially dangerous situation that can lead to serious injuries and/or damage to the tool.



### **NOTE**

Important and useful informations on using this tool.

## 1.5 Technical terms and abbreviations used

Abbreviation	Meaning
°C	Degrees Celsius, temperature
AC	Alternate current
Ah	Amp hours, electric charge, battery capacity
$a_{hv}$	Overall vibration
dB(A)	Decibels, sound pressure level (A-weighted)
DC	Direct current
Hz	Hertz, Frequency
Li-Ion	Lithium-ion, battery technology
$L_{pA}$	Emission sound pressure level, workplace-related
$m/s^2$	Acceleration, Vibration

Abbreviation	Meaning
min <sup>-1</sup>	Revolutions per minute, Speed
mNN	Meters above sea level, height
SN	Serial number
V	Volts, electrical voltage
W	Watts, electrical power

## 1.6 Intended use

This battery operated blind riveting tool was designed to prepare rivet joints. The tool may only be used for this purpose as described in this operating instructions. Only materials that are suitable for this type of tool may be used.



### WARNING

Intended use also includes

- following all indications of the operating instructions and
- observance of inspection and maintenance works.

Any other use or use beyond that is considered improper use. Industrial Rivet & Fastener is not liable for any damage resulting from this.

## 1.7 Improper use



### DANGER

The use of this tool for other purposes, e.g. for hammering, is not permitted. Improper use or incorrect accessories can lead to dangers with unforeseeable consequences.

We accept no liability for damage and malfunctions resulting from non-observance of these operating instructions and improper use.



## **1.8 Duties of the operator**

The operator undertakes to only allow people who are familiar with the basic regulations on occupational safety and accident prevention and who have been trained on how to use the tool at the workplace to work with this tool.

The safety awareness of the personnel while working has to be reviewed at regular intervals.

In addition it is necessary to established safety measures for operator safety which are based upon an estimation of the vibration load during actual conditions of use.

## **1.9 Duties of personnel**

Prior to its use all people who work with this tool are obligated to inform themselves of the applicable workplace safety and accident prevention regulations for this power tool and to observe them.

It is recommended that every operator wears hearing protection.

## **1.10 Training of personnel**

Only trained and instructed personnel should work with this tool. The responsibilities of the personnel must be clearly defined. Trainees may only work with this power tool under the supervision of an experienced person.

## **1.11 Guarantee and liability**

Guarantee and liability claims for personal injury and property damage are excluded, if caused by one or more of the following:

- improper use
- failure to observe these operating instructions
- improper installation, commissioning, operation and maintenance of the device
- Operating the device with defective safety devices or improperly installed, or non-functioning safety and protective devices
- Failure to observe the information in the operating instructions regarding transport, storage, assembly, commissioning, operation and maintenance of the device
- unauthorised structural modifications to the device
- improperly performed repairs
- catastrophes due to external influences and acts of God

## 1.12 Copyright

These operating instructions are intended solely for the operator and its personnel.

They contain guidelines and information which may not be fully, or partially

- reproduced
- distributed or
- otherwise shared.

The copyright of these operating instructions is retained by its owners.

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## 2 General safety information for power tools

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### DANGER

Read all the safety information, instructions, illustrations and technical data which is provided with this power tool. Failure to follow the instructions below may result in electric shock, fire and/or serious injury.



### WARNING

This power tool was manufactured in accordance with current state-of-the-art technology and recognized technological safety guidelines. However, its use may jeopardize the health and life of the user or third parties, or risk damage to other property.



### WARNING

The workplace must only be used in accordance with its intended use and in perfect condition.



### NOTE

Keep all safety information and instructions for the future.



### NOTE

**Only have your device repaired by qualified professional staff and only with original replacement parts which are available at RivetKing®.** This ensures that the safety of the device is maintained.

The term „power tool“ used in the safety information refers to mains-operated power tools (with mains cable) and to battery-operated power tools (without mains cable).

### 2.1 Occupational safety

- a) **Keep your work area clean and well-lit.** Cluttered or dark work areas can lead to accidents.
- b) **Do not work with the power tool in an explosive environment in which there are flammable liquids, gases or dust.** Power tools generate sparks that can ignite the dust or fumes.
- c) **Keep children and other people away while using the power tool.** You can lose control of the power tool if you are distracted.

## 2.2 Electrical safety

- a) **Avoid body contact with grounded surfaces such as pipes, heaters, stoves and refrigerators.** There is an increased risk of electric shock if your body is grounded.
- b) **Keep power tools away from rain or moisture.** Penetration of water into a power tool increases the risk of electric shock.
- c) **Do not misuse the connection cable in order to carry, or hang up the charger, or to pull the plug out of the socket. Keep the connection cable away from heat, oil, sharp edges or moving parts.** Damaged or tangled connection cables increase the risk of electric shock.
- d) **If operating the charger in a damp environment cannot be avoided, use a fault-current circuit breaker.** The use of a fault-current circuit breaker reduces the risk of electric shock.
- e) **Check the electrical equipment regularly. Immediately remove loose connections and scorched cables.** Loose connections or scorched cables can lead to electric shock and risk of fire.

## 2.3 Safety of people

- a) **Be alert, pay attention to what you are doing and take care when you are working with a power tool. Do not use a power tool when you are tired or under the influence of drugs, alcohol or medication.** A moment of inattention while using the power tool can result in serious injury.
- b) **Wear personal protective equipment and always safety glasses.** Wearing personal protective equipment such as a dust mask, non-slip safety shoes, safety helmet or hearing protection, depending on the type and use of the power tool lowers the risk of injury.
- c) **Prevent accidental starting. Ensure that the power tool is switched off before you connect it to the power supply and/or the battery, pick it up or carry it.** Accidents can occur if you have your finger on the switch while carrying the power tool or if you connect the power tool to the power supply when it is switched on.
- d) **Avoid abnormal postures. Make sure you have a secure footing and keep your balance at all times.** This gives you better control of the power tool in unexpected situations.

- e) **Wear suitable clothing. Do not wear loose clothing or jewellery. Keep hair and clothing away from moving parts.** Loose clothing, jewellery or long hair can get caught in moving parts.
- f) **Do not lull yourself into a false sense of security and do not disregard the safety rules for power tools, even if you are familiar with the power tool after repeated use.** Careless action can lead to serious injuries within a split second.
- g) **Actively avoid accidentally switching on the power tool. If the tool is to be in idle mode for a long time, remove the battery beforehand.** This prevents unintentional start-up.

## 2.4 Use and handling of power tools

- a) **Do not overload the power tool. Use the power tool specific for the work you are doing.** With the appropriate power tool you will work better and more safely in the power range indicated.
- b) **Do not use any power tool which has a defective switch.** A power tool which can no longer be switched on or off is dangerous and must be repaired.
- c) **Remove the detachable battery before you make changes to device settings, change application tool parts or put away the power tool.** This precaution prevents unintentional start up of the power tool.
- d) **Keep unused power tools out of the reach of children. Do not let anyone use the power tool who is not familiar with it or has not read this operating instructions.** Power tools are dangerous when used by inexperienced people.
- e) **Maintain power tools and the application tool with care. Check whether moving parts function properly and do not jam, whether parts are broken or damaged in such a way that the function of the power tool is affected. Have damaged parts repaired before using the power tool.** Many accidents are caused by poorly serviced power tools.
- f) **Keep the tool sharp and clean.** Carefully maintained tools jam less often and are easier to manage.
- g) **Use power tools, application tools, etc. in accordance with these instructions. While doing so observe the work conditions and the activities to be performed.** The use of power tools for anything other than the intended application can lead to dangerous situations.

- h) **Keep handles and gripping surfaces dry, clean and free of oil and grease.** Slippery handles and gripping surfaces do not allow safe operation and control of the power tool in unforeseen situations.
- i) **Use the correct power tool.** Do not use under-performing tools for heavy loads. Do not use tools for purposes and work for which they are not intended.
- j) **Check your device for damage.** Before continued use of the tool safety equipment must be tested for proper and intended function. Check whether the function of moving parts is okay, whether they do not jam, whether any parts are broken, whether all other parts function properly and whether all conditions which must be met for the proper operation of the device have been met. Damaged protective devices and parts should be properly repaired, or replaced by trained customer service unless otherwise specified in this operating instructions. Damaged switches must be replaced by a customer service workshop. Do not use any tools which cannot be properly switched on and off using the start button.

## 2.5 Use and handling of battery tools

- a) **Charge the battery only with charging devices which are recommended by the manufacturer.** There is a risk of fire if the battery is used on an unsuitable charger and the battery can be permanently damaged.
- b) **Use only the specifically designated battery for the power tool.** The use of other batteries can lead to injuries and the risk of fire.
- c) **Keep the unused battery away from paper clips, coins, keys, nails, screws or other small metal parts which could cause a bypass of the contacts. Do not open the battery and do not short circuit.** A short circuit between the battery contacts can lead to burns or fire.
- d) **Fluid can leak out of the battery in the event of incorrect use. Avoid contact with it. In the event of accidental contact with skin rinse with water. If the fluid comes into contact with the eye seek medical help.** Leaking battery fluid can lead to skin irritations or burns.
- e) **Do not use damaged or altered batteries.** Damaged or altered batteries can behave unpredictably and can lead to fire, explosion or injury.
- f) **Do not expose a battery to fire or high temperatures.** Fire or temperatures above 130°C can cause an explosion.

- g) **Follow all instructions for charging and never charge the battery or the battery tool outside of the temperature range specified in the operating instructions.** Incorrect charging or charging outside of the approved temperature range can damage the battery and increase the risk of fire.

## **2.6 Service**

- a) **Only have your power tool repaired by qualified professional staff and only with original replacement parts which can be available at Industrial Rivet & Fastener.** This ensures that the safety of the power tool is maintained.
- b) **Never perform maintenance on damaged batteries.** All maintenance of batteries may only be completed by the manufacturer or authorised customer service locations.



## 3 Important information about this tool

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### 3.1 Handling the associated lithium ion battery

- a) **Observe the operating instructions of the Li-Ion battery.**
- b) **If the battery will not be used over a longer period of time it may not remain on the charger or on the machine.** If an interruption of work of more than 3 hours is expected the battery must be removed from the tool. Otherwise it cannot be excluded that the battery will be permanently damaged.
- c) **For safety reasons the Li-Ion battery should not remain on the activated charger for longer than 36 hours.** Remove the battery from the charger as soon as possible after charging is complete.
- d) **An empty battery should not be in contact with the machine or a charger disconnected from the mains for a longer period of time.** In both instances low currents flow which totally discharge the battery and can permanently damage it.
- e) **Always charge the Li-Ion battery as soon as possible after use and do not store it when empty.** If the battery is stored separately from the tool and the charger it's capacity will remain constant for a long period of time (loss approx. 5% per year).
- f) **Always transport the battery separately from the machine if possible.** This prevents accidental switching on of the machine as well as a total discharge of the battery.
- g) **Do not subject the Lithium-Ion battery to high temperatures (above 50°C) or direct sunlight.** If the battery gets warmer than 50°C during operation (charging or discharging) it must be immediately separated from the charger or the tool.
- h) **Under extreme use or temperature conditions batteries may leak. In the event of a leaky battery avoid contact with the skin or eyes.** The battery fluid is corrosive and can cause chemical burns to tissue. If the fluid comes into contact with the skin it must be washed immediately with soap and water and then rinsed with lemon juice or vinegar. If the fluid comes into contact with the eyes they must be rinsed for at least 10 minutes with water and a doctor must be consulted immediately.
- i) **Ensure that the Li-Ion battery does not fall or is not subjected to vibrations or shocks.**
- j) **Clean the battery contacts regularly with a cotton swab dipped in high-proof alcohol.**



#### NOTE

Lithium-Ion batteries have almost no self-discharge and have no memory effect. With proper and professional handling your tool will be reliably supplied with high energy density for a long period of time.

### 3.2 Information on the associated charger

- a) Observe the operating instructions of the charger.
- b) The charger may not be connected to a step-up converter, generator or a direct current outlet.
- c) Ensure that the ventilation slots on the charger are not covered or blocked.
- d) Never charge the battery inside a carton or a closed container. They battery may only be charged in a well ventilated location.
- e) Do not charge the battery at temperatures BELOW 10°C or ABOVE 40°C.
- f) Do not store the power tool, the charger and the battery in locations in which temperatures are above 50°C. In particular, avoid direct sunlight.

### 3.3 Structural modifications

No changes, additions or conversions to the power tool may be made without the approval of the manufacturer.

All conversion measures require written consent and confirmation by **Industrial Rivet & Fastener**.



#### **WARNING**

In the event of the replacement of wear and tear parts only original replacement parts may be used.

### 3.4 Cleaning the device and disposal

Substances and materials used must be handled and disposed of properly, particularly when cleaning with solvents.

**Do not throw the used battery into the household waste, fire or water, instead have it professional disposed of by a specialist or the manufacturer.**



## 4 Start-up and use

---

### **DANGER**

#### **Risk of injury from damaged tools**

Damaged tools can lead to injuries or damages.

- All damaged parts must be repaired before use.

#### **Risk of injury from falling tools**

Falling tools can lead to injuries or damages.

- Ensure you are self-belayed and have a secure footing.
- Avoid dropping the tool.



#### **Risk of burns due to hot exhaust air**

Hot air can escape through exhaust openings.

- Do not place any sensitive body parts directly in front of exhaust openings.

#### **Risk of injury due to improper use**

Improper use can lead to injuries or damage.

- Use the tool only for the intended purposes.

#### **Risk of injury from substances**

Substances such as lubricating oil and grease are flammable on the skin.

- Avoid contact with such substances.
- Should you still come into contact wash the affected area carefully.



### **NOTE**

Maintain your tool with care. Follow the operating instructions during maintenance and cleaning. Keep the handle free of lubricants and dirt.



### **NOTE**

Do not drop the tool, and do not let any other objects fall onto the tool. Protect it from impacts.



### **NOTE**

Ensure that the tool does not come into contact with splashing water or oil.

## 4.1 Tool structure

1. Start button
2. Traction head with mouthpiece
3. Riveting mandrel container
4. Multi-colour LED
5. 18 V Li-ion battery
6. OLED Display
7. LED for work area lighting



## 4.2 Operation

### 4.2.1 Inserting and removing the battery

- In order to insert the battery (1), align it so that it can be easily pushed onto the mounting provided along the plastic guide. After sliding it on completely, the fastening clip (2) must lock the battery firmly and properly into place in the tool housing.
- In order to remove the battery push the fastening clip on the front side of the battery down and pull the battery forward and off.
- Don't use force to install the battery. If the battery can not be easily pushed on it was not correctly positioned.



#### NOTE

Always push the battery all the way in until it locks into place with a click.



#### WARNING

##### Risk of injury from falling battery

If the battery is not correctly locked it can fall out and cause injuries.

- Always ensure that the battery is fully locked into place.



1 - Battery

2 - Fastening clip

### 4.2.2 Press start button

Pressing or actuating the start button starts or stops the tool.



#### NOTE

The battery riveting tool only starts when the battery has sufficient capacity.



\* - Start button

### 4.2.3 Front LED



#### WARNING

##### Risk of injury from the light emitting diode

Looking directly into the light emitting diode can lead to eye injuries.

- Never look directly into the light emitting diode.

- The LED on the front of the tool is used to illuminate the assembly area. After pressing the start button, the LED lights up. It turns off automatically after a few seconds. The afterglow time of the LED can be parametrised in the Freetset Manager Software under „setup“  
→ „general“ → „energy&lighting“.



\* - Front LED

## 4.2.4 LED indicator at the back and sound signals

### Circumferential indicator lights up green after setting, no sound signal

- The parametrised setting was completed successfully.
- The battery capacity is sufficient, the tool is ready for the next setting.

### Circumferential indicator lights red after setting, no sound signal

- A programmed parameter was not reached.



\* - LED Light indicator

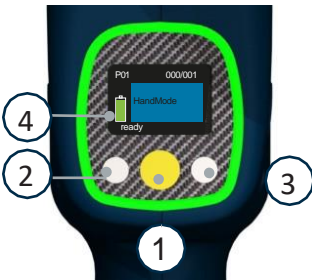


### NOTE

The tool will only start after a battery change if the battery has sufficient capacity.

## 4.2.5 OLED display

- After a sufficiently charged battery has been pushed on the tool will start.
- After pressing the start button, the tool is initialized. The back, circumferential indicator briefly lights up with multiple colors. A beep sounds and on the back of the tool the display indicates the current status.
- The tool is now ready for use.
- After several seconds without actuation the display will dim. After longer downtime the tool will switch into standby mode.



1. Button for menu activation and selection
2. Button for decreasing value (-)
3. Button for increasing value (+)
4. State of charge display



## 4.2.6 Empty remaining collection container

The riveting mandrel container for the torn off riveting mandrels must be emptied regularly. Turn the container by hand approx. 45° „counter clockwise“ or „clockwise“ in order to loosen it and remove it from the riveting machine.

In order to place the riveting mandrel container back on after emptying align the noses and turn the riveting mandrel container approx. 45° until it locks into place and is flush with the riveting mandrel container mount on the tool.

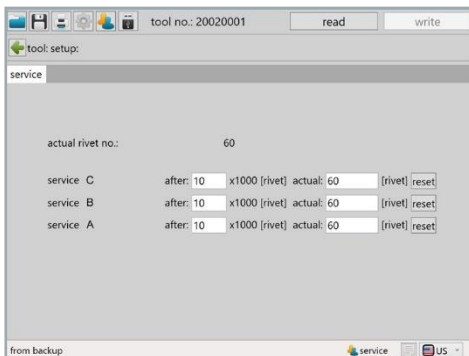


### NOTE

Blockage of the riveting mandrel container must be avoided, otherwise the tool could be damaged.

The tool has a reminder function for emptying the riveting mandrel container. To this end the emptying of the mandrel container can be set with the „Service“ user in the Freeset Manager Software.

In addition a minimum time for emptying can be set. This can prevent an employee from briefly turning the riveting mandrel container back and forth, instead of emptying it.



## **DANGER**

### **Risk of injury from projecting rivets**



Injuries can result if you do not use the original, undamaged riveting mandrel container

- Always use only the original, undamaged riveting mandrel container
- Ensure that the container is correctly installed (fully latched locking mechanism)

In order to prevent use of the tool without a riveting mandrel container the riveting mandrel container is monitored using a sensor. The tool can not be operated without the riveting mandrel container and displays the following error message:



### 4.2.7 Reducing pipes

We provide suitable reducing pipes for rivets with a mandrel diameter smaller than 3.2 mm for RBx-15 or smaller than 4.0 mm for RBx-20. Reducing pipes reduce the diameter of the guide tube through the tool and thereby prevent the remaining rivet mandrel from jamming in the guide tube.

Tool type	Tool guide tube	Reducer Reducing pipe	Item number Reducing pipe
RK-777C-1Q	5.0 mm	2.4 mm	040013001
RK-777C-1Q	5.0 mm	3.4 mm	040012002
RK-777C-1STR	6.3 mm	2.4 mm	040013001
RK-777C-1STR	6.3 mm	3.4 mm	040013002

#### WARNING



#### Risk of injury due to use of incorrect rivets

Using rivets with the incorrect mandrel diameter can lead to significant damage to the tool and cause injuries

- Do not use a rivet with a mandrel diameter below 3.2 mm (RK-777C-1Q) or 4.0 mm (RK-777C-1STR) without a reducing pipe.

### 4.2.8 Selection of nose piece

You can use the riveting tool for processing different size rivets. When doing so, note the exact specification of the rivet and adjust the nose piece and reducing pipe, if necessary (chapter 4.2.7 von page 27).

The maximum riveting mandrel diameter is  $\varnothing$  1.5 - 4.5 mm for RK-777C-1Q and 1.5 – 4.5 mm for RK-777C-1STR, with special traction heads diameters of > 4.5 mm are also possible.

Measure the diameter of the riveting mandrel and select the next largest nose piece. e.g. riveting mandrel diameter 2.7 mm / mouthpiece RK777-NP32 (3.2 mm max. riveting mandrel diameter + reducing pipe 040013002). The minimum mandrel length for standard nose pieces is 30 mm and for security nose pieces 35 mm.

Use a 12 mm and 14 mm wrench size tool for mounting the mouthpiece.



#### 4.2.9 Selection of nose assembly

Tool type	Fastener	Compatible traction head
RK-777C-1Q	Blind Rivets 4.8 Max	040054000
RK-777C-1STR	Blind Rivets 6.4 Max	040055000
RK-797C-1STR	Lockbolts	Huck / Arconic / Howmet / Gage Bilt *

\* There is no guarantee that all traction heads from the manufacturer's named will fit. Contact us for further information.

#### WARNING



#### Risk of injury due to incorrect installation

Incorrectly installed traction heads can lead to injuries

- Assemble the traction heads only in accordance with the quick guides provided by Industrial Rivet

#### 4.2.10 Set fastener

##### NOTE



Always place the riveting tool at a right angle (90°) to the work surface to be riveted. An oblique placement leads to faulty riveting. Use only appropriate mouthpieces for the rivet. An incorrect mouthpiece can lead to damages in the clamping jaws as well as the mouthpiece. You can find the size of the bore and the clamping area in the rivet manufacturer's information.



1. Place blind rivet in mouthpiece.
2. Guide the blind rivet into the hole provided.
3. Press the blind rivet against the component in order to activate the pressure trigger (chapter 4.2.11 on page 30).
4. Start setting process by pressing the start button, hold start button down.
5. The tool will recognise the break (chapter 4.2.12 on page 31) and automatically returns to the starting position.
6. Release start button.
7. Let the broken rivet slide into the riveting mandrel containers by tipping the riveting tool.

## 4.2.11 Contact pressure sensor

The pressure trigger ensures that the blind rivet can only be processed if the pressure trigger is activated. This prevents accidental triggering and ensures that the parts to be processed are lying next to each other.

The pressure trigger can be deactivated in the Freetset Manager Software as described below.

### **DANGER**

#### **Risk of injury from unavailable / deactivated pressure trigger**

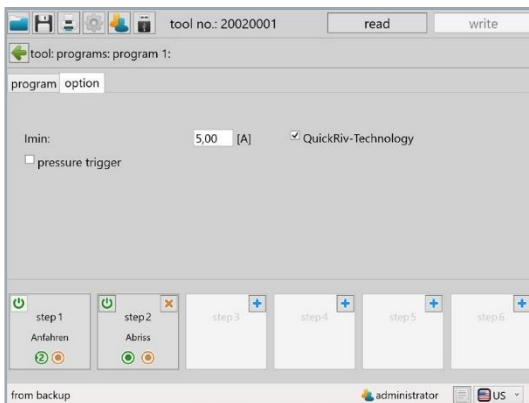


Tools without, or with deactivated, pressure trigger can be triggered without being placed on a part; significant risk of injury results from projectile rivets

- The tools may only be used by trained personnel
- Wear safety glasses and gloves
- Guide the rivet into the mouthpiece only directly before beginning the riveting process

In order to deactivate the pressure trigger read out the tool by using the Freetset Manager Software as described in chapter 4.3 on page 35.

- Click „programming“
- Select the program, for example program 1, in which the pressure trigger should be deactivated
- Click „option“
- Remove the check mark next to „Pressure trigger“ (see image)
- Click „write“



The pressure trigger can not be used in the following tool types due to the system:

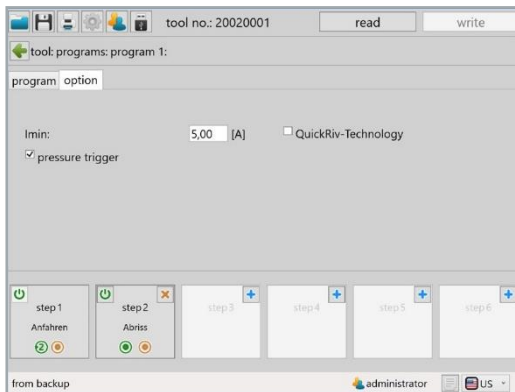
- RK-797C-1

## 4.2.12 QuickRiv-Technology

The tool has a monitor which automatically recognizes when the rivet mandrel breaks and returns the tool back into the starting position. Depending on the traction head or fastener, the break detection must be deactivated. This can be done in the Freeset Manager Software.

In order to deactivate the break detection read out the tool in the Freeset Manager Software as described in chapter 4.3 on page 35.

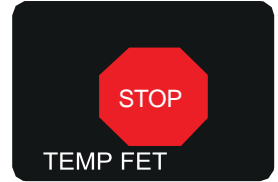
- Click „programming“
- Select the program, for example program 1, in which the pressure trigger should be deactivated
- Click „option“
- Remove the check mark next to „QuickRiv-Technology“ (see image)
- Click „write“



### 4.2.13 Overload

In order to avoid damages as a result of excess temperatures during continuous operation it is important to observe sufficient break times during the installation process.

If the tool should go into an automatic shut-down (TEMP FET) as a result of excess temperatures the break times should be reviewed and adjusted.



Continued work is only possible after a cooling off period in order to protect the tool from lasting damage.

### 4.2.14 Standby and Shut-down mode

After approx. 10 minutes without actuation → the tool switches to standby mode  
The tool starts up again by briefly tapping on the start button.

After another approx. 30 minutes without actuation → automatic shut-down  
Start-up by pressing the start button if the battery has not yet been removed, or right after sliding the battery back on. Both are only possible if the battery has sufficient charge capacity.



#### NOTE

In the case of longer period of non-use (longer than 3 hours) the battery must be separated from the tool in order to prevent deep discharge of the battery.



## 4.2.15 Charge state of the battery










### NOTE

The tool will only start if the battery has sufficient charge capacity.

When fully charged, the battery will display the charge state on the display on the left side as a green battery symbol. As the battery voltage decreases the color of the symbol will change to yellow and then red. When it reaches red an additional warning signal will sound, the display will read „warn batt“ and recommend changing the battery. After several additional installations, the tool will no longer start and the display will read „batt low 2“ with a crossed through battery. The battery must then, at the latest, be changed (chapter 4.2.1 on page 22).



## 4.2.16 Display notifications

Display notification	Meaning	Required action
	Undervoltage warning, Battery empty (batt low 1)	Change / charge battery
	Battery empty (batt low 2) Tool is not working anymore	Change / charge battery
	Excess temperature „FET“	Let tool and battery cool down
	Hardware error (Defect on motor, Sensor, etc.)	Tool must be serviced
	The tool indicates that the service interval for the clamp- ing area cleaning has been reached.	Clean clamping jaws
	Maintenance service counter	Tool must be serviced
	Complete overhaul service counter	Tool must be serviced



### NOTE

In cases of serious faults corresponding notifications will appear in the display. The tool must be sent to the manufacturer.

### 4.3 Freeset Manager Software

This excerpt shows only the most important functions for this tool type. A complete guide for the Freeset Manager Software is available for you to download on our website.

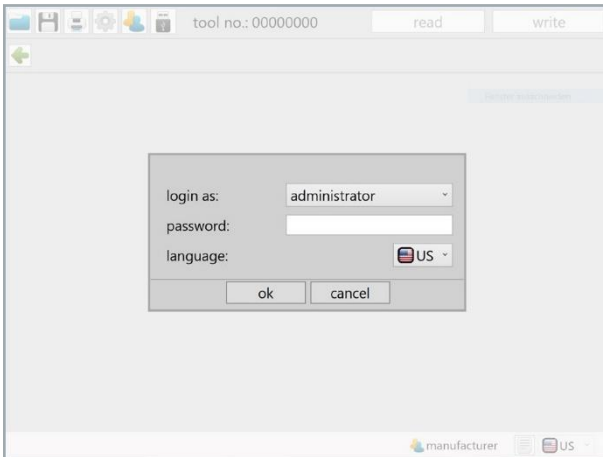
Download the current version of the Freeset Manager Software in the downloads area on the RivetKing® website [www.rivet.com](http://www.rivet.com).

#### NOTE



Always use the most current version of the Freeset Manager Software from the website. The Freeset Manager Software is backward compatible, i.e. it can also read and process older tool versions. If an update of your tool is necessary the Freeset Manager Software will inform you.

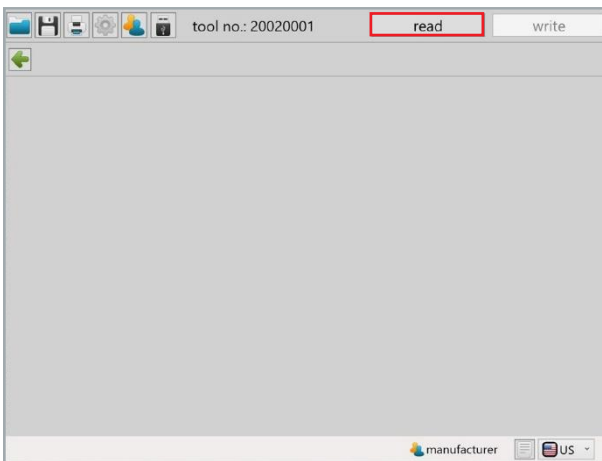
1. Start the Freeset Manager Software by double clicking the Freeset Manager Software icon:
2. Log-in with the required User, a list of the passwords can be requested from [info@rivet.com](mailto:info@rivet.com)



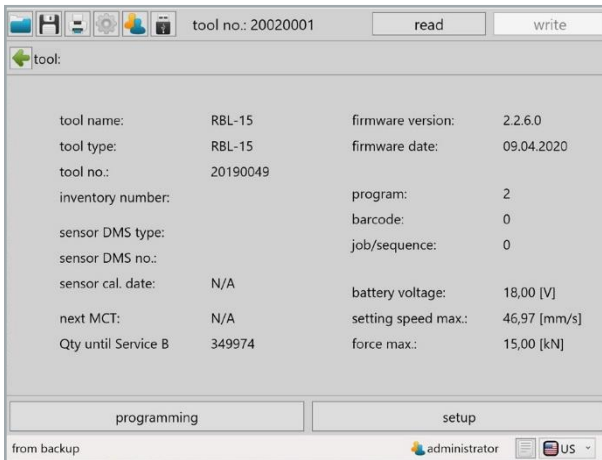
3. Insert the USB cable included into the Mini-B socket at the bottom of the tool and the opposite end into an open USB interface on your laptop / tablet / PC.



4. Click on the „Read“ button on the top right

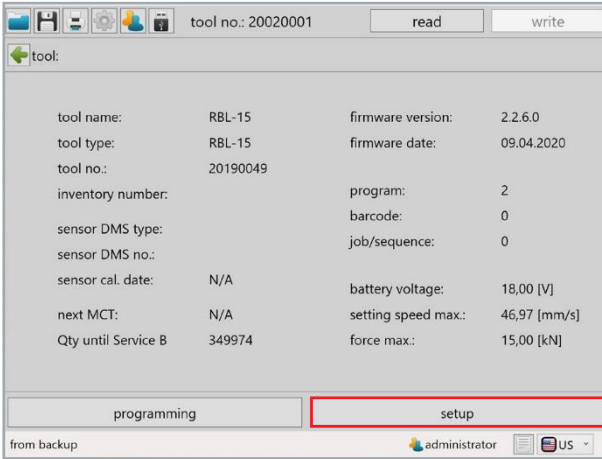


5. The Freset Manager Software will now read the settings from your tool and will display its progress using a green bar. At the end the tool overview will be displayed.



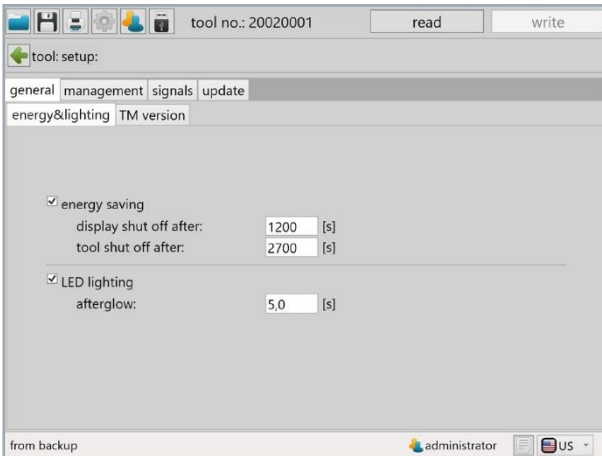
### 4.3.1 Setup

Clicking on setup takes you to the tool settings menu. Here, for example, the display, LED display, and energy savings settings...can be parameterized.



### 4.3.2 General → Energy & Lighting

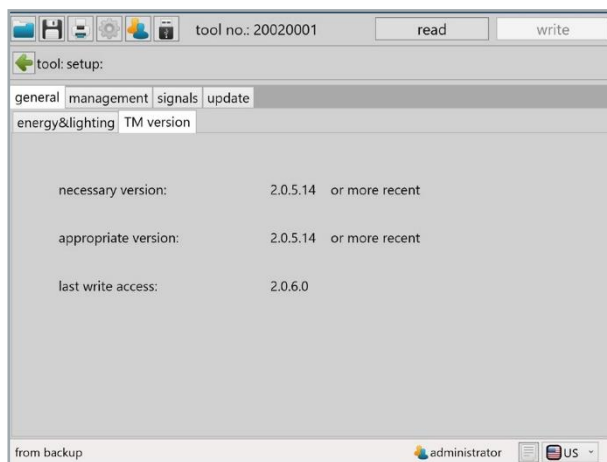
Here you can parametrise the energy saving options and the LED work lighting.



„energy saving“	The energy saving options can be activated or deactivated with the check-box.
„display shut off after“	Time in seconds without action after which the OLED display of the tool will switch off and the screen saver will activate. Default value: 600 seconds (10 minutes)
„tool shut off after“	Time in seconds without action after which the tool turns off. Default value: 1,800 seconds (30 minutes)
„LED lighting“	The LED lighting can be activated or deactivated with the check-box.
„afterglow“	The amount of time the LED lighting continues to glow after completion of the work process.

### 4.3.3 General → TM version

The TM tab will display the Freeset Manager Software version required for this tool, at minimum, the version intended for the application, and the version last written on the tool.

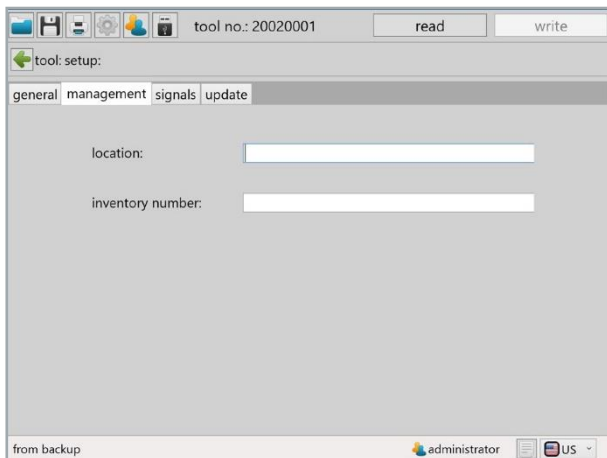


### 4.3.4 Management

The data on the operating site and the inventory number of the tool can be saved under management.

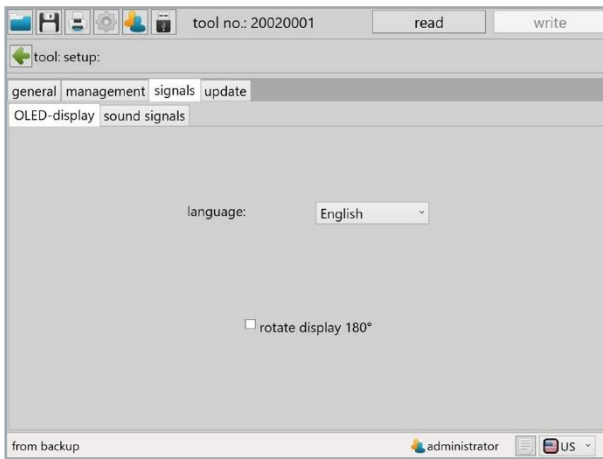
Location max. 20 characters

Inventory number max. 40 characters





### 4.3.5 Signals → OLED-display



---

„language“

Select the language on the OLED display, German or English  
Default: English

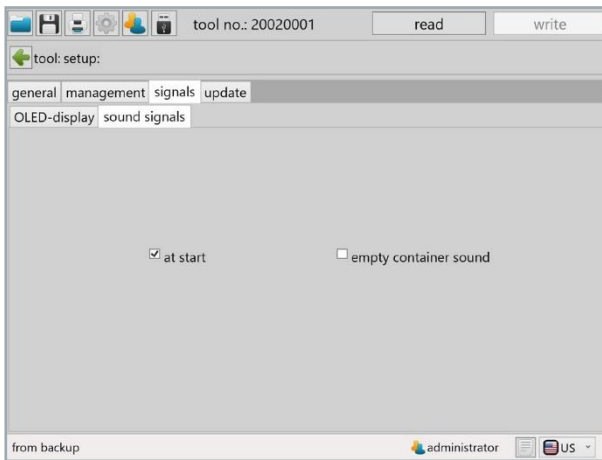
---

„Rotate display 180°“

Selecting the check-box turns the display on the OLED display by 180°.

---

### 4.3.6 Signals → Sound signals



---

„At start“

When the check-box is selected a signal will sound when the tool starts.

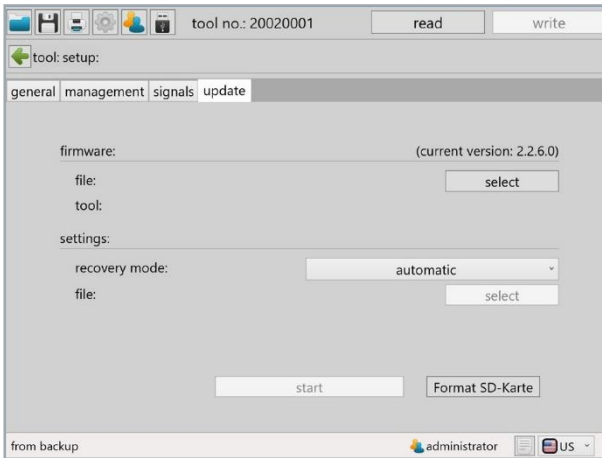
---

„Empty container sound“

If this check-box is selected a sound signal will sound in addition to the display notification when the riveting mandrel container needs to be emptied.

---

### 4.3.7 Update



#### Select

Click on select and find the .upd file provided by Industrial Rivet. Please select automatic under „Recovery mode“. Then click „start“.

The progress of the update will be displayed using a status bar and confirmed at the end with „done“. The tool is now up-to-date with the current firmware and has the same settings as prior to the update.

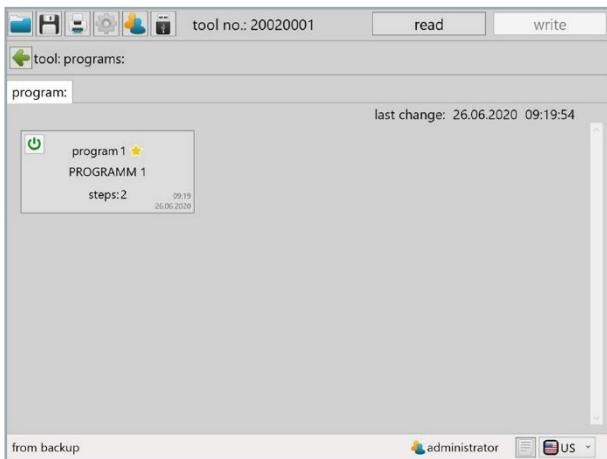


#### NOTE

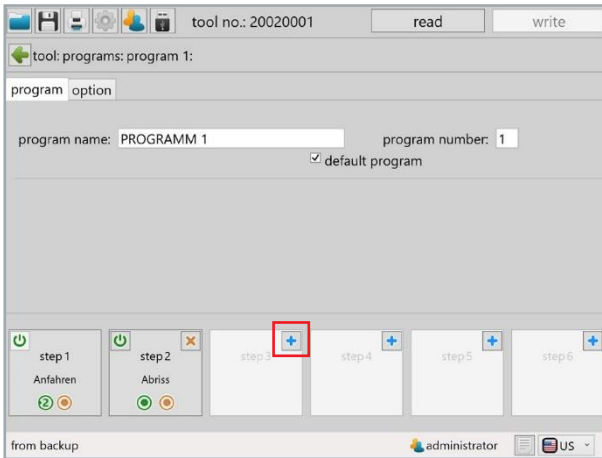
Do not pull out the USB cable during the update process!

### 4.3.8 Programming

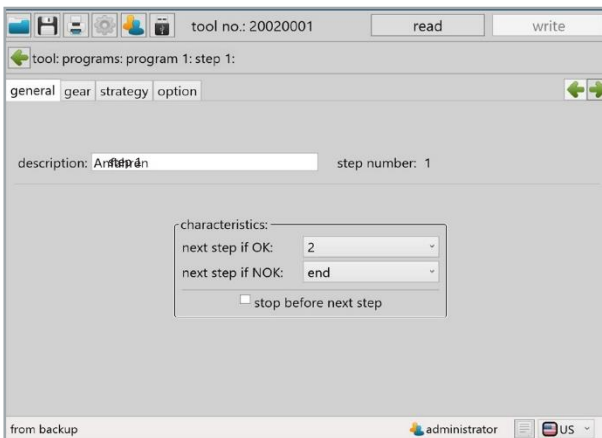
Clicking on „programming“ takes you to the program settings menu. Here you can set the speed, break recognition, contact pressure sensor, ....



### 4.3.9 Program

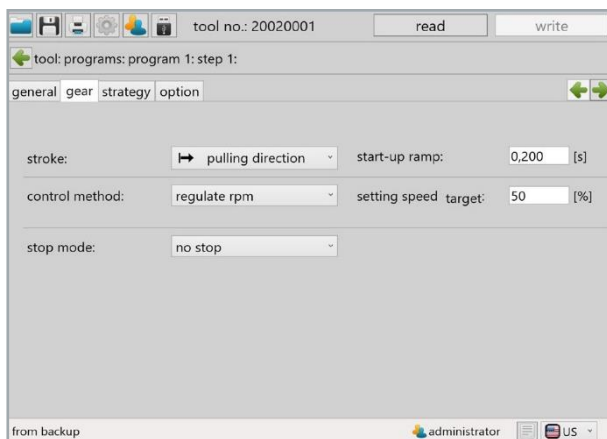


In program 1 up to 6 steps can be activated which can each be programmed individually. In order to set a step individual click the respective step. In order to create a new step click on the small blue plus sign on the top right in the step.



When you have clicked on a step the overview appears in the image above. The following settings can be made under „General“.

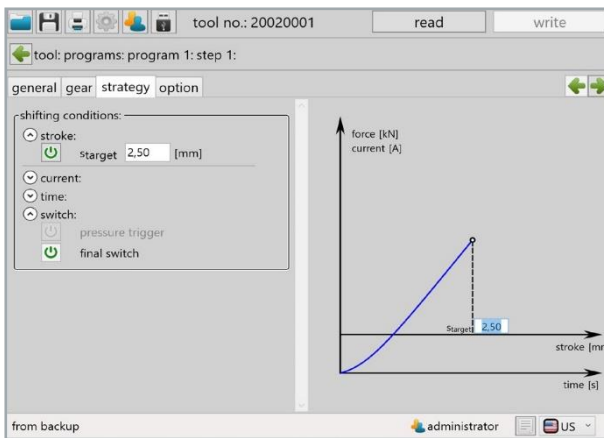
„Next step if OK“	Which action should follow if this step is complete and evaluated as OK can be selected in the drop down menu. e.g. jump to the next step or quit.
„Next step if NOK“	Which action should follow if this step is complete and evaluated as NOK can be selected in the drop down menu. e.g. jump to the next step or quit.
„Stop before next step“	If the check-box is selected the tool stops when reaching the step requirement (this is configured under setting procedure).



In the „gear“ tab the settings for speed and pulling direction can be made.

„stroke“	Sets the direction of the stroke. The default is „pulling direction“. The setting „start position“ is only required in special applications. In case of questions please contact our support at: <a href="mailto:support@rivet.com">support@rivet.com</a>
„start-up ramp“	This time defines which ramp the motor will drive to set rotation speed; recommended value 0.1 - 0.2 seconds.

„control method“	Setting the engine control. „Set speed“ is the default setting. In the „Regulate rpm“ control method the tool keeps the speed constant even under stress.
„setting speed <sub>Target</sub> “	Sets the setting speed in % of the maximum speed. Recommended speed for closing the clamping jaws, step1: 50%, for final setting, step 2: 80 - 100%.
„stop mode“	The selection between „no stop“ for switching between two steps and „ECO stop“ for the last step is found in the drop down menu.



In the „strategy“ the conditions for the rivet setting can be defined. The individual functions can be activated by clicking the on/off icon. Green means active, grayed out means inactive.

stroke „S <sub>Target</sub> “	S <sub>Target</sub> describes the stroke which the tool should use in this step. If this value is reached the tool will switch to the next step.
„S <sub>limit</sub> “	S <sub>limit</sub> describes the maximum stroke which the tool should use in this step. If this value is reached the tool will stop and display the NOK error message.
current „I <sub>Target</sub> “	I <sub>Target</sub> describes the current which the tool should use in this step. If this value is reached the tool will switch to the next step.

„I <sub>Start</sub> “	If I <sub>Target</sub> is activated I <sub>start</sub> appears. This value defines the point at which the stroke measurement for the setting step should be started.
„I <sub>limit</sub> “	I <sub>limit</sub> describes the maximum current which the tool may reach in this step. If this value is reached the tool will stop and display the NOK error message.
„I <sub>limit</sub> “	I <sub>limit</sub> describes the minimum current which the tool may not fall below in this step. If this value is not reached the tool will stop and display the NOK error message. I <sub>limit</sub> will be actively monitored after reaching I <sub>start</sub> .

## Time



### **DANGER**

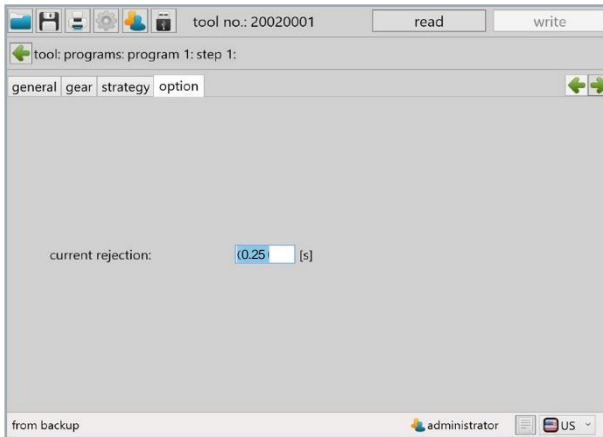
#### **Risk of injury due to incorrect settings**

Incorrect settings can lead to injuries or damages

- Settings may only be completed by experienced users

„T <sub>Target</sub> “	T <sub>Target</sub> describes the time which the tool should run in this step. If this value is reached the tool will switch to the next step.
„T <sub>limit</sub> “	T <sub>limit</sub> describes the maximum time which the tool may be in this step. If this value is reached the tool will stop and display the NOK error message.
Switch „Pressure trigger“	If the pressure switch function is activated during the step the pressure switch must be activated. Default: deactivated
„Final switch“	The limit switch function must be activated in the last programmed step so that the tool can not move on the block.





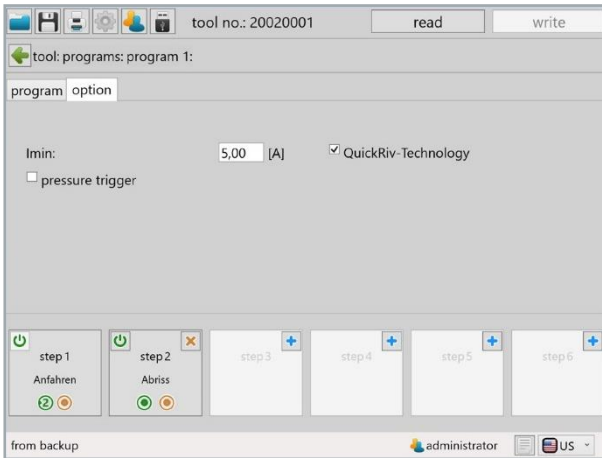
---

„Current rejection“

This function suppresses the start-up current of the motor when using a current setting in the setting process.  
Recommended value: 0.25 seconds.

---

### 4.3.10 Program → Option



Under program options you can configure the options for the program.

„ $I_{min}$ “

$I_{min}$  defines the minimum current for this step. If a current below this value is reached, no rivet will be set. The tool will display the message „blank stroke“ or „Leerhub“, depending on the language setting.



---

„QuickRiv-Technology“ The tool has a monitor which automatically recognises when the rivet mandrel breaks and returns the tool back into the starting position. Depending on the traction head or fastener, the break detection must be deactivated. The break detection is active if the check-box is selected.

---

„Pressure trigger“ The pressure trigger ensures that the blind rivet can only be processed if the pressure trigger is activated. This prevents accidental triggering and ensures that the parts to be processed are lying next to each other. The pressure trigger is active if the check-box is selected.

---

### **DANGER**

#### **Risk of injury from unavailable / deactivated pressure trigger**



Tools without, or with deactivated, pressure trigger can be triggered without being placed on a part; significant risk of injury results from projectile rivets

- The tools may only be used by trained personnel
- Wear safety glasses and gloves
- Guide the rivet into the mouthpiece only directly before beginning the riveting process

The pressure trigger can not be used in the following tool types due to the system:

- RK-797C

## 4.4 Maintenance and service

Apart from the regular cleaning and the inspection and maintenance of the clamping jaws the battery blind riveting device is largely maintenance-free.

### WARNING



#### **Risk of injury as a result of improper handling!**

Repair, maintenance and care of riveting tools must be completed professionally. After the work, no risk for the operator should exist during proper use. The operator may only conduct the work described here.

## 4.5 Cleaning



### NOTE

Observe the following information for cleaning your riveting device. Incorrect cleaning solutions or improper procedures when cleaning can lead to damage to the riveting device.

### 4.5.1 General information

Do not use any degreasing or corrosive cleaning solutions and no water. Do not spray any cleaning solutions, solvents or easily flammable materials into the openings of the housing! The guide pipe for guiding the blind rivet in the collection container should be cleaned daily (carefully blown out from behind with compressed air), in order to remove dust and shavings.

Clean the battery contacts and the battery connection on the tool with a cloth, cotton swab and a little alcohol when necessary.



## 4.5.2 Clean clamping jaws

1. Loosen cap nut
2. Pull sleeve away towards the front
3. Pull lock toward the back and hold, loosen clamping jaw housing
4. Remove clamping jaws
5. Clean or replace clamping jaws
6. Lubricate clamping jaws
7. Check pressure spring
8. Install in reverse order, and ensure that the lock correctly locks the clamping jaw housing
9. Tighten the cap nut by hand



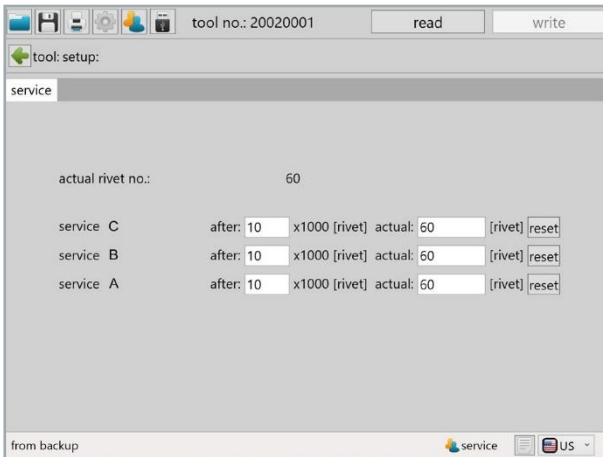
### 4.5.3 Service interval counter

The tool has an internal service interval counter which will inform the user of an inspection due. In this case you will receive the following notification in the display:



The service counters can be parametrised with the Freeset Manager Software under the „Service“ user. The respective value entered will be multiplied by 1,000, i.e. when entering 10 the service notification will appear on the display after 10,000 sets. If you enter 0 the function is deactivated.

The recommended service intervals are saved in the tool ex works. We would be happy to inspect the tools for you after reaching the service interval.



## 5 Storage

---

Observe the following information when storing riveters and chargers:

- Remove the battery when you are not using the riveting device.
- If you will not be using the battery for a longer period of time it should be stored, fully charged, in a dry, dust-proof area.
- Store the riveting device and charger in a dry environment protected against splashing water.
- Store the riveting device and charger in a well ventilated space and protected against exposure to dust.
- Ensure that the storage environment is free of aggressive chemicals and vapours.

## 6 Technical data

Description	RK-777C-1Q	RK-777C-1STR
Operating voltage	18 VDC	18 VDC
Device stroke	25 mm	25 mm
Setting force	max. 15 kN	max. 20 kN
Setting speed	max. 47 mm/s	max. 37 mm/s
Noise emissions ( $L_{pA}$ )	< 70 dB(A)	< 70 dB(A)
Measurement uncertainty (K)	3 dB(A)	3 dB(A)
Vibration ( $a_{hv}$ )	< 2.5 m/s <sup>2</sup>	< 2.5 m/s <sup>2</sup>
Measurement uncertainty (K)	1.5 m/s <sup>2</sup>	1.5 m/s <sup>2</sup>
Operating altitude	< 2000 mNN	< 2000 mNN
Operating temperature	10 - 40 °C	10 - 40 °C
Storage temperature	0 - 50 °C	0 - 50 °C
Dimensions (L x W x H)	approx. 302 x 73 x 270 mm	approx. 302 x 73 x 270 mm
Weight without battery & traction head	approx. 1.7 kg	approx. 1.7 kg
Weight with battery 2.5 Ah	approx. 2.0 kg	approx. 2.0 kg
Weight with battery 5.0 Ah	approx. 2.3 kg	approx. 2.3 kg
Feed-through	max. 4.5 mm	max. 6.3 mm
RK777-BATTERY1825	Li-Ion, 18 V, 2.5 Ah	Li-Ion, 18 V, 2.5 Ah
RK777-BATTERY1850	Li-Ion, 18 V, 5.0 Ah	Li-Ion, 18 V, 5.0 Ah
RK777-CHARGER1	220 - 240 VAC, 50 - 60 Hz, 65 W	220 - 240 VAC, 50 - 60 Hz, 65 W
Suitable for blind rivets	2.4 - 4.8	2.4 - 6.4

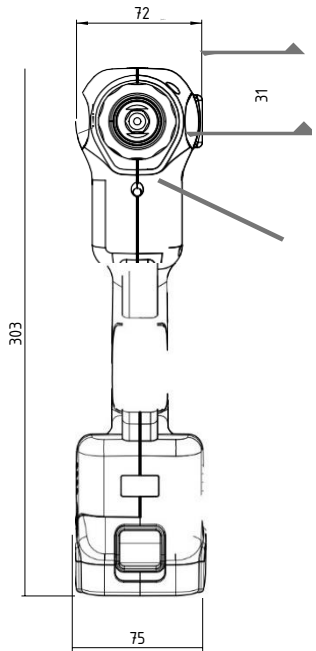
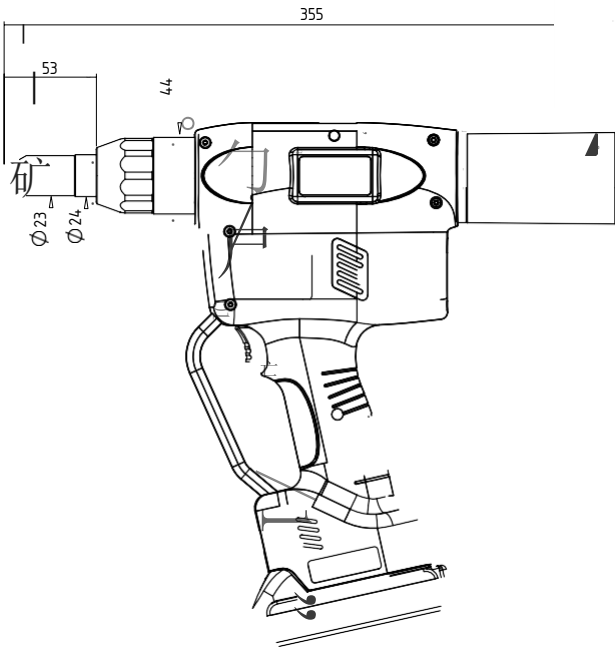
The values given for noise emissions and vibration were measured using a standardised test method and can be used for comparison with other power tools. They can also be used for a preliminary estimate of the load.



### NOTE

The actual emissions can differ from the above information depending on the type and manner of use of the tool and, in particular, depending on the type of work-piece.





Specifications in mm  
Not shown to scale

## 7 Troubleshooting and Fault repair

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The Freset by RivetKing® is a very stable and long-lasting tool.

If, however, a tool does not work properly you can find, and eliminate, the most frequent causes for errors in the table below.

Error	Possible cause	Remedy
Tool does not start, sound signal, red Light field appears	1. Battery empty 2. Defective battery	1. Replace and charge battery 2. Replace battery
Rivet does not break off	- Dirt in clamping jaw - Clamping jaw is worn - Tool stroke too short for the rivet - Setting in the program config- uration	- Clean clamping jaws - Replace clamping jaw - Check which stroke is required for setting - Check setting

If the error still persists or is not listed, please contact RivetKing®.

### Repairs:

Telephone: 201-750-1040 Option 4

E-mail: [info@rivet.com](mailto:info@rivet.com)

### Programming:

Telephone: 201-750-1040 Option 4

E-mail: [support@rivet.com](mailto:support@rivet.com)

### Please note the following information:

- Serial number of the riveting device (see battery compartment of the device)
- What error has occurred?
- Display
- When did the error first appear?
- What have you done to fix the error?

We reserve the right to make errors, technical changes to our products and changes to the delivery program in the course of further development.

# CE Declaration of conformity

---

We hereby declare that the named tool complies with the essential protection requirements of the listed EU directives regarding design and construction type.

The prerequisite for this is the intended use of the tool as well as compliance with the installation and commissioning instructions.

If the product or its accessories are modified without our consent, this declaration becomes invalid.

**Tool description:** Programmable cordless blind riveting tool

**Type designation:** RK-777, RK-797

**Company:** Industrial Rivet  
35 Maple Street  
Norwood, NJ 07648

**Directives:** 2006/42/EU  
2014/30/EU

**Applied standards:** DIN EN ISO 12100 2011-03  
EN 62841-1:2015+AC:2015, EN 62841-2-2:2014  
EN 61000-6-3:2007+A1:2011+AC:2012  
EN 61000-6-2:2005+ AC:2005  
EN 55014-1:2006+A1:2009+A2:2011  
EN 55014-2:1997+ AC:1997+A1:2001+A2:2008

Industrial Rivet and Fastener Co.  
35 Maple Street, Norwood, New Jersey 07648

March 2021



Steven Sherman  
VP Engineering



# Industrial Rivet & Fastener Co.



The technical data in this printed material provide guidance, but are without guarantee!  
We reserve the right to make structural changes. Our construction suggestions are not binding!

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