

IN-017-09



S30 X/C

Electronic PinBrazing unit



USER MANUAL

Safety, Operation and Maintenance

SAFETY SYMBOLS

Safety symbols and signal words, as shown below, are used to emphasize all operator, maintenance and repair actions which, if not strictly followed, could result in a life-threatening situation, bodily injury or damage to equipment.



This is the safety alert symbol. It is used to alert you to potential personal injury hazards. Obey all safety messages that follow this symbol to avoid possible injury or death.



This safety alert and signal word indicate an imminently hazardous situation which, if not avoided, will result in death or serious injury.



This safety alert and signal word indicate a potentially hazardous situation which, if not avoided, could result in death or serious injury.



This safety alert and signal word indicate a potentially hazardous situation which, if not avoided, could result in death or serious injury.



This signal word indicates a potentially hazardous situation which, if not avoided, may result in property damage.



This signal word indicates a situation which, if not avoided, will result in damage to the equipment.



This signal word indicates a situation which, if not avoided, may result in damage to the equipment.

Always observe safety symbols. They are included for your safety and for the protection of the tool.

LOCAL SAFETY REGULATIONS

Enter any local safety regulations here. Keep these instructions in an area accessible to the operator and maintenance personnel.

Tool operators and maintenance personnel must always comply with the safety precautions given in this manual and on the stickers and tags attached to the tool and hose.

These safety precautions are given for your safety. Review them carefully before operating the tool and before performing general maintenance or repairs. Supervising personnel should develop additional precautions relating to the specific work area and local safety regulations. If so, place the added precautions in the space provided in this manual. This tool will provide safe and dependable service if operated in accordance with the instructions given in this manual. Read and understand this manual and any stickers and tags attached to the tool before operation. Failure to do so could result in personal injury or equipment damage.

- Do not operate a damaged, improperly adjusted, or incompletely assembled tools.
- To avoid personal injury or equipment damage, all tool repair, maintenance and service must only be performed by authorized and properly trained personnel.
- Do not exceed the rated limits of the tool or use the tool for applications beyond its design capacity.
- Always keep critical tool markings, such as labels and warning stickers legible.
- Always replace parts with replacement parts recommended by Safetrack.



- Operator must start in a work area without bystanders. The operator must be familiar with all prohibited work areas such as excessive slopes, dangerous terrain conditions, and rail traffic.
- Establish a training program for all operators to ensure safe operation.
- Do not operate the tool unless thoroughly trained or under the supervision of an instructor.
- Always wear safety equipment such as goggles, ear, head protection, and respiratory protection at all times when operating the tool.
- Do not inspect or clean the tool while the battery power source is connected. Accidental arcing can cause serious injury.
- Do not load brazing pins or ceramic rings while the battery power source is connected. Accidental arcing can cause serious injury.
- Do not use the tool while it is connected to a battery charger.
- Ensure battery charging is only done in a dry environment. Charging batteries in the rain or near standing water presents an electrocution hazard. Read the safety and operation instructions provided with the battery charger before using the battery charger.

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IMPORTANT

**Read the instructions carefully
before using the pinbrazing unit.**



WARRANTY

Units 12 months, batteries 6 months.

Valid only when using original parts, batteries and chargers supplied or approved by Safetrack®.

The warranty will expire if the equipment was used or has been used with non-original spare parts, consumables or not used in accordance with the instructions.

Website: www.safetrack.se

E-Mail: Sales@safetrack.se

SAFETRACK® S30 X/C

Electronic Pin brazing unit

SAFE 9308CP DELIVERED WITH

Gun S4, automatic	SAFE 9102
Electronic unit S30X/C	SAFE 9327
Ground device	SAFE 80730
Batteries, sealed, High power 13 Ah, 3pcs	SAFE 8092
Battery charger, stationary	SAFE 8049
Tool case	SAFE 95240
Carrying harness	SAFE 9523
Protective eyewear	SAFE 8043
S4 tool set	SAFE 91250
Grinding pin/stone	SAFE 8025

**Check that all parts
have been received!**

TECHNICAL SPECIFICATION

Voltage	36V DC
No. of brazings/charge	40-60
Unit weight incl.batteries	13Ah/16Ah 21/26 Kg
Dimensions LxWxH (mm)	280x230x390

SERVICING

This manual contains safety, operation, and routine maintenance instructions. Safetrack recommends that servicing of the unit, other than routine maintenance, must be performed by an authorized and certified dealer. Please read the following warning.



**SERIOUS INJURY OR DEATH COULD RESULT FROM
THE IMPROPER REPAIR OR SERVICE OF THIS TOOL.**

**REPAIRS AND / OR SERVICE TO THIS TOOL MUST ONLY BE DONE
BY AN AUTHORIZED AND CERTIFIED DEALER.**

GENERAL PROTECTION

Use only recommended repair and replacement parts and materials specified in the spareparts list section of this manual.

Use only recommended accessories also specified in the spareparts list section of this manual.

Do not use the Electronic PinBrazing unit for applications it was not designed for.
Use the carrying handle to transport the unit from location to location.

CLEANING

Establish a routine to keep the unit as free from dirt as possible – daily, or at each shift change, for example.

PinBrazing unit exposed to rain, sand, or grit-laden air should be cleaned prior to each use.
Keep tool labels and stickers legible.

PREOPERATION PROCEDURES

Before putting a new PinBrazing unit into initial service, or after an extended period of being unused, perform a visual inspection for bent, broken, cracked, missing or worn components.

STORAGE OF UNIT AND BATTERIES

Store the Electronic PinBrazing unit in a place where it is protected from the elements, abrasive dust, and damage.

The batteries must be stored in a clean and dry location, and preferably in a temperature-controlled environment. Although these batteries are shipped fully charged and may be stored for up to 1 years at 25°C (77°F).

Periodic checks of their Open Circuit Voltages (OCV) are recommended.

The warmer the storage environment the more frequent the voltage checks should be.

The batteries must be given a freshening charge once every year or when the OCV drops to 36V (3x12V), whichever occurs earlier.

Failure to observe these conditions may result in greatly reduced capacity and service life.

BATTERY CHARGING

! WARNING

Failure to follow the instructions in the battery charger operation manual can result in battery explosion and serious bodily injury. To reduce the risk of battery explosion, read and understand the safety and operation instructions in the battery charger operation manual, the instructions published by the battery manufacturer, and the instructions in this manual before attempting to charge the batteries.

! WARNING

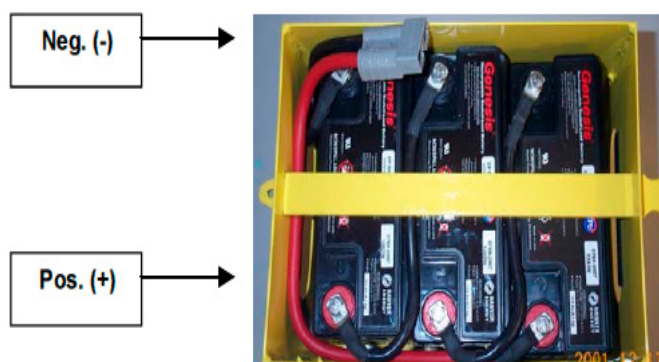
Make sure battery charging is only accomplished in a well ventilated room. DO NOT PLACE THE CONTROL BOX ON TOP OF THE BATTERIES. REMOVE THE BATTERY BOX COVER. Battery charging produces explosive gases. A battery explosion can cause serious injuries. Avoid battery explosions by keeping cigarettes, sparks, and flames away from batteries being charged. Always wear safety glasses when working with batteries.

1. The three batteries furnished are sealed, maintenance free batteries. Sealed, maintenance free batteries do not contain cell caps and are already filled with battery acid. They will require charging before use. Batteries need 3-6 work cycles to reach full capacity.

NOTICE

Use only battery charger specially made for pin brazing units (36V DC) approved by Safetrack.

2. Open the unit and connect the batteries to the unit, check that all cables are securely fastened.



3. Connect the battery charger to the grinder outlet on the unit, then to the mains. When removing the charger remove the main first, the remove the plug from the unit.
4. Charging is finished in approximately 3-5 hours. Follow the instructions in the battery charger manual to complete the charging process.

CONNECTIONS



1. Connect the brazing gun, power and trigger cables to the unit.
2. Connect the ground cable.
3. Connect the grinder. If the unit was supplied with battery powered grinder, make sure that the batteries are charged.
See grinder manufacturers instruction on how to charge the grinder batteries.

GRINDING

Before brazing, the braze area must be cleaned of rust, corrosion, paint, pits, or other contamination at the points where the brazing is going to be done and on an area close to the brazing for placement of the grounding cable.

Cleaning is accomplished with a grinder to ensure clean, bare metal.

! CAUTION

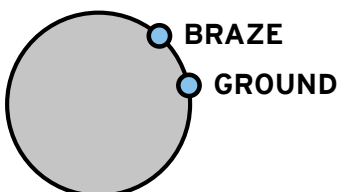
Always use eye protection when grinding and brazing.

NOTE! Use only SAFETRACK's grinding wheel specially made for brazing, other type of wheels will leave a surface not suitable for brazings.

Keep the grinding wheel clean and free from oil etc.

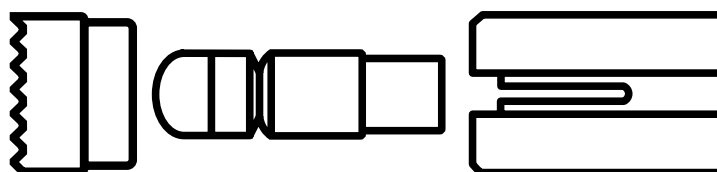


1. Grind the brazing and ground area until you have an even and clean surface.
2. Attach the ground magnet on the same work piece where the pinbrazing should be done. Try to attach the magnet within 0,5m from brazing area.
3. Move the grinder all time when grinding to get an even surface.



PINBRAZING

1. When finished grinding for placement of the grounding cable, place the grounding cable on the cleaned surface.
2. Select brazing pins and ceramic rings to match the specifications of the bonding cable you selected.
3. Check that the pin holder and ring holder on the gun are the correct sizes for the brazing pins and ceramic rings you selected. If the sizes are incorrect, the pin holder and ring holder can be changed, see periodical maintenance of S4 gun on page 12.
4. Insert the brazing pin into the pin holder. The rounded tip should be facing away from the gun.
5. Insert the ceramic ring into the ring holder. The serrated edge should be facing away from the gun.



The S4 automatically adjusts the correct distance of the brazing pin to the surface to be brazed.

NOTE: The S4 may be adjusted manually if necessary using the dial located on the back of the gun.

The settings are as follows:

+ = 2.5 mm distance

0 = 2.0 mm distance (normal position)

- = 1.5 mm distance

See periodical maintenance of S4 gun on page 12.



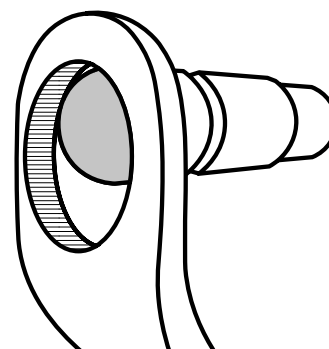
6. Turn on the unit by setting the PIN TYPE switch on the control box for the appropriate pin type being used.

BRAZING PIN SETTING

8 mm Std.	P1
8 mm Extra, M8, M10 and M12.	P2
9.5 mm.	P3

6. Position the terminal lug of the bonding cable against the cleaned surface.

Position the gun against the cable lug so that the brazing pin is at the top edge of the cable lug hole when brazing to a vertical surface and in the center of the cable lug hole when brazing on a horizontal surface.



PINBRAZING (Continued)

7. Hold the gun firmly with both hands as shown and pull the trigger just once. The electronic will by itself finish the brazing process.

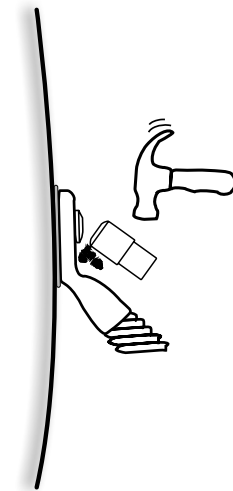
8. Hold the gun in place for 3-4 sec after the brazing while the brazing cools down.

9. Remove the gun **straight** backwards without pulling the trigger!

10. After the braze has cooled, knock the shank off the brazing pin using a hammer.

11. Use a new ceramic ring for each new pin braze.

The brazing is completed.



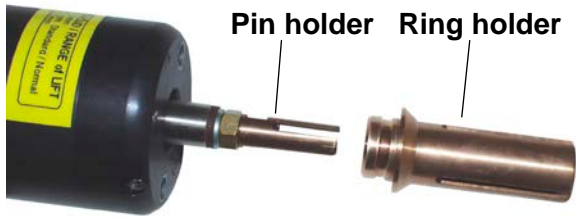
IMPORTANT

A red light indicates low batteries on the unit.
Charge as soon as possible.

PROBLEM	CAUSE	SOLUTION
Brazeing pin does not ignite or does not ignite long enough.	Batteries not charged or are defective.	Test batteries for proper charge. Replace and/or charge as necessary.
	Blown fuse.	Check fuses.
	Magnetic ground faulty.	Check that surface magnetic ground is applied to is ground clean. Check magnetic ground cable and plug for damage.
	Faulty cables.	Check gun cables and plugs for damage.
	Bonding surface contaminated.	Check that the brazing surface is ground clean.
Braze is faulty.	Batteries not charged or are defective.	Test batteries for proper charge. Replace and/or charge as necessary.
	Incorrect PIN TYPE setting.	Check PIN TYPE setting on the control box.
	Magnetic ground faulty.	Check that surface magnetic ground is applied to is ground clean. Check magnetic ground cable and plug for damage.
	Bonding surface contaminated.	Check that the brazing surface is ground clean.
	Incorrect grinding wheel is used.	Use only Tyrolit grinding wheels or carbide burr.
	Ceramic ring was not positioned square to the lug.	Ensure ring is positioned correctly.
	Brazing pin not positioned correctly in lug hole.	Ensure pin is positioned correctly.

PERIODICAL MAINTENANCE OF S4 AUTOMATIC GUN

1. Check that all cables and lugs are without damages and properly tightened in gun and unit.
2. Check that the correct pin holder is fitted in the gun.



PIN & RING HOLDER OPTIONS

Part No.

For brazing pin

With Ring Holder

9211 (A)

8-9,5 mm

9202 for 8-9,5mm pins



9213 (B)

M8 threaded

9204 for M8, M10 and M12 pins



9215 (C)

M10 threaded



9217 (D)

M12 threaded



The ring holder is a “push fit” to the gun.
 To remove it from the gun, simply pull it away from the gun.
 To change the pin holder use spanners as the figure shows.
 While holding the nut in place, unscrew the pin holder counter clockwise.
 Use one 8mm spanner and one 10mm for 8-9,5 mm and M8 pin holders.
 Two 10mm spanner for M10 and M12 pin holders.
 Make sure that pin holder is tightened to the gun, otherwise a spark can destroy the axle and the pin holder.



IMPORTANT

Make sure to never twist the axle when mounting the pinholder!

The pin holder must have a tight grip on the brazing pin, otherwise you can have a contact fault or a spark can arise and destroy the pin holder.
 To get a tighter fit, push together the pin holder flares with your fingers.

3. Check that the ring holder is the right type.
 You can dismount it by hand otherwise adjust with the small screw on the side of the gun.
4. Load the gun with a 8mm pin and ferrule.
 Check that the axle move easily with the pin and ferrule fitted when moving back and forward.
 If not, change either pin holder or ring holder.
 If it still doesn't move easily the axle is damaged and must be sent for repair.

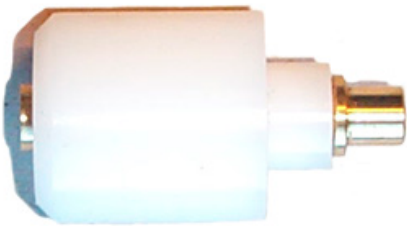


CHECKING LIFT HEIGHT

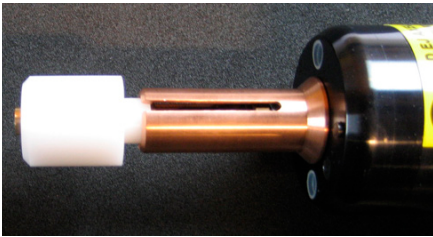
Lift level tool: SAFE 91245

IMPORTANT

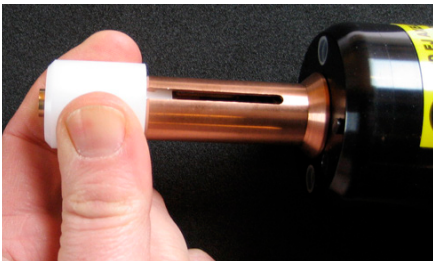
The normal lift height is 2mm. This is very important for the arc and energy amount. Too high lift height increase the risk of a “cold brazing”, too low lift height reduce the time and increase misfires.



1. Connect the cables for the gun to the pinbrazing unit and turn on the unit and select P1. Set the dial on the back of the gun to “0”.



2. Insert the brass part of the tool in the pin holder and fit the plastic part in to the ring holder.



3. Press the trigger on the gun and watch the brass rod.

IMPORTANT!

Press the tool completely against the gun when triggering the gun. Otherwise the gun may be damaged!

IMPORTANT!

Hold the gun so the tool is horizontal.



4. The lift level is calibrated when the brass rod is in same level as the outer plastic sleeve.

Tolerance $\pm 0,2$ mm.

If the brass rod stick out more than 0,2 mm, then the gun needs to be calibrated, see point 6 on the next page.

If the brass rod goes in more than 0,2 mm, then the gun needs to be calibrated, see point 7 on the next page.

See next page (15) for instructions on how to calibrate the PinBrazing gun.

ADJUSTING LIFT HEIGHT



5. Take off the plastic plug with the needle in the upper small hole in the front of the gun.

IMPORTANT, never adjust in the hole where the big plug is!



6. When liftheight is **too low**, use the 3mm hexagon spanner and adjust the screw in the small hole **counter-clockwise** about 1/4 of a turn then recheck with the lift level tool.

7. When liftheight is **too high**, use the 3mm hexagon spanner and adjust the screw in the small hole **clockwise** about 1/4 of a turn then recheck with the lift level tool.

If all is ok, fit the plug in the hole again.

If not ok, send for repair.

NOTICE

In addition to the Safetrack Precautions in this manual, observe the following for equipment protection and care.

- Check that the pin holder is not burnt or not holding the pin tightly. If not, remove the ring holder, clean all the parts and squeeze the fingers of the pin holder together.
- Check the cables on the gun from time to time for damage. Replace as required.
- Check that the lift level is correct with lift the level tool.
- Always store the tool in a clean dry space, safe from damage or pilferage.
- Always keep critical equipment markings, such as warning stickers and tags legible.
- Equipment repair should be performed by experienced personnel only.
- Do not use the equipment for applications for which it was not intended.

ACCESSORIES AND SPAREPARTS

Part	Part number
S4-Brazing gun	SAFE 9102
S4-Angle brazing gun	SAFE 91035
Pin holder A 8-9,5 mm	SAFE 9211
Pin holder B M8	SAFE 9213
Pin holder C M10	SAFE 9215
Pin holder D M12	SAFE 9217
Ring holder 8-9,5 mm	SAFE 9202
Ring holder M8/M10/M12	SAFE 9204
Extended Pin/Ring holder set, 8-9,5 mm	SAFE 9227
Extended Pin/Ring holder set, M8	SAFE 9229
Gun cable 2,7 m	SAFE 9230
Gun cable 4,5 m	SAFE 9236
Gun cable extension 5 m	SAFE 9235
Gun tool set	SAFE 91250
High Power batteries, sealed 13 Ah	SAFE 8092
High Power batteries, sealed 16 Ah	SAFE 8093
Extra box for 13Ah batteries with lid (excl. batteries)	SAFE 9321
Extra box for 16Ah batteries with lid (excl. batteries)	SAFE 9320
Battery adapter for charging	SAFE 9318
Battery charger, stationary use, 36V 7A	SAFE 8049
Battery charger, car use 12V/36V 2A	SAFE 8055
Battery cables kit	SAFE 93251
Ground Switchable magnet 2,7 m	SAFE 80730
Switchable magnet (no cable)	SAFE 9035
Ground grip 2,7 m	SAFE 8071
Cordless Grinding machine	SAFE 593070
Grinding Pin/Stone	SAFE 8025
Carbide burr, Type C	SAFE 8014
Carbide burr, Type C Extended	SAFE 8014XL

ACCESSORIES AND SPAREPARTS

Part	Part number
Pin type knob	SAFE 91301
Grinder/Charger outlet 4 Pols	SAFE 91077
Gun outlet 3 Pols	SAFE 91075
Gun power outlet	SAFE 91093
Ground outlet	SAFE 91096
Fuse holder	SAFE 91197
Fuse 200mAT (on circuit board)	SAFE 91180
Fuse 1AT	SAFE 91182
Fuse 15AT	SAFE 91181
Gun plug 3pin	SAFE 91081
Charger/Grinder plug 4pin	SAFE 91085
Gun power plug	SAFE 91080
Ground plug	SAFE 91091
Tool case	SAFE 95240
Carrying harness	SAFE 9523
Handy2, rail trolley	SAFE 9361
Protective eyewear	SAFE 8043

RETURNING EQUIPMENT FOR REPAIR

To best help you, we ask you to contact us before returning your product.

We understand the need for promptly handling repairs. You can greatly help us process, repair & return your equipment speedily by providing us clear and detailed information about the problems with your equipment.

Please always include your full company contact details in/with the parcel.

If, in our opinion, a repair is not economic we will contact you to discuss your options. Please tell us if you require a cost estimate before we start working on your unit.

If you decide not to go ahead with the repair after receiving our estimate nor purchase a replacement, we will make a standard administration charge +freight to cover the inspection and cost of returning the products to you.

Repair or replace?

When considering whether to repair or replace we would suggest you consider the following:

- a) The cost of a new replacement?
- b) Do current models have new features or options which you would find useful?
- c) The warranty period of a replacement vs the repair limited warranty?
- b) Your cost to return the product for repair? Sending parcels can be surprisingly expensive.
- c) The cost of the product repair?
- d) The processing & return delivery cost?

What if my product fails shortly after the warranty expires?

Fortunately this does not happen often but is difficult for both of us when it does. The official answer is that a warranty is for a specific period, having said that we do not wish to be unreasonable. If you have a product which fails just outside of warranty please contact us to discuss your case, we may be able help you.

Safetrack Support
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DECLARATION OF CONFORMITY

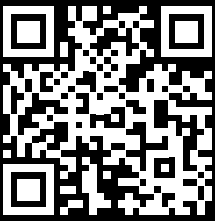
according to EN ISO 17050-1:2010

Manufacturers name: **SAFETRACK BAAVHAMMAR AB**Manufacturers address: **SAFETRACK BAAVHAMMAR AB
Möllebergavägen 339-24
245 93 STAFFANSTORP
SWEDEN**Product: **Pinbrazing unit**
Model number: **S30 X/C (S30)*****The object of the declaration described above is in conformity with the relevant Union harmonisation legislation:***Electromagnetic Compatibility Directive (EMC) 2014/30/EU,
Restriction of Hazardous Substances (RoHS) 2011/65/EU.***References to the relevant harmonised standard used or referenced to the other technical specifications in relation to which conformity is declared.***EMC: EN 60974-10:2014
EN 55011(1998):A1:1999 A2:2002
EN 61000-4-2(1995)
EN 61000-4-3 (2002)

RoHS: EN 50581:2012

The products have been tested in a typical configuration.

Staffanstorp, Sweden 2021-11-01**Torsten Båvhammar**
PresidentIn case of a modification of the products which has not been agreed on with us,
this declaration becomes null and void and the warranty expires.



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