



S300

Electronic Pinbrazing and Safebond unit.



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GENERAL

**Read the instructions carefully before using the S300 unit.
*Check that all parts are received.***



S300

SAFE 93807 Pinbrazing

| | |
|---------------------|---------------|
| S300 Unit | SAFE 93901 |
| 2 x 3M Power cables | SAFE 93909 |
| S15 Gun | SAFE 91015 |
| Gun cable | SAFE 9230-300 |
| Tool kit | SAFE 91250 |
| Ground device | SAFE 80732 |
| 1 x Power cord | |

SAFE 93900 Safebond

| | |
|---------------------|---------------|
| S300 Unit | SAFE 93901 |
| 2 x 3M Power cables | SAFE 93909 |
| SB15 Gun | SAFE SB390117 |
| Gun cable | SAFE 9230-300 |
| Tool kit | SAFE 91251 |
| Ground device | SAFE 80732 |
| 1 x Power cord | |

Technical specification

| | |
|-----------------------|-----------------|
| Voltage | 115V/230V AC |
| Unit weight | 6,4 Kg |
| Dimensions LxWxH (mm) | 300x210x170 |
| Temperature range | -20 °C - +60 °C |

The S300 requires a welding machine capable to deliver 250 to 300 Amp.
Open circuit voltage of max 80V. (not supplied by Safetrack).

Guarantee:

Units 12 months, Valid only when using original parts, supplied or approved by **SAFETRACK®**.

The guarantee 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.

SETUP

Connect and setup the unit:

- Connect the mains cable.
Make sure the switch is set for the correct voltage 115 or 230V.
- Connect the power cables to the unit and to a welding machine.
Set the current to 250-260A. MAX 280A
The open circuit voltage of the welder is Max 80V, voltage over this may cause damage to the unit.
- Setup the welding machine for stick welding.



- Connect the brazing/safebond gun, power and trigger cable to the unit.
- Connect the ground device to the unit.
- Select the right pintyp or Safebond.

Setting

| | |
|----------|--------------------------|
| P1 | 8mm Std |
| P2 | 8mm Extra and M8,M10,M12 |
| P3 | 9,5mm |
| Safebond | |



Warning!

Always use eye protectors when grinding and brazing!

NOTICE!

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.

- Grind the brazing and ground area until you have an even and clean surface.

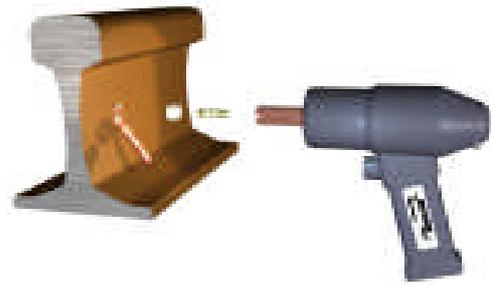


- Attach the ground magnet on the same rail/work piece where the pinbrazing should be done.
- Try to attach the magnet within 0,5m from brazing area.

PINBRAZING

Operation.

- Turn on the unit..
- Load the gun with brazing pin and ferrule.

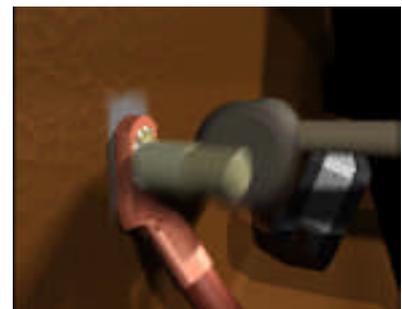


- Make sure to braze in the top of the hole when brazing to a vertical surface.



- Hold the gun firmly with both hands as shown and pull the trigger just once. The electronic will by itself finish the brazing process.
- Hold the gun in place for 3-4 sec after the brazing while the braze freezes.
- **Remove the gun *straight* backwards without pulling the trigger!**
- Knock off the shank of the brazing pin.

The brazing is completed.



PIN HOLDERS

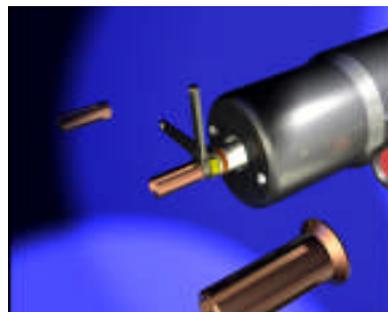
Squeeze the fingers on the pin holder together each time you feel that the brazing pin goes in too easy when mounting them into the pin holder.

This is important since all the current goes thru the pin holder to the brazing pin.

If the fingers are too loose the pin holder will be damaged and must be replaced.

CHANGE PIN HOLDER.

- Separate the ring holder from the gun with your hands.
- Hold the nut closest to the pin holder with a 10mm key.
- Screw the pin holder off.
- When replacing the new pinholder, hold the nut, closest to the pinholder even now.



Warning! Never rotate the shaft, it can damage the gun.

EQUIPMENT

- Check the cables from time to time, so damages have not arise.
- Even the contact surface on the ground magnet with a file from time to time.
- Make sure that the brazing pin with the ferule passes easily in the gun, centered.

BRAZING PINS AND FERRULES

- Keep them dry.

RAILBONDS AND CABLE LUGS

- Keep them free from oxidation.
- Keep them free from contamination like: Grease, oil.
- Make sure that there are no damages on them.

SETTING RIGHT LIFT HEIGHT

The S15 brazing gun self adjust to the same lift height every time.

See seperate instruction for the gun.

Replace the fuses:

Push and unscrew anti-clockwise to remove fuse holder.

Replace fuse and mount fuse holder.

NOTE!

- Main: 1.6AT/250V fuse.
- Control: 1.6AT/250V fuse.
- Gun: 5.0AT/250V fuse.



MAINTENANCE

Periodically maintenance of S15 automatic gun

IN-039-01



B.1. Check that all cables and lugs are without damages and properly tighten in gun and unit.

B.2. Check that the right pinholder is fitted in the gun.

| SAFE No. | For brazing pin | Mark |
|----------|-----------------|------|
| 9211 | 8-9,5 mm | A |
| 9213 | M8 threaded | B |
| 9215 | M10 threaded | C |
| 9217 | M12 threaded | D |



Make sure that pinholder is tight to the gun, use spanners as the figure shows. Otherwise a spark can destroy the axle.
Use one spanner 8mm and one 10mm for 8-9,5 mm and M8 pinholders.
Two pcs of spanner 10mm for M10 and M12 pinholders.

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

The brazing pin shouldn't go too loose in the pinholder, when it does push together with your fingers.
Otherwise you can have a contact fault or a spark can arise.

B.3. Check that the ringholder is the right type. You can dismount it by hand otherwise adjust with the small screw on the side of the gun.

B.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 pinholder or ringholder.
If it still doesn't move easily the axle is damaged and must be sent for repair.



Lift level tool

SAFE 91245

2002-09-05

IMPORTANT! The normal liftheight is 2mm.
This is very important for the arc and energy amount.
Too high liftheight increase the risk of a “coldbrazing”,
too low liftheight reduce the time and increase misfires.

B.5.1. Insert this
end in to the gun.



B.5.2. Turn on the unit and select P1. The welding machine must be connected and on.

**Important! Press the tool completely against the gun then pull the trigger.
Otherwise the gun may be damaged!**

Important! Hold the gun so the tool is horizontal.

B.5.3. The lift level is calibrated when the inner rod, made of brass, on the tool is in same level as the outer plastic sleeve. Tolerance $\pm 0,2$ mm.

If the gun is not calibrated see seperate instruction for adjusting of the gun.

Advanced maintenance work Adjusting the lifthevel.

B.6. Reset correct liftheight at a S15 gun.
Only when to reset a maladjusted gun.

Fit the instrument SAFE 91245 on the gun as in B.5.

B.6.2. Connect the cables to the pinbrazing unit and switch on the power.
The welding machine must be connected and on.

B.6.3. 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!

B.6.4. When liftheight is **too low**.
Use the 3mm hexagon spanner and adjust the screw in the small hole **anti-clockwise** about 1/4 of a turn then check with the instrument as in B.5.

B.6.5. 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 check with the instrument as in B.5.

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

If not ok, send for repair.



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Warning!

Always use eye protectors when grinding and brazing!



NOTICE!

Use only the carbide burr and grinder specially made for brazing. Other type of grind stones etc will leave a surface not suitable for brazing. Keep the carbide burr and the braze surface clean and free from oil, grease, paint, glue, galvanization etc.

Preparation of the rail.

- Grind the brazing and ground area until you have an even and clean surface. Move the grinder up and downwards.



- Immediately, within 7 seconds, apply braze flux to the rail enough to cover the whole brazing area. Grind only one brazing area at a time to prevent contamination of following braze areas.



- Attach the ground magnet on the same rail/work piece where the brazing should be done.
- Try to attach the magnet within 0,5m from brazing area.

Caution!

Always use supplied eye protectors(dark glasses) with UV protection when grinding or brazing!

Persons with eye disease, photo phobia or persons who takes medicine that can increase the eyes sensivity for UV radiation must follow their doctors recommendation about exposing themselves for arcs and flashes.

Important!

Make sure the fingers on the electrode holder is tight around the electrode, otherwise remove the ring holder and squeeze the fingers together to secure a good electric contact .

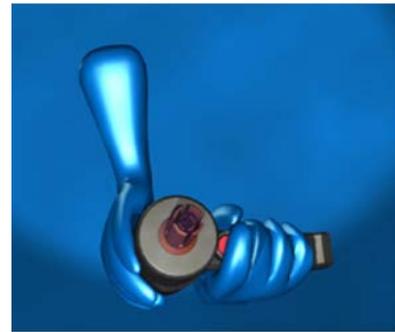
Operation.

- Turn on the unit and select SAFE BOND.
- Load the gun with braze electrode and ferrule.
- Apply a very small amount braze flux to the top side of the lug, just enough to wet the even part of the braze electrode facing the lug.
- Make sure to braze in center of the lug. The shape of the lug (see red area in picture besides)will help you to place it right.



SAFE BOND

- Press the gun firmly, with both hands as shown, with the cable shoe, ferrule and braze electrode to the work piece.
- Pull the trigger just once. The electronics will automatically control the brazing process.



Important!
Don't turn your head around while brazing.
It's better to shut your eyes during the process.

- Hold the gun in place for 7 seconds after the brazing while the braze solidifies. Remove the gun without (re-)pulling the trigger!
- Immediately, after removing the gun, eject the used electrode and ferrule by using the outer sleeve around the electrode and ring holder. Otherwise the electrode holder will be destroyed by the heat.

Caution!
The electrode and ferrule is very hot. Avoid contact with them after brazing to prevent injury. Do not place the hot parts close to any inflammable or combustible material.

- Clean the brazing and the surrounding area of the rail from excessive flux.

The brazing is completed.

Important!
Keep always the consumables protected in the sealed plastic bag until they will be used.

Periodically maintenance of SB15 automatic gun.

DAILY:

Check that all cables and lugs are tight always twist the plug in to the outlets on the units.

AFTER APPR. 400 BRAZINGS:

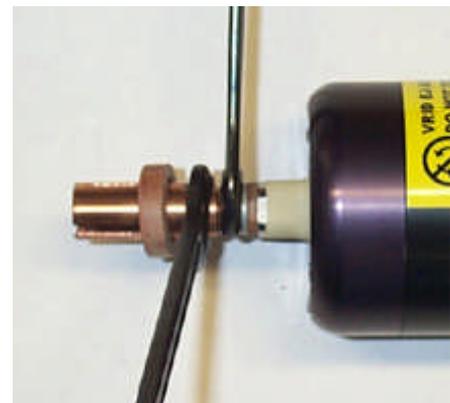
Check that the electrode holder is tight to the gun, otherwise a spark can destroy the axle, use spanners as the figure shows. Reassemble in revers order.



Check that the carbon don't go too loose in the electrode holder, when it does push together with your fingers. Otherwise you can have a contact fault or a spark can arise.

Reassemble in revers order.

Make sure, never twist the axle when mounting the electrode holder.



EQUIPMENT

- Check the cables from time to time, so damages have not arise.
- Even the contact surface on the ground magnet with a file from time to time.
- Make sure that the carbon with the ferule passes easily in the gun, centered.

BRAZING PINS AND FERRULES

-Keep them dry.

RAILBONDS AND CABLE LUGS

- Keep them free from oxidation.
- Keep them free from contamination like: Grease, oil.
- Make sure that there are no damages on them.

SETTING RIGHT LIFT HEIGHT

The SB15 brazing gun self adjust to the same lift height every time.
See seperate instruction for the gun.

Lift level adjustment.

IMPORTANT!

The normal liftheight is 0.9mm this is very important for the arc and energy amount. Too high liftheight increase the risk of a “coldbrazing”, too low liftheight reduce the time and increase misfires.

Lift level tool
SAFE 91246

B.5.1. Insert this
end in to the gun.



B.5.2. Turn on the unit and select P1. The welding machine must be connected and on.

Important!

**Press the tool completely against the gun then pull the trigger.
Otherwise the gun may be damaged!**

Important!

Hold the gun so the tool is horizontal.

B.5.3. The lift level is calibrated when the inner rod, made of brass, on the tool is in same level as the outer plastic sleeve. Tolerance $\pm 0,2$ mm.

If the gun is not calibrated see separate instruction for adjusting of the gun.

Advanced maintenance work

Adjusting the lift level.

B.6. Reset correct liftheight at a SB15 gun.
Only when to reset a maladjusted gun.

Fit the instrument SAFE 91246 on the gun as in B.5.

B.6.2. Connect the cables to the pinbrazing unit and switch on the power.

B.6.3. 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!

B.6.4. When liftheight is **too low**.
Use the 3mm hexagon spanner and adjust the screw in the small hole **anti-clockwise** about 1/4 of a turn then check with the instrument as in B.5.

B.6.5. 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 check with the instrument as in B.5.

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

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