

Useful Notes:

Stanley EP30

Pin Brazer

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Network Rail – Retford S&T

'Stanley EP30' Pin brazing equipment– uncontrolled document for information** only

•  **Caution:**

The brazing equipment operates at very high currents (up to **280a**) and very high temperatures (up to **660 degrees C**), misuse of the equipment or components attached to it could result in serious injury or fatality.

The battery unit **MUST** not be opened and the equipment **MUST** not be tampered with in any way.

• **Pre-use checks:**

1. Check the equipment is in good order (leads are intact, no bare wires showing, battery case sealed and handle in good order) and all controls are intact and working.
2. Check the brazing gun is in good order (the end of the ring (ferrule) holder and pin holder **MUST NOT** be damaged in any way), the trigger must be intact and **ONLY** operate when a ferrule and pin is inserted and pushed down on to a flat surface.
3. Check the unit is fully charged, the yellow LED will be lit, the Low battery red LED unlit.
4. Check all the equipment needed is in the case (if provided).
5. Check you have sufficient ferrules and pins (a new ferrule **MUST** be used with each new pin).
6. Check you have the correct copper straps (connecting cables) for the work to be done.
7. **Goggles and appropriate gloves MUST be worn before use by all involved in the brazing.**
8. The new type of brazing gun* does not require a 'time fuse wire' (the copper tail wire at the base of the pin); this **MUST** be removed by bending and twisting.

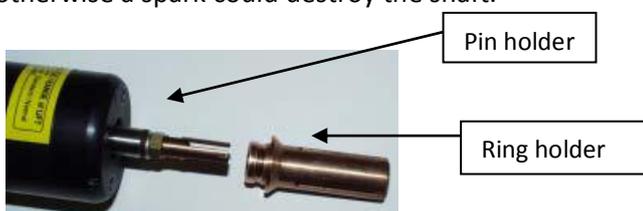
** The new type of gun will be noticeable by the exclusion of the button on the back of the gun.*

• **Instructions for use:**

1. You **MUST** read the above before proceeding.
2. **ENSURE** the main switch is **OFF** first.
3. Check the correct pinholder is fitted to the gun (see below);

Part Code	For pin brazing	Mark (on actual part)
35826	8-9.5 mm	A
35827	M8 threaded	B
35828	M10 threaded	C
35829	M12 threaded	D

4. Make sure that pinholder is tight to the gun, use spanners provided (see picture on right) otherwise a spark could destroy the shaft.



5. **Never twist the shaft when mounting the pin holder.**
6. The brazing pin shouldn't be too loose in the pin holder, if it is push together with your fingers. Otherwise you can have a contact fault or a spark can arise.

7. 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.
8. Load the gun with a 8mm pin and ferrule. Check that the shaft moves 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 shaft is damaged and must be sent for repair.
9. Gun model 'S3' comes with a lift height adjuster on the rear, this is the distance of the tip of the pin to the rail that it is being bonded to.
To check if the setting is correct, the pin holder should be level with the ring holder, adjust as required. Note; the normal setting is '0' (zero).
Model 'S4' is fully automatic and will self-adjust with each braze process and MUST always be set on '0' (zero).

Setting	Distance
+	2.5mm
0	2mm (normal setting)
-	1.5mm



IMPORTANT! The normal lift height is 2mm (setting 0) this is very important for the arc and energy amount. Too high lift height will increase the risk of a "cold brazing", too low lift height will reduce the time and increase misfires.

10. Connect the earth lead by inserting the correct way and twisting.
11. Connect the brazing gun by inserting and twisting.
12. Plug in the grinder by aligning the pins and pushing it in until it clicks.
13. Select the pin braze type switch to correct position;

Pin type	Setting number
8mm standard	1
8mm extra/threaded	2
9.5mm	3

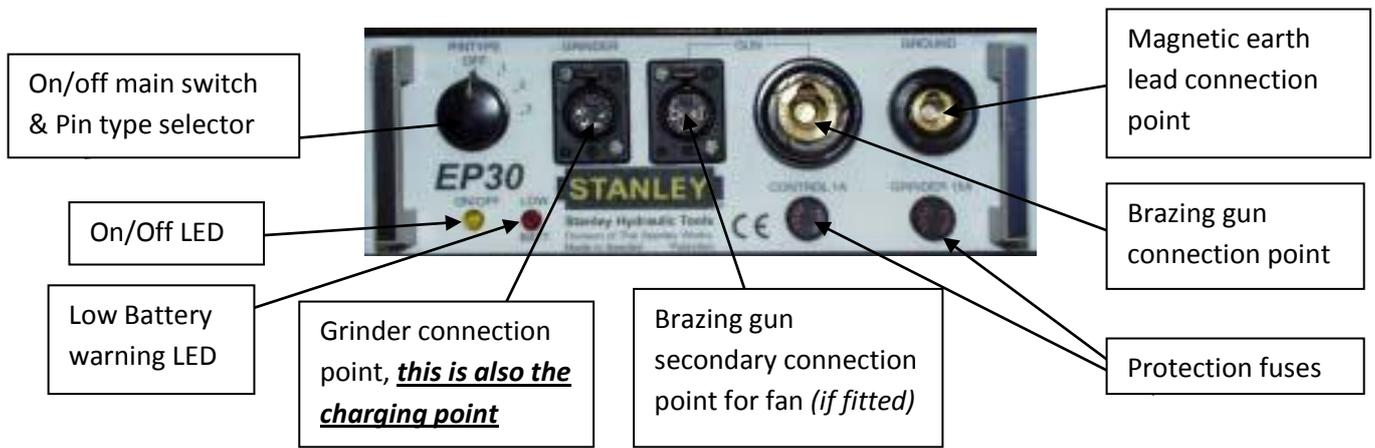
If the switch is not in the correct position it may cause serious injury due to the extended operating time and potential splash back of weld and debris arising from over-burning.

14. Using grinder, grind off the position in which the braze will be welded (*note: the grinder will still work with main switch in the off position*).
15. Attach the earth lead to the same rail the braze will be welded to, ensure good connection or the braze will not work or injury may be caused from potential sparking.
16. Turn on the main switch.
17. Ensure battery is fully charged (3-5hrs) and correct LED's are lit.
18. Position the terminal lug of the bonding cable against the cleaned surface of the rail.
Position the gun against the cable lug so that the brazing pin is at the top edge of the cable lug hole
(*See the illustration on the right*).
19. Ensure everyone else is well clear and pull the trigger on the gun, keep the trigger pulled in until the automatic timer ceases the welding process. Release trigger.
20. Turn **off** main switch and wait 3-4 seconds and remove the gun from the weld (**DO NOT** bend the gun from the weld).
21. Using pliers, remove the spent pin and ferrule from the gun (Caution: the gun, ferrule and spent pin will still be very hot).
22. Repeat the above process ensuring the ferrule is changed every time.



IMPORTANT only press the trigger once, pressing the trigger more than once can cause a short circuit which may severely damage the pin holder.

- The 'EP30' equipment layout:



- Faults:

- Nothing happens:
 - Is the earth lead and gun connections on battery box tight?
 - Is the main switch on and Yellow LED lit?
 - Are protection fuses OK?
 - Lift height could be incorrect, check instructions, alter, and retry.
 - Is the earth lead connected to the same rail to be brazed?
 - Is the pin braze correct type and inserted correctly?
 - Loose pin holder? Check & tighten.
 - Is the gun correctly set up?
 - The TC rail voltage MAY be opposing the process, try disconnecting the TC (or shorting the TC with a track shunt) and retry.
- The weld process is too long:
 - Fuse wire not removed, this will bypass auto burn-time function.
 - The gun is not correctly set-up.
 - Lift height could be incorrect, check instructions, alter, and retry.
- Poor weld process:
 - Lift height could be incorrect, check instructions, alter, and retry.
 - Wet or dirty ferrules and/or pins, check, clean/dry and retry.
 - Poor earth lead connection, clean lead and/or rail.
- The Red LED comes on:
 - The battery is low, it requires charging, if unable to charge immediately, try turning the unit off for 5 mins, and retry.
 - Full charge is achieved after 3-5 hours. (39v fully charged, 36v requires charging)*
- The trigger will not operate:
 - The gun must be loaded and pushed on to the rail to work, if it still does not work using this process, the gun is defective and requires replacing.

If the fault above is not listed or the instructions fail to rectify the fault, the equipment should be reported to the hire company and replacement sort.

Notes written by F.M.Spowart. Version 1 (May 2010)

****Please note that these are NOT the instructions that come with the Pin brazing equipment and should only be used as guidance and not solely for operational use, therefore the operator MUST be trained to use the equipment and not reliant solely upon this document as an alternative to the appropriate training. The author of this document is NOT responsible for any injuries arising from incorrect use whether this document is followed or not.**