

STANLEY®

EPX10 PIN BRAZING UNIT



SAFETY, OPERATION AND MAINTENANCE USER MANUAL



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NOTES

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IMPORTANT

To fill out a Product Warranty Recording form, and for information on your warranty, visit Stanleyhydraulics.com and select the Company tab, Warranty.
(NOTE: The warranty recording form must be submitted to validate the warranty).

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

⚠ 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.

For the nearest authorized and certified dealer, call Stanley Hydraulic Tools at the number listed on the back of this manual and ask for a Customer Service Representative.

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.

SAFETY PRECAUTIONS

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 Stanley Hydraulic Tools.
- Charging the battery can only be carried out between 0°C to +45°C (32°F to 113°F).



- 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.

CHARGING THE BATTERY

Connect the charger to the “grinder / charging” outlet on the unit then plug in the power cord.
The battery is fully charged after about 4 hours (if completely discharged).

NOTICE

CHARGING THE BATTERY CAN ONLY BE CARRIED OUT BETWEEN 0°C to +45°C

CAUTION

If the batteries are left uncharged, they may be damaged.



LED



Battery charging



The battery 95% charged.



The battery 100% charged

LED



The battery temperature below 0 or above 45°C.



Battery temperature OK.

PREOPERATION

GENERAL PROTECTION

Store the Electronic Pin Brazing Unit in a place where it is protected from the elements, abrasive dust, and damage.

Use only recommended repair and replacement parts and materials specified in this manual.

Use only recommended accessories also specified in the this manual.

Do not use the Electronic Pin Brazer 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.

Pin Brazers 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 ECONECT Pin Brazing unit into initial service, or after an extended period of being unused, perform a visual inspection for bent, broken, cracked, missing or worn components.

INITIAL SETUP AND 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.

OPERATION

PREPARE THE RAIL SURFACE

Select the type and length of bonding cable to use for the bond and use it as a guide to determine where brazing points on the rail will be required.

Before brazing, the rail 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.

1. Grind the surface of the rail where brazing is going to be done, until the surface shows shiny metal, free of rust, corrosion, pits, or other contamination. When grinding, use the edge of the grinding wheel - not the face of the wheel.

2. Grind the surface of the rail where the grounding cable will be placed to ensure a good ground. The grounding cable should be placed in close proximity to the brazing area. If using a magnet ground try to attach the magnet within 0.5m/20 in. of brazing area. Ground should be on same work piece where pin brazing is taking place.

PLACING THE GROUNDING CABLE

3. When finished grinding the rail for placement of the grounding cable, place the grounding cable on the cleaned surface and then insert the other end into the twist lock receptacle in the Econect unit marked "GROUND" and twist to lock.

SELECT PINS AND RINGS

4. Select brazing pins and ceramic rings to match the specifications of the bonding cable you selected.

CHANGING PIN AND RING HOLDER

5. 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 as follows:

a. The ring holder is a "push fit" to the gun. To remove it from the gun, simply pull it away from the gun.

b. The pin holder is threaded onto a threaded shaft in the gun and locked in place with a nut. Place an open end wrench over the nut and an open end wrench over the flats on the pin holder. While holding the nut in place, unscrew the pin holder counter clockwise.

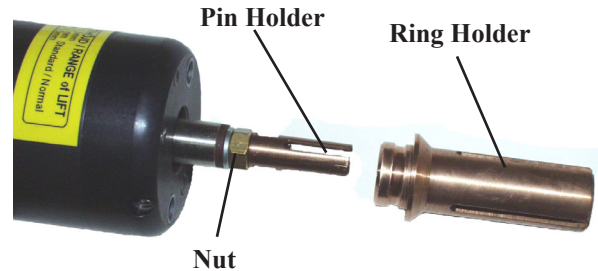


Figure 3. Pin and Ring Holder

c. Install the correct pin holder and tighten it securely against the nut.

IMPORTANT

Warning! Never rotate the shaft when mounting the pin holder, it can damage the gun.

d. Install the correct ring holder by placing it over the pin holder and into the circular groove in the gun, and finally, pushing on it to seat it in place.

LOADING PIN AND RING

6. Insert the brazing pin into the pin holder. The rounded tip should be facing away from the gun.

7. Insert the ceramic ring into the ring holder. The serrated edge should be facing away from the gun. See figure 4.

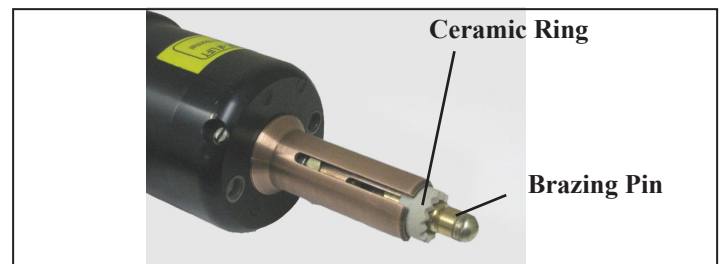
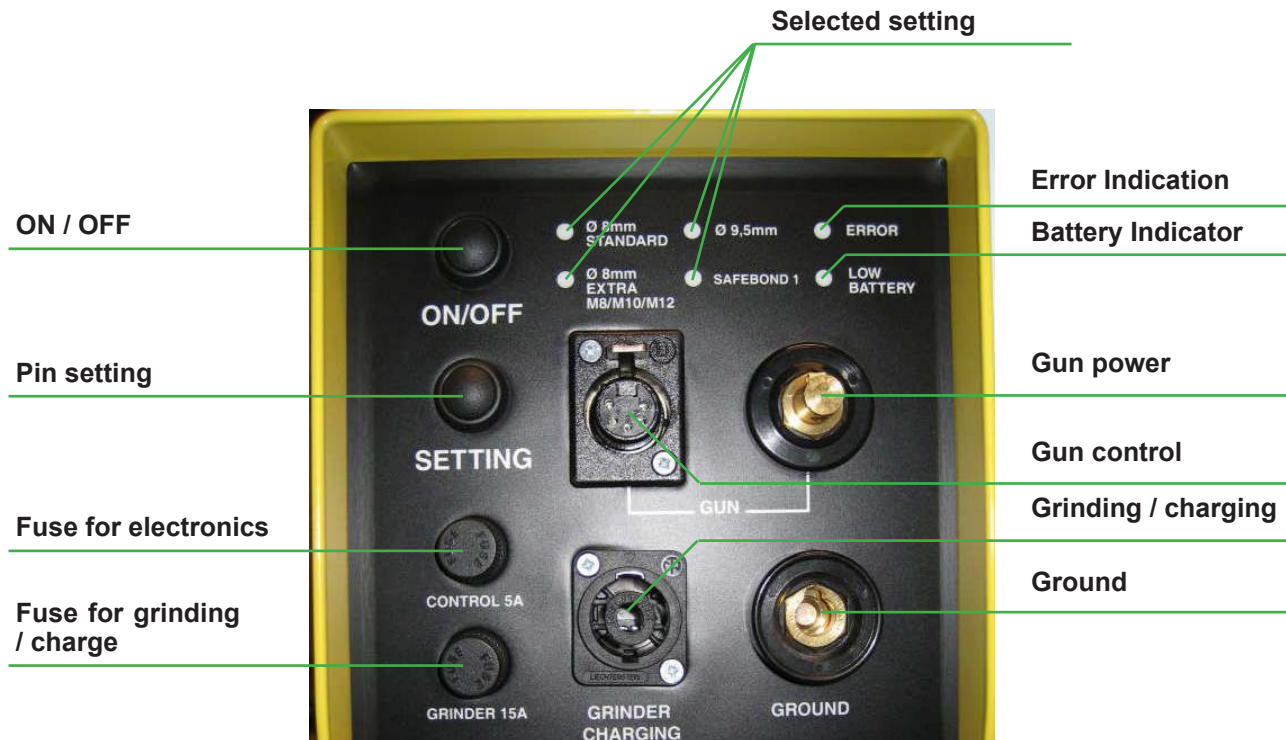


Figure 4. Loading pin and ring

OPERATION

- Connect the brazing gun, power and trigger cable to the unit.
- Connect the ground device to the unit, if not already connected.
- Press on/off button and select the right pin type by pressing the "setting" button.
The unit will remember what setting was used last.
- Load the gun with brazing pin and ferrule, if not already loaded.



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



PIN BRAZE

- Hold the gun firmly with both hands against the work piece and pull the trigger just once.
- The electronic unit will by itself finish the brazing process.
- Hold the gun in place for 3-4 seconds after the brazing is complete to allow for cooling.
- Remove the gun straight backwards without pulling the trigger!
- Knock off the shank of the brazing pin with a hammer.
- The brazing is completed.

NOTE:

If the brazing is aborted to early "ERROR" will turn on. The brazing should be redone for a good result. The error lamp will turn off after 8 seconds. Use a new ceramic ring for each new pin braze.

NOTICE

The battery indicator "LOW BATT" flashes when the batteries are almost discharged, when the "LOW BATT" is constantly lit the batteries are discharged and you can't do any more pin brazing. Charge the battery.

SPECIFICATIONS

SPECIFICATIONS

| | |
|------------------------------------|---------------------------------|
| Voltage..... | 36 V DC |
| Number of Brazes (Per Charge)..... | 50 |
| Weight (incl. Battery) | 9.8 kg / 21.6 lb |
| Width | 5.9 inch / 150 mm |
| Height | 11.0 inch / 280 mm |
| Length..... | 12.5 inch / 320 mm |
| Temperature Range..... | -4° F - 130° F / -20° C - 55° C |

MAINTENANCE

EQUIPMENT

- Always make sure the batteries are fully charged.
- Check the cables from time to time for damage.
- Check the contact surface on the ground magnet from time to time to ensure a good connection.
- 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 they are not damaged.

SETTING RIGHT LIFT HEIGHT

The S15 brazing gun self adjust to the same lift height every time.
See separate instructions in the maintenance section if adjustment for the gun is necessary.

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.

MAINTENANCE

Replace the fuses:

Push and unscrew counter-clockwise to remove fuse holder.
Replace fuse and re-install the fuse holder.



NOTE!

Control: 5A fuse.
Grinder: 15A fuse.

Special functions:



1. BATTERY INDICATOR:

Press and hold the “SETTING” button, while you push the “ON / OFF” button.
“LOW BATTERY” LED will light. Release the buttons.
The LEDs on the front panel show the charge status of battery.

2. LIFTING HEIGHT CONTROL:

First follow step 1 above.
Press “Settings” and the lights start flashing, at this point, you can check the lifting height of the gun.

3. Pressing “Settings” one more time and you go back to battery indicator.

MAINTENANCE

Periodic maintenance of S15 automatic gun

1. Check that all cables and lugs are not damaged and properly tighten in gun and unit.
2. Check that the right pinholder is installed in the gun.

See selection of pinholders in the accessories section of this manual.

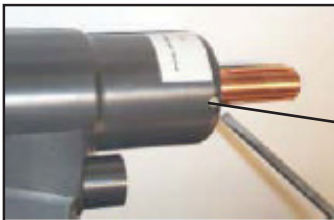


Make sure the pinholder is tight on the gun, otherwise a spark can destroy the axle. Use a wrench to hold the nut from turning and tighten the pinholder as shown in the picture. **Do not** allow the main shaft to turn, only turn the pinholder to tighten. Use one 8mm and one 10mm wrench for 8-9,5 mm and M8 pinholders. Two 10mm wrenches for M10 and M12 pinholders.

Make sure, never twist the main shaft when mounting the pinholder!

When loading the brazing pin, it should **not** go in loose into the pinholder, if it does push the pinholder together with your fingers to gain a tighter fit. Otherwise you can have a contact fault or a spark can arise if there is not a tight contact.

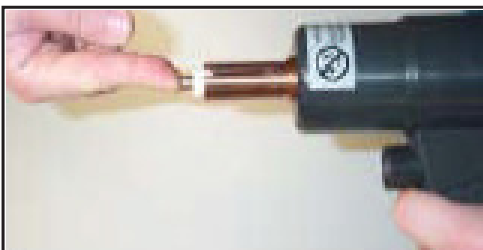
3. Check that the ringholder is the right type. You can remove it by hand and its ease of removing can be adjusted with the small screw on the side of the gun (see photo).



**Ringholder Adjustment
Screw**

4. Load the gun with the appropriate pin & ferrule. Check that the axle moves easily with the pin and ferrule installed by pushing back and forward on the pin with your finger (see photo).

If the pin does not move easily, change either pinholder or ringholder.
If it still does not move easily the axle is damaged and must be sent for repair.



MAINTENANCE

Lift level tool

P/N-62394

IMPORTANT! The normal liftheight is 2mm / 0.078 in.
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.

1. Insert this end in to the gun.



2. Press and hold “SETTING” and press “ON/OFF”.
When “LOW BATTERY” is lit, release buttons.
Press “SETTING” and the leds will start to blink.
In this mode the unit is able to check the lift height.

**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.

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 / 0.007 in. If the gun is not calibrated see separate instruction for adjusting of the gun.

MAINTENANCE

Advanced maintenance work Adjusting the liftheight.

1. Resetting correct liftheight of a S15 gun.
Only reset a maladjusted gun.

Install the lift level tool (shown below) onto the gun.

2. Connect the cables to the pinbrazing unit and switch on the power.

3. Take off the plastic plug with a pin in the upper small hole in the front of the gun (see photo).

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

4. When liftheight is too low. Use the 3mm hexagon allen wrench and adjust the screw in the small hole counter-clockwise about 1/4 of a turn then check with the lift level tool.

5. When liftheight is too high. Use the 3mm hexagon allen wrench and adjust the screw in the small hole clockwise about 1/4 of a turn then check with the lift level tool.

If height is ok, replace the plug in the hole.

If height is not ok, send for repair.

P/N-62394

Lift Level Tool



Remove plastic plug with a pin or sharp object.



TROUBLESHOOTING

Error indications on the unit:

“ERROR” led is lit.

- The temperature of the battery is over +55 °C/131°F

Action: Wait until the light goes out, when the temperature drops you will be able to braze again.

“ERROR” led flashes.

- The temperature of the battery is below +10 °C/50°F

Action: Leave the unit on, the built-in heating element will heat up the battery. Wait until light goes out and the temperature has risen, and you will be able to braze again.

“ERROR” and **”LOW BATTERY”** led flashes.

- The temperature of the battery is below +10 °C/50°F and the battery is almost discharged.

Action: Charge the batteries.

“ERROR” Led is lit after a braze.

- The pin brazing was not complete.

Action: The braze should be remade to achieve good results. The Led turns off after 8 seconds.

“ERROR” Led glows.

- Failure of a sensor in the unit.

Action: The unit should be sent for repair.

”LOW BATTERY” Led flashes.

- Battery is almost discharged

”LOW BATTERY” led is lit.

- Battery is discharged. Charge the batteries.

“NOTHING HAPPENS WHEN YOU PRESS THE BUTTONS”

- The electronics may have gotten stuck.

Action: Remove control 5A fuse for a short time, put it back again.

“THE BRAZING NEVER STOPS”

- The electronics may have gotten stuck.

Action: Remove the gun and the ground magnet from the rails and disconnect them from the unit as soon as possible. Remove the control 5A fuse, check that nothing has been damaged before the fuse is put back.

ACCESSORIES

BRAZING PINS & CERAMIC RINGS

STANDARD BRAZING PINS

| Part No. | Description |
|----------|----------------------|
| 35835 | 8 mm |
| 35836 | 8 mm w/ extra silver |
| 35837 | 9.5 mm |
| 35840 | M8/12 Threaded |
| 35841 | M10 Threaded |
| 35839 | M12 Threaded |

NOTICE

Brazing Pins are for use on Rail Only

Ceramic Ring Reqd

| |
|-------|
| 35832 |
| 35832 |
| 35833 |
| 35834 |
| 35834 |
| 35834 |



CERAMIC RINGS

| Part No. | Description |
|----------|-------------|
| 35832 | 8 mm |
| 35833 | 9.5 mm |
| 35834 | 12 mm |



PIN & RING HOLDERS

| Part No. | Description |
|----------|---|
| 35826 | Pin Holder for Pinbrazing, 8-9,5 mm brazing pins. |
| 35827 | Pin Holder for Pinbrazing, M8 Threaded pins. |
| 35828 | Pin Holder for Pinbrazing, M10 Threaded pins. |
| 35829 | Pin Holder for Pinbrazing, M12 Threaded pins. |
| 35825 | Extended pin and ring holder set for 8-9,5 mm brazing pins. |
| 37945 | Ring Holder, 8 mm pin & ringholder Set |
| 35830 | Ring Holder, 8-9,5 mm ceramic rings. |
| 35831 | Ring Holder, 12 mm ceramic rings. |



35827 Pictured



35831 Pictured

CABLE LUGS (for Pin Brazing to rail)

| Part No. | Description | Brazing Pin Reqd |
|----------|--|------------------|
| 47523 | Braze Lug for 25 mm Cable | 35836 |
| 47524 | Braze Lug for 35 mm Cable | 35836 |
| 47525 | Braze Lug for 50 mm Cable | 35836 |
| 39241 | Cable Shoe #6 | 2 x 35836 |
| 35847 | Cable Shoe 10 mm | 35835 |
| 35855 | Cable Shoe D=8 mm | 35836 |
| 47526 | Cable Lug for 16 mm Cable | 35835 |
| 47527 | Cable Lug for 25 mm Cable | 35836 |
| 47528 | Cable Lug for 35 mm Cable | 35836 |
| 47529 | Cable Lug for 50 mm Cable | 35836 |
| 47522 | Cable Lug 5/8" ground rod to #2 cable | 2 x 35836 |
| 47521 | Braze Sleeve #6 to #6 | 35836 |
| 41625 | Multi-Wire Track Connection | 2 x 35836 |
| 35865 | Clip for 18x5mm | 35835 |
| 67122 | Brazing Clip (Secures Wire to Rail) | 35835 |



47523 Pictured



39241 Pictured



47527 Pictured



47521 Pictured



41625 Pictured



67122 Pictured

ACCESSORIES

BONDING CABLE WITH LUGS (for Pin Brazing)

| Part No. | Description | | Brazing Pin Req'd |
|----------|---|--|-------------------|
| 35845 | 1 AWG / 50 mm ² , 185 mm long, copper |  | 35837 |
| 35844 | 4 AWG / 25 mm ² , 145 mm long, copper | | 35835 |
| 39243 | 3/16 Bond, 300 mm long | | 35835 |
| 39244 | 25 mm ² , 200 mm long | | 35835 |
| 37944 | 50 mm ² , 185 mm long |  | 35836 |
| 39705 | Bond Wire 16" OAL x 25 mm | | 35835 |
| 39706 | Bond Wire 24" OAL x 25 mm | | 35835 |
| 39707 | Bond Wire 36" OAL x 25 mm | | 35835 |
| 39242 | 3/16 Bond Crimpable Sleeve |  | 35835 |
| 40366 | Signal Extension Bond 3/16" (170 mm) | | 35835 |
| 40091 | Signal Extension Bond 150 mm L=430 | | 35837 |
| 40090 | Signal Extension Bond 2 x 35 mm - 2 x L=170 | | 35836 |
| 41635 | 3/16 Signal Bond Wire W/Eye & Crimpable sleeve 24 inch long |  | 35835 |
| 58563 | 3/16 x 7"/180 mm Long with Electrode & Ferrule | | 35835 |
| 41815 | 3/16 Bond 12' Long Eyelet one end, AL block for Tig Weld Other End | | |
| 43686 | Extension Bond CU, 25 mm ² , x 330 mm Long | | 35835 |
| 43519 | 3/16 Extension Bond 12" |  | 35835 |
| 41225 | Bond Wire 34" Long C/L-C/L W/9 mm eyelets on both ends | | 35835 |
| 41226 | Bond Wire 46" Long C/L-C/L W/9 mm eyelets on both ends. | | 35835 |
| 66579 | 25mm ² x 500mm Extension Bond | | 35835 |
| 66580 | 25mm ² x 900mm Extension Bond |  | 35835 |
| 66269 | Signal Bond 3/16" x 6' Braze Lug Both Ends | | 35835 |
| 67634 | Railbond 300 mcm L=330 mm Uninsulated (4) 9.5 Pins Required | | 35837 |
| 73016 | Railbond 300 MCM | | |
| 72988 | Railbond 3/16, 4 in. Reversed (50 pack) |  | 35837 |
| 72989 | Railbond 3/16, 6 in. Reversed (50 pack) | | |
| 73016 | 300MCM Rail Bond | | |
| 67635 | Extension Bond 300 mcm x 200 mm crimp sleeve (2) 9.5 Pins Required | | |
| 47530 | Bungalow Grounding Bond 3/16" | | 35836 |

"T" CONNECTORS (for Pin Brazing)

TYPE C

| Part No. | Description |
|----------|---|
| 35857 | Copper Plate with M8 x 18 Brass Threaded Stud |



Brazing Pin Req'd
35835 x 2

35857 Pictured

TYPE D

| Part No. | Description |
|----------|--|
| 35860 | Copper Plate with M16 x 26 Stainless Steel Threaded Stud |
| 35861 | Copper Plate with M16 x 32 Stainless Steel Threaded Stud |



Brazing Pin Req'd
35837 x 4
35837 x 4

35860 Pictured

ACCESSORIES

Grinder Abrasives

| Part No. | Description |
|----------|---|
| 73052 | Bull Nose Stone 2 in. Dia, (1/4 in. Shank) |
| 66976 | Bull Nose Stone BNSF 2 in. Dia, (1/4 in. Shank) |
| 73358 | Carbide Burr SF 5 (1/4 in. Shank) |



GRINDER

| Part No. | Qty | Description |
|-----------|-----|--|
| HGE12141 | | Cordless Grinder - Includes: (Grinder Only) NO Battery or Charger |
| HGE12151 | | Cordless Grinder Kit (Includes: Grinder, Battery and Charger) |
| HGE12161 | | Cordless Grinder Kit (Includes: Grinder, Battery, Charger and Bull Nose Stone) |
| HGE12161B | | Cordless Grinder Kit (Includes: Grinder, Battery, Charger, Bull Nose Stone and BNSF Stone) |
| 73399 | | Battery 18V and Charger 120V |
| 73400 | | Battery 18V |



Fuses, Chargers, & Batteries

| Part No. | Description |
|----------|---------------------------------------|
| | Control Fuse, 5A Grinder Fuse, 15A |
| 72972 | Charger 36 V / 110 V ECONNECT |
| 73077 | Econnect Battery Kit |



ACCESSORIES

CABLES

Part No. Description

72999 Econect Ground Magnet _____



72973 Carrying Strap _____



66266 Ground Clamp Assembly (Vise Grip Style) _____



72974 Carrying Case _____



EPX10200 Econect Unit _____



EPX10340 SafeBond Kit Econect (Includes: BG20600 Brazing Gun Econect Safebond, EPX10200 Econect Unit, HGE12151 Grinder Elec Cordless Kit, 72972 Charger 36V/110V Econect, 72973 Carrying Strap, and 72974 Carrying Case, 73358 Carbide Burr).

EPX10040 Econect Kit - (Includes: BG10600 S-15 Automatic Brazing Gun, EPX10200 Econect Unit, HGE12151 Grinder Elec Cordless Kit, 72972 Charger 36V/110V Econect, 72973 Carrying Strap, and 72974 Carrying Case, 73358 Carbide Burr)

GUNS

Part No. Description

BG10600 S-15 Automatic Brazing Gun _____

73078 Econect S-15 Gun Cable _____

BG20600 Brazing Gun Econect Safebond _____



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