
EPX151 Heavy Duty Electronic Pinbrazing/SafeBond®



Safety, Operation and maintenance User's Manual

⚠ WARNING

SERIOUS INJURY OR DEATH
COULD RESULT FROM THE IM-
PROPER REPAIR OR SERVICE
OF THIS TOOL.

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



Read
The
Manual



Wear
Breathing
Protection



Wear
Hearing
Protection



Wear
Eye
Protection

STANLEY®

Stanley Hydraulic Tools

3810 SE Naef Road
Milwaukie, OR 97267-5698 USA
Phone: (503) 659-5660
Fax: (503) 652-1780
www.stanleyrailroadproducts.com

SAFETY FIRST

It is the responsibility of the operator and service technician to read rules and instructions for safe and proper operation and maintenance.

A cautious worker
using common sense
is the greatest safety device

COPYRIGHT© 1999 The Stanley Works. All rights reserved.

Under copyright law, this document may not be copied in whole or in part without the prior written consent of The Stanley Works. This exception does not permit copies to be made for others, whether or not sold. Under the law, copying includes translating into another language, format, or medium. This copyright notice must appear on any permitted copies.

CONTENTS

Contents(thispage).....	1
Specification.....	1
SafetyPrecautions.....	2
ToolStickers&Tags.....	3
SafebondMethod.....	5
BatteryCharging.....	6
Pinbrazing.....	7-8
Safebond.....	9-13
Maintenance.....	14
Troubleshooting.....	15
Warranty.....	16

General

Read the instructions carefully before using the EPX151 unit.



A. Check that all parts are received.

Guarantee: Units 12 months, batteries 6 months. Valid only when using original parts, batteries and chargers supplied or approved by *STANLEY*.

Technical Specifications

Technical specification

Voltage 36V DC

Number of Pinbrazings per charge 100 - 200

Number of SAFEBOND brazings per charge 20 - 70

Unit weight including batteries Kg / lb

Dimensions (LxWxH) 705x407x405mm / 29,5"x18"x17,5"

Required equipment to operate the unit:

Make sure you have received below equipment, which is the only approved, to achieve a sufficient SAFEBOND® application!

Grinding machine 36 V DC

Carbide Burr, short, STANLEY 35808

Carbide Burr, extended, STANLEY P/N 52633

High Power batteries, sealed 26 Ah

Battery charger made for pinbrazing units, special 36 V DC

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, may result in minor or moderate 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.

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.

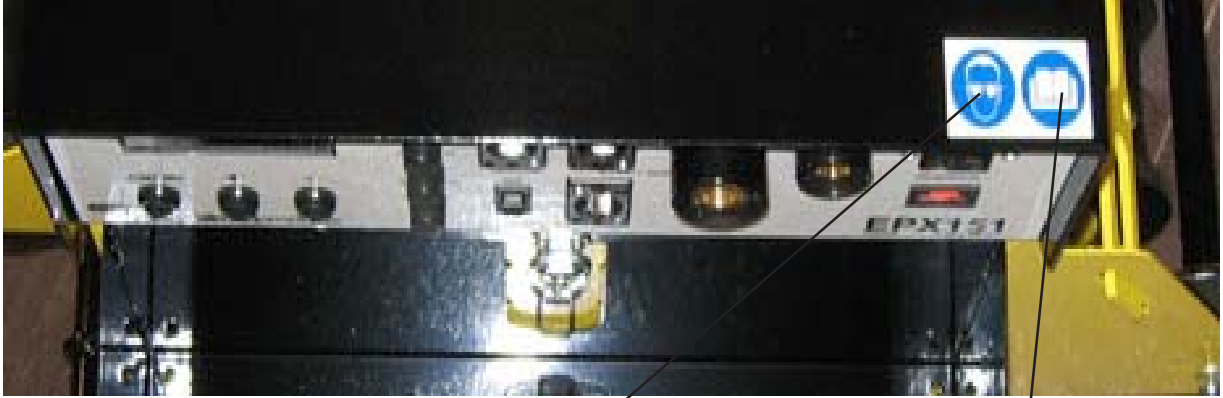
Supervising personnel should develop additional precautions relating to the specific work area and local safety regulations. If so, place the added precautions in the space provided on page 4.

GENERAL SAFETY PRECAUTIONS

The Electronic Pin Brazing/SafeBond EPX31 unit 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 and hoses before operation. Failure to do so could result in personal injury or equipment damage.


- 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 safety shoes 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.
- 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.

TOOL STICKERS & TAGS



EYE PROTECTION STICKER P/N 31049

MANUAL STICKER P/N 28788



Since the use of harder and harder rail is increasing have the **SAFE BOND®** brazing method been developed to meet the need for a safe and fast method to appicate electrical connections to the rails.

Due to the fact that hardening effects are created when the temperature of the rail is increasing 720 °C/1328 °F is the method based on that a special silver alloy(with a lower melting temperature),which is placed beneth the copper cable lug,is melted by an electronically controlled energy amount powered by a 36 V DC battery unit.

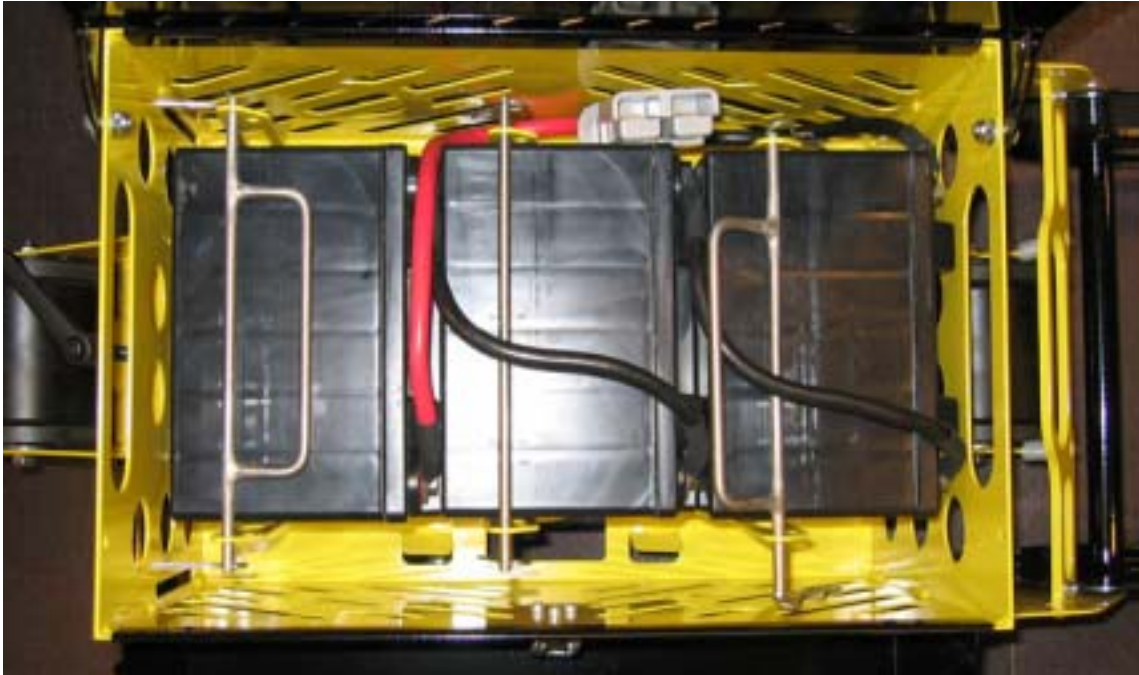
NOTE!

Since it is a braze method and the hardened rail is very sensitive for over heating is it very important that we use a special cleaning method starting with grinding with a carbide burr of the braze surface and the grounding spot, followed by application of a special brazing flux that will protect the surface from oxidation.

Charging the batteries.

For use with sealed High Power 26 Ah Batteries only.

1. Connect the batteries in series in the battery box.
Important that the cables are folded and mounted as shown in picture below.



2. Be sure it is a well ventilated room being used as a charging room.
3. Connect the battery charger to the charger outlet on the unit, then to the mains. When removing the charger remove the main first, then remove the plug from the unit. When charging the battery box separately, use an adapter between the plug of the charger and the connector on the battery box.
4. Charging is ready after about 3-5 hours. See the specific instructions for the charger you are using. Normally when charging is complete the indicator light on the charger will blink.

⚠ CAUTION

The Charger may not be placed over the batteries while charging! In case of gas formation.

NOTICE

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

PinBrazing



⚠ CAUTION



Always Use eye protectors when grinding and brazing.

Operation.

1. Connect the brazing gun, power and trigger cable to the unit.
2. Connect the ground cable to the unit.
3. Connect the grinder to the unit.

Note, use only STANLEY's grinding wheel or carbide burr specially made for Pinbrazing, other type of wheels will leave a surface not suitable for Pinbrazing. Keep the grinding wheel clean and free from oil etc.

4. Grind the brazing and grounding area until you have an even and clean surface.



Move the grinder up and downwards.



Even the surface also for the earthing.

5. Switched on the unit.
6. Adjust the right pin type, Using + or - to select.

- 01-SAFEBOND 3/16" CABLE
- 02-SAFEBOND 16mm² CABLE
- 03-SAFEBOND 25-50mm² CABLE
- 04-SAFEBOND 70mm² CABLE
- 05-PINBRAZING 8mm STANDARD
- 06-PINBRAZING EXTRA SILVER
- 07-PINBRAZING THREADED M8,M10,M12
- 08-PINBRAZING 9,5
- 09-GUN ADJUSTMENT

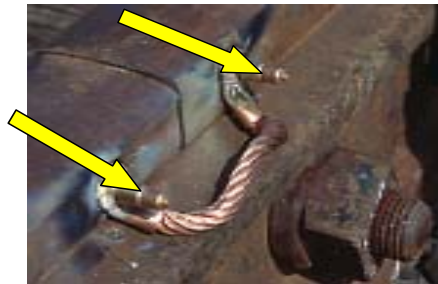


7. Load the gun with a brazing pin and ferrule.
IMPORTANT! Make sure you are using the correct ferrule and brazing pin!
8. Make sure to Pinbrazed in the top of the hole when brazing to a vertical surface.



9. Hold the gun firmly with both hands as shown and pull the trigger just once.
The electronics will by it self finish the braze.
10. Hold the gun in place for 3-4 seconds after the brazing, while the braze cools.
11. Remove the gun **straight** backwards without pulling the trigger.
12. Knock off the shank of the brazing pin.

The brazing is completed.





⚠ CAUTION



Always Use eye protectors when grinding and brazing.

Operation.

Preparation of the rail

1. Connect the Safebond gun, power and trigger cable to the unit.
2. Connect the ground cable to the unit.
3. Connect the grinder to the unit.

IMPORTANT

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



4. Grind the brazing and grounding areas until you have an even and clean surface.

Note: Sometimes when there is not enough room for the grinder you may have to use a extended carbide burr.



Grind both for the ground an the brazing area.
Move the grinder up and downwards.

5. 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 the following braze areas.



SAFE BOND 1, 3/16" CABLE

6. Switch on the unit.
7. Set the correct pin type "SAFE BOND". Using + or - to select.

- 01-SAFE BOND 3/16" CABLE
- 02-SAFE BOND 16mm² CABLE
- 03-SAFE BOND 25-50mm² CABLE
- 04-SAFE BOND 70mm² CABLE
- 05-PIN BRAZING 8mm STANDARD
- 06-PIN BRAZING EXTRA SILVER
- 07-PIN BRAZING THREADED M8,M10,M12
- 08-PIN BRAZING 9,5
- 09-GUN ADJUSTMENT



8. Load the gun with the braze electrode and protection ferrule delivered together with the special cable connector.

IMPORTANT

Make sure you are using the correct ferrule and braze electrode!



9. Set the wheel in position "-" on the back of the gun. The gun will automatically adjust to the right lift level every time you braze.



CAUTION

ALWAYS USE SUPPLIED EYE PROTECTORS (DARK GLASSES) WITH UV PROTECTION WHEN GRINDING OR BRAZING.

Persons with eye disease, photo phobia or persons who take medicine that can increase the eyes sensitivity 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.

10. Apply a small amount of braze flux to the top side of the lug, just enough to wet the flat part of the braze electrode facing the lug.
11. Make sure to braze in the center of the lug.
The shape of the lug (see photo).
12. Press the gun firmly with both hands as shown, with the cable lug, ferrule and braze electrode against the work piece.



13. Pull the trigger just once. The electronics will automatically control the brazing process. If the brazing is incomplete the unit will signal this with three beeps and display "ERROR".

NOTICE

Don't turn your head around while brazing, it's better to shut your eyes during the process.

14. Hold the gun in place for **3 seconds** after the brazing, the unit will beep once after 3 seconds, this allows the braze to solidify.
Remove the gun without (re-) pulling the trigger!
15. **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.

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

The brazing is completed.

SAFE BOND 2, 16mm², 25-50mm² AND 70mm² CABLE

6. Switch on the unit.
7. Set the correct pin type "SAFE BOND". Using + or - to select.

- 01-SAFE BOND 3/16" CABLE
- 02-SAFE BOND 16mm² CABLE
- 03-SAFE BOND 25-50mm² CABLE
- 04-SAFE BOND 70mm² CABLE
- 05-PIN BRAZING 8mm STANDARD
- 06-PIN BRAZING EXTRA SILVER
- 07-PIN BRAZING THREADED M8,M10,M12
- 08-PIN BRAZING 9,5
- 09-GUN ADJUSTMENT



8. Load the gun with the braze electrode and protection ferrule delivered together with the special cable connector.

IMPORTANT

Make sure you are using the correct ferrule and braze electrode!

9. Set the wheel in position "-" on the back of the gun. The gun will automatically adjust to the right lift level every time you braze.



⚠ CAUTION

ALWAYS USE SUPPLIED EYE PROTECTORS (DARK GLASSES) WITH UV PROTECTION WHEN GRINDING OR BRAZING.
Persons with eye disease, photo phobia or persons who take 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.

10. Make sure to braze in the center of the lug. The shape of the lug (see photo)
11. Press the gun firmly with both hands as shown, with the cable lug, ferrule and braze electrode against the work piece.
The gun is fitted with a gyro in the front, too give you better control off the brazing.
Try too keep the gun straight during the braze, the bond is going to move a little bit, but this movement is compensated by the gyro.



12. Pull the trigger just once. The electronics will automatically control the brazing process.
If the brazing is incomplete the unit will signal this with three beeps and display "ERROR".

NOTICE

Don't turn your head around while brazing, it's better to shut your eyes during the process.

13. Hold the gun in place for **3 seconds** after the brazing, the unit will beep once after 3 seconds, this allows the braze to solidify.
Remove the gun without (re-) pulling the trigger!
14. **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.

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

The brazing is completed.

GRINDER / Carbide burr

-Make sure there is no residues on the burr, for example: Paint, glue, galvanization, oil etc. If so change to a new one.

BATTERIES

Check that:

Weekly:

- The cables are tight and intact.
- The terminals are free of oxide.

Daily:

- The batteries are fully charged.

If you are using an extra battery cassette, try to use it as much as the other battery cassette, and always keep it fully charged.

The best way to check sealed batteries conditions is to use a meter that puts a load on the battery while measuring.

BRAZING UNIT AND BRAZING GUN

Weekly:

- Check the cables from time to time for damage; replace as required.
- Check that the lift level is correct with lift level tool.

Daily:

-Check that the electrode holder is not burnt or not holding the electrode tightly. If not: Remove the ring holder with a 2,5 mm hexagon wrench, clean all parts and squeeze the fingers of the electrode holder together.

BRAZING FERRULES AND BRAZE ELECTRODES

Continuously:

- Keep them dry and sealed in package until use.
- Check that the surface at the electrode is even and without any damage.

In order to perform trouble shooting you will need the following tools:
Voltmeter, 8 mm and 10 mm wrenches, 2.5 mm, 3 mm, 4 mm, and 5 mm hexagon wrenches,
control instrument; optional - battery load meter.

- Working Material** Are the bonds in good condition - no breaks, clean?
Stored in their sealed bags until they will be used?
- Grinding** Is the grinding wheel the approved type?
You can only use a steel carbide burr for **Safebond**.
No other wheels are allowed.
For **Pinbrazing** you can also use the special red grind stone.
Provided by Stanley.
Only use an electric grinding machine, to prevent
contamination etc. Air tools are not allowed since the air they
use is mixed with oil.
- Batteries** Sealed cells - check voltage
36V DC battery needs to be charged.
39V DC battery is fully charged.
To check the batteries condition use a battery load meter.
- Gun** Check cables, plugs.
Does axle move easily with pin and ring fitted?
Is the lift level correct, use enclosed lift height instrument.
Are the electrode and ring holders bent?
Remove ring holder and squeeze the fingers on the electrode
holder together.
Clean inside the ring holder.
Check the lifting height with the control instrument.
- Ground Magnet** Is the magnet broken (between the plates)?
Is the plug well screwed in?
Even the plates with a file.
- Electronic Unit** Check cables and connections for tightness.
Are the contacts on the cables damaged?
Are the knobs loose?
Check the fuses.
Check that the cables are attached correctly.
Make a full optical control.
- Battery Charger** Measure with a voltmeter under load that the unit is working.

Service:

Stanley Rail Road Products 3810 SE Naef Road, Milwaukie, USA Tel. +1-503 659 5660 Fax. +1-503 652 1780

WARRANTY

Stanley Hydraulic Tools (hereinafter called "Stanley"), subject to the exceptions contained below, warrants new hydraulic tools for a period of one year from the date of sale to the first retail purchaser, or for a period of 2 years from the shipping date from Stanley, whichever period expires first, to be free of defects in material and/or workmanship at the time of delivery, and will, at its option, repair or replace any tool or part of a tool, or new part, which is found upon examination by a Stanley authorized service outlet or by Stanley's factory in Milwaukie, Oregon to be DEFECTIVE IN MATERIAL AND/OR WORKMANSHIP.

EXCEPTIONS FROM WARRANTY

NEW PARTS: New parts which are obtained individually are warranted, subject to the exceptions herein, to be free of defects in material and/or workmanship at the time of delivery and for a period of 6 months after the date of first usage. Seals and diaphragms are warranted to be free of defects in material and/or workmanship at the time of delivery and for a period of 6 months after the date of first usage or 2 years after the date of delivery, whichever period expires first. Warranty for new parts is limited to replacement of defective parts only. Labor is not covered.

FREIGHT COSTS: Freight costs to return parts to Stanley, if requested by Stanley for the purpose of evaluating a warranty claim for warranty credit, are covered under this policy if the claimed part or parts are approved for warranty credit. Freight costs for any part or parts which are not approved for warranty credit will be the responsibility of the individual.

SEALS & DIAPHRAGMS: Seals and diaphragms installed in new tools are warranted to be free of defects in material and/or workmanship for a period of 6 months after the date of first usage, or for a period of 2 years from the shipping date from Stanley, whichever period expires first.

CUTTING ACCESSORIES: Cutting accessories such as breaker tool bits are warranted to be free of defects in material and or workmanship at the time of delivery only.

ITEMS PRODUCED BY OTHER MANUFACTURERS: Components which are not manufactured by Stanley and are warranted by their respective manufacturers.

- a. Costs incurred to remove a Stanley manufactured component in order to service an item manufactured by other manufacturers.

ALTERATIONS & MODIFICATIONS: Alterations or modifications to any tool or part. All obligations under this warranty shall be terminated if the new tool or part is altered or modified in any way.

NORMAL WEAR: any failure or performance deficiency attributable to normal wear and tear such as tool bushings, retaining pins, wear plates, bumpers, retaining rings and plugs, rubber bushings, recoil springs, etc.

INCIDENTAL/CONSEQUENTIAL DAMAGES: To the fullest extent permitted by applicable law, in no event will STANLEY be liable for any incidental, consequential or special damages and/or expenses.

FREIGHT DAMAGE: Damage caused by improper storage or freight handling.

LOSS TIME: Loss of operating time to the user while the tool(s) is out of service.

IMPROPER OPERATION: Any failure or performance deficiency attributable to a failure to follow the guidelines and/or procedures as outlined in the tool's operation and maintenance manual.

MAINTENANCE: Any failure or performance deficiency attributable to not maintaining the tool(s) in good operating condition as outlined in the Operation and Maintenance Manual.

HYDRAULIC PRESSURE & FLOW, HEAT, TYPE OF FLUID: Any failure or performance deficiency attributable to excess hydraulic pressure, excess hydraulic back-pressure, excess hydraulic flow, excessive heat, or incorrect hydraulic fluid.

REPAIRS OR ALTERATIONS: Any failure or performance deficiency attributable to repairs by anyone which in Stanley's sole judgement caused or contributed to the failure or deficiency.

MIS-APPLICATION: Any failure or performance deficiency attributable to mis-application. "Mis-application" is defined as usage of products for which they were not originally intended or usage of products in such a manner which exposes them to abuse or accident, without first obtaining the written consent of Stanley. PERMISSION TO APPLY ANY PRODUCT FOR WHICH IT WAS NOT ORIGINALLY INTENDED CAN ONLY BE OBTAINED FROM STANLEY ENGINEERING.

WARRANTY REGISTRATION: STANLEY ASSUMES NO LIABILITY FOR WARRANTY CLAIMS SUBMITTED FOR WHICH NO TOOL REGISTRATION IS ON RECORD. In the event a warranty claim is submitted and no tool registration is on record, no warranty credit will be issued without first receiving documentation which proves the sale of the tool or the tools' first date of usage. The term "DOCUMENTATION" as used in this paragraph is defined as a bill of sale, or letter of intent from the first retail customer. A WARRANTY REGISTRATION FORM THAT IS NOT ALSO ON RECORD WITH STANLEY WILL NOT BE ACCEPTED AS "DOCUMENTATION".

NO ADDITIONAL WARRANTIES OR REPRESENTATIONS

This limited warranty and the obligation of Stanley thereunder is in lieu of all other warranties, expressed or implied including merchantability or fitness for a particular purpose except for that provided herein. There is no other warranty. This warranty gives the purchaser specific legal rights and other rights may be available which might vary depending upon applicable law.



Stanley Hydraulic Tools • 3810 S.E. Naef Road • Milwaukie, Oregon 97267-5698
Phone: 503/659-5660 • Fax: 503/652-1780