

# BG10100

## Pin Brazing Gun



### Safety, and Operation 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



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65750 11/2004

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**SERVICING THE Brazing Gun :** This manual contains safety, operation, and routine maintenance instructions. It does not contain service disassembly and service assembly instructions. Stanley Hydraulic Tools recommends that servicing of hydraulic tools, 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, 1-800-549-0517 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.

**⚠ DANGER**

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

**⚠ WARNING**

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

**⚠ CAUTION**

This safety alert and signal word indicate a potentially hazardous situation which, if not avoided, may result in minor or moderate injury.

**CAUTION**

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

**NOTICE**

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

**IMPORTANT**

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.

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## LOCAL SAFETY REGULATIONS

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

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# 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.

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 2.

## GENERAL SAFETY PRECAUTIONS

- 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 Brazing gun 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.

# Maintenance of S4 automatic gun



B.1. Check that all cables and lugs are tight always twist the plug in to the outlets on the units. The cable set has a locking screw on the plug that goes to the gun.

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

STANLEY	For brazing pin	Mark
35826	8-9,5 mm	A
35827	M8 threaded	B
35828	M10 threaded	C
35829	M12 threaded	D



Make sure that pinholder is tight to the gun, use spanners as the figure shows.

Otherwise a spark can destroy the shaft.

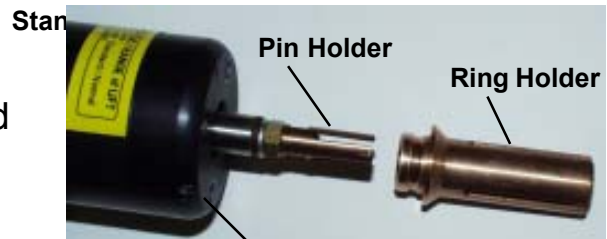
Spanner 8mm and 10mm for 8-9,5 mm and M8 pinholders.

Two pcs of spanner 10mm for M10 and M12 pinholders.

**Make sure, never twist the shaft when mounting the pinholder.**

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

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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.

Adjustment screw for ring holder

B.4. Load the gun with a 8mm pin and ferrule. Check that the shaft 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 shaft is damaged and must be sent for repair.



## Lift level tool SAFE 91245-ST

**IMPORTANT!** The normal liftheight is 2mm (setting 0) 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 set the gun in position “0” in the back (normal setting and gives a lift level of 2 mm).

**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**

**B.6. Reset correct liftheight on a S4 gun.**  
*Only when to reset a maladjusted gun.*

B.6.1. Set gun in position "0".

B.6.2. Fit the instrument SAFE 91245 on the gun as in B.5.

B.6.3. Connect the cables to the pinbrazing unit and switch on the power.

B.6.4. Take off the plastic plug with the needle in the upper small hole in the front of the gun.

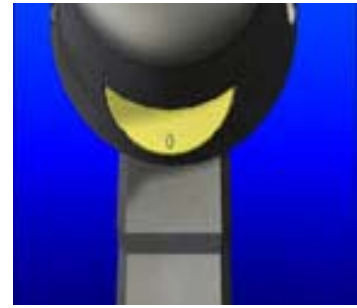
**IMPORTANT, never adjust in the hole where the big plug is!**

B.6.5. When liftheight is too **low**.  
Use the 3mm allen wrench 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.6.6. When liftheight is too **high**.  
Use the 3mm allen wrench 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.



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

### IMPORTANT

**USE ONLY GRINDING WHEELS FURNISHED BY STANLEY. OTHER WHEELS HAVE SHOWN TO LEAVE RESIDUES WHICH CAUSE FAULTY BRAZING.**

### WARNING

**Always use eye protectors when grinding and brazing**

1. Plug the grinder into the control box and 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 magnetic ground will be placed to ensure a good ground. The magnetic ground should be placed in close proximity to the brazing area.

## PLACING THE MAGNETIC GROUND

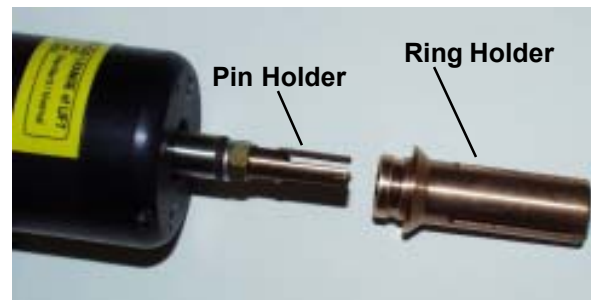
3. When finished grinding the rail for placement of the magnetic ground, place the magnetic ground on the cleaned surface and then insert the other end into the twist lock receptacle in the control box marked "GROUND" or "EARTHING" and twist to lock.

## 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.



- c. Install the correct pin holder and tighten it securely against the nut.  
**Make sure, never twist the shaft when mounting the pinholder.**
- 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.

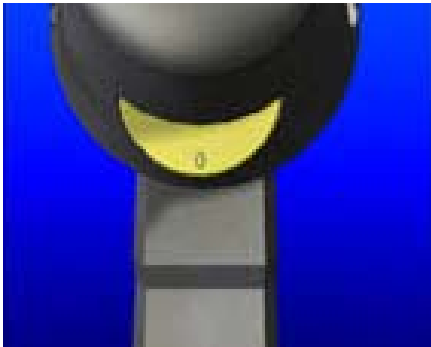
## ADJUSTING BRAZING PIN DISTANCE TO BRAZE SURFACE

## Model S4 Gun

No adjustment is required. The S4 gun automatically adjusts the correct distance of the brazing pin to the surface to be brazed.

In the event of a special situation, the S4 gun may be adjusted using the dial on the back. The settings are as follows:

- + = 2.5 mm distance.
- 0 = 2.0 mm distance. (NORMAL POSITION)
- = 1.5 mm distance.



**Model S4 Gun Adjustment**

8. Plug the 2 gun cables into the appropriate outlets on the control box.

### SET CONTROL FOR PIN SIZE

9. Set the "PIN TYPE" switch on the control box for the EP60 to the pin type being used. See the illustrations below.



10. Set the "PIN TYPE" switch on the control box for the EP30 to the pin type being used. See the illustration below.



11. 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 illustrations below.



12. **IMPORTANT!** Make sure you are using the correct ferrule and brazing pin! Also make sure to Pinbrazed in the top of the hole when brazing to a vertical surface.
13. Hold the gun firmly with both hands and pull the trigger just once. The electronics will finish the braze automatically.
14. Hold the gun in place for 3-4 seconds after the brazing, while the braze cools. Then remove the gun straight backwards without pulling the trigger.
15. Knock off the shank of the brazing pin.

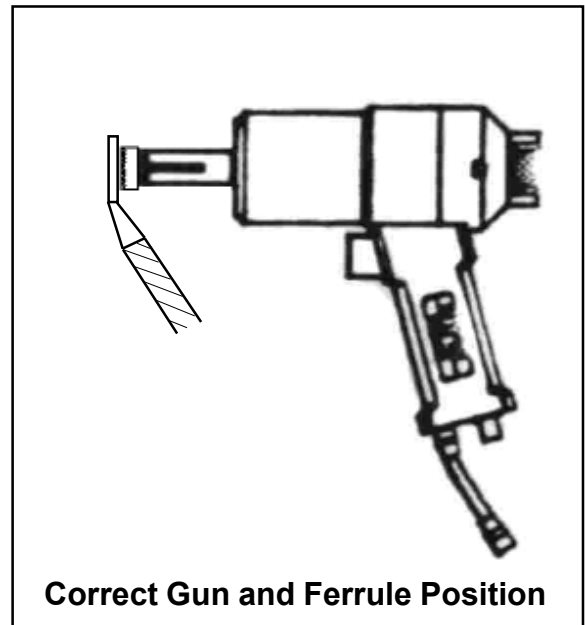
**The brazing is complete.**

**Note! A red lamp indicates when the batteries are low. If so indicated charge the unit as soon as possible.**

## GUN POSITION

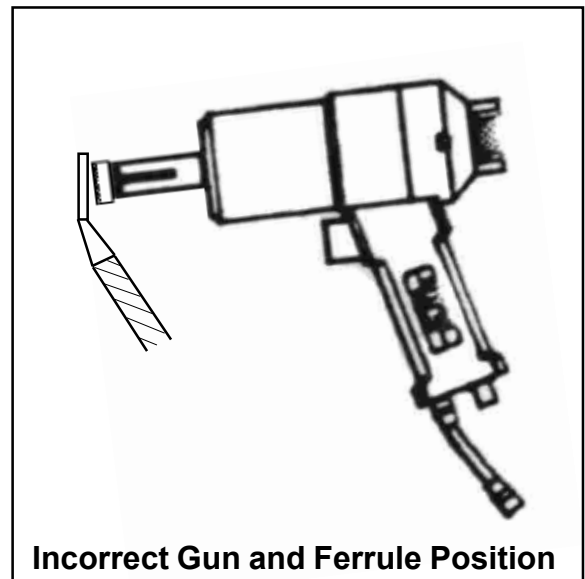
### **IMPORTANT**

HOLD THE GUN AT A RIGHT ANGLE TO THE WORK TO ENSURE A QUALITY BRAZE.



### **IMPORTANT**

ONLY PRESS THE TRIGGER ONCE. PRESSING THE TRIGGER MORE THAN ONCE CAN CAUSE A SHORT CIRCUIT WHICH MAY SEVERELY DAMAGE THE PIN HOLDER.



## MAINTENANCE

### **Weekly:**

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

### **Daily:**

Check that the pin holder is not burnt or not holding the pin tightly. If not: Remove the ring holder, clean all parts and squeeze the fingers of the pin holder together.

### **Brazing Ferrules and Braze Electrodes:**

#### **Continuously:**

Keep them dry and sealed in package until use.  
Keep them clean.8

## BRAZING PINS & CERAMIC RINGS

### STANDARD BRAZING PINS

Part No.	Qty	Description	Ceramic Ring Reqd
35835	100	8 mm	35832
35836	100	8 mm w/ extra silver	35832
35837	100	9.5 mm	35833
35840	50	M8 Threaded	35834
35841	50	M10 Threaded	35834
35839	50	M12 Threaded	35834



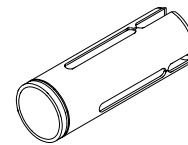
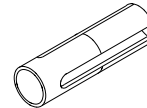
### CERAMIC RINGS

Part No.	Qty	Description
35832		8 mm
35833		9.5 mm
35834		12 mm



## 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..
35830	Ring Holder S4, 8-9,5 mm ceramic rings.
35831	Ring Holder S4, 12 mm ceramic rings.



## CABLE LUGS (for Pin Brazing)

Part No.	Description	Braze Pin Reqd
47523	Cable shoe 25 mm	35836
41625	Multi-Wire Track Connection	35836
35847	10 mm Cable Lug	35835
47526	16 mm Cable Lug	35835
47527	25 mm Cable Lug	35836
47528	35 mm Cable Lug	35836
47529	50 mm Cable Lug	35836



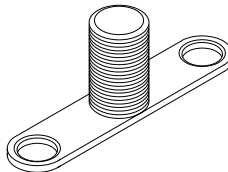
## ACCESSORIES Continued:



### BONDING CABLE WITH LUGS (for Pin Brazing)

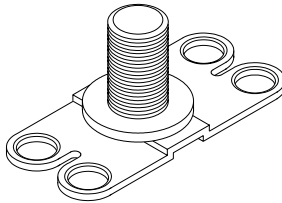
Part No.	Qty	Description	Brazing Pin Reqd
35845	50	1 AWG / 50 mm <sup>2</sup> , 185 mm long, copper	35836
35844	100	4 AWG / 25 mm <sup>2</sup> , 145 mm long, copper	35835
39243	100	3/16 Bond, 300 mm long	35835
39244	100	25 mm <sup>2</sup> , 200 mm long	35835
37944		50 mm <sup>2</sup> , 185 mm long	35836
39242		3/16 Bond Crimpable Sleeve	35835
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	35835
43686		25 mm <sup>2</sup> , x 330 mm Long	35835

### "T" CONNECTORS (for Pin Brazing)



#### TYPE C

Part No.	Qty	Description	Brazing Pin Reqd
35857	1	Copper Plate with M8 x 18 Brass Threaded Stud	35835
35858	1	Copper Plate with M12 x 35 Brass Threaded Stud	35835
35859	1	Copper Plate with M16 x 27 Brass Threaded Stud	35837

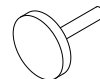


#### TYPE D

Part No.	Qty	Description	Brazing Pin Reqd
35860	1	Copper Plate with M16 x 26 Stainless Steel Threaded Stud	35837
35861	1	Copper Plate with M16 x 32 Stainless Steel Threaded Stud	35837

### GRINDER ABRASIVES

Part No.	Qty	Description
35808	1	Carbide Burr
52633	1	Carbide Burr Extended Long Shaft 1.5 in. Dia
35810	1	Grinding Wheel "Note, Not for SAFEBONDING!"



# TROUBLESHOOTING

If symptoms of poor performance develop, the following chart can be used as a guide to correct the problem.

SYMPTOM	CAUSE	REMEDY
<b>Brazing Gun not working.</b>	<b>Cables and Plugs not installed or not tight.</b>	<b>Check cables and plugs, always twist the plug into the outlets on the unit.</b>
	<b>Loose Pin Holder.</b>	<b>Make sure the pinholder is tight to the gun and make sure, never twist the shaft when mounting the pinholder.</b>
	<b>Low or Dead Batteries</b>	<b>Check batteries and charge or replace if necessary.</b>
<b>Shaft not moving freely.</b>	<b>Bent or damaged pinholder or ringholder.</b>	<b>Check with the pin and ferrule fitted in the gun by moving back and forward. Replace either pinholder or ringholder if damaged. If still doesn't move easily the shaft is damaged and must be returned for repair.</b>
<b>Gun operates poorly.</b>	<b>Incorrect Lift height.</b>	<b>Check the lifting height.</b>
	<b>Low Lift Height reduce the time and increase misfires.</b>	<b>Check the lifting height.</b>
	<b>High Lift Height increase the risk of a "coldbrazing".</b>	<b>Check the lifting height.</b>
	<b>Wet or dirty brazing ferrules or braze electrodes.</b>	<b>Keep them clean, keep them dry and in sealed packages until used.</b>
	<b>Poor ground connection.</b>	<b>Check ground connection, make sure the surface area for the ground magnet is even and clean.</b>

# 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 matter 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.



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