



PULSE-WIDTH MODULATION SYSTEM

OPERATOR MANUAL

For additional information, please visit us at www.steelgreenmfg.com





TABLE OF CONTENTS

GENERAL INFORMATION	3
CONTROLS AND OPERATION	4
SPRAY SYSTEM SG SERIES	4
SPRAY SYSTEM SG54	12
SPRAY SYSTEM SGXL	19
STANDARD VOLUME SPRAY CHART	27
NOTES	28
WARRANTY	29





GENERAL INFORMATION

Thank you for purchasing a Steel Green machine! Please read and understand this manual before operating this piece of equipment. This manual will assist you in areas of operation, safety, and maintenance. Any unresolved question can be directed to Steel Green Mfg. We at Steel Green are excited to hear feedback from our customer base so we can continue to provide you with the most productive and efficient equipment possible.

NOTICE

- This manual and all information and illustrations were accurate at the time of publication. Steel Green Mfg. reserves the right to make changes without notice.
- Please refer to standard operator manuals for all other operation & service.

IMPORTANT: READ SAFETY RULES AND INSTRUCTIONS CAREFULLY.

Serial Number:	 	
Date Purchased:	 	
Dealer Name:	 	
Dealer Phone Number:		



OPTI RATE

CONTROLS AND OPERATION

SPRAY SYSTEM SG SERIES

NOTICE

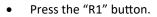
For hose reel operation, see page 10.

STEP 1:

- Once the system boots-up to the home screen, press & hold the "SPRAY TIP" BUTTON for approx. 5 seconds.
- Press the "SPRAY TIP" button repeatedly to cycle through & select desired spray tip color.

STEP 2:

select the "GPT" button.











OPTIERATE

CONTROLS AND OPERATION

- Enter the desired rate & press the "checkmark".
- Press the "GPT" button again to return to the home screen.

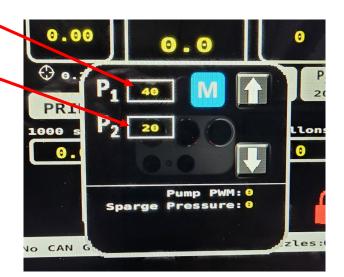
7 8 9 ← 4 5 6 △ 1 2 3 +/0 . 🗵 🗸

STEP 3:

Select the "PSI" button.



- Select "P1" & enter the desired max. spray pressure.
- Select "P2" & enter the desired min. spray pressure.
- Press the "PSI" button again to return to the home screen.



NOTICE

- Higher spray pressure will let you drive faster.
- Lower spray pressure will let you drive slower & minimize drift.
- Use the **Spray Calibration Chart** to determine the desired spray pressure.

Recommended spray pressure:

MAX.-40 PSI

MIN.- 20 PSI



OPTIMRATE

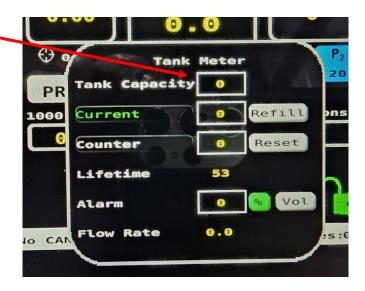
CONTROLS AND OPERATION

STEP 4:

• Select the "GALLONS" button.



• Select the tank capacity button.



• Enter the total tank capacity of your machine & press the "checkmark"





OPTI

CONTROLS AND OPERATION

• Select the "Current" button & enter the amount of fluid in the tanks if they are not full.



 Enter the amount of liquid in the tanks & press the "checkmark".

NOTICE

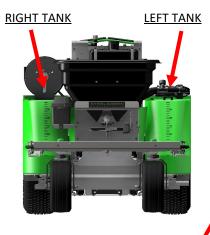
If you are spraying with 1 tank, enter the amount in the tank you are spraying with (see below).

STEP 5: Select tanks.

LIQUID TANKS:

- Each SG Series model is equipped with 2 Liquid Tanks. The tanks can be operated in tandem or separately.
- The left tank is controlled by 2 valves located on the left side of the upright. upper valve controls the suction, and Lower valve controls the return.
- The right tank is controlled by 2 valves located on the right side of the upright. upper valve controls the suction, and lower valve controls the return.
- For the spray system to operate properly, at least one return valve and one suction valve must be open. If the operator desires to pull from both tanks simultaneously, all 4 valves must be open.
- To pull from the either the left of right-side tanks, the corresponding valves must be open.











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CONTROLS AND OPERATION

STEP 6: Select Spray Boom Output

- Select *NORMAL* for even spray rate across the boom.
- Select *L EDGE* for left side trimming. *The left nozzle is set at 20% boost.*



STEP 7:

- Turn the spray pump on.
- Select the "PRIME" button to prime the system.



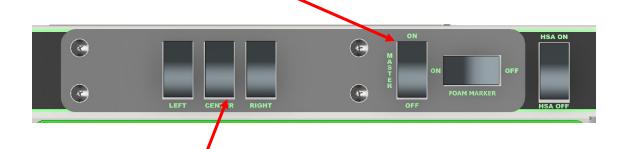




OPTI&RATE

CONTROLS AND OPERATION

Turn the power "ON" to the spray boom.



• Turn the desired boom section "ON".

The spray boom consists of 3-sections: Left Wing, Center Section, & Right Wing (see below).



NOTICE

Orientation is from the riders view, standing on the machine (layout is the same for all SG series).



OPTIMRATE

CONTROLS AND OPERATION

NOTICE

The bars on the screen should stay "GREEN" while spraying.

- If they turn "YELLOW", adjust your speed.
- If they turn "RED", there is a system error.

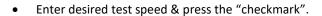


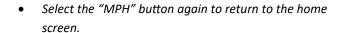
NOTICE

Use steps 8 & 9 to run any spray calibration test.

STEP 8:

- Select the "MPH" button to test the system.
- Select the "TEST SPEED" button.





STEP 9: With the pump on, test speed set, & psi set. Turn the spray boom switches & master boom switch "ON" to perform calibration test.









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CONTROLS AND OPERATION

HOSE REEL:

Each SG Series model is also equipped with either a 75' hose reel (SG52, SG46, SG42) or a 15' Coil Hose (SG36).
 This is meant to assist with spot spraying and or areas that are not able to be reached by the machine.

STEP 1:

- To operate, turn on pump switch, make sure the lever valves are turned off.
- Use the proper pressure dictated in the *Spray Calibration chart*.
- The hose reel or Coil Hose is turned on by a chrome valve.
- To apply press the handle together and mimic the spray pattern from the boom.



Make sure the hose reel or coil hose valve is turned off while not in use. Otherwise back pressure may be created and will cause the nozzle tips to drip.

STEP 2: Turn the spray pump on.

- The spray pump is turned on/off by one of two ways. A
 constant rocker switch is located on the dash panel. This
 pump will constantly run when the switch is pushed in
 the on position.
- A momentary spot spray switch is located on the left side of the operator's foot plate. This switch will only turn the pump on while depressed. Once pressure is lifted from the switch, the pump will shut off.

NOTICE

If the constant rocker switch is in the "on" position, the momentary switch will not function.











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CONTROLS AND OPERATION

SPRAY SYSTEM <u>SG54</u>

STEP 1:

- Once the system boots-up to the home screen, press & hold the "SPRAY TIP" BUTTON for approx.
 5 seconds.
- Press the "SPRAY TIP" button repeatedly to cycle through & select desired spray tip color.



STEP 2:

- select the "GPT" button.
- Press the "R1" button.







OPTIERATE

CONTROLS AND OPERATION

- Enter the desired rate & press the "checkmark".
- Press the "GPT" button again to return to the home screen.

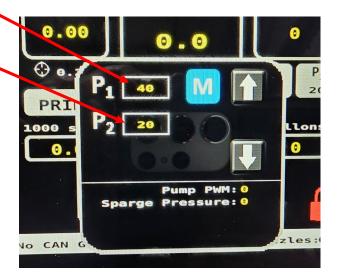
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STEP 3:

Select the "PSI" button.



- Select "P1" & enter the desired max. spray pressure.
- Select "P2" & enter the desired min. spray pressure.
- Press the "PSI" button again to return to the home screen.



NOTICE

- Higher spray pressure will let you drive faster.
- Lower spray pressure will let you drive slower & minimize drift.
- Use the *Spray Calibration Chart* to determine the desired spray pressure.

Recommended spray pressure:

MAX.- 40 PSI

MIN.- 20 PSI



OPTIMRATE

CONTROLS AND OPERATION

STEP 4:

• Select the "GALLONS" button.



• Select the tank capacity button.



Enter the total tank capacity of your machine & press the "checkmark".





OPTI RATE

CONTROLS AND OPERATION

STEP 5:

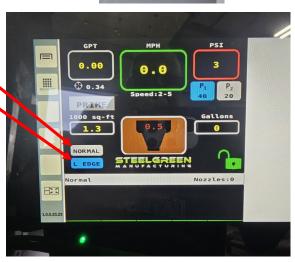
- Select the "Current" button & enter the amount of fluid in the tank if it's not full.
- Enter the amount of liquid in the tank & press the "checkmark".





STEP 6: Select Spray Boom Output

- Select *NORMAL* for even spray rate across the boom.
- Select L EDGE for left side trimming. The left nozzle is set at 20% boost.



STEP 7:

- Turn the spray pump on.
- Select the "PRIME" button to prime the system.









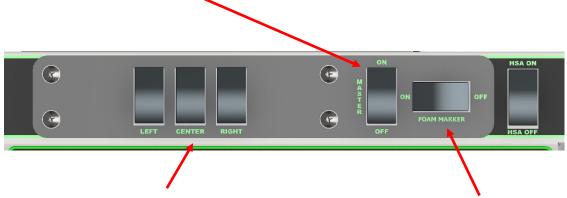
CONTROLS AND OPERATION

NOTICE

- For hose reel operation, be sure the spray boom power is OFF & proceed to hose reel operation page 17.
- Each section of the boom is controlled by an electronic spray valves. To power the boom, press the boom on\off button to the "ON" position, then press the desired section or sections button you wish to spray with see (Fig. 1).

STEP 8:

• Turn the power "ON" to the spray boom.



• Turn the desired boom section "ON".

FOAM MARKER ON\OFF

NOTICE

Refer to 2.5 gallon foam marker manual for operation.



Fig. 1

NOTICE

Orientation is from the riders view, standing on the machine.



OPTI RATE

CONTROLS AND OPERATION



NOTICE

The bars on the screen should stay "GREEN" while spraying.

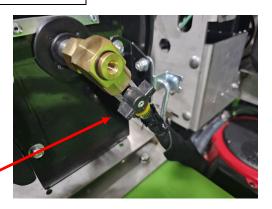
- If they turn "YELLOW", adjust your speed.
- If they turn "RED", there is a system error.

HOSE REEL OPERATION:

- The SG54 is equipped with 100 ft. hose reel. This is meant to assist with spot spraying and or areas that are not able to be reached by the Machine.
- To operate the hose reel, turn on pump switch, make sure the spray boom is turned off.
- Use the proper pressure dictated in the *Spray Calibration chart*.
- The hose reel is turned on by a chrome valve.
- To apply press the handle together and mimic the spray pattern from the boom.



Make sure the hose reel valve is turned off while not in use. Otherwise back pressure may be created and will cause the nozzle tips to drip.







OPTIERATE

CONTROLS AND OPERATION

NOTICE

Use steps 8 & 9 to run any spray calibration test.

STEP 8:

- Select the "MPH" button to test the system.
- Select the "TEST SPEED" button.





- Enter desired test speed & press the "checkmark".
- Select the "MPH" button again to return to the home screen.

STEP 9: With the pump on, test speed set, & psi set. Turn the spray boom switches & master boom switch "ON" to perform calibration test.





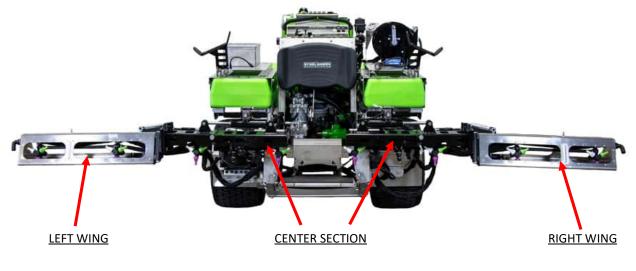


CONTROLS AND OPERATION

SPRAY SYSTEM <u>SGXL</u>

STEP 1: Lower the spray booms.

The spray boom consists of 3-sections: Left Wing, Left Center Section, & Right Wing (see below).

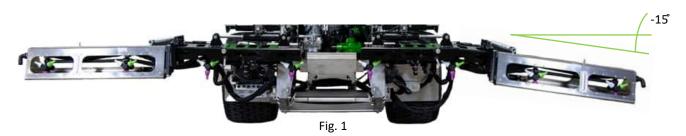




NOTICE

For extended cylinder life do NOT exceed a duty cycle no more than 30 seconds on & off for at least 90 seconds.

- Each boom section\wing holds 2 nozzles.
- The spray boom can be raised or lowered individually by pressing the up\down buttons. You can stop the booms at level or they can be positioned -15° for hill side spray (see Fig. 1).
- The foam marker is also controlled individually left or right boom by pressing the foam marker button left or right.





OPTI&RATE:

CONTROLS AND OPERATION

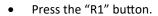
STEP 2:

- Once the system boots-up to the home screen, press & hold the "SPRAY TIP" BUTTON for approx. 5 seconds.
- Press the "SPRAY TIP" button repeatedly to cycle through & select desired spray tip color.



STEP 3:

select the "GPT" button.









OPTI

CONTROLS AND OPERATION

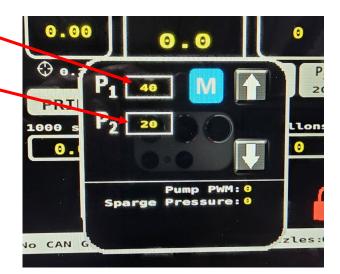
- Enter the desired rate & press the "checkmark".
- Press the "GPT" button again to return to the home screen.

STEP 4:

Select the "PSI" button.



- Select "P1" & enter the desired max. spray pressure.
- Select "P2" & enter the desired min. spray pressure.
- Press the "PSI" button again to return to the home screen.



NOTICE

- Higher spray pressure will let you drive faster.
- Lower spray pressure will let you drive slower & minimize drift.
- Use the *Spray Calibration Chart* to determine the desired spray pressure.

Recommended spray pressure:

MAX.-40 PSI

MIN.- 20 PSI





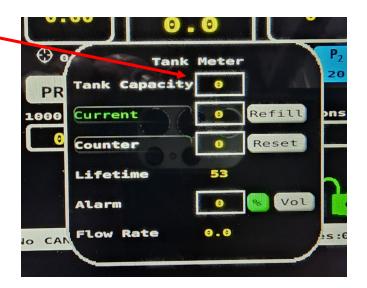
CONTROLS AND OPERATION

STEP 5:

• Select the "GALLONS" button.



• Select the tank capacity button.



Enter the total tank capacity of your machine & press the "checkmark".





OPTIKRATE

CONTROLS AND OPERATION

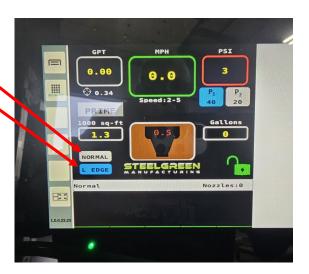
- Select the "Current" button & enter the amount of fluid in the tank if it's not full.
- Enter the amount of liquid in the tank & press the "checkmark".





STEP 6: Select Spray Boom Output

- Select NORMAL for even spray rate across the boom.
- Select *L EDGE* for left side trimming. *The left nozzle is set at 20% boost.*



STEP 7:

- Turn the spray pump on.
- Select the "PRIME" button to prime the system.





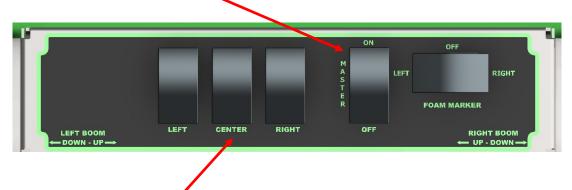


CONTROLS AND OPERATION

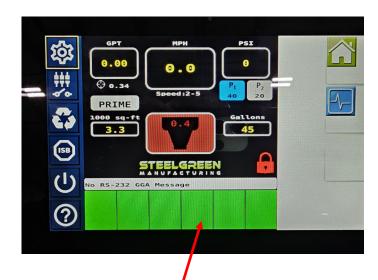
NOTICE

For hose reel operation, be sure the spray boom power is OFF & proceed to hose reel operation page 25

- Each section of the boom is controlled by an electronic spray valves. To power the boom, press the boom on\off button to the "ON" position, then press the desired section or sections button you wish to spray with.
- Turn the power "ON" to the spray boom.



• Turn the desired boom section "ON".



NOTICE

The bars on the screen should stay "GREEN" while spraying.

- If they turn "YELLOW", adjust your speed.
- If they turn "RED", there is a system error.



OPTIKRATE

CONTROLS AND OPERATION

HOSE REEL:

- The SGXL model is equipped with a 100' hose reel. This is meant to assist with spot spraying and or areas that are not able to be reached by the machine.
- To operate, engage the hose reel, make sure the boom switches are turned off.

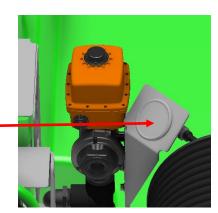
NOTICE

You can switch back & forth between the spray boom & hose reel. The computer will remember were the pressure is set.

- spray pressure is measured by the pressure gauge.
- Use the proper pressure dictated in the *Spray Calibration* chart.
- To activate the hose reel, open the chrome valve.
- Remove the spray gun from the clip, pull the lever back on the spray gun to spray.

NOTICE

Make sure the Hose Reel Valve is turned off while not in use. Otherwise back pressure may be created and will cause the nozzle tips to drip.









CONTROLS AND OPERATION

NOTICE

Use steps 8 & 9 to run any spray calibration test.

STEP 8:

- Select the "MPH" button to test the system.
- Select the "TEST SPEED" button.





- Enter desired test speed & press the "checkmark".
- Select the "MPH" button again to return to the home screen.

STEP 9: With the pump on, test speed set, & psi set. Turn the spray boom switches & master boom switch "ON" to perform calibration test.





OPTIARATE

CONTROLS AND OPERATION

Example: $(30 \text{ gal} \div .34 \text{ gal/1 k}) \times 1.3 \text{ oz} = 114.7 \text{ oz}$ (Tank Capacity ÷ Spray Rate) x Chemical Rate = Amount of product in tank Tabulations are based on spraying water at 70°F. NOTE: Always double-check your application rates. Droplet size classification shown is based on ISO 25358. Droplet size classification standard is subject to change

Mixing of liquid or dry product should be in accordance to manufacturers' labels. This machine is designed for low
volume spraying, and the mix will be more concentrated.
This machine is factory set to put down 1/3 gallon of liquid per thousand square feet (at 5 mph and 40 PSI). For
instance, some products call for 1.1 to 1.5 ounces per thousand square feet. It is recommended to use 1.3 ounces

1.68

215

125

3.8

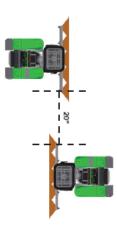
2.9

1.9

1.6

1.4

If you were filling a 30-gallon tank, your equation would look like of product per thousand square feet (median value of 1.1 to 1.5)





OPTIERATE

NOTES

Steel Green Manufacturing, LLC

1-Year Limited Warranty

- A. WHAT IS COVERED This Warranty applies to equipment having model numbers SG52, SG46, SG42, and SG36 ("Equipment") manufactured by Steel Green Manufacturing, LLC, an Indiana limited liability company ("Steel Green"). This Warranty only applies to Equipment purchased directly from Steel Green or an authorized dealer or distributor of the Equipment ("Authorized Dealers") in the United States. Except for Excluded Parts (as hereinafter defined), Steel Green agrees to repair or replace, at its option, any original component of the Equipment that is defective in material or workmanship (collectively "Warranty Service"). This Warranty begins on the date the product is delivered to the original purchaser and continues for a period of twelve (12) months thereafter (the "Warranty Term").
- B. WHAT IS NOT COVERED This Warranty does not apply to the following categories of equipment: (1) used Equipment, unless there has been an Approved Transfer (as hereinafter defined); or (2) Equipment that has been altered or modified in ways not approved by Steel Green, including, but not limited to, setting injection pump fuel delivery above specifications stated in the owner's manual. Furthermore, this Warranty does not apply to damage due to any of the following: (1) normal wear and tear; (2) the failure to perform reasonable and proper maintenance; (3) the failure to follow instructions and recommendations in the owner's manual; (4) negligent or intentional misuse; (5) failure to properly store the Equipment; (6) vandalism; (7) the elements and inclement weather; or (8) collision or accident. "Excluded Parts" means the following parts, which are not covered by and are expressly excluded from this Warranty: (1) consumable parts, such as oil, filters, belts, brakes, and spark plugs; (2) tires; (3) batteries; and (4) the engine. The manufacturers of the Excluded Parts may provide a separate warranty. See manufacturers' manuals for details.
- **C. WHO IS COVERED** This Warranty extends to the original purchaser of the Equipment who completes and returns the warranty registration card included with the Equipment to Steel Green and to any subsequent owner (collectively "you"), provided the subsequent owner notifies Steel Green of the change in ownership and Steel Green approves the transfer of this Warranty ("Approved Transfer"). An Approved Transfer does not extend the Warranty Term.
- D. HOW IS WARRANTY SERVICE OBTAINED To obtain Warranty Service, you must: (1) report the Equipment defect to Steel Green within the Warranty Term; and (2) deliver the Equipment for Warranty Service within a reasonable time thereafter. All Warranty Service must use new or remanufactured parts or components furnished or approved by Steel Green and must be performed by Steel Green, an Authorized Dealer, or a service center approved by Steel Green ("Authorized Service Center"), as directed by Steel Green. This Warranty only covers the costs of parts and labor associated with Warranty Service. You are responsible for delivering the Equipment for Warranty Service, at your sole cost and expense. Steel Green is not responsible for any costs or liability associated with any pickup, delivery, or other transportation required to obtain Warranty Service.
- E. ADDITIONAL LIMITATIONS AND EXCLUSIONS Except as expressly provided herein, Steel Green makes no warranties, representations, conditions or promises, express or implied, as to the quality, performance or freedom from defect of the Equipment covered by this Warranty. STEEL GREEN DOES NOT MAKE ANY STATUTORY OR IMPLIED WARRANTIES OR CONDITIONS OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE, AND SUCH WARRANTIES ARE EXPRESSLY DISCLAIMED. TO THE EXTENT THEY ARE LEGALLY REQUIRED, ANY IMPLIED WARRANTIES OR CONDITIONS SHALL BE LIMITED IN DURATION TO THE WARRANTY TERM.

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STEEL GREEN'S ONLY LIABILITY WITH RESPECT TO THIS WARRANTY AND YOUR EXCLUSIVE REMEDY SHALL BE FOR THE REPAIR OR REPLACEMENT OF PARTS AS SET FORTH HEREIN. NO CLAIM FOR BREACH OF WARRANTY SHALL ENTITLE YOU TO CANCELLATION OR RESCISSION OF THE PURCHASE OF THE EQUIPMENT.

IN NO EVENT WILL ANY AUTHORIZED DEALER, ANY AUTHORIZED SERVICE CENTER, STEEL GREEN OR ANY COMPANY AFFILIATED WITH STEEL GREEN BE LIABLE FOR INCIDENTAL OR CONSEQUENTIAL DAMAGES. Examples of such damages include, but are not limited to: (1) the loss or damage to person or property other than that covered by this Warranty; (2) attorneys' fees; (3) claims for lost revenue or lost profits; and (4) rental costs of similar equipment to the Equipment.

SOME STATES DO NOT ALLOW THE EXCLUSION OR LIMITATION OF INCIDENTAL OR CONSEQUENTIAL DAMAGES, OR LIMITATIONS ON THE DURATION OF AN IMPLIED WARRANTY, SO THE ABOVE LIMITATIONS AND EXCLUSIONS MAY NOT APPLY TO YOU. THIS WARRANTY GIVES YOU SPECIFIC LEGAL RIGHTS, BUT YOU MAY ALSO HAVE OTHER RIGHTS, WHICH VARY FROM STATE TO STATE.

- F. NO OTHER WARRANTIES NO OTHER PERSON OR ENTITY, INCLUDING ANY AUTHORIZED DEALER, HAS AUTHORITY TO MAKE ANY WARRANTY, REPRESENTATION, CONDITION OR PROMISE ON BEHALF OF STEEL GREEN, OR TO MODIFY THE TERMS OR LIMITATIONS OF THIS WARRANTY IN ANY WAY, WHETHER ORALLY OR IN WRITING. STEEL GREEN MAKES NO OTHER WARRANTY RELATED TO THE EQUIPMENT OR ANY OTHER ITEM UNLESS IT DELIVERS TO YOU A SEPARATE WRITTEN WARRANTY.
- **G. CONTACT** To obtain a replacement warranty registration card or report a defect in any Equipment, to find the nearest Authorized Dealer or Authorized Service Center or report your dissatisfaction with their assistance, or to otherwise obtain information regarding this Warranty, please contact Steel Green.

Steel Green Manufacturing LLC
Attn: Customer Service
824 S State Road 39
Lebanon, Indiana 46025
(765) 481-2890
sales@steelgreenmfg.com
Steelgreenmfg.com



WARRANTY REGISTRATION FORM

Fill out form completely and return to Steel Green Manufacturing

Email: sales@steelgreenmfg.com

Mail: 824 S State Road 39, Lebanon, IN 46052

Company Name:

CONTACT INFORMATION

Contact Name:		
Street:		
City:	State: ZIP Code:	
Phone:	Email:	
	MACHINE INFORMATION	
Serial Number:	Date of Purchase:	
Dealer Name:		
Street:		
City:	State: ZIP Code:	
Phone:	Salesperson:	



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