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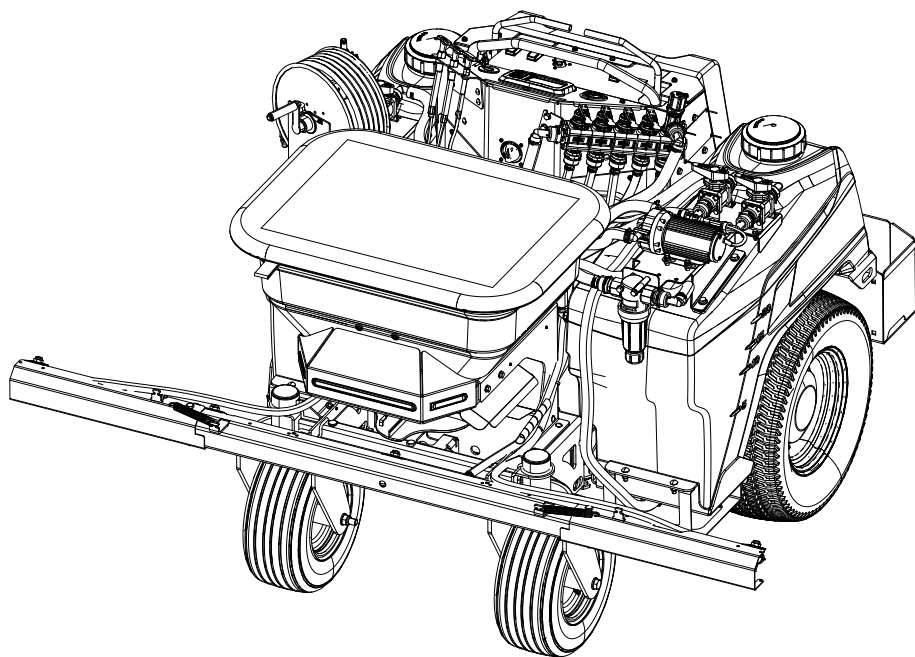
COMMERCIAL

SP952

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SPREADER / SPRAYER

OPERATOR MANUAL



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1 INTRODUCTION

1.1 PRODUCT DESCRIPTION

This product is a battery-operated spreader / sprayer with electric motors.

We are committed to continuously improving our products and reserve the right to modify the design and appearance without prior notice.

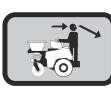
1.2 INTENDED USE

The product is designed for efficiently spreading free-flowing granular substances such as grass seeds, solid fertilizer, dry sand, ice melt, etc. It can also be used to spray fluids such as water and liquid fertilizers, liquid herbicides, pesticides, etc. It is not designed for any other purpose.

1.3 SYMBOLS ON THE PRODUCT

Read the safety decals before operating your product. The warnings have been developed for your safety. Understand and follow all safety decals to reduce the risk of a personal injury or property damage.

Symbol	Explanation
IPX4	Protection from splashing water.
	Indicates a potential personal injury hazard.
	Remove objects that can be thrown by the blade in any direction.
	To reduce the risk of injury, user must read and understand operator's manual before using this product.
	Cutting / dismemberment hazard—stay away from moving parts.
	Keep bystanders away.
	Use extra caution on slopes. Do not mow slopes greater than 15 degrees.
	Wear skin, eye, and respiratory protection.

Symbol	Explanation
	Wear ear protection.
	Professional training is required before operating the product.
	Do not tow this product, it may cause damage to the drive system.
	Do not carry passengers, look forward and down when operating the product, look behind and down when reversing.
	
	Always look down and behind you when maneuvering in reverse or turning around. Make sure children, bystanders, and pets are clear of the area.
	To reduce the risk of injury, keep hands and feet away from rotating parts.
	CAUTION — Do not stare at operating lamp.
	Do not open or remove safety shields while the product is running.
	Press or release the button to control the spray.
	Pull the neutral bypass lever outward to release the drive brake. Never unhook the neutral bypass lever on slopes. It can cause a loss of control.
	Disconnect power before maintenance.

1.4 ENVIRONMENTALLY SAFE BATTERY DISPOSAL



The toxic and corrosive materials below are in the batteries used in this product: **Lithium-ion, a toxic material.**

▲ WARNING

Discard all toxic materials in a specified manner to prevent contamination of the environment. Before discarding damaged or worn-out Lithium-ion battery, contact your local waste disposal agency, or the local Environmental Protection Agency for information and specific instructions. Take the batteries to a local recycling and/or disposal center, certified for Lithium-ion disposal.

▲ WARNING

If the battery pack cracks or breaks, with or without leaks, do not recharge it and do not use. Discard it and replace with a new battery pack. **DO NOT TRY TO REPAIR IT!** To prevent injury and risk of fire, explosion, or electric shock, and to avoid damage to the environment:

- Cover the terminals of the battery with heavy-duty adhesive tape.
- DO NOT try to remove or destroy any of the battery pack components.
- DO NOT try to open the battery pack.
- If a leak develops, the released electrolytes are corrosive and toxic. DO NOT get the solution in the eyes or on skin, and do not swallow it.
- DO NOT put these batteries in your regular household trash.
- DO NOT incinerate.
- DO NOT put them where they will become part of any waste landfill or municipal solid waste stream.
- Take them to a certified recycling or disposal center.

1.5 CALIFORNIA PROPOSITION 65

▲ WARNING

THIS PRODUCT CONTAINS OR EMITS A CHEMICAL KNOWN TO THE STATE OF CALIFORNIA TO CAUSE CANCER OR BIRTH DEFECTS OR OTHER REPRODUCTIVE HARM.

1.6 FCC 15 COMPLIANCE STATEMENT

This device complies with part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

▲ WARNING

Any changes or modifications to this unit not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

Note: This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his own expense.

To satisfy FCC / IC RF exposure requirements, a separation distance of 8 in. (20 cm) or more should be maintained between the antenna of this device and persons during device operation. To ensure compliance, operations at closer than this distance is not recommended.

FCC US AGENT / RESPONSIBLE PARTY:

Greenworks North America, LLC
P.O.Box 1238, Mooresville, NC 28115, USA
1-855-470-4267

www.greenworkscommerical.com

2 SAFETY

2.1 SAFETY DEFINITIONS

Warnings, cautions, and notes are used to point out especially important parts of the manual.

▲ WARNING

THERE IS A RISK OF INJURY OR DEATH FOR THE OPERATOR OR BYSTANDERS, IF THE INSTRUCTIONS IN THE MANUAL ARE NOT OBEYED.

▲ CAUTION

THERE IS A RISK OF DAMAGE TO THE PRODUCT, OTHER MATERIALS, OR THE ADJACENT AREA, IF THE INSTRUCTIONS IN THE MANUAL ARE NOT OBEYED.

Note: Used to give more information that is necessary in a given situation.

2.2 GENERAL SAFETY WARNINGS**▲ WARNING**

Read all safety warnings, instructions, illustrations and specifications provided with this product. Failure to follow all instructions listed below may result in electric shock, fire and/or serious injury.

Save all warnings and instructions for future reference.

The term "product" in the warnings refers to your mains-operated (corded) product or BATTERY-operated (cordless) product.

2.2.1 WORK AREA SAFETY

- **Keep work area clean and well lit.** *Cluttered or dark areas invite accidents.*
- **Do not operate the product in explosive atmospheres, such as in the presence of flammable liquids, gases or dust.** *The product creates sparks which may ignite the dust or fumes.*
- **Keep children and bystanders away while operating the product.** *Distractions can cause you to lose control.*

2.2.2 ELECTRICAL SAFETY

- **Product plugs must match the outlet. Never modify the plug in any way. Do not use any adapter plugs with earthed (grounded) product.** *Unmodified plugs and matching outlets will reduce risk of electric shock.*
- **Avoid body contact with earthed or grounded surfaces, such as pipes, radiators, ranges and refrigerators.** *There is an increased risk of electric shock if your body is earthed or grounded.*
- **When operating the product outdoors, use an extension cord suitable for outdoor use.** *Use of a cord suitable for outdoor use reduces the risk of electric shock.*
- **If operating the product in a damp location is unavoidable, use a Residual Current Device (RCD) protected supply.** *Use of an RCD reduces the risk of electric shock.*
- **Do not clean the product with water from a hose or a pressure washer.** *Water entering a product will increase the risk of electric shock.*
- **Do not operate the product in rain.** *Water entering a product will increase the risk of electric shock.*

2.2.3 PERSONAL SAFETY

- **Stay alert, watch what you are doing and use common sense when operating the product. Do not use the product while you are tired or under the influence of drugs, alcohol or medication.** *A moment of inattention while operating the product may result in serious personal injury.*
- **Use personal protective equipment. Always wear eye protection.** *Protective equipment such as a dust mask, non-skid safety shoes, hard hat, or hearing protection used for appropriate conditions will reduce personal injuries.*
- **Prevent unintentional starting. Ensure the switch is in the off-position before connecting to power source and/or Battery pack, picking up or carrying the product.**
- **Remove any adjusting key or wrench before turning the product on.** *A wrench or a key left attached to a rotating part of the product may result in personal injury.*
- **Do not overreach. Keep proper footing and balance at all times.** *This enables better control of the product in unexpected situations.*
- **Dress properly. Do not wear loose clothing or jewelry. Keep your hair, clothing away from moving parts.** *Loose clothes, jewelry or long hair can be caught in moving parts.*
- **If devices are provided for the connection of dust extraction and collection facilities, ensure these are connected and properly used.** *Use of dust collection can reduce dust-related hazards.*
- **Do not let familiarity gained from frequent use of tools allow you to become complacent and ignore tool safety principles.** *A careless action can cause severe injury within a fraction of a second.*

2.2.4 PRODUCT USE AND CARE

- **Do not force the product. Use the correct product for your application.** *The correct product will do the job better and safer at the rate for which it was designed.*
- **Do not use the product if the switch does not turn it on and off.** *Any product that cannot be controlled with the switch is dangerous and must be repaired.*
- **Disconnect the plug from the power source and/or remove the BATTERY pack, if detachable, from the product before making any adjustments, changing accessories, or storing the product.** *Such preventive safety measures reduce the risk of starting the product accidentally.*
- **Store an idle product out of the reach of children and do not allow persons unfamiliar with the product or these instructions to operate the product.** *A product is dangerous in the hands of untrained users.*

- **Maintain the product and accessories.** Check for misalignment or binding of moving parts, breakage of parts and any other condition that may affect the operation of the product. If damaged, have the product repaired before use. *Many accidents are caused by poorly maintained product.*
- **Keep cutting tools sharp and clean.** Properly maintained cutting tools with sharp cutting edges are less likely to bind and are easier to control.
- **Use the product, accessories and tool bits etc. in accordance with these instructions, taking into account the working conditions and the work to be performed.** Use of the product for operations different from those intended could result in a hazardous situation.
- **Keep handles and grasping surfaces dry, clean and free from oil and grease.** Slippery handles and grasping surfaces do not allow for safe handling and control of the product in unexpected situations.
- **Remove the key or disable the product when leaving the product unattended.** The product is dangerous to untrained users.

2.2.5 BATTERY TOOL USE AND CARE

- **Recharge only with the charger specified by the manufacturer.** A charger that is suitable for one type of battery pack may create a risk of fire when used with another battery pack.
- **Use the product only with specifically designated battery packs.** Use of any other battery packs may create a risk of injury and fire.
- **When battery pack is not in use, keep it away from other metal objects, like paper clips, coins, keys, nails, screws or other small metal objects, that can make a connection from one terminal to another.** Shorting the battery terminals together may cause burns or fire.
- **Under abusive conditions, liquid may be ejected from the battery; avoid contact. If contact accidentally occurs, flush with water. If liquid contacts eyes, additionally seek medical help.** Liquid ejected from the battery may cause irritation or burns.
- **Do not use a battery pack or product that is damaged or modified.** Damaged or modified batteries may exhibit unpredictable behavior resulting in fire, explosion or risk of injury.
- **Do not expose a battery pack or product to fire or excessive temperature.** Exposure to fire or temperature above 265°F (130°C) may cause explosion.
- **Follow all charging instructions and do not charge the battery pack or product outside the temperature range specified in the instructions.** Charging improperly or at temperatures outside the specified range may damage the battery and increase the risk of fire.

2.2.6 SERVICE

- **Have your product serviced by a qualified repair person using only identical replacement parts.** *This will ensure that the safety of the product is maintained.*
- **Never service damaged battery packs.** Service of battery packs should only be performed by the manufacturer or authorized service providers.

2.3 SAFE PRACTICES FOR SPREADER-SPRAYER

▲ WARNING

This product is capable of amputating hands and feet and throwing objects. Failure to observe the following safety instructions could result in serious injury or death.

2.3.1 GENERAL INFORMATION

- Read, understand, and follow instructions and warnings in this manual and on the product, and attachments.
- Only allow operators, who are responsible, trained, familiar with the instructions, and physically capable to operate the product.
- Do not carry passengers and keep bystanders away.
- Do not operate the product while under the influence of alcohol or drugs.
- Follow the manufacturer's recommendation for wheel weights or counterweights.

2.3.2 PREPARATION BEFORE OPERATING

- Clear the operating area of any objects which could be thrown by or interfere with operation of the product.
- Keep the area of operation clear of all bystanders, particularly small children. Stop the product and attachment(s) if anyone enters the area.
- Check frequently for signs of wear or deterioration and replace as needed.
- Wear appropriate personal protective equipment such as safety glasses, hearing protection, and footwear.
- Do not carry passengers anywhere on the product. Keep pets and bystanders out of the working area during operation.

2.3.3 CHEMICAL SAFETY

Chemical substances used in the spreader-sprayer system may be hazardous and toxic to you, bystanders, animals, plants, soils or other property.

- Carefully read and follow the chemical warning labels and Safety Data Sheets (SDS) for all chemicals used and protect yourself according to the chemical manufacturer's recommendations.

Ensure that as little skin as possible is exposed while using chemicals. Use appropriate personal protective equipment (PPE) to guard against personal contact with chemicals, such as the following:

1. safety glasses, goggles, and/or face shield
 2. chemical-resistant gloves
 3. rubber boots or other substantial footwear
 4. hearing protection
 5. respirator or filter mask
 6. clean change of clothes, soap, and disposable towels, to be kept on-hand in the event of a chemical spill
- If you are using more than 1 chemical, read the information about each chemical. Refuse to operate or work on the spreader-sprayer if this information is not available.
 - Before working on a spreader-sprayer system, ensure that the system has been triple rinsed and neutralized according to the recommendations of the chemical manufacturer(s) and that all the valves have been cycled three times.
 - Verify there is an adequate supply of clean water and soap nearby, and immediately wash off any chemicals that contact you.
 - Obtain proper training before using or handling chemicals.
 - Use the correct chemical for the job.
 - Follow the chemical manufacturer's instructions for the safe application of the chemical and do not exceed the recommended system application pressure.
 - Handle chemicals in a well-ventilated area.
 - Have clean water available, especially when filling the spray tank.
 - Do not eat, drink, or smoke while working with chemicals.
 - Do not clean spray nozzles by blowing through them or placing them in your mouth.
 - Always wash your hands and other exposed areas as soon as possible after finishing the work.
 - Keep chemicals in their original packages and in a safe location.
 - Properly dispose of unused chemicals and chemical containers as instructed by the chemical manufacturer and your local codes.
 - Chemicals and fumes are dangerous; never enter the tank or hopper, and do not place your head over or in the opening.
 - Follow all local, state, and federal requirements for spreading and spraying chemicals.

2.3.4 OPERATING

- Always drive with both hands. Do not drive with just one hand.

- Only operate the product in daylight or good artificial light.
- Avoid holes, ruts, bumps, rocks, or other hidden hazards. Uneven terrain could overturn the product or cause operator to lose their balance or footing.
- Do not put hands or feet near rotating parts or under the product. Keep clear of the discharge opening at all times.
- Do not direct discharge material toward anyone. Avoid discharging material against a wall or obstruction. Material may ricochet back toward the operator.
- Never leave an activated product unattended. Take appropriate precautions when stopping the product or leaving the operator's position. Always stop on level ground. Set the parking brake, switch off the power and remove the start key before standing up from the operator's position.
- Do not spread or spray in reverse unless absolutely necessary. Always look down, behind and to the side before changing directions or backing up.

2.3.5 CHILDREN SPECIFIC

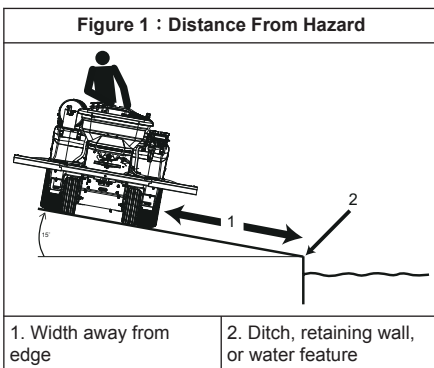
- Tragic accidents can occur if the operator is not alert to the presence of children. Children are often attracted to the product. Never assume that children will remain where you last saw them.
- Keep children out of the operating area and under the watchful care of another responsible adult other than the operator.
- Do not carry children. Children could fall off and be seriously injured or interfere with safe operation. Children who have been given rides in the past could suddenly appear in the working area for another ride and be run over or backed over by the product.

2.3.6 SLOPE OPERATION

Slopes are a major factor related to accidents. Operation on slopes requires extra caution. To reduce the risk of injury, never operate the product under any condition where you experience wheel slipping or sliding, or where wheel traction or stability and control of the product are in doubt. The product may slide even if the wheels are stopped. These conditions increase the risk of roll over.

- Never operate on a slope greater than 15 degrees - a slope that has 5.4 feet of elevation change over any 20 foot segment. See **Slope Identification Guide** in this Operator Manual.
- Stay two product widths away from slopes, drop offs, ditches, water, retaining walls avoid any slope exceeding 15 - degrees. See Figure 1.

Figure 1 : Distance From Hazard



- Operate across slopes, never up and down.
- Reduce speed and use extra care when using the product on slopes. If you cannot back up the slope or if you feel uncomfortable, do not drive on the slope.
- Always keep the product in gear when going down slopes. Do not coast downhill.
- Avoid starting and stopping on slopes. Avoid making sudden changes in speed or direction. Make turns slowly and gradually.
- Avoid using the product on the surface that is slippery, wet, or soft. Operating on wet or soft slopes can cause loss of control, which can lead to tip over.
- Use extra care if operating the product with other attachments. They can affect the stability of the product.

2.3.7 SLOPE IDENTIFICATION GUIDE

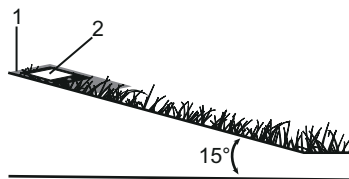
▲ WARNING

To reduce the risk of serious personal injury or death, never operate on slopes greater than 15 degrees. Always check the degree of slope on the lawn surface before attempting to use the product in that area.

▲ WARNING

To reduce the risk of serious personal injury or death, never operate on slopes when the hopper is empty and the spray tanks are full.

- Download an inclinometer app onto your mobile device that measures slopes.
- Place a flat piece of wood or metal, 4-6 feet in length, on the surface of the slope.
- Open the app and place your phone (2) on the flat piece of metal or wood (1) to determine the exact slope. Do not use the product if the slope is greater than 15 degrees.



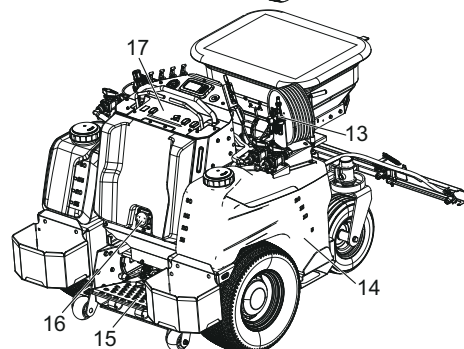
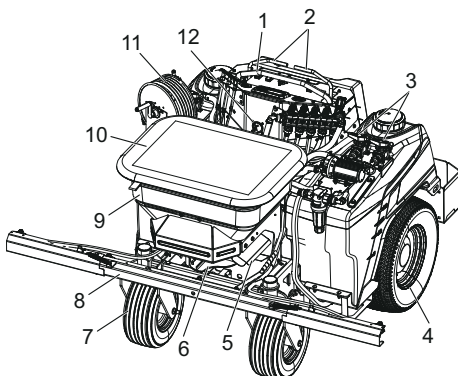
2.3.8 HAULING

Use full width ramps for loading and unloading a product for transport.

3 FEATURES AND CONTROLS

The following section provides a brief description of the function of individual controls. Be familiar with all the controls before you operate the product.

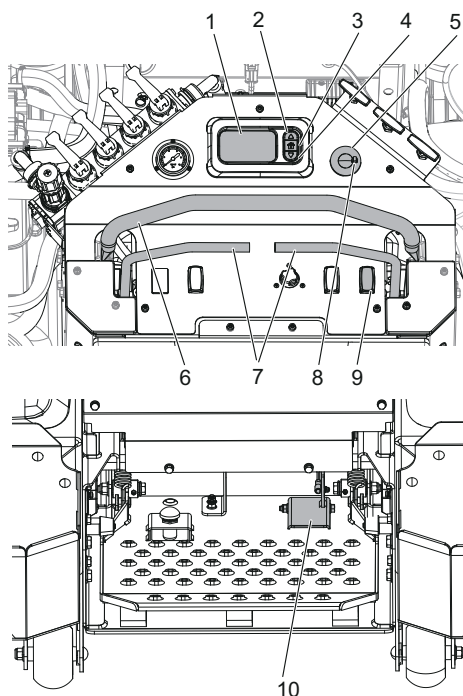
3.1 OVERVIEW



- 1 Forward hand stabilizer bar
- 2 Steering control lever
- 3 Spray tank shutoff valve
- 4 Drive wheel
- 5 Side-deflector

- 6 Impeller
- 7 Front caster wheel
- 8 Spray boom
- 9 Hopper
- 10 Hopper cover
- 11 Hose reel
- 12 Service switch
- 13 Spray gun
- 14 Spray tank
- 15 Platform
- 16 Charging port
- 17 Control panel

3.2 PRODUCT CONTROLS



1. **Digital Display Screen:** The function of the digital display screen is to provide electrical system information to the operator. It gives detailed information in the form of patterns, codes and numbers.
2. **Switch Page - UP:** Switching between pages, direction up.
3. **Home / Back button:** Return to prior screen. Press and hold down to return to the home screen.

4. **Switch Page - DOWN:** Switching between pages, direction down.
5. **Activation Button:** The activation button is used to turn the product on and off.
6. **Forward Hand Stabilizer Bar:** To stabilize operator's hands while positioning steering control levers.
7. **Steering Control Lever:** Use the steering control levers to drive the product forward, reverse, and turn either direction.
8. **Start key:** The start key must be inserted before the activation button can be operated.
9. **Parking-Brake Button:** Press the parking-brake button to engage or release the parking brake.
10. **Caster-Lock Pedal:** Press and hold the caster-lock pedal to lock the caster wheels in the straight position. Release the pedal to unlock the caster wheels to allow turning.

3.3 USE THE STEERING CONTROL LEVERS

Note: The steering control levers control the direction of the product.

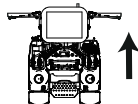
Use the steering control levers:

1. Press the parking-brake button on the control panel to release the parking state.
2. If the "Parking" symbol on the digital display screen disappears, it means the parking state is released. Please confirm again before using the steering control levers.
3. If confirmed, use the steering control levers to control the product's movement.

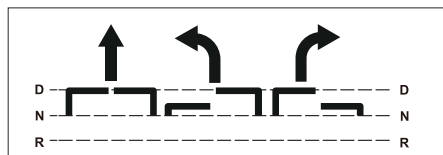
Note: The further a steering control lever is moved away from the neutral position, the faster the drive wheel will turn.

Note: The left steering control lever controls the left rear drive wheel and the right steering control lever controls the right rear drive wheel.

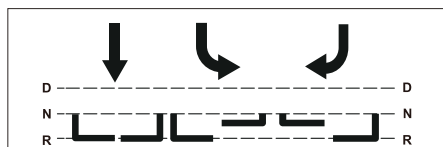
FRONT OF PRODUCT FACES THIS DIRECTION



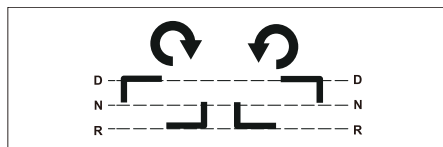
FORWARD TRAVEL



REVERSE TRAVEL



ZERO-RADIUS TURN



N= NEUTRAL POSITION

D= DRIVE POSITION

R= REVERSE POSITION

Direction of arrows indicate direction of product movement

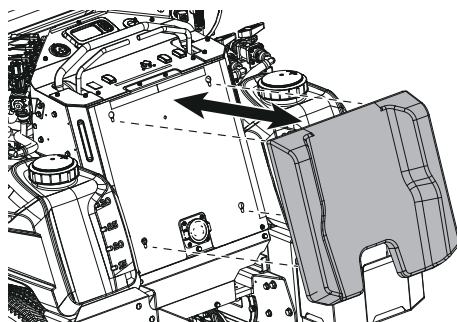


Left steering control lever

Right steering control lever

3.4 REMOVE AND INSTALL THE KNEE PAD

Note: When the operator needs to check the calibration chart, they need lift the pad up and remove the pad.



Remove the Knee Pad

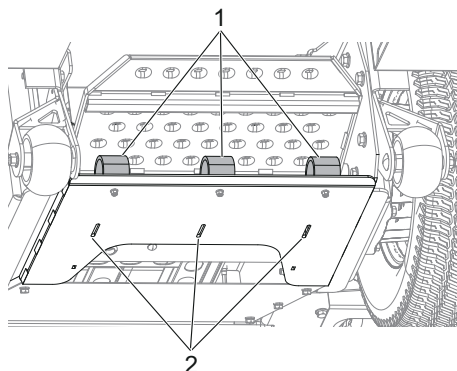
1. Lift the knee pad upwards so that the four screws on the back of the knee pad leave the hanging holes, and then pull the knee pad outwards to remove it.
2. After removing the knee pad, you can see the calibration chart attached to the console cover

Install the Knee Pad

1. Align the four screws on the back of the knee pad with the hanging holes. Fix the knee pad onto the console cover. Ensure all the screws are tightened appropriately.

3.5 CHANGE THE PLATFORM SUSPENSION

Note: The rubber isolators under the operator platform can be adjusted to make the ride softer or harder.



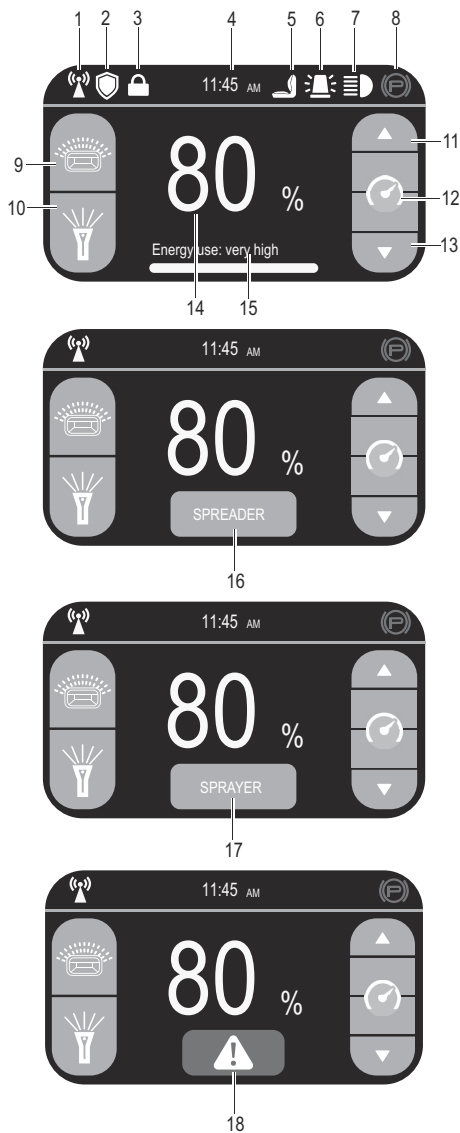
To make the ride softer, move the isolators (1) through the slots (2) to the front position.

To make the ride stiffer, move the isolators (1) through the slots (2) to the rear position.

3.6 DIGITAL DISPLAY

The function of the digital display, located on the control panel, is to provide electrical system information to the

operator. It gives detailed information in the form of patterns, codes and numbers.



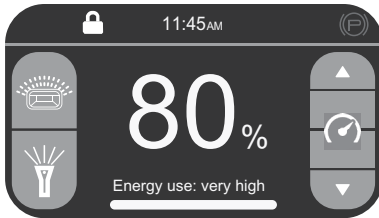
#	Name	Function
1		4G GPS Signal

#	Name	Function
2		Security feature is active.
3		Screen-lock. The touch screen's function is disabled.
4	11:45 AM	Time
5		User presence needed to operate product.
6		Warning light is on.
7		LED Light is on.
8		The parking brake is engaged.
9		The spreader motor is on if the icon lights up. If it doesn't light up, it means it's turned off.
10		The sprayer pump is on if the icon lights up. If it doesn't light up, it means it's turned off.
11		Increase driving speed. The drive speed has 4 levels. Each time you touch the screen button, the drive speed will raise a level. When the speed reaches the highest level, the touch button can't adjust any more.
12		Driving speed. One grid represents a speed of 3 mph. Two grids represent a speed of 4 mph. Three grids represent a speed of 5 mph. The four grids represent a speed of 8 mph.
13		Decrease driving speed. The drive speed has 4 levels. Each time you touch the screen button, the drive speed will reduce a level. When the speed reaches the lowest level, the touch button can't adjust any more.
14	80%	Battery percentage. When it equals to 5% or less, the speed will be limited to the lowest level, please stop work and charge the battery as soon as possible.
15	Energy use	Energy use state
16	SPREADER	Spreader session. Touch to turn to the spreader session page. You can turn on both the spreader and sprayer at the same time.
17	SPRAYER	Sprayer session. Touch to turn to the sprayer session page.

#	Name	Function
18		Error warning. Touch to check the error code and content.

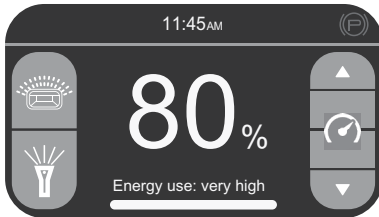
3.6.1 SCREEN LOCK

Press and hold the UP and DOWN buttons on the control panel simultaneously for 3 seconds to lock/unlock the screen. When the screen is locked, all the touch operations will be disabled and the home page will show a lock as below.

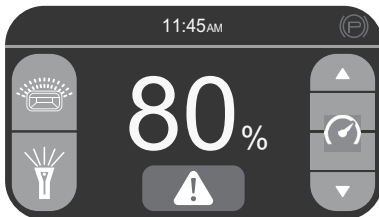


3.6.2 HOME SCREEN STATE

1. Driving speed has 4 levels. The level of the green icon at the right side indicates the driving speed at present.

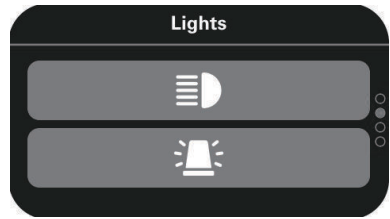


2. If the driving system has errors, the driving speed bar will turn gray until the error is cleared.



3.6.3 LIGHTS

1. Press the Switch Page Button to turn the digital display to the Lights page as below.

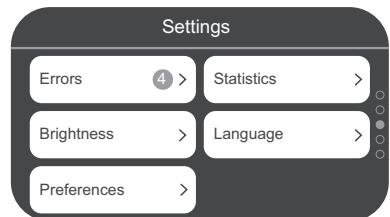


2. Press the LED light button to turn on/off the led light. When the LED light button is green, the LED light is ON, and the LED light icon will show on the home screen. When the LED light button is grey, the LED light is off, and the LED light icon on the home screen will disappear.
3. Press the warning light button to turn on/off the warning light. When the warning light button is green, the warning light is ON, and the warning light icon will show on the home screen. When the warning light button is grey, the warning light is off, and the warning light icon on the home screen will disappear..

3.6.4 SETTINGS

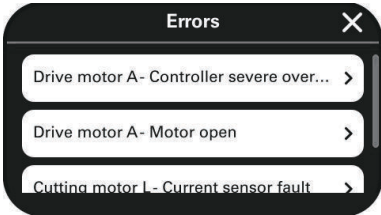
Press the Switch Page button to go to the Settings page.

Item	Function
Errors	This page shows the error contents and suggestions.
Statistics	This page shows the total spray-er/spreader hours.
Brightness	Select your desired screen brightness.
Language	Select the LED display screen language.
Preferences	Select the units of measurement.



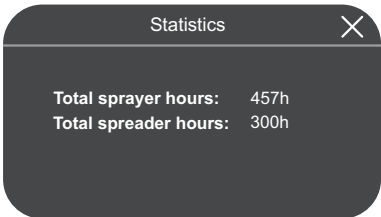
3.6.4.1 ERRORS

Touch the Errors button to enter the Errors page. This page will show all the errors. Touch the specific error name to read the suggestions. Touch "X" to exit.



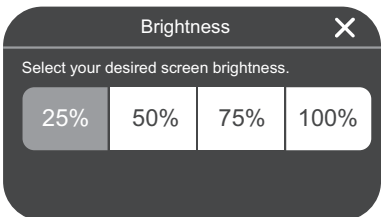
3.6.4.2 STATISTICS

Touch the Statistics button to enter the Statistics page. This page shows the total sprayer hours and total spreader hours.Touch "X" to exit.



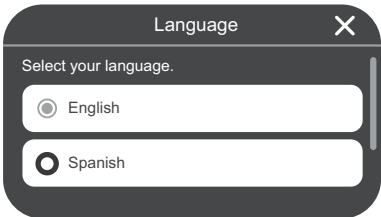
3.6.4.3 BRIGHTNESS

Touch the Brightness button to enter the Brightness page. Select your desired screen brightness. Touch "X" to exit.



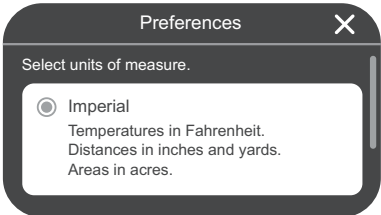
3.6.4.4 LANGUAGE

Touch the Language button to enter the Language page. Select the language you need. Touch "X" to exit.



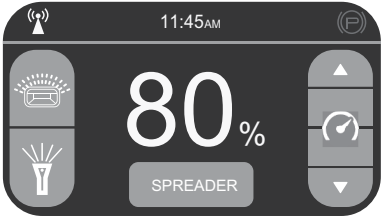
3.6.4.5 PREFERENCE

Touch the Preferences button to enter the Preferences page. Select the units of measure. Touch "X" to exit.

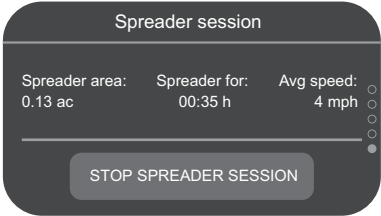


3.6.5 SPREADER SESSION

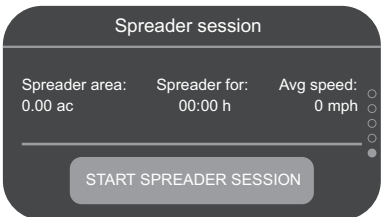
- 1. When the spreader motor is working, the "SPREADER" button will show on the home screen.



- 2. Touch the "SPREADER" button to enter Spreader session page.



- 3. When the impeller stops working, Spreader session data will save for 15 minutes. If the impeller restarts working, Spreader session will continue the record.
- 4. Touch the "STOP SPREADER SESSION" button to turn off the spreader session function. The spreader session will be recorded.
- 5. Touch the "START SPREADER SESSION" button to turn on the function.

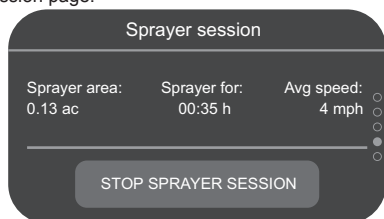


3.6.6 SPRAYER SESSION

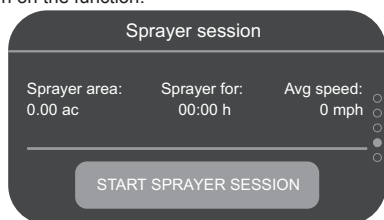
1. When the sprayer pump is working, the "SPRAYER" button will show on the home screen.



2. Touch the "SPRAYER" button to enter Sprayer session page.

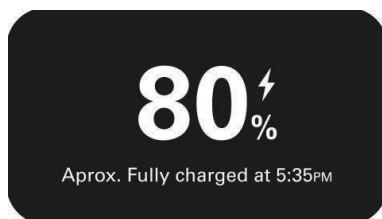


3. When the sprayer pump stops working, Sprayer session data will save for 15 minutes. If the impeller restarts working, Spreader session will continue the record.
4. Touch the "STOP SPREADER SESSION" button to turn off the spreader session function. The spreader session will be recorded.
5. Touch the "START SPREADER SESSION" button to turn on the function.

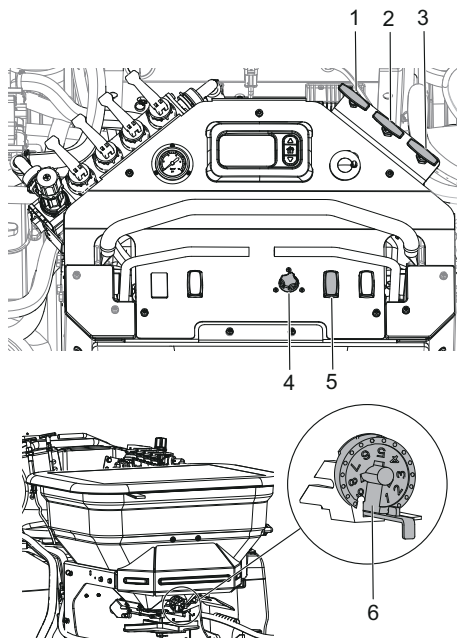


3.6.7 CHARGING

1. When the product is charging, the digital display will show the charging screen only. It will show the battery percentage and the estimated time for fully charged.



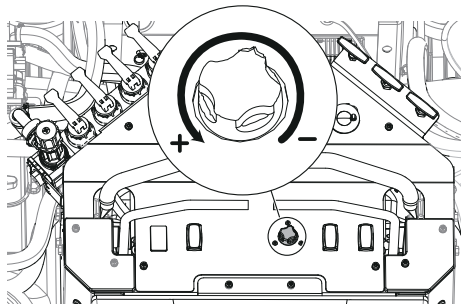
3.7 SPREADER CONTROLS



1. **Hopper-Gate Control Handle:** Open or close the gate at the bottom of the hopper.
2. **Diffuser Control Handle:** The diffuser control handle shifts the product placement of the impeller either to the edge of the impeller or to the middle of the impeller. The closer the material is to the edge of the impeller, the heavier the pattern is to the left.
3. **Side-Deflector Control Handle:** The side-deflector control handle pivots the deflector into the spreader pattern.
4. **Impeller-Speed Control Knob:** Use the impeller-speed control knob to adjust the impeller-motor speed and adjust the spreader pattern width.
5. **Spreader Motor Switch:** Press the spreader motor switch to turn on or turn off spreader motor.
6. **Drop-Rate Cam and Linkage:** The drop-rate cam and linkage are located at the front of the product and below the hopper on the spreader. It can set

the maximum amount of material to be dispensed through the hopper gate and onto the impeller.

3.7.1 ADJUST THE IMPELLER SPEED

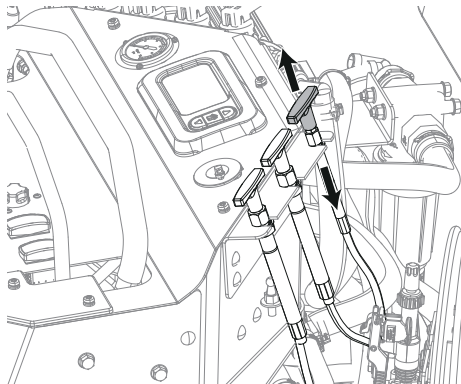


- 1. Rotate the impeller speed control knob counterclockwise to increase motor speed and increase the broadcast pattern.
- 2. Rotate the impeller speed control knob clockwise to decrease motor speed and decrease the broadcast pattern.

3.7.2 OPEN OR CLOSE THE HOPPER GATE

▲ WARNING

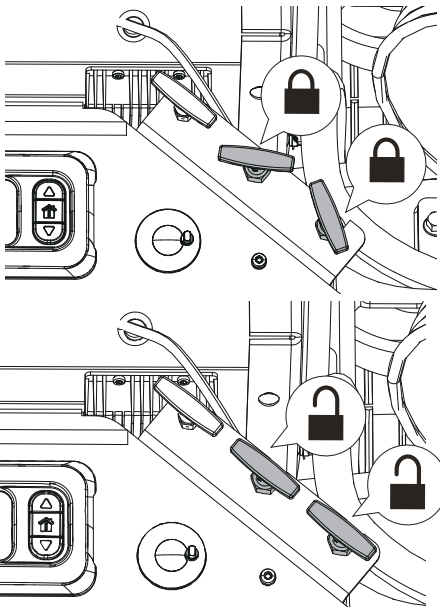
Close the hopper gate when you are not spreading.



- 1. Pull the handle up to allow granular material to flow from the hopper to the impeller.
- 2. Push the handle down to shut off the flow of granular material.

3.7.3 ADJUST THE SPREADER PATTERN

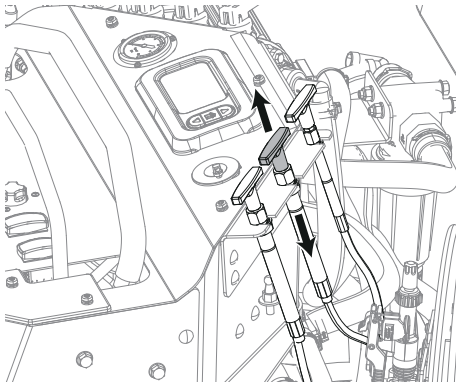
Note: The side-deflector control handle and the diffuser control handle can be locked by turning them clockwise or counterclockwise 30°. Return them to the original position to unlock.



If the spread pattern is skewed or dispensing unequally:

Heavy to left side	Heavy to right side
A: Move ramp pattern to shaded position	

- 1. Unlock the control handle.
- 2. Adjust the spreader pattern as follows:



- If the material is spread too heavy at the left side of the product, push the diffuser control handle down slightly.
- If the material is spread too heavy at the right side of the product, pull the diffuser control handle up slightly.

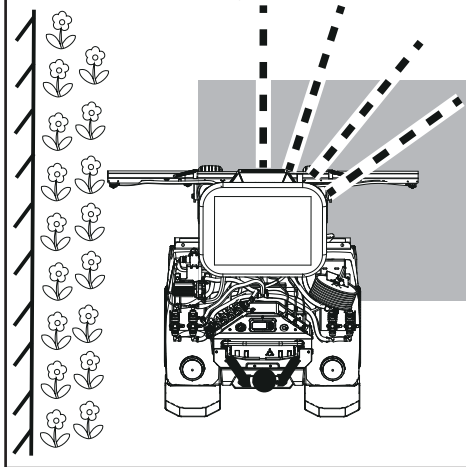
3. Lock the control handle by turning the control handle clockwise or counterclockwise 30°.

3.7.4 USE THE SIDE-DEFLECTOR

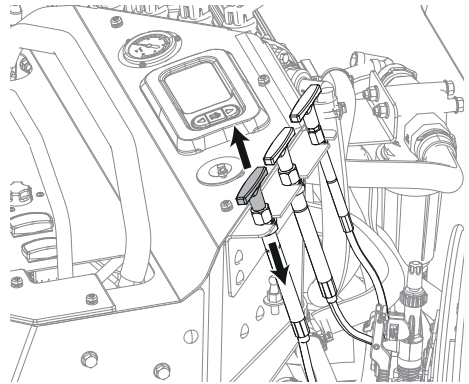
Use the side-deflector control handle to temporarily stop or deflect granular material away from sidewalks, parking lots, patios, or anywhere the granular chemicals are not desired.

▲ CAUTION

The deflector changes the spread of materials from the left side of the spreader only.



1. Unlock the control handle.
2. Adjust the side-deflector as follows:

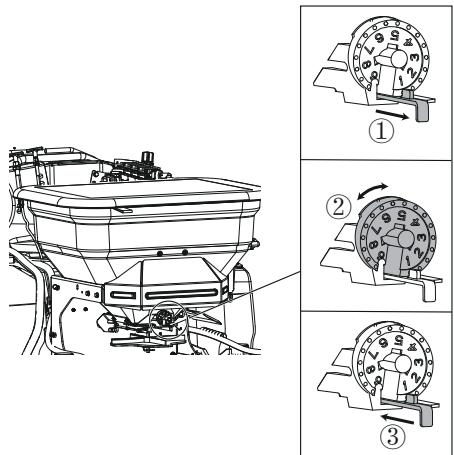


- To broadcast product from the left side of the impeller, push down the side-deflector control handle.
- To block the product from broadcasting on the left side of the impeller, pull up the side-deflector control handle.

3. Lock the control handle by turning the control handle clockwise or counterclockwise 30°.

3.7.5 ADJUST THE DROP-RATE CAM

Note: The drop-rate cam and linkage are used to set the amount of material to be dispensed from the hopper gate.

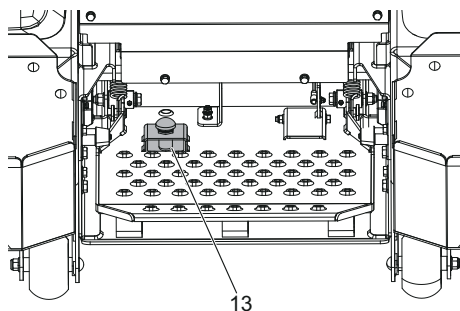
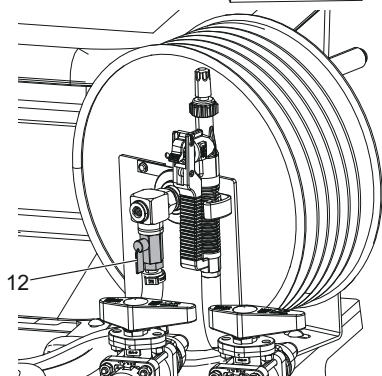
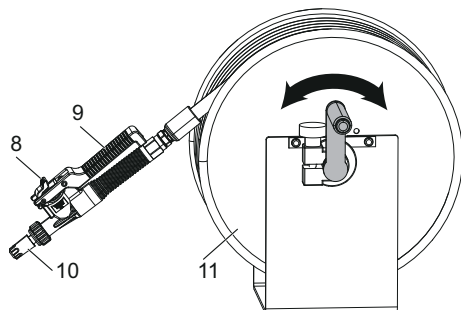
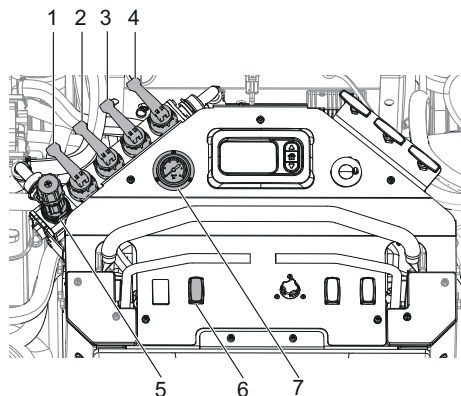


1. With the hopper gate closed, pull out the linkage.
2. Rotate the drop-rate cam until the slot aligns with the linkage.
3. Push in the linkage.
4. Push down the hopper-gate control handle, the gate will open to the set position.

Note: The size of the hopper gate open position is proportional to the number on the drop-rate cam.

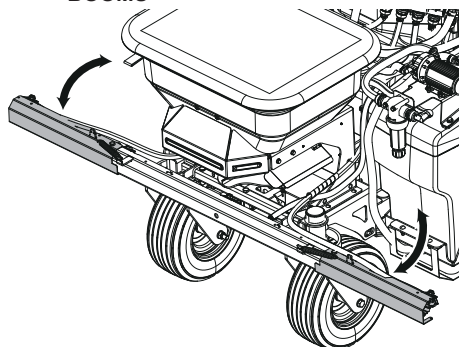
Note: The slot, after setting 9 on the drop-rate cam, allows the hopper gate to be opened to the maximum position. This setting can be used for dry sand, ice melt, or other materials that are difficult to spread; it may also be used for cleaning the hopper.

3.8 SPRAYER CONTROLS



1. **Left Boom Spray-Control Lever:** Pull the lever rearward to turn it on. Push the lever forward to turn off the left nozzle spray.
2. **Middle Boom Spray-Control Lever:** Pull the lever rearward to turn it on. Push the lever forward to turn off the middle nozzle spray.
3. **Right Boom Spray-Control Lever:** Pull the lever rearward to turn it on. Push the lever forward to turn off the right nozzle spray.
4. **Spray Gun Shutoff Lever:** Pull the lever rearward to turn it on. Push the lever forward to turn off the spray gun nozzle spray.
5. **Pressure adjustment valve:** Rotate the pressure adjustment valve to change the spray pressure.
6. **Spray-Pump Switch:** Press the spray-pump switch to turn on or turn off pump motor.
7. **Sprayer Pressure Gauge:** The sprayer pressure gauge displays the pressure (in psi) while you are spraying.
8. **Spray Gun Trigger Lock:** Squeeze the trigger against the handle and push trigger lock forward to keep the spray gun in the OPEN position. Pull the lock back to release the trigger.
9. **Spray Gun Trigger:** Squeeze the trigger to the handle to spray; release the trigger to stop.
10. **Spray Gun Nozzle:** Adjust flow rate and spray pattern.
11. **Hose Reel:** Rotate the handle clockwise to reel the hose in. Rotate the handle counterclockwise to release the hose.
12. **Ball Valve:** Ball valve is on hose reel. Rotate the ball valve to allow liquid to spray from the spray gun.
13. **Spray-Pump Foot Switch:** Press and hold the spray-pump foot switch to turn on the spray pump. Release the switch to shut off the spray pump.

3.8.1 EXTEND OR FOLD THE OUTER SPRAY BOOMS



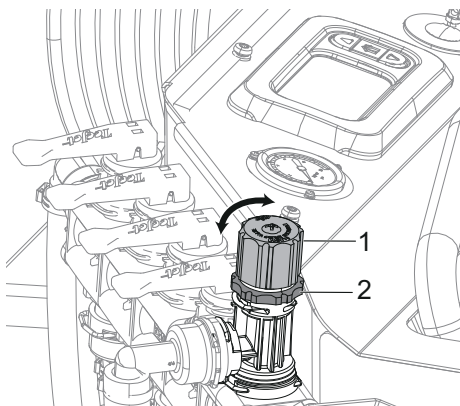
▲ WARNING

Keep hands away from the pivot area as it can be a pinch point.

1. Rotate the outer end of spray boom forward by hand to extend the boom.
2. Rotate the outer end of spray boom rearward by hand to fold the boom.

3.8.2 ADJUST THE SPRAY PRESSURE

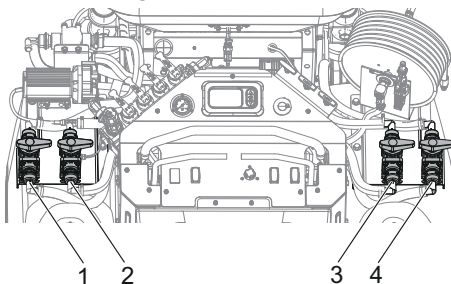
Note: Sprayer-system pressure displays on the pressure gauge. When the spray tips are open, sprayer-system pressure decreases slightly; adjust the pressure adjustment valve to compensate for the drop in pressure.



1. Loosen the locknut (2), and open the pressure adjustment valve (1).
2. Use the pressure adjustment valve (1) to change the pressure:

- Turn the valve (1) clockwise to increase spray-system pressure.
- Turn the valve (1) counterclockwise to decrease spray-system pressure.

3.8.3 USE THE SPRAYER TANK SHUTOFF VALVES



Select the Left Spray Tank:

1. Open the left tank return and suction valve (1) (2).
2. Close the right tank return and suction valve (3) (4).

Select the Right Spray tank:

1. Open the right tank return and suction valve (3) (4).
2. Close the left tank return and suction valve (1) (2).

Select Both Spray tank:

1. Open the left tank return and suction valve (1) (2).
2. Open the right tank return and suction valve (3) (4).

Transfer Fluid from One Tank to Another Tank:

1. Ensure that the targeted tank has capacity to hold extra fluid.
2. Ensure that all the spray-control levers are in the OFF position.
3. Loosen the locknut, and open the pressure adjustment valve to adjust the pressure.
4.
 - From the left tank to the right tank: Open the left tank suction valve (1) and the right tank return valve (3); Close the left tank return valve (2) and right tank suction valve (4).
 - From the right tank to the left tank: Open the left tank return valve (2) and right tank suction valve (4); Close the left tank suction valve (1) and the right tank return valve (3).
5. Press the sprayer-pump switch to the ON position to start the transferring.
6. Press the sprayer-pump switch to the OFF position to finish the transferring.

Please refer to the following table to rotate the spray tank shutoff valves:

	1	2	3	4
	Suction	Return	Return	Suction
Spray from left tank				
Spray from right tank				
Spray from both tanks				

	1	2	3	4
	Suction	Return	Return	Suction
Transfer from left tank to right tank				
Transfer from right tank to left tank				

4 CALIBRATION

4.1 CALIBRATE THE SPREADER

Calibrate the spreader each time you change granular materials. The spreader broadcasts material in a pattern 1 to 7.6 m (3 to 25 ft) wide depending on the material particle size, volume/density, impeller-motor speed, rate of travel, and wind conditions.

Use the **Spreading Charts** along with information from **Determine the Distribution Pattern**, **Determine the Effective Spreading Width**, and **Calculate the Application Rate** when calibrating the spreader.

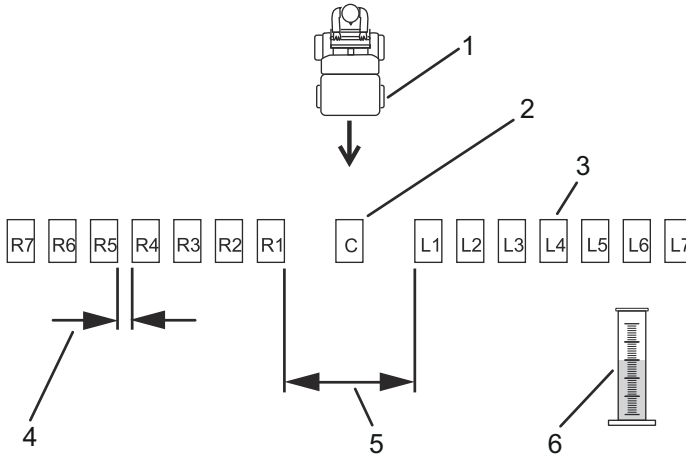
4.1.1 PREPARE THE TEST SITE AND PRODUCT

Operator supplied equipment: 15 shallow collection pans and 15 graduated measuring cylinders.

Note: The most accurate method to measure the distribution uses shallow collection pans and graduated measuring cylinders. In the example below, the 15 shallow collection pans approximately 30 cm (12 inches) wide, 91 cm (36 inches) long, and 5 cm (2 inches) tall.

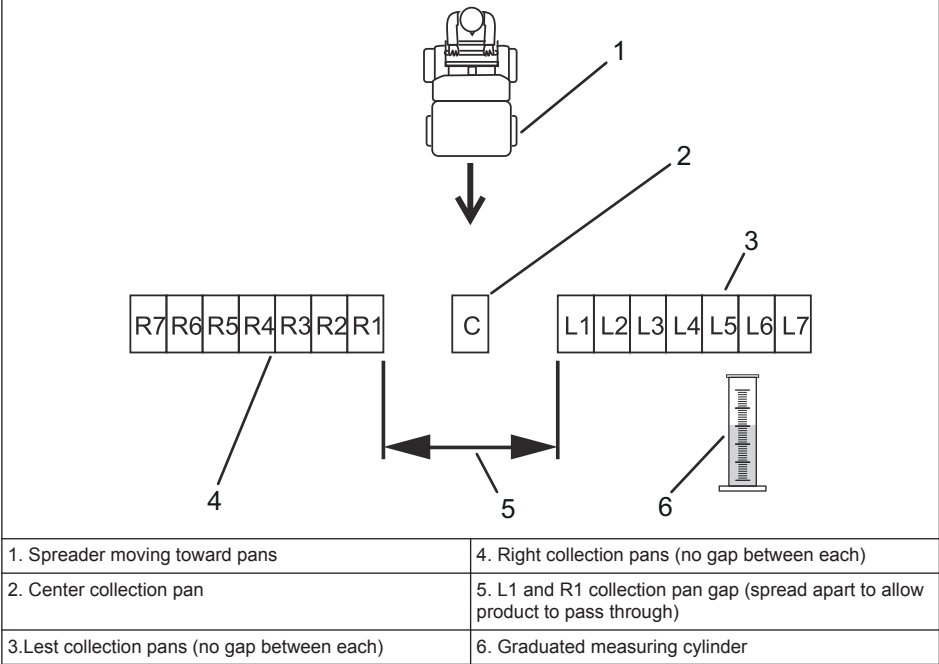
- 1. Place one pan in the center of the drive path. Arrange the next two pans, one on each side, far enough apart to allow adequate room for the drive tires of the product to pass around the center pan.
- 2. Place the remaining pans in a straight line as shown in Figure 1 or Figure 2:

Figure 1: Pan spacing for larger granule materials



1. Spreader moving toward pans	4. 30 cm (12 inch) gap
2. Center pan	5. L1 and R1 collection pan gap (spread apart to allow product to pass through)
3. Collection pans (gap between each)	6. Graduated measuring cylinder

Figure 2: Pan spacing for small granule materials



For larger granule materials: Space 6 additional pans, on each side, 12 inches (30 cm) apart (**Figure 1**).

For small granule materials: Place 6 additional pans, on each side, with no gap in between each pan (**Figure 2**).

- 3. Move the product far enough away from the test area (where the collection pans are located) to ensure that the product travels at the desired spreading speed before reaching the site.
- 4. Determine the application rate and the related drop-rate cam setting.
- 5. Rotate the drop-rate cam to the cam setting you determined just now.
- 6. Ensure that the hopper-gate control handle is in the close position, and fill the hopper approximately half-full with the desired material.
- 7. Pull the side-deflector control handle down and lock it.

4.1.2 DETERMINE THE DISTRIBUTION PATTERN

- 1. Set the diffuser control to the middle of its travel and lock it.
- 2. Adjust the impeller-speed control knob to set the broadcast pattern width.
- 3. Drive the product toward the test site at the appropriate speed.
- 4. As you approach the center pan, pull the wide distribution granular gate control handle up to the open position, and drive over the center pan.
- 5. Close the hopper gate, move steering control levers to the NEUTRAL position, shut off the engine, wait for all moving parts to stop, remove the start key, and engage parking brake.
- 6. Label each graduated measuring cylinder to correspond with the distribution pans (such as L2, L1, Center, R1, R2); refer to **Figure 1** and **Figure 2**.
- 7. One at a time, take a collection pan and dump the contents into the corresponding graduated cylinder. Record the amount of granular material collected and return the pan to its location. Repeat this until all pan contents have been emptied.

Note: Repeat broadcasting over the test site several times, moving in the same direction each time, until enough material is dispensed to the collection pan to half fill a graduated cylinder.

8. With the graduated measuring cylinder in the same straight line as the pans, evaluate the volume of material in each cylinder to determine the quality of the distribution from the spreader.
9. To adjust the spreader pattern, refer to the **Adjust the Spreader Pattern**.
10. Fill the hopper half-full of the desired material and repeat steps 1 through 9 until you achieve a uniform pattern.

4.1.3 DETERMINE THE EFFECTIVE SPREADING WIDTH

Use the effective width to determine the uniform distribution of the granular material.

Note: The spreading width range is 1-8 m (3-25 ft).

1. After the spreader pattern is correctly adjusted, evaluate the amount of material in the center graduated measuring cylinder.
2. Locate the 2 graduated cylinder, one each side of center, that contains 1/2 the measured amount of the material that you observed in the center graduated cylinder.
3. Go to the two corresponding pans. Starting from the outer edge, measure the distance between left pan, across the center pan, to the outer edge of the right pan, and record the measurement. **Record the effective spreading width here:** _____.

4.1.4 PREPARE THE CALIBRATION COURSE FOR CALCULATING THE APPLICATION RATE

1. Determine a course length by dividing 93 m^2 ($1,000 \text{ ft}^2$) by the effective spread width that you determined in **Determine the Effective Spreading Width**; use the course length formula. **Record the course length here:** _____.

Calibration Course Length Formula	
Formula	$93 \text{ m}^2 (1,000 \text{ ft}^2) / \text{Effective width measurement} = \text{Calibration course length}$
Example	$93 \text{ m}^2 (1,000 \text{ ft}^2) / 1.8 \text{ m (6 ft)} = 51 \text{ m (167 ft)}$

Note: In this example the effective width measures 1.8 m (6 ft).

2. Measure and visibly mark the course length. Ensure that you allow enough distance before the starting marker so that the spreader moving forward at full speed when crossing the first mark of the course.

4.1.5 CALCULATE THE APPLICATION RATE

1. Determine the area and amount of material that you are applying to the job site and record those amounts in the area and materials worksheet. **Record the job site area here:** _____. **Record the amount of job site material here:** _____.
2. Initially, use the recommended application rate indicated in the **Spreading Charts** section or use the rate recommended listed on the product manufacturer's label as a guide to help determine the amount of material that you would spread over a 93 m^2 ($1,000 \text{ ft}^2$) area.

Note: In this example the calibration course is 1.8 m (6 ft) by 51m (167 ft).

3. Set the appropriate drop-rate cam setting; refer to the **Spreading Charts** as a starting point.
4. Add material to the hopper.

Note: In this example we added 11.3 kg (25 lb) of material.

5. Drive the spreader over the calibration course while applying the material.
6. Empty the remaining material of the hopper into a clean bucket.
7. Weigh the bucket containing the material and record the weight. Pour the contents back into the hopper and then weigh the empty bucket. Calculate the remaining material weight using the remaining material weight formula. **Record the remaining material weight here:** _____.

Remaining Material Weight Formula	
Formula	$(\text{Remaining material and bucket weight}) - (\text{Bucket weight}) = \text{Remaining material weight}$
Example	$10 \text{ kg (22 lb)} - 1 \text{ kg (2 lb)} = 9 \text{ kg (20 lb)}$

Note: In this example, 9 kg (20 lb) of material remain in the hopper after applying the material to the test course.

8. Calculate applies material weigh using the applied material formula that follows.**Record the applied material weight here:**_____.

Applied Material Weight Formula	
Formula	(Original material weight) - (Remaining material weight) = Applied material weight
Example	11.3 kg (25 lb) - 9 kg (20 lb) = 2.3 kg (5 lb)

Note: This calculation means that at the selected motor-rotation speed, 2.3 kg (5 lb) of material was applied to the 93 m² (1,000 ft²) test course.

9. If necessary, adjust the drop-rate cam to achieve the recommended application rate. Once you achieve the correct application rate, repeat this procedure an additional time to verify your results.

Note: Designate a new calibration course each time, so that the turf is not damaged by excessive application of material.

4.1.6 SPREADING CHARTS

Note: The cam setting tables for granular material and the grass seed are provided with permission from the Brinly-Hardy Company; reference the Brinly-Hardy Company website for more information.

Use these charts as an approximate guideline only. Other factors, such as weather conditions, spreader operation, and the condition of material affects spreader performance.

Cam settings for pellet and granular material application			
Type	kg per 93 m ² (lb per 1,000 ft ²)	Cam Setting — One Pass	Cam Setting — Two Passes
Fine Pellets	0.5 (1)	3.6	3.1
	0.9 (2)	4.0	3.5
	1.4 (3)	4.2	3.7
Mixed Fine Pellets	0.9 (2)	3.7	3.2
	1.8 (4)	4.7	4.1
	2.7 (6)	5.2	4.5
Small Pellets	0.9 (2)	3	2.2
	1.8 (4)	4.2	3.7
	2.7 (6)	4.5	4
Nitrogen Pel-lets Medium Size	0.5 (1)	3.5	3
	4.2	3.7	0.9 (2)
	4.7	4	1.4 (3)
Medium Pel-lets and Gran-ules	0.9 (2)	3.5	3
	4.2	3.8	1.8 (4)
	5.2	4.5	2.7 (6)
Large Heavy Pellets	0.9 (2)	3.8	3.3
	4.9	4.1	1.8 (4)
	5.9	4.9	2.7 (6)

Use the chart below for reference only. When spraying and spreading at the same time, set the spread pattern to twice the width of the spray; this will help avoid striping and streaking. For example, standard spray width = 2.7 m (9 ft), spread width = 5.4 m (18 ft).

Cam settings for pellet and granular material application					
Type	Bag Weight	Coverage - m ² (ft ²)	Cam Setting – Full Rate	Cam Setting – Half Rate	Spreader Width
Blue Grass or Red Top	0.23 kg (0.5 lb)	93 (1,000)	1.25		4 ft (1.2 m)
	0.45 kg (1 lb)	93 (1,000)	2.0		4 ft (1.2 m)
	0.9 kg (2 lb)	93 (1,000)	2.5		4 ft (1.2 m)
Park, Merion, Delta, or Ken- tucky Bluegrass	2.27 kg (5 lb)	93 (1,000)	2.5		4 ft (1.2 m)
	0.45 kg (1 lb)	93 (1,000)	3.0		4 ft (1.2 m)
	0.9 kg (2 lb)	93 (1,000)	3.5		4 ft (1.2 m)
Hulled Bermuda	0.9 kg (2 lb)	93 (1,000)	2.75	2.25	6 ft (1.8 m)
	1.36 kg (3 lb)	93 (1,000)	3.0	2.5	6 ft (1.8 m)
	1.81 kg (4 lb)	93 (1,000)	3.25	2.75	6 ft (1.8 m)
Mixtures Includ- ing Coarse Seeds	0.9 kg (2 lb)	93 (1,000)	6.0		6 ft (1.8 m)
	1.81 kg (4 lb)	93 (1,000)	7.0		6 ft (1.8 m)
	2.72 kg (6 lb)	93 (1,000)	7.0		6 ft (1.8 m)
Rye Grasses or Tall Fescue	0.9 kg (2 lb)	93 (1,000)	6.0		6 ft (1.8 m)
	93 (1,000)	7.0		6 ft (1.8 m)	1.81 kg (4 lb)
	93 (1,000)	7.75		6 ft (1.8 m)	2.72 kg (6 lb)
Dichondra	113 g (4 oz)	93 (1,000)	1.9		8 ft (2.4 m)
	93 (1,000)	2.1		8 ft (2.4 m)	227 g (8 oz)
	93 (1,000)	2.5		8 ft (2.4 m)	340 g (12 oz)
Pensacola Bahia	1.81 kg (4 lb))	93 (1,000)	4.5	3.75	7 ft (2.1 m)
	93 (1,000)	4.75	4.0	7 ft (2.1 m)	2.27 kg (5 lb)
	93 (1,000)	5.0	4.25	7 ft (2.1 m)	2.72 kg (6 lb)

4.2 CALIBRATE THE SPRAYER

Some chemicals exhibit greater aggressiveness compared to others, and each one interacts uniquely with diverse materials. Some formulations of sprayer chemicals (e.g. wettable powders, charcoal) possess higher abrasiveness, resulting in accelerated wear rates. Whenever possible, opt for a formulation that prolongs the lifespan of the sprayer.

Calibrate the sprayer before you start the spray application; refer to **Sprayer Nozzle Application Rate**.

4.2.1 SPRAYER NOZZLE APPLICATION RATE

The product is factory equipped with lavender colored nozzle tips that have an application rate of 1.3 L (0.34 US gallon) per 93 m² (1,000 ft²) when the sprayer pressure is 2.8 bar (40 psi), and the product is driven 8 kph (5 mph).

- Use to the nozzle application rate chart that follows when selecting nozzles and spraying with the product.
- Refer to the spreader/sprayer chart affixed to the back of the knee pad for quick reference calibration information in the field.
- This product supports application rates between 0.95 L per 93 m² (0.25 US gallon per 1,000 ft²) through 3.8 L per 93 m² (1.0 US gallon per 1,000 ft²).

Note: Each sprayer tip shuts off when sprayer pressure is <0.3 bar (5 psi) to prevent dripping.

Nozzle Application Rate Table						
Nozzle tip col- or	Ground speed		Sprayer pressure		Application rate	
Yellow	8 kph	5 mph	2.8 bar	40 psi	1.0 L/ 93 m ²	0.27 (1/4) US gallon/ 1,000 ft ²
Lavender	8 kph	5 mph	2.8 bar	40 psi	1.3 L/ 93 m ²	0.34 (1/3) US gallon/ 1,000 ft ²
Red	8 kph	5 mph	2.8 bar	40 psi	2.0 L/ 93 m ²	0.54 (1/2) US gallon/ 1,000 ft ²
Brown	8 kph	5 mph	3.4 bar	50 psi	2.9 L/ 93 m ²	0.76 (3/4) US gallon/ 1,000 ft ²
Gray	6.5 kph	4 mph	2.8 bar	40 psi	3.8 L/ 93 m ²	1 US gallon/ 1,000 ft ²

5 ELECTRICAL SYSTEM

5.1 ELECTRICAL SYSTEM SAFETY

- Always remove the start key before servicing or repairing unit.
- Keep the unit free of grass clippings, leaves and other debris. DO NOT spray water to clean unit. Use only compressed air. Wear adequate eye and hearing protection when cleaning the unit.
- Always wear safety glasses and protective gear near battery. Use insulated tools.
- Clean battery compartment, drive motor compartment, etc., of all dirt and debris. Do not use solvents, hard cleaners or abrasives.
- Never allow flames, sparks or smoking near batteries.
- Keep batteries out of reach of children.
- Always keep protective shields, covers and guards in place and securely fastened. If they become damaged, repair or replace immediately. Never modify or remove safety devices.

5.2 ELECTRICAL SYSTEM INFORMATION

The Greenworks Commercial product is powered by an 82-volt electrical system. It consists of the following components:

1. Drive controller (2)
2. Spreader controller (1)
3. Spreader motor (1)
4. Sprayer motor (1)
5. Spreader motor switch (1)
6. Sprayer pump switch (1)

7. Spray-pump foot switch (1)
8. Parking-brake button (1)
9. Accelerator - right (1)
10. Accelerator - left (1)
11. Digital display (1)
12. Wheel motor with PGR (Planetary Gear Reduction) (2)
13. Battery pack (1)
14. Activation button (1)
15. Lower headlight (1)
16. Sidelight - right (1)
17. Sidelight - left (1)
18. Tail light - right (1)
19. Tail light - left (1)
20. GPS (1)
21. Fuse box (1)
22. Impeller-speed control knob (1)

6 APP OPERATION TIPS

6.1 REGISTRATION AND LOGIN

1. Visit the website of Fleet Management: fleet.greenworksscommercial.com.
2. Create an account and then log in.
3. Invite other users in your organization.
4. Scan the QR code of app below, download the app and log in.



Serial number

Important! / Important ! / Wichtig!

Retain this information securely through the product lifecycle.
Conservez ces informations en toute sécurité tout au long du cycle de vie du produit.
Bewahren Sie diese Informationen während der gesamten Lebenszeit des Produkts sicher auf.

Serial Number / Numéro de série / Seriennummer

Pairing Code / Code d'appariement / Kopplungscode:

QR code

Pairing code

Note: Please reference Greenworks Commercial App Pairing Page for more details on connecting your product.

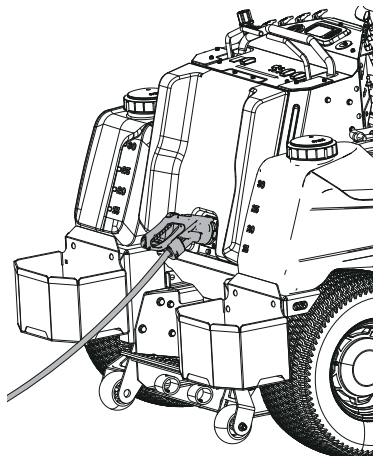
5. Add a device by typing in serial number and pairing code or by scanning QR code on matching label.

Note: The QR code on vehicle matching label on this manual is generated from serial number and pairing code.

7 OPERATION

7.1 CHARGE THE PRODUCT

1. The charging port is located at the back of the product. Open the charging flap, and press the release button to open the port cover to charge.
2. Plug the charger into the charging port, and make sure it is firmly plugged in.
3. Plug the charger into a power outlet, and make sure it is firmly plugged in.
4. When the product is charging, the digital display will show the battery percentage.



▲ WARNING

See the Battery Charger Manual for warnings and instructions for charging. Read and understand all its safety warnings and instructions. Failure to follow them may result in electrical shock, fire and/or serious injury.

▲ WARNING

To reduce the risk of fire and explosion, keep open flames and sparks away from the product and its batteries. Ensure proper ventilation around the product while charging.

Charging recommendations:

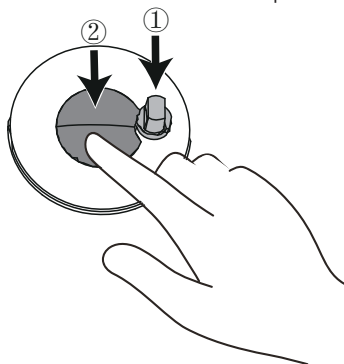
- The battery does not need to be fully discharged before recharging. To maintain proper state of charge calibration, run and charge the product at least once a month. Complete a full charge every six months.
- A battery left uncharged will slowly discharge. Before initial use each spring season, ensure that battery has a full charge.
- Check the battery every six months and charge the battery if the power level is below 50%.
- When the battery level is at 5%-10%, the max driving speed will be reduced. When the battery level is lower than 5%, the product needs to be charged immediately.

Note: If the charging is completed, close the charging flap to prevent foreign objects from entering and causing any damage to the port.

7.2 OPERATE THE PRODUCT

7.2.1 START THE PRODUCT

1. With the start key inserted, press the activation button to turn on the product.



2. Check for the appropriate speed mode by pressing drive speed control button to low speed. The speed button is on the digital display.

Note: It is always recommended to start out in low mode / slow speed.

3. Press the parking-barke button on the control panel to release the parking state.
4. If the "Parking" symbol on the digital display screen disappears, it means the parking state is released. Please confirm again before using the steering control levers.
5. If confirmed, push steering control levers forward for forward motion and pull for reverse motion.

7.2.2 STOP THE PRODUCT

▲ DANGER

Never make sudden stops or reverse direction, especially when maneuvering on a slope. The steering is designed for sensitive response. Rapid movement of the steering control levers in either direction could result in a reaction of the product that can cause serious injury.

1. Return the steering control levers to the Neutral position. Press the parking-barke button on the control panel to engage the parking state. If the "Parking" symbol on the digital display screen appears, it means the parking state is engaged. Please confirm again before leaving.
2. If running, shut off the spray pump.
3. If running, shut off the impeller motor.
4. Press activation button to turn off the product.

7.3 OPREATE THE SPREADER

Note: It is important to complete all the steps to avoid damaging the spreader.

Note: Make sure the spreader has been calibrated for the material to be spread before starting.

Note: The sprayer and spreader can be operated either together or individually (spray liquid and spread granular material at the same time or separately). Regardless of the situation, make sure that the product is running at proper speed for the product application.

Whole Spreader Operation Process :

1. Mix into chemical solution
2. Fill the hopper.
3. Spread at the work site.

7.3.1 MIX INTO CHEMICAL SOLUTION

Calculate the Average Application Rate

To determine about of product to mix for solution of chemical in the tank, you need to understand what nozzle application rate of your product (the factory installed lavender nozzle tip application rate is 1.3 L/ 93 m² (1 / 3 gallon per 1,000 ft²).

For example, a product may specify an application rate range of 33 to 44 ml/93 m² (1.1 to 1.5 oz per 1,000 ft²). When calibrating the sprayer, use the formula that follows to calculate the average application rate:

Average Application Rate Formula	
[lowest application rate] + [highest application rate]	= [sum rate]
[sum rate] / 2	= average application rate

Example: 33 + 44 ml (1.1 + 1.5 oz) = [77 ml (2.6 oz) sum rate]; 77 ml / 2 (2.6 oz / 2) =38.5 ml/93 m² (1.3 oz per 1,000 ft²)—the average application rate value

Calculate the Amount of Chemicals for a Solution of Chemical

1. Multiply the average application rate by the 1-gallon nozzle tip factor to determine the 1-gallon application rate.

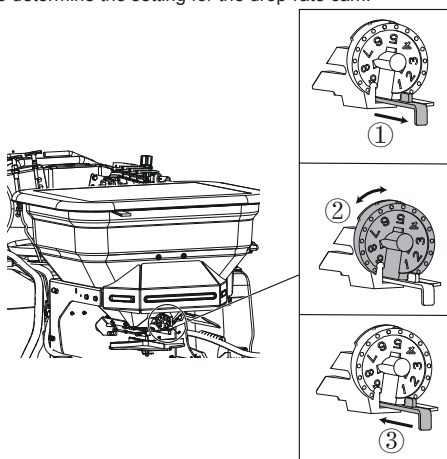
Example: median application rate value—38 ml/93 m² (1.3 fl oz per 1,000 ft²) of 1.1 to 1.5) x 3 (lavender nozzle tip—nozzle tip factor) = 3.9 (adjusted application rate)

2. Multiply the 1-gallon application rate by the amount of chemical solution that you need to add to the spray tank.

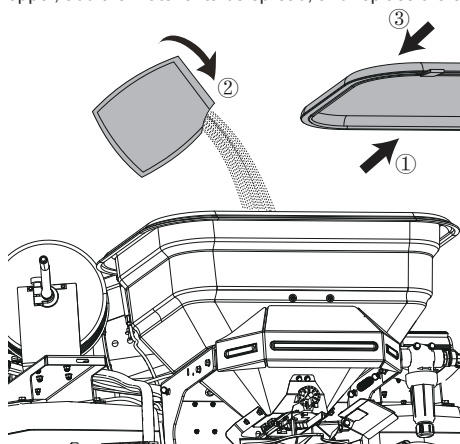
Example: 3.9 (adjusted application rate) x gallons needed. If you are preparing a 114 L (30 US gallon) solution of chemical, use 3.5 L (117 fl oz) of product (3.9 x 30) for 114 L (30 US gallon) of water.

Nozzle Tip/Application Rate and Tip Factor Chart				
Average product application rate (example)	Nozzle tip/ application rate	Nozzle tip factor	Water in the sprayer tank (example)	Product per 114 L (30 US gallon) (example)
38 ml/93 m ² (1.3 fl oz per 1,000 ft ²)	Yellow 1.0 L/93 m ² (0.27 or 1/4 US gallon/ 1,000 ft ²)	(x) 4	(x) 114 L (30 US gallons)	4.6 L (156 fl oz)
38 ml/93 m ² (1.3 fl oz per 1,000 ft ²)	Lavender 1.3 L/93 m ² (0.34 or 1/3 US gallon/ 1,000 ft ²)	(x) 3	(x) 114 L (30 US gallons)	3.5 L (117 fl oz)
38 ml/93 m ² (1.3 fl oz per 1,000 ft ²)	Red 2.0 L/93 m ² (0.54 or 1/2 US gallon/ 1,000 ft ²)	(x) 2	(x) 114 L (30 US gallons)	2.3 L (78 fl oz)
38 ml/93 m ² (1.3 fl oz per 1,000 ft ²)	Brown 2.9 L/93 m ² (.76 (3/4) US gallon/ 1,000 ft ²)	(x) 1.3	(x) 114 L (30 US gallons)	1.5 L (51 fl oz)
38 ml/93 m ² (1.3 fl oz per 1,000 ft ²)	Gray 3.8 L/93 m ² (1 US gallon/ 1,000 ft ²)	(x) 1	(x) 114 L (30 US gallons)	1.2 L (39 fl oz)

1. Stop the product on a level surface, move steering control levers to the neutral position, and engage the parking brake.
2. Ensure that the hopper gate is closed.
3. Use the **Spreading Charts** to determine the setting for the drop-rate cam.



4. Remove the cover from the hopper, add the material to be spread, and replace the cover.



The Maximum weight capacity of the hopper is 220 lbs.

7.3.3 SPREAD AT THE WORK SITE

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- To ensure uniform application, broadcast pellet or granular material in an overlapping pattern. The highest amount of material will dispense from the front of the hopper and less material from each side. Adjust the distribution pattern to achieve desired results.
- Watch for changes in the distribution pattern; unequal distribution may lead to striping.

Note : *Make sure the product has been calibrated properly before spreading.*

1. Start the product and set low driving speed.
2. Set the impeller speed to appropriate broadcast rate setting.
3. Adjust the driving speed and drive to the work site.
4. Pull the hopper-gate control handle up to open the hopper gate and begin spreading.
5. Evaluate the spread pattern. If adjustments are needed, see the **Adjust the Spreader Pattern** section.
6. Close the hopper gate after finishing spreading.

▲ WARNING

Always empty and clean the spreader immediately after each use. Failure to do so may cause the chemicals to corrode the spreader and other components.

7.4 OPERATE THE SPRAYER

Note: *Before using the sprayer, ensure that you have cleaned the tank, plumbing, and nozzles before adding any chemicals .*

Note: *Make sure the sprayer has been calibrated for the material to be sprayed before starting.*

Note: *It is important to complete all the steps to avoid damaging the sprayer.*

Note: *The sprayer and spreader can be operated either together or individually (spray liquid and spread granular at the same time or separately). Regardless of the situation, make sure that the product is running at proper speed for the product application.*

Whole Sprayer Operation Process :

1. Fill the spray tank.
2. Spray at the work site.

7.4.1 FILL THE SPRAY TANK

▲ WARNING

Ensure that the chemicals you will be using are compatible for use with Viton® or fluorocarbon (see the manufacturer's label; it should indicate if it is not compatible). Using a chemical that is not compatible with Viton® or fluorocarbon will degrade the O-rings in the sprayer, causing leaks.

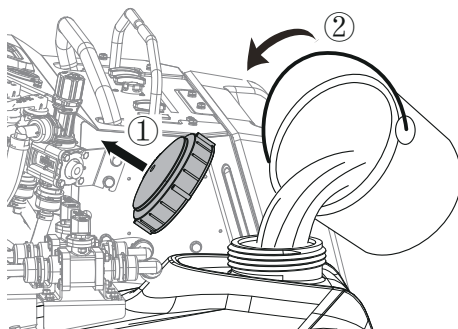
▲ WARNING

Verify that the proper application rate has been set prior to filling the tank with chemicals.

▲ WARNING

The tank markings are for reference only and cannot be considered accurate for calibration.

1. Stop the product on a level surface at the work site, move steering control levers to the neutral position, and set the parking brake.
2. Determine the amount of water needed to mix the amount of chemical needed as prescribed by the chemical manufacturer.
3. Open the tank cap on the spray tank.
4. Add 3/4 of the required water to the spray tank.



▲ WARNING

Always use fresh clean water in the spray tank. Do not pour concentrate into an empty tank.

5. Set the spray-pump switch to the ON position.

Note: *The water in the tank will circulate.*

6. Loosen the locknut, rotate the pressure adjustment valve to increase spray-system pressure.

7. Before adding chemicals to the tanks, be sure:

- the valving is set for the tank that is being used; refer to **Use the Sprayer Tank Shutoff Valves**.
- the spray pressure control knob is all the way open (turn counterclockwise). This will increase circulation/agitation and help purge the system of air.

8. Add the proper amount of chemical concentrate to the tank, as directed by the chemical manufacturer.

Note: *If using a wettable powder, mix the powder with a small amount of water to form a slurry before adding it to the tank.*

9. Add the remaining water to the tank and secure tank cap.

Note: *Anytime the tank has been run dry, repeat steps 5 through 9. This will reduce the time required to purge the system of air.*

7.4.2 SPRAY AT THE WORK SITE

Spraying Tips:

- Do Not overlap the effective spray area that was previously sprayed.
- Watch for plugged nozzles.
- Disengage spray-control levers to stop the spray flow before stopping the motion of the sprayer. Once stopped, leave the steering control levers in neutral and keep the pump running.
- Better results are obtained if the sprayer is moving when spray controls are turned on.
- Watch for changes in the application rate that may indicate that your speed has changed beyond the range of the nozzles or there is a problem with the spray system.

Note: *Make sure the product has been calibrated properly before starting spray application.*

▲ WARNING

The spray gun traps liquids under high pressure, even when engine is off. High pressure spray discharge could cause serious injury or death.

- Keep clear of the nozzle and do not direct the spray or stream at people, pets, or non-work area property.
- Do not direct the spray at or near electrical power components or source.
- Do not repair the spray gun, hoses, seals, nozzle, or other spray gun components; always replace them.
- Do not attach the hoses or other components to the end of the spray gun nozzle.
- Do not attempt to disconnect the spray gun from the product while the system is pressurized.
- Do not use the spray gun if trigger lock is damaged or missing.
- Do Not keep spray gun in locked-open position when job is complete.

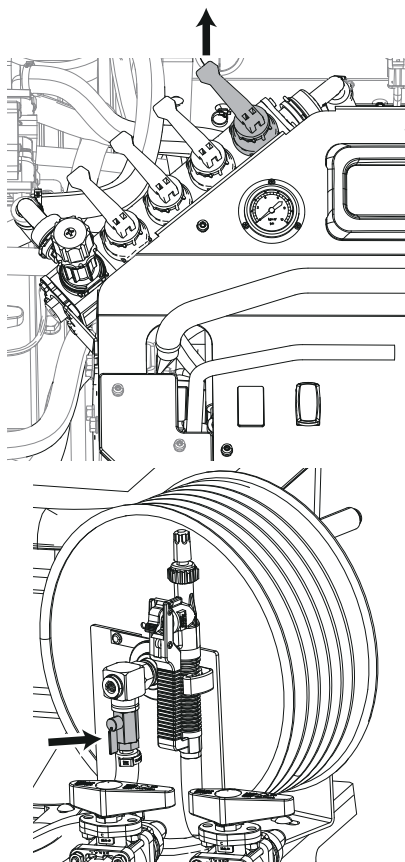
1. Make sure the spray pump is on.
2. Drive to the work site to be sprayed.
3. Adjust the spray pressure to the appropriate setting.
4. Turn on the appropriate spray control:

The sprayer and spreader can be operated either together or individually (spray liquid and spread granular at the same time or separately).

When finished spraying, turn off the spray control lever(s) and the spray pump switch.

The spray pump switch can be left on for tank agitation.

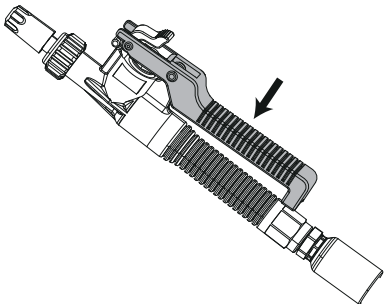
- To use the spray gun:
 - Remove the spray gun from the holder on the right side of the product.
 - Turn spray gun-shutoff lever and ball valve on.



- Firmly grip the spray gun. Point it in the direction to be sprayed.

Note: The spray gun may kickback; make sure to hold the spray gun securely.

- Adjust the sprayer pressure to the desired psi (do not exceed 60 psi) using the pressure adjustment valve (counterclockwise to decrease pressure, clockwise to increase pressure).
- Squeeze the trigger to start spraying; lock the trigger in place if desired.



5. When stopping spray:
- From the front spray nozzles:
 - Set all the boom spray-control levers in the OFF position.
 - Fold the outer spray boom(s) if necessary.
 - From the spray gun:
 - Release the trigger and its lock (if applicable).
 - Set the spray gun-shutoff levers and the ball valve in the OFF position.
 - Return the spray gun back to its holder.

8 MAINTENANCE

Regular maintenance is the best prevention for costly downtime or expensive, premature repair. The following pages contain suggested maintenance information and schedules which the operator should follow on a routine basis. Remain alert for unusual noises, as they could be signaling a problem. Visually inspect the product for any abnormal wear or damage.

8.1 MAINTENANCE SAFETY

- Specific steps must be taken in order to perform service and maintenance procedures safely.
- Read and follow all the applicable safety and instructional messages in this manual.
- Park the product on level ground and allow it to cool. Never allow untrained personnel to service the product.
- Always disengage the spray and/or close the spreader gate, set the parking brake, turn off the product, remove the start key and wait for all movement to stop prior to performing service and maintenance procedures.
- Empty the spray tank and/or hopper before tilting the product for maintenance and before storage.
- Wear appropriate personal protective equipment such as safety shoes, safety glasses, gloves and ear protection. Long hair, loose clothing or jewelry may get tangled in moving parts. Secure hair above shoulder level before starting work.
- Only use replacement parts that are authorized or approved by Greenworks Commercial. Use of parts that are not authorized or approved by Greenworks

Commercial may cause serious or fatal injury or property damage.

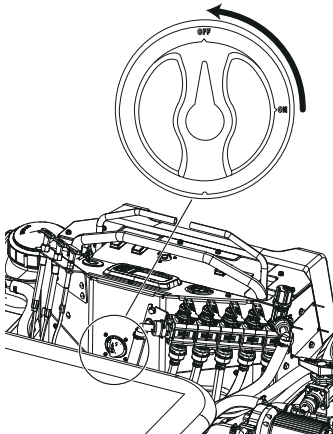
8.2 RECOMMENDED MAINTENANCE SCHEDULE

Maintenance Service Interval	Maintenance Procedure
After the first 100 hours	• Check the wheel-hub nut torque.
Before each use or daily	• Check the product for loose hardware.
After each use	• Clean and lubricate the spreader. • Clean the sprayer system. • Clean the in-line strainer. • Clean the sprayer nozzles. • Clean the grass and debris buildup from the product.
Every 50 hours	• Check the tire pressure. • Check the sprayer system. • Check the spreader system.
Every 100 hours	• Lubricate the grease fittings.
Every 500 hours	• Check the wheel-hub nut torque.
Monthly	• Check the wheel-hub nut torque. • Check the battery.
Yearly	• Lubricate the caster-axle bearings.

8.3 PREPARATION FOR MAINTENANCE

Before servicing, cleaning, or making any adjustments to the product, please do the following steps:

1. Relieve the spray pressure from the system before serving.
2. Empty the tank and/or hopper before tilting the product for maintenance and before storing. Please refer to **Empty the Spray Tank**.
3. Shut the hopper-gate control, shut off the impeller-speed control, shut off the boom sprayer-control levers, and shut off the spreader motor switch and the sprayer-pump switch.
4. Park the product on a level surface.
5. Move the steering control levers to the **NEUTRAL** position.
6. Shut off the product and remove the key.
7. Engage the parking brake.
8. Wait for all moving parts to stop before servicing, storing, or making repairs.
9. Rotate the service switch to OFF position.



8.4 BATTERY MAINTENANCE

The product is powered by Lithium-Ion batteries which, when maintained properly, will provide years of useful life. For proper care, adhere to the following instructions:

- Always charge battery after each use. This is especially crucial when temperatures drop below 32°F (0°C). Over-discharge will shorten battery life and risk permanent damage. If a full charging cycle is not possible immediately after using the product, a 5-10 minute cycle will help maintain battery health. Fully re-charge the battery within 24 hours after use. To maintain proper calibration, run and charge

the product at least once a month. Complete a full charge every six months.

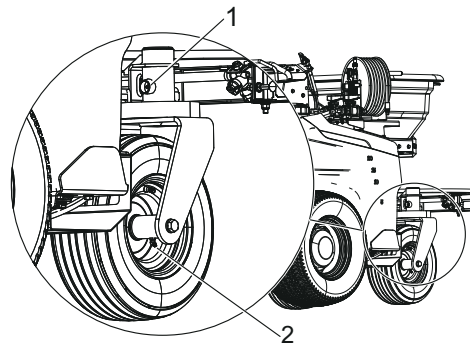
- Keep grass, dirt and debris from collecting in battery area.
- Charge battery in an enclosed, dry area away from sparks and flames. Never expose charger to rain, water vapor or other liquids.
- Do not touch uninsulated portion of charger (terminal pins) or output connector.
- Do not use charger if cords are damaged.
- Please refer to the Battery Manual for more information of batteries.

8.4.1 ROUTINE MAINTENANCE

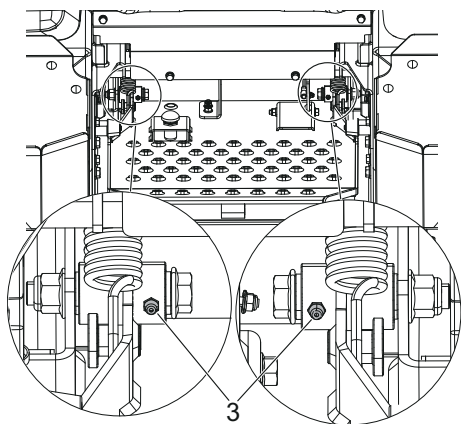
Routine maintenance should include cleaning and inspection.

- During the battery charging process:
 - Make sure the charging plug connects securely and fully in the socket;
 - Make sure the charger operates without faults;
 - Address any faults and have them repaired before charging.
- During the operation of the product and when charging the battery, keep the charging port away from water and other conductive materials. Never charge when the product is wet.
- Charging time will depend on a number of factors, including battery health, ambient temperatures and other factors. Monitor the battery for abnormal performance or behavior.

8.5 LUBRICATION



Use a general purpose lithium-based grease to lubricate the grease fittings (1) (2) on both front casters and the front wheel hubs. Grease the front casters every 100 hours. Grease the front wheel hubs every year.



Also, use a general purpose lithium-based grease to lubricate grease fittings (3) located at the platform pivot.

8.6 CHECK THE SPREADER SYSTEM

- 1. Prepare the product for maintenance.
- 2. Clean the bottom of the hopper with a wire brush and clean off any fertilizer, if needed.
- 3. Replace the hopper bottom bushing or the impeller, if needed.

8.7 CHECK THE SPRAYER SYSTEM

- 1. Prepare the product for maintenance.
- 2. Check all hoses, nozzles, and fittings for damage and leaks.

Note: Replace all damaged or leaking sprayer components.

- 3. Check the nozzle strainers and in-line strainers for accumulation of dirt and chemical sludge.

Note: Clean or replace strainers with an accumulation of dirt and chemical sludge.

8.8 TIRES

It is important that all tires have the correct amount of air pressure. The recommended pressure are:

Note: Tire pressure should only be measured or adjusted when tires are cold.

Front caster wheels	28 psi
Drive wheels	20 psi

Note: Inspect the tires daily. Replace immediately if damaged.

▲ WARNING

Check the tire pressure carefully while inflating. Too much air in the tire could cause the tire to burst, causing serious personal injury.

8.9 CHECK THE WHEEL-LUG NUTS

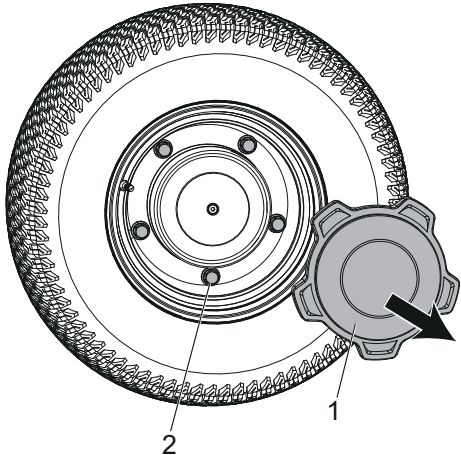
▲ WARNING

Particular attention must be given to tightening the drive wheel-lug nuts. Failure to correctly torque these items may result in the loss of a wheel, which can cause serious damage or personal injury.

Torque values are given below:

Part	Ft-lbs.	N·m
Wheel-lug nuts	83-118	112-132

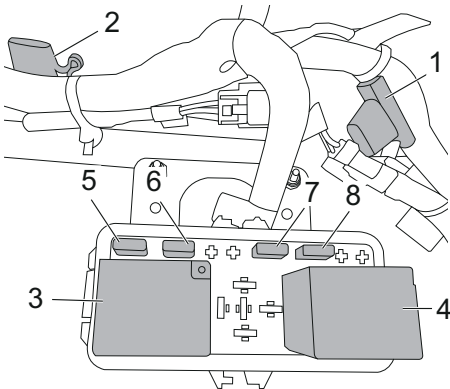
Lug nuts only - It is recommended that these be checked after the first 2 hours of operation, initially, every 100 hours and following removal for repair or replacement.



- 1. Remove the hub cover (1) by hand.
- 2. Check the torque of the wheel-lug nuts (2).

8.10 SERVICE THE FUSES

The electrical system is protected by fuses. If a fuse opens, check the component or circuit for a load or short.



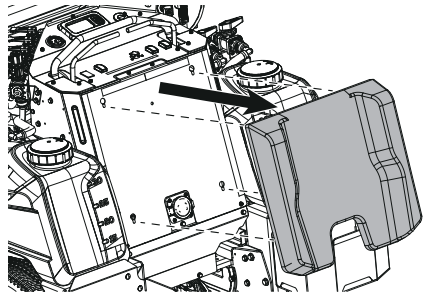
N O.	Item	spec.	Location
1	Spread and spray mi-an positive fuse	80V 20A	On the wiring harness next to the fuse box
2	Drive controller main positive fuse	80V 20A	
3	Spread controller relay	ESV601-30	Inside the fuse box below the control panel
4	Spread motor relay	100-12-HR	
5	12V reserved (foam pump) fuse	12V 5A	
6	Key switch (main power) fuse	12V 3A	
7	Light fuse (including all front and rear lights)	12V 5A	
8	GPS and digital display fuse	12V 3A	

1. Press the activation button to turn off the product.

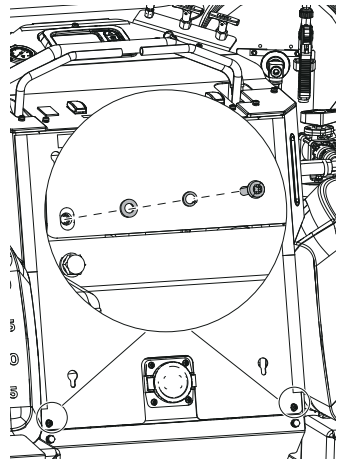
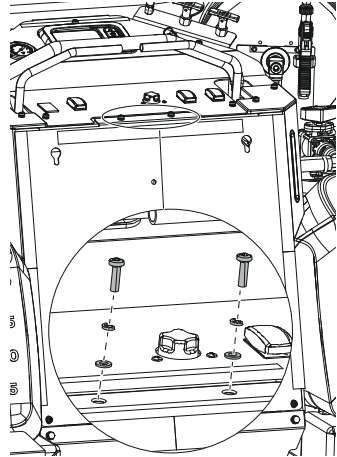
▲ WARNING

Generally, fuse burnout is caused by other faults in the circuit. When checking the circuit and investigating the cause of the fault, the positive and negative terminals of the battery pack should be removed.

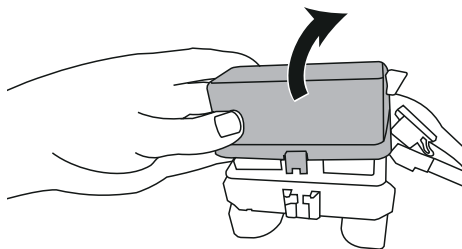
2. Remove the knee pad.



3. Remove the screws, single coil spring lock washers, plain washers. Take off the fixed plate.



4. Open the cover of the fuse holder.



5. Pull the fuse from the socket of the fuse holder.
6. Install a fuse of the same type into the socket of the fuse holder.
7. Close the cover onto the fuse holder until the cover latches securely.
8. Install the fixed plate and the knee pad.

9 TRANSPORTATION

9.1 TRANSPORT THE PRODUCT

▲ CAUTION

Do not tow this product, it may cause damage to the drive system.

▲ WARNING

Do not load the product on a trailer or truck using two separate ramps. Only use a full-width ramp that is at least 305 mm (1 ft) wider than the width of the rear wheels of the product. The rear wheels could fall off the ramps or the unit could tip over injuring the operator or bystanders. Ensure the cutting deck is raised to the highest position so it does not get caught on the ramp.

1. Park the product on a level surface.
2. Close the hopper gate, shut off the impeller-speed control knob, shut off the boom spray-control levers, and shut off the spreader motor switch and the sprayer-pump switch.
3. Position and secure ramp to the trailer according to manufacturer's instructions.
4. Use a full-width loading ramp that is at least 305 mm (1 ft) wider than the product to reduce the risk of driving off the side of the ramp.
5. Slowly drive the product onto the ramp and into the trailer.
6. Set the parking brake.
7. After loading, install the hopper cover if there is material in the spreader hopper. Make sure that the spreader hopper cover and the spray gun are secure before transporting.
8. Secure the product as needed using straps or cables to prevent movement during transport.

▲ WARNING

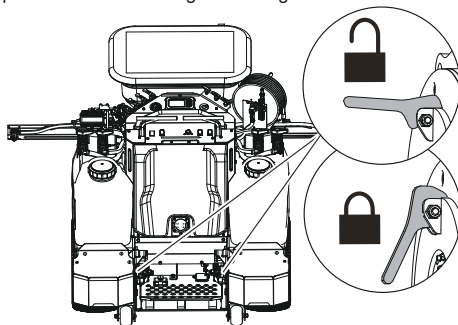
To avoid accidental starting or movement that could result in serious personal injury, always remove the start key and engage the parking brake when transporting the product.

9.2 TRANSPORT THE LITHIUM-ION BATTERY

The US Department of Transportation and international transportation authorities require that lithium-ion battery be transported using special packaging and only be transported by carriers certified to haul them. In the US, you are allowed to transport a battery when it is installed on the sprayer-spreader as battery powered equipment, with some regulatory requirements. Contact the US Department of Transportation or the appropriate government body in your country for detailed regulations on transportation of your battery or the sprayer-spreader with the battery equipped. For detailed information on shipping a battery, contact your authorized Greenworks Commercial servicing dealer.

9.3 NEUTRAL BYPASS LEVER

The neutral bypass levers disengage the drive system that connects the engine power to the wheels and may be used when you need to manually push or move the product without the engine running.



- Locate the neutral bypass levers situated near the caster-lock pedal and spray-pump foot switch. These levers individually manage the drive wheels.
- Push the lever outwards to unlock the levers to release the drive brakes.
- Push the lever inward to lock the levers for regular operation.

▲ WARNING

Never drive the product with the neutral bypass lever disengaged. Always engage the neutral bypass lever to the original position before driving! Failure to engage the lever could cause serious damage to the product and void product warranty!

▲ WARNING

Never unlock the neutral bypass levers when the product is on a slope. Once the levers are released, the product can roll freely and does not have a brake. Releasing the lever on a slope could lead to loss of control and increase the risk of serious personal injury.

9.4 MOVE THE PRODUCT MANUALLY

To push the product manually:

1. Unlock the neutral bypass levers to disengage the drive system.
2. Move the product to the desired location.

▲ CAUTION

To avoid damage to the motor and drive system, do not move the product faster than 5 mph (8 km/h).

3. Immediately after moving the product, lock the neutral bypass levers.

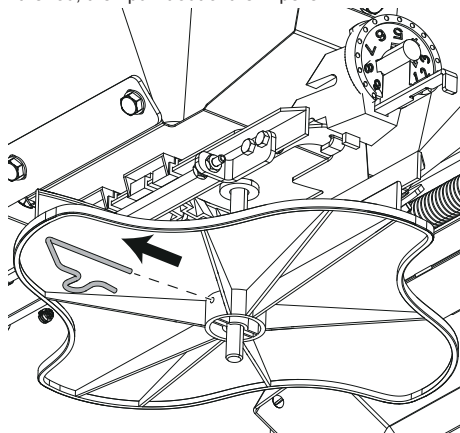
10 CLEAN

10.1 CLEAN THE SPREADER

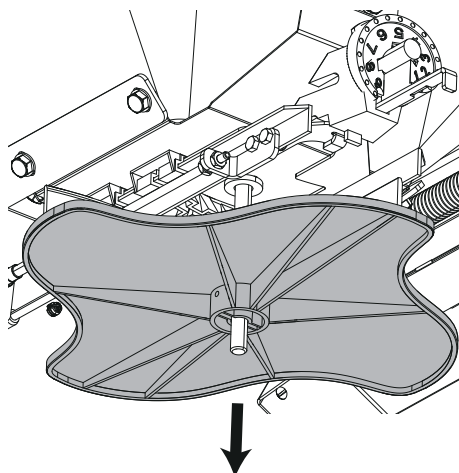
▲ WARNING

The spreader must be cleaned after each use.

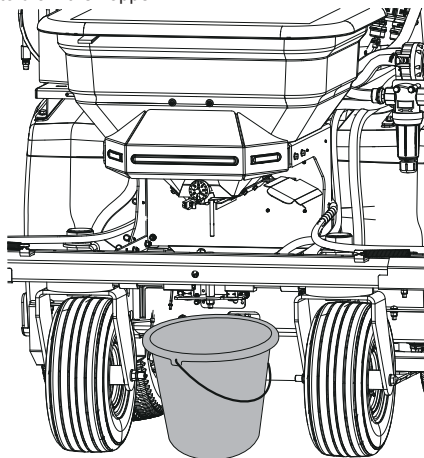
1. Drive the product to a designated cleaning area.
2. Stop the product on a level surface, leave the steering control lever in the neutral position, and turn off the engine. Engage parking brake.
3. Squeeze and rotate the spring to disconnect it from the rod, then pull it out of the impeller.



4. Slide the impeller off the rod.



5. Place a bucket under the hopper trap, open the trap to drain the hopper.



6. Rotate the drop-rate cam past the "9" position to the maximum open position. Open the hopper gate by pulling the handle up to empty the hopper.
7. Using a garden hose, spray the inside and outside of the entire spreader with clean water.

Note: Do not use a power washer to clean the product. The high pressure water may force residual corrosive materials into spreader-sprayer components.

8. When the hopper has been thoroughly rinsed and drained, close the gate.
9. Place the drop-rate cam to a setting lower than the maximum open position.
10. Allow the spreader-sprayer to completely dry before the next use.

10.2 CLEAN THE SPRAYER

▲ WARNING

Always empty and clean the sprayer immediately after each use. Failure to do so may cause the chemicals to dry or thicken in the lines, clogging the pump and other components.

▲ WARNING

Swallowing or inhaling chemicals could cause serious injury or death.

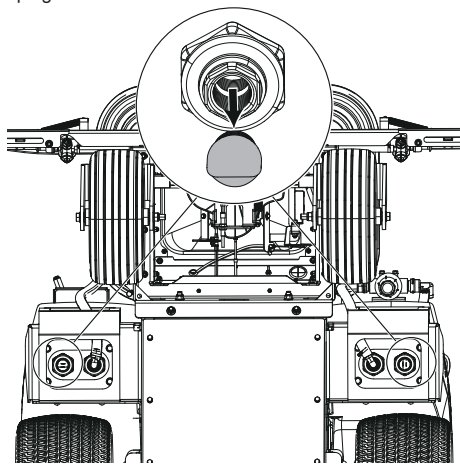
- Keep your mouth away from the spray nozzles. Do not blow through the nozzles.
- Replace all worn and damaged sprayer nozzles.
- Ensure that the nozzles are installed correctly.

▲ CAUTION

Do not use brackish or reclaimed water to clean the product.

10.2.1 EMPTY THE SPRAY TANK

1. Stop the product on a level surface, leave the steering control lever in the neutral position. Turn off the product, wait for all moving parts to stop, remove the start key, and engage the parking brake.
2. According to local regulations, choose a suitable location or a suitable container to discharge the remaining fluid.
3. Rotate the drain plug clockwise to remove the drain plug.



4. Allow the sprayer tank to drain completely.
5. Install the drain plug into the valve.

6. If no longer needed, dispose of the remaining fluid according to local regulations and the chemical manufacturer's instructions.

10.2.2 PREPARE THE PRODUCT

To properly clean the spray system:

- Use three separate rinses.
- Use a minimum of 5 gallons (19 L) for each rinse.
- Use the cleaners and neutralizers as recommended by the chemical manufacturers.
- Use pure clean water (no cleaners or neutralizers) for the last rinse.

10.2.3 CLEAN THE SPAY SYSTEM AND SPAY GUN

▲ WARNING

Always empty and clean the sprayer immediately after each use. Failure to do so may cause the chemicals to dry or thicken in the hoses, clogging the pump and other components.

1. Extend all the outer spray booms.
2. Press the spray-pump switch on the control panel to turn on the spray.
3. Set the left, center, and right boom spray-control levers to the ON position.
4. Ensure that all nozzles spray water correctly.
5. Turn the spray gun-shutoff valve and the ball valve.
6. Remove the sprayer gun from the holder, point the spray gun in a safe direction, and squeeze the spray gun trigger.

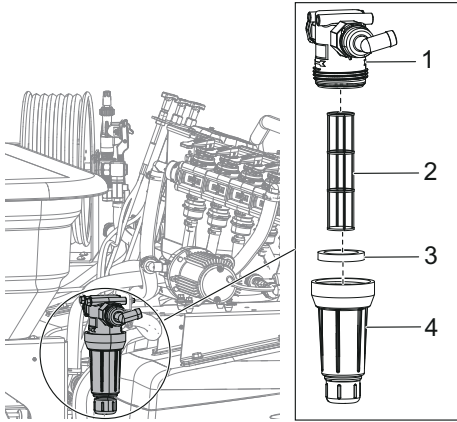
Note: Spray water for 1 to 2 minutes to thoroughly clean the spray gun.

7. Release the spray gun trigger and return it to the holder on the product.
8. Set the boom spray-control levers to the OFF position, set the sprayer-pump switch to the OFF position, and stop the product.
9. Clean the in-line strainer.
10. Repeat steps 3 to 9, use cleaners and neutralizers recommended by the chemical manufacturers to do cleaning again.
11. Repeat steps 3 to 9, only use clean water to do thorough cleaning.
12. Using a garden hose, spray off the outside of the sprayer tank with clean water.
13. Remove the nozzles and nozzle strainer and clean them by hand. Replace damaged or worn nozzles.
14. Allow the spreader-sprayer to completely dry before the next use.

10.2.4 CLEAN THE IN-LINE STRAINER

i NOTE

If you used wettable-powder chemicals, clean the in-line strainer after each time that you rinse the sprayer tank.



1. Set all the return and suction valves to the closed position.
2. Align a drain pan under the in-line strainer.
3. Rotate the bowl cap (4) counterclockwise by hand. Remove the screen (2), big gasket (3), bowl cap (4) from the in-line strainer head (1).

Note: Replace the gasket or screen or both if these parts are worn or damaged.

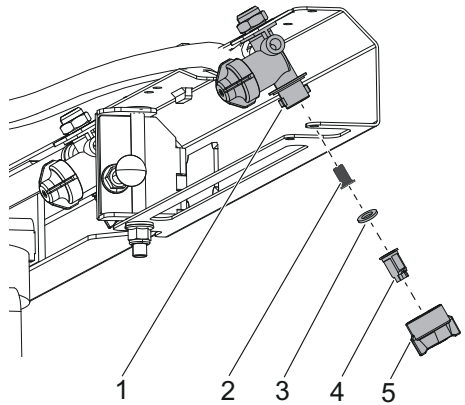
4. Allow any residual chemical solution to drain from the in-line strainer head (1).

Note: Dispose of the waste solution according to local regulations and the chemical manufacturer's instructions.

5. Use a soft-bristle brush and clean water to clean the screen (2) and bowl cap (4).
6. Install the screen (2) into the in-line strainer head (1).
7. Install the screen (2), big gasket (3), bowl cap (4) onto the in-line strainer head (1), and tighten them by hand.

10.2.5 CLEAN THE SPRAY NOZZLES

1. Rotate the nozzle cap (5) 90 degrees counterclockwise and remove the cap (5) from the nozzle body (1).



2. Remove the spray tip (4), gasket (3) and nozzle strainer (2) from the nozzle body (1).
3. Use a soft-bristle brush and clean water to clean the spray tip (4), gasket (3) and nozzle strainer (2).
4. Install the nozzle strainer (2) and gasket (3) into the nozzle body (1).
5. Install the spray tip (4) into the nozzle cap (5).
6. Install the spray tip (4) and nozzle cap (5) into the nozzle body (5). Rotate 90degrees clockwise to secure.

11 STORAGE

11.1 SHORT-TERM STORAGE

The following steps should be taken in order to prepare the product for storage.

- **Clean the Product:** Before storing the product, thoroughly clean it as outlined in the previous section.
- **Avoid Corrosive Materials:** Keep the product away from corrosive substances, such as fertilizer or rock salt, as these can lead to rust and corrosion on metal components like the motor, and frame. Keep the product and its battery away from conductive or corrosive materials to reduce the risk of short circuit, fire, explosion and other electrical hazards.
- **Children Safety:** Store the product in a location inaccessible to children to prevent accidents.
- **Proper Covering:** Do not cover the product with a solid plastic sheet. Plastic coverings can trap moisture, which causes rust and corrosion.
- **Check for Wear and Tear:** Thoroughly inspect the product for any worn or damaged parts that may require replacement.
- **Tire Maintenance:** Avoid deflating the tires during storage.
- **Storage Environment:** Store the product in a well-ventilated, clean, and dry area. Note that the battery charger cannot be used in a wet environment.

- **Charging Process:** Refer to the *Charging the Product* section and also the Charger Manual for comprehensive instructions on using the charger and effectively charging the battery.

Note: By adhering to these guidelines, you can help increase the longevity of the product during periods of storage.

11.2 WINTER STORAGE

Clean the Spreader

1. Follow all the steps in *Clean the Spreader*.

Empty the Spray Tank

1. Follow all the steps in *Clean the Sprayer*.
2. Empty the sprayer system:
 - Empty the sprayer tank.
 - Start the product and set sprayer-pump switch to the ON position.
 - Move the 3 boom spray-control levers to the ON position.

Note: Run the sprayer pump until the spray nozzles is spray air.

3. Shut off the sprayer pump and the product.

Prepare the Spray System

⚠ WARNING

While operating the sprayer nozzles and spray gun, ensure that not all of the antifreeze mixture is emptied from the sprayer tank. Retaining some antifreeze in the pump, valves, and hoses will safeguard against corrosion and damage resulting from moisture trapped within the sprayer system. Avoid using brackish or reclaimed water in the spray system.

1. Pour 7.5 L (2 US gallon) RV anti-freeze concentrate into each sprayer tank.

Note: Use a rust inhibiting, non-alcohol based, RV antifreeze concentrate.

2. Open the tank shutoff valves for both spray tanks.
3. Open the pressure adjustment valve.
4. Start the product and set the sprayer-pump switch to the ON position.
5. Move the spray-control levers to the ON position.

Note: Allow the antifreeze to circulate through sprayer and nozzle.

6. Remove the spray gun from its holder, point it in a safe direction, and squeeze the spray gun trigger. Allow the antifreeze to circulate through sprayer and nozzle and then return the spray gun to its holder.
7. Set the sprayer-pump switch to the OFF position and shut off the product.

12 TROUBLESHOOTING

PROBLEM	POSSIBLE CAUSE	SOLUTION
Spreader motor is not working, meanwhile, the alarm buzzer is turn ON and OFF for 0.5s once as a cycle, repeat the cycle at an interval of 2s until the issue get resolved.	Battery voltage is too low.	Charge the battery.
Spreader motor is not working, meanwhile, the alarm buzzer is turn ON and OFF for 0.5s twice as a cycle, repeat the cycle at an interval of 2s until the issue get resolved.	Battery voltage is too high.	Check the battery.
Spreader motor is not working, meanwhile, the alarm buzzer is turn ON and OFF for 0.5s three times as a cycle, repeat the cycle at an interval of 2s until the issue get resolved.	Spreader motor controller high temperature.	1. Reduce working load of spreader motor. 2. Contact authorized after-sales service center.
Spreader motor is not working, meanwhile, the alarm buzzer is turn ON and OFF for 0.5s four times as a cycle, repeat the cycle at an interval of 2s until the issue get resolved.	Hall sensor abnormal	Check the cable connection.
Spreader motor is not working, meanwhile, the alarm buzzer is turn ON and OFF for 0.5s five times as a cycle, repeat the cycle at an interval of 2s until the issue get resolved.	Spreader motor is stalling.	1. Reduce working load of spreader motor. 2. Contact authorized after-sales service center.
Spreader motor is not working, meanwhile, the alarm buzzer is turn ON and OFF for 0.5s six times as a cycle, repeat the cycle at an interval of 2s until the issue get resolved.	Spreader motor is vibrating.	1. Reduce working load of spreader motor. 2. Contact authorized after-sales service center.
Spreader motor is not working, meanwhile, the alarm buzzer is turn ON and OFF for 0.5s seven times as a cycle, repeat the cycle at an interval of 2s until the issue get resolved.	Pre-charge failure.	Contact authorized after-sales service center.
Spreader motor is not working, meanwhile, the alarm buzzer is turn ON and OFF for 0.5s eight times as a cycle, repeat the cycle at an interval of 2s until the issue get resolved.	Relay malfunction.	Contact authorized after-sales service center.
Spreader motor is not working, meanwhile, the alarm buzzer is turn ON and OFF for 0.5s nine	Spreader motor high temperature	1. Stop the product and wait for the spreader motor temperature to decrease.

PROBLEM	POSSIBLE CAUSE	SOLUTION
times as a cycle, repeat the cycle at an interval of 2s until the issue get resolved.		2. Contact authorized after-sales service center.
Spreader motor is not working, meanwhile, the alarm buzzer is turn ON and OFF for 0.5s ten times as a cycle, repeat the cycle at an interval of 2s until the issue get resolved.	The thermostat of the spreader motor is disconnected.	1. Check the cable connection. 2. Contact authorized after-sales service center.
Impeller does not rotate.	Debris buildup.	Clean impeller.
	Hopper screen is plugged.	Clean hopper screen.
	Spreader motor is loose or damaged.	Repair or replace motor.
	Impeller speed control knob turned off or down.	Check the impeller speed control knob positions. Reset the impeller speed control knob.
	Spreader motor bearing failure.	Replace bearing or entire motor.
Uneven spread/spray pattern.	Impeller is dirty or damaged.	Clean, repair, or replace impeller.
	Gate not adjusted properly.	Adjust the gate. See <i>Adjust the spreader pattern.</i>
	Nozzles are clogged.	Unclog or replace nozzles.
	Hopper screen is plugged.	Hopper screen is plugged.
	Material clumps over gate.	Check motor shaft agitator pin presence.
	Diffuser ramp setting incorrect.	Adjust pattern control.
	Air in spray system.	Purge air from spray system.
No front spray or poor output.	Tank is empty.	Fill tank.
	The nozzle strainer is clogged or damaged.	Clean, repair, or replace the nozzle strainer.
	Pump is clogged or damaged.	Clean, repair, or replace pump.
	Nozzles are clogged.	Unclog or replace nozzles.
	Hoses are clogged, kinked, or damaged.	Clean, repair, or replace hoses.
	Spray control not on.	Turn on spray.
	Spray pressure and speed incorrect.	Adjust pressure and speed.
	Spray mixture is incorrect.	Follow chemical manufacturer's recommendation.
	Spray system is leaking or sucking air.	Inspect system and clean, repair, or replace components as needed.
	Air in spray system.	Purge air from spray system.
No material dispensed from hopper.	Hopper screen is plugged.	Clean hopper screen.
	Gate not adjusted properly.	Adjust the gate. See <i>Open or Close the Hopper Gate, Adjust the spreader pattern and Use the Side-deflector.</i>
Spray gun does not work.	Tank is empty.	Fill tank.

PROBLEM	POSSIBLE CAUSE	SOLUTION
	Control valve in wrong position.	Place in "open" position.
	The spray gun is clogged or damaged.	Clean, repair, or replace the spray gun.
	Nozzle is clogged.	Unclog or replace nozzle.
	Trigger is not pressed.	Press trigger.
	Hoses are clogged or damaged.	Clean, repair, or replace hoses.
	Hose is not connected to the spray gun.	Reconnect hose.
	Hose is kinked.	Unkink hose.
	Spray system is leaking or sucking air.	Inspect system and clean, repair, or replace components as needed.
	Air in spray system.	Purge air from spray system.

13 ERRORS

The Canbus system will take action to protect the user and product when it detects an issue. When it acts to turn off the product or a component, it will indicate that an error has occurred, and that error will be shown on the digital display. All electrical errors have a letter code followed by a number. The first letter describes the system that caused the error according to this chart:

Name	Meaning
BMS	Battery error code
BC	Battery charger error code
TR	Right wheel motor controller error code
TL	Left wheel motor controller error code
AT	Attachment controller Error code
DS	Display screen error code

13.1 DISPLAY SCREEN ERROR CODE

Error Codes	Error Contents	User's Operation Suggestions
DS 11	Abnormal Display CAN Communication	Please check the maintenance switch is set to "I" / ON condition. Please check if the CAN wire on the display or the right wheel motor controller is well connected. Please restart the vehicle. If fault persists after completing the above inspections, please contact after-sales service.

13.2 BMS ERROR CODE

Error Codes	Error Contents	User's Operation Suggestions
BMS 11	Battery Discharging Slight Overtemp	Vehicle has been put into a state of reduced performance while cooling. Once temperature is back within standard range, the fault will automatically clear and normal operation will resume.
BMS 12	Battery Discharging Severe Overtemp	Vehicle has been disabled while cooling. Once temperature is back within standard range, the vehicle can be restarted to clear the fault and resume operation.
BMS 13	Battery Discharging Slight Undertemp	Vehicle has been put into a state of reduced performance while warming. Once temperature is back within standard range, the fault will automatically clear and normal operation will resume.
BMS 14	Battery Discharging Severe Undertemp	Vehicle has been disabled while warming. Warming can take up to [Display Time] hours. Once temperature is back within standard range, the vehicle can be restarted to clear the fault and resume normal operation.
BMS 15	Battery Cells Slight Temperature Difference	Vehicle has been put into a state of reduced performance while cell temperatures return to normal. Once temperature is back within standard range, the fault will automatically clear and normal operation will resume.
BMS 16	Battery Cells Severe Temperature Difference	Vehicle has been disabled while cell temperatures return to normal. This can take up to [Display Time] hours. Once temperature is back within standard range, the vehicle can be restarted to clear the fault and resume operation.
BMS 17	Battery Cells Slight Overvoltage	Please stop charging. This action should correct and clear the fault automatically. If fault persists please contact after-sales service. Vehicle is put into a state of reduced performance while fault is present.
BMS 18	Battery Cells Severe Overvoltage	Please stop charging. If this action does not correct the fault please contact after-sales service and discontinue use of the vehicle. Vehicle is disabled while fault is present.
BMS 19	Battery Cells Slight Undervoltage	Please stop using the vehicle and begin charging. Once vehicle has been charged and cell voltage is within standard range, the fault will automatically clear. The vehicle is put into a state of reduced performance while fault is present.
BMS 21	Battery Cells Severe Undervoltage	Please stop using the vehicle and begin charging it. If this action does not correct the fault please contact after-sales service and discontinue use of the vehicle. Vehicle is disabled while fault is present.
BMS 23	Insulation Resistance Severe Insufficient	Please discontinue use of the vehicle, and contact after-sales service to check vehicle insulation. Vehicle is disabled while fault is present.
BMS 24	Battery Discharge Slight Overcurrent	Vehicle has been put into a state of reduced performance while discharge current high. Attempt to reduce vehicle load. Once

Error Codes	Error Contents	User's Operation Suggestions
		current is back within standard range, the fault will automatically clear and normal operation will resume.
BMS 25	Battery Discharge Severe Overcurrent	Vehicle has been disabled. Attempt to reduce vehicle load. Once discharge current is back within standard range, the vehicle can be restarted to clear the fault and resume operation. If fault persists contact after-sales service.
BMS 26	Battery Cells Voltage Slight Difference	Please charge vehicle. This action should correct and clear the fault. If fault persists contact after-sales. Vehicle has been put into a state of reduced performance while cell voltages are different.
BMS 27	Battery Cells Voltage Severe Difference	Please discontinue use of the vehicle and begin charging. If fault persists after this action contact after-sales. Vehicle is disabled while fault is present.
BMS 28	Battery Slight Overvoltage	Please stop charging. This action should correct and clear the fault automatically. Vehicle is put into a state of reduced performance while fault is present.
BMS 29	Battery Severe Overvoltage	Please stop charging. If this action does not correct the fault please contact after-sales service and discontinue use of the vehicle. Vehicle is disabled while fault is present.
BMS 31	Battery Slight Undervoltage	Please charge vehicle. This action should correct and clear the fault automatically. If fault persists contact after-sales. Vehicle has been put into a state of reduced performance while cell voltages are different.
BMS 32	Battery Severe Undervoltage	Please discontinue use of the vehicle, and begin charging. If fault persists after this action contact after-sales. Vehicle is disabled while fault is present.
BMS 33	Battery Charging Slight Overtemp	Charging performance reduced while temperature is high. Once temperature is within standard range fault will automatically clear and normal charging operation will resume.
BMS 34	Battery Charging Severe Overtemp	Please stop charging and allow unit to cool down. If this action does not correct the fault discontinue use and contact after-sales service.
BMS 35	Charging Port Slight Overtemp	Charging performance reduced while temperature is high. Once temperature is within standard range fault will automatically clear and normal charging operation will resume.
BMS 36	Charging Port Severe Overtemp	Please stop charging and allow charge port to cool down. Check for any debris that may be in charging port or plug and clear if present. If this action does not correct the fault discontinue use and contact after-sales service.
BMS 37	Discharging B+ Contactor Welded	Please restart vehicle. If fault persists, contact after-sales service and discontinue use of the vehicle. Vehicle is disabled while fault is present.

Error Codes	Error Contents	User's Operation Suggestions
BMS 38	Battery B- Contactor Welded	Please restart vehicle. If fault persists, contact after-sales service and discontinue use of the vehicle. Vehicle is disabled while fault is present.
BMS 39	Battery Charging Contactor Welded	Please restart vehicle. If fault persists, contact after-sales service and discontinue use of the vehicle. Vehicle is disabled while fault is present.
BMS 41	Battery Heater Contactor Welded	Please restart vehicle. If fault persists, contact after-sales service and discontinue use of the vehicle. Vehicle is disabled while fault is present.
BMS 42	Battery Current Sensor Abnormal	Please restart vehicle. If fault persists, contact after-sales service and discontinue use of the vehicle. Vehicle is disabled while fault is present.
BMS 43	Battery Sampling Chip Abnormal	Please restart vehicle. If fault persists, contact after-sales service and discontinue use of the vehicle. Vehicle is disabled while fault is present.
BMS 44	Battery Cell Open Circuit	Please restart vehicle. If fault persists, contact after-sales service and discontinue use of the vehicle. Vehicle is disabled while fault is present.
BMS 45	Master and Slave chips Abnormal	Please restart vehicle. If fault persists, contact after-sales service and discontinue use of the vehicle. Vehicle is disabled while fault is present.
BMS 47	Charger CAN Communication Timeout	Please attempt to reinsert and ensure charging connector is fully seated. Ensure use of a known good charger. If these actions for not correct the fault, discontinue use of the vehicle and contact after-sales service.
BMS 48	Battery Precharge Failed	Please restart vehicle. If fault persists, contact after-sales service and discontinue use of the vehicle. Vehicle is disabled while fault is present.
BMS 49	Battery 12V Abnormal	Please restart vehicle. If fault persists, contact after-sales service and discontinue use of the vehicle. Vehicle is disabled while fault is present.
BMS 51	Battery Heater Abnormal	Please restart vehicle. If fault persists, contact after-sales service and discontinue use of the vehicle. Vehicle is disabled while fault is present.
BMS 52	Battery CC2 Detection Abnormal	Please attempt to reinsert and ensure charging connector is fully seated. Ensure use of a known good charger. Check for any debris that may be in charging port or plug and clear if present. If these actions for not correct the fault, discontinue use of the vehicle and contact after-sales service.
BMS 53	Battery B+ Contactor Coil Short	Please restart vehicle. If fault persists, contact after-sales service and discontinue use of the vehicle. Vehicle is disabled while fault is present.

Error Codes	Error Contents	User's Operation Suggestions
BMS 54	Battery B- Contactor Coil Short	Please restart vehicle. If fault persists, contact after-sales service and discontinue use of the vehicle. Vehicle is disabled while fault is present.
BMS 55	Battery Precharge Contactor Coil	Please restart vehicle. If fault persists, contact after-sales service and discontinue use of the vehicle. Vehicle is disabled while fault is present.
BMS 56	Battery Charge Contactor Coil Short	Please restart vehicle. If fault persists, contact after-sales service and discontinue use of the vehicle. Vehicle is disabled while fault is present.
BMS 57	Battery Heating Contactor Coil Short	Please restart vehicle. If fault persists, contact after-sales service and discontinue use of the vehicle. Vehicle is disabled while fault is present.
BMS 58	Battery Continuous Discharge Overcurrent	Vehicle has been put into a state of reduced performance while discharge current high. Attempt to reduce vehicle load. Once current is back within standard range, the fault will automatically clear and normal operation will resume.

13.3 BATTERY CHARGER ERROR CODE

Error Codes	Error Contents	User's Operation Suggestions
BC 11	Input Power Undervoltage	Please stop charging and restart charger. Ensure use of a known good charger. If these actions do not correct the fault, contact after-sales service.
BC 12	Input Power Overvoltage	Please stop charging and restart charger. Ensure use of a known good charger. If these actions do not correct the fault, contact after-sales service.
BC 13	Output Undervoltage	Please stop charging and restart charger. Ensure use of a known good charger. If these actions do not correct the fault, contact after-sales service.
BC 14	Output Overvoltage	Please stop charging and restart charger. Ensure use of a known good charger. If these actions do not correct the fault, contact after-sales service.
BC 15	Output Overcurrent	Please stop charging and restart charger. Ensure use of a known good charger. If these actions do not correct the fault, contact after-sales service.
BC 16	Charger Overtemp	Charger performance reduced while temperature is high. Once temperature is within standard range fault will automatically clear and normal charging operation will resume.
BC 17	Output Short Circuit	Please discontinue charging. Ensure use of a known good charger. If this does not correct the fault, contact after-sales service.
BC 18	Battery Output Polarity Reversal	Please discontinue charging. Ensure use of a known good charger. If this does not correct the fault, contact after-sales service.
BC 19	No Battery Output Voltage	Please attempt to reinsert and ensure charging connector is fully seated. Ensure use of a known good charger. Check for any debris that may be in charging port or plug and clear if present. If these actions for not correct the fault, discontinue use of the vehicle and contact after-sales service.
BC 21	Non-Load	Please attempt to reinsert and ensure charging connector is fully seated. Ensure use of a known good charger. Check for any debris that may be in charging port or plug and clear if present. If these actions for not correct the fault, discontinue use of the vehicle and contact after-sales service.
BC 22	CAN Communication Abnormal	Please attempt to reinsert and ensure charging connector is fully seated. Ensure use of a known good charger. Check for any debris that may be in charging port or plug and clear if present. If these actions for not correct the fault, discontinue use of the vehicle and contact after-sales service.
BC 23	Internal Communication Abnormal	Please attempt to reinsert and ensure charging connector is fully seated. Ensure use of a known good charger. Check for any debris that may be in charging port or plug and clear if present.

Error Codes	Error Contents	User's Operation Suggestions
		If these actions for not correct the fault, discontinue use of the vehicle and contact after-sales service.
BC 24	Charger CC1 Abnormal	Please attempt to reinsert and ensure charging connector is fully seated. Ensure use of a known good charger. Check for any debris that may be in charging port or plug and clear if present. If these actions for not correct the fault, discontinue use of the vehicle and contact after-sales service.

13.4 RIGHT WHEEL MOTOR CONTROLLER ERROR CODE

Error Codes	Error Contents	User's Operation Suggestions
TR 12	Right Wheel Motor Controller Overcurrent	Please restart vehicle and attempt to reduce load. Vehicle is disabled while fault is present.
TR 13	Right Wheel Motor Controller Current Sensor Abnormal	Please restart vehicle. If fault persists, contact after-sales service and discontinue use of the vehicle. Vehicle is disabled while fault is present.
TR 14	Right Wheel Motor Controller Precharge Failed	Please restart vehicle. If fault persists, contact after-sales service and discontinue use of the vehicle. Vehicle is disabled while fault is present.
TR 15	Right Wheel Motor Controller Severe Undertemp	Please ensure ambient temperature is above -40° F and restart vehicle. If fault persists, contact after-sales service and discontinue use of the vehicle. Vehicle is disabled while fault is present.
TR 16	Right Wheel Motor Controller Severe Overtemp	Please allow motor controller to cool and restart vehicle. Attempt to reduce load on right wheel. If these actions do not correct the fault, contact after-sales service and discontinue use of the vehicle. Vehicle is disabled while fault is present.
TR 19	Right Wheel Motor Controller Speed Limit Supervision	Right wheel speed is faster than vehicle max speed. Please restart vehicle and ensure vehicle is operating within standard speed range. If fault persists contact, after-sales service and discontinue use of the vehicle. Vehicle is disabled while fault is present.
TR 1A	Right Wheel Motor Not Stopped	Please restart vehicle. If fault persists, contact after-sales service and discontinue use of the vehicle. Vehicle is disabled while fault is present.
TR 1D	Right Wheel Motor Controller Reset Rejected	Please restart vehicle. If fault persists, contact after-sales service and discontinue use of the vehicle. Vehicle is disabled while fault is present.
TR 1E	Right Wheel Motor Short	Please restart vehicle. If fault persists, contact after-sales service and discontinue use of the vehicle. Vehicle is disabled while fault is present.
TR 22	Right Wheel Motor Controller Overtemp Cutback	Vehicle has been put into a state of reduced performance while motor controller temperature high. Attempt to reduce vehicle load and allow controller to cool. Once temperature is back within standard range, restart the vehicle and normal operation will resume.
TR 25	Right Wheel Motor Controller Ext 5V Supply Failure	Please restart vehicle. If fault persists, contact after-sales service and discontinue use of the vehicle. Vehicle is disabled while fault is present.
TR 26	Right Wheel Motor Controller Ext 12V Supply Failure	Please restart vehicle. If fault persists, contact after-sales service and discontinue use of the vehicle. Vehicle is disabled while fault is present.

Error Codes	Error Contents	User's Operation Suggestions
TR 28	Right Wheel Motor Slight Over-temp	Vehicle has been put into a state of reduced performance while motor temperature high. Attempt to reduce vehicle load and allow motor to cool. Once temperature is back within standard range, restart the vehicle and normal operation will resume.
TR 29	Right Wheel Motor Temperature Sensor Abnormal	Please restart vehicle. If fault persists, contact after-sales service and discontinue use of the vehicle. Vehicle is disabled while fault is present.
TR 31	Main Contactor Coil Driver Short /Open	Please restart vehicle. If fault persists, contact after-sales service and discontinue use of the vehicle. Vehicle is disabled while fault is present.
TR 36	Right Wheel Motor Sin/Cos Encoder Abnormal	Please restart vehicle. If fault persists, contact after-sales service and discontinue use of the vehicle. Vehicle is disabled while fault is present.
TR 37	Right Wheel Motor Phase Open	Please restart vehicle. If fault persists, contact after-sales service and discontinue use of the vehicle. Vehicle is disabled while fault is present.
TR 38	Main Contactor Welded	Please restart vehicle. If fault persists, contact after-sales service and discontinue use of the vehicle. Vehicle is disabled while fault is present.
TR 39	Main Contactor Did Not Close	Please restart vehicle. If fault persists, contact after-sales service and discontinue use of the vehicle. Vehicle is disabled while fault is present.
TR 3A	Right Wheel Motor Controller Setup Needed	Please restart vehicle. If fault persists, contact after-sales service and discontinue use of the vehicle. Vehicle is disabled while fault is present.
TR 41	Right Throttle Wiper High	Please check throttle connection and restart vehicle. If fault persists, contact after-sales service and discontinue use of the vehicle. Vehicle is disabled while fault is present.
TR 42	Right Throttle Input Abnormal	Please check throttle connection and restart vehicle. If fault persists, contact after-sales service and discontinue use of the vehicle. Vehicle is disabled while fault is present.
TR 43	Right Pot2 Wiper High	Please check throttle connection and restart vehicle. If fault persists, contact after-sales service and discontinue use of the vehicle. Vehicle is disabled while fault is present.
TR 46	Right Wheel Motor Controller NV Memory Failure	Please restart vehicle. If fault persists, contact after-sales service and discontinue use of the vehicle. Vehicle is disabled while fault is present.
TR 51	Display CAN Communication Abnormal	Please restart vehicle. If fault persists, contact after-sales service and discontinue use of the vehicle. Vehicle is disabled while fault is present.

Error Codes	Error Contents	User's Operation Suggestions
TR 52	Left Wheel Motor Controller CAN Communication Abnormal	Please restart vehicle. If fault persists, contact after-sales service and discontinue use of the vehicle. Vehicle is disabled while fault is present.
TR 53	Vehicle Initial State Detection Abnormal	Please check if the parking switch is in the park position. Right side throttle lever is not in neutral position. Please ensure right throttle lever is in neutral position to enable operation. Left side throttle lever is not in neutral position. Please ensure left throttle lever is in neutral position to enable operation.
TR 55	BMS CAN Communication Abnormal	Please restart vehicle. If fault persists, contact after-sales service and discontinue use of the vehicle. Vehicle is disabled while fault is present.
TR 56	Operator Presence Detection Abnormal	The operator is not in the correct operating position. Please ensure you are in the correct operating position to resume operation. Right side throttle lever is not in neutral position. Please ensure right throttle lever is in returned to neutral position to resume operation. Left side throttle lever is not in neutral position. Please ensure left throttle lever is in returned to neutral position to resume operation.
TR 59	Limp Home Mode has been activated	Theft Protection Activated: Please contact vehicle owner to unlock the vehicle.
TR 5A	Internal communication failure	Please restart vehicle. If fault persists, contact after-sales service and discontinue use of the vehicle. Vehicle is disabled while fault is present.
TR 5B	Light Parking Brake Manually Disengaged and Not Reset	Detected right parking brake is not engaged. Please re-engage parking brake.
TR 61	GPS Module CAN Communication Abnormal	Please restart vehicle. If fault persists, contact after-sales service and discontinue use of the vehicle. Vehicle is disabled while fault is present.
TR 73	Right Wheel Motor Stall Detected	Please restart vehicle and attempt to reduce load. If these actions do not correct the fault contact after-sales service. Vehicle is disabled while fault is present.
TR 77	Right Wheel Motor Controller Supervision Abnormal	Please restart vehicle. If fault persists, contact after-sales service and discontinue use of the vehicle. Vehicle is disabled while fault is present.
TR 79	Right Wheel Motor Controller Supervision Input Check	Please restart vehicle. If fault persists, contact after-sales service and discontinue use of the vehicle. Vehicle is disabled while fault is present.
TR 83	Right Wheel Motor Controller Internal Hardware	Please restart vehicle. If fault persists, contact after-sales service and discontinue use of the vehicle. Vehicle is disabled while fault is present.

Error Codes	Error Contents	User's Operation Suggestions
TR 87	Right Wheel Motor Controller Motor Characterization Fault	Please restart vehicle. If fault persists, contact after-sales service and discontinue use of the vehicle. Vehicle is disabled while fault is present.
TR A1	Spreader Controller Coil Driver Short/Open	Please restart Spreader Controller and restart vehicle . If fault persists, contact after-sales service and discontinue use of the vehicle. Vehicle is disabled while fault is present.
TR A2	Right Wheel Motor Controller EM Brake Driver Short/Open	Please restart vehicle. If fault persists, contact after-sales service and discontinue use of the vehicle. Vehicle is disabled while fault is present.
TR A3	Sprayer motor Coil Driver Short/Open	Please check Sprayer motor and restart vehicle. If fault persists, contact after-sales service and discontinue use of the vehicle. Vehicle is disabled while fault is present.
TR A4	Auto power off Contactor Coil Driver Short/Open	Please restart vehicle. If fault persists, contact after-sales service and discontinue use of the vehicle. Vehicle is disabled while fault is present.
TR A9	Right Wheel Motor Controller Coil Supply	Please restart vehicle. If fault persists, contact after-sales service and discontinue use of the vehicle. Vehicle is disabled while fault is present.
TR D2	Right Wheel Motor Controller Phase PWM Mismatch	Please restart vehicle. If fault persists, contact after-sales service and discontinue use of the vehicle. Vehicle is disabled while fault is present.

13.5 LEFT WHEEL MOTOR CONTROLLER ERROR CODE

Error Codes	Error Contents	User's Operation Suggestions
TL 12	Left Wheel Motor Controller Overcurrent	Please restart vehicle and attempt to reduce load. Vehicle is disabled while fault is present.
TL 13	Left Wheel Motor Controller Current Sensor Abnormal	Please restart vehicle. If fault persists, contact after-sales service and discontinue use of the vehicle. Vehicle is disabled while fault is present.
TL 14	Left Wheel Motor Controller Precharge Failed	Please restart vehicle. If fault persists, contact after-sales service and discontinue use of the vehicle. Vehicle is disabled while fault is present.
TL 15	Left Wheel Motor Controller Severe Undertemp	Please ensure ambient temperature is above -40° F and restart vehicle. If fault persists, contact after-sales service and discontinue use of the vehicle. Vehicle is disabled while fault is present.
TL 16	Left Wheel Motor Controller Severe Overtemp	Please allow motor controller to cool and restart vehicle. Attempt to reduce load on left wheel. If these actions do not correct the fault, contact after-sales service and discontinue use of the vehicle. Vehicle is disabled while fault is present.
TL 19	Left Wheel Motor Controller Speed Limit Supervision	Left wheel speed is faster than vehicle max speed. Please restart vehicle and ensure vehicle is operating within standard speed range. If fault persists contact, after-sales service and discontinue use of the vehicle. Vehicle is disabled while fault is present.
TL 1A	Left Wheel Motor Not Stopped	Please restart vehicle. If fault persists, contact after-sales service and discontinue use of the vehicle. Vehicle is disabled while fault is present.
TL 1D	Left Wheel Motor Controller Reset Rejected	Please restart vehicle. If fault persists, contact after-sales service and discontinue use of the vehicle. Vehicle is disabled while fault is present.
TL 1E	Left Wheel Motor Short	Please restart vehicle. If fault persists, contact after-sales service and discontinue use of the vehicle. Vehicle is disabled while fault is present.
TL 22	Left Wheel Motor Controller Overtemp Cutback	Vehicle has been put into a state of reduced performance while motor controller temperature high. Attempt to reduce vehicle load and allow controller to cool. Once temperature is back within standard range, restart the vehicle and normal operation will resume.
TL 25	Left Wheel Motor Controller Ext 5V Supply Failure	Please restart vehicle. If fault persists, contact after-sales service and discontinue use of the vehicle. Vehicle is disabled while fault is present.
TL 26	Left Wheel Motor Controller Ext 12V Supply Failure	Please restart vehicle. If fault persists, contact after-sales service and discontinue use of the vehicle. Vehicle is disabled while fault is present.

Error Codes	Error Contents	User's Operation Suggestions
TL 28	Left Wheel Motor Slight Over-temp	Vehicle has been put into a state of reduced performance while motor temperature high. Attempt to reduce vehicle load and allow motor to cool. Once temperature is back within standard range, restart the vehicle and normal operation will resume.
TL 29	Left Wheel Motor Temperature Sensor Abnormal	Please restart vehicle. If fault persists, contact after-sales service. Vehicle is disabled while fault is present.
TL 31	Main Contactor Coil Driver Short /Open	Please restart vehicle. If fault persists, contact after-sales service and discontinue use of the vehicle. Vehicle is disabled while fault is present.
TL 36	Left Wheel Motor Sin/Cos Encoder Abnormal	Please restart vehicle. If fault persists, contact after-sales service and discontinue use of the vehicle. Vehicle is disabled while fault is present.
TL37	Left Wheel Motor Phase Open	Please restart vehicle. If fault persists, contact after-sales service and discontinue use of the vehicle. Vehicle is disabled while fault is present.
TL 38	Main Contactor Welded	Please restart vehicle. If fault persists, contact after-sales service and discontinue use of the vehicle. Vehicle is disabled while fault is present.
TL 39	Main Contactor Did Not Close	Please restart vehicle. If fault persists, contact after-sales service and discontinue use of the vehicle. Vehicle is disabled while fault is present.
TL 3A	Left Wheel Motor Controller Setup Needed	Please restart vehicle. If fault persists, contact after-sales service and discontinue use of the vehicle. Vehicle is disabled while fault is present.
TL 41	Left Throttle Wiper High	Please check throttle connection and restart vehicle. If fault persists, contact after-sales service and discontinue use of the vehicle. Vehicle is disabled while fault is present.
TL 42	Left Throttle Input Abnormal	Please check throttle connection and restart vehicle. If fault persists, contact after-sales service and discontinue use of the vehicle. Vehicle is disabled while fault is present.
TL 43	Left Pot2 Wiper High	Please check throttle connection and restart vehicle. If fault persists, contact after-sales service and discontinue use of the vehicle. Vehicle is disabled while fault is present.
TL 46	Left Wheel Motor Controller NV Memory Failure	Please restart vehicle. If fault persists, contact after-sales service and discontinue use of the vehicle. Vehicle is disabled while fault is present.
TL 52	Right Wheel Motor Controller CAN Communication Abnormal	Please restart vehicle. If fault persists, contact after-sales service and discontinue use of the vehicle. Vehicle is disabled while fault is present.

Error Codes	Error Contents	User's Operation Suggestions
TL 5A	Internal communication failure	Please restart vehicle. If fault persists, contact after-sales service and discontinue use of the vehicle. Vehicle is disabled while fault is present.
TL 5B	Left Parking Brake Manually Disengaged and Not Reset	Detected left parking brake is not engaged. Please re-engage parking brake.
TL 73	Left Wheel Motor Stall Detected	Please restart vehicle and attempt to reduce load. If these actions for not correct the fault contact after-sales service. Vehicle is disabled while fault is present.
TL 77	Left Wheel Motor Controller Supervision Abnormal	Please restart vehicle. If fault persists, contact after-sales service and discontinue use of the vehicle. Vehicle is disabled while fault is present.
TL 79	Left Wheel Motor Controller Supervision Input Check	Please restart vehicle. If fault persists, contact after-sales service and discontinue use of the vehicle. Vehicle is disabled while fault is present.
TL 83	Left Wheel Motor Controller Internal Hardware	Please restart vehicle. If fault persists, contact after-sales service and discontinue use of the vehicle. Vehicle is disabled while fault is present.
TL 87	Left Wheel Motor Controller Motor Characterization Fault	Please restart vehicle. If fault persists, contact after-sales service and discontinue use of the vehicle. Vehicle is disabled while fault is present.
TL A2	Left Wheel Motor Controller EM Brake Driver Coil Short/Open	Please restart vehicle. If fault persists, contact after-sales service and discontinue use of the vehicle. Vehicle is disabled while fault is present.
TL A9	Left Wheel Motor Controller Coil Supply	Please restart vehicle. If fault persists, contact after-sales service and discontinue use of the vehicle. Vehicle is disabled while fault is present.
TL D2	Left Wheel Motor Controller Phase PWM Mismatch	Please restart vehicle. If fault persists, contact after-sales service and discontinue use of the vehicle. Vehicle is disabled while fault is present.

14 TECHNICAL DATA

Product	Voltage		82 V
	Length		74" (188 cm)
	Height		50.8" (129 cm)
	Overall width		52" (132 cm)
	Wheel size	Front caster wheel	16 X 6.5 - 8" (40.5 X 16.5 - 20.2 cm)
		Drive wheel	24 X 12 - 12" (61 X 30.5 - 30.5 cm)
	Forward speed	Stand on the platform	3/ 4/ 5/ 8 mph (4.8/ 6.4/ 8/ 12.9 km/h)
		Stand on the ground	2.25 mph (3.6 km/h)
	Reverse speed	Stand on the platform	3 mph (4.8 km/h)
		Stand on the ground	2.25 mph (3.6 km/h)
Spreader	Battery capacity		8 kWh
	Charger model		CV30KWC and other Greenworks Commercial 82V series
	Spreading width		3-25 ft (0.9-7.6 m)
	Motor type		DC Brushless motor
Sprayer	Impeller speed		130-1000 rpm
	Nominal hopper capacity		220 lbs (100kg)
	Pump type		Diaphragm Pump 5.3GPM DC 72V motor
	Tank capacity		60 gal. (two 30 gal.)
	Spray width		2/ 6/ 8/ 10 ft (0.6/ 1.8/ 2.4/ 3 m)
	Nozzles		5 lavender colored air injected Nozzles (1 left+3 center + 1 right)
	Spot spray		70 ft (21.3 m) hose reel with trigger gun

The recommended ambient temperature range:

Product storage temperature		-4 °F ~ 113 °F (-20 °C ~ 45 °C)
Product operation temperature		32 °F ~ 95 °F (0 °C ~ 35 °C)
Battery pack storage temperature	within 4 weeks	-4°F ~ 113°F (-20°C ~ 45°C)
	4 weeks to 52 weeks	32 °F ~ 95°F (0 °C ~ 35 °C)
Charger operation temperature		-4 °F ~ 122 °F (-20 °C ~ 50 °C)
Battery pack charging temperature		41 °F ~ 131 °F (5 °C ~ 55 °C)
Battery pack discharging temperature		-13 °F ~ 131 °F (-25 °C ~ 55 °C)

15 LIMITED WARRANTY

15.1 WHAT IS COVERED BY THIS WARRANTY

Greenworks Commercial makes the following warranty to the original purchaser ("Owner") only - warranty is non-transferable:

A. Residential Use: Greenworks Commercial product used for normal residential purposes* are warranted for one (1) year from date of purchase on all materials and workmanship of chassis, deck, except batteries. The warranty period for the battery is two (2) years. Consumables (including but not limited to tires) are warranted for thirty (30) days from the date of purchase. If the Owner discovers within this warranty period a defect in materials or workmanship:

- Owner must promptly notify Greenworks Commercial or an authorized dealer in writing or via email, phone call, app or in person of the defect. In no event shall such notification be received by Greenworks Commercial, or an authorized dealer, later than one (1) year from the date of purchase.
- Within a reasonable time after such notification, and verification of warrantable defect; Greenworks Commercial will correct any defect in material or workmanship on the Greenworks Commercial product by, at its option, repairing or replacing part(s) with either new or used replacement parts.
- Such repair, including parts and labor, shall be at the expense of Greenworks Commercial to the original Owner only.

B. Commercial Use: Greenworks Commercial product used for commercial and institutional use are warranted for one (1) year from date of purchase on all materials and workmanship of chassis, deck, except batteries. The warranty period for the battery is two (2) years. Consumables (including but not limited to tires) are warranted for thirty (30) days from the date of purchase. If the Owner discovers within this warranty period a defect in materials or workmanship:

- Owner must promptly notify Greenworks Commercial or an authorized dealer in writing, via email, phone call, app or in person of the defect. In no event shall such notification be received by Greenworks Commercial, or an authorized dealer, later than one (1) year from the date of purchase.
- Within a reasonable time after such notification and verification of warrantable defect Greenworks Commercial will correct any defect in material or workmanship on the Greenworks Commercial product by, at its option, repairing or replacing part(s) with either new or used replacement parts.
- Such repair, including parts and labor, shall be at the expense of Greenworks Commercial to the original Owner (commercial) only.

Note: Failure to properly maintain batteries and keep them fully charged will reduce battery life and will void the battery warranty. The provisions of this limited warranty shall not apply to failure due to:

- Abuse or neglect such as: water damage, loose wiring or rusted or corroded hardware.
- Lack of proper maintenance; damage caused by improper installation of the battery; neglect, breakage, exposure to extreme temperature conditions including but not limited to freezing temperatures, hot temperatures, proximity to heat sources including warmers or fire, exposure to water or other substances, wreckage, operation of the battery in an overcharged or uncharged condition.
- A battery charged by systems other than the original equipment type battery charger.

Footnote: "Normal residential purposes", as used herein, means use of Product on same lot as your home. Use at more than one location is considered commercial use, after which the commercial use warranty would apply.

15.2 WHO MUST PERFORM THE WARRANTY SERVICE

All warranty service shall be performed by a Greenworks Commercial authorized dealer or Greenworks Commercial authorized service technician. Service calls and/or transportation expense of the product to and from the authorized dealer, for warranty work, will be paid by the owner of the product. For warranty service, contact an authorized dealer.

15.3 WHAT IS NOT COVERED BY THIS WARRANTY

Greenworks Commercial does not warranty:

- Repairs made by unauthorized persons.
- Damage caused by use of the Greenworks Commercial product for purposes other than those for which it was designed.

- Damages caused by disasters such as fire, flood, wind, and lightning.
- Damages caused by neglect, abuse, abnormal use, improper or unreasonable use, accident, negligence, or misuse such as water damage.
- Repairs or replacement resulting from the use of unauthorized parts, accessories, or attachments.
- Repairs or replacement as the result if any alterations or modifications, in the determination of Greenworks Commercial, which adversely affects the operation, performance or durability of the equipment.
- Products, components, or parts not manufactured by Greenworks Commercial.
- Products that have had their identification altered, including but not limited to serial numbers removed and/or made illegible.
- Depreciation or damage caused by normal wear, lack of reasonable and proper maintenance, failure to follow the product's operator manual operating, maintenance and adjustment instructions or other operational instructions provided by Greenworks Commercial.
- Normal maintenance parts and service including, but not limited to, lubricants, tune-up parts, bearings, brake or steering adjustments.
- Products with unapproved programming for that product including alterations to parameters, aftermarket programming or adjustments, or any unapproved modification to components, electronics, or software.

15.4 DISCLAIMER OF WARRANTY

The foregoing warranties are in lieu of all other warranties, expressed or implied, including but not limited to the implied warranties of merchantability and fitness for a particular purpose. However, if the Greenworks Commercial Product is purchased as a consumer product, any implied warranty of merchantability or fitness for a particular purpose is limited to the duration of this limited warranty. Some states do not allow limitations on how long an implied warranty lasts, so the above limitation may not apply to you. This warranty gives you specific legal rights, and you may also have other rights which vary from state to state.

15.5 LIMITATION OF REMEDIES

In no case shall Greenworks Commercial be liable for any special, incidental, or consequential damages based upon breach of warranty, breach of contract, negligence, strict liability in tort, or any other legal theory. Such damages include, but are not limited to:

- Loss of profits
- Loss of savings or revenue
- Loss of use of the Greenworks Commercial product or any associated equipment
- Cost of capital
- Cost of any substitute equipment, facilities, services or downtime
- The claims of third parties, including customers, and injury to property

15.6 TIME LIMIT

Unless State law determines otherwise:

Any action for breach of warranty must be commenced within one (1) years from the date of purchase in a residential and/or commercial application.

In the event the date of manufacture exceeds a reasonable timeframe preceding first customer purchase, Greenworks Commercial warranty may be subject to additional limitations.

15.7 NO OTHER WARRANTIES

This agreement is understood to be the complete and exclusive agreement between the parties, superseding all prior agreements, oral or written, and all other communications between the parties relating to the subject matter of this agreement.

15.8 OWNER'S RESPONSIBILITY

You must maintain your Greenworks Commercial Product following the maintenance procedures described in your operator manual. Such routine maintenance, whether performed by a dealer or by you, is at your expense.

This product, like any other powered equipment, is potentially dangerous unless properly operated. Any operator must be cautious and always keep safety in mind. Any operator, prior to using the Greenworks Commercial product,

should thoroughly familiarize themselves with the operator manual regarding operation and safety of the product, as well as all safety warnings on the product itself.

15.9 ALLOCATION OF RISKS

This agreement allocates the risks of product failure between Greenworks Commercial and the Owner. This allocation is recognized by both parties and is reflected in the price of the goods.

15.10 WARRANTY REGISTRATION

Unless State law determines otherwise:

- 1. Owners must register the unit with Greenworks Commercial within ten (10) days following date of purchase.
- 2. Registration can be completed by filling out the Warranty Registration Form, which is provided in the operator manual.
- 3. Registration can also be completed by using forms online at www.greenworksmcommercial.com or by using the app and providing proof of purchase (receipt including date of purchase).

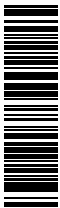
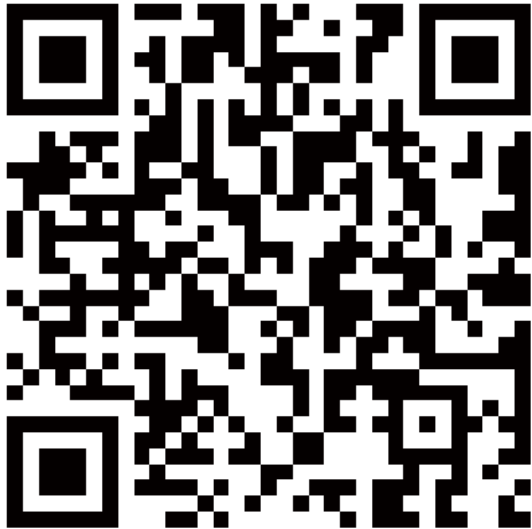
15.11 WARRANTY REGISTRATION FORM

Greenworks Commercial Product Warranty Registration & Manual(s) Received		
Name:		
Address:		
City:	State:	Zip Code:
Country:	Phone Number:	
Serial Number:	Model:	
Attachments:		
Purchase Date:	Purchased From:	

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