

Operator's Manual

SA250

Drop Spreader





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A downloadable parts manual is also available.

To the Owner Contact Information and Product Identification

If you need to contact an authorized Ventrac dealer for information on servicing your product, always provide the product model and serial numbers.

Please fill in the following information for future reference. See the picture(s) below to find the location of the identification numbers. Record them in the spaces provided.

Date of Purchase: _____

Dealer: _____

Dealer Address: _____

Dealer Phone Number: _____

Dealer Fax Number: _____

Model # (A): _____

Serial # (B): _____



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TABLE OF CONTENTS

INTRODUCTION	PAGE 5
Product Description	5
Why Do I Need an Operator's Manual?	5
Using Your Manual	6
Manual Glossary	6
SAFETY	PAGE 7
General Safety Procedures	7
Training Required	7
Requirements for Personal Protective Equipment (PPE)	7
Operation Safety.	7
Keep Riders Off	9
Operating On Slopes	9
Truck Or Trailer Transport	10
Maintenance	10
Fuel Safety	11
Hydraulic Safety	12
Safety Decals	14
SETUP	PAGE 15
SA250 Installation Kits	15
OPERATIONAL CONTROLS	PAGE 16
Transmitter (Remote Control)	16
Hopper Cover Strap	16
GENERAL OPERATION	PAGE 17
Daily Inspection	17
Attaching (Receiver Hitch)	17
Detaching (Receiver Hitch)	17
Attaching (3-Point Hitch)	17
Detaching (3-Point Hitch)	17
Spreader Loading	18
Spreader Operation	19
Application Rates	19
Gate Adjustment.	20
Gate Travel Adjustment.	20
Gate Opening Adjustment	20

TABLE OF CONTENTS

SERVICE	PAGE 21
Cleaning and General Maintenance	21
Service Access Points	21
Lubrication Locations	22
Motor Oil Level.	22
Lubrication Locations	22
Drive Chain Lubrication.	23
Drive Chain Tension Inspection	23
Drive Chain Tension Adjustment.	23
Controller Bypass	24
Synchronizing the Remote Transmitter To the Controller Unit.	24
Replacing the Remote Control Batteries	25
Storage	25
Maintenance Schedule	26
Maintenance Checklist	26
SPECIFICATIONS	PAGE 27
Dimensions.	27
Technical Information.	27
Features.	27

INTRODUCTION



Venture Products Inc. is pleased to provide you with your new Ventrac SA250 drop spreader! We hope that Ventrac equipment will provide you with a ONE Tractor Solution.

Please visit our website, or contact your authorized Ventrac dealer for a complete list of items available for your new SA250 drop spreader.

Accessories	Item Description	Part Number
	Hopper Extension Kit	70.8149*
	High Speed Sprocket Kit	70.8150
	Slow Speed Sprocket Kit	70.8186
	4200/4500/4520 Install Kit for SA250^	70.8140
	3400 Install Kit for SA250^	70.8141
	3100/3200 Install Kit for SA250^	70.8151
	Universal 2 inch Receiver Install Kit for SA250^	70.8142
	Universal 3-Point Hitch Install Kit for SA250^	70.8143

*The hopper extension kit should not be used on a Ventrac 3000 series power unit.

^An install kit is required for mounting the SA250 drop spreader onto a power unit. Make sure you have the correct installation kit for your application.

Product Description

The Ventrac SA250 drop spreader is designed to spread an array of deicing materials with precision flow control. With a narrow frame and a 102 cm (40 inch) drop pattern, the drop spreader is ideal for spreading material on sidewalks and other narrow walkways.

The drop spreader is equipped with a unique compression roller system to evenly distribute material. Easy gate adjustment allows for fine tuning flow rates based on the type of material being spread and the desired quantity being applied. A wireless remote control regulates five motor speeds for quick flow adjustments from the operator's seat.

Stainless steel construction prevents premature failure due to rust and corrosion. An innovative agitation system prevents material bridging and eliminates the need for a traditional noisy vibration motor.

Mounting options are available for specific Ventrac power units. Universal mounting options are available for a 2 inch receiver hitch or a category one 3-point hitch.

Why Do I Need an Operator's Manual?

This manual has been created to help you gain the important knowledge of what is needed to safely operate and maintain your machine, and to avoid injury and product damage. It is divided into chapters for convenient reference of the appropriate information.

You must read and understand the operator's manual for each piece of Ventrac equipment you own. Reading the operator's manual will help you become familiar with each specific piece of equipment. If this manual becomes damaged or unreadable, it should be replaced immediately. Contact your local Ventrac dealer for a replacement.

When using a Ventrac attachment, be sure to read and follow the safety and operating instructions of both the power unit and the attachment being used to ensure the safest operation possible.

The information in this manual provides the operator with the safest procedures to operate the machine while getting the maximum use out of the unit. Failure to follow the safety precautions listed in this manual may result in personal injury and/or damage to the equipment.

INTRODUCTION

Using Your Manual

This manual identifies potential hazards and safety concerns to help you, as well as others, avoid personal injury and/or damage to the equipment.

Safety should always be the first priority when working on or operating equipment. Accidents are more likely to occur when proper operating procedures are not followed or inexperienced operators are involved.

SYMBOL DEFINITIONS



This symbol identifies potential health and safety hazards. It marks safety precautions. Your safety and the safety of others is involved.

There are three signal words that describe the level of safety concern: Danger, Warning, and Caution.

SIGNAL WORD DEFINITIONS

DANGER

Indicates an imminently hazardous situation which, if not avoided, will result in death or serious injury. This signal word is limited to the most extreme cases.

WARNING

Indicates a potentially hazardous situation which, if not avoided, could result in death or serious injury.

CAUTION

Indicates a potentially hazardous situation which, if not avoided, may result in minor or moderate injury and/or property damage. It may also be used to alert against unsafe practices.

This manual also uses two words to highlight information. **ATTENTION** calls attention to special mechanical information to prevent equipment damage and/or best practices for equipment service and care.

NOTE emphasizes general information that is worthy of special attention.

Note: Right-Hand and Left-Hand orientations may be referred to at different places throughout this manual. Right-Hand and Left-Hand is determined as if facing forward from the operator station.

Manual Glossary

Power Unit	A Ventrac tractor or other Ventrac engine powered device that may be operated by itself or with an attachment or accessory.
Attachment	A piece of Ventrac equipment that requires a Power Unit for operation.
Accessory	A device that attaches to a Power Unit or Attachment to extend its capabilities.
Machine	Describes any "Attachment" or "Accessory" that is used in conjunction with a power unit.

SAFETY



General Safety Procedures for Ventrac Power Units, Attachments, & Accessories



Training Required

- The owner of this machine is solely responsible for properly training the operators.
- The owner/operator is solely responsible for the operation of this machine and for the prevention of accidents or injuries occurring to him/herself, other people, or property.
- Do not allow operation or service by children or untrained personnel. Local regulations may restrict the age of the operator.
- Before operating this machine, read the operator's manual and understand its contents.
- If the operator of the machine cannot understand this manual, then it is the responsibility of this machine's owner to fully explain the material within this manual to the operator.
- Learn and understand the use of all the controls.
- Know how to stop the power unit and the attachments quickly in the event of an emergency.

Requirements for Personal Protective Equipment (PPE)

- The owner is responsible for ensuring that all the operators use the proper PPE while operating the machine. Whenever you use the machine, use the following PPE:
- Certified eye protection and hearing protection.
- Closed toe, slip resistant footwear.
- Long pants or trousers.
- A dust mask for dusty conditions.
- Additional PPE may be required. Refer to the product safety procedures for any additional requirements.

Operation Safety

- Secure long hair and loose clothing. Do not wear jewelry.
- Inspect the machine before operation. Repair or replace any damaged, worn, or missing parts. Be sure the guards and shields are in proper working condition and are secured in place. Make any necessary adjustments before operating the machine.
- Some pictures in this manual may show shields or covers opened or removed in order to clearly illustrate the instructions. Under no circumstance should the machine be operated without these devices in place.
- Alterations or modifications to this machine can reduce safety and could cause damage to the machine. Do not alter the safety devices or operate with the shields or covers removed.
- Before each use, verify that all the controls function properly and inspect all the safety devices. Do not operate if the controls or safety devices are not in proper working condition.
- Check the parking brake function before operating. Repair or adjust the parking brake if necessary.
- Observe and follow all of the safety decals.
- All the controls are to be operated from the operator's station only.
- Always wear a seat belt if the machine has a roll cage/bar installed and in the upright position.

SAFETY



General Safety Procedures for Ventrac Power Units, Attachments, & Accessories



- Ensure the attachment or accessory is locked or fastened securely to the power unit before operating.
- Ensure that all bystanders are clear of the power unit and the attachment before operating. Stop the machine if someone enters your work area.
- Always be alert to what is happening around you, but do not lose focus on the task you are performing. Always look in the direction the machine is moving.
- Look behind and down before backing up to be sure of a clear path.
- If you hit an object, stop and inspect the machine. Make any necessary repairs before operating the machine again.
- Stop operation immediately at any sign of equipment failure. An unusual noise can be a warning of equipment failure or a sign that maintenance is required. Make any necessary repairs before operating the machine again.
- If equipped with a high/low range feature, never shift between high and low range while on a slope. Always move the machine to level ground and engage the parking brake before shifting range.
- Do not leave the machine unattended while it is running.
- Always park the machine on level ground.
- Always shut off the engine when connecting the attachment drive belt to the power unit.
- Never leave the operator's station without lowering the attachment to the ground, engaging the parking brake, shutting off the engine, and removing the ignition key. Make sure all moving parts have come to a complete stop before dismounting.
- Never leave the machine unattended without lowering the attachment to the ground, engaging the parking brake, shutting off the engine, and removing the ignition key.
- Only operate in well-lit conditions.
- Do not operate when there is a risk of lightning.
- Never direct the discharge of any attachment in the direction of people, buildings, animals, vehicles, or other objects of value.
- Never discharge material against a wall or obstruction. The material may ricochet back toward the operator.
- Use extra caution when approaching blind corners, shrubs, trees, or other objects that may obscure your vision.
- Do not run the engine in a building without adequate ventilation.
- Do not touch the engine or the muffler while the engine is running or immediately after stopping the engine. These areas may be hot enough to cause a burn.
- Do not change the engine governor settings or over-speed the engine. Operating the engine at excessive speeds may increase the hazard of personal injury.
- To reduce the hazard of fire, keep the battery compartment, engine, and muffler areas free of grass, leaves, excessive grease, and other flammable materials.
- Clear the working area of objects that might be hit or thrown from the machine.

SAFETY



General Safety Procedures for Ventrac Power Units, Attachments, & Accessories



- Keep people and pets out of the working area.
- Know the work area well before operation. Do not operate where traction or stability is questionable.
- Reduce speed when you are operating over rough ground.
- Equipment can cause serious injury and/or death when improperly used. Before operating, know and understand the operation and safety of the power unit and the attachment being used.
- Do not operate the machine if you are not in good physical and mental health, if you will be distracted by personal devices, or if you are under the influence of any substance which might impair your decisions, dexterity, or judgment.
- Children are attracted to machine activity. Be aware of children and do not allow them in the work area. Turn off the machine if a child enters the work area.
- Power units, attachments, and accessories are not designed or intended for travel on public roadways. Never operate or travel on public roads or highways.
- Operate with safety lights when operating near roadways.
- Slow down and be careful of traffic when operating near or crossing roadways. Stop before crossing roads or sidewalks. Use care when approaching areas or objects that may obscure vision.

Keep Riders Off

- Only allow the operator on the power unit. Keep riders off.
- Never allow riders on any attachment or accessory.

Operating On Slopes

- Slopes can cause loss-of-control and tip-over accidents, which can result in severe injury or death. Be familiar with the emergency parking brake, along with the power unit controls and their functions.
- If the power unit is equipped with a fold down roll bar, it must be locked in the upright position when operating on any slope.
- Use low range (if equipped) when operating on slopes greater than 15 degrees.
- Do not stop or start suddenly when operating on slopes.
- Never shift between high and low range while on a slope. Always move the power unit to level ground and engage the parking brake before shifting range or placing the power unit in neutral.
- Variables such as wet surfaces and loose ground will reduce the degree of safety. Do not drive where the machine could lose traction or tip over.
- Keep alert for hidden hazards in the terrain.
- Stay away from drop-offs, ditches, and embankments.
- Sharp turns should be avoided when operating on slopes.
- Pulling loads on hills decreases safety. It is the responsibility of the owner/operator to determine loads that can safely be controlled on slopes.

SAFETY



General Safety Procedures for Ventrac Power Units, Attachments, & Accessories



- Transport the machine with the attachment lowered or close to the ground to improve stability.
- While operating on slopes, drive in an up and down direction whenever possible. If turning is necessary while driving across slopes, reduce your speed and turn slowly in the downhill direction.
- Ensure a sufficient supply of fuel for continuous operation. A minimum of one-half tank of fuel is recommended.

Truck Or Trailer Transport

- Use care when loading or unloading the machine into a truck or trailer.
- Use full width ramps for loading the machine into a truck or trailer.
- The parking brake is not sufficient to lock the machine during transport. Always secure the power unit and/or attachment to the transporting vehicle securely using straps, chains, cables, or ropes. Both the front and rear straps should be directed down and outward from the machine.
- Shut off the fuel supply to the power unit during transport on a truck or trailer.
- If equipped, turn the battery disconnect switch to the Off position to shut off electrical power.

Maintenance

- Keep the safety decals legible. Remove all grease, dirt, and debris from the safety decals and instructional labels.
- If any decals are faded, illegible, or missing, contact your dealer promptly for replacements.
- When new components are installed, be sure that the current safety decals are affixed to the replacement components.
- If any component requires replacement, use only original Ventrac replacement parts.
- Always turn the battery disconnect to the Off position or disconnect the battery before performing any repairs. Disconnect the negative terminal first and the positive terminal last. Reconnect the positive terminal first and the negative terminal last.
- Keep all bolts, nuts, screws, and other fasteners properly tightened.
- Always lower the attachment to the ground, engage the parking brake, shut off the engine, and remove the ignition key. Make sure all moving parts have come to a complete stop before cleaning, inspecting, adjusting, or repairing.
- If the power unit, attachment, or accessory requires repairs or adjustments not instructed in the operator's manual, the power unit, attachment, or accessory must be taken to an authorized Ventrac dealer for service.
- Never perform maintenance on the power unit and/or attachment if someone is in the operator's station.
- Always use protective glasses when handling the battery.
- Check the fuel lines for tightness and wear on a regular basis. Tighten or repair them as needed.
- To reduce the hazard of fire, keep the battery compartment, engine, and muffler areas free of grass, leaves, and excess grease.
- Do not touch the engine, the muffler, or other exhaust components while the engine is running or immediately after stopping the engine. These areas may be hot enough to cause a burn.

SAFETY



General Safety Procedures for Ventrac Power Units, Attachments, & Accessories



- Allow the engine to cool before storing and do not store near an open flame.
- Do not change the engine governor settings or over-speed the engine. Operating engine at excessive speeds may increase the hazard of personal injury.
- Springs may contain stored energy. Use caution when disengaging or removing springs and/or spring loaded components.
- An obstruction or blockage in a drive system or moving/rotating parts may cause a buildup of stored energy. When the obstruction or blockage is removed, the drive system or moving/rotating parts may move suddenly. Do not attempt to remove an obstruction or blockage with your hands. Keep your hands, feet, and clothing away from all power-driven parts.

Fuel Safety

- To avoid personal injury or property damage, use extreme care in handling gasoline. Gasoline is extremely flammable and the vapors are explosive.
- Do not refuel the machine while smoking or at a location near flames or sparks.
- Always refuel the machine outdoors.
- Do not store the machine or fuel container indoors where the fumes or fuel can reach an open flame, spark, or pilot light.
- Only store fuel in an approved container. Keep out of the reach of children.
- Never fill containers inside a vehicle or on a truck or trailer bed with a plastic liner. Always place the containers on the ground away from your vehicle before filling.
- Remove the machine from the truck or trailer and refuel it on the ground. If this is not possible, refuel the machine using a portable container, rather than from a fuel dispenser nozzle.
- Never remove the fuel cap or add fuel with the engine running. Allow the engine to cool before refueling.
- Never remove the fuel cap while on a slope. Only remove the fuel cap when parked on a level surface.
- Replace the fuel tank cap and the container cap securely.
- Do not overfill the fuel tank. Only fill to the bottom of the fuel neck, do not fill the fuel neck full. Overfilling of the fuel tank could result in engine flooding, fuel leakage from the tank, and/or damage to the emissions control system.
- If fuel is spilled, do not attempt to start the engine. Move the power unit away from the fuel spill and avoid creating any source of ignition until the fuel vapors have dissipated.
- If the fuel tank must be drained, it should be drained outdoors into an approved container.
- Check the fuel lines for tightness and wear on a regular basis. Tighten or repair them as needed.
- The fuel system is equipped with a shut-off valve. Shut off the fuel when transporting the machine to and from the job, when parking the machine indoors, or when servicing the fuel system.

SAFETY



General Safety Procedures for Ventrac Power Units, Attachments, & Accessories



Hydraulic Safety

- Make sure the hydraulic connections are tight and all hydraulic hoses and tubes are in good condition. Repair any leaks and replace any damaged or deteriorated hoses or tubes before starting the machine.
- Hydraulic leaks can occur under high pressure. Hydraulic leaks require special care and attention.
- Use a piece of cardboard and a magnifying glass to locate suspected hydraulic leaks.
- Keep your body and hands away from pinhole leaks or nozzles that eject high pressure hydraulic fluid. Hydraulic fluid escaping under high pressure can penetrate the skin causing serious injury, leading to severe complications and/or secondary infections if left untreated. If hydraulic fluid is injected into the skin, seek immediate medical attention no matter how minor the injury appears.
- The hydraulic system may contain stored energy. Before performing maintenance or repairs on the hydraulic system, remove any attachments, engage the parking brake, disengage the weight transfer system (if equipped), shut off the engine, and remove the ignition key. To relieve pressure on the auxiliary hydraulic system, shut off the power unit engine and move the hydraulic control lever left and right before disconnecting the auxiliary hydraulic quick couplers.

SAFETY



SA250 Safety Procedures



- The spreader must be properly secured to the power unit before operating the power unit and spreader.
- Never exceed the recommendations in the weight capacity charts in the operation section, which specifies the material weight that can be used with different front attachments. Exceeding the weight recommendation for your front attachment may result in loss of steering or front wheel traction.
- If using the spreader in combination with a vehicle that is not made by Ventrac, do not exceed the manufacturer's Gross Vehicle Weight Rating (GVWR). Overloading may result in unpredictable and/or unsafe vehicle handling and may cause damage to the equipment. Check your vehicle owner's manual to be sure that the installation of aftermarket equipment will not void the manufacturer's factory warranty.
- Do not operate a Ventrac power unit with the SA250 drop spreader on slopes greater than 10 degrees. Operation on slopes greater than 10 degrees may result in loss of steering or front wheel traction. If using the spreader in combination with a vehicle that is not made by Ventrac, the slope rating is dependent on the vehicle being used. It is the responsibility of the owner or operator to determine and follow the capacity and slope ratings for any vehicles that are not made by Ventrac.
- Do not operate the spreader in temperatures below -20° F (-29° C) or above 50° F (10° C).
- Never attempt to remove the spreader from the power unit while there is material in the spreader hopper.
- When possible, use a crane or forklift to lift the spreader. If the spreader must be lifted manually, ask someone to assist you.
- Before attempting to clear an obstruction or empty the hopper by hand, unplug the spreader from the vehicle power supply to prevent accidental startup.
- Always make sure personnel are clear of areas of danger when using equipment.
- Do not use with foreign debris or non deicing materials in the spreader. The spreader is designed only for use with deicing materials.
- Read the installation instructions before attaching the wire harness to a power source or ground.
- Do not splice any other device into the wire harness.
- The SA250 spreader is not designed for use with aftermarket vibrators/agitation systems.

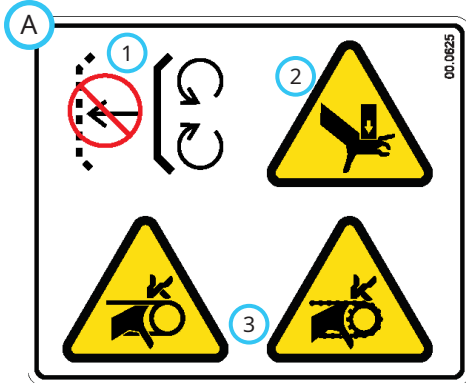
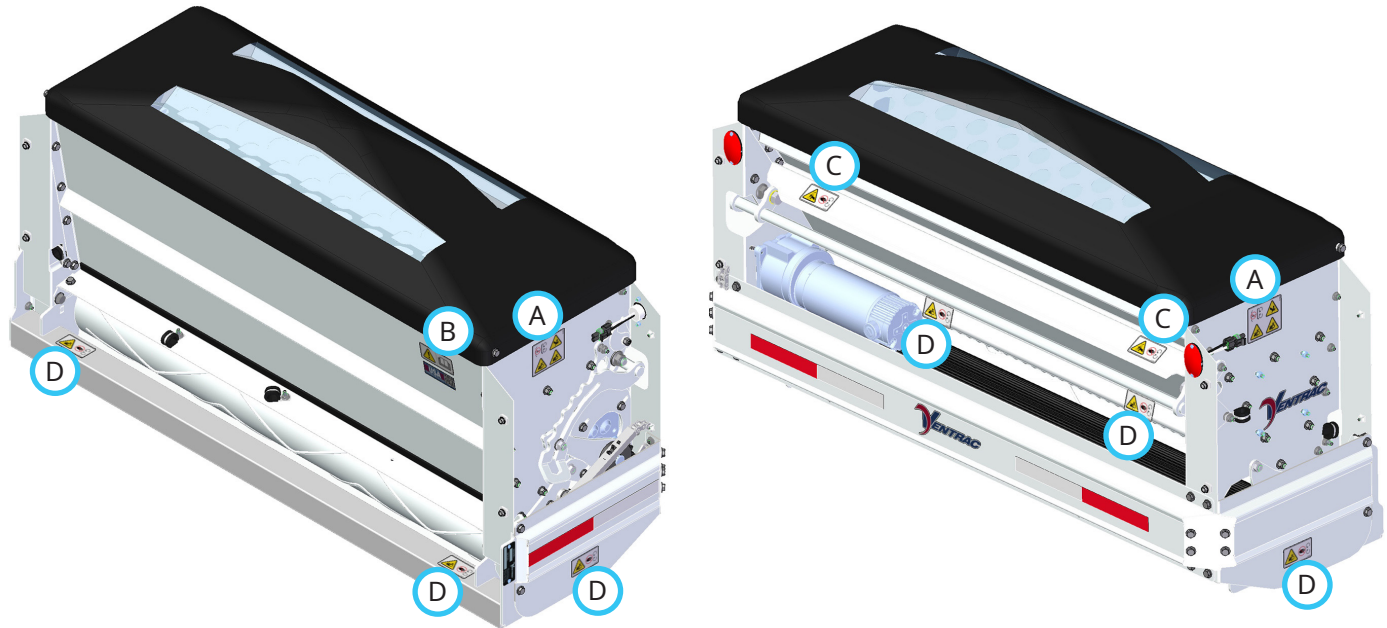
SAFETY

Safety Decals

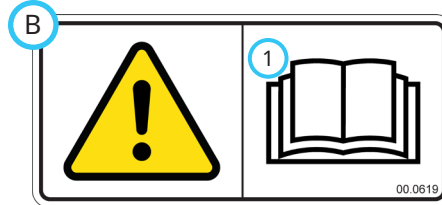
The following safety decals must be maintained on your attachment.

Keep all safety decals legible. Remove all grease, dirt, and debris from safety decals and instructional labels. If any decals are faded, illegible, or missing, contact your dealer promptly for replacements.

When new components are installed, be sure that current safety decals are affixed to the replacement components.



1. Shield missing - do not operate.
2. Pinching or crushing hazard.
3. Finger or hand entanglement.



1. Read the operator's manual.



1. Caution - pinch point. Stay away from moving parts.



1. Finger or hand entanglement.
2. Stay away from moving parts.

Decal	Description	Part Number	Quantity
A	Shield Missing	00.0625	2
B	Read Operator's Manual	00.0619	1
C	Warning, Pinch Point	00.0364	2
D	Finger/Hand Entanglement Hazard	00.0631	6

SETUP

SA250 Installation Kits

Ventrac produces a variety of different installation kits for the SA250 drop spreader. These range from installation kits for specific Ventrac power units to universal installation kits for use on non Ventrac power units that are equipped with either a 2 inch receiver hitch or a category 1 three point hitch.

The drop spreader must be installed by following the instructions for the specific installation kit. The following list includes the kit part number, the kit application, and the instruction sheet part number. If installation instructions are needed, refer to the list and contact your dealer for a replacement instruction sheet.

Part Number	Item Description	Instruction Sheet Number
70.8140	Installation Kit for 4100, 4200, 4500, and 4520 Ventrac power units	09.700198
70.8141	Installation Kit for 3400 Ventrac power units	09.700199
70.8151	Installation Kit for 3100 and 3200 Ventrac power units	09.700200
70.8142	Universal installation kit for use with a standard 2 inch receiver*	09.700201
70.8143	Universal installation kit for use with a category 1 three point hitch*	09.700202

*Before installing the drop spreader on a vehicle that is not made by Ventrac, make sure the vehicle is capable of supplying the proper amperage to the spreader. Refer to the specifications section in this manual for the spreader amperage.

OPERATIONAL CONTROLS

Transmitter (Remote Control)

The remote control transmitter works with the controller unit (receiver) to wirelessly control the operation of the drop spreader.



Press and hold the On button until the power on indicator (A) flashes (approximately 1 second) to turn on the control unit.

The controller is equipped with five speed settings. To start the spreader, select the desired speed setting (1-5). Button #1 is the minimum speed setting and button #5 is the maximum speed setting. The indicator light(s) for the selected speed setting will light up to show the selected speed.

Button #6 is burst mode, which activates the maximum speed for as long as the button is pushed. When the button is released, the controller will return to the previously selected speed setting.

To stop the spreader, press the button that matches the current speed setting. This will stop the spreader without turning off the controller, allowing the operator to restart the spreader by pressing the desired speed button.

Pressing the Off button will stop the spreader and turn off the controller. When the controller has been shut off, the controller will need to be restarted using the remote control's On button, then pressing the desired speed setting.

The remote control is equipped with a low battery indicator (B) to notify the operator that it is time to replace the battery.

Hopper Cover Strap



After placing the hopper cover over the hopper, pull out on the cord (C) to cinch the cover in place. Push in on the ratchet latch (D) to release the cord and remove the cover.

GENERAL OPERATION

Daily Inspection

WARNING

Always engage the parking brake, shut off the power unit engine, remove the ignition key, and ensure that all moving parts have come to a complete stop before inspecting the components, or attempting any repair or adjustment.

1. Park the machine on a level surface, with the engine shut off and all fluids cold.
2. Perform a visual inspection of both the power unit and the attachment. Look for loose or missing hardware, damaged components, or signs of wear.
3. Ensure the electrical connections are tight and clean.
4. Check to ensure nothing is jammed in the hopper.

Attaching (Receiver Hitch)

CAUTION

If possible, use a crane or forklift to lift the spreader. If the spreader must be lifted manually, make sure you have an assistant to help you.

1. Park the power unit on a level surface.
2. Engage the parking brake, shut off the engine, and remove the ignition key.
3. Lift the spreader (with assistance) and slide the spreader hitch into the hitch receiver tube on the power unit. Fasten in place with a clevis pin and a hair pin.
4. Connect the electric plug on the spreader harness to the power unit's connector.

Detaching (Receiver Hitch)

CAUTION

Do not attempt to remove the spreader from the power unit while there is still material in the spreader hopper.

1. Park the power unit on a level surface.
2. Engage the parking brake, shut off the engine, and remove the ignition key.
3. Disconnect the spreader harness from the power unit's connector.
4. Remove the clevis pin from the hitch receiver tube, lift up on the spreader (with assistance), and slide the spreader hitch out of the receiver tube.

Attaching (3-Point Hitch)

CAUTION

If possible, use a crane or forklift to lift the spreader. If the spreader must be lifted manually, make sure you have an assistant to help you.

1. Park the power unit on a level surface.
2. Engage the parking brake, shut off the engine, and remove the ignition key.
3. Insert the lift arm pins into the swivel balls on the 3-point lift arms and secure with linch pins.
4. Insert the 3-point top link into the top link hitch plate, install the top link pin, and secure with a linch pin.
5. Connect the electric plug on the spreader harness to the power unit's connector.

Detaching (3-Point Hitch)

CAUTION

Do not attempt to remove the spreader from the power unit while there is still material in the spreader hopper.

1. Park the power unit on a level surface.
2. Engage the parking brake, shut off the engine, and remove the ignition key.
3. Disconnect the spreader harness from the power unit's connector.
4. Remove the top link pin from the top link hitch plate.
5. Remove the linch pins from the lift arm pins and slide the lift arm pins out of the lift arm swivel balls to remove.

GENERAL OPERATION

Spreader Loading

WARNING

If using the spreader in combination with a power unit that is not made by Ventrac, do not exceed the manufacturer's Gross Vehicle Weight Rating (GVWR). Do not overload the spreader or power unit. Overloading will result in unpredictable and/or unsafe vehicle handling and may cause damage to the equipment.

Use the chart below to calculate the weight of materials. Weights of materials are an average for dry materials.

Material	Weight per Cubic Foot
Rock Salt	34-38.5 kg (75-85 pounds)
Sand/Salt Mix	43-54.5 kg (95-120 pounds)
Maximum Spreader Capacity (Volume)	
Standard	With Hopper Extension
.142 m ³ (2.5 ft ³)	.017 m ³ (5 ft ³)
Maximum Spreader Capacity (Weight)	
Standard	With Hopper Extension
91 kg (200 pounds)	181 kg (400 pounds)

Use the following charts to determine the allowable weight capacity of the spreader in combination with various Ventrac power unit and attachment setups.

WARNING

Exceeding the listed weight capacity for your power unit and attachment combination may result in the loss of steering or front wheel traction.

Ventrac 3000 series power unit (without cab) ®			
Attachment on the front of the power unit		Spreader Capacity	
		Standard	w/Hopper Ext.*
HE482	Slip Scoop	*	Not Applicable
KD482	48 inch dozer blade	*	Not Applicable
KD602	60 inch dozer blade	45 kg (100 pounds)#	Not Applicable
KD722	72 inch dozer blade	45 kg (100 pounds)#	Not Applicable
KV552	55 inch V-blade	68 kg (150 pounds)#	Not Applicable
LB540	Power Broom	68 kg (150 pounds)#	Not Applicable
LX423	Snow Blower	91 kg (200 pounds)^	Not Applicable

Ventrac 3000 series power unit (with cab) ®			
Attachment on the front of the power unit		Spreader Capacity	
		Standard	w/Hopper Ext.*
HE482	Slip Scoop	45 kg (100 pounds)#	Not Applicable
KD482	48 inch dozer blade	45 kg (100 pounds)#	Not Applicable
KD602	60 inch dozer blade	68 kg (150 pounds)#	Not Applicable
KD722	72 inch dozer blade	68 kg (150 pounds)#	Not Applicable
KV552	55 inch V-blade	91 kg (200 pounds)^	Not Applicable
LB540	Power Broom	91 kg (200 pounds)^	Not Applicable
LX423	Snow Blower	91 kg (200 pounds)^	Not Applicable

®If the power unit is equipped with optional weights, the weights must be removed from the power unit.

*Attachments that weigh less than 91 kg (200 pounds) are not recommended for use with the spreader in this configuration.

*Weight transfer set to medium setting.

^Weight transfer set to high setting.

®The hopper extension should not be used on the Ventrac 3000 series power units.

Ventrac 4000 series power unit (without cab)			
Attachment on the front of the power unit		Spreader Capacity	
		Standard	w/Hopper Ext.*
HE482	Slip Scoop	91 kg (200 pounds)*	136 kg (300 pounds)*
KD482	48 inch dozer blade	91 kg (200 pounds)*	136 kg (300 pounds)*
KD602	60 inch dozer blade	91 kg (200 pounds)*	159 kg (350 pounds)*
KD722	72 inch dozer blade	91 kg (200 pounds)*	159 kg (350 pounds)*
KV552	55 inch V-blade	91 kg (200 pounds)*	181 kg (400 pounds)*
KJ520	Power Broom	91 kg (200 pounds)^	181 kg (400 pounds)^
HB580	Power Broom	91 kg (200 pounds)^	181 kg (400 pounds)^
KX480	Snow Blower	91 kg (200 pounds)^	181 kg (400 pounds)^
KX523	Snow Blower	91 kg (200 pounds)^	181 kg (400 pounds)^

Ventrac 4000 series power unit (with cab)*			
Attachment on the front of the power unit		Spreader Capacity	
		Standard	w/Hopper Ext.*
HE482	Slip Scoop	68 kg (150 pounds)	68 kg (150 pounds)
KD482	48 inch dozer blade	68 kg (150 pounds)	68 kg (150 pounds)
KD602	60 inch dozer blade	91 kg (200 pounds)	91 kg (200 pounds)
KD722	72 inch dozer blade	91 kg (200 pounds)	91 kg (200 pounds)
KV552	55 inch V-blade	91 kg (200 pounds)	113 kg (250 pounds)
KJ520	Power Broom	91 kg (200 pounds)^	181 kg (400 pounds)^
HB580	Power Broom	91 kg (200 pounds)^	181 kg (400 pounds)^
KX480	Snow Blower	91 kg (200 pounds)^	181 kg (400 pounds)^
KX523	Snow Blower	91 kg (200 pounds)^	181 kg (400 pounds)^

*The rear weights must be removed from the power unit.

^The weight transfer set to high (maximum).

GENERAL OPERATION

1. Park the power unit on a level surface and turn off the spreader controller.
2. Engage the parking brake, shut off the engine, and remove the ignition key.
3. Open the hopper cover.
4. Pour or shovel the proper amount of ice melt material into the spreader hopper.
5. Replace and secure the hopper cover.

Spreader Operation

WARNING

Do not operate the power unit and spreader on slopes greater than 10 degrees. Operation on slopes greater than 10 degrees may result in the loss of steering or front wheel traction.

Do not exceed 16 kph (10 mph) when operating the spreader.

Always turn off the spreader controller before filling the hopper with material.

Before working on the spreader for any reason, turn off the spreader controller and unplug the spreader from the vehicle's power supply.

Press the On button on the remote control transmitter to turn the controller on. When in position to start spreading, press the desired speed button to start the spreader. The spreader speed can be changed at anytime by selecting the desired speed button.

ATTENTION

The speed of the power unit, the type of material used, the moisture content of the material, and the desired application rate will determine the necessary controller speed and gate settings of the spreader.

If you cannot achieve the desired application using the controller speed options, you will need to adjust the gate settings. Refer to the Gate Adjustment section for adjustment instructions.

If more material is needed in a small area, press and hold the blast button (#6) to increase the application rate by running the spreader at full speed. Release the blast button to return to the selected spreader speed.

NOTE: the blast feature will only work when the controller is set to less than the maximum speed (#5).

To pause spreading for just a short period, press the current speed button. Press the desired speed button to restart the spreader.

Between jobs, turn off the spreader controller by pressing the Off button on the remote control.

The spreader controller will automatically turn off after 30 minutes with no remote control activity.

ATTENTION

Never leave materials in the hopper for long periods of time, as ice melt products are hygroscopic and will attract atmospheric moisture and harden.

When spreading is complete, empty the spreader hopper to prevent the ice melt material from hardening or forming clumps inside the hopper.

Application Rates

Use of excessive amounts of ice melt products increases the cost of treatment and could harm vegetation due to run off of the materials. For these reasons, it is best to use the minimum amount of material necessary to achieve the desired results.

Rate Chart kg/minute (lbs/minute)

Material	Minimum Rate	Maximum Rate
Rock Salt (Bagged)	1.8 kg/minute (4 lbs/minute)	27.2 kg/minute (60 lbs/minute)
Rock Salt (Bulk)	2.3 kg/minute (5 lbs/minute)	34 kg/minute (75 lbs/minute)
Ice B Gone	4.5 kg/minute (10 lbs/minute)	27.2 kg/minute (60 lbs/minute)
Calcium Chloride Pellets	5.4 kg/minute (12 lbs/minute)	20.4 kg/minute (45 lbs/minute)

Rate Calculation

A = pounds per minute

S = speed (Mph)

R = pounds per 1,000 square feet

The formula to calculate pounds per 1,000 square feet from the measured pounds per minute is:

$$R = 3.409 \times \frac{A}{S}$$

The formula to calculate pounds per minute from the desired pounds per 1,000 square feet is:

$$A = \frac{R \times S}{3.409}$$

GENERAL OPERATION

Gate Adjustment

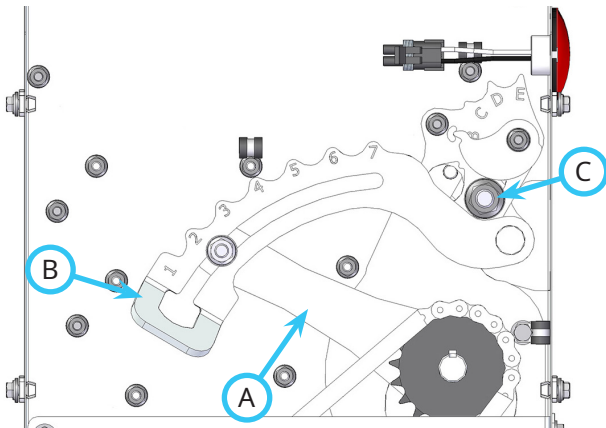
⚠ WARNING

Before making adjustments to the spreader, turn off the spreader controller and unplug the spreader from the vehicle's power supply.

ATTENTION

To prevent thread galling, hand tools and a thread lubricant are recommended when tightening stainless steel fasteners. Do not use air or electric power tools as this increases the risk of thread galling.

There are two different adjustments that can be made to the gate. The gate link (A) can be adjusted on the arm (B) of the gate control rocker to increase or decrease the amount of gate travel for each motor revolution.



The gate control rocker mounting bolts (C) can be adjusted to increase or decrease the overall opening of the gate.

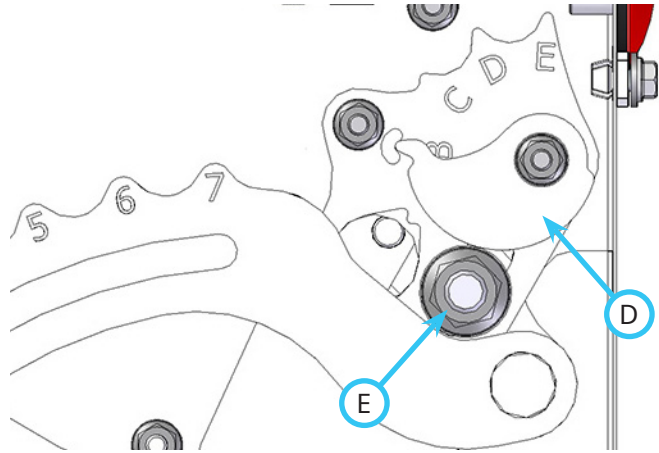
If application rate adjustments need to be made, adjust the gate link first. If the gate link adjustments are not enough to achieve the desired result, adjust the gate control rocker position.

Gate Travel Adjustment

1. Remove the left side cover from the spreader.
2. Loosen the nut that fastens the gate link to the gate control rocker arm.
3. Slide the gate link to the desired position (setting #1 is the minimum amount of gate travel with the lowest flow rate, setting #7 is the maximum amount of gate travel with the highest flow rate).
4. Retighten the nut and torque to 42 Nm (31 ft-lbs).
5. Reinstall the left side cover.

Gate Opening Adjustment

1. Remove both the left and right side covers.
2. Note the location of the left and right gate indicator plates (D).



3. Loosen the nuts (E) that fasten the gate control rocker to the end panels and the stiffener plates.
4. Slide the gate control rocker up or down to the desired location (setting A is the minimum gate opening with least amount of material flow, setting E is the maximum gate opening with the greatest amount of material flow).

ATTENTION

Check to ensure there is clearance between the bottom of the gate and the rotor.

If the gate contacts the rotor, the rotor could jam and cause damage to the motor or the controller.

5. Tighten the gate control rocker nuts slightly. Rotate the left and right indicator plates down until they are resting against the washers on the gate control rocker mounting bolts. Check the left and right indicator plate settings. If the indicators are aligned (ex. both at the tab for setting C), then the rocker shaft is level. If the indicator plates are not aligned, adjust one end of the gate control rocker until the indicator plates align.
6. After both indicator plates are aligned, torque the nuts to 102 Nm (75 ft-lbs).
7. Reinstall the left and right side covers.

SERVICE

⚠ WARNING

Always engage the parking brake, shut off the power unit engine, remove the ignition key, and ensure that all moving parts have come to a complete stop before inspecting the components, or attempting any repair or adjustment.

Before attempting any repairs or adjustments to the spreader, turn off the controller and unplug the spreader from the vehicle's power supply.

When servicing is necessary, perform it in a protected area. Do not use power tools in the rain or snow because of the danger of electrical shock or injury.

Perform service in a well lighted area and keep the service area clean to help prevent accidents.

Read the lead labels before attaching the wire harness to a power source or ground.

ATTENTION

The controller is an electronic unit and is not serviceable. Any attempt to service will void the warranty.

There are no serviceable parts in the motor/transmission assembly.

If any component requires replacement, use only original Ventrac replacement parts.

To prevent thread galling, hand tools and a thread lubricant are recommended when tightening stainless steel fasteners. Do not use air or electric power tools as this increases the risk of thread galling.

Cleaning and General Maintenance

The spreader is constructed of stainless steel panels, along with the majority of components and hardware, to prevent corrosion from salt. Dirt and salt deposits can affect the performance of the spreader.

For best results and performance, clean or wash the spreader to prevent accumulations of dirt, sand, and salt. Remove any ice or snow accumulations from the spreader and hitch mount.

ATTENTION

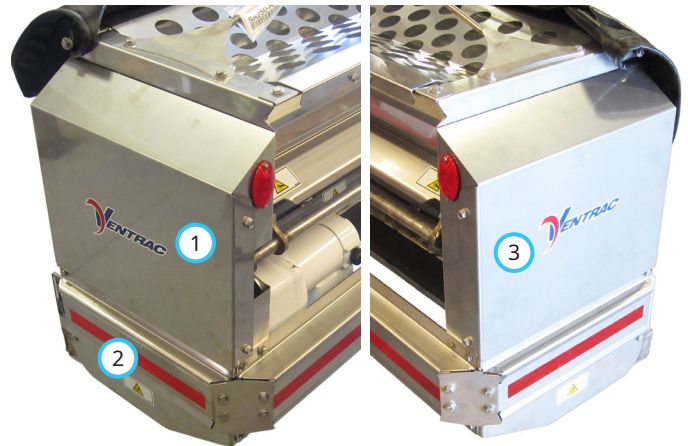
To maintain the finish of the power unit and attachment, thoroughly wash the equipment after each use to remove any corrosive agents (e.g., salt). Failure to clean the equipment may result in corrosion of (including but not limited to) steel, aluminum, and electrical components. Equipment that will experience repeated exposure to corrosive agents should be pretreated with a corrosion preventative.

ATTENTION

When pressure washing the motor area, stay at least 92 cm (36 inches) away from the motor.

Service Access Points

Throughout the manual, different access points are referred to. The following list and images identify shields and covers that may need to be removed for service and adjustments.



1. Left Side Panel

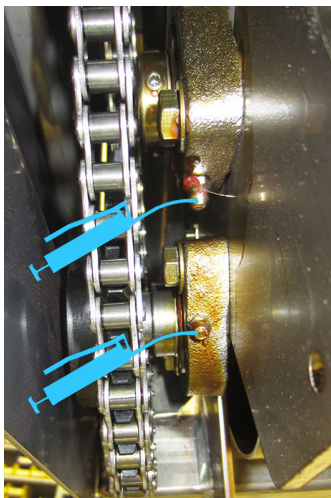
2. Left Bumper

3. Right Side Panel

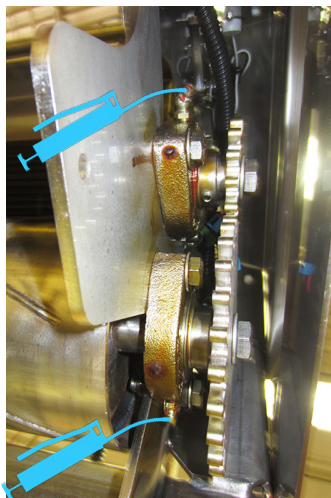
SERVICE

Lubrication Locations

Serial # 01001-03635: lubrication is required at the following locations using a Lithium Complex NLGI #1 type grease or a Lithium Complex NLGI #2 type grease rated for -40° F (-40° C). Refer to the maintenance schedule for service intervals and amount of grease.



Left bearings



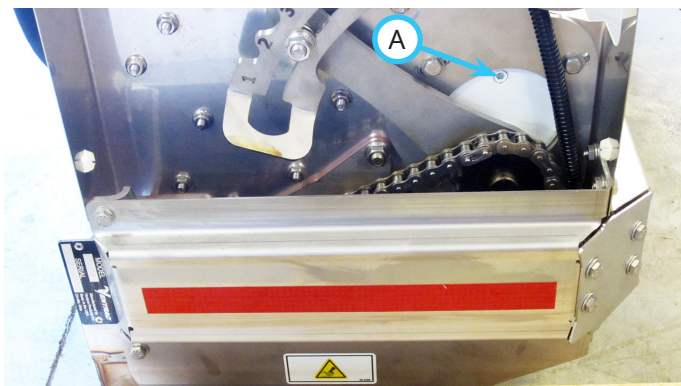
Right bearings

Serial # 03636-: these units are equipped with sealed bearings and do not require lubrication.

Motor Oil Level

For normal service, periodic motor oil level checks are not required. When performing the daily inspection, check the exterior surface of the motor for oil leakage. If oil leakage is suspected, check the motor oil level.

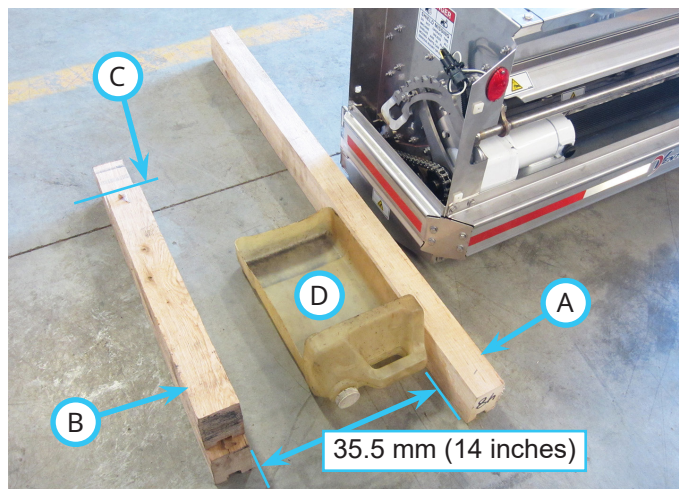
1. Remove the left side panel from the spreader.
2. Remove the fill port plug (A) from the end of the motor. The oil level should be even with the bottom of the fill port to 6.5 mm (1/4 inch) below the fill port.



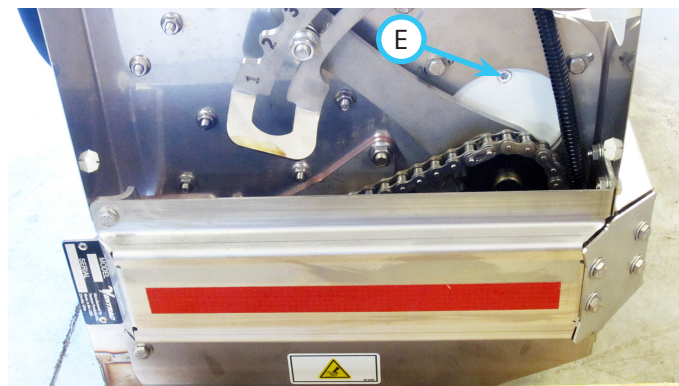
If a motor oil leak is confirmed, the motor must be repaired by an authorized Ventrac dealer.

Lubrication Locations

1. Remove the spreader from the power unit and place on a level surface.
2. Remove the left side panel from the spreader.
3. Place a 4x4 block (A) on the floor next to the left bumper. Stack two 4x4 blocks (B) on the floor with approximately 35.5 cm (14 inches) in between the double blocks and the first block. The end (C) of the top block must be inside the bolt for the top cover.



4. Place a shallow drain pan (D) next to the single block.
5. Place some shop rags or hand towels on the blocks to prevent surface scratches and/or damage to the reflective tape.
6. Remove the plug (E) from the end of the motor.



7. Lift the opposite end of the spreader until the left bumper is setting on the single block.

SERVICE

- Set the upper left end of the spreader hopper onto the double blocks, making sure that the taillight wires and connectors do not get pinched between the blocks and the spreader. Make sure the spreader is setting on the end of the hopper, not on the top cover bolt. Do not rest the spreader on the flanges of the hopper side panel.



- Allow the oil to drain from the motor (may take up to 1/2 hour).
- Lower the right end of the spreader until it is setting on the floor.
- Wipe up any spilled oil from the spreader and the floor.
- Add 350 cc (12 oz) of Ventrac HydroTorq XL synthetic oil to the motor. Oil level should be at the bottom of the fill port to 6.5 mm (1/4 inch) below the fill port.

ATTENTION

For optimal motor life and performance, use Ventrac HydroTorq XL synthetic oil.

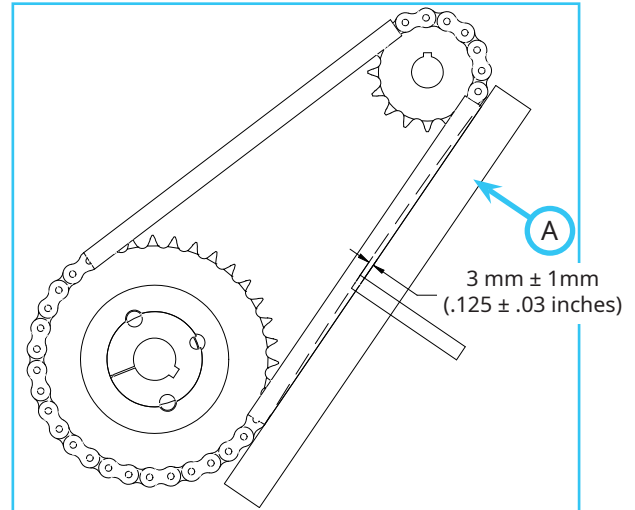
- Reinstall the fill port plug.
- Reinstall the left side panel.

Drive Chain Lubrication

Apply chain oil to the drive chain and wipe up all drips and spills. Refer to the maintenance schedule for service intervals.

Drive Chain Tension Inspection

- Unplug the spreader from the power supply.
- Remove the left side panel from the spreader.
- Remove the left bumper from the spreader.
- Place a straightedge (A) across the bottom of the sprockets as shown.



- Lightly press on the chain at the center point between the sprockets to remove the slack. There should be 3 mm ± 1 mm (.125 ± .03 inches) between the chain and the straightedge.
- If the chain tension needs to be adjusted, proceed to the following section of chain tension adjustment. If the chain tension is correct, reinstall the left bumper and the left side panel.

Drive Chain Tension Adjustment

- Loosen the four motor mount bolts.
- Move the motor to increase or decrease the chain tension and torque the motor mount bolts to 13 Nm (115 in-lbs).
- Reconnect the spreader to the power supply and run the spreader for 20 to 30 seconds.
- Unplug the spreader from the power supply and recheck the tension.
- When chain tension is correct, reinstall the left bumper and the left side panel.

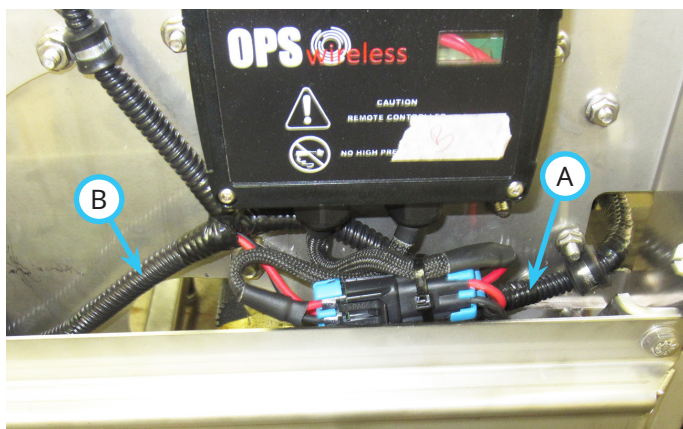
SERVICE

Controller Bypass

In the event of a controller malfunction, the controller unit can be bypassed to allow spreader operation. If the controller is bypassed, the spreader will run at only one speed (maximum speed) and will have to be controlled by turning the power supply on or off.

To bypass the controller unit:

1. Unplug the spreader from the power supply.
2. Remove the right side panel from the spreader.
3. Unplug the power supply wire harness (A) from the controller unit connector.



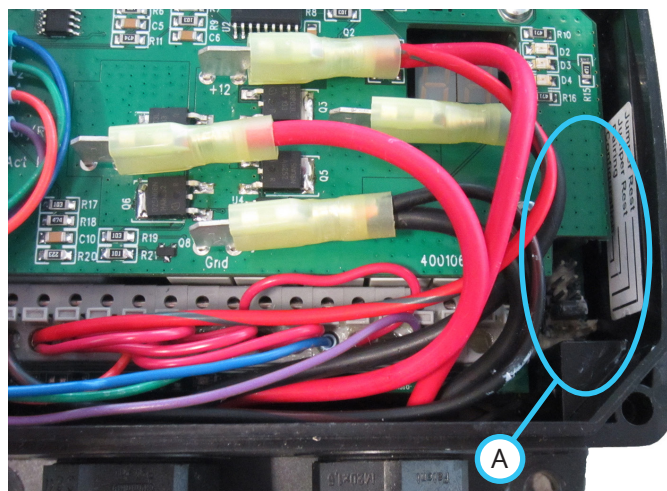
4. Unplug the motor harness (B) from the controller unit connector and plug the motor wire harness connector and the power supply wire harness connector together.
5. Reinstall the right side panel.
6. Reconnect the spreader to the power supply.
NOTE: if the power supply runs through a switch, use the switch to turn the spreader on or off. If the power supply connects directly to the battery, you will have to disconnect the harness to stop the spreader.

Synchronizing the Remote Transmitter To the Controller Unit

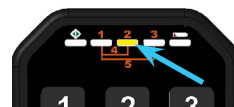
The remote transmitter and the controller unit (receiver) for your spreader come as a matched pair. If you ever need to replace either component, you will need to follow the synchronizing (pairing) procedure to create a unique assignment between the remote transmitter and the controller unit.

1. Disconnect power to the controller unit.
2. Remove the right side cover from the spreader.
3. Remove the front cover from the controller unit.

4. Locate the jumper terminals (A) in the lower right corner of the controller unit.



5. Remove one of the two jumpers from the jumper rest positions and install it in the pairing position. Refer to the label inside controller housing.
6. Press button #1 and button #3 on the remote control at the same time. The middle LED beneath the #2 will light to indicate the remote control is ready for pairing.
7. Reapply power to the controller unit. NOTE: this step must be completed within 10 seconds of the previous step.
8. The controller unit's LED display will flash **Pa Id**.
9. The remote control will confirm the download is complete by flashing the middle LED five times.
10. Disconnect power to the controller unit.
11. Remove the jumper from the pairing position and install it in the jumper rest position.
12. Reinstall the controller unit's front cover.
13. Reinstall the spreader's right side cover.
14. Reconnect power to the controller unit.



SERVICE

Replacing the Remote Control Batteries

⚠ CAUTION

Install the batteries correctly, observing the polarity signs (+, -) to avoid battery leakage.

Non-rechargeable batteries are not to be recharged.

Do not mix old and new batteries.

Do not mix batteries of different types: alkaline, carbon-zinc, Ni-Cad, Ni-MH, or lithium.

Remove the batteries from the remote control when the unit will not be used for an extended period of time.

Always remove exhausted batteries from the remote control.

1. Remove the screw that fastens the belt clip (A) to the back of the remote control.



2. Remove the three screws that fasten the battery compartment cover (B) to the remote control.
3. Remove the batteries from the remote control.
4. Clean the battery compartment area of all dust and dirt to ensure no water can enter the unit.
5. Install three new 1.5 volt AAA size batteries with correct polarity, as shown inside the battery compartment.
6. Reinstall the battery compartment cover.
7. Reinstall the belt clip onto the back of the remote control.

Storage

Preparing the Spreader for Storage

1. Clean and wash the spreader.
2. Allow the spreader to dry, then apply a rust preventative coating to the chain drive sprockets.
3. Remove any rust from the hitch mount(s) and paint any bare metal hitch mount surfaces.
4. Inspect for loose or missing hardware, damaged components, or signs of wear. Repair or replace any damaged or worn components.
5. Inspect the motor for oil leaks.
6. Inspect the safety decals. Replace any decals that are faded, illegible, or missing.
7. **Serial # 01001-03635:** Apply grease to all the grease points and wipe off any excess grease.
8. Apply chain oil to the drive chain. Clean up any excess oil or oil drips.
9. Place the spreader on a skid or wood blocks for storage. Store the remote control at a safe location where it will not get damaged or lost.

Removing the Spreader from Storage

1. Clean the attachment to remove any accumulated dust or debris.
2. Inspect the attachment as instructed in the Daily Inspection section of this manual.
3. Test the attachment to ensure that all the components are working properly.

SERVICE

Maintenance Schedule

	# of locations	# of pumps	As Needed	Daily	At 50 hours	At 100 hours	At 150 hours	At 200 hours	At 250 hours	At 300 hours	At 350 hours	At 400 hours	At 450 hours	At 500 hours	At 550 hours	At 600 hours	At 650 hours	At 700 hours	At 750 hours	At 800 hours	At 850 hours	At 900 hours	At 950 hours	At 1,000 hours	Yearly
Grease and Lubrication: See Lubrication Section																									
Rotor Bearing (Serial # 01001-03635)	2	1			✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Roller Seal Bearing (Serial # 01001-03635)	2	1			✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Oil the Drive Chain					✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Change the Motor Oil														✓										✓	
Inspection																									
Inspect for Loose, Missing, or Worn Components				✓																					
Inspect the Motor for Oil Leaks				✓																					
Inspect the Drive Chain Tension					✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Inspect the Safety Decals				✓																					

Maintenance Checklist

	# of locations	# of pumps	As Needed	Daily	At 50 hours	At 100 hours	At 150 hours	At 200 hours	At 250 hours	At 300 hours	At 350 hours	At 400 hours	At 450 hours	At 500 hours	At 550 hours	At 600 hours	At 650 hours	At 700 hours	At 750 hours	At 800 hours	At 850 hours	At 900 hours	At 950 hours	At 1,000 hours	Yearly
Grease and Lubrication: See Lubrication Section																									
Rotor Bearing (Serial # 01001-03635)	2	1																							
Roller Seal Bearing (Serial # 01001-03635)	2	1																							
Oil the Drive Chain																									
Change the Motor Oil																									
Inspection																									
Inspect for Loose, Missing, or Worn Components																									
Inspect the Motor for Oil Leaks																									
Inspect the Drive Chain Tension																									
Inspect the Safety Decals																									

SPECIFICATIONS

Dimensions

Overall Height	41 cm (16 inches)
Overall Length	56 cm (22 inches)
Overall Width119 cm (47 inches)
Weight	73 kg (160 pounds)
Drop Width102 cm (40 inches)
Material Capacity (Volume)071 m ³ (2.5 ft ³)
Material Capacity (Weight)	91 kg (200 pounds)

Technical Information

System

Voltage12 volt DC
Amperage	up to 12 Amps
Temperature Range	-.29° C to 10° C (-20° F to 50° F)

Controller

Frequency	2.4 GHz (Frequency Jumping)
IP Rating	IP65

Remote Control Transmitter

Batteries	AAA (3)
IP Rating	IP67

Motor

Type	Permanent Magnet
Gear Oil	Ventrac HydroTorq XL

Features

- Stainless steel construction
- Weatherproof hopper cover
- Innovative agitation system
- Precision drop rate control for increased salt savings and consistent drop patterns
- Compression roller system
- Easy flow adjustments
- Material safety grate
- Wireless remote control
- 12 volt electric drive/transmission
- Universal mounting options
- Ability to spread coarse materials such as bulk salt and sand/salt mixtures, as well as free flowing material such as pelletized material and calcium flakes

Visit ventrac.com/manuals
for the latest version of this operator's manual.
A downloadable parts manual is also available.

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