



2010 The BOSS Way
Iron Mountain, MI 49801
United States

Owner's Manual

40 Gallon Brine Kit Snowrator® MAG Vehicle

Part No. SNR24250—Serial No. 400000000 and Up



BOSS Products limited consumer warranty and BOSS Products commercial warranty policies are located at www.bossplow.com.

Patents www.ttcopats.com.

Introduction

Note: This Brine Kit attaches to the Snowrator MAG.

The Brine Kit is intended to be used by professional, hired operators. This attachment is an ice-control solution system to be used on paved or gravel surfaces, such as driveways and sidewalks, and other surfaces for traffic on residential or commercial properties. Using this product for purposes other than its intended use could prove dangerous to you and bystanders.

Read this information carefully to learn how to operate and maintain your product properly and to avoid injury and product damage. You are responsible for operating the product properly and safely.

Visit www.bossplow.com for product safety and operation training materials, accessory information, help finding a dealer, or to register your product.

Whenever you need service, genuine BOSS parts, or additional information, contact an Authorized BOSS Dealer or BOSS Technical Service (1-800-286-4155) and have the model and serial numbers of your product ready. identifies the location of the model and serial numbers on the product. Write the numbers in the space provided.

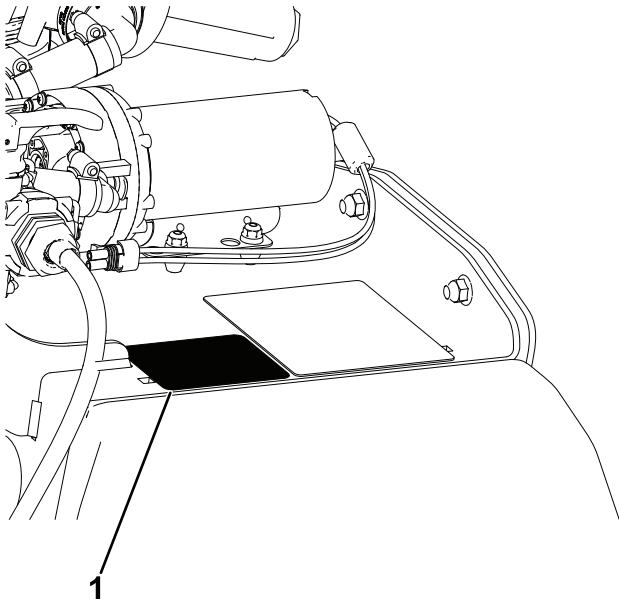


Figure 1

g446710

1. Model and serial number location

Date Purchased	_____
Model No.	_____
Serial No.	_____
Blade Crate Serial No.	_____

This manual identifies potential hazards and has safety messages identified by the safety-alert symbol (Figure 2), which signals a hazard that may cause serious injury or death if you do not follow the recommended precautions.



g000502

Figure 2

1. Safety-alert symbol

This manual uses 2 words to highlight information. **Important** calls attention to special mechanical information and **Note** emphasizes general information worthy of special attention.

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Safety

Improper use or maintenance by the operator or owner can result in injury. To reduce the potential for injury, comply with these safety instructions and always pay attention to the safety-alert symbol **▲**, which means: **Caution, Warning, or Danger**—personal safety instruction. Failure to comply with the instruction may result in personal injury or death.

Preparation

- Read the *Owner's Manual* before operating or servicing the attachment.
- Ensure that only trained personnel installs and performs maintenance on the equipment.
- Always wear appropriate personal protective equipment when loading, unloading, and servicing the attachment.
- The sprayer can hold a maximum capacity of 151 L (40 US gallons) of material. Do not exceed this capacity.

Operation

- Use a 45 kg (100 lb) minimum lifting device to move heavy components.
- Never put any part of your body between the sprayer and the vehicle.
- Wear appropriate clothing, including eye protection, long pants, substantial slip-resistant footwear, and hearing protection. Tie back long hair and do not wear loose clothing or loose jewelry.
- When transporting the machine, ensure that it is properly secured. Instructions are available at www.bossplo.com.
- When transporting the vehicle, position the sprayer so that it does not block your vision or headlights.
- Do not operate the machine while ill, tired, or under the influence of alcohol or drugs.
- Refer to the *Owner's Manual* for proper parking procedures.
- Turn the sprayer off before filling, mounting, removing, servicing, or cleaning it.
- Do not climb into or ride on the sprayer.
- Keep your hands, feet, and clothing away from moving parts and mounting points.
- Use your full attention while operating the machine. Do not engage in any activity that causes distractions; otherwise, injury or property damage may occur.
- Do not operate the sprayer near bystanders.

- This sprayer is restricted to the use of salt mix only. Do not run other materials through the spreader.
- Do not attempt to mount or remove the spreader with material in it.
- Do not store material in the spray tank.

Safety and Instructional Decals



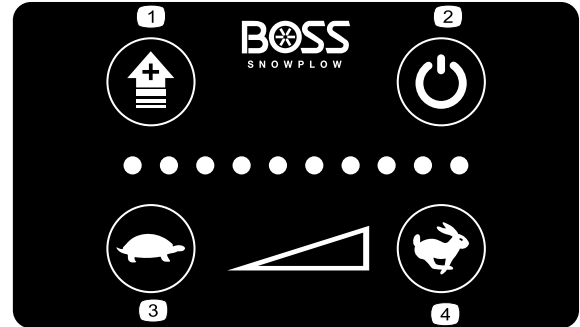
Safety decals and instructions are easily visible to the operator and are located near any area of potential danger. Replace any decal that is damaged or missing.



143-7420

decal143-7420

- | | |
|--|---|
| 1. Warning—read the <i>Operator's Manual</i> . | 7. Fire hazard—do not put flammable liquids in the tank. |
| 2. Warning—all operators should be trained before operating the machine. | 8. Warning—turn off the sprayer, shut off the machine, and remove the key before leaving the machine or performing maintenance. |
| 3. Warning—wear hearing protection. | 9. Warning—stay away from moving parts; keep all guards and shields in place. |
| 4. Warning—wear eye protection. | 10. Tipping hazard—lift only an empty tank; do not lift the tank when full. |
| 5. Warning—do not enter the tank. | 11. Thrown object hazard—keep bystanders away. |
| 6. Warning—remove the key and read the <i>Operator's Manual</i> before performing maintenance. | |



decalmsc24009

MSC24009

- | | |
|-----------------|---------|
| 1. Blast | 3. Slow |
| 2. Power button | 4. Fast |

Setup

Installing the Brine Tank Assembly

Preparing the Machine

1. Park the machine on a level surface.
2. Lower the attachment.
3. Move the motion-control levers to the NEUTRAL position.
4. Engage the parking brake.
5. Remove the key and wait for all moving parts to stop.
6. Remove the front plastic cover.

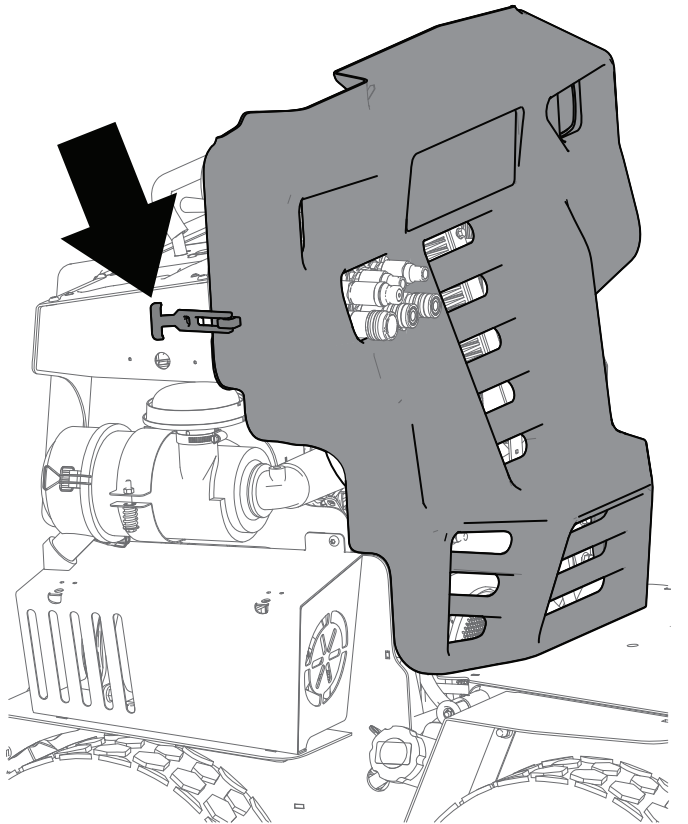


Figure 3

g381410

Mounting the Brine Tank to the Machine

1. Release the quick pins to open the hood.

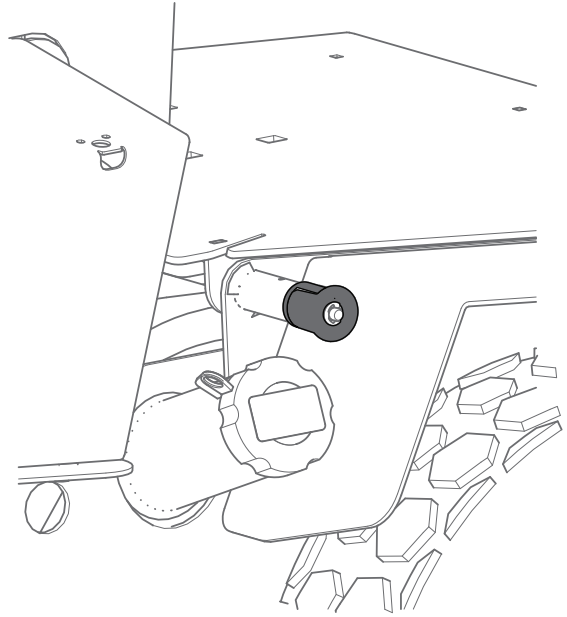


Figure 4

g386773

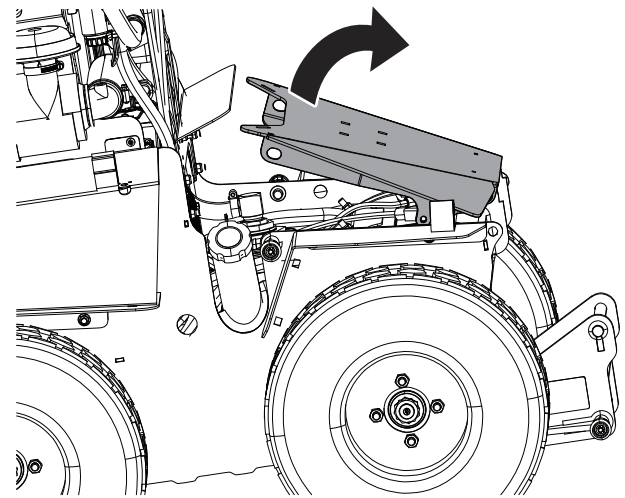


Figure 5

g381901

2. Lift the brine tank assembly and align it with the hood.
3. Install the brine tank to the hood with the 4 hex-head flange bolts (1/2 x 1-1/4 inches) and 4 hex-flange nuts (1/2 inch).

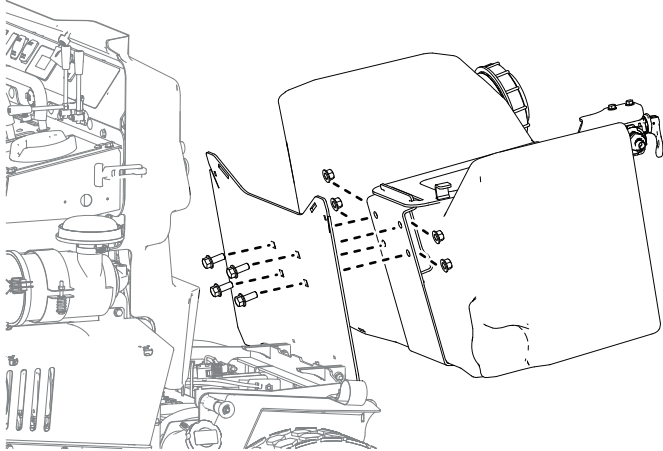


Figure 6

g448605

4. Close and secure the battery cover with the quick pins and install the plastic cover.

Installing the Hose to the Boom Control Valve

1. Install the hose to the boom control valve and secure it with the hose clamp.

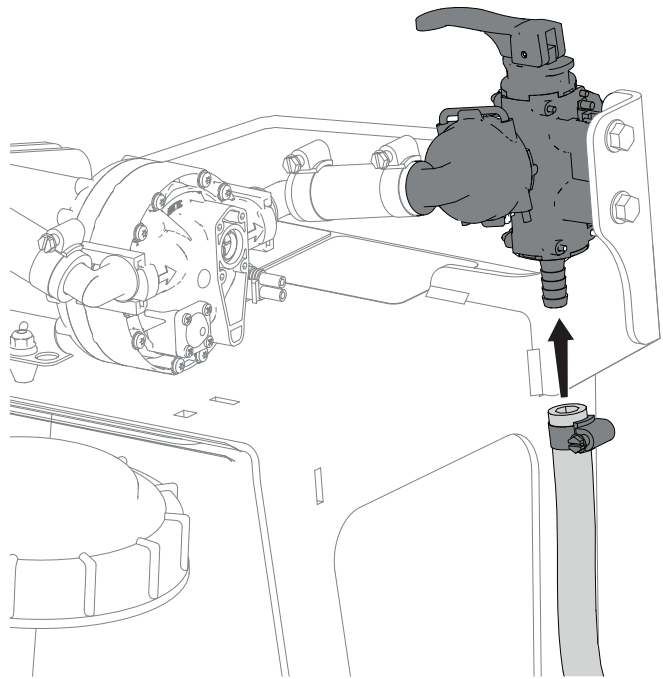


Figure 7

g447096

2. Route the hose to the left side of the machine, as shown below.

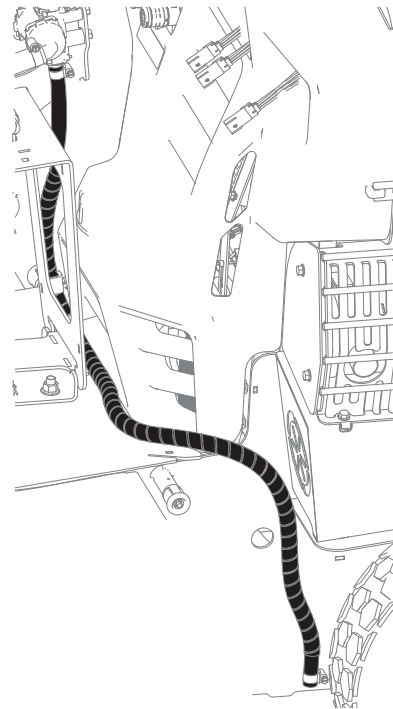


Figure 8

g448023

Installing the Brine Tube to the Bottom of the Machine

1. Install the 2 caps onto the brine tube.



Figure 9

g448606

2. Use a proper lifting device to raise the machine off of the ground.
3. Secure the brine tube to the bottom of the machine using 2 hex-head flange bolts (3/8 x 1-1/4 inches) and 2 hex-flange nuts (3/8 inch).

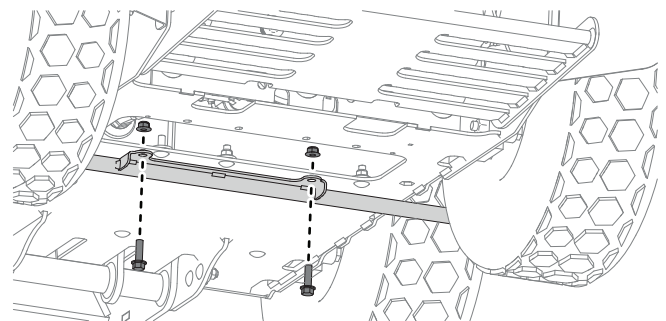


Figure 10

g449039

4. Apply pipe sealant to the barb fitting and install it into the brine tube.
5. Install the hose to the brine tube and secure it with the hose clamp.

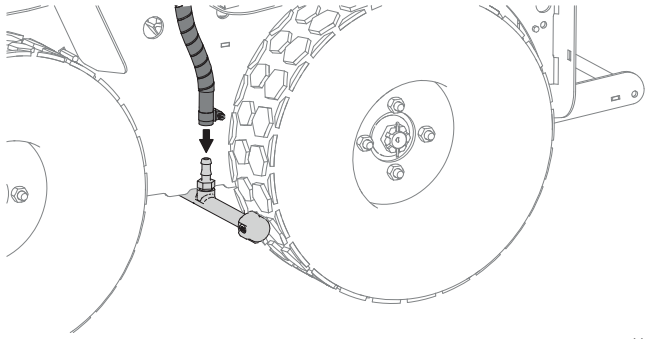


Figure 11

g449040

2. Secure the hose holder bracket to the right pump cover with the 2 hex-head flange screws (5/16 x 1 inch).

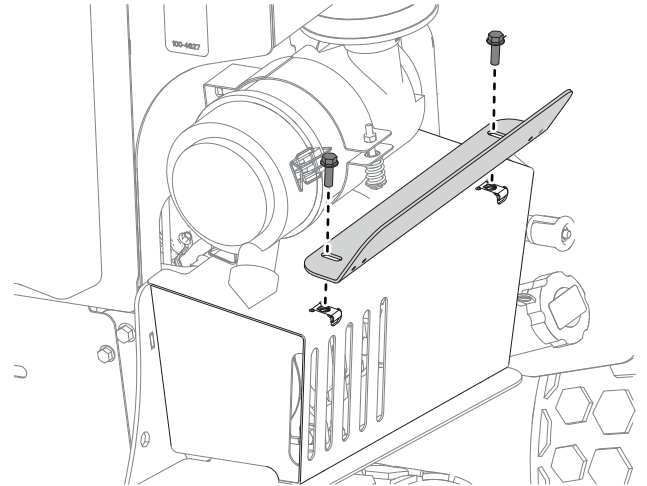


Figure 13

g449043

6. Lower the machine to the ground and remove the lifting device.

Installing the Spray Wand Assembly Brackets

1. Install the 2 U-nuts to the right pump cover.

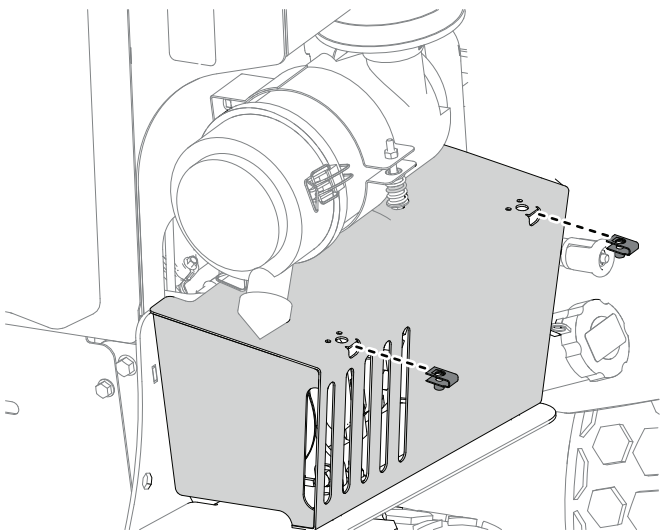


Figure 12

g449041

3. On the right side of the machine, remove the 2 hex-head flange screws (5/16 x 1 inch) from the top of the dashboard.

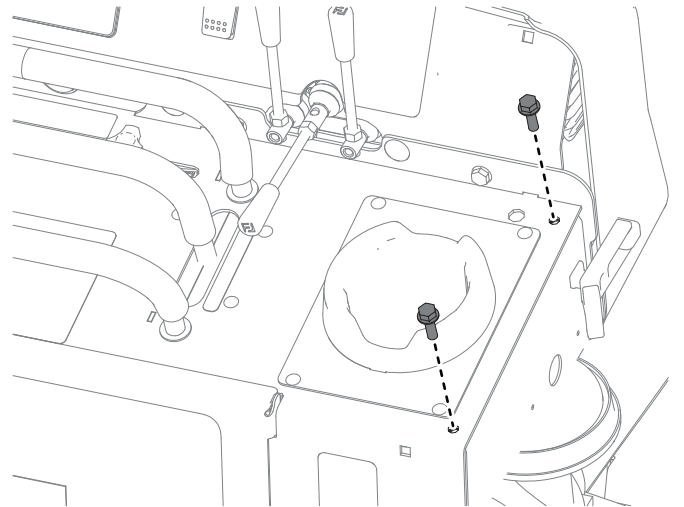


Figure 14

g449044

4. Secure the wand holder to the top of the dashboard with the 2 hex-head flange screws (5/16 x 1 inch) that were previously removed.

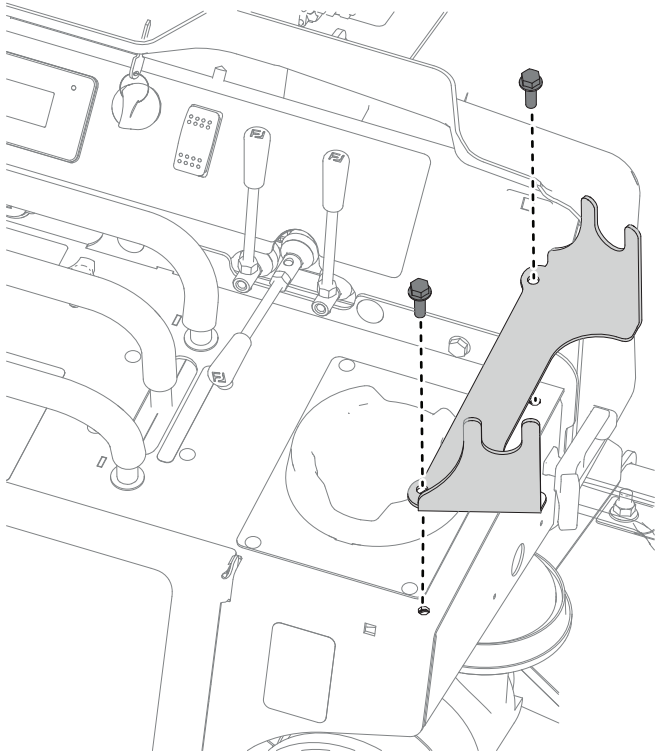


Figure 15

g449045

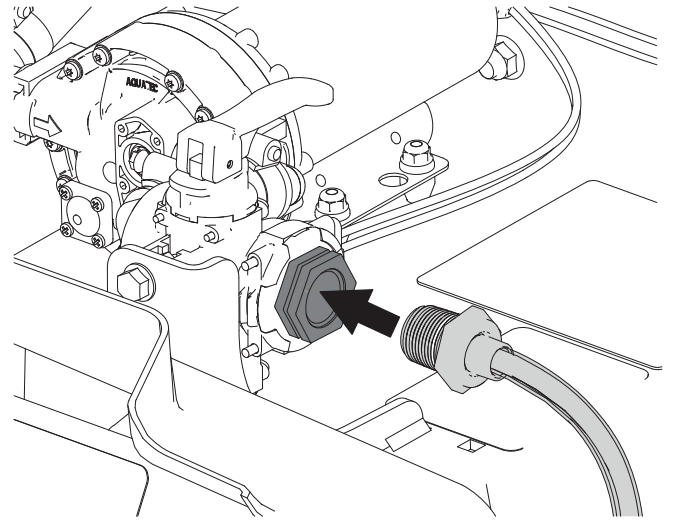


Figure 17

g449057

Installing the Spray Wand Assembly

1. Connect the spray hose to the spray wand.

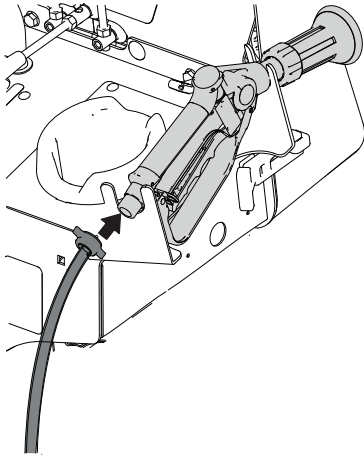


Figure 16

g449056

2. Apply pipe sealant to threads on the spray hose connector. Connect the spray hose to the boom control valve.

Installing the Controller

1. Remove the cushion from the machine.
2. Remove the upper latch from the left side cover.

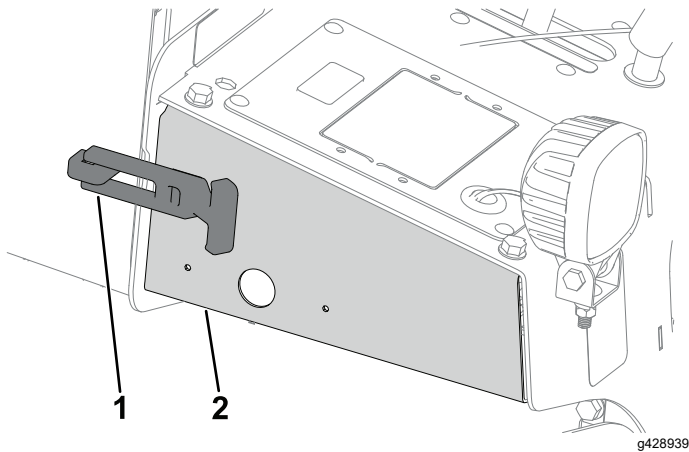


Figure 18

1. Upper latch
2. Side cover

3. Remove the left side cover from the machine by removing the 2 bolts (5/16 inch) that secure it to the upper dashboard.

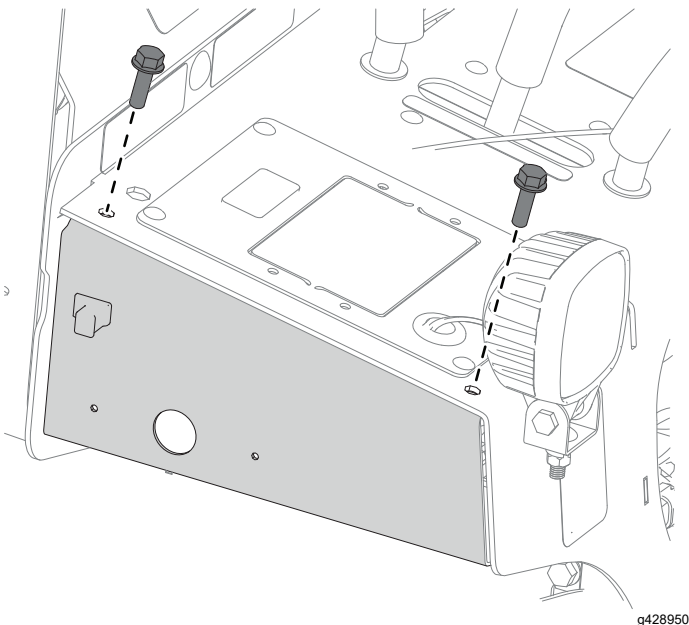


Figure 19

4. Remove the knockout panel on the control panel.

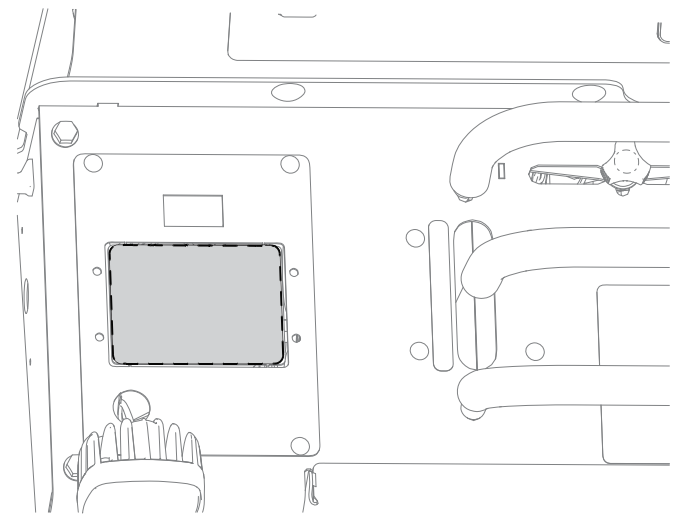


Figure 20

5. Insert the controller into the opening and secure it with 4 bolts (#10) and nuts.

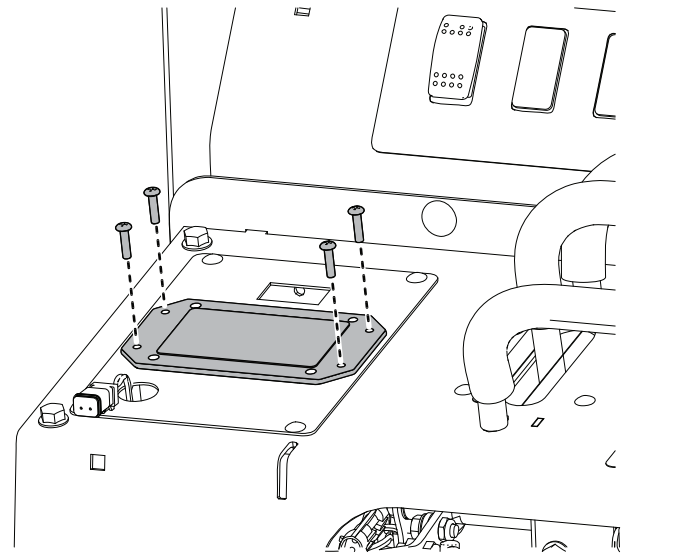
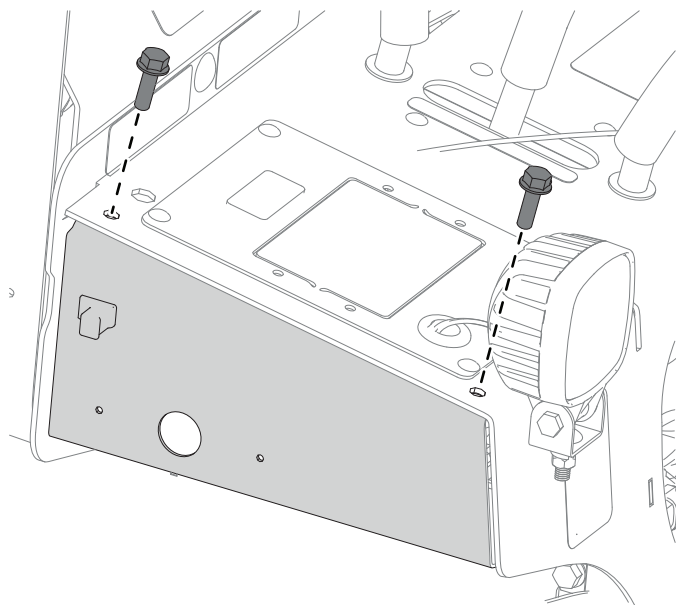


Figure 21

6. Connect the brine pump extension harness to the motor connector.
7. Route the brine pump extension harness through the front of the chassis and connect it to the brine pump.

Note: Verify that the harness is routed away from the traction levers and exhaust components.

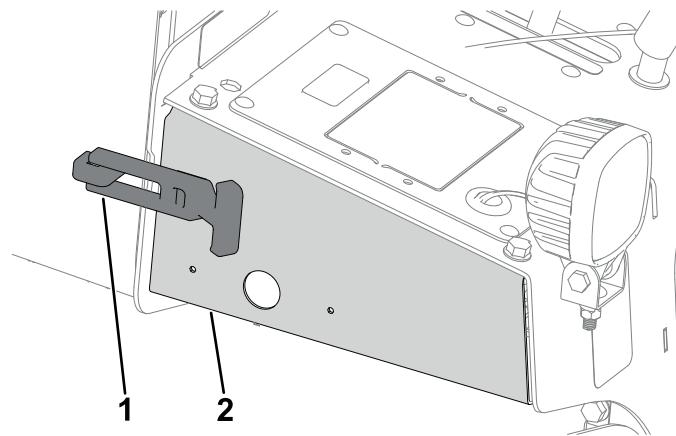
8. Connect the short controller connector to the drop/broadcast spreader kit wiring harness connector.
9. Secure the left side cover to the upper dashboard with the 2 bolts (5/16 inch).



g428950

Figure 22

10. Install the upper latch to the left side cover.



g428939

Figure 23

1. Upper latch

2. Side cover

11. Install the cushion onto the machine.

Product Overview

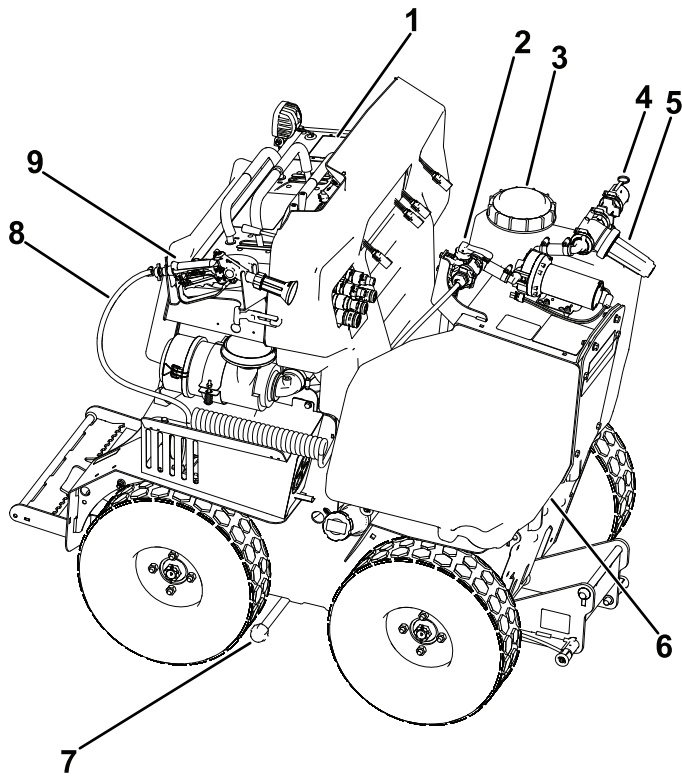


Figure 24

g449078

- | | |
|-----------------------|---------------|
| 1. Controller | 6. Brine tank |
| 2. Boom control valve | 7. Brine tube |
| 3. Fill cap | 8. Spray hose |
| 4. Cam-lock fill port | 9. Spray wand |
| 5. Filter | |

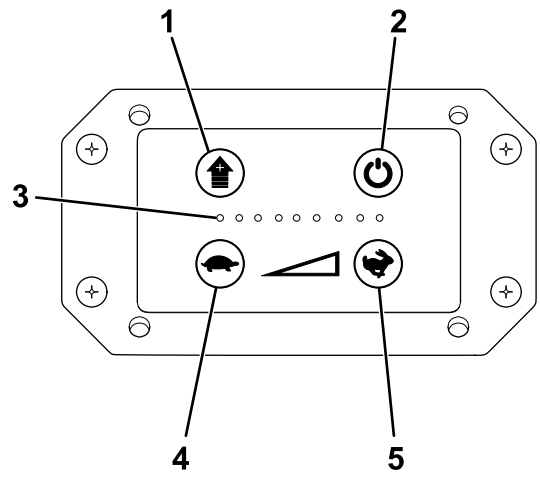


Figure 25

g293836

- | | |
|-----------------|----------------|
| 1. Blast button | 4. Slow button |
| 2. Power button | 5. Fast button |
| 3. Speed LEDs | |

- **Power button**—turns the sprayer controller on or off. Press once to turn the controller on. Press again to turn the sprayer pump on or off. Hold the button to turn the controller off.
- **Blast button**—momentarily sends full power to the sprayer pump as long as it is held on.
- **Fast button**—increases the flow rate.
- **Slow button**—decreases the flow rate.
- **Speed LEDs**—indicates the flow rate and operating mode.

Controls

Become familiar with all the controls before you operate the sprayer.

Spray Wand

The spray wand is located on the right side of the machine. It allows you to precisely apply the liquid in the sprayer tank.

Boom Control Valve

The boom control valve is located on top of the brine tank. It opens or closes the flow of the liquids to the spray boom. Pull the boom control valve lever up to open it, and push the lever down to close it.

Sprayer Controller

The sprayer controller lets you operate your sprayer.

Operation

Sprayer Safety

- Do not aim the hand sprayer at any person or animal.
- Do not place your hand or any other part of your body in front of the spray nozzle.
- Do not leave the equipment under pressure when you are not present.
- Do not use the hand sprayer if the hose, trigger lock, nozzle, or any other part is damaged or missing.
- Do not use the hand sprayer if there are any leaks in any hoses, fittings, or other components.
- Do not spray near power lines; the spray stream could contact the power lines and give you a potentially fatal electrical shock.
- Do not drive while spraying with the spray gun.
- Never spray while people, especially children, or pets are nearby.

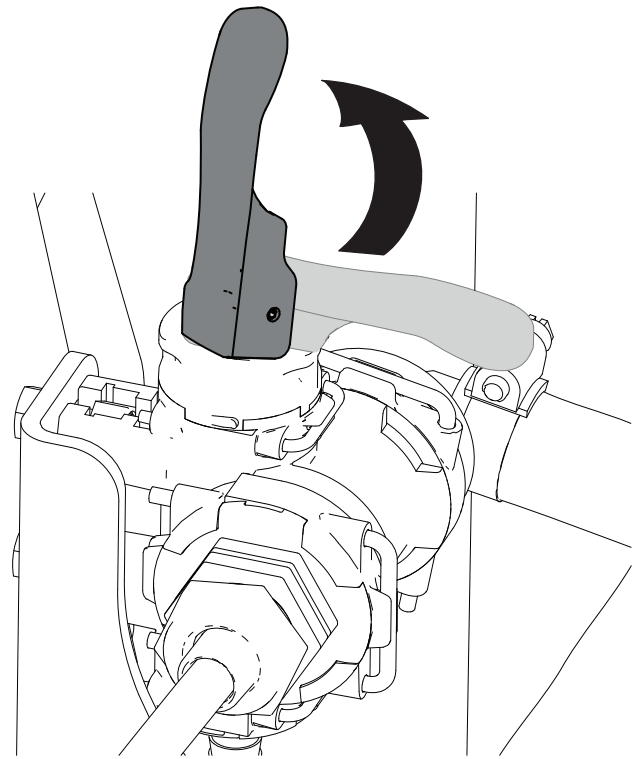


Figure 26

g449106

Filling the Brine Tank

Capacity: 151 L (40 US gallons)

1. Remove the fill cap and fill the tank with your brine solution.

Important: Use only pre-mixed brine to prevent dangerous chemical reactions.

2. Wipe any spills and secure the tank cap.

Operating the Sprayer

1. Drive to the location where you will be spraying.
2. Open the boom control valve by pulling up on the lever.

3. Turn on the sprayer by pressing the power button on the controller 2 times.

Note: Pressing the power button on the controller once only turns on the controller.

4. Set the flow rate of the sprayer; refer to [Adjusting the Flow Rate of the Sprayer](#) (page 13).
5. Drive at a consistent speed as you spray.
6. When you are done spraying, press the power button on the controller once to turn the sprayer off. Press and hold the power button to turn off the controller.
7. Close the boom control valve by pushing the lever down.

Adjusting the Flow Rate of the Sprayer

Use the fast or slow buttons on the controller to control the flow rate. You can press and hold the Blast button to momentarily increase the flow-rate of the sprayer.

The table below is for reference only, actual results may vary.

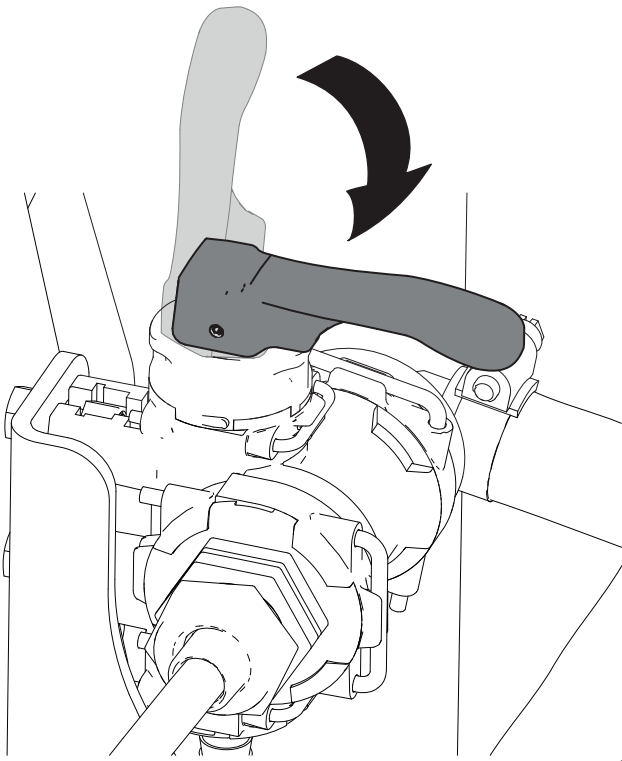


Figure 27

g449107

Application Guide		
Controller Speed Setting	Application Rate at Full Speed	Flow Rate
1	131 L/ha (14 US gallons/acre)	2.6 LPM (0.7 GPM)
2	234 L/ha (25 US gallons/acre)	4.7 LPM (1.24 GPM)
3	337 L/ha (36 US gallons/acre)	6.8 LPM (1.8 GPM)
4	421 L/ha (45 US gallons/acre)	8.9 LPM (2.3 GPM)
5	505 L/ha (54 US gallons/acre)	10 LPM (2.7 GPM)
6	580 L/ha (62 US gallons/acre)	4.9 LPM (3.1 GPM)
7	645 L/ha (69 US gallons/acre)	13 LPM (3.5 GPM)
8	711 L/ha (76 US gallons/acre)	14LPM (3.8 GPM)
9	776 L/ha (83 US gallons/acre)	15.9 LPM (4.2 GPM)
10	823 L/ha (88 US gallons/acre)	16.7 LPM (4.4 GPM)

Spraying Tips

- Do not overlap areas that you have previously sprayed.
- Watch for plugged nozzles. Replace all worn or damaged nozzles.
- You will obtain better results if the machine is moving when you turn the sprayer on.

Using the Spray Wand

Note: Do not drive while spraying with the spray wand.

1. Drive to the location where you will be spraying.
2. Stop the machine.
3. Press the power button on the controller 1 time to turn the controller on.
4. Squeeze the handle on the spray wand to begin spraying.

Note: Use lever on the spray wand to change the spray pattern from jet to mist.

The lock ring can be set to lock the handle in the spray position.

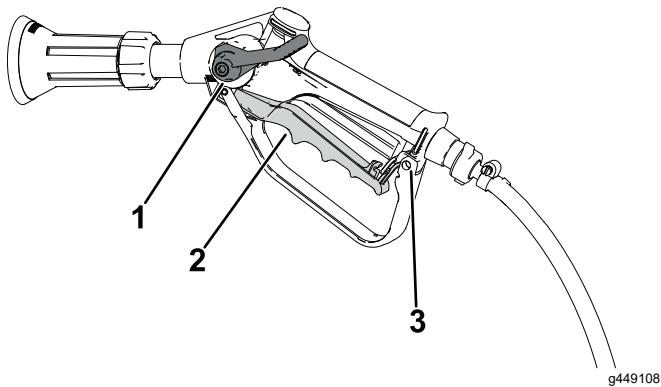


Figure 28

1. Lever
2. Handle
3. Lock ring

-
5. When you are done spraying, release the handle on the spray wand..

Maintenance

Note: Determine the left and right sides of the machine from the normal operating position.

Important: Refer to the machine *Owner's Manual* for additional maintenance procedures

⚠ WARNING

Failing to properly maintain the machine could result in premature failure of machine systems, causing possible harm to you or bystanders.

Keep the machine well maintained and in good working order as indicated in these instructions.

Maintenance Safety

- Always shut off the equipment, wait for all moving parts to stop, and allow the equipment to cool before adjusting, servicing, cleaning, or storing it.
- If you must run the equipment to perform a maintenance adjustment, keep your hands, feet, clothing, and any parts of your body away any moving parts.
- Never tamper with safety devices. Check their proper operation regularly.
- Keep all parts in good working condition. Replace all worn, damaged, or missing parts and decals. Keep all fasteners tight to ensure that the equipment is in safe working condition.
- Carefully read and follow the chemical warning labels and safety data sheets (SDSs) for all chemicals used, and protect yourself according to the chemical manufacturer's recommendations.
- If the machine requires a major repair or you need technical help, contact an authorized BOSS distributor.
- To ensure optimum performance and continued safety of the equipment, use only genuine BOSS replacement parts and accessories. Replacement parts and accessories made by other manufacturers could be dangerous, and such use could void the product warranty.

Recommended Maintenance Schedule(s)

Maintenance Service Interval	Maintenance Procedure
Every 50 hours	<ul style="list-style-type: none">• Service the in-line filter screen.
Before storage	<ul style="list-style-type: none">• Flush the spray system after each spraying season or at times storage exceeding 1 week.• Check and tighten all fasteners.• Clean the brine tank.• Flush the system.

Brine Machine Maintenance

Servicing the In-Line Filter Screen

Service Interval: Every 50 hours

1. Clean the area around the in-line filter cap.

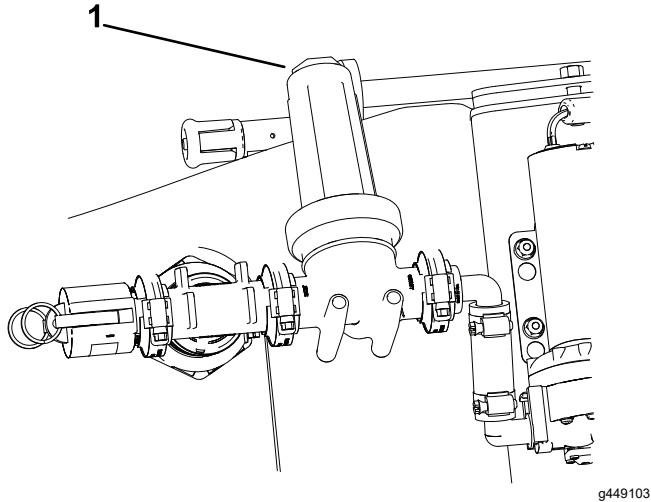


Figure 29

1. Filter and cap
-
2. Remove the in-line filter cap and check the screen for clogging.
 3. If the screen is clogged, clean the screen.
 4. Inspect the gasket. Replace it if it is worn or has cracks.
 5. Install the in-line filter cap.

Cleaning

Flushing the System

Service Interval: Before storage

Important: Use only clean water when cleaning the system.

Important: You must always drain and flush out the system before storage or downtime exceeding 1 week. Failure to flush and clean the system may allow the chemicals to dry and obstruct in the lines, filter, valves, pump, and other components.

Clean the system after each spraying session. To properly clean the system, perform the following:

1. Remove the brine solution from the tank.
 2. Fill the tank with clean water.
- Note:** Use only clean, clear water.
3. Fill the tank with 151 L (40 US gallons) of water.
 4. Check the brine tube to ensure that all holes are spraying correctly.
 5. Allow all water to circulate.
 6. Pump the water out.
 7. Dispose of the water according to local regulations.

Storage

Storing the Brine Tank Assembly

1. Remove grime from the external parts of the tank.
2. Remove the brine solution from the tank.
3. Flush the system; refer to [Flushing the System \(page 16\)](#).
4. Check and tighten all fasteners. Repair or replace any part that is damaged or missing.

Troubleshooting

Problem	Possible Cause	Corrective Action
The pump does not prime.	<ol style="list-style-type: none"> 1. There is a leak in the plumbing between the pump and tank. 2. The filter is clogged. 	<ol style="list-style-type: none"> 1. Check for the leak and repair as necessary. 2. Clean the filter.
The boom spray pattern is uneven or is not spraying.	<ol style="list-style-type: none"> 1. The spray boom is clogged. 	<ol style="list-style-type: none"> 1. Remove the caps and clean out the boom.
There is low to no flow coming from the spray wand.	<ol style="list-style-type: none"> 1. The orifice tip is clogged. 2. The controller speed is set too low. 3. The boom valve is on while the spray wand is being used. 	<ol style="list-style-type: none"> 1. Inspect and clean the orifice. 2. Increase the controller speed. 3. Turn off the valve to prioritize flow to the wand.
1 LED light is flashing on the controller. Low over-current detection.	<ol style="list-style-type: none"> 1. The pump is failing. 2. There is a clog in the plumbing. 	<ol style="list-style-type: none"> 1. Replace the pump. 2. Locate and remove the clog.
2 LED lights are flashing on the controller. High over-current detection.	<ol style="list-style-type: none"> 1. The pump is failing. 2. The pump is jammed. 	<ol style="list-style-type: none"> 1. Replace the pump. 2. Inspect and repair the pump. Replace the pump if necessary.
3 LED lights are flashing on the controller. Short circuit detection.	<ol style="list-style-type: none"> 1. There is a broken wire. 2. The pump is failing. 	<ol style="list-style-type: none"> 1. Locate and replace the failing harness. 2. Replace the pump.
4 LED lights are flashing on the controller. Open circuit detection.	<ol style="list-style-type: none"> 1. There is a loose connector. 2. There is a broken wire. 3. The pump is failing. 	<ol style="list-style-type: none"> 1. Locate and fully seat the connector. 2. Locate and replace the failed harness. 3. Replace the pump.
5 LED lights are flashing on the controller.	<ol style="list-style-type: none"> 1. There is a low supply voltage detected. 	<ol style="list-style-type: none"> 1. Check the machine charging system.
6 LED lights are flashing on the controller.	<ol style="list-style-type: none"> 1. There is a high supply voltage detected. 	<ol style="list-style-type: none"> 1. Check the machine charging system.
7 LED lights are flashing on the controller.	<ol style="list-style-type: none"> 1. The high temperature protection system is activated on the controller. 	<ol style="list-style-type: none"> 1. Let the controller cool down for 10 minutes.

Notes:

BOSS
S N O W P L O W