



Operator's Manual

NB200

Brine Spray System

Serial Number NB200-AB01041 --





500 Venture Drive
Orrville, OH 44667
www.ventrac.com

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.

Dealer _____ Date of Purchase: _____

Dealer Address: _____

Dealer Phone Number: _____ Dealer Fax Number: _____

With your mobile device, you can scan the QR code on the serial number plate to access manuals, warranty, and other product information.



Model # _____

Serial # _____



Venture Products Inc. reserves the right to make changes in design or specifications without obligation to make like changes on previously manufactured products.

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INTRODUCTION



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

Accessories	Item Description	Part Number
	Spray Wand Kit	70.6015

Product Description

The NB200 brine system features a 20 gallon (75.7 liter) tank and rear mounted spray nozzles. These nozzles distribute brine in a 36 - 48 inch (91.4 - 122 cm) wide spray pattern. The optional spray wand can be used for accessing hard to reach areas and features a coiled hose for easy storage and operation.

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 SSV 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.
- Appropriate cold weather clothing.
- 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.
- 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.

SAFETY



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



- 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.
- 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.
- 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.

SAFETY



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



- 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.
- Do not operate on slopes greater than 10 degrees.
- Do not stop or start suddenly when operating on slopes.
- 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.
- 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.

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.
- 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.

SAFETY



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



- 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.
- 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.

SAFETY



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



- 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.

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



NB200 Safety Procedures



- The brine tank frame must be properly secured to the power unit before operating.
- Do not point the spray wand at people or animals.
- Do not use any products containing petroleum or petroleum by-products, as they can cause damage to the system components.
- Always turn off electrical power to the pump and shut off the power unit before performing maintenance or repairs on the brine system.
- Wear safety goggles or a face shield when servicing the brine system hoses, nozzles, or spray wand.
- When using a commercial deicing solution, follow the manufacturer's recommendations for personal protective equipment and first aid procedures.
- If you are making your own salt brine solution, wear safety goggles or a full face shield and gloves when mixing the brine solution and when filling the brine tank. Avoid contact with your eyes, skin, and clothing.
- Salt brine can cause irritation to the eyes. In case of eye contact, immediately flush the eyes with plenty of water for 10 minutes. Seek medical attention if irritation persists.
- Salt brine can cause irritation to the skin. In case of skin contact, wash with mild soap and water.
- Ingestion of salt brine may cause nausea, vomiting, diarrhea, tissue irritation, fever, etc. If a large amount of salt brine is ingested, drink large amounts of water or milk. If any symptoms develop, seek immediate medical attention.
- In case of an accidental release of brine solution, follow the manufacturer's recommendations for containment and cleanup when using a commercial deicing solution. If using your own salt brine solution, rinse away small spills with water. For larger spills, contain the liquid and vacuum up or absorb the liquid for proper disposal. Rinse the spill area with water.

SETUP

Setup Instructions for the Brine System

Installation Time (estimated)

2 hours

⚠ WARNING

Always engage the parking brake, shut off the power unit engine, and remove the ignition key prior to setup of the brine system.

⚠ WARNING

Eye protection must be worn during installation. Hearing protection must be worn when using air or power tools.

ATTENTION

To prevent thread galling of stainless steel hardware, lubricate the bolt threads with a lithium complex NLGI #2 grease and use hand tools to tighten. Do not use air or electric power tools as this increases the potential of thread galling.

1. Park the power unit on a level surface.
2. Engage the parking brake, shut off the engine, and remove the ignition key.
3. Press the button on the battery disconnect switch.

⚠ WARNING

The engine and the muffler may be hot enough to cause severe burns.

Allow the engine, muffler, and surrounding parts to cool completely before working on the unit.

4. Allow the engine and muffler to cool completely before proceeding.
5. If the power unit is equipped with a storage basket kit, the storage basket must be removed prior to starting the setup of the brine system.
6. Remove the box of parts and hardware from the crate. Leave the brine tank assembly crated until the power unit has been fitted with the brine nozzles and hoses.

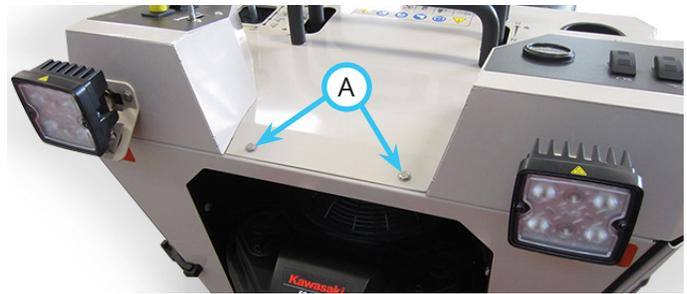
NT2100 Dash Prep

1. Remove the front access panel from the engine covers.

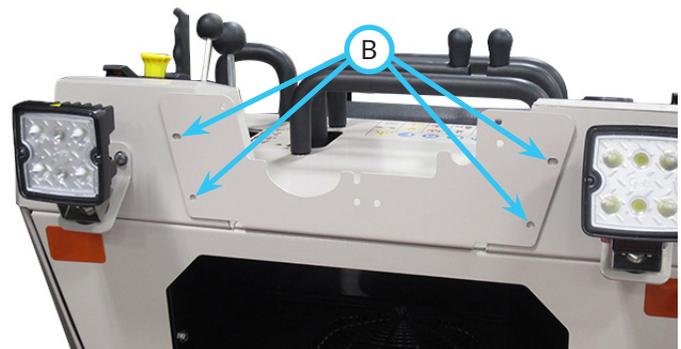
ATTENTION

The brine system (serial # 01041-) and the drop spreader use the same front dash mount, front cover, and cushioned clamp on the left tower frame. If equipped with a drop spreader, install the valve mount onto the existing dash mount. Remove the two pieces of trim from the dash mount and cover and reinstall onto the existing dash mount and cover

2. Remove the two bolts (A) between the upper dash panels.



3. Power units with serial numbers 01001-01230 will require mounting holes to be drilled in the outer dash panels. For power units outside this range, skip to step 8 (dash mount installation).
4. Install the front dash mount between the upper dash panels using the hardware removed in step 2.
5. Use the front dash mount to mark the hole locations (B) in the upper dash panels.



6. Remove the front dash mount and drill four holes in the upper dash panels using a 9/32 inch (7 mm) drill bit.
7. Remove any metal shavings and use tan touch up paint on the drilled holes.

SETUP

8. Install the front dash mount between the upper dash panels using the two bolts removed in step 2, along with four 1/4 x 3/4 inch bolts, flat washers, and flange nuts to fasten the mount to the upper dash panels. Torque all six mounting bolts to 8 Nm (72 in-lb).



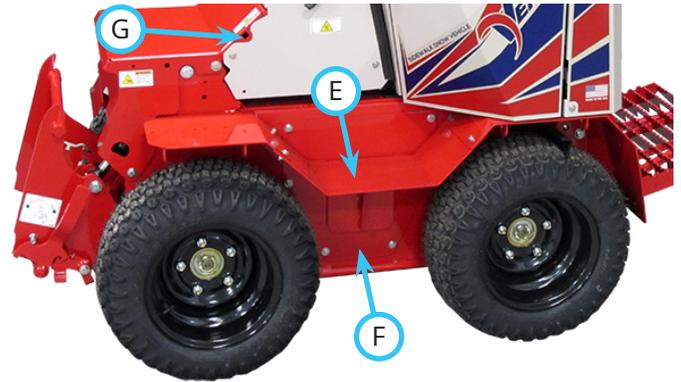
9. Install one of the 3/4 inch cushioned clamps (C) onto the left side of the main tower frame using the original hardware. Do not tighten.



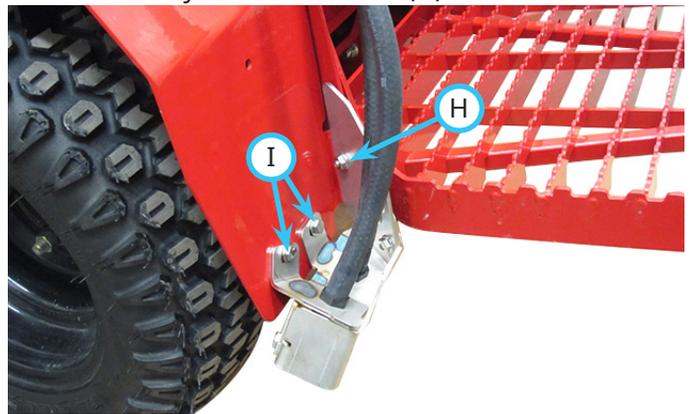
10. Shape a 3/4 inch cushioned clamp so the pump harness connector will slide through. Install the clamp (D) onto the right side of the main tower frame using the original hardware. Do not tighten.

Brine Nozzle and Hose Installation (All models)

11. Remove the operator cushion from the power unit.
12. Remove the pump belt drive cover from the bottom of the engine frame.
13. Remove the left center fender platform (E).



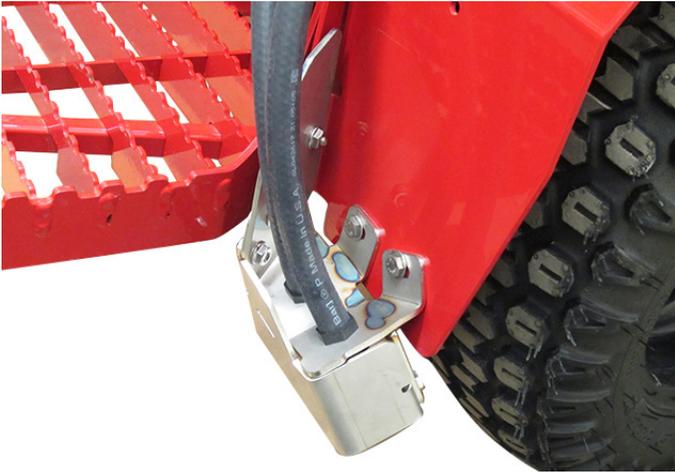
14. Remove the left frame side cover (F).
15. If the power unit is not equipped with cage nuts in the rear mounting bracket location (G) remove the engine covers and install the included 5/16 inch cage nuts in the left and right flanges of the accessory mount shield frame. Squeeze the cage nut tabs and insert into the square hole from the back side of the flange.
16. Remove the nut from the bolt that fastens the left rear fender to the rear flange on the main frame. Install the left brine nozzle mount onto the bolt and loosely reinstall the nut (H).



Fasten the brine nozzle mount to the left rear fender using two 1/4 x 3/4 inch bolts (I), flat washers, and flange nuts. Torque all three mounting bolts to 8 Nm (72 in-lb).

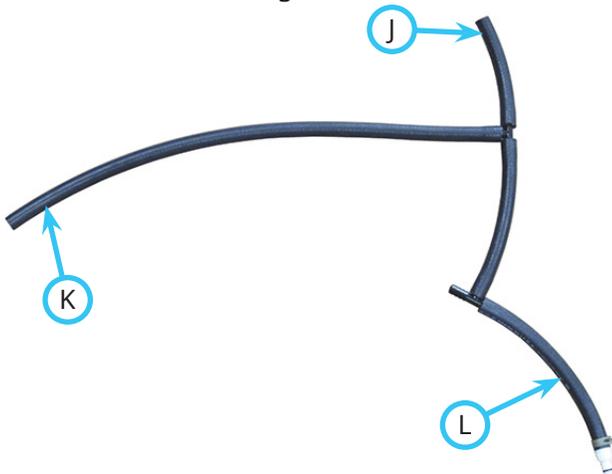
SETUP

17. Remove the nut from the bolt that fastens the right rear fender to the rear flange on the main frame. Install the right brine nozzle mount onto the bolt and loosely reinstall the nut.



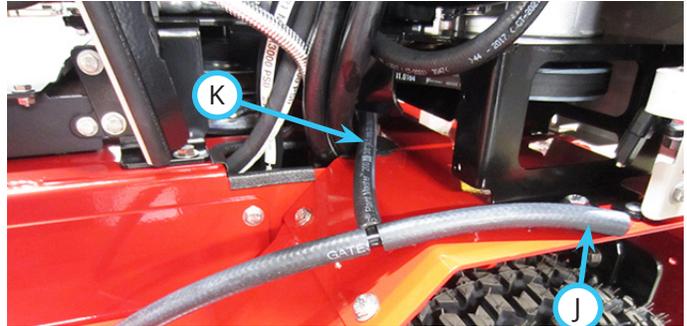
Fasten the brine nozzle mount to the right rear fender using two 1/4 x 3/4 inch bolts, washers, and flange nuts. Torque all three mounting bolts to 8 Nm (72 in-lb).

18. Install the center brine nozzle mount onto the main frame in front of the operator platform using two 1/4 x 1 inch bolts, washers, and flange nuts. Torque to 8 Nm (72 in-lb).
19. Locate the hose assembly with tee fitting connectors and the following hoses.

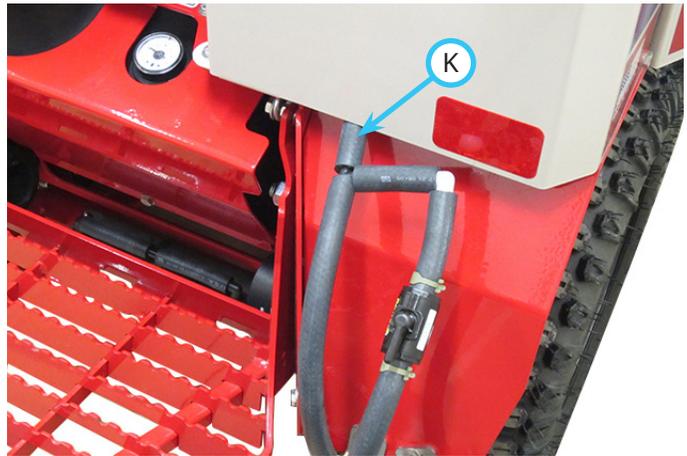


J - short hose to left brine nozzle assembly.
K - long hose to right brine nozzle assembly.
L - hose with quick connector routes to the left front tower post.

20. Route the long hose (K) under the engine mount, in front of the fuel lines, through the slot in the frame panels, and back beside the battery toward the right brine nozzle mount. Route the short hose (J) back toward the left brine nozzle mount.



21. Pull the end of the long hose (K) out below the right rear cover and connect to the barbed fitting for the right brine nozzle assembly.



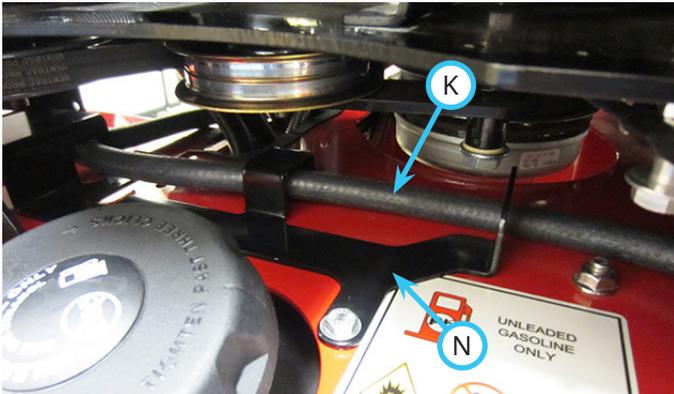
22. Push the hose connections up between the fender and the rear cover. Place a 3/4 inch cushioned clamp (M) around the two hoses and fasten to the rear fender using a 1/4 x 1/2 inch bolt, flat washer, and flange nut. Torque to 8 Nm (72 in-lb).



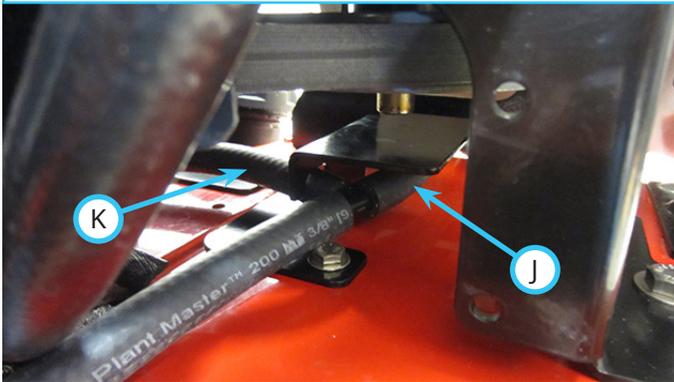
23. Repeat the previous two steps to connect the short hose to the left brine nozzle assembly.

SETUP

24. Place the hose retainer bracket (N) over the long hose (K) that runs under the engine mount. Ensure the hose is captured by all three hooks on the bracket.



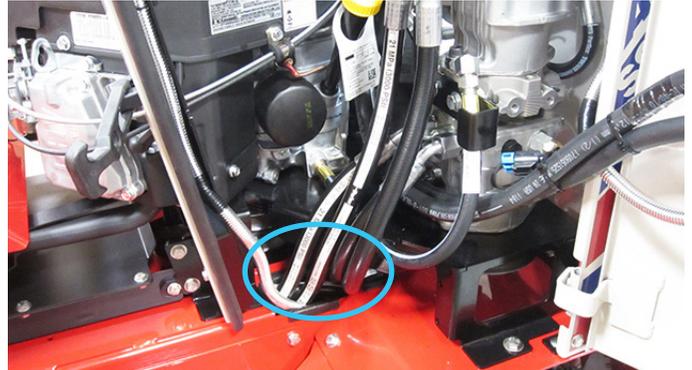
View under the engine mount from the left door



25. Fasten the hose retainer bracket to the frame using two 1/4 x 3/4 inch bolts, flat washers, and flange nuts. Torque to 8 Nm (72 in-lb).
26. Install the rubber grommet (O) into the hole in the main frame cross plate under the fuel tank.



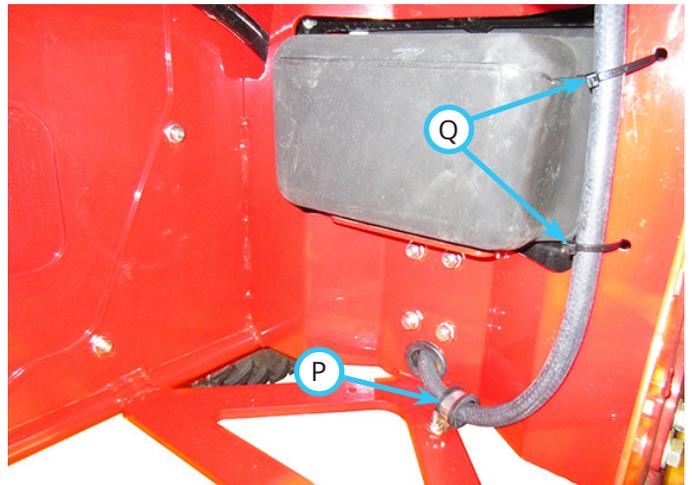
27. Route the 32 inch hose down through the cutout for the hydraulic hoses in the left side of the main frame.



28. Route the hose through the grommet in the rear of the main frame and connect to the barbed fitting on the center brine nozzle assembly.



29. Use a 1/2 inch cushioned clamp (P) to secure the hose to the main frame below the fuel tank. Fasten the clamp to the frame using a 1/4 x 1 inch bolt, flat washer, and flange nut. Use two zip ties (Q) to fasten the hose to the rear frame cross plate next to the fuel tank. Torque the clamp bolt to 8 Nm (72 in-lb).



SETUP

30. Connect the hose (R) from the center brine nozzle assembly to the tee fitting on the hose assembly.



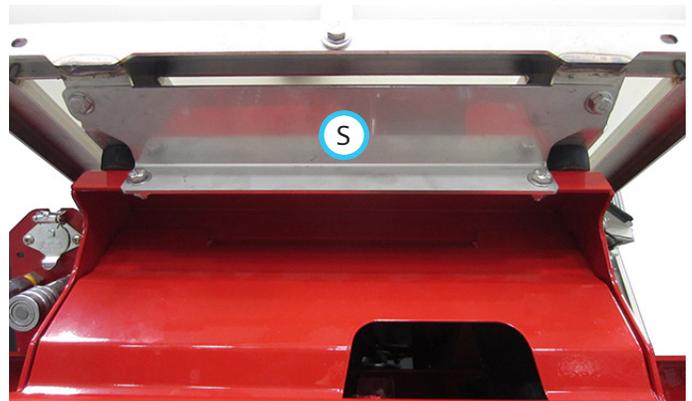
31. Reinstall the left and right engine covers.
32. Reinstall the left frame side cover. Torque the bolts to 17 Nm (149 in-lb).
33. Reinstall the left fender center platform. Torque the bolts to 17 Nm (149 in-lb).
34. Reinstall the pump belt drive cover. Torque the bolts to 8 Nm (72 in-lb).
35. Place the operator cushion back onto the power unit and secure with the rubber latch handle.
36. Unfasten the crate brackets from the crate and remove the brine tank assembly.
37. Remove the crate bracket from the tank frame and reinstall the hardware through the tank strap and frame. Torque to 17 Nm (149 in-lb).
38. Place the brine tank assembly onto the accessory mount shield frame on the front of the power unit.



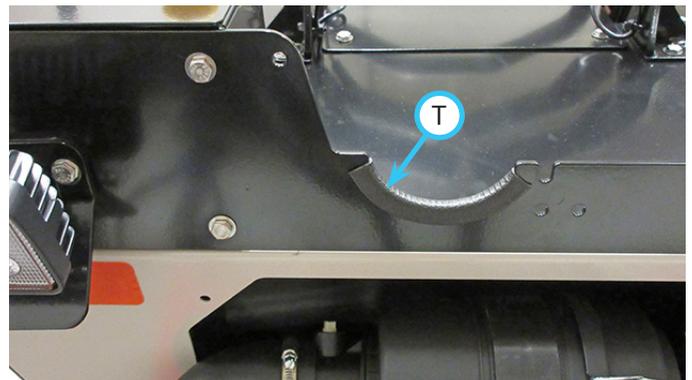
39. Install the left and right rear accessory mounts onto the brine tank frame using 5/16 x 3/4 inch bolts, flat washers, and flange nuts. Do not tighten. Fasten the left and right rear accessory mounts to the 5/16 inch cage nuts in the accessory mount shield frame using 5/16 x 3/4 inch bolts and flat washers. Do not tighten.



40. Install the front accessory mount bracket (S) onto the brine tank frame and the front flange of the accessory mount shield frame using four 5/16 x 3/4 inch bolts, flat washers, and flange nuts. Torque the bolts to 17 Nm (149 in-lb).

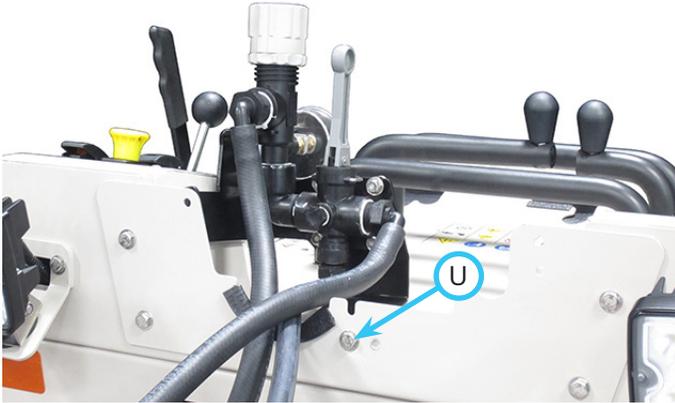


41. Torque the four bolts for the left and right rear mounting brackets to 17 Nm (149 in-lb).
42. **2120:** Remove the trim piece (T) from the front dash mount in the kit and install it onto the front panel on the power unit.

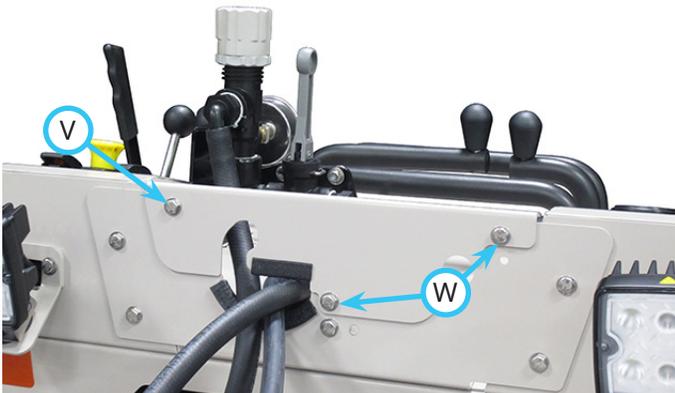


SETUP

43. Position the brine valve mount with the hoses laying in the trim on the dash mount plate (2100) or the front dash plate (2120). Fasten the lower mounting flange to the dash plate using a 1/4 x 3/4 inch bolt (U), flat washer, and flange nut. Do not tighten.



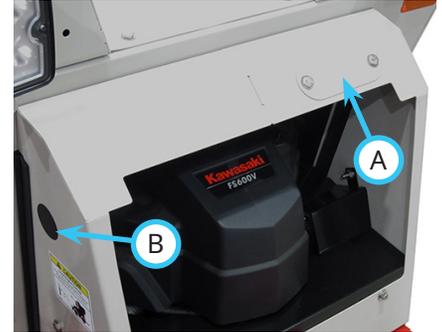
44. Place the dash front cover plate onto the dash plate. Insert a 1/4 x 3/4 inch bolt (V) and flat washer through the front cover plate, the dash plate, and the upper mounting flange of the brine valve mount and secure with a flange nut. Do not tighten.



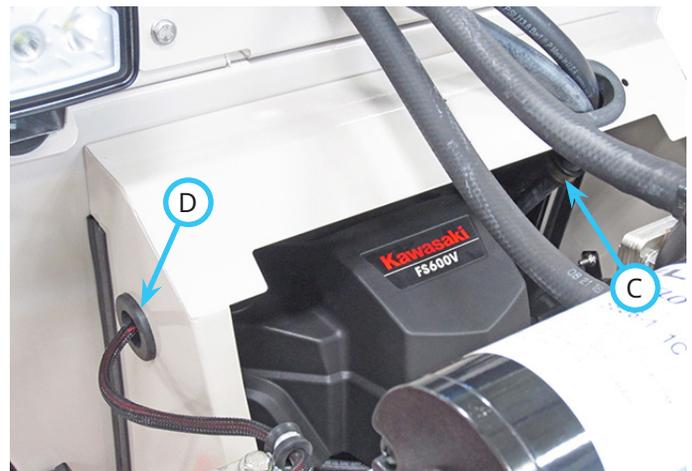
45. Use two 1/4 x 3/4 inch bolts (W), flat washers, and flange nuts to fasten the front cover plate to the dash plate. Torque all four bolts to 8 Nm (72 in-lb).

2100 Hose Connection and Brine Switch and Wire Harness Installation

1. Remove the cover plate (A) from the top of the engine cover and the plastic plug (B) from the right side of the engine cover.
2. Install the included rubber grommets into the engine covers.



3. Route the hose from the bottom port of the on/off control valve through the grommet in the top of the engine cover and the clamp (C) on the left side of the main tower and down past the engine into the left frame area. Connect the hose to the quick connector on the rear supply hose. If the brine system is equipped with an optional spray wand kit, route the hose from the ball valve down into the left frame area with the brine hose and connect to the quick connector on the spray wand hose.



4. Rotate the clamp to hold the hose(s) in proper alignment and torque the bolt to 8 Nm (72 in-lb).

SETUP

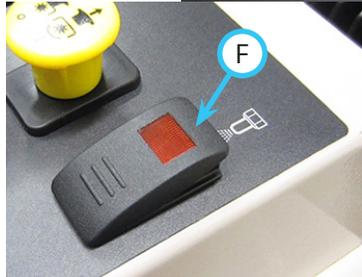
5. Route the connector on the pump harness through the grommet (D) in the right engine cover and the clamp on the right side of the main tower and down past the engine into the right frame area.

6. Locate the switch location (E) in the right dash panel. Shining a light from beneath the dash will help show the area of the decal to remove.



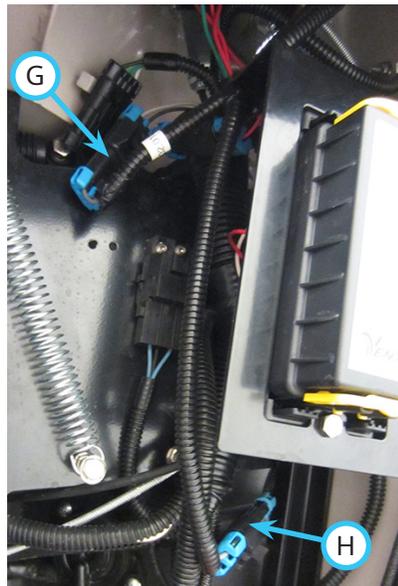
7. Using a utility knife, cut the decal to match the hole in the dash panel.

8. Install the switch (F) into the dash cutout with the light toward the front of the power unit.



9. Insert the switch connector on the brine wire harness up into the dash panel area and connect to the brine switch. Hold the switch in place with one hand while installing the connector.

10. Locate the female MP280 connector (G) with a gray wire (A-058) and a black wire (A-116) behind the fuse panel. Remove the cap and connect to the male connector on the brine wire harness.



11. Connect the female connector (H) on the brine wire harness to the connector on the pump harness.

12. Use a zip tie to fasten the brine wire harness to the main harness behind the fuse panel.

13. Rotate the clamp on the right tower frame to hold the pump harness in proper alignment and torque the bolt to 8 Nm (72 in-lb).

14. Install the 15 amp fuse into the fuse panel. Refer to the label on the fuse panel cover or on the inside of the right door to determine the correct fuse position.

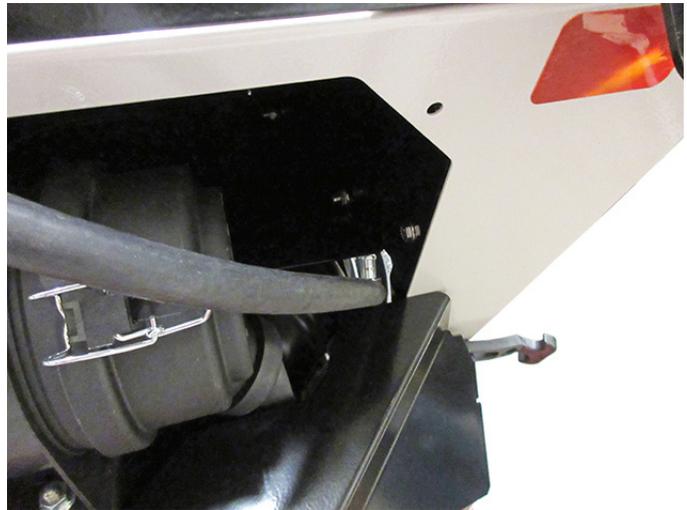
15. Install the front access panel onto the engine covers and secure with the rubber handles.

16. Reset the battery disconnect switch.

Installation is complete.

2120 Hose Connection and Brine Switch and Wire Harness Installation

1. Route the hose from the bottom port of the on/off control valve down past the engine and into the left tower frame area. Connect the hose to the quick connector on the rear supply hose. If the brine system is equipped with an optional spray wand kit, route the hose from the ball valve down into the left frame area with the brine hose and connect to the quick connector on the spray wand hose.

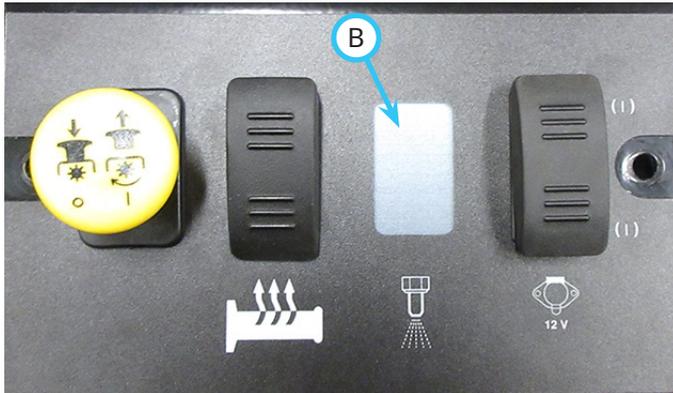


2. Remove the right top dash panel (A).



SETUP

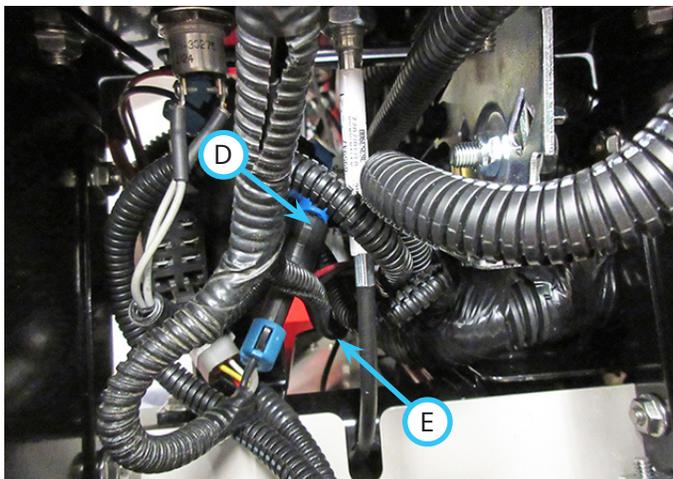
3. Locate the brine switch location (B) in the dash panel. Shining a light from behind the panel will help show the area of the decal to remove.



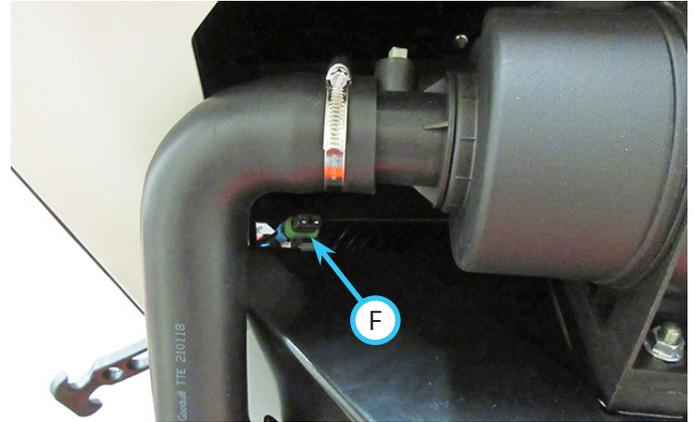
4. Using a utility knife, cut the decal to match the hole in the dash panel.
5. Install the switch (C) into the dash cutout with the light toward the front of the power unit.



6. Install the switch connector on the brine wire harness onto the switch.
7. Locate the female MP280 connector (D) with a gray wire (A-058) and a black wire (A-116) behind the fuse panel. Remove the cap and connect to the male connector on the brine wire harness.



8. Route the harness leg (E) with the female connector on the brine wire harness down behind the fuse panel following the front tower post. Route the connector (F) out past the engine and through the gap in the engine covers. Connect the brine wire harness to the pump harness connector.



9. Use a zip tie to fasten the brine wire harness to the main harness behind the fuse panel.
 10. Install the 15 amp fuse into the fuse panel. Refer to the label on the inside of the right door to determine the correct fuse position.
 11. Reset the battery disconnect switch.
- Installation is complete.

OPERATIONAL CONTROLS

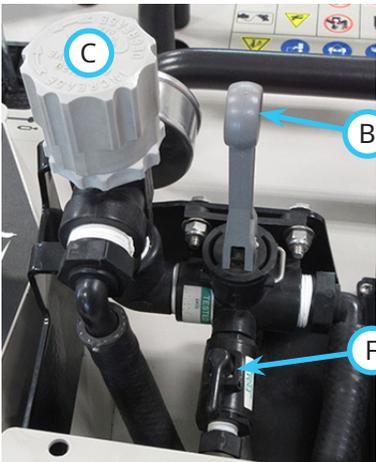
Operational Control Locations

Use the following images to identify the locations of operational controls. Become familiar with all the controls before operating the machine.

2100



2120



Pump Switch (A)

Press the top portion of the pump switch to turn on the brine system pump. The pump switch light will turn on when electrical power is being supplied to the pump. Press the bottom portion of the switch to turn the pump off.

On/Off Control Valve (B)

The on/off control valve turns on or shuts off flow to the spray nozzles. Rotate the handle forward or backward 90 degrees to turn on the flow of brine solution to the spray nozzles. Rotate the handle to the vertical position to shut off the flow of brine solution to the spray nozzles. Brine solution flows through the control valve to the pressure regulating valve and the spray wand (if equipped) with the handle in all positions.

Pressure Regulating Valve (C)

The pressure regulating valve controls the pressure of the brine system. Turning the handle clockwise increases the system pressure. Turning the handle counterclockwise decreases the system pressure. The valve is equipped with a pressure relief bypass that returns excess brine solution to the main tank.

Outer Spray Nozzle Valves (D)

The outer spray nozzle valves control the flow of brine solution to the outer nozzle on each side of the power unit.

Optional Spray Wand (E)

The spray wand is equipped with a 2.4 meter (8 foot) coiled hose and is used to treat small or hard to reach areas. Squeeze the handle to activate the spray wand. The handle can be locked in the On position by pushing the handle lock forward.

The spray pattern can be adjusted by rotating the nozzle tip on the spray wand until the desired spray pattern is achieved.

Optional Spray Wand Valve (F)

The spray wand valve controls the flow of brine solution to the optional spray wand. It can be turned off when the spray wand is not needed to prevent dripping from the spray wand nozzle.

- A. Pump Switch
- B. On/Off Control Valve
- C. Pressure Regulating Valve
- D. Outer Spray Nozzle Valves
- E. Optional Spray Wand
- F. Optional Spray Wand Valve

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 brine system. Look for loose or missing hardware, damaged components, or signs of wear.
3. Inspect the hoses and fittings to ensure tight, leak free connections.
4. Check the nozzles for even spray patterns.

Operating Procedure

Before operation, perform the daily inspection, set the pressure regulating valve to the desired pressure, and turn the outer spray nozzles on or off to set the desired overall width of the spray pattern.

Move the machine into position and turn on the brine system pump. Move the on/off valve handle to the On position to start the flow of brine solution. Drive forward following the sidewalk or other treatment area. When the end of the treatment area is reached, stop the machine and move the on/off valve handle to the Off position.

When treating an area that is wider than the spray pattern, spray in a back and forth pattern until the entire area has been treated.

Use the optional spray wand to treat steps and hard to reach areas. Move the on/off valve handle to the Off position. Park the power unit close to the treatment area and engage the parking brake. Use the spray wand to treat the area, then return the spray wand to its storage position.

Spraying Width

The spraying width can be adjusted to match the width of the sidewalk being treated by turning the left and right outer spray nozzles on or off.

Outer spray nozzle valve positions	Spraying width	
	English	Metric
Both valves On	4 feet	122 cm
One valve On , One valve Off	3-1/2 feet	106.7 cm
Both valves Off	3 feet	91.4 cm

Pressure Regulation

Adjusting the pressure varies the flow rate through the nozzles. Rotate the handle on the pressure regulating valve to increase or decrease the pressure to the desired setting. Tighten the plastic lock nut against the handle to lock the handle in the desired position. Note that pressures will change when the on/off valve is turned on and off as well as when the outer spray nozzles are turned on and off.

Brine System Pressure Settings

The following chart gives the recommended brine system pressure settings based on spraying width and power unit speed. Adjustments may be necessary to achieve your desired application results.

Recommended Brine System Pressure Settings			
Spray Width	at 4 mph (6.4 km/h)	at 6 mph (9.7 km/h)	at 8 mph (12.9 km/h)
3 feet (91.4 cm)	15 PSI	25 PSI	30 PSI
3-1/2 feet (106.7 cm)	15 PSI	25 PSI	Maximum Pressure
4 feet (122 cm)	15 PSI	Maximum Pressure	Maximum Pressure

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.

ATTENTION

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

Cleaning and General Maintenance

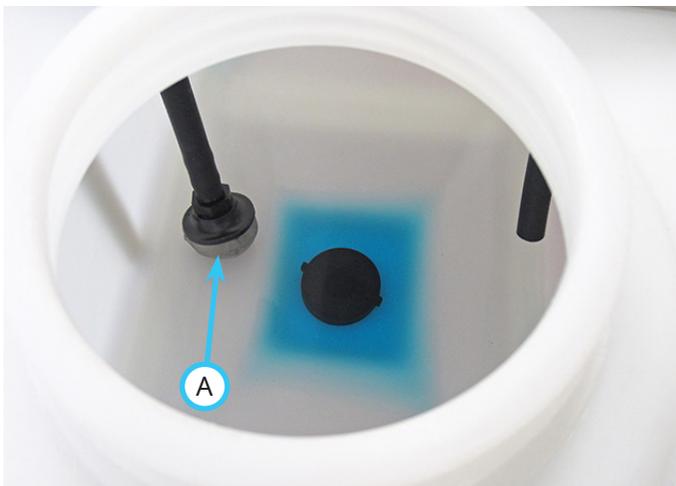
For best results, and to maintain the finish of the power unit and the brine system, clean or wash the power unit and the brine system to remove dirt, brine and salt deposits, and snow or ice accumulations.

ATTENTION

To maintain the finish of the power unit and the brine system, 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.

Cleaning the Strainer

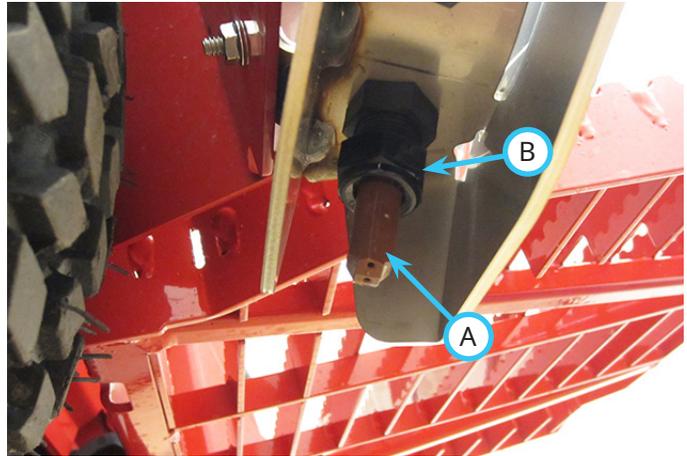
1. Turn off electrical power to the brine system.
2. Drain the brine tank so it is mostly empty.
3. Remove the lid from the brine tank.
4. Use a hose to wash buildup and debris from the strainer (A) on the end of the intake hose.



5. If the brine system has been removed from the power unit, remove the plug on the bottom of the tank to drain the water and debris from the tank. If the brine system is installed on the power unit, remove as much debris as possible from the tank.
6. Reinstall the lid onto the brine tank.

Cleaning the Nozzles

1. Remove the nozzle tip (A) and filter screen from the nozzle base by unthreading the nut (B) from the base.

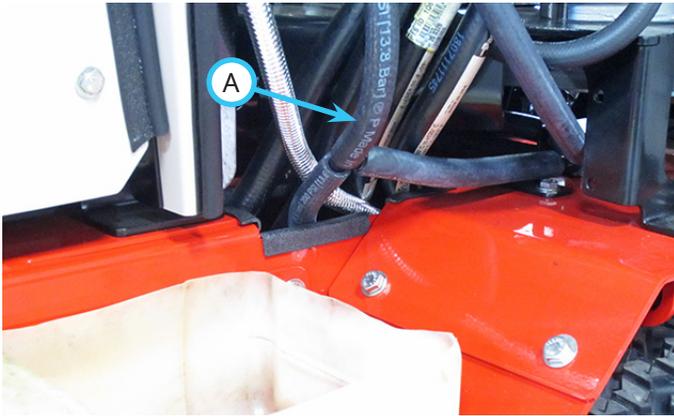


2. Rinse the filter screen under clean running water to remove any debris.
3. Reinstall the filter screen and nozzle tip onto the nozzle base. Do not overtighten.

SERVICE

Draining and Flushing the Brine System

1. Park the power unit on a level surface.
2. Shut off the power unit's engine and engage the parking brake.
3. Move the on/off valve handle to the Off position.
4. If the brine tank is empty, skip to step 14.
5. If the brine tank is full, open the left door of the power unit.
6. Place a small basin next to the tee fitting at the base of the engine frame to catch any liquid that drains from the hose (A).



7. Disconnect the hose (A) coming down from the brine system and let it drain into the basin.
8. Place a container next to the power unit to catch the brine solution.
9. Pull the hose out of the power unit and hold the end over the container.



10. Turn the ignition key to the On position and turn on the pump switch.
11. Move the on/off valve handle to the On position to discharge the brine solution into the container.
12. When the brine tank is empty, turn off the pump.
13. Reinstall the hose onto the tee fitting.
14. Refill the brine tank with clean water.

15. Turn on the pump switch and turn both outer nozzle valves to the On position. Check to ensure all the nozzles are being flushed.
16. Remove the spray wand (if equipped) from the power unit, squeeze the handle, and engage the handle lock.
17. Allow the system to flush until the brine tank is empty, then refill with clean water and flush a second time.
18. After flushing is complete, it is recommended to treat the system with RV antifreeze if the power unit will be stored outside in cold temperatures.
19. Add a gallon of RV antifreeze to the brine tank.
20. Turn on the pump switch and on/off valve and allow to run until the antifreeze starts to discharge from the nozzles.
21. Turn the on/off valve to the Off position to shut off flow to the nozzles.
22. Remove the spray wand (if equipped) from the power unit and squeeze the handle until anti-freeze discharges from the spray wand nozzle.
23. Turn off the pump switch. The brine system is now treated for cold weather storage.

Storage Between Snow Events

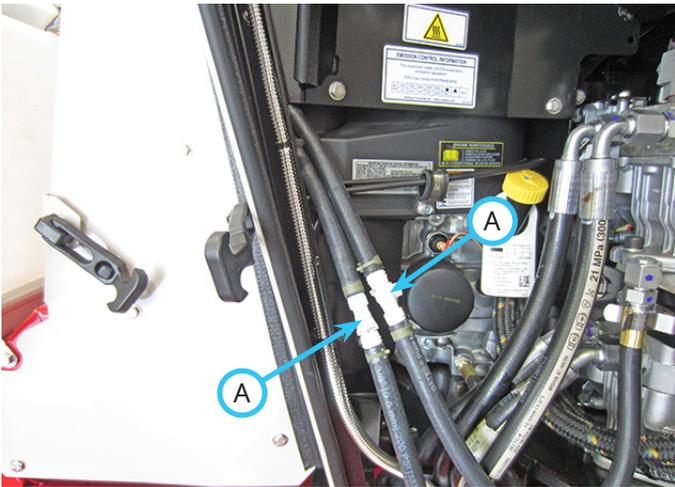
Store the power unit and brine system inside to prevent freezing when the temperatures are extremely low. Drain, flush, and treat the brine system if the machine will be stored outside during extremely low temperatures.

SERVICE

Removal of the Brine Tank

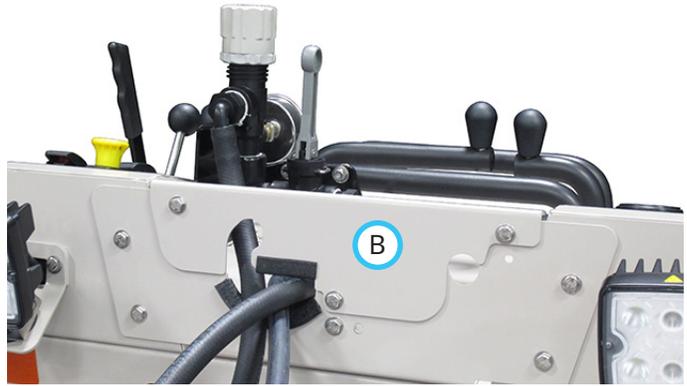
If the brine system will not be used for an extended period of time, the brine tank and controls can be removed from the power unit for storage, while leaving the hoses, brackets, and nozzles in place.

1. Wash the power unit and brine system thoroughly to remove brine deposits.
2. Park the power unit on a level surface.
3. Shut off the power unit's engine and engage the parking brake.
4. Drain and flush the brine system.
5. **2100:** Remove the front access panel from the engine covers.
6. Open the left door of the power unit.
7. Disconnect the quick couplers (A) for the rear supply hose and the spray wand hose (if equipped).



8. Pull the hoses up past the engine and out of the power unit tower frame.
9. Open the right door of the power unit.
10. **2100:** Disconnect the pump wire connector from the power unit harness, remove from the clamp on the power unit, and push through the grommet in the right side of the engine cover.
2120: Disconnect the pump wire connector from the power unit harness and push the power unit harness connector back into the right side of the tower frame.
11. Cap or tape the connector on the power unit harness to prevent dust and deposits from contaminating the terminals and prevent the loss of the connector seal.

12. Remove the front cover plate (B) from the dash mount plate.



13. Remove the brine valve mount from the front dash plate and place on top of the brine tank assembly.
14. Reinstall the front cover plate onto the dash mount plate and torque bolts to 72 in-lb (8 Nm).
15. Remove the hardware that fastens the front mounting bracket and the left and right rear mounting brackets to the accessory mount shield frame.
16. Use a hoist to lift the brine tank assembly off the power unit.
17. After removing the tank assembly from the power unit, the plug in the bottom of the tank can be removed to drain the tank completely before placing in storage.
18. **2100:** Install the front access panel onto the engine covers and secure with the rubber handles.

SPECIFICATIONS

Dimensions

Overall Height	54.6 cm (21-1/2 inches)
Overall Length	39.4 cm (15-1/2 inches)
Overall Width	72.4 cm (28-1/2 inches)
Weight (Dry)	31.8 kg (70 pounds)
Brine Capacity	75.7 liters (20 gallons)
Spray Width	91.4 - 122 cm (36 - 48 inches)

Features

- All stainless steel construction
- Rear mounted spray nozzles with adjustable spray width
- Pressure regulating relief valve
- In-line main filter and filter screens at each nozzle