



Ice STRIKER™



OWNER'S MANUAL

ICESTRIKER™ LION 6-12 HIGHWAY COMBI SPREADER

GENERAL INFORMATION 3

 Spreader parts 3

 Technical information 4

SAFETY INFORMATION 5

 Safety definitions 5

 Safety precautions 5

 Recommended vehicle requirements 6

 Noise 6

 Personal safety 6

 Emergency stop 6

 Warning and caution labels 7

INSTALLATION AND OPERATION 8

 Accessory cables 8

 Control placement 8

 Mounting the spreader 8

 Mounting the spreader with the optional leg stand 9

 Opening tarp cover 9

 Dump function 10

 Adjustable invert-V 11

 Spreading symmetry adjustment 12

 End of material sensor 13

 Calibration of end of material sensor 14

 Electrical installation of end of material sensor 14

LOADING 15

 Average material weights 15

REMOVING THE SPREADER 15

 Removing the spreader 15

 Removing the spreader with the optional leg stand 15

MAINTENANCE 16

 Maintaining the spreader 16

 Chain tension adjustment 17

 Storage 18

 Optional liquid system 18

 Greasing points 19

BRINE SYSTEM DIAGRAM 20


ELECTRICAL SCHEMATIC 22

 Hydraulic spreader 22

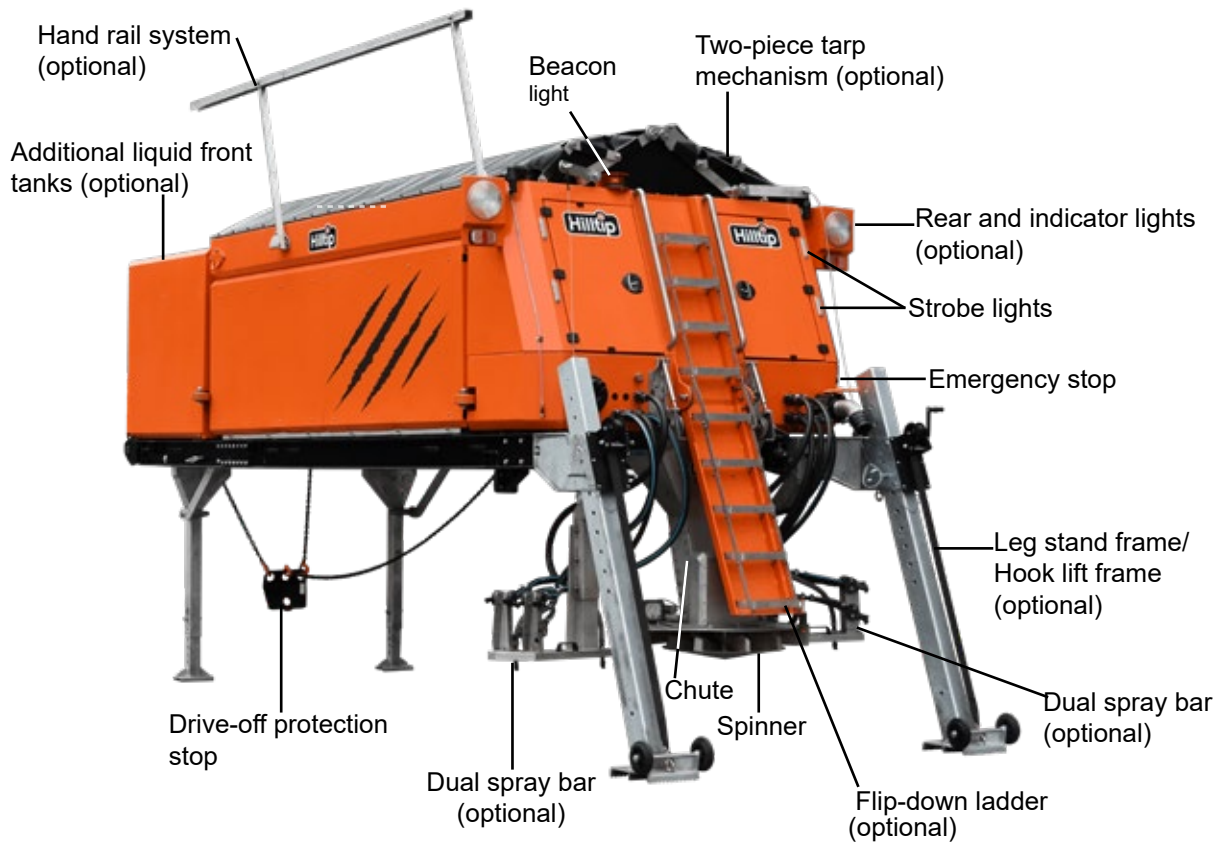
 Hydraulic spreader with spray bar 23

WARRANTY INFORMATION 24

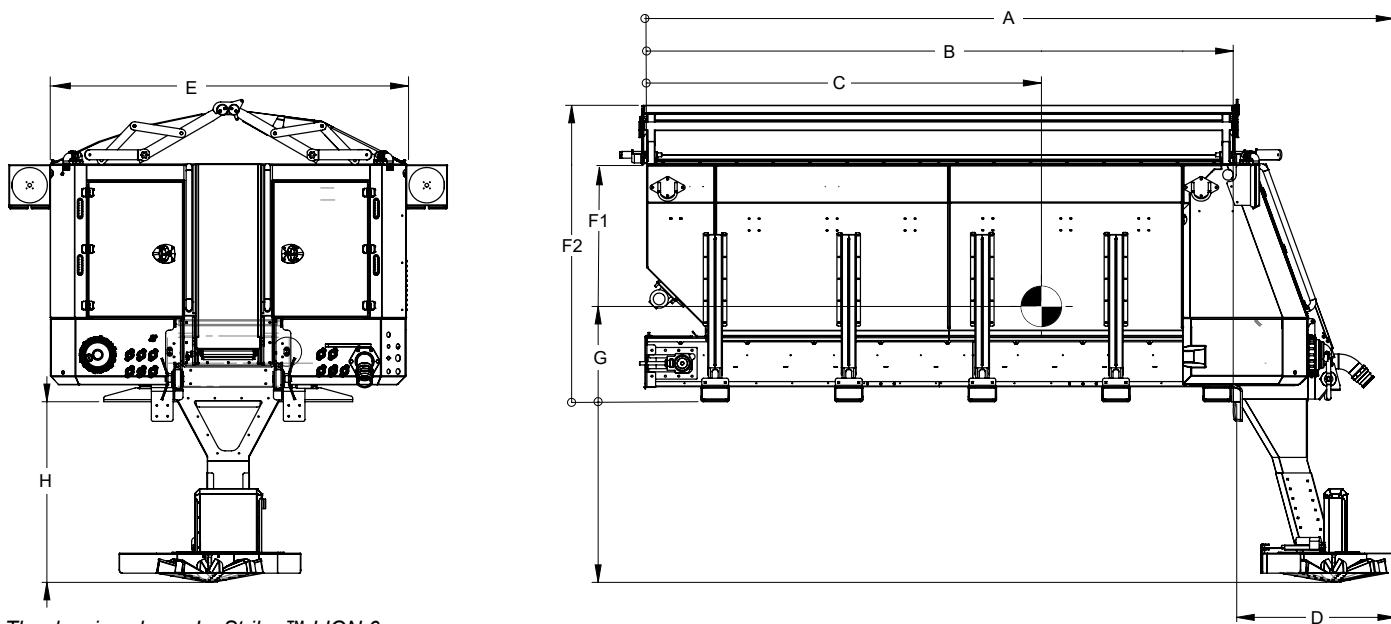
CERTIFICATE OF CONFORMITY 25

	<p>CAUTION</p> <hr style="border: 0; border-top: 1px solid black; margin-bottom: 5px;"/> <p>Read this manual before installing or operating the spreader</p>
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Spreader parts



Technical information



The drawing shows IceStriker™ LION 6


Key	Description	LION 6	LION 7	LION 8	LION 9	LION 10	LION 12
A	Total length	450 cm	450 cm	520 cm	590 cm	590 cm	590 cm
B	Length on truck bed (without front tanks)	360 cm	360 cm	430 cm	500 cm	500 cm	500 cm
C	Distance from the centre of gravity to the rear part of the hopper (empty)	235 cm	235 cm	270 cm	310 cm	310 cm	310 cm
	Distance from the centre of gravity to the rear part of the hopper (full loaded)	182 cm	182 cm	210cm	238 cm	238cm	238 cm
D	Total length of spreading group (disc + chute)	95 cm					
E	Hopper width	213 cm					
F1	Height of the hopper from the loading surface of the carrying vehicle	141 cm	156 cm	141 cm	141 cm	156 cm	176 cm
F2	Total height of the hopper from the loading surface of the carrying vehicle (with tarp mounted)	178 cm	193 cm	178 cm	178 cm	193 cm	213 cm
G	Height of the centre of gravity from the loading surface of the carrying vehicle (empty)	57 cm	57 cm	65 cm	75 cm	75 cm	75 cm
	Height of the centre of gravity from the loading surface of the carrying vehicle (full loaded)	90 cm	90 cm	104 cm	118 cm	118 cm	118 cm
H	Distance between spreading disc and loading surface of the carrying vehicle	108-131 cm					


Description	LION 6	LION 7	LION 8	LION 9	LION 10	LION 12
Hopper volume, rounded	6 m ³	7 m ³	8 m ³	9 m ³	10 m ³	12 m ³
Liquid tank capacity, lateral tanks	2000 L	2000 L	2500 L	3000 L	3000 L	3000 L
Liquid tank capacity with added front tanks (1250 L/tank)	3250-5750 L	3250-5750 L	3750-6250 L	4250-6750 L	4250-6750 L	4250-6750 L
Empty spreader weight	1680 kg	1740 kg	2055 kg	2230 kg	2300 kg	2400 kg
Full loaded spreader solid material, rounded volume	10080 kg	11540 kg	13255 kg	14830 kg	16300 kg	19200 kg
Full loaded spreader solid material, rounded volume, and liquid material full tank (lateral tanks)	12280 kg	13740 kg	16005 kg	18130 kg	19600 kg	22500 kg


These numbers are only guidelines, and based on solid materials with a density of 1400 kg/m³, and brine liquid with a density of 1100 kg/m³.

Specifications are subject to change without notice. We do not take any responsibility in any direct or indirect damages or warranty cases concerning the values above.

Safety definitions


 **WARNING**
Implies a potentially hazardous situation that, if not avoided, could result in death or serious personal injury.


 **NOTE**
Implies a situation or action that can lead to damage to your spreader and vehicle or other property. Other useful information can also be described.

 **CAUTION**
Implies a potentially hazardous situation that, if not avoided, may result in minor or moderate injury. It may also be used to alert against unsafe practices.

Safety precautions

Incorrect installation and operation can lead to serious personal injury and/or damage your equipment and property. Note and ensure that you understand this manual and all the labels before installing, operating or making adjustments to the spreader.

 **WARNING**
Observe these safety precautions before, during and after operating the spreader. You can prevent injury to persons and damage to the spreader by following these precautions.

 **WARNING**
Warning - Disconnect power and wait for spinner and auger to stop completely before servicing, opening the cover to the technical housing or removing the top screen. The auger is fully accessible inside the technical housing and may cause serious injury or death if it's still running while cover is open.

1. Read this manual before operating the spreader.
2. Before operating, make sure all the equipment is securely mounted into place.
3. Check that there are no persons within the spreader spray area when starting and operating this spreader.
4. Do not exceed your vehicle total weight beyond payload limits.
5. Always turn off the spreader before cleaning, lubricating or unclogging material jams.
6. Never climb or ride on or in the spreader.
7. Ensure that you have fastened the spreader to the vehicle according to descriptions in this manual.
8. A spreader in need of repairs or maintenance should not be operated.
9. Before removing or replacing any electrical components, always disconnect the battery.
10. Do not keep gasoline or other flammable liquids on the truck bed while spreader is mounted on the truck bed.

WARNING
 Always keep bystanders a minimum of 20 meters away when operating the spreader.

CAUTION
 Empty and clean the hopper after each use. Unused spreading material left in hopper could freeze or solidify, causing the spreader to not work properly.

WARNING
 Wait for auger and spinner to stop and lock out power before servicing the spreader.

NOTE
 Use a good quality multi-purpose grease to lubricate grease fittings after each use.

Recommended vehicle requirements

The IceStriker™ LION is suitable for trucks and trailers with a minimum payload capacity of 13000 to 23000 kg, depending on the model.

Ensure that the vehicle's Gross Vehicle Weight Rating (GVWR) and axle load ratings can support the total weight of the fully loaded spreader, including both solid and liquid materials. Always comply with local transport regulations.

Noise

The noise caused by the running spreader does not exceed 70 dB

Personal safety

- To prevent accidents, secure long hair and do not wear jewelry or a necktie. Only wear tight-fitting clothes while working on your spreader or vehicle.
- Protect your eyes with safety goggles to avoid damage from battery acid, gasoline, dirt and dust.
- Always handle the solid and liquid materials carefully. Wear safety goggles, mouth mask, gloves and protective close to protect yourself from spattering material.

Emergency stop

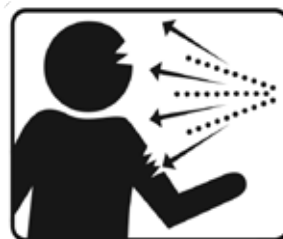
The spreader has an emergency stop button located at the right side of the chute. All spreader functions will immediately stop by pushing this button.



Warning and caution labels

Please become familiar with warning and caution labels on the spreader.

Warning - Handling of abrasive and chemical material can cause injury



- Located on the chute

Warning - Keep away from spinner and spreader in motion. Stay clear of turning spinner. Moving parts can crush and cut



- Located on the chute

Warning - Disconnect power and wait for spinner and auger/chain to stop completely before servicing, opening the cover to the technical housing or removing the top screen. The auger is fully accessible inside the technical housing and may cause serious injury or death if it's still running while cover is open.



Accessory cables

- Red** = Emergency stop (standard)
- Black (big connector)** = Water pump
- Black (small connector)** = Water pump
- Yellow** = Beacon light
- White** = LED work light

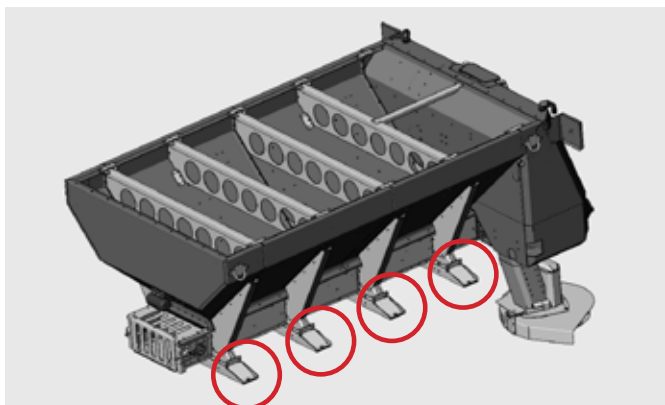
Control placement

The controller should be mounted in a place where it can easily be reached and doesn't interfere with the access to vehicle controls or other equipment. Make sure that the spreader control panel doesn't block the vehicle airbag area. Protect the controller from water, dirt and dust.

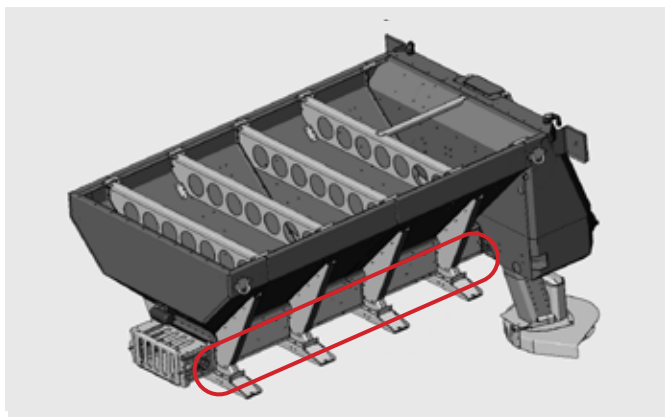


Mounting the spreader

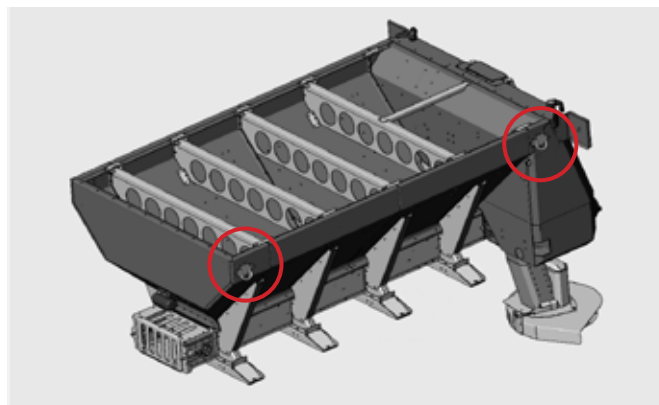
Use a crane to lift and mount the spreader onto the truck. Before lifting, verify that the crane and all lifting accessories are rated for the weight of the specific spreader model. The hopper is equipped with lifting points at each corner (see image below); always use these designated points when mounting the spreader onto the vehicle.



There are **fastening hooks** on each side of the spreader bottom. Use these fastening points to **bolt the spreader to the vehicle**. The number of fastening hooks vary depending on the size of the spreader.



Ensure that the spreader is **fully supported** across the entire area beneath the hopper.



There are **tie-down loops** at each corner of the hopper. Use these loops to secure the spreader to the vehicle with tensioning straps. They are also used as **lifting points**.



WARNING

The spreader is required to be fastened with tensioning straps in all four corners and attached to the vehicle bed with bolts.

Mounting the spreader with the optional leg stand

1. Position the truck

- Slowly reverse the truck until the rear of the truck bed is positioned under the spreader.
- Mount the drive-off protection stop (see picture below) on the truck.
- Raise the truck bed slightly so the weight of the spreader transfers onto the truck.

2. Fold up the front legs

- Remove the locking pin for the front legs. Manually fold up the front legs and lock them in the upper position with the locking pin.

3. Position the spreader on the truck bed

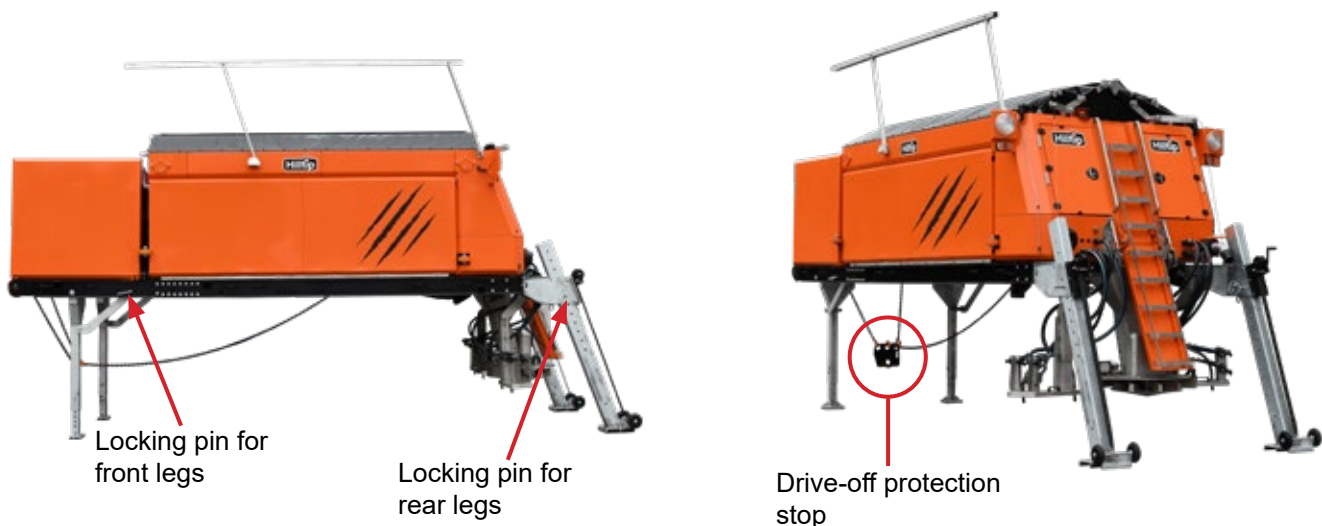
- Continue reversing slowly until the spreader is fully positioned on the truck bed.
- Lower the truck bed to its lowest position so the spreader rests fully on the truck bed and the rear legs are no longer bearing any load.

4. Raise the rear legs

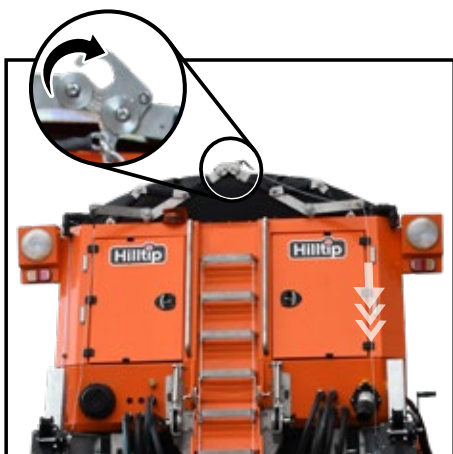
- Remove the locking pin from the rear legs.
- Wind up (raise) the rear legs completely and lock them with the locking pin.

5. Secure the spreader

- Secure the spreader to the truck according to the instructions on page 8. Confirm all connections are properly locked and that the spreader is safely mounted before driving.



Opening tarp cover (optional)



1. Pull right wire to open hook.



2. Pull right wire to open the right side of the tarp cover.



3. Pull left wire to open the left side of the tarp cover.

Dump function (optional)

The dump function allows the operator to activate the auger/chain to empty the hopper after use

1. Flip up the chute and place the material receptacle under the end of the auger/chain.
2. Press the dump button to operate the auger/chain.
3. To stop the auger/chain, press dump button again.



Dump button

NOTE! Activate “Include dumping” on the HTrack™ portal if you want the dumped material included in the reports.

The screenshot shows the HTrack portal interface. At the top, there is a navigation bar with links: HOME, REPORTS, VEHICLE SETTINGS, CUSTOMER SETTINGS, UPLOAD, MY ACCOUNT, and SIGN OUT. Below this, there are tabs for 'Map', 'Calculations', and 'Daily reports'. The main content area is divided into several sections:

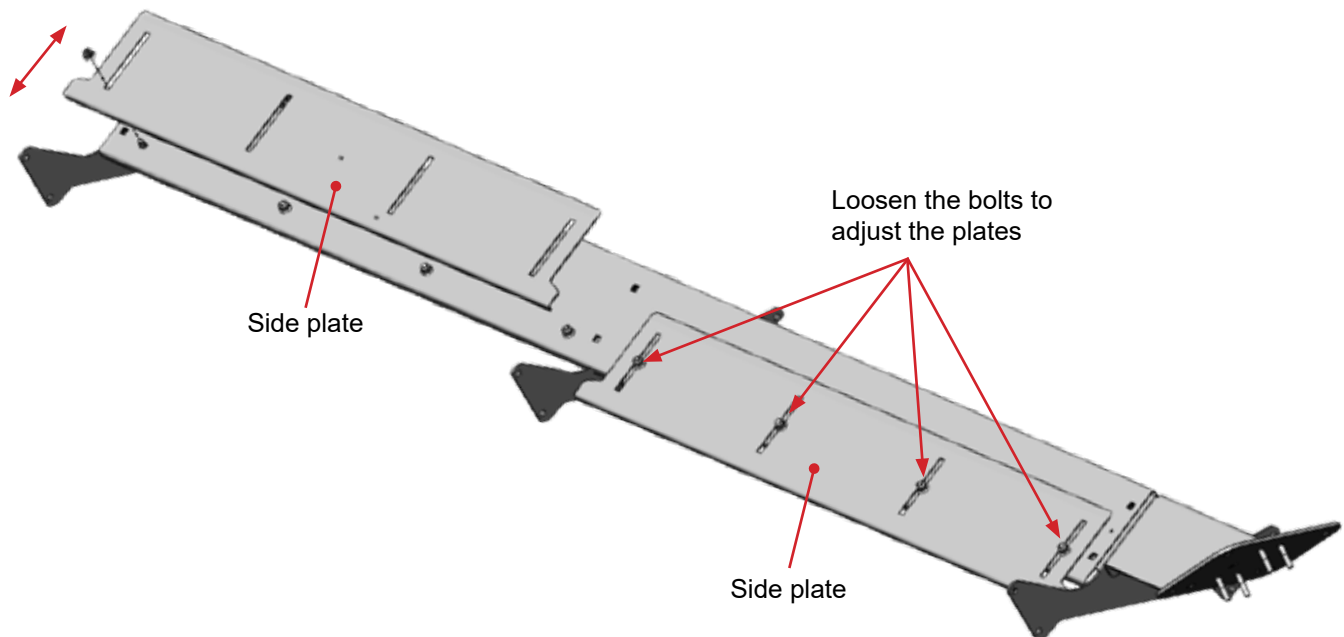
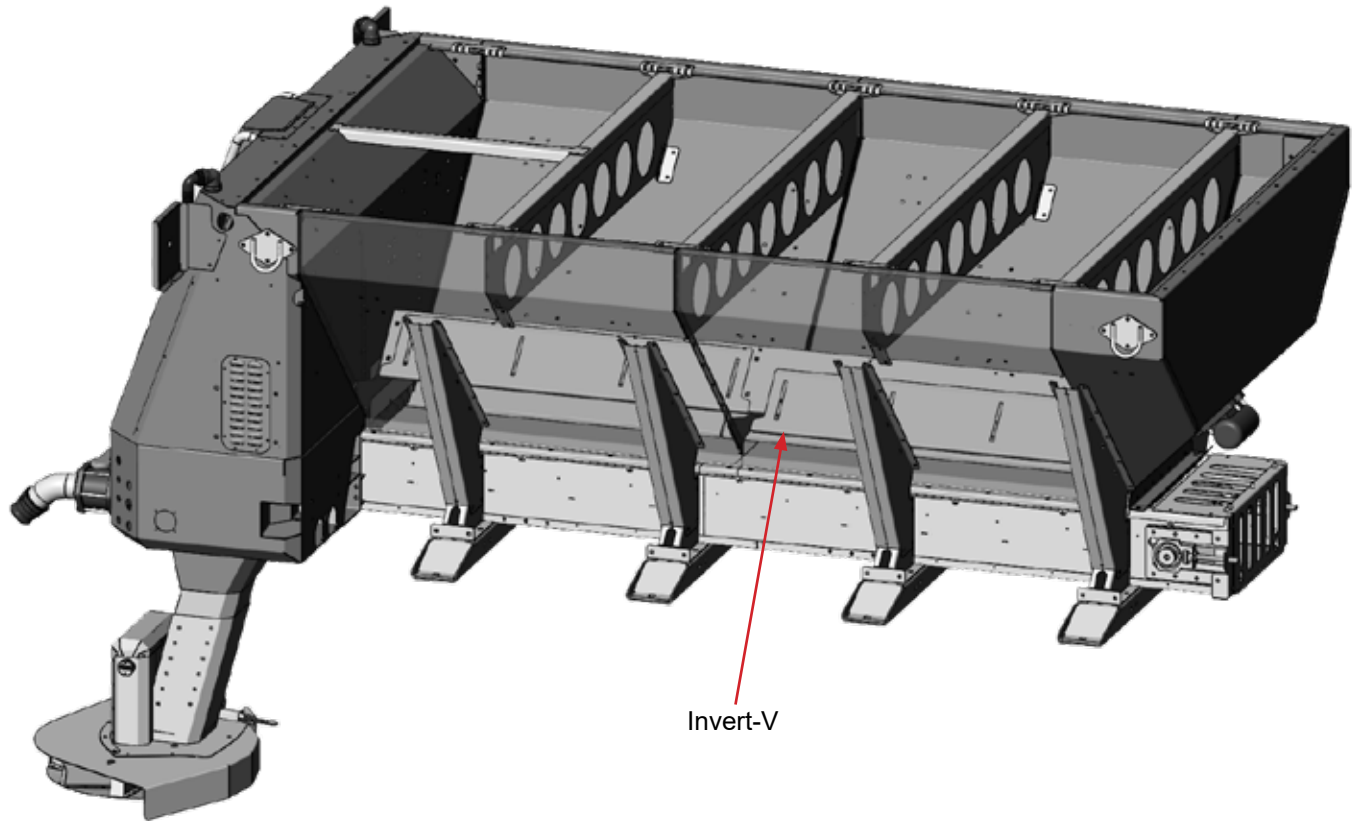
- START:** 09/20/2021 00:00
- END:** 09/20/2021 23:59
- REGION:** Not set
- VEHICLE:** All
- CUSTOMER:** All
- CONTRACT:** All
- WORKSITE:** All
- OPERATING MODE:**
 - All
 - Spreading dry
 - Spreading pre-wet
 - Spraying liquid
 - Plowing
 - Driving only
 - Include dumping
- SUMMARY:**
 - All
 - Total material usage
 - Total distance
 - Total time
 - Efficiency
 - Average speed
 - Average application rate
 - Timestamps

A red arrow points to the 'Include dumping' checkbox in the OPERATING MODE section.

Go to **Reports** → **Map**, **Calculations** and/or **Daily reports** and activate “Include dumping” under “Operating mode” if you want to include the dumped material in the reports.

Adjustable invert-V

The invert-V has adjustable side plates. Unscrew the bolts on both sides to adjust the plates up or down. When the plates are fully opened (adjusted upwards) more material is flowing down to the auger and give a more even material output. It is also possible to remove the adjustable plates if the used spreading material is not flowing down to auger and causing bridging above the auger.



Spreading symmetry adjustment

The spreading pattern can be adjusted by rotating the spinner plate and by adjusting the chute baffle that controls how far in on the spreading disc the material falls down.

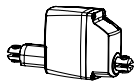
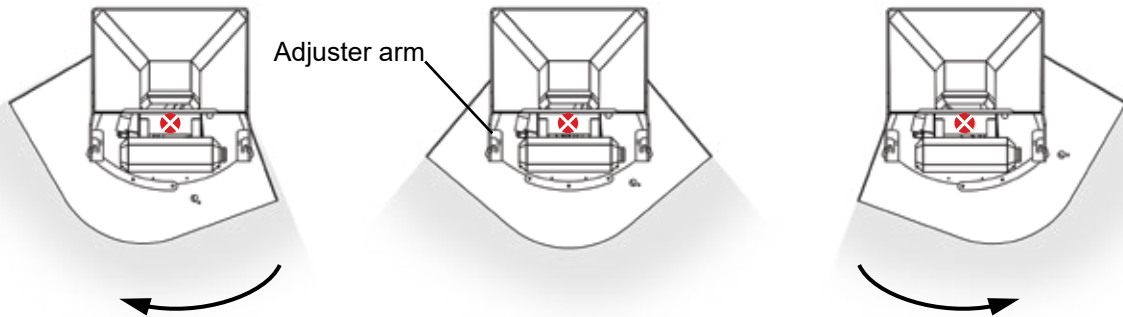
The spinner plate is rotated to the left or right by using the adjuster arm.

⊗ = material drop point

Spinner plate rotated left

Spinner plate center

Spinner plate rotated right



← Adjuster arm can be changed to the optional linear actuator for the optional electric chute adjustment, cabin control.

Electric spreading symmetry adjustment, cabin control (optional)

If the spreader is equipped with the optional electric chute adjustment the user adjusts the spreading symmetry from the controller inside the cab.

When the controller is in spreading mode, the icon on the left shows which position the chute is in. Push the round button so the selected area turns green and scroll the round button to adjust the chute. When scrolling the round button the spinner plate rotates to left or right.



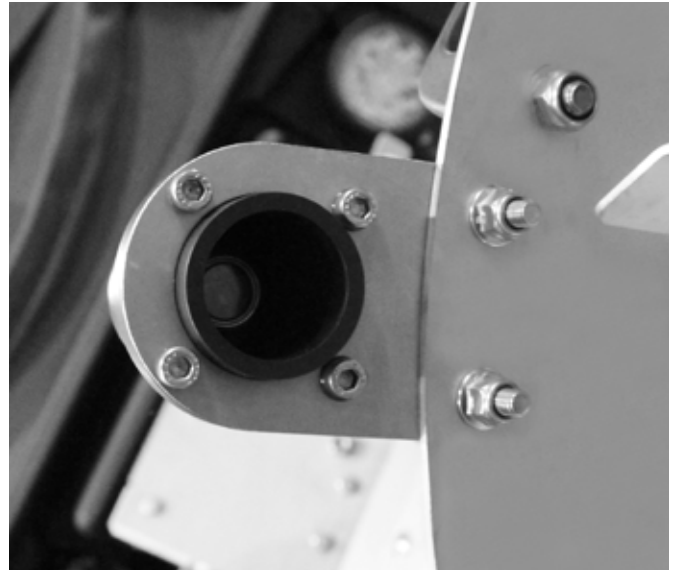
The chute icon shows which position the chute is in.

End of material sensor (optional)

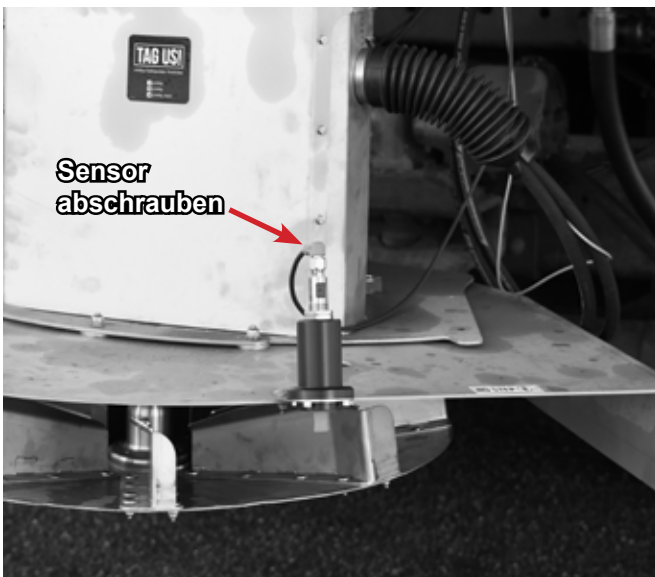
Use the optional “End of Material” (EOM) sensor to detect when no material is coming out from the spreader.



The EOM sensor's LED light lights orange when no material is coming out of the hopper and turns off when material is coming out of the hopper.



The sensor is bolted on the spinner frame.



Make sure you unscrew the cable from the sensor when removing the chute.

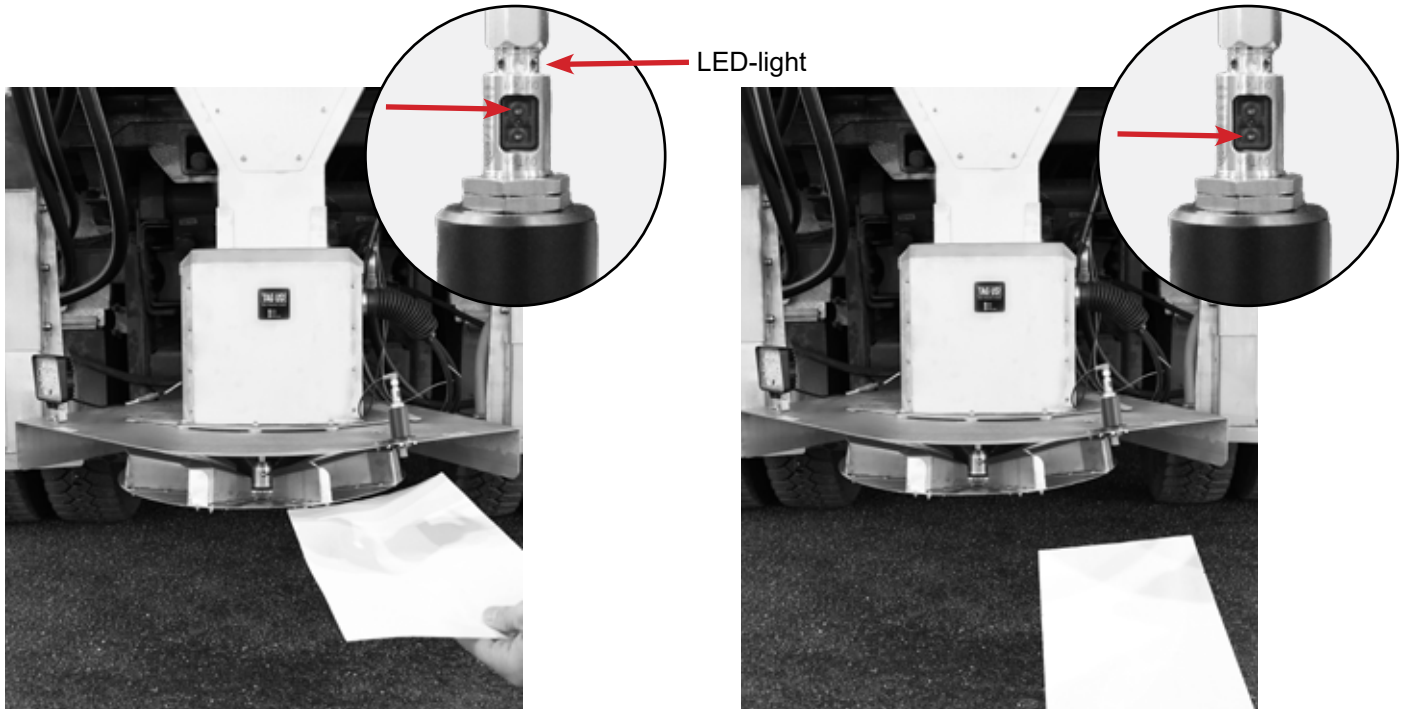


When there is no material coming out from the spinner, you see the message “spreader empty” on the controller. The message disappears when material is coming out from the spinner.

Calibration of end of material sensor

If EOM sensor is not working properly, do a new calibration.

How to calibrate:



1. Hold a piece of white paper at the same height as the spinner assembly and press the upper button until the orange led light starts to flash.

2. Put the white paper on the ground and press the lower button once. Now the led light is constant orange and the sensor is calibrated.

Electrical installation of end of material sensor

Connect the sensor cable to the spreader module:

Blue - to ground terminal
Black - to pin nr 29
Brown - to pin nr 35

Average material weights

Material	Weight (kg/m ³)
Fine salt - dry	1201
Coarse salt - dry	721
Coarse sand - dry	1602
Coarse sand - wet	1922

Please see your local dealer for proper vehicle applications.



WARNING

Do not overload your vehicle beyond GVWR or GAWR, overloading could result in accident or damage.



CAUTION

These material weights are only guidelines, for more precise data, read and adhere to the manufacturer's ice-control material package labeling, including Material Safety Data sheet requirements.

Removing the spreader

Use a crane to lift and remove the spreader from the truck. Before lifting, verify that the crane and all lifting accessories are rated for the weight of the specific spreader model.

The hopper is equipped with lifting points at each corner (see page 8); always use these designated points when removing the spreader from the vehicle.



NOTE

The hopper should always be emptied before removing the spreader.



CAUTION

Make sure bystanders keep a safe distance. Never stand between the truck and the spreader.

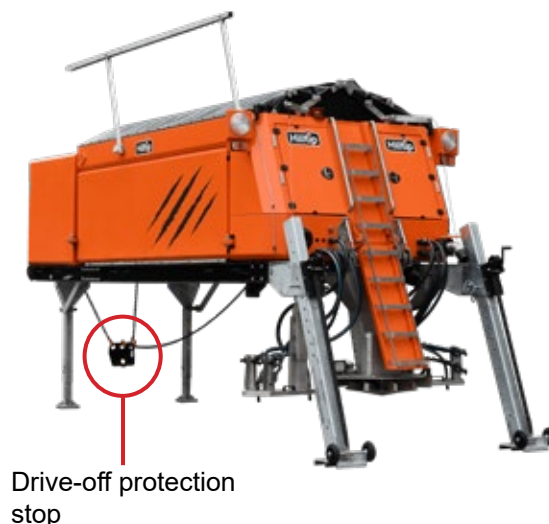
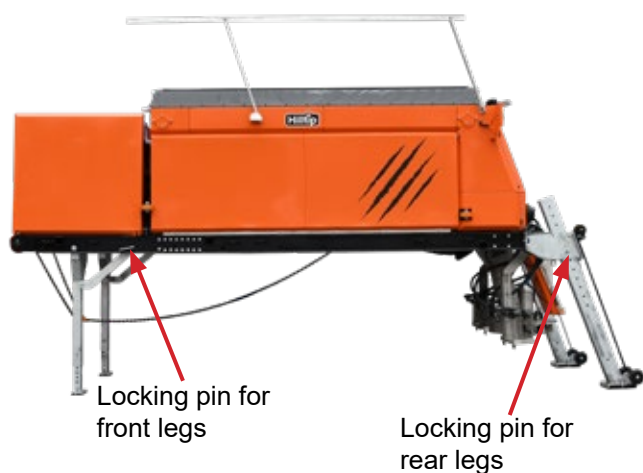


NOTE

Always close hopper lid/deploy tarp to avoid moisture buildup. Do not let spreader sit idle with material in the hopper for a long time.

Removing the spreader with the optional leg stand

1. Unsecure the spreader from the truck bed.
2. Release the locking mechanism for the rear leg stands.
3. Lower the rear legs until they are fully extended and locked. Ensure both legs are firmly on the ground and the spreader is stable.
4. Raise the truck bed slightly.
5. Start the truck and drive forward very slowly, allowing the spreader to remain stable. Stop when passing the front legs.
6. Remove the locking pin from the front legs so they can fold down into position, lock them with the locking pin.
7. Remove the drive-off protection stop from the truck.
8. Drive the truck forward until it is completely free of the spreader.



Maintaining the spreader

WARNING
 Power should always be shut off before and during service or maintenance of the spreader.

WARNING
 Never remove spreader with material in hopper

NOTE
 You must follow all the steps in these maintenance checklists for warranty to be valid.

CAUTION

- Do not operate a damaged spreader or a spreader in need of maintenance
- Spreader should be emptied and cleaned after each use. Left over material could freeze or solidify in the hopper causing the spreader to not work properly.

Daily checklist
Empty the conveyor bottom plate.

Periodical maintenance checklist (check weekly in high-season)
Clean the hopper carefully inside and out with water. Avoid spraying water into bearings, motor and electrical connections.
Check that all screws and fasteners are tight enough. If you notice any missing or damaged fasteners or other parts, replace immediately.
Check that all installations and parts are still securely fastened to the spreader assembly.
Apply dielectric grease on all electrical connections.
Lubricate grease fittings with a good quality multipurpose grease.

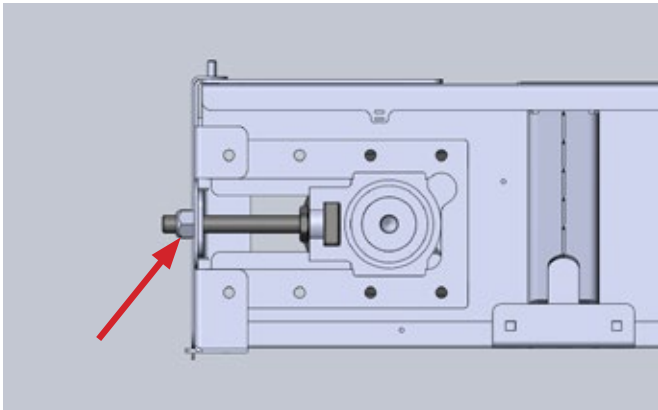
Yearly maintenance checklist (e.g. before or after putting your spreader away for storage)
Clean the hopper carefully inside and out with water, before putting it in storage. Avoid spraying water into bearings, motor and electrical connections.
Clean and apply dielectric grease on all electrical plugs and connectors. Clean and install all dust caps before placing your spreader in storage
Lubricate grease fittings with a good quality multipurpose grease.
Check condition of bearings, replace if needed.
Cover the spreader with a tarp during storage, to protect it from sun fading and other weather conditions and circumstances.

IMPORTANT:

It is strongly recommended and of great importance that you regularly apply dielectric grease on all electrical connectors and protect them with caps when not in use to prevent corrosion. While cables are connected, also connect matching caps to protect them from dirt and dust.

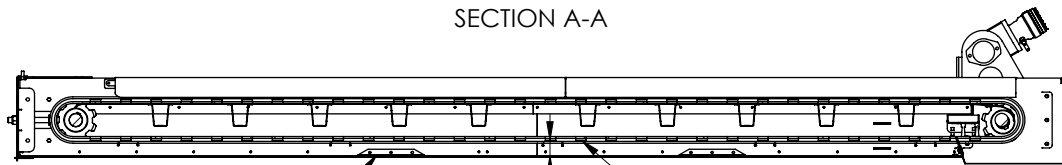


Chain tension adjustment



Tighten the nut to adjust the chain tension.

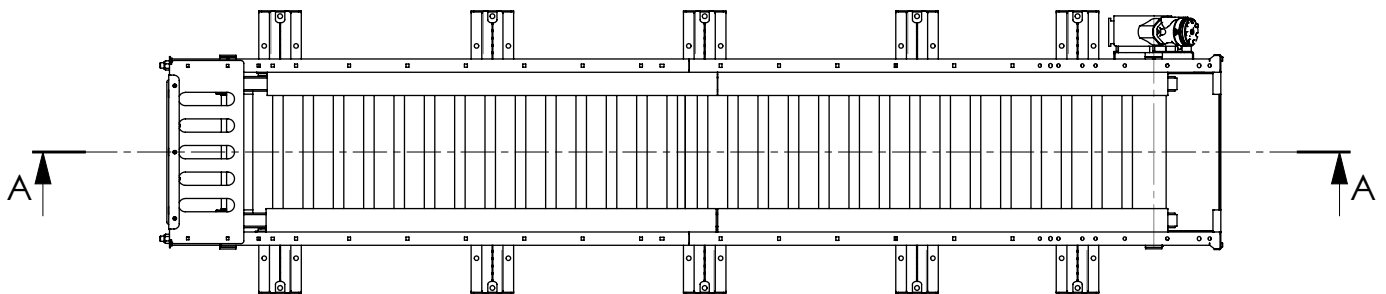
SECTION A-A



Inspect chain plastic guides (H45590) for excessive wear and replace if necessary.

5-20 mm

Chain tension should be adjusted so that slack is between 5-20 mm.



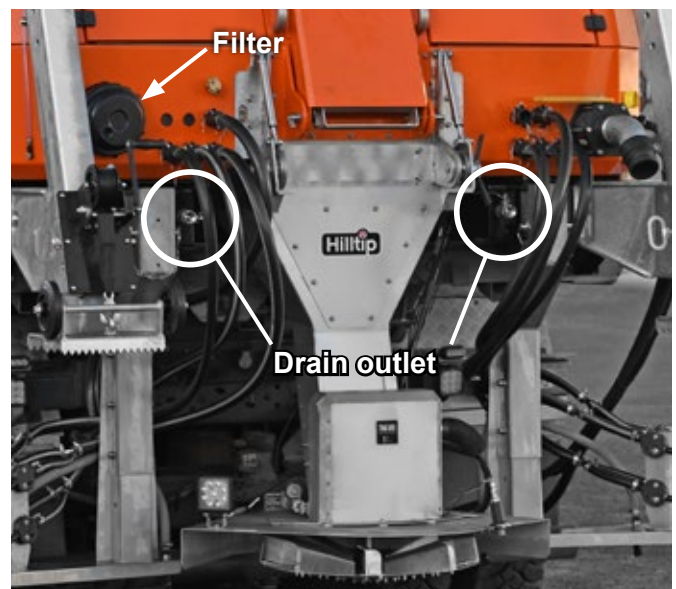
Storage

Apply to these recommendations before placing your spreader in off-season storage to maintain it in a good condition.

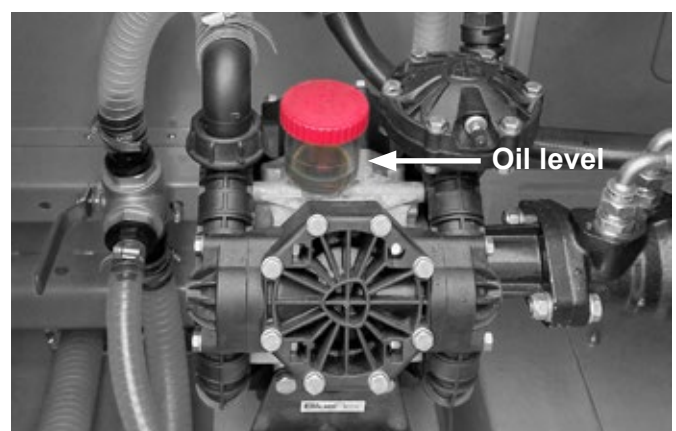
- Cover your spreader using a tarp during storage periods
- Apply a protective compound such as dielectric grease on all electrical connectors and use caps for protection before storage.
- Disconnect and remove the control unit from your vehicle. Store it in a dry and cool place, and protect it from heat and moisture.
- Empty the hopper, remove all kinds of debris and clean the hopper from dirt before storage.
- Protect the hopper from excessive heat during storage periods.

Optional liquid system

- Always empty the liquid tanks after each use. Empty the filter as well. If liquid is left in the tank for an extended period, it may freeze and cause damage to the spreader.
- Clean the filter regularly to ensure proper operation.
- Check the liquid pump oil level and, if necessary, add **75W-90 fully synthetic oil**.



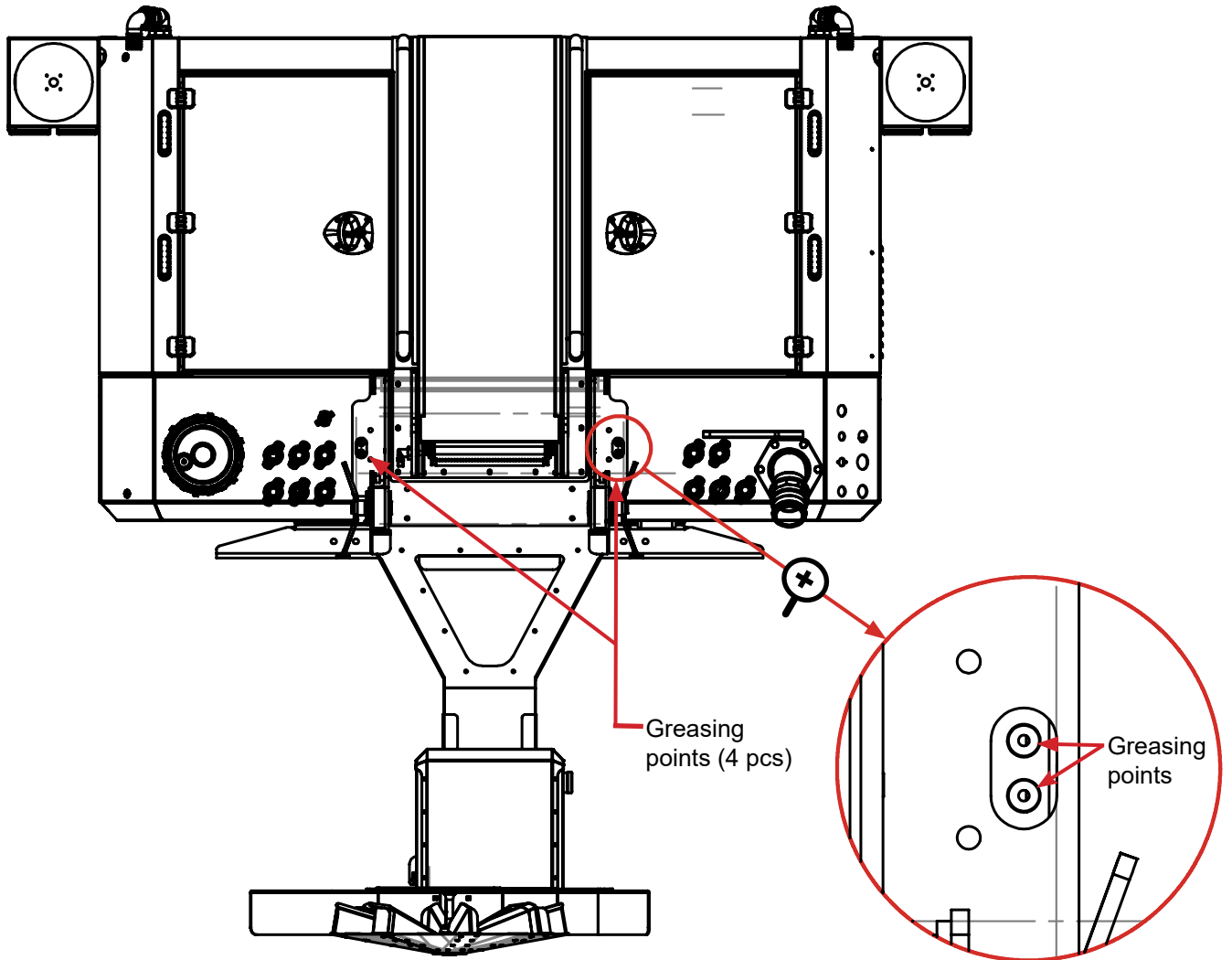
Filter and drain outlets of the liquid tanks



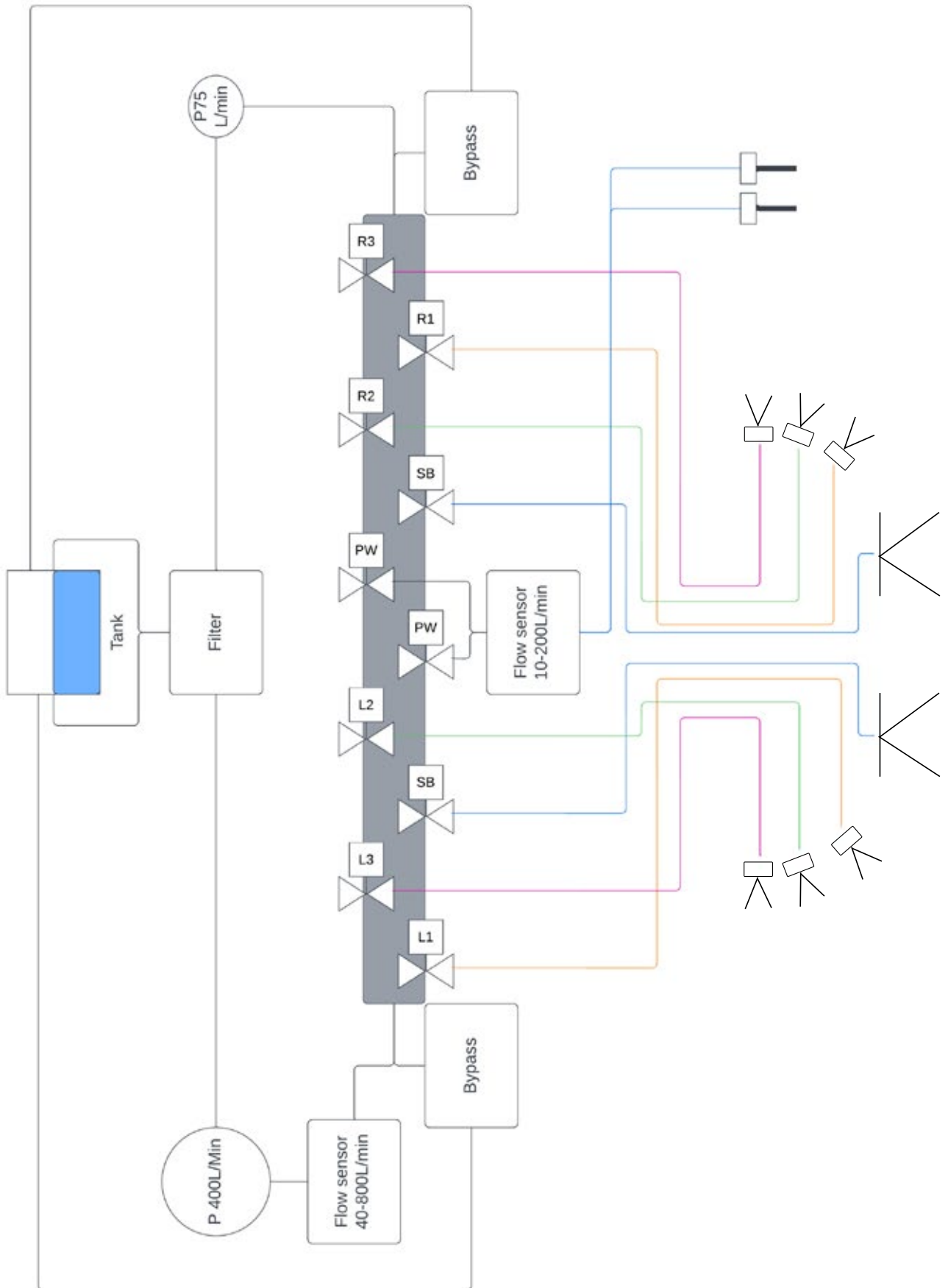
Check oil level

Greasing points

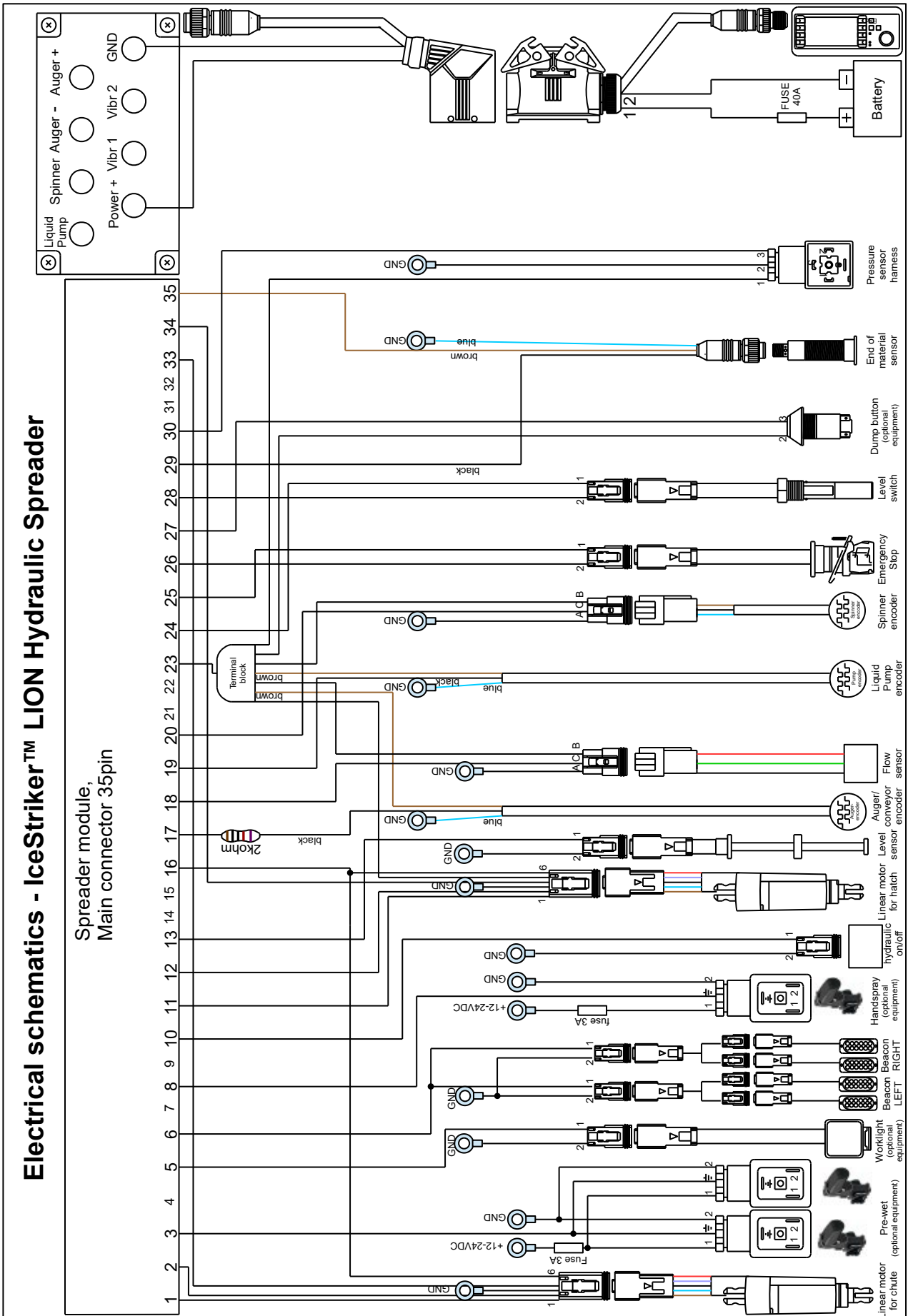
Grease fittings should be lubricated approximately every 20 operating hours.



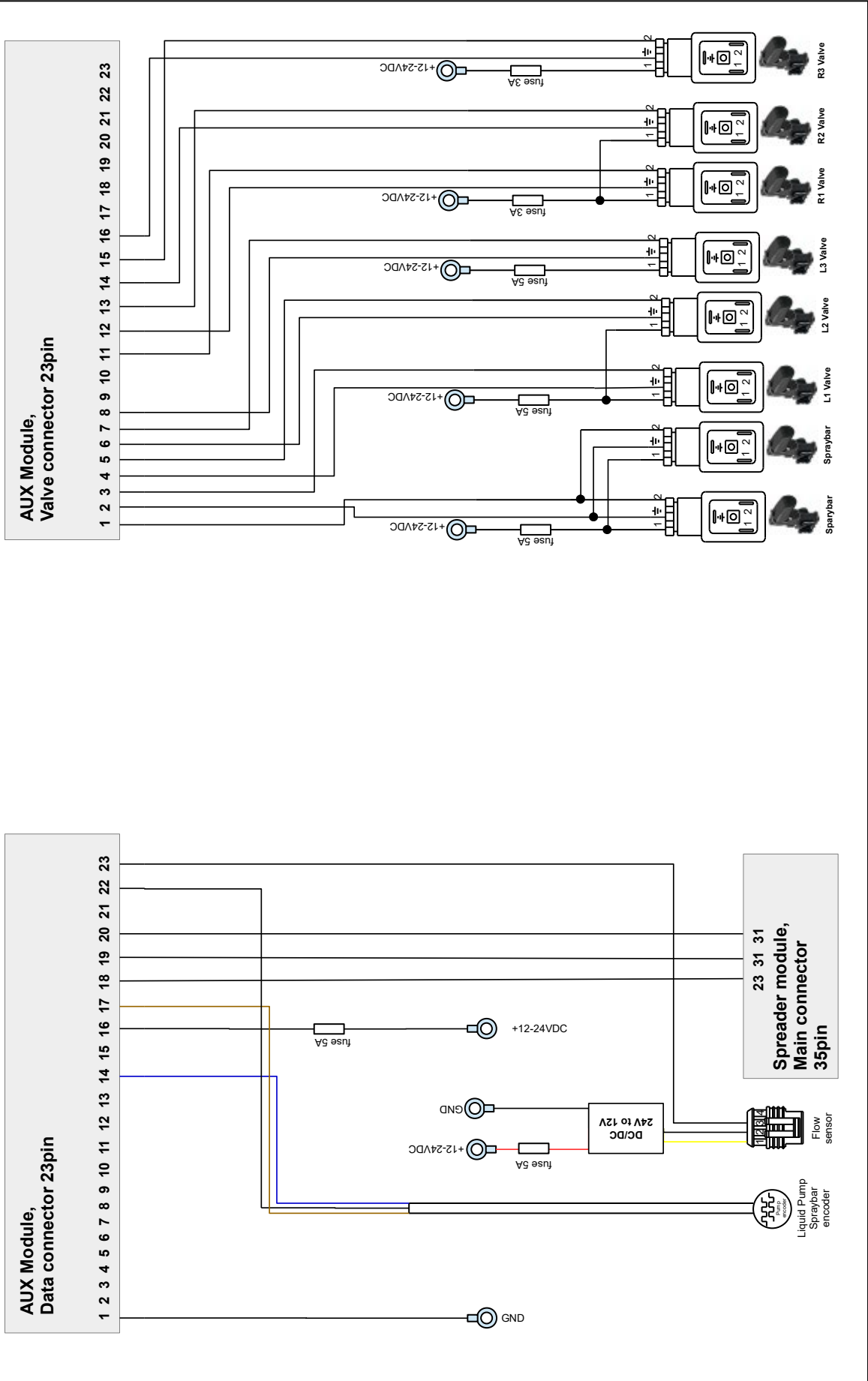
Brine System Diagram - IceStriker™ LION



Electrical schematics - IceStriker™ LION Hydraulic Spreader



Electrical schematics - IceStriker™ LION Hydraulic Spreader with Spray bar



Warranty information

This warranty replaces all previous warranties

Warranty

Thank you for your interest in the products and services of Oy Hilltip Ab. This Limited Warranty applies to snowplows, spreaders, sweepers and other products and parts (from now on referred to as the "Product") purchased from Hilltip or an authorized dealer.

What does this limited warranty cover?

This Limited Warranty covers any defects in material or workmanship under normal use during the Warranty Period.

During the Warranty Period, Hilltip, or an authorized dealer will repair or replace, at no charge, products or parts of a product that proves defective because of improper material or workmanship, under normal use and maintenance.

How long does the coverage last?

The Warranty Period for the product purchased from Hilltip, or an authorized dealer is two (2) years from the date of purchase. The warranty period for a replacement part is one (1) year from the date of replacement or repair.

How to obtain warranty on your product?

Make sure your dealer has registered your product. In order to obtain service under this warranty the product must be registered with the end user's contact details (name, address, e-mail address and phone number).

What does this limited warranty not cover?

- Improperly installed parts.
- Damage caused by usage that is not in accordance with product instructions.
- Modification of the product, and/or the vehicle, is entirely at the purchaser's risk.
- This warranty does not include compensation for the drive to the service spot.
- Any damage in transit will be the responsibility of the carrier or at the risk of the purchaser.
- Hilltip will not provide replacement equipment or cover rental costs while your equipment is out of service.

This Limited Warranty does not cover any problem that is caused by:

- Misuse, neglect, accident, improper installation, maintenance or storage, or repair or alternation by anyone except Hilltip or an authorized dealer.

What do you have to do?

To obtain warranty service, you must first contact us or your authorized dealer. The purchaser must notify Hilltip or an authorized dealer within ten (10) days after any defect in the product becomes known during the warranty period.

What will we do to correct problems?

Hilltip, or an authorized dealer will repair or replace the part at no charge using either new or refurbished replacement parts.



DECLARATION OF CONFORMITY

Manufacturer's & Assambler's Name: **Oy Hilltip Ab**

Manufacturer's & Assambler's Address: **Pukkisaarentie 6, FIN-68600 Pietarsaari, Finland**

Equipment Description: Sand and salt spreader with a liquid spray application system, 6–12 m³ capacity.

Equipment Model Designation: Hilltip IceStriker™ LION 6
Hilltip IceStriker™ LION 7
Hilltip IceStriker™ LION 8
Hilltip IceStriker™ LION 9
Hilltip IceStriker™ LION 10
Hilltip IceStriker™ LION 12

Equipment Application: Trucks

The equipment specified above is manufactured, where applicable, in conformity with the provisions of the normative documents according to the following directives and standards, in addition to the relevant Road Traffic Regulations in European countries.:

- 2006/42/EC
- EN 15597-1
- EN 15597-1
- ECE R10

I, the undersigned, hereby declare that the equipment specified above, assembled by Oy Hilltip Ab, conforms to the above-mentioned directives and standards.

Pietarsaari, January 6, 2025

Signature:

Printed Name: Tom Mäenpää

Title: CEO

Installer's Name:

Installer's Address:

Type:

Serial number:

Year of installation:

I, the undersigned, hereby declare that the equipment installation to the vehicle specified above conforms to the directive 2006/42/EC and relevant Road Traffic Regulations.

DATE:

Signature:

Printed:

Title:



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