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Version 1.10



Ice **STRIKER™**



OWNER'S MANUAL

550-1100 LITER POLY ELECTRIC SPREADER

This manual replaces all editions with an earlier date.

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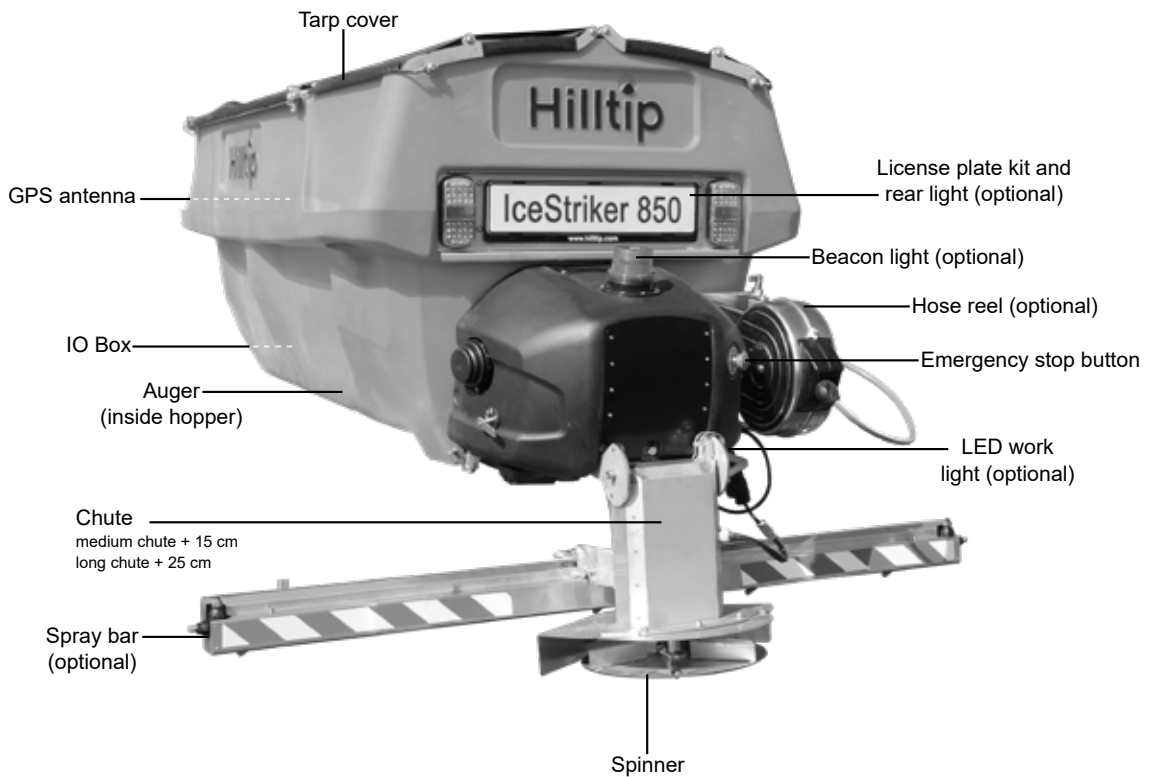
**CAUTION**

Read this manual before installing or operating the spreader

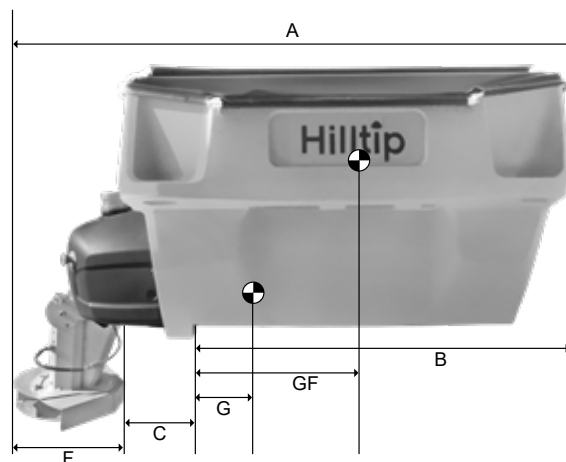
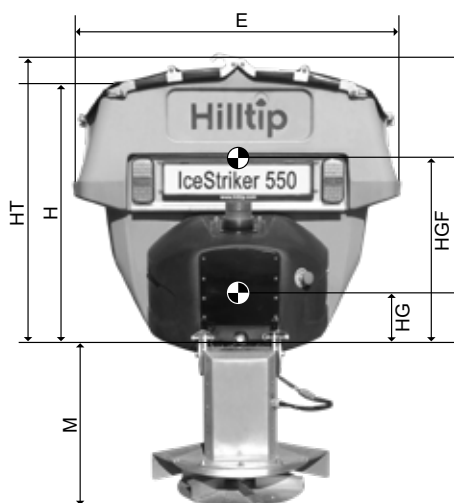
Introduction

The Hilltip spreading device is designed for winter road-area maintenance and uses different technologies for spreading both solid materials and liquid. The solid material is fed by an auger and distributed by the spinner, this basic spreading function can be used for spreading sand, gravel, salt, mixtures of these, and fertilizers. The pre-wet function moistens the dry rock salt with water or different brine solutions, sprayed out by a nozzle close to the feed gate. The spray-bar system solely uses liquids, such as brine solutions or water. The liquid is driven by a pump, and distributed by seven nozzles along the spray bar. The pre-wet and spray-bar system are optional functions. The spreader also has an optional hose reel (12m) and handheld nozzle, that can be used for spraying water or brine solution at hard to reach areas.

Spreader parts



Technical information



Key	Description (mm)	550	750	850	1100
A	Total length	2105	2105	2605	2605
B	Maximum external hopper length	1300	1300	1780	1780
C	Free distance between hopper and chute	345	345	345	345
E	Maximum external width (with tarp mounted)	1250	1250	1250	1250
F	Total length of spreading group (disc + chute)	460	460	460	460
G	Distance from the centre of gravity to the rear part of the hopper (empty)	228	228	375	375
GF	Distance from the centre of gravity to the rear part of the hopper (full)	570	570	710	710
H	Height of the hopper from the loading surface of the carrying vehicle	775	925	775	925
HG	Height of the centre of gravity from the loading surface of the carrying vehicle (empty)	64	119	245	300
HGF	Height of the centre of gravity from the loading surface of the carrying vehicle (full)	500	600	600	700
HT	Total height of the hopper from the loading surface of the carrying vehicle	925	1075	925	1075
M	Distance between spreading disc and loading surface of the carrying vehicle	Short chute = 450 mm Medium chute = 600 mm Long chute = 700 mm			

Description	550	750	850	1100
Hopper volume, struck (H level)	500 l	700 l	750 l	1000 l
Hopper volume, rounded (HT level)	630 l	780 l	880 l	1100 l
Liquid tank capacity	330 l	330 l	450 l	450 l
Empty spreader weight	145 kg	170 kg	190 kg	215 kg
Full loaded spreader solid material, H level	845 kg	1150 kg	1240 kg	1615 kg
Full loaded spreader solid material, HT level	1027 kg	1262 kg	1422 kg	1755 kg
Full loaded spreader solid material, H level, and liquid material full tank	1208 kg	1513 kg	1735 kg	2110 kg
Full loaded spreader solid material, HT level, and liquid material full tank	1390 kg	1625 kg	1917 kg	2250 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.

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 10 meters away when operating the spreader.

**WARNING**

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

**NOTE**

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

Recommended vehicle requirements

This spreader is suitable for utility vehicles, light pick-ups, trucks and trailers with a minimum capacity of 600 kg

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 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 protecting clothes to protect yourself from splattering material.

Emergency stop

The spreader has an emergency stop button located at the right side of the chute.

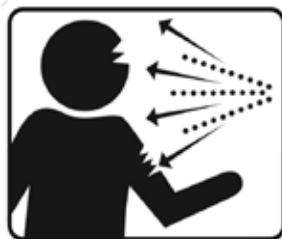
All spreader functions will immediately stop by pushing this button.



Warning and caution labels

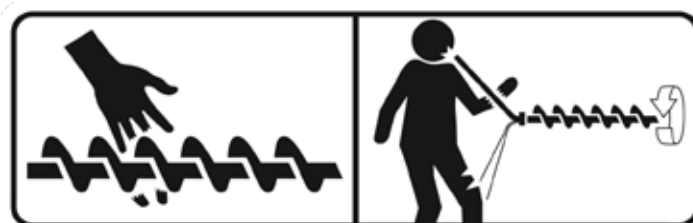
Please become familiar with warning and caution labels on the spreader.

Warning - Handling of abrasive and chemical material can cause injury



- Visible when removing the spinner assembly

Warning - Rotating auger! Keep hands clear. Wrench might slip when working with auger



- Located on the chute

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



Control placement

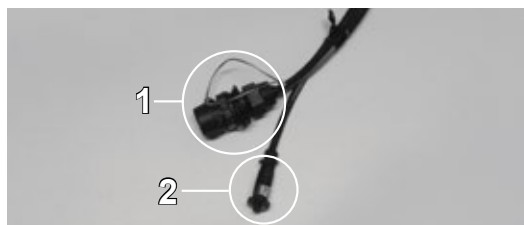
The controller should be mounted in a place where it can easily be reached and doesn't interfere with the access to vehicle controls or other equipment. Make sure that the spreader control panel doesn't block the vehicle airbag area. Protect the controller from water, dirt and dust.



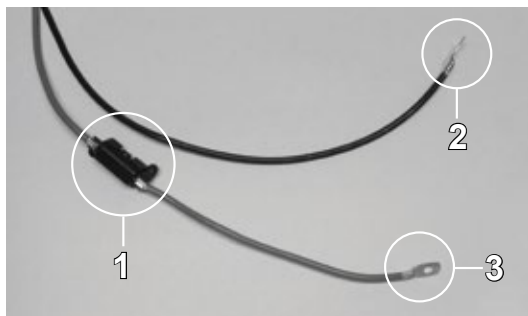
Vehicle side harness cable kit



Vehicle side harness cable kit



1. Power connector to spreader
2. Data connector to spreader



- To car battery
1. 80A fuse
 2. Black (-)
 3. Red (+)



In-cabin connector

Accessory cables

Red	=	Emergency stop (standard)
Black	=	Water pump
Yellow	=	Beacon light
Blue	=	Camera power feed
White	=	LED worklight



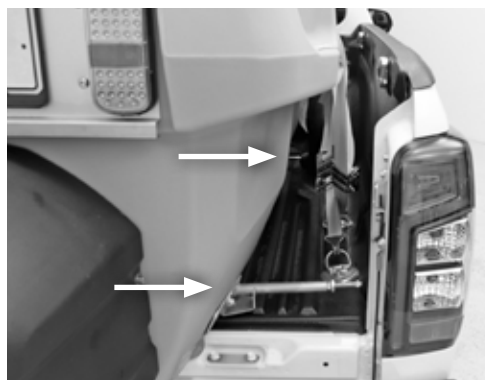
Mounting the spreader



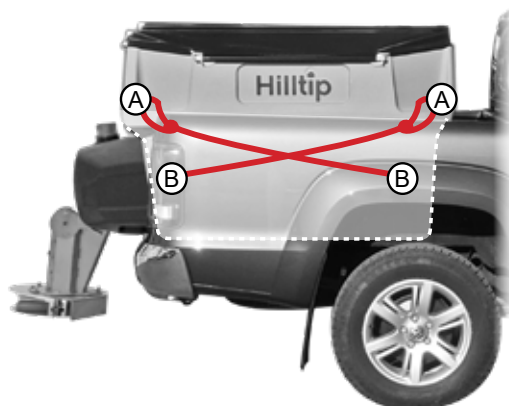
CAUTION

Grip spreader properly when mounting or removing the unit to avoid dropping.

1. Remove tailgate from vehicle.
2. Check the truck bed and remove sharp debris or foreign objects to protect the hopper from damage. Also remove gasoline or other flammable liquids.
3. Place the fixation kit (optional) on the truck bed. The fixation kit prevent the spreader from sliding.
4. Lift the spreader by the molded-in handles located in the corners of the hopper.
5. After placing the spreader, use tensioning straps to secure it to the truck. Cross the straps as shown in the picture to the right. Check the tension of the straps, and make sure that the spreader is still securely fastened before every use.



Optional fixation kit



A: Point A secured to hopper corner
B: Point B secured to car fastening point

Mounting Principle



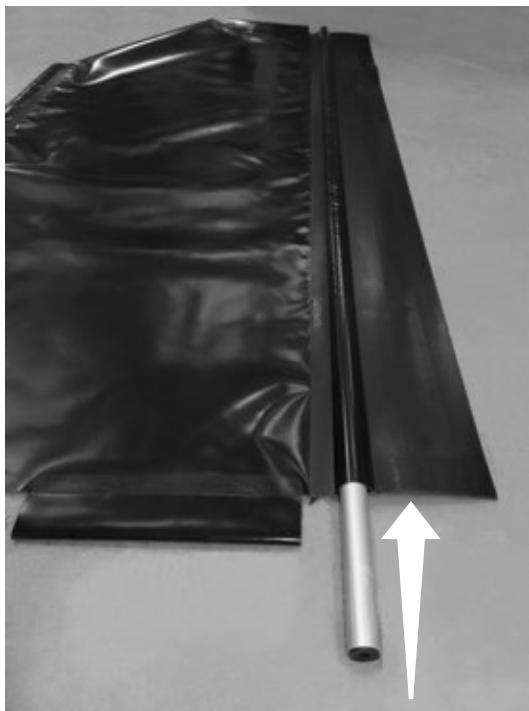
Mounting the top screen

Place the screen so that it fits the hopper opening.

Fasten the brackets on both sides of the screen, the flat bracket should be in the middle.



Mounting the Tarp cover assembly



1 Insert one of the longer pipes into the opening in the cover (pre-mounted)



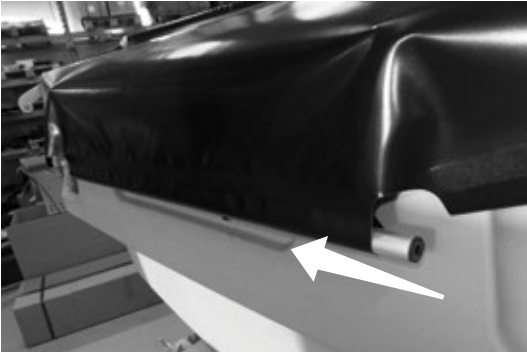
2 Insert brackets in both sides.



3 Connect pipe and brackets with bolts in both ends.



4 Place the second long pipe under the cover and connect to the brackets using bolts



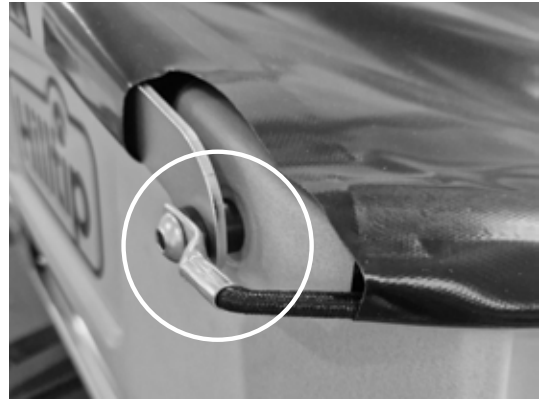
5 Insert the short pipe into the cover, parallel to the other pipes.



6 Insert rubber wires into the two remaining openings in the cover.



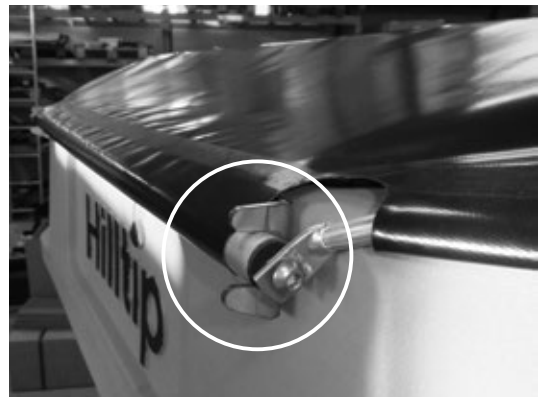
7 Place washer and bush around the bracket, as shown in the picture.



8 Connect washer, bracket, bush and rubber wire with bolt.

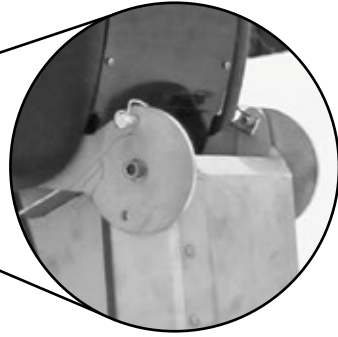
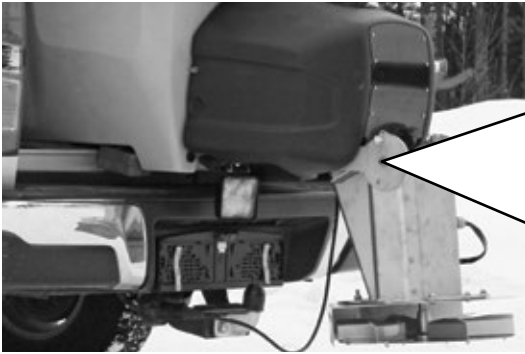


9 Fasten the rubber wire and the shorter pipe with bolt.



10 Fit pipe to the brackets attaching the screen, and make sure the whole tarp cover assembly is properly fastened

Flipping up the chute



1 Remove cotter pins on both sides of the chute



2 Flip up the chute



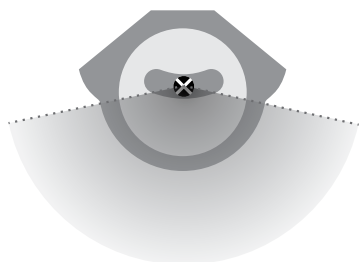
3 Put back the cotter pins

Spreading pattern

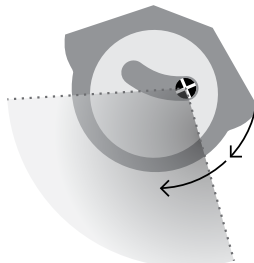
Rotate the spinner plate to position the material drop point and change spreading pattern.

⊗ = material drop point

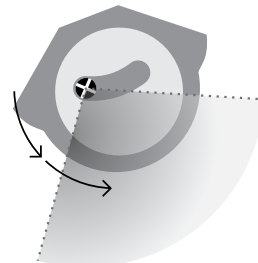
Drop point in center



Spinner plate rotated cw



Spinner plate rotated ccw



Rotate jammed auger manually

If the error code “Auger jammed” appears, the auger can be rotated by hand to release any solidified material or rocks. Always turn off the spreader before servicing it.

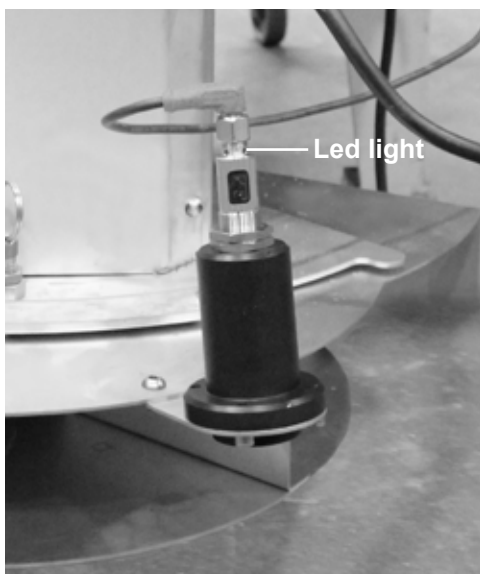
Use a 17 mm socket wrench or similar tool to turn the auger screw.



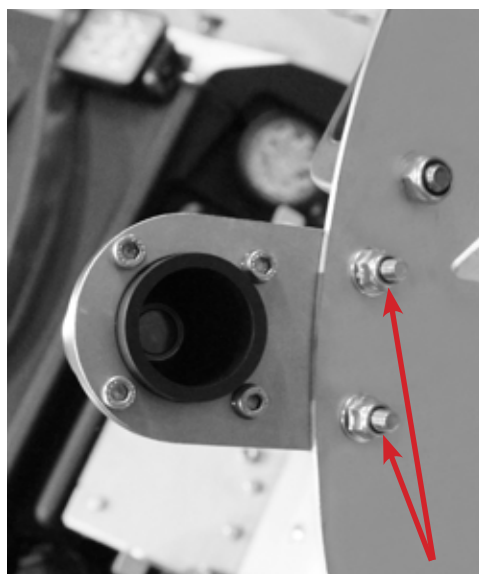
Rotate auger manually by turning it clockwise

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 and turns off when material is coming.



The sensor is bolted on the spinner frame.



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

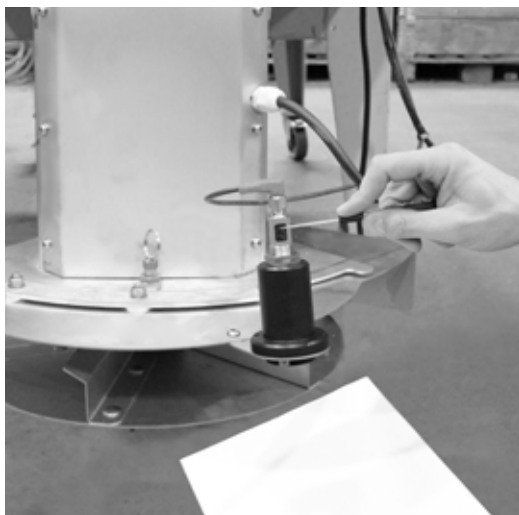


When there is no material coming out from the spinner, you see the message “spreader empty” on the controller. The message disappears when material is coming out from the spinner.

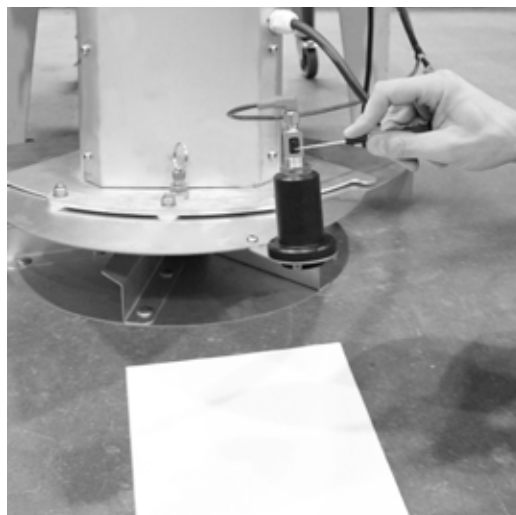
Calibration of end of material sensor

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

How to calibrate:



1. Hold a 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 ones. 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:

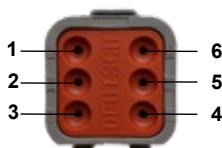
- Blue - to ground terminal
- Black - to pin nr 29
- Brown - to pin nr 35

Linear motor for chute and hatch (optional)



Actuator with potentiometer with 0-5V signal

- H30664 - Linear actuator 100 mm 12V
- H30665 - Linear actuator 100 mm 24V



Rear view

Pin	Actuator with potentiometer with 0-5V signal
#1	Blue
#2	Brown
#3	White
#4	Red
#5	-
#6	Yellow

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.

Filling the integrated pre-wet tank



NOTE

Only use water or de-icing liquids for the pre-wetting system

The hopper body has an integrated tank that should be used only if you had the optional pre-wetting system included to your spreader package. Only use liquids recommended in this manual.

The opening to the integrated pre-wetting tank is covered by a lid, and located on the side, inside the hopper body



Removing the spreader

**CAUTION**

Grip spreader properly when removing or mounting the unit to avoid dropping.

**NOTE**

The hopper should always be emptied before removing the spreader.

**NOTE**

Always close hopper lids to avoid moisture build-up. Do not let spreader sit idle with material in the hopper for a longer time. This could lead to compact material, reduced or blocked material flow and cause damage to the hopper.

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.

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)

Change gearbox oil: Remove the plug in the bottom of the gearbox, remove and discard the old oil properly. Put back the bottom plug. Unplug the plug from the top of the gearbox, insert new oil (0,9 dl), and put back the plug. See recommended oils in the table on next page.

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.

Recommended gearbox oil:

CASTROL	SHELL	VALVOLINE	MOBIL
SYNTRAX 75W90 GL-5	SPIRAX S75W90 GL-5 SYNTHETIC	HD SYNTHETIC 75W90 GL-5	MOBILUBE SHC 75W90 GL-5

IMPORTANT:

It is strongly recommended and of great importance that you regularly apply dielectric grease on all electrical connections and protect them with caps when not in use to prevent corrosion.



Always keep caps on when the cables are not connected or in use.



To prevent corrosion, use dielectric grease on electrical connectors before connecting them.



While cables are connected, also connect matching caps to protect them from dirt and dust.

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.

Product EOL (End Of Life)

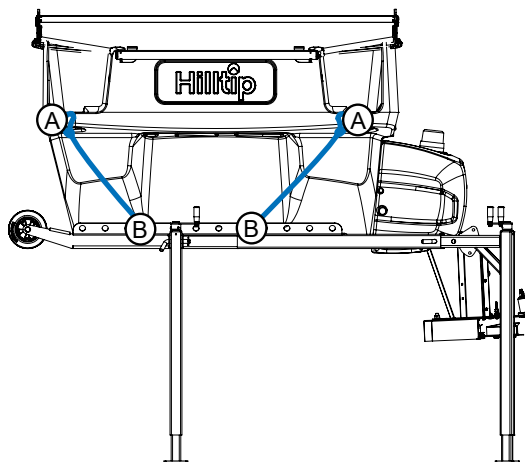
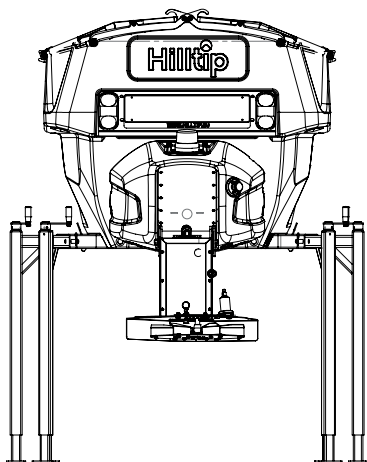


The body of this product is made of LLDPE plastic, a 100% recyclable material.

For proper disposal, please contact your local recycling center for further instructions or advice.

Optional legstand

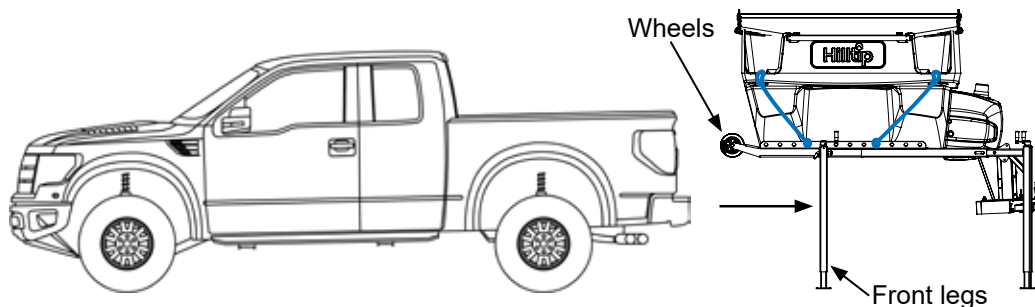
The spreader is required to be secured with tensioning straps in all four corners to the legstand.



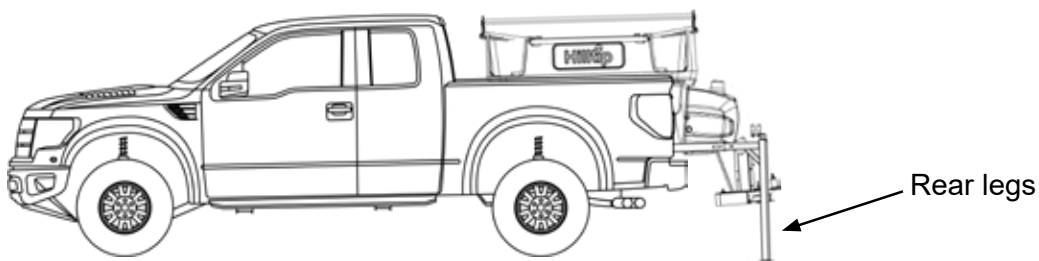
A: Point A secured to hopper corner
B: Point B secured to legstand

Move spreader from legstand to vehicle

1. Move the vehicle towards the front legs of the legstand. Lower the front legs until the wheels on the legstand rests against the truck bed.

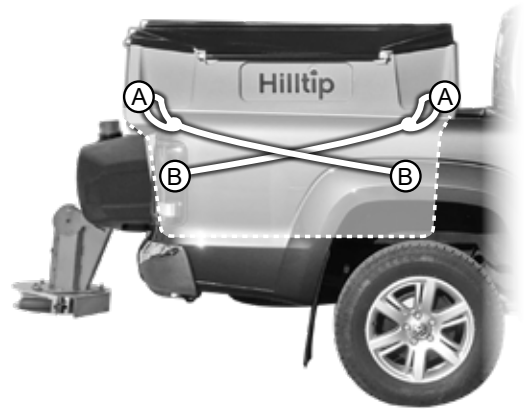


2. Remove the front legs and move the vehicle until the spreader is in the correct position. Lower the rear legs until the spreader is straight on the truck bed.



- Remove the rear legs and secure the spreader to the vehicle with tensioning straps.

A: Point A secured to hopper corner
B: Point B secured to car fastening point

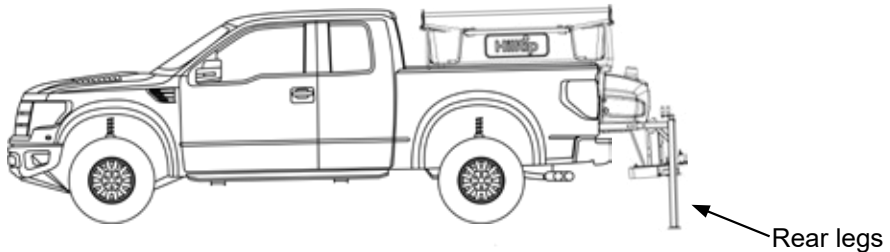


CAUTION

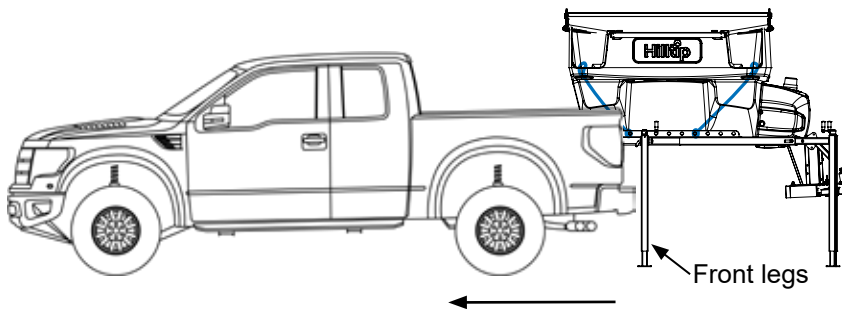
Always secure the spreader to both legstand and vehicle with tensioning straps.

Move spreader from vehicle to legstand

- Mount the rear legs to the legstand and loosen the tensioning straps between the spreader and the vehicle.



- Raise the rear legs until the spreader rests on the front wheels.



- Move the vehicle forward until it is possible to mount the front legs on the legstand. Adjust the height of the legs until the spreader is straight.

Caution!

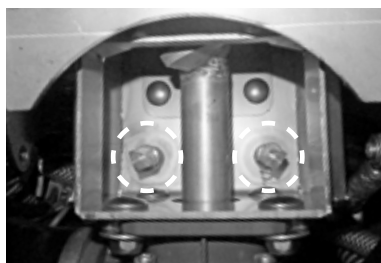
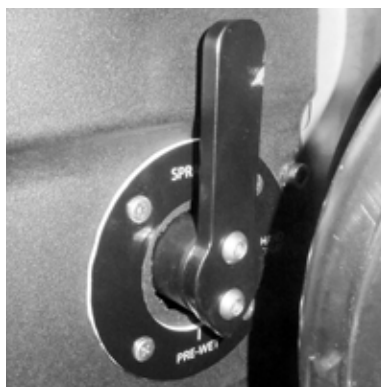
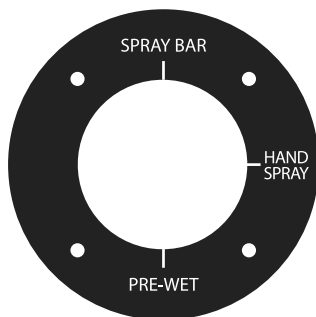
The liquid tank should always be emptied after each use (turn the red handle). Also empty the filter. If liquids are left in the tank for an extended period of time, it may freeze and cause damage to your spreader.

Also make sure to clean the filter regularly.

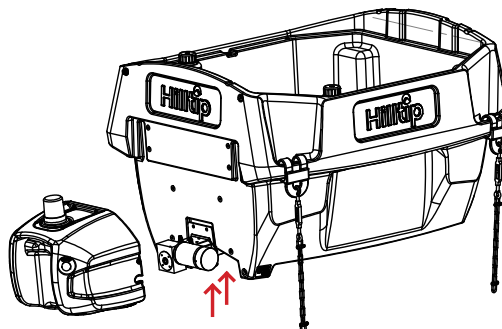


Pre-wet (optional)

1. Start with selecting PRE-WET as spreading mode in the controller.
Go to: Main menu → Settings → Wetting → select Pre-wet
2. You will find a handle on the right side of the chute. Point the handle towards PRE-WET



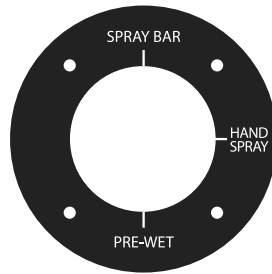
The pre-wet nozzles are located where the auger ends.



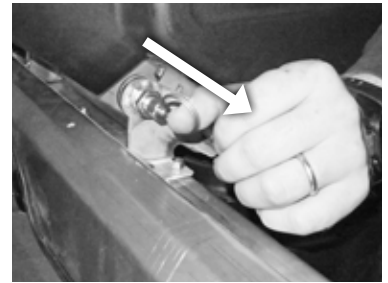
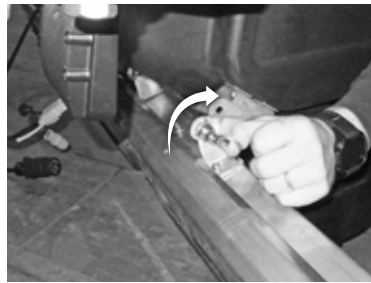
Spray-bar (optional)

1. Start with selecting Spray-bar as spreading mode in the controller.
Go to: Main menu → Settings → Wetting → select Spray-bar

2. You will find a handle on the right side of the chute. Point the handle towards SPRAY BAR



3. Attach spray-bar to the chute:



4. Attach hose to the spray bar and fasten the cotter pins on both sides

5. Turn the red cap to turn on the liquid flow to the side nozzles (will increase the spray width with 1-1,5 m on each side)

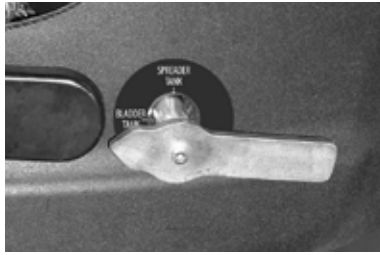


6. Turn nozzle to change nozzle type:

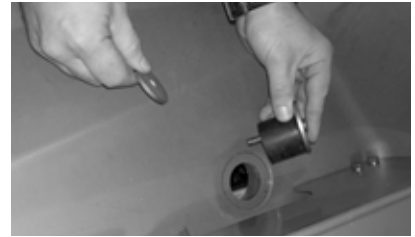


Bladder tank (optional)

1. You will find a handle on the left side of the chute. Point the handle towards BLADDER TANK



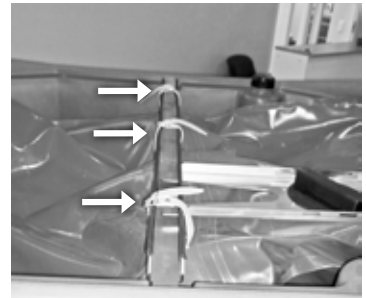
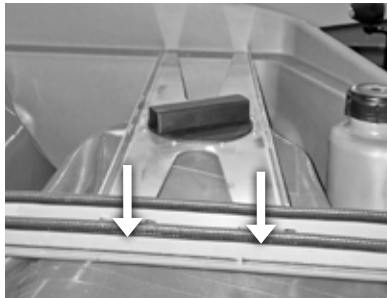
2. Remove the plug from the bottom of the spreader



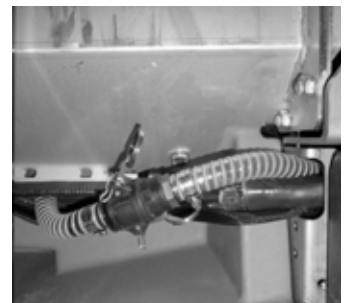
3. Place the bottom support plate and bladder tank. Pull the hose through the hole of the plate and the hopper.



4. Place and fasten the metal bars on top of the hopper, strap the bladder tank to the bar.



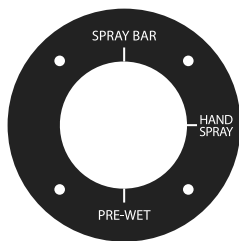
5. Fasten the hose from the bladder tank to the spreader liquid system (under the hopper)



Hose reel (optional)

1. Start with selecting Hand spray as spreading mode in the controller.
Go to: Main menu → Settings → Wetting → select Hand spray

2. You will find a handle on the right side of the chute. Point the handle towards HAND SPRAY



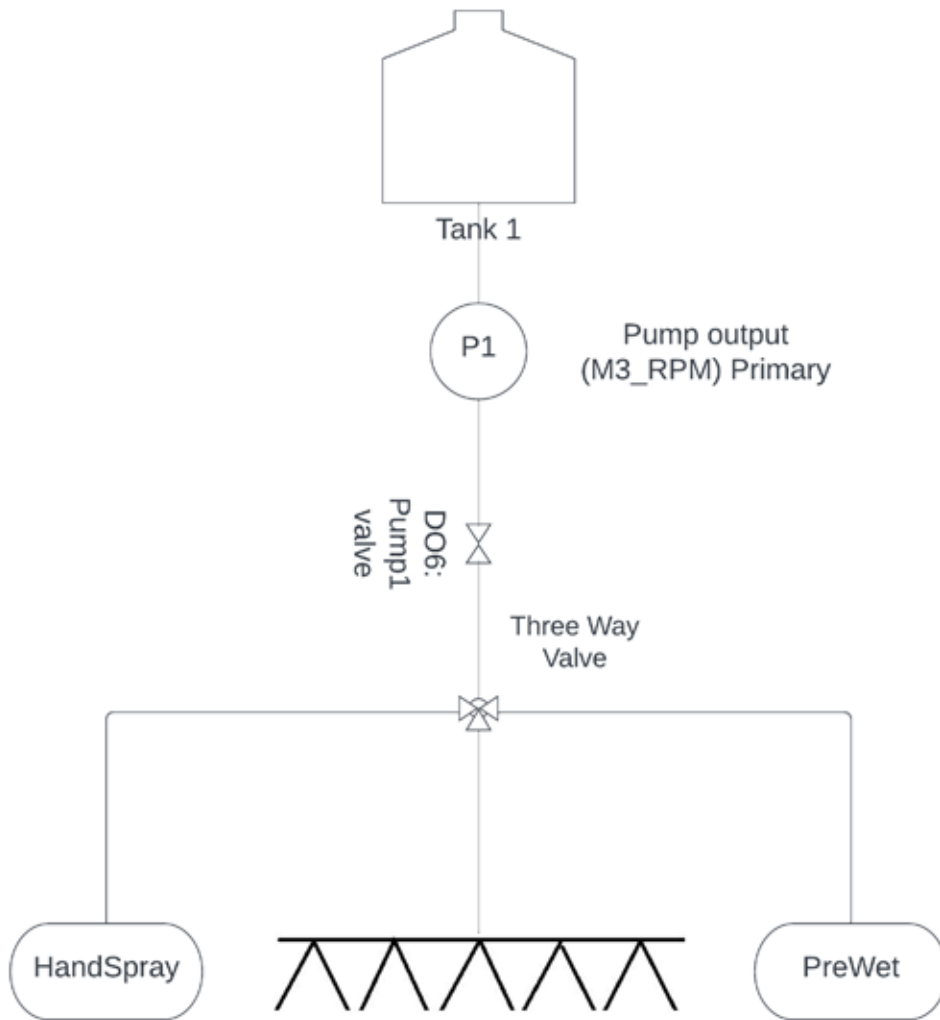
IMPORTANT!

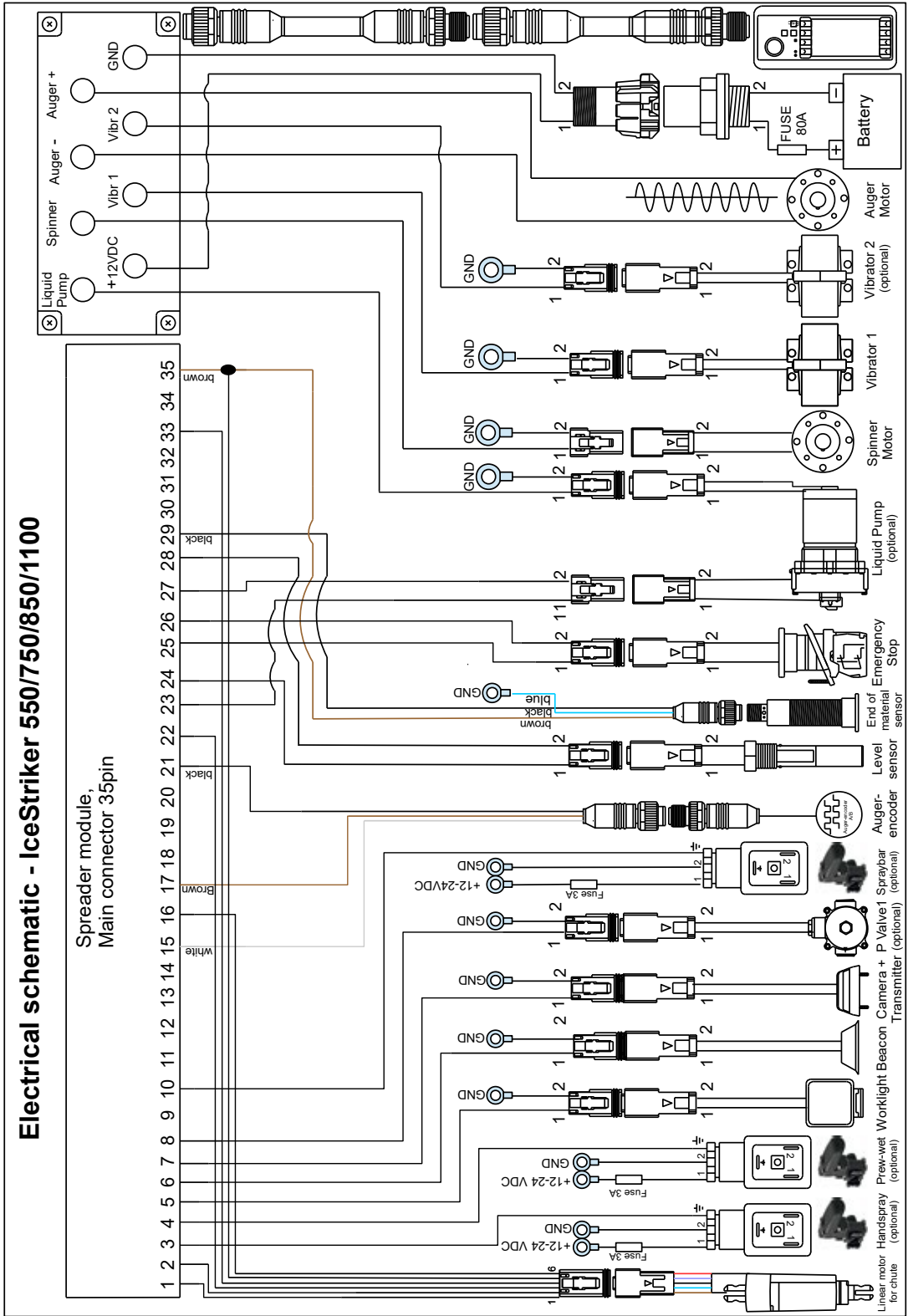
Liquid system clean-out instructions

1. Disconnect spraybar hose at rear of vehicle at Quick-disconnect point. (see page 21)
2. Turn on pump until the hopper tank is empty (alternatively pump the salt liquid back into your storage tank). Once empty, turn off the pump.
3. Disassemble the filter.
4. Connect and press the clean-out hose installed with cone into pump inlet inside filter housing.
5. Add water and RV antifreeze into a barrel, where you put the other end of the clean-out hose.
6. Turn on pump.
7. Reinstall quick-disconnect hose to hosereel/spraybar.
8. Run pump until it is running clear out of each nozzle.

Attention! Ignoring these important steps may cause damage to the pump and the entire liquid system. **If damage is caused by avoiding these steps, the warranty will no longer be valid.**

Fluid schematic





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: Salt, Sand and Fertilizing Spreader and Spray applications

Equipment Model Designation: Hilltip IceStriker 550, 750, 850 and 1100

Equipment applications: UTV, Pickup, Municipal vehicles

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

- 2006/42/EC

- EN 15597-1

- ECE R10

I, the undersigned, hereby declare that the equipments specified above, that have been assembled by Oy Hilltip Ab, conforms to the above directives and standards

Pietarsaari March 1st, 2020

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:



Oy Hilltip Ab
Pukkisaarentie 6
FIN-68600 Pietarsaari
Finland

www.hilltip.com
info@hilltip.com

Construction, specifications and other details are subject to change without notice.