



Ice **STRIKER™**



OWNER'S MANUAL

800-1450 LITER POLY ELECTRIC SPREADER

This manual replaces all editions with an earlier date.

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CAUTION

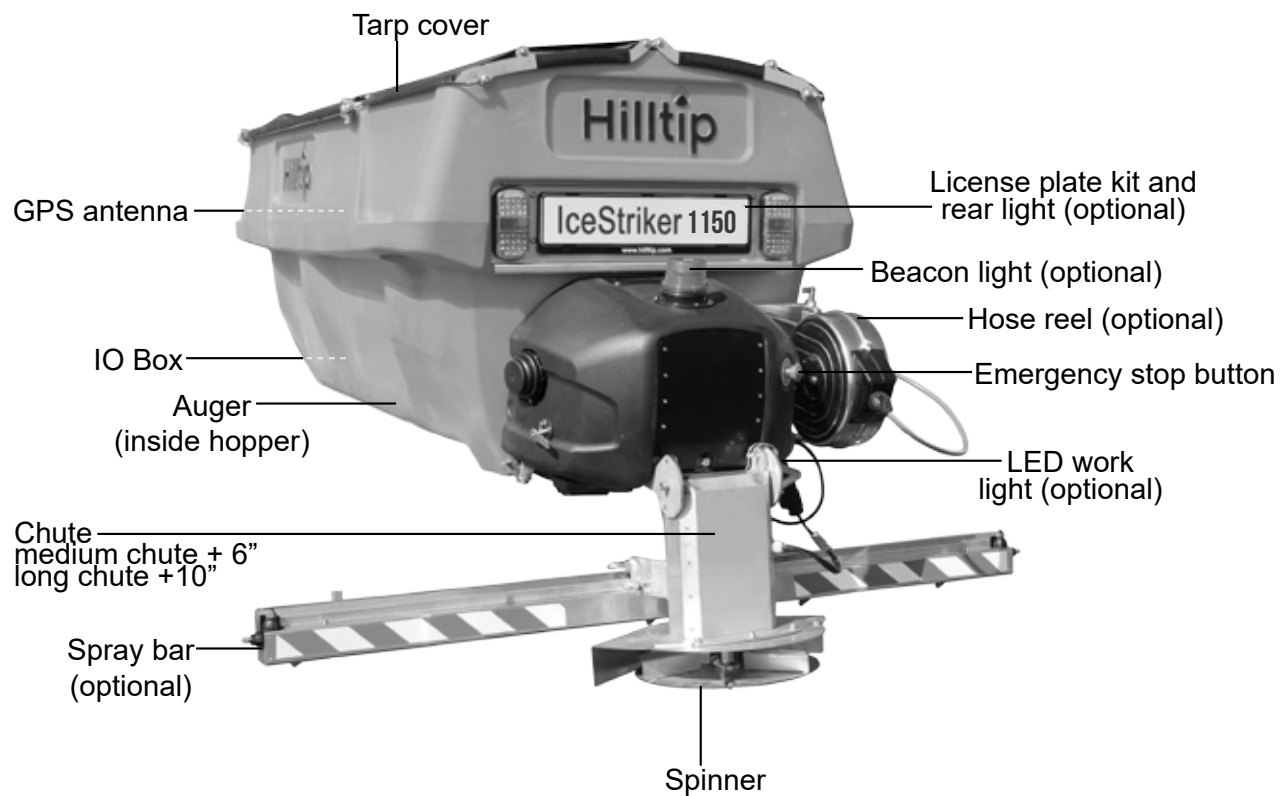
Read this manual before installing
or operating the spreader

Introduction

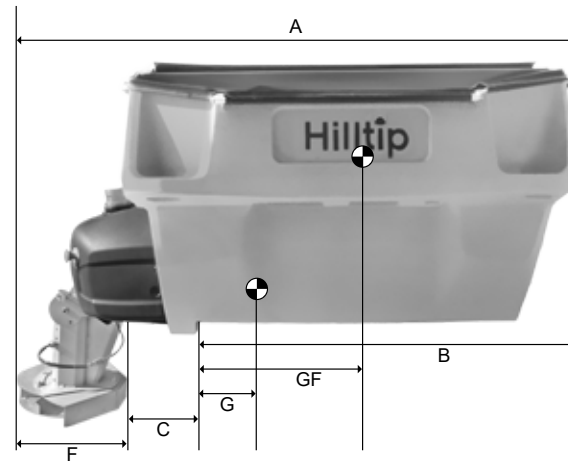
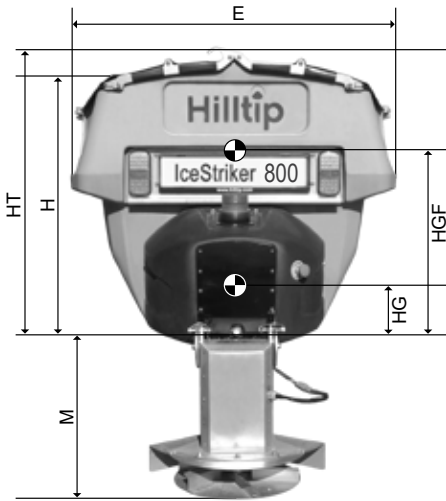
The Hilltip spreading device is designed for winter road-area maintenance and uses different technologies for spreading both solid materials and liquid. The solid material is fed by an auger and distributed by the spinner, this basic spreading function can be used for spreading sand, gravel, salt, mixtures 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 (40') 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)	800	1100	1150	1450
A	Total length	83"	83"	103"	103"
B	Maximum external hopper length	51"	51"	70"	70"
C	Free distance between hopper and chute	14"	14"	14"	14"
E	Maximum external width (with tarp mounted)	49"	49"	49"	49"
F	Total length of spreading group (disc + chute)	18"	18"	18"	18"
G	Distance from the centre of gravity to the rear part of the hopper (empty)	9"	9"	11"	11"
GF	Distance from the centre of gravity to the rear part of the hopper (full)	22"	22"	28"	28"
H	Height of the hopper from the loading surface of the carrying vehicle	31"	36"	31"	36"
HG	Height of the centre of gravity from the loading surface of the carrying vehicle (empty)	3"	5"	10"	12"
HGF	Height of the centre of gravity from the loading surface of the carrying vehicle (full)	20"	24"	24"	28"
HT	Total height of the hopper from the loading surface of the carrying vehicle	36"	42"	36"	42"
M	Distance between spreading disc and loading surface of the carrying vehicle	Short chute = 18" Medium chute = 24" Long chute = 28"			

Description	800	1100	1150	1450
Hopper volume, struck (<i>H</i> level)	0.7 yd ³	1.0 yd ³	1.0 yd ³	1.3 yd ³
Hopper volume, rounded (<i>HT</i> level)	0.80 yd ³	1.10 yd ³	1.15 yd ³	1.45 yd ³
Liquid tank capacity	87 gal	87 gal	120 gal	120 gal
Empty spreader weight	320 lb	375 lb	420 lb	475 lb
Full loaded spreader solid material, <i>H</i> level	2083 lb	2844 lb	2923 lb	4001 lb
Full loaded spreader solid material, <i>HT</i> level	2542 lb	3126 lb	3523 lb	4354 lb
Full loaded spreader solid material, <i>H</i> level, and liquid material full tank	2822 lb	3572 lb	3915 lb	4994 lb
Full loaded spreader solid material, <i>HT</i> level, and liquid material full tank	3270 lb	3854 lb	4515 lb	5346 lb

These numbers are based on the weight when using dry, coarse sand

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 25 ft 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

This spreader is suitable for utility vehicles, light pick-ups, trucks and trailers with a minimum capacity of 1323 lb.

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 spattering material.

Emergency stop

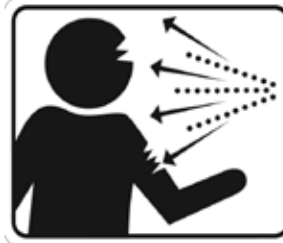
The spreader has an emergency stop button located at the right side of the chute. All spreader functions will immediately stop by pushing this button.



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



- 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

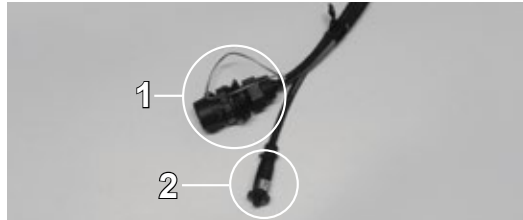
The controller should be mounted in a place where it can easily be reached and doesn't interfere with the access to vehicle controls or other equipment. Make sure that the spreader control panel doesn't block the vehicle airbag area. Protect the controller from water, dirt and dust.



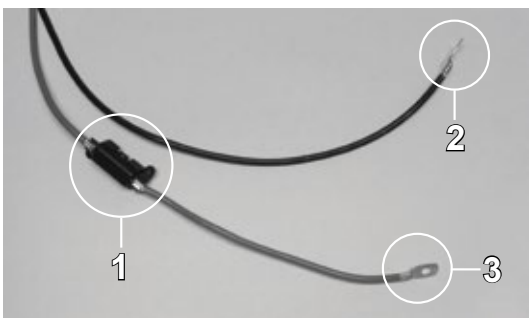
Vehicle side harness cable kit



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



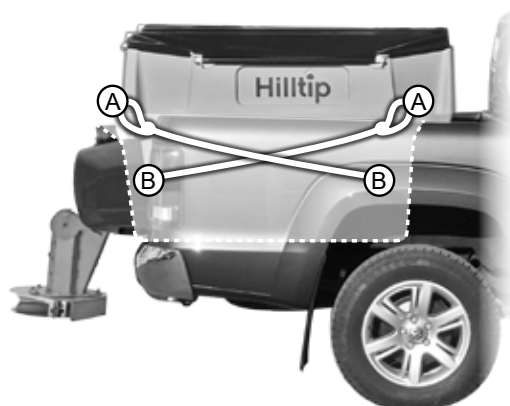
Mounting the spreader



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. Lift the spreader by the molded-in handles located in the corners of the hopper.
4. 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.



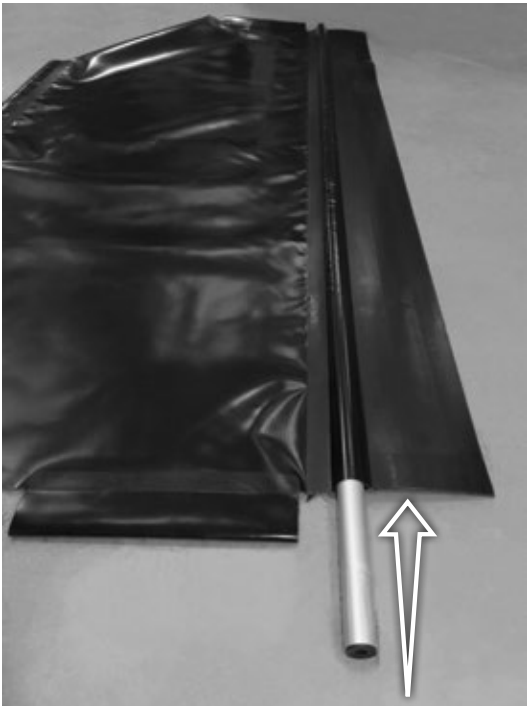
A: Point A secured to hopper corner

B: Point B secured to car fastening point

Mounting Principle



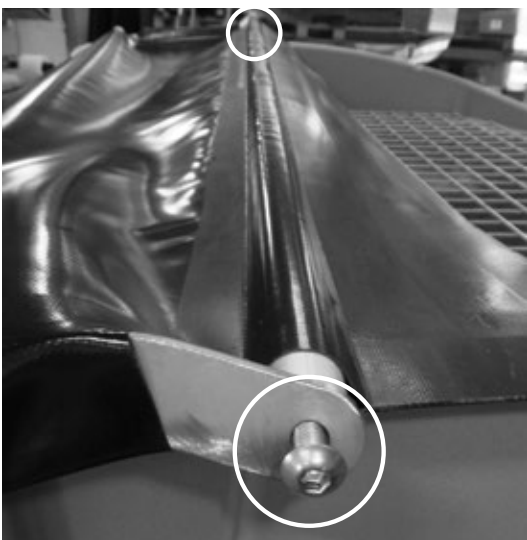
Mounting the Tarp cover assembly



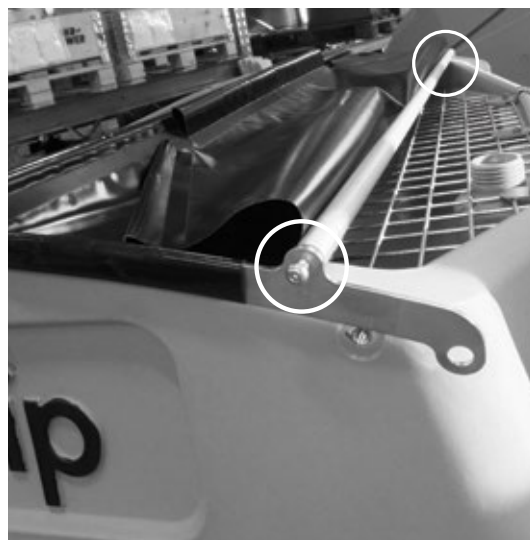
1 Insert one of the longer pipes into the opening in the cover (pre-mounted)



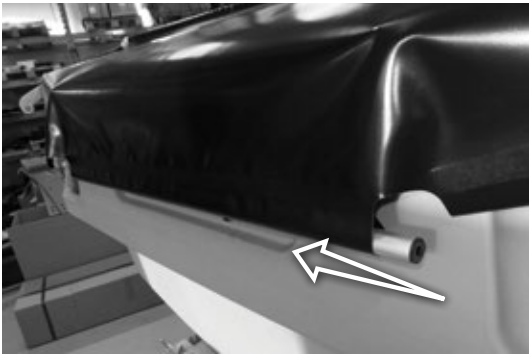
2 Insert brackets in both sides.



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.



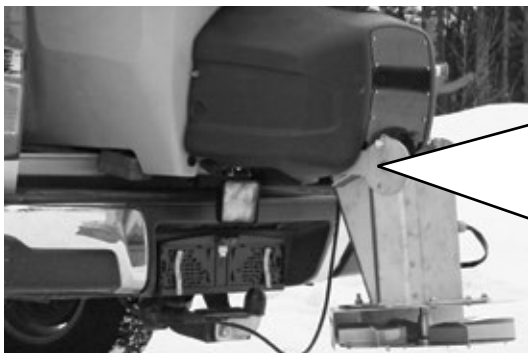
10 Fit pipe to the brackets attaching the screen, and make sure the whole tarp cover assembly is properly fastened

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.



Flipping up the chute



1 Remove cotter pins on both sides of the chute



2 Flip up the chute



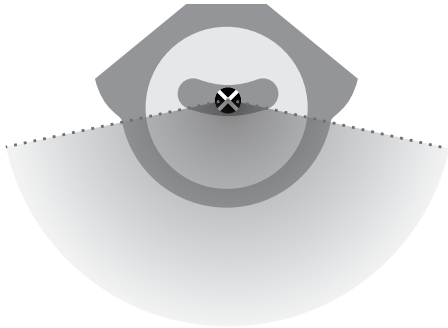
3 Put back the cotter pins

Spreading pattern

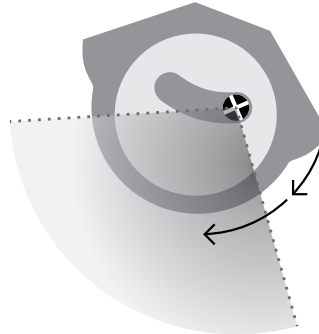
Rotate the spinner plate to position the material drop point and change spreading pattern.

⊗ = material drop point

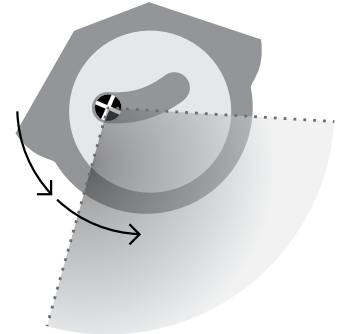
Drop point in center



Spinner plate rotated cw



Spinner plate rotated ccw



Rotate jammed auger manually

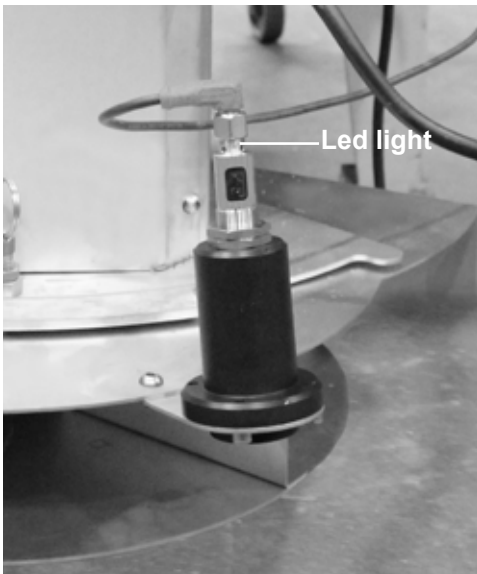
If the error code “Auger jammed” appears, the auger can be rotated by hand to release any solidified material or rocks. Always turn off the spreader before servicing it. Use a 17 mm socket wrench or similar tool to turn the auger screw.



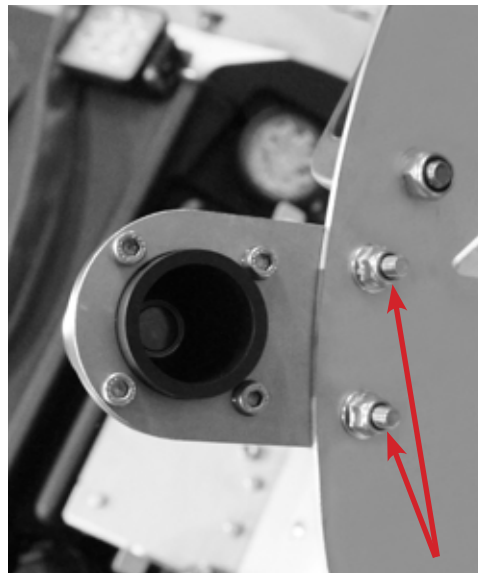
Rotate auger manually by turning it clockwise

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.

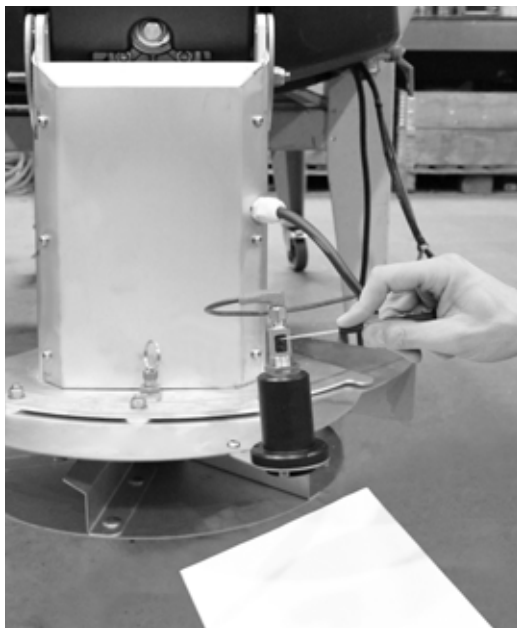


When there is no material coming out from the spinner, you see the message “spreader empty” on the controller. The message disappears when material is coming out from the spinner.

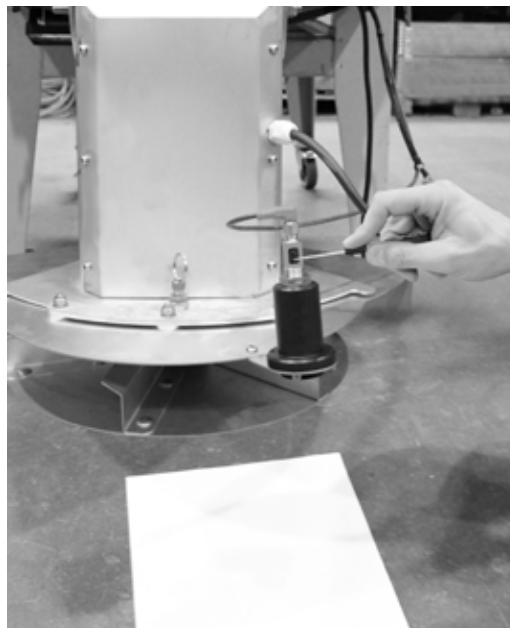
Calibration of end of material sensor

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

Average material weights

Material	Weight (lb/ft³)	Weight (lb/yd³)	Weight (kg/m³)
Fine salt - dry	75	2024	1201
Coarse salt - dry	45	1215	721
Coarse sand - dry	100	2700	1602
Coarse sand - wet	120	3240	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.



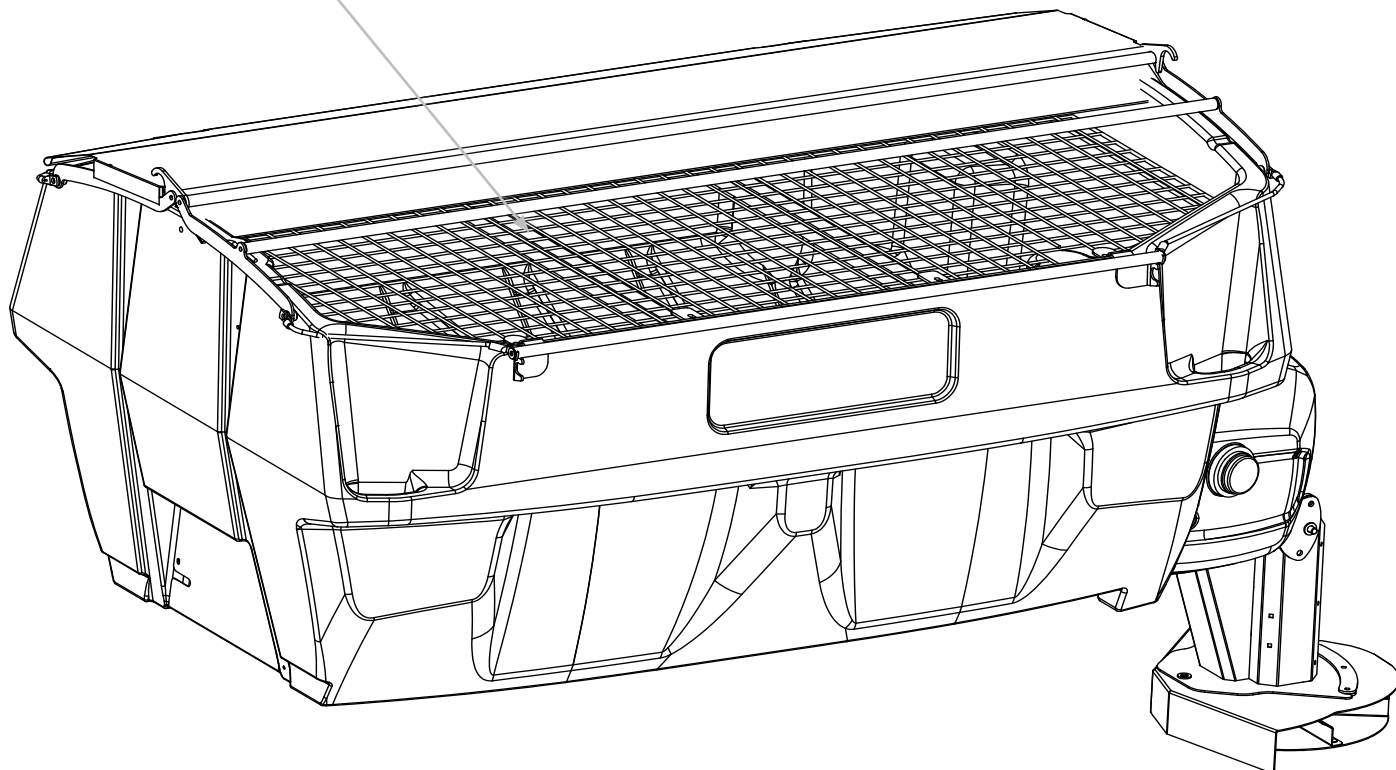
NOTE

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.



CAUTION

Do not lift spreader by this component. Lifting here could cause personal injury and material damage.



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

i 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 (0.2 gal), 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.

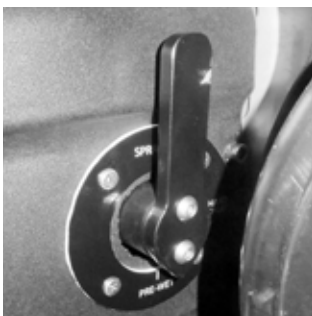
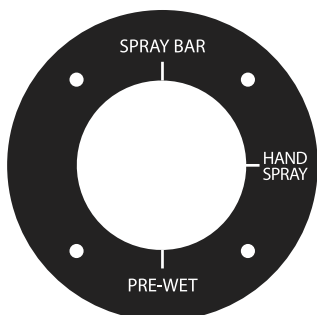
Caution!

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.

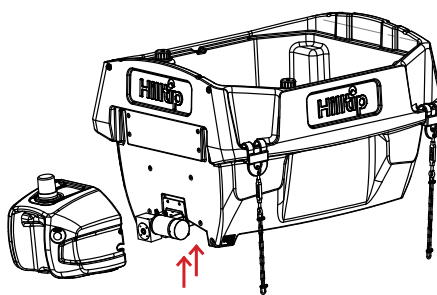
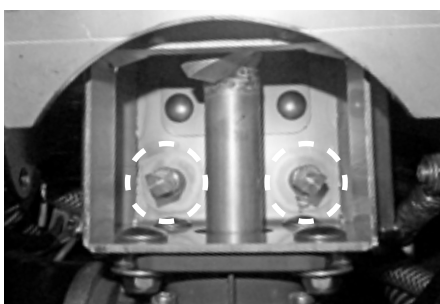


Pre-wet (optional)

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

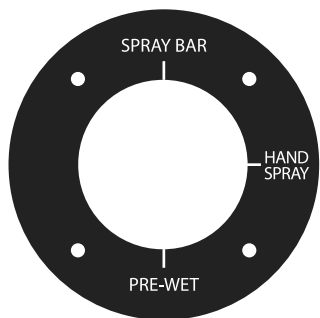


The pre-wet nozzles are located where the auger ends.

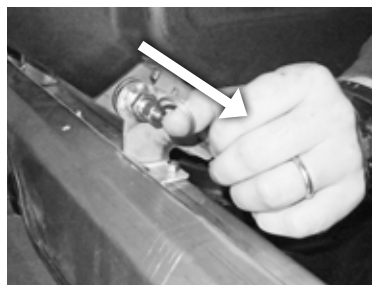


Spray-bar (optional)

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 3-5 ft on each side)

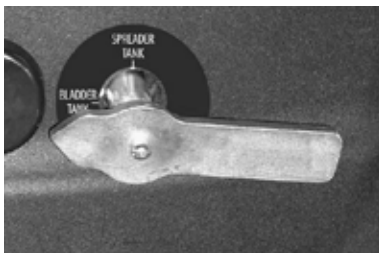


6. Turn nozzle to change nozzle type:



Bladder tank (optional)

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



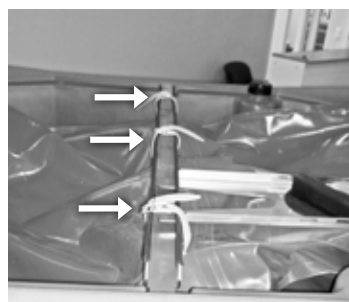
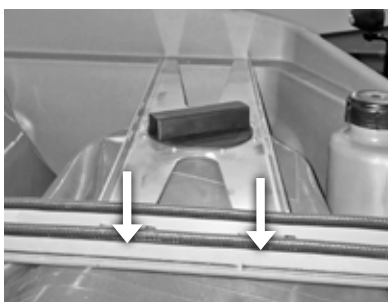
2. Remove the plug from the bottom of the spreader



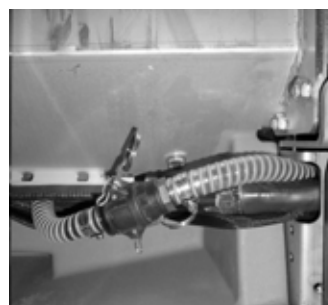
3. Place the bottom support plate and bladder tank. Pull the hose through the hole of the plate and the hopper.



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

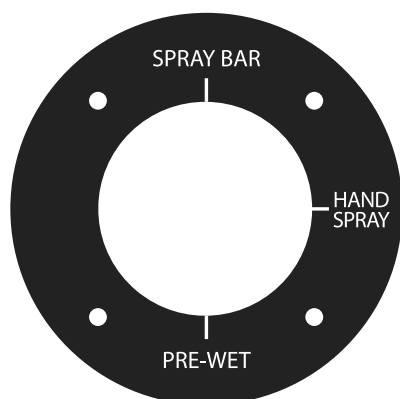


5. Fasten the hose from the bladder tank to the spreader liquid system (under the hopper)



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



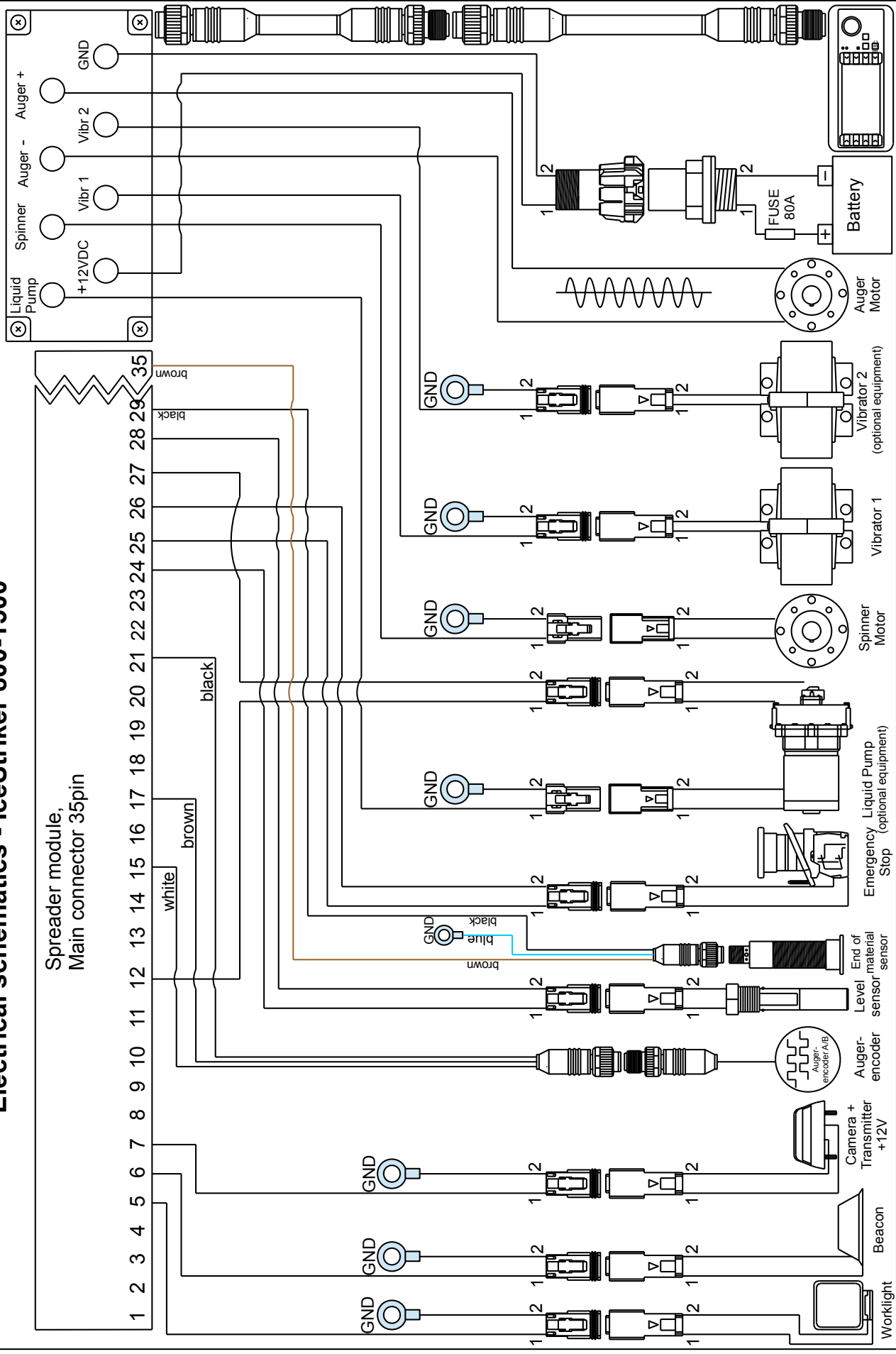
IMPORTANT!

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 hosing.
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 hose reel/ 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.**

Electrical schematics - IceStriker 800-1500



WARRANTY INFORMATION

This warranty replaces all previous warranties

Warranty

This Limited Warranty applies to the IceStriker™ spreader, its spare parts and additional equipment (from now on referred to as the "product"), purchased from Hilltip or some of the authorized dealers.

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 some of the authorized dealers 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.

What will we do to correct problems?

Hilltip, or some of the authorized dealers will repair or replace the product or part at no charge, using either new or refurbished replacement parts.

How long does the coverage last?

The Warranty Period for products purchased from Hilltip, or some of the authorized dealers 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.

What does this limited warranty not cover?

Parts must be properly installed and used under normal conditions for the warranty to be valid. 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 some of the authorized dealers.

What do you have to do?

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



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 800, 1100, 1150 and 1450

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

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

Pietarsaari March 1st, 2016

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:



Hilltip Corp.

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USA

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