STORM

Battery Ride-On Floor Scraper
Instruction Manual

Rev 4.2020
READ MANUAL BEFORE OPERATING EQUIPMENT

General Description

The Storm is powered by an electric motor driving a tandem hydrostatic pump system, creating a (skid-steer) zero turn radius drivetrain. Surface covering and coatings are removed by lowering a weighted blade onto the surface and moving forward under a high torque drive system. A flexible sharpened blade conforming to the floor surface then removes the surface coating. The weight of the machine holds the blade firmly to the floor and does not allow the blade to lift or jump over well-adhered surface coating material, thus lifting the floor coating.

Specifications

Weight	2,620 lbs.
Removable weight	550 lbs.
Machine without weights	2,070 lbs.
Height	57 inches
Width	25 inches
Length	58 inches with blade
Max Ground Speed SS Model	215 ft./min. 270 ft./min.
Hydraulic fluid capacity	3 gallons
Oil for hydraulics	15w50 full synthetic motor oil

SAFETY AND PRECAUTIONS

Before operation of the STORM please read the entire operation and safety manual with complete understanding of the safety section. If you have any questions about safety and/or precautions, please call 1-866-636-7763.

A regular schedule of Preventive Maintenance on your equipment is the best protection against unpleasant surprises that could slow production and/or result in injuries. Here are a few suggested safety, operating, and maintenance tips.

- Maintenance or inspection - Before performing any maintenance or repairs.
    - Make sure the STOP button is pushed down.
    - Remove the cutting blade or lower it to the floor.
    - Chock the rear wheels.
- Wear proper eye and ear protection. Wear heavy-duty work gloves at all times, especially when changing blades or attachments.
- Check machine daily for loose bolts or nuts and torque to the correct torque specifications. For example, the center rear wheel motor axle nut should be torqued to at least 200 ft/lbs. Not doing this could cause the wheel and hub to fall off and would also cause the wheel motor axle to be damaged, resulting in high replacement costs.
- Replace worn parts when necessary.
- Do not reach into blade or control arm areas while machine is in operation.
- Be sure a qualified electrician does all electrical inspections or changes.
- Loose surface coating can cause dangerous footing. Always be alert and careful.
- After replacing parts, make sure all tools used are removed from the machine.
- Always lower blade to the ground when the machine is unoccupied by the operator to prevent unintentional bodily harm with the blade.

- Never allow unauthorized personnel or the general public into the work area.
- The work area should be barricaded off to adequately keep all untrained persons out of the work site. If an unauthorized person enters the work area, stop the machine immediately and do not restart the machinery until they have left the work area.
- Always allow a buffer safety zone around all surface preparation activity.
- The STORM is not a toy. All operators must be over 18 years of age and must have read and reviewed the safety and procedures manual before operating the machinery.
- The STORM is designed for surface preparation ONLY. It is not intended for towing, pushing, or any other procedure not described in this manual.
- No smoking or open flame is allowed while machinery is running or within 50 feet of the machine.
- Operator must be sober, not under the influence of drugs or medication, and under full control of all bodily senses while operating this machinery.
- When transporting the STORM, it is recommended to remove the cutting head and use a transport dolly. When set up properly, this procedure spreads the weight of the machine over 6 points rather than just 4 and allows you to get over door thresholds without damaging them.
- Always park the STORM on a level surface and chock the wheels. Not doing this could lead to the machine rolling away.
- Make sure to unplug the power cord before operating the STORM.

WARNING: Exposure to dust may cause respiratory ailments.

Potential Hazard

- Possible employee exposure to nuisance dust during cutting, grinding, machining, polishing, sanding, scraping, and so forth.

Possible Solutions

- Identify exposure scenarios and perform appropriate evaluations.
    - Perform exposure measurements for the compounds used.
    - Keep exposures below acceptable exposure levels.
- Use wet operations when possible to reduce airborne dust concentrations.
- Provide appropriate ventilation to reduce dust concentration levels in the air.
- Use respiratory protection when necessary to further reduce exposure and protect employees. [29 CFR 1910.134]
- Maintain adequate housekeeping to remove unwanted dust and reduce concentration levels.

BATTERY CHARGER INFORMATION

Delta-Q On Board Charger

Read this information in its entirety before using your on board Delta-Q Charger. For technical support, please contact the manufacturer or distributor of your vehicle or machine, as their version of this charger may require unique operating instructions. For additional product documentation please see www.delta-q.com/resources

Connect charger power cord to an AC outlet that has been properly installed and grounded in accordance with all local codes and ordinances. A grounded AC outlet is required to reduce the risk of electric shock—do not use ground adapters or modify the plug. Do not touch uninsulated portions of the output connector or uninsulated battery terminals. Disconnect the AC supply before making or breaking the connections to the battery. Do not open or disassemble the charger. Do not operate this charger if the AC supply cord or DC output cord is damaged or if the charger has received a sharp blow, been dropped, or is damaged in any way. Refer all repair work to the manufacturer, or qualified personnel. This charger is not intended for use by persons (including children) with reduced physical, sensory or mental capabilities, or lack of experience and knowledge on electrical systems and battery charging, unless they have been given supervision or instruction concerning the use of the charger by a person responsible for their safety. Children should be supervised to ensure they do not play with the charger.

- The charger may become hot during charging. Use hand protection to safely handle the charger during charging.
- To maintain safe operations, the unit automatically reduces its output power if the temperature rises above set thresholds, or if the AC input voltage is too low. The charger will also reduce output power if it detects that the battery pack is damaged.
- If power is interrupted, and then returns, the charger will start and continue to operate without hazard to the user, or damage to the batteries.
- Unplug the charger from both AC and DC sources when cleaning, moving or conducting any maintenance or repair on the charger. No user serviceable parts inside. Do not remove the cover due to the risk of electrical shock.
- Do not expose charger to oil, dirt, mud or direct heavy water spray when cleaning the machine.

- If the detachable AC input power cord set or DC output cord is damaged, do not use the charger until they are replaced with cord sets appropriate to your region and application.
- When mated with a Delta-Q sealed AC cord, the on board charger meets IP66 specifications, making it dust-tight and protected against powerful water jets. If a cord set with an unsealed connector is used, the plug and connector must be periodically inspected to ensure the contacts are clean and dry.
- If this charger is provided with an AC cord set and the power plug does not match the power outlet, contact the equipment manufacturer, distributor or Delta-Q Technologies for the correct AC cord set terminating with a 3-prong plug suitable for your regions' grounded power outlet.
- In North America (and other 120V AC regions), the AC cord must be a 3 conductor UL Listed/CSA approved detachable cord set at least 1.8m in length (≥ 6 feet), minimum 16AWG and rated SJT; terminated with 250V, 13A or greater connector.
- In 220-240VAC regions the AC cord must be a 3-conductor safety-approved cord set, with 1.5mm² conductors(min.), rated appropriately for industrial use. The cord must be terminated on one end with a grounding type input plug appropriate for use in the country of destination and both plug and connector should be rated 250V, 10A or greater.
- Extension cords must be 3-wire cord no longer than 30m (100') at 10 AWG or 7.5m (25') at 16 AWG, per UL guidelines.

Refer to the Delta-Q IC Series manual for more information and illustrations as well as the Charger Error & Fault Codes Table.

Leaving the on board charger(s) plugged in will not harm the batteries and is preferred as they will maintain and charge the batteries when needed. The Lifeline® AGM batteries in your machine discharge 1 to 3% per month and you do not want to store batteries for an extended period of time without them being fully charged. The higher the temperature, the faster the battery will self-discharge.

The Delta-Q on-board charger in your machine has been programmed to charge the Lifeline® AGM sealed batteries that were installed originally from the factory. If any other type of battery is installed on the STORM, your charger profile may need to be changed.

The 2019-2020 STORM SS model will have 2 on board Delta Q Chargers. To be able to use both chargers at the same time for faster charging, each one has to be plugged into a different circuit otherwise it will trip a circuit breaker from within the building due to too much amperage draw.

Quick Charge Stand Alone Charger (available for the Storm SS model only)

This model has a changeover tap to accommodate 208 or 230/240 volt input. You must check your incoming power to the charger matches where the changeover tap is placed for the charger to work correctly. Always use a qualified electrician to install correct AC connections.

Do not disconnect the DC plug from the Storm when the charger is on. The resulting arcing could cause the batteries to explode. Do not expose this charger to rain if possible.

Make sure the AC cord, DC output leads, terminals, and connectors are all in good working condition. Do not use the charger if there are any signs of

stress or damage, or if wires are cut or have damaged insulation. Using this charger with any of these symptoms could result in a fire, property damage, or personal injury. Have a qualified service person make the necessary repairs. See the Quick Charge Corporation Operating Instructions for additional information and FAQs.

START-UP AND MACHINE OPERATION

Pre-Start-Up

The STORM has been safety tested and run at the factory prior to shipping. The factory topped off the hydraulic fluid, but it should be checked just in case something happened along the way. The fluid level should be about 2” from the top of the tank. Overfilling will result in fluid seeping out of the hydraulic tank cap. Inspect for major hydraulic oil leaks. Snug any loose hydraulic fittings using two wrenches if a leak is present. Use caution not to over tighten. Make sure your lug bolts are torqued between 85-100 ft. lbs. and the axle nut is torqued to 200 ft. lbs.

Start-Up

Lift the hood the seat is attached to and check that the circuit breaker is switched to ON (non-SS models). Operator must be in the seat before the electric motor will start. While you are sitting in the seat there is a red knob on your right side, behind the steering joystick. Pull that red knob up and you will hear the electric motor start turning. The battery gauge is behind the red knob and will first display the hours recorded on the gauge. The Storm SS model will have a black throttle dial next to the red knob. This should be set to the “OFF” position while initially pulling the red knob up. The electric motor will still turn while in this position. Then turn the black dial clockwise until desired motor speed is achieved. Note the machine is much slower when the dial is at a low #. This is desirable while loading or

unloading the Storm SS on a trailer or while driving through a doorway or tight space.

Operation

Use the 2 levers between your legs (or the left-hand joystick in the 2020+ models) to position the transport dolly or blade where you would like them before moving. Level the top of the transport dolly horizontally or parallel with the floor for it to function correctly and not peel the coating off the caster wheels. Push the joystick on your right side in the direction you want to go to get moving. You always want to start out scraping with the blade or Tile Tooth as parallel to the floor as possible while still being able to stay under the material being taken up. You then increase the pitch of the blade or tooth as necessary to maintain productivity. While scraping on top of concrete you can flip the scraper blade over when it gets dull and the other side of the blade will have the desired bevel for additional take up. You can do this by pushing down on the right handle between your legs (or pulling backwards if your machine has the left hand joystick) to extend the caster wheels which will in turn raise the front of the machine enough to be able to spin the blade holder. After you do this make sure that you retract the front caster wheels and keep them off the floor while scraping. This ensures maximum weight on the front blade as well as extending the life of your front caster wheels. Remember, when you push down the red button to stop the machine for parking, to make sure it is on a level surface and chock the wheels to prevent the machine from rolling away.

Your Storm is equipped with wheel scrapers that scrape whatever debris you run over like VCT off the tires. If you notice your Storm isn't getting traction or is carrying debris around you may have to loosen 2 bolts on the wheel scrapers and slide them against the tires and retighten.

BATTERY CARE AND MAINTENANCE

DANGER OF EXPLODING BATTERIES

Lead acid batteries can produce explosive mixtures of hydrogen and oxygen. Take the following precautions:

- Never leave batteries in an airtight or sealed enclosure.
- Charge batteries in accordance with the instructions given in this manual.
- Keep all sparks, flames and cigarettes away from batteries.
- Make sure cables are tightly connected to terminals to avoid sparks.
- Wear proper eye and face protection when installing and servicing batteries.

DANGER OF CHEMICAL BURNS

Lead acid batteries contain sulfuric acid electrolyte which can cause severe burns to body tissue. Take the following precautions:

- Avoid contact of the electrolyte with skin, eyes or clothing.
- Never remove or damage vent valves.
- In the event of an accident, flush with water and call a physician immediately.

DANGER OF BURNS IF TERMINALS ARE SHORTED

Lead acid batteries are capable of delivering high currents if the external terminals are short circuited. The resulting heat can cause severe burns and is a potential fire hazard. Take the following precautions:

- Do not place metal objects across battery terminals.
- Remove all metallic items such as belt buckles, watches, bracelets and rings when installing or servicing batteries.
- Wear insulating gloves when installing or servicing batteries.
- Use insulated tools when installing or servicing batteries.

DANGER OF THERMAL RUNAWAY

Thermal runaway is a condition in which the battery temperature increases rapidly resulting in extreme overheating of the battery. Under rare conditions, the battery can melt, catch on fire, or even explode. Thermal runaway can only occur if the battery is at high ambient temperature and/or the charging voltage is set too high. Take the following precautions:

- Charge batteries in accordance with the instructions given in this manual.
- Do not install batteries near heat sources or in direct sunlight that may artificially elevate their temperature.
- Never use another charger not designated by the manufacturer - OEM Products Inc.

As of this writing, Concorde does not know of any Lifeline® AGM batteries that have failed due to thermal runaway. See the LIFELINE® TECHNICAL MANUAL for full SAFETY INFORMATION.

TEMPERATURE CONSIDERATIONS

The temperature of the battery has a significant impact on its performance and life capability. Battery capacity is reduced significantly in cold temperatures.

It should be realized that the temperature of the battery itself and ambient temperature can be vastly different. While ambient temperatures can

change very quickly, battery temperature change is much slower. It takes time for the battery to absorb temperature and it takes time for the battery to relinquish temperature.

If the battery is exposed to cold climates, the state of charge should be kept at a maximum to prevent freezing of the electrolyte. A fully charged battery will not freeze even under the coldest weather conditions, but a discharged battery will freeze even when moderately cold.

Frozen batteries are not capable of charging or discharging except at very low rates, and may be permanently damaged by expansion of the electrolyte. A battery pack with a state of charge of 25% can freeze at 9 degrees Fahrenheit or a battery pack ran all the way down to cutoff can freeze at 21 degrees Fahrenheit. A 100% charged battery pack would have to get colder than -94 degrees Fahrenheit to freeze.

SERVICING

Lifeline® AGM batteries do not need electrolyte additions as do flooded lead-acid batteries, but periodic servicing is essential to assure continued integrity of the battery system. Servicing should include good record keeping documenting the life history of the battery system and to identify whether corrective action needs to be taken. See the LIFELINE® TECHNICAL MANUAL for full Servicing schedule.

CHARGING

You cannot short charge your batteries (like at lunchtime) without long-term effects on your batteries. It is important to charge batteries back to 100%.

When you have a fully charged battery it is lead and sulfuric acid (Active material). When you start discharging a battery, the chemical reaction between lead and sulfuric acid provides energy for your application. The byproduct of this reaction is lead sulfate. Lead sulfate is a soft material that naturally covers the plates, both positive and negative, when the battery is being discharged. The deeper the discharge, the more lead sulfate will cover the plates. Once the load is turned off and it is time to recharge, lead sulfate is easily converted back into lead and sulfuric acid. This is why it is important to charge batteries back to 100%. If you don't you will not convert all the lead sulfate back into the active material. If a lead acid battery is not immediately recharged, the lead sulfate will begin to form hard crystals, which cannot be reconverted by standard charging voltages. The longer this goes on, the harder it is to get all of your capacity back.

MACHINE MAINTENANCE

DAILY MAINTENANCE

- Check hydraulic oil level in tank by removing the filler cap and ensuring the oil level is within 2 inches of the top of the tank.
- Inspect for hydraulic leaks.
- Retorque Wheel lug bolts to 100 ft/lbs. and Axle nut to at least 200 ft/lbs.

EVERY 100 HOUR MAINTENANCE

- Grease caster bearings (front wheels). There are 2 grease zerks for each of the 2 front caster wheels.

EVERY 250 HOUR MAINTENANCE

- Change the hydraulic oil (approximately 3 gallons) with 15w-50 Full Synthetic motor oil. Replace hydraulic filter. (part # SMH-006)