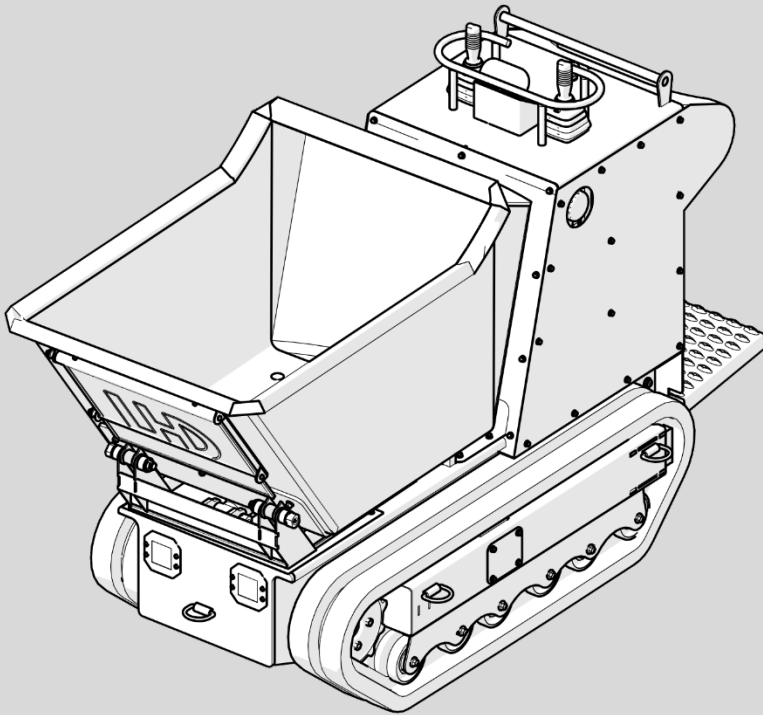




6500_{ETB}

ELECTRIC TRACKED BUGGY
SIDE DUMP

Owner's Manual



This manual should be kept on hand at all times so that it can be immediately referenced. It should be saved for the entire life of the machine.

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Ed. 3 – 5/5/25

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LHDmachinery.com

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info@lhdmachinery.com

Find the latest edition of
this Owner's Manual at:
lhdmachinery.com/library



READ MANUAL, PAY ATTENTION TO WARNING STICKERS AND USE EXTREME CAUTION WHEN OPERATING THE MACHINE
FAILING TO COMPLY WITH ANY OF THESE ITEMS CAN CAUSE SERIOUS INJURY OR DEATH

**PLEASE REGISTER YOUR MACHINE ONLINE AT
LHDMACHINERY.COM**

All LHD machines must be registered online after purchase with a serial number and date of purchase. Warranty may be voided without registration.

To register your machine:

- Navigate to LHDMachinery.com
- Locate the "Support" link in the menu and click "Warranty Registration"
- Enter your information, read and confirm that you understand and agree to the terms of the warranty and then submit the form
- Your warranty period will begin on the date of sale and will continue for 1 year or 1000 hours

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Machine and Engine Identification

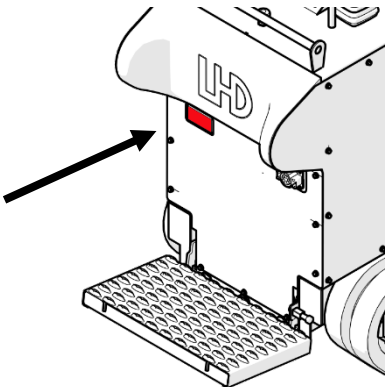
Serial Number of Machine:

Serial Number of Engine:

Purchase Date:

Purchased From:

Dealer Contact:



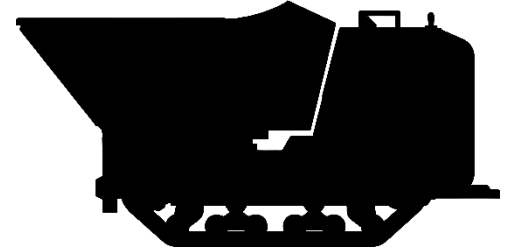
The LHD Serial Number is located on the machine's serial number plate. See the figure to the left for the location of plate on machine.




Preface

Congratulations on your purchase of a LHD 6500ETB Tracked Buggy!

This manual contains the guidelines for operation and maintenance of this LHD Tracked Buggy series, as well as the corresponding safety recommendations. Please read this entire manual prior to operation to maintain your safety and enhance the performance of the machine.



This manual will guide the operator all the rules and precautions needed for operating and maintaining the

machine under the correct safety precautions. Incorrect operation, inspection or maintenance can cause personal injury or even death. **Pay close attention to items marked with this symbol:** 

This symbol a safety concern and give directions for proper use. Potential hazards associated with the operation of this equipment will be referenced with further hazard information which may appear throughout this manual in conjunction with safety symbols.



Reading and use of the manual will help prevent accidents during operation, however, we cannot be held responsible for predicting every kind of danger in all circumstances. The user of the machine is always responsible for paying attention to the machine and its surroundings during operation. Knowledge of this manual and common sense are fundamental in safe use of the machine.



Note: Since our design and manufacturing technology keep improving, future design or improvement may cause the manual to exclude small changes that have been made accordingly. Please contact our company for any information or questions about the machine. Contact information is found on the cover of this manual or can be found on our website. (lhdmachinery.com)

Warranty

LHD Machinery, LLC (“LHD”) warrants that each machine will be free from defects in material and workmanship under normal use for which it was intended for 1 year or 1000 hours. Warranty period begins on first day of purchase by the End User or first day of purchase by a dealer if the machine is intended for rental. Warranty is based on the following limited warranty terms and conditions. It is the responsibility of the user to understand the responsibilities related to the warranty, service and proper operation of the machine.

1. LHD’s obligation and liability under this warranty is expressly limited to replacing or repairing parts if there is determined to be a defect in workmanship or breakage in material. LHD reserves the choice to repair or replace. Parts such as engines, motors, pumps, valves, etc. furnished by us but not manufactured by us will only carry the warranty of their original manufacturer except in special situations as decided upon by the officers of LHD.
2. This warranty does not apply to any failures resulting from: (i) abuse or misuse or improper or unauthorized repair, alteration, maintenance or operation; (ii) accident, natural disaster or act of nature; or (iii) handling, shipping or storage.
3. If LHD chooses to replace the part, it will be at no cost to the customer and will be made available to the LHD Dealer, or Rental Center, from whom the End User purchased the machine or nearest professional repair center. Warranty claims should be reported immediately. Use of the machine after a failure could result in damage and wear not covered under the warranty terms.
4. Replacement or repair parts, installed in the machine, are warranted only for the remainder of warranty period of the machine, as though they were the original parts.
5. LHD’s warranty does not cover the normal maintenance of machines or its components (such as engine tune-ups and oil & filter changes). The warranty also does not cover normal wear and tear items (such as consumables) or ground contact items (such as treads and shovel, if equipped) except in special situations as decided upon by the officers of LHD.
6. LHD does not warranty engines. Engine warranty claims should be made directly to an authorized service center for the particular engine manufacturer. (Please see your engine manual for more details)
7. LHD’s warranty will be void if it is determined that the defect resulted from operator abuse, impact damage, failure to perform normal maintenance, modification, alterations or repairs made to the machine without written approval of LHD.
8. LHD will pay shop labor on warranty items at the LHD Shop Labor Rate in existence on the date of the warranty claim. LHD will determine the time allowed to complete a repair and will govern the shop labor hours that will be allowed.
9. LHD will pay shipping on warranty replacement parts at standard ground rates. No warranty replacement parts will be shipped at any other shipping type or speed at the expense of LHD.
10. LHD’S WARRANTY POLICY WILL NOT COVER THE FOLLOWING: TAXES, SHOP SUPPLIES, ENVIRONMENTAL SURCHARGES, AIR FREIGHT, TRAVEL TIME, LOSS OF TIME, INCONVENIENCE, LOSS OF RENTAL REVENUE, RENTAL COSTS OF EQUIPMENT USED TO REPLACE THE MACHINE BEING REPAIRED, LOSS OF USE OF THE MACHINE, PROPERTY DAMAGE, COMMERCIAL LOSS OR ANY OTHER CHARGES WHATSOEVER OR ANY LIABILITIES FOR DIRECT, INCIDENTAL, OR CONSEQUENTIAL DAMAGE OR DELAY.
11. LHD MAKES NO OTHER WARRANTY, EXPRESSED OR IMPLIED. THERE ARE NO OTHER WARRANTIES THAT EXTEND BEYOND THE DESCRIPTION ON THIS DOCUMENT.
12. No LHD employee or representative is authorized to change this warranty in any way or grant any other warranty unless such change is made in writing and signed by an officer of LHD.

Safety



General Cautions

Read, understand, and follow the instructions in this operator's manual before using the machine.

1. Keep hands, feet and clothing away from all moving parts.
2. Allow only responsible adults who are familiar with the machine and its operation to use the machine.
3. Do not allow any passengers on any part of the machine, including bucket and operating platform.
4. Do not operate any of the control levers unless you are standing with both feet on the platform and firmly holding the grip handles.
5. Always wear long pants, substantial shoes, gloves, eye, and hearing protection when using the machine. Avoid wearing jewelry or loose fitting clothing.



6. Do not place feet under the platform. Always stand on the platform or to the side of the machine.
7. Watch where you are driving. Always look down and behind, before and while reversing.
8. Always power off the machine before leaving the operator's platform.
13. Never jerk the control levers. Use a steady motion. Slow down before turning.
14. Power off the machine before making any adjustments to the machine or any attachments.
15. Never operate the machine in an explosive atmosphere or near combustible materials. An explosion or fire could result causing severe bodily harm or death.
16. Look out for ditches, holes, etc. and beware of traffic when near roads.
17. Do not allow any person or animal close to the machine or its attachments while in operation. Stop the machine if any person or animal comes close.
18. Operate only in daylight or good artificial lighting.
19. Do not operate the machine while fatigued or ill or under the influence of alcohol or drugs.
20. Use extra care while loading or unloading the machine onto a trailer or truck.
21. Do not touch equipment or attachment parts that may be hot from operation. Allow to cool before attempting to maintain, adjust or service.
22. Do not allow children near the machine.
23. Do not use the equipment for any other purposes or application other than its intended purposes.
24. Replace operation and safety decals when they become difficult to read. (Contact LHD for replacements)
25. LHD does not assume responsibility for any accidents due to equipment modifications. Unauthorized modifications will void the warranty.
26. Never use accessories or attachments that are not recommended by LHD for this equipment. Damage to the equipment and/or injury to the user may result.
27. Always know the location of the nearest fire extinguisher.
28. Always know the location of the nearest first aid kit.
29. Always know the location of the nearest phone or keep a phone on the jobsite so that calls can be made quickly in case of emergency.



Remember – Safety is your responsibility.

Safety



Cautions During Operation:

1. All slopes require extra caution. Do not operate on slopes exceeding 10°. If a slope is greater than 10° only go vertically (not horizontally).
2. Always have the heavy end of the machine uphill. Weight distribution will change the tipping point. An empty bucket will make the rear of the machine heaviest, a loaded bucket will make the front of the machine heaviest. These same rules apply when loading and unloading the machine onto a trailer or truck.
3. Avoid turning on slopes. If you must turn, turn slowly keeping the heavy end of the machine uphill.
4. Do not operate near ditches or embankments.
5. Do not operate on wet grass. Reduced traction could cause slippage.
6. Remove obstacles such as rocks, tree limbs, etc. from the work area. Watch for ruts or bumps as uneven terrain could overturn the machine. Tall grass can also hide obstacles.
9. If machine becomes unstable, jump clear. Never try to stabilize the machine yourself.
10. Never use your hand to find hydraulic leaks. Use a piece of wood or cardboard. Hydraulic fluid injected into the skin must be treated by a knowledgeable physician immediately or severe injury or death can occur.
11. Always turn machine off when not in use.
12. Never disconnect any emergency or safety devices. These devices are intended for operator safety. Disconnection of these devices can cause severe injury, bodily harm or even death. Disconnection of any of these devices will void all warranties.
13. Never approach power lines with any part of the buggy unless all local, state/provincial and federal (OSHA) required safety precautions have been taken. Use extreme caution when approaching high voltage power lines.
14. Do not operate the machine at excessive speeds. Reckless operation may cause accidents and severe injury. Slow down when approaching people, wet areas, and going up and down grades. It is the responsibility of the operator to adjust speed, as necessary, depending on the conditions of the road or path.
15. Allow extra time to stop when operating the machine on wet surfaces or loosely graded materials.
16. Do not dump materials that are large, chunky or sticky. These types of material may shift causing the machine to tip and throw the operator off the machine. The machine intended for dumping free-flowing and loose materials such as dry soil, slag, and wet concrete.
17. Do not dump materials from bucket while the power buggy is moving.
18. For walk behind operation, the operator platform must be stowed and locked in the UP position. The speed should also be reduced to 3 mph (4.8 kph) or slower.
19. Always make sure the machine's brakes are working properly. Check brake linkage and adjust as required. Never operate the machine with a defective braking system.
20. Ensure brakes are applied when leaving machine unattended or when using on a slope. When parking on a slope, position the machine at a right angle to a slope. Ensure that the parking brake is engaged and holds the machine safely in place when parking on a slope.
21. When filling or dumping, do not exceed payload capacity of the machine.
22. Do not stand in front, or alongside, the machine when discharging a load.
23. To prevent unexpected loss of control, do not start power on the machine on a sloping surface.
24. Never operate the machine with bad or worn tires. Always replace defective tires with new ones.
25. Always make sure the hydraulic dumping mechanism of the tub is working properly.



Remember – Safety is your responsibility.

Safety



Cautions During Operation:

26. Avoid sudden stops, starts and changes in direction. Operate the controls smoothly. Do not jerk the steering or any other controls.
27. Never attempt to work the controls except from the operator's position.
28. Never drive or tow the machine in traffic or on public roads.
29. Always keep the machine in proper running condition.
30. Fix damage to machine and replace any broken parts immediately.
31. The entire machine should be cleaned after every use. Make sure there is no buildup of concrete, grease, oil or debris on the machine.
32. Always store equipment properly when it is not being used. Equipment should be stored in a clean, dry location out of the reach of children and unauthorized personnel.



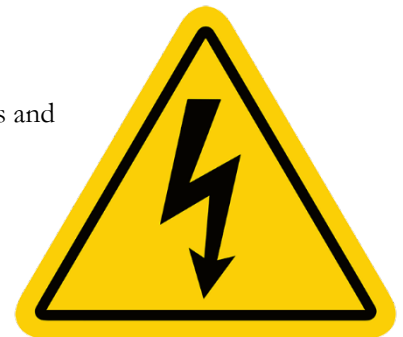
Battery Safety:

1. Stay clear of moving components.
2. Power down before servicing.
3. Avoid contact with damaged wiring or components. Do not touch exposed wires, connectors, or damaged electrical components. High voltage can cause serious injury or death.
4. Keep battery system dry and clean. Do not expose the battery or electrical components to excessive moisture. Keep compartments clean and free of debris to prevent electrical faults.
5. Use proper charging procedures only. Charge batteries only with the manufacturer-approved charger. Do not use damaged charging cables or connectors.
6. Do not operate with a damaged battery. If the battery shows signs of swelling, overheating, leaking, or physical damage, discontinue use immediately and service the machine.
7. Avoid overheating and fire risk. Never expose the battery system to open flame, sparks, or excessive heat. Allow the system to cool before servicing if it has been under heavy load.
8. Do not modify electrical or control systems.



Electrical Safety:

1. Do not power on the machine near spilled fuel or combustible fluids. Combustible liquids, vapors, and dust could ignite from sparks.
2. Exercise caution around energized systems or when working around batteries and electrical components, especially when the system is energized.
5. Do not charge or service while powered on.
6. Never charge the battery or perform maintenance while the machine is powered on or operating.
7. Follow manufacturer charging guidelines. Overcharging or using improper chargers can lead to overheating, fire, or battery damage.
8. Never use electrical components for unintended purposes. Do not use electrical components to operate unauthorized devices or as a substitute for proper tools.
9. Inspect charging equipment regularly. Do not use damaged chargers, cords, or connectors. Replace any worn or defective components immediately



Remember – Safety is your responsibility.

Safety



Battery Safety (Continued):

10. Do not drop the battery. There is a possibility that the battery will explode.
11. Do not expose the battery to open flames, sparks, cigarettes, etc. The battery contains combustible gases and liquids. Contact with a flame or spark could cause an explosion.
12. Always wear safety glasses when handling the battery to avoid eye irritation. The battery contains acids that can cause injury to the eyes and skin. Use well-insulated gloves when picking up the battery.
13. Do not charge battery if frozen. The battery can explode. Warm the battery to at least 61°F (16°C).
14. Always recharge the battery in a well-ventilated environment to avoid the risk of a dangerous concentration of combustible gases.
15. If the battery liquid (dilute sulfuric acid) is exposed to clothing or skin, rinse skin or clothing immediately with plenty of water.
16. If the battery liquid (dilute sulfuric acid) is exposed to eyes, rinse eyes immediately with plenty of water and contact the nearest doctor or hospital to seek medical attention.
17. Always disconnect the negative battery terminal before performing service on the equipment.
18. Always keep battery cables in good working condition. Repair or replace all worn cables.



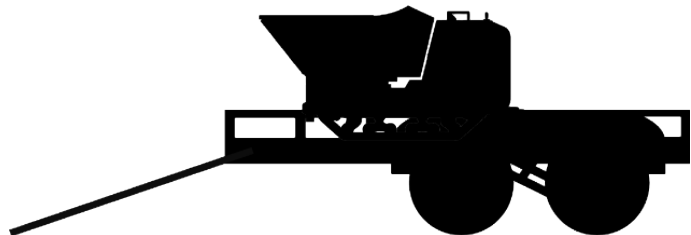
Lifting and Maintenance Safety:

1. Never allow any person or animal to stand underneath the equipment while lifting.
2. When lifting of the machine is required, use a properly rated forklift.
3. Never tip the machine to extreme angles during lifting.
4. Never lift machine to unnecessary heights.
5. Never lift the equipment while the machine is powered on.



Transporting Safety:

1. Always use ramps capable of supporting the weight of the machine and the operator to load and unload the machine.
2. Always shutdown machine before transporting.
3. When transporting the machine is required, place the machine on a flatbed truck, flatbed trailer or equivalent and tie down securely.
4. Always make sure all tie-downs and blocks are in place and the bucket is completely lowered in the flat (horizontal) position.
5. Place chock blocks underneath machine to prevent rolling.
6. When transporting the machine on a truck or trailer, know the overall height to avoid contacting overhead obstructions such as bridges and power lines. Check the truck and ramp capacities.



Remember – Safety is your responsibility.

Safety



Bucket Safety

The machine is equipped with a bucket safety bar that will prevent the bucket from lowering under its own weight while performing repairs. To engage the safety bar, use the following procedure:

1. With machine on, raise the bucket
2. Rotate the safety bar into place. (*Fig 1*)
3. With no one under the bucket and all hands free, very slowly lower the bucket down until the safety bar is locked into place.
4. Shut off machine.
5. Perform these instructions in reverse when done to remove the safety bar.

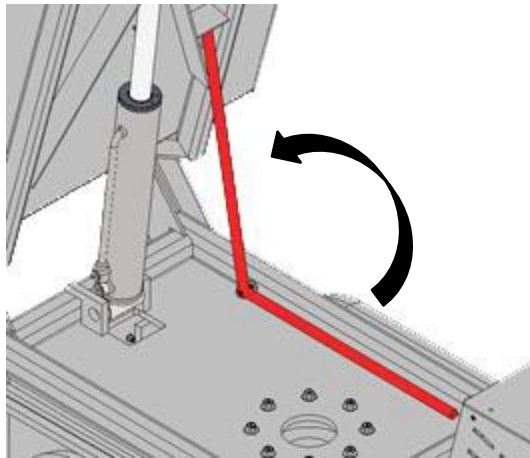


Fig 1 – Bucket Safety Bar



Remember – Safety is your responsibility.

Safety Labels

On the machine there are various signs and labels that provide information on safety. Below is a list of those labels and their corresponding descriptions. Be sure that all safety labels remain clean and legible

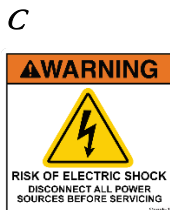


Decal A:

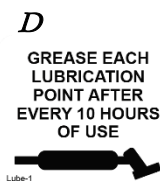
- Do not operate machine within 30 ft. of bystanders.
- Visibility Hazard: Look before backing up.
- Use extreme caution when dumping – Always dump or side dump on level ground, avoid wet and sticky loads, dump slowly to ensure load is leaving bucket (if load sticks abort dump)
- For optimal performance, follow fill level recommendations.
- Use extreme caution when dumping.
- Do not run the machine on vertical slopes more than 10 degrees / horizontal slopes more than 10 degrees.
- Always keep heavy end of machine uphill.
- No Persons Allowed in Bucket (Operator Only)
- Do not start or stop the machine quickly or dump loads too quickly. Ensure the platform is clean and dry or the user may be thrown from the machine.
- Turn slowly to avoid being thrown from machine.
- Always keep the heavy end of the machine uphill and back down slopes.



Decal B:
Safety Bar Warning



Decal C:
Risk of Electric Shock



Decal D:
Grease Each Lubrication Point After Every 10 Hours of Use



Decal E:
Caution / Hot – Do Not Touch



Decal F:
Danger of Pinching

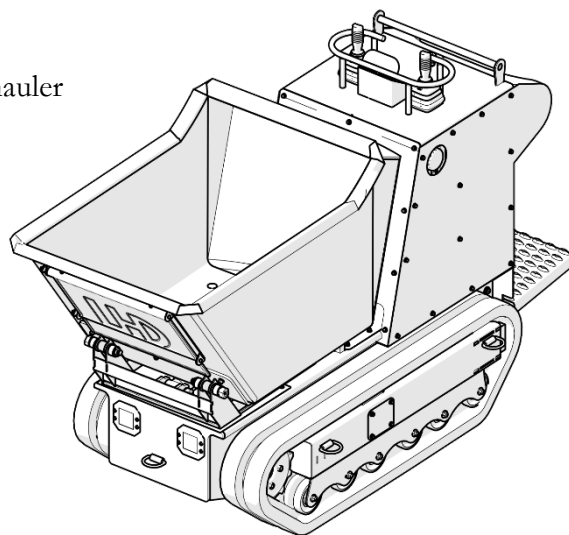


Decal G:
Hydraulic Fluid Only (No Other Fluids)

Technical Data

The LHD 6500ETB Tracked Buggy is a universal material hauler intended for the transportation of any bulk material. This machine is also designed for many other construction and landscaping applications such as job site cleanup and supply transport.

The LHD 6500ETB Tracked Buggy is equipped with a poly bucket with a capacity of 16 cubic feet, or .6 yard, which allows users to move more material in less trips. The 16-inch dump height and wide 8 in (200mm) tracks also allow users to navigate most any terrain. The design of the machine is balanced with a low center of gravity for safety.



This battery powered 48 volt machine allows for prolonged use up to 8 hours without interruption and the powerful batteries allow for a maximum speed of 6 mph when empty.

The maximum weight capacity of the LHD 6500ETB Tracked Buggy is 2,500 lbs. (1,133 kg), the machine can pass through a 36 in. standard door width.

Easy hand controls in reach from the safety handlebar allowing the user to keep their hands on the machine for stability. Multiple lift and tie down points have been provided.

The LHD 6500ETB Tracked Buggy has a 5 hour charge time at 220 volts and a 8 hour charge time at 110 volts.

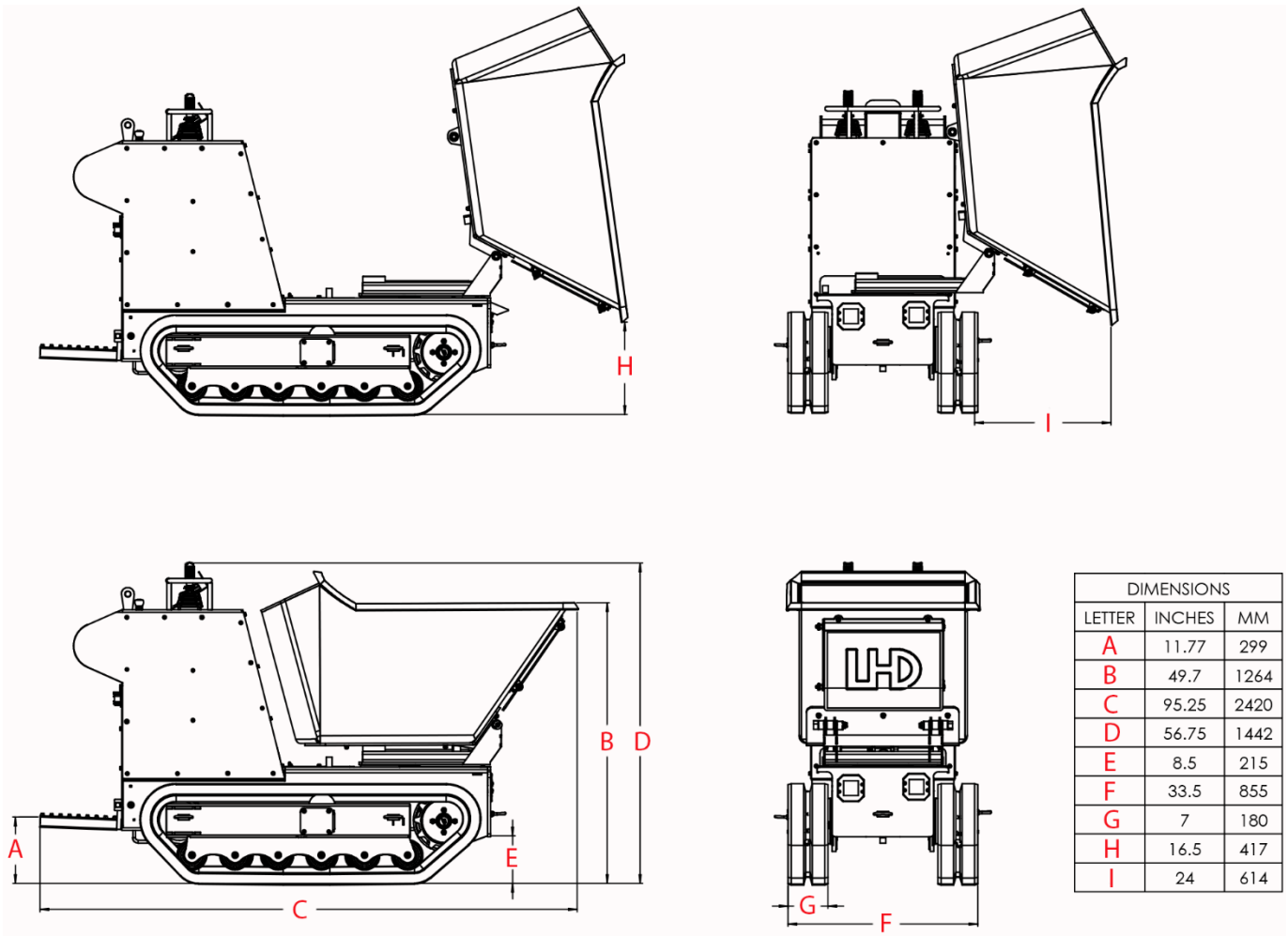


Important Caution: Read this manual and your engine manual fully before operating or maintaining the machine. Pay special attention to the warning stickers on the body of the machine. It is of extreme importance to follow any warnings or instructions described in the manuals or by the stickers on the machine. Always use common sense for maintenance and use, otherwise property damage, personal injury or death may occur.

Technical Data

Battery Power	10 KW / 13 HP
Charge Time	5 hour charge time at 220 volts and a 8 hour charge time at 110 volts
Batter Life	8 Hours
Starter	Electric
Speed (empty, loaded)	6 MPH, Single Speed
Bucket Capacity	16 Cu. Ft
Payload	2,500 LBS
Dump Angle	85°
Weight	2140 lbs (970.7 kg)

Dimensions



Startup

Please read the entire Instruction Manual carefully before putting the machine into use. This also includes the warning labels on the machine. Any operation in contradiction with these instructions or warning may result in personal injury.

Check if the surroundings of the machine are safe and if there are any objects or foreign matter between the moving parts. If the machine is started under such conditions, it may cause damage of the machine or result in injury.

To keep machine in a good operative state, it is required to check these items EVERYDAY:

- Battery Charge Level
 - Function of Controls
 - Tension of tread and status of each working wheel
 - Lubricating points of each sliding position (replenish lubricating oil if needed)
 - Tightness of bolts
-
- To turn machine on, turn key clockwise to ON Position.
 - To turn machine off, turn key back to OFF position.

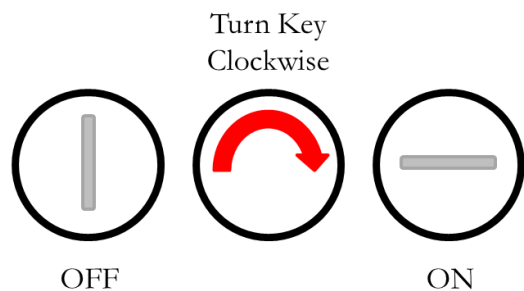


Fig 1

Initial Use

Before their sale, all machines have been tested and inspected. However, during the first 10 hours of use it is recommended that you pay close attention to a few items to ensure successful, efficient and safe operation. If the machine is run improperly or if these directions are not followed the machine's lifespan will shorten and working efficiency will be reduced.

It is the responsibility of the owner to follow these directions **during the first 10 hours of use**:

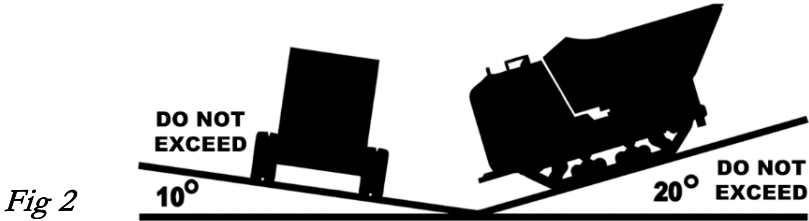
- Let the machine warm up at least 5 minutes after start up.
- Avoid using full speed to drive the machine.
- Never start or accelerate the machine hastily; avoid unnecessary emergency stops or turning abruptly.

Operation

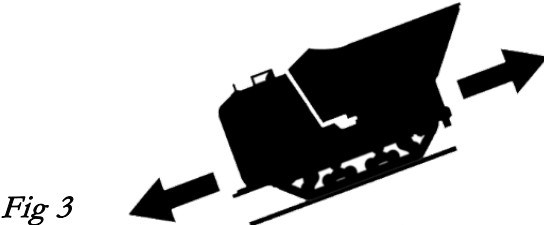
1. Slopes



Caution: Always avoid site conditions with slopes that are greater than the slopes in (Fig 2) or include loose soil conditions. There is a possibility of overturning the machine with serious injury or death of the operator. Always avoid working on terrain with slopes that are greater than those prescribed. In every case, but especially when working on slopes, it is important that the terrain is solid and stable.



Caution: Always keep the heavy end of the machine uphill and always back down slopes. (Fig 3)



Caution: Never dump on a slope or soft soils. (Fig 4)



Operation

2. Loading Bucket

For safety and optimal performance do not exceed fill level recommendations and/or the 2500 lbs hauling capacity. (Fig 5)

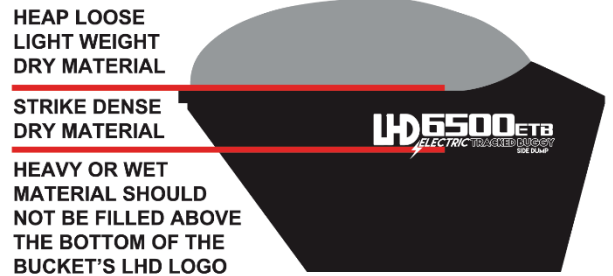


Fig 5

3. Traveling

Note: The horn is the top button of the drive control.

After the engine starts, you should operate the joystick as shown in the figure to the right (Fig 6) to drive the machine. Push the joystick forward to move forward and pull backward to move back. The more pressure put on the joystick, the higher the speed.

To turn: While stopped, slowly push the joystick to the right to turn right; push the joystick to the left to turn left. To turn while driving, push the joystick in the direction you would like to travel.

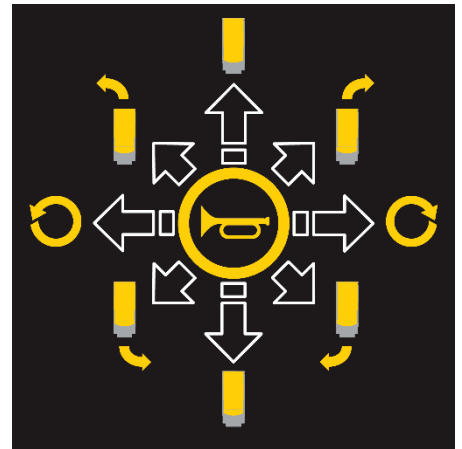


Fig 6



Caution: Never run the machine too quickly when moving or turning. This causes a risk of throwing the user off the machine and causing injury or death. Never steer on a slope or on unstable ground. This could cause the machine to overturn. Take precautions when traveling across a slope. Always move in directions parallel with the slope.

4. Unloading Bucket

Operate the joystick as shown. (Fig 7) Push the joystick forward slowly to dump the bucket. Pull the handle backward slowly and it will return the material bucket to its original position.

To unload: After the material bucket is filled, drive the machine to the discharging area. Dump the bucket SLOWLY. Driving the machine backward after dumping may help empty the bucket.

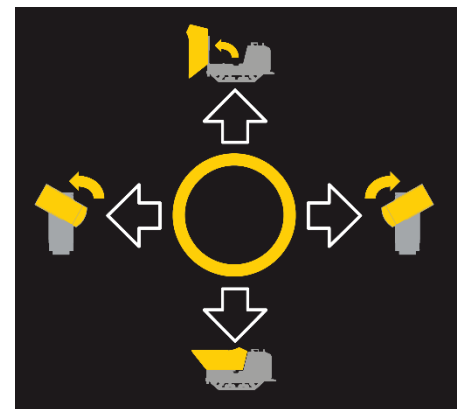


Fig 7

5. Rotating Bucket and Side Dumping

Operate the joystick as shown. (Fig 7) Push the joystick to the right to rotate the bucket right. Push the joystick to the left to rotate the bucket left. Be sure to re-center the bucket to dump straight forward again

Operation



Caution: While side dumping, or dumping straight, if the load is sticky (such as wet soil) the user may need to help remove the load from the bucket. Turn off the machine and check its surroundings before you help unload. Dump slowly to ensure load is leaving bucket, if load sticks about the dump.



Caution: Be the utmost aware when dumping the bucket to the side. (*Fig 8*) Ensure all persons are a safe distance away, 30 feet or more. Never side dump the machine with other than 2500 lbs or less of loose easy to remove materials. Never dump the machine on a declining slope. Look for barriers when dumping.



Fig 8



Caution: Always operate the machine at the appropriate speed. Operating the machine at too high of a speed can lead the user to being thrown off the machine or the machine tipping over. Use extreme caution when using the machine at high speeds.

6. Transporting the Machine

Loading and unloading the machine from vehicle or trailer:

- Always load and unload the machine on a level surface.
- Always use ramps that are sufficiently strong, wide and long for the machine.
- Ensure that the hauling surface and ramps are clean and not slippery. (Never steer on ramps)

Transporting:

- Secure the machine to the vehicle or trailer tightly using fastening devices and the 6 tie down points. (*Fig, 9, 10 and 11*) Figure 11 shows tie down location under the rear of machine. Ensure that the machine will not roll or shift on its own.

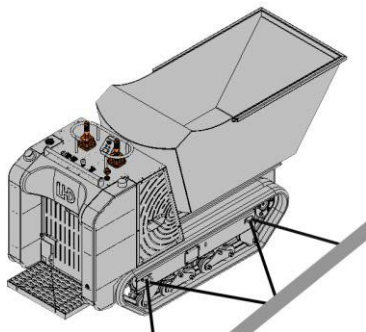


Fig 9

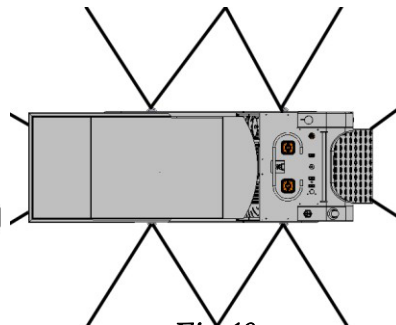


Fig 10

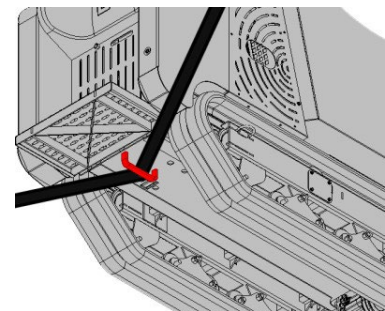


Fig 11

Operation



Caution: Never transport the machine unless you are sure that it is secured sufficiently to the transport vehicle. Before leaving the machine unattended, always turn it off. Check that all locking devices are in the correct position.

7. Automatic Park Brake

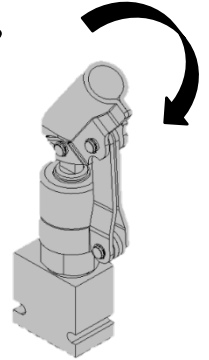
The automatic park brake is intended to eliminate accidental movements when there is no operator present. When the engine is started and everything is working properly the park brake is released. When the engine is off the park brake is automatically set.



Caution: Park the machine on a flat, level and stable surface. If parking on an uneven surface is unavoidable, turn the bucket straight, apply the park brake and block the tracks at the lower end of the machine. Without a load, park the machine with the operator's step uphill. With a load, park the machine with the operator's step downhill (Never park sideways on a slope.)

In order to deactivate the park brake the park brake pump must be used. **Locate the park brake pump (Fig 12) inside the left side panel next to the muffler** and pump until there is enough pressure to release. While towing, pressure may drop. Continue to pump the park brake release pump until the machine has reached a different destination.

Fig 12



8. Towing

After the material has been removed from the bucket and the park brake has been released, use the D ring located on the front bumper and connect a strong tow strap. (Fig 13) While towing, if the tracks start to spin continue to pump the park brake release pump until you reach your destination. (See Automatic Park Brake Above)



Fig 13

9. Lifting with Crane

The machine is equipped with 4 D rings for lifting. Ensure the bucket is empty and no person is near the machine while lifting. (Fig 14)

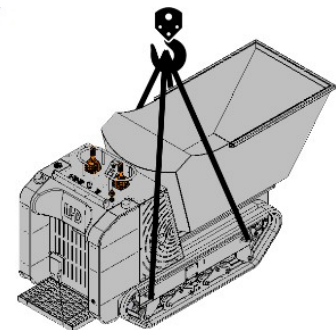


Fig 14

Operation

10. Lifting with Forklift

The machine can be lifted from the rear or the sides, not from the front, with a forklift. To lift from the rear, adjust the forks so they are 16' 5" apart (from the outside). Raise the rear platform of the machine. Use caution not to cause damage to the tanks while the forklift is going towards the machine. To lift the machine from the side, place the forks through the frame (*Fig 15*) by placing the forks 33" apart (from the outside). Ensure the forks extend to through the other side of the machine before lifting. With both lifting techniques, make sure bystanders are clear, move slowly and always keep machine as close to the ground as possible.

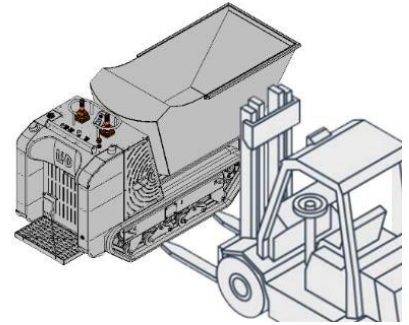


Fig 15

12. Standing Platform

To lower the standing platform, pull the pin at the bottom right side of the platform out towards the right side of the machine. (*Fig 16*) When lowered it locks into place but still has some movement. To raise the platform, pull the pin towards the right side of the machine and raise. The platform will lock into place once raised all the way.

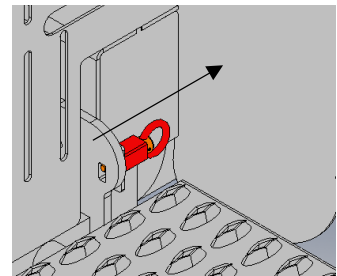


Fig 16



Caution: Hard or sharp objects may scrape the tread and reduce service life. Corrosive fluid may also damage the tread. If spilled onto the tread or run over on the ground clean the tread immediately.

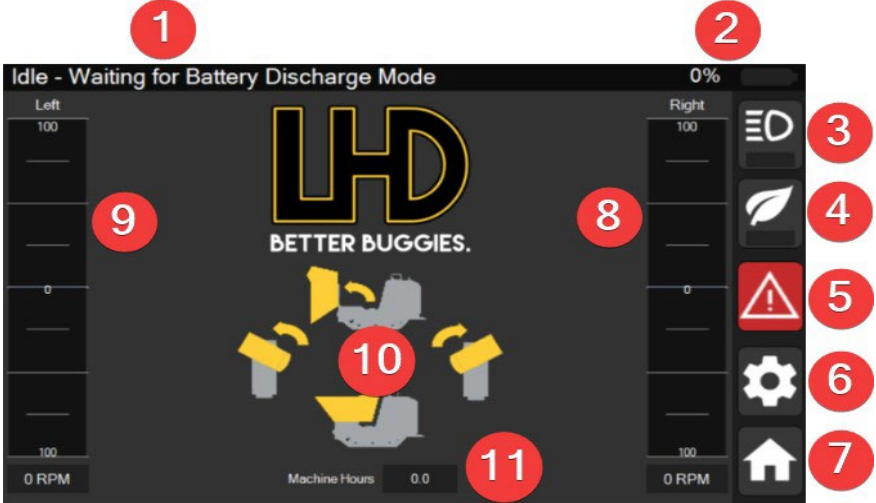


Caution: If the machine is not to be used for an extended time (3 months or more) store machine in location where the tracks are not in direct sunlight or weather.

Display Guide

This guide provides a comprehensive overview of the LHD6500E interface, covering the main screen, settings, and alarm management to ensure safe and efficient operation.

1.0 Main Screen Overview



The main screen provides access to various machine functions and status indicators:

1. Status Bar: Machine Status

- Functionality: Shows the overall operational status of the machine, communicating its current activity.
- States:
 - Disabled: Machine is not starting up and is disabled.
 - Starting up: Machine is performing startup checks and waiting for modules to activate.
 - Transition to discharge: Machine is preparing to enter the discharging state, waiting for the battery to switch to discharge mode and the inverter to precharge and close contactors.
 - Transition to charge: Machine is preparing to charge after being plugged in, waiting for batteries to report charge mode.
 - Idle: Machine has transitioned to discharge mode, is ready to accept commands, but is currently stationary.
 - Running: Machine is actively operating and performing work.
 - Charging: Machine is in charge mode, either waiting to charge or charging.
 - Error: A critical fault is present.
 - Estop Ramp Down: The Emergency Stop (ESTOP) has been pressed, and the reel motor is safely and quickly decelerating to a stop.
 - ESTOP: The ESTOP has been pressed, and the machine is at rest.
 - Operator Lockout: Lockout is active; the user must press and hold the exit lockout button. The machine is in a safe state.

Display Guide

2. Status Bar: Battery Indicator

- Functionality: Provides a clear visual representation of the machine's battery SOC (state of charge).
- Color Codes:
 - Green: Charging
 - Grey: Discharging (> 20% remaining)
 - Orange: Low Battery Discharging (< 20% remaining)
 - Red: Critical Battery Discharging (< 10% remaining)
 - Red with Exclamation Mark: Fault
 - 3 Orange Waves Icon: Battery heating active

3. Light Button

- Enables the front lights on the machine.

4. Eco-Mode Button

- Limits max speed of the traction motors to 1000rpm each in order to prolong battery life.

5. Alerts Button

- Functionality: Opens the alarm manager.
- Information: The alarm manager displays all currently active faults and a history of past faults and warnings.

6. Settings Button

- Functionality: Navigates to the settings and information screen.

7. Home Button

- Returns the user to this main home screen.

8. Right Motor Bar Graph

- Shows the right motor speed in percentage from -100% to 100%.
- RPM readout is shown in the box indicator below the bar graph.

9. Left Motor Bar Graph

- Shows the left motor speed in percentage from -100% to 100%.
- RPM readout is shown in the box indicator below the bar graph.

10. Hydraulic Function Image Readout

- Shows the active hydraulic circuit (tilt forward, tilt backwards, rotate left, rotate right).
- Center portion will show a text label if the joystick functions have been swapped in the settings page.
- Machine hours readout box is below the hydraulic function images. The hours increase while either the traction motors are enabled or the hydraulic pump is enabled.

11. Machine Hours Readout

- Shows machine hours. The hours increase while either the traction motors are enabled or the hydraulic pump motor is enabled.

Display Guide

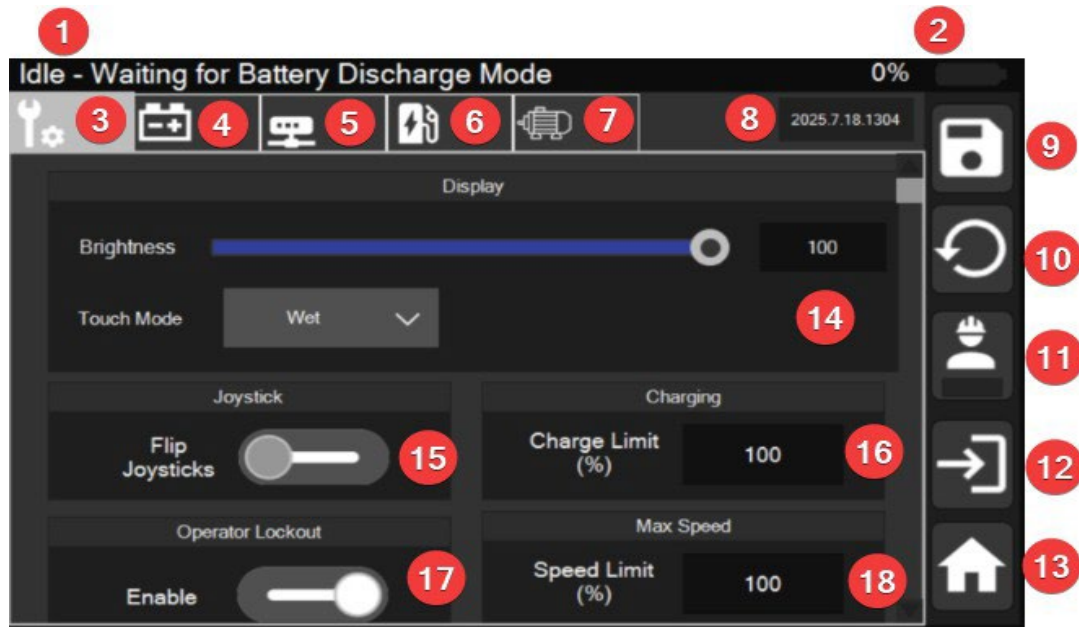
1.1 Operator Lockout



1. Operator Lockout is caused by inactivity of the machine: traction motors, hydraulic pump motor, touch display, joysticks.
2. When none of these elements are used for 60s the operator lockout message appears and the machine functions cannot be used until the message is acknowledged by holding the message for 3s.

Display Guide

1.2 Settings Screen Overview



3. Status Bar: Machine Status

a. Functionality: Shows the overall operational status of the machine, communicating its current activity.

b. States:

- i. Disabled: Machine is not starting up and is disabled.
- ii. Starting up: Machine is performing startup checks and waiting for modules to activate.
- iii. Transition to discharge: Machine is preparing to enter the discharging state, waiting for the battery to switch to discharge mode and the inverter to precharge and close contactors.
- iv. Transition to charge: Machine is preparing to charge after being plugged in, waiting for batteries to report charge mode.
- v. Idle: Machine has transitioned to discharge mode, is ready to accept commands, but is currently stationary.
- vi. Running: Machine is actively operating and performing work.
- vii. Charging: Machine is in charge mode, either waiting to charge or actively charging.
- viii. Error: A critical fault is present.
- ix. Estop Ramp Down: The Emergency Stop (ESTOP) has been pressed, and the reel motor is safely and quickly decelerating to a stop.
- x. ESTOP: The ESTOP has been pressed, and the machine is at rest in a safe state.
- xi. Operator Lockout: Lockout is active; the user must press and hold the exit lockout button. The machine is in a safe state.

Display Guide

4. Status Bar: Battery Indicator

- a. Functionality: Provides a clear visual representation of the machine's battery SOC (state of charge).
- b. Color Codes:
 - i. Green: Charging
 - ii. Grey: Discharging (> 20% remaining)
 - iii. Orange: Low Battery Discharging (< 20% remaining)
 - iv. Red: Critical Battery Discharging (< 10% remaining)
 - v. Red with Exclamation Mark: Fault
 - vi. 3 Orange Waves Icon: Battery heating active

5. Settings Tab

- a. Press to go to settings page (Redundant)

6. Battery Info Tab

- a. Press to go to “Battery Info” page

7. Inputs/Outputs Tab

- a. Press to go to “Inputs/Outputs” page

8. Charging info tab

- a. Select to go to the “Charging Info” page

9. Motor info tab

- a. Select to go to the “Motor Info” page

10. Software Version

- a. Year.Month.Day.24HourTime

11. Save Button

- a. Saves current settings to nonvolatile memory that retains after power cycle.

11. Revert to Default Button

- a. Reverts settings to default values.

Display Guide

12. Rental Mode Button

- a. Enters machine into rental mode.
- b. Settings are locked to configured values, passcode needed to change.

14. Exit Rental Mode Button

- a. Brings up a PIN keypad to exit rental mode.
- b. PIN Codes- XXXXXX

15. Home Button

- a. Returns the user to this main home screen.

16. User Settings: Brightness and Touch Mode

- a. Change brightness of display
- b. Changes display touch response for a wet screen, gloves, or normal use.

17. User Settings: Joystick Flip Button

- a. Flips functionality of left and right joystick for operator preference.

18. User Settings: Charge Limit %

- a. Changing this value changes the max percentage that the battery will charge to. For storage, set this limit to 50%, for normal operation set to 80% and for extended operation set to 100%
- b. It is recommended to set to 100% at least once a month to help calibrate the BMS

19. User Settings: Operator Lockout

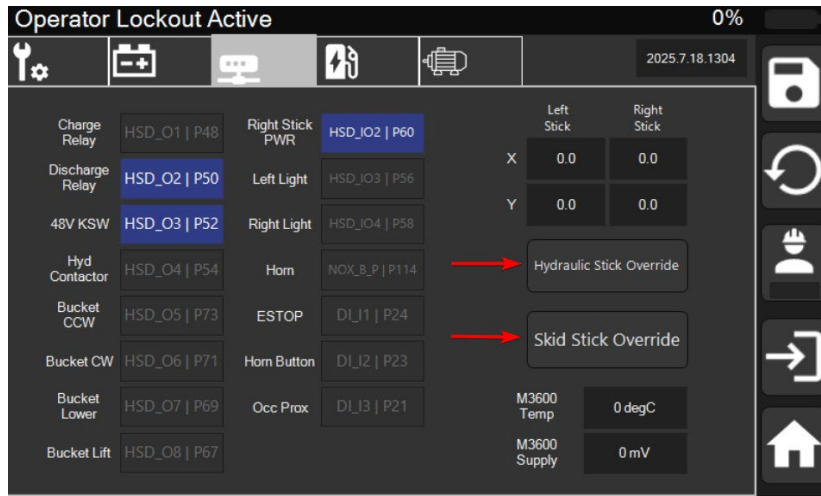
- a. Enable or disable the operator lockout functionality
- b. WARNING: By disabling this, you are bypassing a safety device that prevents operators from mistakenly causing machine motion. Do this at your own risk!

20. User Settings: Max Speed Limit %

- a. Limits the max speed of the motors based on a percentage, will also apply to negative direction.

Display Guide

1.3 Joystick Override Screens

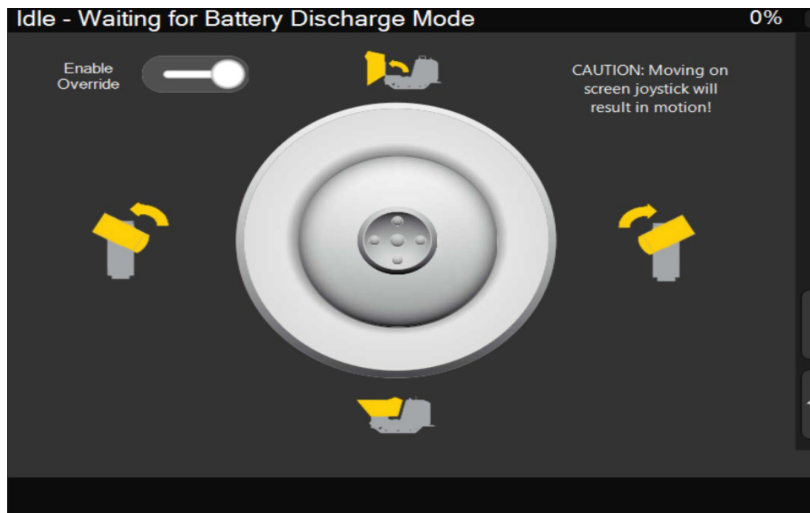


1. Hydraulic Stick Override

- a. Entering this page will allow for hydraulic joystick override using the touch display.

2. Skid Stick Override

- a. Entering this page will allow for traction joystick override using the touch display.



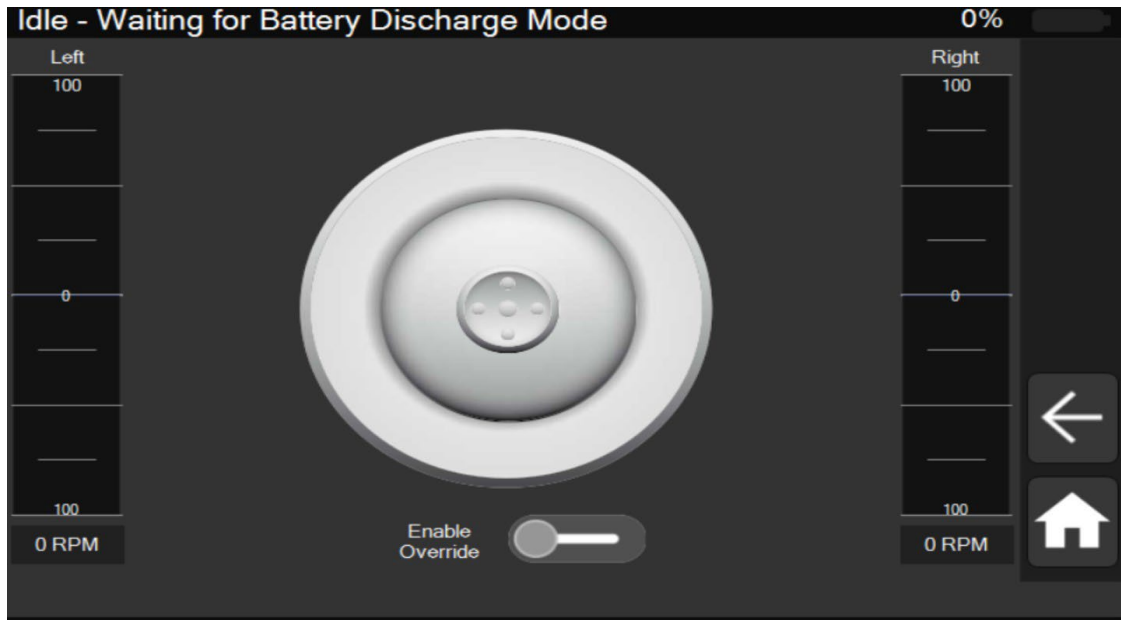
1. Enabled Override

- a. This must be selected before the touch display joystick will function.
- b. Caution: Once this is enabled, the onscreen joystick will result in machine motion.

2. Operation

- a. The onscreen joystick emulates the gated joystick on the machine. Touch the center point and drag to up, down, left, right positions to move the bucket.
- b. Dragging the center point to an angled position (e.g. between up and left, 10:30 position) will result in both functions being activated (bucket dump and swing).

Display Guide



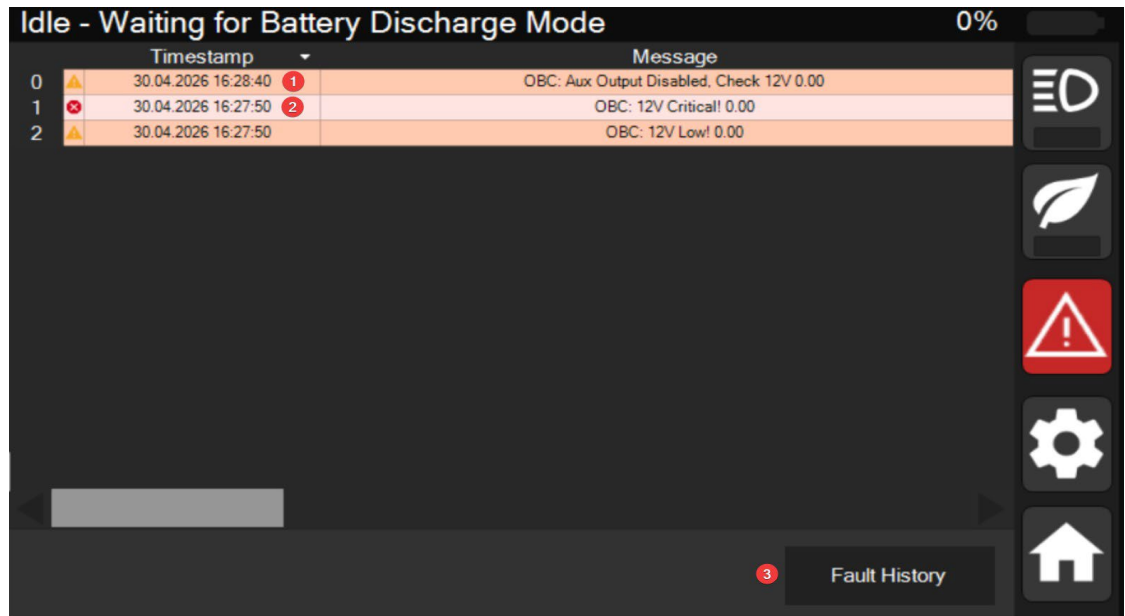
1. Enabled Override

- a. This must be selected before the touch display joystick will function.
- b. Caution: Once this is enabled, the onscreen joystick will result in machine motion.

2. Operation

- c. The onscreen joystick emulates the gated joystick on the machine. Touch the center point and drag to up, down, left, right positions to engage the tracks. Moving to an angled position (e.g. 10:30 position) will cause the machine to turn.

Display Guide



1.4 Alarm Screen

3. Active Warning

- This is an example of an active warning, background will be colored and fault code will be present
- Warnings are conditions that require operator caution but do not prevent machine operation.

4. Active Alarm

- This is an example of an active alarm, background will be colored and fault code will be present
- Alarms are critical conditions that stop machine operation

5. Alarm History button

- Press to see current and previous logged alarms and warnings

6. Inactive Alarms/Warnings

- Inactive alarms and warnings will show on the list but will not be highlighted.

Maintenance Schedule

Regular maintenance should be conducted. Maintenance is essential to warrant long life of the machine. Below is a general overview of the maintenance schedule to guide maintenance and proper techniques. Please see your engines owner’s manual for a more specific maintenance routine. Maintenance work can be dangerous if it is not done safely. Anyone working on the machine should understand all hazards and follow safety procedures. Prior to any maintenance work, turn OFF the engine and block the machine to prevent any movement that could cause harm to the operator.

Item	Maintenance Requirements	Weekly	Frequency HRS						
			2 5	5 0	1 0 0	2 0 0	2 5 0	5 0 0	1 K
Treads	Check if there are loose fasteners; Check the tension; The tread can be tightened by adjusting the tensioning bolt	X		X					
Grease Points	Keep All Grease Points Lubricated	X							
Batteries	Replace Batteries								X



Caution: Always keep the machine clean. Remove any dirt or grease and never leave anything flammable in the working area of the machine. No smoking is allowed when filling oil or fuel.



Caution: If there is any abnormal sound when the machine is in use, it should be stopped immediately for inspection or maintenance. Always shut down machine before maintenance.

Maintenance Directions

1. Battery

Always keep the batteries clean and fully charged. Use a paper towel to clean the battery case. If the battery terminals are corroded, clean them with a solution of four parts water and one-part baking soda. Apply a light coating of grease to the battery terminals to reduce corrosion.

Note: Battery Voltage: 48 v

If battery dies or machine is not used for a long period, charge the battery using an external battery charger. Do not rely on the engines charging system to recharge a battery. It is only meant to maintain charge in a good battery.

2. Cleaning and Long Term Storage

1. Lower and center (if equipped) the bucket and turn the key to “OFF” to stop the engine. Remove the key.
2. Remove dirt and grime from the external parts of the entire machine, especially the engine.

IMPORTANT: You can wash the machine with mild detergent and water. Avoid excess use of water, especially near the control panel.

3. Check condition of treads and tighten if necessary; refer to section on treads.
4. Charge the Battery; refer to section on Batteries.
5. Check and tighten all bolts, nuts, and screws. Repair or replace any part that is damaged or defective.
6. Store the machine in a clean, dry garage or storage area. Remove the key from the ignition switch and keep it in a memorable place. Cover the machine to protect it and keep it clean.

3. Tracks

- Adjust the track tension weekly to ensure sufficient tightening
- Insufficient tension quickly wears out the tracks
- Excessive tension produces resistance which can cause excessive wear or possible breakage

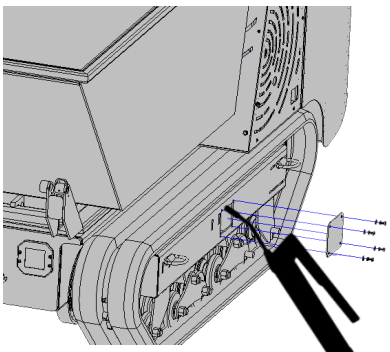


Fig 17

To prevent damage to rubber tracks avoid working on extremely rough terrain and using aggressive movements.

Tensioning Tracks:

1. Remove the tensioner access plate on the side of the tracks. **(Fig 17)**
2. Using a grease gun pump to insert the grease.
3. Tighten nut.

Maintenance Directions

4. Grease Points

Check grease points every 10 hours of use. There are 33 total. Each track roller has 24 total grease points, the dump cylinder has 2, slew drive has 5, and the bucket pivot has 2. General locations show below. (*Fig 18*)

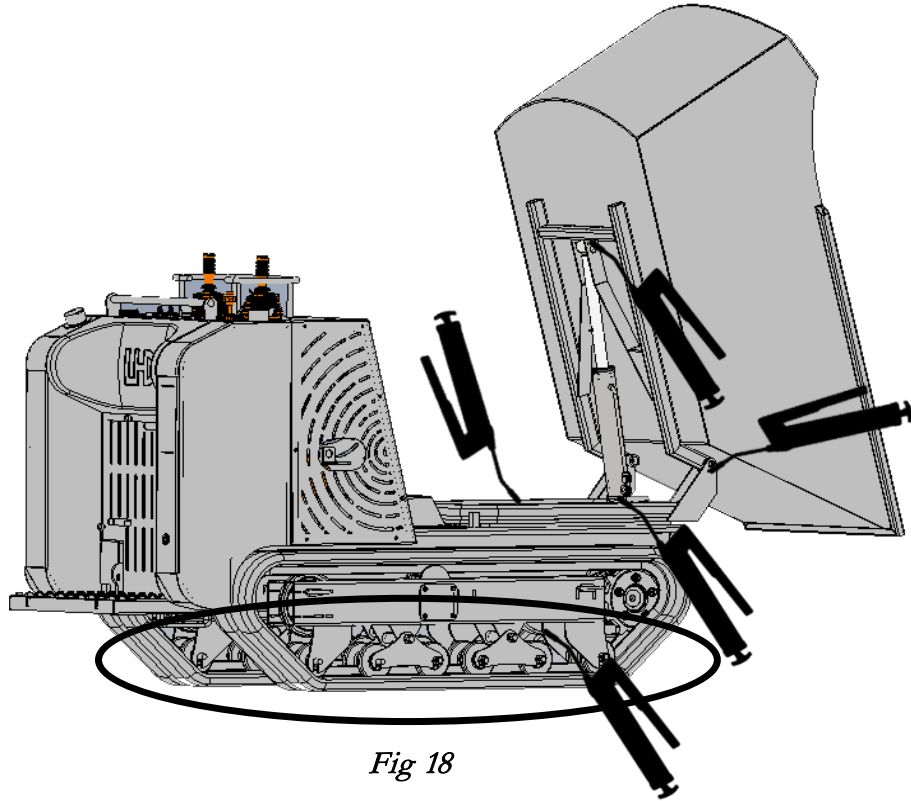


Fig 18

Troubleshooting

	Possible Cause		
	Tighten/Check Tracks	Grease Points	Emergency Stop Button is Activated
Will Not Start			x
Stops Suddenly			x
Lacks Power		x	
High Fuel Consumption		x	
Bucket, Loader, or Lift Are Slow		x	
Excessive Noise From Tracks	x	x	
Excessive Noise From Bucket, Loader or Lift		x	
Machine Will Not Move	x	x	