

sukoon

SUKOON SOLUTIONS

HALDHAR MICROTRAC 4x4

Operational Manual

Dual Motor • 10.752 kWh • Zero Emissions • 4-Wheel Drive



SAFETY FIRST

⚠ **CAUTION:** Before using this tractor, please read this manual carefully to understand the proper use of your unit. Keep this manual handy.

First-time users shall have practical instructions in the use of the Haldhar Microtrac 4x4 and the protective equipment from an experienced operator.

Instructions contained in warnings within this manual marked with a symbol concern critical points which must be taken into consideration to prevent possible bodily injury. You are requested to read all such instructions carefully and follow them without fail.

ABOUT US

The word "**Sukoon**" signifies peace — a value that has driven our mission since we began in 2016. What started as an empathetic response to the hardships of manual labourers soon evolved into a focus on revolutionizing the agricultural economy. Recognizing the physical and financial strain on farmers, we transitioned our efforts toward developing sustainable, electric machinery. Our core vision is to provide total solutions that replace the high costs and emissions of traditional engines with quiet, efficient technology that respects both the worker and the environment.

Today, Sukoon Solutions helps modernize the fields by offering a range of zero-emission tools, such as the Haldhar electric tractor, which reduces operational expenses by up to 90%. By diversifying into eco-friendly agritech, we provide marginal farmers with the means to achieve financial independence while eliminating toxic exhaust from their daily work. Our practical approach ensures that technology contributes to the success of rural communities, creating a cleaner, more stable, and more dignified livelihood for the hands that feed our nation.

INTRODUCTION

Since its inception, the company has been driven by a vision to provide complete and reliable solutions to its customers by developing equipment that is both economically practical and environmentally responsible. Built on this philosophy, the Haldhar Microtrac 4x4 represents the next evolution in sustainable agricultural mechanization — a high-performance, multi-utility electric tractor engineered to meet the growing demands of modern farming operations.

The Haldhar Microtrac 4x4 is equipped with a dual-motor, 4-wheel drive system specifically designed to provide superior traction, improved torque delivery, and enhanced operational stability across a wide range of agricultural conditions. Developed especially for small and marginal farmers, the machine is capable of delivering efficient performance on inclined terrain, wet fields, uneven surfaces, and challenging rural landscapes while maintaining low operating costs and minimal maintenance requirements.

To ensure maximum versatility, the Haldhar Microtrac 4x4 has been developed with compatibility across the range of attachments and implements manufactured by the company. These attachments are specifically engineered to integrate seamlessly with the tractor, enabling efficient operation for multiple agricultural and utility tasks while maintaining reliability, safety, and ease of use.

This operational manual has been prepared to guide users in the safe, efficient, and proper operation of the Haldhar Microtrac 4x4. The manual includes important instructions regarding machine operation, hydraulic controls, battery management, charging procedures, safety precautions, troubleshooting, and routine maintenance practices required for long-term performance and durability. Together, we move toward a future of sustainable, efficient, and environmentally conscious farming solutions.

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1. SERVICE INFORMATION

Our Commitment to You

- Training and Handover: Before you begin, our authorized dealer will provide comprehensive on-site training. We ensure you are fully confident in operating the Microtrac 4x4 before the Sales Intimation Card is signed.
- Periodic Services: To keep your machine in peak condition, we recommend **four** scheduled services per year. The first **two** services are free of all labour charges.
- Machine Warranty: Your investment is protected by a warranty of **1 year** whichever comes first. *

Battery Warranty

Battery Warranty	5 Years or 1,200 charge cycles — whichever comes earliest. Valid only when the Sukoon-certified charger is used exclusively and the Service Book is maintained.

Maintenance for Peak Performance

- Battery Health: Always use the Sukoon-certified charger. Never use third-party chargers — this voidsthe battery warranty.
- The Service Book: Required for all warranty claims and free service coupons. Treat it as the machine's heartbeat.
- Support: Reach out to your local dealer for expert technical assistance at any time or you may contact Sukoon using the mail id **service@sukoonsolutions.com**.

*** Only genuine Sukoon parts must be used to keep this warranty valid. If any tamper is detected the warrant will be deemed null and void.**

2. TECHNICAL SPECIFICATIONS

Drive System	4-Wheel Drive (4x4) — Dual Motor Configuration
Motor Count	2 (Independent Motor Controllers)
Power Rating (per motor)	2 x 2 kW
Total System Power	4.0 kW
Rated Torque (per motor)	4.8 Nm
Maximum Motor Voltage	58V
Battery Type	Lithium Iron Phosphate (LiFePO4) — Prismatic
Battery Make	Dr Litheumn
Battery Configuration	2 × 105 Ah (Dual Independent Packs)
Tyres	6.00 x 12
Total Energy Capacity	105 Ah x 52V
Battery Cycle Life	3,000 cycles
Battery IP Class	Prismatic
Battery Warranty	5 years or 1,200 cycles (whichever is earlier)
Machine Warranty	1 year
Top Speed	16km/h
Ground Clearance	230mm
Tyres Type	Agricultural Lug Thread
Wheel Track	875mm
Dimensions (L×W×H)	1900mm x 1300mm x 1009mm
Weight	635 kgs
Pulling Capacity	5 Tonn
Power Bank Output	105 x 52 / 210 x 52
Wheel Base	1230mm
Backup	4 – 6 hours

3. ADJUSTMENT

Seat Adjustment

To adjust the seat on the Haldhar Microtrac 4x4 for optimal comfort and control, follow these steps using the slider mechanism located at the base of the seat:

Operating the Adjustment Lever

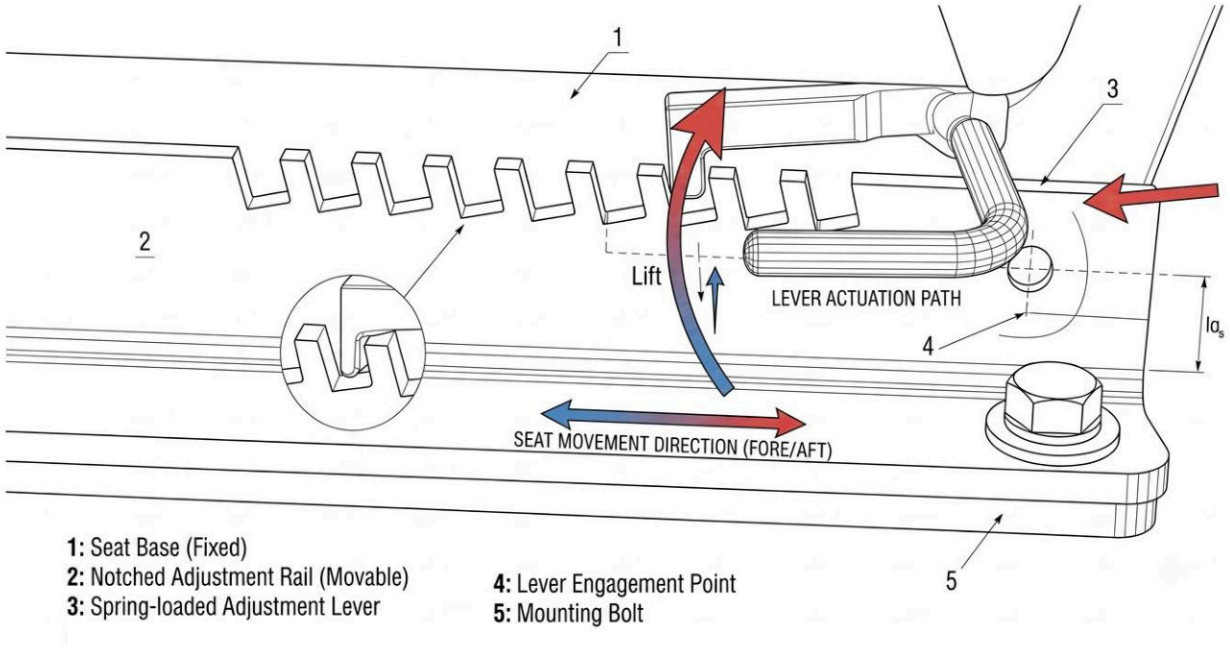
Locate the L-shaped metal adjustment lever positioned on the right side of the seat base. To unlock the mechanism, firmly pull the lever upwards. This disengages the locking pin from the notched tracking rail, allowing the seat to move freely along its mounting.

Positioning the Seat

While maintaining an upward pull on the lever, use your body weight to push or slide the seat forward or backward until it reaches your desired position. Ensure you are close enough to comfortably reach all foot pedals and the steering wheel without straining.

Locking the Mechanism

Once you have found a comfortable position, release the lever. Gently rock the seat back and forth until you hear the locking pin click firmly into one of the notches on the track. Always verify that the seat is fully immobilized before starting the engine or operating the tractor.



Reference IMG 1.1

4. OPERATIONS OF HALDHAR MICROTRAC 4x4

The Haldhar Microtrac 4x4 is a high-torque, multi-utility electric tractor featuring a dual-motor 4-wheel drive system designed for superior traction, precision, and power. The 4x4 system delivers drive force to allfourwheels simultaneously, making it exceptionally capable on inclined terrain, wet or loose soil, and heavy cultivationwork.

Operation begins by engaging the MCB (Miniature Circuit Breaker) to activate both high-capacity battery banks, followed by the ignition key. It features a unique dual-hand lever steering system for zero-turnmanoeuvres,speed control modes, and dual hydraulic operation.

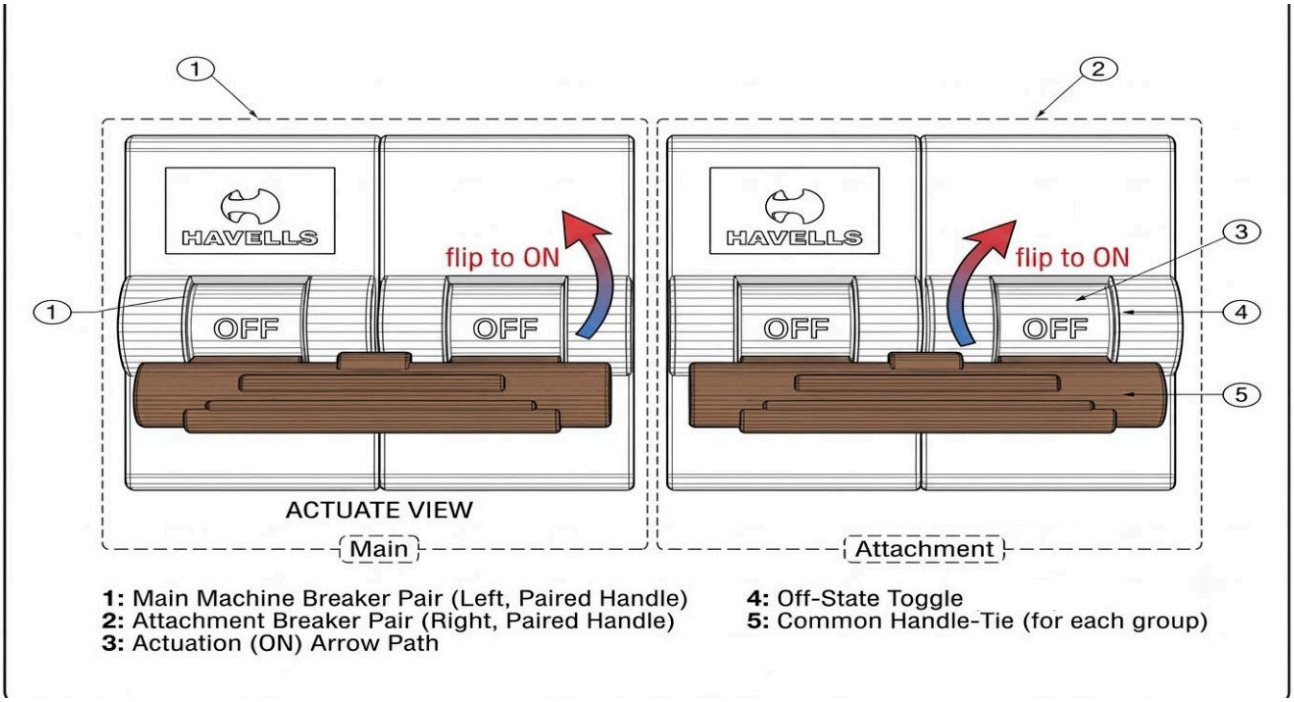
System Startup & Power Sequence

The Microtrac 4x4 uses an industrial-grade power management system with dual battery packs, each governed by its own Battery Management System (BMS).

Step 1 — Primary Power Activation (MCB)

Locate the main MCB (Miniature Circuit Breaker). Switch the MCB to the **ON** position to engage both high-capacity battery banks. The MCB acts as the primary safety kill-switch and power gate for the entire system. *On newer models with three MCBs, two control the independent motors, while the third controls the attachment.*

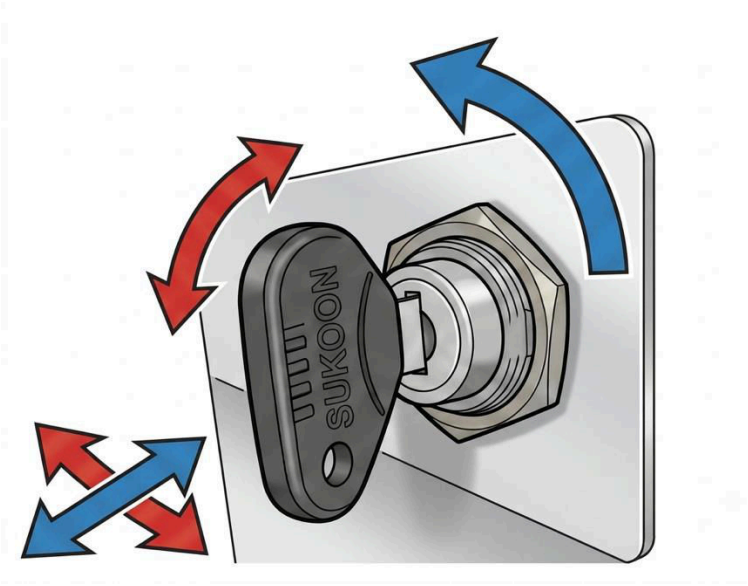
- If operating without any electric attachment, keep the attachment MCB **OFF.**
- If the tractor is not in use, both MCBs must be turned **OFF.**
- When the tractor is put on charging, the attachment MCB must be turned **ON.**



Reference IMG 2.1

Step 2 — Secondary Ignition

Once the MCB is engaged, insert the ignition key and rotate it clockwise to power on the digital dashboard and user-friendly interface. Rotate the key anticlockwise to power the system off.

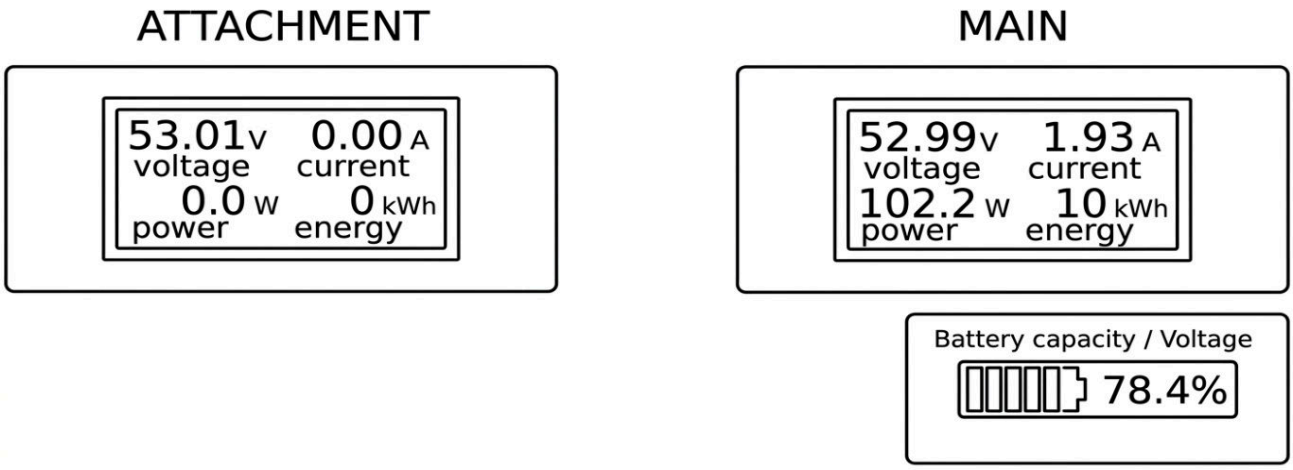


Reference IMG 2.2

Step 3 — System Check

Ensure battery voltage on the display is within the operational range of 51.00 V to 58V before engaging the motors.

- Left screen: Current draw of all attachments (*if any*).
- Right screen: Current draw of the main machine.
- Below the right-side ampere meter: average battery level indicator for both packs combined.



Reference IMG 2.3

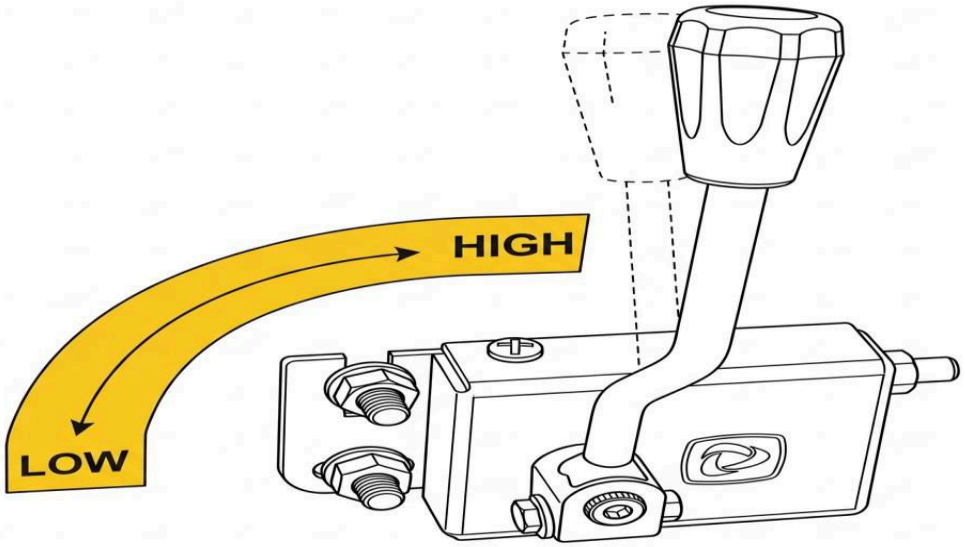
Advanced Steering & Control

The Microtrac 4x4 is designed for zero-turn style manoeuvres in confined spaces such as factory floors and narrow farm rows.

Hand Lever Control

Identify the hand lever located on the left of the operator's seat.

- Lever straight = **HIGH SPEED LOW TORQUE** [normal driving].
- Lever downward = **LOW SPEED HIGH TORQUE** [cultivation, rough terrain, inclined surfaces].

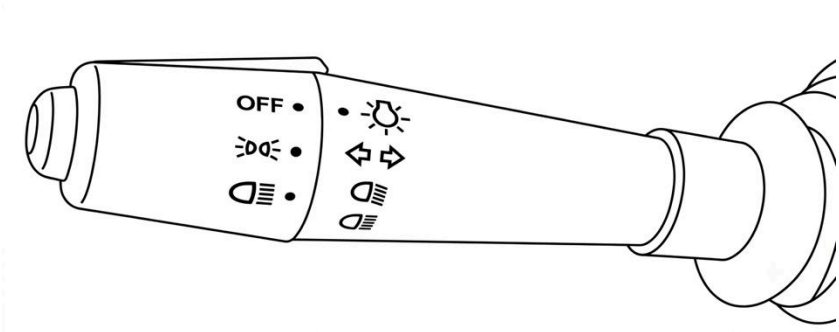


Reference IMG 3.1

Note : Both the levers should be set in the exact same position to function appropriately.

Light Control

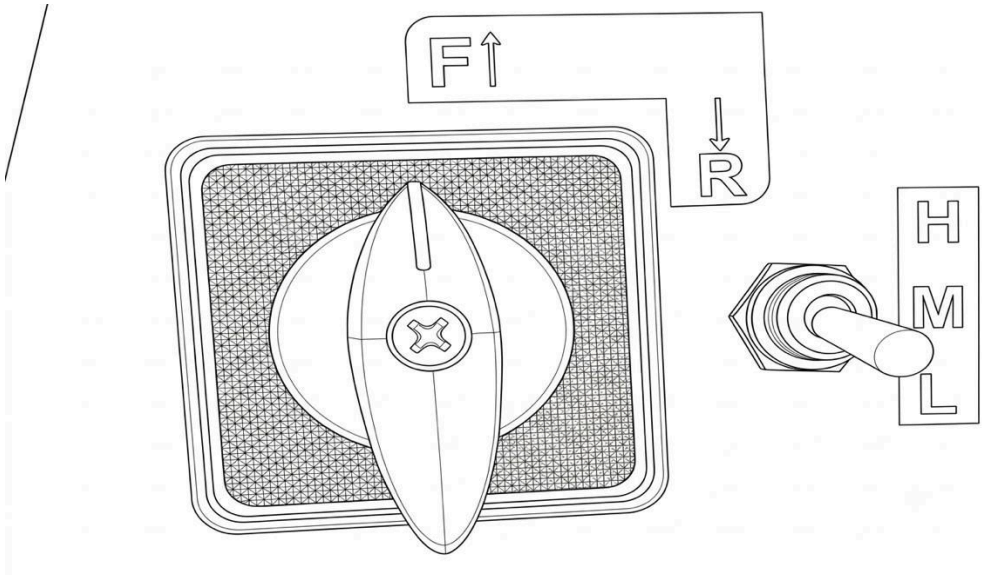
- Rotate the function knob towards the front to turn the plough light **ON.**
- Push the function knob slightly upward to turn main headlight and backlight **ON**.



Reference IMG 3.2

Toggle Switch

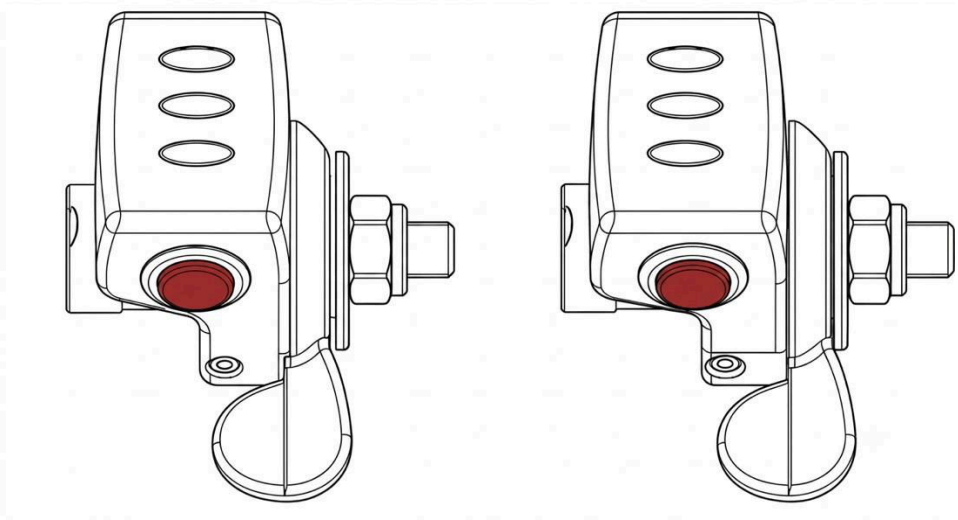
- The toggle switch controls High, Medium, and Low speed modes.
- The Red knob when turned towards the R gets the system to Reverse mode and if turned to the F side it would drive the system forward. If the knob is set to any other direction the system will revert back to forward mode.



Reference IMG 3.3

Jammer

- Left side jammer: operates the **ATTACHMENTS.**
- Right side jammer: operates the **MACHINE.**



Reference IMG 3.4

Motor Control

• The Haldhar Microtrac 4x4 is engineered to operate with both motors engaged simultaneously at all times, ensuring continuous full-time 4x4 functionality throughout operation. This dual-motor configuration allows power to be delivered evenly across all driving wheels, resulting in improved traction, enhanced pulling capability, and greater operational stability under varying working conditions.

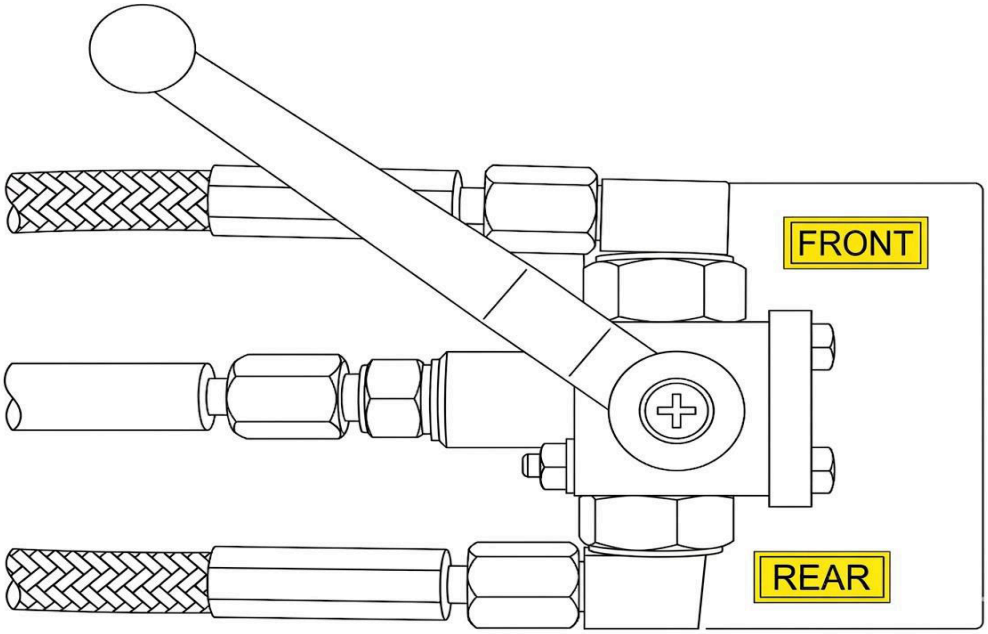
The synchronized operation of both motors significantly improves the machine's ability to traverse uneven, muddy, loose, or inclined terrains where conventional single-drive systems may experience wheel slip or reduced efficiency. By maintaining constant power distribution, the system enhances overall control, minimizes traction loss, and ensures smoother movement during agricultural and utility operations.

In addition to improved terrain handling, the full-time dual-motor arrangement contributes to better load-handling performance and operational reliability. The combined output of both motors enables the machine to sustain higher pulling forces while reducing stress concentration on a single drive unit. This results in more balanced performance, increased durability of drivetrain components, and improved efficiency during prolonged usage.

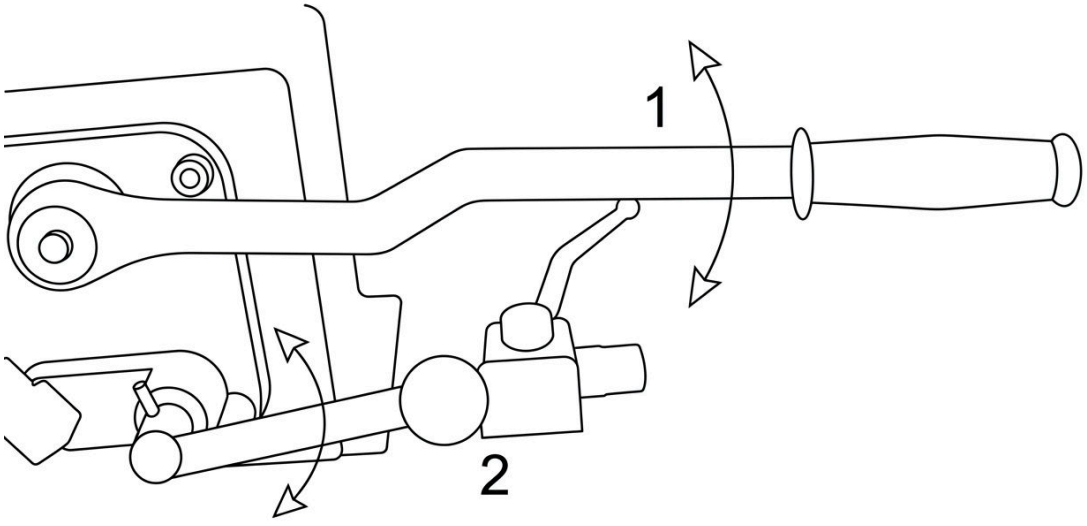
• **Note:** For either motor to function, the corresponding MCB (Miniature Circuit Breaker) must be set to the upright/ON position before operating the machine.

Working of Lift Lever

- The FRONT and REAR markings on the hydraulic directional control valve indicate the operating direction of the lift system. Before operating any attachment mounted on either side of the tractor, the operator must position the hydraulic control lever according to the required direction. Ensure the lever is set to the corresponding FRONT or REAR position prior to operation.



Reference IMG 4.1

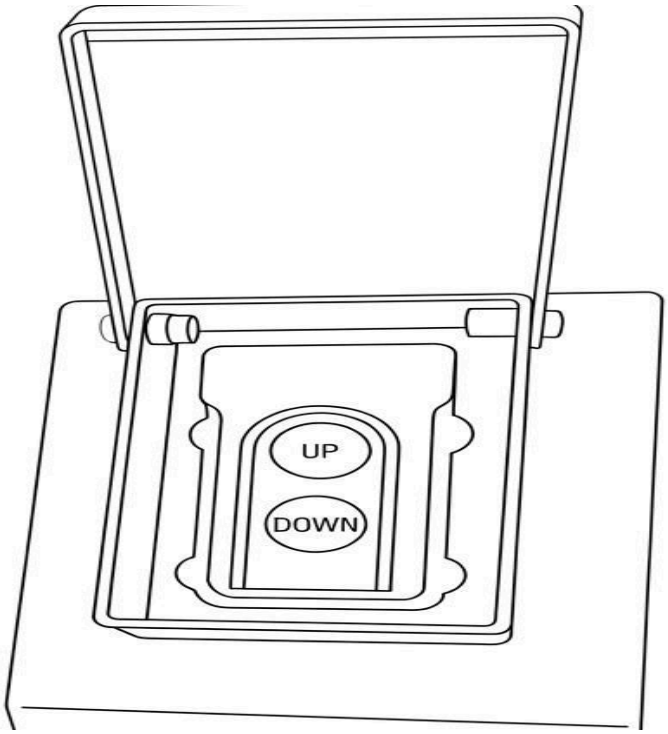


Reference IMG 4.2

• The hand crank [Point 1 Reference 4.2] is used to operate and position the hydraulic lift manually. Push the handle downward or pull it upward to raise the attachment to the desired position.

• The lever [Point 2 – Reference 4.2] is used during manual hand crank operation. Before operating the hand crank, the Point 2 lever must be kept in the closed position. Once engaged, the hand crank can be operated to lift the attachment. In cases where the user raises the attachment beyond the required height, the Point 2 lever may be rotated anticlockwise to release the pressure, thereby allowing the attachment to be lowered either partially or completely.

• For models equipped with an electrically operated lift system [Reference 4.3] , the lift can be raised or lowered using the provided control button, eliminating the need for manual hand cranking. All other operations,including FRONT/REAR directional selection and the lift position locking mechanism, remain the same.

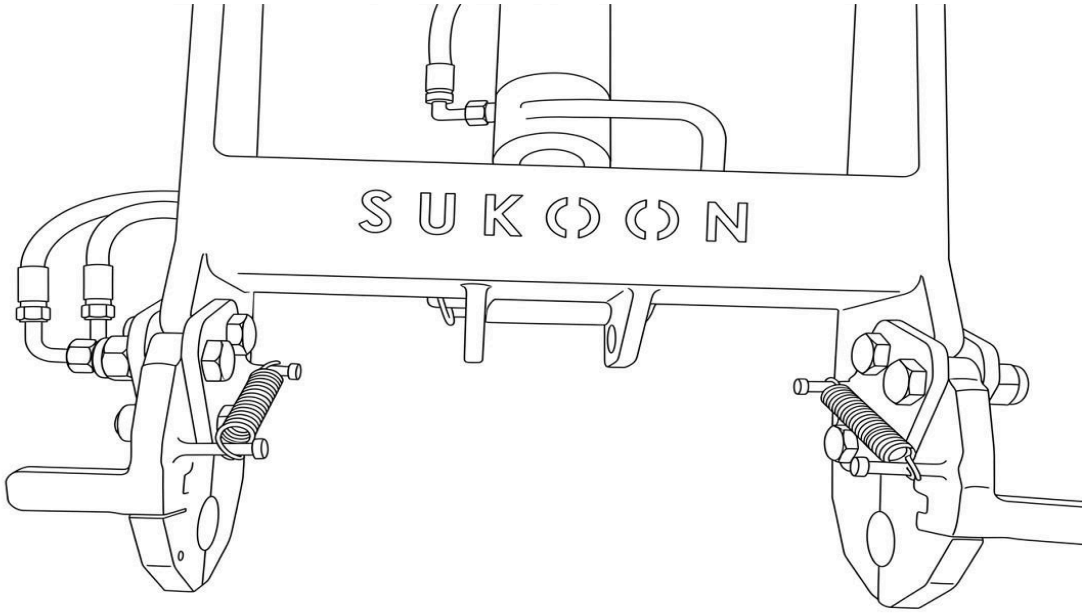


Reference IMG 4.3

Dynamic Hydraulics & Attachments

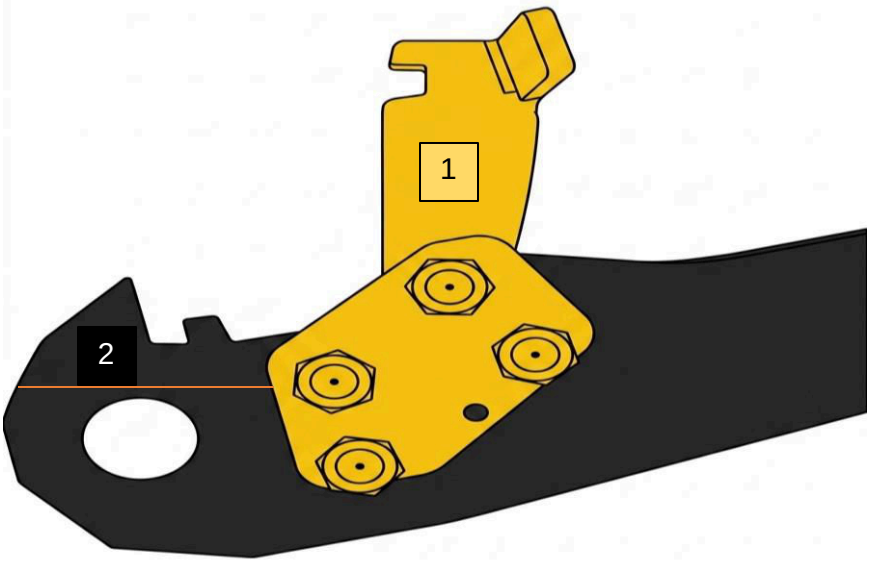
The Microtrac 4x4 features a dual-end hydraulic system designed to reduce manual labour.

Attaching Implements



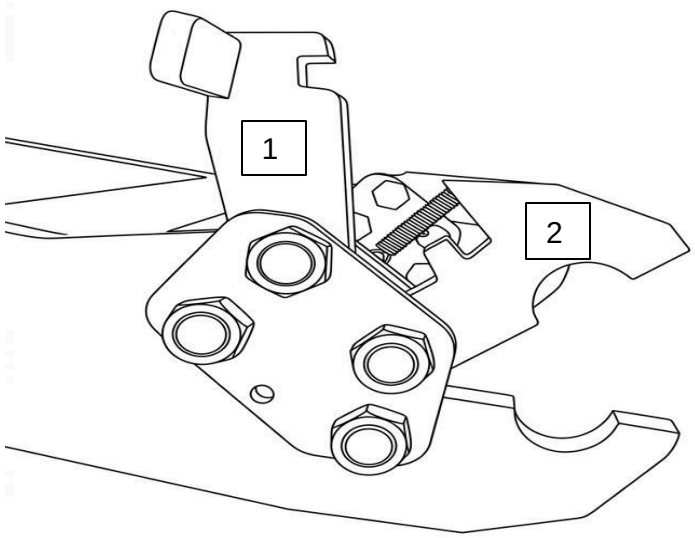
Reference IMG 5.1

- Attach the cultivator or other implements by unlocking the locked strips [Reference 5.2].



Reference IMG 5.2

- Pull the yellow strip number 1 [Reference 5.2] **Upwards** to release the locking mechanism.
- Pull the yellow strip number 2 [Reference 5.2 & 5.3] upwards to mount the attachment(s).
- Secure the attachments firmly before operating.
- Lock the system by using the yellow strip number 2 and then 1 [reference 5.2&5.3] **Downwards** to lock.



Reference IMG 5.3

Battery Care & Shutdown

The dual 105 Ah LiFePO4 battery packs are the heart of the machine. Each pack is independently managed by its own BMS to ensure balanced performance and protection.

Shutdown Procedure

1. Lower all hydraulic attachments to the ground.
2. Turn the ignition key to the OFF position.
3. Crucial: Flip the MCB to OFF. This prevents phantom drain and ensures both battery packs are physically disconnected from the motor controllers during storage.
4. We recommend to charge both the batteries to 100% if planned to be unused for a prolong time.

Tractor Cabin

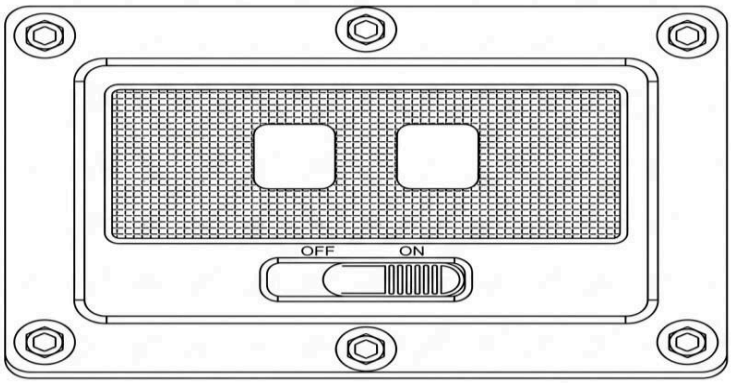
Cabin Control and Cooling

The cabin is equipped with a dedicated ventilation and cooling system, standard automotive-style lighting controls, and a three-button switch console.

Lighting

The cabin lighting operates identically to a standard automotive system, utilizing a 3-position toggle switch:

- **ON:** Lights remain continuously on.
- **OFF:** Lights remain continuously off.



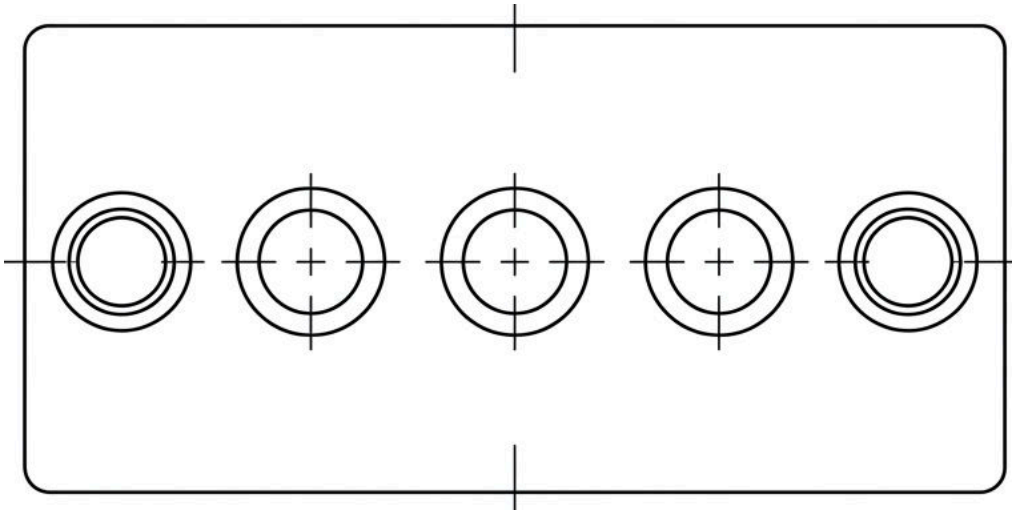
Reference IMG 6.1

Control Console

The primary cabin accessories are controlled via three mechanical pull-buttons located on the consoleontopright for easy of accessibility:[Reference diagram 6.2]

- **Left Switch:** Pull to operate the ventilation fan.
- **Center Switch:** Pull to activate the pump for the water-based cooling system.
- **Right Switch:** Dummy switch.

i Note: The cabin cooling system utilizes **water** as its primary coolant. Ensure the reservoir is checked and filled regularly for optimal performance.

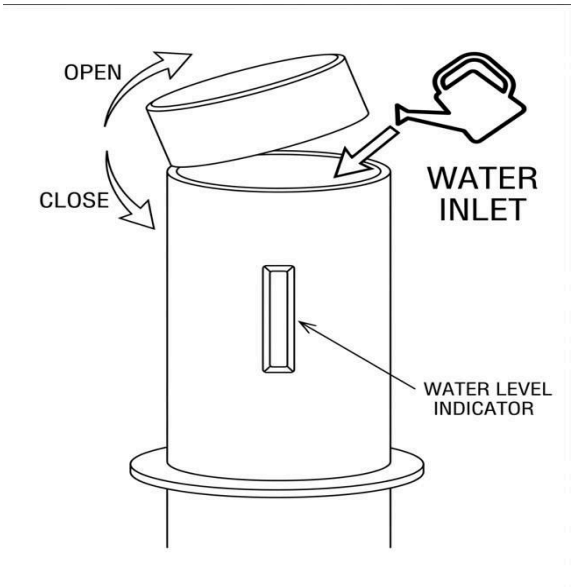


Reference IMG 6.2

Cooling pump

An auxiliary refilling pump is mounted directly inside the cabin to manage the cooling system's fluid levels.

- **Operation:** When an external water supply located at the rear of the cabin is connected to the system, this pump automatically activates to push water up into the overhead reservoir.
- **Level Regulation:** The system continuously monitors fluid levels. The pump **automatically starts** when the overhead reservoir water drops below a set threshold and **cuts off** instantly once the optimum water level is reached, ensuring a constant, hands-free supply.
- When the system requires refilling water should be added till the indicated limit.



Reference IMG 6.3

BATTERY SYSTEM & CHARGING GUIDE

The Haldhar Microtrac 4x4 is powered by a dual Lithium Iron Phosphate (LiFePO4) battery system — the cleanest, most durable battery chemistry available for electric agricultural machinery. Understanding your battery system and following the correct charging procedure is essential for safety, performance, and preserving your 5-year battery warranty.

Battery Specifications

Battery Type	Lithium Iron Phosphate (LiFePO4) — Prismatic
Model / Make	Dr Litheum
IP Class	IP 67
Configuration	Dual Pack — 2 × 105Ah (Independent)
Nominal Voltage	48.0 V
Cycle Life	3,000 charge cycles
Battery Warranty	5 years or 1,200 cycles — whichever comes first
Approved Charger	Eco Star EV Charger (supplied with unit)
Charging Ports	Front port OR Right rear port
Minimum Storage Charge	20% — never store either pack below this level

⚠ APPROVED CHARGER ONLY — DO NOT USE THIRD-PARTY CHARGERS

Always use the Sukoon-certified Eco Star EV Charger supplied with your unit.

Using any other charger will immediately void your 5-year battery warranty and may cause irreversible damage to both battery packs.

Do not attempt to charge with domestic chargers, generic EV chargers, or any unapproved device.

Charging Port Locations

The Microtrac 4x4 provides two charging port positions for operator convenience. Either port charges bothbattery packs simultaneously.

Front Port	Located at the front of the tractor. Convenient when the tractor is parked facing a charging station or wall socket.

Right Rear Port	Located on the right-hand rear side of the tractor. Useful when the tractor is reversed into a bay or when the front is obstructed.

i NOTE

Only one port needs to be connected at a time. Do not connect both ports simultaneously.

Charging Procedure — Step by Step

Follow every step in sequence. Do not skip or reorder any step.

1

Engage the Battery MCB

Before connecting any charging cable, locate the Battery MCB (Miniature Circuit Breaker).

Flip the Battery MCB to the ON position.

This activates the battery management circuit and allows the charger to communicate with the BMS of both packs.

⚠ Do not connect the charger before the MCB is engaged — doing so may cause a connection fault.

2

Connect the Charging Cable to the Eco Star EV Charger

Locate the charging cable supplied with your unit.

Insert the cable connector into the Eco Star EV Charger, matching the positive (+) and negative (−) terminals as indicated by the labels on both the charger and the cable.

⚠ Incorrect polarity connection will trigger the FAULT indicator. Do not force any connector.

3

Connect the Cable to the Tractor Port

Plug the other end of the charging cable into either the Front Port or the Right Rear Port on the tractor.

Ensure the connector clicks firmly into place. A loose connection may cause intermittent charging or trigger a fault.

4

Plug the Eco Star EV Charger into the Mains Socket

Plug the Eco Star EV Charger into a stable 220V AC mains socket.

Ensure the socket is dry and in good condition.

Turn on the socket switch.

5

Confirm Charging Has Started

The Eco Star EV Charger will display its status via the LED and FAULT indicators.

A green LED confirms that charging is in progress.

If the FAULT display is illuminated, stop and refer to the Fault Diagnosis section.

You may also verify charging status on the tractor's right-side dashboard display, which will show live voltage and current draw for both packs.

Fault Diagnosis During Charging

If the FAULT display on the Eco Star EV Charger illuminates at any point during or at the start of charging, follow the steps below before contacting support:

1. Turn off the mains socket switch and unplug the charger from the wall.
2. Disconnect the charging cable from the tractor port.
3. Wait 60 seconds for the system to fully reset.
4. Check that the Battery MCB is in the ON position.
5. Inspect the charging cable connectors for any dirt, moisture, or bent pins.
6. Verify the mains socket is providing stable range of 210V to 240V — try a different socket if available.
7. Reconnect and attempt charging again from Step 1.
8. If the FAULT indicator reappears after a retry, do not attempt further charging. Contact your Sukoon authorized dealer immediately.

> **⚠ DO NOT OPERATE WHILE CHARGING**
>
> Never start or operate the Microtrac 4x4 while the charging cable is connected.
>
> Always disconnect the charger fully before turning the ignition key.

Battery Care & Best Practices

- Never allow either battery pack to drop below 20% charge before recharging.
- Charge in a well-ventilated, dry area — never in enclosed or wet spaces.
- Do not leave the MCB ON when the tractor is stored for extended periods without charging.
- Once a month, leave the tractor on the charger for a full 12-hour cycle to allow both BMS units to balance individual cells across both packs.
- Always use only the Sukoon Eco Star EV Charger. Using any other charger immediately voids the battery warranty.
- If storing the tractor for more than 2 weeks, ensure both packs are at least 50% charged before storage.
- Avoid exposing the battery packs to direct sunlight or extreme heat for prolonged periods.

5. OPERATING PRINCIPLES

The Haldhar Microtrac 4x4 is engineered for efficient, low-maintenance operation when used within itsdesigned parameters. Following these operating principles ensures safety, performance, and long service life.

- ✅ Perform a visual inspection before each operation.
- ✅ Ensure the direction selector and the MCB are flipped ON before any operation.
- ✅ Operate the tractor within the rated load capacity and duty cycle.
- ✅ Use only Sukoon-approved attachments to maintain stability and electrical safety.
- ✅ Avoid sudden acceleration, braking, or direction changes under load.
- ✅ Monitor system indications and warning alerts during operation.
- ✅ Allow adequate cooling intervals during extended or continuous use.
- ✅ Operate the tractor only after understanding the control layout and basic functions.
- ✅ Charge only with the charger provided with the product on a stable 220V supply. Charge in a dry,open environment.
- ✅ Use only 50% throttle speed (green zone) while operating the machine for best performance and battery backup.
- ✅ Monitor battery packs via the dashboard. Do not continue if it shows a critical low voltage (below 46V).

6. COMMON MISUSE

The following actions are considered misuse and must be strictly avoided:

- ✕ Operating the tractor beyond its rated load or on unsuitable terrain.
- ✕ Continuous operation beyond the recommended duty cycle without breaks.
- ✕ Using non-approved attachments or accessories.
- ✕ Bypassing safety features, interlocks, or warning systems.
- ✕ Charging or operating the tractor in wet, poorly ventilated, or unsafe environments.
- ✕ Making unauthorized electrical or mechanical modifications.
- ✕ Ignoring abnormal noises, vibrations, or warning indications.
- ✕ Allowing untrained personnel to operate the tractor.
- ✕ Operating the machine while connected to the charger or while charging is in progress.
- ✕ Operating in heavy rain.
- ✕ Operating the rotavator in hard soil.
- ✕ Operating the machine in high gear during cultivation.
- ✕ Operating the machine in case of overheating (indicated by a beeping alarm).
- ✕ Using a non-Sukoon charger with either battery pack — this immediately voids the battery warranty.
- ✕ Allowing either battery pack to discharge below 20% before recharging.
- ✕ Do not leave the MCB ON while the tractor is being stored for a long period.

7. TROUBLESHOOTING

This section provides solutions for common mechanical and electrical interruptions.

Electrical Power Faults

Tractor Won't Power On

- Check if the MCB switch is in the ON position.
- Verify the Master Key is fully inserted and turned.
- If the MCB trips immediately, there is a short circuit — do not force the switch. Inspect main battery leads for damage.
- Check battery voltage using a multi-meter (DC voltage mode) via the charging socket. Check both packs independently.

Voltage Reading	Status	Action
46.0 V – 49.8 V	Low charge	Charge immediately
49.8 V – 52.0 V	Half charge	Can operate; charge soon
52.0 V above	Fully charged	Ready for operation
Below 46.0 V / No reading	Faulty / Dead	Contact support

Tractor Stops Suddenly During Heavy Pulling

This is an over-current trip. The MCB has popped to protect the motors. Reduce the load, wait 30 seconds, and reset the MCB.

Tractor Has Power but Is Not Moving

- Check the jammer throttle — if in an engaged position, reset it by pulling the switch back to its home position [Green]
- Check the wire harness for any damage or breakage.

Mechanical & Steering Faults

Unable to Turn Sharp / Zero-Turn

Ensure the independent hand levers are being pulled fully to lock the desired wheel. If the lever feels loose, the brake cable may need tightening.

Hydraulic Arms Won't Lift

- Ensure the tractor is not in charging mode (some versions lock hydraulics during charge).
- Check for low hydraulic oil in the reservoir; refill with ISO VG 46.

Power Bank Issues

No Power to External Tools

- Confirm the MCB for attachments are engaged.
- If a high-draw tool causes a shutdown, the tool's peak draw exceeds the system limit. Use a lower power setting.

Low Battery Backup

- Check operating mode — use HIGH MODE for normal driving, LOW MODE while working on the farm.
- Check correct fitment of the attachment with the allowed working depth.
- Ensure both battery packs are fully charged before extended field operations.

System Hard Reset Procedure

1. Bring the tractor to a full stop.
2. Turn the ignition key to OFF.
3. Flip the MCB to OFF.
4. Wait 60 seconds for the capacitors to discharge.
5. Flip MCB to ON and restart with the key.

8. UNDERSTANDING ERROR INDICATORS

The Microtrac 4x4 uses a digital interface to provide real-time feedback across both battery packs and dual motor controllers.

Digital Display Icons

Voltage Gauge

The most critical health indicator. A reading of 51.2V (nominal) is optimal. If it drops to 46V on either pack, that pack is in Critical Low mode — stop and recharge immediately.

Thermal Signal (RED LED Indication)

Indicates a motor controller has reached a high temperature. The system will automatically reduce torque to prevent damage. Allow the machine to cool before resuming work.

Current Load Bar

Shows how many amps each motor is drawing. If consistently in the red zone during towing, you are at risk of tripping the MCB. Reduce load or shift to low gear.

Audible & Visual Alerts

Symptom	Likely Cause	Action
Voltage indications	Normal startup confirmation	MCB and ignition successfully engaged; both packs online
Continuous beeping	Motor overheating / overload	Turn off machine for 10–15 min. If beeping continues, contact support
Low Voltage or no display at all.	BMS–controller communication break	Perform hard reset. If error persists, contact dealer

9. PERIODIC MAINTENANCE & SERVICE

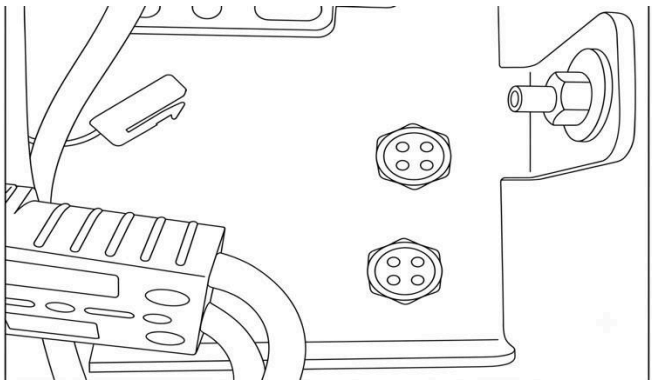
Regular maintenance ensures the dual-motor system, hydraulics, and 10.752 kWh power capacity remainreliable. Follow this schedule to keep the warranty valid and the machine safe.

Daily Maintenance (Operator Check)

- MCB Inspection: Ensure MCB terminals are free of dust and the switch snaps firmly. Check both main and attachment MCBs.
- Battery Levels: Check the digital dash for voltage on both battery packs. Never store either pack below 20% charge.
- Hydraulic Rods: Wipe down hydraulic pistons with a clean cloth to remove dust and mud beforeoperation, to prevent seal damage.

Monthly Service (Technical Check)

- Terminal Tightening: Vibration can loosen connections. Ensure all battery and MCB terminals acrossboth packs are tight.
- Brake Cable Adjustment: Check the hand levers for zero-turn manoeuvring. If wheels are not locking properly, tighten the brake cables.
- Hydraulic Fluid Level: Check the reservoir by unscrewing the orange cap present above the hand crank hub for a visual inspection.
- Chassis Greasing: Apply grease to all moving joints, especially the 3-point hitch and front-wheel kingpins.
- Brake Oil: Check brake oil and ensure it is at maximum marking.
- To check the motors independently, we have provided 2 switches present in the controllerassemblyplate which enables independent control of the motor [Reference 7.1]



Reference IMG 7.1

Quarterly / Seasonal Service (Authorised service technician)

- Controller Cleaning: Use compressed air to blow out dust from both motor controller cooling fins. Never use water on electrical components.
- Battery Balancing: Leave the tractor on the charger for a full 12-hour cycle once a month to allow both BMS units to balance individual cells across the two packs.

Detailed Maintenance Schedule

Component	Daily Use	Periodic (Not Daily)
Chain	Grease every 60 days	Grease every 3 months
Brake Oil	Check monthly (max marking)	Check monthly (max marking)
Gearoil / Gearbox Oil	Fill every 6 months	Fill every 1 year
Hydraulic Oil	Fill every 3 months	Fill every 6 months
Tie Rod ends	Grease every 60 days	Grease every 3 months
Spindle Bearing	Grease every 60 days	Grease every 3 months
Rotavator Gear Oil	Fill every 6 months	Fill every 1 year
Rotavator Bearing	Grease every 60 days	Grease every 6 months
Rotavator Chain	Grease every 60 days	Grease every 3 months
Spray Pump Oil	Fill every 6 months	Fill every 1 year
Bearing (Harrow/Roller/Auger)	Grease every 60 days	Grease every 3 months
Water Pump Belt/Chain	Check every 3 months; replace if cut/fraying	Check every 3 months/Greese if chain
Reaper Blade	Oil after each use	Oil every 60 days
Reaper Chain	Oil every 1 month	Oil every 3 months

General Service Tips for Haldhar 4x4 Owners

- Zero-Emissions Advantage: No engine oil, air filters, or spark plugs to change. The dual-motor system is maintenance-free at the drivetrain level.
- Dual Battery Care: The 4x4 carries 10.752 kWh across two independent packs. Always charge both packs together using the supplied charger. Never use a single-pack charger on one pack while the other is idle.
- Water Caution: The Microtrac 4x4 is weather-resistant, but avoid high-pressure power washing near the MCB, dashboard, and motor controllers. Use a damp cloth instead.
- Genuine Parts: Always use Sukoon-certified fuses and MCBs. A standard domestic MCB may fail to protect the dual high-torque motors during a power surge.



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