

User manual with maintenance information

# HYBEKO SP-45XC



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## Notes

### CONTACT INFORMATION:

OWNER:.....

FIRM:.....

ADDRESS:.....

TELEPHONE:.....

MOBILE:.....

EMAIL:.....

SERIAL NUMBER:.....

# INNHold

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# Introduction

## About this Manual

We at Hybeko thank you for choosing our machine. User safety is our highest priority. This book is a manual for use and daily maintenance for the user or operator of a Hybeko machine.

## Additional Manuals

### NOTICE

This manual will also have references to additional manuals that the user must read and understand before using the Hybeko SP-45XC

All manuals is located in the manual storage container, at the platform. and should be considered a permanent part of your machine and should remain with the machine at all times.

Contact Hybeko if you have any questions.

## Overview manuals

- Hybeko SP-45XC User Manual with Maintenance information
- JUICE BOOSTER 2 pro User manual
- Smart PG Pistol Grip Remote Control manual (Winches)



## Area of Use

### **WARNING**

The machine is designed with a winch deck/platform to lift power cables to a workplace above ground only.

## Bulletin Deployment and Compliance

The safety of users is Hybeko's top priority. Various bulletins are used to provide important safety and product information to retailers and machine owners.

The information in the bulletins is associated with specific machines by specifying the machine model and serial number. Bulletins are distributed to the last registered owner and their reseller, so it is important that you register your computer and make sure that your contact information is up to date.

## Contact the manufacturer

Sometimes it may be necessary to contact Hybeko. When you do so, be ready to enter your machine's model number and serial number, as well as your name and contact information. At a minimum, Hybeko should be contacted in the following cases:

- Reporting accidents
- Questions about the use of the product and safety
- Standards and information on regulatory compliance.
- Update of owner information, such as change of owner or of your contact information


## Change of ownership

By spending a few minutes updating owner information, you will ensure that you receive important safety, maintenance, and usage information that applies to your machine.

Register your machine by calling us at

35 50 85 00.

## Inspections

 **WARNING** Failure to follow the instructions and safety instructions in this manual could result in death or serious injury.



### Do Not Operate Unless:

- You have read and follow this user manual's principles for safe use of the machine.
- Always inspect the machine before use.
- Always perform functional tests before use.
- Inspect the workplace.
- Only use the machine for what it is designed for.
- You have read, understood, and follow the manufacturer's instructions and safety precautions – as well as safety and user manuals and the markings on the machine.
- You have read, understood, and follow the employer's safety rules and regulations for the workplace.
- You have read, understood, and follow all applicable government regulations.
- You have undergone qualified training in safe use of the machine.

## Inspection Before Use

### NOTICE

- It is the responsibility of the user to carry out inspection before use as well as routine maintenance.
- The inspection before use is a visual inspection carried out by the user before each work shift.
- The purpose of the inspection is to detect obvious faults with the machine before the user performs the functional test. The inspection before use should also be able to determine whether routine maintenance must be carried out.
  
- Only routine maintenance specified in this manual can be carried out by the user.
- In the event of damage or unauthorized deviations from the factory condition, the machine must be marked and taken out of service.
- Repairs may only be carried out by a qualified service technician according to the manufacturer's specifications.
- After the repairs have been carried out, the user must again inspect the machine before performing the function test.
- Fixed maintenance inspections should be carried out by qualified service technicians according to the manufacturer's specifications and requirements specified in the service book.

## Hazard classification and labelling

The marking on this machine uses symbols, color codes and words that indicate the following:



Safety symbol – alerts you to the potential risk of personal injury. Follow all safety messages that follow this symbol to prevent possible injury or death.



High Voltage, danger of electric shock



Indicates a dangerous situation that, if not avoided, will result in death or serious injury.



Indicates a dangerous situation that, if not avoided, can lead to death or serious injury.



Indicates a hazardous situation that, if not avoided, can result in minor or moderate injury.

### NOTICE

Indicates a warning of material damage. Mandatory with protective equipment



## Maintenance of safety decals with symbols

Replace any missing or damaged safety decals. Always think about the user's security. Clean the safety decal with mild soapy water. Do not use solvent-based cleaners. Then the safety decal may be destroyed.



## Pre-operating Inspection



### Inspection checklist

Also, make sure that components are not corrupted, installed incorrectly, or that parts are missing, or unauthorized changes have been made:

- Make sure that the user, safety, and maintenance books are complete and legible, and that they are in the storage box on the platform.
- Make sure that all marking is in place and that it is legible.
- Check the level of the hydraulic oil and that there is no oil leakage. Add oil if necessary.
- Check the liquid level of the battery and that there is no battery fluid leakage. Fill distilled water if necessary.
- Electrical components, wiring and electrical wiring
- Hydraulic hoses, couplings, cylinders, and branches
- Hydraulic tank
- Motor for driving as well as turntable as well as hub
- Protective pads
- Tires & Wheels
- End switches and horns
- Primary boom angle sensor
- Swivel Dial Quilt Sensor
- Cable drum length sensor
- Alarms and warning lights (if mounted)
- Nuts, bolts, and other fasteners
- Platform grid and center post
- Platform load cell
- Strap attachment point Check the entire machine for:
- Cracks in welds or goods
- Dents or damage to the machine
- Large amounts of rust, corrosion, or oxidation
- Make sure that all structural and other essential components are in place and that all associated fasteners and bolts are in place and sufficiently screwed in.
- After performing the inspection, make sure that all covers are in place and locked.
- Level Cooling Fluid

# Safety Decals and part number

Find out if the marking on your machine has text or symbols. Inspect to make sure all marking is in place and legible. Below is a numbered list of quantities, placement and explanation



**114390**

**⚠ DANGER**

**Electrocution Hazard**  
Death or injury can result from contacting electric power lines.

Line Voltage	Required Clearance
0 to 300V	1.0 m
50 to 2000V	1.0 m
250 to 3000V	2.0 m
350 to 5000V	2.5 m
500 to 7500V	3.0 m
750 to 10000V	4.0 m
	13.7 m

Maintain required clearance.

**82237**

**⚠ DANGER**

**Electrocution Hazard**  
Contact with energized components can result in death or serious injury.

Avoid contact with energized components.

**97865**

**⚠ WARNING**

**Electrocution/Burn Hazard**  
Failure to disconnect all the batteries before performing service on this machine may result in death or serious injury.

Disconnect all the batteries before performing service on this machine.

**31788**

**⚠ DANGER**

**Explosion - Burn Hazard**  
Explosion, death, burns or blindness due to ignition of explosive gases in contact with corrosive acid.

Keep all open flames and sparks away. Wear personal protective equipment, including face shield, gloves and long sleeve shirt.

DO NOT OPERATE equipment you do not understand the instructions in the manual. Consult your supervisor, the owner or the manufacturer.

**1267121**

**⚠ WARNING**

**Crush Hazard**  
Contact with moving work platform or boom can result in death or serious injury.

Securely raise work platform or boom to dry maintenance.

**1263543**

**⚠ WARNING**

**Improper operation or maintenance of this equipment can result in death or serious injury.**

**Access by trained and authorized personnel only.**

**1267121**

**⚠ WARNING**

**Crush Hazard**  
Contact with moving work platform or boom can result in death or serious injury.

Securely raise work platform or boom to dry maintenance.

**114390**

**⚠ DANGER**

**High voltage.**  
Electrical hazard. Authorized personnel only.

**114390**

**⚠ DANGER**

**Electrocution Hazard**  
Death or injury can result from contacting electric power lines.

Line Voltage	Required Clearance
0 to 300V	1.0 m
50 to 2000V	1.0 m
250 to 3000V	2.0 m
350 to 5000V	2.5 m
500 to 7500V	3.0 m
750 to 10000V	4.0 m
	13.7 m

Maintain required clearance.

**1267121**

**⚠ WARNING**

**Crush Hazard**  
Contact with moving work platform or boom can result in death or serious injury.

Securely raise work platform or boom to dry maintenance.

**1263453**

**⚠ WARNING**

**Improper operation or maintenance of this equipment can result in death or serious injury.**

**Access by trained and authorized personnel only.**

**31788**

**⚠ DANGER**

**Explosion - Burn Hazard**  
Explosion, death, burns or blindness due to ignition of explosive gases in contact with corrosive acid.

Keep all open flames and sparks away. Wear personal protective equipment, including face shield, gloves and long sleeve shirt.

DO NOT OPERATE equipment you do not understand the instructions in the manual. Consult your supervisor, the owner or the manufacturer.

**31060**

**⚠ DANGER**

**Tip-over Hazard**  
Altering or disabling sensors or limit switches can result in machine tip-over. Machine tip-over will result in death or serious injury.

Do not alter or disable sensors and/or limit switches.

**82237**

**⚠ DANGER**

**Electrocution Hazard**  
Contact with energized components can result in death or serious injury.

Avoid contact with energized components.

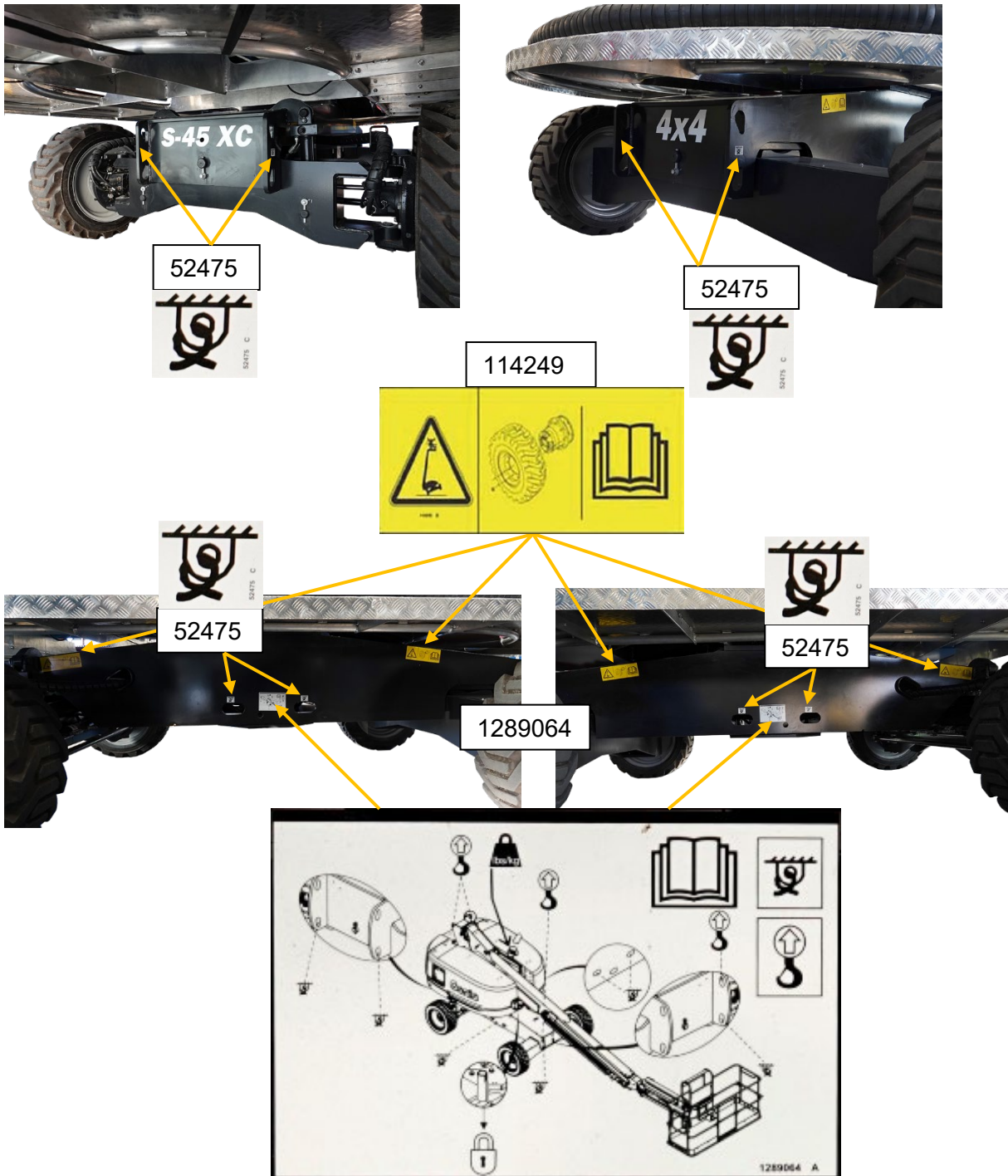
**NOTICE**

Blue arrow means the labels are placed behind a cover.

**ONLY 110V**

**PULL UP LADDER, LOCK BEFORE START**

**HYBEKO**



Part number	Number	Explanation
1263543 A	2	Warning Access by trained and authorized personnel only
1284981	2	Warning Explosion Hazard
31060	1	Tip Over Hazard
82237	2	Danger Electrocutation Hazard
114390	2	Danger Electrocutation Hazard
31788	1	Explosion/ Burn Hazard
97865	1	Danger Electrocutation/Burn Hazard
1267121	2	Crash Hazard
	1	Serialnumber plate
	4	Manual symbol labels
	1	Lift and Lock ladder
1289064	2	Lifting & tie down instructions
52475	8	Tie-down point
114249	4	Tip-over hazard/Tire specifications
	1	Danger High Voltage





Winches must NOT be used to lift anything other than what it is designed for

The total weight of persons, equipment and materials must not exceed the maximum capacity of the machine for the limited or unlimited range of motion.

## Danger of overturning



The boom must only be raised or extended if the machine is placed on a firm and level surface. Do not use the tilt alarm as an indicator of whether the machine is level.

The tilt alarm on the platform is triggered only when the machine is very tilted.

Be very careful if the tilt alarm is triggered with the platform raised. The machine indicator light will not light up and the driving function in one or both directions will not work. Map the situation around the boom in the slope as shown below. Follow the steps to lower the boom before moving the machine to a firm, flat surface. Do not rotate the boom while it is being lowered.

If the tilt alarm is triggered with the platform uphill:

- Raise the boom.
- Pull in the boom.

If the tilt alarm is triggered with the platform downhill:

- Retract the boom.
- Lower the boom.



Do not raise the boom when the wind speed is above 12.5 m/s. If the wind speed exceeds 12.5 m/s when the boom is raised, lower the boom, and stop using the machine. Do not use the machine in strong winds or strong gusts.

### NOTICE

Do not increase the surface area of the platform or cargo. Increasing the area exposed to the influence of wind will make the machine more unstable.

## Danger from Incorrect Use



### **DANGER**

Be extremely careful and drive at low speed and with the machine folded over uneven terrain, debris, unstable or slippery surfaces and close to holes and cliffs.

Do not drive the machine with the boom raised or extended on or near uneven terrain, unstable surfaces or in other hazardous conditions.

- Do not use the machine as a crane.
- Do not push the machine or other objects with the boom.
- Do not let boom come into contact with other objects.
- Do not tie the boom or platform to other objects.
- Do not place loads so that it protrudes beyond the outer limits of the platform.
- Do not push yourself or retreat towards objects outside the platform.
- Max. permissible manual power – 400 N
- Do not modify or disconnect machine parts that affect safety and stability in any way.
- Do not replace parts vital to the stability of the machine with parts of different weights or specifications.
- Tires assembled from the factory must not be replaced with tires with other specifications or a different ply rating.
- Do not use air-filled tires. The machines are equipped with foam-filled tires. The wheel scale is essential for stability.
- Do not modify or modify a lifting work platform without the manufacturer's prior written permission. Installing optional tools or materials step board or railing may increase the weight of the platform and the surface area of the platform or load.

### **NOTICE**

- Do not fasten, or place overloading loads on any part of this machine.
- Do not place ladders or scaffolding on the platform or against any part of this machine.
- Keep the platform free of junk.

## Fall Hazards



### **⚠ DANGER**

All users must comply with the regulations of the employer, workplace and authorities regarding the use of personal protective equipment.

- Do not sit, stand, or climb on the platform railings. Always stand firmly on the platform.
- Do not transport tools and materials if they are not distributed evenly and can be handled safely by the person(s) on the platform.
- Do not use this machine on a moving or mobile surface or vehicle.
- Make sure that the tires are in good condition and that the wheel nuts are well tightened.

### **⚠ DANGER**

## Danger when driving on Slopes

Do not run the machine in slopes steeper than the maximum inclination upwards, downwards, or sideways that the machine can handle. The specified maximum inclination for the machine only applies when the machine is folded.

Max. tilt, Stowed position, 4WD

- Platform into the ground      35 % (19°)
- Platform up the hill            35 % (19°)
- Lateral slope                      25 % (14°)

Approved maximum slope depends on the ground conditions with one person on the platform and sufficient traction. Additional platform weights can reduce the approved maximum slope. See "Driving in a slope" in the operating instructions.

## Collision risk

- Pay attention to the position of the boom and the turning radius of the rear end when rotating.
- Check the workplace for high obstacles and other possible hazards.
- Use the color-coded directional arrows on the platform control for driving and steering functions.



- Be aware of limited visibility and blind spots when driving or operating the machine
- Be aware of the risk of clamping when holding onto the railings of the platform.



## Risk of injury



### **WARNING**

All users must comply with the regulations of the employer, workplace and authorities regarding the use of personal protective equipment.

- Do not use the machine if hydraulic oil or air leaks. An air leak or leakage of hydraulic oil may penetrate the skin and/or cause burns.
- Unfortunate contact with machine parts under any cover will result in serious injury. Only skilled maintenance personnel must open such covers. Users should only open such covers upon inspection prior to use. All covers must be closed and secured when the machine is in use.

## Risk of explosion and fire

- Do not use the machine or charge the batteries in hazardous locations or where flammable or explosive gases or particles may occur.

## Risk of damage to the machine

### **DANGER**

- Do not use a damaged machine or a malfunctioning machine.
- Inspect the machine thoroughly before use and test all functions before each work shift. Mark a damaged machine immediately and remove it from operation.
- Ensure that all maintenance has been carried out in accordance with this manual and the applicable Hybeko service manual.
- Make sure that all marking is in place and that it is legible.
- Make sure that the user, safety, and accountability manuals are complete and legible and that they are in the storage box of the machine.
- Do not use the machine in places where there may be strong magnetic fields.
- Use of the machine for play and stunt is prohibited.
- Do not lower the boom without the area below being free of persons and obstacles.
- Do not use the boom near cranes without the crane being cordoned off and/or precautions have been taken to prevent a possible collision.
- Limit the speed of movement based on driving conditions (surface, traffic, slope, people in the area) and other factors that may cause a collision hazard.

## Battery safety



### Risk of electric shock

Avoid contact with the battery terminals.



MASHINE CONTAINS A HEIGH VOLTAGE BATTERY  
RISK OF ELECTRIC SHOCK

DISCONNECT ALL POWER SOURCES BEFORE OPENING ENCLOSURE  
THIS IS TO BE SERVICED BY TRAINERDPERSONELL ONLY

## Combustion damage



Batteries contain acid. Always wear protective clothing and goggles when working with batteries. Avoid spilling or contact with battery acid. Neutralize battery acid spills with baking powder and water.

**⚠ DANGER**

### Risk of explosion

Keep sparks, flames, and lit cigarettes away from the batteries. Batteries secrete an explosive gas.



## Ground Controls



DO NOT USE TURTABLE ROTATE FROM GROUND CONTROL WITHOUT PULL UP AND LOCK THE PLATFORM LADDER/GATE.

### **WARNING**

Ground controls are for emergency decent and storage purposes only.

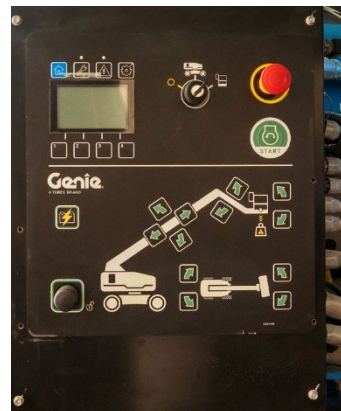
The ground control station should be used as a means of functional tests and for storage purposes. When the ground control station is selected, the platform controls, including the e-stop switch, cannot rate. The Ground Control functions should only be used in the event of an emergency lowering.

### **NOTICE**

Before use, the cover fitted over the controls must be removed

## How to use Emergency Lowering

- Turn the key switch to Ground Control
- Pull out the red emergency stop button to the "on" position.
- Press the emergency power button and activate lowering function



## Test functions from the Ground control



### Starting the lift

- Select a test area that is firm, level, and free of hazards.
- Turn the switch to ground control.
- Pull out the red emergency stop button to the "on" position.  
**Result:** The warning lights (if fitted) should flash.

### Test the Emergency Stop function

- Press the red emergency stop button to the "off" position.  
**Result:** The motor should stop, and no functions should be active.
- Pull out the red emergency stop button to the "on" position and restart the engine.

### Test Machine Functions

- Do not press the function activation button. Try activating each button for boom and platform features  
**Result:** No toll or platform features should work.
- Press and hold the feature activation button and activate all boom and platform function buttons.  
**Result:** All toll and platform functions should work in a complete cycle. The lowering alarm (if fitted) should sound while the boom is lowered.

### Test the Tilt Sensor

- Press the Maintenance button above the LCD.  
**Result:** The LCD should show the chassis and boom angle in degrees.

### Test Auxiliary Power



- Remove the cover
- The key switch to ground control and turn off the engine.
- Pull out the red emergency stop button to the "on" position.
- Press the emergency power button and activate each boom function button at the same time  
**Result:** All toll functions should work. Driving does not work on emergency power

## Recovery Mode



### **DANGER**

The recovery mode should only be used by trained and authorized personnel.

Genie specifications require that this procedure be performed quarterly.

A properly functioning recovery system is essential to safe machine operation. The Recovery mode allows the platform to be lowered if the platform is unable to lower using the platform controls, system failure or emergency situations.

## Test The Recovery System

- Turn the key switch to ground control and pull out the red Emergency Stop button to the on position.
- Start the engine and raise the primary boom to the horizontal position and extend it approximately 4 ft / 1.2 m.
- Push in the red Emergency Stop button to the off position to turn the engine off and pull it back out to the on position.
- Press the function enable button and activate the recovery switch.

**Result:** The auxiliary power unit will turn on and the boom will begin the following recovery sequence.

1. The primary boom will retract.
2. The primary boom will lower.



Function Enable Button. Recovery switch

### **NOTICE**

When test from ground control is completed.

Turn the key switch to platform control and attach the cover.

## Recovery Mode from platform control



### **DANGER**

The recovery mode should only be used by trained and authorized personnel. Hybeko specifications require that this procedure be performed quarterly.

A properly functioning recovery system is essential to safe machine operation. The Recovery mode allows the boom to be lowered and the machine to be towed if system failure or emergency situations.

### **WARNING**



This procedure should only be used when it is not possible to operate the machine in the normal way. This entails danger and extra care when emergency procedures are used. Emergency operation must only be used when the machine's normal operating source has been switched off.

### **WARNING**

By manually releasing the brakes, the vehicle will be free to move. Remember to block the wheels before releasing the brakes.

### **NOTICE**

#### In recovery mode you can perform:

-  Emergency lower all boom functions
-  Tow the machine when brakes are manually released, Wheel steering will still be operational

## Platform Control Panel (PCON)

### NOTICE

Don't press down footswitch before activate the start button.



1-Horn	9- Low and heigh torque
2-Winch platform Up and Down	10- Speed select toggel switch
3-Winch platform rotation	11- Switch to enable driving when rotating chassis
4-Jib up/down	12- Run/Steer Joystick
5-Joystick for raise/lower boom and rotation	13- <a href="#">Driving Light (Front of platform)</a>
6-Thumb control for boom in and out	14- <a href="#">Work lights (Winch platform)</a>
7-Start and stop toggel switch	15- Emergency Stop button
8- Auxiliary switch (emergensy toggle switch)	16- <a href="#">Operating Indicator lights</a>

### Emergency operation of boom functions

- Be sure the normal power source is turned off
- Key to platform control
- Pull out the emergency stop button (pos.15)
- Stand on the foot pedal
- Press and hold button (pos.8)(Auxiliary switch (emergensy toggle switch))
- perate the desired boom function

## Ladder/gate with Contact alarm



### **CAUTION**

The ladder is equipped with a contact alarm. Before the machine can be started, the ladder must be raised and locked. This is to prevent accidents and damage to the machine when using the rotation function. If the ladder is not raised and the user tries to start the machine, the contact alarm will be activated with sound and flashing LED lights and the machine will not start.

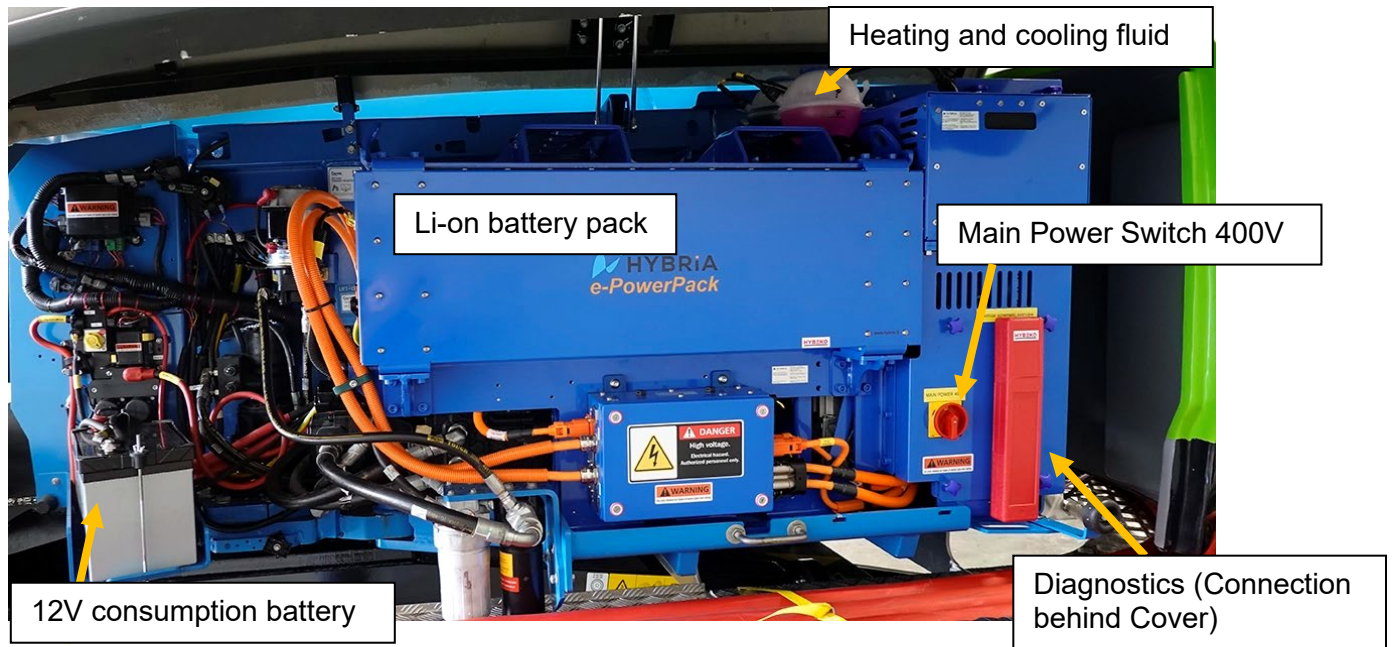
To deactivate the alarm


- Lift up and lock the ladder

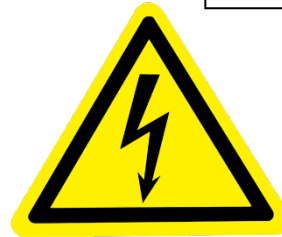




## POWER UNIT



 <p><b>ELECTRIC POWER UNIT</b> Product code: A211108-001A Serial No: 20220705-001</p> <p>Manufacturer: Hybria Ltd. WWW.HYBRiA.FI</p>	<p><b>BATTERY:</b> Li-ion 31 kWh Vnom 334 Vdc (288-393 Vdc) Battery fuse 400 A</p>
	<p><b>CHARGER:</b> Input 85-265 Vac, 32 A Connector SAE J1772 Type 1</p>
	<p><b>MECHANICAL POWER:</b> 55 kW <b>MASS:</b> 519 kg</p>
	<p><b>OPERATING TEMP:</b> -20 - 60 °C <b>COOLANT:</b> WEG 50/50 TYPE G13 <b>REFRIGERANT:</b> R-1234vf</p>



**HIGH VOLTAGE 400VDC  
RISK OF ELECTRIC SHOCK**

### Heating and Cooling System Fluid

#### COOLANT

Mixture of Si-OAT coolant medium on ethylene glycol basis and water.

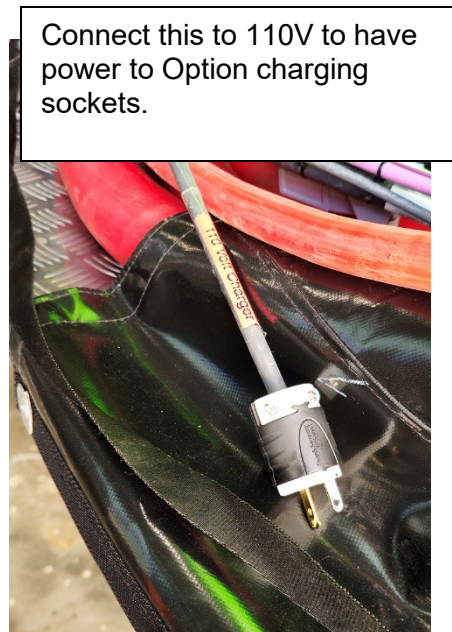
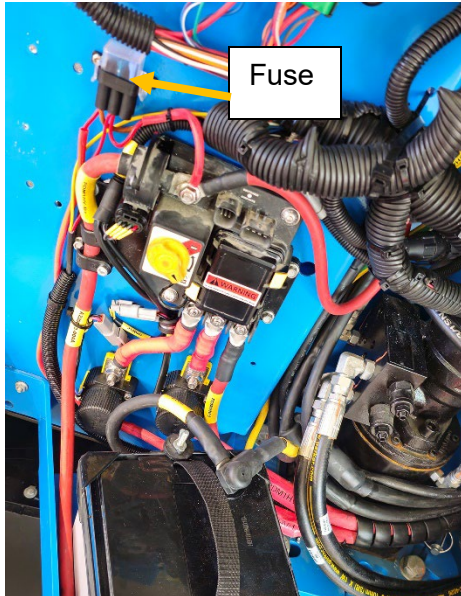
The Coolant medium type Glysantin G40 can also be used.  
Recommended coolant medium content 50%.

Mixture of different types of coolant and additional additives is not admissible.

- Battery circuit coolant volume is ca. 3,0 liters.
- Components circuit volume is ca. 7,5 liters



## 12V Consumption battery with Charger



# Charger

110V



## NOTICE

For more detail and technical information about the Juice booster 2 charger, see the JUICE BOOSTER 2 manual pdf.

## LED GUIDE

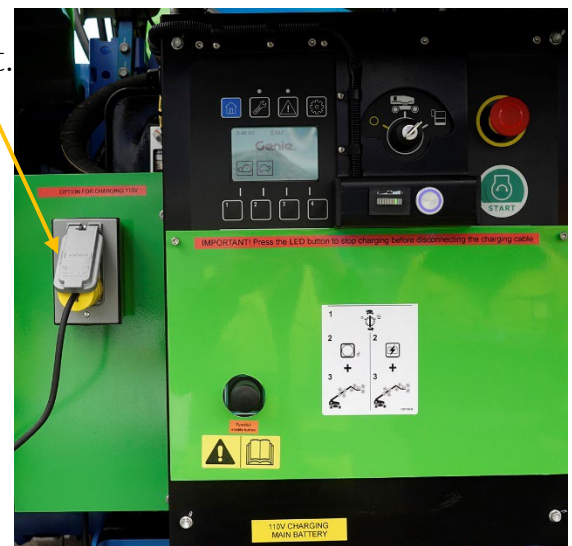
- **Green LED** AMPERE: Displays the automatically set or individually reduced amperage value
- **Yellow LED** MODE: Indicates the preselected mode.
- **Red LED** FAULT: Displays the cause in case of a fault.



ALL LEDs flash yellow for 2 seconds	The device is intialising and carrying out a self test
ONE LED flashes yellow for 30 seconds	The device displays the selected mode
One green LED is permanently	This displays the set amp value. And it's ready to charge. This status is also shown when charging is complete
One LED flashes alternately green then yellow	The amp value and the mode are at the same position
ALL orange LEDs light up in sequence	The battery is charging
ALL/one LED(s) flash(es) red alternately	Error message. A singel red light indicates the cause of the error

If option for charging is connected.

You can connect Juice Booster charger to this socket.



## Quick Start Charging



### Plug in

- Attach the right adapter for the socket
- Listen for the click as it connects.
- Plug it into socket first, then connect -to the machine

### Charging

#### NOTICE

- Sequential flashing orange light indicate that charging is in progress.
- When charging is complete you should only see a green light displaying the set charging intensity

### Start Charging

- CharCharging intensity is displayed in green with selected mode in yellow.
- You can reduce the charger intensity up to 30 seconds after charging starts using the select button.
- You can also change mode up to 30 seconds after charging starts by holding down SELECT for 5 seconds
- Charging intensity is displayed in green with selected mode in yellow.
- You can reduce the charger intensity up to 30 seconds after charging starts using the select button.
- You can also change mode up to 30 seconds after charging starts by holding down SELECT for 5 seconds

### Finish Charging

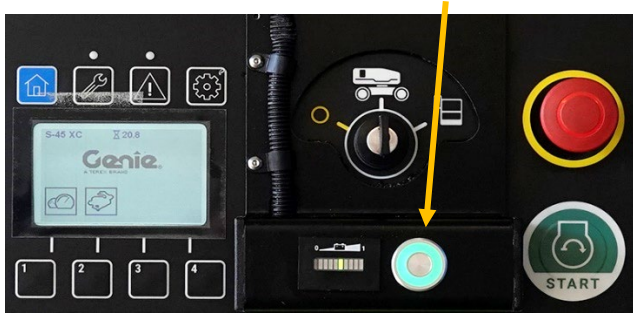
#### NOTICE

- Always finish the charging process on the mashine side first.
- Do not remove the connector from the socket or the JUICE CONNECTOR while charging is in progress.
- If you need to you can remove the adapter by pulling the retaining ring.

## System startup and shutdown

Human-machine interface

The machine has additional panel for the electric power pack as seen below:



- There is LED (with red, green, blue light) for informing user about the status of the electric power pack.
- Charge START/STOP button in the middle of the LED
- State of charge (SOC) display for the high voltage battery.

### LED states

Color	Blinking	Meaning
Off	Off	System is off. Can be restarted
Blue	1 Hz, 50% duty cycle	starting up or shutting down. Please wait
Blue	1 Hz, short pulse	Ready to start. Waiting for start button
Blue	Steady	Operational
Green	1 Hz, short pulse	Charger plugged. Waiting for charge button
Green	1 Hz, 50% duty cycle	Charging
Green	Steady	Charge complete. Press charge button to unlock
Red	Steady	Error active [machine alarm sound is also activated if that option is enabled in system parameters]

### General notes about starting and stopping the operation modes

#### **⚠ CAUTION**

Starting and stopping the system takes some time. Please wait until the system LED informs that the system is ready to start/stop until you take further action. If may need to learn new way of starting and stopping the operation modes.

## Operation modes

Following operation modes are available:



### Drive mode

Drive mode is the basic operation mode. Boom control is allowed. Drive is allowed. Charge plug is not connected.

Starting the mode:

- Turn key switch to Ground control on.
- The LED goes **blinking blue** (1 Hz, **50%** duty cycle)
- wait ca. 10 sec until LED light goes to **blinking blue** (with **short** pulse)
- Short pulse means that the system is OFF but READY TO START
- Now, press start.



#### NOTICE



- wait until LED light goes **constant blue**
- System is now ready to drive
- Turn the key switch to platform controls
- stop the system with turning power switch to off.
- Wait until the system is fully switched off (the LED is OFF). This takes CA 10 seconds finish
- Now it is possible to restart if needed. If you restarted before LED was OFF, just turn power switch OFF again.



### Charge mode from drive mode

- While on drive mode, plug in charge plug
- LED is not blinking **green** (1 Hz, **short** (15% time) pulse)
- press charge button at the center of LED light
- Plug is locked, charge starts and LED turns blinking **green** (1 Hz, **50% pulse**)
- when battery is full, LED turns **constant green**.
- to stop charging, press again charge button. Plug is now unlocked.
- Remove plug
- The system is now in drive mode
- You can now drive, or turn power switch off if you want to shut down.



#### NOTICE

When shutting down, wait until LED is OFF, before re-starting the system.

## Charge mode without turning the key switch to on position

You need to unplug the charge plug to shut down the system  
This mode is for charging only. No driving allowed, no boom allowed.

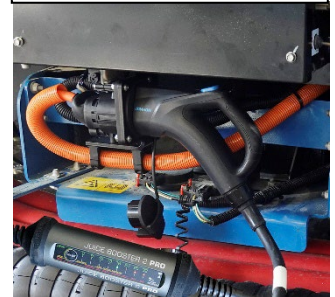


### When system is OFF:

- Keep key switch in OFF state
- Plug charge plug in, with AC mains connected.
- Systems now wakes up from charge plug electric signal
- Wait until LED starts blinking **green** (1 Hz, 15% pulse)
- press charge button.
- System starts up, locks plug and starts charging.
- To stop charging and shut down, press charge button again
- Remove plug
- Removing the plug shuts to system down. Wait until the LED goes OFF

#### NOTICE

Unplug the charge plug to shut down the system.



## Power supply mode

Read this section very carefully for your safety

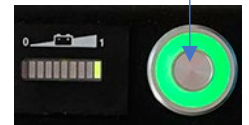
Power supply means that the system is operational while it is also charging. Charge is allowed, boom control is allowed but Driving is INHIBITED.

#### NOTICE

This option is only available if allowed from system parameters. By default, this is allowed.

- Start with the normal DRIVE MODE start procedure.
- Then, plug charge plug in, and start charging using charge button.
- You can now move boom and charge at the same time.
- To switch system off, stop charging from charge button, unplug the charge plug, and turn key switch to off position.
- Wait for the system to shutdown and LED going OFF.

Start and stop button for charging



#### NOTICE

Turning the key switch OFF does not shut the system OFF. You also need to stop charging and unplug the charge plug to shut down.

This feature is for following reasons:

- Genie system turns ignition off automatically after some time ("function enable delay" parameter in genie display)
- We don't want to stop charging because of this delay

- Ground E-STOP turns E-STOP circuit OFF.
- However, basket E-STOP turn ENGINE KEY OFF!
- The power pack has no way of telling whether key switch is turned OFF, Function enable delay is activated, or basket E-STOP is pressed.
- The implication is that you cannot shutdown and re-start the system from basket, if you are charging at the same time.



The E-STOP in the basket de-activates the pump still normally.

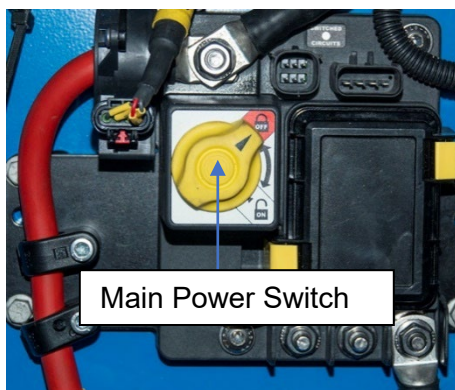
## Main Power switch

### NOTICE

The yellow main power switch for the system is located on engine side of the machine. The main switch **only** cuts power to winches and the Hybria electrical system. All functions other than driving will still work with Auxiliary Power.

- Turn this switch off before transport and storage.

If the main power switch is turned off and then turned ON. The button in the center must be pressed ones to enable the system again.



**⚠ DANGER**

**HIGH VOLTAGE**

## How to Disconnect Battery from Engine

Battery can be disconnected from engine by unplugging the orange power connection in front of the engine.



Turn Main Switch to OFF position



Press up the lock at the top of the connector



Press Down and pull out



## Using additional low voltage loads



Addition low voltage (12V) loads (such as winches) can be attached and used with the system.

### NOTICE

Loads must be connected into the outputs of the 12V power distribution unit and NOT DIRECTLY TO 12V BATTERY POLES!

### Rationale:

The power pack contains a DC/DC-converter that charges the 12V battery and maintains its voltage as 13,5V. The DC/DC converter (included in pump motor inverter) can feed the 12V system with up to 180A current.

The DC/DC current control logic protects the 12V battery from being overcharged, and temporarily lowers the DC/DC current reference value if the overcharge condition is detected. The detection is done by measuring the battery current with a current sensor, located in the 12V power distribution unit.

The logic only works if the winches are connected via the distribution unit. Otherwise the loads could not be measured with the current measurement sensor.

The 12V power distribution unit contains three fuses. One for power pack, two for additional loads. Be sure to not exceed the current limits. Also, **do not exceed the 180A limit for extended period with additional loads**, because otherwise the 12V battery will be depleted and this causes error and the system to shut down.

When the additional loads (e.g. winches) are not used, the DC-DC converter recharges the 12V battery.

NOTE! If the 12V energy needed for the winches are not sufficient, consider adding bigger 12V battery or several batteries in parallel.

## Operation from platform



### NOTICE

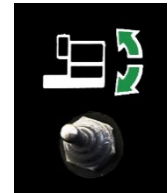
System start must be carried out according to procedure before the machine can operate from platform controls.

- Turn the switch to platform control.
- Check that red emergency stop buttons both on the ground and on the platform are in "on" position.



## To Position Winch Deck

- Press down on the pedal.
- Slowly move the appropriate function control handle or toggle switch or press the appropriate button according to the markings on the control panel.



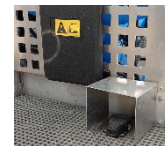
### NOTICE

At maximum working height and lower, the boom down and retract are coordinated by the control system.

## Control for Drive and Steer

- Press down on the pedal.
- Slowly move the drive lever in the same direction as the blue or yellow arrows
- Move the lever slowly in the same direction as the blue or yellow triangle shows,
- OR press the thumb switch on the top of the drive lever.
- Use the color-coded directional arrows on the platform control to see which direction the wheels will swing.

- Running the machine Press down on the pedal.
- Speeding up: Slowly move the lever out of the middle position.
- Slow down: Slowly move the drive lever towards the middle position.
- Stop: Center the drive lever or release the pedal.
- Use the color-coded directional arrows on the platform control to see which direction the machine will be in.



### NOTICE

Machine travel speed is restricted when the booms is raised.

## Winch deck/platform

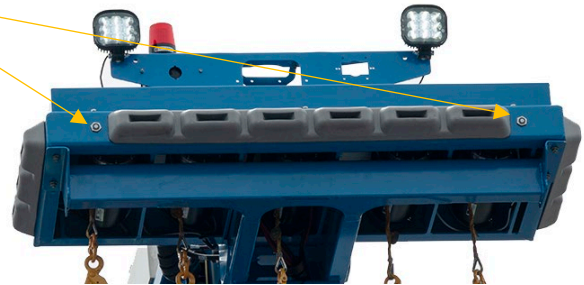


### Distance Sensors

There are two sensors one in each corner of the winch platform. to prevent collisions and damage to the machine.

### Flashing warning light

If the winch platform comes to near a surface. ( 45,72 cm/18inch) The alarm will sound and the red warning light will flash.



### Worklights

winch platform is equipped with two powerful LED work lights. User can activate the lights on the ground control ([worklight switch page 21](#))

### Direction Light platform



### Winches

- 6x DC Electric 12 Volt permanent magnet. Maintenance free with rated capacity 907 kgf each.
- 6x Stal Rope 12 mtr: 6mm 12-FL Dynema SK-78 MBL 3570 kg
- splicing of ropes reduces strength by 10%
- Not to be heat treated



## Remote Control PG-x14 Safety Instructions



### **WARNING**

Carefully read these instructions to properly use the SmaRT PG-214 or PG-xH14, to keep it in safe working condition, and to reduce the risks of misuse.

- Do not use the system in potentially explosive atmospheres.
- Any use other than that specified in this manual is DANGEROUS.
- Strict adherence to the following instructions is a MUST.

To comply with United States Federal Communications Commission (FCC) radio frequency (RF) exposure compliance requirements, do not co-locate or operate this device and its antenna in conjunction with any other antenna or transmitter.

### **WARNING**

- Certain adjustments may need to be made while the controlled machinery is active. All personnel must be at a safe distance from the machine during these adjustments to avoid risk of injury or accidental death.

## Read and follow all instructions.

- Failure to abide by Safety Precautions may cause equipment failure, loss of authority to operate the equipment, and personal injury.
- Use and maintain proper wiring. Follow equipment manufacturer instructions. Improper, loose, and frayed wiring can cause system failure, equipment damage, and intermittent operation.
- Changes or modifications made to equipment not expressly approved by the manufacturer will void the warranty.
- Equipment owner/operators must abide by all applicable Federal, State, and Local laws concerning equipment installation and operation. Failure to comply could result in penalties and could void user authority to operate the equipment.
- Make sure that the machinery and surrounding area is clear before operating. Do not activate the remote-control system until you are certain that it is safe to do so.
  
- Turn off the handheld remote and remove power from the base unit before attempting any maintenance. This will prevent accidental operation of the controlled machinery.
- Remove power from the Base Unit either by detaching the harness wiring cables from the base unit connectors or by removing the source power from the circuit.
- Use a damp cloth to keep units clean. Remove mud, concrete, dirt, etc., after use to prevent obstructing or clogging the buttons, levers, wiring, and switches.
- Do not intentionally allow liquid to enter the handheld or base unit enclosures. Do not use high-pressure equipment to clean the handheld remote or base unit.
- Disconnect the radio base unit before welding on the machine. Failure to disconnect the base unit may destroy or damage the base unit.
- Keep high-energy radio frequency (RF) devices away from handheld remotes. Activating

high-power communication radios, for instance, close to the handheld remotes can cause interference and “false” circuit activation.



- Operate and store units only within the specified operation and storage temperatures defined in this document.
- Do not key two-way radios when the handheld remote is active.

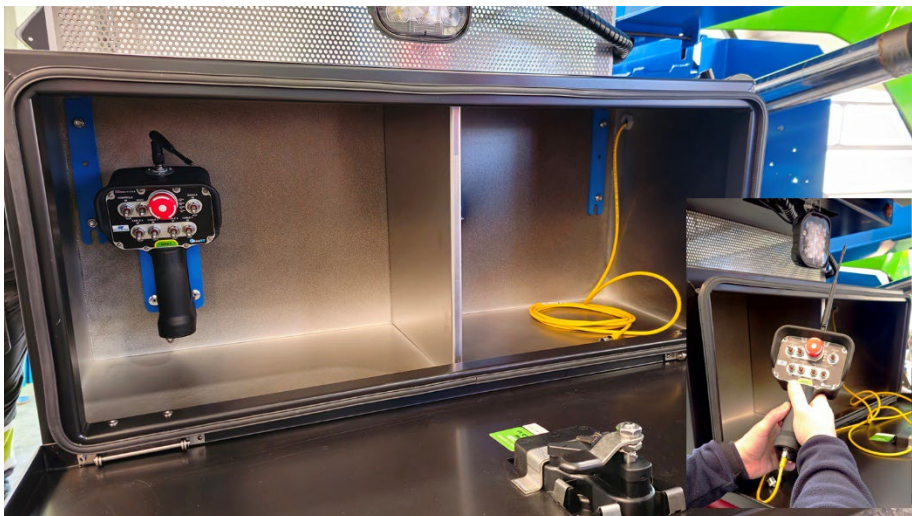
### **CAUTION**

- Outputs under sole control of momentary switches—push-to-operate (PTO), for instance—should only change state when the appropriate handheld remote button or switch is pressed or positioned; and then only for the duration of time that output button is pressed, or switch is positioned. Investigate any unexpected motion that occurs when pressing the handheld remote output controls.
- Immediately stop operating if a jerky motion occurs while constantly pressing an output switch. Check the base unit diagnostic LEDs for any indication of a problem. Diagnostic descriptions are found in the manual of the Smart base unit in use.
- Be aware that even if the handheld and base unit diagnostic LEDs do not indicate a problem, one may be present and further troubleshooting steps may be needed.
- If a problem is found, do not operate the SmaRT System until the problem is resolved.

## Features

- Controls accessible while wearing gloves
- Oversized Machine Stop button
- Seven three-position, bi-direction toggle switches (standard)
- Four status/diagnostic LEDs
- Comfortable weatherproof design
- Magnet-embedded handle (to attach to machine surfaces)
- Powered by four “AA” cell batteries (+3.0 VDC nominal)

Storage cabinet for charger and remote control and option cable control



## Operation

### Battery Installation

#### NOTICE

Four size AA cell batteries power the SmaRT pistol grip handheld unit. When installing batteries, be sure to observe proper polarity—as marked on the inside of the compartment—to avoid damaging the unit. To replace or install batteries in the handheld:

- ❑ Loosen the four Phillips battery compartment cover screws on the rear of the remote and lift the cover from the handheld.
- ❑ Install (or replace with) four fresh size AA cell batteries.
- ❑ Replace the compartment cover and tighten the four Phillips screws. Do not over-tighten these screws, but make sure they are tight enough to ensure the gasket provides a proper watertight seal.

#### CAUTION

Be sure to observe proper polarity when placing batteries in the handheld battery compartment.

### Turn the Unit ON and OFF:

Power ON the SmaRT PG-xH14 Pistol Grip Remote by twisting the large red stop button clockwise until it springs UP; and then activate toggle switch TX ON. The unit will not transmit or receive messages before activating the toggle switch.

#### NOTICE

Power to the handheld is available when you twist the mushroom-style Machine Stop button clockwise until it springs UP, but the transceiver is not yet enabled. The unit does not transmit or receive until it is enabled.

If a switch is held before the Stop button is released (enable the remote), the red ERR LED begins to flash. The handheld will not operate until the condition is remedied.

Turn the SmaRT PG-xH14 Pistol Grip Remote OFF by pushing the large red mushroom-style button IN or by allowing the unit to “time out.”

#### CAUTION

A stuck switch is indicated if the remote’s Stop button is depressed and the red ERR LED lights solid and remains lit. Check all switches before use. If the LED remains lit, the remote needs to be serviced before it can be safely used.

Toggle switches S1 through S7 are three-position, return-to-center, Up or Down with a return-to-center detent.



Unit ON Toggle switch



Function Enable Button.

## How to operate cable winches and main Saddle.



Lifting and lowering the winch Cables is controlled with toggle switches 5-8 on the Remote Control

Toggle Switch 1: Saddle Up/Down

Toggle Switch 2: -

Stop Button (3)

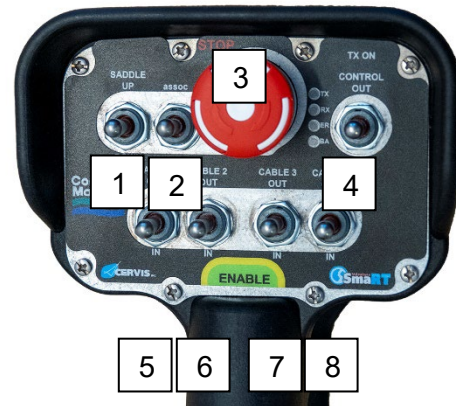
Toggle Switch 4: TX-ON

Toggle Switch 5: Controls cable 1 OUT/IN

Toggle Switch 6: Controls cable 2 OUT/IN

Toggle Switch 7: Controls cable 3 OUT/IN

Toggle Switch 8: Controls cable 4 OUT/IN



## Junction box

Main junction box for wiring, fuses and reciver for wifi signals from remote control are mounted on top of the jib bom

## Driving light

One powerful LED drive light mounted in front of platform. User can activate the light on the ground control ([worklight switch](#))



## Securing connectors to winch rope



### **⚠ DANGER**



IMPORTANT! Everyone who uses lifting equipment must have the necessary training and knowledge, as well as instruction in safe use. The user must also be able to master the dangers associated with the use. This is determined in the Norwegian Labor Inspection Authority's regulation no. 555 "Use of work equipment".

For maintenance and control of lifting equipment, this must be carried out in expert activities at least every 12 months. Inspection of equipment must be performed more often if the use and conditions indicate this.

### Check before use:

- The hook (s) must be marked with CE, WLL, manufacturer and code marking.
- The hook and eye / fork / swivel must not be deformed, or have cracks, nicks, pits or corrosion that may impair the properties.
- Check that any locking / locking mechanism works.
- Check hook opening for any overload.
- The hook (s) must not have heat damage or splashes from welding.
- Check that the hook is not deformed or worn sideways.
- Wear, cuts or wounds that do not exceed more than 10% of diam., Can be accepted.
- Never stand under a suspended load!
- The maximum permissible load must never be exceeded.
- Hooks should be used so that the load is applied to the bottom of it, and not to the tip, as they are designed and certified for this. Other ways of loading the hook may result in deformation or damage.
- All hooks that are to be used for lifting must have a locking lip or other construction that acts as a self-locking load.
- The release mechanism release (located on the back / back of the hook) must be pressed down to open the hook.
- If the locking lip does not lock in the closed position, this must be repaired before the hook is used.
- When loose hooks are used in multi-party lifting gear, it must be taken into account that the load increases when the angle between the parties increases.
- The tip of the hooks should always point outwards when hooking (in multi-party gear).
- Do not use hooks in temperatures above + 250gr.C or below -40gr.C.



## Driving on a slope



### **DANGER**

Find out how much inclination up, down and sideways the machine can handle and how steep the slope in question is.



Maximum slope, platform down to the ground (climbing capacity): 4WD: 35% (19°)



Maximum slope, platform up into the ground: 4WD: 35% (19°)



Maximum page tilt: 25% (14°)

Approved maximum slope depends on the ground conditions with one person on the platform and sufficient traction. Additional platform weights can reduce the approved maximum slope.

The term "climbing ability" applies only to counterweight and uphill configuration.

**Make sure that the boom is under the horizontal position and that the platform is between the non-swivel wheels.**



When driving uphill or loading machine for transportation. Move the speed switch to the machine symbol at an inclination.

## To determine the slope grade:

Measure the slope with a digital inclinometer, OR follow the following procedure:

You will need:

- A straight board, at least 1 m long
- measuring tape
- Place the board in the slope.
- At the lower end of the slope, place the level on top of the plank and lift the plank until level.
- While keeping the plank level, measure the vertical distance from the underside of the plank down to the ground.
- Divide the distance (height) by the length of the plank (length), and multiply by 100.

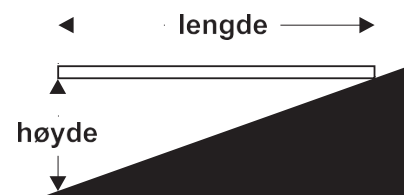
Example:

Board = 3.6 m Length = 3.6 m Height = 0.3 m

$0.3 \text{ m} \div 3.6 \text{ m} = 0.083 \times 100 = 8.3\% \text{ slope}$

### **DANGER**

If the slope is greater than the maximum permissible inclination upwards, downwards or laterally, the machine must be winched or transported up or down the slope. See section 'Transport and lifting'.



## Drive Enable Function Activation Switch



### **DANGER**

Flashing lights indicate that the boom is past one of the non-controllable wheels and that the driving function has been interrupted.



Move and hold the drive switch to either side and slowly move the lever away from the center.

Please note that the machine may move in the opposite direction in relation to how you move the drive/joystick.

Always use the color-coded directional arrows on the platform control and chassis to see which direction the machine will run in.

## Drive Speed Select



Machine in slope symbol: Low speed in slopes or rugged terrain

Symbol for machine on flat surface: Maximum operation and driving speed

## Operating Envelope Indicator Lights

The operating capacity indicator lights will light up to alert the user that a function has been interrupted and/or an action by the user is required. In case of alarm, lift avoiding, and driving are deactivated Follow the operating capacity indicator light procedure (page 33) to restore driving and lift functions.



Boom lift/contraction indicator light flashes: Raise/pull in the boom until the indicator light goes out.



BOM lowering indicator light flashing: Lower the boom until the LED goes out.



Machine tilt indicator light lights up: The lamp lights up and the tilt alarm sounds when the machine exceeds the tilt sensor activation settings. Follow the correct procedure below and move the machine to a firm and level surface.

If the tilt alarm is triggered with the platform uphill:

Lower the boom.

Pull in the boom.

If the tilt alarm is triggered with the platform downhill:

Pull in the boom.

Lower the boom.

## Platform Overload Indicator Light



Flashing light indicates that the platform is overloaded. The engine will stop, and no functions will be in effect. Remove weight from the platform until the light goes out and restart the engine.

## Machine Malfunction Indicator Light



Luminous light indicates system failure.

Press the red emergency stop button, and then pull it out again.

Lower and pull in the boom.

Mark the machine and remove it from operation. The features will not work.

## Platform Capacity Range

Range of motion is automatically controlled based on platform load.

Note: With attached optional extras, the permissible payload will vary

- Unlimited range of motion: When the platform load is less than 300 kg.
- Limited range of motion: When the platform load is 301-454 kg.



The range indicator lights up when the platform load exceeds 300 kg.

Luminous light indicates limited range of motion due to platform weight.



The Range of Motion light lights up when the platform preservation is less than 300 kg and in a slope.

## After Each Use

- Find a secure parking space – a fixed and flat surface, without obstacles and traffic.
- Pull in and lower the boom to the folded position.
- Rotate the lift so that the boom is between the non-swivel wheels.
- Turn the key switch to the "off" position and remove the key so that no unauthorized persons can use the machine.

## Maintenance and inspection after use:


- After use, the components should be checked for damage / wear that may have occurred.
- If this is detected, it must be marked in white, and moved to a specific place, where it is considered whether it should / can
- repaired or discarded / destroyed.
- Connectors that have been found in order must be stored in a suitable place. A dry storage place is recommended

## Maintenance and Service



### NOTICE

Only routine maintenance specified in this manual can be carried out by the user.

 Regular maintenance inspections should be carried out by qualified service technicians according to the manufacturer's specifications and requirements specified in the maintenance manual.

### First service

#### NOTICE

After 50 hours of use, Hybeko will perform the following maintenance procedure on the lift.

- Inspect wheels and bolts
- Lubricate gear and make swing wreath
- Checking bolts turn wreath
- Replacing oil on hubs
- Changing hydraulic filter
  
- Dispose of material in accordance with government regulations.
- Only use spare parts approved by the manufacturer.

### Maintenance Symbol Legend

The following symbols are used in this manual to show the meaning of the instructions. When one or more of the symbols appear at the beginning of a maintenance procedure, it means the following:



Indicates that you need tools to perform this procedure.



Indicates that you need new parts to perform this procedure.



Indicates that the engine must be cold to perform this procedure.

### Scheduled maintenance

Maintenance every quarter, yearly and every two years must be carried out by personnel trained and qualified to perform maintenance on this machine in accordance with the procedures specified in the Maintenance Manual.

Machines that have been out of service for more than three months must undergo quarterly maintenance before they can be put back into service.

## Check the Hydraulic Oil Level.



The correct amount of hydraulic oil is essential for the machine to work. The wrong amount of hydraulic oil can damage the hydraulic components. During daily checks, changes in oil levels may be detected, which may indicate problems in the hydraulic system.

Make sure the boom is pulled in.

Perform a visual check of the gauge on the side of the tank with hydraulic oil.

Add oil if necessary. Don't over-refill.

The level of the hydraulic oil should be within the top 5 cm of the meter.

Hydraulic oil specifications

Type of hydraulic oil Equivalent Chevron Rando HD

## Check the Batteries



Functional batteries are essential to ensure good machine performance and safety. Incorrect fluid levels or damaged cables and couplings can cause damage to parts and hazardous conditions.

### **⚠ DANGER**

Risk of electric shock. Contact with hot or live circuits can lead to death or serious injury. Take off all your rings, watches, and jewelry.



### Risk of injury.

Batteries contain acid. Avoid spilling or contact with battery acid. Neutralize battery acid spills with baking powder and water.

- Wear protective clothing and glasses.
- Make sure that the battery cables are well connected and free of corrosion.
- Make sure that the fastening bar that holds the battery in place is attached.
- Note: Protective caps on the poles and anti-corrosion agent help against corrosion of poles and cables.

## Specifications



Models: Hybeko SP S-45XC:

Working height maximum:	9,47 m - 31 ft/ 1in
Horizontal reach maximum:	9,47 m - 31 ft/ 1in
Height stowed:	2,96m
Length stowed:	9,88m
Width:	2,60m
Wheelbase:	2,46 m - 8 ft /1 in
Ground Clearance- Center:	0,32 m -1 ft / 0,5 in
Platform rotation:	160° (80°/80°)
Vertical jib rotation:	133° (+79° /-54°)
Turntable rotation:	360° continuous
Turntable tail swing:	97 cm 3 ft 2 in
Drive speed - stowed:	6.40 km/h 4 mph
Gradeability** stowed :	45%
Turning radius – inside:	2.08 m 6 ft 10 in
Turning radius – outside:	5.23 m 17 ft 2 in
Controls:	12 V DC proportional
Tyres - RT foam filled ply:	315/55D20-12
Power source:	Electric
Electric Battery:	Lithium 31kWA
Auxiliary power unit:	12 V DC
Hydraulic tank capacity:	144 L/38 gal
Machine weight:	8812 kg



## Maximum slope rating , stowed position.

Platform up in the ground	35% (19°)
Platform into the ground	35% (19°)
Lateral slope	25 % (14°)

### **⚠ DANGER**

Approved maximum slope depends on ground conditions with one person in the platform sufficient traction. Additional platform weights can reduce the approved maximum slope

Driving speed

Max driving speed, stowed	6,4 km/h 12,2m / 6,8 sec
Max driving speed, raised or extended	1,1 km/h 12,2 m / 40 sec

## Floor loading information

Tire load maximum	3 607 kg
Tire contact pressure	2,67 kg/cm <sup>2</sup> 262 kPa
Occupied floor pressure	758 kg/cm <sup>2</sup> 7,44 kPa

The floor load information is approximate and does not consider various equipment choices, it must be used with sufficient safety margins.

Tire size	445D50/710, 18 ply HD FF
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### **NOTICE**

(The machine weight varies with the selected equipment. See the serial number mark for the machine's weight.)

Product specifications are subject to change without notice and additional obligations.

## Transport Instructions:



This Hybeko safety information is intended as a recommendation.

The driver is solely responsible for ensuring that the machine is adequately secured and that the correct type of transport vehicle is used in accordance with the national transport regulations and the company's rules.

- Hybeko customers who need to transport a lift or Hybeko product in containers should contact a professional freight forwarder with knowledge of preparing, loading, and securing construction for international shipping.
- Carrier must park on a level surface
- Make sure that the vehicle, the surface, straps, and chains can withstand the weight of the machine. Hybeko lifts have a high weight relative to their size. See the serial number mark for the machine's weight.

### NOTICE

- Make sure that the turntable is secured with a locking mechanism before transport. Be sure to release the rotary wheel before use.
- Do not run the machine in slopes steeper than the maximum inclination and side slope that the machine can handle. See "Driving at a slope" in the Operating Instructions.
- If the transport vehicle is at a steeper slope than the maximum permissible, the machine must be loaded and unloaded with a winch, as described in "Triggering brakes".



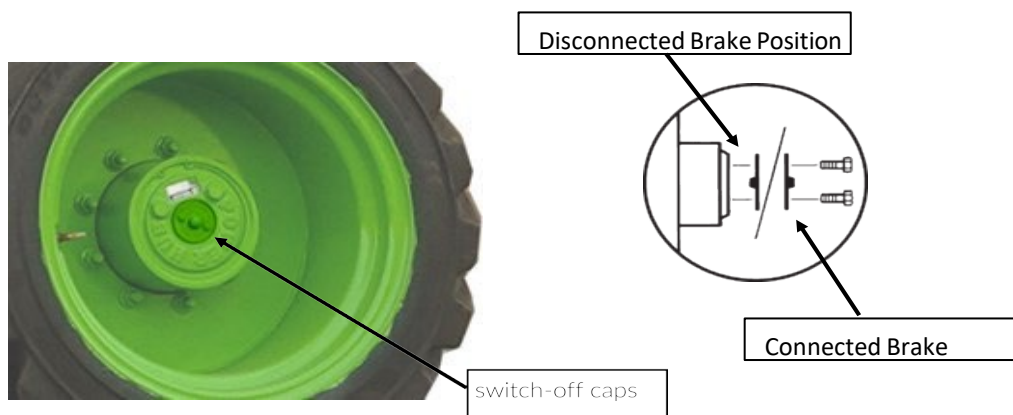
## Free-Weel Configuration for towing



### **WARNING**

the machine's brakes can be released manually for towing.  
Before starting the manual brake release procedure, make sure all cables are disconnected between ship and vehicle . Also between vehicle and shore current contacts.

- Secure the machine by blocking all wheels. When the brakes are released, the vehicle will be free to move.
- Release the brakes by unscrewing all four switch off caps in the wheel hubs. Turn them over and screw them in so that they press in the free wheel valve
- Follow the opposite procedure to reconnect the brakes.
- The freewheel valve should always be closed.



Steering the wheels when the vehicle is towed

- Set key to platform control
- Pull out the emergency stop
- Stand on the foot pedal
- Press and hold emergency toggle switch (pos 8)
- Use the buttons on top of the joystick for driving (pos 12) to steer the wheels

### **DANGER**

When the brakes are released, the vehicle is free to roll.

### **NOTICE**

This machine can also be towed using a forklift truck.



## Steering the wheels when the vehicle is towed



### **DANGER**

- Set key to platform control
- Pull out the emergency stop (pos 15)
- Stand on the foot pedal
- Press and hold emergency toggle switch (pos 8)
- Use the buttons on top of the joystick for driving (pos 12) to steer the wheels

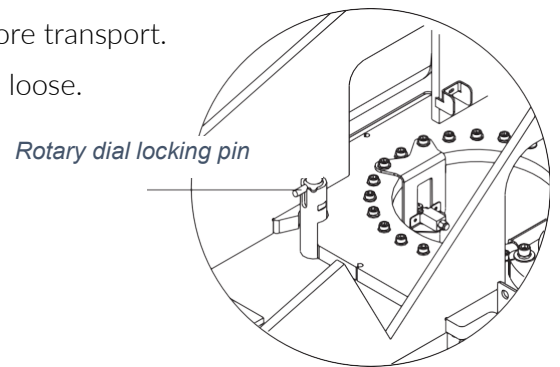
## Securing to Truck or Trailer for Transit

### **DANGER**

Always block the turntable with the locking pin when transporting the machine.

Turn the key switch to the "off" position and remove the key before transport.

Inspect the entire machine and check that no parts or objects are loose.



## Securing the Chassis



- Use chains strong enough. Use at least 6 chains.
- Adjust the clamp so that the chains are not damaged.
- See form in Lifting instructions

### **NOTICE**

Fasten straps only to specified lifting points on the machine. Adjust the clamp so that the machine is not damaged and so that it is level.



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