Operation Manual

EN 280-1:2022

SC0407E-2
SC0610E-2
SC0610EL-2

Mobile Elevating Work Platforms

PART No. OM-2537051121

Original Instructions

Original Instructions

Thank you for choosing to use this Mobile Elevating Work Platform from LGMG，All models are designed and manufactured according to EN 280-1:2022, All dealers, owners, users, operators, lessors, lessees, and brokers to comply with appropriate section(s) of applicable EN 280-1:2022 standards.

This manual is a guide for safe and proper operation and maintenance of the machine, which introduces technical parameters and mechanism and operation herein.

We sincerely hope that you will read through this manual before attempting to operate the machine for the first time and before repairing and maintaining the machine, and that you will master the operation and maintenance described therein.

The information contained in this manual is correct at the time of publication. However, LGMG has endeavored to deliver the highest degree of accuracy possible. And continuous improvement of our product is a LGMG policy. Therefore, product specifications are subject to change without notice.

Due to the impossibility of foreseeing all possible hazards, therefore, it is not possible to include all safety precautions in this manual and the machine's safety precautions in this manual and the machine's safety instructions. If some operations that are not recommended in this manual, you must ensure that you and others are safe and will not damage the machine. If the security of certain operations cannot be determined, please call LGMG industries or dealer service center.

The precautions for operation and maintenance contained in this manual are only applicable when the machine is used for the specified use. If the machine is used within the scope not listed in this manual, our company will not assume any safety responsibility, which is borne by the user and operator in such operations.

Any prohibited operations in this manual shall not be performed.

This manual should always be placed in the designated location for read. This manual is part of the machine, when the ownership or use right of the machine is transferred, please hand over this manual together. If the manual is lost, damaged or illegible, please replace it promptly.

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Safety Notices

The operator shall understand and abide by the current national and local safety regulations. If such regulations are not available, the safety instructions in this manual shall prevail.

Most accidents are caused by failure to obey operation and maintenance specifications of the machine. To avoid unnecessary accident, please read and follow all warnings and precautions in this manual and on the machine before operation or maintenance.

The safety measures are detailed in Chapter 1 “Safety”.

Considering the fact that not all possible hazards are foreseeable, it is impossible for safety notices in this manual and on the machine to cover all safety precautions. If it is necessary to take steps and operations not recommended herein, always ensure the safety of yourself and others, and keep the machine from any damage. If the safety of some operations remains uncertain, please consult us or dealers.

The operation and maintenance precautions referred to herein apply only to the intended use of this machine. If the machine is to be used for other purposes than those listed herein, it is the user or operator instead of us that shall take the safety liabilities therefrom.

In no case shall any operations expressively prohibited herein be performed.

For the purpose of this manual, the following signal words are applied to identify safety instructions:

DANGER - Indicating any existing dangers that, if not avoided, will cause serious injury or even death, and also serious machine damage.

WARNING - Indicating any potential dangers that, if not avoided, may cause death or serious injury, and also serious machine damage.

CAUTION - Indicating situations that, if not avoided, may cause minor or moderate injury, and also machine damage or shortened machine service life.

Chapter 1 Safety

DANGER

Failure to comply with the instructions and safety rules in this manual will result in death or serious injury.

WARNING

Operations cannot be carried out unless

- You have understood and practiced according to the rules for the safe operation of machine in this manual.
- Avoid dangerous situations. Know and understand the safety rules before proceeding to the next step.
- Always perform pre-operation inspection.
- Always perform pre-operation function test.
- Check the workplace
- The machine shall be used only according to its design intent.
- The manufacturer's instructions and safety rules- safety operation manuals and machine labels, shall be read, understood and observed.
- The user's safety rules and regulations on the work site shall be read, understood and observed.
- It is required to read, understand and abide by all the applicable government laws and regulations.
- You have received appropriate training of the safe operation of machine.

CAUTION: Classification of risks

The meanings of symbols, color codes and symbolic words used for the products of LGMG are as follows:

Safety warning sign-used to warn of potential personal injury. Observe all safety warning information after this sign to avoid possible personal injury or death.



Red-indicates a dangerous situation. If it is not avoided, death or serious injury may occur.



Orange-indicates a dangerous situation. If it is not avoided, death or serious injury may occur.



Yellow-indicates a dangerous situation. If it is not avoided, minor or moderate personal injury may occur.



Blue - indicates a dangerous situation. If it is not avoided, it may result in property loss.

Voltage	Required clearance
0V ~ 50 kV	3.05 m
50 kV ~ 200 kV	4.6 m
200 kV ~ 350 kV	6.10 m
350 kV ~ 500 kV	7.62 m
500 kV ~ 750 kV	10.67 m
750 kV ~ 1000 kV	13.72 m

1.1 Intended Use

This machine is only intended for lifting people and their tools and materials to a high-altitude workplace.

1.2 Maintenance of Safety Sign

Replace any missing or damaged safety sign so that the operator always keeps safety in mind.

Wash safety signs with neutral soap and water.

Do not use solvent-based detergent, as such detergent may damage the safety sign material.

⚠ Risk of electric shock

- **This machine is not insulated and does not provide protection against electric shock when it is in contact with or near wires. Please follow the applicable laws and regulations and the instructions in the table below to maintain a sufficient safety distance from power supplies and electrical equipment.**
- **The influence of strong wind or gust on the movement of the platform, the swing and relaxation of wires shall be considered.**
- **If the machine comes into contact with a live wire, please stay away from the machine. Before the power supply is switched off, personnel on the ground or platform shall not touch or operate the machine.**
- **Do not operate the machine during lightning or storms.**
- **Do not use the machine as ground wire during welding.**
- **Do not touch the charger while it is charging.**

1.3 Safety in Working Area

⚠ WARNING

The user is responsible for all the consequences caused by non-compliance with the requirements of "Safety in working area".

⚠ Risk of rollover

The total weight of personnel, equipment and materials on the platform shall not exceed the maximum load capacity of the platform and the extended platform.

1) The platform can only be lifted on the solid, flat and level ground.
2) After the platform is raised, the machine is not able to self-propel.
3) Do not use the tilt alarm as a level indicator. Only when the machine is severely tilted, the tilt alarm of the chassis and platform will sound.

4) If the tilt alarm sounds: lower the platform and move the machine to a solid level ground. If the tilt alarm sounds when the platform is lifted, lower the platform carefully.
5) If the machine is used outdoors, do not elevate the platform when wind speed is above 12.5 m/s. If wind speed exceeds the limit after elevating the platform, immediately lower the platform and stop all machine operation.
6) The ambient temperature for use of the machine is -20℃ ~ 40℃.
7) The ambient relative humidity for use of the machine shall not be greater than 90% (at 20℃).
8) The allowable voltage fluctuation of the machine power is ± 10%.
9) Do not operate the machine in strong winds or gusts. Do not increase the surface area of the platform or load. Enlarging the area exposed to the wind will reduce the stability of the machine.
10) Do not use the PCU to release the platform when the platform is tripped, stuck, or its normal movement is hindered by other objects nearby. All personnel must leave the platform before the platform is to be released with the GCU.
11) Be extremely careful and reduce the speed when the machine runs in retracted state on uneven, gravel, unstable or smooth surfaces, near openings or steep slopes, etc.
12) Do not drive at high speed when going downhill.

⚠ CAUTION: Before going downhill, make sure that the slow (tortoise) mode is selected.

13) Do not push or pull anything outside the platform.
14) Do not use the machine as a crane.
15) Do not place, tie or hang loads on any part of the machine.
16) Do not push machines or other objects with the platform.
17) The machine shall not be operated with the chassis tray open.
18) Do not lean the platform against adjacent buildings.
19) Do not change or disable the limit switch (if equipped).
20) Do not tie the platform to adjacent components.
21) Do not attach load to the outside of the platform guardrail.
22) Do not modify or alter the Lifting platform without the written permission of the manufacturer. The installation of additional devices for placing tools or other materials on the platform, pedals or guardrail will increase

the weight, the surface area and the load of the platform.

23) Do not change or damage any components that may affect the safety and stability of the machine.

24) Key parts affecting the stability of the machine cannot be replaced with parts of different weights or specifications.

25) The maximum allowable inclination angle for the machine operation is shown in the following table:

Do not use the battery with a weigh less than the original battery. The battery not only serves as a counterweight in the chassis, but also play an important role in maintaining the stability of the machine.

26) Ladders or scaffolding shall not be placed on the platform or against any part of the machine.

27) Only tools and materials that are evenly distributed and can be safely moved by personnel on the platform can be transported.

28) Do not use the machine on the moving or active surfaces and vehicles.

29) Avoid sharp turning of the machine at sharp projections.

30) Wipe off the oil immediately after the rubber track is in contact with oil.

31) If the driving wheel is severely worn, stop use it and replace it.

⚠ Risk of crushing

- **Do not place your hands and arms close to the area that has the risk of cutting or crushing.**
- **When using the controller to operate the machine on the ground, please maintain normal judgment and plan. Maintain a safe distance between the operators, the machines and fixed objects.**
- **When the oil side door must be opened, fold the pedal upwards by 90 °, rotate the pedal upwards, and then open the battery side door.**

⚠ Risk when operating on slopes

Do not drive the machine on slopes where the rated values of slopes and side slopes exceed. The slope rating applies to the machine in retracted status.

Note: The slope rating is limited by ground conditions and adequate traction force.

⚠ Risk of falling

- **During operation, the personnel on the platform must wear a full-body safety device and fix it on an approved rope fixing point with a belt hook. Each rope fixing point can only be connected with one hook.**

- Close the entry port before operation.
- Do not climb or sit on the guardrail of the platform. Stand steadily on the platform floor at all times.
- During the process of lifting the platform, climbing down from it is not allowed.
- Keep the platform floor free of debris.
- If there is no guardrail installed, or the entry port cannot guarantee safe operation, please do not operate the machine.
- Do not enter or exit the platform unless the machine is in retracted state.

Risk of collision

- When starting or operating the machine, pay attention to the sight range and the existence of blind spots.
- Pay attention to the position of the extended platform when moving the machine.
- Check the working area to avoid overhead obstacles or other potential risks.
- Beware of the risk of squeezing when grasping the platform guardrail.
- The user must abide by the rules of the employer, workplace and government laws and regulations regarding the use of personal protective equipment.
- The driving and turning direction arrows on the PCU and platform labels and nameplates shall be observed and used.
- Do not operate the machine on any route for cranes or moving overhead machinery unless the crane controller is locked and/or precautions have been taken to prevent any potential collision.
- When operating the machine, do not drive with danger or play with it.
- The platform can only be lowered when there are no person and obstacles below the platform.
- Control the travel speed according to the ground conditions, congestion level, gradient, personnel location, and any other factors that may cause a collision.

Risk of component damage

- Do not use any battery charger with the power greater than 24V to charge the battery.
- Do not use the machine as ground wire during welding.

Risk of explosion and fire

Do not use the machine or charge the machine at the places where flammable or explosive gases or particles may exist.

Risk of machine damage

- Do not use damaged or faulty machine.
- Before each shift, the machine shall

undergo a thorough pre-operation inspection and tests for all functions. Damaged or faulty machine shall be immediately marked and stopped.

- Ensure that all maintenance operations have been performed as specified in this manual.
- Ensure that all labels are located properly and easily identified.
- Make sure this manual is kept in the manual box in the platform.

⚠ Risk of personal injury

- Do not operate the machine when hydraulic oil leaks, which may penetrate or burn the skin.
- Improper touching of any component under the chassis will result in serious injury. Only trained maintenance personnel can inspect the compartment. Suggestion: inspection shall be performed by the operator only during pre-operation inspection. All compartments shall remain closed and locked during operation.
- It is forbidden to carry out maintenance work when the equipment is electrically charged or the hydraulic system is under pressure.

1.4 Safety Concerning Battery

⚠ Risk of fire

- The battery contains acidic substance. Wear protective clothing and glasses when using batteries.
- Prevent the spillage of the acidic substance from the battery, and avoid any contact with the substance. Use soda and water to neutralize the spilled battery acidic substance.
- Do not expose battery or battery charger to water or rain.
- If the vehicle is parked for a long time, the power master switch shall be disconnected.

⚠ Risk of explosion

- Sparks, flames and lighted cigarettes are prohibited from approaching the battery. Battery can release explosive gases.
- Do not touch the battery terminal or cable clamps with tools that may cause sparks.

⚠ Risk of component damage

Do not use any battery charger with the power greater than 24V to charge the battery.

⚠ Risk of electric shock/burn

- The battery charger can be only connected to the grounded three-phase AC power socket.
- Check cables and wiring daily for damage.

Replace damaged parts before operation.

- **Avoid electric shock due to contact with battery terminal. Be sure to remove the ring, watch and other ornaments.**

⚠ Risk of rollover

Do not use the battery with a weigh less than the original battery. The battery not only serves as a counterweight in the chassis, but also play an important role in maintaining the stability of the machine.

⚠ Risk during lifting

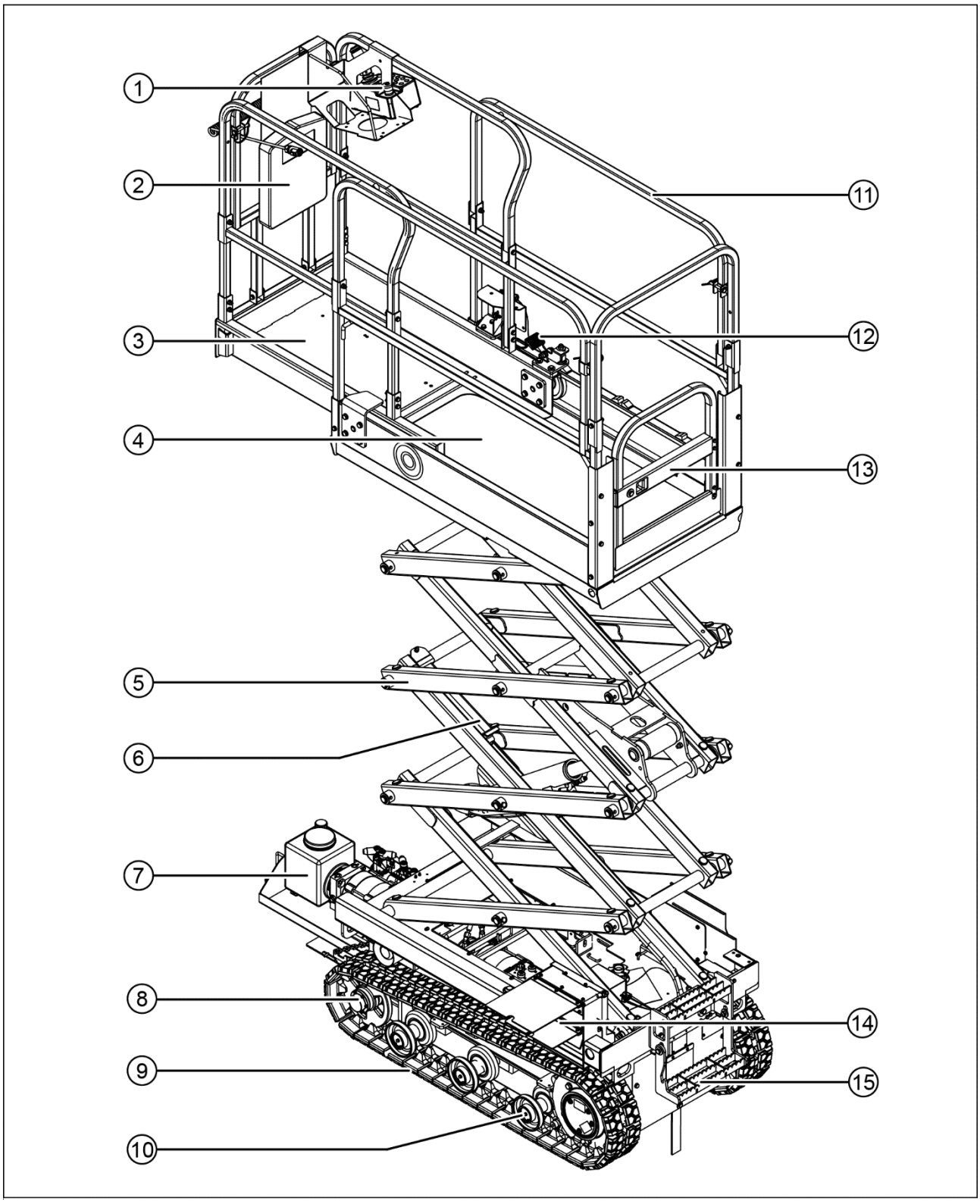
The number of person to lift the battery and the lifting method should be appropriate.

1.5 Lock After Each Use

1) Choose a safe parking position, which can be solid level ground, free of obstacles and away from heavy traffic.
2) Lower the platform.
3) Turn the key switch to the OFF position and remove the key in order to avoid unauthorized use.
4) Charge the Battery. (If necessary)

Chapter 2 Legend

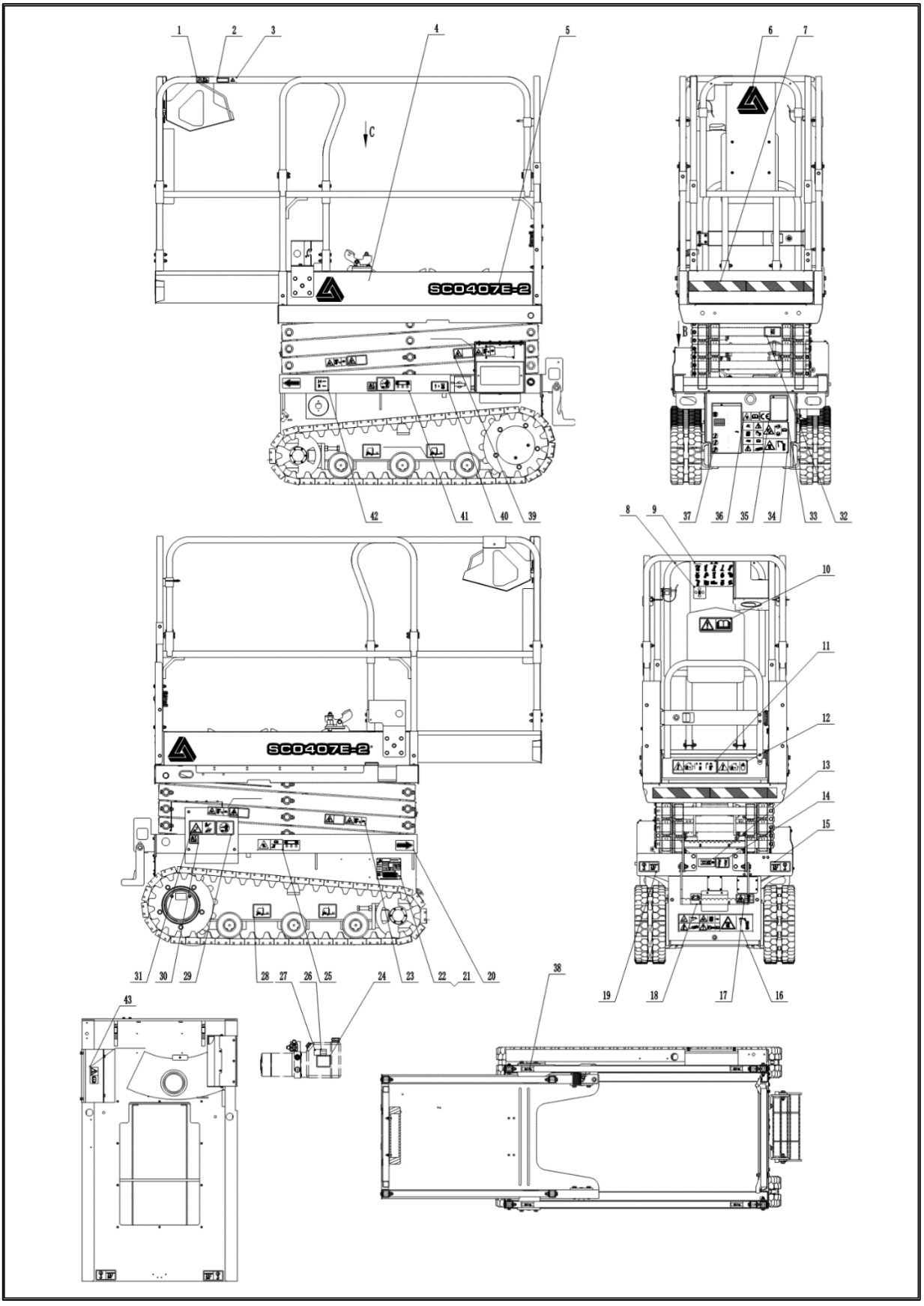
CAUTION: Take SC0407E-2 as an example for the schematic diagram of product structure. For other models, please refer to this schematic diagram.

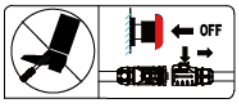
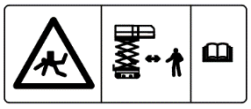
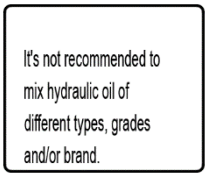
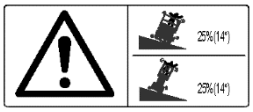
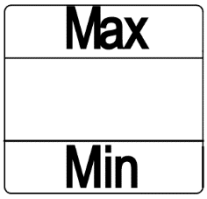
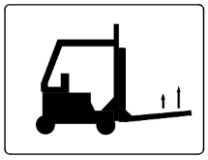
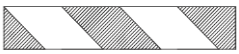
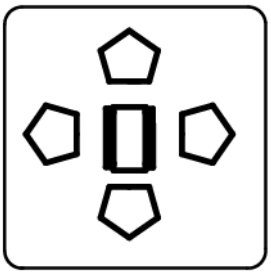


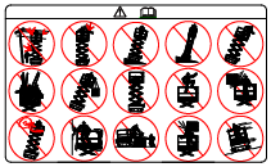
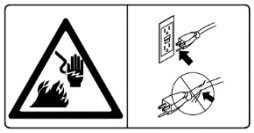
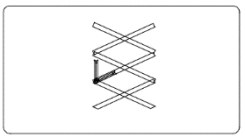
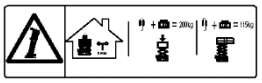
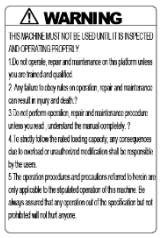
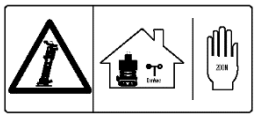
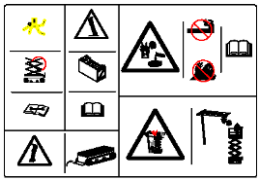
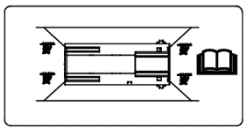
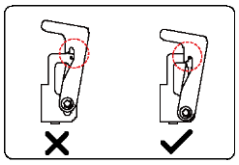
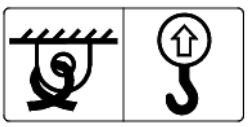
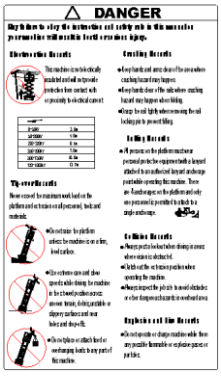
No.	Description	No.	Description
1	PCU	9	Track
2	Manual storage container	10	Track roller
3	Extension deck	11	Guardrail assembly
4	Main deck	12	Pedal
5	Scissor assembly	13	Swing gate assembly
6	Safety prop	14	GCU
7	Power unit	15	Ladder assembly
8	Idler		

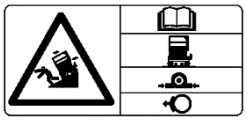
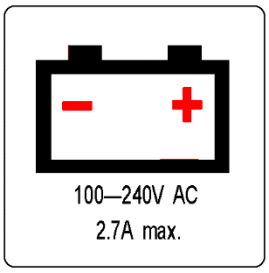
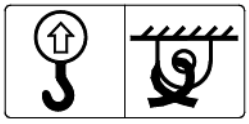
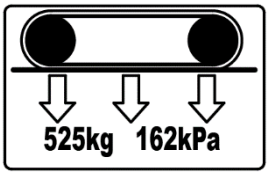
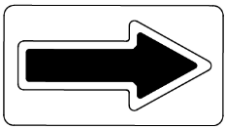
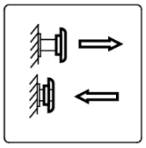
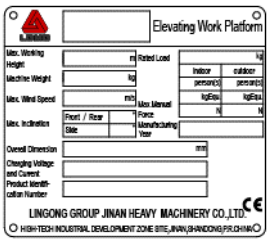
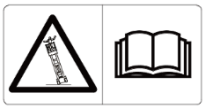
Chapter 3 Decals

SC0407E-2 Decal

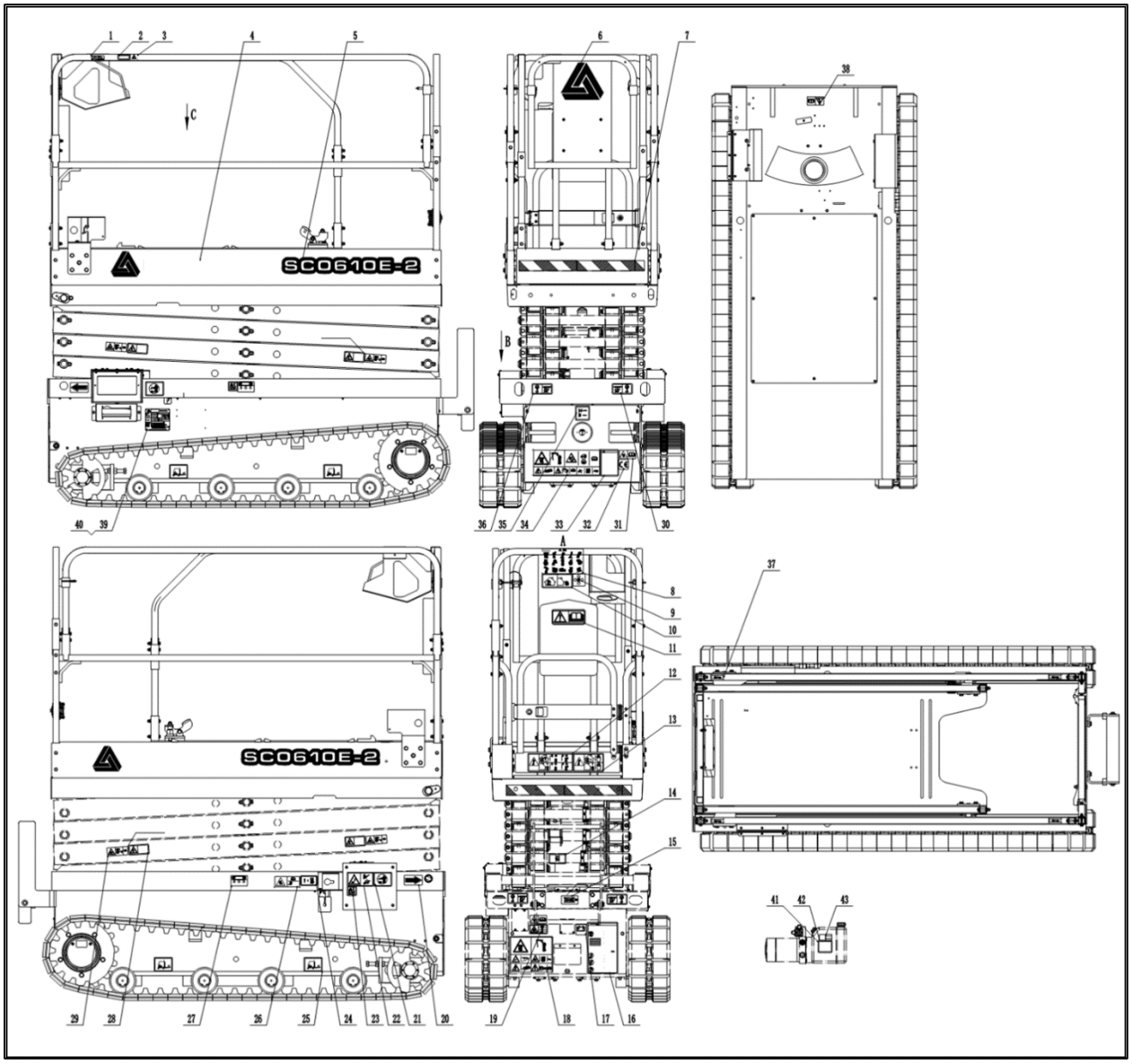


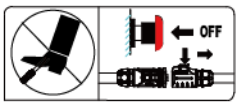
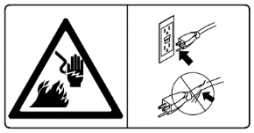
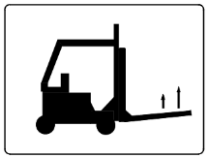
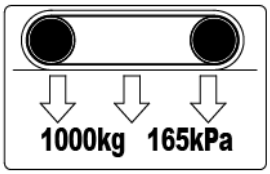
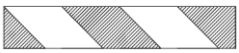
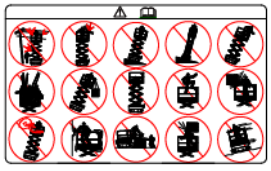
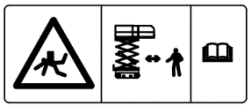
Description	Decal	Description	Decal
1. Decal-Do not connect or disconnect with power on		23. Decal-Away from machine warning	
2. Decal-Hand-hold position		24. Decal-Do not mix hydraulic oils	
3. Decal-Risk of pinching hand		25. Decal-Driving on a slope instructions	
4. Decal-LGMG logo		26. Decal-Oil level	
5. Decal-Model SC0407E-2		27. Decal-HV32 Hydraulic oil	
6. Decal-LGMG logo		28. Decal-Forklift pocket	
7. Decal-Warning strip		29. Decal-Do not spray water	
8. Decal-Arrow		30. Decal-Service warning	

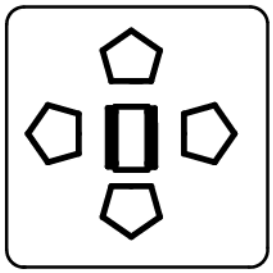
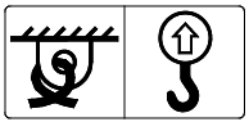
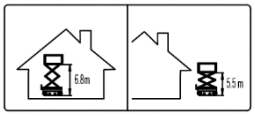
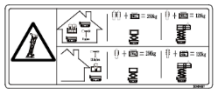
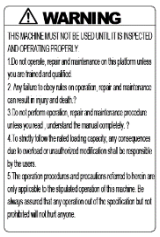
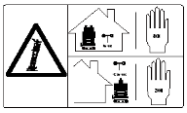
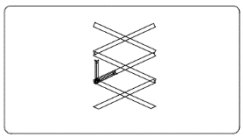
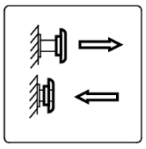
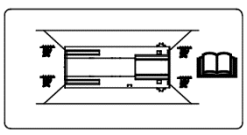
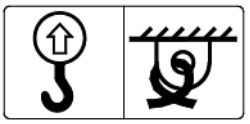
9. Decal-Prohibition		31. Decal-Electrocution/fire hazard	
10. Decal-Read the manual		32. Decal-Safety prop	
11. Decal-Platform safety warning		33. Decal-Warning	
12. Decal-Maximum manual force		34. Decal-Battery side decal	
13. Decal-Transport tie-down		35. Decal-CE	
14. Decal-Ladder warning		36. Decal-Electrocution hazard	
15. Decal-Lifting (right)		37. Decal-Danger	

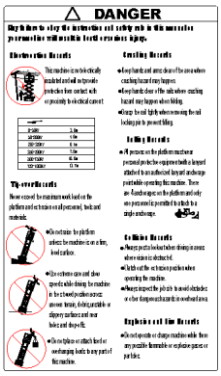
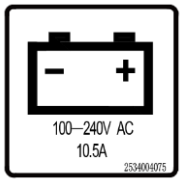
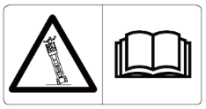
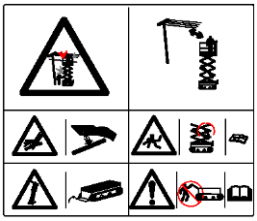
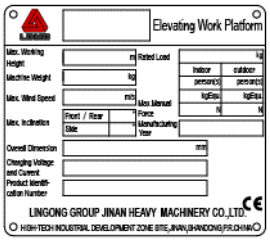
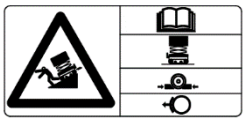
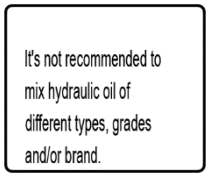
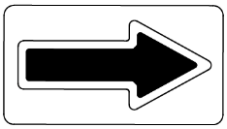
16. Decal-Tank side decal		38. Decal-Lanyard attachment point	
17. Decal-Brake release safety warning		39. Decal-Risk of pinching hand	
18. Decal-Battery charging (2.7A)		40. Decal-Emergency lowering	
19. Decal-Lifting (left)		41. Decal-Track load	
20. Decal-Forward direction		42. Decal-Turn off the power	
22. Machine nameplate (CE)		43. Decal-Tip-over hazard	

SC0610E-2 Decal



Description	Decal	Description	Decal
1. Decal-Do not connect or disconnect with power on		22. Decal-Electrocution/fire hazard	
2. Decal-Hand-hold position		23. Decal-Service warning	
3. Decal-Risk of pinching hand		24. Decal-Emergency lowering	
4. Decal-LGMG logo		25. Decal-Forklift pocket	
5. Decal-Model SC0610E-2		26. Decal-Driving on a slope instructions	
6. Decal-LGMG logo		27. Decal-Track load	
7. Decal-Warning strip		28. Decal-Risk of pinching hand	
8. Decal-Prohibition		29. Decal-Away from machine warning	

9. Decal-Arrow		30. Decal-Lifting (right)	
10. Decal-Switch warning		31. Decal-Electrocution hazard	
11. Decal-Read the manual		32. Decal-CE	
12. Decal-Platform safety warning		33. Decal-Warning	
13. Decal-Maximum manual force		34. Decal-Battery side decal	
14. Decal-Safety prop		35. Decal-Turn off the power	
15. Decal-Transport tie-down		36. Decal-Lifting (left)	

16. Decal-Danger		37. Decal-Lanyard attachment point	
17. Decal-Battery charging (10.5A)		38. Decal-Tip-over hazard	
18. Decal-Tank side decal		40. Machine nameplate (CE)	
19. Decal-Brake release safety warning		41. Decal-Do not mix hydraulic oils	
20. Decal-Forward direction		42. Decal-HV32 Hydraulic oil	
21. Decal-Do not spray water		43. Decal-Oil level	

Chapter 4 Specifications

SC0407E-2 (S040700NDQ0CE8020) Parameters

The performance parameters of the whole machine

Items	Parameters	Items		Parameters
Rated load (kg)	200	Fork lifting time (S)		20±2
Extended platform load (kg)	115	Fork descending time (S)		20±2
Weight of the whole machine (kg)	800	The maximum manual force	Indoor (N)	200
The maximum number of workers (indoor)	1		Outdoor (N)	0
The maximum number of workers (outdoor)	0	Theoretical maximum climbing ability (unloaded and with fork arms retracted)		30%
The maximum working height (m)	6.5	The maximum allowable tilt angle	X direction: left/right direction	1.7°
The maximum platform height (m)	4.5		Y direction: front/rear direction	1.7°
The minimum turning radius (m)	In-situ steering	The maximum inner wheel angle		--
The maximum travelling speed (with fork arms retracted) (km/h)	1.7±0.2	The maximum allowable wind speed (m/s)		0
The maximum travelling speed (lifting) (km/h)	0	Driving type		Track drive
The maximum braking distance (unloaded and with fork arms retracted) (mm)	600			

Main dimensions

Items	Parameters	Items	Parameters
Overall length (with ladder installed) (mm)	1495	Extension size of the platform (mm)	600
Overall length (without ladder) (mm)	1335	Wheelbase (mm)	950±100
Machine width (mm)	780	Track (mm)	630
Height of the whole machine (high guardrail) (mm)	1995	The minimum ground clearance (with fork arms retracted) (mm)	80
Machine height (guardrails retracted) (folded) (mm)	1795/1573	The minimum ground clearance (lifting) (mm)	80
Dimensions of the working platform (length × width) (mm)	1290×700	Track size (width x length) (mm)	150×72

Transmission system

Items		Parameters/Content
Travelling reducer	Rated output torque (Nm)	300

Hydraulic system

Items			Parameters/Content
Functional system	Type		Open system
	Pump displacement (ml/r)		1.6
	Lifting system	The maximum working pressure (MPa)	21

Electrical system

Items		Parameters/Content
Driving motor	Rated power (kW)	0.5
Lifting motor	Rated power (kW)	1.46
Battery	Output voltage (V)	12
	Capacity (Ah)	85(5 hours discharge rate)
Charger	Nominal AC input voltage (V)	100-240VAC
	The maximum AC input current (A)	2.7
	Nominal DC output voltage (V)	24
	The maximum DC output current (A)	15
Control system	Voltage (V)	24

Oil filling amount

Items	Parameters/Content	Items	Parameters/Content
Hydraulic oil (L)	4	Gear oil for travelling reducer (L)	0.1

Floor loading information

Items	Parameters/Content	Items	Parameters/Content
Track contact pressure (kpa)	42.36	Occupied floor pressure (kpa)	8.0

SC0610E-2 (S061000WDQ0CE8020) Parameters

The performance parameters of the whole machine

Items		Parameters	Items		Parameters
Rated load (kg)		250	Fork lifting time (s)		36±2
Extended platform load (kg)		120	Fork descending time (s)		36±2
Weight of the whole machine (kg)		1580	The maximum manual force	Indoor (N)	400
The maximum number of workers (indoor)		2		Outdoor (N)	200
The maximum number of workers (outdoor)		1	Theoretical maximum climbing ability (unloaded and with fork arms retracted)		30%
The maximum working height (m)	Indoor	8.8	The maximum allowable tilt angle	X direction: left/right direction	2°
	Outdoor	7.5			
The maximum platform height (m)	Indoor	6.8		Y direction: front/rear direction	2.5°
	Outdoor	5.5			
The minimum turning radius (m)		In-situ steering	The maximum inner wheel angle		--
The maximum travelling speed (with fork arms retracted) (km/h)		2±0.2	The maximum allowable wind speed (m/s)		12.5
The maximum travelling speed (lifting) (km/h)		0	Driving type		Rear wheel drive In-situ steering
The maximum braking distance (unloaded and with fork arms retracted) (mm)		600			

Main dimensions

Items	Parameters	Items	Parameters
Overall length (with ladder installed) (mm)	2052	Extension size of the platform (mm)	900
Overall length (without ladder) (mm)	1907	Track (mm)	790
Machine width (mm)	990	The minimum ground clearance (with fork arms retracted) (mm)	115
Height of the whole machine (with guardrail not retracted) (mm)	2192	The minimum ground clearance (lifting) (mm)	115
Overall height (rails retracted/folded) (mm)	1992/1860	Track size (width x length) (mm)	200×72
Dimensions of the working platform (length × width) (mm)	1895×730		

Transmission system

Items		Parameters/Content
Travelling reducer	Rated output torque (Nm)	300

Hydraulic system

Items			Parameters/Content
Functional system	Type		Open system
	Pump displacement (ml/r)		4
	Lifting system	The maximum working pressure (MPa)	24

Electrical system

Items		Parameters/Content
Driving motor	Rated power (kW)	0.9
Lifting motor	Rated power (kW)	3
Battery	Output voltage (V)	6
	Capacity (Ah)	185 (5 hours discharge rate)
Charger	Nominal AC input voltage (V)	100-240VAC
	The maximum AC input current (A)	10.5
	Nominal DC output voltage (V)	24
	The maximum DC output current (A)	30
Control system	Voltage (V)	24

Oil filling amount

Items	Parameters/Content	Items	Parameters/Content
Hydraulic oil (L)	5.5		

Floor loading information

Items	Parameters/Content	Items	Parameters/Content
Track contact pressure (kpa)	32.67	Occupied floor pressure (kpa)	7.68

CAUTION: Please add hydraulic oil according to the operating environment and temperature, as described below:

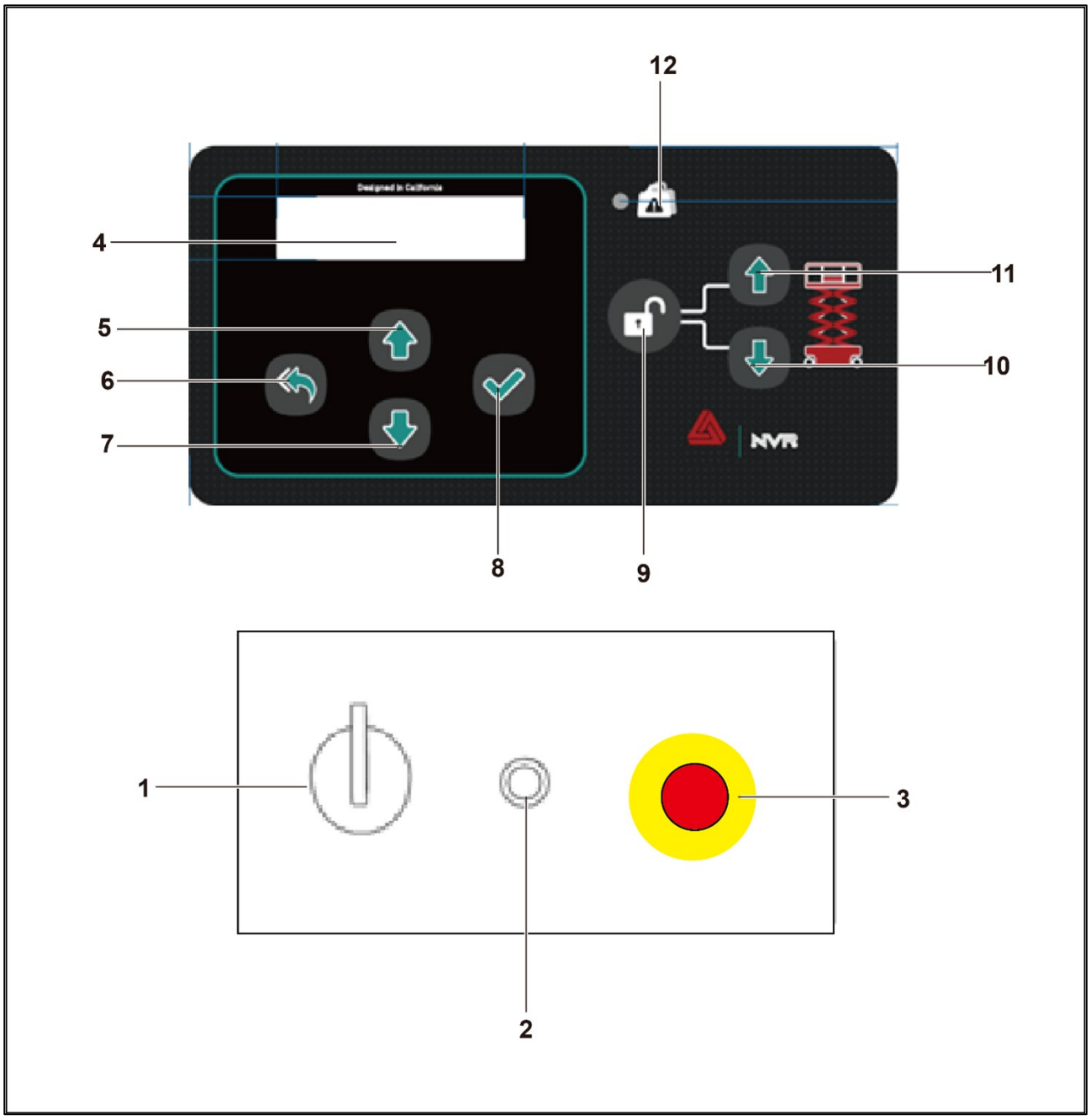
Grade	Brand
Rando MV32	Chevron

CAUTION:

- **The ground bearing information is approximate and different optional configuration factors are not taken into account. This information can only be used if there is an adequate safety factor.**
- **The operation manual contains latest and valid information, technical parameters, and legend when the manual is released. LINGONG HEAVY MACHINERY CO., LTD will reserve the right to update the technical parameters and related information without prior notice due to technical improvements, product updates and higher legal and regulatory requirements. If the technical parameters and information of this manual do not match your actual machine status, please contact the service department of LINGONG HEAVY MACHINERY Co., LTD in time to obtain the updated information.**
- **Machine weight varies depending on the optional configuration.**

Chapter 5 Controller

5.1 GCU



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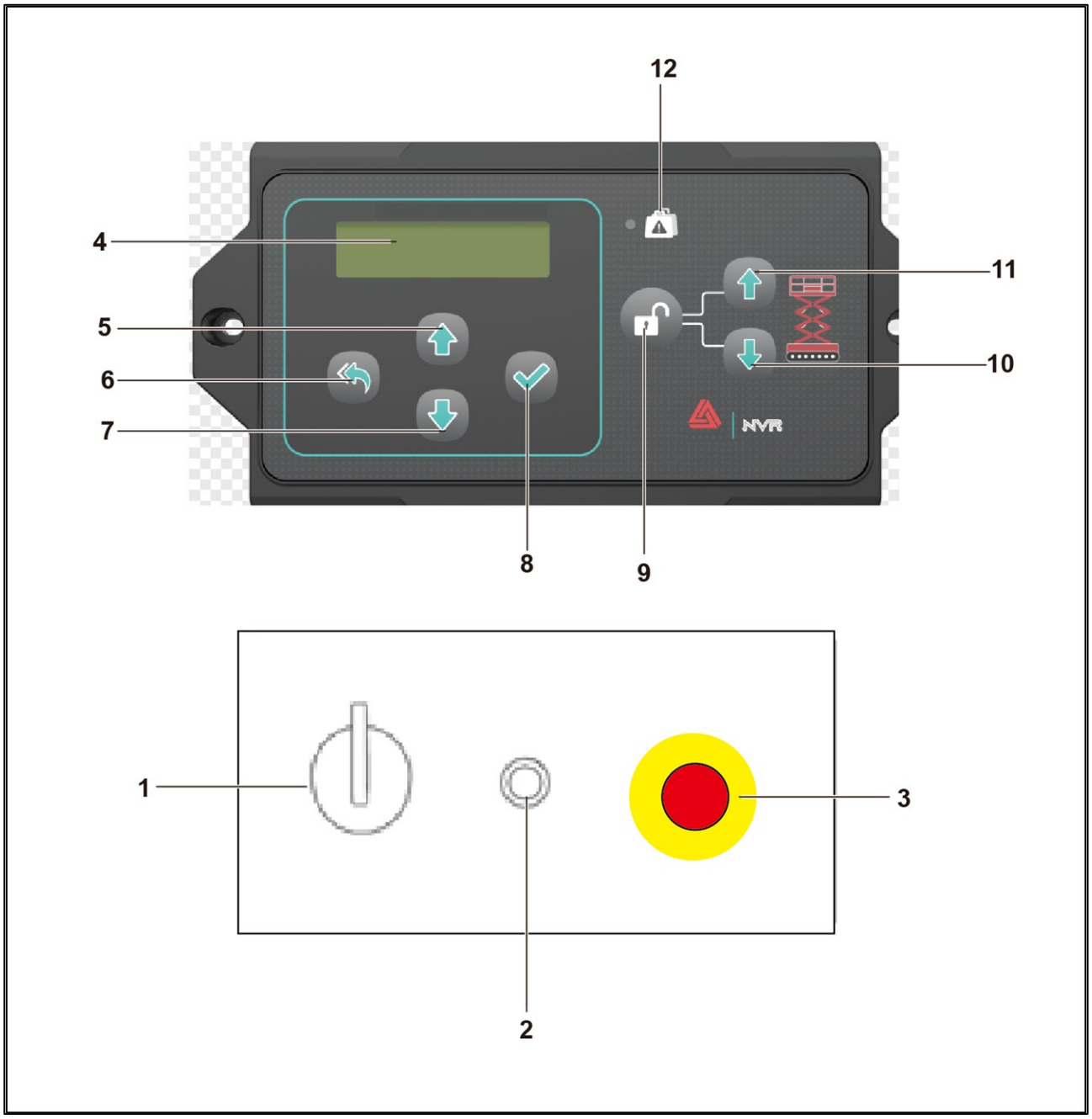
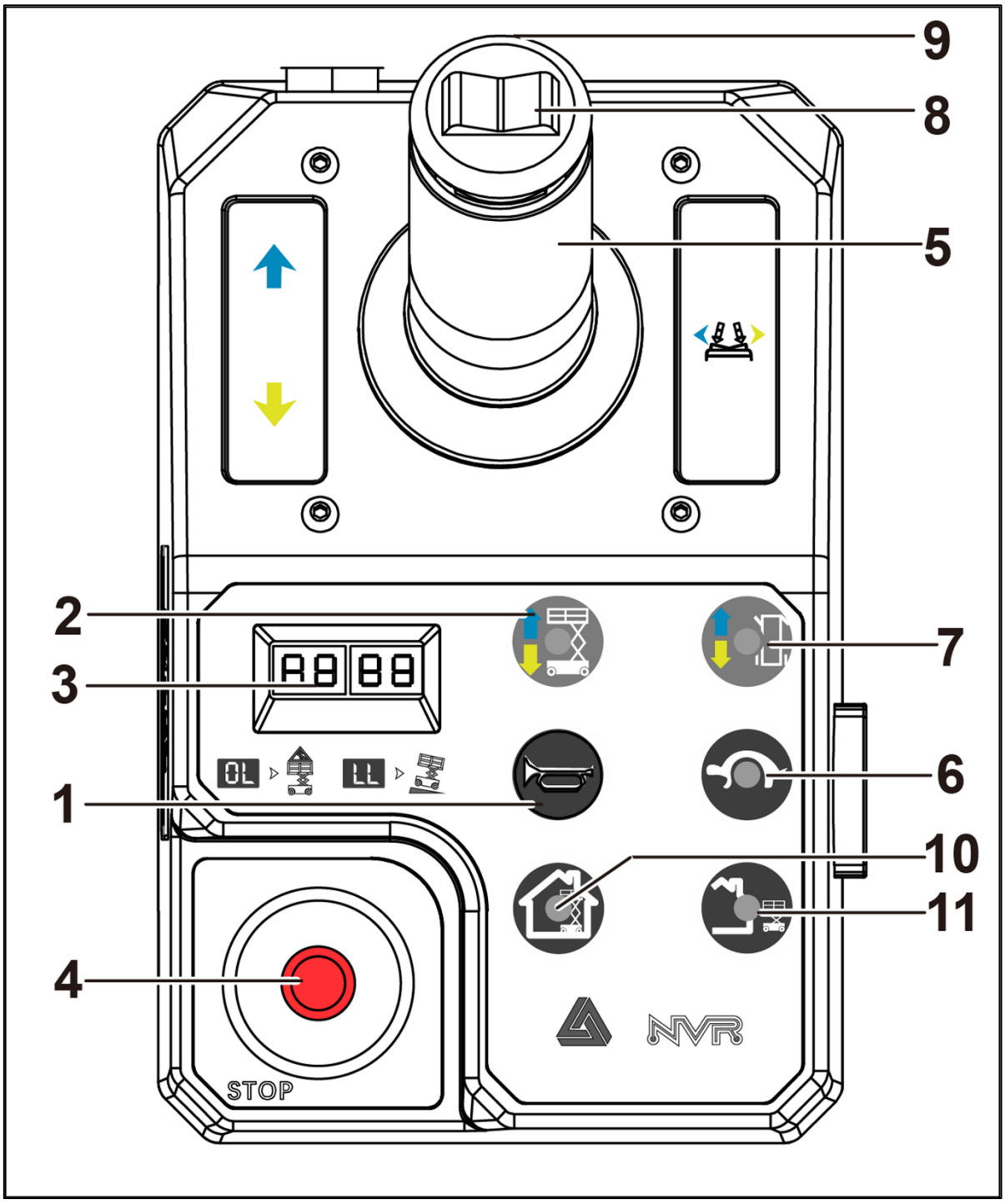
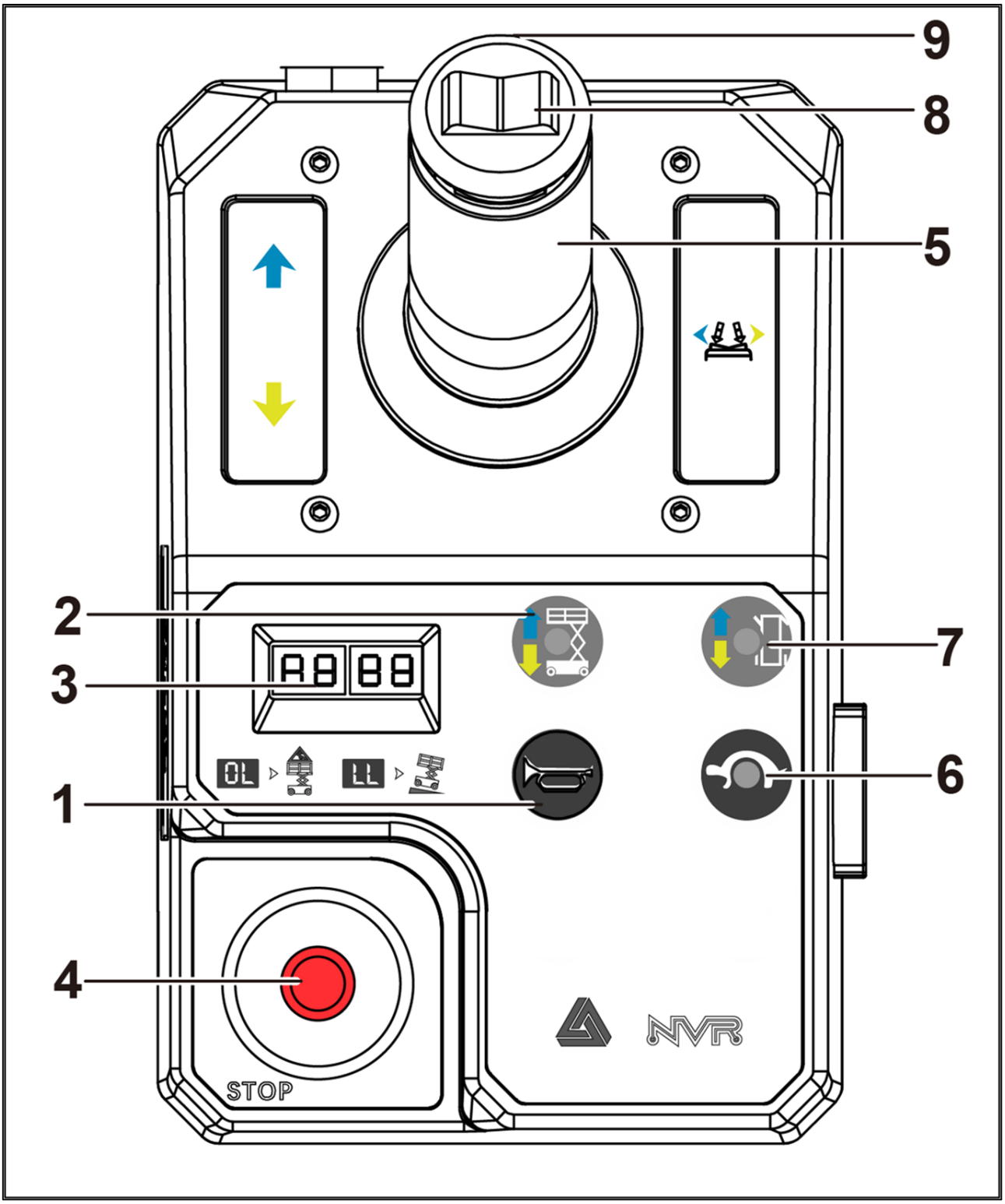


No.	Items	Operation function description
1	Key switch	Turn the key switch to the platform position and the PCU will operate; Turn the key switch to the neutral position and the machine will be turned off; Turn the key switch to the chassis position and the GCU will run. **⚠ CAUTION: The key switch can only be plugged and unplugged when it is in the neutral position.**
2	Fuse	
3	Emergency stop button	Press the emergency stop button to stop all functions; Pull out the emergency stop button to operate the machine. **⚠ CAUTION: The emergency stop buttons, connected in series, are installed on the chassis and PCU. To ensure normal operation, both emergency stop button must be pulled out. Pressing any emergency stop button on the chassis or platform will turn off the power. The safety function is built on a complete circuit. Pressing any emergency stop button will disconnect the circuit.**
4	Display	
5	Menu up button	
6	Menu exit button	
7	Menu down button	
8	Menu entry button	
9	Lift function enable button	Press and hold the button to activate the lifting function
10	Platform lowering button	Press the button to lower the platform
11	Platform lifting button	Press the button to lift the platform
12	Platform overload indicator lamp	

5.2 PCU



If equipped:



No.	Items	Operation function description
1	Horn button	Press this button and the horn will sound. Release this button and the horn will stop sounding.
2	Lift function button	Pressing this switch activates the lift function for the platform.
3	Display	
4	Red emergency stop button	Push the red emergency stop button inward to the OFF position to stop all functions. Pull the red emergency stop button out to the ON position to operate the machine. ⚠ **CAUTION: The emergency stop buttons, connected in series, are installed on the chassis and PCU. To ensure normal operation, both emergency stop button must be pulled out. Pressing any emergency stop button on the chassis or platform will turn off the power. The safety function is built on a complete circuit. Pressing any emergency stop button will disconnect the circuit.**
5	Control handle	Drive function: Press the drive function button and the indicator lamp lights up. Press and hold the enable switch on the control handle, the machine will move to the forward when the control handle is moved to the direction (front) indicated by the blue arrow, or to the backward when the control handle is moved to the direction (back) indicated by the yellow arrow. Lift function: Press the lift function button and the indicator lamp lights up. Press and hold the enable switch on the control handle, the platform will lift when the control handle is moved to the forward, or lower when the control handle is moved to the backward.
6	Low (turtle) drive speed mode selection button (If equipped)	Press this button to active the slow drive function. The indicator light will be on when the slow drive is selected.
7	Drive function button	Press this button to enable the drive function.
8	Steer switch	After the drive function button and the enabling switch on the lever are pressed, the steer switch can be used to control the steering direction of the machine.
9	Enabling switch	The driving, steering, lifting or lowering function can be activated only when the enabling switch on the control handle is pressed.
10	Indoor mode button	Press this button or press and hold this button (about 3 seconds), the indicator lamp will light up, and the indoor mode is enabled.
11	Outdoor mode button	Press this button or press and hold this button (about 3 seconds), the indicator lamp will light up, and the outdoor mode is enabled.

Chapter 6 Pre-operation Inspection

⚠ WARNING: Operations cannot be carried out unless

You have understood and practiced the principles of safe operation of machine in this operating manual.

- **Avoid dangerous situations.**
- **Always perform pre-operation inspection.**
- **Check the workplace.**
- **Always perform pre-operation function test.**
- **The machine shall be used only according to its design intent.**

6.1 Basic Principles

1) It is the responsibility of the operator to perform the pre-operation inspection and routine maintenance.
2) The pre-operation inspection is a quite visualized inspection process, which is performed by the operator before each change of shift. The purpose of the inspection is to find out whether there are obvious problems with the machine before the operator performs the function test.
3) Pre-operation inspection can also be used to determine if routine maintenance procedures are needed. The operator can only perform the routine maintenance items specified in this manual.
4) Please review the list on the next section and check each item.
5) If damage or any unauthorized change different from the factory settings is found, the machine shall be marked and turned off.
6) Only qualified maintenance technicians can repair the machine according to the regulations of the manufacturer. After the repair, the operator must perform the pre-operation inspection again before continuing the function test.

6.2 Pre-operation Inspection

1) Ensure that the manual is complete, readable and kept in the manual box in the platform.
2) Ensure that all the labels are clear, legible, and properly positioned. Reference to the "Labels" section.
3) Check if the hydraulic oil leaks and if the level is appropriate. Reference to the "Labels" section.
4) Check the battery electrolyte for leakage.
5) Check the following components or areas for damages, improper installation or missing parts and unauthorized alterations:
   a) Electrical components, wiring and Cable
   b) Hydraulic hoses, joint, hydraulic cylinders and hydraulic valve blocks
   c) Battery pack and its connection
   d) Drive motor
   e) Wear-resistant slider and gaskets
   f) Rubber track, track roller, driving wheel
   g) Angle potentiometer, alarm and horn
   h) Nut, bolt and other fasteners
   i) Platform overload parts
   j) Platform entrance
   k) Indicator lamp and alarm
   l) Safety arm
   m) Extended platform
   n) Fork pin and fastener
   o) Platform control handle
6) Check the entire machine for:
   a) Cracks in welds or structural parts.
   b) Dents or damages of the machine.
   c) Ensure that all structural parts and other critical components are complete and that all related fastener and pins are in the correct position and tightened.
   d) The guardrail has been installed, the guardrail bolt has been installed in place, and the bolt has been properly tightened.
   e) Make sure the chassis tray is closed and

locked, and the battery is correctly connected.

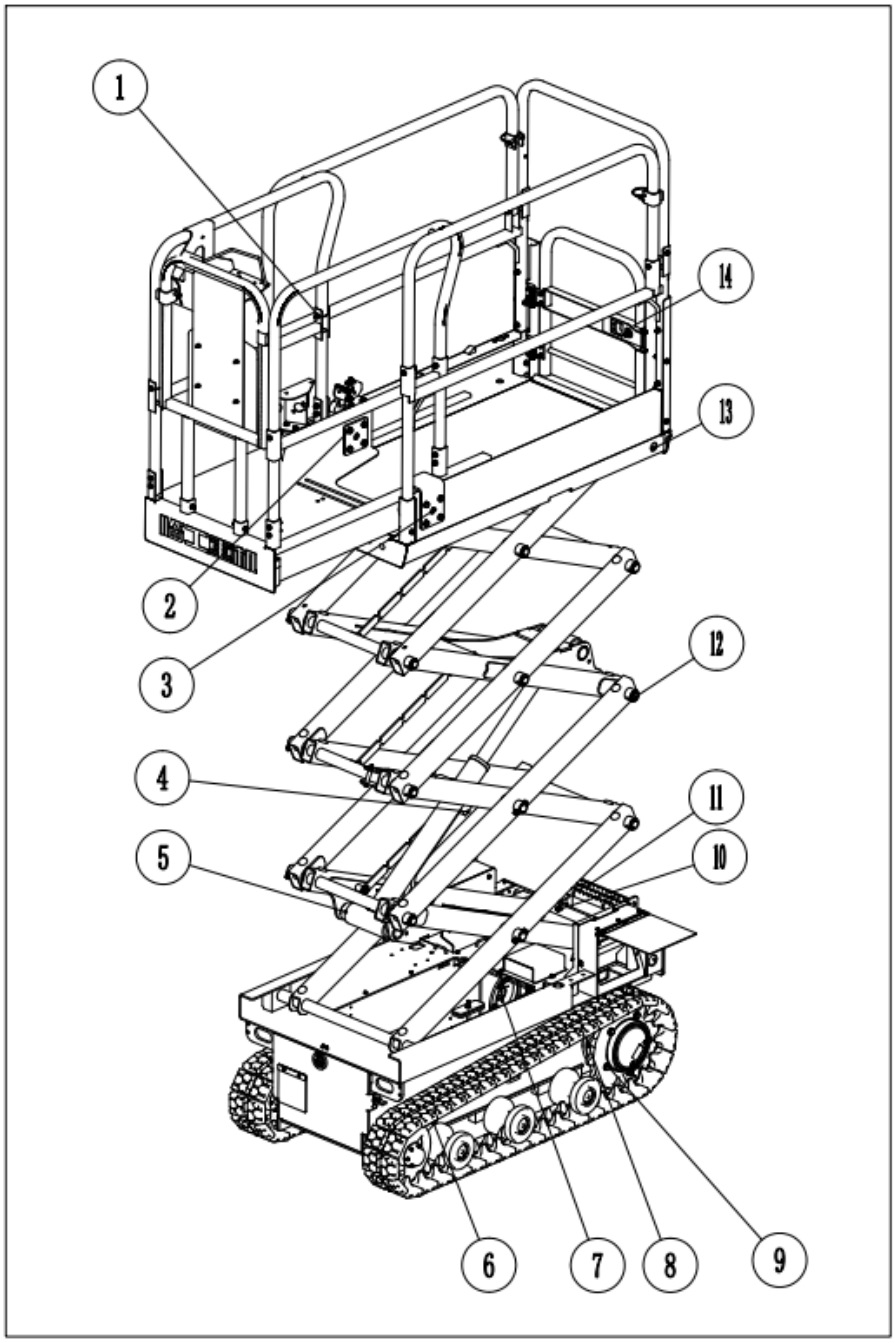
CAUTION: If the platform must be lifted to check the machine, please make sure the safety arm is in the correct position. See the "Operating Instructions" section.

6.3 Machine inspection diagram

Check each structural securement point on the machine in strict accordance with the illustration. Once a loose, broken, rusted or missing bolt or deformed or dislodged pin is found, immediately tag the abnormal location and remove the equipment from service. Never operate the malfunctioning equipment.

In addition to the following check points, comprehensively verify: whether any component is loose, broken, cracked or missing and securement is firm; and whether hydraulic lines are excessively worn, broken or leaky and harnesses are broken or damaged. Be sure each function operates properly.

Remember to check the bottom side of the machine! Failure to do so could cause safety accidents, resulting in equipment damage and personal injury or death.



1) Platform guardrail fixing: Check the condition of fixing pins and the installation of pivot pins. Beware of guardrail overturning and falling caused by pin breakage or pivot pin dislodgement.
2) Extension platform roller support fixing: Check the fixing status of the extension platform roller support. Beware of the extension platform falling or overturning caused by roller dislodgement.
3) Main platform roller support fixing: Check the fixing status of the main platform roller support. Beware of the platform falling or overturning caused by roller dislodgement.
4) Cylinder valve fixing: Check the installation of fixing bolts. Beware of the platform falling or

overturning caused by bolt breakage.

5) Lift cylinder fixing: Check the installation of fixing bolts and pivot pins. Beware of the lift cylinder falling caused by bolt breakage or pivot pin dislodgement.
6) Track tension bolt: Check track tension and tension regularly. Beware of track dislodgement.
7) Drive motor and reducer connecting bolts: Check the installation of fixing bolts. Beware of the drive motor and reducer falling caused by bolt breakage.
8) Reducer flange bolt fixing: Check the installation of fixing bolts. Beware of the reducer falling caused by bolt breakage or dislodgement.
9) Reducer and drive wheel connecting bolts: Check the installation of fixing bolts. Beware of the drive wheel falling and vehicle tipping over caused by bolt breakage.
10) Chassis and scissor fixing: Check the installation of fixing bolts and pivot pins. Beware of the scissor falling or overturning caused by bolt breakage or pivot pin dislodgement.
11) Ladder assembly fixing: Check the installation of fixing bolts. Beware of the ladder assembly falling caused by bolt breakage.
12) Scissor pivot pin connection fixing: Check the installation of fixing bolts and pivot pins. Beware of the platform falling or overturning caused by bolt breakage or pivot pin dislodgement.
13) Platform and scissor fixing: Check the installation of fixing bolts and pivot pins. Beware of the platform falling or overturning caused by bolt breakage or pivot pin dislodgement.
14) Door assembly fixing: Door locks and hinges are in normal condition.

Chapter 7 Workplace Inspection

⚠ WARNING: Operations cannot be carried out unless

You have understood and practiced the principles of safe operation of machine in this operating manual.

1) Avoid dangerous situations.

2) Always perform pre-operation inspection.

⚠ CAUTION: before proceeding to the next step, it is necessary to learn about and understand the workplace inspection.

3) Check the workplace.

4) Always perform pre-operation function test.

5) The machine shall be used only according to its design intent.

7.1 Basic Principles

1) Workplace inspection help operators decide if the workplace is safe for the operation of the machine. The operator shall complete this before moving the machine to the workplace.

2) It is the responsibility of the operator to understand and remember the risks in the workplace, which should be noted and avoided when moving, installing and operating the machine.

7.2 Workplace Inspection

Pay attention to and avoid the following dangerous situations:

1) Steep slope or cave

2) Protrusions, ground obstacles or debris

3) Inclined surface

4) Insecure or smooth surface

5) Air obstacles and high-voltage cables

6) Dangerous place

7) Surface supports not sufficient to withstand the full load of the machine

8) Wind and weather conditions

9) Unauthorized personnel are present

10) Other possible unsafe conditions

Chapter 8 Function Test

⚠ WARNING: Operations cannot be carried out unless

You have understood and practiced the principles of safe operation of machine in this operating manual.

1) Avoid dangerous situations.

2) Always perform pre-operation inspection.

Function test checks should be known and understood before proceeding to the next step.

3) Check the workplace.

4) Always perform pre-operation function test.

5) The machine shall be used only according to its design intent.

8.1 Basic Principles

1) Function test are used to detect faults before starting to use the machine.

2) The operator must test all functions of the machine according to the step instructions.

3) Use of faulty machine is prohibited. If you find a fault, the machine shall be marked and be turned off.

4) Only qualified maintenance technicians can repair the machine according to the regulations of the manufacturer.

5) After the maintenance, the operator must perform the pre-operation inspection and function test again before starting to use the machine.

8.2 Function Test

1) Select a solid, level ground without obstacles place.

2) Make sure the battery pack is connected.

8.3 Testing on GCU

1) Pull the red emergency stop buttons of PCU and GCU to the "ON" position.

2) Turn the key switch to the GCU.

3) Observe the LCD display on the GCU.

Result: The LCD lights up and displays the operation interface.

Test emergency shutdown

1) Push the red emergency stop button of the GCU inward to the OFF position.

Result: the machine will be turned off and no function will work.

2) Pull the red emergency stop button out to the ON position.

Test the up/down function and the function enable

⚠ CAUTION: The central alarm system controls the buzzer to sound alarms of different frequencies. The lowering alarm sounds 60 times per minute. When tilting, the buzzer sounds 180 times per minute.

1) Turn the key switch to the PCU or OFF position.

2) Press the lift function enable button and platform lifting button.

Result: the platform is not lifted.

3) Turn the key switch to GCU position.

4) Press the lift function enable button and platform lifting button.

Result: the platform should be lifted.

5) Press the lifting function enable button and the platform lowering button.

Result: the platform should be lowered. When the platform is lowered, the lowering alarm shall sound.

If the anti-pinch function is equipped:

The platform will stop lowering when it is lowered to a certain height.

Press the lift function enable button and platform lowering button again.

Result: the platform should be lowered to the lowest position. When the platform is lowered, the lowering alarm shall sound.

8.4 Test Assisting Lowering

1) Lift the platform about 60 cm.

2) Pull outwards the emergency lowering control knob at the right side of the machine.

Result: the platform should be lowered. The lowering alarm does not sound.

3) Turn the key switch to the PCU.

8.5 Testing on PCU

Test emergency shutdown

1) Push the red emergency stop button of PCU to the OFF position.

Result: the machine will be turned off and all functions will not work.

2) Pull the red emergency stop button out to the ON position.

Result: the LED diagnostic data device indicator lamp will light up.

Testing horn

1) Press the horn button.

Result: the horn will sound.

Test up/down function

1) Press the lift function button.

2) Do not press and hold the enable switch on the control handle.

3) Slowly move the control handle in the direction indicated by the blue arrow, then move the control handle in the direction indicated by the yellow arrow.

Result: None of the functions will work.

4) Press the lift function button.

5) Press and hold the enable switch on the control handle.

6) Slowly move the control handle in the direction indicated by the blue arrow.

Result: the platform should be lifted.

7) Release the control handle.

Result: the platform shall stop lifting.

8) Press and hold the enable switch on the control handle. Slowly move the control handle in the direction indicated by the yellow arrow.

Result: the platform should be lowered. When the platform is lowered, the lowering alarm shall sound.

Test turning

⚠ CAUTION: Stand on the platform and face the forward direction of the machine when performing turning and driving function test.

1) Press the drive function button and the indicator lamp lights up.

2) Press and hold the enable switch on the control handle.

3) Do not move the control handle, and press the left side rocker switch on top of the control handle.

Result: the machine will turn left.

4) Do not move the control handle, and press the right side rocker switch on top of the control handle.

Result: the machine will turn right.

Test drive and brake functions

1) Press the drive function button and the indicator lamp lights up.

2) Press and hold the enable switch on the control handle.

3) Slowly move the control handle in the direction indicated by the blue arrow on the control panel until the machine begins to move, and then return the handle to the center position.

Result: the machine shall move in the direction indicated by the blue arrow on the control panel and then stop suddenly.

4) Press and hold the enable switch on the control handle.

5) Slowly move the control handle in the direction indicated by the yellow arrow on the control panel until the machine starts to move, and then move the handle to the center position.

Result: the machine shall move in the direction indicated by the yellow arrow on the control panel and then stop suddenly.

⚠ CAUTION: On any slope that the machine can climb onto, the brake must ensure stable park of the machine.

Test the operation of tilt sensor

⚠ CAUTION: Perform the test with PCU when you are standing on the ground instead of platform.

1) Lower the platform completely.
2) Drive the machine onto a slope slightly greater than 1.7°(SC0407E-2)/2.5° (SC0610E-2)(in the fore-and-aft direction).
3) Lift the platform to a certain height.

Result: the platform shall stop lifting and at the same time, the tilt alarm shall sound.

4) Press the drive function button and the indicator lamp lights up.
5) Press and hold the enable switch on the control handle.
6) Move the drive control handle in the direction indicated by the blue arrow and then in the direction indicated by the yellow arrow.

Result: The driving function should not work in either direction.

7) Lower the platform and drive the machine away from the obstacles.

Chapter 9 Instructions for operation

⚠ WARNING: Operations cannot be carried out unless

You have understood and practiced the principles of safe operation of machine in this operating manual.

1) **Avoid dangerous situations.**
2) **Always perform the pre-operation inspection.**
3) **Check the workplace.**
4) **Always perform pre-operation function test.**
5) **The machine shall be used only according to its design intent.**

9.1 Basic Principles

1) This machine is a self-walking lifting device equipped with working platform on the scissor mechanism. Vibration generated during the operation of the machine is not dangerous to the operator standing on the working platform. This machine can be used to load personnel and their portable tools to reach a certain height from the ground, or to reach a certain working area above the machine or equipment.
2) The chapter provides specific instructions for all aspects of the machine operation. It is the responsibility of the operator to follow all safety rules and instructions on the operation and maintenance manual.
3) It is unsafe or even dangerous to use this machine for the purposes other than lifting personnel, machines, tools and materials to workplaces in the air.

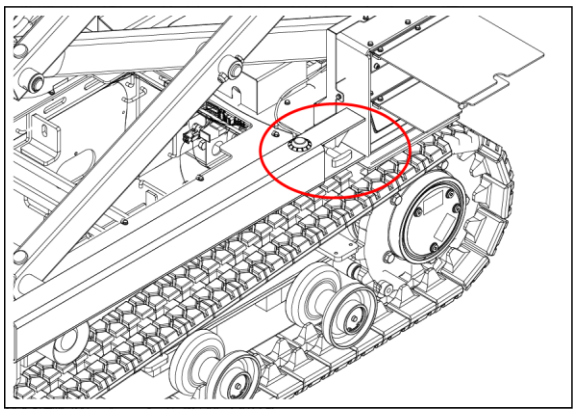
⚠ CAUTION: it is strictly forbidden to carry goods in this machine.

4) Only trained and authorized personnel can operate the machine. If more than one operator uses the same machine at different times during the same shift, they must all be qualified operators and comply with all safety regulations and instructions on the operation and maintenance manual. This means that each new operator should do pre-operation inspection, function test and workplace inspection before using the machine.

9.2 Emergency Shutdown

1) Push the red emergency stop button of GCU or PCU to the OFF position to stop all functions.
2) If a function is still working when any red emergency stop button is pressed, the function should be repaired.

9.3 Emergency Lowering



Pull the emergency lowering knob on the right side of the chassis outward to lower the platform.

9.4 Use GCU to Operate

1) Turn the key switch to the GCU.
2) Turn the red emergency stop buttons of GCU and PCU to "ON" position.
3) Make sure the battery is connected before operating the machine.

Adjust the position of platform

1) Press and hold the lift function enable button.
2) Press the platform up or down button.

⚠ Notice: The drive and turn functions are not available through the GCU.

9.5 Use PCU to Operate

1) Make sure the battery is connected before operating the machine, and turn the key switch to the PCU.

2) Pull the red emergency stop buttons of GCU and PCU to the "ON" position.

Selection of indoor mode or outdoor mode

This function is applied uniformly across the machines equipped with indoor and outdoor lifting height.

1) Press the indoor mode button or press and hold this button (about 3 seconds), the indicator lamp will light up, and the indoor mode is enabled.



2) When the indoor mode is enabled, the lift will be allowed to set to the indoor maximum height. Refer to the specifications.

3) Press the outdoor mode button or press and hold this button (about 3 seconds), the indicator lamp will light up, and the outdoor mode is enabled.



4) When the outdoor mode is enabled, the lift will be allowed to set to the outdoor maximum height. Refer to the specifications.

5) At the retracted state, the indoor/outdoor mode can be switched; at the lifting state, the indoor/outdoor mode cannot be switched.

6) The default mode is the one when the machine is turned off (Key switch off or emergency stop switch off).

Warning: In case of indoor mode, it is prohibited to move the machine from indoors to outdoors.

Adjust the position of platform

1) Press the lift function button.

2) Press and hold the enable switch on the control handle.

3) Move the control handle according to the mark on the control panel, and move the control handle forward, then the platform will be lifted; Move the control handle backwards and the platform will be lowered.

Drive

1) Press the drive function button.

2) Press and hold the enable switch on the control handle.

3) Increase speed: Slowly move control handle away from the center.

   Decrease speed: Slowly move control handle toward the center position.

   Stop: Slowly move control handle to the center position or release the enable switch.

4) Use the PCU and the direction arrows on the platform to determine the moving direction of the machine.

5) After the platform is raised, the machine is not able to self-propel.

6) The state of the battery will affect the performance of the machine. When the battery level Indicator lamp flashes, the machine driving speed and function speed will decrease.

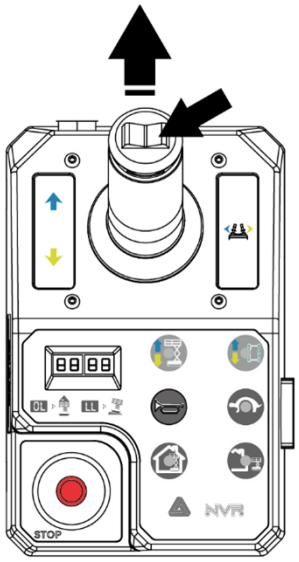
Turning

1) Press the driving function enable button

2) Press and hold the enable switch on the control handle.

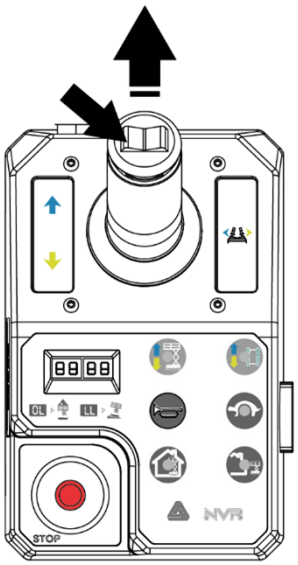
Machine moves forward and turns right:

- The forward speed of the left track is greater than that of the right track.
- Move the control handle forward and at the same time press the right side rocker switch on the top of the handle.



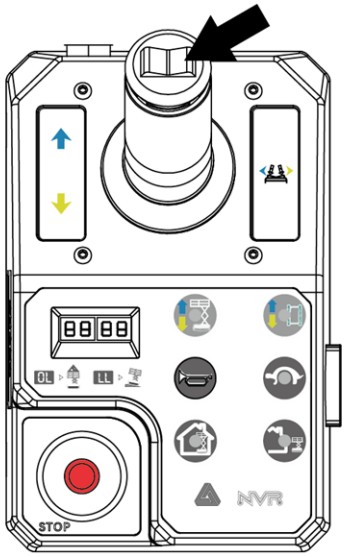
The machine moves forward and turns left.

- The forward speed of the right track is greater than that of the left track.
- Move the control handle forward and at the same time press the left side rocker switch on the top of the handle.



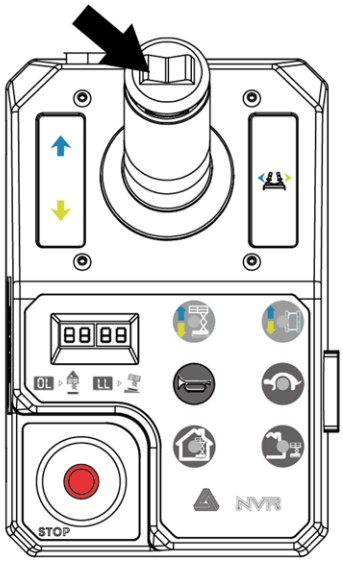
The machine turns right (in-situ steering):

- The left track moves forwards and the right track moves backwards at the same speed.
- Press the right side rocker switch on the top of the handle.



The machine turns left (in-situ steering):

- The right track move forwards, and the left track moves backwards at the same speed.
- Press the left side rocker switch on the top of the handle.



Use PCU to operate when standing on the ground:

1) Maintain safe distance between operator, machine and fixed object.
2) Pay attention to the travel direction of the machine when using the controller.

9.6 Driving Speed Selection (If equipped)

The drive controller can be operated in two different driving speed modes .When the drive speeding selection button lights up, the slow driving speed mode is active. When the drive speed selection button goes out, the fast driving speed mode is active. Press the drive speed selection button to select the desired driving speed.

9.7 Driving on a Slope

Determine the slope rating and the side slope rating, as well as the gradient for the machine.

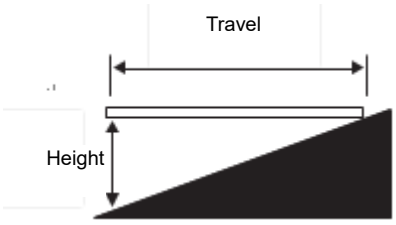
Model	Maximum slope rating in retracted status 	Maximum side slope rating in retracted status 
SC0407E-2	30%(16.7°)	25%(14°)
SC0610E-2	30%(16.7°)	25%(14°)

Note: The slope rating is limited by the ground condition and the traction force as the platform carries one person. Additional platform weight will reduce slope rating.

Determine gradient

Measure the gradient with a digital inclinometer or follow the steps below.

- ✓ Tools required: Woodworking ruler, straight wood block (at least 1m in length), tape measure, etc.
- ✓ Place the wood block on the slope and at the end of the downhill. Place the woodworking ruler on the upper edge of the block, and lift the end of the block to level.
- ✓ Keep the wood block horizontal and measure the vertical height from the bottom of the wood block to the ground.
- ✓ Height divided by the length (travel) of the block, for example:



Travel = 3.6 m, height = 0.3 m

0.3÷3.6=0.083=8.3%

⚠ CAUTION: If the gradient exceeds the maximum uphill, downhill or side slope rating, the machine must be lifted up and down or transported along the slope. Please refer to "Transportation and Lifting".

9.8 Safety Arm Usage

1) Lift the platform to a certain height from the ground (see the table below).

Model	Height (m)
SC0407E-2	2.5
SC0610E-2	3.2

2) Lift the safety arm, move it to the middle of the scissor bushing, and rotate it upward until it is vertical.

3) Lower the platform until the safety arm is in full contact with the bushing. When lowering the platform, keep away from the moving part.

⚠ DANGER: There shall be no load on the platform when using the safety arm support. It is forbidden to use the safety arm support for a long time (8 hours) under no-load condition.

9.9 How to Stow the Guardrail

The platform guardrail system consists of a

folding guardrail on an extended platform and a folding guardrail on the main platform.

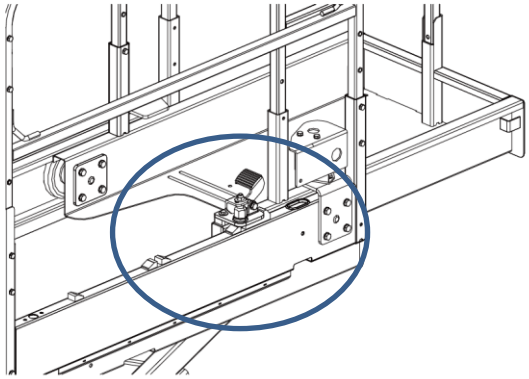
Pull-out guardrail

1) Fully lower the platform and lock the extension platform.
2) Remove the platform controller.
3) Remove the M-shaped fixed seat between the guardrails of the main platform and the extended platform from the inside of the platform and place it in the platform.
4) Remove the fixing bolt from the tube of the extended platform guardrail, press the guardrail carefully, install the fixing bolt.
5) Remove the fixing bolt from the tube of the main platform guardrail, press the guardrail carefully, install the fixing bolt.

Folding guardrail

1) Fully lower the platform and lock the extension platform.
2) Remove the platform controller.
3) Remove the M-type fixed seat between the main platform folding guardrail and the extension platform folding guardrail from the inside of the platform and place the fixed seat in the platform.
4) Remove the D-type pins in the front of the extension platform from the inside of the platform.
5) Turn over the front guardrail of the extension platform inward and do not put your hands in places where they can be pinched. At the same time, prevent tipping over of the left and right guardrails of the extension platform.
6) Install two removed D-type pins back to the guardrail bracket on each side.
7) Turn over the left guardrail of the extension platform inward and do not put your hands in places where they can be pinched. At the same time, prevent tipping over of the right guardrail of the extension platform.
8) Turn over the right guardrail of the extension platform inward and do not put your hands in places where they can be pinched.
9) Remove D-type pins in the upper part of the main platform door guardrail.
10) Push the left guardrail of the main platform inward from the ladder or the ground and do not put your hands in places where they can be pinched. At the same time, prevent tipping over of the right guardrail of the main platform.
11) Push the right guardrail of the main platform inward from the ladder or the ground and do not put your hands in places where they can be pinched. At the same time, prevent tipping over of the door guardrail.
12) Push the door guardrail inward from the ladder or the ground and do not put your hands in places where they can be pinched.
13) Install removed D-type pins back to the guardrail on each side.

9.10 Extending and retracting of platform



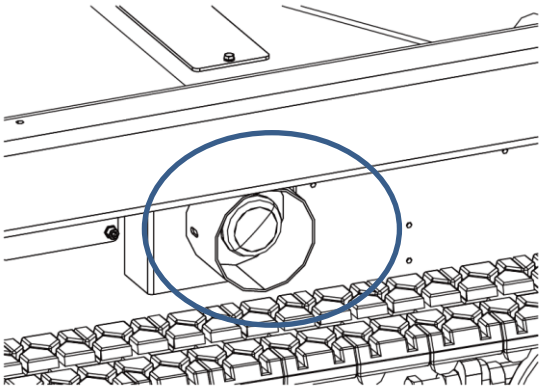
1) Step on the positioning pedal on the extension platform.

2) Push the extended platform guardrail to extend the platform to the fixing point and lock it.

⚠ CAUTION: Do not stand on the extended platform when trying to extend platform.

9.11 Power Master Switch

DC power switch



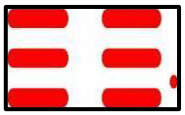
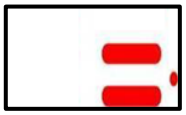
Press the DC power switch and the machine power will be switched off.

Pull out the DC power switch and the machine power will be switched on.

⚠ CAUTION: When the machine is transported, repaired or not used for a long time, the power master switch shall be disconnected.

9.12 Power Display

Use the LED diagnostic reading device to determine the battery power.

Platform display	Percentage of battery power (%)	Description
	90-100	Battery is full
	70	Remaining percentage of battery power
	50	Remaining percentage of battery power
	30	Remaining percentage of battery power
	20	Battery must be charged
	10	The battery power is very low

⚠ CAUTION: When the battery power is very low (battery power ≤ 10%), the machine automatically switches to low speed mode.

9.13 Fall Protection

The use of personal fall protection equipment (PFPE) is required during the operation of the machine. If PFPE is required in workplace or user rules, the following requirements shall be observed:

All PFPEs must comply with the corresponding government regulations and must be inspected and used according to the manufacturer's instructions.

9.14 After Each Use

1) Choose a safe parking position, which can be solid level ground, free of obstacles and away from heavy traffic.
2) Lower the platform.
3) Turn the key switch to the OFF position and remove the key in order to avoid unauthorized use.
4) Charge the Battery. (If necessary)

9.15 Error Status (alarm code)

⚠CAUTION: In the error alarm state, the alarm code will display on the ECU and PCU.

Table: alarm code

Display	Description	Response
01	System initialization error	Stop all actions
02	System communication error	Stop all actions
03	Model error	Stop all actions
05	ECU and BMS communication failure	Lifting and travelling are prohibited.
09	Invalid pedal alarm	Stop lifting and running
10	The alarm switch is on when height limit rod is being touched	Stop lifting and running
11	Upper&Lower limit abnormity	Display alarm only
12	Chassis lifting or lowering button opening error during start	Stop all chassis controls
14	Motor controller 1 communication failure	Stop lifting and running
15	Motor controller 2 communication failure	Stop lifting and running
16	BMS fault	Stop lifting and running
18	Pothole protection error	Stop lifting and running
23	Traveling function is limited when lifting	Stop running
27	Down proportional valve fault	Stop lifting and running
31	Pressure sensor error	Stop lifting and running
32	Angle sensor error	Stop lifting and running
33	No calibration of light load	Stop lifting
34	Down after overload	Display alarm only
35	Load calibration error	Display alarm only
36	Low battery alarm	Speed reduced to low speed
38	Load calibration error	Stop lifting
40	GPS communication failure	Display alarm only
41	GPS level 1 lockout	Stop lifting
42	Platform left turn button pressing error during start	Display alarm only
43	Platform right turn button pressing error during start	Display alarm only

44	ZAPI 1 fault (AC pump motor parameter fault)	Display alarm only
45	ZAPI 2 fault（AC pump motor hardware fault）	Display alarm only
46	Platform handle enable switch button pressing error during start	Stop platform control
47	“The platform handle is not in the middle position” error during start	Display alarm only
49	AC pump motor: Motor fault detected	Display alarm only
50	AC pump motor connector fault	Display alarm only
51	Wireless collision avoidance alarm	Stop lifting
52	Forward coil error	Stop lifting and running
53	Backward coil error	Stop lifting and running
54	Lifting error of lifting coil	Stop lifting and running
55	Lifting error of lowering coil	Stop lifting and running
56	Right turn coil error	Stop lifting and running
57	Left turn coil error	Stop lifting and running
58	Brake coil error	Stop lifting and running
60	Motor controller fault	Stop lifting and running
61	Motor controller current sensor fault	Display alarm only
62	Motor controller damaged hardware fault	Display alarm only
63	Motor controller output fault	Display alarm only
64	Motor controller SRO fault	Display alarm only
67	Motor controller HPD fault	Display alarm only
68	Low voltage fault	Lifting and high speed running are prohibited
69	Motor controller	Stop lifting and running
70	Motor controller	Stop lifting and running
71	Motor controller contactor fault	Stop lifting and running
73	Motor controller overheated	Display alarm only
74	Motor controller fault	Display alarm only
75	Motor controller pump motor fault	Stop lifting and running
76	Motor controller left drive motor fault	Stop lifting and running
77	Motor controller right drive motor fault	Stop lifting and running
78	Motor controller pump motor short-circuit fault	Stop lifting and running
79	Left drive motor short-circuit fault	Stop lifting and running

80	Alarm of exceeding 80% load	Alarm only
81	Right drive motor short-circuit fault	Stop lifting and running
82	Left brake coil fault	Stop lifting and running
83	Right brake coil fault	Stop lifting and running
84	Motor POST Short Fault	Stop lifting and running
89	Motor excitation open-circuit fault	Stop lifting and running
90	Alarm of exceeding 90% load	Alarm only
91	Motor excitation short-circuit error	Stop lifting and running
92	Motor excitation short-circuit error	Stop lifting and running
93	AC pump brake fault	Display alarm only
94	AC pump drive temperature fault	Display alarm only
95	AC pump motor temperature fault	Display alarm only
96	AC pump abnormal voltage/ electric quantity	Display alarm only
97	AC pump CANBUS communication fault	Display alarm only
98	AC pump speed sensor fault	Display alarm only
99	Alarm of exceeding 99% load	Alarm only
100-114	Three-phase AC motor drive node 8 fault （100-144）	Display alarm only
115-128	Three-phase AC motor drive node 9 fault （115-128）	Display alarm only
129-142	Three-phase AC motor drive node A fault （129-142）	Display alarm only
OL	Platform overload alarm	Stop all actions
LL	“The machine tilts over the safety limit” error	Stop lifting and running
DL	Wires disconnect fault of PCU	Stop PCU running

Troubleshooting Guidance

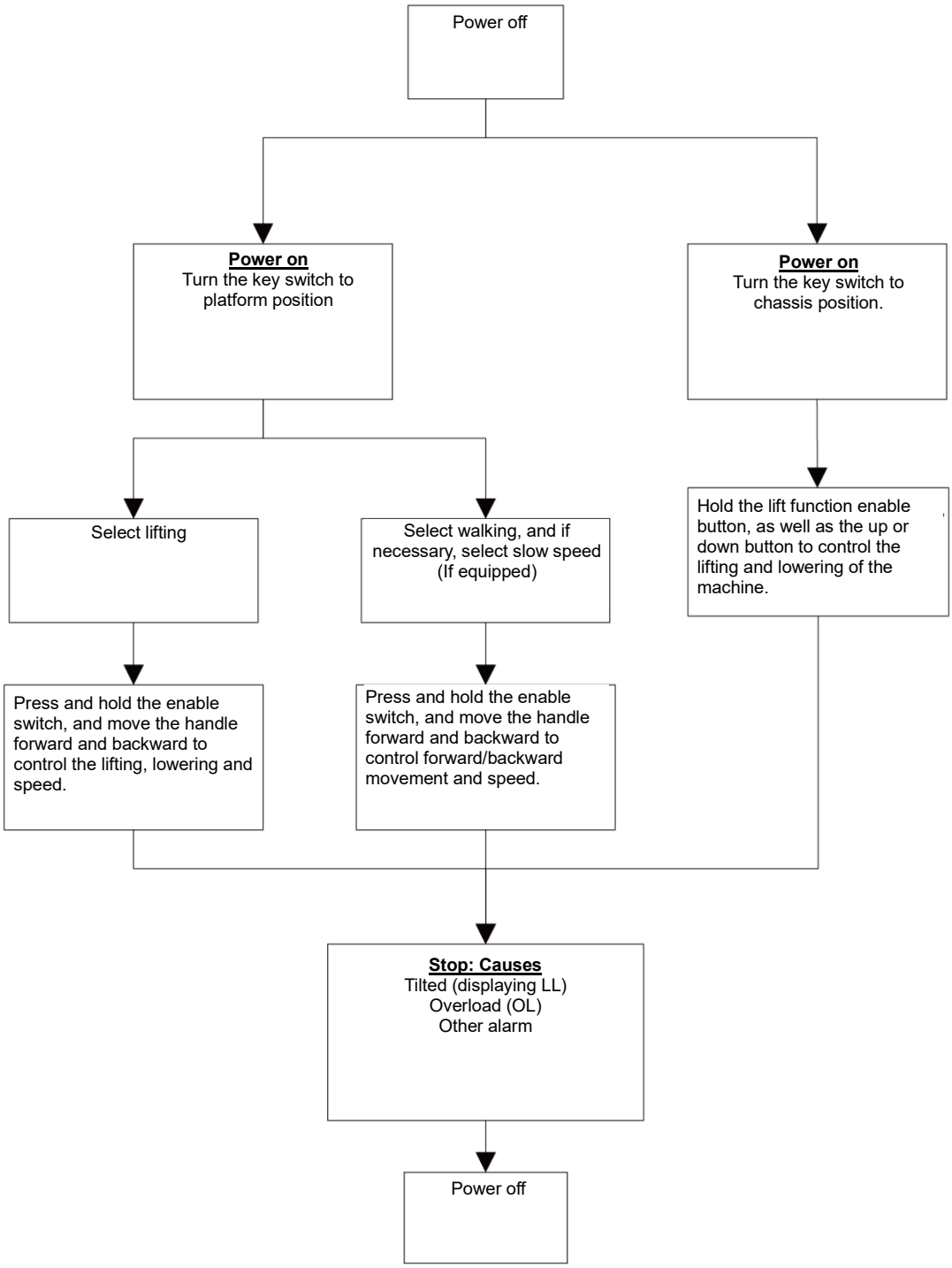
Display	Description
01	Restart device or replace ECU
02	System communication error: Check connection between the communication line and other cables. If fault still exists, please replace the PCU or the ECU
03	Invalid option setting error: Set proper options for the machine
05	Check if CAN bus are contacted well or have lithium battery replaced
09	Release the pedal switch, if it is invalid, check the connection status of pedal harness (check for short-circuit)
10	Down alarm override
11	Reset upper limit switch or outdoor limit switch

Display	Description
12	Check if the chassis lifting or descending button is pressed when powered on，or replace ECU
14	Check if CAN bus are contacted well or have electric drive type modified
15	Check if CAN bus are contacted well or have electric drive type modified
16	Check if CAN bus are contacted well or have lithium battery replaced
18	Pothole protection error: Check whether the pothole protection is activated, and check the pothole protection limit switch. Check the wiring of the switch, lower limit switch and wiring.
23	Down alarm override
27	Check or replace the down proportional valve
31	Pressure sensor error: Check the sensor wiring and the sensor. Check to confirm that the correct machine option with overload detection is selected
32	Angle sensor error: Check the sensor wiring and the sensor. Check to confirm that the correct machine option with overload detection is selected
33	Calibrate light load, or shut off double load function
34	This fault is only apply to warn the operator
35	Recalibrate no load and full load
36	When the battery power is low, charge it in time; If the battery power is normal, check the wiring or replace the ECU,
38	Recalibration
40	Check if CAN bus are contacted well or have GPS device replaced
41	Unlock or contact GPS device
42	Platform left turn button pressing error during start: Ensure that buttons on the handle are not pressed. If not, consider replacing the handle or the PCU
43	Platform right turn button pressing error during start: Ensure that buttons on the handle are not pressed. If not, consider replacing the handle or the PCU
44	Replace the motor driver or contact the motor manufacturer
45	Replace the motor driver or contact the motor manufacturer
46	Platform handle enable switch button pressing error during start: Ensure that the enable switch on the handle is not pressed. If not, consider replacing the handle or the PCU
47	“The platform handle is not in the middle position” error during start: Confirm that the handle is in the middle position, and check the middle position parameter setting. If normal, consider replacing the handle or the PCU
49	Replace the motor driver or contact the manufacturer
50	Replace the motor driver or contact the manufacturer
51	Down alarm override
52	Forward coil error: Check the connection of the coil and confirm that it is normal. If normal, check the coil for short circuit or open circuit
53	Backward coil error: Check the connection of the coil and confirm that it is normal. If normal, check the coil for short circuit or open circuit
54	Lifting error of lifting coil: Check the connection of the coil and confirm that it is normal. If normal, check the coil for short circuit or open circuit
55	Lifting error of lowering coil: Check the connection of the coil and confirm that it is normal. If normal, check the coil for short circuit or open circuit
56	Right turn coil error: Check the connection of the coil and confirm that it is normal. If normal, check the coil

Display	Description
	for short circuit or open circuit.
57	Left turn coil error: Check the connection of the coil and confirm that it is normal. If normal, check the coil for short circuit or open circuit.
58	Brake coil error: Check the connection of the coil and confirm that it is normal. If normal, check the coil for short circuit or open circuit.
60	Replace the motor driver or contact the manufacturer
61	Replace the motor driver or contact the manufacturer
62	Replace the motor driver or contact the manufacturer
63	Replace the motor driver or contact the manufacturer
64	Replace the motor driver or contact the manufacturer
67	Replace the motor driver or contact the manufacturer
68	Charge in time; when battery is working well , check the cable or replace the ECU
69	Replace the motor driver or contact the manufacturer
70	Replace the motor driver or contact the manufacturer
71	Replace the motor driver or contact the manufacturer
73	Replace the motor driver or contact the manufacturer
74	Replace the motor driver or contact the manufacturer
75	Replace the motor driver or contact the manufacturer
76	Replace the motor driver or contact the manufacturer
77	Replace the motor driver or contact the manufacturer
78	Replace the motor driver or contact the manufacturer
79	Replace the motor driver or contact the manufacturer
80	Alarm of exceeding 80% load: As the platform is close to the load limit, it is not recommended to increase the load
81	Replace the motor driver or contact the manufacturer
82	Check the connection of the coil and confirm that it is normal. If normal, check the coil for short circuit or open circuit.
83	Check the connection of the coil and confirm that it is normal. If normal, check the coil for short circuit or open circuit.
84	Replace the motor driver or contact the manufacturer
89	Replace the motor driver or contact the manufacturer
90	Alarm of exceeding 90% load: As the platform is close to the load limit, it is not recommended to increase the load
91	Replace the motor driver or contact the manufacturer

Display	Description
92	Replace the motor driver or contact the manufacturer
93	Replace the motor driver or contact the manufacturer
94	Replace the motor driver or contact the manufacturer
95	Replace the motor driver or contact the manufacturer
96	Replace the motor driver or contact the manufacturer
97	Replace the motor driver or contact the manufacturer
98	Replace the motor driver or contact the manufacturer
99	Alarm of exceeding 99% load: As the platform has reached the load limit, do not to increase the load
100-114	Replace the motor driver or contact the manufacturer
115-128	Replace the motor driver or contact the manufacturer
129-142	Replace the motor driver or contact the manufacturer
OL	Platform overload alarm: Remove excessive loads immediately
LL	If the machine is tilted, try to restore it to horizontal level, and if not tilted, it needs to check the level sensor wiring and the sensor itself and recalibrate.
DL	PCU internal fault, check whether the handle connection line is loose, damaged or disconnected before power on or during operation. Display: PCU-DL GCU-144

9.16 Operation Flow Chart



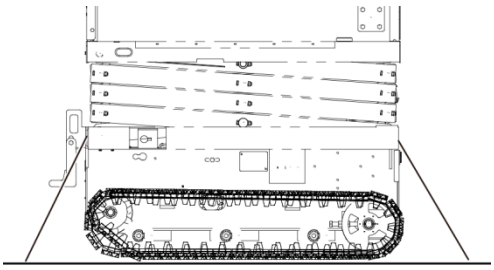
Chapter 10 Hoisting for Transportation and Instructions

⚠ WARNING: Observe the regulations

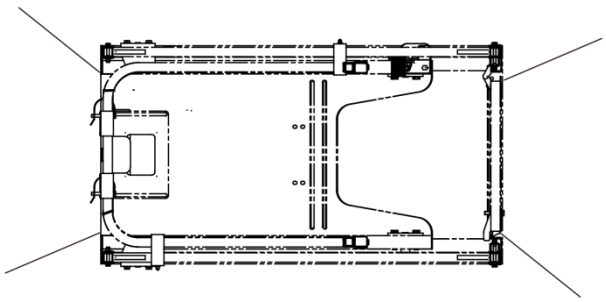
- **When the crane lifts the machine, maintain normal judgment and planning to control the machine movement.**
- **Only personnel qualified for overhead lifting operations can load and unload the machine.**
- **The transport vehicle must be parked on a level ground.**
- **When loading the machine, the transport vehicle should be secured to prevent movement.**
- **Ensure that the vehicle has enough capacity, loading surface, chain or belt to withstand the machine weight. Refer to the nameplate for machine weight.**
- **Do not drive the machine on slopes that exceed machine uphill, downhill or slope rating. See "Driving on Slopes" in "Instructions for operation".**

10.1 Ensuring Transportation Safety

1) Always lock the machine wheels when preparing for transport.
2) Retract and secure the extended platform.
3) Before transportation, turn the key switch to the "OFF" position and remove the key.
4) Secure the front and rear tracks with wooden wedges and check the machine thoroughly to prevent loose or unfixed parts.
5) Fix the machine on the transportation surface through the fastening part on the chassis.



6) Use four or more chains or belts.



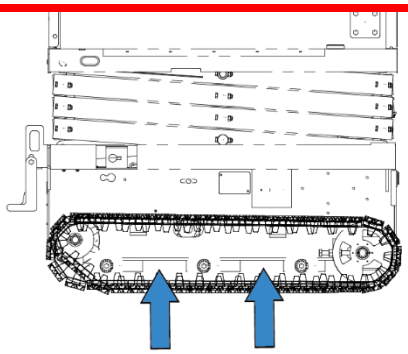
7) Ensure that the chains or belts used have sufficient load strength.

⚠ WARNING: Observe the regulations

- **Only a qualified hooking man can assemble the lock and lift the machine.**
- **Only personnel with forklift operation qualification can use forklift to load and unload machine.**
- **Ensure that the lifting capacity, loading surface, belts or ropes of the crane are sufficient to bear the weight of the machine. See serial number nameplate.**

10.2 Lifting Machine with Forklift

1) Ensure that the extended platform, the controller and the chassis tray are secured safely and reliably. Remove all moving parts from the machine.
2) Lower the platform completely. Platform must remain retracted during the whole transportation.
3) Use the forklift notch on both sides of the chassis.
4) Place the fork leg in the forklift notch position.



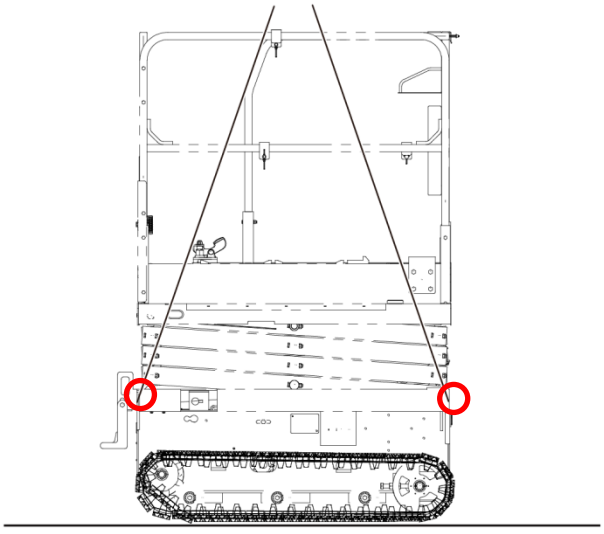
5) Drive forward to fully insert the fork into the notch.

6) Lift the machine by 15 cm and then tilt the fork back slightly to keep the machine stable.

7) Make sure the machine is level when lowering the fork.

10.3 Lifting Instruction

1) Lower the platform completely. Ensure that the extended platform, the controller and the chassis tray are secured safely and reliably. Remove all moving parts from the machine.



2) The sling must be connected to the specified lifting points on the machine.

3) There are two long holes on the front panel of the machine and two long holes on the rear tailgate, all of which are used for lifting.

4) Adjust the lock to avoid damaging the machine and keep the machine level.

10.4 Parking and Retracting

Follow the below instructions for parking and retracting:

1) Drive the machine to a well-protected and well-ventilated area.

2) Make sure the working platform is fully lowered.

3) Set the emergency stop button to the "OFF" position.

4) If necessary, cover the control panel, caution and warning signs to prevent them from being affected by harsh external environment.

5) If the machine is to be parked for a long time, use stoppers to secure the wheels on both sides.

6) Turn the key switch to the "OFF" position and remove the key to make the machine cannot be started, which aims to prevent unauthorized use of the device.