



Operation Manual

M0810JE

Mast Mobile Elevating Work Platform



WARNING

Before operation and maintenance, the drivers and service personnel shall always read and thoroughly understand all information in this manual. Failure to do so may result in, fatal accidents or personal injury.

This manual must be kept with this machine at all times.

Mast Mobile Elevating Work Platform Operation Manual

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Foreword

Thank you for choosing to use this Mobile Elevating Work Platform from LGMG. This machine is designed according to AS/NZS 1418.10:2011+A1:2017. The information specified in this manual is intended for the safe and proper operation of this machine for its' intended purpose.

For maximum performance and utilization of this machine, thoroughly read and understand all the information in this manual before starting, operating, or performing maintenance on this machine.

Due to continuous product improvements, LGMG reserves the right to make specification changes without any prior notifications. For any updated information, contact LGMG.

Ensure all preventive maintenance to the machine is performed according to the interval specified in the maintenance schedule.

Keep this manual with this machine for reference at all times. When the ownership of this machine is transferred, this manual shall be transferred with this machine. This manual must be replaced immediately if it is lost, damaged, or becomes illegible.

This manual is copyrighted material. The reproduction or copy of this manual is not allowed without the written approval of LGMG.

The information, technical specifications and drawings in this manual are the latest available when this manual is issued. Due to continuous improvement, LGMG reserves the right to change the technical specifications and machine design without notice. If any specifications and information in the manual are not consistent with your machine, please contact the service department of LGMG.

WARNING

Only personnel who have been properly trained and qualified to operate or maintain this machine can operate, repair and maintain this machine.

Improper operation, maintenance, and repair are dangerous and can cause personal injury and death.

Before any operation or maintenance, the operator shall thoroughly read this manual. Do not operate, perform any maintenance or make any repairs on this machine before reading and understanding this manual.

Loading shall be done in strict accordance with the rated loading capacity, and any consequence due to overloading or unauthorized modification shall be the responsibility of the users.

The operation procedures and precautions referred to herein are only applicable to the stipulated operation of the machine. For any operation out of the specification but not prohibited, always make sure that this operation will not hurt you or other people.

Please operate the machine in accordance with operator's manual, for any consequences caused by improper operations that are not in accordance with safety rules, the user shall take full responsibility.

Safety Precautions

The operator of this machine shall understand and follow the existing safety regulations of state and local governments. If these are unavailable, the safety instructions in this manual shall be followed.

To help prevent accidents, read and understand all warnings and precautions in this manual before operation or performing maintenance.

The safety measures are specified in Chapter 1 Safety.

It is impossible to foresee every possible hazard and the safety instructions in this manual may not cover all safety prevention measures. Always ensure the safety of all personnel and protect the machine against any damage. If unable to confirm the safety of some operations, contact LGMG.

The operation & maintenance prevention measures listed in this manual are only applicable to the specified uses of this machine. LGMG assumes no responsibility if this machine is used beyond the range of this manual. The user and the operator shall be responsible for the safety of such operations.

Do not perform any operation forbidden in this manual in any situation.

The following signal words are applicable for identifying the level of safety information in this manual.



DANGER: Due to failure to avoid it, the sequence of the danger will cause serious injuries or death. This word also indicates that failure to avoid it may cause serious damages to the machine.



WARNING: Due to failure to avoid it, the sequence of potential danger may cause serious injuries or death. This word also indicates that failure to avoid it may cause serious damages to the machine.



NOTICE: Failure to avoid it may cause light or medium injuries. This word also indicates that failure to avoid it may cause damages to the machine or shortening of the service life of the machine.

Chapter 1 Safety

 **DANGER**

Failure to disobey the instructions and safety rules in this manual may cause death or serious injuries.

 **CAUTION: No Operation Except**

Following Cases.

You have known and practiced the rules for safe operation of machine in the Operation Manual.

- 1) Avoid the dangers. Know and understand the safety rules before next step.
- 2) Always check before operation.
- 3) Always perform the function test before operation.
- 4) Check the work place.
- 5) Use the machine only as per the design intent of the machine.
- 6) Read, understand and obey the instructions and safety rules of manufacturer-safe operation manual and machine label.
- 7) Read, understand and obey the safety rules for users and regulations of work site.
- 8) Read, understand and obey all applicable government laws and regulations.
- 9) You need to accept proper training for safe operation of the machine.

 **NOTICE: Dangers Classification**

The meanings of symbols, color codes and characters of LGMG's products are as follows:

Security warning symbol: are used for warning of potential personal injuries. Observe all safety instructions below these signs, to avoid situations causing potential personal injury and death.



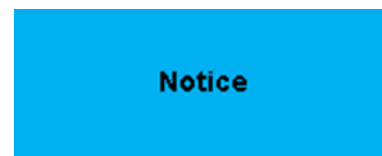
Red: Signifies dangerous situations. If not avoided, will result in personal death or severe injury.



Orange: Signifies dangerous situations. If not avoided, may result in personal death or severe injury.



Yellow: Signifies dangerous situations. If not avoided, may result in minor or intermediate personal injury.



Blue: Signifies dangerous situations. If not avoided, property loss or damage can occur.

1.1 Intended use

This machine is intended to be used only to lift personnel, along with their tools and materials to an aerial work site.

1.2 Safety Sign Maintenance

Replace any missing or damaged safety signs. Keep operator safety in mind at all times. Use mild soap and water to clean safety signs. Do not use solvent-based cleaners because they may damage the safety sign material.



Electrocution Hazards

This machine is not electrically insulated and will not provide protection from contact with or proximity to electrical current. Maintain required clearances from electrical power lines and apparatus in accordance with applicable governmental regulations and the following chart.

Line Voltage	Required Clearance
0~50KV	3.05m
50KV~200KV	4.6m
200KV~350KV	6.10m
350KV~500KV	7.62m
500KV~750KV	10.67m
750KV~1000KV	13.72m

- Allow for platform movement, electrical line sway or sag and

beware of strong or gusty winds.

- Keep away from the machine if it contacts energized power lines. Personnel on the ground or in the platform must not touch or operate the machine until energized power lines are shut off.
- Do not operate the machine during lightening or storms.
- Do not use the machine as a ground for welding.
- Do not touch the charger while the machine is charging.



Tip-over Hazards

Occupants, equipment and materials shall not exceed the maximum platform capacity.

M0810JE	M0810T0WDQ0NE3000			
Maximum occupants	Indoor	2	Outdoor	1
Maximum platform capacity.	Indoor	200kg	Outdoor	200kg

Never overload the platform.



Fall Protection

PFPE fall protection equipment (PFPE) is required when operating this

machine.

Operators must comply with employer, job site and governmental rules wear a safety belt or harness in accordance with governmental regulations.

All PFPE must comply with applicable governmental regulations, and must be inspected and used in accordance with the PFPE manufacturer’s instructions.

1.3 Safety of Work Area



CAUTION: If there are accidents of one’s own or others caused by improper operations that are not in accordance with “1.3 Safety of Work Area”, it is the one that takes the responsibility.

- 1) The platform can only be raised on a solid and flat level ground.
- 2) The speed shall not exceed 0.43 km/h when the platform is raised.
- 3) The inclination alarm cannot be regarded as level indicator. When the machine is seriously inclined, the inclination alarm of the chassis and platform will ring.

Model Item	M0810JE (M0810T0WDQ0NE3000)
Maximum allowable angle (Along the boom)	3°
Maximum allowable angle (Vertical to the boom)	3°

- 4) If inclination alarm rings, lower the platform and move the machine to a solid level ground. If the inclination alarm rings when the platform is raised, the platform shall be lowered very carefully.
- 5) In case the machine is used outdoor, do not lift the platform when the wind speed is above 12.5m/s. If the wind speed exceeds the limit after lifting the platform, please immediately lower the platform and stop the machine operation.
- 6) Ambient temperature for machine operation is -20°C-40°C. The altitude of the workplace is below 1500m.
- 7) Ambient relative humidity for machine operation shall be no greater than 90% (at 20°C).
- 8) The allowable fluctuation of machine power supply voltage is ±10%.
- 9) Do not operate the machine in strong winds or gusts. The surface area of the platform or

load cannot be increased. Increase of the area exposed to the wind will reduce the stability of the machine.

- 10) Do not use the platform control unit (PCU) to release the platform when the platform is tripped, stuck, or its normal operation is obstructed by other nearby matters. Before using the ground control unit (GCU) to release the platform, all staff must leave the platform.
- 11) In the folding state, the machine must run very carefully and reduce its speed when it runs on uneven terrain, unstable or smooth surface with stones, or the place near the tunnel, or the steep slope.
- 12) Precautions for travelling with elevated work platform.
- 13) In the raising state of the platform, the machine cannot run on uneven terrain and unstable surface, or in other dangerous situations, or near these areas.
- 14) Always follow your national traffic regulations.
- 15) Don't use the machine as a crane.
- 16) Do not use the boom to push the vehicle or other object.
- 17) Do not put the platform against adjacent buildings.
- 18) Don't push or pull anything outside the platform.

Model	Maximum allowable manual force
M0810JE	Indoor:400N; Outdoor:200N

- 19) Don't change or disable limit switch.
- 20) Don't tie platforms to adjacent components.
- 21) Don't place loads outside the platform guardrail.
- 22) Do not modify the elevating work platform without the prior written permission of the manufacturer. Installing additional equipment for placing tools or other materials on the platform, pedal plate or guardrail will increase the weight of the platform and the surface area of the platform or increase the load.
- 23) Don't change or damage any component that may affect the safety and stability of the machine.
- 24) Don't replace key parts that affect machine stability with parts of different weights or specifications. It is forbidden to use a battery weighing less than the original battery. The battery installed on the chassis is used and counterweight and is vital for the stability of machine.

Model	Battery weight (kg)
M0810JE	14.2

- 25) Don't place ladders or scaffolds within the platform or against any component of the machine.

- 26) Only transport tools and materials that are evenly distributed and can be safely moved by people on the platform.
- 27) Don't use machines on moving surfaces and vehicles.
- 28) Ensure that all tires are in good condition and nuts have been properly tightened.
- 29) The total value of the vibration experienced by the hand/arm system shall not exceed 2.5 m/s², and the highest root-mean-square value of the weighted acceleration experienced by the whole body shall not exceed 0.5 m/s².
- 30) The noise level of the ground working area and platform working area is less than 72.3dB.
- 31) Wear necessary protection when used or stand beside the machine.

Don't drive the machine on slopes that exceed the ratings of machine slopes. Slope ratings are applicable to machines in a stowed state.

Maximum slope rating in the retracted state	25% (14°)
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 **Fall Hazards**

- During operation, the operator on the platform must wear a full body safety device and be secured on approved rope anchorage points with safety strap hooks. Each rope anchorage point can only be tied with one hook.
- Don't climb or stand on the platform guard railing. Stand firmly on the platform floor at all times.
- Don't climb down from the platform when the platform is lifted.
- Keep the platform floor free from debris.
- Please close the entrance door before operation
- Don't operate the machine if guard railings are not installed properly or safe operation cannot be guaranteed at the entrance door.
- Don't move in and out of the platform unless the machine is in a folding state.
- Never get on or get off the platform when the platform is raised.

 **Smashing and Pressing Hazards**

- Don't move your hands and arms near parts that are in danger of cutting or smashing.
- Please maintain good judgment and planning when operating the machine with controllers on the ground. Maintain a safe distance among operators, machines and stationary objects.

 **Hazards of Operating on Slopes**

 **Collision Hazards**

- Pay attention to range of visibility and blind spots when starting or manipulating the machine.
- Check the operation areas to avoid obstacles overhead or other possible hazards.
- Be careful of extrusion hazards when grasping the platform guard railing.
- Users must comply with service regulations of personal protection equipment as required by the employer, in workplace and stipulated in government laws and regulations.
- Observe and use the direction arrows of driving and steering functions on the PCU and platform labels when driving and steering.
- Don't operate the machine on any running route of crane or high-altitude machinery unless the crane controller has been locked and/or precautions have been taken to prevent any potential collision.
- Prohibit dangerous driving or play when the machine is operated.
- It is allowed to lower the platform when there are no staff and obstacles in the area under the platform.
- Restrict driving speed according to ground condition, jamming degree, gradient, staff position and any other factors that may cause collision.

- The machine shall be on a ground surface or have been fixed before releasing brake.

Hazard of Component Damage

- Do not charge the battery with any above 24V battery charger.
- Do not use machine as grounded cord when welding.
- When cleaning the vehicle, it is forbidden to wash the battery, charger, controller, and other electrical compents directly.

Hazard of Explosion and Fire

- It is allowed to charge the battery only in the open and well-ventilated places far away from sparks, flames, burning cigarettes, etc.
- Do not operate or charge the machine at the location with possible inflammable or explosive gas or particles.

Hazard of Machine Damage

- Do not use the damaged or faulted machine.
- Be sure to perform a thorough check before operation of machine and test all functions before each shift. The damaged or faulted machine shall be marked immediately, and the operation shall be stopped.
- Ensure that all maintenance operations have been performed as specified in this manual.

- Ensure that all labeling positions are proper and easy to be identified.
- Ensure that this manual is stored in document box on the platform.

**Hazard of Bodily Injuries**

- Do not operate the machine when hydraulic oil or air leaks. Leakage of hydraulic oil or air may penetrate or burn the skin.
- Wrong contact with any component under the cover may cause serious injuries.

Trained maintainers are only allowed to overhaul the compartment. Suggestion: Only when the check before operation is performed, can operator overhaul the compartment. During operation, all compartments must be closed and locked.

1.4 Battery Safety**Combustion Hazard**

- The battery contains acidic substances. Be sure to wear protective clothing and protective glasses when the battery is used.
- Avoid overflow of acidic substance or contact with it in the battery. Use soda and water to neutralize the overflowing acidic substances in the battery.
- If the vehicle is parked for a long time, disconnect the main power switch.
- Maintain the battery on a vertical level.

- Avoid exposition of the battery or charger to water or rain during charging.

**Explosion Hazard**

- Prohibit sparks, flames, and lighted cigarettes to be near the battery, because the battery can release explosive gas.
- Do not use tools that may cause sparks to contact battery terminal or cable clamp.
- Keep the battery cover open while charging.

**Component Damage Hazard**

Do not charge the battery with any above 24V battery charger.

**Electric Shock/ Empyrosis Hazard**

- Only connect the battery charger to a grounded AC three wire power outlet.
- Check cables, cables and wiring daily for damage. Replace damaged items before operation.
- Avoid electric shock due to contact with battery terminals. Remove all rings, watches and other accessories.

**Tip-over Hazard**

It is forbidden to use a battery weighing less than the original battery. The battery installed on the chassis is used and counterweight and is vital for

the stability of machine. Minimum weight of battery group (including battery) must be 210 kg.



Lifting Hazard

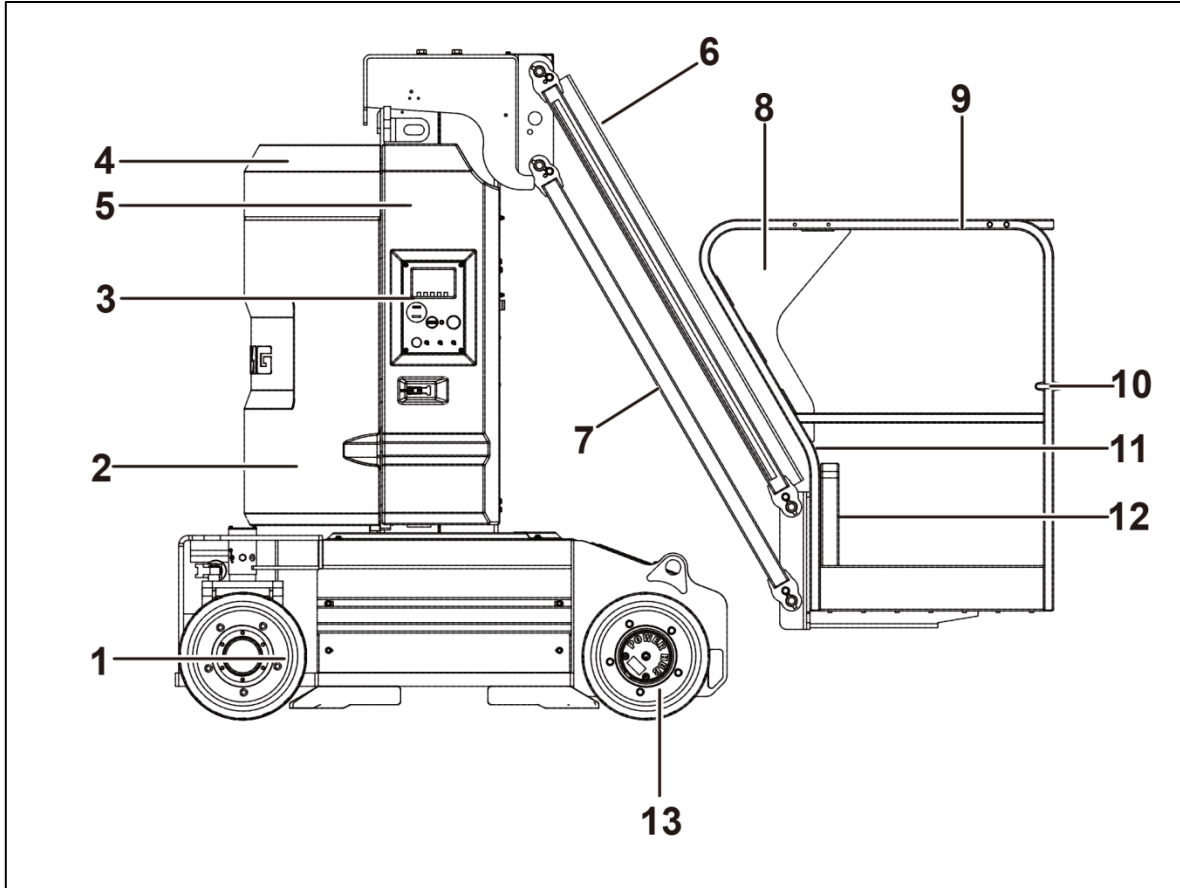
Use the appropriate number of people and proper lifting techniques when lifting batteries.

1.5 Lockout After Each Use

- 1) Choose a safe parking position, which can be a solid level surface, without obstacles and heavy traffic.
- 2) Lower the jib boom and mast to stowed position.
- 3) Rotating turntable makes the platform between non-steering wheels.
- 4) Turn the key switch to the “OFF” position and remove the key to avoid unauthorized.
- 5) Choke the wheel.
- 6) Charge the battery (if necessary).

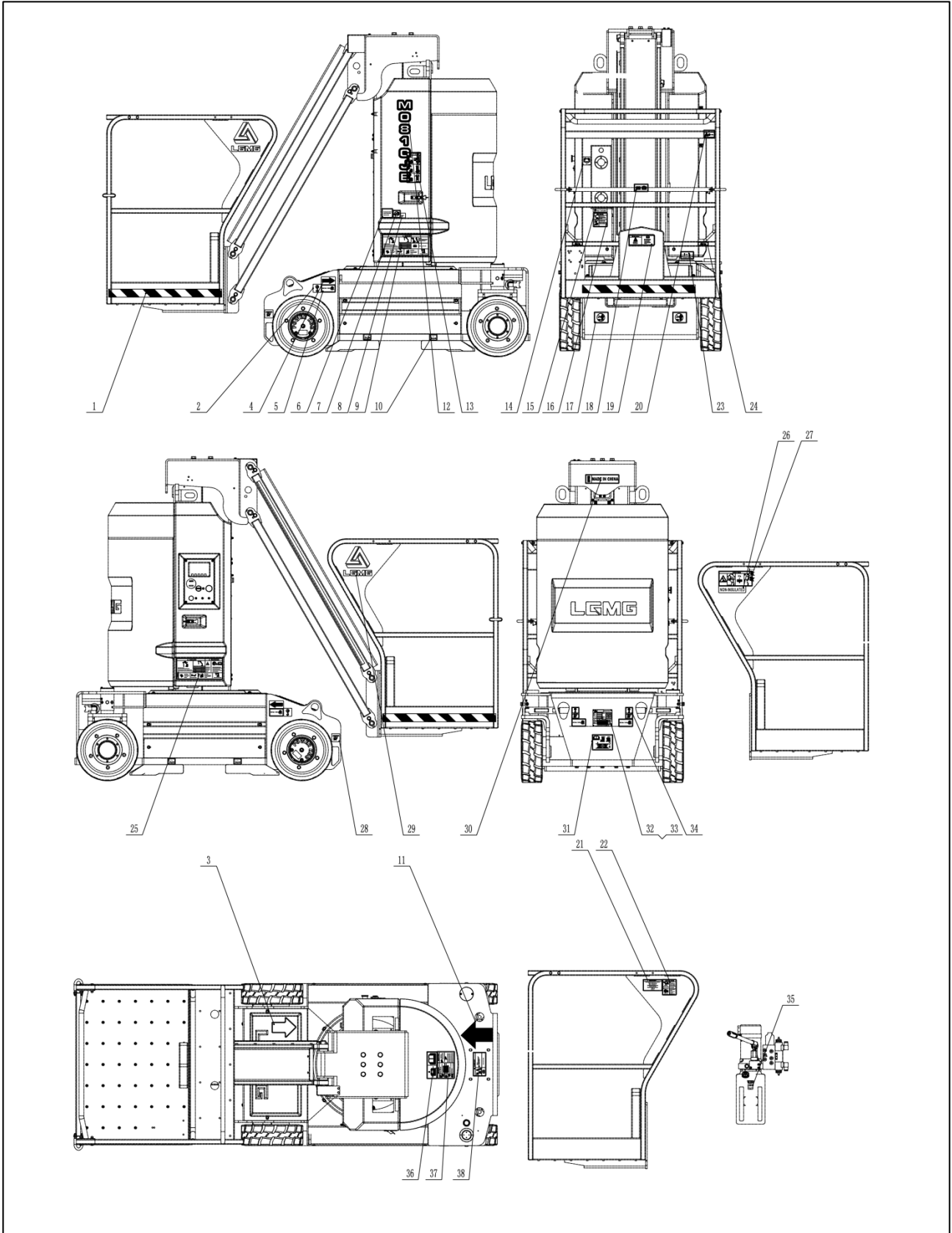
Chapter 2 Legend

! NOTICE: The schematic diagram takes M0810JE as an example, which is also available for reference to other models.



No.	Name	No.	Name
1	Steering wheel	8	Platform control unit
2	Counterweight	9	Platform
3	Ground control Unit	10	Platform lift lever
4	Battery	11	Tackle fixing point
5	Mast	12	File box
6	Jib boom	13	Non-steering wheel
7	Jib boom cylinder		

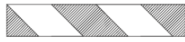

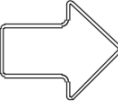







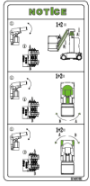
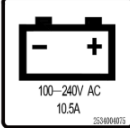








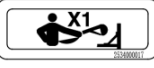

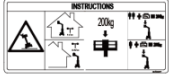



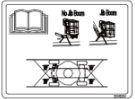


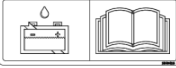
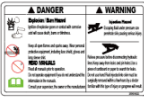
Chapter 3 Decal

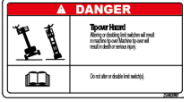
M0810JE Label


M0810JE Label List

No.	Name	No.	Name
1	Decal-Warning line	20	Decal-Cautions
2	Decal-Lifting	21	Decal-Maximum hand power
3	Decal-Backward arrow-yellow	22	Decal-Platform attention
4	Direction of advance identification	23	Decal-Emergency lowering
5	Decal-Wheel load	24	Decal-Lanyard fixed point
6	Not mixing	25	Decal-Lower control box
7	Decal-Spark prohibition	26	Decal-No-insulating
8	HV32	27	Decal-Rated load
9	Decal-Oil tank side	28	Decal-Lifting eye
10	Decal-Forklift pocket	29	Decal-Company Logo
11	Decal-Backward arrow-yellow	30	Decal-Country of origin
12	Decal-Model	31	Decal-Lanyard fixed point
13	Decal-Manual pump	32	Decal-Machine nameplate
14	Decal-Battery charging	33	Bolt
15	Battery Isolator	34	Decal-Lifting
16	Decal-Warning, Electric shock&fire	35	Decal-Oil level
17	Decal-Lanyard anchorage point	36	Decal-Filler
18	Lowering middle column warning	37	Decal-Battery
19	Decal-Operation manual	38	Decal-Tilting risk

M0810JE Label

1-2534000024	2-2534000027	3-2534003475	4-2534000102	5-2534001017	6-2534004201
				2623 lbs / 1190 kg 	It's not suggested mixing the hydraulic oils from different brands and models.
7-2534000998	8-2534004218	9-2534004219	10-2534002789	11-2534000052	12-2534002708
	HV32				
13-2534003081	14-2534004075	15-2534003745	16-2534000976	17-2534000124	18-2534000036
		Battery Isolator			
19-2534000986	20-2534002594	21-2534001106	22-2534004223	23-2534003876	24-2534000017
					
25-2534004220	26-2534001762	27-2534003877	28-2831990027	29-2534000605	30-2534001525
	NON-INSULATED				
31-2534002019	32/33-2534004372	34-2534002101	35-2534000100	36-2534004216	37-2534004221
			Max Min		

38-2534000987					
					

Chapter 4 Specification

1. Overall machine performance parameters

Item		Parameter	Item	Parameter
Rated load (kg)		200	Time of turntable rotating in a circle(retracted) (s)	70±5
			Time of turntable rotating in a circle (extended) (s)	70±5
Machine weight (kg)		2720	Time of boom extended (s)	36±3
Maximum working occupants (indoor)		2	Time of boom retracted (s)	45±3
Maximum working occupants (outdoor)		1	Time of jib boom lifted (s)	25±3
Maximum working height (m)		10	Time of jib boom lowered (s)	35±3
Maximum platform height (m)		8	Range of jib boom vertical rotation	130° (+70°/-60°)
Maximum horizontal extension (m)		3.2	Maximum manual force (N)	400
Maximum span height (m)		6.6	Maximum allowable wind speed (m/s)	12.5
Maximum turning radius (inner wheel) (m)		0.8	Drive mode	Rear-wheel drive Front wheel steering
Maximum allowable tilt angle	Along the boom	3°	Maximum braking distance (no-load and stowed) (mm)	≤1200
	Vertical to the boom	3°	Maximum traveling speed (stowed) (km/h)	5±0.25
Theoretical maximum gradeability (no-load and stowed)		25%	Maximum traveling speed (extended) (km/h)	0.43±0.02
Turntable rotating angle		345°	Length of side shaking (mm)	0

2. Main Dimensions

Item	Parameter	Item	Parameter
Machine length (mm)	2600	Wheelbase (mm)	1200
Machine width (mm)	1000	Wheel track (mm)	870
Machine height (mm)	1990	Minimum ground clearance (mm)	100
Main platform size (length x width) (mm)	980×720	Tire size (mm)	380×130

3. Drive system

Item		Parameter
Drive reducer	Rated output torque (N.m)	500

4. Hydraulic system

Item		Parameter	
Function system	Model		
	Opened system		
	Pump displacement (ml/r)		2.5
	Lifting system	Max working pressure (MPa)	15
	Rotating system	Max working pressure (MPa)	5
Motor displacement (MPa)		315	
Steering system	Max working pressure (MPa)	15	

5. Electrical System

Item		Parameter
Drive motor	Rated power (kW)	0.87
Lifting motor	Rated power (kW)	3
Battery	Output voltage (V)	24
	Capacity (Ah)	250
Charger	Nominal AC input voltage (V)	100-240V AC
	Maximum AC input current (A)	10.5
	Nominal DC output voltage (V)	24
	Maximum DC output current (A)	30
Control system	Voltage (V)	24

6. Oil capacity

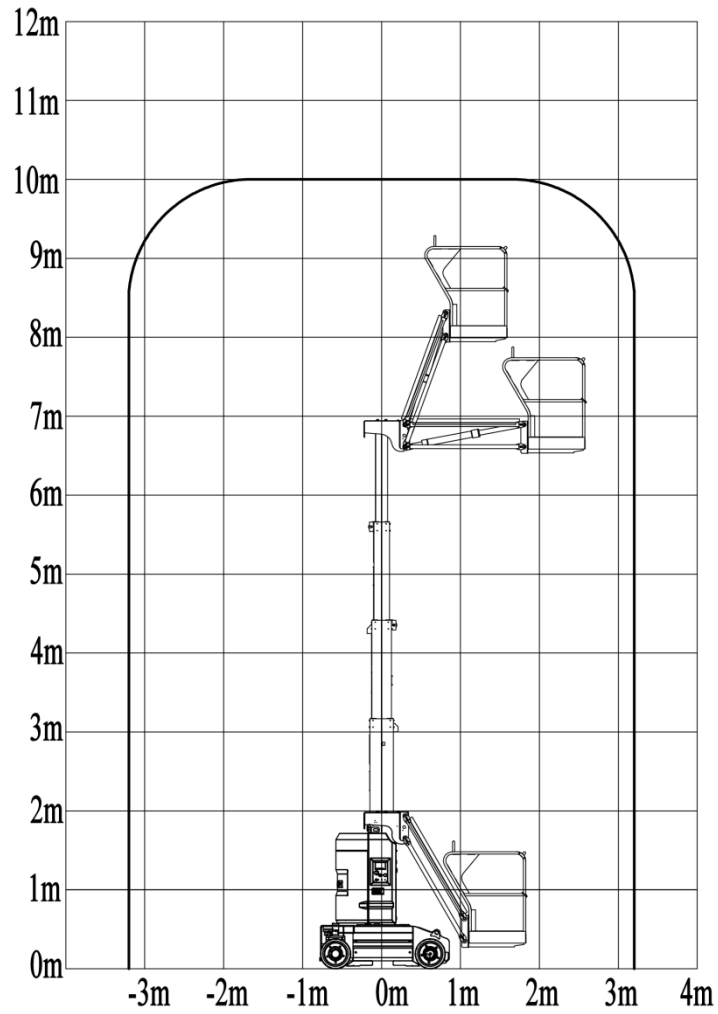
Item	Parameter	Item	Parameter
Hydraulic Oil (L)	6.5	Traveling reducer gear oil (L)	0.3


7. Ground load

Occupation of land pressure (Kpa)	23.87		
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8. Tire specification

Items	Parameters/Content	Items	Parameters/Content
Drive wheel load-6km/h (kg)	1395	Maximum static load (kg)	1630

9. Range of motion

 **NOTICE:** When refueling hydraulic oil, it is necessary to use corresponding hydraulic oil in accordance with the environment and temperature. Please refer to the following as bellows.

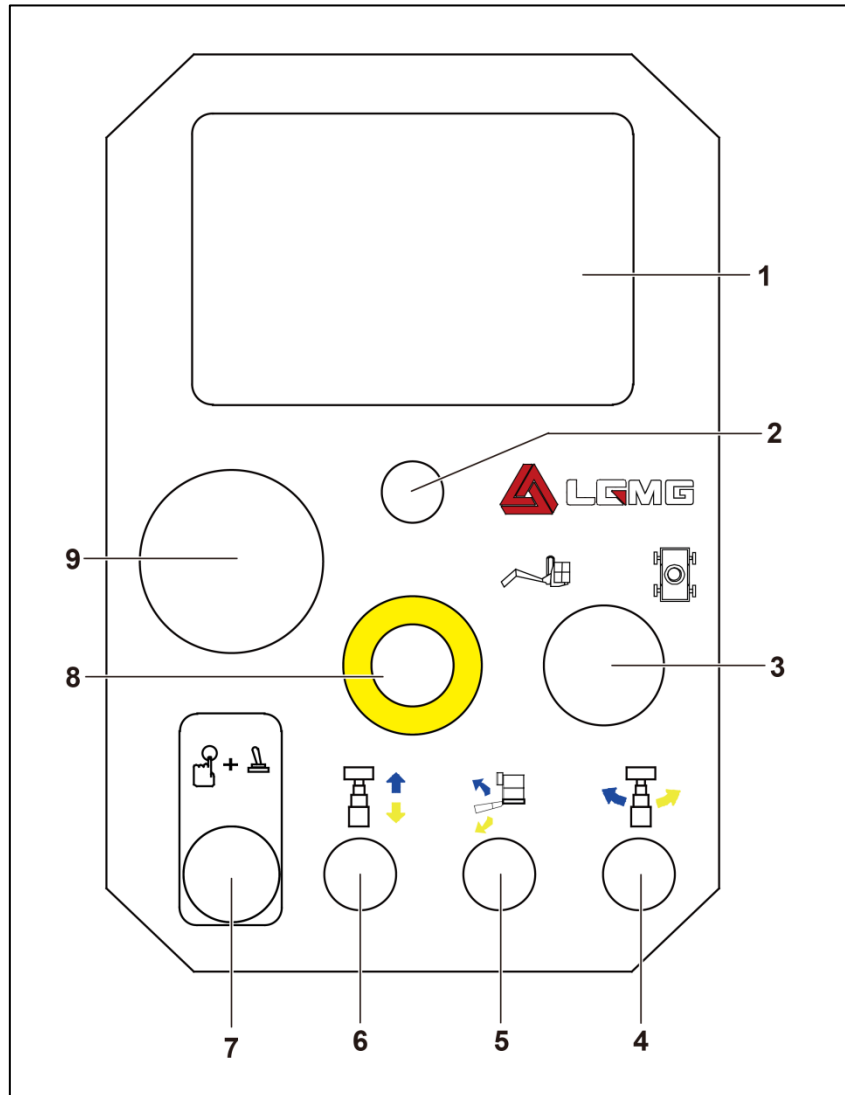
Grade	Brand
Rando MV32	Chevron

 **NOTICE:**

- Parameters of ground load is approximate, which is not considered with different optional factors. Only the information is allowed for reference under sufficient safety factors.
- The information, parameters and graphs in the operator's manual are the latest and valid. Due to the improvement of technology, product updates and requirements of laws and regulations, the right of information updates without previous notice of this manual is reserved by Lingong Heavy Machinery Co., Ltd. If this technical parameters is inconsistent with your actual parameters of machine, please contact the service department of LGMG to get updated information.
- The machine weight is different for optional devices.

Chapter 5 Controller

5.1 Ground Control Unit



1. Display panel
2. Self-reset fuse (20A)
3. Key Switch
4. Turntable rotate toggle switch
5. Jib boom up/down toggle switch
6. Mast up/down toggle switch
7. Enable switch
8. Emergency stop switch (Red)
9. Timer

5.1.1 Display

To display the whole machine working performance, faulty information and other service information.

5.1.2 Self-reset Fuse

Protect the circuit.

5.1.3 The Key Switch

The key switch controls the whole machine power, and there are three operating modes for choosing.

Turn the key switch to the platform position and the platform control unit will operate; turn the key switch to the chassis position and the ground control unit will operate; turn the key switch to the neutral position and the machine will stop.



NOTICE: The power will be cut off when the key switch is in the middle position.

5.1.4 The Turntable Rotating Toggle Switch

Press the enable switch, meanwhile, push the turntable rotating toggle switch to left, the turntable will turn to left; push the turntable rotating toggle switch to right, the turntable will turn to right.

5.1.5 The Jib Boom Lifting/Lowering Toggle Switch

Press the enable switch, push upward jib boom lifting/lowering toggle switch, and the jib boom will be lifted; push downward jib boom lifting/lowering toggle switch, and the jib boom will be lowered.

5.1.6 The Mast Lifting/Lowering Toggle Switch

Press the enable switch, meanwhile, push upward the mast toggle switch, the mast will be lifted; push downward the mast toggle switch, the mast will be lowered.

5.1.7 The Enable Switch

Press the enable switch, meanwhile, push the toggle switch to enable the boom lever and turntable function.

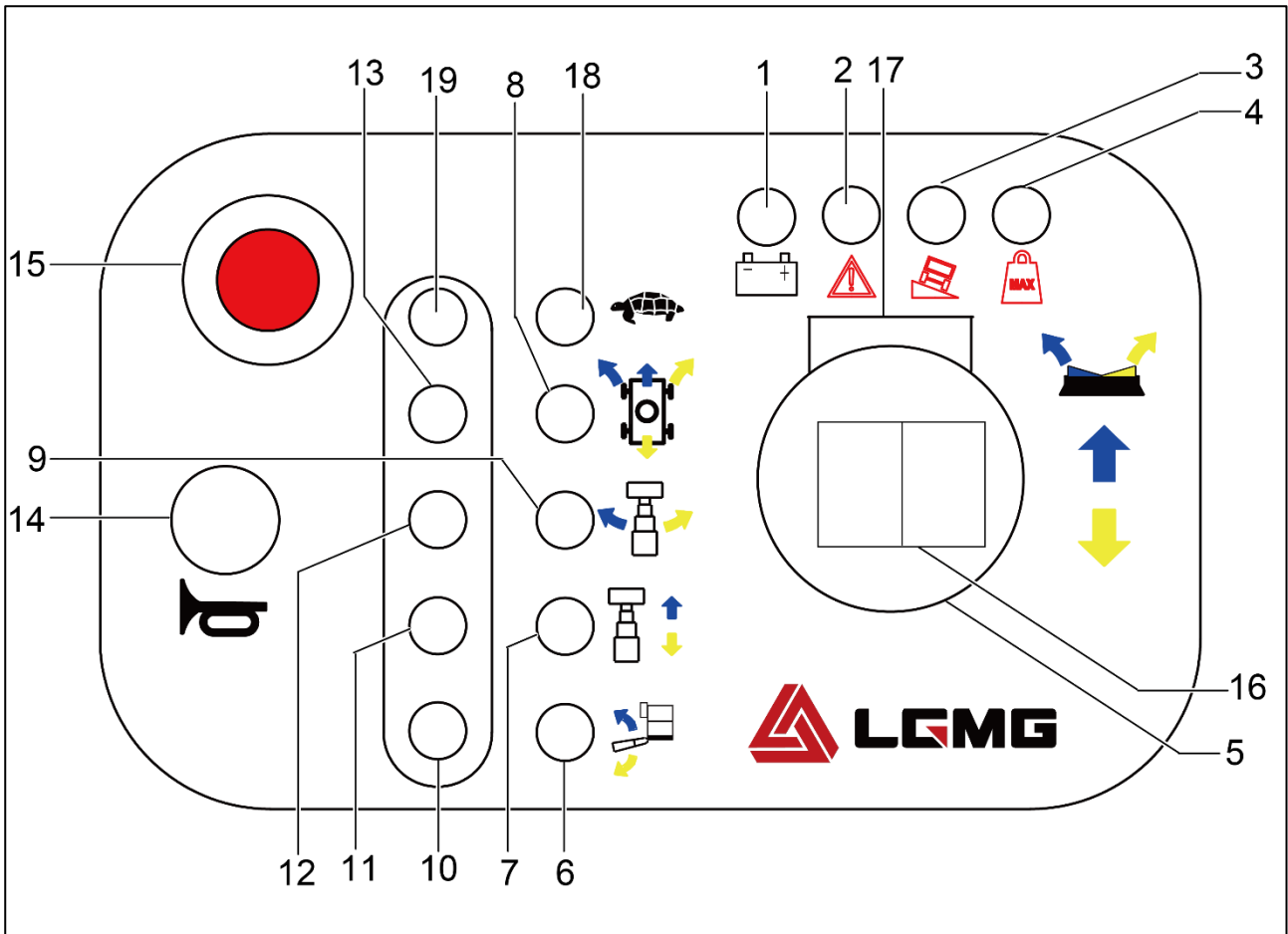
5.1.8 The Emergency Stop

Push the red emergency stop button to the “OFF” position to stop all functions; turn the red emergency stop button to the “ON” position to start all functions.

5.1.9 Timer

To display the working time. (When it is working)

5.2 Platform Control Unit



1. Low Battery Indicator Light
2. Machine Fault Alarm Indicator Light
3. Machine Tip-over Alarm Indicator Light
4. Platform Overload Alarm Indicator Light
5. Double-shaft handle controlling machine traveling、 mast lifting/lowering、 turntable Rotating、 jib Boom Lifting/Lowering
6. Jib Boom Lifting/Lowering Function Enable Indicator Light
7. Mast Lifting/Lowering Function Enable Indicator Light
8. Traveling、 Steering Function Enable Indicator Light
9. Turntable Rotating Function Enable Indicator Light
10. Jib Boom Lifting/Lowering Function Enable Button
11. Mast Lifting/Lowering Function Enable Button
12. Turntable Rotating Function Enable Button

13. Traveling、Steering Function Enable Button**14. Horn Button****15. Emergency Stop (Red)****16. Thumb Rocker Switch for Steering****17. Enable Switch****18. Low Speed Driving Function Enable Indicator Light****19. Low Speed Driving Function Enable Button****5.2.1 Low Battery Indicator Light**

If the indicator is on, that shows the battery quantity is too low.

5.2.2 Machine Fault Alarm Indicator Light

If the indicator is on, the system is faulty.

5.2.3 Machine Tip-over Alarm Indicator Light

If the indicator is on, the machine has exceeded the maximum allowable title angle.

5.2.4 Platform Overload Alarm Indicator Light

If the indicator is on, please unload the load and operate the machine after the indicator is off.

5.2.5 Double-shaft Handle Controlling Machine Traveling、 Mast lifting/lowering、 Turntable Rotating、 Jib Boom Lifting/Lowering**The mast lifting/lowering function:**

Press the mast lifting/lowering enable button, the indicator will light up. Press and hold the enable switch, move control handle in the direction indicated by the blue arrow, then the mast should be lifted; move control handle in the direction indicated by the yellow arrow, then the mast should be lowered



NOTICE: The lowering alarm will sound when the mast is lowered.

The jib boom lifting/lowering function:

Press the jib boom lifting/lowering enable button, the indicator will light up. Press and hold the enable switch, move control handle in the direction indicated by the blue arrow, then the jib boom should be lifted; move control handle in the direction indicated by the yellow arrow, then the jib boom should be lowered.

Turntable rotating function:

Press the turntable rotating enable button, the indicator will light up. Press and hold the enable switch and move the control handle for left; the turntable will turn to left; move the control handle for right; the turntable will turn to right.

Driving function:

Press the driving function enable button, the indicator will light up. Press and hold the enable switch, move control handle in the direction indicated by the blue arrow, then the machine will move forward; move control handle in the direction indicated by the yellow arrow, then the machine will move backward.



NOTICE: When the turntable makes platform exceed either of non-steering wheels, the machine may move in the direction against the steering and driving control handle.

5.2.6 Jib Boom Lifting/Lowering Function Enable Indicator Light

The indicator lights up to indicate that the jib boom lifting/lowering function has been enabled.

5.2.7 Mast Lifting/Lowering Function Enable Indicator Light

The indicator lights up to indicate that the mast lifting/lowering function has been enabled.

5.2.8 Traveling、Steering Function Enable Indicator Light

The indicator lights up to indicate that the traveling、steering functions have been enabled.

5.2.9 Turntable Rotating Function Enable Indicator Light

The indicator lights up to indicate that the turntable rotating function has been enabled.

5.2.10 Jib Boom Lifting/Lowering Function Enable Button

Press the button and the indicator comes on, which shows the jib boom lifting/lowering function have been enabled.

5.2.11 Mast Lifting/Lowering Function Enable Button

Press the button and the indicator comes on, which shows the mast lifting/lowering function have been enabled.

5.2.12 Turntable Rotating Function Enable Button

Press the button and the indicator comes on, which shows the turntable rotating function has been enabled.

5.2.13 Traveling、Steering Function Enable Button

Press the button and the indicator comes on, which shows the traveling、steering function have been enabled.

5.2.14 Horn Button

Press the button, and the horn will sound. Release the horn button, and the sound will stop.

5.2.15 Emergency Stop Switch

Push the ground red emergency stop button inward to the "OFF" position, the machine will be stopped and all functions will not work. Pull the red emergency stop button to the "ON" position, the machine will be operated.

5.2.16 Thumb Rocker Switch

Presss the driving function enable button, then the indicator comes on. Press and hold the enable switch and press the left side of the thumb rocker switch, the machine will turn to left; press the right side of the thumb rocker switch, the machine will turn to right.

5.2.17 Enable Switch

The enable switch on handle must be pressed to enable all functions.

5.2.18 Low Speed Driving Function Enable Indicator Light

The indicator lights up to indicate that the low speed driving function is enabled.

5.2.19 Low Speed Driving Function Enable Button

Press the Low speed driving function enable button, the indicator will light, indicat that the low speed driving function is enabled.

Make sure slow speed (turtle) is selected before descending any slope.

Chapter 6 Pre-Operation Inspection

**CAUTION: Do not operate unless**

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

- Avoid dangerous situations.
- Always perform a pre-operation inspection.
- Inspect the workplace.
- Always perform pre-operation functional tests.
- Use the machine only for the design purpose.

6.1 Basic Principles

- 1) It is the operator's responsibility to perform pre-operation inspection and routine maintenance.
- 2) Pre-operation inspection is a very intuitive process that is performed by the operator before each shift. The purpose of the inspection is to determine if there is a significant problem with the machine before the operator performs a functional test.
- 3) Pre-operation inspection can also be used to determine if a routine maintenance procedure is necessary. The operator can only perform the routine maintenance items specified in this manual.
- 4) See the checklist and check each item and position for any parts change, damage, looseness or missing.
- 5) Machines that have been damaged or modified may not be used. In the event of

any damage or any unauthorized changes different from the normal status, the machine should be marked and prohibited from putting into operation.

- 6) Only qualified service technicians are allowed to maintain the machine according to the manufacturer's instructions. After the maintenance is completed, the operator must perform a pre-operation inspection again before continuing the functional test.
- 7) Regular maintenance inspections should be performed by qualified service technicians according to the manufacturer's specifications and the requirements listed in the responsibilities manual.

6.2 Pre-Operation Inspection

- 1) Make sure the manual is complete, easy to read, and stored in a file box on the platform.
- 2) Make sure all labels are clear, legible, and in the right place. See the label section.
- 3) Check hydraulic oil for leakage and appropriate oil level. Please fill the oil as needed.
- 4) Check the battery fluid for leakage and appropriate liquid level. Add the distilled water as needed.
- 5) Check the following parts or areas for damage, improper installation, parts missing or unauthorized changes:
 - a) Electrical components, wires and cables
 - b) Hydraulic hoses, joints, valve blocks, hydraulic cylinders

- c) Hydraulic tank
 - d) Battery groups and connections
 - e) Drive motor and power unit
 - f) Mast wear pad
 - g) Tire and wheel
 - h) Limit switch and horn
 - i) Nut, bolt and other fasteners
 - j) Platform entry port
 - k) Indicators and alarms
 - l) Controller
 - m) Brake releasing parts
 - n) Red Guard protective system
- 6) Check the entire machine for:
- a) Crack in the weld or structural member
 - b) Dent or damage to the machine
 - c) Excessive rust, corrosion or oxidation
 - d) Make sure all structural members and other critical components are complete, and all associated fasteners and pins are in the right position and tightened.
 - e) Ensure that battery is connected properly.



Make sure all shifting boards hold closed after inspection.

Chapter 7 Workplace Check



CAUTION: Do not operate unless

You have known and practiced the rules for safe operation of machine in the Operation Manual.

- 1) Avoid the dangers.
- 2) Always check before operation.



NOTICE: Know and understand the

workplace check and then perform the next operation

- 3) Check the work place.
- 4) Always perform the function test before operation.
- 5) Use the machine only as per the design intent of the machine.

7.1 Basic Principles

- 1) The workplace check helps operators determine whether the workplace ensures safe operation of machine. The operator shall carry out the work before moving the machine to the workplace.
- 2) Knowing and remembering the hazards in the workplace is the responsibility of the operator, who can be aware of and avoid them when moving, installing, and operating machines.

7.2 Workplace Check

Beware and avoid the following dangerous situations

- 1) Steep slopes or caves
- 2) Protrusions, ground obstacles or debris
- 3) Declining surface
- 4) Unstable or smooth surface
- 5) Aerial obstacles and high voltage lines
- 6) Hazardous area
- 7) Surface support insufficient to withstand the full load applied by the machine
- 8) Wind and weather conditions
- 9) There are unauthorized personnel.
- 10) Other possible unsafe conditions

Chapter 8 Functional Test

**CAUTION: Do not operate unless**

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

- 1) Avoid dangerous situations.
- 2) Always perform pre-operation checks

Know and understand the functional test and then perform the next operation.

- 3) Inspect the workplace.
- 4) Always perform pre-operation functional tests.
- 5) Use the machine only for the design purpose.

8.1 Basic Principles

- 1) Functional tests are used to detect faults before operating the machine.
- 2) The operator must follow the steps to test all the functions of the machine.
- 3) Do not use a malfunctioning machine. If a fault is found, the machine must be marked and stopped.
- 4) Only qualified service technicians are allowed to maintain the machine according to the manufacturer's instructions.
- 5) After the maintenance is completed, the operator must perform the pre-operation inspection and functional test again before operating the machine.

8.2 Functional Test

- 1) Choose a test place that is solid, level and free of obstacles.

- 2) Make sure the battery has been connected.

8.3 On the Ground Control Unit

- 1) Turn the key switch to the ground control unit.
- 2) Pull the red emergency stop button to the "ON" position.

Test the emergency stop function

- 1) Push the ground red emergency stop button inward to the "OFF" position.
- 2) Enable all functions.
Result: All functions will not work.
- 3) Pull the red emergency stop button to the "ON" position.

Test machine functions and descent alarm

- 1) Do not press and hold the enable button. Try to enable all functions.
Result: All functions will not work.
- 2) Press and hold the enable buttons used for the mast and jib boom lifting/lowering, and turntable rotating right/left. These functions should take one cycle. When the mast is lowered, the alarm will sound.

Test the tilt sensor

- 1) Raise the platform about 20cm.
- 2) Open the turntable on the ground control unit and locate the tilt sensor.
- 3) Press the top side of tilt sensor.
Result: The alarm will sound.

4) Lower the platform.

8.4 Test on the Platform Control Unit

- 1) Turn the key switch to the platform control unit.
- 2) Pull out the red "Emergency Stop" button to the "ON" position.

Test the emergency stop function

- 1) Push the platform red emergency stop button inward to the "OFF" position.
- 2) Enable all functions.
Result: All functions will not work.
- 3) Pull the red emergency stop button to the "ON" position.

Test the horn

- 1) Press the horn button.
Result: The horn will sound.

Test the enable switch

- 1) Press the function enable button.
- 2) Do not press the enable switch on the control handle.
- 3) Slowly move the control handle in the direction indicated by the blue arrow and slowly move the control handle in the direction indicated by the yellow arrow.
Result: All functions will not work.

Test the machine functions

- 1) Press the jib boom function enable button.
Result: The jib boom function enable indicator light should light up.

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

- 3) Slowly move the control handle in the direction indicated by the blue arrow
Result: The jib boom should be lifted.

- 4) Slowly move the control handle in the direction indicated by the yellow arrow
Result: The jib boom should be lowered.

- 5) Press the mast function enable button.
Result: The mast function enable indicator light should light up.

- 6) Press and hold the enable switch on control handle.

- 7) Slowly move the control handle in the direction indicated by the blue arrow
Result: The mast should be lifted.

- 8) Slowly move the control handle in the direction indicated by the yellow arrow.
Result: The mast should be lowered.

- 9) Press and hold the turntable function enable button.
Result: The turntable function enable indicator light should light up.

- 10) Press and hold the enable switch on control handle.

- 11) Move the control handle to left.
Result: The turntable should turn to left.

- 12) Move the control handle to right.

Result: The turntable should turn to right.

- 13) Press the driving function enable button.

Result: The driving function enable indicator light should light up.

- 14) Press the enable switch on the control handle.

- 15) Press the thumb rocker switch in the direction indicated by the blue arrow on the control panel.

Result: The steering wheel should turn to the direction indicated by the blue arrow.

- 16) Press the thumb rocker switch in the direction indicated by the yellow arrow on the platform control unit.

Result: The steering wheel should turn to the direction indicated by the yellow arrow.

Test the drive and brake functions

- 1) Rotate the turntable until the platform is between the two non-steering wheels.

- 2) Press the driving function enable button.

Result: The driving function enable indicator light should light up.

- 3) Press and hold the enable switch on the control handle.

- 4) Slowly move the control handle in the direction indicated by the arrow on the control panel until the machine begins to move, and then reset the handle to the center position.

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



CAUTION: The brake must be able to stop the machine stably at any slope the machine can climb.

Test the limited drive speed

- 5) Press the mast lifting/lowering function enable button and the indicator will light up.

- 6) Press the enable switch on handle and move the control handle, then the platform will be lifted about 30cm.

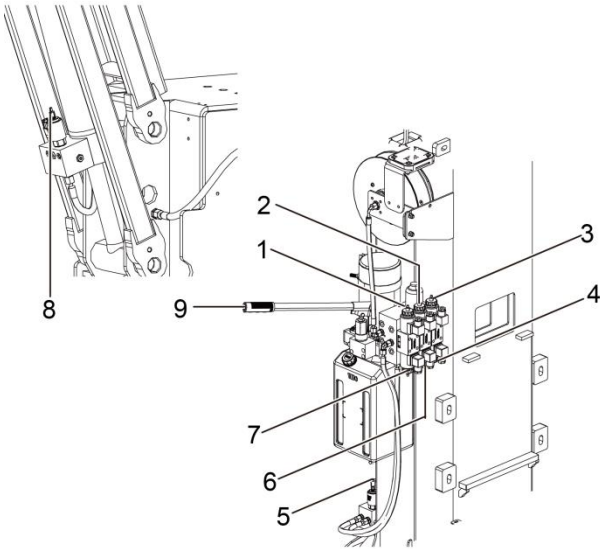
- 7) Press the driving function button and the indicator flashes.

- 8) Press the enable switch on control handle and slowly move the control handle to fully-driven position.

Result: The maximum driving speed should not exceed 0.43km/h when the mast is lifted.

If the maximum driving speed exceeds 0.43km/h when the mast is lifted, please signify the machine and stop operating.

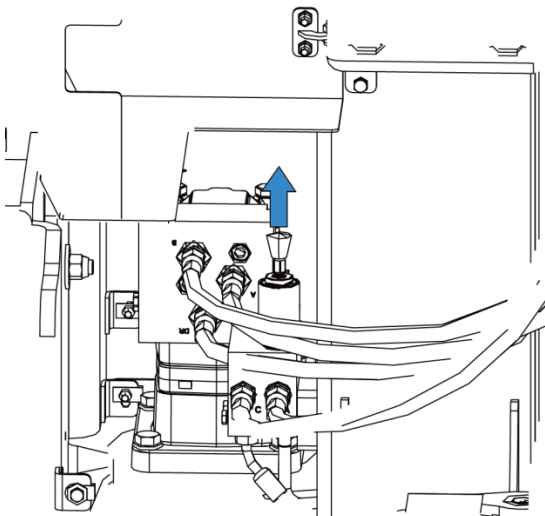
8.5 Test Emergency Functions



- 1) Raise the mast about 20cm.
- 2) Raise the jib boom about 20cm.
- 3) Place the key switch at center position and press the emergency stop switch.
- 4) Insert the safety bar (9) in the socket of the pump.

Test mast lowering

- 5) Locate the lifting function valves on the chassis.



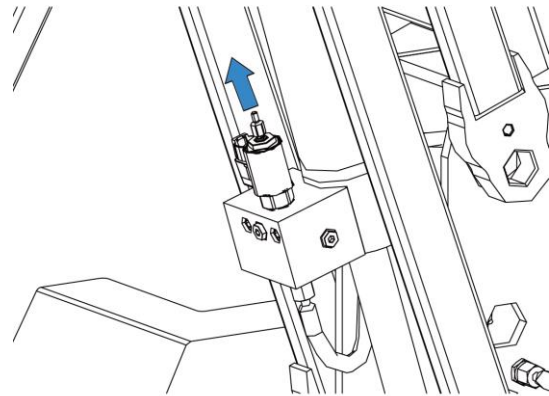
- 6) Pull outward the mast emergency lowering

button (5).

Result: The mast should be lowered.

Test jib boom lowering

- 7) Locate the jib boom function valves on the jib boom.

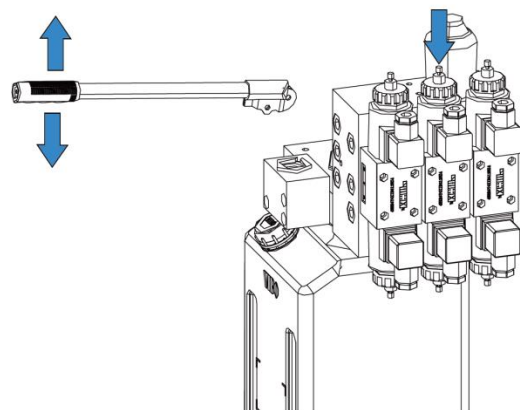


- 8) Pull outward the jib boom emergency lowering button (8).

Result: The jib boom should be lowered.

Test turntable rotating to right

- 9) Locate the power unit valves on the right side of turntable.



- 10) Press the valve spool (2) while repeatedly press the manual pump by safety bar (9).

Result: The turntable should turn to the right.

Test steering wheel to left

11) Locate the power unit valves on the right side of turntable.

12) Press the valve spool (3) while repeatedly press the manual pump by safety bar (9).

Result: The steering wheel should turn to the left.

Chapter 9 Operation Instruction

! CAUTION: Do not operate unless

You have understood and practiced the principles of safe operation of the machine in this manual. Avoid dangerous situations.

- 1) Always perform pre-operation checks.
- 2) Know and understand the functional test and then perform the next operation.
- 3) Inspect the workplace.
- 4) Always perform pre-operation functional tests.
- 5) Use the machine only for the design purpose.

9.1 Basic Principles

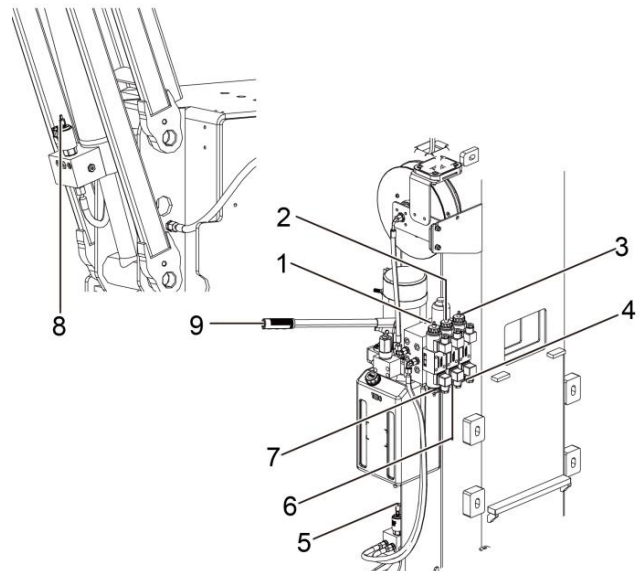
- 1) The “Operating Instruction” section provides specific instructions for all aspects of machine operation. It is the operator’s responsibility to follow all safety rules and instructions in the Operation and Maintenance Manual.
- 2) In addition to lifting personnel and tools to the overhead workplace, it is unsafe or even dangerous to use this machine for other purposes.
- 3) Only trained and authorized personnel can operate the machine. If more than one operators use the same machine at different times during the same work shift, they must be qualified operators and follow all safety rules and instructions in the Operation and Maintenance Manual. This means that every

new operator should perform pre-operation inspections, functional tests and workplace inspections before operating the machine.

9.2 Emergency Stop

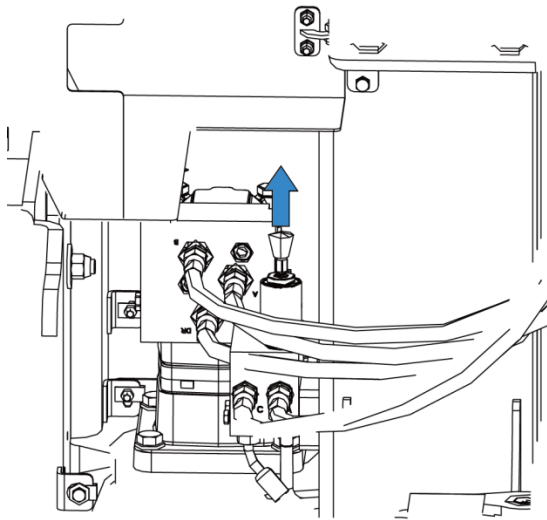
- 1) On the ground control unit or platform control unit, push the red emergency stop button to the “OFF” position to stop all functions.
- 2) The function should be fixed if it is still working when any of the red emergency stop buttons is pressed.
- 3) Selecting and operating the ground controls will override the platform red Emergency Stop button.

9.3 Emergency Function



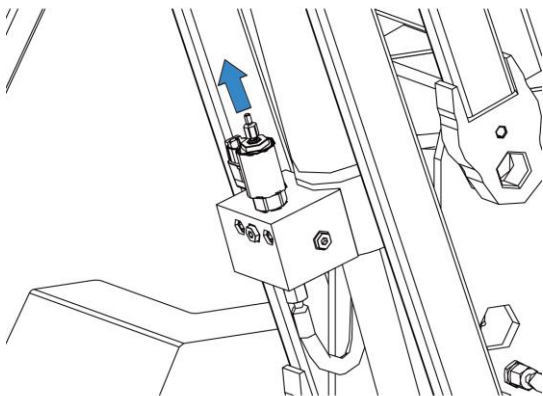
- 1) Insert the safety bar (9) in the socket of the pump.

To lower the mast



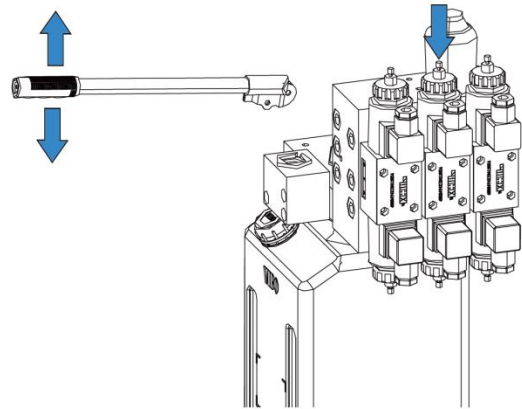
- 2) Locate the lift function valves on the chassis.
- 3) Pull out and hold the mast emergency lowering button (5).

To lower the jib boom



- 4) Locate the jib boom function valves on the jib boom.
- 5) Pull out and hold the jib boom emergency lowering button (8).

Turntable rotate to right



- 6) Locate the power unit valves on the right side of turntable.
- 7) While holding the black button, pump the handle up and down. Press down on the valve spool (2), and press the manual pump by safety bar (9) repeatedly.

Turntable rotate to left

- 8) Locate the power unit valves on the right side of turntable.
- 9) While holding the black button, pump the handle up and down. Press down on the valve spool (6), and press the manual pump by safety bar (9) repeatedly.

Turntable rotate to right

- 10) Locate the power unit valves on the right side of the turntable.
- 11) Press down on the valve spool (3), and press the manual pump by safety bar (9) repeatedly.

Steering wheel turn to right

- 12) Locate the power unit valves on the right side of the turntable.

- 13) Press down on the valve spool (4), and press the manual pump by safety bar (9) repeatedly.

To lift the mast

- 14) Locate the power unit valves on the right side of the turntable.
- 15) Press down on the valve spool (1), and press the manual pump by safety bar (9) repeatedly.

To lift the jib boom

- 16) Locate the power unit valves on the right side of the turntable.
- 17) Press down on the valve spool (7), and press the manual pump by safety bar (9) repeatedly.



NOTICE: Pay attention to the

position of machine while operating it with emergency buttons, in case the crush hazard and collision hazard.

9.4 At the Ground Controls

- 1) Turn the key switch to ground control.
- 2) Pull out the red Emergency Stop button to the on position.

Adjust the platform position

- 1) Press and hold the enable switch.
- 2) Push the toggle switch and adjust the platform position.
- 3) Unable to realize the driving and steering

function by ground controller.

9.5 Operation at the Platform

- 1) Turn the key switch to platform control unit.
- 2) Pull the red emergency stop button on the platform and ground to the "ON" position.
- 3) Make sure the battery has been connected before operating the machine.

Adjust the platform position

- 1) Press the function enable button and the indicator will light up.
- 2) Press and hold the enable switch on the control handle.
- 3) Move handle to adjust the platform position in accordance with signs on control panel.

To Steer

- 1) Press the drive function select button. The indicator light next to the drive function will be on.
- 2) Press and hold the enable switch on the control handle.
- 3) Press the thumb rocker switch on the top of the control handle.

To Drive

- 1) Press the drive function select button. The indicator light next to the drive function will be on.
- 2) Press and hold the function enable switch on the control handle.
- 3) Increase speed: Slowly move the drive

control handle off center.

Decrease speed: Slowly move the drive

control handle toward center.

Stop: Return the drive control handle to center or release the function enable switch.

- 4) Use the color-coded direction arrows on the platform controls and the drive chassis to identify the direction the machine will travel.
- 5) Machine travel speed is restricted when the mast is raised.

9.6 Driving on a Slope

Determine the slope ratings for the machine and determine the slope grade.

Maximum slope rating: 25% (14°)



NOTE: Slope rating is subject to

ground conditions and adequate traction. Be sure the platform is lowered and the platform is between the non-steer wheels.

Always orientate the machine in the direction of the slope.

Do not travel down slopes in high speed.

Do not drive fast in narrow or cluttered areas.

Keep speed under control while making turns or sharp bends.

Be sure the platform is lowered and the platform is between the non-steer wheels.

To determine the slope grade:

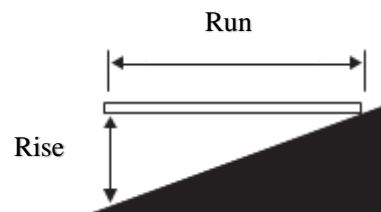
Measure the slope with a digital inclinometer OR use the following procedure.

You will need:

- ✓ Carpenter's level
- ✓ Straight piece of wood, at least 1 m long
- ✓ Tape measure

Lay the piece of wood on the slope. At the downhill end, lay the level on the top edge of the piece of wood and lift the end until the piece of wood is level.

- ✓ While holding the piece of wood level, measure the vertical distance from the bottom of the piece of wood to the ground.
- ✓ Divide the tape measure distance (rise) by the length of the piece of wood (run) and multiply by 100.



Run=3.6m、 Rise=0.3m

$0.3m \div 3.6m = 0.083 \times 100 = 8.3\%$ grade



NOTE: If the slope exceeds the maximum uphill, downhill or side slope rating, then the machine must be winched or transported up or down

the slope. See Transport and Lifting section.

9.7 Machine Tip-Over

When the machine doesn't stand on a horizontal ground, the indicator will light and the buzzer will alarm. Move the machine at a firm and level ground.

9.8 Platform Overload

If the platform overload indicator is on, the alarm will sound. The machine cannot work until the indicator is off after unloading the load from the platform.

9.9 Lockout After Each Use

- 1) Select a safe parking location—firm level surface, clear of obstruction and traffic.
- 2) Lower the Jib boom and the mast to the stowed position.
- 3) Rotate the turntable so that the platform is between the non-steer wheels.
- 4) Turn the key switch to the off position and remove the key to secure from unauthorized use.
- 5) Chock the wheels.
- 6) Charge the battery (if necessary).
- 7) Cut off the main power when the machine is on a transit, being repaired, or being placed for a long time.

9.10 To Charge Battery

Observe and Obey:

- ① Do not use an external charger or booster battery.
- ② Charge the battery in a well-ventilated area.
- ③ Use proper AC input voltage for charging as indicated on the charger.
- ④ Use only LGMG authorized battery and charger.

To Charge Battery:

Standard batteries

- ① Make sure the battery is connected before charging.
- ② Open the battery compartment cover. The compartment cover should remain open throughout the charging process.
- ③ Remove the battery vent cap and check the battery acid level. If necessary, only add the distilled water necessary for covering the plate. Do not add excessive distilled water before charging.
- ④ Reset the battery vent cap.
- ⑤ Connect the battery charger to a grounded AC circuit.
- ⑥ The charger will give an indication when the battery is fully charged. The indicator will flash when not fully charged.
- ⑦ After the machine gets full-charged, disconnect the charger and the AC power.

Check the battery acid level at the end of the charge cycle. Add the distilled water to the bottom of the filling pipe. Do not add excessive distilled water.

Instructions for dry battery fluid filling and charging

- ① Open the battery vent cap.
- ② If the electrolyte level is far above the plate, it indicates that it is unnecessary to add water; if the electrolyte level has not yet come over the plate, it is necessary to add the distilled water. Please add water to the maximum level.

Do not fill to the maximum level until the battery charging process is completed. Excessive fluid filling may cause the battery acid to overflow during charging. Soda and water can be used to neutralize the spilled battery acid.

- ③ After adding water, reset the vent cap to the battery.
- ④ Charge the battery.
- ⑤ The charger will give an indication when the battery is fully charged. The indicator will flash when not fully charged.
- ⑥ After the machine gets full-charged, disconnect the charger and the AC power.
- ⑦ Check the battery acid level at the end of the charge cycle. Add the distilled water to the bottom of the filling pipe. Do not add excessive distilled water.

Maintenance-free batteries

- ① Make sure the battery is connected before charging.

- ② Open the battery compartment cover. The compartment cover should remain open throughout the charging process.
- ③ Connect the battery charger to a grounded AC circuit.
- ④ The charger will give an indication when the battery is fully charged. The indicator will flash when not fully charged.
- ⑤ After the machine gets full-charged, disconnect the charger and the AC power.

9.11 Power Supply Switch



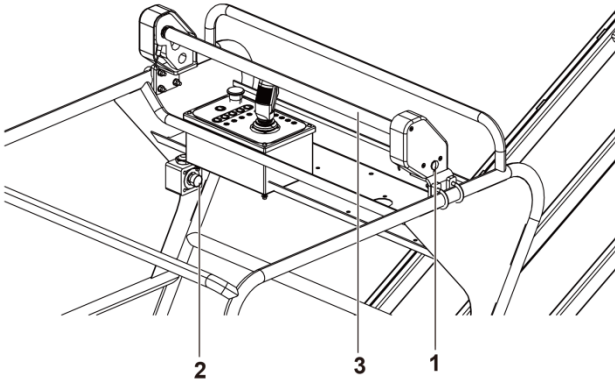
1. DC power switch

Press the DC power switch, power supply of the whole machine will be disconnected.

Pull out the DC power switch and power supply of the whole machine will be connected.

⚠ NOTE: disconnect the power supply switch when the machine is in transportation/ repaired or not used for a long time. (DC power switch)

9.12 Instructions for Red Guard Protective System



1. Flashing alarm
2. Override switch

Notice: When the entrapment system has been activated, the machine can be operated to a safe position using the override switch.

3. Safety pole

Note: Once the safety rod has slipped or got off track, the safeguard system will be activated.

Restore the safety rod at home position will shut down the sound and visual alarm.

- 1) The Red Guard protective system aims to create safe and convenient operating environment for operators on the basis of ensuring operation convenience, the loading capacity of the platform and the operators' field of view.
- 2) The Red Guard protective device is disposed above the control panel of the platform. If the safety pole is stressed, the protective system will be activated instantly, and the device will stop all actions immediately, thereby preventing operators from suffering from secondary injury.

- 3) In the extreme case, the safety pole in the protective device will slip to the bottom to ensure operators have sufficient space for buffering and operation. Upon the activation of the Red Guard protective system, the device will give an alarm prompt tone immediately while the blue alarm light flickers. Through the above two approaches, other site operators are reminded, and the safety awareness of neighboring personnel is improved. In addition, the Red Guard protective system also provides the safety overriding switch for operators, facilitating operators to remove dangers. Benefiting from rigid components of the Red Guard protective system, the reliability of the system is improved greatly, and regular or additional maintenance is reduced.

9.13 Fault State (Alarm code)

Code	Instructions
1	Output power supply 1 disconnect
2	Output power supply 2 disconnect
3	IOCORE bus disconnect
4	Angle sensor fault
5	Joystick fault
6	ZAPI Bus disconnect
7	Cable carrier disconnected
8	Upper travel limit switch fault
9	Lower travel limit switch fault
10	Pressure sensor disconnected
11	Cable carrier 1 disconnected
12	Cable carrier 2 disconnected
13	Flying jib lifting height above upper limit
101	Upper limit
102	Lower limit
103	Overload
104	Battery low
105	Flying jib lifting limit
106	Mast lifting inclination alarm

Chapter 10 Instructions for Transportation and Lifting

**CAUTION: Complice and****obedience**

- When the machine is lifted by a crane or forklift, maintain normal judgment and planning to control the movement of the machine.
- Only personnel with high-altitude lifting qualifications can load and unload the machine.
- The transport vehicle must be parked on a level surface.
- When loading the machine, the transport vehicle must be fixed to prevent movement.
- Make sure the vehicle's capacity, loading surface, chain or belt is sufficient to withstand the weight of the machine. Please see the "Specification" for the weight of the machine.
- The machine must be parked on a level surface or fixed before releasing the brake.
- Do not drive the machine on slopes that exceeds the uphill, downhill or side slope rating. See the "Driving on a Slope" in the "Operating Instructions". If the slope of the transport vehicle exceeds the maximum slope rating, the winch must be used to load and unload the machine as described in "Brake Release Operation".

10.1 Brake Release Operation

**Collision Hazards:**

Failure to securely fix the machine before releasing the brake may cause death or severe injuries.



NOTICE: Switch on the main power before releasing the brakes. The emergency stop switch on control handle and chassis must be cut off.

1. Make sure that the machine is on the firm, safe, level ground.
2. Choke the wheel to protect machine from sliding.
3. Make sure the winch is tracted with tie points on chassis and the road is barrier-free.
4. Open the cover on the left side of turntable, locate the brake release key switch.
5. Always moving the key switch to release the brake.

After the machine is loaded:

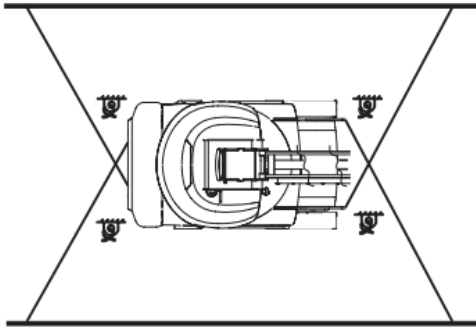
1. Choke the wheel to protect machine from sliding.
2. Release the key switch and reset the brakes.

10.2 Fixed to a Truck or Trailer During Transportation

- 1) The machine wheels must always be blocked when preparing for transport.
- 2) The machine is at stowed state.
- 3) Turn the key switch to the "OFF" position and remove the key before transporting.
- 4) Fix the front and rear wheel by chock block

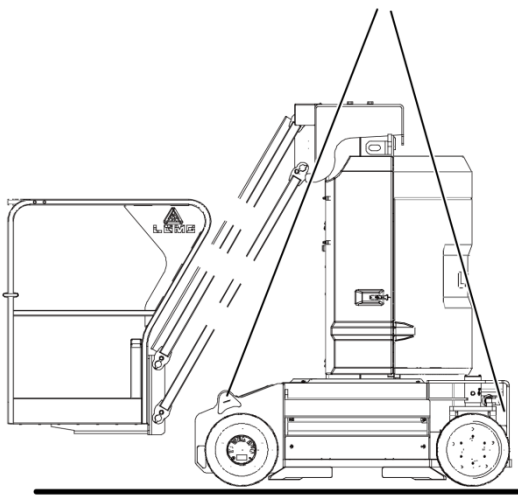
and check the machine to find loose and unfixed parts.

- 5) Secure the machine to the transport surface with the tie points on the chassis.



- 6) Use at least 4 chains or belts.
- 7) Make sure the chain or belt used has sufficient load strength.

10.3 Lifting the Machine



CAUTION: Compliance and Obey

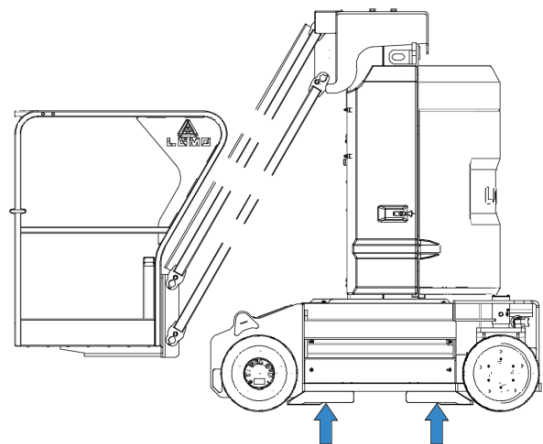
Only qualified hook operators can assemble the lock and lift the machine. Make sure the crane's lifting capacity, loading surface, belt or rope is sufficient

to withstand the weight of the machine. Please see the serial number plate.

- 1) Lower the mast completely. Remove all moving parts from the machine.
- 2) Only connect the spreaders to the specified lifting point on the machine.
- 3) There are two strip holes respectively on the front and rear plate of machine, in order to lift.
- 4) Adjust the lock to avoid damaging the machine and keeping the machine level.

10.4 Lifting Machine by Forklift Truck

- 1) Lower the mast completely. Remove all moving parts from the machine.
- 2) Maintain the platform at stowed state during all shipments.
- 3) Use the forklift rabbit on both sides of the chassis.
- 4) Place the forklift foot on the rabbit position.



- 5) Drive forward, plug the fork into the rabbet completely.
- 6) Raise the machine 25cm, then lean the fork a little bit back to keep machine's stability.
- 7) Make sure the machine level when lowering the fork.

10.5 Vehicle Parking and Restoring

To park and restore the vehicle following the instruction as bellows.

- 1) Move the machine to safety area.
- 2) Make sure the mast and jib boom lowered completely.
- 3) Turn the emergency stop switch to the "OFF" position.
- 4) If necessary, cover control panel to protect it against severe environment.
- 5) Place blocks to stop wheels if the vehicle is parked for a long time.
- 6) Turn the key switch to the "OFF" position and remove the key to avoid unauthorized use.
- 7) Turn off the main power.

Chapter 11 Appendix

Maintenance Items

Table of Routine Inspection and Maintenance Period

Maintenance level	Routine inspection	Level 1 maintenance	Level 2 maintenance	Level 3 maintenance	Level 4 maintenance	Level 5 maintenance
Maintenance Period	Daily	25h/1m	50h/3m	100h/6m	200h/12m	400h/24m



NOTE: Working hours shall prevail for the maintenance cycle.

Table of Maintenance Inspection Items

Item	Operation	Level					
		Routine inspection	Level 1 maintenance	Level 2 maintenance	Level 3 maintenance	Level 4 maintenance	Level 5 maintenance
Electrical System	Check battery capacity	•	•	•	•	•	•
	Check liquid level in battery refueling device and add distilled water	•	•	•	•	•	•
	Check if buttons on the PCU panel operate normally	•	•	•	•	•	•
	Check if PCU emergency switch is firmly	•	•	•	•	•	•
	Check if switch operation is sensitive	•	•	•	•	•	•
	Check if the PCU harness connector is connected firmly	•	•	•	•	•	•
	Check if the PCU harness connector is stained	•	•	•	•	•	•
	Check if the PCU harness is extruded or broken	•	•	•	•	•	•
	Check if the pressure sensor is connected	•	•	•	•	•	•

	firmly						
	Check if the lowering solenoid valve is connected firmly	•	•	•	•	•	•
	Check if the tilt sensor wiring is connected firmly	•	•	•	•	•	•
	Check if limit switch rocker arms are wired loosely	•	•	•	•	•	•
	Check if emergency stop switches, key switch, connector switch and wiring on the ground control panel are loose	•	•	•	•	•	•
	Check alarm light and horn function are good	•	•	•	•	•	•
	Check if the motor, motor controller, relay and ECU wiring are loose	•	•	•	•	•	•
	Check if the solenoid valve coils of main valve block are wired normal or loose	•	•	•	•	•	•
	Check if the charger wiring is looser rusted	•	•	•	•	•	•
	Check if the charger terminals are loose or rusted	•	•	•	•	•	•
	Check the battery	•	•	•	•	•	•
	Check overall machine performance and all limited switches	•	•	•	•	•	•
	Check if all connectors are loose or rusted	•	•	•	•	•	•
	Check the clearance of proximity switch				•	•	•
	Calibrate the platform overload system				•	•	•
Hydraulic system	Check if the rotating system pressure is			•	•	•	•

	normal						
	Check if the lifting pressure system is normal			•	•	•	•
	Check if the steering system pressure is normal			•	•	•	•
	Check if all pipes and connectors are loose	•	•	•	•	•	•
	Check if the oil cylinder leaks oil	•	•	•	•	•	•
	Check if the valve spools leak oil	•	•	•	•	•	•
	Check the hydraulic oil level	•	•	•	•	•	•
	Inspect the breather cap			•	•	•	•
	Replace the breather cap	Every six months					
	Replace the hydraulic filter	Every six months					
	Replace hydraulic oil	Per year					
Overall system	Replace reducer lubrication oil	First maintenance: After 50 hours; time interval: 200 hours					
	Check if the machine bolts are loose or have abnormal noise	•					
	Check if the emergency lowering device is normal	•					
	Check if the platform, mast and chassis are deformed or unweld.	•					
	Check if the machine paint falls off	•					
	Check if the safety labels are missing or stained	•					
	Check if the manual and labels are missing, stained or damaged	•					
	Check overall machine performance and all limited switches	•					

	Check if the chains is wear, broken and serious rust				•	•	•
	Check if the wire rope is looseness, broken wires and serious rust			•	•	•	•
	Check the rotation bearing bolts	Every year. Torque:120±10N.m					
	Check the slew reducer bolts	Every six months. Torque: 120±10N.m					
	Replacement of wire rope	Every ten years.					
Lubrication system	Lifting chains lubrication	100h or six months, whichever comes first.					
	Rotation bearing lubrication	Per month					
	Steering knuckle lubrication	Per month					

Oil selection

Grade	Hydraulic oil brand
Rando MV32	Chevron

Minimum temperature	Gear oil model (API GL-5)
30°C<The lowest temperature	SAE 85W/140
-10°C<The lowest temperature<30°C	SAE 85W/90
-30°C<The lowest temperature<-10°C	SAE 80W/90
The lowest temperature<-30°C	SAE 75W