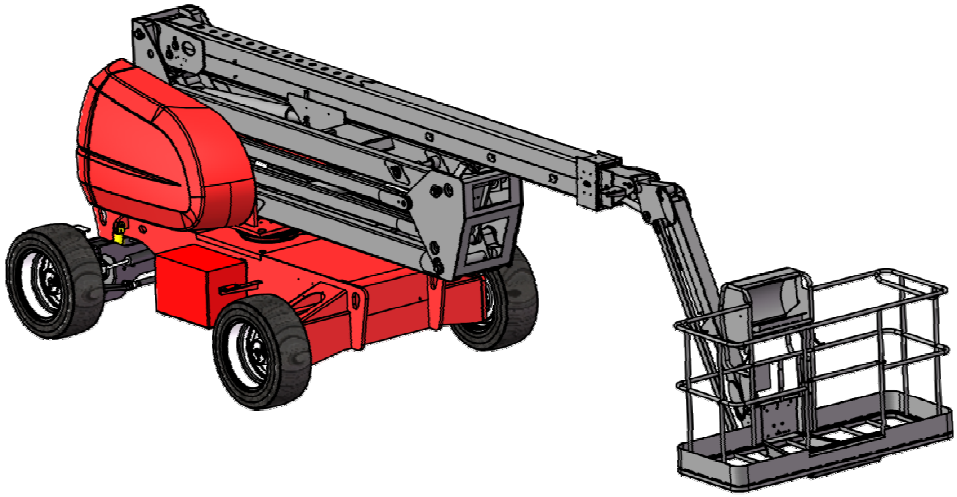
HZ Series

Curved arm high-altitude work platform

HZ210A

Operation mannual



HANGCHA GROUP CO., LTD

MAY 2023

Catalogue

Preface

Thank you for purchasing the machine of HANGCHA group. Before using the machine, you should master the use and operation requirements of the machine! Any operation of the machine has risks. Only when we master the safety rules and operate carefully can we effectively prevent personal injury, property loss and accidents. Your safety needs us to work together!

The machine is limited to transporting personnel and tools to the working position and working on the working platform. Human safety is related to the operation and use of the machine. It is very important to train competent and careful personnel to use the machine, and carry out the safe operation of the machine.Only trained and authorized personnel are allowed to operate the machine.

This manual is used to guide the user / operator to operate and use the machine. Before operating and using the machine, the user / operator is responsible for reading, understanding and implementing this manual and the manufacturer's instructions; Read, understand and abide by safety rules and operating instructions; The service parameters and expected environment of the equipment shall be considered; The requirements for safe use shall be strictly observed.

This manual, together with the maintenance manual and parts manual, should be regarded as part of the machine and kept with the machine at all times! The manager of the machine shall ensure that all necessary information about the operation and daily inspection / maintenance of the machine provided by the machine manufacturer is provided to each lessee. If sold, it shall be distributed randomly, and the manager of the machine shall also provide the manufacturer's maintenance information to the trained maintenance personnel responsible for the machine.

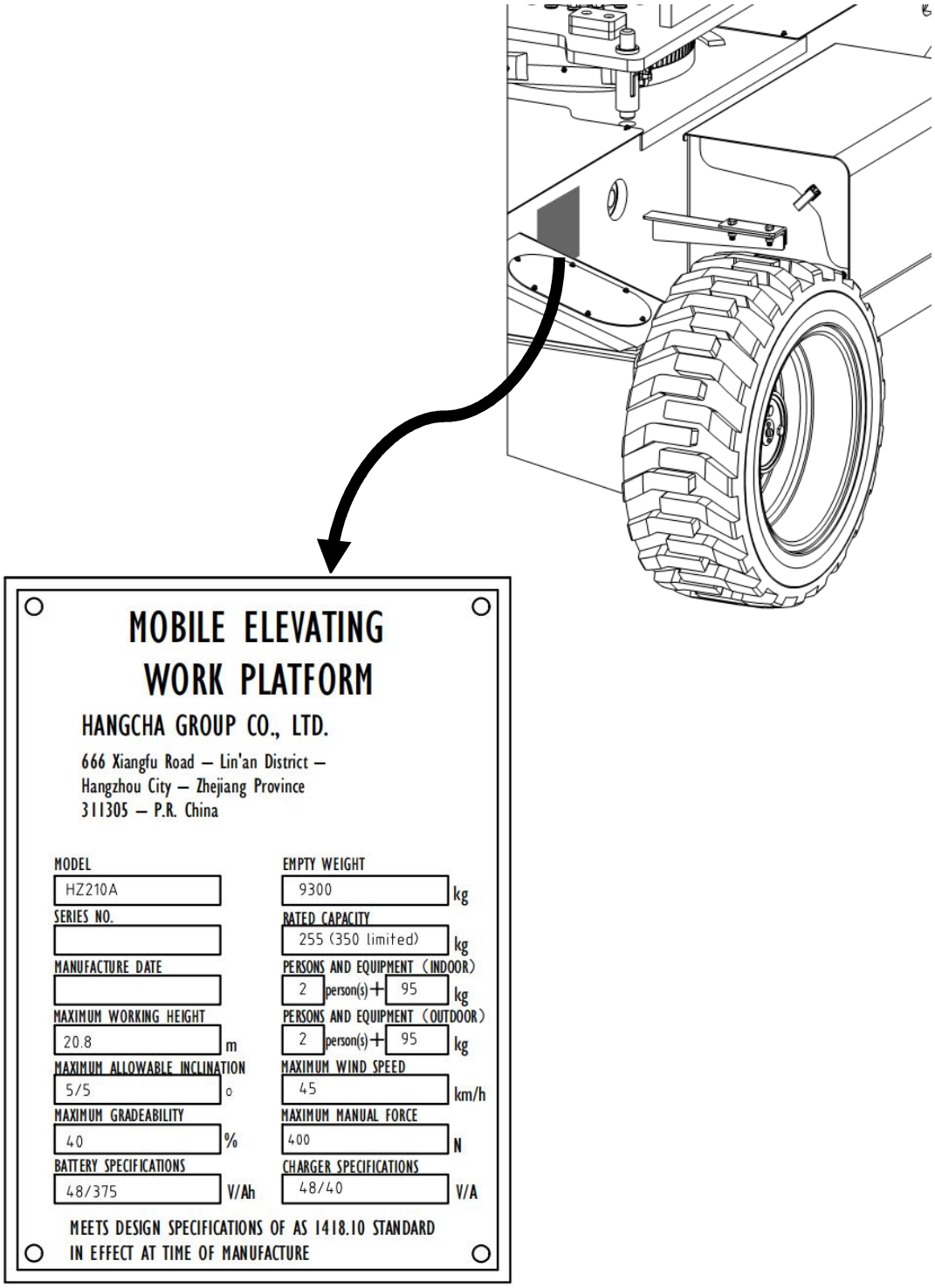
Our product design will be continuously updated and improved. The contents of this manual may be different from the equipment in your hand.

If you have any questions, please contact the sales company or agent of HANGCHA group.

How to Read Your Serial Number

Machine data plate

On the machines destined for foreign markets, the data plateis applied on the right side of the chassis.

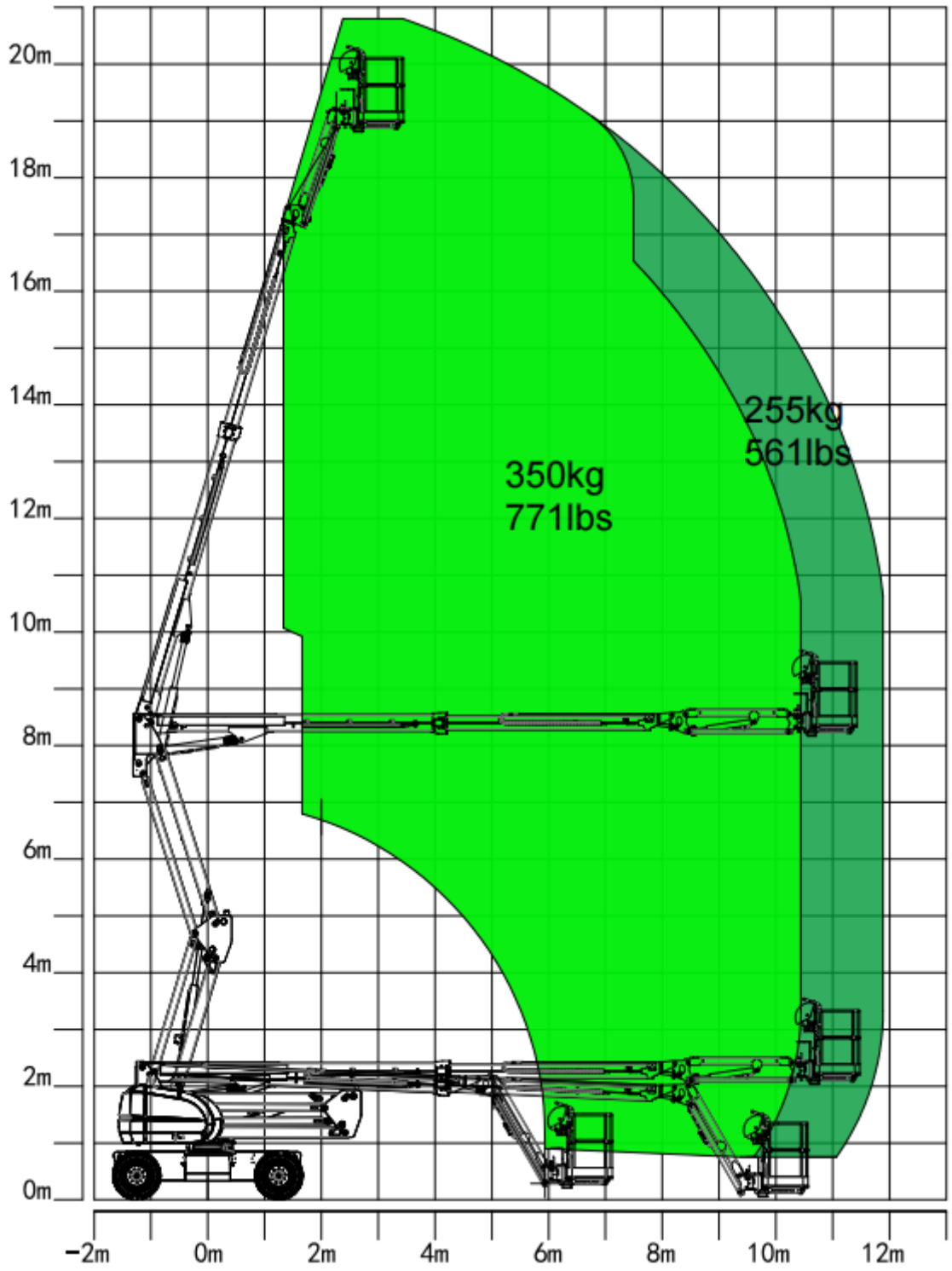


Chapter I Product performance parameters

Dimension parameters	
Maximum platform height	18.80m
Maximum working height	20.80m
Maximum crossing height	8.28m
Maximum horizontal extension	11.45m
Maximum horizontal working distance	11.95m
Length	8.63m
Length（Transportation status）	
Width	2.49m
Width（Transportation status）	2.49m
Height	2.43m
Height（Transportation status）	2.43m（2.31m）
Wheelbase	2.5m
Maximum ground clearance	0.31m
Platform (long) × wide × High)	2.2m×0.8m×1.1m
Tire model	315/55 D20 (Foam filled tire）
Performance parameter	
Rated load	255kg（350kg Limited）
Maximum number of operators	2 persons
Maximum manual force	400N
Maximum driving speed	6.1km/h
Maximum traveling speed in lifting state	0.8km/h
Minimum turning radius	2.05m(inner)
Gradeability	40%
Maxi slope acceptable	5°
Turret rotation	360°free
Maximum allowable wind speed	12.5m/s
Platform rotation angle	180°
Jib luffing angle	70°/-60°

Operation manual　Chapter I Product performance parameters

Power parameters	
Drive mode (drive) × Steering)	4WD×2WS
Drive motor	3.3kW
Hydraulic motor	6kW
Pump	
Tank Capacity	60L
Hydraulic system pressure	
Battery Specification (voltage, capacity)	48V，375Ah（Lithium battery）
	48V，480Ah（lead-acid battery）
System voltage	48V
Control voltage	12V
Weight	
Total weight	9300kg（Lithium battery）
	9680kg（lead-acid battery）
Ground bearing information	
Maximum tire load	4900kg
Noise	
Noise	≤80dB


20m
18m
16m
14m
12m
10m
8m
6m
4m
2m
0m
−2m
0m
2m
4m
6m
8m
10m
12m
350kg
771lbs
255kg
561lbs

Chapter 2 Important safety rules

2.1 Summary

This chapter covers how to use your machine correctly and safely in most applications.In order to achieve this goal, we have established a set of daily checklist, which is mandatory for qualified quality inspectors to carry out daily maintenance in strict accordance with this checklist, so as to ensure that the machine can operate without fault and ensure safe operation.

Read, understand and comply with safety rules, job site requirements and government regulations.

Whether you are the owner, user or operator of the machine， Before operating the machine for the first time， You must read and correctly understand the contents of this manual， The machine can only be operated independently after the whole process is operated from beginning to end under the supervision of qualified personnel with practical operation experience. If you have any questions about the use or operation of the machine, please call HANGCHA group in time for consultation.

Before operating the machine, ensure that the personal protective devices listed in the following table are worn correctly and in good condition：

- Fall safety rope
- Protective gloves
- Safety helmet
- Safety shoes

Most of the accidents involved in the operation, maintenance and repair process are caused by the failure to follow the basic safety operation procedures and precautions in the actual operation.In fact, if we can analyze the applied construction safety hazards and take corresponding safety measures before each construction operation, most accidents in practice can be completely avoided.Therefore, before each use and operation, it should be evaluated by the safety officer who has been trained and has the experience and ability of safety hazard analysis, and remind the personnel operating the machine to take necessary countermeasures to avoid the occurrence of danger.

Incorrect operation, lubrication, maintenance and repair are very dangerous, which may cause personal injury or casualties. Therefore, only after you read the manual thoroughly and fully understand the knowledge and information about operation, lubrication, maintenance and repair, can you take maintenance for the equipment.

2.2 Symbol description

This safety symbol appears in most safety statements. This means that you need to pay attention and be vigilant at all times, and your safety will be affected! Please read and observe the relevant information of safety warning symbols.

It is used to indicate that there is an emergency and dangerous situation. If it is not avoided, it will cause death or serious injury.

It is used to indicate that there is an emergency and dangerous situation.If it is not avoided, it will cause death or serious injury.

It is used to indicate that there is a potentially dangerous situation, which, if not avoided, may cause slight or moderate injury to personnel.

Notice

Conditions that may cause damage to the power plant, loss of personal property or harm to the environment, or lead to improper operation of the equipment.

Note: these steps, instructions or conditions should be followed in order to make the power unit or component work in the expected way.

2.3 Accident notification

In case of any accident involving the machinery of HANGCHA Group Co., Ltd., HANGCHA Group Co., Ltd. must be notified immediately. Even if there is no personal injury or property damage in the accident, HANGCHA Group Co., Ltd. must be contacted by telephone and all necessary details must be provided.If the manufacturer is not notified within 48 hours after the accident involving the machinery of HANGCHA Group Co., Ltd., the warranty of the product may be invalidated.

Notice

After any accident, thoroughly check the machine and its function.First test all functions from the ground controller, and then test from the platform controller. Before all damages are repaired and all controllers can be operated correctly, the lifting height must not exceed 3m.

2.4 Electric shock danger

Notice

This machine is not insulated and does not have the function of electric shock protection.

All operators and managers shall comply with the relevant national or local regulations on the minimum safety distance of live conductors above the ground. If there is no such requirement, the operators and managers shall comply with the requirements of the minimum safety distance in.

Electric shock danger

- Follow relevant government rules and always keep a safe distance from power lines and electrical equipment. See 2-1 for details.
- Platform movement, wire swinging or sagging shall be considered, and strong wind or gust shall be avoided. Do not operate the machine in case of lightning or rainstorm.
- If the machine contact with live wires, stay away from the machine. Personnel on the ground or on the platform are not allowed to touch or operate the machine until the power is cut off.
- Do not use the machine as ground wire during welding, grinding and other operations.

Chart 2-1 Minimum safety distance of electrified body

Voltage range（Phase to phase，kV）	Minimum approach distance m（ft）
0～50	3（10）
50～200	5（15）
200～350	6（20）
350～500	8（25）
500～750	11（35）
750～1000	14（45）

2. 5 Tipping danger

Chart 2-2 Maximum rated load of platform

Rated load	
Rated load	255kg（350kg limit）
Maximum number of people allowed	2 persons
Maximum manual operating force	400N

Overturn danger

- Personnel, equipment and materials on the platform shall not exceed the maximum load capacity.
- The platform can only be lifted or extended when the machine is on solid and flat ground.
- Do not use the tilt alarm as a level indicator.The tilt alarm on the platform will sound only when the machine is heavily tilted.If the tilt alarm sounds: be very careful to lower the platform and transfer the machine to a solid and level ground. Do not change the level or limit switch.
- Do not drive faster than 0.8 km / h when the platform is raised.
- When the platform is raised, the machine cannot travel on uneven, unstable surfaces or other dangerous conditions.
- Do not operate the machine during strong wind or gust, and do not increase the surface area of the platform or load.Increasing the area exposed to the wind will reduce the stability of the machine.
- Be careful and reduce the speed when the machine is driving in uneven areas, gravel, or other uneven surfaces, or near holes and steep slopes.
- Do not push or pull any object outside the platform. The maximum allowable lateral force is 400N（90 lbf）
- Do not change any machine parts that may affect safety and stability.
- Do not replace key parts that affect the stability of the machine with parts of different weights or specifications.
- Do not modify or change the aerial work platform without the written permission of the manufacturer.
- Do not install additional devices for placing tools or other materials on the platform or guardrail, which will increase the weight and surface area of the platform or increase the load.
- Do not place or fix any suspended load on any part of this machine.
- Do not place ladders or scaffolds in the platform or lean against any part of the machine.

Overturn danger

- Do not use the machine on moving or moving surfaces or on vehicles.Ensure that all tires are in good condition and that the tire nuts are tightened.
- Do not use the platform to push the machine or other objects.
- Do not allow the platform to contact adjacent components.
- Do not tie the platform to adjacent components with ropes or other binding materials.
- Do not place loads outside the perimeter of the platform.
- Do not use the platform controller to lower the platform when the platform is tripped, stuck, or other nearby objects hinder its normal movement.If it is intended to lower the platform using the ground controller, it must be operated after all personnel leave the platform.

2.6 Work environment danger

Unsafe workplace danger

- Do not operate the machine, on surfaces、 edges or potholes that cannot bear the weight of the machine.The platform can only be raised or extended when the machine is on solid and flat ground.
- Do not use the tilt alarm as a level indicator. The tilt alarm on the platform will sound only when the machine is tilted seriously.
- When the platform is raised, if the tilt alarm sounds, carefully lower the platform and do not change the level or limit switch.
- Do not exceed 0.8 km / h when the platform is raised.
- If the machine can be used outdoors, do not operate the machine in strong winds or gusts.When the wind speed exceeds 12.5m/s (28mph)， Do not lift the platform； If the wind speed exceeds 12.5m/s (28mph) after lifting the platform,lower the platform immediately and do not continue to operate the machine.
- When the platform is raised, the machine cannot travel in uneven areas, unstable surfaces or other dangerous conditions.
- When the machine is stowed, be careful and reduce the speed when the machine is driving in uneven areas, gravel, unstable or smooth surfaces, steep and near holes.
- Do not drive or lift the machine on a slope, step or arched ground that exceeds the maximum climbing capacity of the machine.

Before or during the use of the machine, check the possible hazards in the workplace and pay attention to environmental restrictions, including flammable and explosive gases or dust.

Chart 2-3 The Beaufort Scale

Beaufort scale	m/s	Instruction	Ground condition
0	0～0.2	No wind	No wind, smoke vertical upward.
1	0.3～1.5	Soft wind	Smoke can indicate the wind direction.
2	1.6～3.3	Soft wind	The skin feels bare. The leaves make a slight noise.
3	3.4～5.4	Breeze	The twigs began to shake.
4	5.5～7.9	Gentle wind	Dust and scraps of paper rose and twigs began to shake.
5	8.0～10.7	Cool breeze	The tree shook.
6	10.8～13.8	Fierce wind	Tree branches shake, overhead wires whir and sound, and it is difficult to carry an umbrella.
7	13.9～17.1	strong wind	The whole tree shook. It is difficult to walk against the wind.
8	17.2～20.7	Gale	The branch broke. Vehicles on the road were blown off course by the wind.
9	20.8～24.4	Strong wind	Minor damage to buildings.

Notice

Maximum slope angle 40% . The maximum climbing capacity shall be applied to the machine with the platform in the retracted state.
The climbing capacity is the maximum allowable inclination angle when the machine is on solid ground and the platform carries only one person.When the platform increases weight, the rating of the slope will be reduced.

2.7 Unsafe operation danger

The operation of the machine shall strictly comply with the requirements of this manual and maintenance manual. If there are more stringent regulations in the industry or place, the latter shall be followed.

Unsafe operation danger

- Do not push or pull any object outside the platform. Maximum allowable lateral force： 400 N(90 lbf)
- Do not change any machine parts that may affect safety and stability.
- Do not replace key parts that affect the stability of the machine with parts of different weights or specifications.

Unsafe operation danger

- Do not modify or alter the aerial work platform without the written permission of the manufacturer.
- Do not install additional devices for placing tools or other materials on the platform or guardrail, which will increase the weight and surface area of the platform or increase the load.
- Do not place ladders or scaffolds in the platform or lean against any part of the machine.
- Do not use the machine on moving or moving surfaces or on vehicles. Ensure that all tires are in good condition and that the tire nuts are tightened.
- Do not place or attach any suspended loads on any part of the machine.
- Do not use the machine as a crane.
- Do not use the platform to push the machine or other objects.
- Do not allow the platform to contact adjacent components.
- Do not tie the platform to adjacent components.
- Do not place the load outside the platform.
- Do not use the platform controller to lower the platform when the platform is tripped, stuck, or other nearby objects hinder its normal movement.If it is intended to lower the platform using the ground controller, it must be operated after all personnel leave the platform.

When one or more tires are off the ground, evacuate all personnel before stabilizing the machine and use cranes, forklifts or other suitable equipment to stabilize the machine.

2.8 Fall danger

The operation of the machine shall strictly comply with the requirements of the operation manual and maintenance manual. If there are more stringent regulations in the industry or place, the latter shall be followed.

Fall danger

- Personnel on the platform must wear safety belts or use safety device in accordance with government regulations.Tie the anchor to the fixed points of the platform, and only one person can tie the anchor at each fixed point.
- It is forbidden to sit, stand or climb on the protective guardrail of the platform.Stand steadily on the platform floor at all times.
- When the platform is lifted, do not climb down from the platform.
- Keep the platform floor clear of obstacles.
- Do not enter or exit the platform unless the machine is in the fully stowed position.
- Close the entrance door before operation.
- Do not operate the machine if the guardrail is not installed correctly and the entrance door is not closed.

2.9 Collision danger

The operation of the machine shall strictly comply with the requirements of the operation manual and maintenance manual. If there are more stringent regulations in the industry or place, the latter shall be followed.

Collision danger

- When moving or operating the machine, pay attention to the sight range and the existence of blind spots.
- heck the work area to avoid overhead obstacles or other possible hazards.
- Be careful when using the platform controller and ground controller.The color marked direction arrows show the driving, lifting and steering functions.
- Users must comply with user, workplace and government regulations on "use of personal protective equipment" （Safety helmet, safety belt and gloves, etc）.
- Before releasing the brakes, the machine must be level or fastened.
- Lower the platform only when there are no people and obstacles in the bottom area.
- Limit travel speed based on ground conditions, congestion, ground slope, personnel location and any other factors that may cause a collision.

Collision danger

- Do not operate the machine in the range of any crane or mobile overhead unless the crane controller is locked or precautions have been taken to prevent any potential collision.
- Keep your hands and arms away from places where they may be squeezed.
- Do not work under the platform or near the telescopic boom.
- When using the controller to operate the machine on the ground, please maintain correct judgment.Keep proper distance between the operator, the machine and fixed objects.
- When operating the machine, do not drive or play with danger.

2.10 Squeeze danger

There is a potential danger of squeeze during machine movement. During the operation of the machine, body and clothes should always keep a safe distance from the machine.

Squeeze danger

- Keep your hands and arms away from places where they may be squeezed.
- Do not work under the platform or near the telescopic boom.
- When using the controller to operate the machine on the ground, please maintain correct judgment and keep an appropriate distance between the operator, the machine and fixed objects.

2.11 Danger of explosion and fire

Danger of explosion and fire

- Do not use the machine, charge the battery or refuel the machine in dangerous or flammable and explosive places.

2.12 Danger of machine damage

Notice

Follow the use and maintenance requirements of parts in this manual and maintenance manual, otherwise the machine will be damaged.

Danger of machine damage

- Unsafe operation hazard.
- Do not use damaged or faulty machines.
- Before every startup,the machine shall be checked before operation and all functions shall be tested.Damaged or faulty machines shall be marked immediately and stop operation.
- Ensure that all maintenance operations have been carried out in accordance with the provisions of the manual and the corresponding maintenance manual.
- Ensure that all labels are properly positioned and easy to identify.
- Ensure that the operation manual and maintenance manual are intact and easy to read, and stored in the document box on the platform.

2.13 Danger of physical injury

All operation and maintenance requirements in the manual and maintenance manual shall be observed.

- Hazards of unsafe operation.
- Do not operate the machine when there is hydraulic oil leakage.Hydraulic oil leakage may penetrate and burn the skin.

2.14 Battery danger

- The battery contains sulfuric acid and can produce an explosive mixture of hydrogen and oxygen.Any equipment that can cause sparks or flames (including cigarette / smoke materials) should be kept away from the battery to prevent explosion.
- Do not touch the battery terminals or cable clamps with spark generating tools.

Chapter 3 Operator responsibilities, equipment preparation and inspection

3.1 Personnel training

The equipment of aerial work platform is controlled by the operator. Only the trained and qualified personnel can operate and maintain the equipment.

It is strictly forbidden for people who cannot control themselves after drinking or taking medicine, dizziness and other people, as well as people with acrophobia, to operate and use the equipment.

3.1.1 Operator training

Operator training includes but is not limited to the following contents:

- Use and function restrictions of various control handles and switches on the upper and lower control panels, emergency operation and safety devices, etc.
- Various control knowledge labels, operation instructions, warning signs, etc. on the equipment.
- Regulatory requirements of the employer and local government.
- How to use the allowed fall prevention facilities.
- Master the relevant knowledge of equipment operation to understand and judge the faults and potential faults of the machine.
- Master how to operate in the safest way in various narrow spaces, mobile equipment, various obstacles, pits and other environmental conditions.
- How to avoid conductive or charged objects and avoid electric shock.
- Operation methods under special operation and application conditions.

3.1.2 Training supervision

The training shall be conducted in an open place without obstacles and under the supervision of authorized personnel with training qualification. Novices should not operate machines and equipment independently until they are approved by the training supervisor.

3.1.3 Operator responsibilities

The operator must be instructed and authorized. Once the machine or site fails or there is a possibility of insecurity, the operator immediately stop the machine.

3.2 Preparation, inspection and maintenance of the machine before use

3.2.1 Summary

The contents of this chapter include the inspection items that must be done before the equipment is put into use.The contents of this part must be carefully read and understood, and the equipment can be put into use only after it is carefully inspected and passed in strict accordance with the inspection items.This will help to

ensure the safe operation of the equipment and prolong the service life of the equipment and machine.

The following table contains the regular maintenance items of the equipment in the normal working environment. Please refer to them when carrying out maintenance according to your actual working conditions.Note: if the equipment works under very bad working conditions, the utilization rate of the machine is very high, and the maintenance interval should be shortened appropriately.

3-1 Check the maintenance list

Type	Maintenance interval	Responsible	Reference
Startup inspection	Every day before the device is enabled	User or operator	Operation manual
Delivery inspection	Before sale or before each lease	Owner, delivery person or user	Operation manual
Regular inspection	Before sale or before each lease	Owner, delivery person or user	Operation manual
Annual inspection	One year, no more than 13 months at most	Owner, delivery person or user	Operation manual
Preventive inspection	Follow the maintenance intervals specified in the service manual	Owner, delivery person or user	Operation manual

3.2.2 Preparation before use

A new equipment must be inspected before use, including:

(1) Inspect the appearance carefully and find out if there is any damage during transportation.In case of any damage, contact the freight in time.

(2) Then, the inspection shall be carried out item by item according to the items listed in item 3.2.3.

(3) After starting the equipment for the first time, during the whole operation process, carefully check whether each functional action operates smoothly; Whether there is oil leakage in the hydraulic system and fitting; Whether all parts are fixed reliably, etc.

(4) Before the machine is put into use, the management department is responsible for making necessary preparations.During preparation, the machine shall have good operation experience and conduct appearance inspection.The items to be inspected are listed in the daily inspection module (see 3.2.4 for details)

(5) Before using the machine, it should be ensured that the items listed in the delivery, circle inspection and functional inspection have been checked and passed.

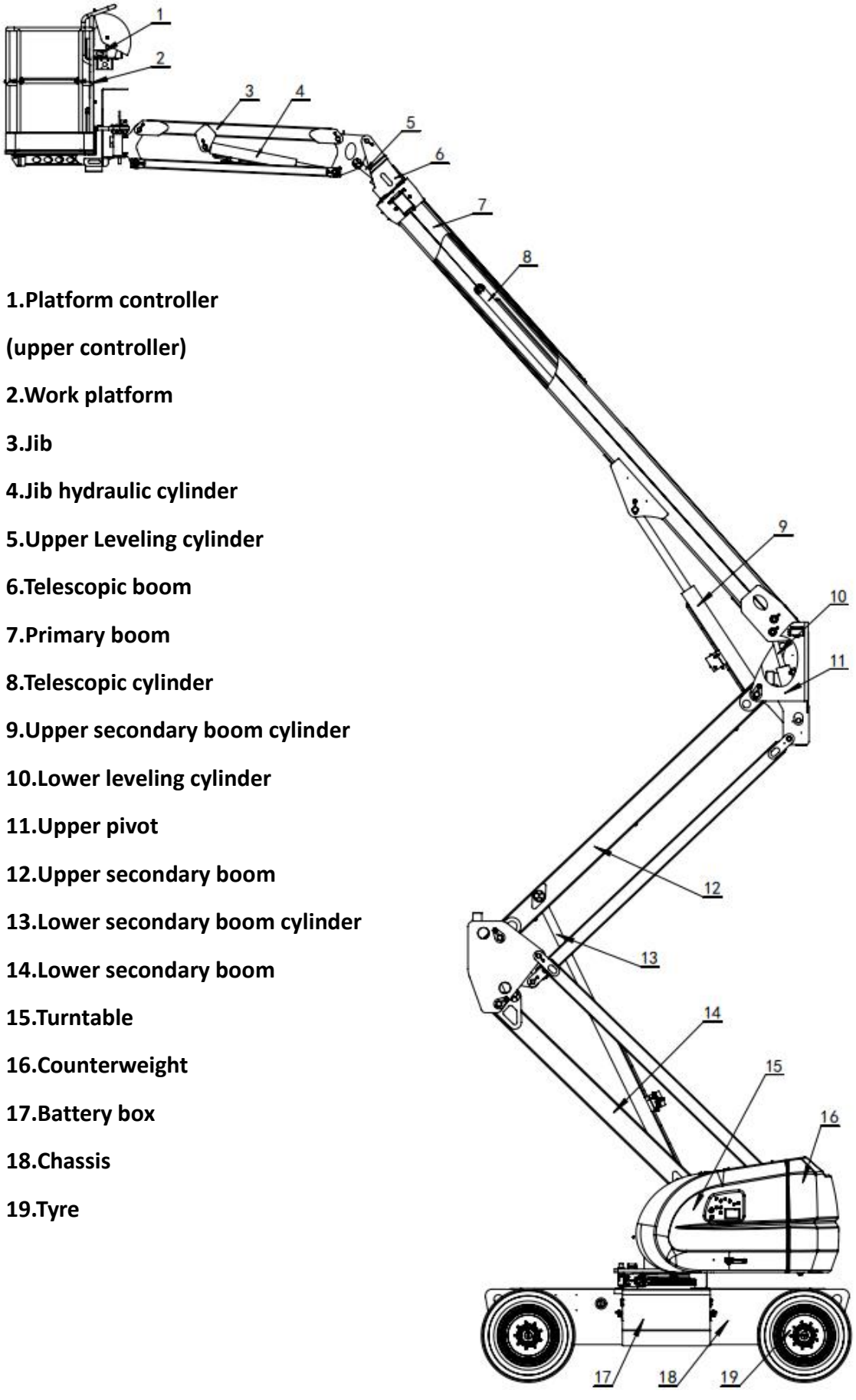
3.2.3 Delivery inspection and periodic inspection

Notice
The aerial work platform shall be subject to annual inspection, and the annual inspection interval shall not exceed 13 months. The annual inspection shall be conducted by qualified full-time inspectors.

Operation manual Chapter 3 Operator responsibilities, equipment preparation and inspection

The following inspection item list provides a process for inspecting the system item by item according to the inspection item list, so as to accurately find out whether the equipment has deformation, damage, assembly error and other defects; Under normal operating conditions, the inspection shall be conducted every 3 months or 150 working hours (whichever comes first). If the equipment is used in areas with harsh environment, or the equipment is used more frequently than normal, the maintenance interval shall be appropriately reduced.

The inspection items of this part shall also be implemented for machines in stock or placed in harsh and changeable environment. The same applies to the machine after maintenance.



1.Platform controller

(upper controller)

2.Work platform

3.Jib

4.Jib hydraulic cylinder

5.Upper Leveling cylinder

6.Telescopic boom

7.Primary boom

8.Telescopic cylinder

9.Upper secondary boom cylinder

10.Lower leveling cylinder

11.Upper pivot

12.Upper secondary boom

13.Lower secondary boom cylinder

14.Lower secondary boom

15.Turntable

16.Counterweight

17.Battery box

18.Chassis

19.Tyre

Operation manual Chapter 3 Operator responsibilities, equipment preparation and inspection

Chassis

（1）Check the front axle tire and wheel assembly to see if there are loose tire bolts, missing parts, scratches, wear, etc.

（2）Check the steering device assembly to see if any parts are lost and if the steering rod is bent and deformed; Whether the steering cylinder, hydraulic hose and fitting are loose, leaking, etc; Whether the installation angle is appropriate; Whether the pipeline is worn, etc.

（3）Please check whether the drive hub, drive motor, brake, cable and connector are worn and loose. If necessary, please contact professional technicians.

（4）Check the rear axle tire and wheel assembly to see if there are loose tire bolts, missing parts, scratches, wear, etc.

（5）Please check whether the hydraulic oil tank and components on the oil tank are worn and damaged.

（6）Check the lubricating oil level of the drive reducer. (if you need help, please contact the service personnel)

Notice
The lubricating oil level should be maintained at half the height of the drive reducer housing.

（7）Check the floating oil cylinder and observe whether the oil cylinder joint and pipeline have leakage.

Check hydraulic and electrical components for wear and damage.

Turntable

（1）Check the turntable to see if there are parts missing, loose, etc; Check the rotary reducer; Check the hydraulic hose and fitting for looseness and leakage.

（2）Check the rotary reducer and observe whether there are broken teeth and other damage; Whether the lubrication is good and whether the fixing bolts are Looseness, etc; If damaged, please replace with new parts.

（3）Check the hydraulic valve and pipeline to see whether they are firmly fixed and whether there are looseness, leakage, corrosion and other phenomena.

（4）Check the control box and observe whether there is damage, looseness, loss of parts, loose electrical connectors, corrosion, damage of wire insulation, etc.Whether each function button switch is normal. If there is any problem, it should be repaired immediately.

（5）Check the battery, observe whether there is damage, whether the wiring terminal is loose, whether the protective cap is complete, whether the battery is fixed firmly, whether it is rusted, and whether the liquid level of electrolyte is appropriate.If the liquid level is insufficient, add distilled water in time.

（6）Check the machine cover, observe whether there is damage, whether the hinge, gas spring and other switches are stuck, and whether the connection is firm.

（7）Check the function valve, observe whether the hydraulic hose and fitting are deformed and leaking, and whether the fixing is firm.

（8） Check all connecting shafts and locking pins and observe whether there are looseness, missing parts, etc. If yes, please supplement it in time.

（9）Check all wires and cables for wear, damage, looseness, erosion, etc.

Lifting boom

（1）Check each boom and rod, and observe whether there is deformation, damage, loss of parts, reliable connection, etc.

（2） Check all connecting shafts and locking pins and observe whether there are looseness, missing parts, etc. If yes, please supplement it in time.

（3） Check all hydraulic hoses, wires and cables for wear, looseness, erosion and leakage, and replace new parts if necessary.

（4）Check the limit switch and observe whether it is rusted and firm, and whether the limit switch is flexible, etc.

（5）Check the lower connecting seat, luffing cylinder and hydraulic hose for damage, leakage and wear, sufficient lubrication and loose pin shaft locking.

（6）Check the lifting boom shaft busing for damage.

（7） Check whether the upper joint, upper luffing cylinder, shaft and hydraulic hose are worn and leaked, whether the shaft is loose and whether the lubrication is sufficient.

（8） Check the telescopic boom for deformation, missing parts and reliable connection.

（9）Check whether the sliding block of the telescopic boom is damaged or lost, and whether the fixing bolt is loose.

（10） Check the telescopic cylinder and observe whether the fixed shaft of the telescopic cylinder is complete and firmly connected; Whether the hydraulic hose and fitting are loose, leaking, etc. Replace with new parts if necessary.

（11）Check the leveling cylinder and observe whether the fixed shaft of the leveling cylinder is complete and firmly connected; Whether the hydraulic hose and fitting are loose, leaking, etc. Replace with new parts if necessary.

（12）Check the jib cylinder and observe whether the fixed shaft of the jib cylinder is complete and firmly connected; Whether the hydraulic pipelines and joints are loose, leaking, etc. Replace with new parts if necessary.

（13）Check whether the connectors of the rotation of the working platform and the electromagnetic coil of the jib are loose or missing, whether the wiring is firm, and whether the insulation layer of the wire is damaged.Replace if necessary.

Working platform

（1） Check the working platform and upper controller, observe whether there is damage, looseness or missing parts, and whether the fastening is firm.

（2） Check the control switch and control handle, observe whether they are loose or missing, and whether they are fixed firmly to ensure that the control handle functions normally.

（3）Check whether the control switch, control handle and electrical connector are connected reliably, whether the connector is rusted, and whether the insulating layer is damaged; Ensure that all control switches function normally.

（4） Check whether the guardrail at the entrance of the working platform is damaged and whether the switch is smooth. Repair as needed.

（5） Check whether the rotation operation of the working platform is normal, whether it is damaged and whether it is fixed firmly; Check whether the hydraulic pipelines and fitting are loose, worn and leaking, and repair or replace them in time if necessary.

Notice

Check all "safety warning", "operating instructions" and other labels to ensure that the handwriting is clear and firmly pasted.

Torque check

Refer to table 3-2. The values in the table are the reference torques of metric bolts and nuts with different strength levels and diameter specifications. According to different use experience, dry or wet torque values are sometimes given for the reference of the operator during daily inspection or operation.In the repair and maintenance manual, some important parts will give the tightening torque and maintenance inspection interval separately.Tightening according to the values in the tightening torque table during inspection and maintenance can strengthen the safety and reliability of the equipment and improve the performance of the machine.

3-2 Bolt tightening torque

Bolt specification	Metric grade 8.8 bolts and nuts（N.m）	Metric grade 10.9 bolts and nuts （N.m）	Metric grade 12.9 bolts and nuts （N.m）
M4	3	4.4	5.1
M5	5.9	8.7	10
M6	10	16	18
M8	25	36	43
M10	49	72	84
M12×1.25	93	135	160
M12×1.5	89	130	155
M12	86	126	145
M14×1.5	145	215	255
M14	135	200	236
M16×1.5	226	330	390
M16	210	310	365
M18×1.5	340	485	570
M18	300	430	600
M20×1.5	475	680	790
M20	425	610	710
M22×1.5	630	900	1050
M22	580	820	960
M24×2	800	1150	1350
M24	730	1050	1220

M27×2	1150	1650	1950
M27	1100	1550	1800
M30×2	1650	2350	2750
M30	1450	2100	2450

Chapter 4 operation and instruction of the machine

4.1 Summary

This section provides information on machine operation and control.

Notice
The manufacturer cannot directly control the application and operation of the equipment.Users and operators are responsible for observing correct safety specifications.

4.2 Control and indication description

4.2.1 Lower controller (ground control box)

NOTICE:All vehicles have function control buttons. When doing relevant actions, you need to press the function button and corresponding action button at the same time to operate the machine actions, such as luffing, telescopic rotation, jib luffing, manual leveling, platform rotation, etc.

⚠
➢ It is forbidden to use the ground controller to operate the machine when there are people in the working platform unless in the emergency treatment state. ➢ When carrying out the machine function test, first operate the machine with the lower controller for test.

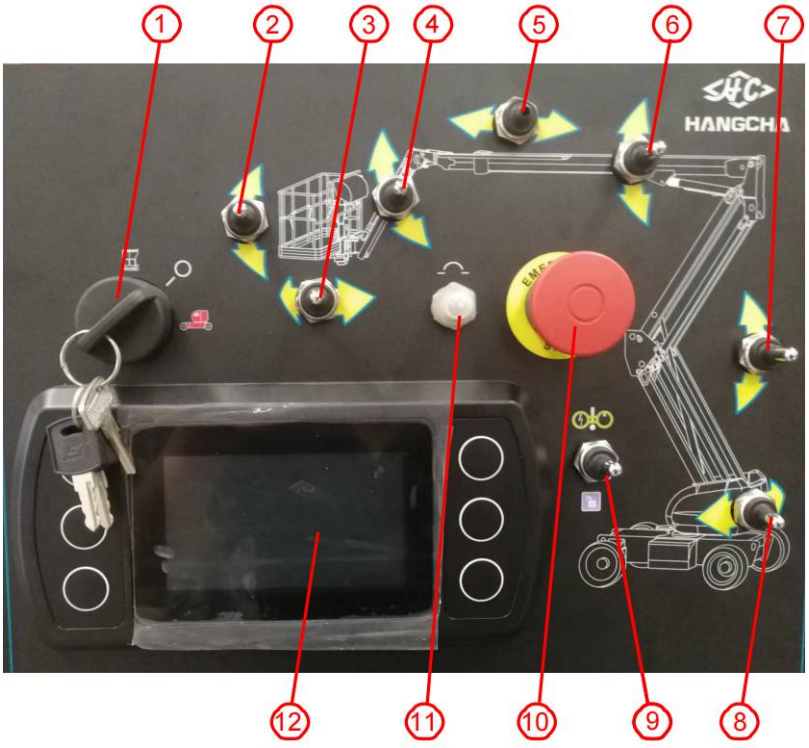
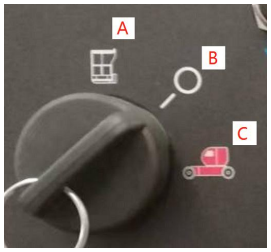
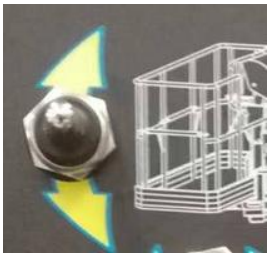
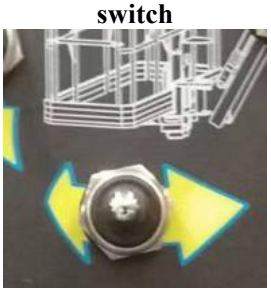
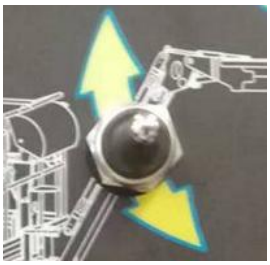
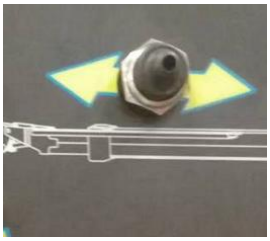
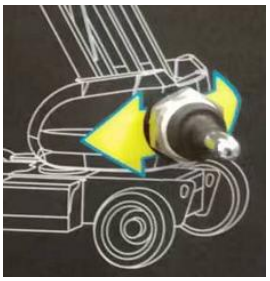
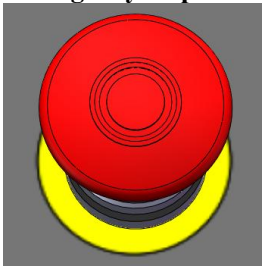


Fig.4-1 Base control panel

No	Name	Describe
1	**Upper/lower control selection switch** 	Upper/lower control selection switch is a key switch used to select the lower controller or the upper controller for operation: ■ The key switch is in the median B: Cut off the power to the upper/lower controller. ■ Turn the key switch counterclockwise to A: Select the upper control to operate the machine, and the lower control does not work. ■ Turn the key switch clockwise to C: Select the lower control to operate the machine, and the upper control does not work. **NOTE:** (1)After operating the machine, press the Emergency Stop button of the upper/lower console to make the machine in the shutdown state; (2) After operating the machine, turn the key to the median B. Then pull out the key and cut off the power of the machine to prevent unauthorized personnel from operating by mistake.
2	**Platform leveling control switch** 	Platform leveling control switch is a self–resetting handle switch. After automatic leveling, if the working platform is tilted, the operator can use this handle switch to correct the working platform ■ When the working platform is tilted down, toggle the handle in the direction of the upward arrow and hold until the platform is in a horizontal position. Then release the handle, it automatically reset to the middle. ■ When the working platform is tilted upwards, toggle the handle in the direction of the downward arrow and hold until the platform is in a horizontal position. Then release the handle, the it automatically reset to the middle. **Note: When the platform is tilted, it needs to be carefully corrected with manual leveling. However, the wrong manual leveling may cause the personnel or cargo inside the platform to flip or even fall off the platform. Manual leveling errors can cause serious accidents and even casualties.**
3	**Platform swing control switch** 	Three position handle switch. In the free state, the switch automatically resets in the middle. It is used to control the rotation of the working fence to the left or right. Swing range of working fence: ±90°

No	Name	Describe
4	**Forearm luffing control switch** 	Forearm luffing control switch is a self-resetting handle switch used to control the forearm luffing. ■ Pull the handle and hold along the upward arrow direction, and the forearm is luffing until it reaches the maximum angle. After releasing the handle, it automatically resets to the middle. ■ Pull the handle and hold along the downward arrow direction, and the forearm is luffing down until it reaches the lowest position. After releasing the handle, it automatically resets to the middle.
5	**Telescopic arm control switch** 	Telescopic arm control switch is a self-resetting handle switch used to control the telescoping function. ■ Pull the handle and hold along the arrow direction to the left, extending the telescopic arm until it reaches its maximum length. After releasing the handle, it automatically resets to the middle. ■ Pull the handle and hold along the arrow direction to the right, and retracting the telescopic arm until it reaches its minimum length. After releasing the handle, it automatically resets to the middle.
6	**Upper arm luffing control switch** 	Upper arm luffing control switch is a self-resetting handle switch used to control the upper arm luffing. ■ Pull the handle and hold along the upward arrow direction, and the upper arm is luffing until it reaches its maximum angle. After releasing the handle, it automatically resets to the middle. ■ Pull the handle and hold along the downward arrow direction, and the upper arm is luffing down until it reaches its lowest position. After releasing the handle, it automatically resets to the middle.
7	**Crank arm luffing control switch** 	Crank arm luffing control switch is a self-resetting handle switch, used to control the middle and lower luffing of the lifting arm. ■ Pull the handle and hold along the upward arrow direction, crank arm 1 and 2 synchronous luffing up until it reaches its maximum angle. After releasing the handle, it automatically resets to the middle. ■ Pull the handle and hold along the downward arrow direction, crank arm 1 and 2 synchronous luffing down until it reaches its lowest position. After releasing the handle, it automatically resets to the middle.

No	Name	Describe
8	**Turntable control switch** 	Three-position handle switch. In the free state, the spring automatically resets in the middle. and the turntable is stationary. Turn the handle and the turntable will turn left or right in the direction indicated by the arrow.
9	**Functional control/emergency switch** 	Self-resetting handle switch. Use with function action switch, or for emergency operation. ■ Before toggle the handle of the function action switch, first toggle the handle of the function control switch downward and hold it, and then toggle the corresponding function action switch handle, so that the machine works, otherwise the operation is invalid. Release the handle after the operation, and it will automatically reset to the middle. ■ When the machine is faulty, or the main battery is dead, the operator can use this switch for emergency operation. Upward toggle the emergency lowering switch and hold, and then select the corresponding function action switch, you can carry out the emergency action. ***Note: Emergency operations supported at present include:*** *Folding arm luffing downward, main arm luffing downward, telescopic arm retraction, forearm luffing downward, turntable rotation. Do not choose more than two functional actions when using the emergency pump, to avoid the overload damage to the emergency pump.* **Warning: The emergency switch is prohibited for routine function operation. It can only be used when the machine has an electrical fault, otherwise it may cause a serious accident or even casualties.**
10	**Emergency stop switch** 	Two-position button control switch in the shape of red mushroom head is used to stop the machine in case of emergency. (1) Directly press the button to cut off the system power supply in case of emergency. (2) Before starting the system, the emergency stop button of the lower /upper control panel must be in the unpressed position; otherwise, the system cannot start. Turn the mushroom head clockwise to release the emergency stop button.

No	Name	Describe
11	**Self-resetting fuse** 	Self-resetting fuse
12	**Display** 	Multifunction display for indicating: ■ Cumulative working hours system ■ Battery level ■ Fault code

4.2.2 controller (ground control box)

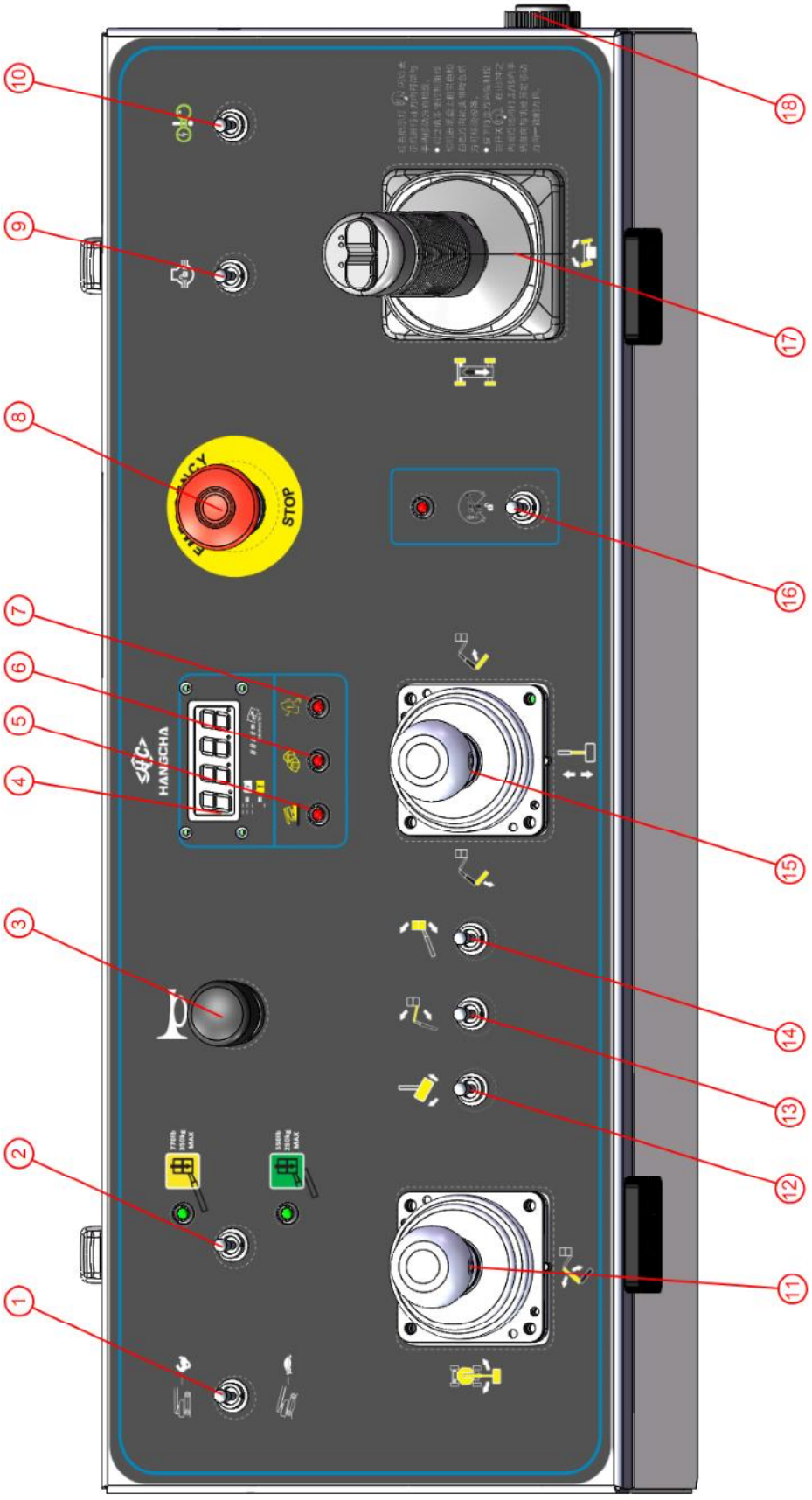
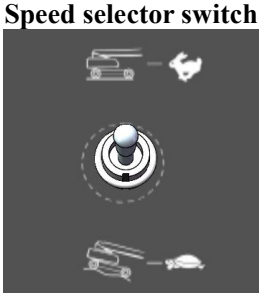
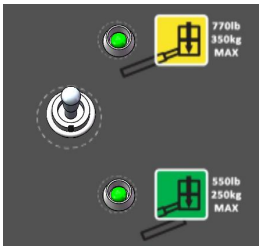
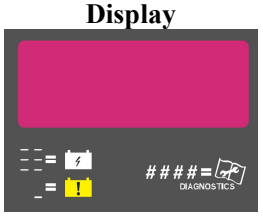
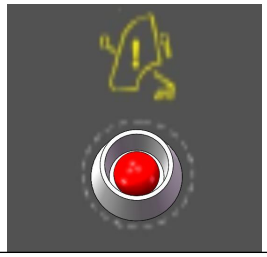
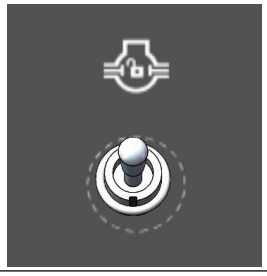
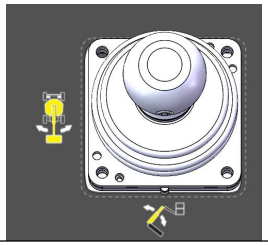
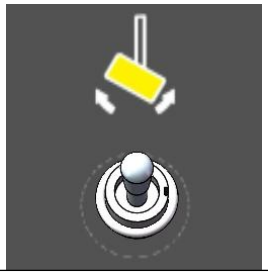
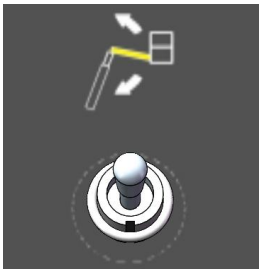
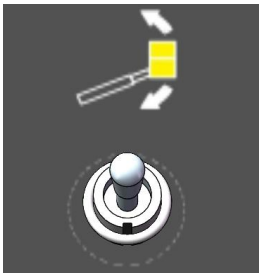


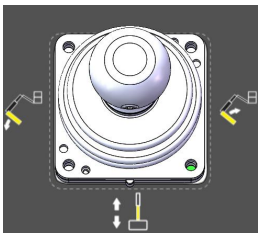
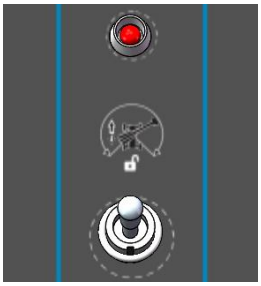
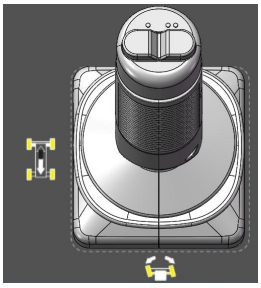
Fig 4-2 Basket control panel

Fig4-2 Basket control panel presentation

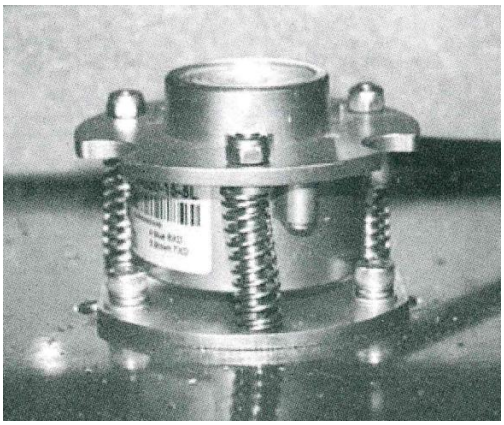
Item	Name	Discription
1	**Speed selector switch** 	"Tortoise"/ "Hare" selector switch is two-position handle switch. ➢ "Tortoise speed": Pull the handle down. ➢ "Hare speed": Pull the handle up.
2	**Load selector switch** 	Load selector switch is two-position handle switch. ➢ Pull the handle down and the lower indicator is on. The maximum load is 255kg and the equipment can be used in 255kg operating range. When the load exceeds 255kg, the equipment will overload warnings. ➢ Pull the handle up and the upper indicator is on. The maximum load is 350kg, and the equipment can be used in 350kg operating range. When the load exceeds 350kg, the equipment will overload warnings.
3	**Horn button** 	Press the button and the horn sounds. Release the button, the horn will not sound.
4	**Display** 	Used to display： ➢ Battery level ➢ Fault code
5	**Tilt alarm indicator** 	Tilt alarm indicator is a red warning light. In normal state, the indicator is off. When the tilt switch detects that the tilt of the device is greater than 5°, it turns on.

Item	Name	Description
6	**Overload alarm indicator** 	Overload alarm indicator is a red warning light. In normal state, the indicator is off. Light up when the platform load is greater than the rated load.
7	**Fault alarm indicator** 	Overload alarm indicator is a red warning light. In normal state, the indicator is off. Light up when there is a fault.
8	**Emergency stop button** 	Two-position button control switch in the shape of red mushroom head is used to stop the machine in case of emergency. (1) Directly press the button to cut off the system power supply in case of emergency. (2) Before starting the system, the emergency stop button of the lower /upper control panel must be in the unpressed position; otherwise, the system cannot start. Turn the mushroom head clockwise to release the emergency stop button.
9	**Emergency unlock switch** 	Emergency unlock switch is a self-resetting toggle switch, which is used to unlock the limit of the overload alarm on the boom action: When the overload alarm sounds, toggle the emergency unlock switch. The telescopic boom retraction and up/down luffing lowering can be performed within the next ten seconds. This operation can be repeated. **Warning: Do not use this switch in normal state.**
10	**Emergency switch** 	When machine is in certain fault conditions, can use this switch for emergency action. Toggle the emergency switch and hold it, and then select the corresponding function action switch to carry out the emergency function action. ***Note: Emergency operations supported at present include:*** *Folding arm luffing downward, main arm luffing downward, telescopic arm retraction, forearm luffing downward, turntable rotation. Do not choose more than two functional actions when using the emergency pump, to avoid the overload damage to the emergency pump.* **Warning: The emergency switch is prohibited for routine function operation. It can only be used when the machine has an electrical fault, otherwise it may cause a serious accident or even casualties.**

Item	Name	Description
11	**Upper luffing /body rotation control handle** 	Push the handle forward and the upper luffing will swing down, Push the handle back and the upper luffing will swing up. Push the handle to the left, the machine will turn to the left, Push the handle right and the machine will turn right. ***Note:*** *When manipulating, you must first step on the foot safety start switch and select the action to perform the operation within 5 seconds.*
12	**Platform swing control switch** 	Self-resetting three-position handle switch, used to control the working platform swing to the left or right. Swing range of working platform: ±90° ***Note:*** *When manipulating, you must first step on the foot safety start switch and select the action to perform the operation within 5 seconds.*
13	**Forearm luffing control switch** 	Forearm luffing control switch is a self-resetting handle switch used to control the forearm luffing. ■ Pull the handle and hold along the upward arrow direction, and the forearm is luffing until it reaches the maximum angle. After releasing the handle, it automatically resets to the middle. ■ Pull the handle and hold along the downward arrow direction, and the forearm is luffing down until it reaches the lowest position. After releasing the handle, it automatically resets to the middle. ***Note:*** *When manipulating, you must first step on the foot safety start switch and select the action to perform the operation within 5 seconds.*
14	**Platform leveling control switch** 	Platform leveling control switch is a self-resetting handle switch. After automatic leveling, if the working platform is tilted, the operator can use this handle switch to correct the working platform ➢ When the working platform is tilted down, toggle the handle in the direction of the upward arrow and hold until the platform is in a horizontal position. Then release the handle, the handle automatically reset to the middle position. ➢ When the working platform is tilted upwards, flip the handle in the direction of the downward arrow and hold until the platform is in a horizontal position. Then release the handle, the handle automatically reset to the middle position. **Platform leveling can be performed only in the retracted state.** ***Note:*** *When manipulating, you must first step on the foot safety start switch and select the action to perform the operation within 5 seconds.*

Item	Name	Description
15	**Telescopic arm/lower luffing handle** 	Push the handle forward and the telescopic arm will retract. Push the handle back and the arm will extend. Push the handle to the left and the lower luffing will go down. Push the handle to the right and the lower luffing will go up. ***Note:*** *When manipulating, you must first step on the foot safety start switch and select the action to perform the operation within 5 seconds.*
16	**Driving direction mandatory control switch** 	Driving direction mandatory control switch is used to confirm the driving direction. Toggle the driving direction mandatory control switch to slowly push the driving/steering handle in the direction consistent with the intended movement direction of the machine within 3 seconds. When the moving direction of the device is opposite to that of the handle, the red indicator blinks.
17	**Driving/steering control handle** 	Hold the enable switch, push the handle forward, the machine will go forward; push the handle back, the machine will go back. Hold the enable switch and press the left button of the thumb switch above the handle to turn the front wheel to the left; Press and hold the right thumb button to turn the front wheel to the right. ***Note:*** ➢ *Driving and steering can be done simultaneously, but it will reduce the speed.* ➢ *Adjust the device so that the black arrows on the control panel match the white arrows on the chassis before moving the device.*
18	**Buzzer** 	Used for action alarm or fault alarm.

4.3 Frame tilt alarm

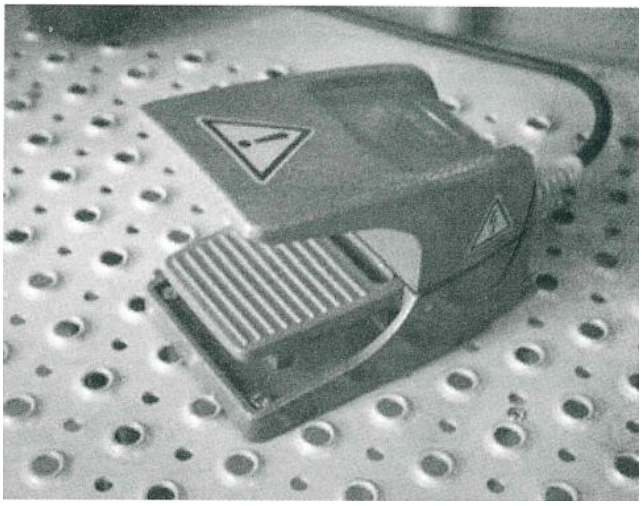


The frame tilt sensor is mounted on the turret to detect whether the frame is level.

Once the sensor detects that the frame tilt Angle is greater than 5 degrees, the indicator light on the sensor will change from green to red, and the control system will send out an alarm signal. After the alarm signal is issued, the control system will activate the buzzer alarm, and the upper tilt alarm indicator of the upper control box will light up.

Note: In the alarm state, the forward and backward of the machine, the extension of the telescopic boom and the upward luffing boom are invalid .

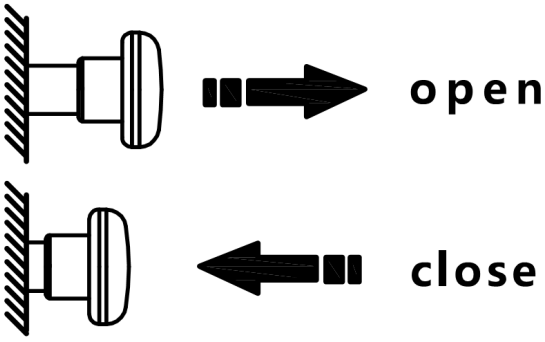
4.4 Foot safety start switch



Foot safety start switch is installed on the bottom plate of the working platform for easy operation.

- when the upper controller operates the machine, the foot must be stepped on the safety switch before any operation command is performed and the movement is selected to perform the operation within 5 seconds.
- If no action is selected within 5 seconds; Or the interval with the previous operation exceeds 5 seconds, the system will automatically return to the initial state, unable to operate the machine. To continue to perform the action, you must release and re-press the pedal safety start switch before operation.

4.5 The main power switch



The main power switch is installed on the right side of the chassis and is used to control the on-off of the machine circuit.

- Before turning on the main power switch, please make sure that the key switch of the base control box is in the middle position.
- When the equipment is not in use for a long time or the equipment is undergoing maintenance inspection, please turn the key switch to the middle position and then cut off the main power switch.
- When charging the device, please turn off the main power switch first.

Chapter 5 Operating instructions

5.1 Summary

This equipment is a self-propelled working platform， A platform is equipped at the end of the swing telescopic boom.The platform shaking caused by the lifting boom will not affect the safety of the operators in the platform.The machine can be used to transport workers to work at height.

The upper controller of the equipment is located on the working platform.The operator can use this controller to operate the machine for forward, backward, left and right steering, upward / downward luffing of the lifting boom, 360 ° continuous rotation of the turntable, left and right rotation and up and down leveling of the platform, expansion and contraction of the telescopic boom and other functional operations.The equipment has a ground controller, which can be used to operate when the platform controller fails.The lower controller can operate the lifting and rotation of the boom, which is used to lower the platform to the ground when the operator on the platform cannot operate in an emergency.The lower controller is used to check the machine function and action before operation.

Operating instructions and warnings are pasted near the two controllers and elsewhere in the machine.Let operators know the operation instructions and warnings and review them regularly, so as to improve their familiarity with machine operation and maintenance.

Safe operation instructions are provided for the operator in the operation and maintenance manual, which comply with national laws and regulations and on-site operation rules of the workplace.Safe operation instructions are very important to operators. According to the instructions in the operation and maintenance manual, the machine should be maintained regularly. If the machine is not maintained regularly or has faults, damage or changes, it should be reported to the machine owner or the person in charge of the operation site or the safety supervisor in time, so that the machine can be repaired in time. These are necessary.

The equipment can not lift heavy objects except for the operation tools required by the operator to operate in the working platform. Operation tools are not allowed to be placed outside the working platform.This machine can not be used as a lift, crane or high-altitude support column, and can not be used to push or pull other objects.

Each functional action of the equipment is realized by the hydraulic pump or hydraulic motor providing power for each hydraulic cylinder.Each hydraulic element is controlled by the hydraulic valve, and the hydraulic valve is controlled by the switch and operating lever, so as to control the movement of each hydraulic component.The speed of each function action controlled by the operating lever can change from zero to maximum, and the speed is determined by the position of the operating lever.The function action controlled by the toggle switch is only startup and shutdown.When operating the machine with the upper control, the foot switch on the platform floor must be pressed before operation.When the foot switch is released, the operation of each function action fails, which also provides an emergency stop method.

The driving mode of the machine is 4x4, and the motor provides driving force for each driving wheel.Each drive wheel is spring braked and electrically released.When

the drive control lever returns to the middle position, the drive wheel brakes automatically.

The platform is double loaded, and the rated load is 255kg and 350kg (limited); It means that after loading ≤ 255kg load, the platform can be at any position in the working area. When 255kg ＜ loading ≤ 350kg, the platform can only be used in the restricted working area.

5.2 Operating characteristics and limitations

Machine working capacity

Please confirm before operating the self-propelled telescopic boom aerial work platform:

(1) The machine is located on a flat and solid level ground；
(2) The working load does not exceed the rated load.
(3) The machine is in normal working condition.
(4) Are the tires fastened.
(5) The machine has not been modified without authorization.

Stability

The stability of the machine can be divided into two working conditions: forward stability and backward stability.The forward tilt stability is shown in Figure 5-1, and the backward tilt stability is shown in Figure 5-2.

To prevent the machine from turning forward and backward, do not overload the machine or operate the machine on uneven ground.

5.3 Driving operation

- Unless it is confirmed that the machine is on a flat and solid ground, it is strictly prohibited to drive the machine under the lifting state of the lifting boom; In order to avoid losing control of driving operation or overturning, it is forbidden to drive on an inclined road with a slope exceeding the requirements in the manual.
- Do not operate on a slope more than 5 °；
- When climbing, the driving mode should select climbing mode.When the platform is driving in the lifting state or in reverse, especially when any part of the machine is less than 2m away from the obstacle, drive carefully.
- Keep the telescopic boom between the left and right wheels of the vehicle when driving. If it exceeds the driving area, turn the turntable back to the appropriate position.

Forward and Backward Operation Steps

(1) Turn on the emergency stop switch and step on the foot switch. Hold the drive control handle and press the Deadman control button on the front of the handle. Then push the handle forward away from the median to control the forward drive. The farther the handle deviates from the median, the faster it travels.

(2) Step down the foot switch, hold the drive control handle and press the Deadman control button on the front of the handle. Then pull the handle back away from the median to control the backward drive. The farther the handle deviates from the median, the faster it travels.

5.4 Steering Operation

(1) Turn on the emergency stop switch and step on the foot switch. Hold the drive control handle and press the Deadman control button on the front side of the handle. Then press the thumb switch left button of the drive control handle and the machine will turn left.

(2) Step down the foot switch, hold the drive control handle and press the Deadman control button on the front of the handle. Then press the thumb switch right button of the drive control handle and the machine will turn right.

5.5 Platform Operation

Platform Leveling Operation

This operation is a manual leveling correction of the work platform and can only be performed when the equipment is in transport condition.

The working platform of this machine is automatically levelled. When the platform is tilted, manual leveling can be carefully used for correction. If operated or reoriented incorrectly, tools or personnel in the platform may fall. Improper operation may cause equipment damage or even casualties.

(1) Turn the upper/lower control switch to select the upper/lower control operation;

(2) Step down the foot switch, toggle the leveling control switch and hold it (Upper control operation）; Toggle the leveling control switch and hold it (Lower control operation）;

(3) Pull the handle upward and hold, and the platform is leveling upward. Release the handle, it automatically reset to the middle;

(4) Pull the handle downward and hold, and the platform is leveling downward. Release the handle, it automatically reset to the middle.

Platform Swing Operation

(1) Turn the upper/lower control switch to select the upper/lower control operation.

(2) Step down the foot switch, toggle the platform swing control switch and hold it (Upper control operation); Toggle the swing control switch handle and hold it (Lower control operation);

(3) Turn the handle to the left and hold, and the platform swings to the left. Otherwise, it swings to the right; Release the handle, it automatically reset to the middle.

5.6 Turntable rotation operation

- Do not operate the machine to turn or lift when it is on an inclined road.
- Do not rely solely on the tilt alarm to determine whether the chassis is level.
- In any case, if the control handle or switch of the working platform panel cannot be automatically returned to the center after release, it must be stopped immediately and handed over to professional maintenance personnel before operation, so as to avoid greater equipment damage and even casualties.
- If the operation of the equipment does not stop after the release of the control handle or switch, release the foot switch quickly and press the emergency stop button to stop.

Upper control operation

(1) Press the foot switch, press and hold the deadman control button on the front side of the handle and hold;

(2) Push the handle to the right and the turntable rotates to the right: push the handle to the left and the turntable rotates to the left.

Lower control operation

(1) Toggle the handle of the body rotation control switch and hold;

(2) Toggle the body rotation control switch and hold. Turn the turntable in the corresponding direction until it turns to the ideal position and release the handle.

Notice

Before turning, enough space must be ensured to prevent obstacles in the process of rotation. During the process of rotation, pay attention to observe that there is enough space for rotating parts and walls.

5.7 Lifting Arm Operation

Lower Luffing Operation

(1) Turn the upper/lower control switch to select the upper/lower control operation.

(2) Step down the foot switch, toggle the telescopic arm/lower luffing control handle and hold. Push the handle to the right, the lower luffing up; Push the handle to the left and the lower luffing drops down; After releasing the handle, it automatically resets to the middle (upper control).

(3) Toggle the handle of the function control switch and hold, while toggle the lower luffing function switch handle up/down and hold. Pull the handle upward, and the lower luffing lifts; Pull the handle down, and the lower luffing drops; After releasing the handle, it will automatically reset to the middle (lower control).

Telescopic Arm Operation

(1) Turn the upper/lower control switch to select the upper/lower control operation.
(2) Step down the foot switch, toggle the telescopic arm/lower luffing control handle and hold. Push the handle forward and the telescopic arm retracts; Push the handle backward, and the telescopic arm extends; After releasing the handle, it automatically resets to the middle. (upper control).
(3) Toggle function control switch handle and hold, while toggle telescopic arm control switch handle up/down and hold ; Pull the handle upward, the telescopic arm retracts; Pull the handle downward, and the telescopic arm extends ; After releasing the handle, it automatically resets to the middle. (lower control).

Upper Luffing Operation

- If the lower control is selected for upper luffing operation：

Toggle function control switch handle and hold, at the same time along the up/down arrow direction toggle handle and hold, upper arm up/down luffing. After releasing the handle, it automatically resets to the middle.

- If the upper control is selected for upper luffing operation：

Step down the foot switch. Push forward or backward the upper luffing/body rotation control handle and hold. When the handle is pushed forward, the upper luffing rises; when the handle is pushed backward, the upper luffing drops; After releasing the handle, it automatically resets to the middle.

5.8 Emergency operation

Notice
Do not choose more than two functional actions when using the emergency pump, to avoid the overload damage to the emergency pump. Emergency operations supported at present include: Folding arm luffing downward, main arm luffing downward, telescopic arm retraction, forearm luffing downward, turntable rotation.

Emergency function is mainly in order to provide power for emergency action when the machine cannot operate due to electrical fault. Then professional maintenance technicians find the cause of the fault and troubleshoot it.

Perform the following steps to perform emergency operations.

Emergency Operation Procedure:

Upper control operation

(1) Switch the upper and lower control selector switches to the upper control.
(2) Emergency stop switch is open.
(3) Toggle the emergency switch upward and hold.
(4) Step down the foot switch and hold.
(5) Select the corresponding function switch for emergency operation.
(6) Release the emergency switch handle, function switch handle and foot switch.
(7) Press the emergency stop switch.

Lower control operation

(1) Switch the upper and lower control selector switches to the lower control.

(2) Turn on the emergency stop switch.
(3) Toggle the function control/emergency switch upward to select emergency operation and hold.
(4) Select the corresponding function switch for functional action operation.
(5) Release the function control/emergency switch handle, and the function switch handle.
(6) Press the emergency stop switch.

It is forbidden to use the emergency function switch in conventional luffing operation. The switch can only be used when the machine has an electrical fault, otherwise it may cause a serious accident or even casualties.

5.9 Forearm operation

(1) Turn the upper/lower control switch to select the upper/lower control operation；
(2) Step down the foot switch， toggle the handle of the forearm luffing control switch and hold (upper control)， toggle the handle of the forearm luffing control switch and hold (lower control)；
(3) Pull the handle along the upward arrow direction and hold, and the forearm is luffing to the maximum Angle. On the contrary, the forearm luffings downward. After releasing the handle, it automatically resets to the middle.

5.10 Swing axle locking function test

Notice

The locking function test of oscillating axle shall be tested regularly: however, whether it has been tested or not, once the system components are replaced or the system state is uncertain, it shall be tested immediately to avoid accidents.

(1) Place a 150mm (5.9in) cushion block with slope in front of the left front wheel of the equipment.
(2) Select the upper control operation, extend the telescopic boom , and make the equipment in working condition.
(3) Drive the equipment to place the left front tire on the cushion block.
(4) Operate Turntable rotation slowly， to turn the turntable to the right side of the equipment about 90 degrees.
(5) Operate the corresponding functions to make the main boom horizontal and extend the telescopic boom fully.
(6) The auxiliary personnel shall Observe that the force side of the floating cylinder cannot be retracted.
(7) Toggle the "travel direction forced control switch" to drive the equipment down from the cushion block.
(8) The assistant personnel shall check whether the left or right rear wheel is still off the ground at the bottom and keep it lifted.
(9) Operate Turntable rotation slowly, so that the turntable returns to its original position (between two driving wheels). At this time, the floating cylinder should be released, allowing the left front whee to fall back to the ground. (sometimes it

is necessary to walk forward or backward again, so that the empty wheel can fall back to the ground.).

(10) Place a 200mm (7.9in) cushion block with slope in front of the right front wheel.

(11) Drive the equipment to place the left front tire on the cushion block.

(12) Operate Turntable rotation slowly， to turn the turntable to the left side of the equipment about 90 degrees.

(13) Operate the corresponding functions to make the main boom horizontal and extend the telescopic boom fully.

(14) The assistant personnel shall check whether the left or right rear wheel is still off the ground at the bottom and keep it lifted.

(15) Operate Turntable rotation slowly, so that the turntable returns to its original position (between two driving wheels). At this time, the floating cylinder should be released, allowing the left front whee to fall back to the ground. (sometimes it is necessary to walk forward or backward again, so that the empty wheel can fall back to the ground.).

(16) Repeat the above steps to check the front left/right float cylinder.

(17) If the floating cylinder works abnormally, qualified maintenance personnel should eliminate the fault before further operation.

5.11 Shutdown and parking

The procedure for shutting down and parking the machine is as follows：

(1) Drive the machine to a protected area.

(2) Make sure the telescopic boom is fully retracted and lowered beyond the rear wheel.

(3) Total Uninstall.

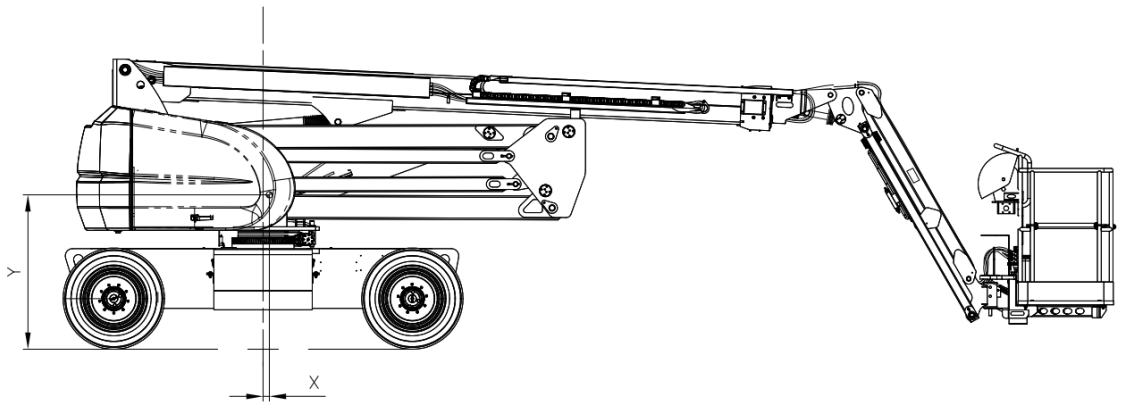
(4) Lower control the key selection switch to the middle position, press the emergency stop switch and pull out the key.

(5) If necessary, the platform controller shall be covered to protect the operation indication label, warning label and control device from the adverse environment.

5.12 Lifting and binding

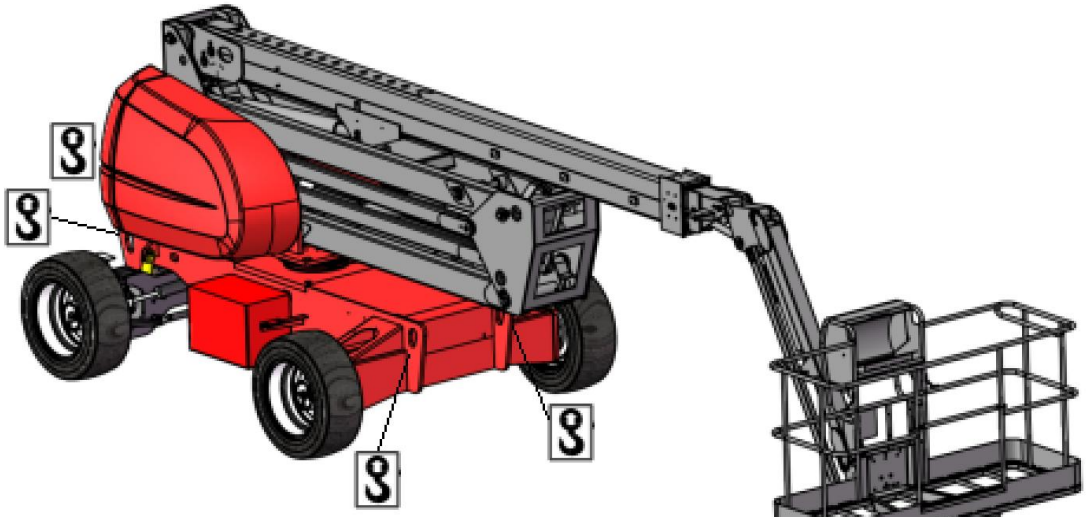
Lifting operation

(1) Check the label to see the total weight of the machine.



Model		HZ210A	
		Lithium battery	lead-acid battery
Total weight		9300kg	9680kg
Gravity centre	x axe	24mm	22mm
	y axe	1265mm	1260mm

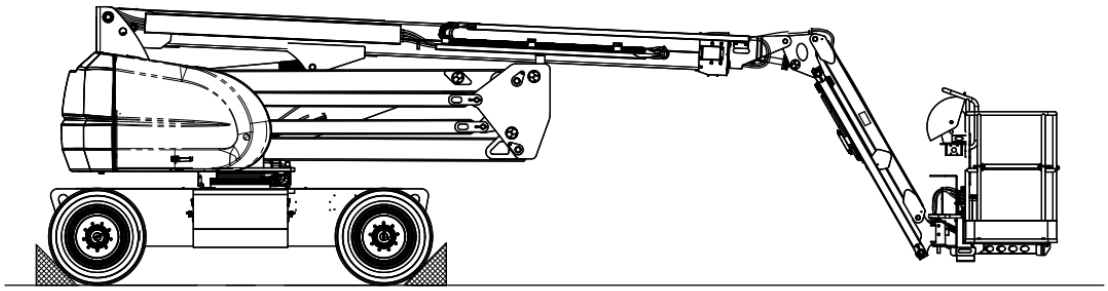
(2) The lifting boom is placed in the retracted state.
(3) Remove all moving parts from the machine.
(4) Keep the machine level.
If the crane must be used for lifting, the lifting device can only be tied at the designed binding hole (where the lifting position label is pasted).

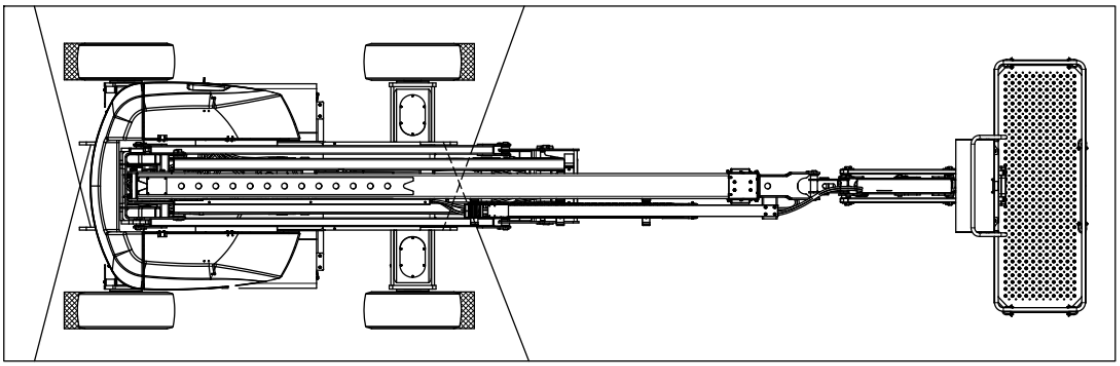


Notice

The lifting holes are located at the front and rear ends of the frame.The four ropes or chains used for lifting must be corrected to keep the machine in a horizontal position during lifting.The bearing capacity of the rope or chain must meet the needs of lifting the machine, otherwise it may lead to serious accidents.

Bundling operation
(1) Check the label to see the total weight of the machine.
(2) Remove all moving parts from the machine.
(3) Plug the front and rear positions of each tire with wedges.
(4) Bind the chassis to the binding hole with a rope or chain of appropriate length.





Notice
When transporting machines. The lifting boom must be in a closed position and securely attached to the truck or trailer. The machine has four bundling holes located at the four corners of the frame.

5.13 Trailer operation

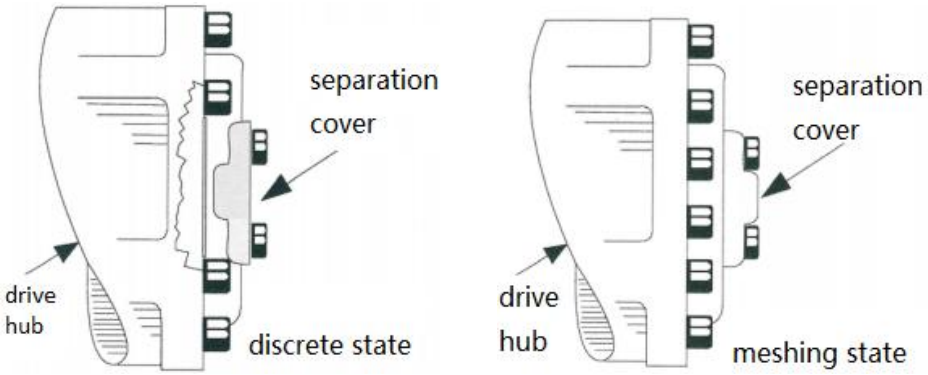
- This machine has no trailer braking device, so the machine is at risk of losing control.Therefore, the traction vehicle must be able to control the machine.
- High speed trailers are prohibited. The maximum traction speed is 8km / h and the maximum traction slope is 25%.
- Illegal operation may lead to serious accidents or personal casualties.

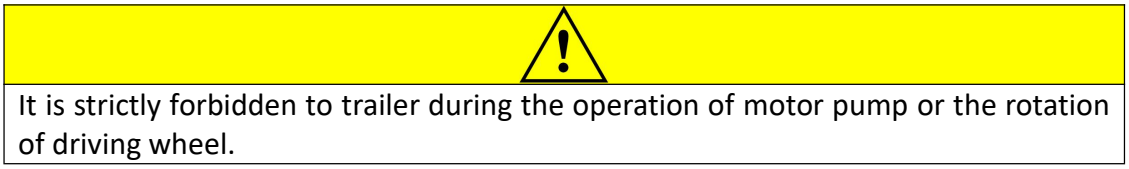
Before traction, complete the following preparations：

(1) The telescopic boom retracts, the lifting boom is lowered in place, and the turntable rotates to zero.

(2) Remove the release cover to separate the drive hub.

(3) After the trailer operation is completed, restore the release cover to re engage the drive hub.





It is strictly forbidden to trailer during the operation of motor pump or the rotation of driving wheel.

Chapter 6 Emergency operation

6.1 Summary

This chapter provides the rules to be observed and the emergency operation in case of emergency during operation on the machine.The entire operation manual of the machine, including this chapter, shall regularly train all personnel related to the machine or those in contact with the machine.

6.2 Emergency traction steps

In case of machine failure or power failure, it may be necessary to move the machine. Unless equipped with appropriate equipment, traction is strictly prohibited.The following steps are only for emergency movement to the appropriate maintenance area.

（1）Block the wheels.

（2）Remove the release cover to separate the drive hub.

（3）Connect suitable equipment, remove the wedge and traction the machine.

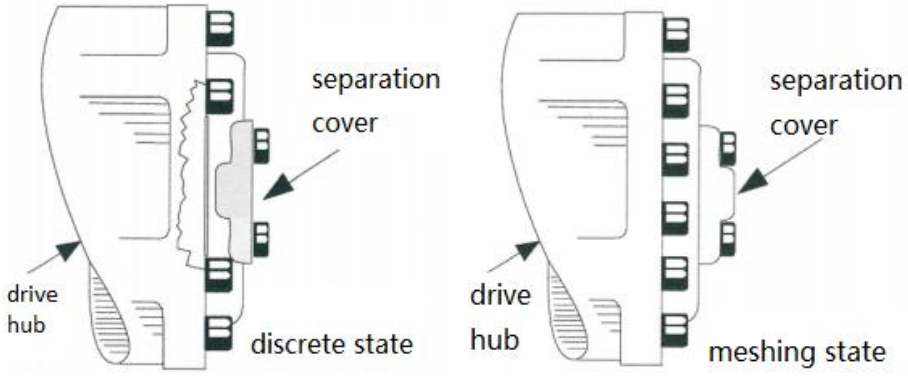
After traction, perform the following steps：

（1）Place the machine on a solid and flat ground.

（2）Chock the wheels.

（3）Remove the release cover and restore the drive hub.

（4）Remove the wedge from under the wheel.



6.3 Emergency control device and installation position

6.3.1 Emergency stop button

(1) There is an emergency stop button on the lower controller panel and the upper controller panel respectively.

Check the emergency stop function before each operation of the machine.If there is any problem, repair it immediately.

(2) In the normal working state, the emergency stop button is in the pop-up position, turn on the power supply of the control system, and the system works normally.In

case of emergency, press any emergency button and the machine will stop running immediately.

6.3.2 Lower controller

The lower controller is located on the right side of the vehicle, and a key selection switch is installed on the lower control panel.The upper control can be switched to the lower control by turning the key switch， The luffing, slewing, telescopic and leveling operations of the main boom are carried out through the lower controller.In actual operation, in case of controller function failure, rescuers or companions can switch to the lower control for operation.

6.3.3 Emergency lowering switch

The machine have two emergency lowering switches, which are located on the left side of the lower controller.This function can be used only when the hydraulic unit or controller fails.The emergency switch can make the telescopic boom and articulation boom rise and lower. See Chapter 5.8 for the operation steps.

6.4 Emergency operation

6.4.1 Lower control operation

Be familiar with using the lower controller for emergency operation in case of emergency.

The lower control operator must be very familiar with the performance characteristics and parameters of the machine, and be familiar with the functions of various control handles and button switches on the lower controller. Relevant training and actual simulation operation shall be carried out to ensure that they can take treatment calmly and freely in case of emergency.

6.4.2 Emergency treatment when the operator is unable to operate the machine

If the operator in the platform has collapsed or is entangled by ropes, etc., and cannot operate the machine:

(1) Other personnel can only operate the machine through the ground control device as required.
(2) Other personnel on the platform please continue to operate, and the person on the ground will slowly lower the lifting boom through the emergency lowering button.
(3) Forklifts, cranes or other devices can be used to transfer people on the platform and keep the machine stable.

6.4.3 Emergency treatment of work platform or lifting boom stuck at height

If the working platform or main boom is stuck by buildings and equipment at height, stop the machine immediately. Do not attempt to operate the machine through the upper controller or lower controller to get out of danger.First, transfer all personnel and tools of the working platform to a safe place by other means, then lift the restrictions of the working platform by other methods or with the help of other equipment, so that the equipment can move freely, and then operate the machine through the lower controller.

6.4.4 Inspection after machine overhaul

After the overhaul of the machine after the accident, first carefully check whether the various functions of the machine are normal through the lower controller, and then switch to the upper controller for inspection.For safety, the lifting height shall not exceed 3M unless it is confirmed that the damaged parts have been repaired in good condition.

6.4.5 Manual rotation unlocking

When the platform is above a structure or obstacle, the total power failure occurs. After manual rotation and unlocking, the boom and turntable assembly can be manually rotated.When operating the manual rotation unlocking, according to the following steps:

(1) Using a 22 (7 / 8) mm (inch) socket and ratchet spanner, position the nut on the rotating worm gear on the left side of the machine;
(2) Use gloves to pull the nut in the corresponding direction.

6.5 Accident notification

In order to better understand and protect your machinery and equipment, HANGCHA Group. requires that once an accident occurs during the use of HANGCHA products, regardless of any reason, equipment damage and casualties, please inform HANGCHA Group immediately, Otherwise, if HANGCHA Group is not notified within 48 hours of the accident, HANGCHA Group has the right to think that you have automatically waived the warranty right of the accident machine, and the warranty period will automatically terminate, regardless of the remaining warranty period.
You can inform HANGCHA group by telephone, fax, email, etc.

Chapter 7 Normal maintenance

7.1 Summary

The purpose of this chapter is to provide the operator with additional information required to correctly operate the box and maintain the machine.The maintenance part of this chapter is only used to assist the operator in daily maintenance , Not as preventive maintenance and inspection Icon.

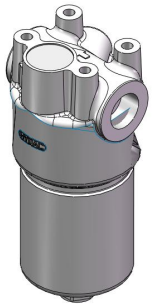
7.2 Lubrication specification

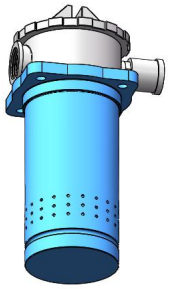
Notice
Lubrication cycle are based on machine operation under normal conditions. When the equipment operates in multi shift system or in harsh environment, the lubrication frequency shall be increased accordingly.

Lubrication specification

Lubrication device	Capacity	Suggestion
Hydraulic tank	60L	Shell 46# hydraulic oil
=Wheel reducer	0.8L	Shell Spirax a80w90
General lubrication Lubrication of body gear bearing bush		High performance lubricant

7.3 Replace the filter





Name		Replace cycle
filter	GTHZ210C-600501-G00	100h
filter	GTHZ210C-600200-G00	100h

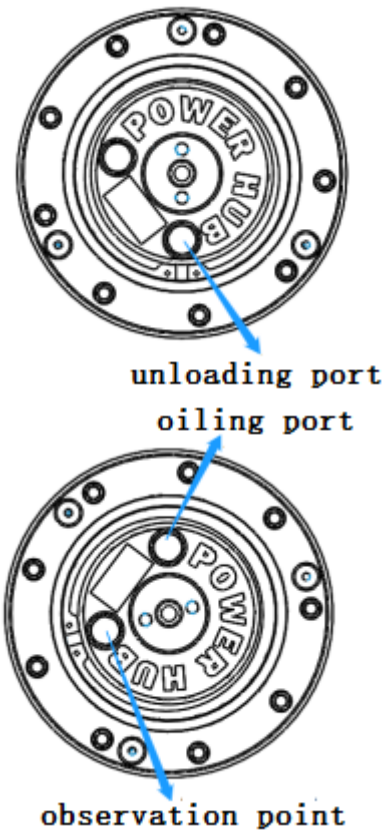
Notice
When replacing any filter, it is recommended to replace all filters on the equipment at the same time.

7.4 Operator maintenance

7.4.1 Reducer

Changing the gear lubricating oil of the reducer is very important for prolonging the service life of the machine and maintaining the good operating performance of the machine. Irregular replacement of the lubricating oil will lead to the decline of the performance of the equipment. If the equipment is still running under insufficient lubrication, it will cause damage to the parts and components.

(1) Park the equipment on level ground.
(2) Confirm the reducer to be maintained and drive the equipment to make any oil filling plug on the reducer at the lowest position.
(3) Unscrew the two oil filling plugs on the reducer and drain the oil.
(4) Drive the equipment so that any oil filling plug on the reducer is in the highest position and the other is in the horizontal position.
(5) Inject lubricating oil into the reducer from the upper oil filling hole until the lower surface of the oil filling hole in the horizontal position is flat.
(6) Apply thread sealant to the oil filler plug, then screw the oil filler plug back to the oil filler hole of the reducer and tighten it.
(7) Repeat the above operation for other reducers.



Lubrication of wheel reducer			
Lubrication	Oil filling plug	**capacity**	Each requires 0.8L
Lubricating oil	Shell Spirax A80W90, or other gear lubricants meeting the applicable API classification level Gl5.		
Lubrication cycle	Check the oil level once every 100 hours; Every two years		

7.4.2 Lubrication of slewing ring and worm gear reducer

The annual lubrication planning of slewing ring and worm gear reducer is very important to maintain the good performance of the machine and prolong the service life of the machine. Running the equipment under insufficient lubrication will cause damage to parts and components.

(1) Lift the jib and place a wedge on the lifting cylinder, and then slowly lower the jib onto the cylinder wedge.

Danger of crushing.When lowering the boom, do not put your hands close to the lifting cylinder and all moving parts.

(2) Align the nozzle of the grease gun with the slewing bearing in the middle of the turntable.

(3) Spray butter on the tooth surface, then turn the turntable at a certain angle and repeat the above actions until the whole circle of slewing ring is coated with butter.

Do not grease the slewing bearing too much.
Too much butter will squeeze the sealing ring outside the slewing ring.

(4) Remove the safety wedge and lower the lifting boom to the retracted position.

(5) Align the nozzle of the grease gun with the drive chamber of the worm gear reducer.

(6) Add butter until it overflows.

(7) Lubricate the exposed slewing ring teeth with butter.

Lubrication of slewing ring			
Lubrication	4 grease fittings	**capacity**	As needed
Lubricating oil	Multi effect grease	**Lubrication cycle**	3 months or 150 hours of operation
Lubrication of external teeth of slewing ring			
Lubrication	Slewing ring external gear teeth	**capacity**	As needed
Lubricating oil	Open gear grease	**Lubrication cycle**	50 hours or per month
Lubrication of worm gear reducer			
Lubrication	2 grease fittings	**capacity**	As needed
Lubricating oil	Multi effect grease	**Lubrication cycle**	1000 hours or per year

7.4.3 Testing and changing hydraulic oil

The testing and replacement of hydraulic oil is very important to maintain the good performance of the machine and prolong the service life of the machine.Polluted hydraulic oil and filter may cause the machine to run smoothly, and continued operation may cause damage to parts.In the case of poor working environment, the frequency of replacing hydraulic oil should be increased.

Notice

The hydraulic oil used in this machine is the hydraulic oil with the same quality grade as Shell hydraulic oil.Before changing the hydraulic oil, it is very important to consult the local supplier on how to select the appropriate hydraulic oil specification.If the hydraulic oil has not been replaced within two years, the hydraulic oil shall be tested every quarter. If the test is unqualified, the hydraulic oil shall be replaced in time.

When the lifting boom is retracted, replace the hydraulic oil according to the following steps:

(1) Remove the plug from the hydraulic tank.
(2) Put all the oil into a suitable container.
(3) Clean the hydraulic tank.
(4) Replace the oil inner filter screen. (refer to the replacement steps of oil suction filter components)
(5) Replace the oil outer filter screen. (refer to the replacement steps of oil suction filter components)
(6) Install the oil drain plug.
(7) Fill the oil tank with a filtering accuracy is 10 μ until the oil is 2 inches deep and not too full.
(8) Put a suitable container under the LR port of the hydraulic block, then remove the pipping at the LR port and use M16x1 5 plug.
(9) Ensure that the emergency stop is open, use the lower control to perform the upward luffing operation of the telescopic boom, and put the oil in the oil cylinder into a suitable container.
(10) Stop and restore the pipping.
(11) Put a suitable container under the LL port of the hydraulic block, then remove the pipping at the LL port and use M16x1 5 plug.
(12) Use the lower control to operate the lower luffing and the upper luffing, and put the oil in the hydraulic cylinder into the container.
(13) Shut down and restore the oil pipe to LL.
(14) Put a suitable container under port P1B of the hydraulic block, then remove the pipping at port P1B and plug it with M16x15 plug.
(15) Use the lower control to carry out the telescopic operation of the telescopic boom, and put the oil in the cylinder into the container.
(16) Shut down and restore the oil pipe to the main valve P1B port.

7.4.4 Replace hydraulic oil filter

Regular replacement of hydraulic oil filter is very important to maintain good performance and prolong the service life of the machine.If the hydraulic filter is polluted or the filter screen is blocked, the operating performance of the machine will decline, and continued use will cause damage to parts and components.When the environmental conditions are too bad, the filter replacement cycle should be shortened.

Replacement steps of oil filter：

1) Clean the area near the hydraulic tank cover plate.

2) Loosen and remove the 20 bolts on the hydraulic oil tank cover plate with a torque spanner, remove the hydraulic oil tank cover plate, and then remove the filter from the oil filter.

3) Screw in a new filter on the oil filter.

4) Replace the oil tank cover plate and tighten 20 bolts.

5) Replacement cycle: every two years or 1200 hours of operation.Clean or replace the filter when changing the hydraulic oil.

Replacement steps of oil return filter：

1) Clean the area around the filter and remove the filter cover.

2) Take out the filter element from the filter chamber.

3) Install the new filter element into the filter.

4) Replace the filter cover plate and remove the hydraulic oil spilled during the replacement of the filter element.

5) Replacement cycle: replace the filter element when the machine runs for 50h for the first time, and then replace it every 6 months or when the machine runs for 300h, or when there is a signal indicating that the filter element needs to be replaced.

7.4.5 Battery maintenance

The reaction products of lead-acid batteries are flammable and explosive.In order to avoid casualties caused by explosion, it is forbidden to smoke or keep the battery close to fireworks during battery maintenance.During the maintenance of lead-acid batteries, it is generally necessary to wear eye masks.

1) Open the battery cover plate and find the battery terminal and exhaust cap.

2) Remove the battery cables on the battery terminals one by one, starting from the negative pole.Clean the cable with neutral solution (such as baking soda, water or ammonia) and wire brush.Replace the cable and / or cable clamp bolts as necessary.

3) Clean the battery terminal with a brush and reconnect the cable to the terminal.Coat non-contact surfaces with mineral oil or vaseline.

4) After cleaning the terminal posts of all cable boxes, confirm that all cables are correctly positioned and not clamped.Close the battery cover.

- Do not change any electrical system components unless you are familiar with the electronic control system.
- When checking the battery, it is forbidden to connect the terminal of the battery with metal objects.Otherwise, it will cause short circuit, fire and even explosion.
- Do not charge the frozen battery, otherwise it may cause explosion.
- The lead-acid battery contains sulfuric acid, which will cause certain injury if it is accidentally contacted.Therefore, when working near the lead-acid battery, you need to wear a mask to prevent acid from splashing into your eyes.Once the acid splashes on the eyes, wash them with clean water immediately and seek medical attention in time.At the same time, it is also necessary to wear protective gloves and protective clothing during operation to avoid acid injury to the skin.If acid splashes on the skin, rinse immediately with clean water.
- Before repairing the electrical system, remove the battery wiring.When removing other wiring, first remove the grounding wire.When rewiring, finally connect the grounding wire.

7.4.6 Tire and wheel maintenance

Tire damage

For polyurethane foam tires, the company recommends that when the following situations occur, they should be stopped immediately and ready to replace the tire or tire assembly.

- Smooth and uniform cuts in the ply with a total length of more than 75 cm (3 inches).
- Cracks or cracks (irregular edges) exceeding 25 cm (1 inch) in any direction in the ply.
- Perforations over 2.5cm (1 inch) in diameter.
- Any damage to the tire layer.

If the tire is damaged but does not meet the above standards, the tyre must be inspected every day to ensure that the damaged part does not exceed the allowable standard.

Tire replacement

HANGCHA group recommends using tires with the same size, brand and level as the original tires of the machine for replacement.Please refer to the parts manual of the corresponding model for the part number of the tire of the specific model.If HANGCHA tires are not used, the replacement tires used shall meet the following characteristics:

- Tier / load rating and size equal to or better than original tires.
- The tread grounding width is equal to or better than the original tire.
- The wheel diameter, width and compensation size are equal to or better than the original tires.
- These applications (including inflation pressure and maximum tire load) are permitted by the tire manufacturer.Without the special approval of Hang Cha group, no tire filled or solid tire components should be replaced with pneumatic tyres..When selecting and installing replacement tires, ensure that all tire pressures reach the pressure specified by HANGCHA group.Due to the size difference between different brands of tires, two tires on the same axle should use the same brand.

Wheel replacement

The rims installed on each product model are strictly designed according to the stability requirements such as wheel track, tire pressure and load capacity.Changing the rim width, center position and diameter without the written advice of the factory may lead to unstable and dangerous conditions.

Wheel installation

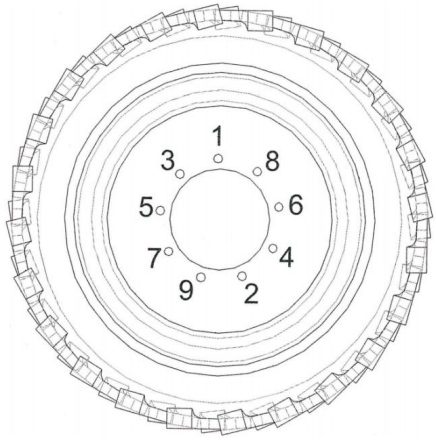
It is extremely important to use and maintain proper wheel mounting torque.

The tire nuts shall be installed and maintained with appropriate torque to prevent wheel loosening, hub bolt damage and wheel disengagement from the axle. Ensure that only matching hub bolts and tire nuts are used.

The tire nuts shall be installed and maintained with appropriate torque to prevent wheel loosening, hub bolt damage and wheel disengagement from the axle. Ensure that only matching hub bolts and tire nuts are used.

Tighten the tire nuts to the appropriate torque to prevent the wheels from loosening.Tighten the nut with spanner.If you do not have a torque spanner, use a socket spanner to tighten the nut, and then immediately ask the service station or dealer to tighten the nut to the correct torque.Over tightening will cause the hub bolts to break or permanently deform.The correct procedure for fastening the wheel is as follows:

(1) Screw on all nuts by hand to prevent thread damage.Do not use lubricant on threads or nuts.
(2) Tighten the nuts in the following order:



(3) The tightening of nuts shall be carried out in steps. Please refer to the wheel torque table and tighten the nuts in the recommended sequence.

Torque application sequence		
First time	Second time	Third time
60N·m	125N·m	250N·m

(4) The wheel nuts shall be tightened after the first 50h operation or after each wheel removal. Check the torque every 3 months or 150 hours of operation.

Chapter 8 Schematic

8.1 Summary

Listed in this chapter are electrical schematics and hydraulic schematics, which can be used to view most possible operating problems.

8.2 Fault diagnosis

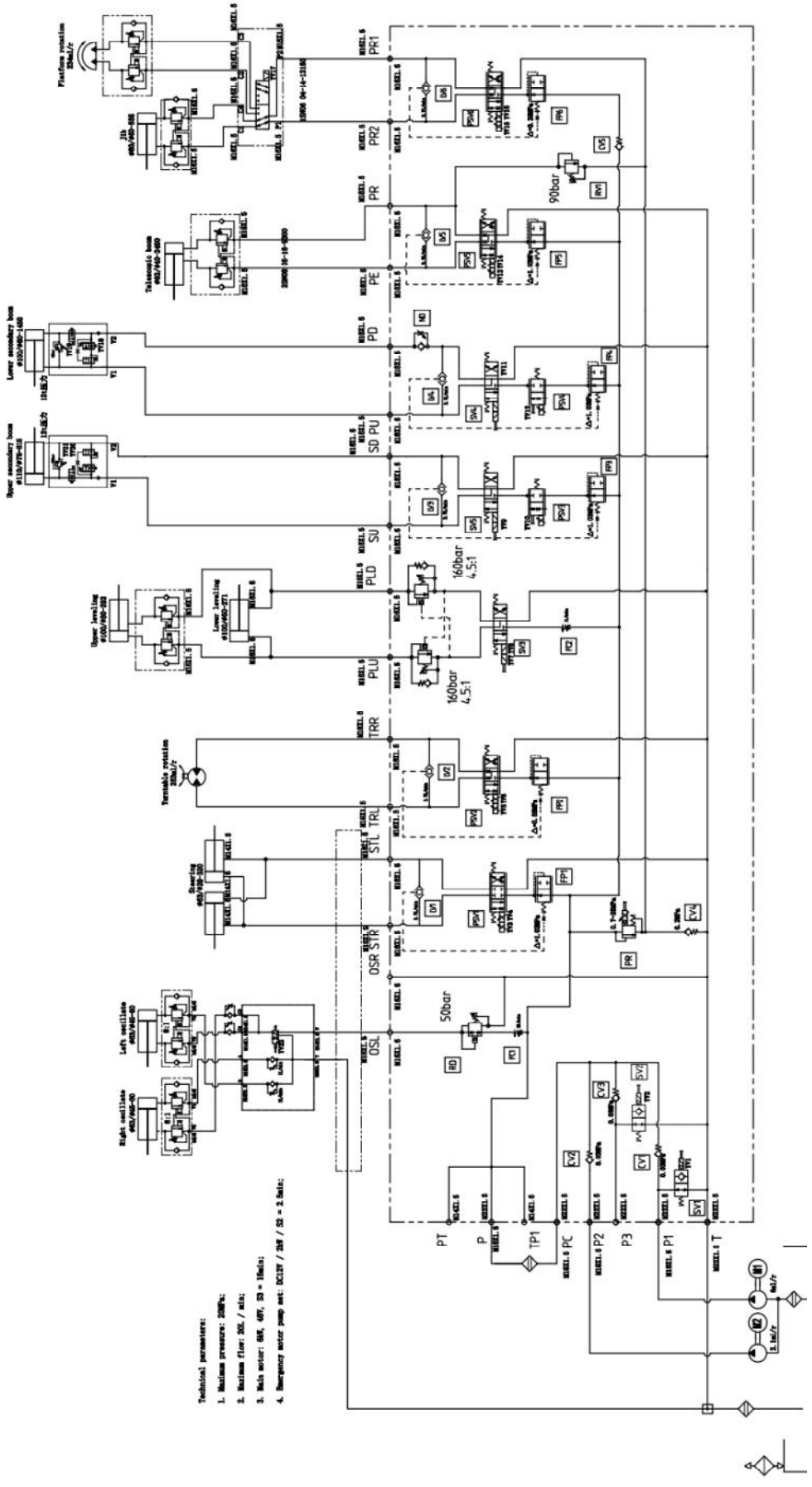
Note that familiarity with equipment and related systems is necessary.At the same time, it should be realized that the main problems that may occur in the machine are concentrated in the hydraulic and electrical systems.

The principle of fault diagnosis for any hydraulic circuit and electric control circuit is to determine whether the circuit is short of hydraulic oil and whether it is powered on.It can be determined by unlocking the bypass valve, allowing hydraulic oil to enter the function valve, and then unlocking the function valve mechanically.If the function is normal, the problem is in the control circuit.

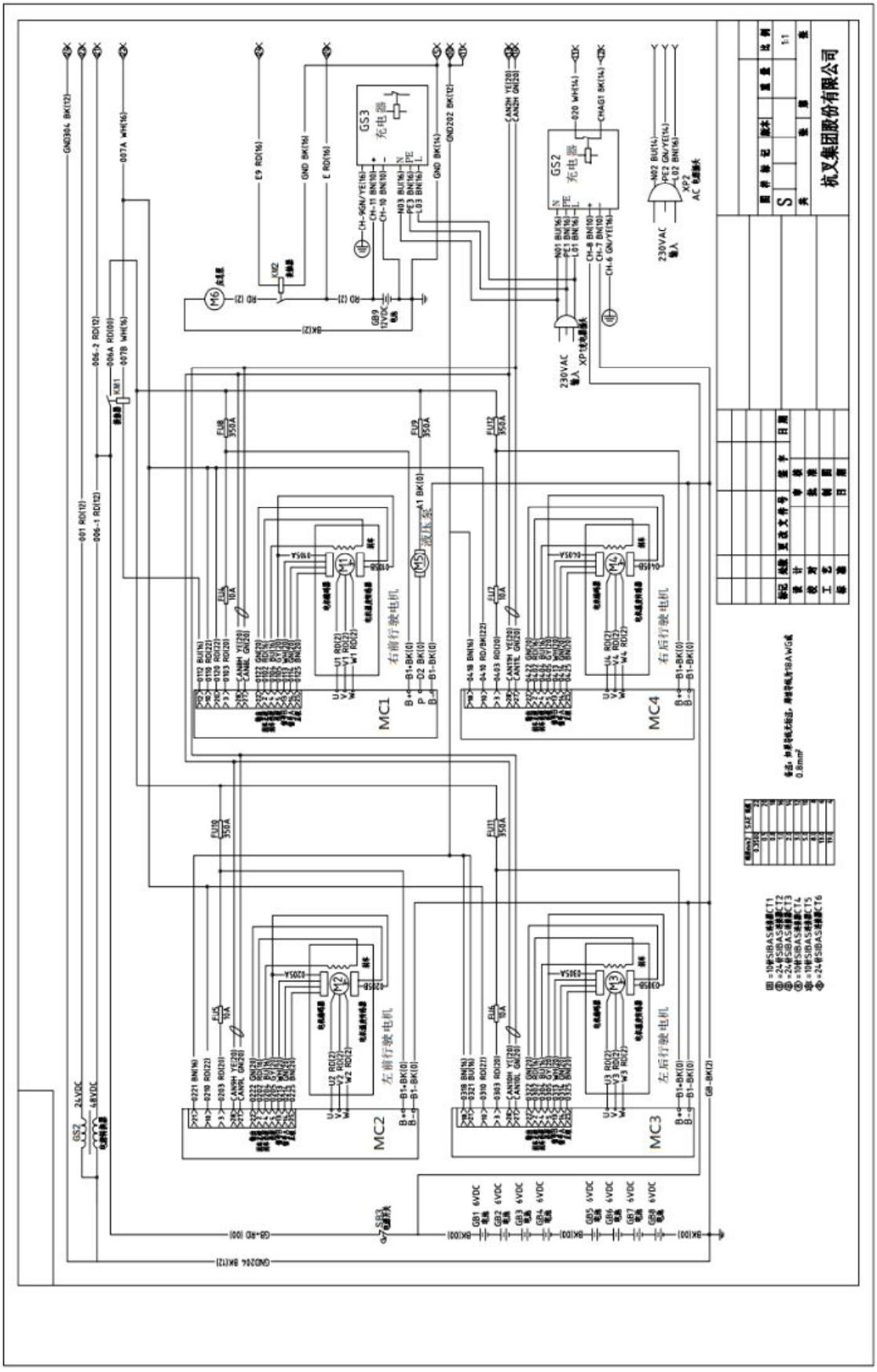
8.3 Hydraulic operation circuit inspection

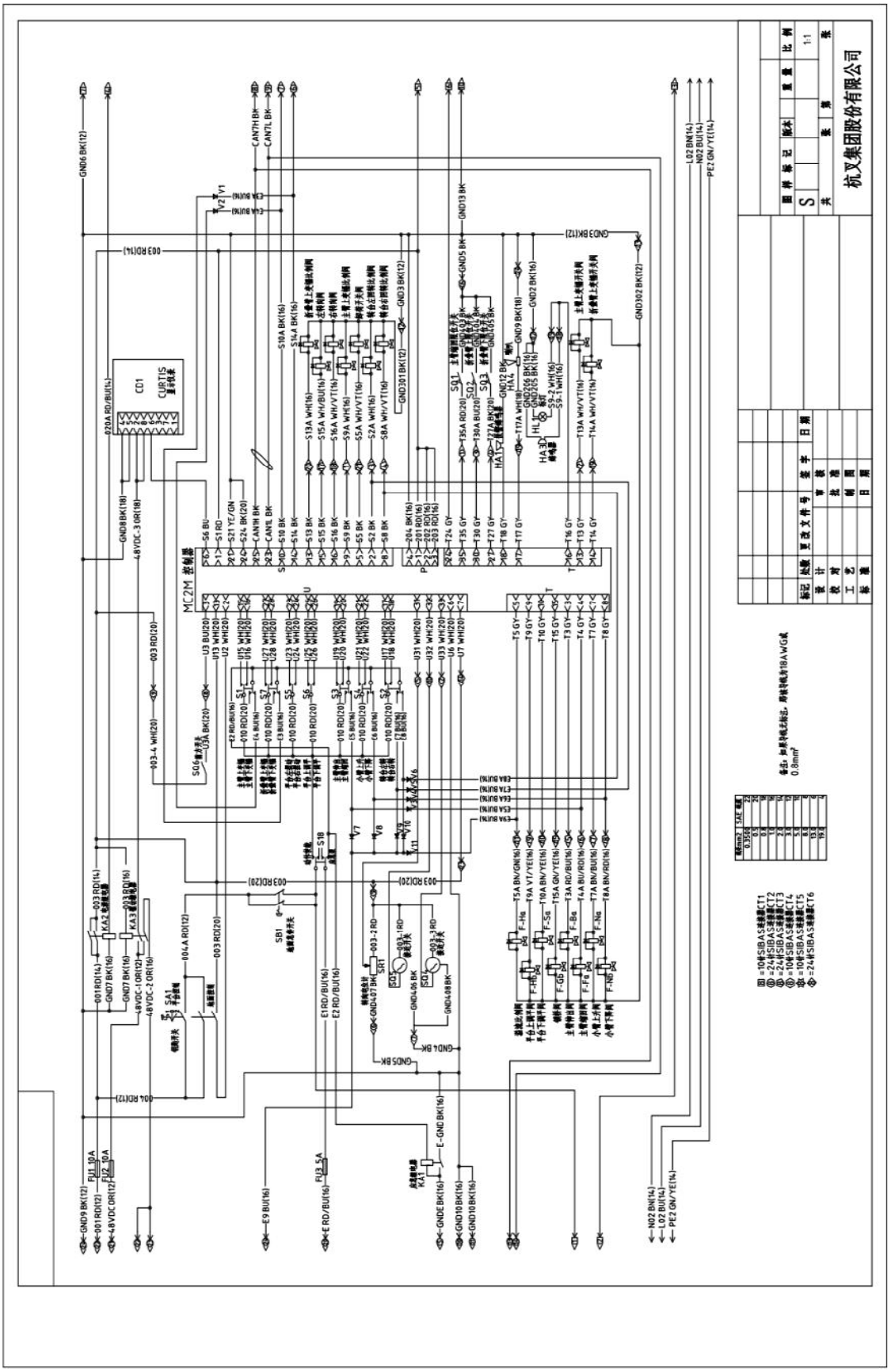
At the beginning of the problem analysis, the first is the power source (pump).If the pump can be used, systematically check the circuit components from the control components.If you need help during fault diagnosis, please refer to the following hydraulic schematic diagram and electrical schematic diagram.

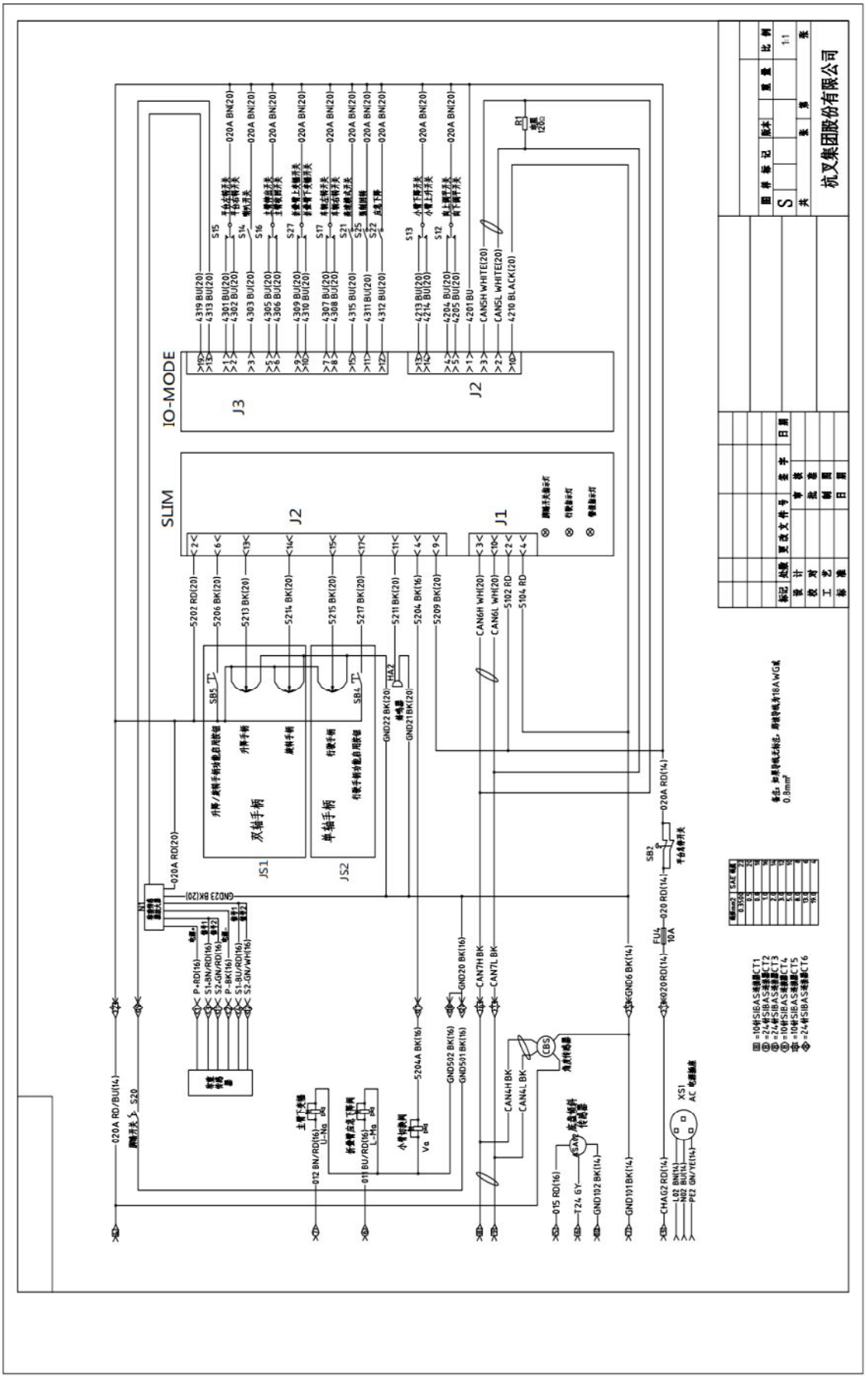
8.3.1 Hydraulic schematic diagram



8.3.2 Electrical schematic diagram




杭叉集团股份有限公司
MC2M
CD1
CURTIS


IO-MODE
SLIM
J3
J2
J1
J2
JS1
JS2
双轴手柄
单轴手柄
杭叉集团股份有限公司

Chapter 9 Inspection and maintenance record form

Date	Content	Recorder

Regular maintenance inspections must be carried out every day, every quarter, every six months and every year. Use this form to help you comply with the routine maintenance plan.

Table Maintenance schedule

Inspection interval	Inspection procedure
Every day or every 8 hours	A
Quarterly or every 250 hours	A+B
Every year or every 1000 hours	A+B+C

Maintenance inspection report

- The maintenance inspection report is divided into three sections (A, B and C) according to the maintenance procedure, the time requirements of the maintenance plan and the requirements of the maintenance procedure.
- The maintenance inspection report contains a checklist for each type of periodic inspection.
- Copy the maintenance inspection report for each inspection. The completed form shall be kept for at least 10 years or until the machine is out of use or at the request of the machine owner / company.
- Use the table below to record the results. After completing each part, tick the corresponding box.
- If any inspection result is "no", the machine must be stopped, and the machine must be rechecked after the maintenance is completed, and a mark must be ticked in the box marked "repaired". Select the appropriate inspection procedure according to the inspection type.

Maintenance check report					
Model					
S/N					
Check list A					
Item	Description	YES	NO	REPAIRED	Comment
A-1	Check all the manuel				
A-2	Check all the stickers				
A-3	Check for damaged, loose or missing parts				
A-4	Check the oil level				
A-5	Check any oil leakage				
A-6	Check all the founctions				
A-7	Check the battery				
A-8	Check every 30 days				

Maintenance check report					
Check list B					
Item	**Description**	**YES**	**NO**	**REPAIRED**	**Comment**
B-1	Check and replace the filter of hydraulic oil tank				
B-2	Check the rim, tyre and their fasterner				
B-3	Check the hydraulic oil				
B-4	Replace the high pressure filter				
B-5	Check the angle sensor and switch				
B-6	Check the oil level of reducer				
B-7	Check rotary support connection bolts				
B-8	Remote lubrication rotary support				
B-9	Check platform swing cylinder fasteners				
B-10	Check cylinder deviation				
B-11	Floating cylinder exhaust and balance valve lock inspection				
B-12	Check wiring				
B-13	Check the battery				
B-14	Test the travelling speed				
B-15	Check emergency descent function				
B-16	Check the tilt protection system				

Maintenance check report					
Check list C					
Item	**Description**	**YES**	**NO**	**REPAIRED**	**Comment**
C-1	Replce the gear oil of drive reducer				
C-2	Replace the gear oil of rotary reducer				
C-3	Replace the hydraulic oil				
C-4	Replace the filter of hydraulic oil tank				
C-5	Check the arm blocks				

EC Declaration of Conformity

WE

HANGCHA GROUP CO., LTD.
666 Xiangfu Road, Hangzhou, Zhejiang, China

Declare that the product described is in conformity with

The Machinery Directive: 2006/42/EC
The Electromagnetic compatibility Directive: 2014/30/EU

Applicable Harmonized standards:
EN ISO 12100:2010，EN 280-1:2022, EN 60204-1 :2018

Product Name: Mobile elevating working platform
Product Model: GTHZ120, HZ120P, GTHZ170, HZ170P, GTHZ170C, HZ210A
Trade Mark:

series number:as per order

Authorised Representative and technical documentation for the machinery is available from and person authorized to compile the technical file:
Hangcha Europe GmbH
Mariechen-Graulich-Straße 12a,65439 Flörsheim am main Germany

Notified Body: SGS Italia S.p.A (Appointment Number 1381)
Address: Via Caldera, 21 20153 Milano 02/73931
The number of the EC-Type certificate: XXXX

Responsible for making this declaration is the

Manufacturer ■

Authorized representative established within the EU □

2023-12-14 Linan,Hangzhou,China	GuangYao Hou (侯光耀) Technical manager	
Issue date and place	**Name and position**	**Signature and company stamp**