

SKYBOOM

OPERATION AND MAINTENANCE MANUAL

For STL-19J/22J/26J/28J



CHANGSHA SKYBOOM HEAVY INDUSTRY CO. LTD

WARNING

Please read, understand and obey these safety rules and operating instructions before operating this machine. Only trained and authorized personnel shall be permitted to operate this machine.

This manual should be considered a permanent part of your machine and should remain with the machine at all times. If you have any questions, contact us.

Contact information:

Changsha Skyboom Heavy Industry Co. Ltd

Tel: 0086-731-86171759

E-mail: hcs@skyboom.cn

Website: www.skyboom.cn

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1. Introduction

Owners, Users and Operators:

Thank you for choosing our machine for your application. Our number one priority is user safety, which is best achieved by our joint efforts. We feel that you make a major contribution to safety if you, as the equipment users and operators:

- A. Comply with employer, job site and governmental rules.
- B. Read, understand and follow the instructions in this and other manuals supplied with this machine.
- C. Use good safe work practices in a commonsense way.
- D. Only have trained/certified operators, directed by informed and knowledgeable supervision, running the machine.



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

Do Not Operate Unless:

- ☐ You learn and practice the principles of safe machine operation contained in this operator's manual.
 - 1 Avoid hazardous situations.Know and understand the safety rules before going on to the next section.
 - 2 Always perform a pre-operation inspection.
 - 3 Always perform function tests prior to use.
 - 4 Inspect the workplace.
 - 5 Only use the machine as it was intended.
- ☐ You read, understand and obey the manufacturer's instructions and safety rules—safety and operator's manuals and machine decals.
- ☐ You read, understand and obey employer's safety rules and job site regulations.
- ☐ You read, understand and obey all applicable governmental regulations.
- ☐ You are properly trained to safely operate the machine.

Intended Use

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

Safety Sign Maintenance

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

Hazard Classification

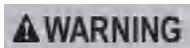
Decals on this machine use symbols, color coding and signal words to identify the following:



Safety alert symbol—used to alert you to potential personal injury hazards. Obey all safety messages that follow this symbol to avoid possible injury or death.



Indicates a hazardous situation which, if not avoided, will result in death or serious injury.



Indicates a hazardous situation which, if not avoided, could result in death or serious injury.

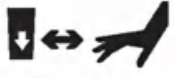
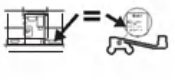


Indicates a hazardous situation which, if not avoided, could result in minor or moderate injury.



Indicates a property damage message.

2. Symbol and Hazard Pictorials Definitions

				
Crush hazard	Crush hazard	Electrocution hazard	Explosion hazard	Full hazard
				
Keep away from moving parts	Keep away from path of moving platform	Keep off this surface	Maintain required clearance	No smoking No flame Stop engine
				
Only trained maintenance personnel should access compartments	Platform downhill: 1 Retract boom 2 Lower boom	Platform downhill: 1 Lower boom 2 Retract boom	Read the operator's manual	Replace tires with tires of same specification
				
See serial label for rated capacity	Tip-over hazard	Tip-over hazard	Tip-over hazard	Tip-over hazard
				
Avoid contact	Lanyard anchorage points	Wheel load	Electrocution hazard	Read the service manual
				
Weight of welder reduces capacity	Keep open flames away	Explosion / Burn hazard	Explosion hazard	Do not use ether or other high energy starting aids on machines equipped with glow plugs

3. Personal Fall Protection

- ✓ Personal fall protection equipment (PFPE) is required when operating this machine.
- ✓ Occupants must wear a safety belt or harness in accordance with governmental regulations. Attach the lanyard to the anchor provided in the platform.
- ✓ Operators must comply with employer, job site and governmental rules regarding the use of personal protective equipment.
- ✓ All PFPE must comply with applicable governmental regulations, and must be inspected and used in accordance with the PFPE manufacturer's instructions.

4. Work Area Safety

Electrocuting Hazards

This machine is not electrically insulated and will not provide protection from contact with or proximity to electrical current.



Obey all local and governmental regulations regarding required clearance from electrical power lines. At a minimum, the required clearance contained in the chart below must be followed.

Line Voltage	Required Clearance
0 to 50KV	3.05 m
50 to 200KV	4.60 m
200 to 350KV	6.10 m
350 to 500KV	7.62 m
500 to 750KV	10.67 m
750 to 1000KV	13.72 m

Allow for platform movement, electrical line sway or sag, and beware of strong or gusty winds.



Keep away from the machine if it contacts energized power lines. Personnel on the ground or in the platform must not touch or operate the machine until energized power lines are shut off.

Do not operate the machine during lightning or storms.

Do not use the machine as a ground for welding.

Tip-over Hazards

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

Model	STL-19J	STL-22J	STL-26J	STL-28J
Maximum platform capacity	250 kg	300kg/460kg	300kg/460kg	300kg/460kg
Maximum occupants	2	2	2	2

Note: See the serial label for the maximum rated load.

The weight of options and accessories, such as pipe cradles, panel cradles and welders, will reduce the rated platform capacity and must be subtracted from the platform capacity. See the decals with the options and accessories.

If using accessories, read, understand and obey the decals, instructions and manuals with the accessory.



Do not raise or extend the boom unless the machine is on a firm, level surface.



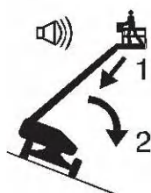
Do not depend on the tilt alarm as a level indicator. The tilt alarm sounds in the platform only when the machine is on a severe slope.

If the tilt alarm sounds when the platform is raised, use extreme caution. The machine not level indicator light will come on and the drive function in one or both directions will not operate. Identify the condition of the boom on the slope as shown below. Follow the steps to lower the boom before moving to a firm, level surface. Do not rotate the boom while lowering.



If the tilt alarm sounds with the platform uphill:

1. Lower the boom.
2. Retract the boom.



If the tilt alarm sounds with the platform downhill:

1. Retract the boom.
2. Lower the boom.



Do not raise the boom when wind speeds may exceed 12.5 m/s. If wind speeds exceed 12.5 m/s when the boom is raised, lower the boom and do not continue to operate the machine.

Do not operate the machine in strong or gusty winds. Do not increase the surface area of the platform or the load. Increasing the area exposed to the wind will decrease machine stability.



Use extreme care and slow speeds while driving the machine in the stowed position across uneven terrain, debris, unstable or slippery surfaces and near holes and drop-offs.

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

Do not use the machine as a crane.

Do not push the machine or other objects with the boom.

Do not contact adjacent structures with the boom.

Do not tie the boom or platform to adjacent structures.

Do not place loads outside the platform perimeter.



Do not push off or pull toward any object outside of the platform.

Maximum allowable manual force – 400 N

Do not alter or disable machine components that in any way affect safety and stability.

Do not replace items critical to machine stability with items of different weight or specification.

Do not replace factory-installed tires with tires of different specification or ply rating.

Do not replace factory-installed foam-filled tires with air-filled tires. Wheel weight is critical to stability.

High flotation tires must be factory-installed. Do not replace standard factory-installed tires with high flotation tires.

Do not modify or alter an aerial work platform without prior written permission from the manufacturer. Mounting attachments for holding tools or other materials onto the platform, toeboards or guard rail system can increase the weight in the platform and the surface area of the platform or the load.



Do not place or attach fixed or overhanging loads to any part of this machine.



Do not place ladders or scaffolds in the platform or against any part of this machine.

Do not transport tools and materials unless they are evenly distributed and can be safely handled by person(s) in the platform.

Do not use the machine on a moving or mobile surface or vehicle.

Be sure all tires are in good condition, air-filled tires are properly inflated and lug nuts are properly tightened.

Do not use the platform controls to free a platform that is caught, snagged or otherwise prevented from normal motion by an adjacent structure. All personnel must be removed from the platform before attempting to free the platform using the ground controls.





Operation on Slopes Hazards

Do not drive the machine on a slope that exceeds the maximum uphill, downhill or side slope rating of the machine. Slope rating applies only to machines in the stowed position.

Maximum slope rating, stowed position, 2WD

Platform downhill	30% (17°)
Platform uphill	15% (9°)
Side slope	25% (14°)

Maximum slope rating, stowed position, 4WD

Platform downhill	45% (24°)
Platform uphill	30% (17°)
Side slope	25% (14°)

Note: Slope rating is subject to ground conditions and adequate traction. See Driving on a Slope in the Operating Instructions section.



Fall Hazards

Occupants must wear a safety belt or harness in accordance with governmental regulations. Attach the lanyard to the anchor provided in the platform.



Do not sit, stand or climb on the platform guard rails. Maintain a firm footing on the platform floor at all times.

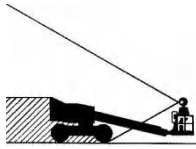


Do not climb down from the platform when raised.
Keep the platform floor clear of debris.

Lower the platform entry mid-rail or close the entry gate before operating.

Do not enter or exit the platform unless the machine is in the stowed position and the platform is at ground level.

Collision Hazards



Be aware of limited sight distance and blind spots when driving or operating.
Be aware of the boom position and tail swing when rotating the turntable.



Check the work area for overhead obstructions or other possible hazards.



Be aware of crushing hazards when grasping the platform guard rail.

Operators must comply with employer, job site and governmental rules regarding use of personal protective equipment.

Observe and use the color-coded direction arrows on the platform controls and drive chassis for drive and steer functions.



Do not lower the boom unless the area below is clear of personnel and obstructions



Limit travel speed according to the condition of the ground surface, congestion, slope, location of personnel, and any other factors which may cause collision.

Do not operate a boom in the path of any crane unless the controls of the crane have been locked out and/or precautions have been taken to prevent any potential collision.

No stunt driving or horseplay while operating a machine.



Bodily Injury Hazard

- ✓ Always operate the machine in a well-ventilated area to avoid carbon monoxide poisoning.
- ✓ Do not operate the machine with a hydraulic oil or air leak. An air leak or hydraulic leak can penetrate and/or burn skin.
- ✓ Improper contact with components under any cover will cause serious injury. Only trained maintenance personnel should access compartments. Access by the operator is only advised when performing a pre-operation inspection. All compartments must remain closed and secured during operation.



Explosion and Fire Hazards

- ✓ Do not start the engine if you smell or detect liquid petroleum gas (LPG), gasoline, diesel fuel or other explosive substances.
- ✓ Do not refuel the machine with the engine running.
- ✓ Refuel the machine and charge the battery only in an open, well-ventilated area away from sparks, flames and lighted tobacco.
- ✓ Do not operate the machine or charge the battery in hazardous locations or locations where potentially flammable or explosive gases or particles may be present.
- ✓ Do not spray ether into engines equipped with glow plugs.



Damaged Machine Hazards

- ✓ Do not use a damaged or malfunctioning machine.
- ✓ Conduct a thorough pre-operation inspection of the machine and test all functions before each work shift. Immediately tag and remove from service a damaged or malfunctioning machine.
- ✓ Be sure all maintenance has been performed as specified in this manual and the appropriate Genie service manual.
- ✓ Be sure all decals are in place and legible.
- ✓ Be sure the operator's, safety and responsibilities manuals are complete, legible and in the storage container located on the machine.



Component Damage Hazards

- ✓ Do not use any battery or charger greater than 12V to jump-start the engine.
- ✓ Do not use the machine as a ground for welding.
- ✓ Do not operate the machine in locations where extremely high magnetic fields may be present.



Battery Safety

Burn Hazards



Batteries contain acid. Always wear protective clothing and eye wear when working with batteries.

Avoid spilling or contacting battery acid. Neutralize battery acid spills with baking soda and water.

Explosion Hazards



Keep sparks, flames and lighted tobacco away from batteries. Batteries emit explosive gas.

Electrocution Hazard



Avoid contact with electrical terminals.



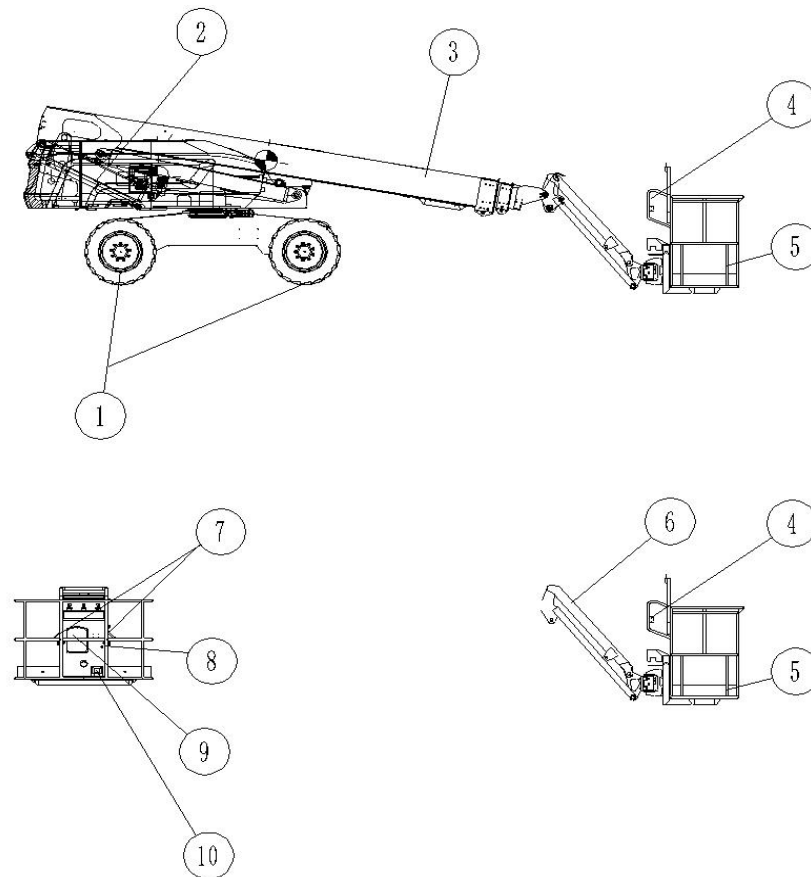
Fire extinguisher use and safety

Read, understand and obey the local rules and instruction for the fire hydrant.

Please not exceed the platform standard load capacity. So please must remove the weight of the fire extinguisher from the total loaded weight.

Please make sure that the fire extinguisher is fixed safely.

5. Legend

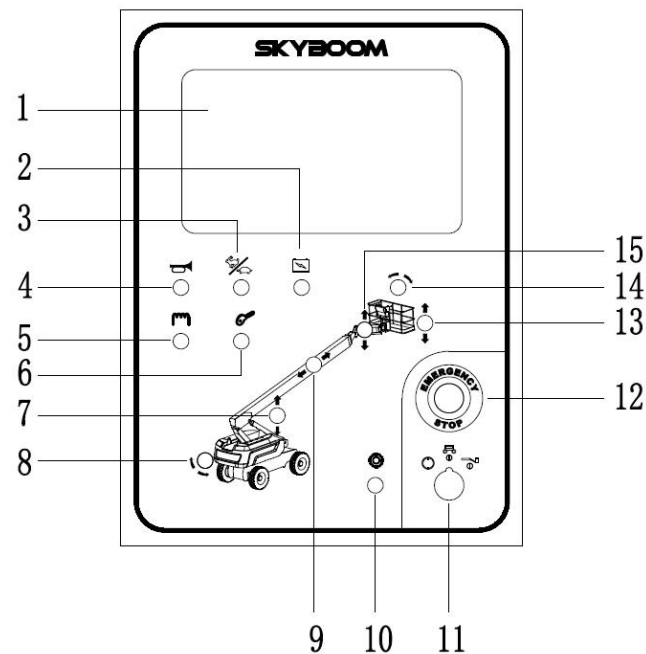


1. Solid tire	6. Flying boom
2. Ground control	7. Lanyard anchorage points
3. Boom	8. Sliding mid-rail
4. Platform control	9. Manual box
5. Platform	10. Foot switch

6. Controls

Ground control is for lifting the platform to store or function testing. And it is also for the emergency use to secure the person who was in the platform and can not use the machine. When you select the ground control, the platform control would not to use, even the emergency button.

Ground control panel:



Ground control panel description

Number	Name	Number	Name
1	Display screen	9	Main boom extension switch
2	Emergency power unit switch	10	Enable switch
3	Engine high/low speed switch	11	Platform / ground selection switch
4	Horn switch	12	Power / emergency stop switch
5	Engine preheat switch	13	Platform leveling switch
6	Engine start switch	14	Platform rotary switch
7	Main boom lift switch	15	Flying boom lifting switch
8	Rotary switch		

1) Display screen

The display screen contains information such as fault indication, function parameter monitoring and modification, and equipment information.



2) Emergency power unit switch



The auxiliary pump can be activated by moving the switch to the start position. The auxiliary pump provides emergency descent power in case of failure of the main pump or engine.

The emergency power unit switch is only for use in a short period of time when the engine cannot work (when the working bar is lowered to the maximum Angle and maximum length position). When operating the emergency power unit, do not use two or more action functions at the same time. Operating several functions at the same time will overload the auxiliary motor and pump.

3) Engine high/low speed switch



Turn on the engine high/low speed switch. The engine speed should be switched between high and low.

4) Horn switch



Turn on the horn switch, the horn should ring.

5) Engine preheat switch



Turn on the engine preheat switch and maintain it for 6~10s to preheat the engine intake.

Note: The electronically controlled engine is automatically preheated.

6) Engine start switch



Turn on the engine start switch. The engine should start smoothly without any noise.

Note: This switch has no effect after the engine starts; before loading any load, the engine should run at low speed for 3min~5min for preheating.

7) Main boom lift switch

The main boom is raised/lowered when moving up and down.

8) Rotary switch

Provides continuous 360 degree rotation control of the turntable.

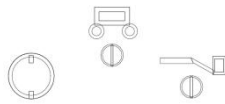
9) Main boom telescopic switch

Provides telescopic control function of the main boom.

10) Enable switch

At the same time, the enable switch and each action switch are moved, so that all functions of the machine can work normally.

11) Platform/ground selection switch



The three-position key controls the switch. When turned to the "platform" position, power is supplied to the platform control box, and only the platform mode can be operated. When the switch key is turned to the ground position, only the ground controller can operate. Turning the three-position key to the left position simultaneously deactivates both the platform mode and ground mode.

12) Power/emergency stop switch



When a red mushroom-shaped two-position switch is pulled out (turned on), the power supply to the platform/ground selection switch will be activated. When this switch is pressed in (turned off), the power supply to the platform/ground selection switch will be turned off.

When the equipment is turned off, the main power/emergency stop switch must be in the "OFF" position to prevent depletion of battery power.

13) Platform leveling switch

This switch can adjust the level of the work table in uphill and downhill situations.

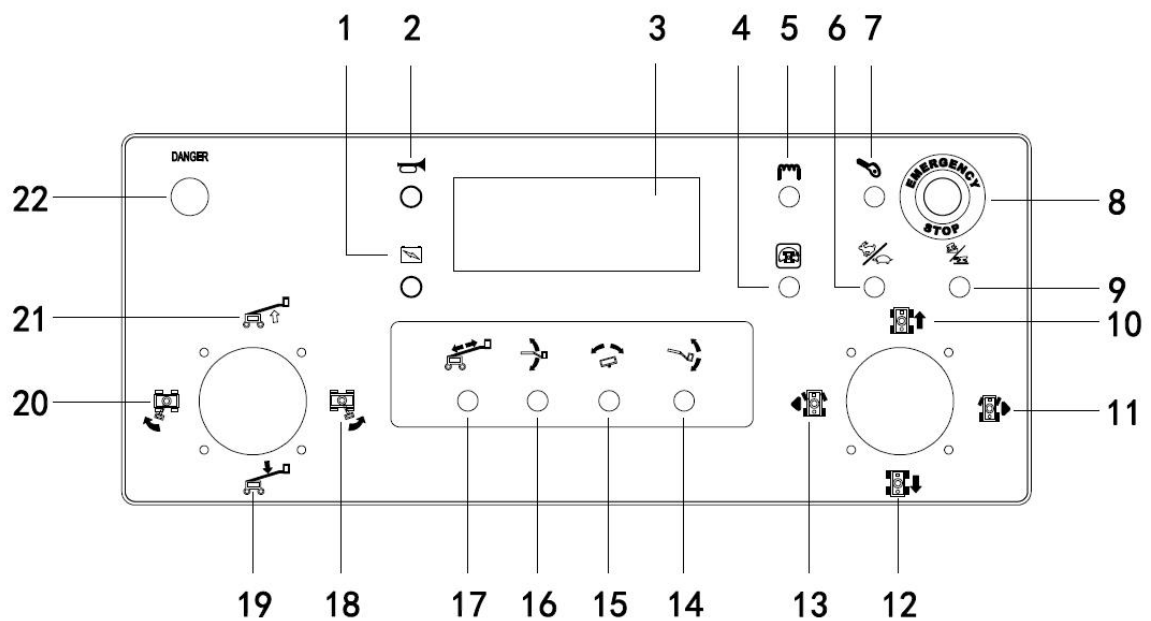
14) Platform rotary switch

Provides the rotation control function of the platform.

15) Flying boom lift switch

Provide the lifting control function of the fly boom.

Platform control panel:



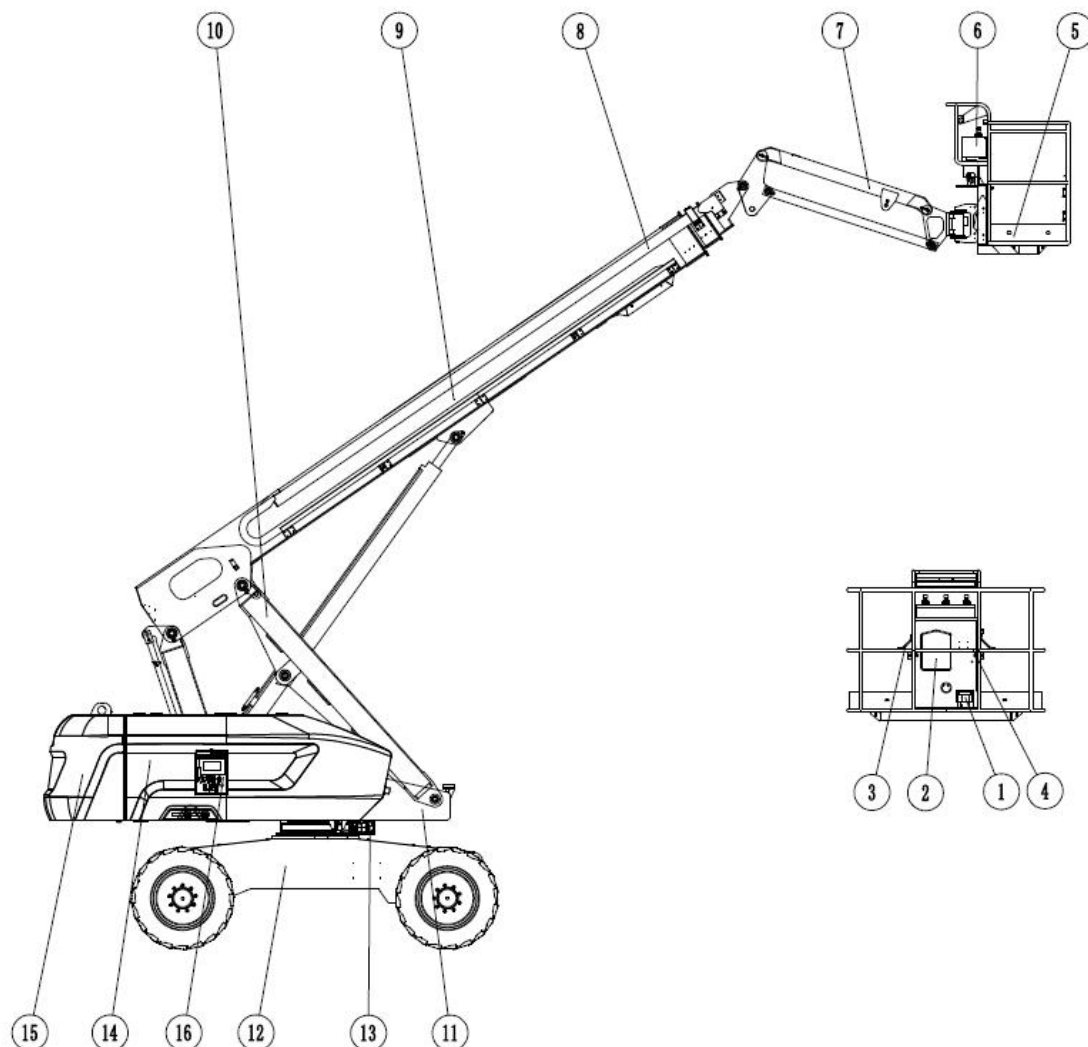
Platform control panel (only the switch number corresponding to the existing function is marked)

Platform control panel description

Number	Name	Number	Name
1	Emergency power unit switch	12	Drive back
2	Horn switch	13	Turn left
3	Platform controller indicator light panel	14	Work platform leveling switch
4	Reverse drive switch	15	Swing switch on the work platform
5	Engine preheat switch	16	Fly boom lifting switch
6	High speed/low speed switch of engine	17	Main boom extension switch
7	Engine start switch	18	The turntable rotates counterclockwise
8	Power / emergency stop switch	19	Main boom lower switch
9	Driving mode selection switch	20	The turntable rotates clockwise
10	Drive forward	21	Master boom lift switch
11	Turn right	22	Buzzer

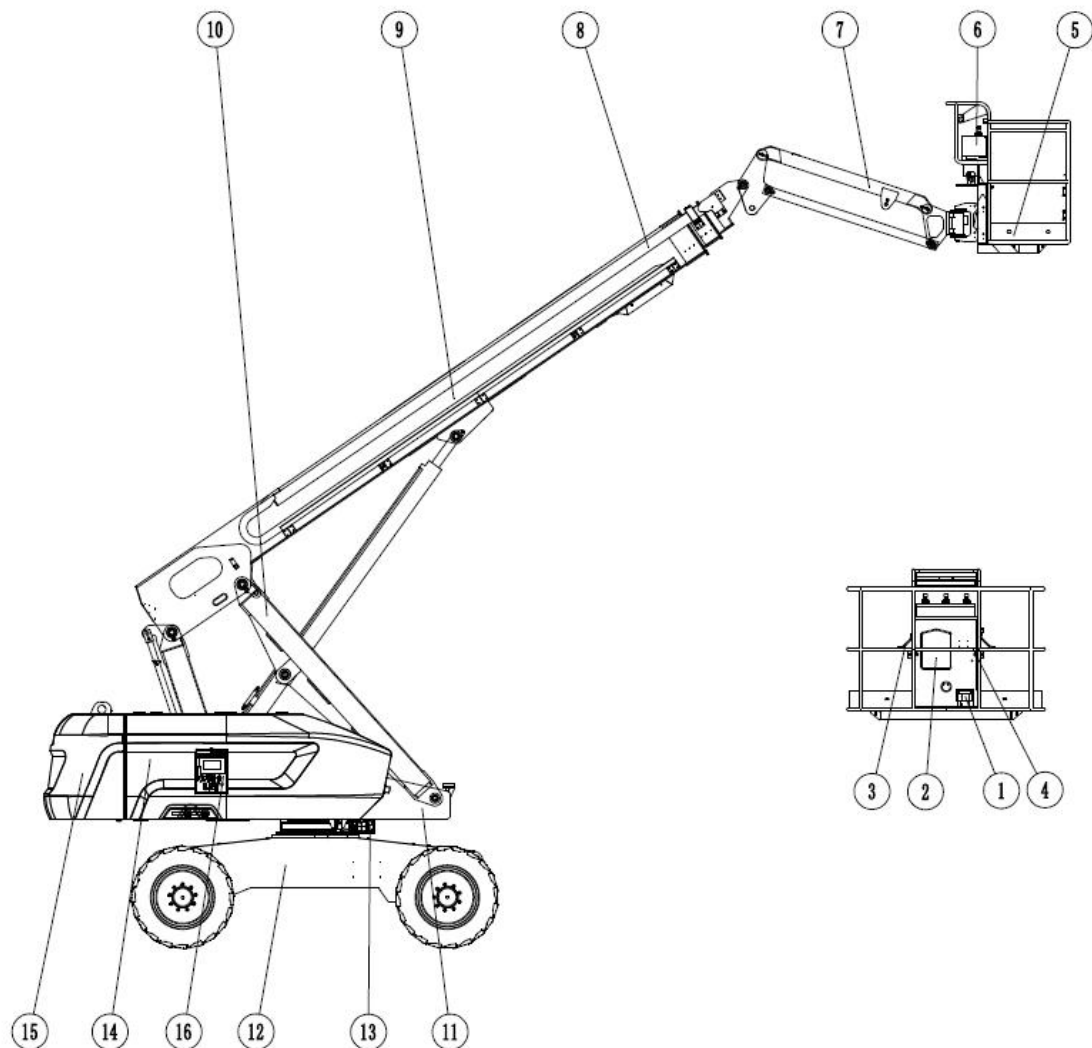
Basic components of the equipment

STL-19J



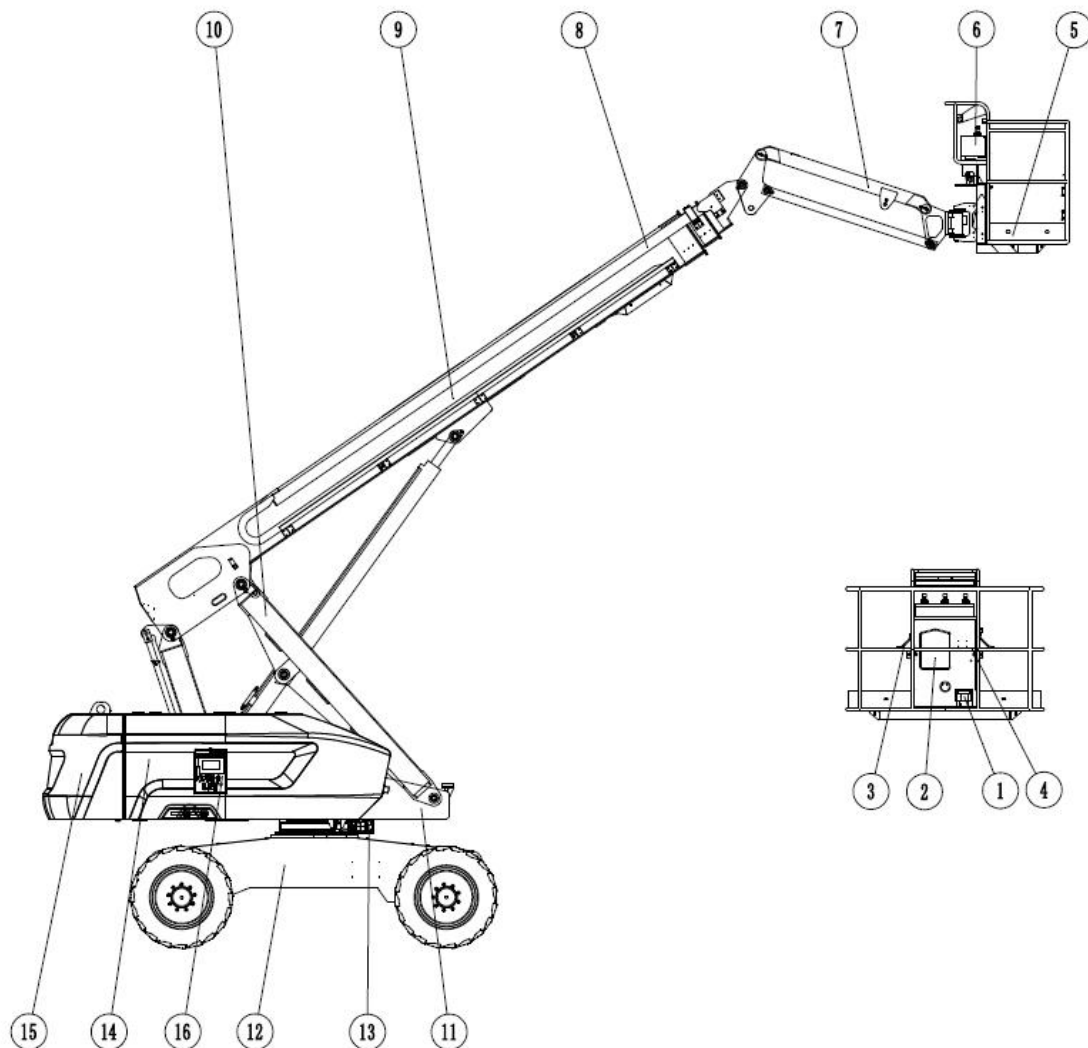
1. Foot switch	7. Fly boom	13. Rotary mechanism
2. File box	8. Drag chain mechanism	14. Cover assembly
3. Safety rope fixing point	9. Boom frame assembly	15. Counter weight
4. Slide the railing	10. Front support boom	16. Ground control box'
5. Work platform	11. Turntable assembly	
6. Platform control box	12. Chassis assembly	

STL-22J



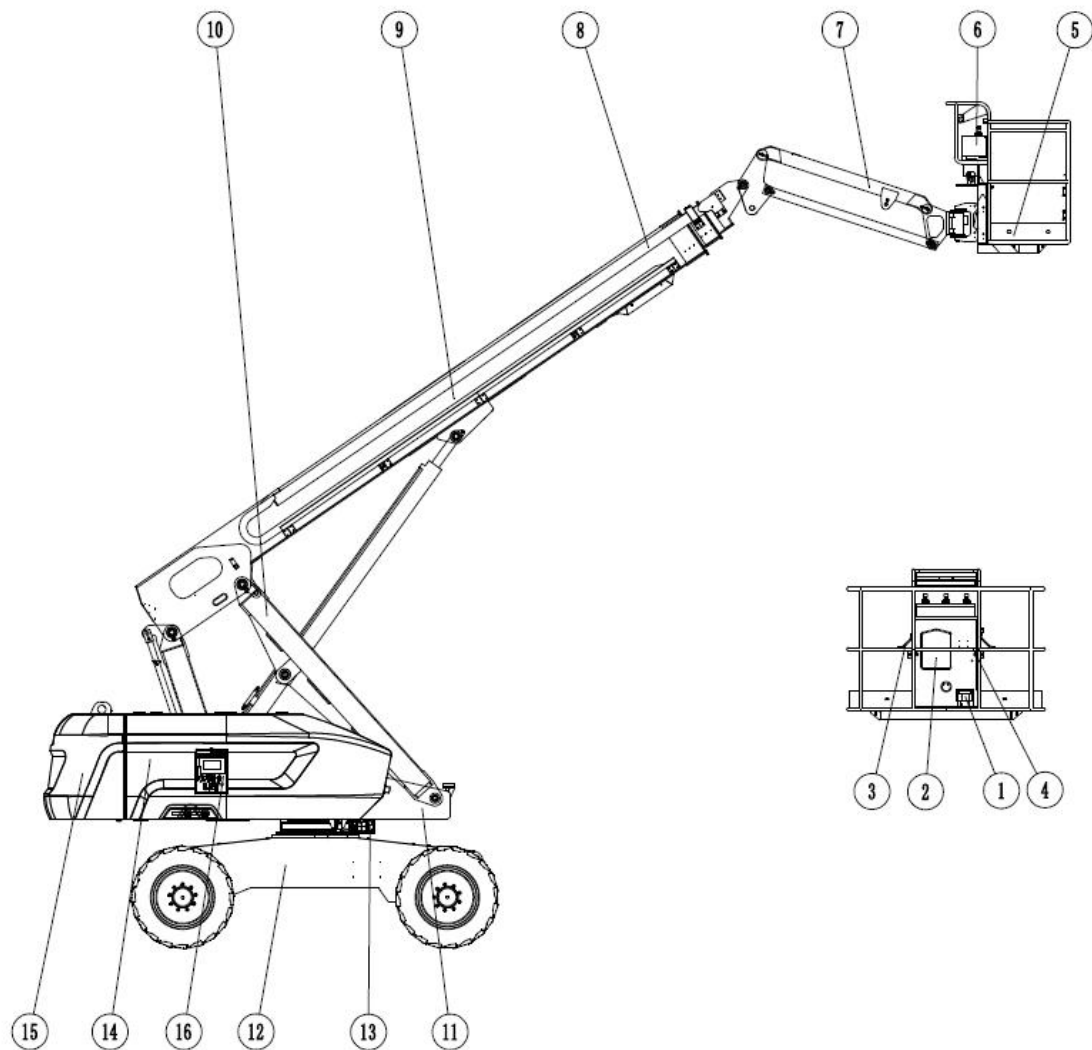
1. Foot switch	8. Fly boom	13. Rotary mechanism
2. File box	9. Drag chain mechanism	14. Cover assembly
3. Safety rope fixing point	10. Boom frame assembly	15. Counter weight
4. Slide the railing	11. Front support boom	16. Ground control box'
5. Work platform	12. Turntable assembly	
6. Platform control box	13. Chassis assembly	

STL-26J



1. Foot switch	9. Fly boom	13. Rotary mechanism
2. File box	10. Drag chain mechanism	14. Cover assembly
3. Safety rope fixing point	11. Boom frame assembly	15. Counter weight
4. Slide the railing	12. Front support boom	16. Ground control box'
5. Work platform	13. Turntable assembly	
6. Platform control box	14. Chassis assembly	

STL-28J



1. Foot switch	10. Fly boom	13. Rotary mechanism
2. File box	11. Drag chain mechanism	14. Cover assembly
3. Safety rope fixing point	12. Boom frame assembly	15. Counter weight
4. Slide the railing	13. Front support boom	16. Ground control box'
5. Work platform	14. Turntable assembly	
6. Platform control box	15. Chassis assembly	

7. Inspections

Do Not Operate Unless:

You learn and practice the principles of safe machine operation contained in this operator's manual.

- 1 Avoid hazardous situations.
- 2 Always perform a pre-operation inspection. Know and understand the pre-operation inspection before going on to the next section.
- 3 Always perform function tests prior to use.
- 4 Inspect the workplace.
- 5 Only use the machine as it was intended.

Pre-operation Inspection

Fundamentals

- ✓ It is the responsibility of the operator to perform a pre-operation inspection and routine maintenance.
- ✓ The pre-operation inspection is a visual inspection performed by the operator prior to each work shift. The inspection is designed to discover if anything is apparently wrong with a machine before the operator performs the function tests.
- ✓ The pre-operation inspection also serves to determine if routine maintenance procedures are required. Only routine maintenance items specified in this manual may be performed by the operator.
- ✓ Refer to the list on the next page and check each of the items.
- ✓ If damage or any unauthorized variation from factory delivered condition is discovered, the machine must be tagged and removed from service.
- ✓ Repairs to the machine may only be made by a qualified service technician, according to the manufacturer's specifications. After repairs are completed, the operator must perform a pre-operation inspection again before going on to the function tests.
- ✓ Scheduled maintenance inspections shall be performed by qualified service technicians, according to the manufacturer's specifications and the requirements listed in the responsibilities manual.

Pre-operation Inspection

- ✓ Be sure that the operator's, safety and responsibilities manuals are complete, legible and in the storage container located in the platform.
- ✓ Be sure that all decals are legible and in place. See Inspections section.
- ✓ Check for hydraulic oil leaks and proper oil level. Add oil if needed. See Maintenance section.
- ✓ Check for battery fluid leaks and proper fluid level. Add distilled water if needed. See Maintenance section.
- ✓ Check for engine oil leaks and proper oil level. Add oil if needed. See Maintenance section.
- ✓ Check for engine coolant leaks and proper level of coolant. Add coolant if needed. See Maintenance section.
- ✓ Check air-filled tires for proper tire pressure. Add air if needed. See Maintenance section.

Check the following components or areas for damage, improperly installed or missing parts and unauthorized modifications:

- ☐ Electrical components, wiring and electrical cables
- ☐ Hydraulic hoses, fittings, cylinders and manifolds
- ☐ Fuel and hydraulic tanks
- ☐ Drive and turntable motors and drive hubs
- ☐ Wear pads

- ☐ Tires and wheels
- ☐ Engine and related components
- ☐ Limit switches and horn
- ☐ Alarms and beacons (if equipped)
- ☐ Nuts, bolts and other fasteners
- ☐ Platform entry mid-rail or gate
- ☐ Lanyard anchorage points
- ✓ Check entire machine for:
 - ☐ Cracks in welds or structural components.
 - ☐ Dents or damage to machine
 - ☐ Excessive rust, corrosion or oxidation
- ✓ Be sure that all structural and other critical components are present and all associated fasteners and pins are in place and properly tightened.
- ✓ After you complete your inspection, be sure that all compartment covers are in place and latched.

Function Test

Fundamentals

The function tests are designed to discover any malfunctions before the machine is put into service. The operator must follow the step-by-step instructions to test all machine functions.

A malfunctioning machine must never be used. If malfunctions are discovered, the machine must be tagged and removed from service. Repairs to the machine may only be made by a qualified service technician, according to the manufacturer's specifications.

After repairs are completed, the operator must perform a pre-operation inspection and function tests again before putting the machine into service.

At the Ground Controls

- 1 Select a test area that is firm, level and free of obstruction.
- 2 Turn the key switch to ground control.
- 3 Pull out the red Emergency Stop button to the on position.

☉ Result: The beacons (if equipped) should flash.

4 Start the engine. See Operating Instructions section.

Test Emergency Stop

5 Push in the red Emergency Stop button to the off position.

☉ Result: The engine should shut off and no functions should operate.

6 Pull out the red Emergency Stop button to the on position and restart the engine.

Test Machine Functions

7 Do not push the function enable button. Attempt to activate each boom and platform function toggle switch.

☉ Result: No boom and platform functions should operate.

8 Press and hold the function enable button and activate each boom and platform function toggle switch.

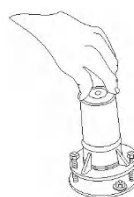
☉ Result: All boom and platform functions should operate through a full cycle. The descent alarm (if equipped) should sound while the boom is lowering.

Test the Tilt Sensor

9 Pull out the platform red Emergency Stop button to the on position. Turn the key switch to platform control.

10 Open the tank side turntable

cover and locate the tilt sensor next to the fuel tank.



11 Press down one side of the tilt sensor.

Result: The alarm, located in the platform, should sound.

At the Platform Controls

Test Emergency Stop

12 Turn the key switch to platform control and restart the engine.

13 Enter the platform and pull out the red Emergency Stop button. Start the engine.

14 Push in the platform red Emergency Stop button to the off position.

☉ Result: The engine should shut off and no functions should operate.

15 Pull out the red Emergency Stop button and restart the engine.

Test the Horn

16 Press the horn button.

Result: The horn should sound.

Test the Foot Switch

17 Push in the platform red Emergency Stop button to the off position.

18 Pull out the red Emergency Stop button to the on position and do not start the engine.

19 Press down the foot switch and attempt to start the engine by pressing the engine start button.

☉ Result: The engine should not start.

20 Do not press down the foot switch and restart the engine.

21 Do not press down the foot switch and test each machine function.

☉ Result: No functions should operate.

Test Machine Functions

22 Press down the foot switch.

23 Activate each machine function control handle or toggle switch.

☉ Result: All boom and platform functions should operate through a full cycle.

Test the Steering

24 Press down the foot switch.

25 Press the thumb rocker switch on top of the drive control handle in the direction indicated by the blue triangle on the control panel OR slowly move the control handle in the direction indicated by the blue triangle.

☉ Result: The steer wheels should turn in the direction that the blue triangles point on the drive chassis.

26 Press the thumb rocker switch in the direction indicated by the yellow triangle on the control panel OR slowly move the control handle in the direction indicated by the yellow triangle.

Result: The steer wheels should turn in the direction that the yellow triangles point on the drive chassis.

Test Drive and Braking

27 Press down the foot switch.

- 28 Slowly move the drive control handle in the direction indicated by the blue arrow on the control panel until the machine begins to move, then return the handle to the center position.
 - ⊙ Result: The machine should move in the direction that the blue arrow points on the drive chassis, then come to an abrupt stop.
- 29 Slowly move the control handle in the direction indicated by the yellow arrow on the control panel until the machine begins to move, then return the handle to the center position.
 - ⊙ Result: The machine should move in the direction that the yellow arrow points on the drive chassis, then come to an abrupt stop.

Note: The brakes must be able to hold the machine on any slope it is able to climb.

Test the Oscillating Axle (if equipped)

- 30 Start the engine from the platform controls.
- 31 Drive the right steer tire up onto a 15 cm block or curb.
 - ⊙ Result: The three remaining tires should stay in firm contact with the ground.
- 32 Drive the left steer tire up onto a 15 cm block or curb.
 - ⊙ Result: The three remaining tires should stay in firm contact with the ground.
- 33 Drive both steer tires up onto a 15 cm block or curb.
 - Result: The non-steer tires should stay in firm contact with the ground.

Test the Drive Enable System

- 34 Press down the foot switch and lower the boom to the stowed position.
- 35 Rotate the turntable until the boom moves past one of the non-steer wheels.
 - ⊙ Result: The drive enable indicator light should come on and remain on while the boom is anywhere in the range shown.
- 36 Move the drive control handle off center.
 - ⊙ Result: The drive function should not operate.
- 37 Move and hold the drive enable toggle switch to either side and slowly move the drive control handle off center.
 - ⊙ Result: The drive function should operate.



Note: When the drive enable system is in use, the machine may drive in the opposite direction that the drive and steer control handle is moved.

Test Limited Drive Speed

- 38 Press down the foot switch.
- 39 Raise the boom to just above horizontal.



40 Slowly move the control handle to full drive position.

⊙ Result: The maximum achievable drive speed with the boom raised should not exceed 30 cm per second.

41 Lower the boom to the stowed position.

42 Slowly move the control handle to full drive position.

⊙ Result: The maximum achievable drive speed with the boom extended should not exceed 30 cm/s.

If the drive speed with the boom raised or extended exceeds 30 cm/s, immediately tag and remove the machine from service.

Test the Lift/Drive Select Function

43 Press down the foot switch.

44 Move the drive control handle off center and activate a boom function toggle switch.

Result: No boom functions should operate. The machine will move in the direction indicated on the control panel.

Workplace Inspection

Fundamentals

The workplace inspection helps the operator determine if the workplace is suitable for safe machine operation. It should be performed by the operator prior to moving the machine to the workplace.

It is the operator's responsibility to read and remember the workplace hazards, then watch for and avoid them while moving, setting up and operating the machine.

Workplace Inspection Checklist

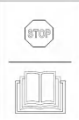
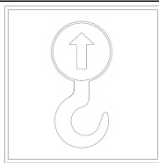
Be aware of and avoid the following hazardous situations:

- ☐ drop-offs or holes
- ☐ bumps, floor obstructions or debris
- ☐ sloped surfaces
- ☐ unstable or slippery surfaces
- ☐ overhead obstructions and high voltage conductors
- ☐ hazardous locations
- ☐ inadequate surface support to withstand all load forces imposed by the machine
- ☐ wind and weather conditions
- ☐ the presence of unauthorized personnel
- ☐ other possible unsafe conditions

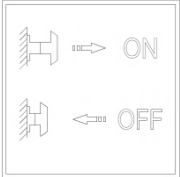
Technical diagrams of the Skyboom 4000 boom lift, showing various views and components:

- Left View:** A side profile of the boom lift with the boom extended. Callouts 11, 12, 6, 7, 10, 13, 9, 8, 12, 11 point to various parts of the chassis and boom.
- Middle View:** A front view of the lift with the boom retracted. Callouts 15 and 16 point to the front wheels.
- Right View:** A side profile of the boom lift with the boom retracted. Callouts 5, 2, 3, 4, 11, 12, 1, 13, 14, 12, 11 point to various parts of the chassis and boom.
- Bottom Left:** A detailed view of the engine compartment. Callout 25 points to the engine.
- Bottom Center-Left:** A detailed view of the engine compartment. Callout 26 points to the engine.
- Bottom Center:** A detailed view of the engine compartment. Callouts 23, 24, and 22 point to various components.
- Bottom Center-Right:** A detailed view of the engine compartment. Callout 17 points to the engine.
- Bottom Right:** A detailed view of the engine compartment. Callouts 21, 20, 27, 19, 18, and 18 point to various components.

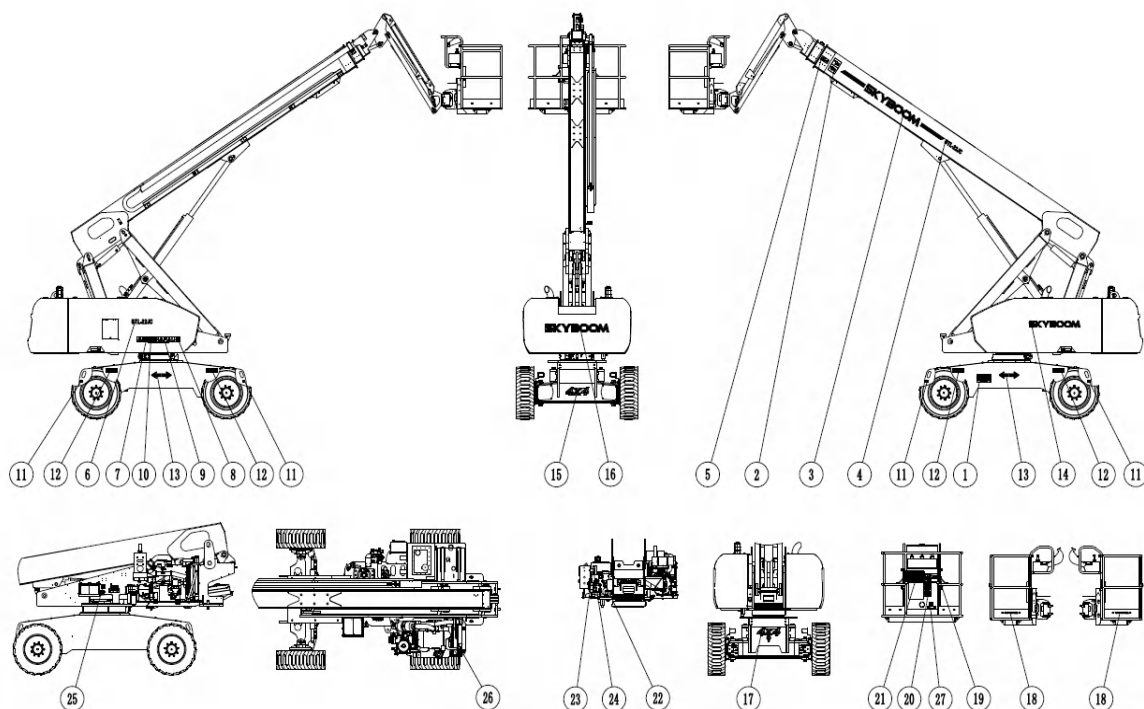
30

8	Maintenance marks for compartments	1	 
9	Explosion hazard sign	1	 
10	Tilt hazard sign	1	  
11	Lifting point identification	4	
12	Replace the same tyre	4	  
13	Direction arrow symbol	2	
14	SKYBOOM label	1	SKYBOOM
15	4 Drive signs	1	4x4
16	SKYBOOM label	1	SKYBOOM
17	4 Drive signs	1	4x4
18	SKYBOOM label	2	SKYBOOM
19	Wind speed and push force labels	1	  

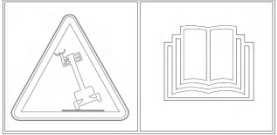
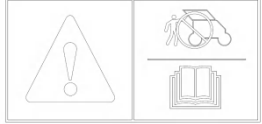
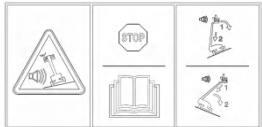
20	Danger symbol label	1	
21	Rated load label	1	
22	Hydraulic oil temperature label	1	
23	Hydraulic oil level (high) label	1	
24	Hydraulic oil level (low) label	1	
25	Emergency stop switch label	1	
26	Heat hazard label	1	

27	Foot switch	1	
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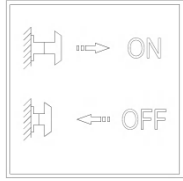
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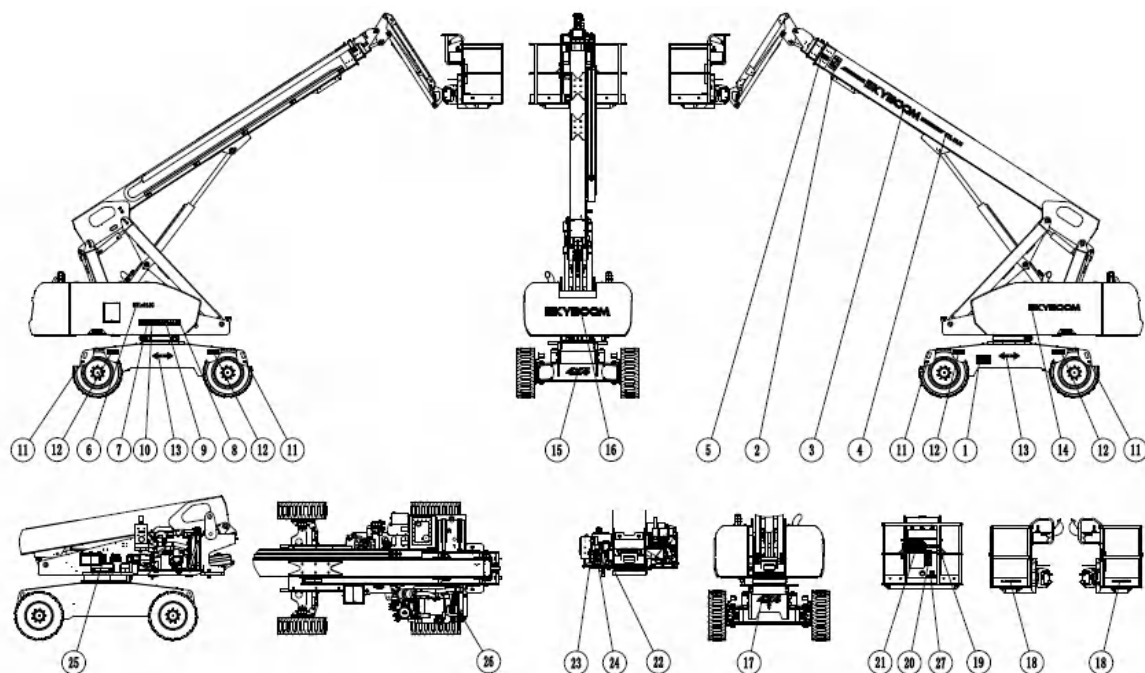
Number	Name	Number	Label
1	Name plate	1	
2	Fall hazard sign	1	
3	SKYBOOM label	1	
4	Model label	1	
5	The platform rotates away from the sign	2	
6	Model label	1	

7	Tilt hazard sign	1	
8	Maintenance marks for compartments	1	
9	Explosion hazard sign	1	
10	Tilt hazard sign	1	
11	Lifting point identification	4	
12	Replace the same tyre	4	
13	Direction arrow symbol	2	
14	SKYBOOM label	1	SKYBOOM
15	4 Drive signs	1	4x4
16	SKYBOOM label	1	SKYBOOM
17	4 Drive signs	1	4x4
18	SKYBOOM label	2	SKYBOOM
19	Wind speed and push force labels	1	

20	Danger symbol label	1	
21	Rated load label	1	
22	Hydraulic oil temperature label	1	
23	Hydraulic oil level (high) label	1	
24	Hydraulic oil level (low) label	1	
25	Emergency stop switch label	1	
26	Heat hazard label	1	

27	Foot switch	1	
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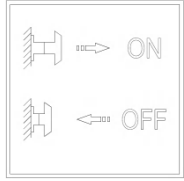
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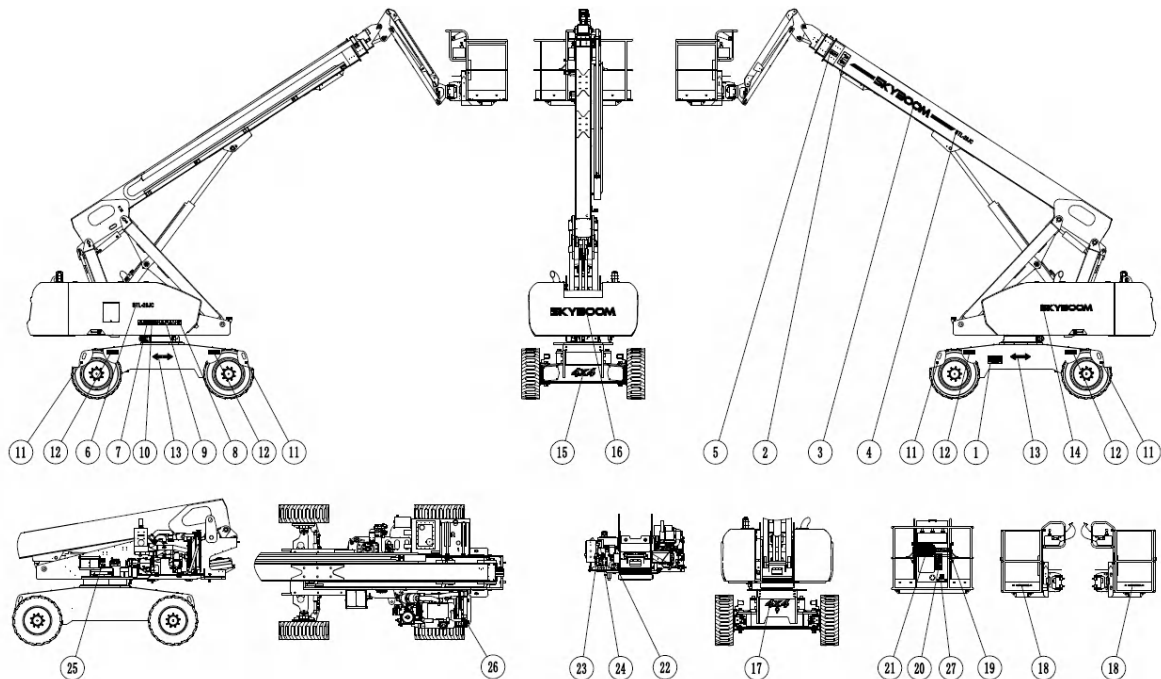
Number	Name	Number	Label
1	Name plate	1	
2	Fall hazard sign	1	
3	SKYBOOM label	1	
4	Model label	1	
5	The platform rotates away from the sign	2	
6	Model label	1	
7	Tilt hazard sign	1	

8	Maintenance marks for compartments	1	
9	Explosion hazard sign	1	
10	Tilt hazard sign	1	
11	Lifting point identification	4	
12	Replace the same tyre	4	
13	Direction arrow symbol	2	
14	SKYBOOM label	1	SKYBOOM
15	4 Drive signs	1	4x4
16	SKYBOOM label	1	SKYBOOM
17	4 Drive signs	1	4x4
18	SKYBOOM label	2	SKYBOOM
19	Wind speed and push force labels	1	

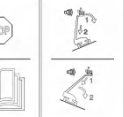
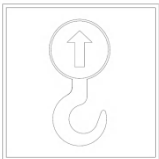
20	Danger symbol label	1	
21	Rated load label	1	
22	Hydraulic oil temperature label	1	
23	Hydraulic oil level (high) label	1	
24	Hydraulic oil level (low) label	1	
25	Emergency stop switch label	1	
26	Heat hazard label	1	

27	Foot switch	1	 The diagram shows a rectangular box containing two foot switch symbols. The top symbol is a foot pressing a pedal to the right, with an arrow pointing right and the word 'ON' to its right. The bottom symbol is a foot pressing a pedal to the left, with an arrow pointing left and the word 'OFF' to its right.
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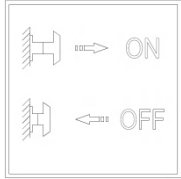
STL-28J



Number	Name	Number	Label
1	Name plate	1	
2	Fall hazard sign	1	
3	SKYBOOM label	1	
4	Model label	1	
5	The platform rotates away from the sign	2	
6	Model label	1	
7	Tilt hazard sign	1	

8	Maintenance marks for compartments	1	 
9	Explosion hazard sign	1	 
10	Tilt hazard sign	1	 
11	Lifting point identification	4	
12	Replace the same tyre	4	  
13	Direction arrow symbol	2	
14	SKYBOOM label	1	SKYBOOM
15	4 Drive signs	1	4x4
16	SKYBOOM label	1	SKYBOOM
17	4 Drive signs	1	4x4
18	SKYBOOM label	2	SKYBOOM
19	Wind speed and push force labels	1	  

20	Danger symbol label	1	
21	Rated load label	1	
22	Hydraulic oil temperature label	1	
23	Hydraulic oil level (high) label	1	
24	Hydraulic oil level (low) label	1	
25	Emergency stop switch label	1	
26	Heat hazard label	1	

27	Foot switch	1	
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8. Operating Instructions



Do Not Operate Unless:

You learn and practice the principles of safe machine operation contained in this operator's manual.

- 1 Avoid hazardous situations.
- 2 Always perform a pre-operation inspection.
- 3 Always perform function tests prior to use.
- 4 Inspect the workplace.
- 5 Only use the machine as it was intended.

Fundamentals

The Operating Instructions section provides instructions for each aspect of machine operation. It is the operator's responsibility to follow all the safety rules and instructions in the operator's, safety and responsibilities manuals.

Using the machine for anything other than lifting personnel, along with their tools and materials, to an aerial work site is unsafe and dangerous.

Only trained and authorized personnel should be permitted to operate a machine. If more than one operator is expected to use a machine at different times in the same work shift, they must all be qualified operators and are all expected to follow all safety rules and instructions in the operator's, safety and responsibilities manuals. That means every new operator should perform a pre-operation inspection, function tests, and a workplace inspection before using the machine.

Before launch

- a) The initial start must always be performed from the ground control console;
- b) Before starting the machine, the foot pedal switch must be released.
- c) Do not start the engine when the foot pedal switch is pressed;
- d) Please consult Changsha SKYBOOM Heavy Industry Co., LTD. for information on operating the machine under abnormal conditions.

Start sequence

- a) Rotate the platform/ground selection switch to the "ground" position;
- b) Pull the power/ emergency stop switch to the "on" position;
- c) Turn on the engine by moving the engine start switch until the engine starts;

- d) After the engine has been preheated sufficiently, turn off the engine and pull the power/ emergency stop switch;
- e) Set the platform/ground selection switch to the "platform" position;
- f) On the platform, pull the power/ emergency stop switch to supply power to the platform;
- g) Turn on the engine by moving the engine start switch until the engine starts.

Assistance power

1. When operating auxiliary power, do not perform more than one action function simultaneously.
2. Operating multiple action functions simultaneously can overload the auxiliary pump motor.
3. Both the platform control box and the ground control box have auxiliary power switches.

If the engine fails, operating the auxiliary power switch in either platform or ground mode will activate the electric auxiliary pump. The auxiliary pump powers the hydraulic system, allowing you to operate the main boom lifting, main boom extending, boom folding, turntable rotation, flying boom lifting, platform leveling, and platform rotation functions.

To activate auxiliary power in platform mode:

- a) Set the platform/ground selection key switch to the 'platform' position;
- b) Pull the power/stop switch to the 'on' position;
- c) Set the auxiliary power switch to 'on' and hold it;
- d) Step on the foot pedal switch;
- e) Operate the control switches or handles for the required action and hold them;
- f) To end the action, release the auxiliary power switch, the action control switches, handles, and foot pedal switch;
- g) Set the power/stop switch to the 'off' position.

To activate auxiliary power in ground mode:

- a) Set the platform/ground selection key switch to the 'ground' position;
- b) Pull the power/stop switch to the 'on' position;
- c) Set the auxiliary power switch to 'on' and hold it;
- d) Operate the control switches for the required action and hold them;
- e) To end the action, release the auxiliary power switch and the corresponding control switches;
- f) Set the power/stop switch to the 'off' position.

Shut down and park

- a) Move the equipment to a safe location;
- b) Ensure the main boom is fully retracted and lowered above the rear (driving) axle; c) After unloading all loads from the platform, let the engine idle for 3-5 minutes to reduce the internal temperature;
- d) In the ground control box, turn the key switch to the off position and press the power/ emergency stop switch to the off position. Remove the key;
- e) Close and secure all hoods and doors;
- f) Cover the platform control console to protect the controller, handles, switches, and panels from damage due to harsh environmental conditions.

Diesel models

- 1 When starting in cold conditions, move the glow plug switch (if equipped) to either side and hold for 3 to 5 seconds.
- 2 Move the engine start toggle switch to either side. If the engine fails to start or dies, the restart delay will disable the start switch for 3 seconds.
- 3 If the engine fails to start after 15 seconds of cranking, determine the cause and repair any malfunction. Wait 60 seconds before trying to start again.

Note:

In cold conditions, -6°C and below, warm the engine for 5 minutes before operating to prevent hydraulic system damage.

In extreme cold conditions, -18°C and below, machines should be equipped with optional cold start kits. Attempting to start the engine when temperatures are below -18°C may require the use of a booster battery.

Emergency Stop

Push in the red Emergency Stop button to the off position at the ground controls or the platform controls to stop all machine functions and turn the engine off.

Repair any function that operates when either red Emergency Stop button is pushed in.

Selecting and operating the ground controls will override the platform red Emergency Stop button.

Emergency Power

Use emergency power if the primary power source (engine) fails.

- 59 Turn the key switch to ground or platform control.
- 60 Pull out the red Emergency Stop button to the on position.
- 61 Press down the foot switch when using the controls from the platform.
- 62 Break the security tie and lift the emergency power switch cover.

Note: If the security tie is broken or missing, consult the appropriate Genie Service Manual.

- 5 Simultaneously hold the emergency power switch on and activate the desired function.

The drive and steer functions will not operate with emergency power.



Operation from Ground

- 1 Turn the key switch to ground control.
- 2 Pull out the red Emergency Stop button to the on position.
- 3 Gasoline/LPG models: Choose fuel by moving the fuel select switch to the desired position.
- 4 Start the engine.

To Position Platform

- 1 Push and hold the function enable button.

- 2 Move the appropriate toggle switch according to the markings on the control panel.

Drive and steer functions are not available from the ground controls.

Operation from Platform

- 1 Turn the key switch to platform control.
- 2 Pull out both ground and platform red Emergency Stop buttons to the on position.
- 3 Gasoline/LPG models: Choose fuel by moving the fuel select switch to the desired position.
- 4 Start the engine. Do not press down the foot switch when starting the engine.

To Position Platform

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

To Steer

- 1 Press down the foot switch.
- 2 Slowly move the drive control handle in the direction indicated by blue or yellow triangles OR press the thumb rocker switch located on top of the drive control handle.

Use the color-coded direction arrows on the platform controls and the drive chassis to identify the direction the wheels will turn.

To Drive

- 1 Press down the foot switch.
- 2 Increase speed: Slowly move the control handle off center.
Decrease speed: Slowly move the control handle toward center.
Stop: Return the control handle to center or release the function enable switch.

Use the color-coded direction arrows on the platform controls and the drive chassis to identify the direction the machine will travel.

Machine travel speed is restricted when the boom is raised.

▲ Driving on a slope

Determine the uphill, downhill and side slope ratings for the machine and determine the slope grade.



Maximum slope rating, platform downhill (gradeability):

2WD: 30% (17°) 4WD: 45% (24°)



Maximum slope rating, platform uphill:

2WD: 15% (9°) 4WD: 30% (17°)



Maximum side slope rating:

25% (14°)

Note: Slope rating is subject to ground conditions and adequate traction. The term gradeability applies to the counterweight uphill configuration only.

Be sure the boom is below horizontal and the platform is between the non-steer wheels.

Move the drive speed select switch to machine on incline symbol.

To determine the slope grade:

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

You will need:

- ☐ carpenter's level
- ☐ straight piece of wood, at least 1 m long
- ☐ tape measure

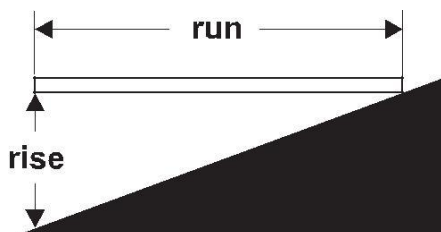
Lay the piece of wood on the slope.

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

While holding the piece of wood level, measure the vertical distance from the bottom of the piece of wood to the ground.

Divide the tape measure distance (rise) by the length of the piece of wood (run) and multiply by 100.

Example:



Piece of wood = 3.6 m

Run = 3.6 m

Rise = 0.3 m

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

If the slope exceeds the maximum uphill, downhill or side slope rating, then the machine must be winched or transported up or down the slope. See Transport and Lifting section.

Drive Enable

Light on indicates that the boom has moved just past either non-steer wheel and the drive function has been interrupted.

To drive, hold the drive enable switch to either side and slowly move the drive control handle off center.

Be aware that the machine may move in the opposite direction that the drive and steer controls are moved.

Always use the color-coded direction arrows on the platform controls and the drive chassis to identify the direction the machine will travel.

Engine Idle Select (rpm)

Select engine idle (rpm) using the symbols on the control panel.



When the foot switch is not pressed, the engine will idle at the lowest rpm.

- ☐ Turtle symbol: Foot switch activated low idle
- ☐ Rabbit symbol: Foot switch activated high idle



Drive Speed Select



- Machine on incline symbol: Low range operation for inclines or rough terrain
- Machine on level surface symbol: High range operation for maximum drive speed

Generator (if equipped)

To operate the generator, move the generator toggle switch to the on position.

The generator will turn on and the engine will continue to run. Pressing down on the foot switch will turn the generator off. Releasing the foot switch will turn the generator back on.

Plug a power tool into the power to platform GFCI outlet.

To stop the generator, move the generator toggle switch to the off position.

Check Engine Light



Light on and engine stopped: Tag the machine and remove from service.

Light on and engine still running: Contact service personnel within 24 hours.

Machine Not Level Indicator Light

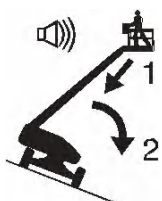


If the tilt alarm sounds when the platform is raised, the Machine Not Level indicator light will come on and the drive function in one or both directions will not operate. Identify the condition of the boom on the slope as shown below. Follow the steps to lower the boom before moving to a firm, level surface. Do not rotate the boom while lowering.



If the tilt alarm sounds with the platform uphill:

- 1 Lower the boom.
- 2 Retract the boom.



If the tilt alarm sounds with the platform downhill:

- 1 Retract the boom.
- 2 Lower the boom.

Machine Malfunction Indicator Light



Light on indicates all functions have stopped.

- 1 Push in and then pull out the red Emergency Stop button.

- 2 Lower and retract the boom.
- 3 Tag the machine and remove from service. Functions will not operate.

Platform Overload Indicator Light

Light flashing indicates the platform is overloaded and no functions will operate.

Remove weight from the platform until the light goes off.

Stopping the Engine

Push in the red Emergency Stop button and turn the key switch to the off position.

9. Transport and Lifting Instructions

Observe and Obey:

SKYBOOM provides this securement information as a recommendation. Drivers are solely responsible for making sure machines are properly secured and the correct trailer is selected pursuant to local transportation regulations, other localized regulations, and their company policy.

SKYBOOM customers needing to containerize any lift or SKYBOOM product should source a qualified freight forwarder with expertise in preparing, loading and securing construction and lifting equipment for international shipment.

Only qualified aerial lift operators should move the machine on or off the truck.

The transport vehicle must be parked on a level surface.

The transport vehicle must be secured to prevent rolling while the machine is being loaded.

Be sure the vehicle capacity, loading surfaces and chains or straps are sufficient to withstand the machine weight. SKYBOOM products are very heavy relative to their size. See the serial label for the machine weight.

Be sure the turntable is secured with the turntable rotation lock before transporting. Be sure to unlock the turntable for operation.

Do not drive the machine on a slope that exceeds the uphill, downhill or side slope rating. See Driving on a Slope in the Operating Instructions section.

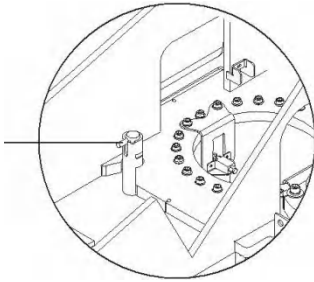
If the slope of the transport vehicle bed exceeds the maximum slope rating, the machine must be loaded and unloaded using a winch as described in the brake release operation.

Free-wheel Configuration for Winching

- ☐ Chock the wheels to prevent the machine from rolling.
- ☐ 2WD models: Release the non-steer wheel brakes by turning over the drive hub disconnect caps.
- ☐ 4WD models: Release the wheel brakes by turning over all four drive hub disconnect caps.
- ☐ Be sure the winch line is properly secured to the drive chassis tie points and the path is clear of all obstructions.
- ☐ Reverse the procedures described to re-engage the brakes.

Securing to Truck or Trailer for Transit

Always use the turntable rotation lock pin each time the machine is transported.



Turntable rotation lock pin

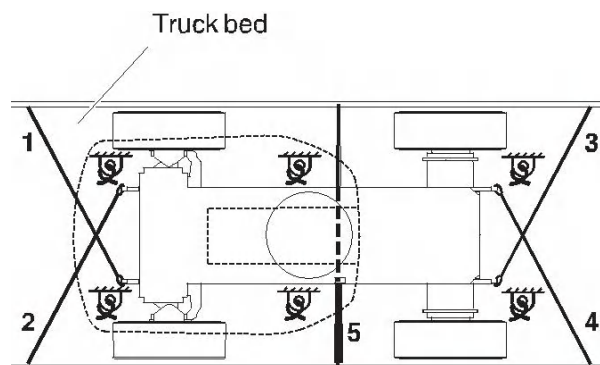
Turn the key switch to the off position and remove the key before transporting.

Inspect the entire machine for loose or unsecured items.

Securing the Chassis

Use chains or straps of ample load capacity. Use a minimum of 5 chains.

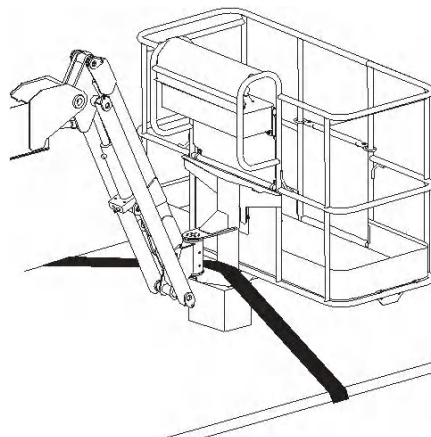
Adjust the rigging to prevent damage to the chains.



Securing the Platform

Place a block under the platform rotator. Do not allow the block to contact the platform cylinder.

Secure the platform with a nylon strap placed through the lower platform support. Do not use excessive downward force when securing the boom section.



Lifting Instructions

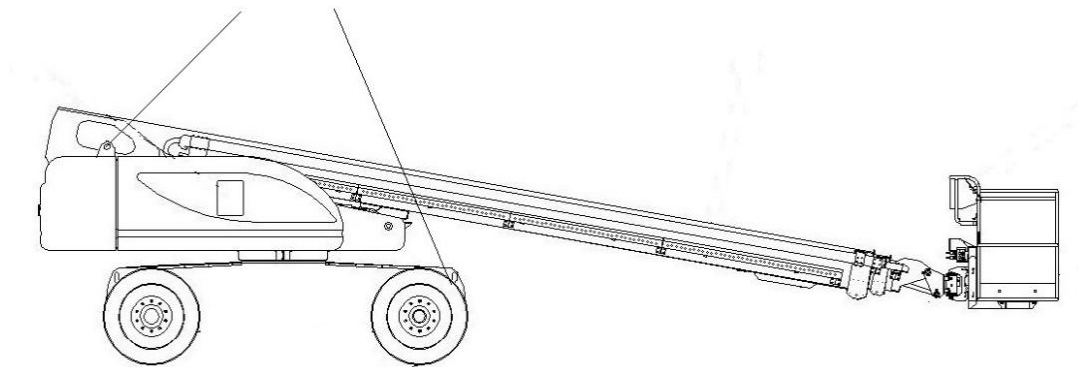
Fully lower and retract the boom. Remove all loose items on the machine.

Use the turntable rotation lock to secure the turntable.

Determine the center of gravity of your machine using the table and the picture on this page.

Attach the rigging only to the designated lifting points on the machine. All four of the lifting points are on the turntable.

Adjust the rigging to prevent damage to the machine and to keep the machine level.



10. Maintenance



Observe and Obey:

Only routine maintenance items specified in this manual shall be performed by the operator.

Scheduled maintenance inspections shall be completed by qualified service technicians, according to the manufacturer's specifications and the requirements specified in the responsibilities manual.

Dispose of material in accordance with governmental regulations.

Use only SKYBOOM approved replacement parts.

Maintenance Symbols Legend

The following symbols have been used in this manual to help communicate the intent of the instructions. When one or more of the symbols appear at the beginning of a maintenance procedure, it conveys the meaning below.



Indicates that tools will be required to perform this procedure.



Indicates that new parts will be required to perform this procedure.



Indicates that a cold engine is required before performing this procedure.

Check before operation

- a) Ensure the operation manual is in good condition, easy to read, and stored in the storage box on the platform;
- b) Ensure all labels are clear and properly positioned;
- c) Check for any leaks in the hydraulic oil and ensure the oil level is appropriate. Refill as needed. Refer to the "Maintenance" section;
- d) Check for any leaks in the battery fluid and ensure the fluid level is appropriate. Add distilled water as needed, but only after the battery has been fully charged. Inspect the following components or areas for damage, improper installation, missing parts, or unauthorized modifications:
 - 1) Electrical components, wiring, and cables;
 - 2) Hydraulic hoses, fittings, valves, and cylinders;
 - 3) Drive motors;
 - 4) Wear-resistant sliders and pads;
 - 5) Tires and wheels;
 - 6) Limit switches, alarms, and horns;
 - 7) alarms and indicator lights (if equipped);
 - 8) Nuts, bolts, and other fasteners;
 - 9) Brake release components.

Maintain safety

- a) Before performing any adjustment or maintenance operations, all control components should be powered off, and all moving parts must be securely fixed;
- b) Do not work under a raised workbench unless it has been fully lowered to the storage position. If conditions permit, use appropriate safety supports, blocks, or other top supports for support;
- c) Do not attempt to repair or tighten hydraulic hoses or seals while the equipment is energized or the hydraulic system is pressurized;
- d) Before releasing or removing hydraulic components, release all hydraulic line pressure;
- e) Do not inspect for leaks by hand. Use a piece of cardboard or paper to locate leaks, and wear gloves to protect your hands from splashing hydraulic oil.



The risk of physical injury

Do not operate the machine when hydraulic oil or air leaks. Oil or air leaks from the hydraulic system can seep into or burn the skin. During operation or after some time, the hydraulic system components may develop high surface temperatures, which can cause skin burns if they come into contact with the skin. Any maintenance or adjustment of the hydraulic system components can result in serious injuries, and only trained maintenance personnel should perform such tasks. It is recommended that operators check the equipment's health status before performing any operations. During operation, all compartments must remain closed and locked.

Check the Engine Oil Level



Maintaining the proper engine oil level is essential to good engine performance and service life. Operating the machine with an improper oil level can damage engine components.

Note: Check the oil level with the engine off.

- 1 Check the oil level dipstick. Add oil as needed.

Cummins QSB2.8	
Oil type	15W-40
Oil type - cold conditions	5W-40

Check the Hydraulic Oil Level



Maintaining the hydraulic oil at the proper level is essential to machine operation. Improper hydraulic oil levels can damage hydraulic components. Daily checks allow the inspector to identify changes in oil level that might indicate the presence of hydraulic system problems.

- 1 Be sure that the boom is in the stowed position.
 - 2 Visually inspect the sight gauge located on the side of the hydraulic oil tank.
- ☉ Result: The hydraulic oil level should be within the top 2 inches / 5 cm of the sight gauge.
- 3 Add oil as needed. Do not overfill.

Check the Engine Coolant Level –Liquid Cooled Models



Maintaining the engine coolant at the proper level is essential to engine service life. Improper coolant level will affect the engine's cooling capability and damage engine components. Daily checks will allow the inspector to identify changes in coolant level that might indicate cooling system problems.



Burn hazard. Do not remove the radiator cap if the engine has been running. Contact with pressurized coolant may cause severe burns. Allow engine to cool before removing the radiator cap.

- 1 Check the coolant fluid level. Add fluid as needed.
- ☉ Result: The fluid level should be visible in the top tank of the radiator.

Check the Batteries



Proper battery condition is essential to good machine performance and operational safety. Improper fluid levels or damaged cables and connections can result in component damage and hazardous conditions.

⚠ Electrocuting hazard. Contact with hot or live circuits may result in death or serious injury. Remove all rings, watches and other jewelry.

⚠ Bodily injury hazard. Batteries contain acid. Avoid spilling or contacting battery acid. Neutralize battery acid spills with baking soda and water.

- 1 Put on protective clothing and eye wear.
- 2 Be sure that the battery cable connections are tight and free of corrosion.
- 3 Be sure that the battery hold-down brackets are in place and secure.

Note: Adding terminal protectors and a corrosion preventative sealant will help eliminate the corrosion on the battery terminals and cables.

Check the Bolts and Stop Pins



Regularly check the bolts and stop pins, whether the bolts and stop pins on the machine are loose or not.

Regularly Maintenance

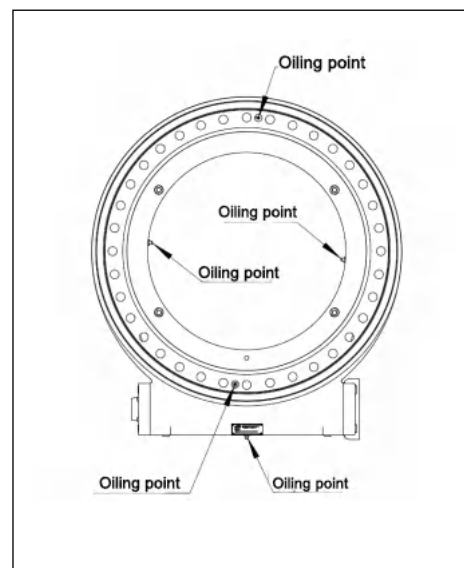
The quarterly, annual and biennial maintenance items must be completed by qualified personnel trained in the maintenance of the machine according to the procedures in the machine maintenance manual.

Maintenance tasks, including quarterly, annual, and biennial ones, must be carried out by qualified personnel trained in machine maintenance, following the procedures outlined in the machine repair manual.

Machines that have been idle for more than three months must undergo a quarterly inspection before being put back into use.

Note: The lubrication intervals should be based on the machine's normal operating conditions. For equipment used in multiple shifts or under harsh environmental conditions, the lubrication frequency should be increased accordingly.

Swivel support assembly



Lubrication point: Oil nipple.

Capacity: As required.

Lubrication: Great Wall 7408B-1 gear grease.

Time interval: Every 3 months or after 150 hours of operation.

Note: Apply lubricating oil and rotate at 90-degree intervals until the bearing is fully lubricated.

Do not over-lubricate the bearing, otherwise it will cause damage to the external seal of the housing.

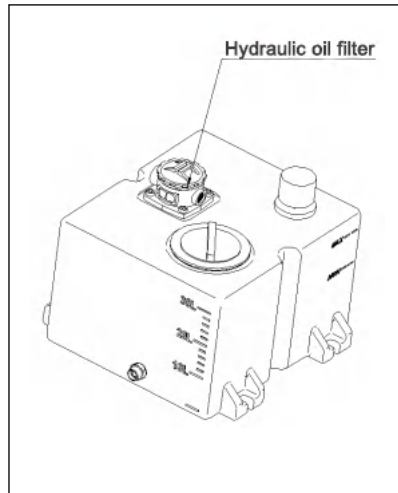
a) hydraulic oil tank

Liquid level: 95 litres

Time interval: Check the liquid level every day; replace it once every year or after 2000 hours of operation.

Note: On new equipment, equipment with major overhaul or equipment after hydraulic oil replacement, operate all systems for at least two complete cycles and recheck the liquid level in the oil tank.

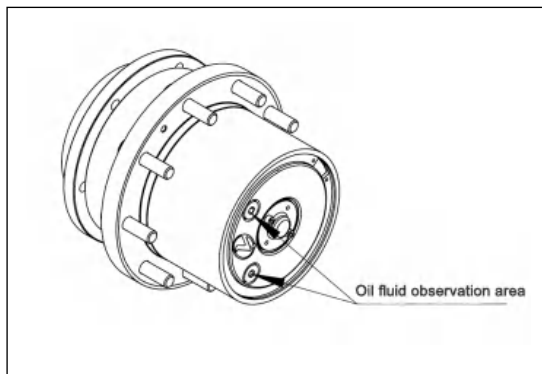
Hydraulic oil circuit filter



Maintenance point: Replace the oil return filter element.

Time interval: replace after 50 hours for the first time, and then every 6 months or 300 hours.

b) Walking reducer and walking motor

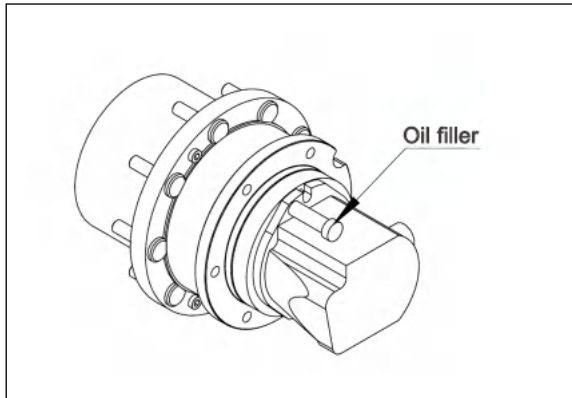


Lubrication point: Oil level / filler plug.

Capacity: 1 L

Model: SAE80W/90 Industrial closed gear oil

Time interval: Check the level every 3 months or after 150 hours of operation; replace every 2 years or after 1200 hours of operation.



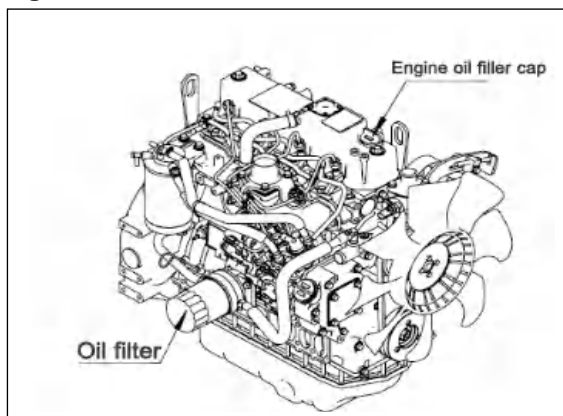
Lubrication point: fuel filler plug.

Capacity: 89 ml.

Oil model: same as hydraulic oil.

Time interval: replace as required.

d) Engine oil and oil filter



Maintenance points: Plug the fuel port / rotate and fix the filter element.

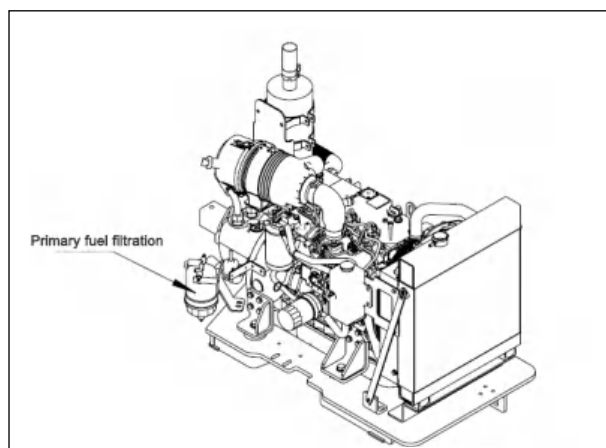
Capacity: about 7.4 litres.

Oil: engine oil.

Time interval: every six months or after 300 hours of operation.

Note: Check the oil level daily / replace according to the engine manual.

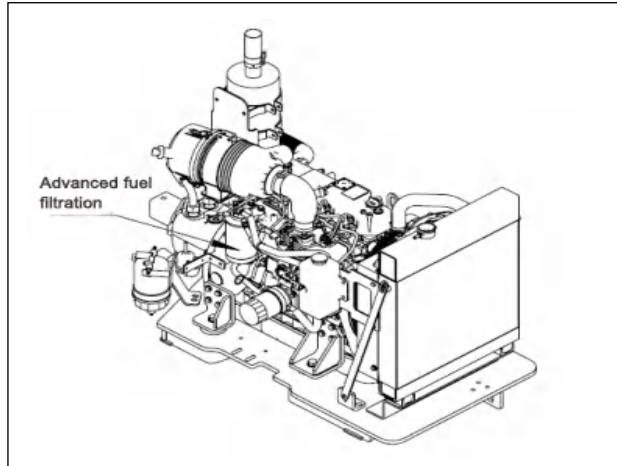
e) Initial fuel filter for engine



Maintenance point: replaceable filter element.

Time interval: drain water every day, replace the fuel filter every six months or 300 hours of operation.

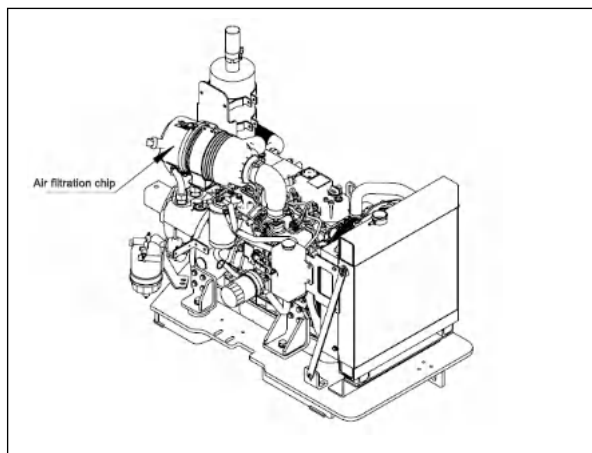
f) Engine fuel fine filter



Maintenance point: replaceable filter element.

Time interval: replace the fuel filter every six months or 300 hours of operation.

g) Engine air filter

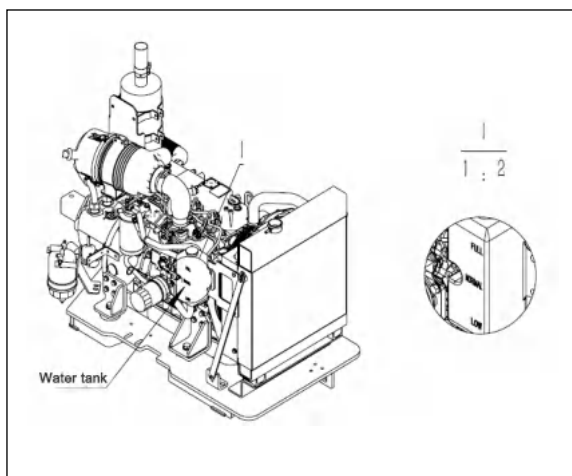


Maintenance point: replaceable filter element.

Time interval: replace every 6 months or after 300 hours of operation, or replace according to the status indicator.

Note: check the dust valve daily.

h) engine coolant



Maintenance point: Add or replace antifreeze.

Capacity: about 11 litres.

Time interval: Check oil level every day, replace every 1000 hours or two years (whichever comes first).

Tires and wheels

Tire replacement

SKYBOOM recommends that the size, number of layers, and brand of the replacement tires be the same as those originally installed on the equipment. Refer to the SKYBOOM parts manual for the tire part numbers allowed for a specific equipment model. If you do not use SKYBOOM-approved replacement tires, the replacement tires must meet the following criteria:

equal to or greater than the original tire in terms of number of layers, rated load, and size;

the tread contact width of the replacement tires must be equal to or greater than that of the original tires;

the diameter, width, and offset of the replacement wheels must be the same as those of the original wheels;

the application approved by the tire manufacturer (including inflation pressure and maximum tire load).

Unless specifically approved by SKYBOOM, foam-filled tire assemblies should not be replaced with pneumatic tires. When selecting and installing replacement tires, ensure that all tires meet SKYBOOM's recommended inflation pressures. Since different brands have different tire sizes, the same brand of tires must be used on the same axle.

Wheel and tire requirements

The rim installed on each product model, the tread width, tire pressure and load are specially designed to meet the stability requirements. Any change in the rim width, center position, diameter increase or decrease without the factory's written recommendation may constitute an unsafe factor and affect the stability.

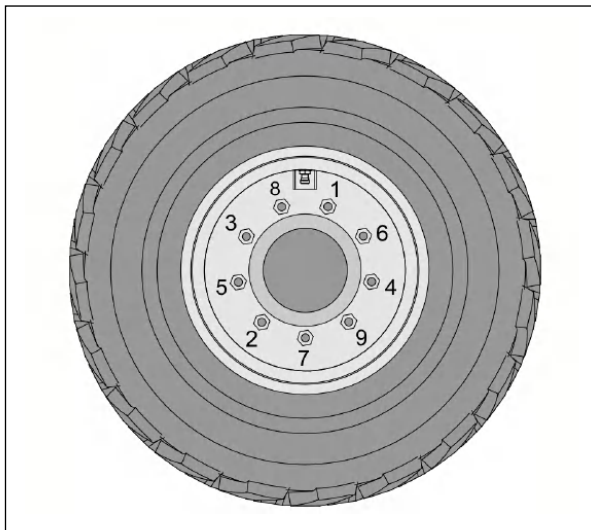
Wheel installation

Applying and maintaining the correct wheel installation torque is extremely important

To avoid the risk of wheel loosening, bolt breakage, and possible separation of the wheel from the axle, the wheel nut must be installed with the correct torque and maintained. The nut used must match the cone Angle of the wheel.

Tighten the nut to the correct torque to prevent the wheel from loosening. Use a torque wrench to tighten the fastener. If a torque wrench is not available, use a specialized wheel bolt wrench to tighten it, and then have the repair shop or dealer tighten the nut to the correct torque. Over-tightening can cause the bolt to break or permanently damage the bolt installation hole on the wheel. The correct sequence for wheel installation is as follows:

- a) First, tighten all nuts by hand to prevent thread damage. Do not apply lubricants to the threads or nuts;
- b) Tighten the nuts in the following order;
- c) The nuts must be tightened in multiple stages. Follow the recommended sequence and torque when tightening the nuts;
- d) After the first operation, 50 hours later, and after each removal of the wheel, the wheel nuts must be tightened to the specified torque. Check the torque and retighten every 3 months or after 150 hours of operation.



Product Specification

Model	STL-19J	STL-22J	STL-26J	STL-28J
Max. Platform Height	21m	24m	28m	29.8m
Max. Working Height	19m	22m	26m	27.8m
Max. Horizontal Reach	14.9m	14m/15.8m	16m/18m	17.8m/20m
Standard Load Capacity	250KG	300kg/460kg	300kg/460kg	300kg/460kg
Gradeability	45%	45%	45%	45%
Turning Radius-outside	3.42m	5.6m	5.98m	5.98m
Turning Radius-inside	6.21m	2.4m	2.5m	2.5m
Travelling speed (stowed)	5.1KM/H	5.1KM/H	5.1KM/H	5.1KM/H
Travelling speed (raised)	1.1KM/H	1.1KM/H	1.1KM/H	1.1KM/H
Rotation angle	Continues 360°	Continues 360°	Continues 360°	Continues 360°
Platform rotation angle	±80°	±80°	±80°	±80°
Max. wind speed allowed	12.5m/s	12.5m/s	12.5m/s	12.5m/s
Max. lateral force	400N	400N	400N	400N
Max. slope	5°	5°	5°	5°
Length (stowed)	9.5m	10.8m	12.5m	13.1m
Width	2.28m	2.49m	2.49m	2.49m
Height (stowed)	2.65m	2.7m	2.9m	2.9m
Ground clearance	0.45m	0.43m	0.43m	0.43m
Wheelbase	2.44m	2.51m	3m	3m
Platform dimension	1.83*0.76m	2.44*0.91*1.1m	2.44*0.91*1.1m	2.44*0.91*1.1m
Tyre	36*14-20	36*14-20	385/65-24	385/65-24
Engine	Yanmar	Cummins QSF2.8	Cummins QSF2.8	Cummins QSF2.8
Fuel capacity	110L	160L	160L	160L
Hydraulic oil tank	180L	200L	200L	200L
Control voltage	12V	12V	12V	12V
Drive & steering	4WD*2WS	4WD*2WS	4WD*2WS	4WD*2WS
Weight	10200kg	12200kg	16100kg	17200kg

Maintenance Schedule

There are five types of maintenance inspections that must be carried out according to the schedule: daily, quarterly, every six months, annually and every two years. Considering the repeated procedures, the "periodic maintenance part" and "maintenance inspection report" are divided into five segments - A, B, C, D and E.

Determine the combination of procedures required to perform periodic maintenance according to the following table.

Maintenance interval	Maintenance procedure
Every day or every 8 hours	A
Every quarter or every 250 hours	A+B
Every half a year or every 500 hours	A+B+C
Every year or every 1000 hours	A+B+C+D
Every two years or every 2000 hours	A+B+C+D+E

Maintenance inspection report:

- ✓ The maintenance report includes the inspection items of each type of regular inspection.
- ✓ Save the completed form for at least three years.

Maintenance record sheet:

Model	
Product Serial No.	
Manufacturing date	
User	
Maintainer signature	
Maintainer post	
Maintainer company	

Check the maintenance procedures item by item according to the steps in this chapter. Record the results. If any result is N, the equipment must be stopped and rechecked after maintenance, with R indicated.

A- Y-YES, machine performance good.

B- N-No, machine has problem.

C- R-Repaired, machine repaired.

Record sheet A			
Project	Y	N	R
A-1 Manual			
A-2 Label			
A-3 Pre operation inspection			
A-4 Function check			
A-5 Engine maintenance			

A-6 Safety system			
Every 40 hours			
A-7 Engine air filter			
After 40 hours			
A-8 Perform 30 day maintenance			
After 50 hours			
A-9 Engine maintenance			
Every 50 hours			
A-10 Engine maintenance			
Every 100 hours			
A-11 Engine maintenance			
Every 150 hours			
A-12 Reducer gear oil			
Every 200 hours			
A-13 Engine maintenance			
A-14 Engine oil-water separator			
Every 1~2 month			
A-15 Engine maintenance			

Record sheet B			
Project	Y	N	R
B-1 Battery			
B-2 Wires			
B-3 Wheel hub and tire			
B-4 Key switch			
B-5 Emergency stop switch			
B-6 horn			
B-7 Brake			
B-8 Travelling speed (stowed)			
B-9 Travelling speed (raised or extended)			
B-10 Hydraulic oil tank filter			
B-11 Hydraulic oil analysis			
B-12 alarm			
B-13 Reducer gear oil			
Every 400 hours			
B-14 Engine maintenance			

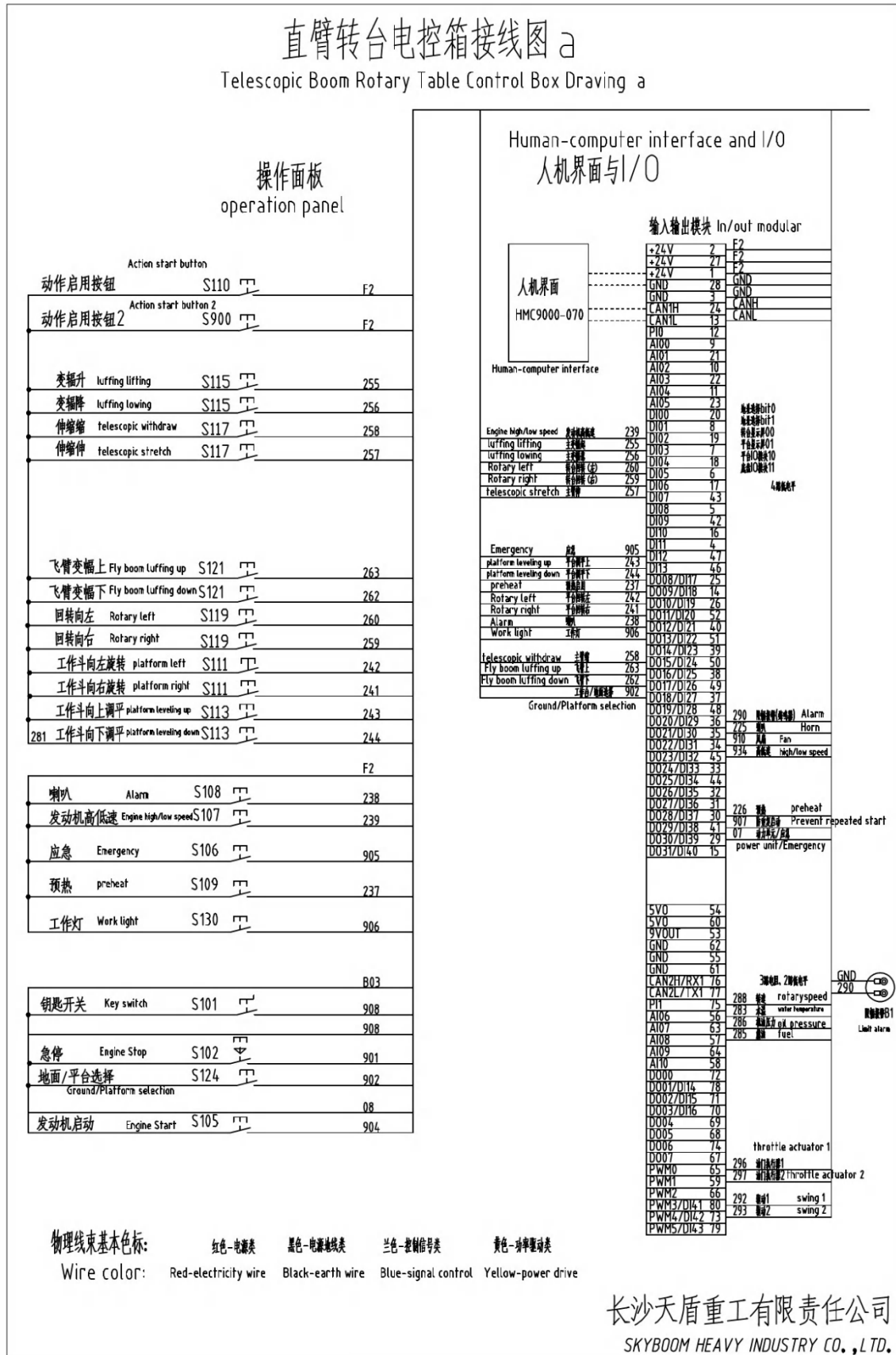
Record sheet C			
Project	Y	N	R
C-1 Platform overload system			
C-2 Emergency descent system			
C-3 Fuel tank			
C-4 Hydraulic oil tank filter			

Every 500 hours			
C-5 Engine maintenance			
Every 800 hours			
C-6 Engine maintenance			

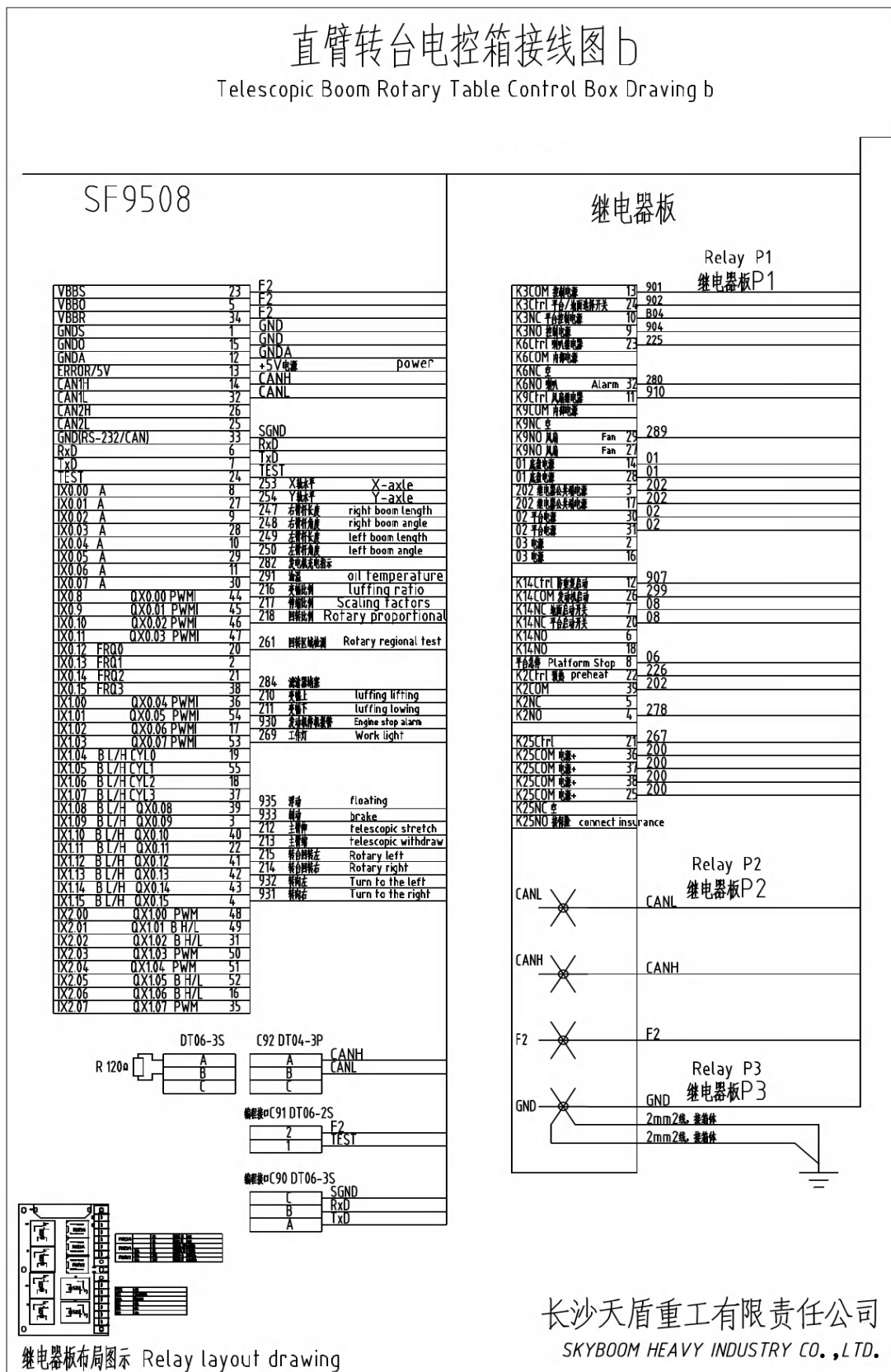
Record sheet D			
Project	Y	N	R
D-1 every stop pin			
D-2 slider			
D-3 Hydraulic oil return filter			
D-4 Engine maintenance			
D-5 Reducer gear oil			
Every 1500 hours			
D-6 Engine maintenance			

Record sheet E			
Project	Y	N	R
E-1 Check and replace hydraulic oil			
Every 2000 hours			
E-2 Engine maintenance			
Every 3000 hours			
E-3 Engine maintenance			

Electrical Diagram (Rotary table A)

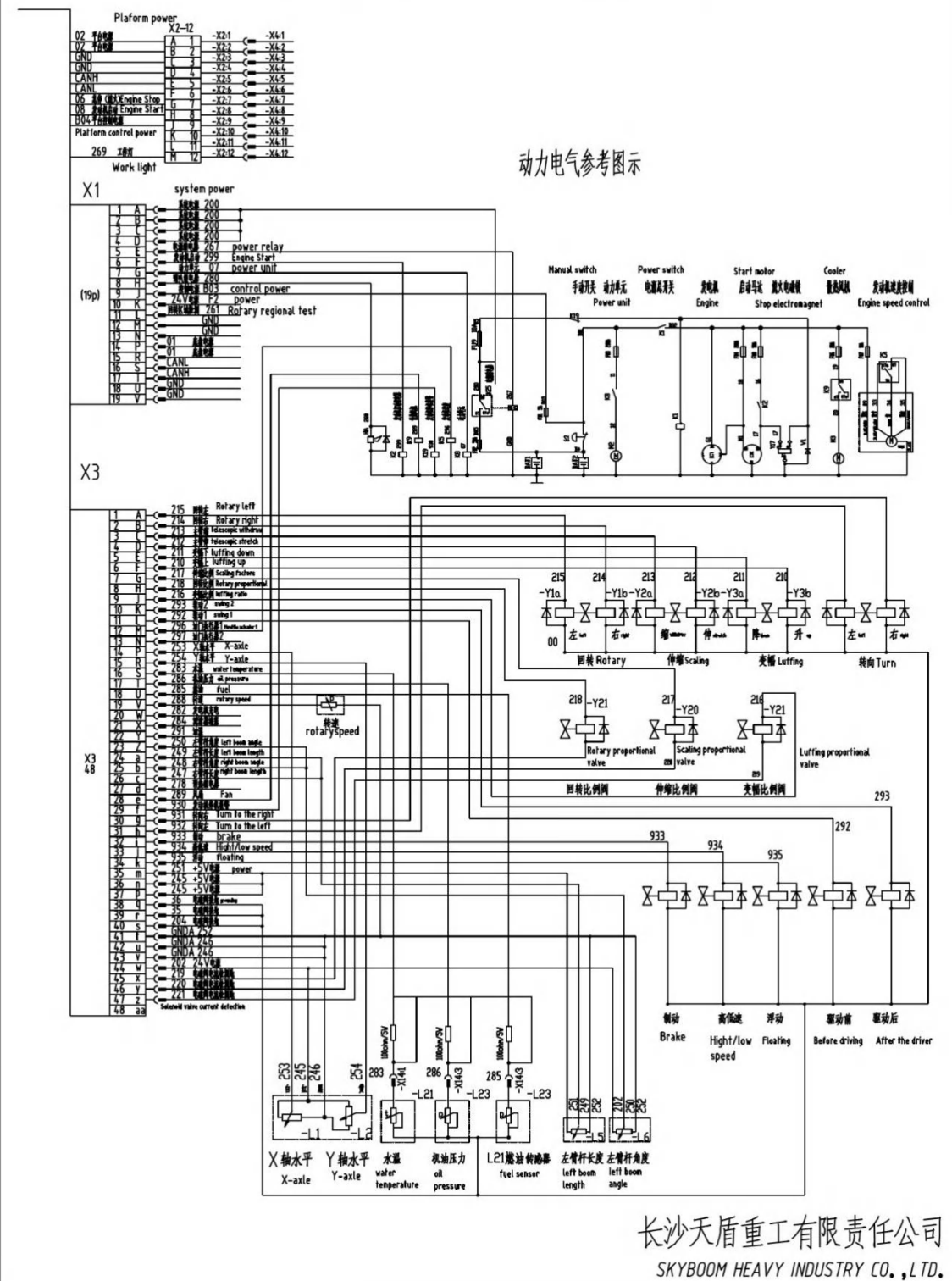


Electrical Diagram (Rotary table B)

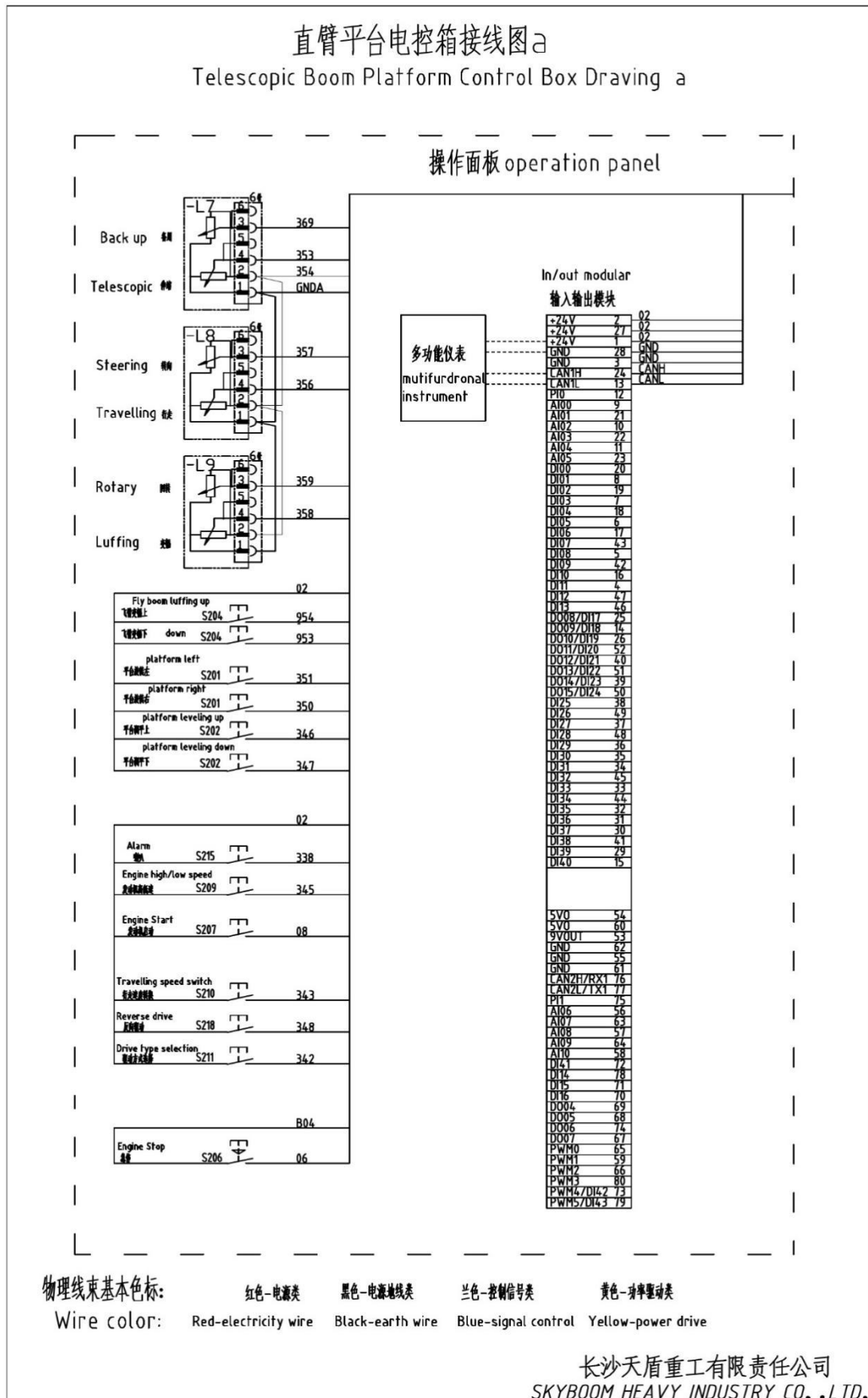


直臂转台电控箱接线图 C

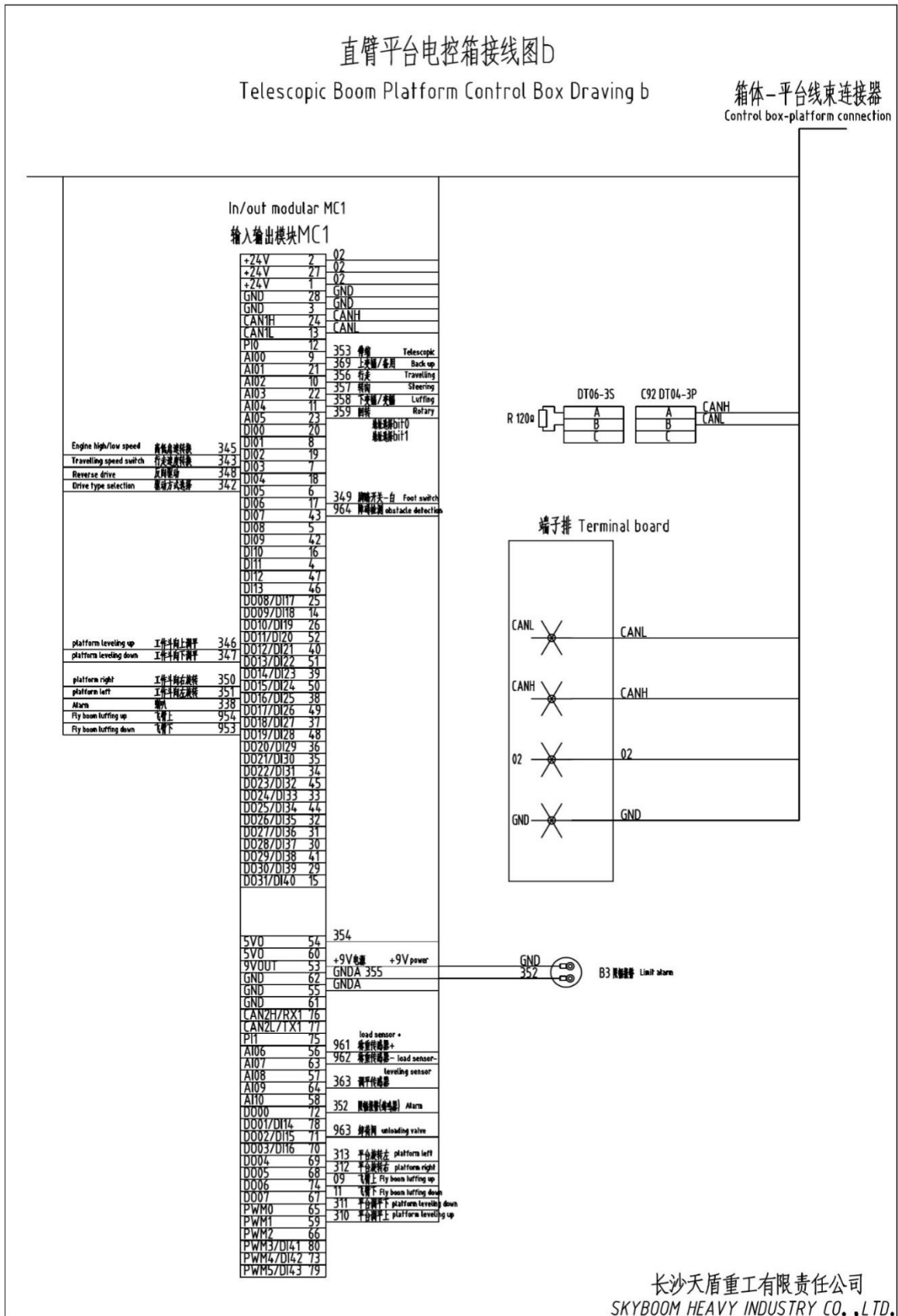
Telescopic Boom Rotary Table Control Box Draving c



Electrical Diagram (Platform A)



Electrical Diagram (Platform B)



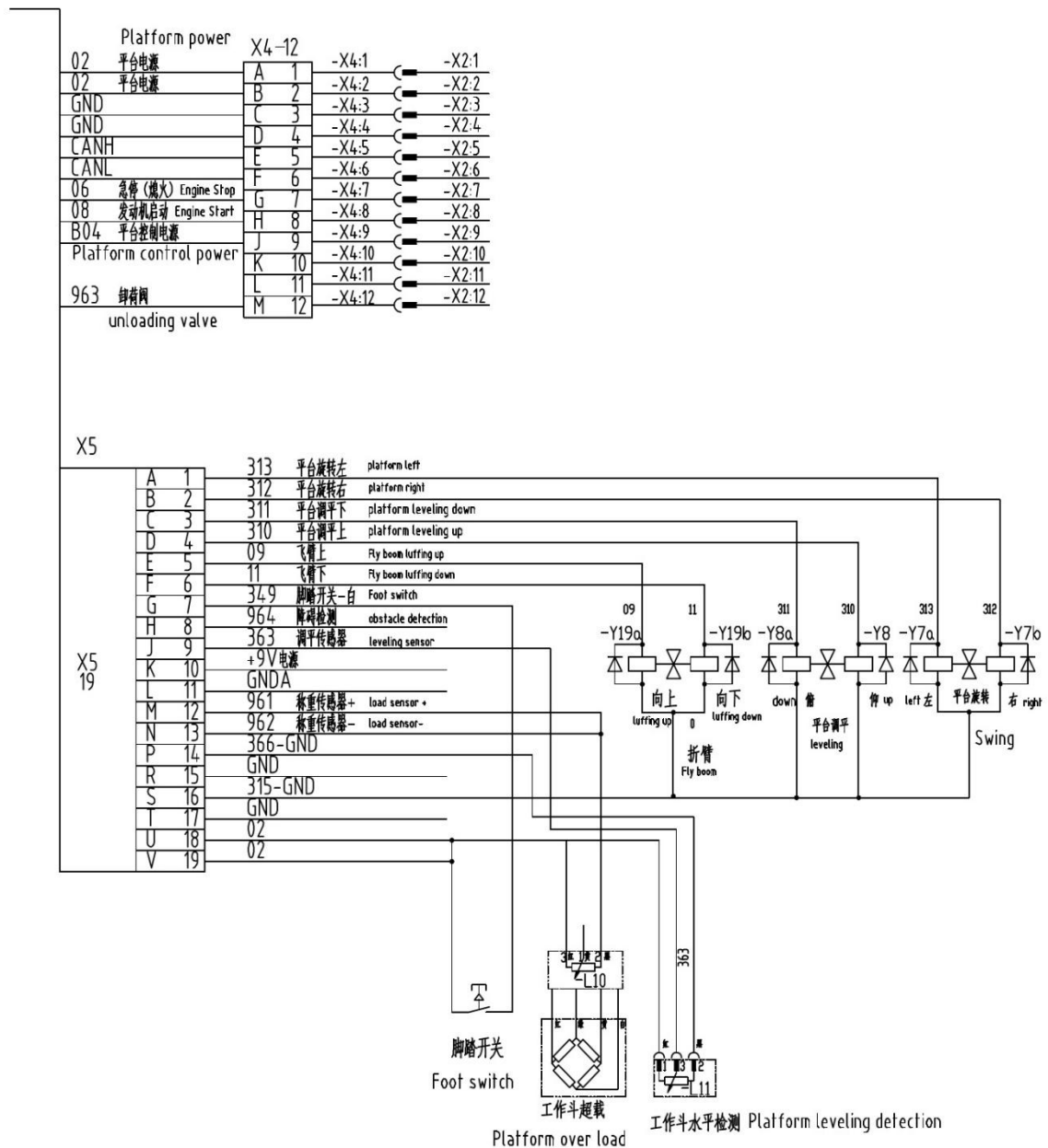
Electrical Diagram (Platform C)

直臂平台电控箱接线图c

Telescopic Boom Platform Control Box Draving c

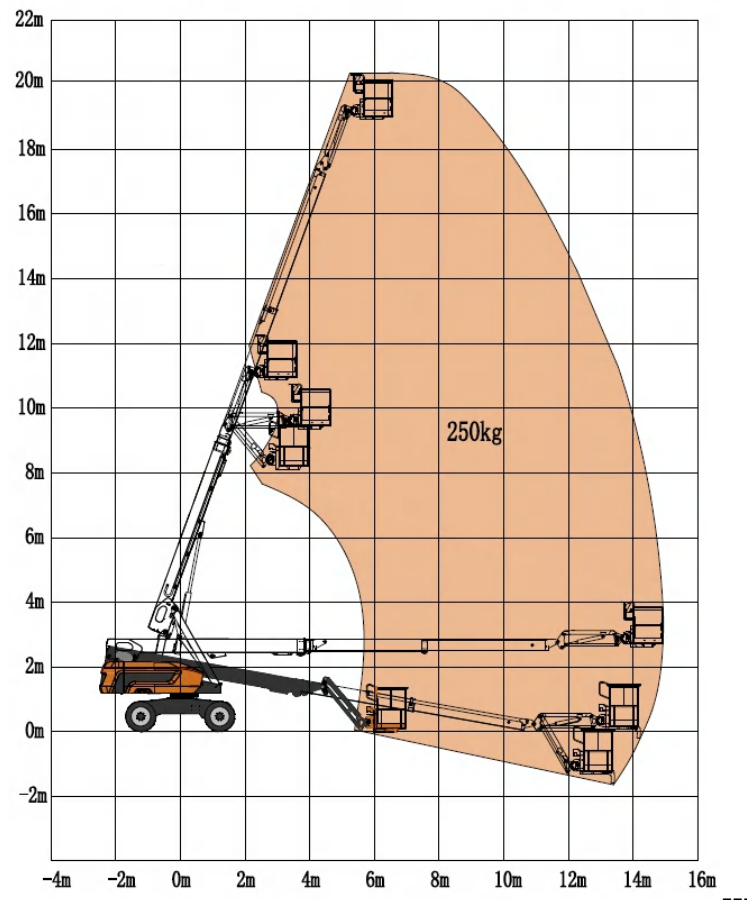
箱体-平台线束连接器

Control box-platform connection

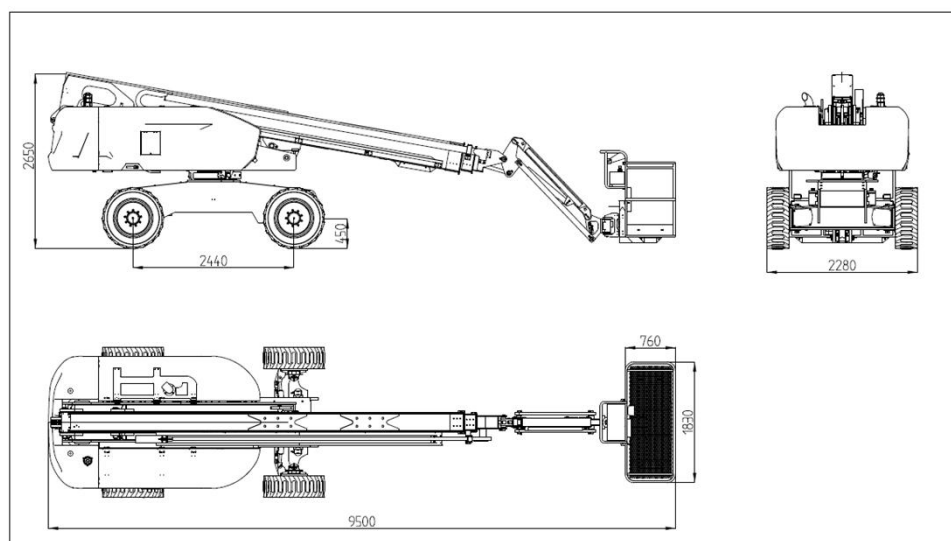


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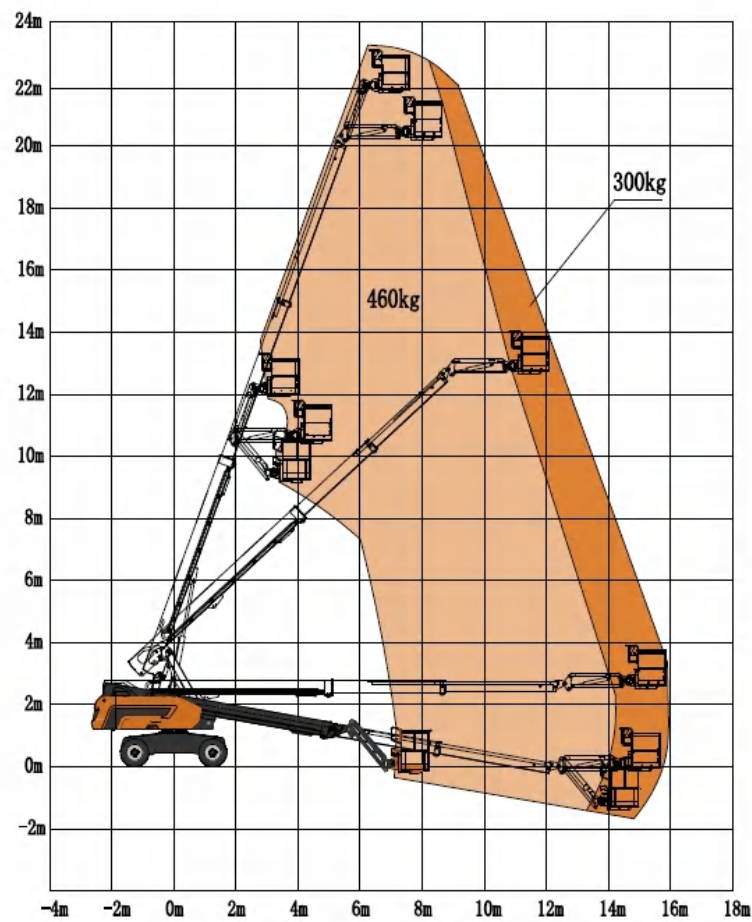
STL-19J Operation Scope Diagram



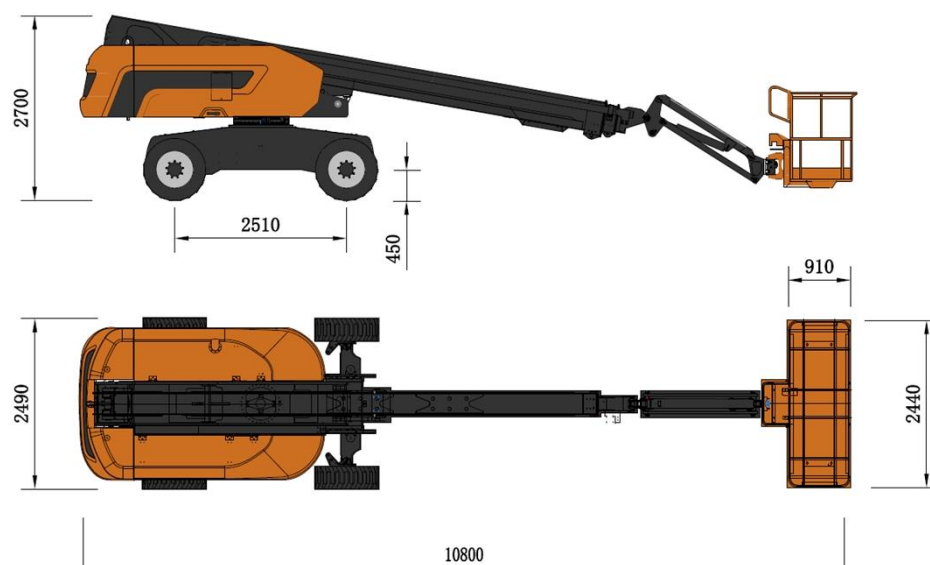
STL-19J external dimension diagram



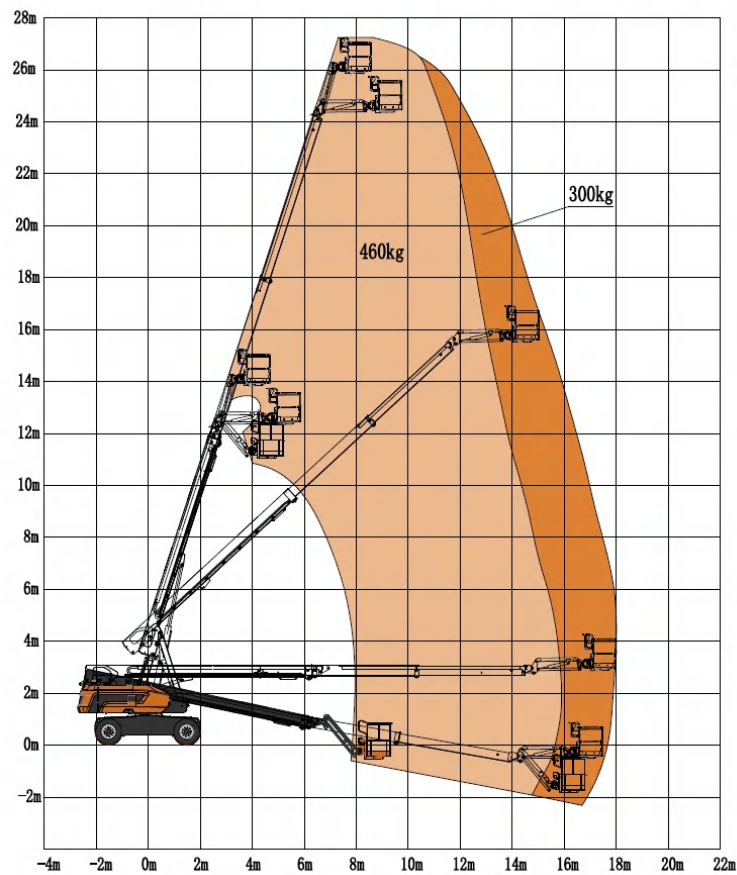
STL-22J Operation Scope Diagram



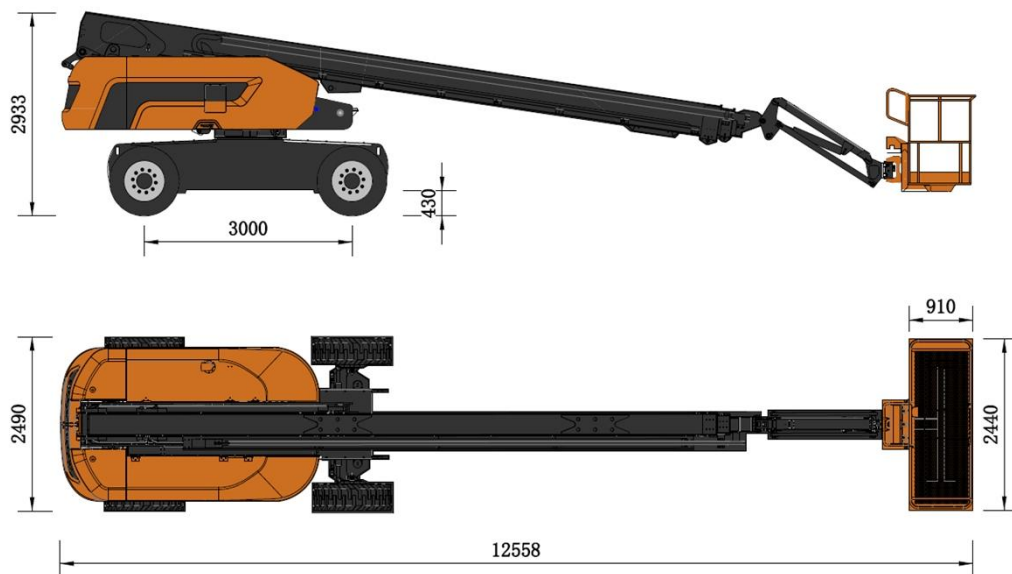
STL-22J external dimension diagram



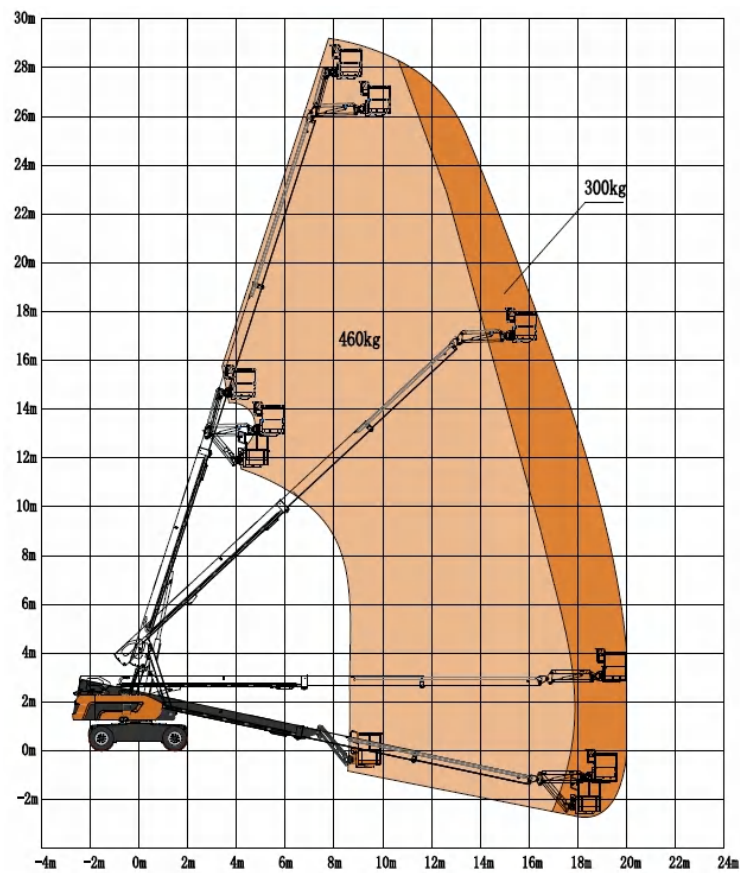
STL-26J Operation Scope Diagram



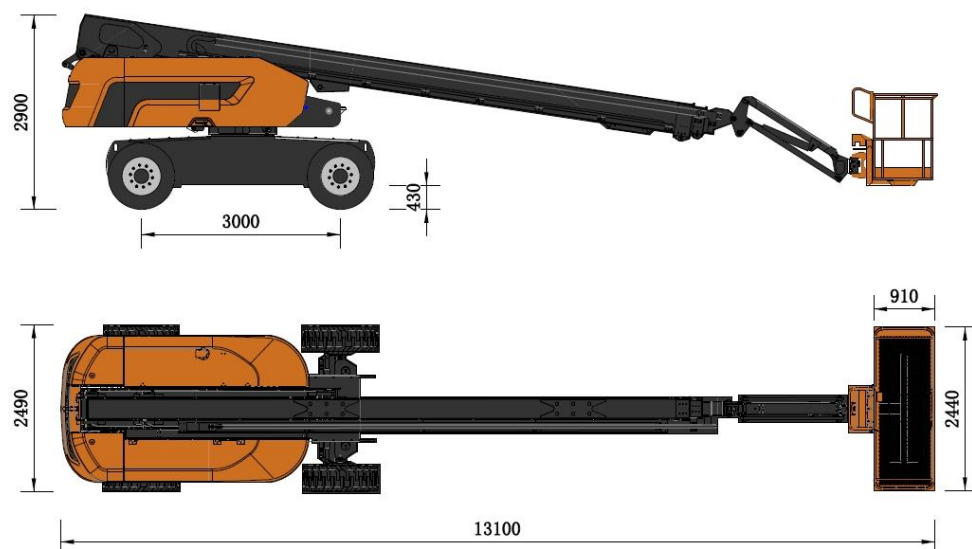
STL-26J external dimension diagram



STL-28J Operation Scope Diagram



STL-28J external dimension diagram



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This image shows a full page of white paper with horizontal dashed lines, typical of primary-ruled notebook paper. The lines are evenly spaced and run across the width of the page. There are no margins, text, or other markings on the paper.

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This image shows a full page of white paper with horizontal dashed lines, typical of primary school handwriting practice paper. The lines are evenly spaced and run across the width of the page. There are no margins, text, or other markings on the paper.