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Translated version

Operation Manual

TB14J Plus/TB460J Plus

CE  AS/NZS  EAC GB

SINOBOOM



WARNING

Operating, servicing and maintaining this vehicle or equipment can expose you to chemicals including engine exhaust, carbon monoxide, phthalates and lead, which are known to the State of California to cause cancer and birth defects or other reproductive harm. To minimize exposure and avoid breathing exhaust, do not idle the engine except as necessary, service your vehicle or equipment in a well-ventilated area and wear gloves or wash your hands frequently when servicing. For more information, go to: www.P65warnings.ca.gov.

For disposal, please comply with local regulations.

SINOBOOM



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Hunan Sinoboom Intelligent Equipment Co., Ltd. retains the right of final interpretation of the manual.

To Users

Thank you for choosing and using the machinery of **Hunan Sinoboom Intelligent Equipment Co., Ltd.**

Use this machine only to transport tools to work locations and for performing tasks on the work platform. Only authorized personnel who have received appropriate MEWP training may operate this machine. Before using the machine, carefully read and fully understand this manual and strictly follow its relevant instructions. Different countries, regions, or governments may have equipment operating regulations that conflict with this manual. The stricter safety operating regulations should be followed. Our company will not be liable for any adverse consequences arising from the failure to operate and use the machine in accordance with this manual or the relevant regulations.

This manual provides necessary safety precautions and operation instructions for users. This manual covers the basic configuration information of one or more models. Please refer to the information applicable to your machine model. Treat this manual as an integral part of the machine and keep it with the machine at all times. This manual may not be copied, distributed, sold, or altered without written permission from Sinoboom.

Due to continuous improvement and upgrading of product design and different product models covered, some charts and textual content in the manual may be not applicable to your machine. Our company reserves the right to revise the contents of this manual due to technological improvements. Changes will be made without prior notice. Contact Sinoboom to obtain the most current version of the manual.

Please go to www.sinoboom.com.cn to download your desired Operation Manual, Maintenance Manual and Parts Manual.

If you have any questions, contact **Hunan Sinoboom Intelligent Equipment Co., Ltd.**

Manual Revision History:

[illegible]

Applicable Models

The manual applies to the following models and serial numbers:

Model	Metric Trade ID	Imperial Trade ID	Serial No.
TB14J Plus	TB14J Plus	TB460J Plus	0508400100 to present

Note:

- Check the machine model and serial number on the machine nameplate. The location of the nameplate can be found in the ***Diagram of Decal Positions*** section of the Operation Manual.
- Product model numbers are indicated on the nameplates to distinguish products with different main technical parameters.
- Product trade names (product commercial codes) are used for marketing purposes and machine decals for the differentiation of products with different main technical parameters. Product trade names are categorized as metric and imperial trade names: metric trade names are applicable to regions/countries using the metric system or as specifically requested by customers; imperial trade names are applicable to regions/countries using the imperial system or as specifically requested by customers.

1 SAFETY WARNING SYMBOLS AND SIGNS

The safety warning symbols used on the machine and in the manuals have the following meanings:



Safety warning symbol. This symbol is used to alert you to potential hazards. Observe all safety instructions following a symbol to avoid possible injuries.



DANGER

Indicates an imminently hazardous situation that, if not avoided, will result in death or serious injury.



WARNING

Indicates an imminently hazardous situation that, if not avoided, could result in death or serious injury.



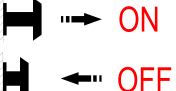
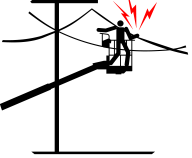
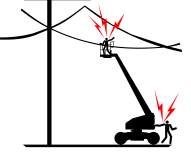
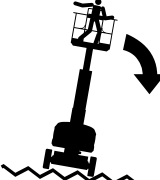
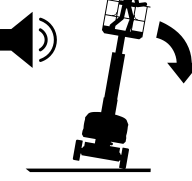
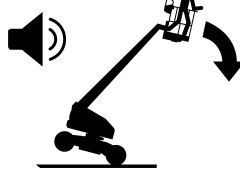
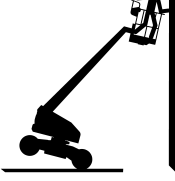
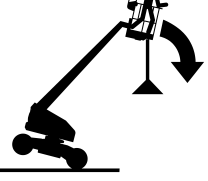
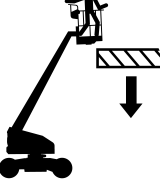
CAUTION

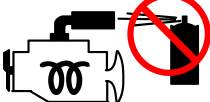
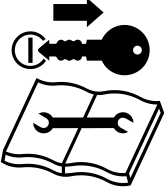
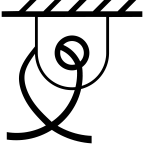
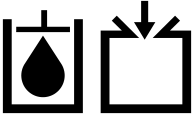
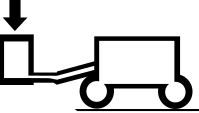
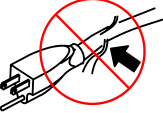
Indicates an imminently hazardous situation that, if not avoided, could result in minor or moderate injury.

Note

Indicates information directly or indirectly related to personal safety, machine damage, or property loss.

The safety signs used on the machine and in the manuals have the following meanings:

 Refer to the maintenance manual	 Anchorage point only for 1 person	 Wind speed	 Chemical burns hazard	 Wedge the wheel
 Refer to the operation manual	 Add lubricant	 Crushing hazard – safety shoes required	 Danger of hot, high-pressure fluid spray	 Wind
 Noise level	 Burn Hazard	 Keep a safe distance from high temperatures	 Pull out-ON Press-OFF	 Alarm sounding
 Depress – ON Release – OFF	 Hydraulic oil level low	 Hydraulic oil level high	 Temperature	 Replace with tires of the same specification
 Only trained maintenance personnel can check the compartment	 Electrocution hazard on platform	 Electrocution hazard on the ground and platform	 Tipping hazard – avoid uneven ground	 Tipping hazard – avoid uneven ground
 Tipping hazard – never use machine in strong, gusty winds	 Tipping hazard – never use machine in strong, gusty winds	 Tipping hazard – never push or pull objects outside the platform	 Tipping hazard – never suspend objects from the platform	 Tipping hazard – never place ladders and scaffolding on the platform
 Tipping hazard – never use machine in strong, gusty winds	 Tipping hazard – never use machine in strong, gusty winds	 Tipping hazard – never use machine in strong, gusty winds	 Tipping hazard – never use machine in strong, gusty winds	 Tipping hazard – never use machine in strong, gusty winds

Collision hazard – keep the platform clear of obstacles below when lowering the platform	Collision hazard – keep head clear of overhead obstacles when raising platform	Crushing hazard – keep hands clear from overhead obstacles when raising platform	Fall hazard – never climb on platform guardrails	Fall hazard – never climb on the boom
				
Keep clear from the rotating platform	Engine preheating explosion hazard	Never use ether or other starting additives for machines equipped with a glow plug	Fuel explosion hazard	Wear protective clothing and safety goggles
				
Only qualified maintenance personnel may perform maintenance work	Lateral force	Electrocution hazard	Battery explosion hazard	No smoking or open flames/sparks
				
No smoking or open flames/sparks	Lifting point	Lashing point	Tire ground pressure	Hydraulic oil filler
				
Platform load capacity	Do not use damaged power cords	Tool or weight	Fast/high speed	Slow/low speed
				
Horn				

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2 IMPORTANT SAFETY RULES

2.1 GENERAL

This chapter briefly describes the precautions that must be followed for safe and proper operation and maintenance of this machine. To ensure safe use and proper operation of the machine, the operator must perform routine maintenance on the machine in accordance with the Operation Manual and Maintenance Manual. In addition, the machine must be regularly maintained and serviced by a qualified service technician according to the instructions provided in the Maintenance Manual.

Familiarize yourself with the local regulations concerning Mobile Elevated Work Platforms (MEWPs) and related operations. The rules for equipment operation from different countries, regions, or governments may conflict with this manual, so the stricter safety operation rules should be followed. If you have any questions about safety, training, inspection, maintenance, purposes and operation of the machine, please contact Hunan Sinoboom Intelligent Equipment Co., Ltd.

Sinoboom cannot foresee all the potential hazards related to this machine, so all parties involved should place high importance on safety issues.



WARNING

Failure to follow the operating instructions and safety rules in this manual may result in machine damage, property loss, or personal injury.

2.2 PREPARING FOR OPERATION

Operator's Training and Knowledge Requirements

Before operating this machine, read, understand, and comply with all applicable regulations and requirements of employers, local authorities, and the government related to equipment use.

Before operating this machine, you should read and fully understand this manual, undergo professional training based on this Operation Manual, and only operate this machine independently after acquiring the qualification for proficient operation. The training content should include, but not be limited to, the following topics:

- Warnings, operating instructions, and the Operation Manual on the machine.

- Pre-start test
- Factors affecting the stability of the machine
- Common hazards and how to avoid them
- Workplace Inspection
- Functions and related knowledge of all controls, including emergency controls
- Use of personal protective equipment appropriate to the work task, workplace, and environment
- Safe operation
- Transport
- How to prevent unauthorized use

Workplace Inspection

Before and during the operation of the machine, users must pay attention to the hazards and take preventive measures to avoid hazards in the work area. Without the written permission of Hunan Sinoboom Intelligent Equipment Co., Ltd., this machine shall not be used in the following areas or conditions:

- Steep slopes or caves
- Ground with protrusions, obstacles, or debris
- Insecure or slippery surfaces
- Surfaces not sufficient to support the machine (machine weight +platformWeight)
- Trucks, trailers, rail cars, ships, or other equipment
- Dangerous locations
- Places with overhead electric wires, cranes, or other potential obstacles
- In gusty and/or strong wind conditions, or lightning
- Unauthorized persons
- Other areas where unsafe conditions may occur

Machine Inspection

Make sure to complete all checks in strict accordance with the steps in the **Pre-operation Test** section of this manual before operating the machine:

- **Pre-start test**: Ensure that no components are loose/loosening, missing or altered. Components must be securely fixed, without visible damage, leakage, or excessive wear, etc., all parts must be in their original locations and operating position; make sure that all fluid levels, battery level, etc. are appropriate; ensure that maintenance work has been completed

in accordance with the requirements specified in the Maintenance Manual.

- **Decals inspection** : Ensure that no decals and nameplates are missing and/or damaged; decals must be clearly visible.
- **Functional test** : Make sure that all functions of the machine are working properly.



WARNING

It is forbidden to alter or modify the machine without the written permission of Hunan Sinoboom Intelligent Equipment Co., Ltd.

2.3 OPERATION SAFETY

General

WARNING



- This machine shall only be used to transport tools to work locations and for performing tasks on the work platform, and should not be used for other purposes.
- Operators should use personal fall protection equipment (PFPE) while operating the machine. If workplace or other rules require the use of PFPE by persons on the platform, the PFPE should be inspected and used in accordance with the PFPE manufacturer's instructions and applicable government requirements.
- The operator must devote their full attention to their work during the operation of the machine. The use of mobile phones, wireless communication devices, etc. may distract the operator and affect the safe operation of the machine, so the operator should completely stop the machine before using such devices.
- Remove all rings, watches and other accessories before operating the machine, do not wear loose clothing, and do not let long hair hang loosely.
- Individuals who have consumed alcohol or taken medication, who are overly fatigued or mentally distressed, who suffer from health conditions such as heart disease, high blood pressure, epilepsy, etc., individuals with a fear of heights or who feel unwell are prohibited from operating the machine.
- Do not operate a damaged or malfunctioning machine. In case of any failure, stop the machine immediately, label the machine appropriately, and contact the manufacturer or relevant department.
- Never disassemble, modify or retrofit the machine or its parts.
- Never disable any safety devices of the machine.
- Never place objects on the platform guardrails.

WARNING

- Never push the control switch or joystick forcefully through the neutral position directly into the opposite direction. Before pushing the switch to the next function position, move it back to the neutral position and stop, and then move it with slow and uniform force to perform the next function.
- Except in case of emergency, it is forbidden to perform operations from the ground if any person is still on the platform.
- When there are two or more people on the platform, all operation of the machine must be conducted by the operator.
- Always operate the machine in well-ventilated conditions to avoid carbon monoxide or nitrogen oxide poisoning.
- Before leaving the machine, the platform should be completely lowered and all power should be shut off.

Electrocution Hazard

WARNING



- This machine is not insulated and not equipped with electrocution protection function.
- Do not use this machine during thunderstorms or heavy rain. Should you encounter thunderstorms or heavy rain while operating the machine, immediately lower the platform completely in a safe and stable position, and disconnect all power sources so as to avoid personal injury or machine damage.
- Comply with the national or regional provisions covering minimum safe distance from live conductors. In absence of such provisions, comply with the specifications in the table below to keep a minimum safe distance from power lines, electrical equipment or any live (bare or insulated) components. The minimum safe distance must take into account factors such as machine movement and the swinging or sagging of power lines.
- If an insulating partition rated for the voltage of the power lines is installed, the minimum safe distance can be reduced. Such partitions cannot be part of the machine or fixed on the machine. The reduction in the minimum safe distance due to insulating partitions must comply with the relevant national or local regulations.
- Do not use the machine as a ground wire during welding and polishing operations.

Table 2-1 Minimum Safe Distance

Voltage (Phase to Phase, kV)	Minimum Safe Distance
0-50	3.05 m (10 ft)
50-200	4.60 m (15 ft)
200-350	6.10 m (20 ft)
350-500	7.62 m (25 ft)

Table 2-1 Minimum Safe Distance (Continued)

Voltage (Phase to Phase, kV)	Minimum Safe Distance
500 -750	10.67 m (35 ft)
750 -1000	13.725 m (45 ft)

DANGER

Do not operate the machine or transport personnel with the machine within access-restricted areas with live electrical equipment.

Tripping and Fall Hazards

WARNING



- Before operating the machine, make sure that the platform guardrails are properly installed and that the platform gates are closed and properly secured.
- Operators on the platform must wear the safety belt properly and secure the safety belt to the specified anchorage point with the hook. Each anchorage point shall only be used by one person.
- Exercise extreme caution when entering and exiting the platform. Use only the platform gate for access and never use the boom for entry or exit. Before entering and exiting the platform, make sure the platform is fully lowered. When entering and exiting the platform, face the platform and maintain “three-points of contact” with the machine with both hands and one foot or both feet and one hand.
- Both feet must be securely placed on the platform floor at all times. It is forbidden to sit, stand or climb on the platform guardrails.
- Never use ladders, boxes, steps, boards, or similar items on the platform to extend your reach.
- Do not allow oil, sludge or other slippery substances to remain on work shoes and platform floor.
- Keep the platform floor unobstructed.

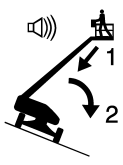
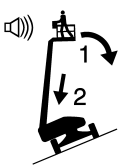
Tipping Hazard

WARNING



- Before driving onto any ground, bridge, truck, or other surface, check to ensure that these surfaces can support the total weight of the machine (machine weight + platform load). Do not drive on surfaces or edges that are not supported or insufficiently supported.
- Operators must familiarize themselves with the ground conditions of the work area before commencing work.
- Do not operate the machine on moving surfaces or vehicles.
- The total weight of personnel, devices and materials on the platform shall not exceed the platform's rated load capacity, and all loads shall be kept within the specified range of the platform.
- On the slopes the machine may only be driven at low speed.
- The machine must not be driven on slopes, steps or arched surfaces that exceed the maximum gradeability of the machine.

WARNING



- Do not use the tilt alarm as a horizontal indicator. The tilt alarm on the platform will only sound when the machine is severely tilted.
- If the tilt alarm sounds when the machine drives up a slope, lower the boom as per the following instructions and move the machine to firm and level ground. Make sure not to rotate the boom while lowering it.
 1. Lower the main boom;
 2. Retract the telescopic boom.
- If the tilt alarm sounds when the machine drives down a slope, lower the boom as per the following instructions and move the machine to firm and level ground. Make sure not to rotate the boom

WARNING



while lowering it.

1. Retract the telescopic boom;
2. Lower the main boom.

- Do not drive the machine on uneven or soft surfaces or slopes that exceed the maximum gradeability of the machine or under other hazardous conditions with the platform raised.
- The boom must only be raised or extended when the machine is on solid, level ground.
- When the machine is traveling on uneven ground, or on other rough surfaces such as gravel, or near holes, steep slopes, etc., maintain a distance of at least 0.6 m (2 ft) from potential hazards, and reduce the speed.
- Do not push or pull any objects located outside the platform.
- Never push or pull other equipment or objects using the platform or the boom.
- Do not place or attach any suspended load on or to any part of the machine.
- Do not place any load outside the perimeter of the platform.
- Using the machine as a hoist or crane is strictly prohibited.
- Never attach the machine or any part of it to any adjacent object.
- When one or more tires are off the ground, first evacuate all personnel, then use a crane, hoist, forklift, or other suitable equipment to stabilize the equipment.
- Without written authorization of the manufacturer, it is forbidden to modify, remove or install any parts, including counterweights, which may affect the safety and stability of the machine.
- Do not replace critical parts that affect the stability of the machine with parts of different weight or specifications. For example, batteries not only provide power, but also serve as counterweight,

WARNING

which is crucial for maintaining the stability of the machine.

WARNING



- Do not operate the machine in wind speeds exceeding 12.5 m/s (28 mph). Please check the Beaufort wind force scale in the table below. Factors that affect wind speed include: height of the platform, surrounding terrain, and local weather conditions, such as wind speed at height, which may be much higher than at ground level.
- Wind speeds can change at any time. Always consider the

WARNING

impending weather conditions, the time needed to lower the platform, and methods to monitor current and potential wind conditions.

- When operating the machine outdoors, do not carry items with a large surface area on the platform, do not cover the surface of the platform or load, and never use additional items that increase the surface area of the platform or load. Adding such additional items will increase the area of the machine exposed to wind. Increasing the windward area will lead to reduced machine stability.

Table 2-2

BEAUFORT SCALE	WIND SPEED		DESCRIPTION	AMBIENT CONDITIONS
	METERS/SECOND	MILES/HOUR		
0	0 ~ 0.2	0 ~ 0.5	Calm	Calm. Smoke rises vertically.
1	0.3 ~ 1.5	1 ~ 3	Light breeze	Direction of wind shown by smoke drift.
2	1.6 ~ 3.3	4 ~ 7	Light breeze	Wind felt on exposed skin. Leaves rustle.
3	3.4 ~ 5.4	8 ~ 12	Gentle breeze	Leaves and smaller twigs in constant motion.
4	5.5 ~ 7.9	13 ~ 18	Moderate breeze	Dust and loose paper rise. Leaves and smaller twigs in constant motion.
5	8.0 ~ 10.7	19 ~ 24	Fresh breeze	Smaller trees sway.
6	10.8 ~ 13.8	25 ~ 31	Strong breeze	Large branches in motion. Flags fly nearly horizontally. Umbrella use becomes difficult.
7	13.9 ~ 17.1	32 ~ 38	Near gale/ moderate gale	Whole trees in motion. Effort required to walk against the wind.
8	17.2 ~ 20.7	39 ~ 46	Fresh gale	Twigs break from trees. Cars veer on road.
9	20.8 ~ 24.4	47 ~ 54	Strong gale	Light structure damage.

DANGER

If the wind speed exceeds 12.5 m/s (28 mph) after the platform has been raised, the platform should be retracted immediately, then all power sources should be disconnected, and the machine should be stopped.

Collision and Crushing Hazards

WARNING



- All operators and other personnel in the work area must wear approved safety helmets.



- Keep all parts of the body within the platform guardrails during operation.

- Care should be taken at all times to avoid contact with stationary (built-up structures etc.) or moving objects (vehicles, cranes etc.) to prevent obstacles from hitting or interfering with control components or personnel on the platform.



- During operation, make sure to check clearance and obstacles above, around and below the platform.



- Be aware of the field of vision and potential blind spots when moving or operating the machine. Observers should be arranged when the field of vision is obstructed.

- When moving the machine, if the working platform is approximately 2 m (6.6 ft) away from an obstacle, use the boom or platform functions to approach the obstacle, do not use the machine's travel function.

- During operation, non-operators must maintain a distance of at least 1.8 m (6 ft) from the machine.

- When the machine is operating at height, warn other personnel not to work, stand or walk under the elevated boom or platform. If necessary, the work area should be cordoned off on the ground with suitable means.

- Make sure there are no persons and/or obstacles below the platform before lowering the platform.

- Do not place hands, arms, or other body parts near areas where they may be crushed.

- Do not work under the platform or boom if the boom is not secured with appropriate lifting/supporting equipment.

- Ensure that operators of other

WARNING

equipment in the vicinity working at height and on the ground are aware that this MEWP is in operation.

- Limit travel speed based on ground conditions, congestion, ground slope, position of personnel, and other factors.
- Determine the braking distance at all travel speeds. When traveling at high speed reduce the travel speed before stopping.
- Do not use the high speed setting when traveling in areas with limited or enclosed spaces or when reversing.
- Before releasing the brake, the machine must be placed on a horizontal surface or secured.

2.4 TOWING, HAULING AND LIFTING SAFETY

WARNING



- Except in case of emergency situations, machine malfunction, power loss or loading/unloading, it is strictly prohibited to tow or drag the machine.
- When towing or dragging the machine, comply with local policies and road traffic regulations.
- Before towing, hauling or lifting the machine, make sure that the boom is stowed, that the turntable is locked (or if equipped with turntable slewing pin, that the turntable slewing pin is locked), that there are no loose or unsecured parts on the machine, and that there are no tools left on the platform.
- Only the lifting points/rigging lashing points on the chassis may be used to tow, haul or lift the machine. Ensure that the machine lifting points/rope lashing points and their attached structures are intact and that the belt or rope to be used has sufficient load strength.
- When towing, hauling or lifting the machine, no persons are allowed on the platform.
- Before loading/unloading the machine, ensure that the transport vehicle is parked on level ground, that the loading surface of the transport vehicle has sufficient capacity/strength to support the machine, and that the slope of the ramp used for driving the machine onto the vehicle does not exceed the maximum gradeability of the machine.
- When loading/unloading the machine, the transport vehicle must be secured to prevent it from moving.
- The wheels should be locked after the machine is loaded to prevent it from moving.
- The machine may only be lifted from a specific position with a

WARNING

forklift or crane with sufficient lifting capacity. Care should be taken to prevent the machine from colliding with surrounding objects.

For towing and dragging procedures, refer to the **Emergency Towing** section of this manual. For transport and lifting procedures, please refer to the **Transport and Lifting** section of this manual.

2.5 MAINTENANCE SAFETY

Unsafe Maintenance Hazards

WARNING



- Before performing any adjustment or service operations, power off all control units and ensure that all moving parts are safely secured and cannot move unintentionally.
- Before performing any adjustment or service operations, ensure that the boom is stowed. Never work under a raised platform/boom. If it becomes necessary to work under the raised platform/boom, the platform and boom must be supported with appropriate safety supports.
- When lifting or moving heavy parts of the machine, use equipment with sufficient capacity, and never place heavy objects in an unstable position after moving.
- When machine parts are lifted by other equipment, ensure that there are no persons under and/or around the equipment.
- When striking brass rods with a mallet, make sure to wear eye protection.
- If you need to replace parts, use only original parts specified by Sinoboom.
- Do not wash the machine with water. The machine contains electronic components such as solenoid valves and sensors, which may fail or operate erratically after water ingress. If it is necessary to wash with water, turn off the main power switch before proceeding. Only turn the power back on after ensuring the machine is completely dry.
- Make sure the machine is turned off before using flushing equipment (such as high-pressure water gun) to clean the machine. Do not direct water or steam ejected from the flushing equipment at electrical components, as this may cause short-circuits or electrical shocks.
- After maintenance is completed, thoroughly clean up any spilled hydraulic oil, and avoid allowing it

WARNING

to be spilled on the ground.

- After maintenance is completed, immediately wash off any hydraulic oil that may have come into contact with your skin.
- Waste hydraulic fluids, fuels, coolants and refrigerants must be recycled or disposed as per local regulations.

High Temperature and High Pressure Hazards

WARNING



- High surface temperatures may be present on some components during the operation of the machine or after the machine has been operating for some time. High temperatures may cause burns through skin contact. Do not touch any hot parts!
- It is forbidden to repair or tighten hydraulic hoses or seals while the machine is operating or when the oil system is under pressure.
- Before loosening or disassembling the hydraulic parts (especially the counterbalance valve on the cylinder), the hydraulic pressure of all hydraulic lines should be released and the hydraulic oil should completely cool down.
- For engine-powered machines, do not attempt to open the radiator cover when the machine has not cooled fully.
- Disassemble the hydraulic components slowly to prevent hydraulic oil from splashing and injuring people.
- Never check for hydraulic leaks by hand. Use a piece of cardboard or stiff paper to locate leaks, and wear gloves to protect your hands from spraying hydraulic fluid.
- Do not operate the machine in case of hydraulic or air leaks. Oil or air leakage from the hydraulic system may penetrate and burn the skin.
- Never plug hydraulic leaks by hand. If there is a leak, the pressure of the hydraulic system should be released first, maintenance/repair should be carried out after the hydraulic oil has cooled down.
- If injury occurs due to high temperature and/or high pressure, seek immediate medical attention. If treatment is not carried out immediately, serious complications may result.

Welding and Grinding Operation Hazards

WARNING



- Welding, grinding and polishing operations must follow the appropriate local safety procedures.
- Before performing welding, grinding and polishing operations, turn off the machine's power, and ensure that all wires or cables are connected correctly.
- Do not use the machine as a ground wire during welding and grinding operations.
- Always make sure that all power tools are placed completely within the perimeter of the platform. Do not hang the cords of power tools on the guardrail of the platform or in any work area outside the platform, and do not hang the power tools directly by their cords.

Fire and Explosion Hazards

WARNING



- Do not operate the machine, charge the battery or refuel the machine in places where potentially flammable or explosive gases may be present.
- Refueling and charging should be carried out in a well-ventilated place without flames, sparks, and other hazards that may cause fire or explosion.
- For engine-powered machines, do not refuel the machine while the engine is running.
- Never spray ether or other starting agents into glow-plug-equipped engines (engine-powered machines).
- Never touch the battery terminals or cable clamps with tools that can generate sparks.
- Only approved non-flammable cleaning solutions should be used on the machine.

Battery Hazard

WARNING



- Be sure to read and adhere to the battery manufacturer's recommendations on proper battery use and maintenance procedures.
- Individuals without adequate professional qualification should not repair and maintain the battery system, otherwise this may cause personal injury or damage to the battery system.
- Individuals without adequate professional qualification should not modify parameters, signal lights, etc. during the operation of the battery system, otherwise this may cause personal injury or damage to the battery system.
- Always wear goggles, protective gloves and protective clothing, and remove all rings, watches and other accessories before servicing the battery. Contact with live circuits may result in death or serious injury.
- Before replacing the battery, be sure to select an appropriate number of personnel and suitable lifting methods.
- It is forbidden to modify the battery system without approval to avoid serious accidents.
- When maintaining electrical components, the battery should be disconnected.
- Do not place tools or other metal objects across the two terminals of the battery.
- The battery charger can only be connected to a grounded three-wire AC power outlet. Make sure the charger is working properly before charging. Do not connect the battery directly to a power outlet.
- If the battery becomes hot, deformed, leaks, emits an unusual smell, or produces smoke during use, stop using the battery immediately and report to the relevant maintenance personnel promptly.
- Batteries contain sulfuric acid and can produce explosive

WARNING

mixtures of hydrogen and oxygen. Keep any materials (including cigarette/smoking materials) that can cause sparks or flames away from batteries to prevent explosion.

- Never touch the battery terminals or cable clamps with tools that can generate sparks.
- Never charge the battery in direct sunlight. The battery should be charged in a well-ventilated place.

CAUTION



- Avoid spilling battery acid or allowing it to come into contact with unprotected skin. If battery acid spills, use water mixed with bicarbonate (baking soda) to neutralize the acid. In case of contact with battery acid, rinse the acid off immediately with plenty of water and seek medical attention promptly.
- Always keep the battery upright. If the battery is placed on its side or diagonally, liquid may spill from the battery.
- Discarded batteries can be hazardous. Do not dispose of them casually. If you need to discard them, please contact a battery recycling company.

Note



- Please use the charger provided by the manufacturer to charge the battery.
- The charging process must be completed in full. Frequent intermittent charging can damage the battery.
- The battery is only suitable for use with the equipment it was provided with at the time of manufacture. Do not use the battery for other purposes.
- Do not reverse the positive and negative terminals of the battery for use.
- Do not short-circuit the positive and negative terminals of the

Note

battery system.

- Do not place objects or tools on the battery to prevent short circuiting it.
- Do not strike, throw, step on, or hit the battery with sharp objects.
- Do not immerse the battery in water, acidic, alkaline or salty solutions, and protect the battery from rain.
- The battery should be fully charged immediately after each use of the machine, then the machine power switch should be turned off.

Note

Battery over-discharge (continued use of battery with level of less than 10%) or battery under-voltage caused by long-term non-charging (battery with level of less than 10% not charged for more than three days), resulting in battery capacity attenuation and failure, are not covered by the warranty.

3 RESPONSIBILITIES OF RELEVANT PARTIES

3.1 OWNER'S (OR LESSOR'S) RESPONSIBILITIES

- The owner (or lessor) is obliged to help the user understand all the instructions in the manual.
- The owner (or lessor) should provide the latest manuals or replace missing or damaged decals. To obtain the most current machine manuals please contact Sinoboom or its authorized agents.
- The owner (or lessor) should comply with local regulatory requirements related to the use of the machine.

3.2 EMPLOYER'S RESPONSIBILITIES

- The employer must ensure that the operator is properly trained and qualified to operate the machine.
- The employer should ensure that the user is healthy and has good judgment, sense of cooperation and psychological qualities.
- The employer has the responsibility to ensure that signalmen have good visual and auditory judgment, master standard command signals and send clear and accurate signals, and have sufficient experience to identify hazards and inform operators to avoid hazards in time.
- The employer should clarify the corresponding safety responsibilities to each operator and require them to report unsafe factors to the supervisor timely.

3.3 TRAINER'S RESPONSIBILITIES

- The trainer must be accredited by Sinoboom, have comprehensive knowledge training on the machine, and must have the required skills related to machine repair and maintenance.
- The trainer must conduct training in an open area free of hazards until the trainees acquire the ability to safely control and operate the machine.

3.4 USER'S RESPONSIBILITIES

- The user must be properly trained on MEWP, and authorized.
- The user must carefully read and fully understand this manual and the decals on the machine.
- The user must report to the owner (lessor) all anomalies that may cause the machine to work abnormally or have potential dangers, and if possible, correct the abnormal situation promptly while ensuring safety.
- The user must be fully aware of the content and procedures of the respective operation.
- The user must be familiar with and comply with signal instructions and operation requirements in emergency situations.
- The user must be vigilant in observing for any hazardous conditions and promptly report any dangers to other operators and signal personnel. This includes situations such as high-voltage lines, unrelated personnel, and unfavorable ground conditions.
- The user must stop using the equipment if it is not functioning properly or if a hazardous condition arises.

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4 TECHNICAL PARAMETERS

4.1 MACHINE SPECIFICATIONS

Table 4-1 Specifications

ITEM	Metric	Imperial
Product Category		
Power type	Diesel engine-powered	
Axle type	Oscillating axle	
Dimensions		
Maximum platform height	14.1 m	46 ft 3 in
Maximum working height	16.1 m	52 ft 10 in
Maximum horizontal reach (restricted)	10.9 m/10 m/9.1 m	35 ft 9 in/32 ft 10 in/29 ft 10 in
Maximum horizontal working envelope (restricted)	11.5 m/10.5 m/9.6 m	37 ft 9 in/34 ft 5 in/31 ft 6 in
Overall length (stowed)	7.99 m	26 ft 3 in
Overall length (transport)	5.88 m	19 ft 3 in
Overall width (stowed)	2.3 m	7 ft 6 in
Overall width (transport)	2.3 m	7 ft 6 in
Overall height (stowed)	2.49 m	8 ft 2 in
Overall height (transport)	2.81 m	9 ft 3 in
Wheelbase	2.3 m	7 ft 6 in
Ground clearance	0.37 m	1 ft 3 in
Platform dimensions (L×W×H)	2.44×0.91×1.1 m	8 ft×3 ft×3 ft 7 in
Performance		
Rated platform capacity (restricted)	454 kg/340 kg/250 kg	1000 lb/749 lb/551 lb
Maximum number of people on the platform (restricted)	3 persons/2 persons	
Drive speed (stowed)	0 ~ 4.8 km/h	0 ~ 3 mph
Drive speed (raised)	0 ~ 0.8 km/h	0 ~ 0.5 mph
Gradeability (4WD)	40%	
Turntable slewing (angle/continuity)	360°/continuous	
Platform slewing angle	160°	
Maximum allowable tilt angle	5°	
Turning radius (internal/external)	1.82 m/4.78 m	6 ft/15 ft 8 in

Table 4-1 Specifications (Continued)

ITEM	Metric	Imperial
Turntable tailswing	0.98 m	3 ft 3 in
Tire (spec/type)	33×12D610 (foam-filled) 33×12-20 (solid)	
Maximum operating noise level	98 dB	
IP rating	IP54	
Maximum allowable total vibration on the platform	2.5 m/s ²	
Maximum allowable whole body vibration value (WBV)	0.5 m/s ²	
Power		
Drive x steer	4WD×2WS	
Engine (power/rpm/spec/brand/emission standard)	18.4kW/3000rpm/3TNV80F-NXDSI/Yanmar/EU Stage V, EPA Tier 4F 18.5kW/3000rpm/D1105-E4B-EU-X1/Kubota/EU Stage V, EPA Tier 4F	
Hydraulic tank capacity	120 L	26.4 gal (UK)/31.7 gal (US)
Oil capacity of hydraulic tank	100 L	22.0 gal (UK)/26.4 gal (US)
Diesel tank capacity	100 L	22.0 gal (UK)/26.4 gal (US)
Hydraulic system pressure	28 MPa	4061 psi
Battery (voltage, capacity)	12 V, 220 Ah	
System voltage	12 VDC	
Control voltage	12 VDC	
Weight		
Gross weight	7300 kg	16093 lb
Ground bearing information		
Maximum tire load	4520 kg	9965 lb
Ground pressure	1163 kPa	169 psi
Environmental requirements		
Maximum allowable lateral force (restricted/unrestricted)	400 N	90 lbf
Maximum allowable wind speed	12.5 m/s	28 mph
Maximum allowable altitude	1000 m	3280 ft
Allowable ambient temperature	-10°C ~ 40°C	14°F ~ 104°F
Maximum allowable relative humidity	90%	

Table 4-1 Specifications (Continued)

ITEM	Metric	Imperial
Storage environment	Store at -20°C to 50°C (-4°F to 122°F) in a well-ventilated environment with 90% relative humidity (max.) (20°C [68°F]), protected from rain, sun, corrosive gas, flammable or explosive materials.	

Note:

- a) The platform height plus the operator height (assumed to be 2 m [6 ft 7 in]) equals the working height.
- b) The maximum horizontal reach plus the arm length of the operator (assumed to be 0.6 m [1 ft 11 in]) is the maximum horizontal working envelope.
- c) The ground bearing data is approximate, without considering different options, thus it is applicable only in adequately safe conditions.
- d) In different areas, hydraulic oil, engine oil, coolant, fuel and lubricant should be added in accordance with the environmental temperature.
- e) In cold weather, auxiliary devices are needed to start the machine.
- f) Rated platform load capacity refers to the maximum allowable load on the platform, including the weight of persons, materials, tools, accessories and other objects.

4.2 MOVEMENT SPEED

Table 4-2

ITEM	TIME
Raise main boom	60 ~ 70s
Lower main boom	60 ~ 70s
Rotate the turntable (360°)-stowed	90 ~ 110s
Rotate the turntable (360°)-fully extended	160 ~ 180s
Extend main boom	45 ~ 60s
Retract main boom	45 ~ 60s
Rotate platform (160°)	18 ~ 22s
Level platform upward	50 ~ 60s
Level platform downward	40 ~ 50s
Raise jib	30 ~ 38s
Lower jib	25 ~ 32s
Max drive speed (30 m [98.4 ft])-stowed	18 ~ 22s
Max drive speed (30 m [98.4 ft])-operating	88 ~ 108s

Table 4-2 (Continued)

ITEM	TIME
Braking distance at maximum drive speed	0.8 ~ 1.2m (2.62 ~ 3.9ft)

- a) The function speed depends on the start and end point of the movement rather than the controls/ switches.
- b) The drive speed test results will vary with tires of different specifications.
- c) All speed tests should be conducted from the platform controller. Test results will differ if tested from the ground controller.
- d) All tests should be conducted with the hydraulic oil temperature at 50 - 60 °C. If the hydraulic oil temperature is too low the test results will be affected.

Test requirements:

Raise/lower main boom : With the main boom fully retracted, raise the main boom from the lowest to the highest position, and lower it from the highest to the lowest position. Perform this maneuver for two times.

Rotate turntable : With the boom centered, rotate the turntable through two full cycles.

Extend/retract main boom : With the main boom fully raised, extend the main boom from the fully retracted to the fully extended position, and retract it from the fully extended to the fully retracted position. Perform this maneuver for two times.

Rotate platform : With the platform horizontal, rotate the platform from the full left to the full right position, and rotate it again from the full right to the full left position. Perform this maneuver for two times.

Raise/lower the jib boom : With the platform horizontal, raise the jib from the lowest to the highest position, and lower the jib again from the highest to the lowest position. Perform this maneuver for two times.

Drive, stowed position : With the machine on a level surface, switch to high engine speed and high travel speed, and push the travel joystick to maximum travel distance to drive forward and reverse for 30m respectively for two times.

Drive, operating position : With the machine on a level surface, switch to high engine speed, and push the travel joystick to maximum travel distance to drive forward and reverse for 30m respectively for two times.

Braking distance: With the machine on a level surface, switch to high engine speed, and push the travel joystick to maximum travel distance.

5 PRE-OPERATION INSPECTION

A pre-operation test must be performed before each operation, before resuming operations, and before changing operators, as well as after each repair. Please carefully check each item according to the content of this section.

Technical drawing of a scissor lift truck, showing a side view and a detailed view of the hydraulic system. The drawing includes numbered callouts (1-17) identifying various components.

Side View Components:

- 1: Platform floor plate
- 2: Platform safety railing
- 3: Platform safety door
- 4: Scissor arm
- 5: Hydraulic cylinder
- 6: Hydraulic cylinder
- 7: Hydraulic cylinder
- 8: Hydraulic cylinder
- 9: Hydraulic cylinder
- 10: Control panel
- 11: Front wheel
- 12: Rear wheel

Top View Components:

- 13: Hydraulic pump
- 14: Hydraulic valve
- 15: Hydraulic valve
- 16: Hydraulic valve
- 17: Platform safety railing

Table 5-1

1. Platform	2. Foot switch	3. Platform controls
4. Jib (if equipped)	5. Second telescopic boom	6. First telescopic boom

Table 5-1 (Continued)

7. Base boom	8. Drag chain assembly	9. Main boom lift cylinder
10. Turntable controls	11. Front wheel (steering wheel)	12. Rear wheel (non-steering wheel)
13. Engine	14. Fuel tank	15. Hydraulic tank
16. Power switch	17. Harness anchorage point	

5.2 MACHINE POSITIONS

The machine positions/states covered in this manual are stowed position, transport position, operating position, and non-operating position. Each position is described in detail below:

- **Stowed position:** The boom tube is fully retracted and lowered.
- **Transport position:** The boom tube is horizontal and fully retracted, and the jib is fully lowered.
- **Operating position:** The main boom is elevated to more than 15° above horizontal, or the boom tube extends more than 1.2m (3.9ft).
- **Non-operating position:** The main boom is elevated to no more than 15° above horizontal, or the boom tube extends no more than 1.2m (3.9ft).

5.3 PRE-START INSPECTION

WARNING

If any damage, malfunction, or unauthorized modifications differing from the factory state are found with the machine, it should be immediately tagged and shut down. Report the fault to the relevant maintenance personnel and do not operate the machine until safe operation can be guaranteed.

The pre-start inspection shall include the following:

1. Cleanliness – inspect all surfaces of the machine for leaks (hydraulic oil, fuel, engine oil or battery electrolyte, etc.) or foreign objects.
2. Structure – check whether there are any abnormalities in the equipment structure, such as dents, damage, cracks in welds or structural components, severe rust, severe corrosion, etc.
3. Operation Manual and Maintenance Manual – ensure that the Operation Manual and Maintenance Manual are intact, easy to read, and stored in the manuals storage box on the platform.

4. Decals and nameplate – ensure that labels and the nameplate are in place, intact, accurately located and visible.

WARNING

Do not operate the machine if any label or nameplate is missing or worn.

5. Maintenance – ensure that maintenance has been completed in accordance with the maintenance inspection requirements specified in the Maintenance Manual.
6. Battery – charge the battery as required. The electrolyte level, if adjustable, must be kept at an appropriate height.
7. Fuel level (if equipped with an engine) – add fuel as needed.
8. Engine oil level (if equipped with an engine) – make sure the oil level is between the “FULL” and “ADD” level of the oil dipstick and that the filler cap is tightened.
9. Coolant level (if equipped with a water-cooled engine) – add coolant as needed.
10. Hydraulic oil – check the hydraulic oil level. Add suitable hydraulic oil as needed.
11. Options/accessories – if the machine is equipped with any options/accessories, consult this manual and the supplemental manuals for options/accessories for inspection, operation and maintenance instructions.
12. Machine components – check the following components to ensure that they are correctly installed and firmly attached without loose, missing or altered parts and visible damage, leakage or excessive wear, etc., and that all components are in their original positions and normal working states, in addition to checking other stated items.
 - 1) Platform assembly and gate – ensure that the foot switch is working properly and has not been altered, closed or blocked; ensure that the rope anchorage points are safe and reliable with only one person per anchorage point; make sure the latches and hinges are in normal working states, that the platform gate opens and closes properly, is not bent or damaged, and that the

surrounding area is free of obstacles. The gate should remain closed at all times, except for entering/exiting the platform and loading/unloading materials;

- 2) Turntable and platform controls – ensure that all control switches are off, joysticks are in neutral position and can return to neutral position normally once activated and released (self-resetting switches can return to neutral position normally after release), and that all control markings are visible;
- 3) Platform slewing unit;
- 4) Boom assembly;
- 5) Jib assembly;
- 6) Drag chain system;
- 7) Turntable and turntable cover;
- 8) Engine, fuel tank and related components (if equipped with an engine);
- 9) Power unit and related components (if so equipped);
- 10) Turntable slewing unit;
- 11) Slewing drive components (motor, reducer, etc.);
- 12) Turntable bearings – ensure proper lubrication and no loose or missing bolts between bearings and the machine.
- 13) Turntable slewing pin (if equipped) – ensure it works properly, and ensure that the turntable slewing pin can lock/unlock the turntable;
- 14) Tire assembly – ensure that the tire assembly is firmly secured and wheel nuts are not loose or missing; check for worn tread, cuts, breakage or other abnormalities;
- 15) Drive system components (motor, reducer, hub, etc.);
- 16) Steering linkage and steering connection plate;
- 17) Hydraulic cylinder, valve block, pump, oil tank, hoses, pipe joints and other hydraulic parts;
- 18) Electrical parts such as limit switches and wire harnesses.

NOTICE

Make sure to check the platform floor area, as inspection of this area may uncover conditions that could cause personal injury or machine damage.

5.4 FUNCTIONAL TEST

Before performing a functional test:

- Choose a firm, flat and level test area.
- Make sure the test area is free from obstructions.

WARNING

For telescopic booms with three or more stages, when checking the telescoping function of the boom, ensure that all boom sections extend/retract together at the same speed. If any anomaly is observed, it could indicate potential movement delays and loosening of the wire ropes. In such a case immediately lower the platform to the stowed position, turn off the machine, and have the wire rope inspected and repaired by a qualified service technician.

WARNING

If any switch/handle returns to neutral position and the corresponding movement does not stop, remove the foot from the foot switch or push in the emergency stop button to stop the machine.

NOTICE

- *When the auxiliary power is in use, do not perform two or more functions at the same time, because certain operations may not respond due to the low voltage in the auxiliary motor or pump.*
- *The auxiliary power switch can only be used for a short time (to fully lower and retract the platform from maximum angle/maximum extension) when the main power source is not working, prolonged operation may damage the motor.*

Follow these steps to perform a functional test:

1. With no load applied on the platform, turn the ground/platform control selector switch on the turntable controls to the ground control position, pull out the emergency stop button on the turntable controls, and perform the following tests from the turntable controls:
 - 1) Make sure that the relevant indicator lights on the display illuminate and that no error or alarm message is displayed during the entire functional test.
 - 2) Make sure that when the emergency stop button on the ground controls is pressed, the controls are powered off, the machine cannot be started and no functions can operate.
 - 3) Make sure that the horn sounds properly when the horn button is pressed.
 - 4) Activate the engine start switch – the engine should start smoothly without abnormal noise (if the machine is equipped with an engine).

- 5) Activate any action switch without activating the enable switch, the corresponding function must not operate.
 - 6) Activate the enable switch and any action switch at the same time, the corresponding function should operate normally.
 - 7) With the main power source turned off, activate the emergency power switch and any boom action switch at the same time – the corresponding function shall operate normally. After that, deactivate the emergency power (This test is required if the machine is equipped with an emergency power switch).
2. Turn the ground/platform control selector switch on the ground controls to the platform control position, pull out the emergency stop button on the ground controls and platform controls, and perform the following tests from the platform controls:
- 1) Make sure that when the emergency stop button on the platform controller is pressed, the platform controller is powered off and no function on the platform controller can be activated.
 - 2) Make sure that the horn sounds properly when the horn button is pressed.
 - 3) Activate the engine start switch – the engine should start smoothly without abnormal noise (if the machine is equipped with an engine).
 - 4) Activate any action switch/handle without depressing the foot switch – the corresponding action will not operate.
 - 5) Depress the foot switch and activate any action switch/handle at the same time – the corresponding action shall operate normally. Move the switch/handle to the neutral position after an action is performed; the corresponding action should stop reliably and safely.

Note: When the travel function handle is released, the brake must be able to hold the machine on any slope within the maximum gradeability reliably without sliding.

- 6) Move any action switch/handle 7 secs after the foot switch is depressed – the corresponding action must not operate and the buzzer will sound.
- 7) When the boom rotates beyond the rear wheels, the rear position indicator light should flash and the travel function should be deactivated. After pressing the rear position travel drive switch, the rear position indicator light should illuminate steadily, and the travel function should be reactivated.

WARNING

In this case, the direction of travel and steering of the machine will be opposite to the indicated direction. Operate the machine with caution!

- 8) With the machine in non-operating position, push the high/low drive speed selector switch upward – the machine will start to run at high speed. Push the travel control handle to the full drive position – the machine will travel at the maximum travel speed.
- 9) With the machine in operating position, push the high/low drive speed selector switch upward – the machine will start to run at low speed. Push the travel control handle to the full drive position – the machine continues to travel at low speed.
- 10) When the machine travels on a slope with a grade greater than or equal to the maximum allowable tilt angle of the machine and smaller than or equal to the maximum gradeability of the machine, the chassis tilt indicator icon will illuminate, and the tilt alarm will be triggered.
- 11) Without activating the main power source, depress the foot switch, and activate the emergency power switch and any boom action switch at the same time – the corresponding action should operate normally. After that, deactivate the emergency power (This test is required if the machine is equipped with an emergency power switch).

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6

This chapter provides a brief introduction of switches, handles and displays on the turntable controls and platform controls. Refer to the **Operation Instructions** section for a detailed description.

6.1 TURNTABLE CONTROLS

NOTICE

The manufacturer cannot directly control the application and operation of the machine. Users and operators are responsible for complying with the applicable safety specifications.

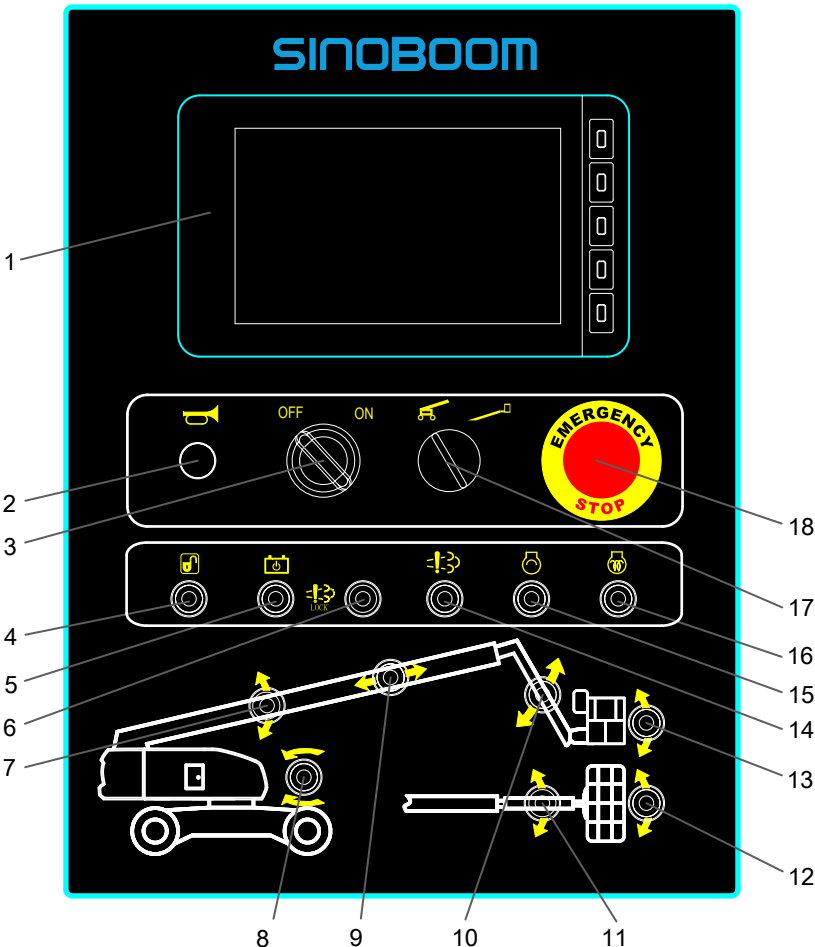


Fig 1

Table 6-1

No.	Indication	Description
1	Turntable display	Provides machine working states, engine states, fuel/battery level, alarm information, fault codes & query, and other information.
2	Horn	Press the button for the horn to sound.
3	Key switch	Turn the switch to ON position, the machine will be powered on; Turn the switch to OFF position, the machine will be powered off.
4	Enable switch	Move and hold the switch – all functions will be enabled to operate.
5	Auxiliary power switch	Provides auxiliary (emergency) power in case of main power source failure.
6	After-treatment regeneration disable switch (if equipped)	Move the switch, and the engine cannot enter the regeneration state.
7	Main boom luffing switch	Controls main boom luffing movements
8	Turntable slewing switch	Controls turntable rotation
9	Main boom telescoping switch	Controls main boom telescoping
10	Jib luffing switch (if equipped)	Controls jib lifting/lowering
11	Jib rotation switch (if equipped)	Controls jib rotation
12	Platform rotation switch	Controls platform rotation
13	Platform leveling switch	Adjusts platform levelness while traveling uphill/downhill on a slope
14	After-treatment regeneration request switch (if equipped)	With the after-treatment regeneration disable switch turned off, move this switch, and the engine after-treatment device will enter regeneration state.
15	Engine start switch	Move the switch, and the engine will be started.
16	Glow plug switch (if equipped)	Move and hold the switch 6 ~ 10s, and the engine will take in air for preheating.
17	Ground/platform control selector switch	Turn the switch to the left to Ground control position, and all functions will be operative only at the turntable controls, while the platform controls will not work; turn the switch to the right to Platform control position, and all functions will be operative only at the platform controls, while the turntable controls will not work.
18	Emergency stop button	When pulled to the “ON” position the machine can be started normally. Pushing the button to the “OFF” position will deactivate the controller, the machine cannot be started and no function can be activated.

6.2 TURNTABLE DISPLAY

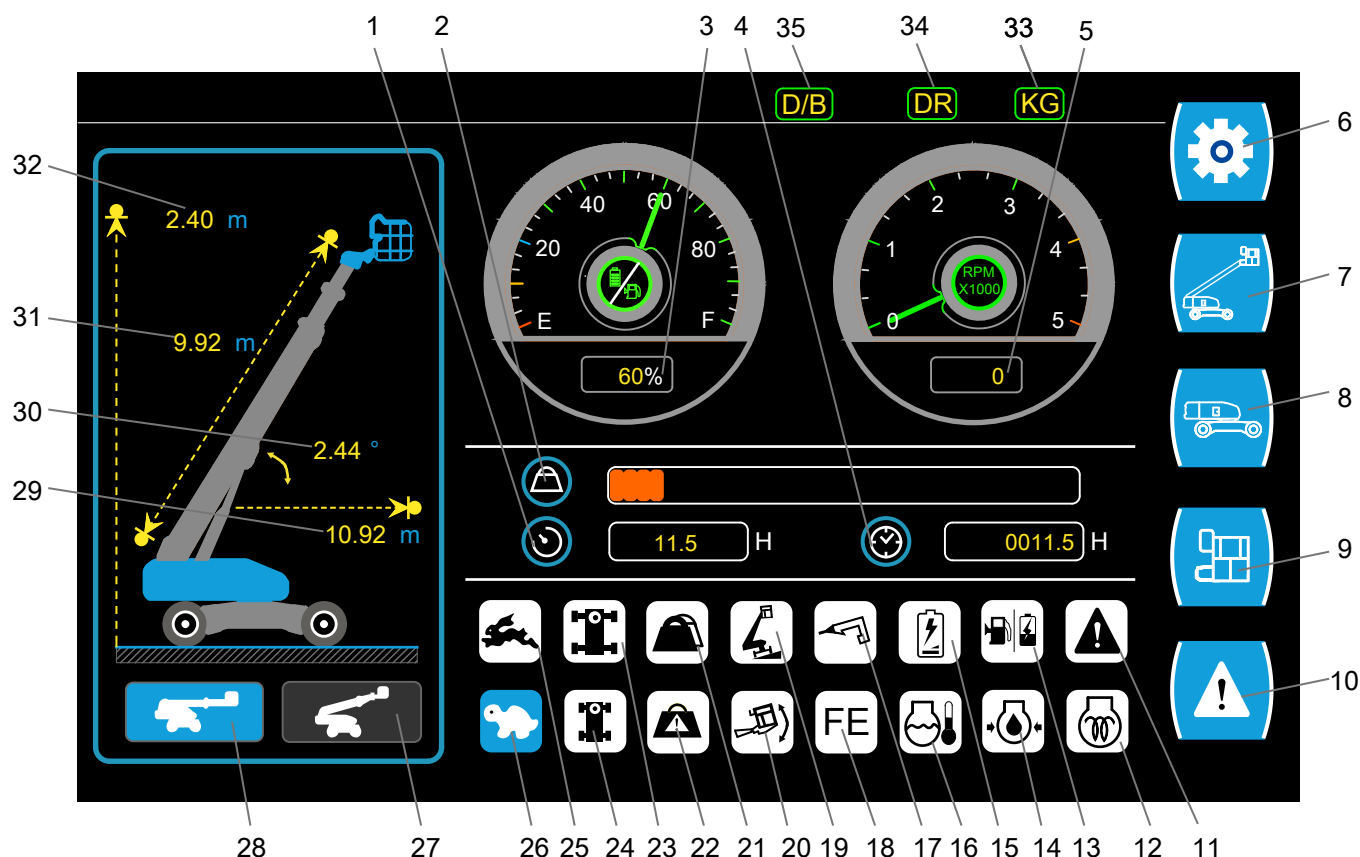


Fig 2 Ground controls display

Table 6-2

No.	Indication	Description
1	Current working hours	Indicates the machine's current operating hours.
2	Platform load	Indicates the load weight on the platform.
3	Fuel/battery level indicator	Indicates the remaining fuel oil/battery level in percentage.
4	Accumulated operating hours	Indicates the machine's accumulated operating hours.
5	Tachometer	Indicates the current engine speed.
6	Setup menu	Press the key to the right of the icon to enter the setup interface for language and debugging setting.
7	Machine info	Press the key to the right of the icon to enter the machine information interface for time setting, and sensor, detection switch, proportional valve and engine information query.
8	Turntable info	Press the key to the right of the icon to enter turntable information interface to check the input state of switches at the turntable control panel.
9	Platform info	Press the key to the right of the icon to enter platform information interface to check the input and output states of switches at the platform controls panel and the handles state at the platform controls.

Table 6-2 (Continued)

No.	Indication	Description
10	Alarm message	Press the key to the right of the icon to enter alarm message interface to check the system alarm or fault state.
11	Fault alarm indicator	This icon illuminates to indicate a system failure.
12	Glow plug indicator	This icon illuminates to indicate that the engine is taking in air for preheating.
13	Low fuel/battery level indicator	This icon illuminates to indicate low fuel/battery level.
14	Engine oil pressure alarm indicator	This icon illuminates to indicate that the engine oil pressure is too low.
15	Charging indicator	This icon illuminates to indicate that the machine is charging.
16	Water temp alarm indicator	This icon illuminates to indicate that the engine water temperature is too high.
17	Hydraulic generator/inverter indicator ON	This icon illuminates to indicate that the hydraulic generator/inverter is turned on.
18	FE mode indicator	This icon illuminates to indicate that the machine is in FE mode.
19	Chassis tilt indicator	This icon illuminates to indicate that the chassis tilt angle exceeds the maximum allowable tilt angle.
20	Platform tilt alarm indicator	This icon illuminates to indicate that the platform is tilted.
21	Heavy load indicator	This icon illuminates to indicate that the load on the platform exceeds the lower load range.
22	Overload alarm indicator	This icon illuminates to indicate that the load on the platform exceeds its rated load.
23	Fully-extended axle indicator	This icon illuminates to indicate that the telescopic axle has been fully extended.
24	Fully-retracted axle indicator	This icon illuminates to indicate that the telescopic axle has been fully retracted.
25	High engine speed indicator	This icon illuminates to indicate that the engine is running at high speed.
26	Low engine speed	This icon illuminates to indicate that the engine is running at low speed.
27	Operating position	This icon illuminates to indicate that the machine is in operating position.
28	Non-operating position	This icon illuminates to indicate that the machine is in non-operating position.
29	Boom horizontal reach	Indicates the horizontal reach from the platform outer edge to the slewing center.
30	Boom's angle relative to the horizontal	Indicates the boom's angle relative to the horizontal, with the boom above the horizontal as positive value, and the boom below the horizontal as negative value.
31	Boom length	Indicates the current boom length.
32	Platform height	Indicates the current platform height.

Table 6-2 (Continued)

No.	Indication	Description
33	KG	This icon illuminates to indicate that many movements of the machine in operating position are restricted when the platform is overloaded.
34	DR	This icon illuminates to indicate that traveling movement is restricted when the machine is in operating position.
35	D/B	This icon illuminates to indicate that traveling and boom movements can be performed simultaneously.

6.3 PLATFORM CONTROLS

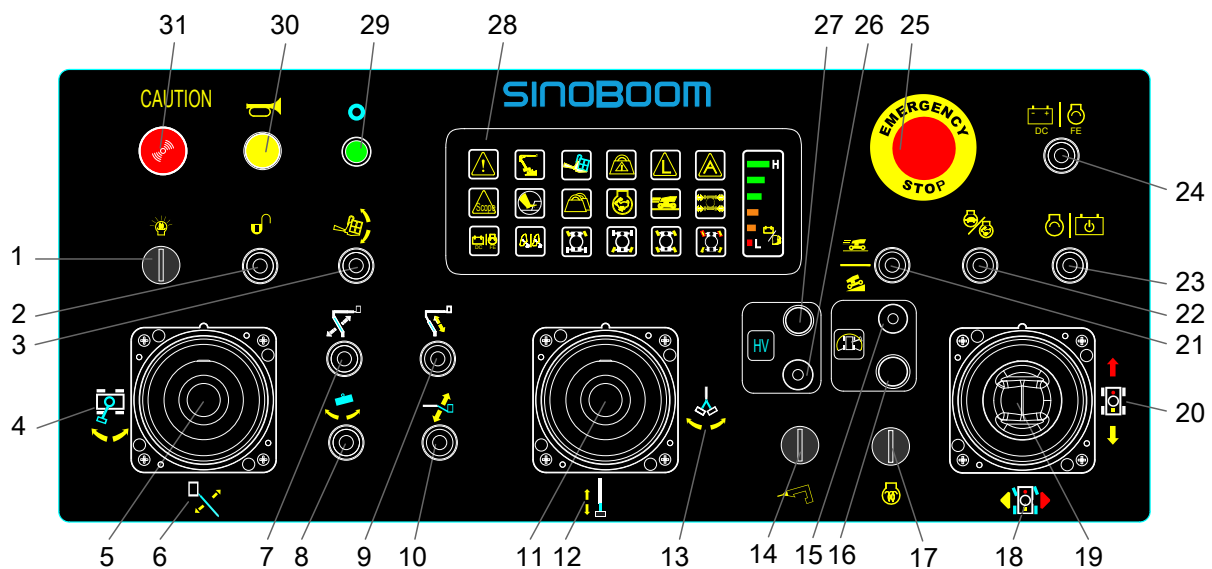


Fig 3 Platform controls

Table 6-3

No.	Indication	Description
1	Work light switch (if equipped)	Turns the work light on/off
2	Release switch (if equipped)	After the secondary guarding has been triggered, activate this switch to continue in override mode.
3	Platform leveling switch	Adjusts platform levelness while traveling uphill/downhill on a slope
4	Turntable slewing control indication	Provides indication for turntable slewing control
5	Main boom luffing/turntable slewing control handle	Push the handle to the left/right to rotate the turntable clockwise/counterclockwise.
		Push the handle forward/backward to raise/lower the main boom
6	Main boom luffing control indication	Provides indication for main boom luffing control
7	Not used	/

Table 6-3 (Continued)

No.	Indication	Description
8	Platform rotation switch	Controls platform rotation
9	Not used	/
10	Jib luffing switch (if equipped)	Controls jib lifting/lowering
11	Main boom telescoping/jib rotation control handle	Push the handle to the left/right to rotate the jib clockwise/anti-clockwise (if equipped)
		Push the handle forward/backward to retract/extend the main boom.
12	Main boom telescoping control indication	Provides indication for main boom telescoping control.
13	Jib rotation control indication (if equipped)	Provides indication for jib rotation control.
14	Hydraulic generator/inverter switch (if equipped)	Turn on/off the hydraulic generator/inverter.
15	Reverse position indicator	This indicator flashes to indicate that the boom has moved beyond the rear wheel.
16	Reverse position travel switch	Press this switch when the reverse position indicator is flashing – the travel function will resume. Please note that in this case the traveling and steering direction of the machine is opposite to the indicated direction.
17	Glow plug switch (if equipped)	Move and hold the switch 6 ~ 10s, and the engine will take in air for preheating.
18	Steering control indication	Provides indication for wheel steering control
19	Travel/steer joystick	Push the joystick forward/backward to drive the machine forward/backward;
		Press the left/right button on the joystick to steer the machine to left/right
20	Travel control indication	Provides indication for travel control
21	High/low travel speed selector switch	Switches between high/low travel speed
22	High/low engine speed selector switch	Switches between high/low engine speed.
23	Engine start switch/emergency power switch	Move the switch to the left, and the engine will be started; move the switch to the right to provide emergency power in case of main power source failure.
24	DC/FE mode selector switch (if equipped)	Move the switch to the left, the DC mode will be active; move the switch to the right, the FE mode will be active.
25	Emergency stop button	Pull out the button to ON position, and the platform controls will be powered on;
		Press the button to OFF position, the platform controls will be powered off and all functions at the platform controls cannot work.
26	Horizontal-Vertical (HV) mode enable switch (if equipped)	Turns the HV mode on/off.
27	Horizontal-Vertical (HV) mode indicator (if equipped)	OFF: indicates that the HV mode can't currently be activated.

Table 6-3 (Continued)

No.	Indication	Description
		Flashing slowly: indicates that the HV mode can be activated. Move the HV mode enable switch to enter the HV mode. Illuminated steadily: indicates that the HV mode is currently active. Flashing rapidly: indicates a HV mode failure: if the error exceeds ± 300 mm the boom stops moving and the HV mode will not work. Turn the HV mode off using the HV mode enable switch.
28	Platform display	Displays the current fuel level/battery level and faults
29	Power indicator	This indicator illuminates to indicate that the power supply to the platform controller operates normally.
30	Horn	Press the button to sound the horn.
31	Buzzer	The buzzer emits sound and light alarms with different frequencies in different situations

6.4 PLATFORM DISPLAY

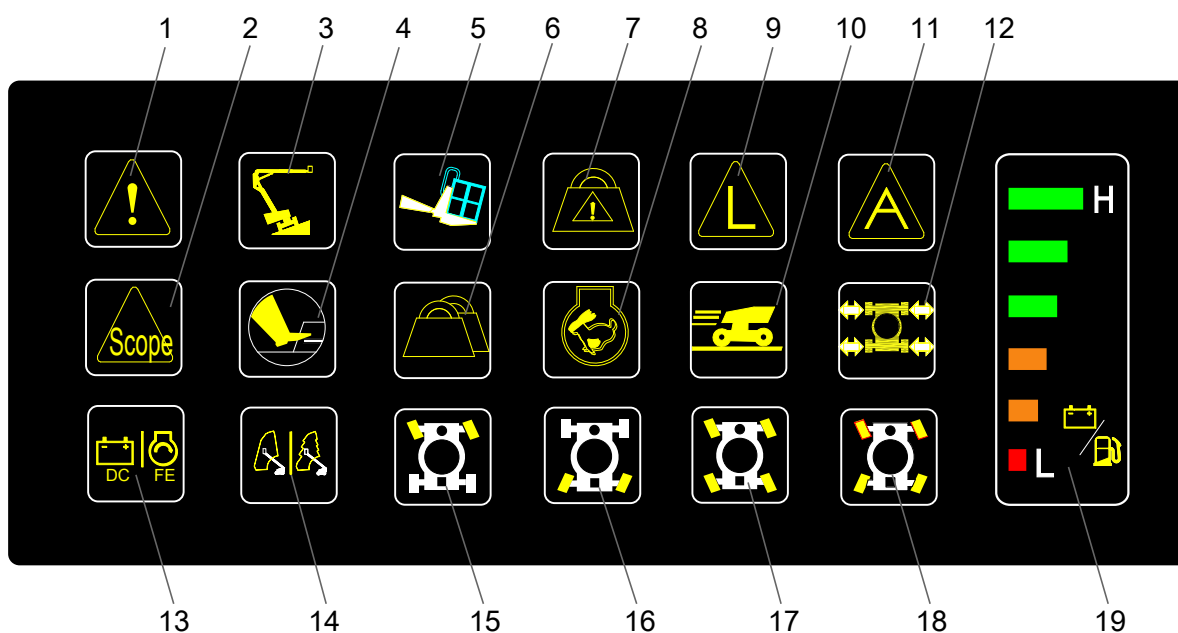


Fig 4 Platform controls display

Table 6-4

No.	Indication	Description
1	System fault indicator	This icon illuminates to indicate low fuel level, low engine oil pressure, high engine coolant temperature, CAN bus error, or other faults.
2	Scope limiting indicator	This icon illuminates to indicate that the boom has exceeded the specified working envelope.

Table 6-4 (Continued)

No.	Indication	Description
3	Chassis tilt indicator	This icon illuminates to indicate that the chassis tilt angle exceeds the maximum allowable tilt angle.
4	Foot switch indicator	This icon illuminates to indicate that the foot switch is depressed.
5	Platform tilt indicator	This icon illuminates to indicate that the platform is tilted.
6	Heavy load indicator	This icon illuminates to indicate that the load on the platform exceeds the lower load range.
7	Overload alarm indicator	This icon illuminates to indicate that the load on the platform exceeds its rated load.
8	High engine speed indicator	This icon illuminates to indicate that the engine starts to run at high speed.
9	Boom length sensor fault indicator	This icon illuminates to indicate boom length sensor faults.
10	High travel speed indicator	This icon illuminates to indicate that the machine starts to travel at high speed.
11	Angle sensor fault indicator	This icon illuminates to indicate angle sensor faults.
12	Axle retracting/extending indicator	This icon flashes to indicate that the axle is retracting/extending.
		This icon illuminates to indicate that the axle is fully retracted/extended.
13	DC/FE mode indicator	This icon illuminates to indicate that the FE mode is active (for machines with hybrid power only)
14	Main boom auto-control mode indicator	This icon illuminates to indicate that the main boom enters auto-control mode.
15	Front wheel steering indicator	This icon illuminates to indicate that the machine enters front wheel steering mode.
16	Rear wheel steering indicator	This icon illuminates to indicate that the machine enters rear wheel steering mode.
17	Crab steer indicator	This icon illuminates to indicate that the machine enters the crab steer mode.
18	Four-wheel steering indicator	This icon illuminates to indicate that the machine enters four-wheel steering mode.
19	Fuel/battery level indicator	Displays the current fuel level/battery level.

7 OPERATION INSTRUCTIONS

7.1 GENERAL

This mobile elevating work platform is used to transport tools to work locations and for performing tasks on the work platform. This machine has two controllers: ground controller and platform controller.



WARNING

- **Except in case of emergency, it is forbidden to perform operations from the ground if any person is still on the platform.**
- **If any switch/handle returns to neutral position and the corresponding movement does not stop, remove the foot from the foot switch or push in the emergency stop button to stop the machine.**

7.2 WORKING ENVELOPE
DIAGRAM

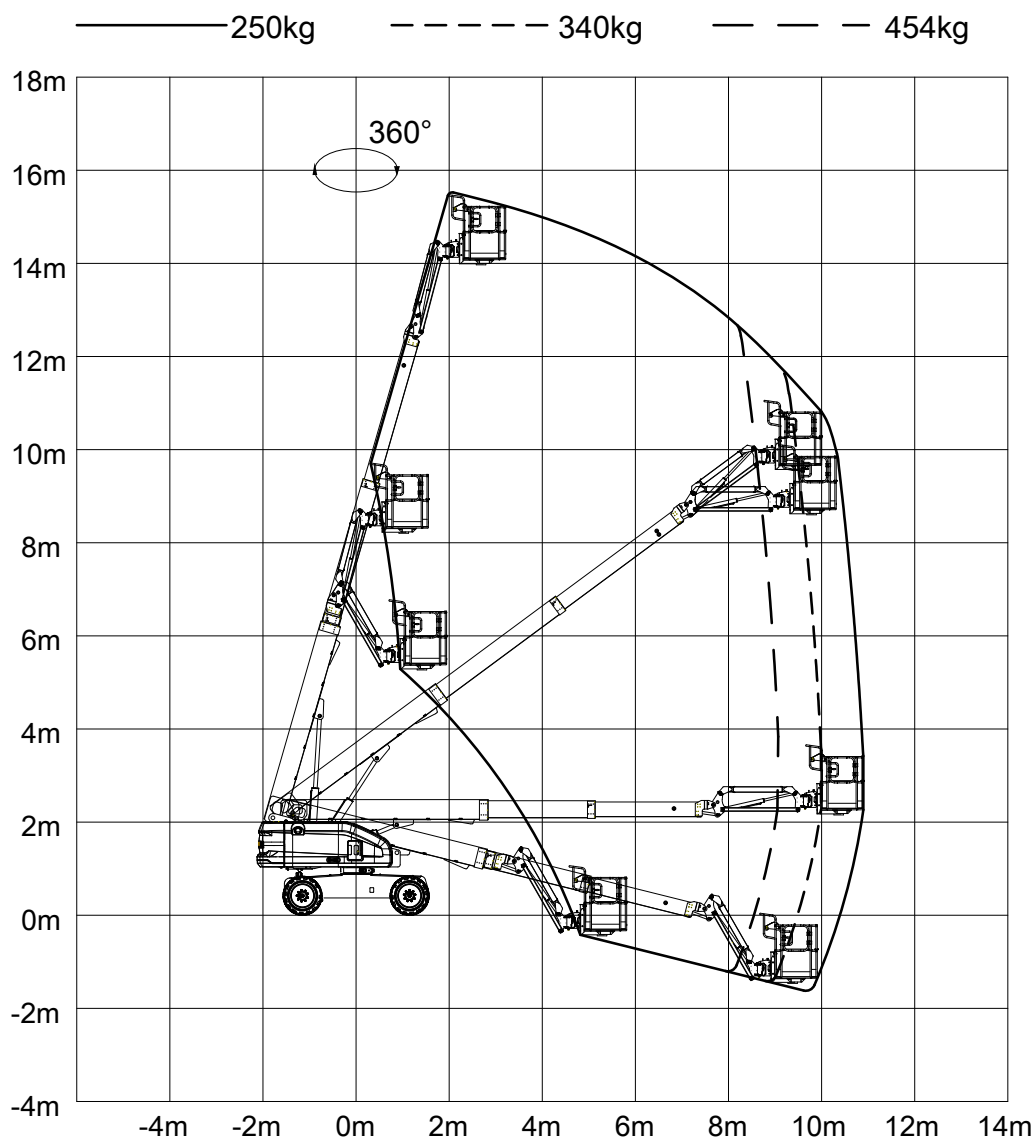


Fig 1 Working Envelope Diagram (5°)

7.3 STABILITY

Regarding the stability of the machine it is necessary to take two key situations into consideration: stability over the front (forward stability) and stability over the rear (backtip stability) of the machine. See the following figures and description for the least stable positions, both over the front and over the rear of the machine.

Do not overload the platform or operate the machine on tilted surfaces exceeding the maximum allowable tilt angle to prevent forward or backward tipping.

WARNING



Fig 2 Position of lowest forward stability of the machine

1. Boom fully extended;
2. Boom kept horizontal;
3. Turntable rotated 90°;
4. The machine will tip over in the direction as indicated by the arrow if overloaded or operating on a tilted surface exceeding the maximum allowable tilt angle.

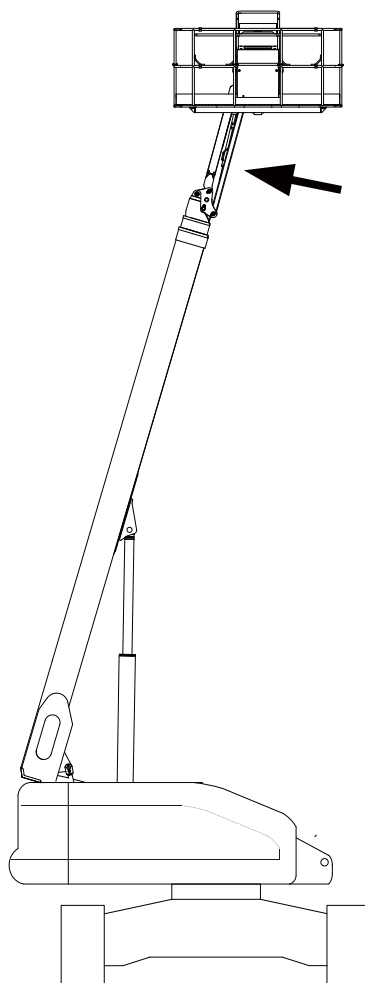


Fig 3 Position of lowest backtip stability of the machine

1. Boom fully retracted;
2. Main boom fully elevated;
3. Jib fully elevated;
4. Turntable rotated 90°;
5. Platform rotated 90°;
6. The machine will tip over in the direction as indicated by the arrow if overloaded or operating on a tilted surface exceeding the maximum allowable tilt angle.

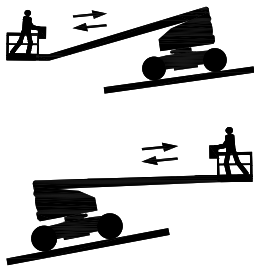
7.4 GRADEABILITY

Gradeability refers to the maximum allowable slope angle the machine can achieve on solid ground with sufficient traction, the platform in stowed position and occupied by only one person. Gradeability will decrease when the load on the platform increases.

WARNING

Do not drive the machine on slopes exceeding the machine's maximum gradeability.

The gradeability includes uphill/downhill as well as lateral slope capability. Uphill/downhill gradeability of this machine:



Downhill: 40%/24°



Uphill: 40%/24°

Lateral slope limit:



Lateral slope: 25%/14°

7.5 ENGINE OPERATION

Startup Sequence

Note: The initial start must always be done from the turntable controls.

NOTICE

If the engine fails to get started immediately, do not keep starting the engine for too long, and try to start the engine again. If a restart still fails, allow the starter to cool down for 2–3min. If the engine still fails to get started after several attempts, please reference the engine manual.

Note: Before starting the engine, the operator should first turn on and hold the engine glow plug switch for 6 ~ 10s to let the engine take in air for preheating. Due to different ambient temperatures, the warm-up time will be different, and the engine can only be started after the glow plug indicator goes out. (An electronically controlled engine can be preheated automatically)

1. Turn the ground/platform control selector switch at the turntable controls to ground control position.
2. Pull out the emergency stop button at the turntable controls to ON position.
3. Turn the key switch at the turntable controls to ON position.
4. Move the engine start switch at the turntable controls to start the engine (no more than 15s).

NOTICE

Before applying any load, allow the engine to run at low speed for 3min ~ 5min to warm up.

5. After the engine has warmed up adequately, press the emergency stop button at the turntable controls to OFF position and turn off the engine.
6. Turn the ground/platform control selector switch at the turntable controls to platform control position.
7. Pull out the emergency stop button at the turntable controls and platform controls to ON position.
8. Move the engine start switch at the platform controls to start the engine (no more than 15s).

NOTICE

Do not start the engine when the foot switch is depressed.

Shutdown Sequence

NOTICE

If the machine is shut down unexpectedly due to engine failure, make sure to correct the failure before restarting the engine.

1. Remove all loads and set the machine in stowed position.
2. Let the engine run at low speed for 3min ~ 5min to further lower the internal temperature of the engine.
3. Press the emergency stop button on the turntable controls and platform controls to OFF position.
4. Turn the key switch at the turntable controls to OFF position.

7.6 TURNABLE SLEWING

WARNING

Before slewing the turntable, make sure that the boom has sufficient distance from surrounding walls, obstacles, etc.

Perform operation from the ground:

1. Rotate the turntable clockwise: Move and hold the enable switch, and push the turntable slewing switch downwards, the turntable will rotate clockwise.
2. Rotate the turntable counterclockwise: Move and hold the enable switch, and push the turntable slewing switch upwards, the turntable will rotate counterclockwise.

Perform operation from the platform:

1. Rotate the turntable clockwise: Depress the foot switch, push the main boom luffing/turntable slewing control handle to the left, the turntable will rotate clockwise.
2. Rotate the turntable counterclockwise: Depress the foot switch, push the main boom luffing/turntable slewing control handle to the right, the turntable will rotate counterclockwise.

Note: When performing the operation from the platform, the rotation speed of the turntable is in direct proportion to the travel distance of the control handle. The shorter the travel distance, the slower the speed.

7.7 TRAVELING

WARNING

- The machine cannot travel with the boom positioned higher than the horizontal unless it is on a solid and flat surface without exceeding the maximum gradeability.
- The machine must not be driven on slopes, steps or arched surfaces that exceed the maximum gradeability of the machine.
- Before traveling, confirm the traveling control direction, and make sure the boom is above the rear-wheel drive axle. If the boom is above the front-wheel axle, the traveling and steering control directions will be opposite to the indicated directions.
- Extreme care must be taken when driving the machine in reverse or with the platform raised.
- When driving the machine in potentially dangerous situations such as driving on slopes or reversing, operate the handle in small increments to avoid danger due to excessive speed.

Note: The travel speed is in direct proportion to the travel distance of the handle. The shorter the travel distance, the slower the speed.

Driving Forward and Reverse

1. Driving forward: Depress the foot switch and push the travel/steer control handle forward, the machine will travel forward.
2. Driving backward: Depress the foot switch and push the travel/steer control handle backward, the machine will travel backward.
3. When the boom is above the rear-wheel drive axle, the control direction of traveling and steering of the platform controller will be indicated by the red and yellow directional arrows on the chassis.
4. When the boom moves beyond the rear wheel, the reverse position indicator will flash, and the travel function will be turned off. To restore the travel function: Press the reverse position travel switch, the rear position indicator will illuminate, and the travel function will resume. (At this time, the control direction of traveling and steering of the machine will be opposite to the red and yellow directional arrows on the chassis)

Steering While Traveling

1. Steer left: Depress the foot switch, push the travel/steer control handle forward and press the left button on top of the handle, the machine will steer left.

- Steer right: Depress the foot switch, push the travel/steer control handle forward and press the right button on top of the handle, the machine will steer right.

Traveling on Slopes



WARNING

The machine must not be driven on slopes, steps or arched surfaces that exceed the maximum gradeability of the machine.

Before traveling on a slope, please determine:

- the machine's maximum gradeability.
- The slope grade. To determine the slope grade:
 - Use a suitable carpenter's ruler, a straight piece of wood and a tape measure.
 - Measure the height (H) and length (L) of the slope.

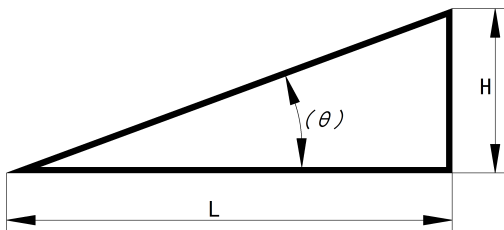


Fig 4

- Slope grade= $H/L \times 100\%$.

Switching Between High/Low Travel Speed



WARNING

- In a tilted condition the machine must be driven at low speed.
- Before traveling at high speeds, make sure to first observe whether the surrounding environment is safe. Otherwise, it is possible to collide with obstacles or other persons, and other dangers may occur.

NOTICE

Before switching to high travel speed mode, make sure the engine (if equipped) is running at high speed.

- With the machine traveling in non-operating position, push upward the high/low travel speed selector

switch, the travel speed will be switched to high speed and the high travel speed indicator light will be on; push the travel control handle to full drive position, the machine will travel at the maximum travel speed.

NOTICE

- Before traveling in a non-operating position, if the high/low travel speed selector switch remains in the high-speed position after the drive function is activated, the machine will start to run at high speed immediately.
- With the machine traveling in non-operating position, push upward the high/low travel speed selector switch, the machine will start to run at high speed.

- With the machine traveling in non-operating position, push downward the high/low travel speed selector switch, and the travel speed will be switched to low speed and the high drive speed indicator light will be out.
- With the machine in operating position, the machine can only travel at low speed.

7.8 BOOM MOVEMENTS



WARNING

Do not position the boom above the horizontal while driving the machine on slopes exceeding the maximum allowable tilt angle.

Perform operation from the ground:

- Raise the main boom:** Move and hold the enable switch and push the main boom luffing switch upwards – the main boom will be raised.
- Lower the main boom:** Move and hold the enable switch and pull the main boom luffing switch downwards – the main boom will be lowered.
- Extend the main boom:** Move and hold the enable switch and push the main boom telescoping switch to the right – the main boom will be extended.
- Retract the main boom:** Move and hold the enable switch and push the main boom telescoping switch to the left – the main boom will be retracted.
- Raise the jib:** Move and hold the enable switch and push the jib luffing switch upwards – the jib will be raised. (if equipped)
- Lower the jib:** Move and hold the enable switch and pull the jib luffing switch downwards – the jib will be lowered. (if equipped)

7. **Rotate the jib clockwise:** Move and hold the enable switch, pull the jib rotation switch downwards - the jib will rotate clockwise. (if equipped)
8. **Rotate the jib counterclockwise:** Move and hold the enable switch, push the jib rotation switch upward - the jib boom will rotate counterclockwise. (if equipped)

Perform operation from the platform:

Note: When performing operation from the platform, the speed of main boom luffing and telescoping and jib rotating is in direct proportion to the travel distance of the handle. The shorter the travel distance, the slower the speed.

1. **Raise the main boom:** Depress the foot switch and push the main boom luffing/turntable slewing control handle forward – the main boom will be raised.
2. **Lower the main boom:** Depress the foot switch and pull the main boom luffing/turntable slewing control handle backward – the main boom will be lowered.
3. **Extend the main boom:** Depress the foot switch, push the main boom telescoping/jib rotation control handle backward, and the main boom will be extended.
4. **Retract the main boom:** Depress the foot switch, push the main boom telescoping/jib rotation control handle forward, and the main boom will be retracted.
5. **Raise the jib:** Depress the foot switch and push the jib luffing switch upward – the jib will be raised. (if equipped)
6. **Lower the jib:** Depress the foot switch and pull the jib luffing switch downwards – the jib will be lowered. (if equipped)
7. **Rotate the jib clockwise:** Depress the foot switch, push the main boom telescoping/jib rotation control handle to the left - the jib will rotate clockwise. (if equipped)
8. **Rotate the jib counterclockwise:** Depress the foot switch, push the main boom telescoping/jib rotation control handle to the right - the jib will rotate counterclockwise. (if equipped)

7.9 PLATFORM MOVEMENTS



WARNING

The platform leveling function can only be used to slightly adjust the platform's levelness in situations such as traveling up/down slopes. Improper use may cause loads/people to move or fall.

Perform operation from the ground:

1. **Level the platform upward:** Move and hold the enable switch, push upward the platform leveling switch, the platform will be leveled upward.
2. **Level the platform downward:** Move and hold the enable switch, pull downward the platform leveling switch, the platform will be leveled downward.
3. **Rotate the platform clockwise:** Move and hold the enable switch, pull downward the platform rotation switch, the platform will rotate clockwise.
4. **Rotate the platform counterclockwise:** Move and hold the enable switch, push upward the platform rotation switch, the platform will rotate counterclockwise.

Perform operation from the platform:

1. **Level the platform upward:** Depress the foot switch, push the platform leveling switch upward, the platform will be leveled upward.
2. **Level the platform downward:** Depress the foot switch, pull the platform leveling switch downward, the platform will be leveled downward.
3. **Rotate the platform clockwise:** Depress the foot switch, push the platform rotation switch to the left, the platform will rotate clockwise.
4. **Rotate the platform counterclockwise:** Depress the foot switch, push the platform rotation switch to the right, the platform will rotate anti-clockwise.

7.10 AUXILIARY POWER

NOTICE

- When the auxiliary power is in use, do not perform two or more functions at the same time, because certain operations may not respond due to the low voltage in the auxiliary motor or pump.
- The auxiliary power switch can only be used for a short time (to fully lower and retract the platform from maximum angle/maximum extension) when the main power source is not working, prolonged operation may damage the motor.

In the event of main power source failure, the auxiliary power can be used to perform the desired function operation.

Perform operation from the ground:

Move and hold the auxiliary power switch, activate the desired movement switch to perform the required function operation.

Perform operation from the platform:

Depress the foot switch, move and hold the auxiliary power switch, and activate the desired movement switch to perform the required function operation.

7.11 SHUTDOWN AND PARKING

1. Park the machine on a solid, flat, and level surface, and make sure the area is adequately protected.
2. Make sure the boom is fully retracted and positioned above the rear-wheel drive axle, and all panels and gates are closed and secured.
3. Remove all loads on the platform.
4. If equipped with an engine, idle the engine for 3min ~ 5min to lower its internal temperature.
5. Press the emergency stop button at the turntable controls and platform controls, turn the key switch to OFF position and remove the key.
6. Close the platform controls guard to protect the platform controller, handles, switches and panels from harsh environments.
7. If the machine is to be left unused for a long time, press the power switch.

7.12 TRANSPORT AND LIFTING

The mobile elevating work platform is a non-road vehicle and is not licensed for on-road use, so the machine needs to be transported and transferred by road, railway or waterway.



WARNING

Only qualified individuals may drive the machine onto or from the transport vehicle.

Before transporting and lifting the machine:

1. Determine the total weight of the machine (see machine nameplate or **Technical Parameters** section of this manual) and select appropriate lifting equipment, rigging equipment, and transport vehicle.
2. Make sure the boom is stowed, that the turntable is locked (lock the slewing pin if so equipped), make sure there are no loose or unsecured parts on the machine, and that there are no persons or tools on the platform.

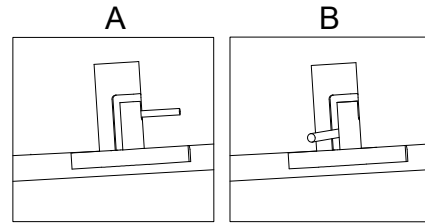


Fig 5

- A: The turntable slewing pin is not locked, and the turntable can rotate
- B: The turntable slewing pin is locked, the turntable cannot rotate

3. Ensure that the machine lifting points/rope lashing points and their attached structures are intact and that the belt or rope to be used has sufficient load strength.
4. Before loading/unloading the machine, ensure that the transport vehicle is parked on level ground and that the ramp used for driving the machine onto the transport vehicle does not exceed the maximum gradeability of the machine.
5. When loading/unloading the machine, the transport vehicle must be secured to prevent it from moving.
6. The wheels should be locked after the machine is loaded to prevent it from moving.
7. Before releasing the brake, the machine must be parked on a horizontal surface or secured.
8. The machine may only be lifted from a specific position with a forklift or crane with sufficient lifting capacity. Care should be taken to prevent the machine from colliding with surrounding objects.

Transport

1. Adjust the machine to the transport position (the positions of the jib and platform in the following figure are for reference only, and can be adjusted as appropriate for the trailer during transportation).
2. Turn the key switch on the turntable controls to the OFF position and remove the key.
3. Firmly secure the chassis on the transport vehicle and take appropriate safety measures. Use at least 4 ropes or belts to secure the chassis and at least 1 rope or belt to secure the platform.
4. Adjust the rigging appropriately to prevent damage to the rope or belt.
5. To protect the boom, platform components and electrical and hydraulic components, do not apply excessive downward pulling force to the ropes or belts used to secure the platform. A foam layer can be

padded under the platform so that the underside of

the platform is suspended.

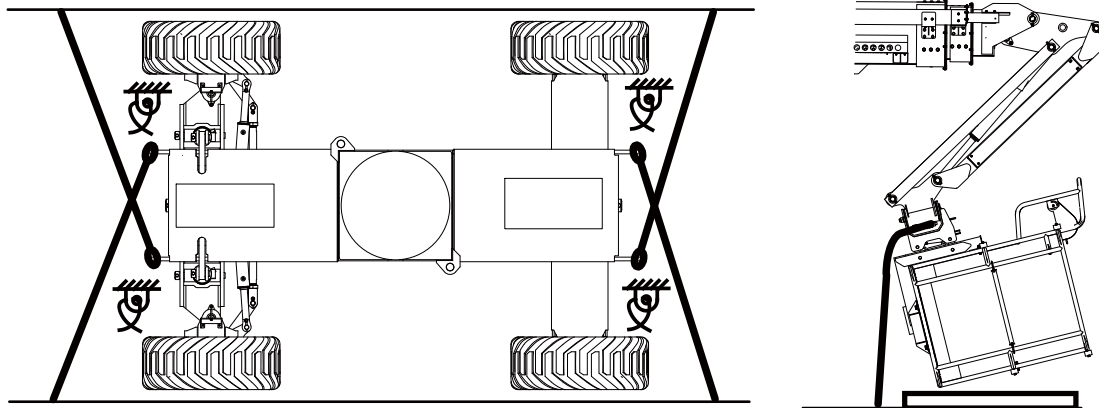


Fig 6 Transport diagram

Lifting

1. Determine the center of gravity of the machine.
2. The rigging equipment must be attached to the machine's specified lifting point.
3. Adjust the rigging equipment properly to avoid

damage to the machine and keep the machine level.

X=1050mm (3ft 5.3in)

Y=1147mm (3ft 9.2in)

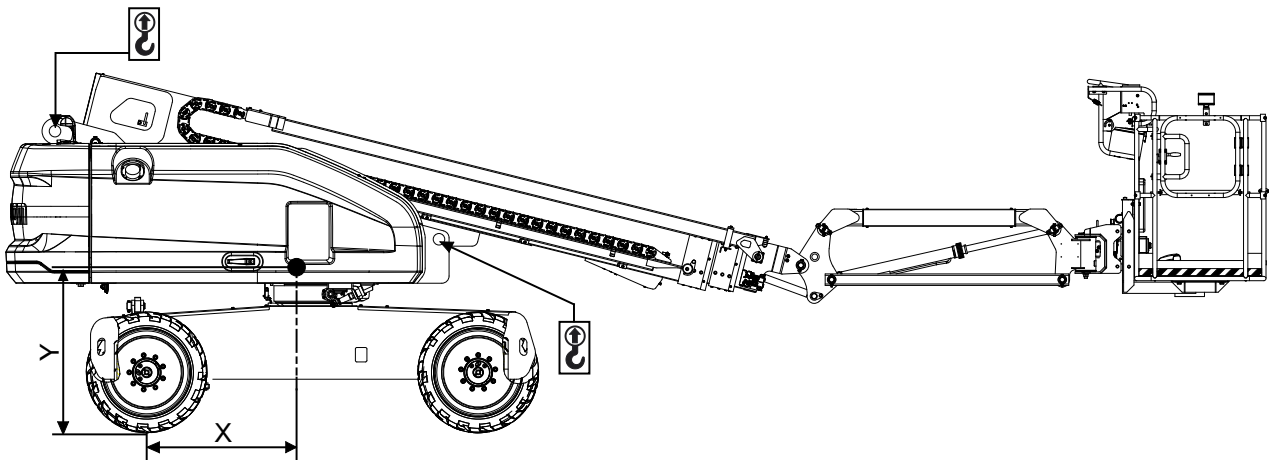


Fig 7 Lifting diagram

7.13 STORAGE

Mobile elevating work platforms should be stored in places that are protected from rain, humidity, sunlight, corrosive gases, and have good ventilation.

In order to ensure the machine can be operated normally after prolonged storage, the following measures should be taken when storing the machine:

1. Retract and lower the boom to the stowed position.

2. Close and lock all panels and gate locks on the machine.
3. Press the emergency stop button at the turntable controls and platform controls, turn the key switch to OFF position and remove the key.
4. Press the main power switch to OFF.
5. Chock the wheels.
6. Wipe off all dust and oil from the machine to keep it clean.

7. Apply lubricating oil to corrosive parts.
8. When long-term storage is required, the fuel (if equipped with engine) and water should be drained, and the positive and negative terminal of the battery should be disconnected.
9. For a machine stored for more than three months, idle the machine every three months for not less than one hour each time, and clean and maintain the machine.
10. For a machine stored for more than one and a half years, a comprehensive inspection and maintenance on the machine should be carried out before use, aging seals and filter elements should be replaced as appropriate.

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8

EMERGENCY PROCEDURES

This chapter describes the steps to follow in the event of unexpected situations during operation.

8.1 REPORTING ACCIDENTS

In case of any accident involving Hunan Sinoboom Intelligent Equipment Co., Ltd. products, Hunan Sinoboom Intelligent Equipment Co., Ltd. must be notified immediately. In case of any accident involving the machinery of Hunan Sinoboom Intelligent Equipment Co., Ltd., notify Hunan Sinoboom Intelligent Equipment Co., Ltd. by telephone immediately and provide all necessary details, even if the accident did not cause personal injury or property damage.

Failure to notify the manufacturer within 48 hours of the incident involving the machinery of Hunan Sinoboom Intelligent Equipment Co., Ltd. may void the product warranty.

Note

Thoroughly inspect the machine and all its functions after any accident. First, test all functions from the ground controller, then from the platform controller. Ensure the machine's lifting height does not exceed 3 m (10 ft) until all damage has been repaired and all controllers operate properly.

8.2 EMERGENCY OPERATION

When the operator is unable to control the machine (squeezed or trapped on the platform):

1. Other personnel can only operate the machine from the turntable controls according to the operation requirements.
2. Other qualified personnel on the platform can operate the platform controller. If the controller is not working properly, do not continue to operate.
3. A crane, forklift, or other equipment that meets usage condition requirements can be used to transport personnel on the platform and stabilize the movement of the machine.

When the platform or boom is stuck at height:

If the platform or boom is stuck or blocked by a high building or aerial equipment, rescue the operator on the platform first before attempting to free the machine.

If any switch is reset but the movement does not stop:

If any switch/handle returns to neutral position and the corresponding movement does not stop, remove the foot from the foot switch or push in the emergency stop button to stop the machine.

8.3 EMERGENCY LOWERING

When the main power source fails, the auxiliary power on the turntable or platform controls can be used according to the actual condition to lower the platform into place. Refer to section [Page 44, 7.10 Auxiliary Power](#) for detailed procedures.

8.4 EMERGENCY TOWING



WARNING

- Except in case of emergency situations, machine malfunction, power loss or loading/unloading, it is strictly prohibited to tow or drag the machine.
- When towing or dragging the machine, comply with local policies and road traffic regulations.
- Towing the machine on public highways is prohibited.
- The machine is not equipped with a brake for towing control, so the towing vehicle must be able to control the machine at all times, otherwise the machine may lose control, resulting in serious injury or death.
- The maximum permissible towing speed is 3 km/h (1.9 mph).
- The maximum permissible towing gradient is 25%.
- The machine must not be towed/dragged with the engine running or the drive hub engaged.
- Before the brake is released, the machine must be parked on a horizontal surface or secured.

1. Place the machine on solid level ground and secure the wheels with chocks to prevent the machine from moving.
2. Make sure that the boom is stowed, that the turntable is locked (or if equipped with turntable slewing pin, that the turntable slewing pin is locked), that there are no loose or unsecured parts on the machine, that there are no persons or tools on the platform, and that there are no obstacles on the surrounding area.
3. Loosen the bolts on each drive hub and mount the drive hub cap in the towing position (reversely).

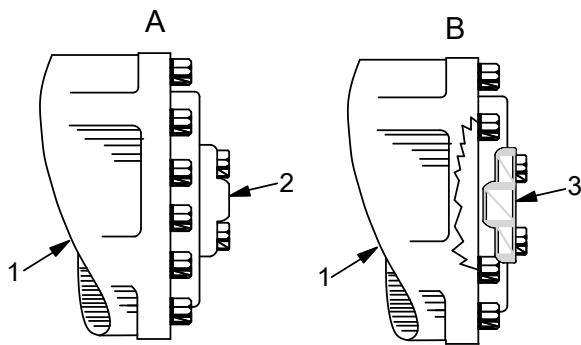


Fig 1

A Drive hub engaged

B Drive hub disengaged

- 1) Drive hub
- 2) Disengage drive hub cap (normal operating position)
- 3) Disengage drive hub cap (towing position)
4. Tighten the bolts and disengage the drive hub. The machine can then be towed and dragged by external force.
5. After towing, place the machine on solid level ground and secure the wheels with chocks to prevent the machine from moving.
6. Install the drive hub back to its original position, and tighten the bolts to engage the drive hub.

- Perform operation from the ground: Activate the desired movement switch while operating the auxiliary power switch on the ground controls;
- Perform operation from the platform: Depress the foot switch, move the emergency power switch on the platform controller, and activate the desired movement switch.

This will activate the function override operation with an overloaded platform, and the corresponding movement can be performed. The time of the override operation and the actual weight on the platform are shown on the display and are recorded.

NOTICE

The function override operation with an overloaded platform may only be used to lower the platform in an emergency situation when the platform is overloaded. Before operating the machine using the override function make sure that the surrounding area is safe/clear and the machine is in a safe state.

WARNING

When using the function override operation with an overloaded platform avoid movements in directions where the machine may tip over. Improper operation may cause the machine to tip over, causing injuries to personnel and severe damage.

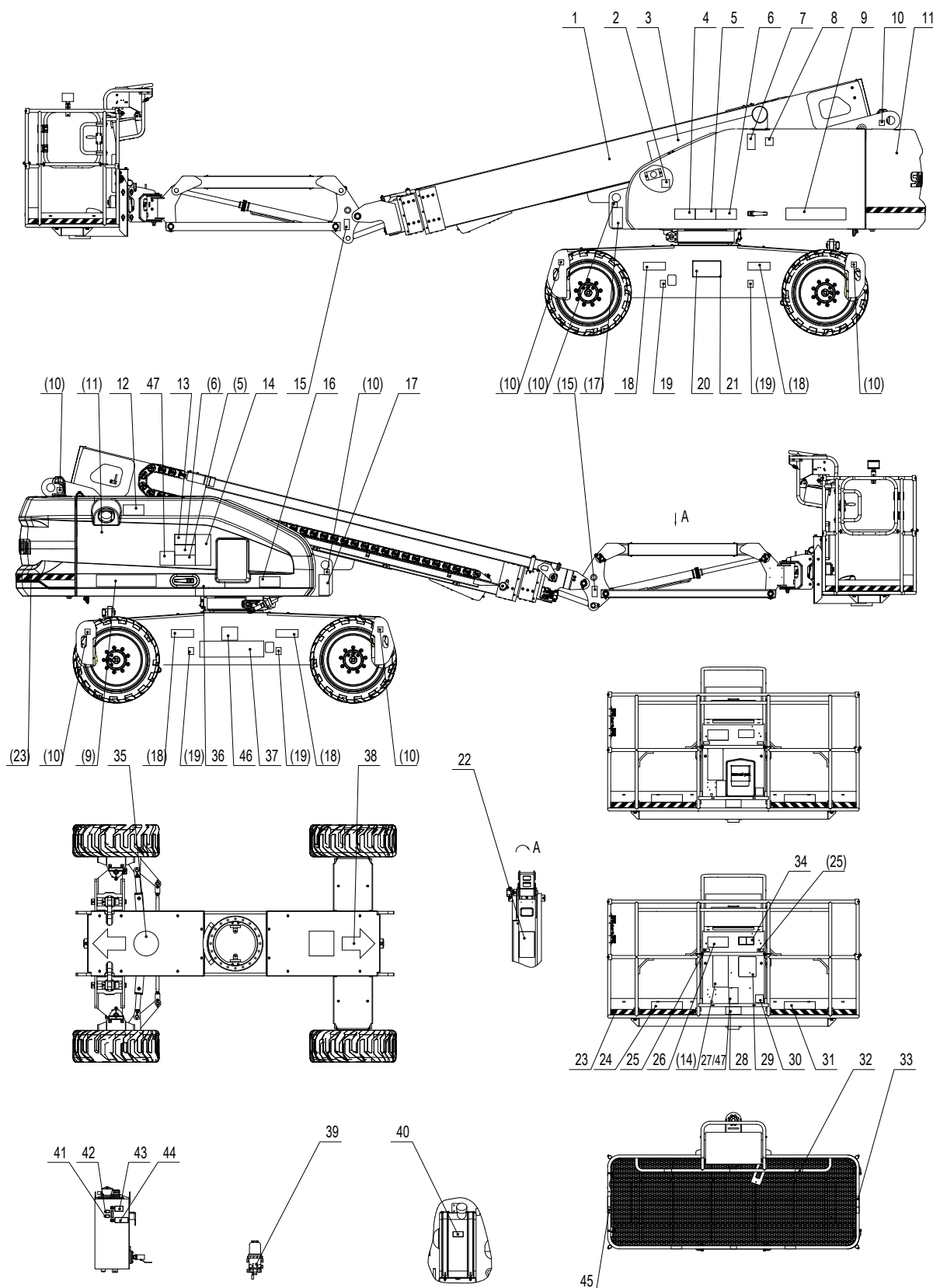
8.5 OVERRIDE OPERATION WITH AN OVERLOADED PLATFORM

The function "override operation with an overloaded platform" is only available for certain overseas models.

With the machine in the overweight limit (KG) mode, if an overload alarm is triggered and the platform needs to be lowered, the function override operation with an overloaded platform should be activated.

9

DIAGRAM OF DECAL POSITIONS



No.	GB	CE-Metric	CE-Imperial	AS	CSA&ANSI	Quantity	Description
	105084100006	105084100007	105084100009	105084100008	105084100010	1	Decals diagram
1	105057103001	105057103001	105057103001	105057103001	105057103001	1	LOGO SINOBOOM
2	104011100016	104011100016	104011100016	104011100016	104011100016	1	Decal – Emergency stop button
3	105084100001	105084100001	105084100003	105084100001	105084100003	1	Decal - Trade ID
4	104011100005	104011100005	104011100005	104011100005	104011100005	1	Decal - Explosion hazard
5	104011100006	104011100006	104011100006	104011100006	104011100006	2	Decal – General maintenance
6	104011100007	104011100007	104011100007	104011100007	104011100007	2	Decal – Tipping hazard
7	104011100018	104011100018	104011100018	104011100018	104011100018	1	Decal - Burn hazard
8	104011100008	104011100008	104011100008	104011100008	104011100008	1	Decal - Noise level of 82dB
9	105084100002	105084100002	105084100004	105084100002	105084100004	2	Decal - Trade ID
10	104011100002	104011100002	104011100002	104011100002	104011100002	8	Decal – Lifting point
11	105045103002	105045103002	105045103002	105045103002	105045103002	2	LOGO symbol
12	104011100014	104011100014	104011100014	104011100014	104011100014	1	Decal - Explosion hazard
13	104011100013	104011100013	104011100013	104011100013	104011100013	1	Decal – Electrocution hazard
14	104011100020	104011100020	104011100020	104011100020	104011100020	2	Decal – General safety instructions
15	103009103009	103009103009	103009103009	103009103009	103009103009	2	Decal – Crushing hazard
16	104011100022	104011100022	104011100022	104011100022	104011100022	1	Decal - Turntable slewing pin
17	104011100011	104011100011	104011100011	104011100011	104011100011	2	Decal – Crushing hazard
18	104011100001	104011100001	104011100001	104011100001	104011100001	4	Decal – Tipping hazard
19	105084100013	105084100013	105084100013	105084100013	105084100013	4	Decal – Ground pressure 4520kg
20	105001100057	105082103016	105082103016	105045103004	103004103004	1	Nameplate
21	215050000012	215050000012	215050000012	215050000012	215050000012	4	Blind rivet 4×8-ZnD GB/T 12618.2
22	104011100012	104011100012	104011100012	104011100012	104011100012	1	Decal – Fall hazard
23	216060000002	216060000002	216060000002	216060000002	216060000002	5	Yellow & black hazard warning tape w. stripes
24	103007103002	103007103002	103007103002	103007103002	103007103002	1	Decal – Tipping hazard

No.	GB	CE-Metric	CE-Imperial	AS	CSA&ANSI	Quantity	Description
25	101048100014	101016100030	101016100030	101016100030	101016100030	2	Decal – Anchorage point
26	105021100003	105021100003	105021100003	105021100003	105021100003	1	Decal – Tipping hazard
27	/	/	/	/	105029103023	1	Decal – Operation instructions
28	104011100019	104011100019	104011100019	104011100019	104011100019	1	Decal – Crushing hazard
29	105084100005	105084100005	105084100005	105084100005	105084100005	1	Decal – Diagram of working envelope
30	104011100017	104011100017	104011100017	104011100017	104011100017	1	Decal – Foot switch
31	105072103014	105072103014	105072103014	105072103014	105072103014	1	Decal – Rated platform capacity of 250/340/454 kg
32	/	101079103029	101079103029	101079103029	101079103029	3	Decal – Handle grip position
33	104011100021	104011100021	104011100021	104011100021	104011100021	4	Decal – Crushing hazard
34	104011100009	104011100009	104011100009	104011100009	104011100009	1	Decal – Refer to the manuals
35	105001100053	105001100053	105001100053	105001100053	105001100053	1	Decal – Direction marking
36	/	/	/	/	101040103015	1	Decal – Annual inspection date
37	103003100004	105001100050	105001100050	105001100050	105001100050	1	Decal – Contact information
38	105001100051	105001100051	105001100051	105001100051	105001100051	1	Decal – Direction marking
39	104009100020	104009100020	104009100020	104009100020	104009100020	1	Decal – Fuel-water separator
40	104009100019	104009100021	104009100021	104009100021	104009100021	1	Decal – Diesel fuel marking
41	104011100003	104011100003	104011100003	104011100003	104011100003	1	Decal – Hydraulic oil level
42	104011100010	104011100010	104011100010	104011100010	104011100010	1	Decal – Hydraulic oil level
43	104010100021	104010100021	104010100021	104010100021	104010100021	1	Decal – Applicable temperature range
44	104009100018	104009100022	104009100022	104009100022	104009100022	1	Decal – Hydraulic oil marking
45	/	/	/	/	103010103014	1	Decal – Non-insulated
46	114006103012	/	/	/	/	1	Decal – QR code
47	/	105082103017	105082103017	105082103017	/	1	Decal – Tipping hazard

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10 MAINTENANCE

This chapter provides the operator with additional information needed to properly operate and maintain the machine, and is only intended to assist the operator in performing routine maintenance tasks. For more comprehensive maintenance instructions, please refer to the **Inspection and Preventive Maintenance Schedule** and the Maintenance Manual.

10.1 LUBRICATION

In order to ensure the performance and service life of the machine and its components, moving parts must be regularly inspected and lubricated.

NOTICE

- *Mixing lubricating oil of different grades will alter its properties and cause damage to the machine. When refilling lubricant, the oil being added must be of the same grade as the oil currently in use in the machine.*
- *Any contamination (dust) of the lubricating oil can lead to premature wear of the sliding surfaces and shorten the service life of the machine. Before adding lubricating oil the container used for filling and other surfaces must be cleaned.*
- *Failing to adhere to lubrication cycles or lack of lubrication can cause equipment damage, and increase repair costs and downtime.*



WARNING

- **During the lubrication procedure, non-related personnel are prohibited from operating the equipment. Unexpected equipment movements could pose serious risks to the operator.**
- **If lubricating oil gets into the eyes, rinse the eyes immediately with clean water and seek medical attention promptly. If the skin comes into contact with lubricating oil, make sure to thoroughly wash the skin with water.**

Table 10-1

No.	Position	Interval	Lubricating oil/grease grade	Operation
1	Drive system components	Every 3 months or 250 operating hours	Refer to the Gear Oil section	Check oil level
		Every 1 year or 1000 operating hours		Replace oil
2	Slewing drive unit	Every 3 months or 250 operating hours	Refer to the Gear Oil section	Check oil level
		Every 1 year or 1000 operating hours		Replace oil

Table 10-1 (Continued)

No.	Position	Interval	Lubricating oil/grease grade	Operation
3	Slewing bearing	Every 3 months or 250 operating hours	ZL-3 lithium-based lubricating grease	Add oil with oil gun
Notes: If the machine is equipped with an integrated slewing bearing (including both the slewing drive unit and the slewing bearing) to perform the slewing movement, just conduct an inspection and lubrication as per requirement No. 3 in the table.				

Lubrication intervals are based on machine usage under normal operating conditions. If the machine is used in rough (such as dusty environments) or other unusual conditions, inspection and lubrication should be performed more frequently.

Hydraulic oil

Factory-filled hydraulic oil is usually L-HV32 or L-HM46 or as specified by customers. Different regions have different temperature environments, so please select the hydraulic oil suitable for your region according to the recommendations in the table below.

10.2 OIL REQUIREMENTS

Note

- Please choose suitable oil according to the ambient temperature and local regulations; the use of unsuitable oil will damage the machine components.
- Oils of different grades or viscosities should not be mixed. When refilling oil, the oil being added must be of the same grade and viscosity as that of the oil currently in use in the machine.
- For special environments or special operating requirements please contact Sinoboom.

WARNING

- Before refilling oil, wait until the temperature of the machine drops to room temperature, otherwise it may cause splashes, burns or other personal injury.
- The use of inferior oils is strictly prohibited. Using inferior oil may damage the machine, and faults caused by this are not covered by Sinoboom's warranty.

Table 10-2

Ambient temperature range	Amer	Mobil	Shell	Castrol
0°C ~ 40°C (32°F ~ 104°F)	L-HM46	DTE 10 Excel 46	S2M46	Hyspin AWH-M46
-25°C ~ 25°C (-13°F ~ 77°F)	L-HV32	DTE 10 Excel 32	TELLUS-S3VE32	Hyspin HVI-32

Table 10-2 (Continued)

Ambient temperature range	Amer	Mobil	Shell	Castrol
> 40°C (104°F)	L-HM68	DTE 10 Excel 68	S2M68	Hyspin AWH-M68
< -30°C (-22°F)	Special oil required, to be determined			

Gear Oil

The viscosity grade of gear oil generally added when the machine leaves the factory is 80W-90, suitable for use in regions with an environmental temperature of -12 to 40°C (10.4 to 104°F). If the ambient temperature is beyond the applicable range, please select a suitable gear oil.

Different regions have different temperature environments. Please refer to the table below for the recommended usage temperature of different viscosity grades of gear oil to select the appropriate gear oil.

Table 10-3

Viscosity grade	Recommended ambient temperature
75W-90	-40 ~ 30°C (-40 ~ 86°F)
80W-90	-26 ~ 40°C (-14.8 ~ 104°F)
85W-90	-12 ~ 40°C (10.4 ~ 104°F)

Fuel Oil



WARNING

- The machine should be refueled in a well-ventilated place with no flames, sparks, and other hazards that may cause fire or explosion.
- Do not refuel the machine while the engine is running.

This machine uses diesel oil as the fuel, and the diesel oil filled in the factory is generally 0# diesel, which is suitable for use in areas with ambient temperature above 4°C (39.2°F). The diesel oil has been basically emptied when the machine leaves the factory, and the user needs to fill diesel oil with appropriate grade according to the ambient temperature and emission regulations. The following table shows the recommended ambient temperature for different grades of diesel oil:

Table 10-4

Grade	Recommended ambient temperature
5#	Above 8°C (46.4°F)
0#	Above 4°C (39.2°F)
-10#	Above -5°C (23°F)
-20#	Above -14°C (39.2°F)
-35#	Above -29°C (6.8°F)
-50#	Above -44°C (-47.2°F)

NOTICE

Please go to a certified gas station to purchase qualified fuel oil. It is recommended prepare an oil storage tank with fuel filter and store the fuel oil in the tank for more than two days to precipitate impurities and water before use.

Engine Oil

The engine oil filled in the factory is generally 15W-40 oil of CJ-4 grade, which is suitable for use in areas with temperature range of -15°C ~ 40°C (5 ~ 104°F). If the ambient temperature is beyond the applicable range, please select other appropriate engine oil.

The ambient temperature varies from region to region, so please choose the oil viscosity grade that suits your region according to the recommendations in the table below.

Table 10-5

Viscosity grade	Recommended ambient temperature
0W-30	-35 ~ 0°C (-31 ~ 32°F)
5W-40	-25 ~ 30°C (-13 ~ 86°F)
15W-40	-15 ~ 40°C (5 ~ 104°F)
20W-50	0°C ~ 50°C (32 ~ 122°F)

Coolant

The coolant filled in the factory is generally -18°C pre-mixed coolant, which is suitable for use in areas with ambient temperature above -18°C (-0.4°F). If the ambient temperature is beyond the applicable range, select other appropriate coolants.

The environment temperature varies from region to region, so please choose the coolant applicable for your region according to the recommendations in the table below.

Table 10-6

Coolant type	Recommended ambient temperature
-18°C premixed coolant	Above -18°C (-0.4°F)
-37°C premixed coolant	Above -37°C (-34.6°F)
Mixed coolant with 50% ethylene glycol anti-freeze and 50% water	-32°C ~ 0°C (-25.6 ~ 32°F)
Mixed coolant with 60% ethylene glycol anti-freeze and 40% water	-54°C ~ -32°C (-65.2 ~ 25.6°F)

10.3 TIRE ASSEMBLY

Checking Tires and Rims

Check the tires and rims daily and replace a tire if any of the following defects is found:

- The tire is severely cracked, broken, deformed or shows other abnormalities.
- The tire ply shows a smooth, uniform cut with a total length of more than 75 mm (3 in).

- The tire ply shows a crack or fissure that exceeds 25 mm (1 in) in either direction.
- The tire has a puncture with a diameter of more than 25 mm (1 in).
- The tire shows severe bulging.
- The wear extent of the tire's ground-supporting surface exceeds 25%.

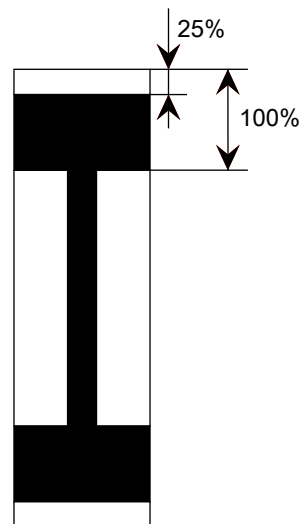


Fig 1

Testing Tire Fasteners

The tire fasteners should be tightened before the machine is put into service for the first time and after each tire is removed. Check and tighten the wheel nuts to the specified torque every 3 months or 250 operating hours.

Replacement Requirements

WARNING

- The tires and rims on the machine have been designed and selected according to the overall performance and load stability requirements of the machine. Therefore, the model specifications, rim width, installation center surface, diameter, etc. must not be changed, otherwise this could lead to an unstable and hazardous condition.
- Wheel-specific nuts must be used that match the wheel bolts. The wheel nuts must be installed and maintained with the proper tightening torque to prevent loose rims, broken bolts and wheels loosening from the axle. Be sure to only use nuts that match the mounting angle of the rim holes.

Hunan Sinoboom Intelligent Equipment Co., Ltd. recommends the replacement tire be of the same size, ply rating and brand as the original tire. For the tire part numbers of specific machine models, please refer to the Parts Manual of the corresponding machine. If you choose not to use the replacement tires recommended by Hunan Sinoboom Intelligent Equipment Co., Ltd., the following specifications should be adhered to:

- The ply rating/rated load capacity and size should be the same as the original tire or superior to it.
- The tire tread contact width should be the same as or superior to the original tire.
- The wheel diameter, width and offset dimensions must be the same as the original tires.
- The replacement tire must be approved for the application by the tire manufacturer (including intended purpose, maximum travel speed, maximum tire load, etc.).
- Due to size differences between different tire brands, both tires on the same axle should be of the same brand.

NOTICE

Unless specifically approved by Sinoboom, do not replace foam-filled tires with pneumatic tires.

Replacing Tires

WARNING

Tighten the wheel nuts to the specified torque to prevent the wheel from loosening. Use a torque wrench to tighten the nuts. If no torque wrench is available use a socket wrench to tighten the nuts and then immediately have a service station or dealer tighten the nuts to the specified torque. Over-tightening will cause the nuts to break or permanently deform the bolt holes in the rims.

The correct steps to replace a tire are as follows:

1. Make sure the machine is in stowed position.
2. Turn the power switch off and disconnect all power sources (such as battery charger) from the machine.
3. Use a wrench to loosen but do not remove the wheel nuts yet.
4. Use a jack with sufficient load capacity to lift the machine to the appropriate height so that the wheel assembly is off the ground.
5. Remove the wheel nuts in an alternating sequence, then remove the wheel.
6. Align the mounting holes of the new wheel assembly with the corresponding mounting hole on the

hub.

7. Apply Loctite 272 thread locking adhesive to the bolts and nuts, then install the nuts in sequence.
8. Tighten all nuts by hand first to prevent loosening of the bolts and nuts. Never apply lubricant to threads or nuts.
9. Then tighten the nuts step by step in the sequence as shown below. Please refer to the recommended torque settings in the table below.

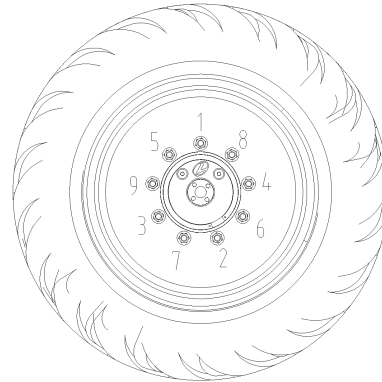


Fig 2 Diagram of wheel nuts tightening sequence

Table 10-7 Table of wheel nuts tightening torque

First step	Second step	Third step
150 Nm (110 ft-lb)	240 Nm (177 ft-lb)	300 Nm (221 ft-lb)

10.4 INSPECTION AND PREVENTATIVE MAINTENANCE SCHEDULE

This section provides safety and other vital information for machine operators. To extend the service life of the machine and ensure safe operation, all necessary inspections and maintenance work must be completed before the machine is put into service.

It is crucial to develop and adhere to a comprehensive inspection and preventive maintenance program. This manual outlines the regular inspections and maintenance procedures recommended by Hunan Sinoboom Intelligent Co., Ltd. Consult your national, regional or local regulations for aerial work platforms. The frequency of the inspection and maintenance must be increased as required by environmental conditions, requirements and frequency of usage.

Pre-delivery Inspection (PDI)

The pre-delivery inspection should be performed by qualified Hunan Sinoboom Intelligent Equipment Co., Ltd. technicians.

A pre-delivery inspection should be performed before each sale, lease or rental delivery.

Refer to the **Inspection and Preventive Maintenance Schedule** for items requiring preventive maintenance. Refer to the corresponding section of this manual to perform inspection and maintenance procedures.

Pre-operation Test

A pre-operation test must be performed before each start or restart of work, change of operator, and after each maintenance operation. Refer to the pre-operation test section of the Operation Manual for detailed information. The Operation Manual must be read and understood in its entirety before performing a pre-operation inspection.

Regular Inspections

Regular inspections should be performed by qualified Hunan Sinoboom Intelligent Equipment Co., Ltd. technicians.

Regular inspections must be performed after the machine has been in service for 3 months or 250 hours, whichever comes first, or if it has been out of service for more than 3 months. The frequency of the inspection and maintenance must be increased as required by environmental conditions, requirements and frequency of usage.

The items included in the regular inspections are identical to the pre-delivery inspection.

Annual Inspection

An annual machine inspection must be performed once a year and no later than 13 months from the date of the previous annual inspection. Hunan Sinoboom Intelligent Equipment Co., Ltd. recommends this task be performed by a factory-trained service technician, a person recognized by Sinoboom as one who, by qualification, certificate and training, has successfully demonstrated the ability and proficiency to service, repair and maintain the Sinoboom model in question.

Refer to the **Inspection and Preventive Maintenance Schedule** for items requiring annual inspection, and refer to the corresponding section of this manual to perform inspection and maintenance procedures.

Preventive Maintenance

Preventive maintenance procedures shall be performed by qualified Hunan Sinoboom Intelligent Equipment Co., Ltd. technicians. The frequency of the inspection and maintenance must be increased as required by environmental conditions, requirements and frequency of usage.

Refer to the **Inspection and Preventive Maintenance Schedule** for items requiring preventive maintenance. Refer to the corresponding section of this manual to perform inspection and maintenance procedures.

Responsible Persons and Qualifications for Performing Inspection and Maintenance

Table 10-8

Inspection Type	Inspection Frequency	Primary Responsible Persons	Service Qualifications
Pre-operation Inspection	Before starting/restarting work, change of user, after each maintenance activity.	User or operator	Properly trained user or operator
Pre-delivery Inspection (PDI)	Before each sale, lease or rental delivery	Owner, dealer or user	Qualified Sinoboom technician
Regular Inspections	In service for 3 months or 250 hours (whichever comes first) or out of service for more than 3 months	Owner, dealer or user	Qualified Sinoboom technician

Table 10-8 (Continued)

Inspection Type	Inspection Frequency	Primary Responsible Persons	Service Qualifications
Annual Machine Inspection	Once a year and no later than 13 months from the date of the previous annual inspection	Owner, dealer or user	Factory-trained service technician
Preventive Maintenance	At intervals specified in the <i>Inspection and Preventive Maintenance Schedule</i>	Owner, dealer or user	Qualified Sinoboom technician

Inspection and Preventive Maintenance Schedule

Perform inspection and preventive maintenance for the items in the table below at the specified intervals. Maintenance and inspection intervals are calculated based on the months of service or the “cumulated operating hours” displayed on the turntable controls (whichever comes first).

Inspection intervals are based on the use of the machine under normal operating conditions. The intervals should be shortened accordingly when operating in harsh environmental conditions.

Table 10-9 Inspection and Preventive Maintenance Schedule

Items	Intervals		
	Before each delivery ¹ or quarterly ²	Semiannually ³	Annually ⁴
Chassis assembly			
Chassis	2	2	2
Tires	1, 2	1, 2	1, 2
Drive hub	1, 2	1, 2	1, 2
Wheel nuts	1 ⁵⁰	1 ⁵⁰	1 ⁵⁰
Drive motor	1, 6	1, 6	1, 6
Travel reducer	1, 2, 6	1, 2, 6	1, 2, 6, 11
Steering components	1, 2	1, 2	1, 2
Axles \ Extending axles	1, 2, 3	1, 2, 3	1, 2, 3
Bearings	1, 2, 5, 12	1, 2, 5, 12	1, 2, 5, 12
Turntable assembly			
Turntable	2	2	2
Slewing bearing	1 ⁵⁰ , 2, 6, 12	1 ⁵⁰ , 2, 6, 12	1 ⁵⁰ , 2, 6, 8, 12
Slewing reducer	1, 2, 6	1, 2, 6	1, 2, 6, 11
Central rotary joint	6	6	6
Slewing motor	1, 6	1, 6	1, 6
Turntable pin	1, 2, 3	1, 2, 3	1, 2, 3
Turntable cover assembly	1, 2, 3	1, 2, 3	1, 2, 3

Table 10-9 Inspection and Preventive Maintenance Schedule (Continued)

Items	Intervals		
	Before each delivery ¹ or quarterly ²	Semiannually ³	Annually ⁴
Hydraulic generator (if equipped)	1, 3, 6, 10 ^{NO.1}	1, 3, 6, 10 ^{NO.1}	1, 3, 6, 10 ^{NO.1}
Boom assembly			
Boom weldment	1, 2	1, 2	1, 2
Hose, wire rope bracket	1, 2	1, 2	1, 2
Pulley and slider assembly	1, 2	1, 2	1, 2
Bearings	1, 2, 5, 12	1, 2, 5, 12	1, 2, 5, 12
Cover or protective guard (if equipped)	1, 2	1, 2	1, 2
Drag chain and wire rope system	1, 2, 3, 5	1, 2, 3, 5	1, 2, 3, 5
Pivot pins and retaining rings	1, 2	1, 2	1, 2
Platform assembly			
Guardrails	2	2	2
Access gate	1, 2, 3	1, 2, 3	1, 2, 3
Floor	2	2	2
Swing cylinder	1, 2, 5, 6	1, 2, 5, 6	1, 2, 5, 6
Safety belt anchorage point	1, 2, 7	1, 2, 7	1, 2, 7
Power system			
Engine idle speed, RPM and throttle valve	1, 3	1, 3	1, 3
Fuel oil	6	6	6
Engine oil	6	6, 11	6, 11
Cooling system	1, 2, 5, 6, 7	1, 2, 5, 6, 7	1, 2, 5, 6, 7, 11
Fuel filter	1, 5	1, 5, 11	1, 5, 11
Air filter	1, 6, 11	1, 6, 11	1, 5, 6, 11
Engine oil filter	1, 5	1, 5, 11	1, 5, 11
Intake/exhaust system	1, 6	1, 6	1, 6
Charging function	1, 3	1, 3	1, 3
Belt	2, 3	2, 3	1, 2, 3
Fuel tank, tank cover, vent hole	1, 2, 6	1, 2, 6	1, 2, 6
Auxiliary power system	1, 3, 10	1, 3, 10	1, 3, 10
Hydraulic system			
Hydraulic pump	1, 2, 6	1, 2, 6	1, 2, 6
Hydraulic cylinder	1, 2, 5, 6	1, 2, 5, 6	1, 2, 5, 6

Table 10-9 Inspection and Preventive Maintenance Schedule (Continued)

Items	Intervals		
	Before each delivery ¹ or quarterly ²	Semiannually ³	Annually ⁴
Oscillating cylinder	10 ^{NO. 1}	10 ^{NO. 1}	10 ^{NO. 1}
Hydraulic valves	1, 2, 5, 6	1, 2, 5, 6	1, 2, 5, 6
Counterbalance valve, check of the locking function	10 ^{NO. 1}	10 ^{NO. 1}	10 ^{NO. 1}
Hydraulic hoses, pipes and fitting	1, 2, 6	1, 2, 6	1, 2, 6
Hydraulic tank, cap and vent	1, 2, 3, 5, 6	1, 2, 3, 5, 6	1, 2, 3, 5, 6
Hydraulic oil high-pressure filter	1, 5, 6	1, 5, 6, 11 ⁵⁰	1, 5, 6, 11 ⁵⁰
Hydraulic oil	5, 6	5, 6	5, 6, 11
Electrical system			
Electrical wiring, connector	1, 2	1, 2	1, 2
Battery	1, 2, 6, 9, 12	1, 2, 6, 9, 12	1, 2, 6, 9, 12
Electrolyte	6	6	6
Charging function	3	3	3
Instruments, gauges, switches, lamps, horn	1, 3	1, 3	1, 3
Functions and controls			
Platform controls	1, 3, 4, 7, 10	1, 3, 4, 7, 10	1, 3, 4, 7, 10
Turntable controls	1, 3, 4, 7, 10	1, 3, 4, 7, 10	1, 3, 4, 7, 10
Function control lock, secondary guarding device and brake	1, 3, 10	1, 3, 10	1, 3, 10
Foot switch	1, 3, 10	1, 3, 10	1, 3, 10
Emergency stop button (ground and platform)	1, 3, 10	1, 3, 10	1, 3, 10
Limit switches and power switch	1, 3, 10	1, 3, 10	1, 3, 10
Overload limit system	1, 3, 10	1, 3, 10	1, 3, 10
Tilt alarm	1, 3, 10	1, 3, 10	1, 3, 10
Drive brake	1, 3, 10	1, 3, 10	1, 3, 10
Slewing brake	1, 3, 10	1, 3, 10	1, 3, 10
Other inspection items			
Operation Manual in the manuals compartment	10	10	10
All decals/labels complete, clear and secure	10	10	10
Annual inspection date of the machine	/	/	10

Table 10-9 Inspection and Preventive Maintenance Schedule (Continued)

Items	Intervals		
	Before each delivery ¹ or quarterly ²	Semiannually ³	Annually ⁴
No unapproved changes or additions	10	10	10
All safety publications taken into account	10	10	10
General structural components and weldments	2	2	2
All fasteners, pins, protective guards and covers	1, 2	1, 2	1, 2
Grease and lubricating to specifications	10	10	10
Functional test of all systems	10	10	10
Paint and appearance	5	5	5
Inspection date stamped on the chassis	/	/	12
Notify Sinoboom of machine ownership	/	/	12

Table 10-9 Inspection and Preventive Maintenance Schedule (Continued)

Items	Intervals		
	Before each delivery ¹ or quarterly ²	Semiannually ³	Annually ⁴
Note: ¹ Before each sale, lease or shipment delivery; ² In service for 3 months or 250 hours; or out of service for more than 3 months; ³ In service for 6 months or 500 hours; ⁴ Once a year and no later than 13 months from the date of the previous annual machine inspection; ⁵⁰ The first inspection shall be performed once the machine reaches 50 hours in service for the first time. This occurs only once in the service life of the machine. ²⁵⁰ The first inspection shall be performed once the machine reaches 250 hours in service for the first time. This occurs only once in the service life of the machine. NO. 1 Before the machine is put into service for the first time, or before the first use after the oscillating cylinder or counterbalance valve has been replaced.			
Inspection activity (numerical codes): 1. Check for correct installation (accurate position, firmly installed, tightened to the specified torque) 2. Visual inspection for damage (cracks, cracked welds, deformation, wear, corrosion, excessive wear, gouges, abrasions and exposed threads) 3. Check for normal function 4. Return to neutral position or "off" position normally (the self-reset switch can return to neutral position or "off" position after released) 5. Clean and free of foreign objects 6. Check for correct level, sealing and leaks 7. Labels complete, clear and secure 8. Check for appropriate tolerances 9. Fully charged 10. Verify/perform 11. Replace the oil or filter element 12. Correctly lubricated			

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11 OPTIONS

11.1 SECONDARY GUARDING DEVICE

Self-propelled aerial boom lifts are designed to transport persons, tools and materials to aerial work locations. Operating the machine from the platform with your back turned towards the telescoping direction of the boom and your eyesight facing the luffing direction of the boom it is possible to miss obstacles behind or overhead in time. Such oversight or any accidental operation may result in life-threatening hazards. The secondary guarding device can protect the operator by preventing them from being pinched.



WARNING

Unsafe Operation Hazard



- The secondary guarding device may only be installed on models/ in markets as specified by Sinoboom.
- Before using the secondary guarding device, the safety rules and all operating instructions should be read, understood and observed. This manual should be considered part of the secondary guarding device and should always be kept with it.

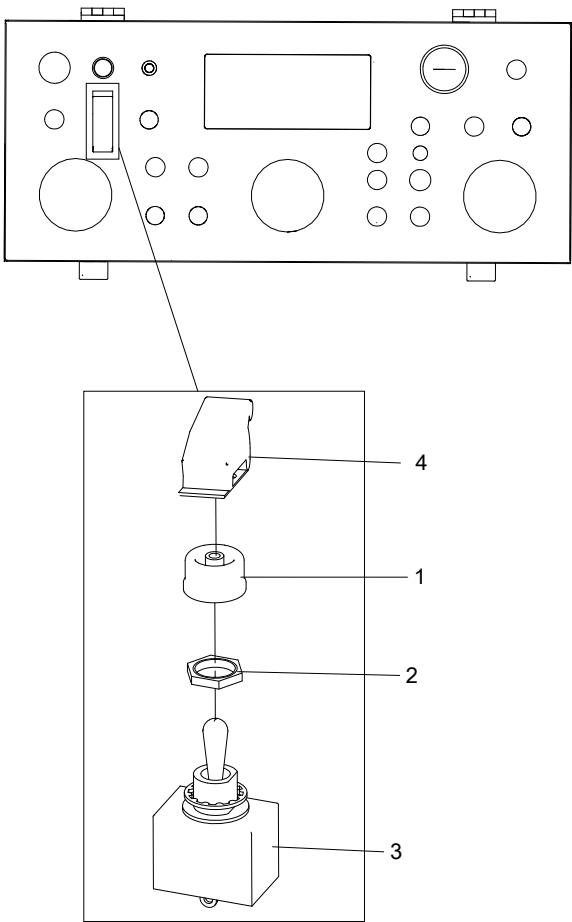


Fig 1

Table 11-1

No.	Part number	Part name	Quantity	Comment
1	203080000101	Waterproof cap	1	
2	203080000109	Slotted nut	1	
3	203060000021	Toggle switch	1	
4	203060000150	Toggle switch guard	1	If equipped

Parts List

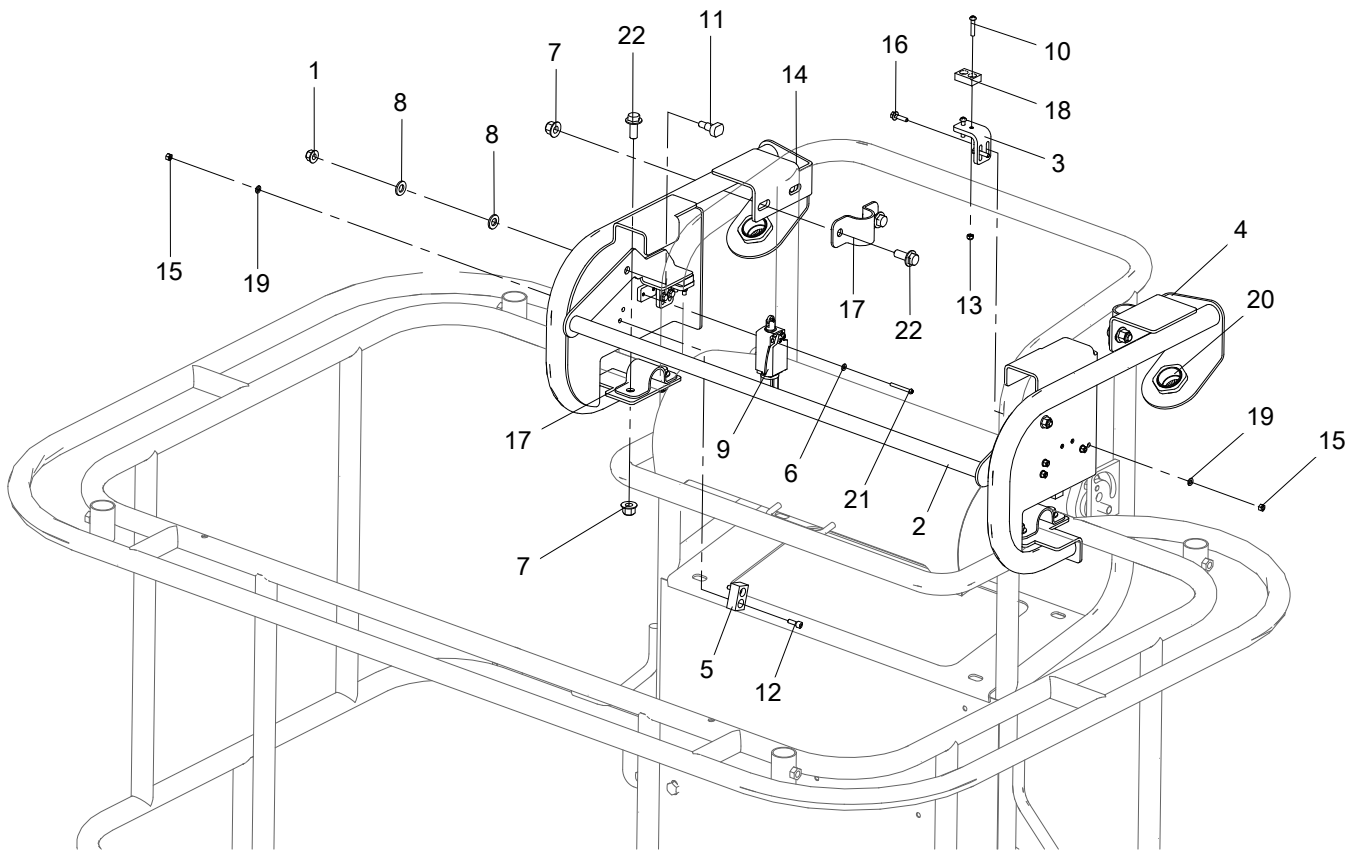


Fig 2

Table 11-2

No.	Part number	Part name	Quantity	Comment
1	215030000108	Nut M8-8-ZnD GB/T 6183	2	
2	105070043011	Support	1	
3	105070043028	Angle bracket	2	
4	105070043030	Support	1	
5	103010013495	Support pad	2	
6	215040000031	Washer 4-A2 GB/T 97.1	4	
7	215030000109	Nut M10-8-ZnD GB/T 6183	8	
8	215040000035	Washer 10-200HV-ZnD GB/T 97.1	4	
9	203060003031	Limit switch (Schneider)	2	
10	215020000113	Screw M5×25-A2-70 GB/T 818	4	
11	105070043031	Bolt	2	
12	215020000007	Screw M5×16-A2-70 GB/T 70.1	4	
13	215030000091	Nut M5-8-A2-70 GB/T 6184	4	
14	105070043032	Support	1	
15	215030000003	Nut M5-A2-70 GB/T 6170	8	

Table 11-2 (Continued)

No.	Part number	Part name	Quantity	Comment
16	215010000256	Bolt M5×20-8.8-ZnD GB/T 5789	4	
17	105029043013	Plate	4	
18	209990003011	Magnet	2	
19	215040000032	Washer 5-A2 GB/T 97.1	12	
20	203050003058	Strobe light	2	
21	215020000212	Screw M4×35-A2-70 GB/T 818	4	
22	215010000238	Bolt M10×25-8.8-ZnD GB/T 5789	8	

Installation and Removal

WARNING

Unsafe Operation Hazard



The secondary guarding device may only be installed on models/in markets as specified by Sinoboom.

Installation instructions

1. Position the support (#4 or #14) at the mounting position on the platform railing, align the support with the mounting holes on mounting plate #17, and use bolts and nuts to secure the support to the platform railing. Install the support on the opposite side of the platform in the same way.
2. Align the angle bracket #3 with the mounting holes on the left and right supports, tighten it with bolts, washers and nuts, and install the magnet #18 on the angle bracket.
3. Then align support #2 with the mounting holes on the left and right supports (the angle brackets on both sides of support #2 should be attracted by the magnets), tighten it with bolts, washers and nuts.
4. Install the support pad #5 on the left and right supports in turn, and tighten it with screws, washers and nuts.
5. Install the limit switch #9 on the left and right supports in turn, and tighten it with screws and washers.
6. Install the strobe light #20 on the left and right

supports in turn.

7. Connect the harness of the secondary guarding device.

Removal instructions

Disassemble the secondary guarding device in the reverse order of the installation instructions.

Instructions for Use

1. Under normal circumstances, the angle brackets on both sides of support #2 will be attracted to the magnets below.
2. Press down the railing of support #2, so that the angle brackets on both sides detach from the magnets and flip up, the travel switch will disconnect, the left and right strobe lights will flash, and all functions on the platform controller will be disabled.
3. Depress the foot switch while operating the release switch on the platform controls – the boom may be retracted and lowered, and the turntable may rotate slowly.
4. To enable the boom telescoping and luffing functions, lift the railing of support #2 up until the angle brackets on both sides are attracted by the magnets again and the strobe light goes out.

Harness and Schematic Diagram

Harness, Secondary Guarding Device

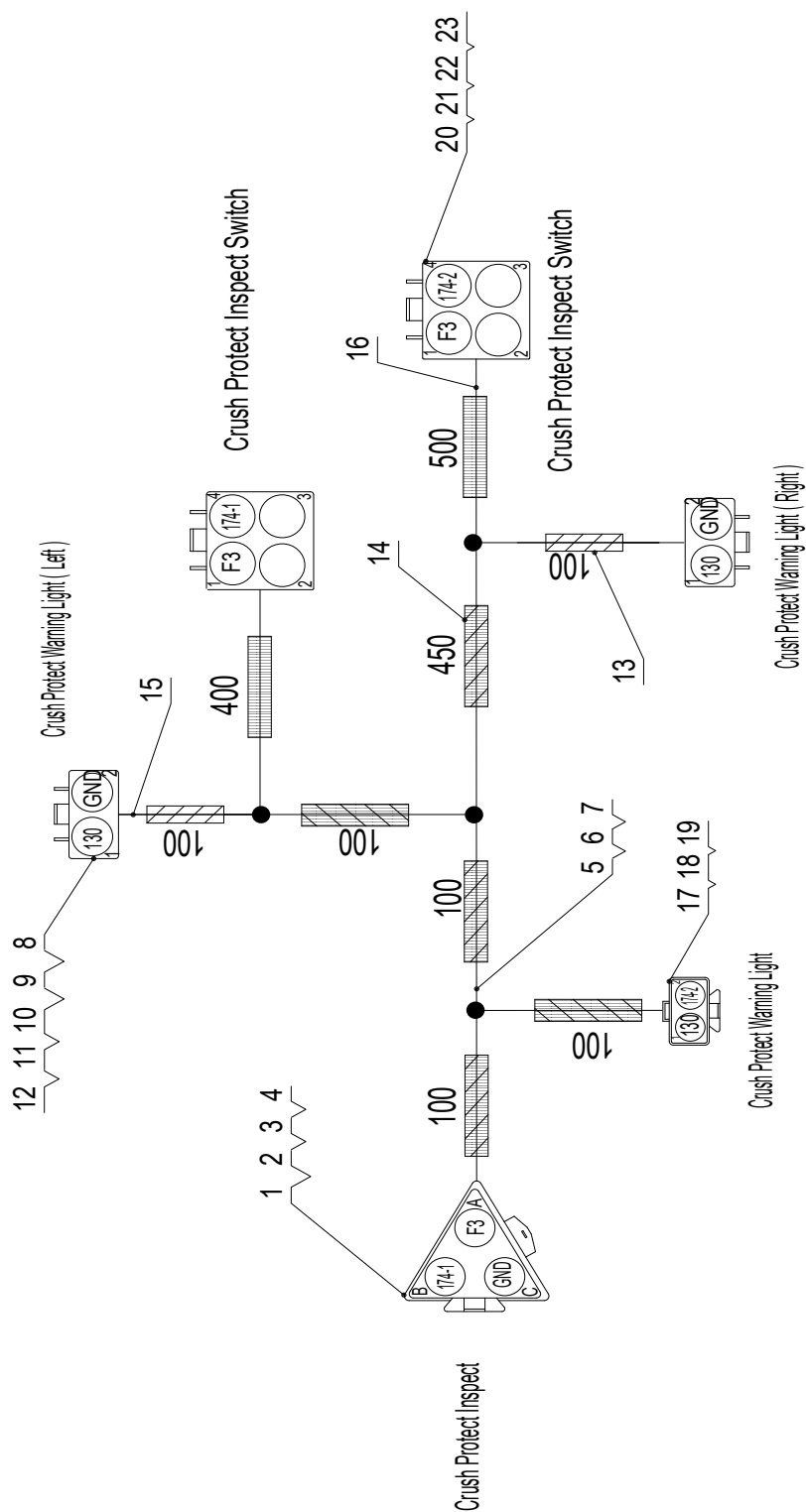


Fig 3

Table 11-3

No.	Part number	Part name	Quantity	Comment
1	203080000405	Sheath	1	
2	203080000046	Lock	1	
3	203080000033	Tape-on-reel male terminal	5	
4	203080000466	Tail clamp (3-pin, male)	1	
5	203080003313	Thin-walled automotive wires	2	
6	203080003326	Thin-walled automotive wires	1	
7	203080000564	Thin-walled automotive wires (white)	5	
8	203080000410	Sheath	2	
9	203080000016	Lock	2	
10	203080000041	Tape-on-reel female terminal	8	
11	203080000437	Tail attachment (2-pin, female)	2	
12	203080000448	Rubber connector (2-pin)	2	
13	203080000417	Nylon hose (closed-end)	1	
14	203080000424	Nylon hose (closed-end)	1	
15	203080000563	Thin-walled automotive wires (black)	1	
16	203080000562	Thin-walled automotive wires (red)	1	
17	203080000408	Sheath	1	
18	203080000021	Lock	1	
19	203080000462	Tail attachment (2-pin, male)	1	
20	203080000044	Sheath	2	
21	203080000020	Lock	2	
22	203080000445	Tail attachment (4-pin, female)	2	
23	203080000446	Rubber connector (4-pin)	2	

Electrical Schematic Diagram of the
Secondary Guarding Device

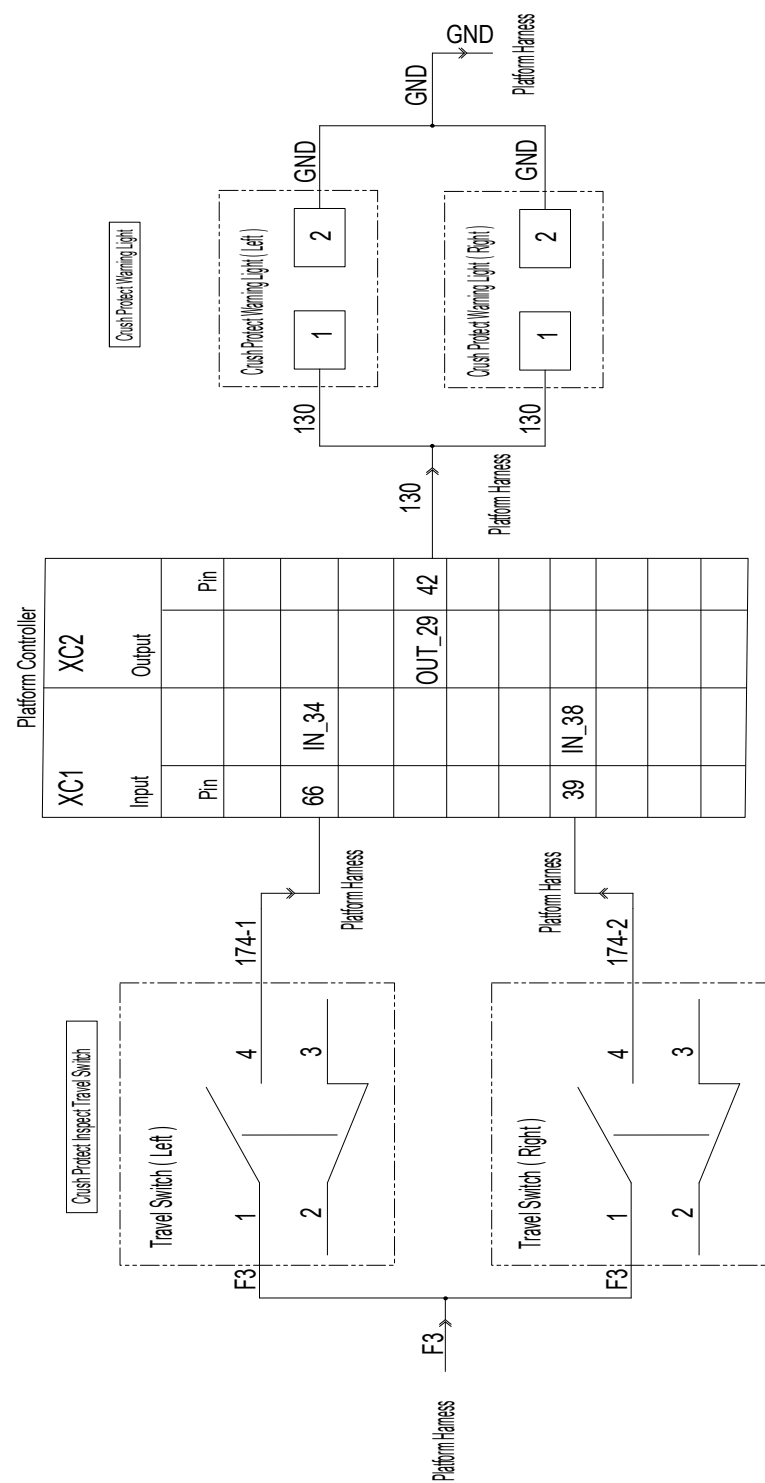


Fig 4

Wiring Diagram, Platform Controller

The diagram below only shows the wiring related to the secondary guarding device. For detailed wiring instructions, please refer to the complete wiring diagram of the platform controller.

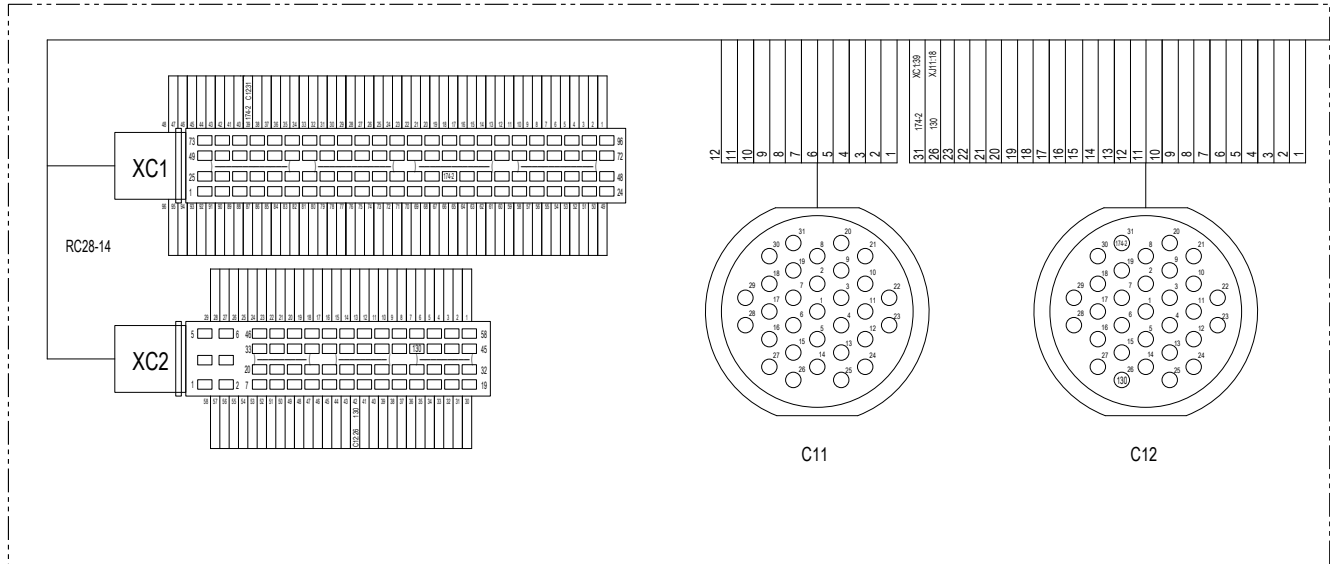


Fig 5

Platform Harness

The figure below only shows the platform harness related to the secondary guarding device. The complete harness layout can be found in the complete platform harness diagram.

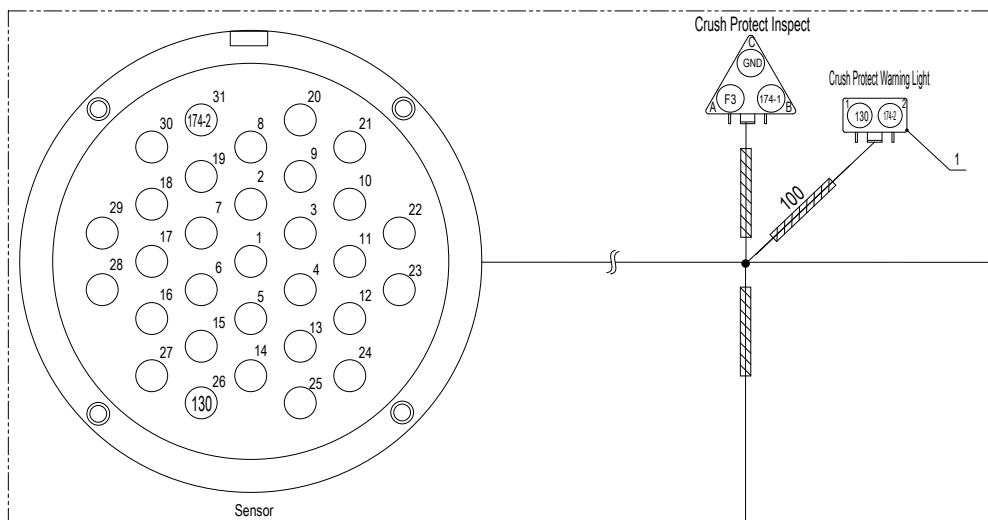


Fig 6

Table 11-4

No.	Part number	Part name	Quantity	Comment
1	203080000474	Waterproof cap (2-pin, female terminal)	1	

Electrical Schematic Diagram of the Platform

The diagram below only shows the electrical schematic related to the secondary guarding device. For detailed explanations please refer to the complete platform electrical schematic.

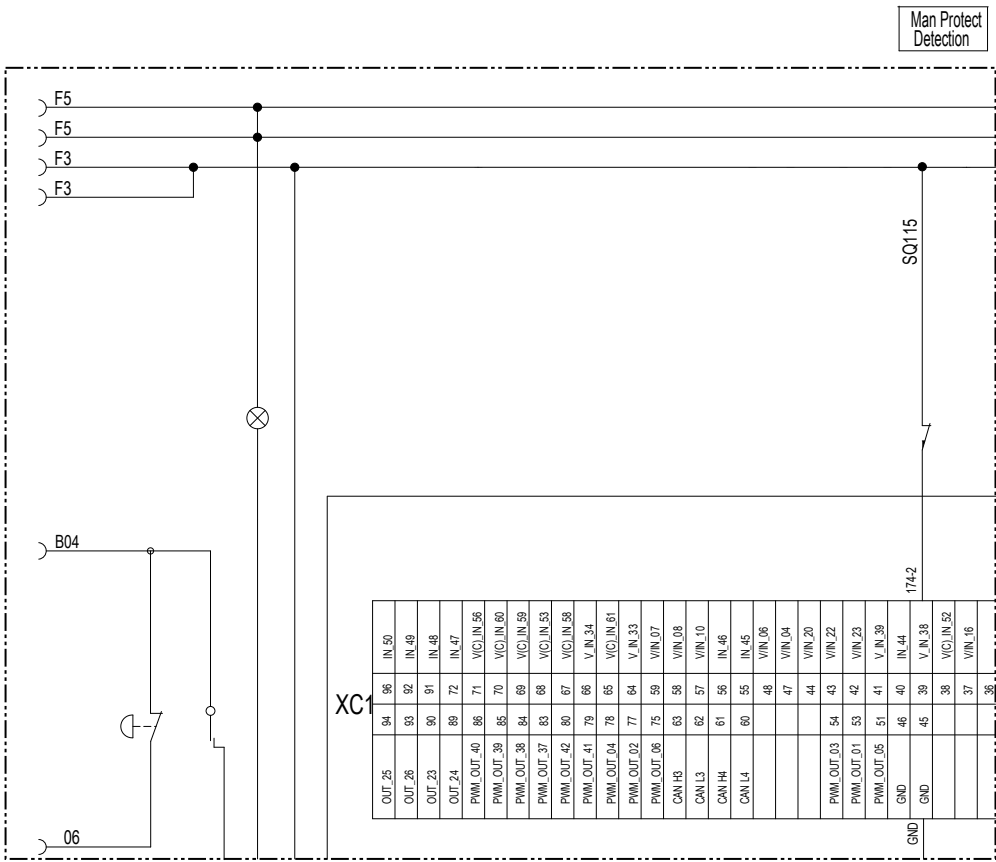


Fig 7

11.2 PIPE CRADLE

Self-propelled aerial boom lifts are designed to transport persons, tools and materials to aerial work locations. When it's necessary to transport objects such as pipes, such objects may be placed, secured, and transported using the pipe cradle.

WARNING

Unsafe Operation Hazard



- The pipe cradle may only be installed on models/in markets as specified by Sinoboom.
- Before using the pipe cradle, the safety rules and all operating instructions should be read, understood and observed. This manual should be considered part of the pipe cradle and should always be kept with it.

Installation and Removal

The pipe cradle assembly includes two pieces of pipe cradles secured with U-bolts and nuts to both sides of the guardrails.

WARNING

Unsafe Operation Hazard



The pipe cradle may only be installed on models/in markets as specified by Sinoboom.

WARNING

Unsafe Operation Hazard



- Read and understand the following safety instructions before proceeding to the next step.
- The installation of the pipe cradle shall not obstruct the normal operation of the platform controller.
- The installation of the pipe cradle shall not obstruct the entrance and exit of the platform.
- Before installing the pipe cradle, ensure that the platform remains level.

Installation instructions

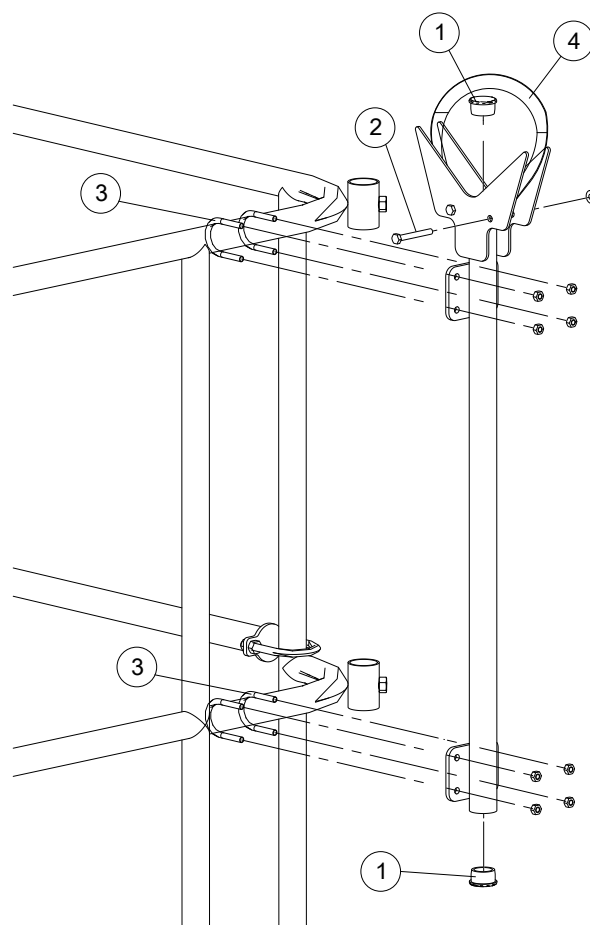


Fig 8

1. Install the top and bottom pipe seals to the pipe cradle weldment.
2. Secure the welding plate on the top of the pipe cradle weldment with bolts.
3. Roughly secure the pipe cradle to one side of the platform, and then tighten the pipe cradle from top to bottom sequentially: insert the U-bolt through the platform guardrails, align it with the mounting holes of the pipe cradle, and then secure it with hex nuts. Install the pipe cradle to the other side of the platform in the same way.
4. Fasten the strap to tightly secure it to the bracket.

Removal instructions

Disassemble the pipe cradle in the reverse order of installation.

Instructions for Use

WARNING

Tipping Hazard



- **The pipe cradle and its load will affect the load capacity of the platform; this must be factored into the total platform capacity.**
- **In case of excessive combined weight of the pipe cradle and load, the maximum number of people on the platform should be reduced.**

Table 11-5

Pipe cradle capacity	100 kg (220 lbs)
Weight of the pipe cradle assembly	6 kg (13 lbs)

After the pipe cradle is installed, follow the below instructions for use:

1. Ensure that the pipe cradle is installed correctly and secured to the platform guardrail.
2. Place the load upon the pipe cradle, and ensure that the load remains parallel with the pipe cradle's longitudinal axis.
3. Ensure the load is centered on the same vertical plane with the center of the pipe cradle.
4. Use the straps to secure loads to both sides of the pipe cradle.
5. Gently push and pull on the load to ensure that it is safely secured.
6. When the machine is operating, ensure that the load is always secured in place.

11.3 GLASS PANEL SUPPORT

Self-propelled aerial boom lifts are designed to transport persons, tools and materials to aerial work locations. When it's necessary to transport panel-like objects to aerial work locations the glass panel support provides a means to place the panels on it and transport the panels after being secured.

WARNING

Unsafe Operation Hazard



- **The glass panel support may only be installed on models/in markets as specified by Sinoboom.**
- **Before using the glass panel support, the safety rules and all operating instructions should be read, understood and observed. This manual should always be kept as an integral part with the glass panel support.**

Installation and Removal

WARNING

Unsafe Operation Hazard



The glass panel support may only be installed on models/in markets as specified by Sinoboom.

Installation instructions

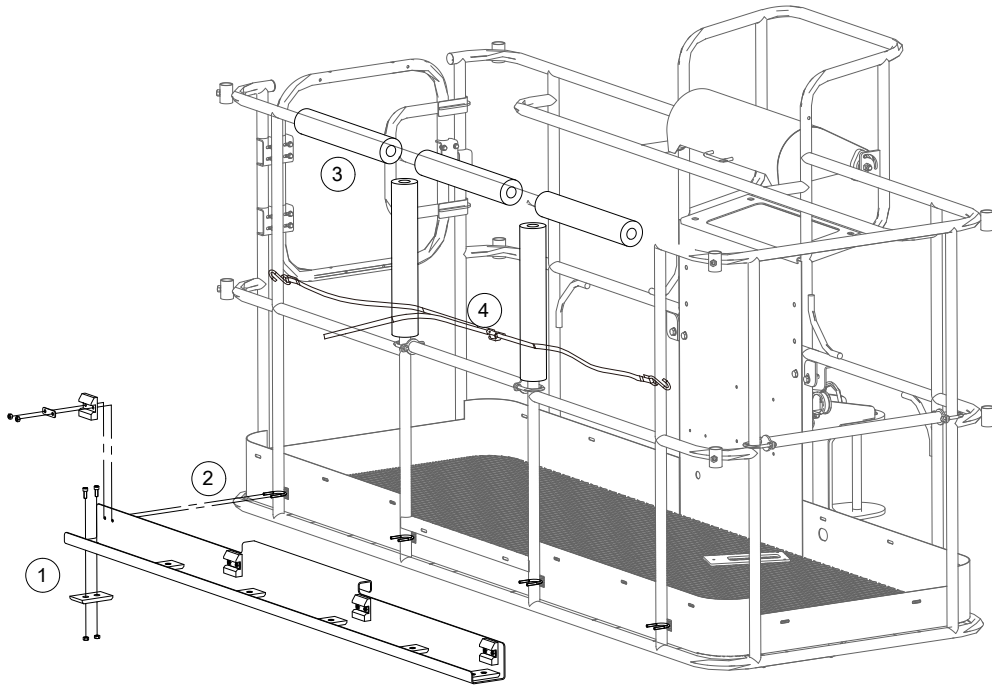


Fig 9

1. Using the provided bolts and nuts, secure the support pads to the mounting plate of the glass panel support.
2. After roughly securing the mounting plate in place, insert the U-bolt into the holes of the mounting plate and vertical support pad, then secure it with the washer plate and nuts. Continue installing the mounting plate in sequence as illustrated.
3. Attach the tube pads to the platform guardrails.
4. Attach the straps to the guardrails to secure the mounting plate tightly on the platform.

Removal instructions

Disassemble the glass panel support in the reverse order of the installation instructions.

Instructions for Use

WARNING

Tipping Hazard



- Do not use the glass panel support in wind speeds exceeding 12.5 m/s (28 mph).
- The glass panel support and its load will affect the load capacity of the platform; this must be factored into the total platform capacity.
- In case of excessive combined weight of the glass panel support and its load, the maximum number of people on the platform should be reduced.
- The glass panel surface area will expose the machine to an increased wind load and reduce the stability of the machine.
- Only use the glass panel support with the machine on flat, solid ground.

Table 11-6

Glass panel support capacity	115kg (253.5lbs)
Weight of the glass panel support	15.2 kg (33.5 lbs)
Maximum allowable wind speed	12.5 m/s (28 mph)
Maximum allowable glass panel surface area	0.17 m ² (1.83 sq.ft)
Maximum allowable vertical height of glass panel	1.2 m (3 ft 11 in)

1. Ensure that the glass panel support is installed correctly and secured to the platform.
2. Place the load upon the glass panel support, and ensure that the load remains parallel with the longitudinal axis of the glass panel support.
3. Ensure the load is centered on the same vertical plane with the center of the glass panel support.
4. Use the straps to secure the load to the platform.
5. Gently push and pull on the load to ensure that the load is safely secured.
6. When the machine is operating, ensure that the load

is always secured in place.

NOTICE

Ensure that the load remains at a proper distance from the gate bar to prevent abrasion, crush or other damage to the load.

11.4 PLATFORM MESH

The platform mesh comes in two types: half and full height mesh; it can effectively prevent tools or other materials from dropping off the platform.

WARNING

Unsafe Operation Hazard



- The platform mesh may only be installed on designated models and the corresponding markets, not on other models or in other markets.
- Before using the platform mesh, the safety rules and all operating instructions should be read, understood and observed. This manual should always be kept as an integral part with the platform mesh.

Installation and Removal

WARNING

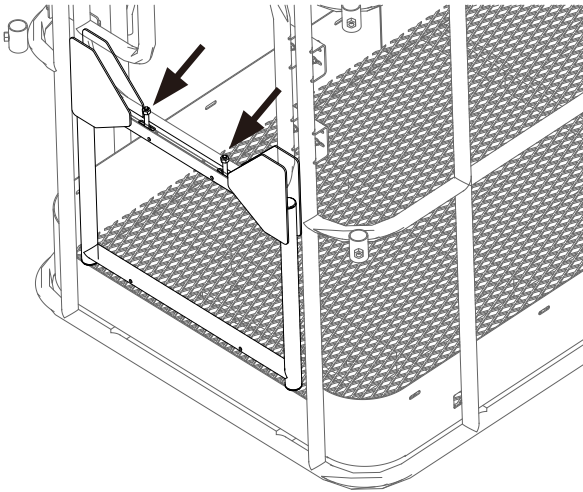
Unsafe Operation Hazard



- The platform mesh may only be installed on designated models and the corresponding markets, not on other models or in other markets.
- The platform mesh may only be installed on platforms equipped with a swing gate.

Installation instructions

1. Install the swing gate frame.



2. Half-height platform mesh: Install each mesh module in sequence as shown in the figure below, secure the bottom part at location ① with bolts, and secure the top part at location ② and the side part at location ③ with nylon cable ties or bolts.

Fig 10

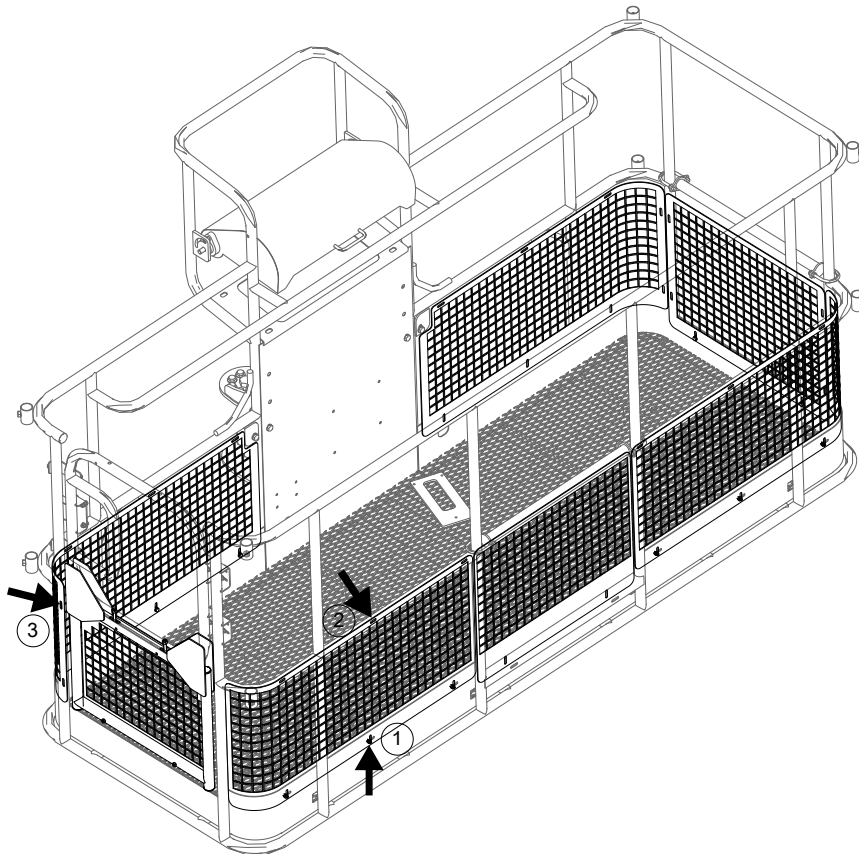


Fig 11

3. Full-height platform mesh: Install each mesh module in sequence as shown in the figure below, secure the bottom part at location ① with bolts, and

secure the top part at location ② and the side part at location ③ with nylon cable ties or bolts.

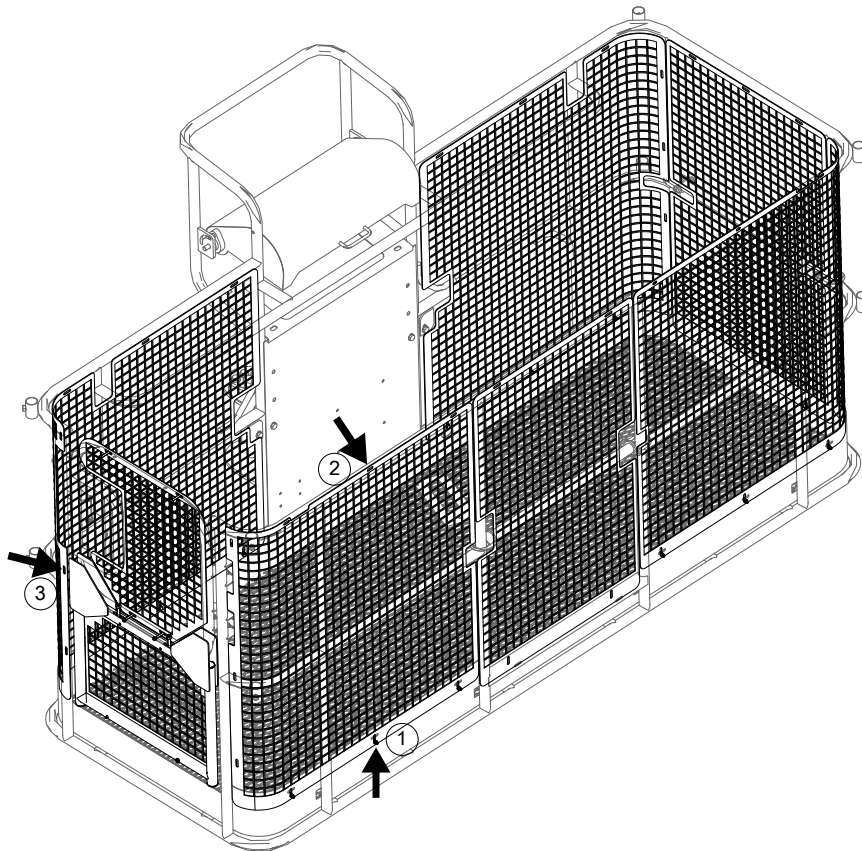


Fig 12

Removal instructions

Disassemble the platform mesh in the reverse order of the installation instructions.

Instructions for use

- Once the platform mesh is installed, the operator can only enter or exit the platform via the swing gate.
- Do not install other attachments, such as pipe cradles/glass panel supports to platforms already fitted with the platform mesh.

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