

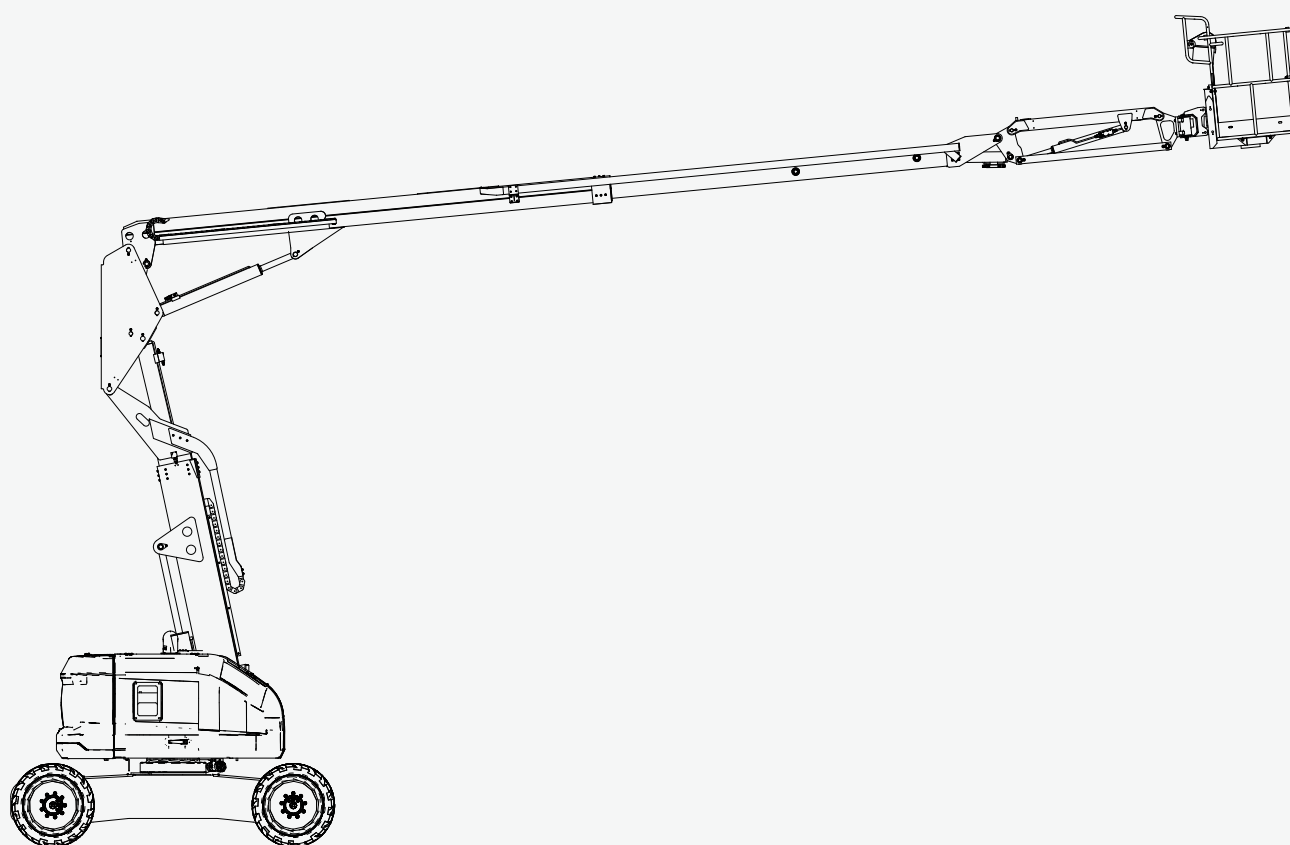
Part No.504022100002

Rev: A

Oct. 2022

Operation Manual

GTZZ18J/AB18J/AB600J



CE GB  EAC

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, 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 follow your nation regulation.

Manual revision history:

REV	DATE	DESCRIPTION	REMARK
A	Oct. 2022	Original issue of the manual	

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APPLICABLE MODELS

Use the following table to identify the specific serial number for models included in this manual. Check the model of your machine before consulting the manual, and then use the correct manual according to the serial number of the model. See the nameplate on your machine to identify the model and serial number. (See ***Decals/Nameplates Inspection*** of the *Operation Manual* for details).

Models	Trade Identification		Serial No.
	Metric	Imperial	
GTZZ18J	AB18J	AB600J	From 0402200100 to present

NOTE:

- Product model is applied in product nameplate for distinction of products of different main parameters.
- Product trade identification is applied in marketing and machine decals for distinction of products of different main parameters, and can be classified as metric type and imperial type: The metric trade identification is applicable to machines for countries/regions using metric system or as specially required by customers; The imperial trade identification is applicable to the machines for countries/regions using imperial system or as specially required by customers.

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STATEMENTS

Hunan Sinoboom Intelligent Equipment Co., Ltd. (Hereinafter referred to as Sinoboom) will upload the latest product manual information to the website www.sinoboom.com as soon as possible. However, due to continuous product improvement, the information in this manual is subject to change without prior notice.

This manual covers the basic parts information of one or more products. Therefore, please use this manual according to your needs. If you find problems in the manual or have suggestions for improvement, feel free to share your feedback with Sinoboom, and we will address these issues as soon as possible.

Feel free to consult and download the *Operation Manual*, *Maintenance Manual* and *Parts Manual* of the products you need online at www.sinoboom.com.

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INTRODUCTION

Thank you for choosing and using the machinery of Hunan Sinoboom Intelligent Equipment Co., Ltd. Always read, understand and become familiar with the operation requirements of the machine and its associated safety procedures before operating, maintaining and repairing the machine. Operating the machine without becoming familiar with its specific operation requirements and safety procedures poses serious risks. Operators who follow safety rules and operate the machine carefully and effectively will prevent personal injury, property loss and accidents.

Use this machine only to transport tools to work locations and for performing tasks on the work platform. Operators must be competent and must obtain training to carefully use the machine and follow safety procedures. Only trained and authorized personnel may operate the machine.

This manual guides the operator in operating and using the machine. The operator is responsible for reading, understanding and implementing the operation and safety procedures in this manual and for following the manufacturer's instructions before beginning any work. Read, understand and follow all safety rules and operating instructions. The operator must also consider the machine's uses and limitations and the conditions at the jobsite before using this machine. Strictly following all safety requirements in this manual is critical.

Consider this manual a part of the machine, along with *Maintenance Manual* and *Parts Manual*, and always keep the manuals with the machine. The owner or administrator of the machine shall offer all manuals and other necessary information provided by the machine manufacturer regarding the daily inspection and maintenance to each of the renters. If the machine is sold, the owner or administrator must pass along the manuals and other necessary information to the purchaser. The owner or administrator of the machine shall also provide the manufacturer's maintenance information to the person responsible for maintaining the machine.

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

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1

PERFORMANCE PARAMETERS

Table 1-1 GTZZ18J specifications

MEASURE	AB18J (Metric)	AB600J (Imperial)
DIMENSION PARAMETERS		
Max platform height	18.3 m	60 ft
Max working height	20.3 m	66 ft 7 in
Max horizontal reach	12.2 m	40 ft
Max up-and-over height	7.8 m	25 ft 7 in
Overall length (stowed)	8.6 m	28 ft 3 in
Overall width (stowed)	2.28 m	7 ft 6 in
Overall height (stowed)	2.56 m	8 ft 5 in
Wheelbase	2.44 m	8 ft
Ground clearance	0.23 m	9.1 ft
Platform dimension (L×W×H)	1.83 m × 0.85 m × 1.1 m	6 ft ×2 ft 9 in ×3 ft 7 in
Tire size (spec/type)	Options 33×12-20 (solid, non-marking) 33×12-20 (solid) 33×12D610 (foam-filled) 33×12D610 (foam-filled, non-marking)	
PERFORMANCE PARAMETERS		
Max bearing capacity of platform	250 kg (unrestricted/2 persons & tools)	551 lb (unrestricted/2 persons & tools)
Turntable rotation angle/continuity	360 °/continuous	
Platform rotation angle	160°	
Max drive speed (stowed)	5 km/h	3.1 mph
Max drive speed (raised)	1.1 km/h	0.68 mph
Drive mode (drive×steer)	4WD×2WS	
Gradeability	40%	
Turntable tail-swing	0.2 m	8 in
Max allowable inclination angle	5°	
Turning radius (inside)	3.48 m	11 ft 5 in
Turning radius (outside)	6.29 m	20 ft 8 in
Max allowable side force	400 N	90 lbf
IP rating	IP 54	

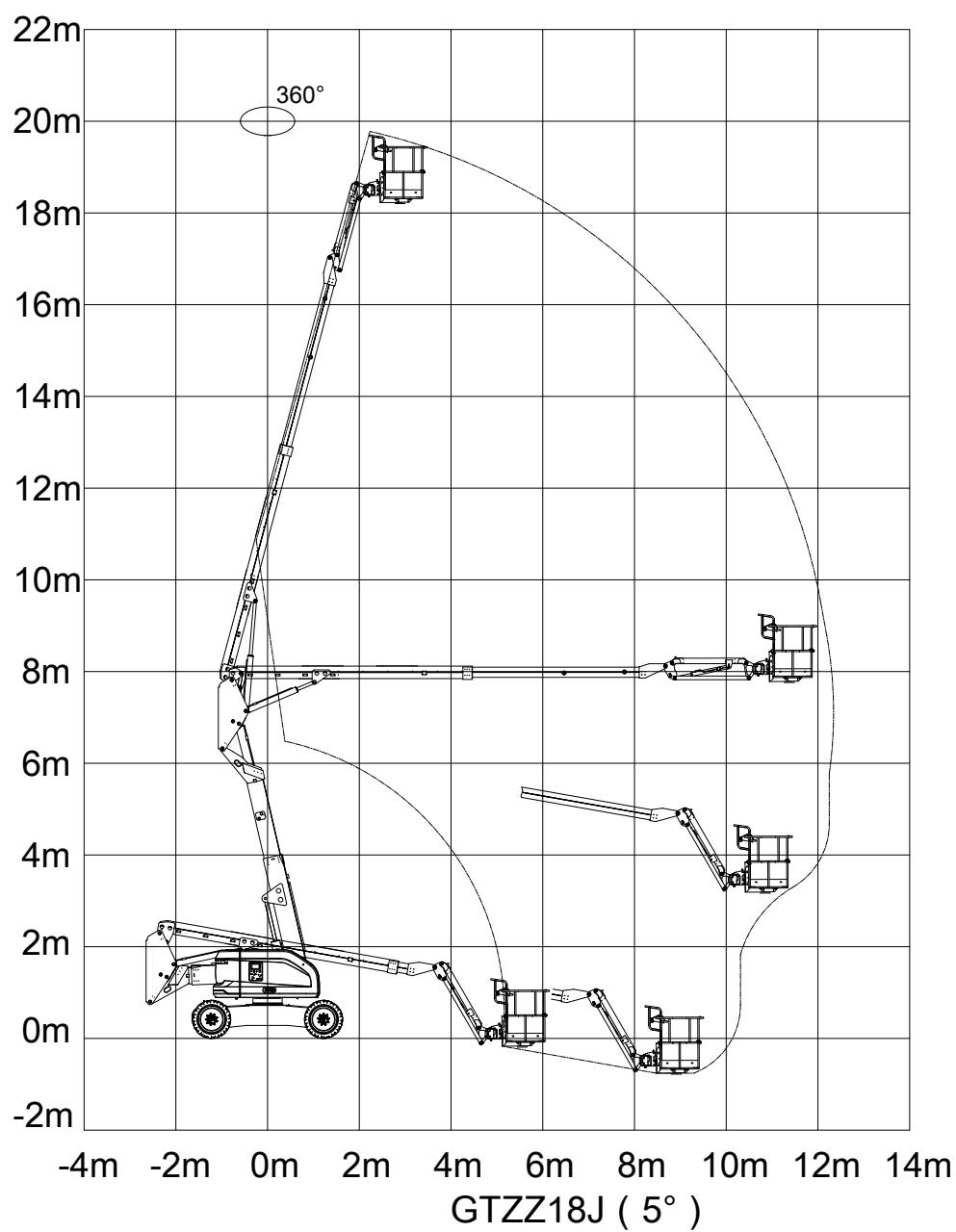
Table 1-1 GTZZ18J specifications (continued)

MEASURE	AB18J (Metric)	AB600J (Imperial)
Max operating noise level	82 dB	
POWER PARAMETERS		
Engine (rated power, rated rpm)	Cummins QSF2.8t3NA60 (43 kW, 2500 rpm)	
Hydraulic tank capacity	110 L	24.2 gal (UK)/29 gal (US)
Fuel tank capacity	110 L	24.2 gal (UK)/29 gal (US)
Hydraulic system pressure	28 MPa	3046 psi
Battery (number×voltage, capacity)	2×12V	
System voltage	12 VDC	
Control voltage	12 VDC	
GROUND BEARING DATA		
Max tire load	6280 kg	13845 lb
Tire contact pressure	830 kPa	120 psi
ENVIRONMENT REQUIREMENT		
Max allowable wind speed	12.5 m/s	28 mph
Max allowable altitude	1000 m	3280 ft
Allowable ambient temperature (lead-acid battery)	-10°C ~ 40°C	14°F ~ 104°F
Max allowable RH	90%	
Storage environment	Stored at -20°C to 50°C (-4°F to 122°F) in a well-ventilated environment with 90% relative humidity (20°C [68°F]), and away from rain, sun, corrosive gas, inflammables and explosives.	
WEIGHT		
Gross weight (unladen)	10700 kg (4WD)	23589 lb (4WD)

Note:

- a) The platform height plus the operator height (taken as 2m [6ft 7in]) is the working height.
- b) The ground bearing data is approximate, without factoring different configurations, and should only be used in adequately safe conditions.
- c) In different areas, hydraulic oil, engine oil, coolant, fuel and lubricant should be added in accordance with the environmental temperature.
- d) In cold climates, auxiliary devices are needed to start the machine.
- e) The loads of persons, accessories, tools and materials are factored into the rated platform capacity.
- f) The total vibration value of the platform does not exceed 2.5m/s², and the maximum root-mean-square value of the weighted acceleration of the entire machine does not exceed 0.5m/s².

GTZZ18J Chart of working envelope



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2 MACHINE COMPONENTS

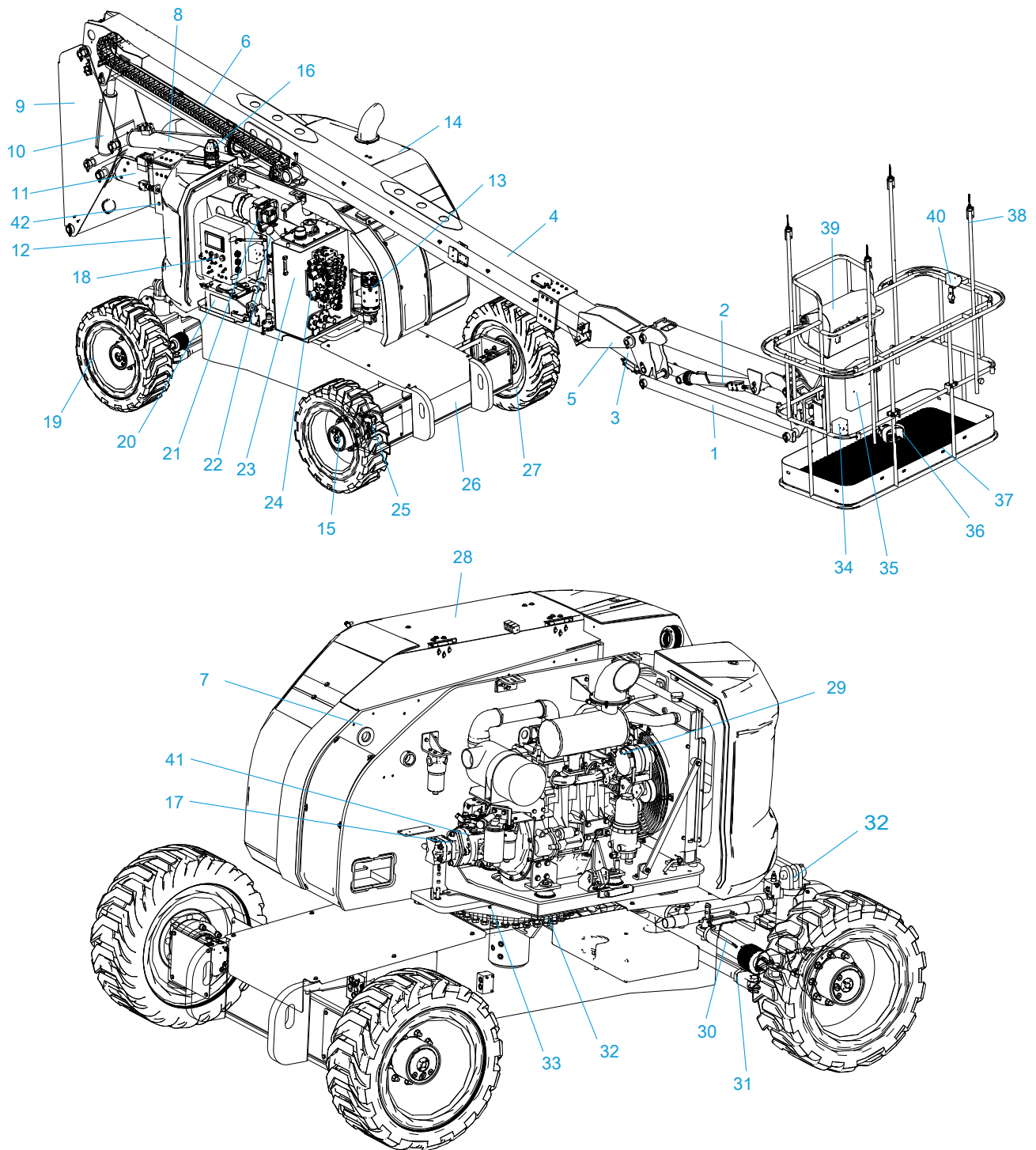


Figure 2-1

Table 2-1

1. Jib boom	15. Reducer	29. Engine
2. Jib boom cylinder	16. Warning lamp	30. Steering cylinder
3. Upper leveling cylinder	17. Gear pump	31. Steering linkage
4. Main boom	18. Ground controller	32. Slewing mechanism
5. Telescopic boom	19. Front wheel	33. Cycloid motor
6. Cable track system	20. Storage battery	34. AC power receptacle (optional)
7. Turntable assembly	21. Hydraulic generator (optional)	35. Manual storage container (optional)
8. Main boom lift cylinder	22. Fuel tank	36. Foot switch
9. Connector	23. Hydraulic tank	37. Platform
10. Auxiliary leveling cylinder	24. Boom function manifold	38. Height limit device (optional)
11. Articulated boom leveling cylinder	25. Travel motor	39. Platform controller
12. Counterweight	26. Chassis	40. Working light (optional)
13. Power unit	27. Rear wheel	41. Closed-circuit variable pump
14. Turntable cover (RH)	28. Turntable cover (LH)	42. Articulated boom

Machine positions

Stowed position:

Articulated boom descends in place, and main boom descends and retracts in place.

Non-operating position:

Articulated boom descends in place, and main boom descends and retracts in place.

Operating/raised position:

Articulated boom not descends in place, or main boom not descends or retracts in place.

3 SAFETY

Read, understand and comply with the safety rules and regulations of your workplace and your government.

Before using the machine, ensure the operator is properly trained and qualified in safely operating the machine. The training includes but is not limited to :

- Warning and instruction decals on the machine
- Pre-operation inspection
- Any factors that may affect the machine stability
- Common hazards and countermeasures
- Jobsite inspection
- Functions of all controls and associated knowledge, including emergency control.
- Personal protection equipment that suits the task, workplace and environment.
- Safety operation
- Transporting the machine
- Measures against unauthorized use
- Operating instructions

Understand that as the operator you have the responsibility and right to shut down the machine in case of failure with the machine or other emergency at your workplace.

NOTICE

People suffering from heart disease, hypertension, epilepsy and other diseases and people who fear heights must never operate or use this machine. Also, people who have alcohol or drugs in their system, or experience excessive fatigue or depression, are prohibited from operating or using this machine.

SAFETY DEFINITIONS



This safety alert symbol appears with most safety statements. It means attention, become alert, your safety is involved! Please read and abide by the message that follows the safety alert symbol.

DANGER

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

WARNING

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

CAUTION

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

NOTICE

Indicates a situation that can cause damage to the engine, personal property and/or the environment, or cause the equipment to operate improperly.

NOTE: Indicates a procedure, practice or condition that should be followed in order for the engine or component to function in the manner intended.

REPORTING ACCIDENTS

In case of any accident involving the machinery of Hunan Sinoboom Intelligent Equipment Co., Ltd., notify Hunan Sinoboom Intelligent Equipment Co., Ltd. Immediately, even if no personal injury or property damage occurs during the accident. Contact Hunan Sinoboom Intelligent Equipment Co., Ltd. by telephone and provide all necessary details. 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's warranty.

NOTICE

Thoroughly inspect the machine and all its functions after any accident, being sure to test first from the ground controller and then from the platform controller. Ensure the machine's lifting height does not exceed 3 m(9.8 ft) until all damage has been repaired and all controllers operate properly.

ELECTROCUTION HAZARDS

NOTE: This machine is not insulated and does not have an electric shock protection function.

All operators and managers shall comply with national or local regulations regarding the minimum safe distance of live conductors above the ground. In the absence of such requirements, operators and managers should follow the minimum safety distance requirements in [Table 3-1 Minimum Safe Distance](#), [page 3-2](#).

 **WARNING**

ELECTRICAL SHOCK HAZARDS





- Always maintain a safe distance from power lines and electrical equipment in accordance with applicable government regulations and see [Table 3-1 Minimum Safe Distance](#), [page 3-2](#).
- Consider platform and boom movement, wire swinging or drooping, beware of strong winds or gusts, and do not operate the machine when there is lightning or heavy rain.
- If the machine comes into contact with live wires, keep away from the machine. Personnel on the ground or on the platform must not touch or operate the machine until the power is switched off.
- Do not use the machine as a ground wire during welding and polishing operations.

TIPPING HAZARD AND RATED LOAD

Maximum load-bearing capacity of the platform:

Table 3-2

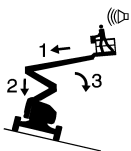
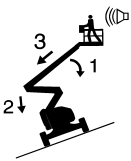
GTZZ18J	
Metric	250kg (unrestricted/2 persons & tools)
Imperial	551lb (unrestricted/2 persons & tools)

Table 3-1 Minimum Safe Distance

Voltage (Phase to Phase, kV)	Minimum Safe Distance (m/ft)
0-50	3.05 (10)
50-200	4.60 (15)
200-350	6.10 (20)
350 -500	7.62 (25)
500 -750	10.67 (35)
750 -1000	13.725 (45)

WARNING

TIPPING HAZARD



- The total weight of personnel, equipment and materials on the platform shall not exceed the maximum load-bearing capacity.
- The boom tube cannot be raised or extended unless the machine is on solid, level ground.
- Select only low speed when driving the machine on a slope.
- Do not use the tilt alarm as a level indicator. The tilt alarm on the platform will sound only if the machine is heavily tilted.
- If the tilt alarm sounds when the machine drives up a slope, please lower the boom as per the following steps and move the machine to firm and level ground. Make sure not to rotate the boom when lowering it.
 1. Lower the main boom;
 2. Lower the articulated boom;
 3. Retract the telescopic boom.
- If the tilt alarm sounds when the machine drives down a slope, please lower the boom as per the following steps and move the machine to firm and level ground. Make sure not to rotate the boom when lowering it.
 1. Retract the boom;
 2. Lower the articulated boom;
 3. Lower the main boom.
- Do not drive the machine faster than 1.1km/h (0.68mph) when the platform is raised.
- When the platform is raised, the machine cannot travel on uneven terrain, unstable surfaces or in other dangerous conditions.
- Do not operate the machine in strong or gusty wind, and do not increase the surface area of the platform or load. Increasing the area exposed to the wind will reduce the stability of the machine.
- When the machine travels on uneven ground or surfaces with gravel, or near holes and steep

WARNING

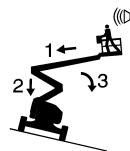
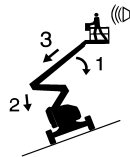
TIPPING HAZARD

slopes, maintain a minimum distance of 0.6m (2ft) and reduce the speed.

- When on the platform, do not push and pull objects outside of it. The maximum lateral force allowed is: 400N (90lbf).
- Tow the machine only from the tie-down/lifting points on the chassis.
- Never use the boom or platform to stabilize or support any objects outside of the machine.
- Do not change any machine parts that may affect safety and stability.
- Do not replace key parts that affect machine stability with parts of different weights or specifications.
- Do not modify or change the machine without the manufacturer's prior written permission.
- Do not attach an additional device for placing tools or other materials on the platform or the guardrail, otherwise the platform weight, surface area and load will be increased.
- Do not place or fasten any overhanging load on or to any part of this machine.
- Do not place ladders or scaffolding on the platform or against any parts of the machine.
- Do not operate the machine on a moving or active surface or on a vehicle. Ensure all tires are in good condition, the slotted nuts tightened and the cotter pins complete.
- Do not use any battery that weighs less than the original battery (26kg [57.3lb]), and do not remove or modify the counterweight or other parts in the battery box. The battery not only provides power, but also serves as a counterweight, and is vital to maintaining the stability of the machine.

⚠ WARNING**TIPPING HAZARD**

- Do not use the platform or boom assembly to push other machines or objects.
- Do not allow the platform or boom assembly touch nearby structures.
- Do not tie off the platform with ropes or other binding materials to nearby structures.
- Do not place any load outside the platform.
- When the platform is caught or stuck or when other objects in the vicinity impede its normal movement, do not use the platform controller to lower the platform. If you intend to lower the platform with the ground controller, first ensure that all persons have left the platform.

WORK ENVIRONMENT HAZARDS**⚠ WARNING****UNSAFE JOBSITE HAZARDS**

- Do not operate the machine on surfaces, edges or potholes that cannot bear the weight of the machine. Raise or extend the boom only when the machine is on firm, flat ground.
- Never travel on uneven terrain or unstable surfaces or in other dangerous conditions when the platform is raised.
- When the machine is on rough ground with gravel or other uneven surfaces, or near holes and steep slopes, maintain a minimum distance of 0.6m (2ft) and reduce the speed.
- Do not use the tilt alarm as a level indicator. The tilt alarm on the platform will sound only when the machine is heavily tilted.
- If the tilt alarm sounds when the machine drives up a slope, lower the boom as per the following procedures 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. Lower the articulated boom;
 3. Retract the telescopic boom.
- If the tilt alarm sounds when the machine drives down a slope, lower the boom as per the following procedures and move the machine to firm and level ground. Make sure not to rotate the boom while lowering it.
 1. Retract the telescopic boom;
 2. Lower the articulated boom;
 3. Lower the main boom.
- The drive speed should not exceed 1.1km/h (0.68mph) when the platform is raised.
- If the machine can be used outdoors, never operate it in strong or gusty wind. Do not raise

⚠ WARNING

UNSAFE JOBSITE HAZARDS

the platform when the wind speed exceeds 12.5m/s (28mph). If the wind speed increases to beyond 12.5m/s (28mph) after the platform is raised, lower the platform and stop operating the machine immediately.

- Do not use any device that may increase the wind load on the machine.
- Do not drive or lift the machine on slopes, steps or vaulted surfaces that exceed the maximum gradeability of the machine.

⚠ WARNING

UNSAFE JOBSITE HAZARDS

- Do not lift the machine and drive the machine sideways on slopes greater than 5°.

Before or during the operation of machine, check the jobsite for possible hazards, and pay attention to environmental restrictions, including flammable and explosive gases/dust. If the machine is to be used in any special workplace or by any special work method other than those specified by **Hunan Sinoboom Intelligent Equipment Co., Ltd.**, the manufacturer's approval and guidance should be obtained first.

Table 3-3

BEAUFORT SCALE	METERS/SECOND	MILE/HOUR	DESCRIPTION	GROUND CONDITION
0	0 ~ 0.2	0 ~ 0.5	Calm	Calm. Smoke rises vertically.
1	0.3 ~ 1.5	1 ~ 3	Light air	Wind motion visible in smoke.
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. Small branches begin to move.
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 waving near horizontal. Umbrella use becomes difficult.
7	13.9 ~ 17.1	32 ~ 38	Near gale/moderate gale	Whole trees in motion. Effort needed to walk against the wind.
8	17.2 ~ 20.7	39 ~ 46	Fresh gale	Twigs broken from trees. Cars veer on road.
9	20.8 ~ 24.4	47 ~ 54	Strong gale	Light structure damage.

NOTICE

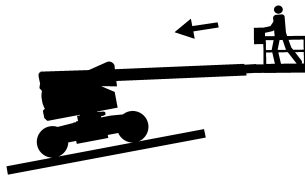
Maximum gradeability is applicable for machines with platform retracted. The maximum climbing angle of the machine: 40%/22° (4WD).

Gradeability refers to the maximum allowable tilt angle of the machine when it is on solid ground and the platform is only carrying one person. As the weight of the machine's platform increases, the machine's climbing capacity will be decreased.

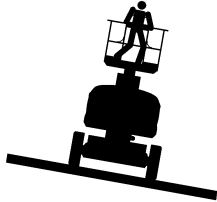
Max gradeability:



Uphill:
40%/22° (4WD)



Downhill: 25%/14°



Sideslope: 25%/14°

UNSAFE OPERATION HAZARDS

At a minimum, operators must operate and maintain the machine as stated in this manual and the *Maintenance Manual* in addition to following more stringent industry regulations and workplace rules.

Do not use the machine in the following situations:

- Unrelated personnel/equipment is present in the working envelope of the machine.
- Use as a crane (except the custom-made ones with such function).
- Use on the truck, trailer, tracked vehicle, ship, scaffold and the like without written consent by the manufacturer or qualified professionals.
- Improper securing of the machine to another object by just leaning, fastening or binding.
- Stunt or imprudent use of the machine.
- Overloaded or over-moment situation.
- Other prohibited conditions specified in this manual and in the maintenance manual.

WARNING

UNSAFE OPERATION HAZARDS



- Do not push/pull any object outside the platform. The maximum lateral force allowed is 400N (90 lbf).
- Tow the machine only from the tie-down/lifting points on the chassis.
- Never use the boom or platform to stabilize or support any objects outside the machine.
- Do not modify any component that may affect the machine safety and stability.
- Do not replace key parts that affect machine stability with parts of different weights or specifications.
- Do not change or modify moving aerial work platforms without the manufacturer's written permission.
- On the platform, do not attach an additional device for placing tools or other materials to the guardrail. This will increase the platform weight, surface area and load.
- Do not put ladders or scaffolding on the platform or against any part of this machine.
- Do not use the machine on any mobile or movable surface or vehicle. Ensure all tires are in good condition, the slotted nuts tightened and the cotter pins complete.
- Do not use a battery that weighs less than the original storage battery (26kg [57.3 lb]), and do not remove or modify the counterweight or other parts inside the battery box. The battery not only provides power, but also serves as a counterweight and is vital to maintaining the stability of the machine.
- Do not place or attach any suspended load onto any part of the machine.

⚠ WARNING

UNSAFE OPERATION HAZARDS

- Do not use the machine as a crane or hoist.
- Do not use the platform or boom to push the machine or other objects.
- Do not allow the platform or boom to touch nearby structures.
- Do not use ropes or other binding materials to tie the platform or boom onto nearby structures.
- Do not put the load outside the platform.
- When the platform is caught or stuck or when other objects in the vicinity impede its normal movement, do not use the platform controller to lower the platform. If you intend to lower the platform with the ground controller, you must operate it only after all personnel have left the platform.
- When one or more of the machine's tires are off the ground, evacuate all personnel before attempting to stabilize the machine. Use a crane, forklift or other suitable equipment to stabilize the machine.

⚠ WARNING

FALL HAZARDS



- Each person on the platform must wear harnesses or use safety equipment consistent with government regulations. Fasten the cable to the fixed point of the platform. Never fasten the cable of more than one person to a fixed point on the platform.
- Do not sit, stand or crawl on the guardrails. When on the platform always remain standing on the platform floor.
- Do not enter or exit the platform through the boom.
- Keep the platform floor free of obstacles.
- Do not allow mud, oil stains, grease or other slippery substances reside on the footwear or platform floor.
- Do not enter or exit the platform unless the machine is fully in stowed position.
- Close the platform entrance door before operating the machine.
- Do not operate the machine if the handrails are not properly installed and the platform entry door is not closed.

FALL HAZARDS

At a minimum, operators must operate and maintain the machine as stated in the operation manual and in the maintenance manual in addition to following more stringent industry regulations and workplace rules.

COLLISION HAZARDS

At a minimum, operators must operate and maintain the machine as stated in the *Operation Manual* and in the *Maintenance Manual* in addition to following more stringent industry regulations and workplace rules.

WARNING

COLLISION HAZARDS



- Pay attention to the field of sight and the presence of blind spots when moving or operating the machine.
- The non-staff must maintain a minimum of 1.8m (5.9ft) distance from the machine while it is travelling or swinging.
- When the work platform of a moving machine is approx. 2m (6.6ft) away from the obstructions, use the boom lifting/lowering function (rather than the driving function) to get close to the obstructions.
- Switch to the low speed gear before parking the machine that drives at high speed.
- Do not use the high speed gear when the machine is driving reverse or in restricted or enclosed work area.
- Check the work area to avoid ground and overhead obstructions or other possible risks.
- Be sure to exercise caution when using the platform controller and ground controller. Color-marked directional arrows show the function of travel, lift and steering.
- Users must comply with user, workplace and government rules regarding the use of personal protective equipment (hard hats, safety belts and gloves, etc.).
- Place the machine on level ground or in a secured position before releasing the brakes.
- Only lower the platform when there are no people or obstructions in the area beneath it.
- When the machine is conducting aerial work, warn the staff/non-staff not to work, stand or walk under the raised boom or platform.
- Limit the speed of travel according to ground conditions, crowding, gradients, the presence and location of personnel and any



WARNING

COLLISION HAZARDS

- other factors that may cause collisions.
- Do not operate the machine on any crane or overhead traveling device unless the crane control is locked or precautions have been taken to prevent any potential collision.
- Try to prevent the machine from touching stationary objects (- buildings etc.) or mobile objects (- vehicles, cranes etc.).
- Never operate a machine dangerously or for fun.

CRUSH HAZARDS

A potential crush hazard exists during movement of the machine. Always keep body parts and clothing a safe distance from the machine during machine operation.

WARNING

CRUSH HAZARDS



- Do not place your hands and arms where they may become crushed or trapped.
- Do not work under the platform or the boom when the boom is not protected by a crane.
- Maintain good judgment and planning when using the controller on the ground to operate the machine. Maintain proper distance between operator, machine and fixed object.

EXPLOSION AND FIRE HAZARDS

WARNING

EXPLOSION AND FIRE HAZARDS



- Do not use the machine or charge the battery in hazardous or potentially flammable or explosive atmosphere.



- For the engine-powered machines, never add fuel while the engine is still running, and only add fuel when the place is well ventilated and free of flame, spark or any other hazards that may cause explosion.
- Never spray ether on the engine equipped with glow plug.

DAMAGED MACHINE HAZARDS

NOTICE

To avoid machine damage, follow all operation and maintenance requirements in the Operation Manual and the Maintenance Manual.

WARNING

DAMAGED MACHINE HAZARDS



- Do not use the machine if it is damaged or not in proper operating condition.
- Thoroughly inspect and test for all functions of the machine before use. Immediately mark and stop damaged or faulty machines.
- Ensure that all maintenance operations have been performed in accordance with the *Operation Manual* and the *Maintenance Manual*.
- Make sure all labels are in place and are legible.
- Ensure that the *Operation Manual* and *Maintenance Manual* are sound, easy to read and stored in the storage compartment on the platform.

BODILY INJURY HAZARDS

Always follow all operation and maintenance requirements in this manual and the Maintenance Manual.

WARNING

BODILY INJURY HAZARDS



- Do not operate the machine when there are oil spills/leaks. Oil spills or leaks in hydraulic fluids may penetrate and burn the skin.
- Always operate the machine in well ventilated atmosphere to prevent carbon monoxide poisoning.

NOTE: The operator must carry out maintenance during the pre-operation inspection only. During operation, keep the left and right doors of the chassis closed and locked. Only trained service personnel can open the left and right doors to repair the machine.

BATTERY HAZARDS

 WARNING**FIRE AND EXPLOSION HAZARD**

- Batteries contain sulfuric acid and may generate explosive mixtures of hydrogen and oxygen gases. Keep any device that may produce sparks or flames (- including cigarettes/smoking materials) away from the battery to prevent explosion.
- Do not touch the battery terminals or cable clips with tools that may produce sparks.
- Do not charge the battery under direct sunlight.
- The battery should be charged in a well-ventilated site.
- Should the battery overheat, deform, leak, smell or smoke during service, stop using the battery immediately and place it in an open area far away from the crowd.
- Do not throw the battery to a fire or heater.

 WARNING**CHEMICAL BURN HAZARD**

- Avoid battery acid spilling or contacting unprotected skin. Wash the skin with plenty of water and seek medical attention immediately if battery acid contacts skin.
- If the battery acid escapes, please use baking soda to neutralize the acid.

 WARNING**ELECTROCUTION HAZARD**

- Contact with hot circuit may cause serious injury or death. Be sure to wear goggles, gloves and protective clothing.
- Remove all rings, watches and other accessories.

⚠ WARNING**UNSAFE OPERATION HAZARD**

- Strictly follow the manufacturer's recommendations on how to properly use and maintain the battery.
- The battery charger can only be connected to 3-phase AC outlet, and ensure the charger works properly before charging.
- Only use the charger provided by the manufacturer.
- The battery is only applicable for the matching equipment, so do not use it otherwise.
- Only the properly trained personnel authorized by the workplace are allowed to remove the battery from the machine.
- Before replacing the battery, be sure to identify the appropriate number of personnel and the lifting method.
- The wrapping of the battery is prone to becoming damaged by pointed objects, so do not use a pointed part to collide with the battery.
- Do not place other objects or tools upon the battery to avoid short circuit.
- Always keep the battery vertically placed. If tiltedly placed, the battery acid may escape.
- Never short circuit the battery positive and negative poles.
- Do not use the battery positive and negative conversely.
- Do not connect the battery directly to a power outlet.
- Do not tap, throw or step on the battery.
- Do not immerse the battery under water, acid or alkaline solution with salt, and do not expose the battery to the rain.
- Do not tamper with battery system to avoid serious accident.
- Cut off the battery main switch if the battery is not to be used for an extended period.

⚠ WARNING**UNSAFE OPERATION HAZARD**

- The waste battery may pose danger, so do not discard at will. If it needs to be scrapped, contact a battery recycling company.
- Except for the professionals, do not perform a systematic maintenance or service to the battery, otherwise it may cause bodily injuries or damage to the battery system.
- Except for the professionals, do not tamper with the settings or service a signal light when the system is running, otherwise it may cause bodily injuries or damage to the battery system.
- Except for the professionals, do not remove the battery housing, otherwise it may cause damage to the battery system.

NOTICE

It will not covered by the warranty if the battery attenuates or fails due to customer's overuse (- continued use after battery level less than 10%) or failure to charge the battery for a long time (not timely charged for 3 days or longer when the battery level less than 10%).

HYDRAULIC HAZARDS

⚠ WARNING




BURN AND SPRAY HAZARDS

- When the hydraulic system is hot, do not touch to avoid severe skin burn.
- After the machine shutdown, thoroughly clean the spilled hydraulic oil. Do not throw the oil on the ground. Once the maintenance and repair is complete, immediately clean any oil on the skin. Dispose of the used oil as per the governing laws and regulations.
- Do not use your hand to block the hydraulic leaks. If the leakage occurs, please first release the system pressure and maintain only after the hydraulic oil cools down. If any injury is caused by the spray of hydraulic oil, go to the doctor immediately, otherwise severe complication may develop.

WELDING AND POLISHING REQUIREMENTS

Before welding, grinding and polishing operations, always ensure you read and understand all operation and maintenance requirements in the *Operation Manual* and the *Maintenance Manual*.

⚠ WARNING



WELDING HAZARDS

- Comply with the welder manufacturer's recommendations for procedures concerning proper use of the welder.
- Welding leads or cables may only be connected after turning off the power unit.
- Carry out welding operations only after the welding cable has been correctly connected.
- Do not use the machine as a ground wire during welding operation.
- At all times, make sure that the power tools are completely stored in the working platform. Do not hang the power tools on the railing of the working platform or the work area outside the working platform, or hang the power tools directly by the wire.

Before performing welding, grinding and polishing work, welders must seek permission of the responsible department at the workplace.

AFTER USING THE MACHINE

1. Choose a safe parking location that is on sturdy, level ground and that is free of obstructions. Avoid areas with heavy traffic.
2. Lower the boom to stowed position.
3. Take off all loads from the platform and run the engine at low speed for 3–5 minutes to reduce the engine inside temperature.
4. Push in the emergency stop button at the platform controls to the OFF position.
5. Close the cover of platform controls to protect the control panel, handle and controller from hostile weather conditions.
6. Push in the emergency stop button at ground controls to the OFF position.
7. Turn the key switch at the ground controls to OFF position and remove the key to avoid unauthorized operation of the machine.
8. Turn off the main power switch.

NOTICE

After using the machine, the main power switch must be disconnected.

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4 JOBSITE INSPECTION

WARNING

UNSAFE OPERATION HAZARD



Be sure to follow the instructions and safety rules in this manual. Failure to follow the instructions and safety rules in this manual may result in death or serious injury.

Do not operate this machine unless you have learned and practiced the rules for safely operating the machine as stated in this manual.

- **Know and understand the safety rules before continuing the next step.**
- **Avoid dangerous situations.**
- **Always check the machine before operating.**
- **Select appropriate machinery and personal protective equipment (hard hats, safety belt and gloves, etc.) for the task.**
- **Always perform a pre-operation function test before using the machine.**
- **Check the work site.**
- **Check the safety decals/ name-plate on the machine.**
- **Only use the machine according to the instructions in this manual and for its intended purpose.**

- Unstable or ultra-smooth surfaces
- Overhead obstacles and high-voltage wires
- Hazardous locations
- Ground surface that could fail to support the capacity of the machine and its load
- Gusts and strong winds
- Actions by unauthorized personnel
- Other possible unsafe conditions

During the jobsite inspection the operator determines whether the jobsite is suitable for safe machine operation. The operator should conduct the jobsite inspection before moving the machine to the jobsite.

Safety is the operator's responsibility. Part of safety is conducting a thorough jobsite inspection. Operators must identify and avoid workplace hazards when moving, installing and operating the machine.

Unless approved by Sinoboom, never operate the machine in a hazardous site. The following items present danger on the jobsite:

- Steep hills or caves
- Ground prominences, obstacles or debris
- Ground inclines

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5 PRE-OPERATION INSPECTION

WARNING



UNSAFE OPERATION HAZARD

Be sure to follow the instructions and safety rules in this manual. Failure to follow the instructions and safety rules in this manual may result in death or serious injury.

Do not operate this machine unless you have learned and practiced the rules for safely operating the machine as stated in this manual.

- Know and understand the safety rules before continuing the next step.
- Avoid dangerous situations.
- Always check the machine before operating.
- Select appropriate machinery and personal protective equipment (- hard hats, safety belt and gloves, etc.) for the task.
- Always perform a pre-operation function test before using the machine.
- Check the work site.
- Check the safety decals/ nameplates on the machine.
- Only use the machine according to the instructions in this manual and for its intended purpose.

Before operating the machine, please first understand the tasks to be done and be aware of the following :

1. Be familiar with each function of the machine and capable of operating it adeptly.
2. Only the person authorized by the management is allowed to operate the machine.
3. Obey the safety rules in this manual, and fully understand and follow the operating instructions in this manual to operate the machine.
4. The operator should go through a professional training based on this operation manual, and should be certified as a qualified operator in operation of this machine.

5. Clearly understand all nameplates, warning and safety decals on the machine.
6. Before each operation, examine and check the operational environment, and ensure the safety protection equipment is properly in place. The safety equipment may differ according to the operational environment.
7. Before operating the machine, be sure that all control handles are returned to neutral, and all switches in the OFF position.

TIPS FOR CONDUCTING A PRE-OPERATION INSPECTION

WARNING



TIPPING HAZARD

Do not change or modify the aerial work platform without the prior written permission of the manufacturer. If an additional device is installed on the platform or guardrail for placing tools or other materials, this will increase the platform weight and surface area or increase the load.

- The operator is responsible for performing the “pre-operation inspection” and routine maintenance as stated in this manual.
- Before each shift change, the operator must conduct a pre-operation inspection to find out whether the machine has obvious problems before performing a pre-operation function test.
- The pre-operation inspection also helps the operator determine whether the machine requires routine maintenance. The operator can only perform the routine maintenance items as stated in this manual.
- Please refer to [Inspecting Parts, page 5-2](#) and check each item.
- Never use a machine that has damaged or modified parts. Mark the machine and stop using the machine if you discover damage or modifications.
- Only qualified maintenance technicians can repair the machine according to the manufacturer's regulations. After any maintenance, the operator

must perform another pre-operation inspection before conducting a pre-operation function test.

- Qualified maintenance technicians must perform regular maintenance inspections according to the requirements in the manufacturer's *Maintenance Manual*.

CONDUCTING A PRE-OPERATION INSPECTION

Before starting the machine, check whether it meets the following requirements:

- Ensure the *Operation Manual* and *Maintenance Manual* are in good condition, legible and stored in the storage compartment on the platform.
- Make sure all labels are legible and appropriately located.
- Check the hydraulic oil for leaks and the hydraulic oil level. Add oil as needed. See [Inspect Hydraulic Oil Level, page 5-2](#).
- Check the diesel fuel for leaks and the diesel fuel level. Add fuel as needed. See [Inspecting Diesel Fuel Level, page 5-3](#).
- Check the engine oil level. Add engine oil as needed. See [Inspecting Engine Oil Level, page 5-4](#).
- Check the coolant level. Add coolant as needed. See [Inspecting Coolant Level \(water-cooled engine \) , page 5-5](#).
- Check the battery for leaks and the liquid level. Add distilled water as needed. See [Inspecting the Battery, page 5-6](#).
- Check whether the protective device in use is appropriate for the type of work performed and conforms to relevant technical standards.

INSPECTING PARTS

Before each use or work shift, check the following items for any damaged, improperly installed, loose or lost parts and unauthorized changes:

- Electrical components, wiring, cables and safety rope
- Hydraulic hoses & fittings, hydraulic cylinder and manifolds
- Fuel tank and hydraulic oil tank
- Storage battery pack and its connection
- Drive motor, drive reducer and slewing reducer

- Boom wear pads and telescopic boom wear pads
- Limit switch and horn
- Tires and rims
- Engine and its relevant components
- Alarms and lighting lamp (if equipped)
- Platform (including rails, floor plate, safety lock, brackets and entry door)
- Structure and welding cracks
- Nuts, bolts and other fasteners
- Personal protection equipment
- Emergency control equipment
- Operation instructions, warning and control signs

NOTICE

If any part is found to be damaged, improperly installed or lost, please replace with a new part immediately and install it correctly; if any fastener is found detached or loose, please secure it immediately.

INSPECTING ENTIRE MACHINE

Inspect the entire machine for:

- Cracks in a weld joint or structural part
- Dents or other damage
- Severe rust, corrosion or oxidation
- Improper twisting of steel wire ropes, electric cables, hoses inside the platform
- Missing or loose structural parts and key components, including fasteners and pins for correct positioning and tightness
- After the inspection, ensure all covers are in place and securely locked

INSPECT HYDRAULIC OIL LEVEL

Ensuring the hydraulic oil at an appropriate level is vital to proper operation of the machine. If hydraulic oil level is too high, the oil will spill out from the oil tank during machine operation; if hydraulic oil level is too low, the oil pump will have entrained air and hydraulic components will be damaged. Performing daily

inspection of the hydraulic oil level will help you determine if a problem exists in the hydraulic system.

Perform the following procedures with the boom in stowed position:

1. Open the left turntable cover to make visual inspection of the sides of hydraulic tank, the hydraulic oil level should be within the marking range of oil level indicator.

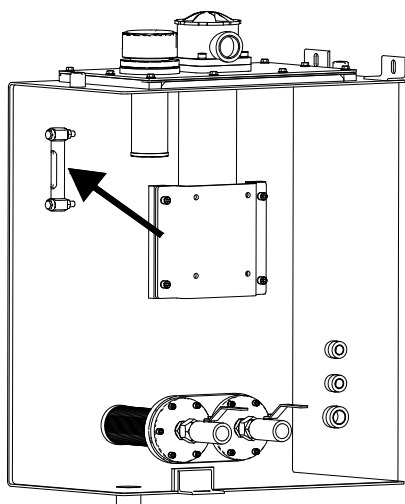


Figure 5-1

2. Ensure the hydraulic tank body and its connections are free of leaks.
3. Add oil as needed. Never overfill the tank.

Table 5-1

CUSTOMER REQUIREMENTS	HYDRAULIC OIL MARK
Normal temperature region 0°C to 40°C (32°F to 104°F)	L-HM46
Low temperature region -25°C to 25°C (-13°F to 77°F)	L-HV32
High temperature region greater than 40°C (104°F)	L-HM68
Extremely low temperature region less than -30°C (-22°F)	Special programmes need to be identified.

NOTICE

Certain hydraulic oil can be added according to customer requirements upon factory delivery, but different hydraulic oils cannot be mixed.

INSPECTING DIESEL FUEL LEVEL

NOTICE

The inspection must be performed with the engine stopped.

Keeping the diesel fuel at an appropriate level is vital to maintaining the engine performance and extending service life. The diesel fuel in the tank at an inappropriate level will bring damage to the engine parts and lead to improper functioning of the machine.

Perform the following procedures with the boom in stowed position:

1. Turn the Ground/Platform select switch at the ground controller to the ground control position, and pull out the emergency stop button at the ground controller to the ON position, and then turn on the key switch at the ground controller, the ground control display will show the diesel fuel level in percentage.

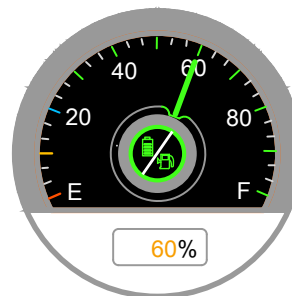


Figure 5-2

2. When the diesel fuel level is lower than or equal to 10%, an alarm will be triggered. Make sure to add diesel fuel before continuing work.
3. Ensure the fuel tank and its connections are free of leaks.
4. Shut off the engine before adding any diesel fuel.
5. Open the cap of fuel tank, and then add fuel as needed. Never overfill the tank, and it is recommended to add diesel fuel to the level range of 50%–100% of the tank capacity.

Table 5-2

DIESEL GRADE	RECOMMENDED AMBIENT TEMP
5#	Lowest temperature 8°C or higher
0#	Lowest temperature 4°C or higher

DIESEL GRADE	RECOMMENDED AMBIENT TEMP
-10#	Lowest temperature -5°C or higher
-20#	Lowest temperature -14°C or higher
-35#	Lowest temperature -29°C or higher
-50#	Lowest temperature -44°C or higher

NOTICE

- The diesel fuel in the tank has been drained off basically before delivery, so customers should add diesel fuel of appropriate grade according to the operating ambient temperature and the governing emission regulations.
- Do not add mixed diesel fuels of different grades.
- Light fuels may affect the fuel economy or damage the combustion components.
- It is recommended to use the diesel fuels with sulphur content less than 5000ppm.
- It is recommended to use the diesel fuels with min. cetane number of 45 at operating temperatures below 0°C and min. cetane number of 40 at operating temperatures over 0°C. When the cetane number of the diesel fuel in use is less than the recommended number, it may lead to startup failure, instable running or large amount of white smoke.
- The max cloud point and pour point of the diesel fuel must be 6°C less than the lowest operating ambient temperature.

WARNING

EXPLOSION AND FIRE HAZARD



- Do not mix the diesel fuel with gasoline, alcohol or their mixtures.
- Do not add diesel fuel when the engine is running.

WARNING



DAMAGED MACHINE HAZARD

Due to the extremely accurate tolerance match of the diesel injection system, it is critical to keep the fuel clean and free of dirt or water. Any dirt or water entering the combustion system can cause severe damage to the fuel pump and injector.

INSPECTING ENGINE OIL LEVEL

NOTICE

Turn off the engine before inspection.

An appropriate engine oil level is vital to maintaining the engine performance and extending its service life, otherwise the engine parts will be damaged. Through daily check, the inspector can know about the changes in engine oil level which may indicate a system distress with the engine.

- Turn the ground/platform select switch to ground control.
- Pull out the emergency stop button at ground controller to ON position.
- Turn the key switch at ground controller to ON position.
- Move the engine start switch and idle it for 2 minutes.
- Switch off the engine, and 5 minutes later open the turntable cover on the right side.
- Remove the engine dipstick to inspect the engine oil level.
- The engine oil level should be within the FULL and ADD marks.
- Add engine oil as needed. Do not overfill. It is recommended to use engine oil equivalent to or higher than CJ-4 with viscosity grade of 15W-40.

Table 5-3

VISCOSITY	RECOMMENDED AMBIENT TEMP
0W-30	-35°C ~ 0°C
5W-40	-25°C ~ 30°C

VISCOSITY	RECOMMENDED AMBIENT TEMP
15W-40	-15°C ~ 40°C
20W-50	0°C ~ 50°C

NOTICE

- The engine oil filled by the factory is generally CJ-4 with viscosity 15W-40, suitable for regions with ambient temperature range of 15°C ~ 40°C. If the operating ambient temperature is outside of the range, please change the engine oil as appropriate.
- The multi-grade engine oil can provide excellent lubrication under high-temperature operating condition, reduce the sediments, and improve the engine low-temperature start performance and durability. Also, the multi-grade engine oil plays an important role in ensuring the machine meeting the emission standards.
- Do not mix the engine oils of different grades.
- It is recommended that the sulphated ash content not exceed 1%, otherwise it will damage the air valve or piston, and lead to excessive consumption of engine oil.
- The use of high-quality engine oil in conjunction with suitable oil filter and replacement interval of oil filter is very critical to maintaining engine performance and extending service life. If the oil or oil filter is not replaced as recommended, there will be sediments, contaminants or wear incurred which will shorten the engine service life.

INSPECTING COOLANT LEVEL (WATER-COOLED ENGINE)

The appropriate coolant level is vital to maintaining the engine performance and extending its service life, otherwise it will damage the engine parts. Through the daily check the inspector can know about the changes on coolant level which may indicate a system distress with the engine.



WARNING

HIGH TEMPERATURE AND PRESSURE HAZARDS

Before inspecting the coolant level, allow the coolant to cool down to room temperature, and slowly open the cover to release the pressure.



NOTICE

Turn off the engine before inspection.

1. Turn off the engine, and open the right turntable cover.
2. Open the cover of coolant box over the radiator to inspect the coolant level.

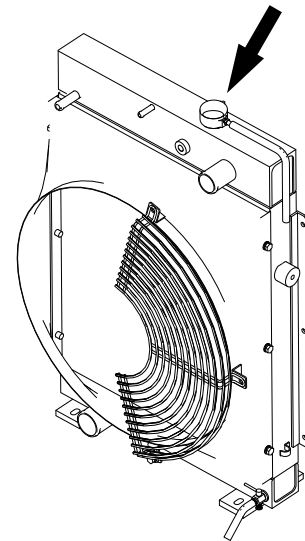


Figure 5-3

3. The coolant level should be at the fill inlet of the coolant box.
4. Add coolant as needed. Do not overfill. It is recommended to choose the -18°C ready-mix coolant or the ethylene glycol(ethylene and propene) in ratio mix with water. The water quality must meet the requirements as listed in the table below.

Table 5-4

COOLANT TYPE	RECOMMENDED AMBIENT TEMP
-18°C ready-mix coolant	-18°C or higher
-37°C ready-mix coolant	-37°C or higher
50% ethylene glycol and 50% water mixed coolant	-32°C ~ 0°C
650% ethylene glycol and 40% water mixed coolant	-54°C ~ -32°C

NOTICE

- Do not apply sealing additive to the cooling system, otherwise it will cause blockage to the low-fluidity area, radiator and engine oil cooler, or damage the water pump sealing.
- Do not apply soluble engine oil to the cooling system, otherwise it will corrode the brass and copper, damage the surface of heat exchanger, sealings and hose.
- The water added into the coolant must meet the requirements of calcium and magnesium less than 170ppm and sulphur less than 100ppm. Excessive calcium and magnesium can lead to scale formation, and excessive chloride and sulfate can corrode the cooling system.

INSPECTING THE BATTERY

Battery condition is critical to machine performance and safe operation. A battery with improper electrolyte level or damaged cables and wiring may harm battery parts and may pose dangerous conditions.

WARNING

ELECTROCUTION HAZARD



- Contact with live circuit may cause serious injury or death. Be sure to wear goggles, gloves and protective clothing.
- Remove all rings, watches and other jewelry.



WARNING

CHEMICAL BURN HAZARD



Avoid battery acid spills or contact with unprotected skin. If battery acid comes into contact with skin, wash the skin immediately with plenty of water and seek medical attention immediately.

If battery acid spills, use water mixed with bicarbonate (baking soda) to neutralize the acid.

- Inspect the battery level to make sure the consumed battery power is no more than 80% of the total capacity. Charge the battery after each use.
- Ensure the battery cells are wired reliably with the locking nuts torqued to the specifications as below:

Nut type	Torque
M8	9 ~ 11Nm (6.6 ~ 8.1ft-lb)
M10	18 ~ 23Nm (13.2 ~ 17ft-lb)

NOTICE

Improper connection may cause reduced performance, damaged terminals, fusions and even fires.

- Ensure the battery negative and positive are correctly connected.
- Ensure the battery connections are not corroded.
- Check the battery electrolyte level is proper (for lead-acid battery requiring maintenance)
- Check the battery box for accumulation of water, and if any, clear the water.
- Check the paint of battery for damage, if any, repair immediately to prevent corrosion and keep the box insulated.

Note: Adding terminal protectors or applying anti-corrosion agent will help the terminals and cables from corrosion.

6 PRE-OPERATION FUNCTION TEST

WARNING



UNSAFE OPERATION HAZARD

Be sure to follow the instructions and safety rules in this manual. Failure to follow the instructions and safety rules in this manual may result in death or serious injury.

Do not operate this machine unless you have learned and practiced the rules for safely operating the machine as stated in this manual.

- Know and understand the safety rules before continuing the next step.
- Avoid dangerous situations.
- Always check the machine before operating.
- Select appropriate machinery and personal protective equipment (- hard hats, safety belt and gloves, etc.) for the task.
- Always perform a pre-operation function test before using the machine.
- Check the work site.
- Check the safety decals/ nameplate on the machine.
- Only use the machine according to the instructions in this manual and for its intended purpose.

Conducting a pre-operation function test helps you discover potential problems before you start using the machine. The operator must test all machine functions according to the instructions in this manual.

Do not use a machine with problems or malfunctions. Mark the machine and do not use it if you discover any

problems. Only qualified maintenance technicians can repair the machine according to the manufacturer's regulations.

After any maintenance, the operator must perform another pre-operation inspection before conducting a pre-operation function test.

PREPARING FOR A PRE-OPERATION FUNCTION TEST

NOTICE

All the pre-operation function tests must be completed within the same period..

NOTICE

In cold weather, auxiliary devices are needed to start the machines.

Before beginning a pre-operation function test:

1. Select a test area that has a solid, flat, level surface.
2. Ensure the test area is free of obstacles.

TESTING THE GROUND CONTROLLER

NOTICE

All tests on the ground controller must be completed within the same cycle.

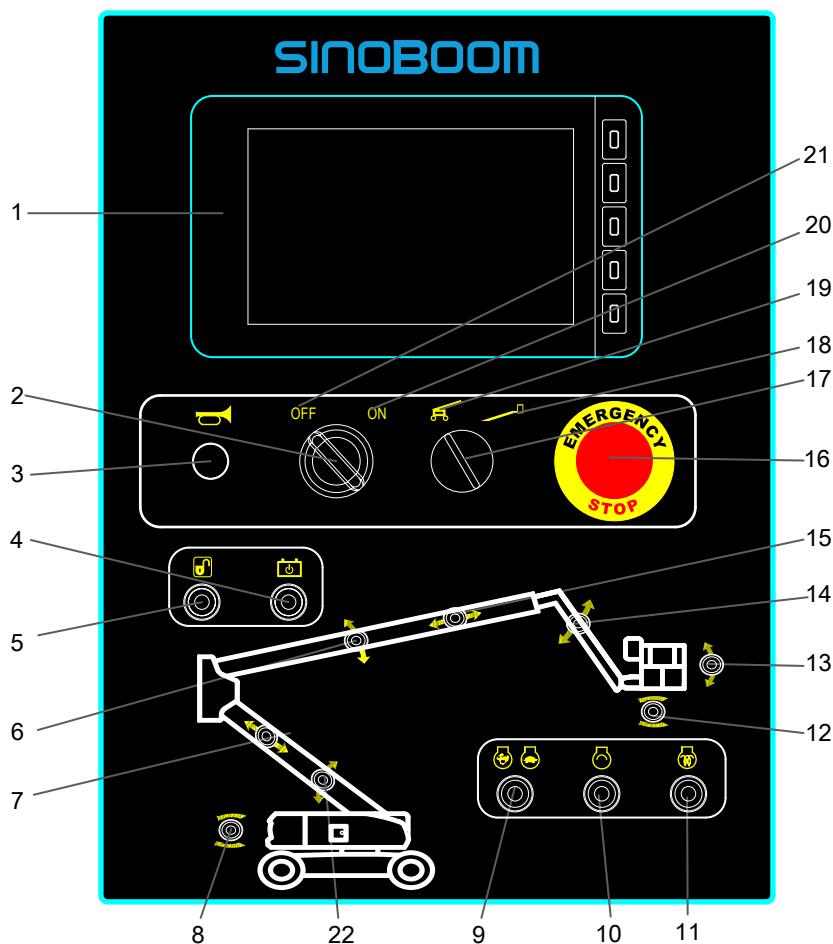


Figure 6-1

Table 6-1

1. Display screen (see the figure and table below)	9. Engine speed select switch	17. Ground/Platform select switch
2. Key switch	10. Engine start switch	18. Platform control position
3. Horn	11. Glow plug switch (if equipped)	19. Ground control position
4. Emergency power switch	12. Platform rotation switch	20. ON position
5. Enable switch	13. Platform leveling switch	21. OFF position
6. Main boom luffing switch	14. Jib luffing switch	22. Articulated boom luffing switch
7. Articulated boom telescoping switch	15. Main boom telescoping switch	
8. Turntable rotation switch	16. Emergency stop button	

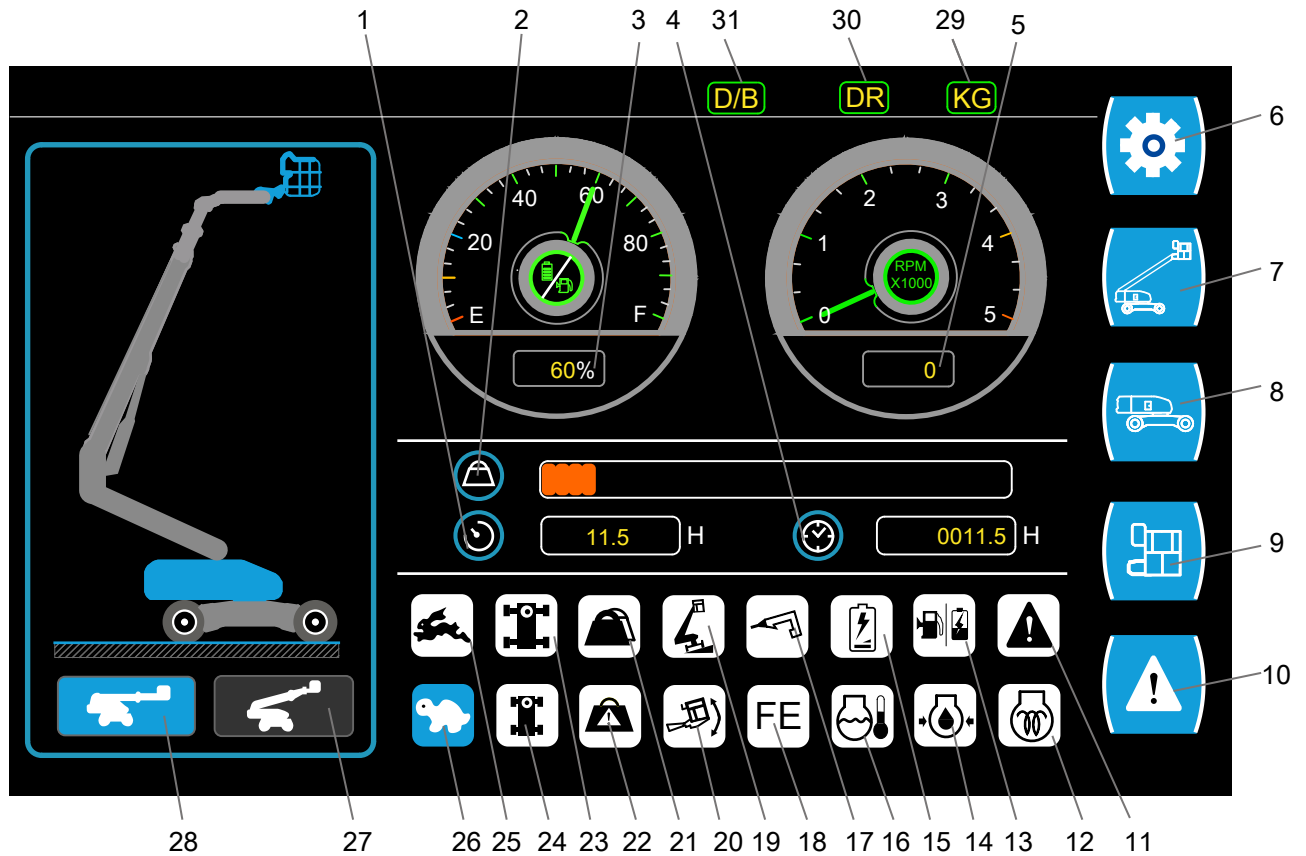


Figure 6-2 Ground controller display screen

Table 6-2

1. Current work hours	12. Glow plug	23. Not used
2. Platform load	13. Low diesel/battery alarm	24. Not used
3. Diesel/battery gauge	14. Engine oil pressure alarm	25. Engine high idle
4. Accumulated work hours	15. Low battery alarm	26. Engine low idle
5. Tachometer	16. Water temp alarm	27. Operating position
6. Setup menu	17. Inverter ON	28. Non-operating position
7. Machine info	18. Not used	29. Overload restriction
8. Turntable info	19. Chassis tilt alarm	30. Travel restriction (operating position)
9. Platform info	20. Platform tilt alarm	31. Travel and boom movement allowed
10. Alarm message	21. Heavy load indicator	
11. Fault alarm	22. Overload alarm	

WARNING

UNSAFE OPERATION HAZARD



- Unless in emergency situations, never operate the machine from the ground controller if there is any person on the platform.
- Never operate the machine if any control handle or switch that controls the platform movement does not return to the OFF position after being released.

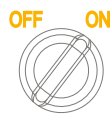
WARNING

COLLISION HAZARD



Before operating the boom, ensure the area near or under the platform is clear of persons or obstructions.

Preparation



1. Turn the Ground/Platform select switch at the ground controller to ground control position.
2. Pull out the emergency stop button at the ground controller to ON position.
3. Turn the key switch at the ground controller to ON position.
4. Ensure the relevant indicator light on the display screen is illuminated and no error comes up.

Horn button



Push down the horn button, the horn should sound.

Engine start switch



Flip the engine start switch, the engine should be started smoothly without abnormal noise.

Note: The switch will get irresponsive after engine startup.

Glow plug switch (if equipped)

NOTICE

Under low temperature conditions, the engine should be preheated for 5 minutes before operation to prevent damage to the hydraulic system.



Flip the glow plug switch and hold it for 6-10s, the engine should take in air for preheating.

Note: The electrically controlled engine will be preheated automatically.

Emergency stop button



1. Push in the emergency stop button at the ground controller to OFF position and flip the engine start switch. The engine should fail to start and all functions should be inoperative.
2. Pull out the emergency stop button at the ground controller to ON position and flip the engine start switch. The engine should start normally.

Ground/Platform select switch



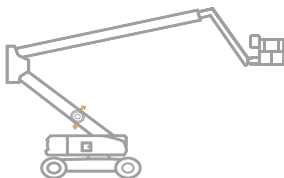
1. Turn the Ground/Platform select switch at the ground controller to ground control position. The function operation shall only be allowed at the ground controller, while the platform controller shall be inoperative.
2. Turn the Ground/Platform select switch at the ground controller to platform control position. The function operation shall only be allowed at the platform controller, while the ground controller shall be inoperative.

Enable switch



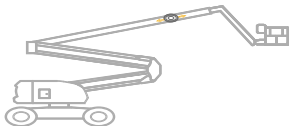
1. Flip both the enable switch and the engine start switch, the engine shall fail to start.
2. Flip the engine start switch without flipping the enable switch, the engine shall start normally.
3. Flip one function switch without flipping the enable switch, the corresponding function shall be inoperative.
4. Flip one function switch together with the enable switch, the corresponding function shall operate normally.

Articulated boom luffing switch



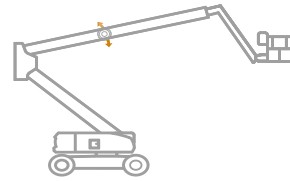
1. Flip the enable switch and meanwhile move upward the articulated boom luffing switch, the articulated boom shall go up smoothly without shaking or abnormal noise if it is not raised in place, but the articulated boom shall extend smoothly without shaking or abnormal noise if it is raised in place.
2. Flip the enable switch and meanwhile move downward the articulated boom luffing switch, the articulated boom shall retract smoothly without shaking or abnormal noise if it is not retracted in place, but the articulated boom shall be lowered smoothly without shaking or abnormal noise if it is retracted in place, and the buzzer will sound intermittently.

Articulated boom telescoping switch



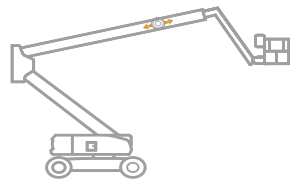
1. Flip the enable switch and meanwhile move upward the articulated boom telescoping switch, the articulated boom shall extend smoothly.
2. Flip the enable switch and meanwhile move downward the articulated boom telescoping switch, the articulated boom shall retract smoothly.

Main boom luffing switch



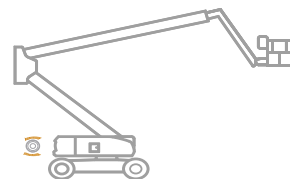
1. Flip the enable switch and meanwhile move upward the main boom luffing switch, the main boom shall go up smoothly.
2. Flip the enable switch and meanwhile move downward the main boom luffing switch, the main boom shall go down smoothly, and the buzzer shall sound.

Main boom telescoping switch



1. Flip the enable switch and meanwhile move the main boom telescoping switch to the right, the main boom shall extend smoothly.
2. Flip the enable switch and meanwhile move the main boom telescoping switch to the left, the main boom shall retract smoothly.

Turntable rotation switch



1. Flip the enable switch and meanwhile move upward the turntable rotation switch, the turntable shall rotate anticlockwise.
2. Move the enable switch and meanwhile move downward the turntable rotation switch, the turntable shall rotate clockwise.

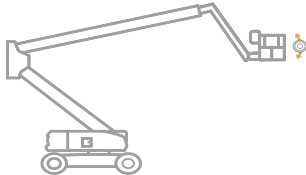
Platform leveling switch

WARNING

FALL HAZARD

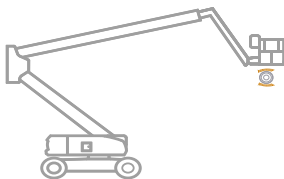


The platform leveling function is only used for slight adjustment of the platform. Improper operation may result in unintended movement or fall of the load/occupants.



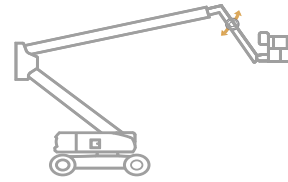
1. Flip the enable switch and meanwhile move upward the platform leveling switch, the platform level shall go up.
2. Flip the enable switch and meanwhile move downward the platform leveling switch, the platform level shall go down.

Platform rotation switch



1. Flip the enable switch and meanwhile move upward the platform rotation switch, the platform shall rotate anticlockwise.
2. Move the enable switch and meanwhile move downward the platform rotation switch, the platform shall rotate clockwise.

Jib luffing switch



1. Flip the enable switch and meanwhile move upward the jib luffing switch, the jib boom shall go up.
2. Flip the enable switch and meanwhile move downward the jib luffing switch, the jib boom shall go down and the buzzer will sound.

Emergency power switch

NOTICE

- The emergency power switch is used for a short period of time (to fully lower and retract the platform from the maximum angle and length) when the engine fails.
- When the emergency power is in use, do not perform two or more functions simultaneously, otherwise the auxiliary motor and pump will get overloaded.



Flip both the emergency power switch and one function switch/handle, the corresponding function shall operate normally.

Engine speed select switch

NOTICE

Before applying any loads, idle the engine for 3-5min for preheating.



Flip both the enable switch and the engine speed select switch, the engine speed shall be switched between the high/low speed.

Buzzer

The buzzer shall give a sound-light alarm at variable frequency when any of the following situations occur:

- Main boom or jib boom down
- Machine overloaded

- Machine tilted
- Length sensor faulted
- Angle sensor faulted
- Other faults

TESTING THE PLATFORM CONTROLLER

NOTICE

All tests on the platform controller must be completed within the same cycle.

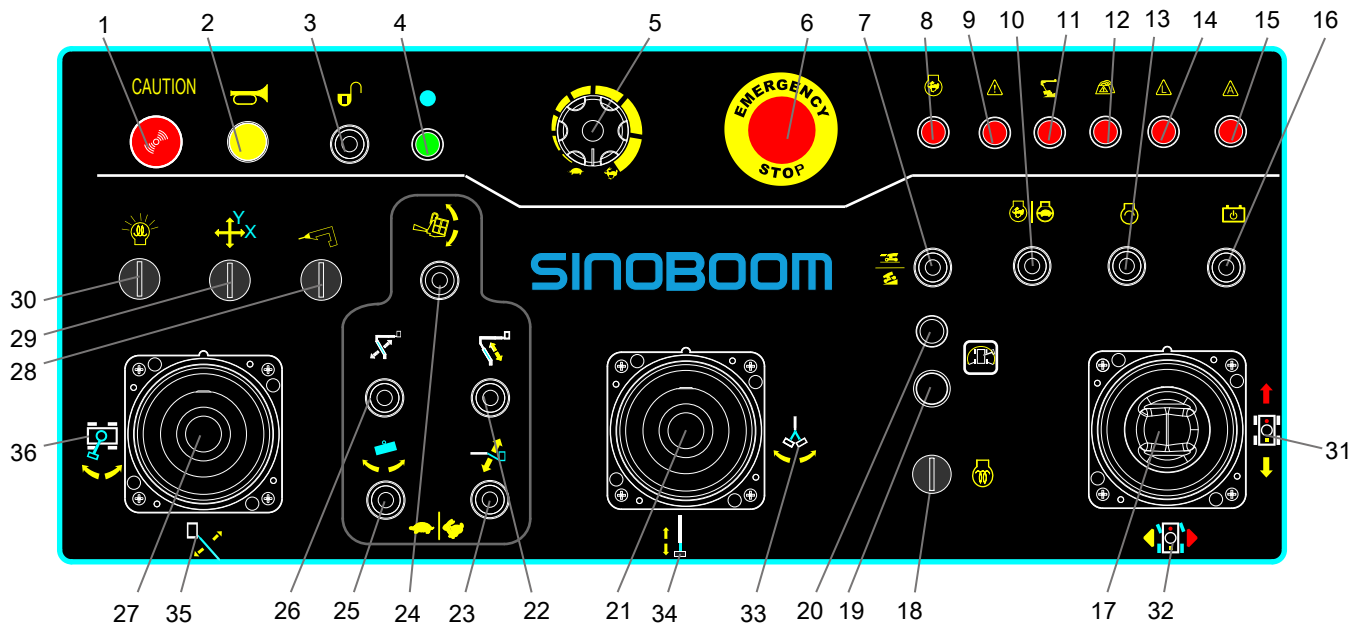


Figure 6-3 Platform Controller

Table 6-3

1. Buzzer	13. Engine start engine	25. Platform rotation switch
2. Horn	14. Length sensor malfunction indicator light (not used)	26. Articulated boom luffing switch
3. Anti-pinch/soft touch unlock switch (if equipped)	15. Angle sensor malfunction indicator light (not used)	27. Main boom luffing/turntable rotation proportional control handle
4. Power indicator light	16. Emergency power switch	28. Hydraulic generator switch (if equipped)
5. Speed adjusting knob indicator light	17. Drive/steer proportional control handle	29. X/Y drive switch (if equipped)
6. Emergency stop switch	18. Glow plug switch	30. Lighting lamp switch (if equipped)
7. Drive speed select switch	19. Rear position drive switch	31. Drive direction
8. High engine speed indicator light	20. Rear position indicator light	32. Steer button control direction
9. System distress indicator light	21. Main boom telescoping proportional control handle	33. Jib boom rotation proportional control direction

10. Engine speed select switch	22. Articulated boom telescoping switch	34. Main boom telescoping proportional control direction
11. Chassis tilt indicator light	23. Jib boom luffing switch	35. Main boom luffing proportional control direction
12. Overload indicator light	24. Platform leveling switch	36. Turntable rotation proportional control direction

WARNING

UNSAFE OPERATION HAZARD

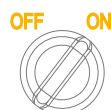
- Unless in emergency situations, never operate the machine from the ground controller if there is any person on the platform.**
- Never operate the machine if any control handle or switch that controls the platform movement does not return to the OFF position after being released.**

WARNING

COLLISION HAZARD

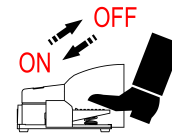
Before operating the boom, ensure the area near or under the platform is clear of persons or obstructions.

Preparation



1. Turn the Ground/Platform select switch at the ground controller to Platform control position.
2. Pull out the emergency stop buttons at both ground and platform controllers to ON position.
3. Turn the key switch at ground controller to ON position.
4. Ensure the power indicator light is on and no error message is present.

Foot switch



1. Depress the foot switch and meanwhile move the engine start/emergency power switch to the left, the engine should not start.
2. Release the foot switch, and move the engine start/emergency power switch to the left, the engine should start.
3. Release the foot switch, and directly flip any function switch/handle, the corresponding function should not operate and the buzzer should sound.
4. Depress the foot switch and meanwhile flip any function switch/handle, the corresponding function should operate.
5. Flip any function switch and then depress the foot switch, the corresponding function should not operate and the buzzer should sound.
6. Depress the foot switch, and 7 seconds later flip any function switch/handle, the function should not operate and the buzzer should sound.

Horn button



Push the horn button, the horn should sound.

Engine start switch



Flip the engine start switch, the engine should start smoothly without abnormal noises.

Note: The switch will get irresponsive after engine startup.

Glow plug switch (if equipped)

NOTICE

Run the engine at low idle for 3–5min to preheat the engine before applying any loads.



Flip the glow plug switch and hold it for 6-10s, the engine should take in air for preheating.

Note: The electrically controlled engine can be preheated automatically.

Emergency stop button



1. Push in the emergency stop button at the platform controller to OFF position and flip the engine start switch. The engine should fail to start and all functions should be inoperative.
2. Pull out the emergency stop button at the platform controller and ground controller to ON position and flip the engine start switch. The engine should start normally.
3. Push in the emergency stop button at the ground controller to OFF position and pull out the emergency stop button on the platform controller to ON position, and then flip the engine start switch, the engine should fail to start and all functions should be inoperative.

Engine speed select switch



Flip the engine speed select switch, the engine speed should be switched between high/low speed.

Drive function



1. Depress the foot switch and move forward the Drive/Steer proportional control handle, the machine shall drive forward smoothly without noticeable impact in startup; when the handle is released, the machine should be held reliably.
2. Depress the foot switch and move backward the Drive/Steer proportional control handle, the machine should drive reverse smoothly without noticeable impact in startup; when the handle is released, the machine should be held reliably.

Note: The drive speed is in direct proportion to the stroke of control handle.

Steer function



1. Depress the foot switch and move forward the Drive/Steer proportional control handle, and press the left side of the thumb rocker switch on top of the drive control handle, the machine should steer left.
2. Depress the foot switch and move forward the Drive/Steer proportional control handle, and press the right side of the thumb rocker switch on top of the drive control handle, the machine should steer right.

Note: The steering drive speed is in direct proportion to the stroke of control handle.

Drive speed select switch



WARNING

TIPPING HAZARD

The machine must drive at low speed when not on a level surface.





1. With the machine traveling in stowed position, push upward the drive high/low select switch, the drive speed shall be switched to high speed, and the high drive speed indicator light shall be lit.

Note:

- Before the machine traveling in stowed position, if the drive high/low speed select switch is left in high speed position, after the drive function is activated, the machine will start to run at high speed immediately.
- With the machine traveling in stowed position, by pushing upward the drive high/low speed select switch, the machine will start to run at high drive speed immediately.

Make sure the surrounding area is free of obstructions or persons before performing the above operations to avoid colliding with obstructions or persons. Besides, the operator shall pay attention to personal safety.

2. With the machine traveling in stowed position, pull down the drive high/low speed select switch, the drive speed shall be switched to low speed, and the high drive speed indicator light shall be off.

Turntable rotation



1. Depress the foot switch and move the main boom luffing/turntable rotation proportional control handle to the left, the turntable should rotate clockwise.
2. Depress the foot switch and move the main boom luffing/turntable rotation proportional control handle to the right, the turntable should rotate counterclockwise.

Note: The turntable rotation speed is in direct proportion to the stroke of control handle.

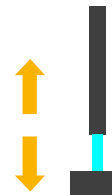
Main boom luffing



1. Depress the foot switch and move forward the main boom luffing/turntable rotation proportional control handle, the main boom should rise smoothly.
2. Depress the foot switch and move backward the main boom luffing/turntable rotation proportional control handle, the main boom should descend smoothly, and the buzzer should sound.

Note: The main boom luffing speed is in direct proportion to the stroke of control handle.

Main boom telescoping



1. Depress the foot switch and move backward the main boom telescoping proportional control handle, the main boom should extend smoothly.
2. Depress the foot switch and move forward the main boom telescoping proportional control handle, the main boom should retract smoothly.

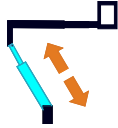
Note: The main boom telescoping speed is in direct proportion to the stroke of control handle.

Articulated boom luffing switch



1. Depress the foot switch and move upward the articulated boom luffing switch, the articulated boom should rise smoothly.
2. Depress the foot switch and move downward the articulated boom luffing switch, the articulated boom should descend smoothly.

Articulated boom telescoping switch



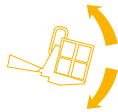
1. Depress the foot switch and move upward the articulated boom telescoping switch, the articulated boom should extend smoothly.
2. Depress the foot switch and move downward the articulated boom telescoping switch, the articulated boom should retract smoothly.

Platform leveling switch

WARNING

FALL HAZARD

The platform leveling function is only used for slight adjustment of the platform. Improper operation may result in unintended movement or fall of the load/occupants.



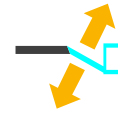
1. Depress the foot switch and move upward the platform leveling switch, the platform should level up.
2. Depress the foot switch and move downward the platform leveling switch, the platform should level down.

Platform rotation switch



1. Depress the foot switch and move the platform rotation switch to the left, the platform should rotate clockwise.
2. Depress the foot switch and move the platform rotation switch to the right, the platform should rotate counterclockwise.

Jib luffing switch



1. Depress the foot switch and move upward the jib luffing switch, the jib boom should go up.
2. Depress the foot switch and move downward the jib luffing switch, the jib boom shall go down, and the buzzer should sound.

Speed adjusting knob



1. Turn the speed adjusting knob to the right and flip one function switch/handle, the corresponding movement shall speed up.
2. Turn the speed adjusting knob to the left and flip one function switch/handle, the corresponding movement shall speed down.

Emergency power switch

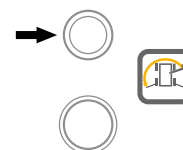
NOTICE

- *The emergency power switch is only used for a short period of time (to fully lower the platform from the maximum angle) when the engine fails.*
- *When the emergency power is in use, do not operate two or more functions simultaneously, otherwise the auxiliary motor and pump will get overloaded.*



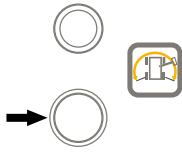
Depress the foot switch and flip both the emergency power switch and each function switch/handle, the corresponding function shall operate normally.

Rear position indicator light



When the boom rotates beyond the rear wheels, the drive function should be closed and the rear position indicator light should flash at an interval of 0.5s.

Rear position drive switch



When the rear position indicator light is flashing, the drive function should be closed. Flip the rear position drive switch, the light shall be lit and the drive function should resume.

NOTICE

When driving reverse, the machine will drive and steer in opposite direction as indicated.

Hydraulic generator switch (if equipped)



When the engine runs at idle speed stably, depress the foot switch and move the hydraulic generator switch. All movements (including boom and travel movements) of the machine will be stopped, and the engine will automatically turn to high speed. After the engine runs at high speed stably for 5s, the solenoid valve of the hydraulic generator will be energized and start to generate electricity.

Lighting lamp switch (if equipped)



Flip the lighting lamp switch, the lighting lamp should be on/off.

Buzzer

The buzzer should give a sound-light alarm at variable frequency in the event of any of the following situations:

- Main boom or jib boom down
- Machine overloaded
- Machine tilted
- Length sensor faulted
- Angle sensor faulted
- Other faults

System distress indicator light



The system distress indicator light will be lit under any of the following conditions:

- Low fuel level
- Low engine oil pressure
- High engine water temperature
- CAN bus error
- Other faults

Chassis tilt indicator light



When the machine is tilted, the alarm should sound and the chassis tilt indicator light should be on.

NOTICE

Should the chassis tilt indicator light come on when the boom is raised or extended, retract and lower the boom to stowed position.

Overload indicator light



When the load on the platform exceeds the rated platform capacity, the overload indicator light should be on.

High engine speed indicator light



When the engine runs at high idle (rpm), the high engine speed indicator light should be on.

Anti-pinch/soft touch unlock switch (if equipped)

NOTICE

"Anti-pinch/soft touch unlock switch" is only used to get rid of the obstruction when the machine comes into contact with an obstruction.



When the machine comes into contact with an obstruction, flip the anti-pinch/soft touch unlock switch, the machine can move away from the obstruction.

X/Y drive switch (if equipped)

Not used.

TESTING DRIVE SPEED

1. Flip the engine start switch at the platform controller.
2. Depress the foot switch.
3. Slowly push forward the drive/steer proportional control handle to full drive speed.
4. Flip the engine speed select switch at the platform controller to switch from low speed to high speed.
5. Flip the drive speed select switch at the platform controller upward to switch from low speed to high speed.
6. The test results should be as shown in the table below:

Table 6-4

POSITION	MAX DRIVE SPEED
Operating	1.1Km/h (0.68mph)
Non-operating	5Km/h (3.1mph)

NOTICE

If the drive speed exceeds the speed value as shown above by 10%, please immediately tag the machine and remove it from service.

TESTING THE EMERGENCY LOWERING FUNCTION

When the engine/motor fails, depending on the actual conditions, flip the emergency power switch on the ground or platform controller to start the emergency power unit, and meanwhile flip the function switch to enable the required boom movement.

NOTICE

- The emergency power switch is only used for a short period of time (with the platform fully lowered and retracted to the minimum degree and length) when the engine/motor fails.
- When the emergency power is in use, do not perform two or more functions simultaneously, otherwise the auxiliary motor and pump will get overloaded.

Operating from the ground:

1. Turn the Ground/Platform select switch on the ground controller to the ground control position.
2. Pull out the emergency stop button on the ground controller to the ON position.
3. Flip and hold the emergency power switch on the ground controller.
4. Flip the corresponding boom function switch on the ground controller to lower the platform.

Operating from the platform:

1. Turn the Ground/Platform select switch on the ground controller to the platform control position.
2. Pull out the emergency stop button on both the ground and platform controllers to the ON position.
3. Depress the foot switch, and flip and hold the emergency power switch on the platform controller.
4. Flip the corresponding boom function switch on the platform controller to lower the platform.

TESTING THE TILT PROTECTION SYSTEM

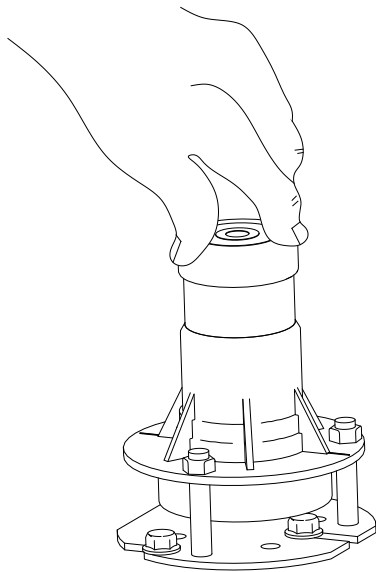


Figure 6-4

1. Start the machine.
2. With the machine in non-operating position, flip the level switch to exceed 5° in X (left-to-right)/Y (front-to-back) direction.
3. The tilt alarm will sound and the chassis tilt indicator light will flash, with no function restricted.
4. With the machine in operating position, flip the level switch to exceed 5° in X (left-to-right)/Y (front-to-back) direction.
5. The tilt alarm will sound with the chassis tilt indicator light flashing, and some functions will be restricted, but the boom retracting and lowering, and turntable rotating will be allowed.
6. Place two wooden blocks under the two wheels on the left or right side of the machine. The wooden block should be 750×250×174mm (2.46×0.82×0.57ft) in size (L×W×H). With the machine in non-operating position, drive it onto the two wooden blocks.
7. The tilt alarm will sound and the chassis tilt indicator light will flash, with no function restricted.
8. Drive the machine off and remove the wooden blocks.
9. Place two wooden blocks under the two wheels on the front or rear of the machine. The wooden block should be 750×250×213mm (2.46×0.82×0.7ft) in size (L×W×H). With the machine in operating position, drive it onto the two wooden blocks.
10. The tilt alarm will sound with the chassis tilt indicator light flashing, and some functions are restricted, but the boom retracting and lowering, and turntable rotating will be allowed.
11. Drive off the machine in non-operating position and remove the wooden blocks.

TESTING THE WEIGHING SYSTEM

Before the test, fully raise and lower the boom and fully extend and retract the boom for at least twice to ensure the pulley and track are adequately lubricated.

Table 6-5

MODE	TEST RESULTS
KG	When the load does not exceed 250kg (551lb), the platform can be elevated to the highest position. When the load exceeds 250kg (551lb), the buzzer will sound continuously, the overload indicator light will flash, the display screen will indicate platform overload, all functions will be restricted and will not resume until the excessive load is removed.
Non-KG	When the load does not exceed 250kg (551lb), the platform can be elevated to the highest position. When the load exceeds 250kg (551lb), the buzzer will sound continuously, the overload indicator light will flash, the display screen will indicate platform overload, some functions will be restricted, but boom retracting and then lowering as well as turntable rotating are allowed. Such functions will not resume until the excessive load is removed.

WARNING



TIPPING HAZARD

While performing override operation on the machine, please avoid operation in a dangerous direction.

For overseas models, with the machine in the KG mode, if activating any function switch while flipping the emergency power switch after an overload alarm, the override operation should be performed, and the corresponding action can be performed. The time of the override operation and the actual weight on the platform are recorded on the display.

NOTICE

Override operation is an emergency operation in an emergency state. Before conducting any override operation, please make sure the surrounding area and the whole machine are in a safe state, try to avoid operation in a dangerous direction and ensure personal safety.

CONNECTOR REPOSITIONING

In normal conditions, the connector should always remain perpendicular to the turntable, but due to the leakage of the connector leveling cylinder, the connector may tilt after a long period of use. When operating the machine, please pay attention to the status of the connector. If the connector is tilted, please stop using the machine immediately and reposition the connector to restore the connector to its normal state.

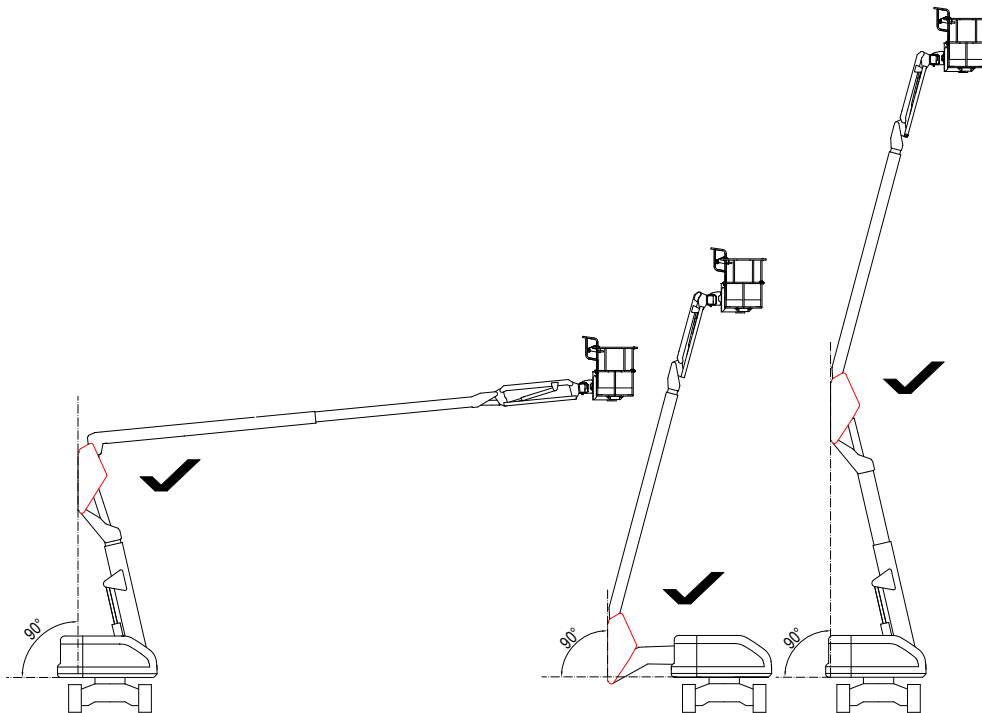


Figure 6-5 Connector perpendicular to the turntable

The connector may be tilted in two directions: backward tilt and forward tilt.

Connector tilted backward

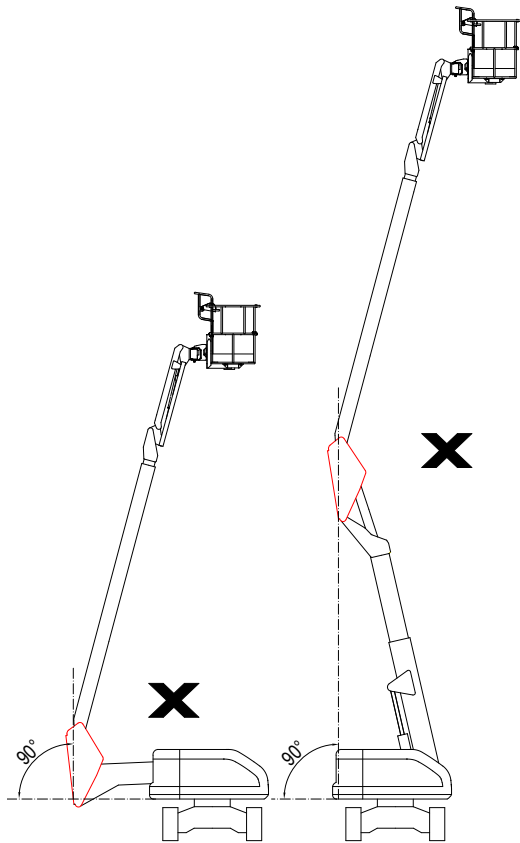


Figure 6-6 Connector tilted backward

Backward tilt is a common tilt condition for the connector. In case of backward tilt, contact Sinoboom or a service technician approved by Sinoboom immediately to reposition the machine.

⚠ WARNING



Tipping hazard

If the connector tilts backward and the platform is raised, extend and lower the main boom until the platform reaches the ground. Do not use the machine until the connector is restored to its normal state.

⚠ WARNING



Collision hazard

Before operating the boom tube, make sure there are no people and obstacles around or below the platform.

Before starting the repositioning operation, stop the machine on solid and flat level ground and make sure that the machine is retracted.

1. Turn the ground/platform control select switch at the ground controller to the ground control position.
2. Pull the red emergency stop button at the ground controller to the ON position.
3. Turn the key switch at the ground controller to the ON position.
4. Start the engine.
5. Raise the main boom slightly by about 0.2m to make sure that the distance between the main boom #1 and the upper surface limit block #2 of the articulated boom is more than 0 ($L > 0$) during the repositioning of the connector.

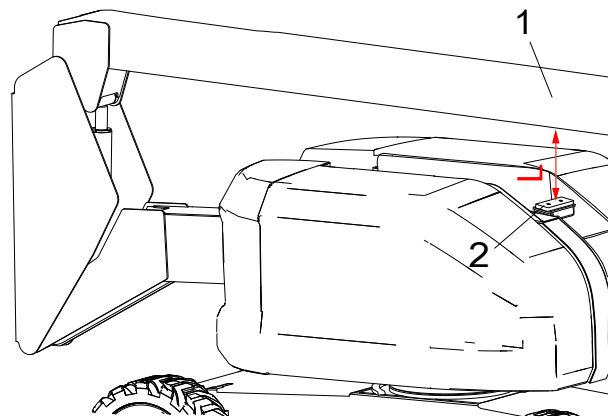


Figure 6-7

6. Pull out the manual release valve knob next to the hydraulic tank and hold it while lowering the articulated boom.

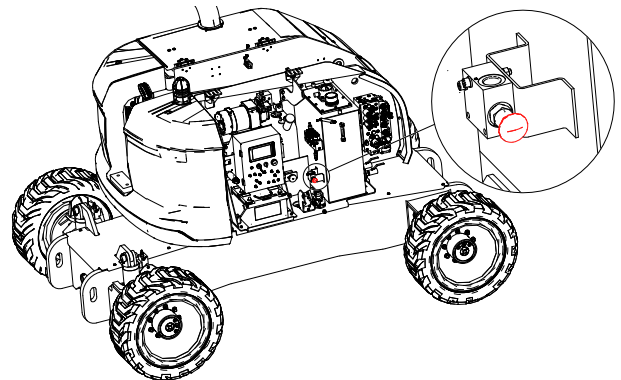


Figure 6-8

7. When the connector becomes perpendicular to the turntable, stop lowering the articulated boom.
8. Close the manual release valve.

 **WARNING**

Unsafe operation hazard



After the connector is repositioned, the manual release valve must be closed in time, otherwise it may lead to serious personal injury or death.

Connector tilted forward

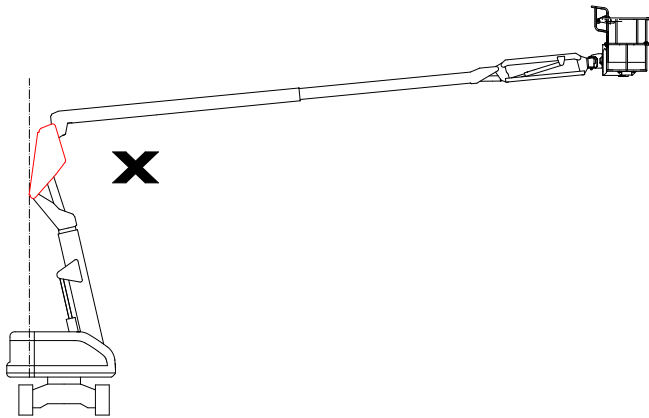


Figure 6-9 Connector tilted forward

 **WARNING**

Tipping hazard



If the connector tilts forward and the platform is raised, retract and lower the main boom until the platform reaches the ground. Do not use the machine until the connector is restored to its normal state.

The connector may be tilted forward in a few cases, and repositioning forward-tilting connector is complicated, which is not described in this manual. In case of forward tilt, contact Sinoboom or a service technician approved by Sinoboom immediately to reposition the machine.

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7 OPERATING THE MACHINE

WARNING



UNSAFE OPERATION HAZARD

Be sure to follow the instructions and safety rules in this manual. Failure to follow the instructions and safety rules in this manual may result in death or serious injury.

Do not operate this machine unless you have learned and practiced the rules for safely operating the machine as stated in this manual.

- Know and understand the safety rules before continuing the next step.
- Avoid dangerous situations.
- Always check the machine before operating.
- Select appropriate machinery and personal protective equipment (- hard hats, safety belt and gloves, etc.) for the task.
- Always perform a pre-operation inspection.
- Always perform a pre-operation function test before using the machine.
- Check the work site.
- Check the safety decals/ nameplate on the machine.
- Only use the machine according to the instructions in this manual and for its intended purpose.

This section provides specific instructions for all the aspects of machine operation. The operator is responsible for following all the safety rules and instructions in this manual.

Use this machine to transport people and tools to the workplace. It is unsafe and dangerous to use this machine for purposes other than what is stated in this manual.

Only trained and authorized personnel may operate the machine. If more than one operator uses the same machine at different times of the same work shift, they must all be qualified operators and follow all the safety rules and instructions in this *Operation Manual*.

Each new operator must perform the pre-operation inspection, pre-operation function test, and workplace checks before using the machine.

STABILITY

The machine stability is based on two conditions: forward stability and backward stability.

WARNING



TIPPING HAZARD

Do not overload the platform or operate the machine on any tilted surface to prevent forward or backward tipping.

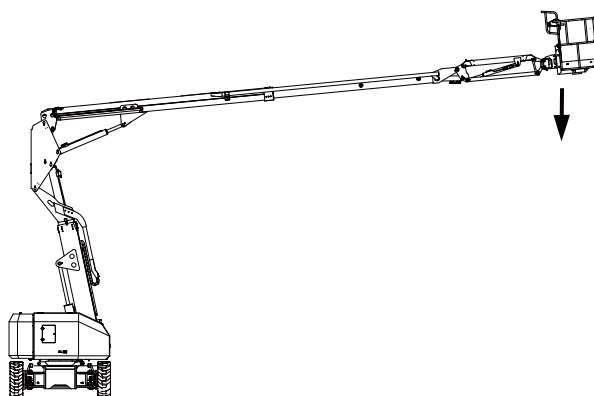


Figure 7-1 Position of least forward stability

1. Turntable rotated to the position as shown in the figure, articulated boom fully raised, and telescopic articulated boom not extended;
2. Main boom kept horizontal;
3. Telescopic boom fully extended;
4. Jib boom kept horizontal;
5. The machine will tip over in the direction as indicated by the arrow if overloaded or operated on a tilted surface beyond the maximum allowable tilt angle.

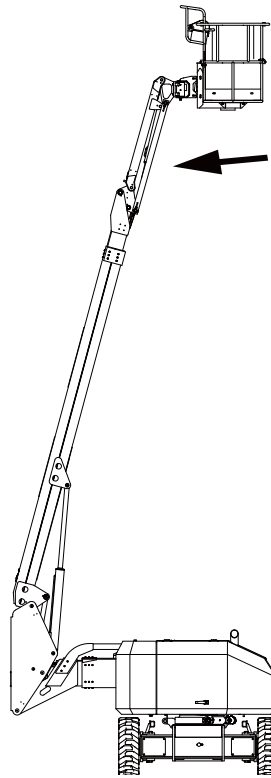


Figure 7-2 Position of least backward stability

1. Turntable rotated to the position as shown in the figure, and articulated boom fully retracted;
2. Main boom raised to the indicated position (boom tube at 75° above the horizontal);
3. Telescopic boom fully retracted;
4. Jib boom fully raised;
5. The machine will tip over in the direction as indicated by the arrow if overloaded or operated on a tilted surface beyond the maximum allowable tilt angle.

EMERGENCY STOP

- Push in the emergency stop button at the platform controller to OFF position, and then all functions controlled by the platform controller will get inoperative.
- Push in the emergency stop button at the ground controller to OFF position, and then all functions controlled by the ground controller and platform controller will get inoperative.
- Open the right turntable cover, push in the main power switch on the right side of the chassis to OFF position, the system power will be disconnected and all functions will get inoperative. The main power switch is located as shown in the below figure.

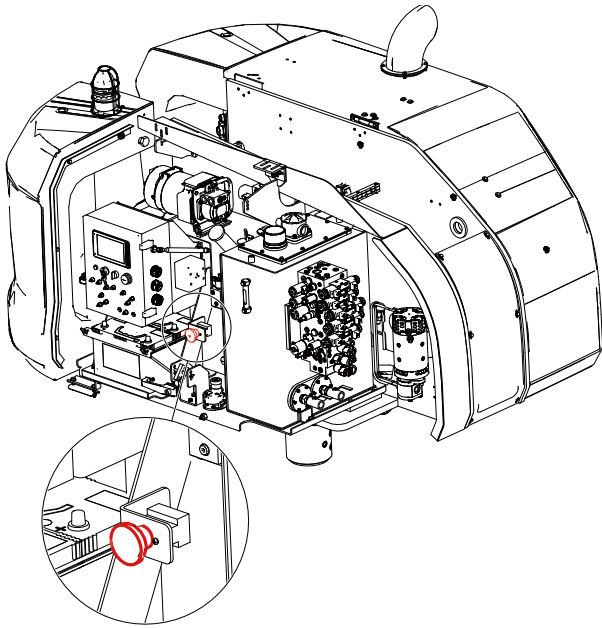


Figure 7-3

EMERGENCY LOWERING

When the engine fails, flip the emergency power switch on the ground or platform controller as appropriate for emergency lowering of the platform.

For the specific operating procedure, please refer to [Testing the Emergency Lowering Function, page 6-13](#).

EMERGENCY OPERATING

When the operator is unable to control the machine:

1. Other personnel should operate the machine from the ground controls only as required by the safety rules.
2. Other qualified personnel on the platform may use the platform controls. Do not continue operation if the controls do not function properly.
3. Cranes, forklift trucks or other equipment can be used to stabilize motion of the machine.

When the platform or boom is caught overhead:

If the platform or boom becomes jammed or snagged in overhead structures or equipment, rescue all people in the platform before freeing the machine.

EMERGENCY TOWING/ DRAGGING

WARNING

UNSAFE OPERATION HAZARD



- Unless in case of emergency situations, machine malfunction, power loss or loading/unloading, it is strictly prohibited to tow or drag the machine.
- When towing/dragging the machine, there should be no person in the platform.
- Before towing/dragging the machine, ensure that the machine is in stowed position with the turntable securely locked and platform free of any tools or objects.
- Do not tow/drag the machine with the engine started or the drive hub engaged.
- The machine must on a level surface or secured before releasing the brake.
- The towing/dragging of the machine must follow the local laws and traffic rules.

1. Choke wheels securely to prevent motion of the machine.
2. Ensure the travel path is free of obstacles and the main power switch is off.
3. Loosen the bolts on each drive hub, then reverse the cover of drive hub.
4. Tighten the bolts, till now the drive hub is disengaged and ready for towing/dragging.

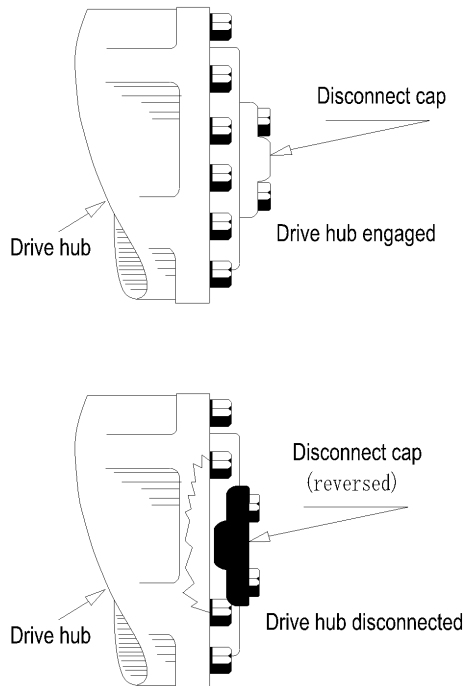


Figure 7-4

5. After moving the machine, position machine on a firm level surface.
6. Choke the wheels securely to prevent motion of the machine.
7. Loosen the bolts on each drive hub, then reverse the cover of drive hub.
8. Tighten the bolts and engage the drive hub.
9. Remove the chokes as necessary.

NOTICE

The allowable towing speed is 3km/h (1.9mph) , the maximum towing distance is 1km (0.6mile)

OPERATION FROM GROUND

WARNING

UNSAFE OPERATION HAZARD



- Unless in emergency situations, do not operate the machine from the ground controller when there is any person in the platform.
- Do not operate the machine if any control handle or switch does not return to OFF position after being released.

WARNING

COLLISION HAZARD



When operating the boom, make sure the area around or under the platform is free of persons or obstacles.

Before operation:

1. Ensure the battery is well connected before operating the machine.
2. Turn the Ground/Platform select switch on the ground controller to Ground.
3. Pull out the red emergency stop button on the ground controller to ON position.
4. Turn the key switch on the ground controller to ON position.
5. Move the engine start switch (not exceeding 15s) on the ground controller to start the engine.

NOTICE

- If the engine fails to get started immediately, do not keep starting the engine for too long; 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 Maintenance Manual.
- Before applying any load, warm up the engine by running it at low speed for 3–5min.

To position platform:

1. Move the enable switch and meanwhile move upwards/downwards the articulated boom up/down switch to raise or lower the articulated boom. Moving upwards the articulated boom up/down

switch, the articulated boom shall extend automatically after rising to the highest; Moving downwards the articulated boom up/down switch, the articulated boom shall descend automatically after retracting in place.

2. Move the enable switch and meanwhile move upwards/downwards the main boom up/down switch to raise or lower the main boom.
3. Move the enable switch and meanwhile move rightwards/leftwards the boom telescope switch to extend or retract the main boom.
4. Move the enable switch and meanwhile move downwards/upwards the turntable rotate switch to rotate the turntable clockwise or anticlockwise.
5. Move the enable switch and meanwhile move upwards/downwards the platform level switch to level up or down the platform.

! WARNING



FALL HAZARD

The platform level switch can only be used for slight leveling of the platform, improper use may cause the load/occupant to shift or fall.

6. Move the enable switch and meanwhile move upwards/downwards the platform rotate switch to rotate the platform clockwise or anticlockwise.
7. Move the enable switch and meanwhile move upwards/downwards the jib up/down switch to raise or lower the jib boom.
8. Move the enable switch and meanwhile move upwards/downwards the jib rotate switch to rotate the jib boom anticlockwise or clockwise.

To drive:

The drive function cannot be enabled from the ground controller.

To steer:

The steer function cannot be enabled from the ground controller.

OPERATION FROM PLATFORM

! WARNING



UNSAFE OPERATION HAZARD

- Unless in emergency situations, do not operate the machine from the ground controller when there is any person on the platform.
- Do not operate the machine if any control handle or switch does not return to OFF position after released.

! WARNING



COLLISION HAZARD

When operating the boom, ensure the area around or under the platform is free of persons or obstacles.

Before operation:

1. Make sure the battery is well-connected before operating the machine.
2. Turn the Ground/Platform select switch on the ground controller to Platform position.
3. Pull out the red emergency stop button on both the ground controller and platform controller to ON position.

To position platform:

1. Depress the foot switch and meanwhile push forward/pull backward the main boom luffing/turntable rotate proportional control handle to raise or lower the main boom.
2. Depress the foot switch and meanwhile push forward/pull backward the main boom telescoping proportional control handle to retract/extend the main boom.
3. Depress the foot switch and meanwhile move upward/downward the articulated boom luffing switch to raise or lower the articulated boom.
4. Depress the foot switch and meanwhile move upward/downward the articulated boom telescoping switch to extend/retract the articulated boom.
5. Depress the foot switch and meanwhile move the main boom luffing/turntable rotate proportional control handle to the left/right to rotate the turntable clockwise or anticlockwise.

6. Depress the foot switch and meanwhile move the platform rotate switch to the left/right to rotate the platform clockwise or anticlockwise.
7. Depress the foot switch and meanwhile move upward/downward the platform level switch to level up/down the platform.

! WARNING



FALL HAZARD

The platform level switch can only be used for slight leveling of the platform. Improper use may cause the load/occupant to shift or fall.

8. Depress the foot switch and meanwhile move the platform rotate switch to the left/right to rotate the platform clockwise or anticlockwise.
9. Depress the foot switch and meanwhile move upward/downward the jib boom up/down switch to raise or lower the jib boom.

To drive:

1. Depress the foot switch and meanwhile push forward/pull backward the steer/drive proportional control handle to drive the machine forward or backward.
2. Speed up: slowly move the handle off center.
3. Speed down: slowly move the handle toward center.
4. Stop: return the handle to center or release the foot switch.

When the boom is in operating position, the drive speed of the machine will be restricted.

To steer:

Depress the foot switch and meanwhile move forward the drive/steer proportional control handle and press the left/right button on top of the handle to steer left/right.

To select drive speed:

The machine in non-operating position can run in two drive speed modes (high/low speed).

1. In the process of driving, push the drive speed select switch upward to switch the drive speed to high speed;
2. In the process of driving, push the drive speed select switch downward to switch the drive speed to low speed.

! WARNING



TIPPING HAZARD

Drive the machine at low speed when the machine is tilted.

The machine in operating position can only travel at operating speed, and pushing the drive speed select switch upward will not switch to the high speed mode.

DRIVING ON A SLOPE

! WARNING



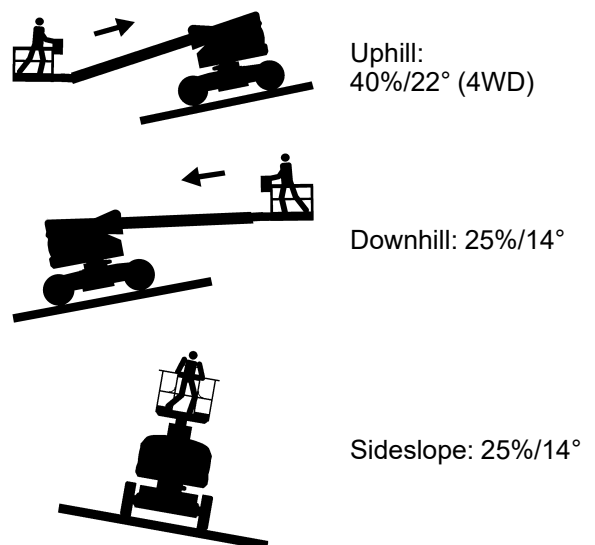
TIPPING HAZARD

- Do not operate the machine on any slope exceeding the maximum slope rating (5°).
- Do not drive the machine across any slope exceeding the maximum side slope rating (14°).
- Do not drive the machine on any slope exceeding the machine gradeability.

Before driving on a slope:

1. Determine the gradeability (climbing ability) of the machine.

Max gradeability:



2. Ensure the machine is in stowed position.

3. Ensure the slope grade is within the machine gradeability.

NOTICE

Gradeability refers to the maximum permissible percentage of the slope (or called slope grade as below) when the machine is on solid ground with sufficient traction and the platform is carrying only one person. As the weight of the machine's platform increases, the machine's gradeability will be reduced.

To determine the slope grade:

1. Prepare a carpenter's level, a straight wooden board (at least 1m [3.3ft] long) and a tape measure.
2. Measure the height (H) and length (L) of the slope.

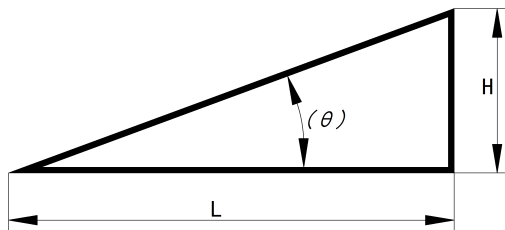


Figure 7-5

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

NOTICE

The machine must not run on the maximum permissible slope grade for over 2min to prevent the tires running suspended.

8 TRANSPORTING AND LIFTING THE MACHINE

WARNING

TRANSPORTATION AND LIFTING HAZARD



- Use a forklift or crane with proper lifting capacity to lift the machine. Use good judgment and planned movement to control the machine.
- The transport vehicle must be parked on level ground.
- The transport vehicle must be secured from rolling when the machine is being loaded.
- Ensure that the vehicle capacity, loading surface, belts or ropes are sufficient to support the weight of the machine. Refer to [1 Performance Parameters, page 1-1](#) for the weight of the machine.
- Before driving the machine onto the transport vehicle, ensure that the slope is within the machine gradeability, refer to [1 Performance Parameters, page 1-1](#) for the gradeability of the machine.
- Before transportation and lifting, check if the rigging anchor point and its attached structure are in good condition.
- Be sure the machine is on a level surface or secured before releasing the brake.
- Never transport people on the machine while the machine is being towed, lifted or dragged.
- The machine should be towed/dragged following the local laws and traffic rules.
- When using a forklift or crane to lift the machine, try to prevent the machine from colliding with nearby objects.
- Lock the wheels of the machine after it has been loaded to prevent the machine from rolling.

NOTICE

Do not tow/drag the machine unless an emergency, failure or loss of power occurs. Refer to [Emergency Towing/Dragging, page 7-4](#).

LIFTING THE MACHINE WITH A CRANE

Follow these requirements when lifting the machine by crane:

1. The boom must be stowed while lifting the machine.

2. Ensure the boom is positioned in the same direction as the travel direction of the chassis.
3. Remove all loose parts from the machine.
4. Determine the center of gravity of the machine: X= 187mm (0.6ft); Y=2560mm (8ft 16in).

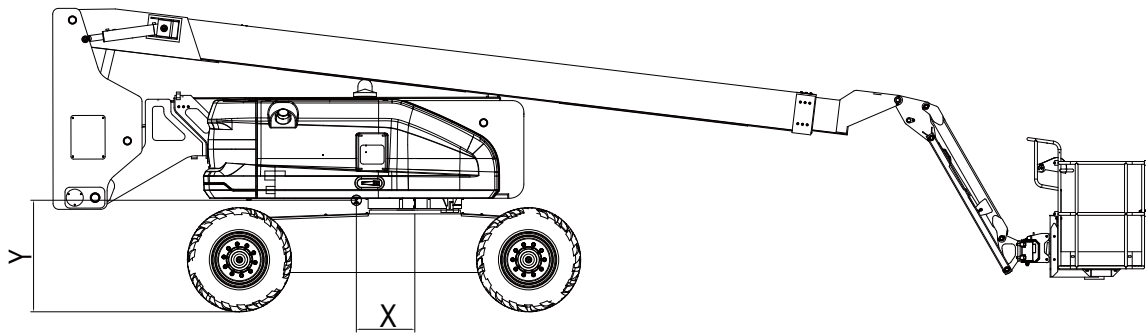


Figure 8-1

5. Lift the machine as shown in the figure below.

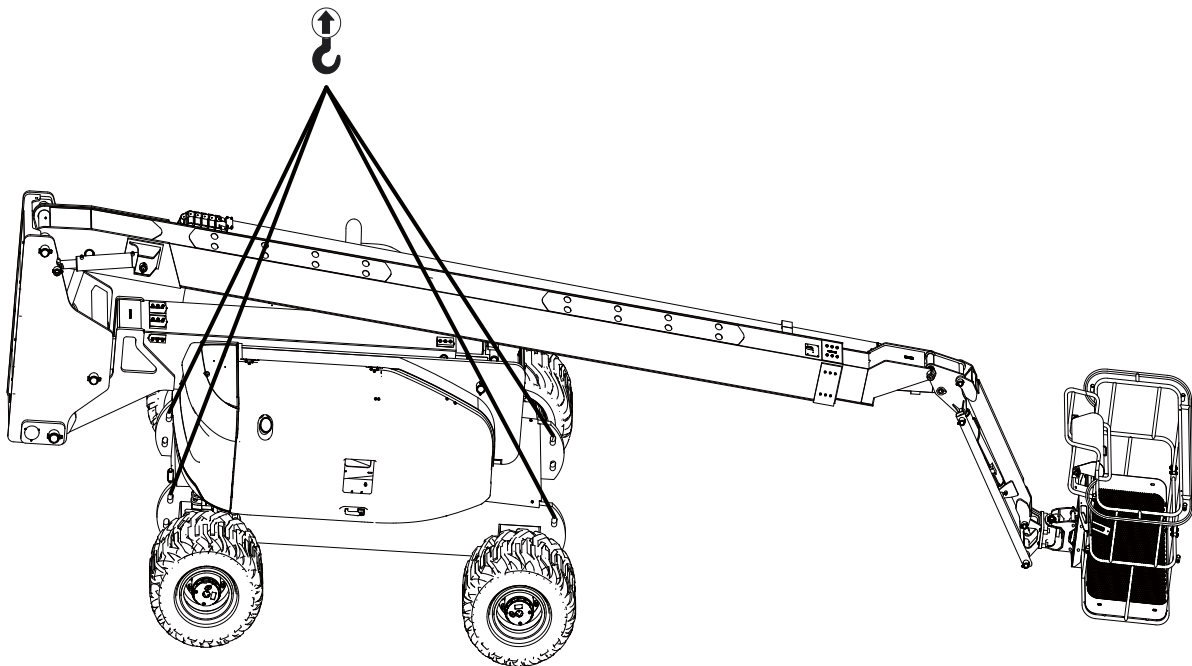


Figure 8-2

6. Connect the rigging to the lifting point specified on the machine. Adjust the rigging to avoid damage to the machine and to keep the machine horizontal.

NOTICE

To protect the machine, choose rigging with appropriate length.

TRANSPORTING THE MACHINE

Follow these requirements when transporting the machine by truck or trailer:

1. Before transporting, turn the key switch on ground controller to OFF, and remove the key.
2. Thoroughly inspect the machine for loose or untightened components and ensure the turntable rotation pin is locked.
3. Ensure the binding ropes or belts are of sufficient strength.
4. Use at least 4 ropes/belts to fasten the chassis and 1 rope/belt for the platform.
5. Adjust the rigging to prevent damage to the ropes/belts.
6. To protect the boom components and platform weighing sensors, do not apply excessive downward force to the rope/belt fastened near the platform. It is recommended to add a foam layer beneath the platform and ensure the platform is suspended.

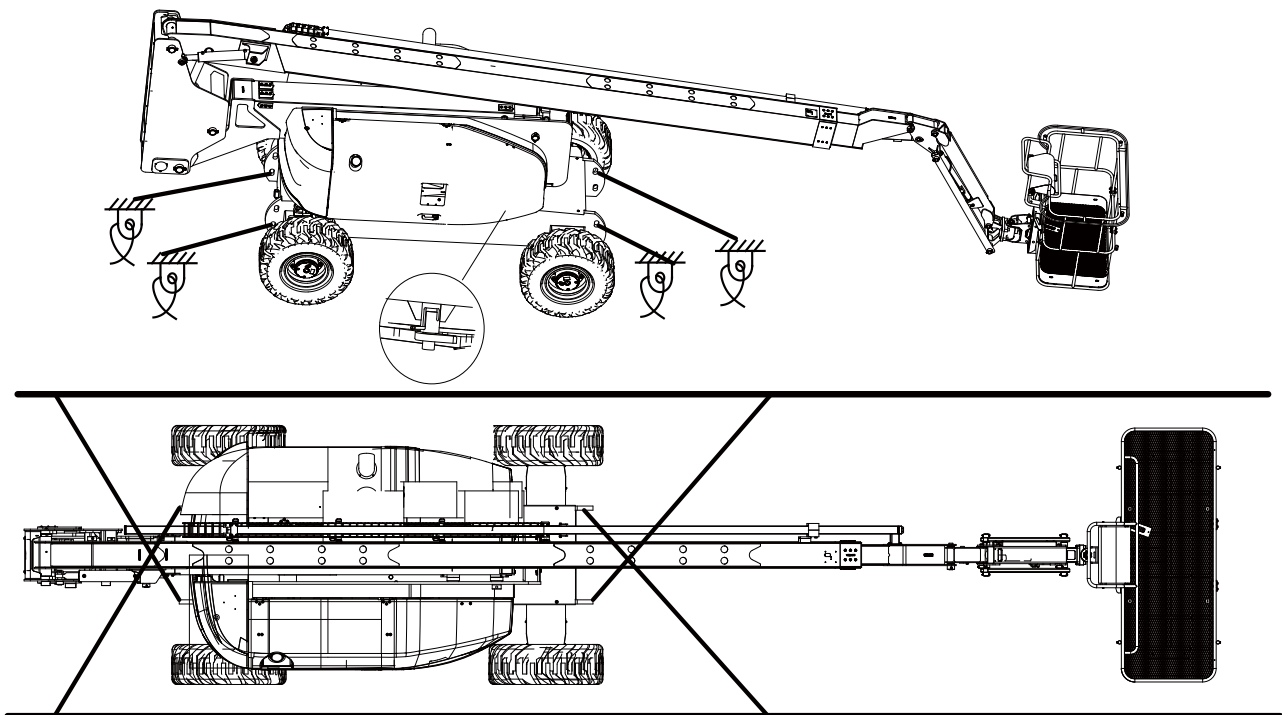


Figure 8-3

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9 MAINTENANCE

This section provides detailed procedures for regular maintenance inspections. For further information about maintenance, please see the **Maintenance Manual**.

**WARNING**

**UNSAFE OPERATION HAZARD**
Failure to follow proper maintenance procedures may result in death, serious injury or damage to the machine.

Follow these general rules:

- Preventive maintenance procedure should be established by the user according to the manufacturer's recommendations, machine operational environment and intensity of use, which should include both the regular inspection and the annual inspection.
- Only professionally trained, qualified personnel can conduct routine maintenance inspections on this machine.
- Daily routine maintenance inspections must be performed during normal operation of the machine. Maintenance inspectors must carry out inspection and maintenance according to the repair & inspection report and must complete the repair & inspection report.
- Regular maintenance inspections must be performed at quarterly, biannual and annual intervals. Qualified, trained personnel must check and maintain the machine according to the repair & inspection report and must complete the repair & inspection report.
- Immediately remove a damaged or malfunctioning machine from service, mark and stop using it.
- Repair any damaged or malfunctioning machine before operating it.
- Keep all machine inspection records for at least 10 years or until the machine is no longer in use or as required by machine owner/company/custodian.
- The inspection and maintenance intervals depend on the manufacturer's recommendations, and should also be appropriate to the operational conditions and environment.
- Conduct a quarterly inspection on machines that have been out of service for more than three months.
- Without the manufacturer's approval, do not change any parts, especially those load-bearing and safety-relevant parts. The replacement parts used in the maintenance should be identical with or equivalent to the original parts.
- Any change that may affect the stability, strength or performance of the machine, must obtain the manufacturer's prior approval.
- After any major change or maintenance that may affect the stability, strength or performance of the entire machine or its parts, the machine must be inspected and verified.
- Unless otherwise specified, the maintenance procedures must be performed according to the following terms and conditions:
 - Park the machine on flat, level and solid ground.
 - Place the machine in non-operating position.
 - Turn the key switch on ground controller to OFF position and remove the key to prevent unauthorized use of the machine.
 - Push in the red emergency stop buttons on ground and platform controllers to OFF position to avoid unintended start-up of the operating system.
 - Turn off the main power switch.
 - Disconnect all DC power from the machine.
 - Lock all wheels to prevent movement of the machine.
 - Before unscrewing or removing the hydraulic components, release the hydraulic oil pressure in the hydraulic circuit, particularly with the counterbalance valve on the cylinder.

CONDUCTING A PRE-DELIVERY INSPECTION

When the machine owner/company changes, in addition to conducting a pre-delivery inspection, the corresponding inspection shall be carried out according to the maintenance schedule requirement and repair & inspection report. When conducting a pre-delivery inspection, comply with the following requirements:

1. It is the responsibility of the machine owner/company to perform a pre-delivery inspection.
2. Follow this procedure each time before delivery. Performing a pre-delivery inspection could reveal

potential problems with the machine before you begin putting the machine into service.

3. Never use a damaged or malfunctioning machine. Tag the machine and do not use it.
4. Only professionally trained, qualified personnel may repair the machine and must follow the procedures as stated in *operation manual* and *maintenance manual*.
5. A competent operator must conduct daily maintenance on this machine as stated in *operation manual* and *maintenance manual*.

Before delivering the machine, complete the following record using these instructions:

1. Prepare the machine before delivery, which includes performing a pre-delivery inspection, following maintenance procedures and performing functional inspections.
2. Use the following table to note the results. After each section is complete, mark the appropriate box.
3. Record the inspection results. If any inspection results are "NO", the machine must be stopped and re-inspected after repair is completed and marked in the box marked "inspection".

Table 9-1

PREPARE THE WORK RECORD BEFORE DELIVERY			
Model			
Serial No.			
Inspection Item	YES/Machine is in Good Condition	NO/Machine Has Damage or Malfunction	REPAIRED/Machine Has Been Repaired
Pre-operational Inspection			
Maintenance Procedure			
Functional Inspection			
Machine Buyer/ Renter			
Inspector Signature			
Inspector Title			
Inspector Company			

FOLLOWING A MAINTENANCE SCHEDULE

Regular maintenance inspections must occur daily, quarterly, biannually (every 6 months) and annually, and must be performed by the personnel qualified in the maintenance and service of the machine models involved. Use the table to help you adhere to a routine maintenance schedule.

Table 9-2

INSPECTION INTERVAL	INSPECTION PROCEDURES
Every day or every 8 hours	A
Every quarter or every 250 hours	A+B

INSPECTION INTERVAL	INSPECTION PROCEDURES
Every half a year or every 500 hours	A+B+C
Every year or every 1000 hours	A+B+C+D

COMPLETING A REPAIR & INSPECTION REPORT

1. The Repair & Inspection Report is divided into four parts (A, B, C and D) according to the time requirements of the maintenance schedule and the maintenance procedure requirements.
2. The Repair & Inspection Report shall include the inspection form of each regular inspection.

3. Duplicate the Repair & Inspection Report template for each inspection. Store the completed forms for 10 years or until the machine is no longer in use or as required by machine owner/company/custodian.
4. Use the following form to record the results. After one item is complete, check the appropriate box.
5. If any inspection item is marked as "NO", the machine must be stopped, and after the repair is completed, the machine shall be re-inspected and the box marked "REPAIRED" shall be checked. Select the appropriate inspection procedure based on the inspection type.

Table 9-3

REPAIR & INSPECTION REPORT				
Model				
Serial No.				
Checklist A Procedures				
Items	YES/Machine is in Good Condition	NO/Machine Has Damage or Malfunction	REPAIRED/ Machine Has Been Repaired	Problem Description
A-1 Inspect All Manuals				
A-2 Inspect All Decals				
A-3 Inspect Damaged, Loose or Lost Parts				
A-4 Inspect Hydraulic Oil Level				
A-5 Inspect Hydraulic Oil Leakage				
A-6 Inspect Fuel Level				
A-7 Inspect Fuel Leakage				
A-8 Inspect Engine Oil Level				
A-9 Inspect Coolant Level (water-cooled engine)				
A-10 Inspect Engine Belt				
A-11 Inspect Fuel Strainer (fuel-water separator)				
A-12 Inspect Cooling Fan				
A-13 Inspect Engine Intake System				
A-14 Functional Tests				
A-15 Perform Maintenance after 30 Days				
A-16 Perform Oscillate Cylinder Exhausting				
A-17 Check Connector Tilting				
Checklist B Procedures				

REPAIR & INSPECTION REPORT				
Items	YES/Machine is in Good Condition	NO/Machine Has Damage or Malfunction	REPAIRED/ Machine Has Been Repaired	Problem Description
B-1 Inspect and Replace Hydraulic Oil Tank Return Filter Element				
B-2 Inspect Rim, Tire and Fasteners				
B-3 Inspect Hydraulic Oil				
B-4 Inspect Cooling System				
B-5 Replace Fuel Strainer Element (fuel-water separator)				
B-6 Inspect Air filter of Hydraulic Tank				
B-7 Replace High-Pressure Filter Element				
B-8 Replace Air Filter Element of Engine				
B-9 Inspect Travel Switch				
B-10 Inspect Engine Exhaust System				
B-11 Inspect Drive Reducer Oil Level				
B-12 Inspect Worm Gear End Gap				
B-13 Inspect Slewing Bearing Bolts				
B-14 Lubricate Slewing Bearing				
B-15 Inspect Platform Rotate Cylinder Fasteners				
B-16 Test Cylinder Drift				
B-17 Inspect Oscillate Cylinder Exhausting and Counterbalance Valve Locking				
B-18 Inspect Electrical Wiring				
B-19 Inspect Battery				
B-20 Test Oscillate Outriggers and Oscillate Multi-way Valve Lever				
B-21 Test Drive Speed				

REPAIR & INSPECTION REPORT				
B-22 Inspect Emergency Lowering				
B-23 Inspect Tilt Protection				
B-24 Test Braking Distance				
Checklist C Procedures				
Items	YES/Machine is in Good Condition	NO/Machine Has Damage or Malfunction	REPAIRED/ Machine Has Been Repaired	Problem Description
C-1 Replace Fuel Filter Element				
C-2 Replace Hydraulic Tank Air Filter				
C-3 Replace Engine Oil				
C-4 Replace Engine Oil Filter				
C-5 Inspect Weighing System				
Checklist D Procedures				
Items	YES/Machine is in Good Condition	NO/Machine Has Damage or Malfunction	REPAIRED/ Machine Has Been Repaired	Problem Description
D-1 Replace Drive Reducer Gear Oil				
D-2 Replace Hydraulic Oil				
D-3 Inspect Boom Wear Pads				
D-4 Replace Hydraulic Tank Suction Filter				
D-5 Replace Coolant and Coolant Hoses (water-cooled engine)				
D-6 Replace Fuel Hoses				
User				
Inspector Signature				
Inspection Date				
Inspector Title				
Inspector Company				

MAJOR MODIFICATION AND REPAIR RECORD

1. A major modification/repair is a modification/repair made to all or part of a machine that affects the stability, strength or performance of the machine.
2. Each time the machine owner/company makes a major modification/repair to the machine, it should be documented using the form below. Keep the form properly until the machine is taken out of service, or as requested by the machine owner/company.
3. Major modifications/repairs to the machine must be performed by a qualified service technician.
4. The machine must be inspected and verified after major modifications/repairs, with the inspection items including but not limited to all items in the maintenance and inspection report.
5. If the inspection result of each item in the Maintenance and Inspection Report is "YES", the "Machine Status after Modification/Repair" in the form will be "Good" and the machine can be used. If either inspection result is "NO", the machine must be re-inspected after the repair is completed until the machine is in "Good" condition before continuing to use the machine.

Table 9-4

Major Modification and Repair Record					
Model					
Serial No.					
Date	Problem Description	Modification/Repair Item	Machine Status after Change	Repairman's Company and Position	Repairman Signature

10

DECALS/NAMEPLATES INSPECTION

Choose appropriate methods to check that all decals are easy to identify and properly placed.

Replace any lost or damaged safety decals.

Clean safety decals with neutral soap and water. Do not use solvent-based cleaners, which can damage safety label materials.

Do not operate any machine with missing decals/ nameplates.



WARNING



UNSAFE OPERATION HAZARD

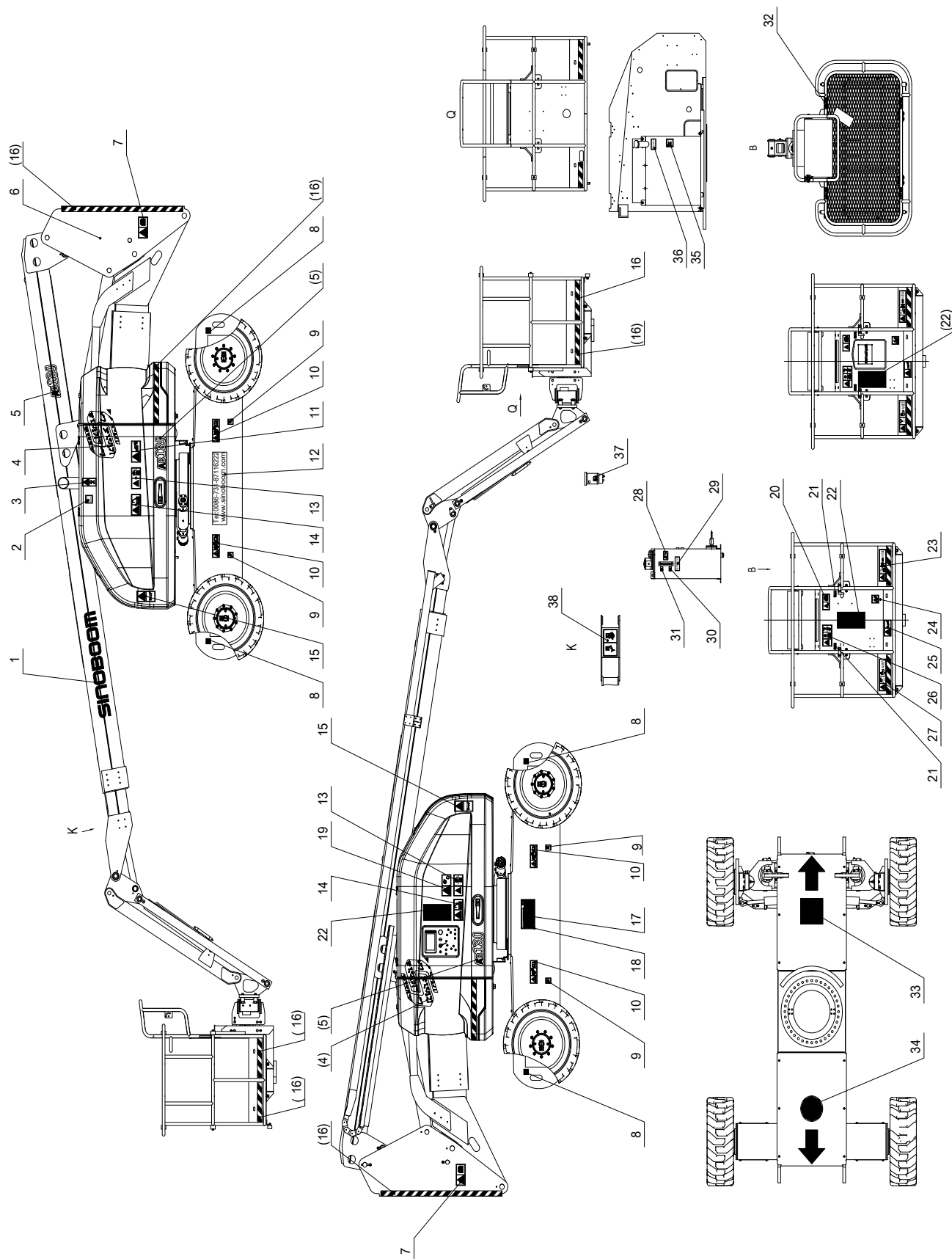
All safety labels must be legible to alert personnel of safety hazards. Replace any illegible or missing labels immediately. Safety labels removed during any repair work must be put back to their original positions before the engine is placed back into service. Do not start an engine if there are missing or badly worn safety labels.

[illegible]

No.	Part No.	Description	Qty.	Remarks
	104022000004	General chart of decals (GB)-GTZZ18J	1	
1	105058103003	LOGO-SINOBOOM (small)	3	
2	104011100008	Decal-Noise 82dB	1	
3	104011100018	Decal-Burn hazard	1	
4	103008103006	LOGO-Symbol (small sticker)	2	
5	104022103003	Decal-AB18J	3	
6	500000060001	General Painting Conditions for Sinoboom Products	1	
7	104011100007	Decal-Tipping hazard	2	
8	104011100002	Decal-Lifting points	4	
9	104025103000	Decal-Max. load of tire to ground 6280kg	4	
10	104011100001	Decal-Tipping hazard	4	
11	104011100005	Decal-Explosion hazard	1	
12	105001100048	Decal-Contact information	1	
13	104011100006	Decal-Bulkhead overhaul	2	
14	104011100013	Decal-Electrocution hazard	2	
15	104011100011	Decal-Crush hazard	1	
16	216060000002	Yellow-black caution stripe	7	
17	105001100057	Nameplate-GB	1	
18	215050000001	Blind rivet	4	
19	104011100014	Decal-Explosion hazard	1	
20	104011100009	Decal-Read manuals	1	
21	101016100030	Decal-Lanyard anchorage point	2	
22	104011100020	Decal-General safety	2	
23	104010100014	Decal-Rated load 250kg	1	
24	104011100017	Decal-Foot switch	1	
25	104011100019	Decal-Crush hazard	1	
26	104011100015	Decal-Tipping hazard	1	
27	103007103002	Decal-Tipping hazard	1	
28	104010100021	Decal-Temperature range	1	
29	104009100022	Decal-Hydraulic oil marking	1	
30	104011100003	Decal-Hydraulic oil level	1	
31	104011100010	Decal-Hydraulic oil level	1	
32	104011100021	Decal-Crush hazard	4	
33	105001100051	Decal-Direction marking	1	
34	105001100053	Decal-Direction marking	1	

No.	Part No.	Description	Qty.	Remarks
35	104011100016	Decal-Emergency stop switch	1	
36	104009100021	Decal-Diesel fuel marking	1	
37	104009100020	Decal-Fuel-water separator	1	
38	104011100012	Decal-Fall hazard	1	
39	Environmental information marking position			

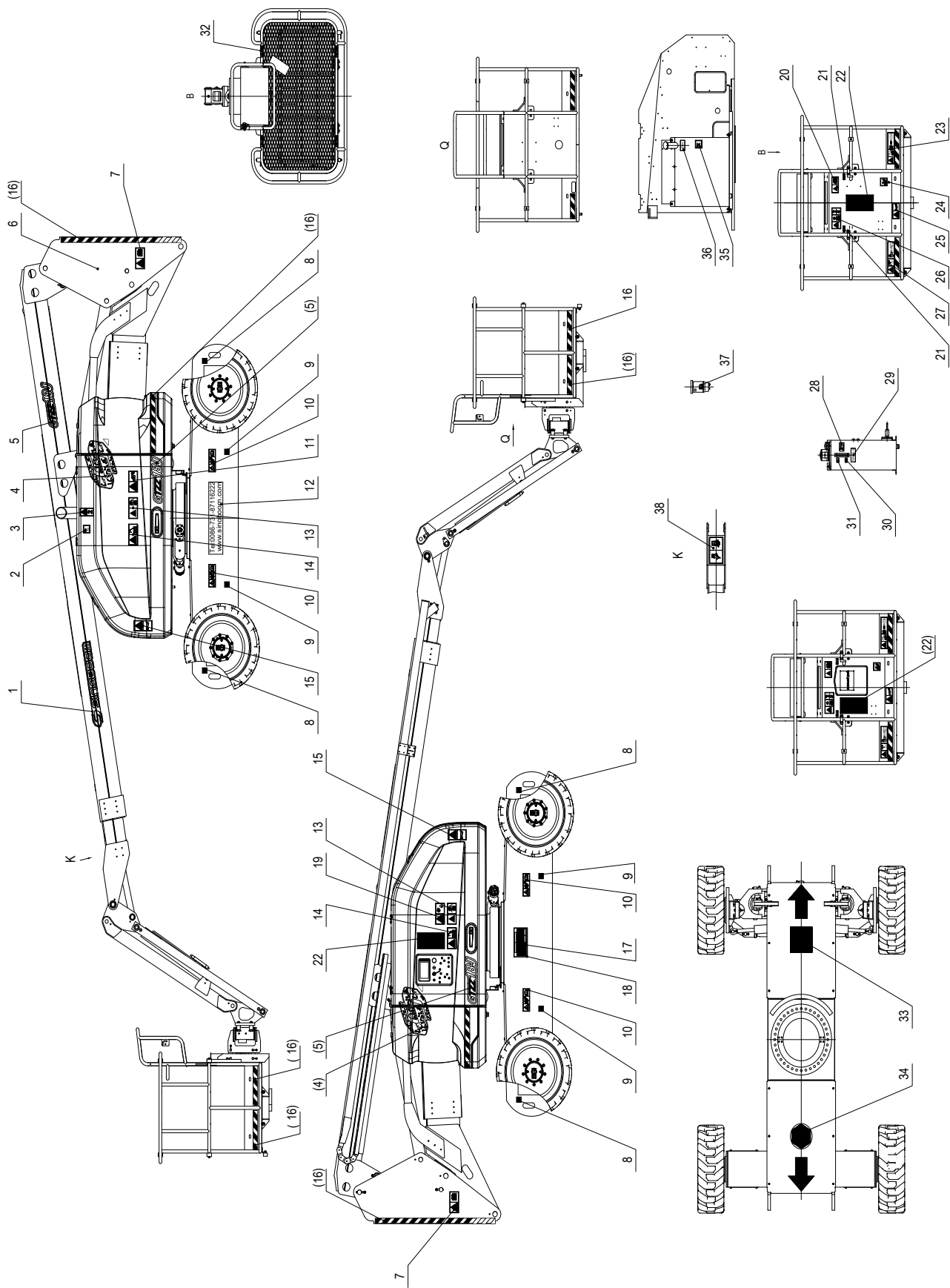
DECALS/NAMEPLATES-CE



No.	Part No.	Description	Qty.	Remarks
	104022000003	General chart of decals (CE)-GTZZ18J	1	
1	105058103003	LOGO-SINOBOOM (small)	3	
2	104011100008	Decal-Noise 82dB	1	
3	104011100018	Decal-Burn hazard	1	
4	103008103006	LOGO-Symbol (small sticker)	2	
5	104022103003	Decal-AB18J	3	
6	500000060001	General Painting Conditions for Sinoboom Products	1	
7	104011100007	Decal-Tipping hazard	2	
8	104011100002	Decal-Lifting points	4	
9	104025103000	Decal-Max. load of tire to ground 6280kg	4	
10	104011100001	Decal-Tipping hazard	4	
11	104011100005	Decal-Explosion hazard	1	
12	105001100050	Decal-Contact information	1	
13	104011100006	Decal-Bulkhead overhaul	2	
14	104011100013	Decal-Electrocution hazard	2	
15	104011100011	Decal-Crush hazard	1	
16	216060000002	Yellow-black caution stripe	7	
17	103011103013	Nameplate-UKCA&CE (AB)	1	
18	215050000001	Blind rivet	4	
19	104011100014	Decal-Explosion hazard	1	
20	104011100009	Read manuals	1	
21	101016100030	Decal-Lanyard anchorage point	2	
22	104011100020	Decal-General safety	2	
23	104010100014	Decal-Rated load 250kg	1	
24	104011100017	Decal-Foot switch	1	
25	104011100019	Decal-Crush hazard	1	
26	104011100015	Decal-Tipping hazard	1	
27	103007103002	Decal-Tipping hazard	1	
28	104010100021	Decal-Temperature range	1	
29	104009100022	Decal-Hydraulic oil marking	1	
30	104011100003	Decal-Hydraulic oil level	1	
31	104011100010	Decal-Hydraulic oil level	1	
32	104011100021	Decal-Crush hazard	4	
33	105001100051	Decal-Direction marking	1	
34	105001100053	Decal-Direction marking	1	

No.	Part No.	Description	Qty.	Remarks
35	104011100016	Decal-Emergency stop switch	1	
36	104009100021	Decal-Diesel fuel marking	1	
37	104009100020	Decal-Fuel-water separator	1	
38	104011100012	Decal-Fall hazard	1	

DECALS/NAMEPLATES-AS

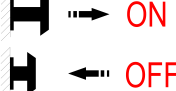
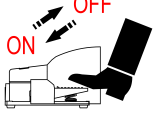
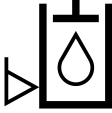
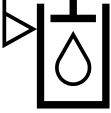
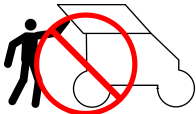
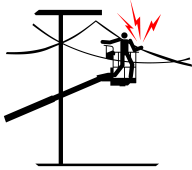
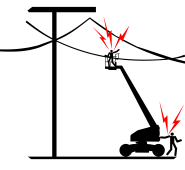
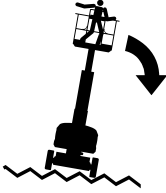
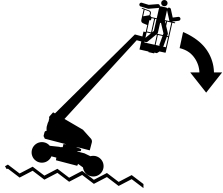
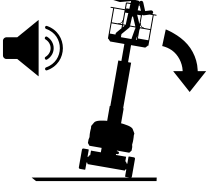
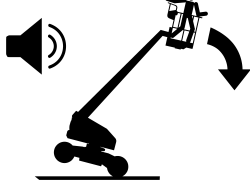
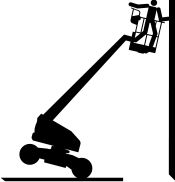
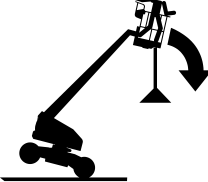


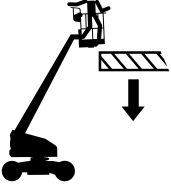
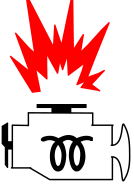
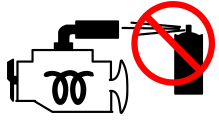
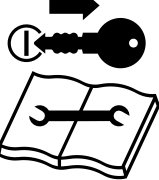
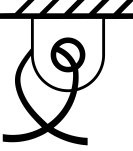
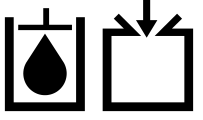
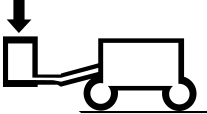
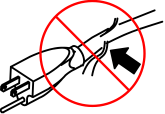
No.	Part No.	Description	Qty.	Remarks
	104022103000	General chart of decals (AS)-GTZZ18J	1	
1	105001100068	Black-and-white logo-Sinoboom (small)	3	
2	104011100008	Decal-Noise 82dB	1	
3	104011100018	Decal-Burn hazard	1	
4	105021100006	Turntable cover logo (small)	2	
5	104011000002	GTZZ18J	3	
6	500000060001	General Painting Conditions for Sinoboom Products	1	
7	104011100007	Decal-Tipping hazard	2	
8	104011100002	Decal-Lifting points	4	
9	104011100004	Marking-Wheel load	4	
10	104011100001	Marking-Replace with tires of same spec	4	
11	104011100005	Marking-Engine safety	1	
12	105001100050	Contact information (English)	1	
13	104011100006	Decal-Bulkhead overhaul	2	
14	104011100013	Decal-Electrocution hazard	2	
15	104011100011	Decal-Crush hazard	1	
16	216060000002	Yellow-black caution stripe	7	
17	105018100005	AS Nameplate	1	
18	215050000001	Blind rivet	4	
19	104011100014	Decal-Explosion hazard	1	
20	104011100009	Read manuals	1	
21	101016100030	Decal-Lanyard anchorage point	2	
22	104011100020	Decal-General safety	2	
23	104010100014	Decal-Rated load 250kg	1	
24	104011100017	Decal-Foot switch	1	
25	104011100019	Decal-Crush hazard	1	
26	104011100015	Decal-Tipping hazard	1	
27	103007103002	Decal-Tipping hazard	1	
28	104010100021	Decal-Temperature range	1	
29	104009100022	Hydraulic oil (English) marking	1	
30	104011100003	Decal-Hydraulic oil level	1	
31	104011100010	Decal-Hydraulic oil level	1	
32	104011100021	Decal-Crush hazard	4	
33	105001100051	Decal-Direction marking	1	
34	105001100053	Decal-Direction marking	1	

No.	Part No.	Description	Qty.	Remarks
35	104011100016	Decal-Emergency stop switch	1	
36	104009100021	Decal-Diesel fuel marking	1	
37	104009100020	Decal-Fuel-water separator	1	
38	104011100012	Decal-Fall hazard	1	

APPENDIX 1: SYMBOLS AND DESCRIPTION

SYMBOLS CHART

				
Read maintenance manual	Anchor point allows only 1 person to tie	Wind speed	Chemical burns hazards	Wedge the wheel
				
Read operation manual	Add lubricant	Crushing hazard-Please wear work shoes	Danger of hot, high pressure fluids	Wind
				
Noise level	Burns hazards	Keep a safe distance from high temperatures	Pull out-open Press-close	Alarm sounds
				
Step-open Release-close	Hydraulic oil level - low level	Hydraulic oil level - high level	Temperature	Replace with tires of the same specification
				
Only trained maintenance personnel can access the bulkhead	Electrocution hazards on platform	Electrocution hazards on the ground and platform	Tip-over hazards-Avoid uneven ground	Tip-over hazards-Avoid uneven ground
				
Tip-over hazards- Never use machine during strong, gusty wind	Tip-over hazards- Never use machine during strong, gusty wind	Tip-over hazards- Never push or pull objects outside platform	Tip-over hazards- Never suspend objects from platform	Tip-over hazards- Never place ladders and scaffolding on the platform

 Collision hazards- Never lower platform without checking for nearby obstacles	 Collision hazards- Never raise platform without checking for overhead obstacles	 Crushing hazards- Keep hands away from nearby obstacles when raising platform	 Fall hazards-Never climb on guardrails of platform	 Fall hazards-Never climb on boom
 Keep away from platform in rotation	 Engine preheat explosion hazard	 No ether or other start additives to machine with glow plug	 Fuel explosion hazard	 Wear protective clothing and glasses
 Only professional maintenance personnel can start the maintenance	 Side force	 Electrocution hazards	 Battery explosion hazard	 No smoking
 No smoking	 Lifting point	 Lashing points	 Tire to ground load	 Hydraulic oil filler
 Platform carrying capacity	 Do not use damaged cords	 Tool or weight	 Fast/high speed	 Slow/low speed
 Horn				

APPENDIX 2: PREPARE THE WORK RECORD BEFORE DELIVERY

PREPARE THE WORK RECORD BEFORE DELIVERY			
Model			
Serial No.			
Inspection Item	YES/Machine is in Good Condition	NO/Machine Has Damage or Malfunction	REPAIRED/Machine Has Been Repaired
Pre-operational Inspection			
Maintenance Procedure			
Functional Inspection			
Machine Buyer/ Renter			
Inspector Signature			
Inspector Title			
Inspector Company			
NOTE: 1. Prepare the machine before delivery, which includes performing a pre-delivery inspection, following maintenance procedures and performing functional inspections. 2. Use the table to record the results. After each section is complete, mark the appropriate box. 3. Record the inspection results. If any inspection result is "NO", the machine must be stopped, and then re-inspected after repair is completed, and the box marked "REPAIRED" shall be checked.			

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APPENDIX 3: REPAIR & INSPECTION REPORT

REPAIR & INSPECTION REPORT				
Model				
Serial No.				
Checklist A Procedures				
Items	YES/Machine is in Good Condition	NO/Machine Has Damage or Malfunction	REPAIRED/Machine Has Been Repaired	Problem Description
A-1 Inspect All Manuals				
A-2 Inspect All Decals				
A-3 Inspect Damaged, Loose or Lost Parts				
A-4 Inspect Hydraulic Oil Level				
A-5 Inspect Hydraulic Oil Leakage				
A-6 Inspect Fuel Level				
A-7 Inspect Fuel Leakage				
A-8 Inspect Engine Oil Level				
A-9 Inspect Coolant Level (water-cooled engine)				
A-10 Inspect Engine Belt				
A-11 Inspect Fuel Strainer (fuel-water separator)				
A-12 Inspect Cooling Fan				
A-13 Inspect Engine Intake System				
A-14 Functional Tests				
A-15 Perform Maintenance after 30 Days				
A-16 Perform Oscillate Cylinder Exhausting				
A-17 Check Connector Tilting				
Checklist B Procedures				

REPAIR & INSPECTION REPORT				
Items	YES/Machine is in Good Condition	NO/Machine Has Damage or Malfunction	REPAIRED/ Machine Has Been Repaired	Problem Description
B-1 Inspect and Replace Hydraulic Oil Tank Return Filter Element				
B-2 Inspect Rim, Tire and Fasteners				
B-3 Inspect Hydraulic Oil				
B-4 Inspect Cooling System				
B-5 Replace Fuel Strainer Element (fuel-water separator)				
B-6 Inspect Air filter of Hydraulic Tank				
B-7 Replace High-Pressure Filter Element				
B-8 Replace Air Filter Element of Engine				
B-9 Inspect Travel Switch				
B-10 Inspect Engine Exhaust System				
B-11 Inspect Drive Reducer Oil Level				
B-12 Inspect Worm Gear End Gap				
B-13 Inspect Slewing Bearing Bolts				
B-14 Lubricate Slewing Bearing				
B-15 Inspect Platform Rotate Cylinder Fasteners				
B-16 Test Cylinder Drift				
B-17 Inspect Oscillate Cylinder Exhausting and Counterbalance Valve Locking				
B-18 Inspect Electrical Wiring				
B-19 Inspect Battery				
B-20 Test Oscillate Outriggers and Oscillate Multi-way Valve Lever				
B-21 Test Drive Speed				

REPAIR & INSPECTION REPORT				
B-22 Inspect Emergency Lowering				
B-23 Inspect Tilt Protection				
B-24 Test Braking Distance				
Checklist C Procedures				
Items	YES/Machine is in Good Condition	NO/Machine Has Damage or Malfunction	REPAIRED/ Machine Has Been Repaired	Problem Description
C-1 Replace Fuel Filter Element				
C-2 Replace Hydraulic Tank Air Filter				
C-3 Replace Engine Oil				
C-4 Replace Engine Oil Filter				
C-5 Inspect Weighing System				
Checklist D Procedures				
Items	YES/Machine is in Good Condition	NO/Machine Has Damage or Malfunction	REPAIRED/ Machine Has Been Repaired	Problem Description
D-1 Replace Drive Reducer Gear Oil				
D-2 Replace Hydraulic Oil				
D-3 Inspect Boom Wear Pads				
D-4 Replace Hydraulic Tank Suction Filter				
D-5 Replace Coolant and Coolant Hoses (water-cooled engine)				
D-6 Replace Fuel Hoses				
User				
Inspector Signature				
Inspection Date				
Inspector Title				

REPAIR & INSPECTION REPORT

Inspector Company

Note:

1. The Repair & Inspection Report shall include the inspection form of each regular inspection.
2. Duplicate the Repair & Inspection Report template for each inspection. Store the completed forms for 10 years or until the machine is no longer in use or as required by machine owner/company/custodian.
3. Use the following form to record the results. After one item is complete, check the appropriate box.
4. If any inspection item is marked as "NO", the machine must be stopped, and after the repair is completed, the machine shall be re-inspected and the box marked "REPAIRED" shall be checked.

Select the appropriate inspection procedure based on the inspection type.

APPENDIX 4: MAJOR MODIFICATION AND REPAIR RECORD

Major Modification and Repair Record					
Model					
Serial No.					
Date	Problem Description	Modification/Repair Item	Machine Status after Change	Repairman's Company and Position	Repairman Signature

Note:

1. A major modification/repair is a modification/repair made to all or part of a machine that affects the stability, strength or performance of the machine.
2. Use this form to record major modifications/repairs made to the machine. Keep the form properly until the machine is taken out of service, or as requested by the machine owner/company.
3. The machine must be inspected and verified after major modifications/repairs, with the inspection items including but not limited to all items in the maintenance and inspection report.
4. If the inspection result of each item in the Maintenance and Inspection Report is "YES", the "Machine Status after Modification/Repair" in the form will be "Good" and the machine can be used. If either inspection result is "NO", the machine must be re-inspected after the repair is completed until the machine is in "Good" condition before continuing to use the machine.

Always for Better Access Solutions



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