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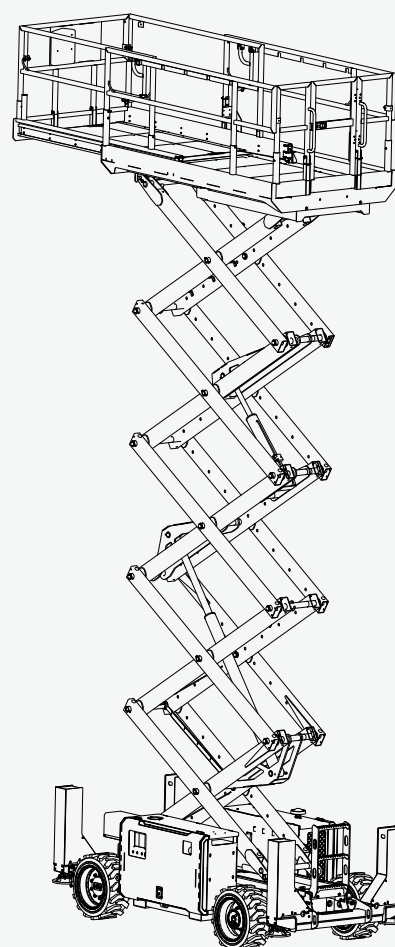
Rev: A

Jul. 2021

Operation Manual

1018RD/3369RD

1218RD/4069RD



CE EAC **ANSI** 

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 :

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A	Jul. 2021	Original issue	

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APPLICATION

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/Nameplate Inspection](#) for details.)

Models	Trade Identification		Serial Numbers
	Metric	Imperial	
1018RD	1018RD	3369RD	0200300150 to present
1218RD	1218RD	4069RD	0200400200 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 type of trade identification is applicable to machines for countries/regions using metric system or as specially required by customers; The imperial type of 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 MACHINE SPECIFICATIONS

Table 1-1 1018RD specifications

MEASURE	1018RD (METRIC)	3369RD (IMPERIAL)
DIMENSION		
Max. platform height	10 m	32ft 9.7in
Max. working height	12 m	39ft 4.4in
Max. horizontal reach	1.5 m	4ft 11.1in
Overall length (stowed, with/without outriggers)	3.8 m/3.19 m	12ft 5.6in/10ft 5.6in
Overall width (stowed)	1.78 m	5ft 10in
Overall height (stowed, with rails folded)	1.94 m	6ft 4.4in
Overall height (stowed, with rails unfolded)	2.56 m	8ft 4.8in
Wheelbase	2.28 m	7ft 5.8in
Wheel span	1.44 m	4ft 8.6in
Ground clearance	0.22 m	8.66in
Tire size (spec/type)	26×12-16.5/solid	
Platform dimension (L × W × H)	2.8 m × 1.6 m × 1.1 m	9ft 2.2in × 5ft 3in × 3ft 7.3in
PERFORMANCE		
Rated platform capacity	450 kg	992 lb
Max. capacity of extension platform	140 kg	309 lb
Max. platform occupancy (indoor/ outdoor)	4P/2P	
Drive speed (stowed)	0 ~ 5.6 km/h	0 ~ 3.5 mph
Drive speed (raised)	0 ~ 0.48 km/h	0 ~ 0.3 mph
Up time (no-load)	42 s ~ 52 s	
Down time (no-load)	40 s ~ 50 s	
Gradeability	35% (19°)	
Max. allowable inclination (front-to-back)	3°	
Max. allowable inclination (side-to-side, outrigger retracted/extended)	2°/0.8°	
Max. outrigger leveling angle (front-to-back)	5.3° (front)/4.2° (back)	

Table 1-1 1018RD specifications (continued)

MEASURE	1018RD (METRIC)	3369RD (IMPERIAL)
Max. outrigger leveling angle (side-to-side)	11.7°	
Turning radius (inside)	2.11 m	6ft 11.1in
Turning radius (outside)	4.6 m	15ft 1.1in
Max. allowable side force (indoor/outdoor)	400 N	90 lbf
Max. operating noise	82 dB	
POWER		
Drive mode (drive×steer)	4WD×2WS	
Engine specs (rated power, rpm)	18.5 kW, 3000 rpm (Kubota D1105-E4B-EU-X1)	
Fuel tank capacity-diesel	48 L	10.6 gal (UK)/12.7 gal (US)
Hydraulic tank capacity	72 L	15.8 gal (UK)/19 gal (US)
Hydraulic system pressure	21 MPa	3046 psi
Battery specs (voltage, capacity, rate of discharge)	12 V, 60 Ah, 5 hr	
System voltage	12 VDC	
Control voltage	12 VDC	
GROUND BEARING DATA		
Max. tire load	2400 kg	5291 lb
Tire contact pressure	630 kPa	91 psi
Max. outrigger load	2300 kg	5071 lb
Outrigger contact pressure	460 kPa	67 psi
ENVIRONMENT		
Max. allowable wind speed (indoor/outdoor)	0m/s/12.5m/s	0 mph/28 mph
Max. allowable altitude	1000m	3280.8ft
Allowable ambient temperature (lead-acid batteries)	-10°C ~ 40°C	14°F ~ 104°F
Allowable ambient temperature (-lithium batteries)	-20°C ~ 40°C	-4°F ~ 104°F
Max. allowable RH	90%	
Storage conditions	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 (with/without outriggers)	4110 kg/3650 kg	9061 lb/8046 lb

Table 1-2 1218RD specifications

MEASURE	1218RD (METRIC)	4069RD (IMPERIAL)
DIMENSION		
Max. platform height	12.2 m	40ft 0.3in
Max. working height	14.2 m	46ft 7.1in
Max. horizontal reach	1.5 m	4ft 11.1in
Overall length (stowed, with/without outriggers)	3.8 m/3.19 m	12ft 5.6in/10ft 5.6in
Overall width (stowed)	1.78 m	5ft 10in
Overall height (stowed, with rails folded)	2.1 m	6ft 10.7in
Overall height (stowed, with rails unfolded)	2.73 m	8ft 11.5in
Wheelbase	2.28 m	7ft 5.8in
Wheel span	1.44 m	4ft 8.6in
Ground clearance	0.22 m	8.66in
Tire size (spec/type)	26×12-16.5/solid	
Platform dimension (L × W × H)	2.8 m× 1.6 m× 1.1 m	9ft 2.2in×5ft 3in×3ft 7.3in
PERFORMANCE		
Rated platform capacity	365 kg	805 lb
Max. capacity of extension platform	140 kg	309 lb
Max. platform occupancy (indoor/outdoor)	3P/2P	
Drive speed (stowed)	0 ~ 5.6 km/h	0 ~ 3.5 mph
Drive speed (raised)	0 ~ 0.48 km/h	0 ~ 0.3 mph
Up time (no-load)	55 s ~ 65 s	
Down time (no-load)	50 s ~ 60 s	
Gradeability	35% (19°)	
Max. allowable inclination (front-to-back)	3°	
Max. allowable inclination (side-to-side, outrigger retracted/extended)	2°/0.8°	
Max. outrigger leveling angle (front-to-back)	5.3° (front)/4.2° (back)	
Max. outrigger leveling angle (side-to-side)	11.7°	
Turning radius (inside)	2.11 m	6ft 11.1in
Turning radius (outside)	4.6 m	15ft 1.1in

Table 1-2 1218RD specifications (continued)

MEASURE	1218RD (METRIC)	4069RD (IMPERIAL)
Max. allowable side force (indoor/ outdoor)	400 N	90 lbf
Max. operating noise	82 dB	
POWER		
Drive mode (drive×steer)	4WD×2WS	
Engine specs (rated power, rpm)	18.5 kW, 3000 rpm (Kubota D1105-E4B-EU-X1)	
Fuel tank capacity-diesel	48 L	10.6 gal (UK)/12.7 gal (US)
Hydraulic tank capacity	72 L	15.8 gal (UK)/19 gal (US)
Hydraulic system pressure	21 MPa	3046 psi
Battery specs (voltage, capacity, rate of discharge)	12 V, 60 Ah, 5 hr	
System voltage	12 VDC	
Control voltage	12 VDC	
GROUND BEARING DATA		
Max. tire load	2400 kg	5291 lb
Tire contact pressure	630 kPa	91 psi
Max. outrigger load	2300 kg	5071 lb
Outrigger contact pressure	460 kPa	67 psi
ENVIRONMENT		
Max. allowable wind speed (indoor/ outdoor)	0m/s/12.5m/s	0 mph/28 mph
Max. allowable altitude	1000m	3280.8ft
Allowable ambient temperature (lead-acid batteries)	-10°C ~ 40°C	14°F ~ 104°F
Allowable ambient temperature (- lithium batteries)	-20°C ~ 40°C	-4°F ~ 104°F
Max. allowable RH	90%	
Storage conditions	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		

Table 1-2 1218RD specifications (continued)

MEASURE	1218RD (METRIC)	4069RD (IMPERIAL)
Gross weight (with/without outriggers)	5180kg/4720kg	11420 lb/10406 lb

Note:

- a) The platform height plus the operator height (taken as 2m/6ft 7in) is the working height.
- b) In different areas, hydraulic oil, engine oil, coolant, fuel and lubrication should be added in accordance with the environmental temperature.
- c) In cold weather, auxiliary devices are needed to start the machine.
- d) The ground bearing data is approximate, not considering different options and only applicable when it is safe enough.
- 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.
- g) The hydraulic tank capacity is the maximum volume in the hydraulic tank.

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2 MACHINE COMPONENTS

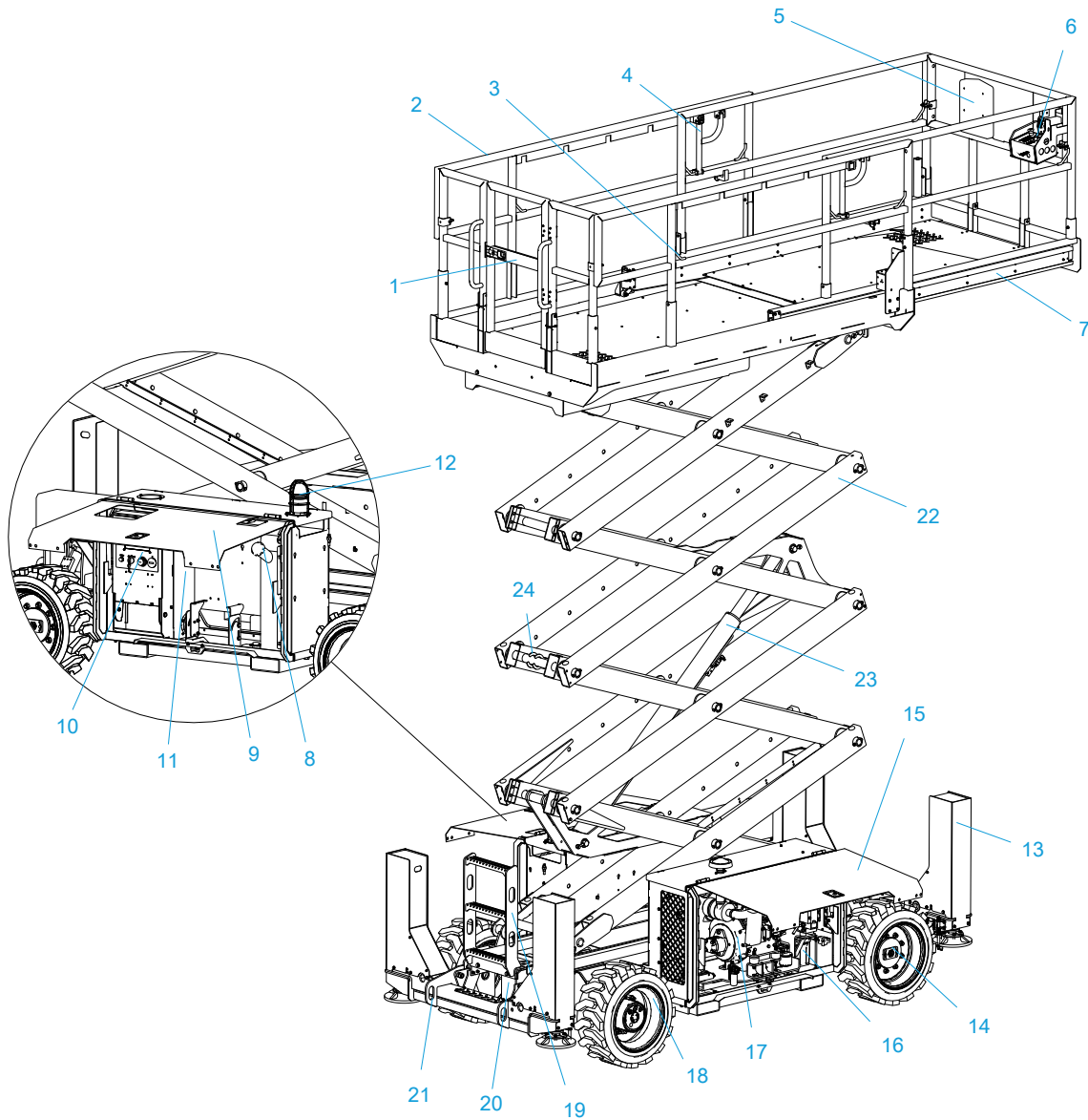


Figure 2-1

Table 2-1

1. Platform entry gate	9. Chassis door, left	17. Engine
2. Platform rail	10. Ground controls with LCD display	18. Non-steer wheel
3. Lanyard anchorage point	11. Hydraulic tank	19. Entry ladder
4. Platform extension locking handle	12. Flash beacon	20. Chassis

Table 2-1 (continued)

5. Manual storage container	13. Outrigger	21. Transport tiedown point
6. Platform controls	14. Steer wheel	22. Scissor assembly
7. Extension deck	15. Chassis door, right	23. Lift cylinder
8. Fuel tank	16. Battery	24. Safety arm

Machine positions

Operating/raised position:

The machine comes in operating/raised position when the platform is raised until the down limit switch disengages.

Platform heights at which the down limit switch disengages (height from ground to platform floor):

1018RD: 2.7 ~ 3.3m (8.9ft ~ 10.8ft)

1218RD: 2.7 ~ 3.3m (8.9ft ~ 10.8ft)

Stowed position:

The machine comes in stowed position when fully retracted.

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 machine of Hunan Sinoboom Intelligent Equipment Co., Ltd., notify Hunan Sinoboom Intelligent Equipment Co., Ltd. immediately, even if no personal injury or property damage occurs in 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 machine 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. Make sure to test it 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 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 HAZARDS AND RATED LOAD

Max platform capacity (rated load):

Table 3-2

1018RD	
Platform retracted	450 kg(992 lb)
Platform extended - extension deck only	140 kg(309 lb)
1218RD	
Platform retracted	365 kg(805 lb)
Platform extended - extension deck only	140 kg(309 lb)

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 HAZARDS


- Personnel, equipment and materials on the platform must not exceed the maximum platform capacity.
- Only raise or extend the platform when the machine is on solid, level ground.
- 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:
 - Be very careful to lower the platform. Transfer the machine to solid, level ground. Do not change the level or limit switch.
- Do not drive faster than 0.48 km/h (0.3 mph) 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 during strong winds or gusts, 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 is on rough ground, with gravel or other uneven surfaces, or near holes and steep slopes, use caution and reduce the speed.
- Do not push and pull objects outside of the platform. The maximum side force allowed is 400 N(90 lbf).
- Do not change any machine parts that may affect safety and stability.
- Do not replace key parts that affect machine stability with different weights or specifications.
- Do not modify or change moving aerial platforms without the manufacturer's prior written permission.

⚠ WARNING






TIPPING HAZARDS

- 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 place on, or fasten to, any overhanging load to any part of this machine.
- Do not place ladders or scaffolding on the platform or any parts of the machine.
- Do not use 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 a platform to propel machines or other objects.
- Do not let the platform touch nearby objects.
- Do not tie off the platform with rope or other binding materials to nearby objects.
- Do not put a load outside the platform.
- Do not operate the machine when the chassis doors are open.
- 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 a ground controller, you must operate it only after all personnel 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 platform only when the machine is on firm, flat ground.
- Do not use the tilt alarm as a horizontal indicator. The tilt alarm on the platform will sound only when the machine is heavily tilted.
- If the tilt alarm sounds while lifting the platform, be very careful when lowering the platform. Do not change the level or limit switch.
- Drive speed should not exceed 0.48 km/h (0.3 mph) when the platform rises.
- If the machine can be used outdoors, never operate it during strong winds or gusts. Do not lift the platform when the wind speed exceeds 12.5 m/s (18 mph). If the wind speed exceeds 12.5 m/s (18 mph) after the platform is lifted, fold the platform and do not continue to operate the machine.

 **WARNING**

UNSAFE JOBSITE HAZARDS

- Do not use any device that may increase the wind load on the machine.
- Never travel on uneven terrain or unstable surfaces or in other dangerous conditions when raising the platform.
- When the machine retracts, be careful and slow down when the machine is moving on uneven terrain, crushed stone, unstable or smooth surfaces, steep slopes and near cave entrances.
- Do not drive or lift the machine on slopes, steps or vaulted surfaces that exceed the maximum climbing capacity of the machine.

Before or during machine operation, check the jobsite for potential hazards and beware of the environmental limitations, including potentially flammable and explosive gas/dust. If the machine is to be used in any other applications, or by any other means, other than those specified by **Sinoboom**, it must be approved or guided by the manufacturer.

Table 3-3

BEAUFORT NUMBER	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.

BEAUFORT NUMBER	METERS/ SECOND	MILE/ HOUR	DESCRIPTION	GROUND CONDITION
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.

Gradeability:

1018RD: 35% (19°)

1218RD: 35% (19°)

Gradeability means the maximum allowable tilt angle of the machine when it is on solid ground and the platform is only capable of carrying one person. As the weight of the machine's platform increases, the machine's climbing capacity reduces.

UNSAFE OPERATION HAZARDS

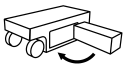
At a minimum, operators must operate and maintain the machine as stated in the *Operation Manual* and the *Maintenance Manual* in addition to following more stringent industry regulations and workplace rules. Never engage in unsafe machine operation.

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 functions).
- Use on the truck, trailer, tracked vehicle, ship, scaffold and the like without written consent by the manufacturer or a qualified professional.
- Improper securing of the machine to another object by just sitting it against, fastening or binding.
- Stunt or imprudent use of the machine.
- Overloaded or overmoment situation.
- Other situations as specified in the Manuals.

⚠ WARNING

UNSAFE OPERATION HAZARDS



- Do not push any object outside the platform. The maximum side force allowed is 400 N(90 lbf).
- Do not change any machine parts that may affect safety and stability.
- Do not replace key parts that affect machine stability with different weights or specifications.
- Do not change or modify moving aerial 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 any part of this machine.
- Do not use additional devices to increase the working height of the 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 place or attach any suspended load onto any part of the machine.
- Do not use the machine as a crane.
- Do not use the platform to push the machine or other objects.
- Do not allow the platform to touch nearby objects.
- Do not tie the platform onto nearby objects.
- 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

⚠ WARNING

UNSAFE OPERATION HAZARDS

platform controller to lower the platform. If you intend to lower the platform with a ground controller, you must operate it only after all personnel have left the platform.

- Do not operate the machine when the chassis door box is open.
- When one or more of the machine's tires are off the ground, evacuate all personnel before attempting to stabilize the equipment. Use a crane, forklift or other suitable apparatus to stabilize the equipment.

FALL HAZARDS

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

⚠ 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 climb down from the platform when the platform is elevated.
- Keep the platform floor free of obstacles.
- Do not enter or exit the platform unless the machine is fully in place.
- 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.

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.
- Pay attention to the extended platform when moving the machine.
- 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 chassis 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.
- Limit the speed of travel according to ground conditions, crowding, gradients, the presence and location of personnel and any 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.
- Do not place your hands and arms where they may become crushed or trapped.
- Do not work in or under the platform or near the scissor arms when the safety lever is not in place.
- 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.

⚠ WARNING**COLLISION HAZARDS**

- Keep the machine away from any 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 in or under the platform or near the scissor arms when the safety lever is not in place.
- 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

UNSAFE OPERATION 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 corresponding *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 the *Operation Manual* and the *Maintenance Manual*.

⚠ WARNING

UNSAFE OPERATION HAZARD





Do not operate the machine when there are oil spills/leaks. Oil spills or leaks in hydraulic fluids may penetrate and burn the skin.

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

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****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****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 SYSTEMS HAZARD

⚠ WARNING

BURN AND HIGH PRESSURE HAZARD



- Hydraulic systems are hot. **DO NOT TOUCH!** Serious personal injury may result from hot hydraulic fluid.
- When work on the hydraulic system is completed, thoroughly clean any spilled oil from the machine. Do not spill any hydraulic fluid on the ground. Clean any hydraulic fluid from your skin as soon as you have completed performing maintenance and repairs. Dispose of used fluid as required by law.
- Never inspect for hydraulic leaks with bare hands or other exposed body parts. As a minimum, wear leather gloves and use cardboard or wood to inspect for leaks. If leaks are present, relieve pressure to allow system to cool prior to servicing. If injured by escaping hydraulic fluid, contact a physician immediately. Serious complications may arise if not treated immediately.

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 platform.
3. Turn the emergency stop switch of the ground controller to the "OFF" position
4. Turn the key switch to the "OFF" position and remove the key to avoid unauthorized use of the machine.
5. Block the wheels with the wheel wedges.
6. Charge the battery.

NOTICE

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

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 Sinoboam, 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 the operator performs a pre-operation function test.
- The pre-operation inspection also helps the operator determine whether the machine requires routine maintenance.
- Please refer to 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 for hydraulic oil leaks and proper oil level. Add oil as needed. See *Inspect Hydraulic Oil Level, page 5-3*.
- Check for diesel fuel leaks and proper fuel level. Add fuel as needed. See *Inspecting Fuel Level, page 5-4*.
- Check battery for leaks and proper liquid level. Add distilled water as needed. See *Inspecting the Battery, page 5-5*.
- Check for proper engine oil level. Add engine oil as needed. See *Inspecting Engine Oil Level, page 5-3*.
- Check for proper coolant level. Add coolant as needed. See *Inspecting Coolant Level, page 5-6*.
- Check whether the protective equipment is suitable for the nature of work and conforming to specifications.

INSPECTING PARTS

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

- Electrical components, wiring, cables and safety ropes
- Hydraulic hoses, fittings, cylinders and counterbalance valves
- Drive motors
- Wear pads
- Tires and wheels
- Limit switches, alarms and horn

- Beacons and indicator lights (if equipped)
- Bolts, nuts and other fasteners
- Brake releasing
- Safety arm
- Scissor arm pins and fasteners
- Platform extension
- Scissor arm pins and fasteners
- Platform joystick
- Outriggers (if equipped)
- Fuel tank, hydraulic tank
- Engine and associated parts
- Platform (including rails, floor plate, safety lock, brackets and entry door)
- Generator (if equipped)
- Personal protection equipment
- Emergency control equipment
- Operation instructions, warning and control decals

NOTICE

If any part is found damaged, missing, or improperly installed, please immediately replace with a new one and install correctly; if any fastener is found detached or loose, please tighten immediately.

INSPECTING ENTIRE MACHINE

Inspect the entire machine for:

- Cracks in welds or structures
- Dents or other damages
- 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
- Ensure the rails are installed with bolts tightened.

NOTICE

If the machine has to be inspected with platform raised, please be sure the safety arm is properly set up.

INSPECTING ENGINE OIL LEVEL

NOTICE

Turn off the engine before inspection.

The appropriate engine oil 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 engine oil level which may indicate a system distress with the engine.

1. Turn the ground/platform select switch to ground control.
2. Pull out the emergency stop button at ground controls to ON position.
3. Move the engine preheat switch and idle for 2 minutes.
4. Switch off the engine, and 5 minutes later open the engine cover.
5. Remove the engine dipstick to inspect the engine oil level.
6. The engine oil level should be between the FULL and ADD marks.
7. Add engine oil as needed. Do not overfill. It is recommended to use engine oil equivalent to or higher than CH-4 with viscosity grade of 15W-40.

Table 5-1

VISCOSITY	RECOMMENDED AMBIENT TEMP
0W-30	-35°C ~ 0°C
5W-40	-25°C ~ 30°C
15W-40	-15°C ~ 40°C
20W-50	0°C ~ 50°C

NOTICE

- The engine oil filled by the factory is generally CH-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 fulfilling the machine with 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 change interval is very critical to maintaining engine performance and extending service life. If the oil or oil filter is not changed as recommended, there will be sediments, contaminants or wear incurred which will shorten the engine service life.

INSPECT HYDRAULIC OIL LEVEL

Ensuring appropriate hydraulic oil level is vital to proper operation of the machine. If too high, the oil will spill out from the oil tank during machine operation, if too low, the oil pump will suction air and damage hydraulic components. Performing daily inspection of the hydraulic oil level will help you determine if a problem exists in the hydraulic system.

Perform the following procedure with the platform retracted:

1. Visually inspect on the hydraulic tank side to be sure the hydraulic oil level is within the marking range of sight gauge.

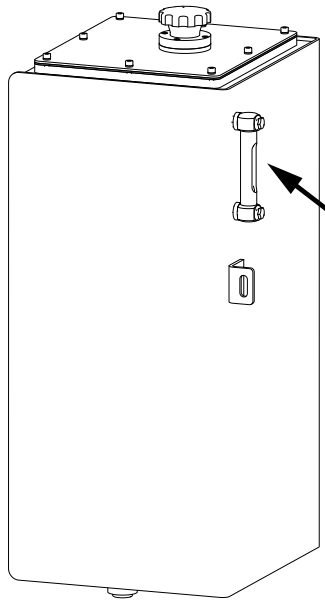


Figure 5-1

- 2. Ensure the tank body and ports are free of leakage.
- 3. Add hydraulic oil as needed. Never overfill the tank.

Table 5-2

CUSTOMER REQUIREMENTS	HYDRAULIC OIL MARK
Normal-temperature region 0°C to 40°C (32°F to 104°F)	L-HM46
Cold 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 cold region less than -30°C (-22°F)	Special programmes need to be identified.

NOTICE

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

INSPECTING FUEL LEVEL

NOTICE

Be sure to shut down the engine before inspection.

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

- 1. Open the rear left door of chassis, and locate the fuel tank.
- 2. Inspect the fuel level to ensure it is within the marking range of sight gauge.

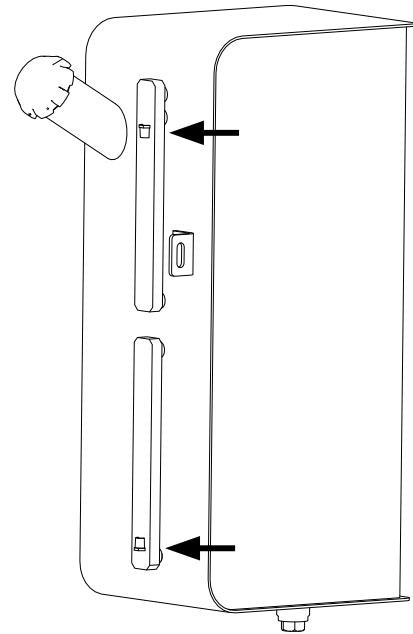


Figure 5-2

- 3. If the fuel level is below the MIN position, add fuel before work continues.
- 4. Be sure the fuel tank body and ports are free of leakage.
- 5. The engine must be off when adding fuel.
- 6. Open the cap of fuel tank, add fuel as need. Never overfill the tank, it is recommended to add 50%–100% of the tank capacity.

Table 5-3

DIESEL GRADE	RECOMMENDED AMBIENT TEMP
5#	Lowest temperature 8°C or higher
0#	Lowest temperature 4°C or higher
-10#	Lowest temperature -5°C or higher
-20#	Lowest temperature -14°C or higher


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

NOTICE

- The diesel has been drained off basically before delivery, so the customer should add diesel of appropriate grade to suit the operating ambient temperature and the governing emission regulations.
- Do not add mixed diesel of different grades.
- The light fuel may affect the fuel economy or damage the combustion components.
- It is recommended to use the diesel with sulphur content less than 5000ppm.
- It is recommended to use the diesel with min. cetane number of 45 in operating temperatures below 0°C and min. cetane number of 40 in operating temperatures over 0°C. When the cetane number of the diesel 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 must be 6°C less than the lowest operating ambient temperature.

WARNING

EXPLOSION AND FIRE HAZARD




- Do not mix the diesel with gasoline, alcohol or their mixture.
- Do not add diesel 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. The dirt or water entering the combustion system can cause severe damage to the fuel pump and injectors.

INSPECTING THE BATTERY


The condition of the battery affects the performance of the machine. Improper levels of battery electrolyte or damaged cable and wiring may harm battery parts and may pose dangerous conditions.

NOTICE

This inspection is not required for the machines with sealed or maintenance-free battery.

WARNING


ELECTROCUTION HAZARD



Remove all rings, watches or other jewelry. Contact with energized circuit may result in death or severe injury.

WARNING

BODILY INJURY HAZARD



The battery contains acid, avoid the acid leakage or direct contact with it. If battery acid spills, use water mixed with baking soda to neutralize the acid.

NOTICE

Wear protective clothing and goggles to inspect the battery after fully charged.

Ensure the battery wiring is tight and free of corrosion.

Ensure the battery holder is properly positioned and secure.

NOTE: Add terminal protectors and antiseptic sealants to help eliminate corrosion of the battery terminals and cables.

NOTE: Ensure the battery is fully charged before testing.

INSPECTING COOLANT LEVEL

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.

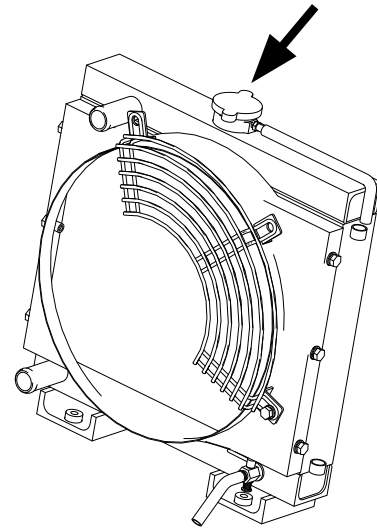


Figure 5-3

3. The coolant level should be at the filler port 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
60% ethylene glycol and 40% water mixed coolant	-54°C ~ -32°C

WARNING

BURN AND EJECTION 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 chassis cover.
2. Open the cover of coolant box over the radiator to inspect the coolant level.

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, chloride less than 40 ppm and sulphur less than 100ppm. Excessive calcium and magnesium can lead to scale formation, and excessive chloride and sulfate can corrode the cooling system.*

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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.

WARNING

UNSAFE OPERATION HAZARD

- 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.

TESTING THE GROUND CONTROLLER (DTC SYSTEM)

NOTICE

All tests on the ground controller should be completed in one cycle.

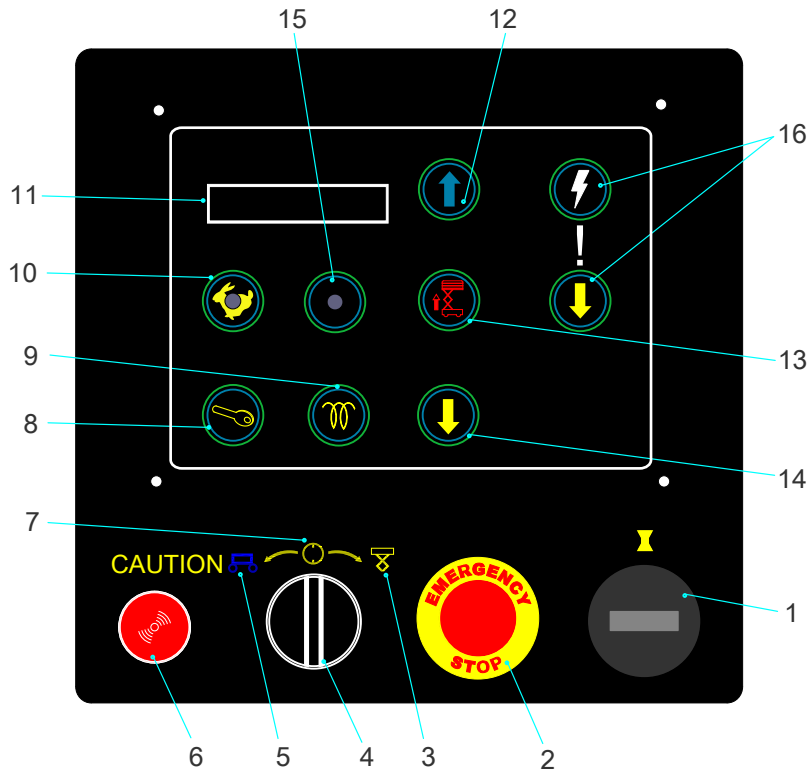


Figure 6-1 Ground controller (DTC system)

Table 6-1

1. Hour meter	7. OFF position	13. Platform lift enable switch
2. Emergency stop button	8. Engine start switch	14. Platform down switch
3. Platform position	9. Engine preheat switch	15. Overload indicator light
4. Key switch (Ground/Platform select switch)	10. Engine high/low idle speed select switch (with indicator light)	16. Emergency lowering switch (not used)
5. Ground position	11. LCD screen	
6. Buzzer	12. Platform up switch	

⚠ WARNING

UNSAFE OPERATION HAZARD

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

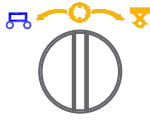
PREPARATION

1. Select a firm, level test surface free of obstructions.
2. Turn the Ground/Platform select switch on ground controller to Ground position.
3. Pull out the emergency stop button on ground controller to ON position.
4. Be sure the LCD screen is lit and reads "SYSTEM READY".

NOTICE

In cold weather, the LCD screen needs warming up before it properly displays anything.

GROUND/PLATFORM SELECT SWITCH



1. Turn the Ground/Platform select switch on ground controller to Ground position, all functions are only operative on the ground controller, while the platform controller is inoperative.
2. Turn the Ground/Platform select switch on ground controller to Platform position, all functions are only operative on the platform controller, while the ground controller is inoperative.

ENGINE START SWITCH



Press the engine start switch, the engine should be started smoothly without abnormal noises.

EMERGENCY STOP BUTTON



1. Push in the emergency stop button on ground controller to OFF position, and press the engine start switch, the engine should not be started and all functions are inoperative.
2. Pull out the emergency stop button on ground controller to ON position, and press the engine start switch, the engine can be normally started.

ENGINE PREHEAT SWITCH



Press the engine preheat switch and hold it for 6-10s, the engine should take in air for preheating.

ENGINE HIGH/LOW IDLE SPEED SELECT SWITCH



Press the engine high/low idle speed select switch, the button should be lit, indicating the engine is at high idle speed; press the button again, the button light should go out, indicating the engine is at low idle speed.

Note: The engine is defaulted at low idle speed.

PLATFORM UP/DOWN FUNCTION

The alarm sounds 60 times/minute while the platform is lowering, and 180 times/minute while the machine is tilt.



1. Press the platform up switch or down switch without pressing the platform lift enable switch, the intended function will be inoperative.
2. Press the platform lift enable switch, the button should be lit.
3. Press the platform up switch, the platform should rise.
4. Press the platform down switch, the platform should lower and the alarm sounds.

TESTING THE GROUND CONTROLLER (SINOBOOM CONTROL SYSTEM)

NOTICE

All tests on the ground controller shall be completed within one cycle.

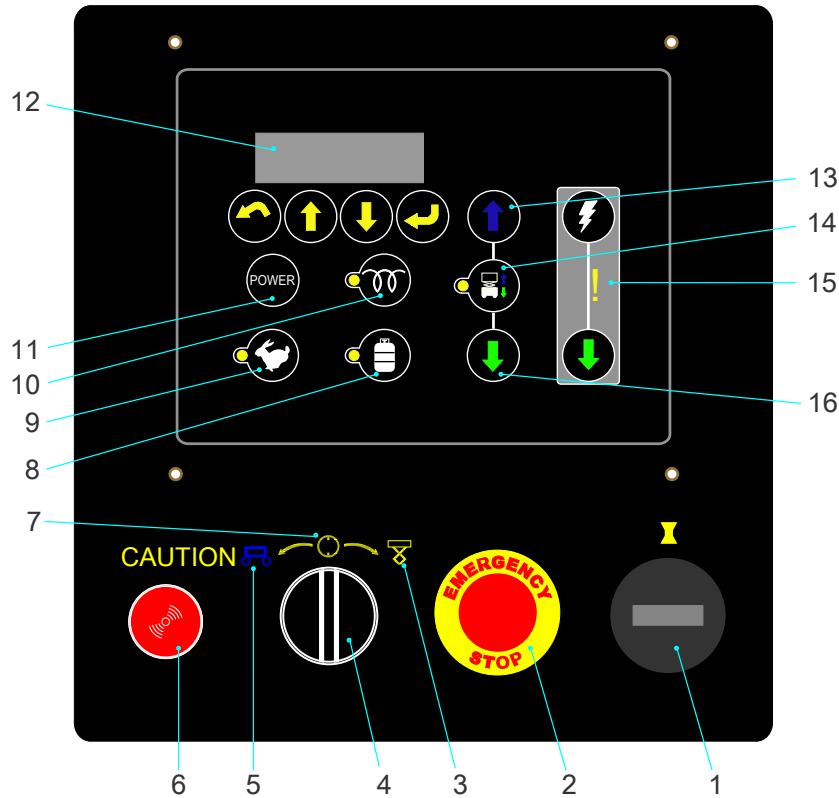


Figure 6-2 Ground controller (Sinoboom control system)

Table 6-2

1. Hour meter	7. Neutral position	13. Platform up switch
2. Emergency stop button	8. Natural gas switch (not used)	14. Platform up/down enable switch
3. Platform control position	9. Engine speed select switch	15. Emergency lowering combination switch (not used)
4. Key switch (Ground/Platform select switch)	10. Glow plug switch	16. Platform down switch
5. Ground control position	11. Ignition switch	
6. Buzzer	12. LED screen	

⚠ 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 is not returned to the OFF position after being released.**

PREPARATION

1. Select a firm, level test surface free of obstructions.
2. Turn the Ground/Platform select switch on ground controller to Ground control position.
3. Pull out the emergency stop button on ground controller to ON position.
4. Ensure the LCD screen is lit, and then “System Loading...”, “星邦智能高空作业平台” (- Sinoboom Intelligent Aerial Work Platform), and the angles in X-axis and Y-axis of chassis are displayed successively.

NOTICE

In cold weather, the LCD screen needs warming up before it properly displays anything.

GROUND/PLATFORM SELECT SWITCH



1. Turn the Ground/Platform select switch on ground controller to Ground control position, and all functions are only operative on the ground controller, while the platform controller is inoperative.
2. Turn the Ground/Platform select switch on ground controller to Platform control position, and all functions are only operative on the platform controller, while the ground controller is inoperative.

IGNITION SWITCH



After pressing the ignition switch, the engine should be started smoothly without abnormal noises.

Note: This switch will be inoperative after engine startup.

EMERGENCY STOP BUTTON



1. Push in the emergency stop button on ground controller to OFF position, and press the engine start switch, the engine should not be started and all functions are inoperative.
2. Pull out the emergency stop button on ground controller to ON position, and press the engine start switch, the engine can be normally started.

GLOW PLUG SWITCH



After pressing the glow plug switch and holding it for 6-10s, the engine should take in air for preheating.

Note:

An electrically-controlled engine can be preheated automatically.

ENGINE SPEED SELECT SWITCH

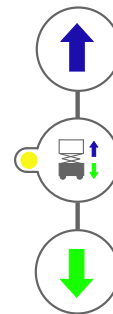


After pressing the engine speed select switch, the button should be lit, indicating the engine is at high idle speed; by pressing the button again, the button shall go out, indicating the engine is at low idle speed.

Note: The engine is defaulted at low idle speed.

PLATFORM UP/DOWN FUNCTION

The alarm sounds 60 times/minute while the platform is lowering, and 180 times/minute while the machine is tilt.



1. Press the platform up/down enable switch, the button should be lit.
2. Press the platform up switch, the platform should be raised.
3. Press the platform down switch, the platform should be lowered and the lowering alarm should sound.

TESTING THE PLATFORM CONTROLLER (DTC SYSTEM)

All tests on the platform controller should be completed in one cycle.

NOTICE

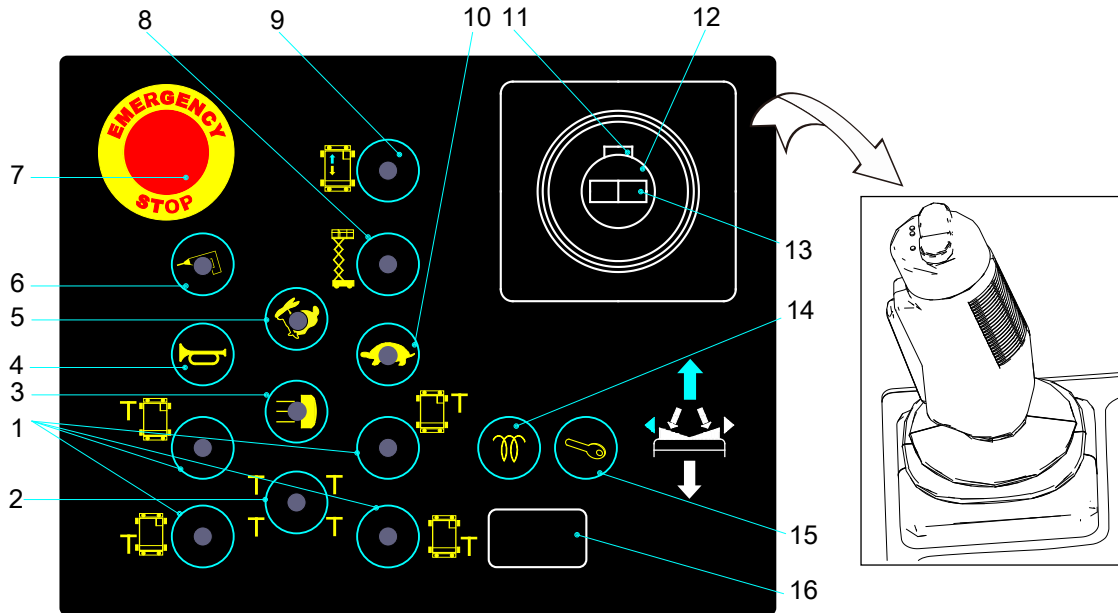




Figure 6-3 Platform controller (DTC system)

Table 6-3

1. Individual outrigger leveling switch	7. Emergency stop button	13. Steer thumb rocker switch
2. Outrigger self-leveling switch	8. Platform lift switch (with indicator light)	14. Glow plug switch
3. Lighting switch (optional)	9. Drive switch (with indicator light)	15. Engine start switch
4. Horn button	10. Drive speed select switch (with indicator light)	16. LCD screen
5. Engine speed select switch (with indicator light)	11. Enable switch	
6. Hydraulic generator switch (with indicator light, if equipped)	12. Drive/lift proportional control joystick	

 **WARNING**

UNSAFE OPERATION HAZARD



- Unless in emergency situations, never operate the machine from the ground controller if there is still any person on the platform.
- Never operate the machine if any control handle or switch that controls the platform movement is not returned to the OFF position after being released.
- Platform controller joysticks of different brands can't be used to replace each other, otherwise the machine may be damaged or safety accidents may occur.
- To avoid severe personal accidents and deaths, never remove or alter the foot switch (if equipped) or disable it with blocks or any other means.

EMERGENCY STOP BUTTON



1. Push in the emergency stop button on platform controller to OFF position, and press the engine start switch, the engine should not be started and all functions are inoperative.
2. Pull out the emergency stop buttons on ground and platform controllers to ON position, and press the engine start switch, the engine can be normally started.
3. With the emergency stop button on ground controller in OFF position and the one on platform controller in ON position, press the engine start switch, the engine should not get started and all functions are inoperative.

PREPARATION

1. Select a firm, level test surface free of obstructions.
2. Turn the Ground/Platform select switch on ground controller to Platform position.

ENGINE PREHEAT SWITCH



Press and hold the engine preheat switch for 6–10s, the engine should take in air for preheating.

Electrically-controlled engines can be preheated automatically.

ENGINE START SWITCH



Press the engine start switch, the engine should be started smoothly without abnormal noises.

Note: The switch shall be inoperative after the engine is started.

HORN BUTTON



Press the horn button, the horn should sound.

LIGHTING SWITCH (OPTIONAL)



Press the lighting switch, the switch should be lit and the lighting turns on.

ENGINE SPEED SELECT SWITCH



Press the engine speed select switch, the button should be lit, indicating the engine is at high idle speed; press the button again, the button light should go off, indicating the engine is at low idle speed.

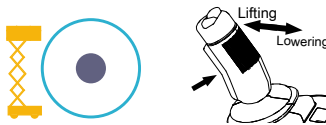
Note: The engine is running at low idle speed by default.

HYDRAULIC GENERATOR SWITCH (IF EQUIPPED)



Press the hydraulic generator switch, other functions (including boom movement and travel) will be inoperative, and the engine will be switched to high speed. After the engine runs at high speed stably for 5s, the solenoid valve of the hydraulic generator will be energized and the hydraulic generator will start to generate power.

PLATFORM LIFT SWITCH

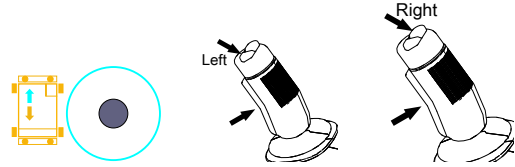


1. Start the engine.
2. Press the platform lift switch, the switch should be lit.
3. Hold the joystick enable switch and slowly deflect forward the joystick, the platform should rise.
4. Hold the joystick enable switch and slowly deflect backward the joystick, the platform should descend with the alarm sounding.

STEER THUMB ROCKER SWITCH

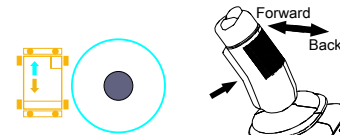
NOTICE

When testing the steer/drive functions, the operator should stand on the platform facing towards the machine steer direction.



1. Press the drive switch, the switch should be lit.
2. Hold the joystick enable switch and press the steer thumb rocker switch on the left, the wheel should steer left.
3. Hold the joystick enable switch and press the steer thumb rocker switch on the right, the wheel should steer right.

DRIVE SWITCH



1. Press the drive switch, the switch should be lit.
2. Hold the joystick enable switch and slowly deflect forward the joystick, the machine should drive forward.
3. Release the joystick, the machine should come to an immediate stop.
4. Hold the joystick enable switch and slowly deflect backward the joystick, the machine should drive reverse.
5. Release the joystick, the machine should come to an immediate stop.

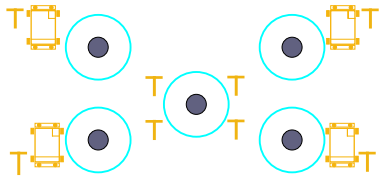
DRIVE SPEED SELECT SWITCH



Press the drive speed select switch, the switch should be lit and the low drive speed is selected; press the switch again, the switch light goes out and the high drive speed is selected.

Note: The machine is running at low drive speed by default.

OUTRIGGER LEVELING



1. Press the outrigger self-leveling switch, and hold the joystick enable switch and slowly deflect backward the joystick.
2. The outriggers should extend to stand on the ground and level the machine, and the switch should be lit when the machine is level.
3. Press the individual outrigger leveling switch, and hold the joystick enable switch and slowly deflect forward the joystick.
4. The respective outrigger should retract.

5. Press the individual outrigger leveling switch, and hold the joystick enable switch and slowly deflect backward the joystick.
6. The respective outrigger should extend, and the switch should be lit when the outriggers stand on the ground.

TESTING THE PLATFORM CONTROLLER (SINOBOOM CONTROL SYSTEM)

NOTICE

All tests on the platform controller should be completed in one cycle.

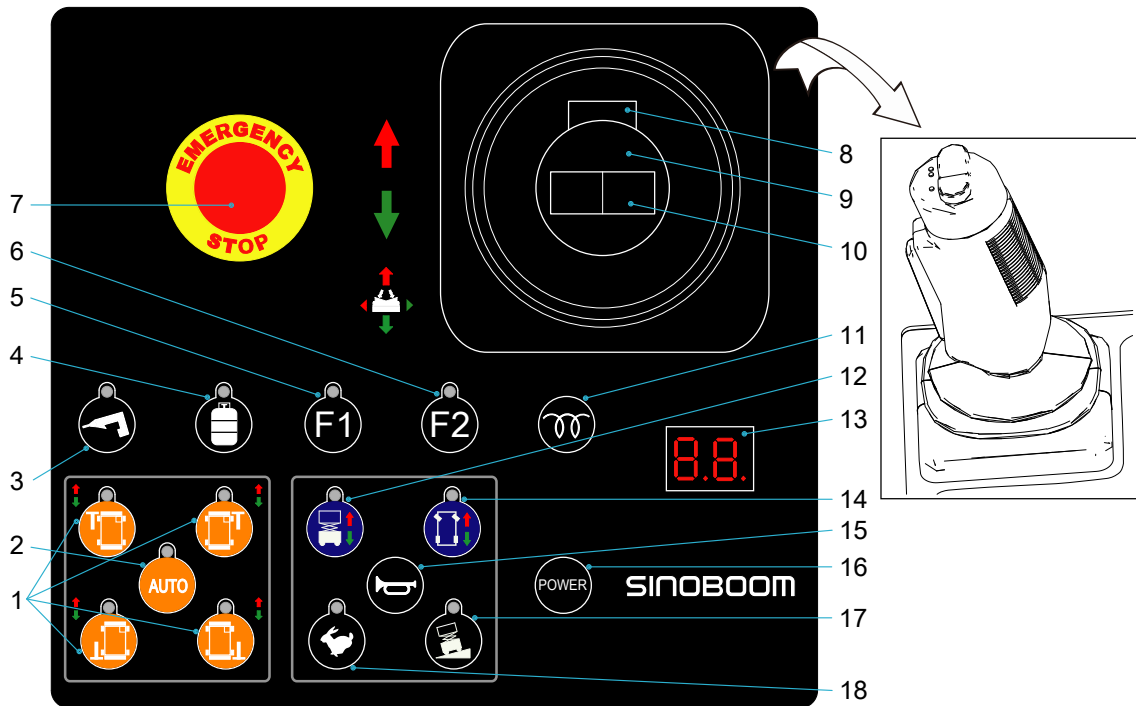


Figure 6-4 Platform controller (Sinoboom control system)

Table 6-4

1. Individual outrigger level switch	7. Emergency stop button	13. LED screen
2. Outrigger self-level switch	8. Enable switch	14. Drive & steer enable switch
3. Hydraulic generator switch (not used)	9. Drive/lift proportional control joystick	15. Horn button
4. Natural gas switch (not used)	10. Steer thumb rocker switch	16. Ignition switch

5. Not used	11. Glow plug switch	17. Climbing mode enable switch
6. Not used	12. Platform up/down enable switch	18. Engine speed select switch

WARNING

UNSAFE OPERATION HAZARD

- Unless in emergency situations, never operate the machine from the ground controller if there is still any person on the platform.
- Never operate the machine if any control handle or switch that controls the platform movement is not returned to the OFF position after being released.
- Platform controller joysticks of different brands can't be used to replace each other, otherwise the machine may be damaged or safety accidents may occur.
- To avoid severe personal accidents and deaths, never remove or alter the foot switch (if equipped) or disable it with blocks or any other means.

EMERGENCY STOP BUTTON



1. Push in the emergency stop button on platform controller to OFF position, and press the engine start switch, the engine should not be started and all functions are inoperative.
2. Pull out the emergency stop buttons on ground and platform controllers to ON position, and press the engine start switch, the engine can be normally started.
3. With the emergency stop button on ground controller in OFF position and the one on platform controller in ON position, press the engine start switch, the engine should not get started and all functions are inoperative.

GLOW PLUG SWITCH



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

Note:

An electrically-controlled engine can be preheated automatically.

PREPARATION

1. Select a firm, level test surface free of obstructions.
2. Turn the Ground/Platform select switch on ground controller to Platform position.

IGNITION SWITCH



Press the ignition switch, the engine should be started smoothly without abnormal noises.

Note: This switch will be inoperative after engine startup.

HORN BUTTON



Press the horn button, the horn should sound.

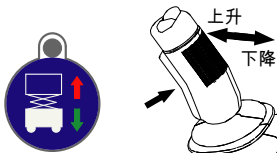
ENGINE SPEED SELECT SWITCH



- For machines equipped with a China Stage III engine: press the engine speed select switch, the indicator light should flash at an interval of 1s, and the engine is at high idle speed. Release the engine speed select switch, the indicator light should go off, and the engine is at low idle speed.
- For machines equipped with a China Stage IV engine: press the engine speed select switch, the indicator light should be lit, and the engine is at high idle speed. Release the engine speed select switch, if the machine is performing any operations, the indicator light should flash and the engine should run at the set speed; if the machine is not performing any operations, the indicator light should go out, and the engine runs at low idle speed.

Note: The engine is defaulted at low idle speed.

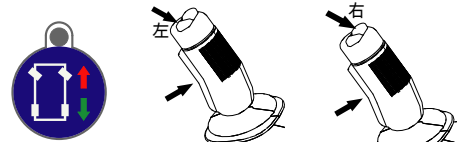
PLATFORM UP/DOWN FUNCTION



1. Start the engine.
2. Press the platform up/down enable switch, the indicator light should be lit and the lift mode is activated.
3. Hold the joystick enable switch and slowly push forward the joystick, the platform should rise.
4. Hold the joystick enable switch and slowly pull backward the joystick, the platform should be lowered with the lowering alarm sounding.

Note: The raising/lowering speed is in direct proportion to the stroke of the joystick.

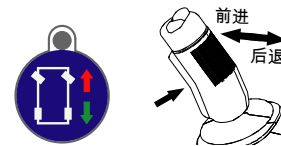
STEER THUMB ROCKER SWITCH



1. Press the drive & steer enable switch, the indicator light should be lit, and the drive & steer control mode is activated.
2. Hold the joystick enable switch and press the steer thumb rocker switch on the left, the wheel should steer left.
3. Hold the joystick enable switch and press the steer thumb rocker switch on the right, the wheel should steer right.

Note: The steering speed is in direct proportion to the stroke of the joystick.

DRIVE SWITCH



1. Press the drive & steer enable switch, the indicator light should be lit, and the drive & steer control mode is activated.
2. Hold the joystick enable switch and slowly push forward the joystick, the machine should drive forward.
3. Release the joystick, the machine should come to an immediate stop.
4. Hold the joystick enable switch and slowly pull backward the joystick, the machine should drive reverse.
5. Release the joystick, the machine should come to an immediate stop.

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

NOTICE

When testing the steer/drive functions, the operator should stand in the platform facing towards the machine steer direction.

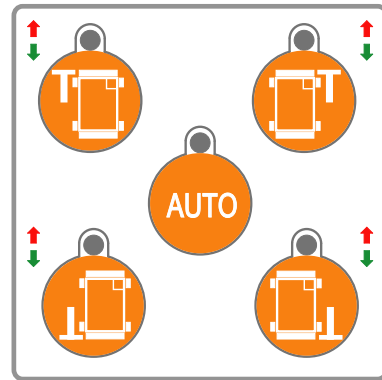
CLIMBING MODE



- Turn the Ground/Platform select switch on ground controller to Platform position, activate the drive & steer mode, and press the climbing mode enable switch, the machine should be switched to the climbing mode, and the indicator light should be lit.

Note: When the fore-and-aft inclination of the machine is beyond 6°, the climbing mode will be activated automatically.

OUTRIGGER LEVELING



1. Press the outrigger self-level switch, hold the joystick enable switch and slowly pull backward the joystick.
2. The outriggers should extend to the ground and level the machine, and the indicator light should be lit after the machine becomes level.
3. Press the outrigger self-level switch, and hold the joystick enable switch and slowly push forward the joystick.
4. The outriggers should retract, and the indicator light should go out.
5. Press the individual outrigger level switch, and hold the joystick enable switch and slowly pull backward the joystick.
6. The corresponding outrigger should retract and the indicator light should be lit after the outrigger touches the ground.
7. Press the individual outrigger level switch, and hold the joystick enable switch and slowly push forward the joystick.
8. The corresponding outrigger should retract and the indicator light should go out.

TESTING THE EMERGENCY LOWERING FUNCTION

1. Turn the Ground/Platform select switch on the ground controls to the platform control position.
2. Pull out the emergency stop buttons on both the ground and platform controls to the ON position.
3. Press the engine start switch on platform controls.
4. Press the platform lift switch.
5. Hold the joystick enable switch and slowly deflect forward the joystick to raise the platform to a height and release the joystick.

6. Shut off the engine.
7. Pull out the emergency lowering handle (located on the right side of chassis).

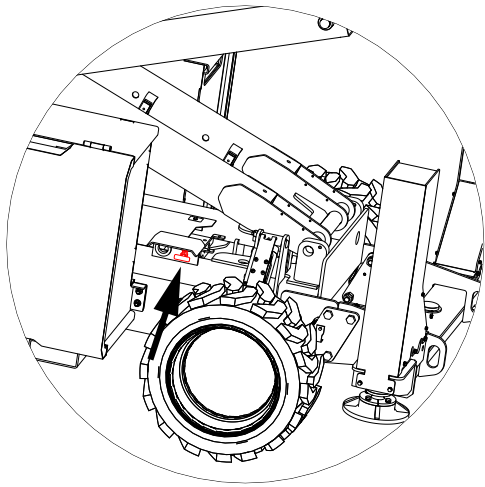


Figure 6-5

8. The platform should lower until properly in place.

TESTING THE LEVEL SENSOR

 WARNING	
UNSAFE OPERATION HAZARDS	
	<ul style="list-style-type: none"> • Don't put your hands and arms close to positions where they may get squeezed. • If the safety arm is not in the proper position, don't work under the platform or near the scissor arm.
	

NOTICE
<p><i>Do not stand on the platform but on the ground using the platform controller to perform this test.</i></p>

1. Position the machine on a level, firm surface. Start the machine, and the green indicator light on the level sensor should illuminate.
2. With the machine in stowed position, place 2 wooden blocks near the two front or rear wheels, then drive the machine upon the wooden blocks.

The wooden block dimension (L×W×H) is 100×50×150mm (4in×2in×5.9in).

3. Switch from drive to platform lift function, and raise the platform until the lower limit switch disengages, the red indicator light on the level sensor will illuminate with the alarm sounding, and further lifting and driving is restricted.
4. Lower the platform to the stowed position, the alarm will stop sounding, and the machine function limit is cancelled.
5. Drive the machine off and remove the wooden blocks.
6. With the machine in stowed position (outrigger retracted), place 2 wooden blocks near the two wheels on the left or right side, then drive the machine upon the wooden blocks. The wooden block dimension (L×W×H) is 100×50×70mm (4in×2in×2.76in).
7. Switch from drive to platform lift function, and raise the platform until the lower limit switch disengages, the red indicator light on the level sensor will illuminate with the alarm sounding, and further lifting and driving is restricted.
8. Lower the platform to the stowed position, the alarm will stop sounding, and the machine function limit is cancelled.
9. Drive the machine off and remove the wooden blocks.
10. With the machine in stowed position (outrigger extended), place 2 wooden blocks near the two wheels on the left or right side, then drive the machine upon the wooden blocks. The wooden block dimension (L×W×H) is 100×50×28mm (4in×2in×1.1in).
11. Switch from drive to platform lift function, and raise the platform until the lower limit switch disengages, the red indicator light on the level sensor will illuminate with the alarm sounding, and further lifting and driving is restricted.
12. Lower the platform to the stowed position, the alarm will stop sounding, and the machine function limit is cancelled.
13. Drive the machine off and remove the wooden blocks.

TESTING THE DRIVE SPEED

With the machine in stowed position:

1. Turn the Ground/Platform select switch on ground controller to Platform.
2. Pull out the emergency stop buttons on ground and platform controllers to ON position.

3. Press the engine start switch on platform controller.
4. Press the drive switch.
5. Hold the joystick enable switch and slowly deflect forward the joystick to full stroke.
6. Press the drive high/low speed switch on platform controller to select the high drive speed.
7. The max drive speed of the machine in stowed position is $5\pm 0.5\text{Km/h}$ ($3.12\pm 0.31\text{mph}$), or the drive time for 40m (131 ft) is 28 ~ 35s.

With the machine in operating position:

1. Turn the Ground/Platform select switch on ground controller to Platform.
2. Pull out the emergency stop buttons on ground and platform controllers to ON position.
3. Press the engine start switch on platform controller.
4. Press the platform lift switch.
5. Hold the joystick enable switch and slowly deflect forward the joystick to raise the platform, and release the joystick when the lower limit switch disengages.
6. Press the drive switch.
7. Hold the joystick enable switch and slowly deflect forward the joystick to full stroke.
8. Press the drive high/low speed switch on platform controller to select the high drive speed.
9. The max drive speed of the machine in stowed position is $0.48\pm 0.048\text{Km/h}$ ($0.3\pm 0.03\text{mph}$), or the drive time for 20m (65.6 ft) is 136 ~ 166s.

The oscillate outriggers enables the machine to drive on uneven surfaces with 4 tires in close contact with the ground, thus improving the traction performance and stability.

- With the machine in stowed position:
 1. Start the machine from the platform controller and select the high idle speed.
 2. Drive the machine to allow the left steer wheel to stand on a 10cm (3.9in) high block or kerb.
 3. The other 3 wheels should come in close contact with the ground.
 4. Drive the machine to allow the right steer wheel to stand on a 10cm (3.9in) high block or kerb.
 5. The other 3 wheels should come in close contact with the ground.
- With the machine in operating position:
 1. Start the machine from the platform controller and select the high idle speed.
 2. Using the platform lift function, raise the platform until the lower limit switch disengages.
 3. Drive the machine to allow the left steer wheel to stand on a 10cm (3.9in) high block or kerb.
 4. The other 3 wheels should come in close contact with the ground.
 5. Drive the machine to allow the right steer wheel to stand on a 10cm (3.9in) high block or kerb.
 6. The other 3 wheels should come in close contact with the ground.

NOTICE

If the machine drive speed exceeds the test results above, immediately tag and remove the machine from service.

TESTING THE OSCILLATE OUTRIGGERS

NOTICE

Do not stand in the platform but on the ground to perform this testing using platform controller.

TESTING THE WEIGHING SYSTEM

1. Before conducting this test, fully lift and lower the platform twice to ensure normal lubrication of the slider and track.
2. Lower the platform to the minimum height and retract the extension platform. With the scissor arm fully retracted, gradually add loads to the platform.

Table 6-5

Models	Test Results
1018RD	When the weight does not exceed 450 kg (992 lb), ensure that the platform is able to lift to the highest position. When the weight is greater than or equal to 540 kg (1190 lb), the platform lifting height should be no greater than 3±0.5m (9ft 10in±1ft 8in) .
1218RD	When the weight does not exceed 365 kg (805 lb), ensure that the platform is able to lift to the highest position. When the weight is greater than or equal to 438 kg (966 lb), the platform lifting height should be no greater than 3.2±0.5m (10ft 6in±1ft 8in) .

Note : The hydraulic oil viscosity will increase as the temperature reduces, which may adversely affect the pressure sensing. If the new machine operates at temperature conditions that differ with the OEM factory temperature by more than 10°(50°F), or the hydraulic oil temperature is below 15°(59°F), the overload alarm may be triggered (the display screen on platform or ground controller indicates “OL”) even if the platform load does not exceed the rated load, in this circumstance, please re-calibrate the weight sensor.

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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 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.

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.

EMERGENCY STOP

1. Push in the emergency stop buttons on the platform controller and ground controller to the OFF position. All functions will not operate.
2. Push in the main power button on the left door of chassis to the OFF position, all functions will not operate.

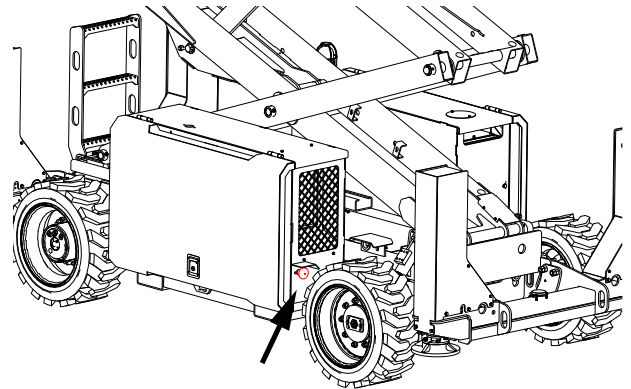


Figure 7-1

3. To resume the operation of any function, return the positions of the emergency stop buttons and main power button to the original.

NOTICE

If the platform controller displays the number "02", press the emergency stop button immediately.

STARTING THE ENGINE

1. From the ground controller, turn the key switch to the intended position.
2. Ensure the red emergency stop buttons on ground and platform controllers are pulled out to ON position.
3. Press the engine start switch.

NOTICE

Under low temperature conditions of 10°C(50°F) or below, before starting the engine, press and hold the engine preheat switch for 5–10s. The time for continuously holding the engine preheat switch is limited to 20s.

If the engine still fails to start after 15s, please identify the cause and eliminate the fault, and wait 60s before a second attempt to start the engine.

Under low temperature conditions of -6°C (20°F) or below, before operating the machine, preheat the engine for 5m to prevent damage to hydraulic system.

Under extremely low temperature conditions of -18°C (0°F) or below, please start the engine with assistance of the cold-start kit, and a battery booster may also be needed.

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, preheat the engine by running it at low speed for 3–5min.
- If an unexpected shutdown is caused by an engine fault, the fault must be corrected first before starting the engine again.

Platform up/down:



1. Press and hold the platform up-down switch.
2. The platform up or down function will be performed.

The drive and steer functions can't be enabled from the ground controller.

To drive:

The drive functions can't be enabled from the ground controller.

To steer:

The steer functions can't be enabled from the ground controller.

EMERGENCY LOWERING

When the engine fails, please operate the emergency lowering function as appropriate.

For the specific procedure, please reference [Testing the Emergency Lowering Function, page 6-12](#).

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 on the platform.
- Do not operate the machine if any control handle or switch that controls the platform movement is not returned to OFF position after being released.

Before operation:

1. Turn the key switch to Ground position.
2. Pull out the emergency stop buttons on ground and platform controllers to ON position.
3. Start the engine.



SELECTING ENGINE SPEED



Press the engine high/low speed switch to select the engine speed (rpm). Two engine speed modes can be selected :

- Indicator light off indicates engine low speed mode is selected.
- Indicator light on indicates engine high speed mode is selected.

OPERATION FROM PLATFORM

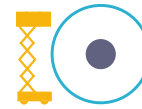
 WARNING	
	<p style="text-align: center;">UNSAFE OPERATION HAZARD</p> <ul style="list-style-type: none"> • Unless in emergency situations, do not operate the machine from the ground controller when there is any person on the platform. • Do not operate the machine if any control handle or switch that controls the platform movement is not returned to OFF position after being released.

Before operation:

1. Turn the key switch to Platform position.
2. Pull out the emergency stop buttons on ground and platform controllers to ON position.
3. Start the engine.

NOTICE
<ul style="list-style-type: none"> • <i>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.</i> • <i>Before applying any load, preheat the engine by running it at low speed for 3–5min.</i> • <i>If an unexpected shutdown is caused by an engine fault, the fault must be corrected first before starting the engine again.</i>

Platform up/down:



1. Press the platform up-down enable switch.
2. Push the up/down rocker switch.

To steer

1. Press and hold the joystick enable switch.
2. Press the thumb rocker switch on the top of the joystick to control the steer wheels.

To drive

1. Press and hold the joystick enable switch.
2. Increase speed: slowly deflect the joystick off center.
3. Decrease speed: slowly deflect the joystick toward center.
4. Stop: return the joystick to center or release the joystick enable switch.


NOTICE
<p><i>Use the color-coded direction arrows on the platform controller to identify the travel direction of the machine.</i></p>

NOTICE
<p><i>Machine travel speed is restricted when the platform is raised.</i></p>

To select drive speed

⚠ WARNING

TIPPING HAZARD



The machine must travel at low speed when tilted.

In case of a tipping alarm, all other operations are prohibited except lowering the machine. The tipping hazard must be removed before continuing the operation.

1. The machine in stowed position can travel at two speed modes (high/low speed).
2. In the process of traveling, push the high/low drive speed select switch to select the desired drive speed. When the low drive speed button is lit, the low drive speed mode will be active. When the low drive speed button goes out, the high drive speed mode will be active.

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

If the red indicator light comes on:

Push in and pull out the emergency stop button to reset the system.

If the action above fails, tag and remove the machine from service.

DRIVING ON A SLOPE

Before driving on a slope :

Determine the machine gradeability (including slope rating and side side slope rating)and the slope grade.

Max slope rating, stowed position :

MODELS	MAX SLOPE RATING
1018RD	35%/19°
1218RD	35%/19°

NOTICE

The machine gradeability is subject to ground conditions and adequate traction..

To determine the slope grade :

Measure the slope grade using a digital slope gauge or following the procedure as below:

1. Use a carpenter’s level, a straight piece of wood (at least 1 m [3.3 ft] long) and a tape measure.
2. Lay the piece of wood on the slope.

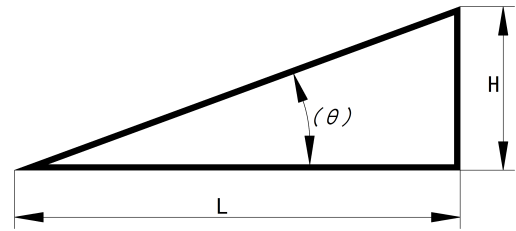


Figure 7-2

3. At the downhill end, lay the level on the top edge of the piece of wood and lift the end until the piece of wood is level.
4. While holding the piece of wood level, measure the vertical distance from the bottom of the piece of wood to the ground.
5. Slope grade= $H/L \times 100\%$.

If the slope exceeds the maximum slope or side slope rating, then the machine must be lifted or transported up or down the slope. See the *Transporting and Lifting the Machine* section.

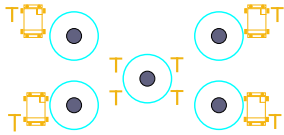
EXTENDING AND RETRACTING THE PLATFORM

1. Raise the platform extension locking handle to horizontal.
2. Push the handle to extend the platform to the intended position. Do not stand in the platform extension while attempting to extend the platform.
3. Lower the platform extension locking handle, and ensure the extension platform is locked.

OPERATING THE OUTRIGGERS

NOTICE

Start the machine before operating the outriggers. Be sure to operate the outriggers with the machine stowed, never raised.

**To extend the outriggers:**

1. Position the machine on the desired work area.
2. Press and hold the outrigger self-level switch, and hold the enable switch on the control joystick and slowly deflect backward the control joystick.
3. The outriggers will extend and come in contact with the ground to level the machine. A beep will sound and the outrigger self-level switch will be lit when the machine is level.

To retract the outriggers:

1. Set the machine in stowed position.
2. Press and hold the outrigger self-level switch, and hold the enable switch on the control joystick and slowly deflect forward the control joystick.
3. The outriggers will retract, and the indicator light of the outrigger self-level switch will go out when the outriggers are off the ground.

Note : The above procedures apply equally to the single outrigger level switch.

When the outriggers are not all in close contact with the ground, the raised height of the machine should not exceed the height at which the down limit switch disengages.

If any outrigger fail to retract in place, the screen on the platform controller will display "or". When any outrigger is in contact with the ground, the drive and steer functions will be disabled.

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8 TRANSPORTING AND LIFTING THE MACHINE

WARNING

TRANSPORTATION AND LIFTING HAZARD



- Use a forklift or crane with the proper lifting capacity to lift the machine. Use good judgment and a planned movement to control the machine.
- The transport vehicle must be parked on level ground.
- The transport vehicle must be secured from rolling when loading the machine.
- Ensure that the vehicle capacity, loading surface, belts or ropes are sufficient to support the weight of the machine, refer to.
- 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.
- When removing the wire rope safety pin, prevent the rails from falling. The rails must be held tight at all times when folding down.
- Never transport persons on the platform when the machine is being transported, lifted or towed.
- When using a forklift or crane to lift the machine, beware not to collide the machine with the nearby objects.
- Lock the wheels of the machine wheels after it has been installed to prevent the machine from rolling.

NOTICE

Do not tow the machine unless an emergency, failure or loss of power occurs.

RELEASING THE BRAKE

1. Choke the wheels to prevent the machine from rolling. 4WD models: Turn over the both rear torque hub disengage caps to release the brake, as shown in [Fig 8-0](#), page 8-1. Turn counterclockwise the orifice valve on the traction manifold to the end, as shown in [Fig 8-1](#), page 8-1.

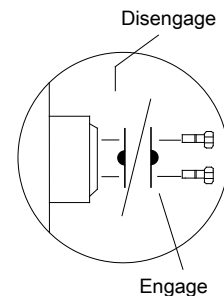


Figure 8-1

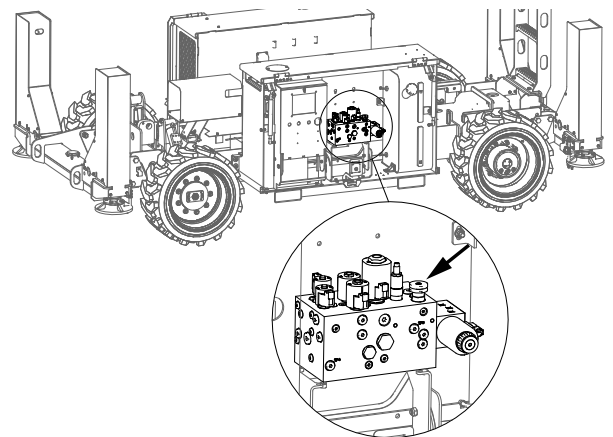


Figure 8-2

2. Be sure that the winch cable is properly fastened to the tiedown points on the chassis, and the path of travel clear of obstructions.
3. Perform the above procedures inversely to re-engage the brake and stabilize the wheels from motion.

TRANSPORTING THE MACHINE

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

1. Always choke the machine wheels in preparation for transport.
2. Retract and lock the extension platform.
3. Use the tie-down points on the chassis for anchoring down to the transport surface.
4. Use at least two chains or straps.
5. Ensure the chains or straps are of ample loading capacity.
6. Turn the key switch to the OFF position and remove the key before transporting.
7. Inspect the entire machine for loose or unsecure items. Use straps to secure the fold-down rails before transporting.

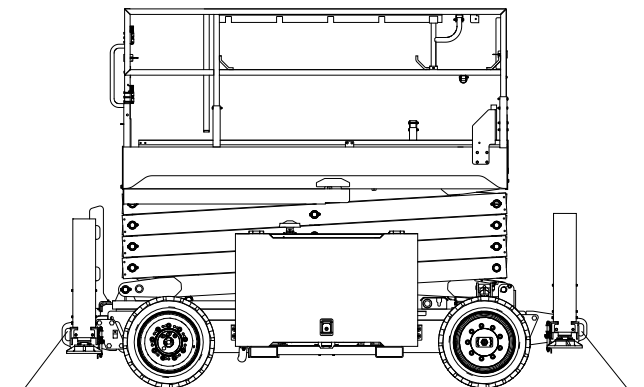
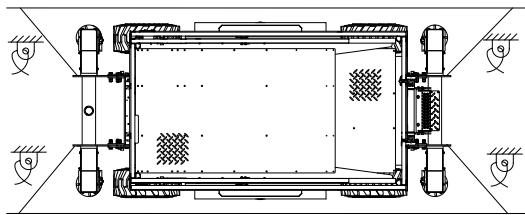


Figure 8-3

NOTICE

Retract the extension platform to secure it to the slot, and ensure the extension platform will not extend or shake out from the main platform during transport.

LIFTING THE MACHINE WITH A CRANE

Follow these requirements when lifting the machine by crane:

1. Fully lower the platform. Keep the platform down during transportation.
2. Ensure the extension platforms, controllers and chassis components are adequately securely in place.
3. Remove all loose items from the machine.
4. Determine the center of gravity of the machine.

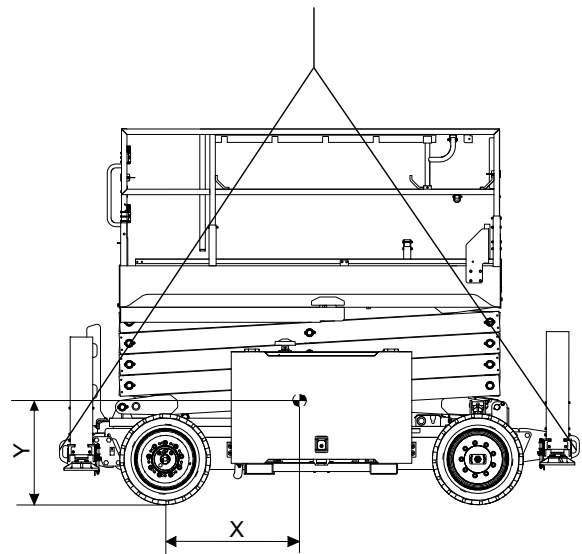


Figure 8-4

Table 8-1

Models	X	Y
1018RD	1080 mm (42.5 in.)	800 mm (31.5 in.)
1218RD	980 mm (38.6 in.)	790 mm (31.1 in.)


5. Only connect the rigging to the designated lifting points on the machine. Adjust the rigging to avoid damaging the machine and to keep the machine horizontal.

NOTICE


To protect the platform guardrail, choose the appropriate length of rigging.

9 MAINTENANCE

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

 **WARNING**

UNSAFE OPERATION HAZARD



Failure to follow the proper maintenance 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.
 - Professionally trained, qualified personnel must conduct routine maintenance inspections on this machine.
 - Daily routine maintenance inspections must occur 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 occur by operators and at quarterly, biannual and annual intervals by qualified, trained personnel. 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, mark it 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 a period lasting longer than three months.
- Without the manufacturer's approval, do not change any parts, especially those load-bearing and safety-relevant parts. While maintaining the machine, replace any parts on the machine using the same parts or the same parts of the original machine.
 - 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, perform all maintenance procedures according to the following terms and conditions:
 - Park the machine on flat, level, firm ground.
 - Keep the machine in the stowed position.
 - Ensure the key switch of the ground controller is in the OFF position and remove the key to prevent unauthorized use of the machine.
 - Place the red emergency stop button on the platform control box and ground controller in the OFF position to avoid accidental start-up of the operating system.
 - Disconnect main power switch.
 - Disconnect all DC power from the machine.
 - Lock all wheels to prevent movement of the machine.
 - Before releasing or removing the hydraulic components, release the hydraulic oil pressure in the hydraulic pipeline.

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. Divide the Repair & Inspection Report into four sections (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 table of each regular inspection.

3. Duplicate the Repair & Inspection Report for each inspection. Store the completed tables for 10 years or until the machine is no longer in use or as required by machine owner/company/custodian.
4. Use the following table to note the results. After each section is complete, mark the appropriate box.
5. 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". Select the appropriate inspection procedure based on the inspection type.

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				
A-10 Inspect Engine Intake System				
A-11 Inspect Engine Belt				
A-12 Inspect Fuel Filter				
A-13 Inspect Cooling Fan				
A-14 Functional Tests				
A-15 Perform Maintenance after 30 Days				
Checklist B Procedures				
Items	YES/Machine is in Good Condition	NO/Machine Has Damage or Malfunction	REPAIRED/ Machine Has Been Repaired	Problem Description
B-1 Inspect Electrical Wiring				

REPAIR & INSPECTION REPORT				
B-2 Inspect Rim ,Tire and Fasteners				
B-3 Inspect Hydraulic Oil				
B-4 Inspect Cooling System				
B-5 Replace Fuel filter				
B-6 Inspect Air filter of Hydraulic Tank				
B-7 Replace High-Pressure Filter Element				
B-8 Replace Engine Air Filter Element				
B-9 Inspect the Battery				
B-10 Inspect Engine Exhaust System				
B-11 Inspect Drive Reducer Oil Level				
B-12 Test Oscillate Outriggers				
B-13 Test Drive Speed				
B-14 Test Tilt Protection System				
B-15 Test Brake 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 Engine Oil				
C-3 Replace Engine Oil Filter				
C-4 Test Weighing System				
C-5 Test Secondary Lowering				
Checklist D Procedures				
Items	YES/Machine is in Good Condition	NO/Machine Has Damage or Malfunction	REPAIRED/ Machine Has Been Repaired	Problem Description

REPAIR & INSPECTION REPORT				
D-1 Replace Drive Reducer Gear Oil				
D-2 Inspect Scissor Arm Sliders				
D-3 Replace Hydraulic Oil				
D-4 Replace Hydraulic Tank Suction Filter				
D-5 Inspect Scissor Arm Bearing				
User				
Inspector Signature				
Inspector 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 9-3

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


Use appropriate inspection methods to check that all decals are legible and properly in place..

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 machines without decals/nameplates.

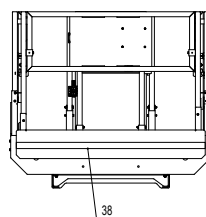
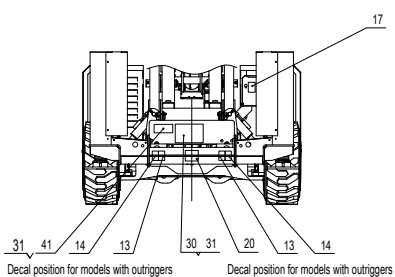
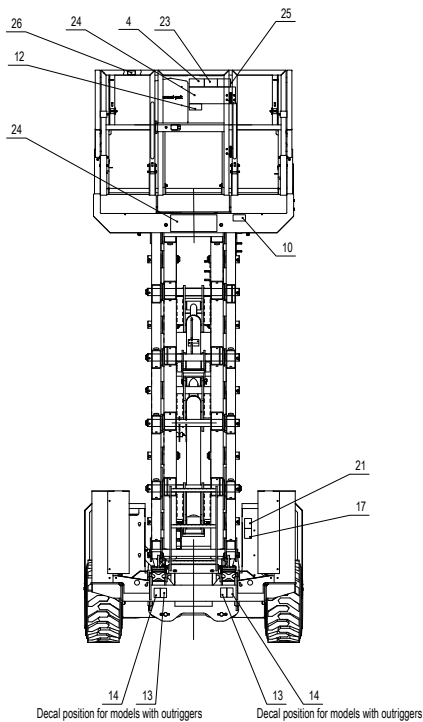
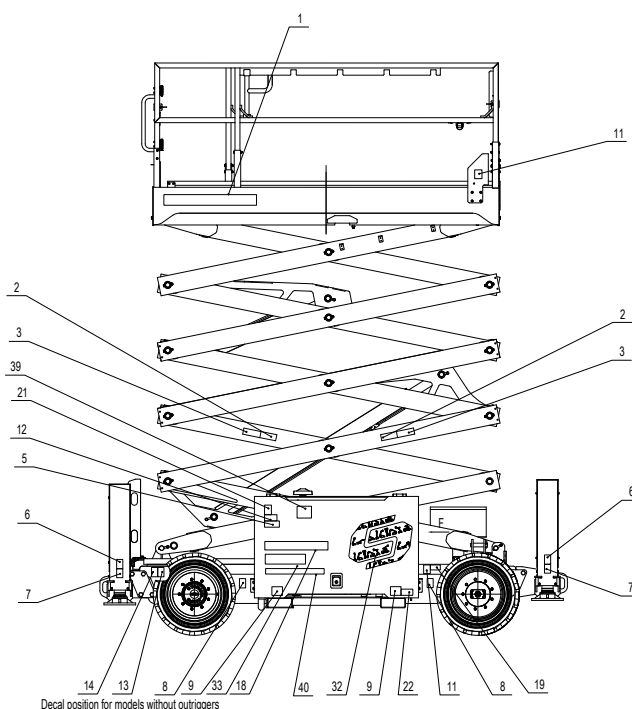
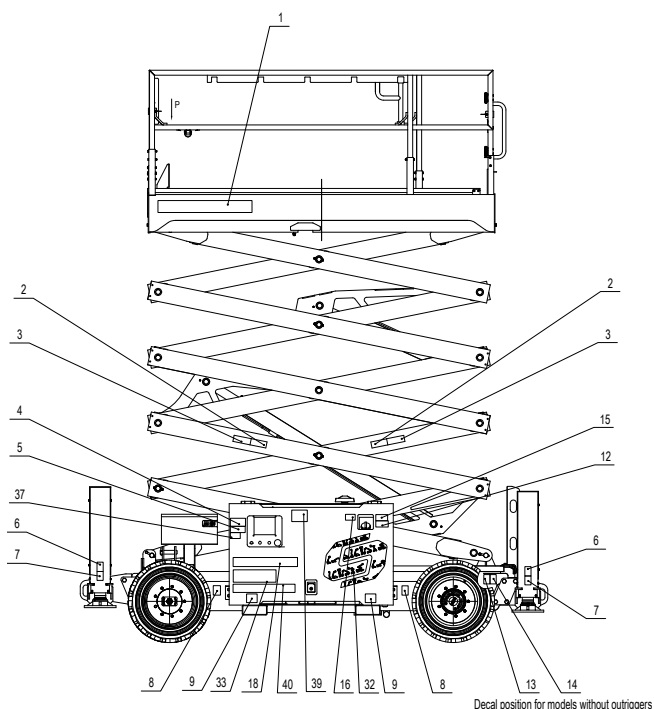
 **WARNING**



UNSAFE OPERATION HAZARD

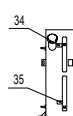
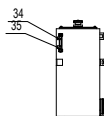
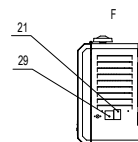
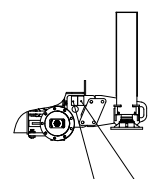
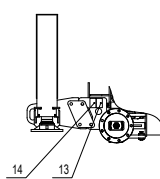
All safety decals must be legible to alert personnel of safety hazards. Replace any illegible or missing decals immediately. Safety ldecals removed during any repair work must be replaced in their original position before the engine is placed back into service. Do not operate the engine if there are missing or badly worn safety decals.

DECALS/NAMEPLATES(GB)



Decal position for models without outriggers

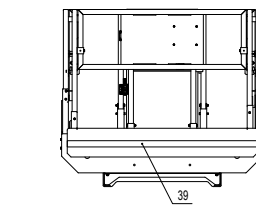
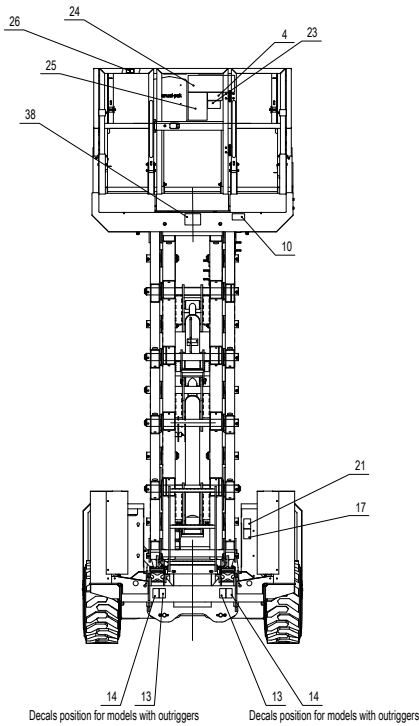
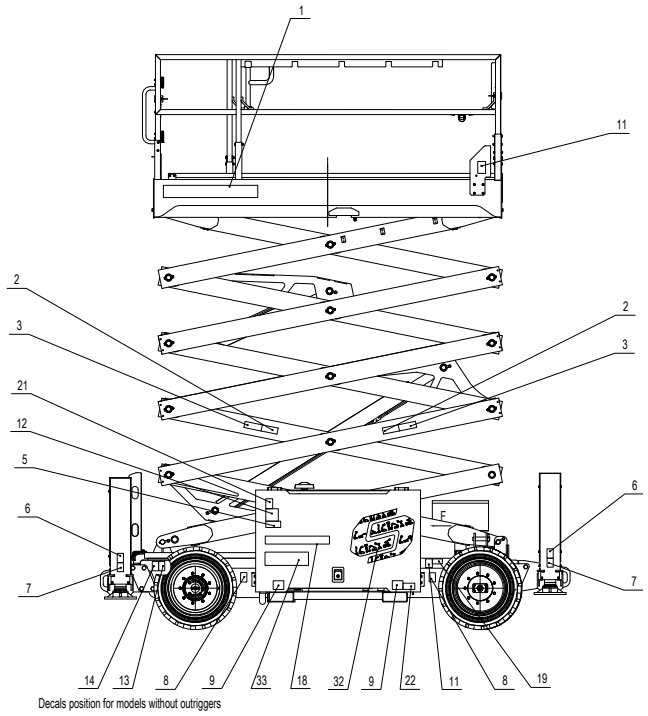
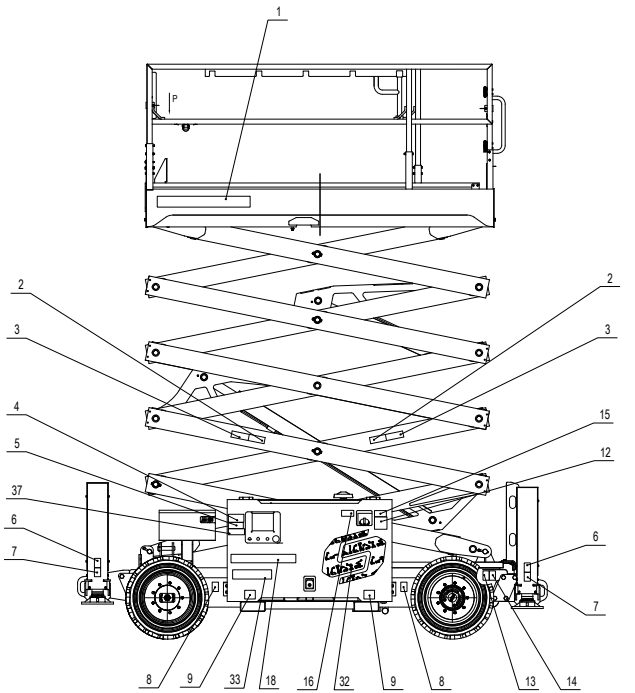
Decal position for models without outriggers



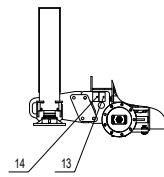
No.	Part No.	Description	Qty.	Remarks
	102003100012	Decals(GB)-1018RD	1	
	102004100038	Decals(GB)-1218RD	1	
1	101048103025	Decal-SINOBOOM	2	
2	101012100029	Decal-Crush hazard	4	
3	101012100018	Decal-Crush hazard	4	
4	101012100027	Decal-Read manuals	2	
5	101012100030	Decal-Bulkhead overhaul	2	
6	101014100013	Decal-Crush hazard	4	
7	115003103006	Decal-Outrigger load against ground 2300kg	4	
8	115003103007	Decal-Tire load against ground 2400kg	4	
9	101012100026	Decal-Forklift pockets	4	
10	101058103001	LOGO-IPAF	1	
11	101012100009	Decal	2	
12	101012100005	Decal-Electrocution hazard	3	
13	101014100021	Decal-Transport tiedown	4	
14	101014100020	Decal-Lifting points	4	
15	102004100007	Decal-Explosion hazard	1	
16	104009100019	Decal-Diesel fuel	1	
17	101012100012	Decal-High pressure hazard	2	
18	102004100029	Decal-4WD	2	
19	101012100011	Decal-Emergency lowering	1	
20	102004100008	Decal-Transport tiedown	1	
21	102004100003	Decal-Burn hazard	2	
22	101012100001	Decal-No smoking or fires	1	
23	101012100007	Decal-Tipping hazard	1	
24	102003100009	Decal-Operation requirements	2	1018RD
	102004100024	Decal-Operation requirements	2	1218RD
25	101012100019	Decal-Tipping hazard	1	
26	102004100040	Decal-Crush hazard	1	
27	101014100026	Decal-Safety arm	2	
28	101016100030	Decal-Lanyard anchorage	8	
29	101056103002	Decal-Main power disconnect switch	1	
30	102001103001	Nameplate-GB	1	
31	215050000012	Blind rivet 4×8-ZnD GB/T 1261	8	
32	102001103016	Decal-LOGO, white	2	
33	102009103000	Decal-1018RD	2	

No.	Part No.	Description	Qty.	Remarks
	102010103000	Decal-1218RD	2	
34	104011100010	Decal-Hydraulic oil level	2	
35	104011100003	Decal-Hydraulic oil level	2	
36	101055103016	Decal-Emergency stop button	1	
37	104009100018	Decal-Hydraulic oil	1	
38	216060000004	Decal-Caution tape, 50mm wide	2	
39	101014100036	Decal-Warranty	2	
40	101014100034	Decal-Contact information	2	
41	102010103002	Decal-D1105-E4B-EU-X1 environmental protection info	1	

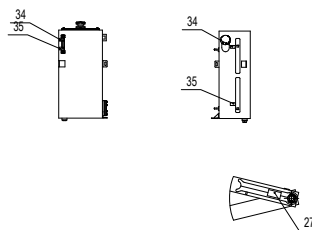
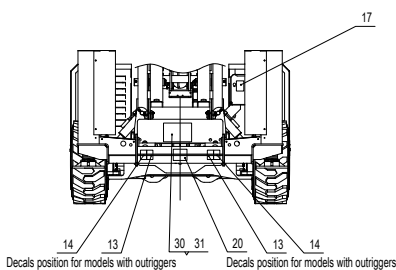
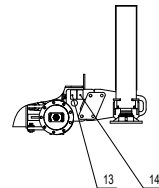
DECALS/NAMEPLATES(AS)



Decals position for models without outriggers



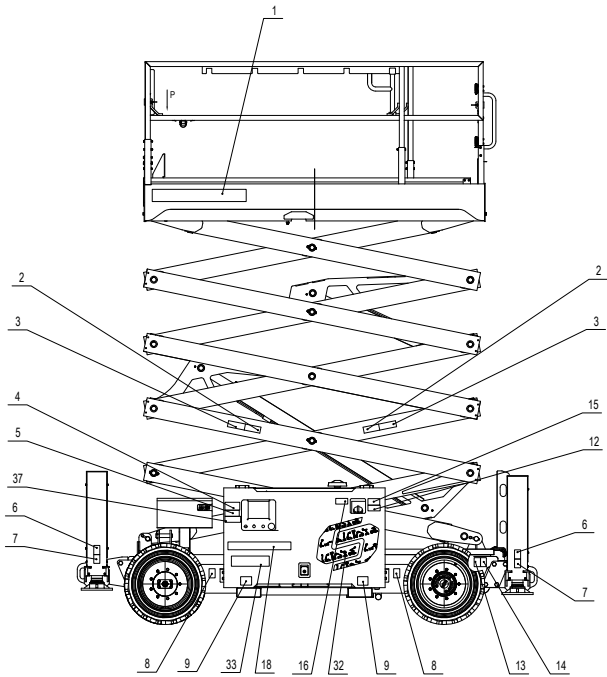
Decals position for models without outriggers



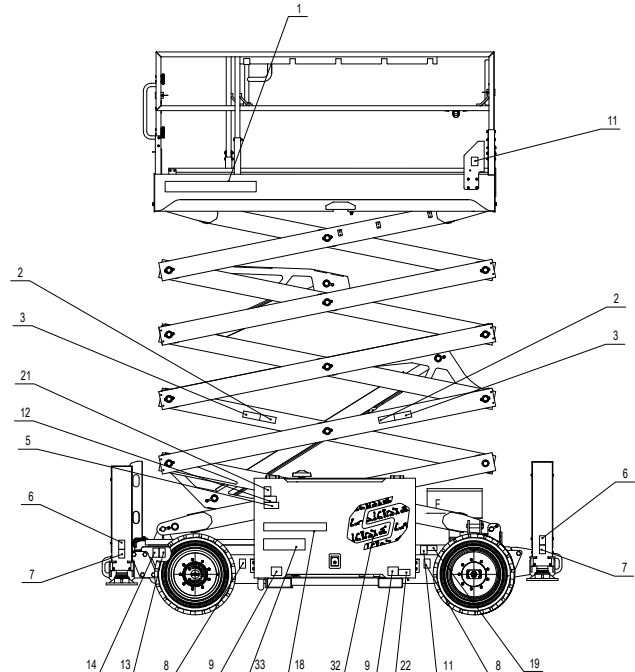
No.	Part No.	Description	Qty.	Remarks
	102003100010	Decals(AS)-1018RD	1	
	102004100037	Decals(AS)-1218RD	1	
1	101048103025	Decal-SINOBOOM	2	
2	101012100029	Decal-Crush hazard	4	
3	101012100018	Decal-Crush hazard	4	
4	101012100027	Decal-Read manuals	2	
5	101012100030	Decal-Bulkhead overhaul	2	
6	101014100013	Decal-Crush hazard	4	
7	115003103006	Decal-Outrigger load against ground 2300kg	4	
8	115003103007	Decal-Tire load against ground 2400kg	4	
9	101012100026	Decal-Forklift pockets	4	
10	101058103001	LOGO-IPAF	1	
11	101012100009	Decal	2	
12	101055103019	Decal-Electrocution hazard	2	
13	101014100021	Decal-Transport tiedown	4	
14	101014100020	Decal-Lifting points	4	
15	102004100007	Decal-Explosion hazard	1	
16	104009100021	Decal-Diesel fuel	1	
17	101012100012	Decal-High pressure hazard	2	
18	102004100029	Decal-4WD	2	
19	101012100011	Decal-Emergency lowering	1	
20	102004100008	Decal-Transport tiedown	1	
21	102004100003	Decal-Burn hazard	2	
22	101012100001	Decal-No smoking or fires	1	
23	101012100007	Decal-Tipping hazard	1	
24	102003100009	Decal-Operation requirements	2	1018RD
	102004100024	Decal-Operation requirements	2	1218RD
25	102004100015	Decal-General safety	1	
26	102004100040	Decal-Crush hazard	1	
27	101014100026	Decal-Safety arm	2	
28	101016100030	Decal-Lanyard anchorage	8	
29	101016100031	Decal-Main power disconnect switch	1	
30	102001103002	Nameplate-AS	1	
31	215050000012	Blind rivet 4×8-ZnD GB/T 1261	4	
32	102001103016	Decal-LOGO, white	2	
33	102009103000	Decal-1018RD	2	

No.	Part No.	Description	Qty.	Remarks
	102010103000	Decal-1218RD	2	
34	104011100010	Decal-Hydraulic oil level	2	
35	104011100003	Decal-Hydraulic oil level	2	
36	101055103015	Decal-Emergency stop button	1	
37	104009100022	Decal-Hydraulic oil	1	
36	102003100003	Decal-1018RD operation requirements	1	
	102004100005	Decal-1218RD operation requirements	1	
39	216060000004	Decal-Caution tape, 50mm wide	2	

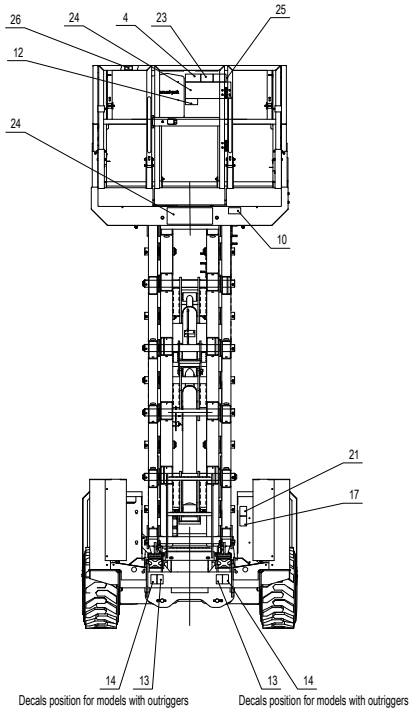
DECALS/NAMEPLATES(CE-IMPERIAL)



Decals position for models without outriggers

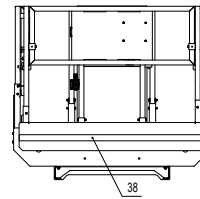


Decals position for models without outriggers



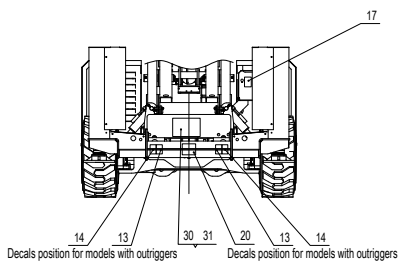
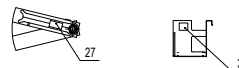
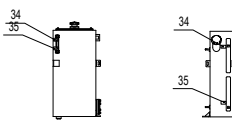
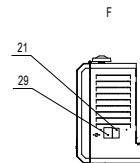
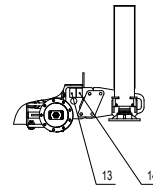
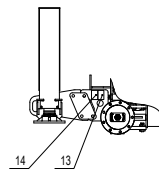
Decals position for models with outriggers

Decals position for models with outriggers



Decals position for models without outriggers

Decals position for models without outriggers



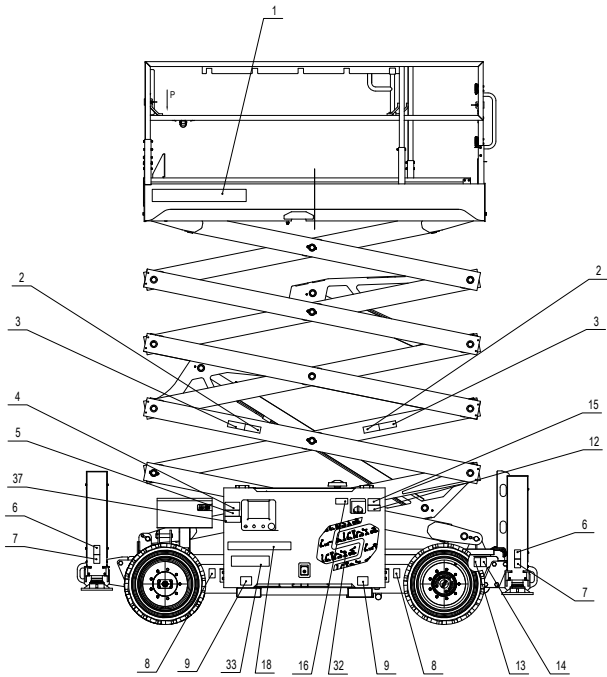
Decals position for models with outriggers

Decals position for models with outriggers

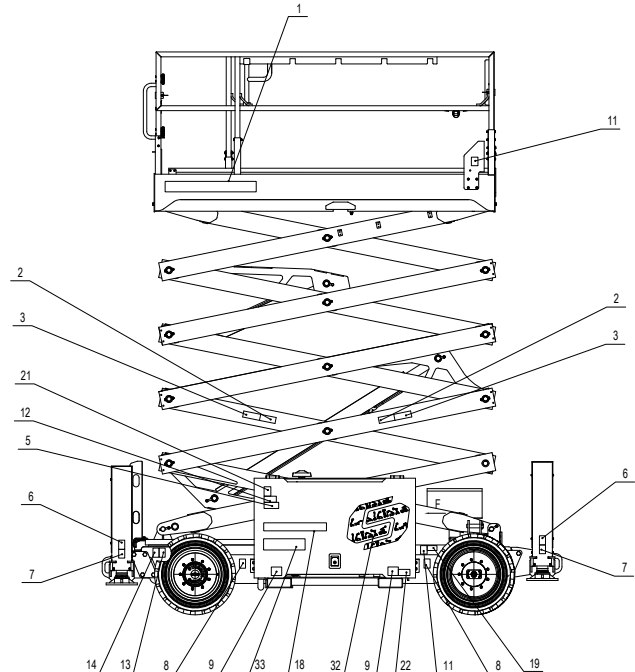
No.	Part No.	Description	Qty.	Remarks
	102003100011	Decals(CE-Imperial)-1018RD	1	
	102004100039	Decals(CE-Imperial)-1218RD	1	
1	101048103025	Decal-SINOBOOM	2	
2	101012100029	Decal-Crush hazard	4	
3	101012100018	Decal-Crush hazard	4	
4	101012100027	Decal-Read manuals	2	
5	101012100030	Decal-Bulkhead overhaul	2	
6	101014100013	Decal-Crush hazard	4	
7	115003103006	Decal-Outrigger load against ground 2300kg	4	
8	115003103007	Decal-Tire load against ground 2400kg	4	
9	101012100026	Decal-Forklift pockets	4	
10	101058103001	LOGO-IPAF	1	
11	101012100009	Decal	2	
12	101012100005	Decal-Electrocution hazard	3	
13	101014100021	Decal-Transport tiedown	4	
14	101014100020	Decal-Lifting points	4	
15	102004100007	Decal-Explosion hazard	1	
16	104009100021	Decal-Diesel fuel	1	
17	101012100012	Decal-High pressure hazard	2	
18	102004100029	Decal-4WD	2	
19	101012100011	Decal-Emergency lowering	1	
20	102004100008	Decal-Transport tiedown	1	
21	102004100003	Decal-Burn hazard	2	
22	101012100001	Decal-No smoking or fires	1	
23	101012100007	Decal-Tipping hazard	1	
24	102003100009	Decal-Operation requirements	2	1018RD
	102004100024	Decal-Operation requirements	2	1218RD
25	101012100019	Decal-Tipping hazard	1	
26	102004100040	Decal-Crush hazard	1	
27	101014100026	Decal-Safety arm	2	
28	101016100030	Decal-Lanyard anchorage	8	
29	101016100031	Decal-Main power disconnect switch	1	
30	102001103003	Nameplate-CE	1	
31	215050000012	Blind rivet 4×8-ZnD GB/T 1261	4	
32	102001103016	Decal-LOGO, white	2	
33	102009103001	Decal-3369RD	2	

No.	Part No.	Description	Qty.	Remarks
	102010103001	Decal-4069RD	2	
34	104011100010	Decal-Hydraulic oil level	2	
35	104011100003	Decal-Hydraulic oil level	2	
36	101055103015	Decal-Emergency stop button	1	
37	104009100022	Decal-Hydraulic oil	1	
38	216060000004	Decal–Caution tape, 50mm wide	2	

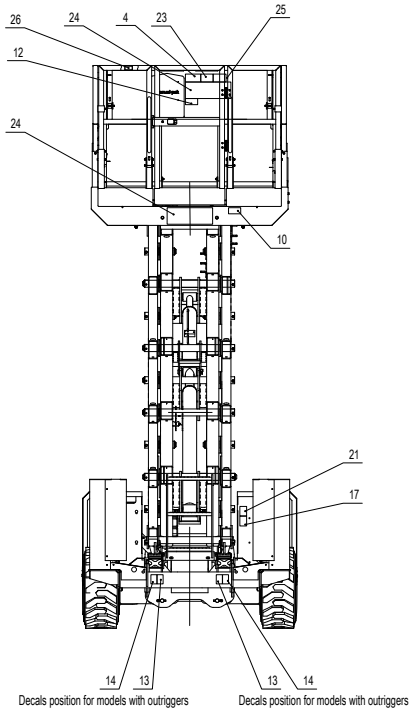
DECALS/NAMEPLATES(CE-METRIC)



Decals position for models without outriggers

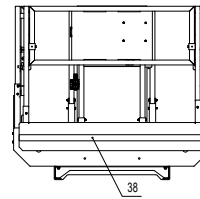


Decals position for models without outriggers



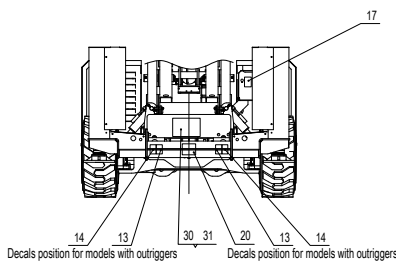
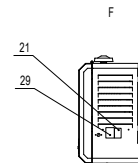
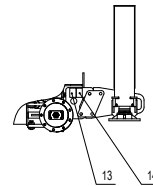
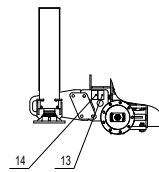
Decals position for models with outriggers

Decals position for models with outriggers



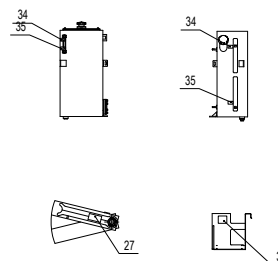
Decals position for models without outriggers

Decals position for models without outriggers



Decals position for models with outriggers

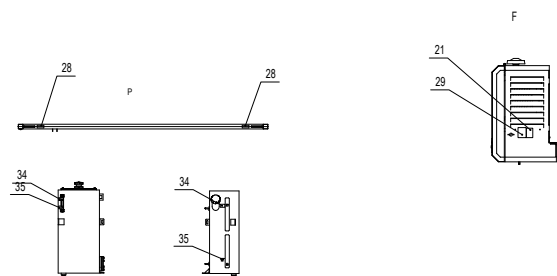
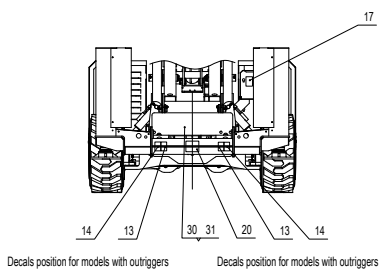
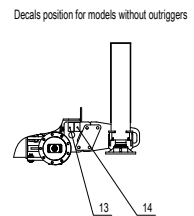
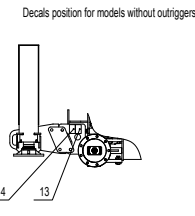
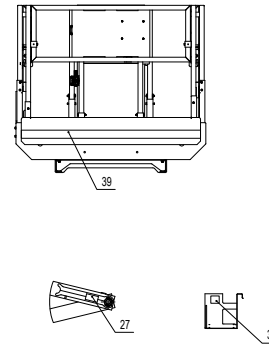
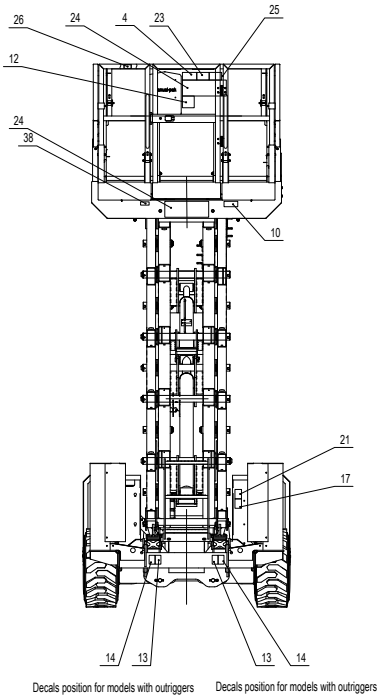
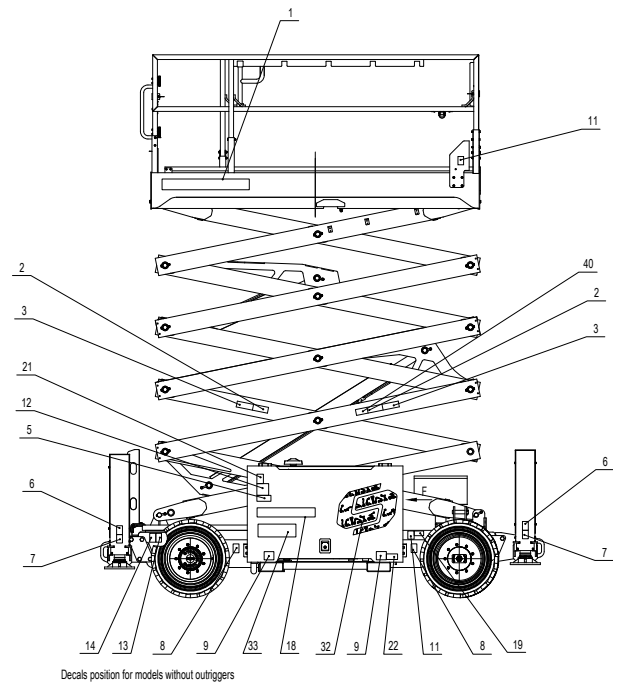
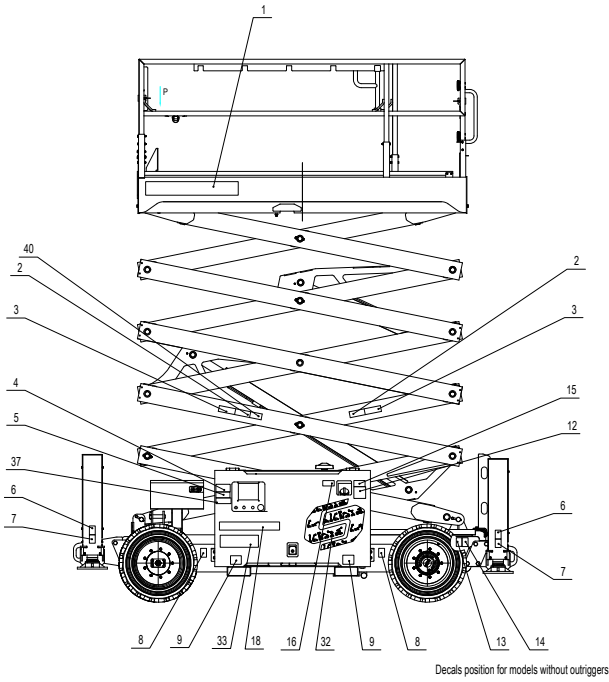
Decals position for models with outriggers



No.	Part No.	Description	Qty.	Remarks
	102009103007	Decals(CE-Metric)-1018RD	1	
	102010103007	Decals(CE-Metric)-1218RD	1	
1	101048103025	Decal-SINOBOOM	2	
2	101012100029	Decal-Crush hazard	4	
3	101012100018	Decal-Crush hazard	4	
4	101012100027	Decal-Read manuals	2	
5	101012100030	Decal-Bulkhead overhaul	2	
6	101014100013	Decal-Crush hazard	4	
7	115003103006	Decal-Outrigger load against ground 2300kg	4	
8	115003103007	Decal-Tire load against ground 2400kg	4	
9	101012100026	Decal-Forklift pockets	4	
10	101058103001	LOGO-IPAF	1	
11	101012100009	Decal	2	
12	101012100005	Decal-Electrocution hazard	3	
13	101014100021	Decal-Transport tiedown	4	
14	101014100020	Decal-Lifting points	4	
15	102004100007	Decal-Explosion hazard	1	
16	104009100021	Decal-Diesel fuel	1	
17	101012100012	Decal-High pressure hazard	2	
18	102004100029	Decal-4WD	2	
19	101012100011	Decal-Emergency lowering	1	
20	102004100008	Decal-Transport tiedown	1	
21	102004100003	Decal-Burn hazard	2	
22	101012100001	Decal-No smoking or fires	1	
23	101012100007	Decal-Tipping hazard	1	
24	102003100009	Decal-Operation requirements	2	1018RD
	102004100024	Decal-Operation requirements	2	1218RD
25	101012100019	Decal-Tipping hazard	1	
26	102004100040	Decal-Crush hazard	1	
27	101014100026	Decal-Safety arm	2	
28	101016100030	Decal-Lanyard anchorage	8	
29	101016100031	Decal-Main power disconnect switch	1	
30	102001103003	Nameplate-CE	1	
31	215050000012	Blind rivet 4×8-ZnD GB/T 1261	4	
32	102001103016	Decal-LOGO, white	2	
33	102009103000	Decal-1018RD	2	

No.	Part No.	Description	Qty.	Remarks
	102010103000	Decal-1218RD	2	
34	104011100010	Decal-Hydraulic oil level	2	
35	104011100003	Decal-Hydraulic oil level	2	
36	101055103015	Decal-Emergency stop button	1	
37	104009100022	Decal-Hydraulic oil	1	
38	216060000004	Decal–Caution tape, 50mm wide	2	

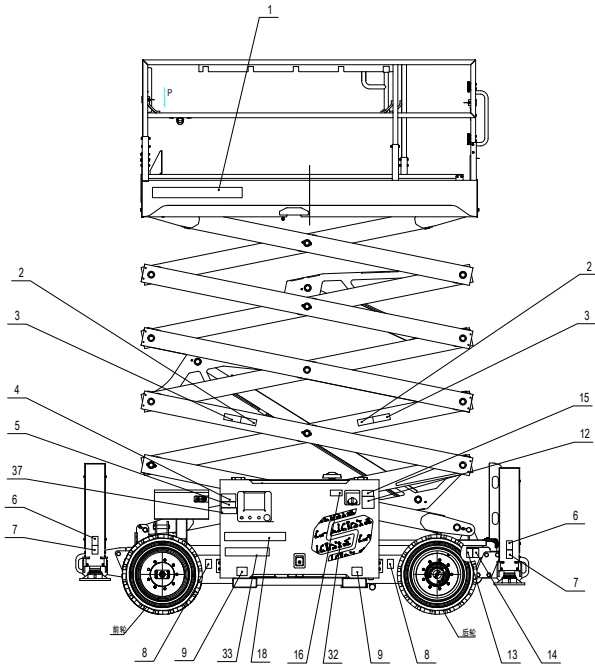
DECALS/NAMEPLATES(CSA)



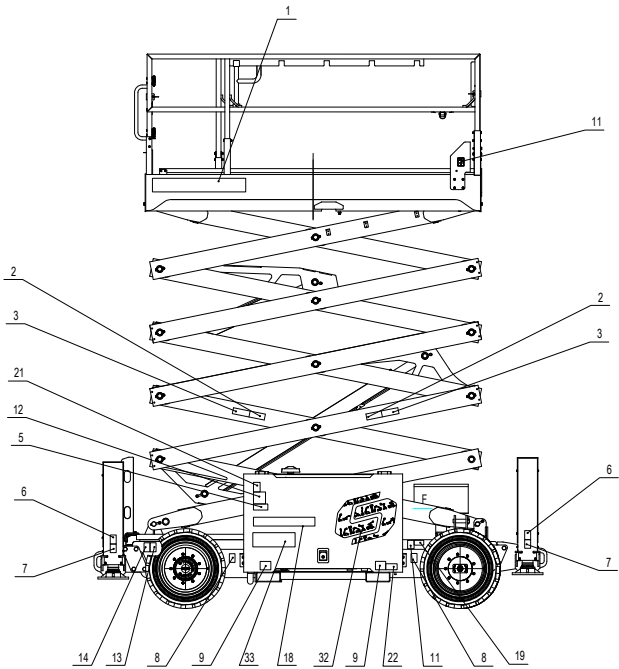
No.	Part No.	Description	Qty.	Remarks
	102009103009	Decals((CSA)-1018RD	1	
	102010103009	Decals((CSA)-1218RD	1	
1	101048103025	Decal-SINOBOOM	2	
2	101012100029	Decal-Crush hazard	4	
3	101012100018	Decal-Crush hazard	4	
4	101012100027	Decal-Read manuals	2	
5	101012100030	Decal-Bulkhead overhaul	2	
6	101014100013	Decal-Crush hazard	4	
7	102010103011	Decal-Outrigger load against ground 2300kg	4	
8	102010103010	Decal-Tire load against ground 2400kg	4	
9	101012100026	Decal-Forklift pockets	4	
10	101058103001	LOGO-IPAF	1	
11	101012100009	Decal	2	
12	101040103013	Decal-Electrocution hazard	3	
13	101014100021	Decal-Transport tiedown	4	
14	101014100020	Decal-Lifting points	4	
15	102004100007	Decal-Explosion hazard	1	
16	104009100021	Decal-Diesel fuel	1	
17	101012100012	Decal-High pressure hazard	2	
18	102004100029	Decal-4WD	2	
19	101012100011	Decal-Emergency lowering	1	
20	102004100008	Decal-Transport tiedown	1	
21	102004100003	Decal-Burn hazard	2	
22	101012100001	Decal-No smoking or fires	1	
23	101012100007	Decal-Tipping hazard	1	
24	102009103006	Decal-Operation requirements	2	1018RD
	102010103006	Decal-Operation requirements	2	1218RD
25	101012100019	Decal-Tipping hazard	1	
26	102004100040	Decal-Crush hazard	1	
27	101014100026	Decal-Safety arm	2	
28	101016100030	Decal-Lanyard anchorage	8	
29	101016100031	Decal-Main power disconnect switch	1	
30	102001103005	Nameplate-CSA	1	
31	215050000012	Blind rivet 4×8-ZnD GB/T 1261	4	
32	102001103016	Decal-LOGO, white	2	
33	102009103001	Decal-3369RD	2	

No.	Part No.	Description	Qty.	Remarks
	102010103001	Decal-4069RD	2	
34	104011100010	Decal-Hydraulic oil level	2	
35	104011100003	Decal-Hydraulic oil level	2	
36	101055103015	Decal-Emergency stop button	1	
37	104009100022	Decal-Hydraulic oil	1	
38	101040103015	Decal-Annual inspection	1	
39	216060000004	Decal-Caution tape, 50mm wide	2	
40	104011100021	Decal-Crush hazard	2	

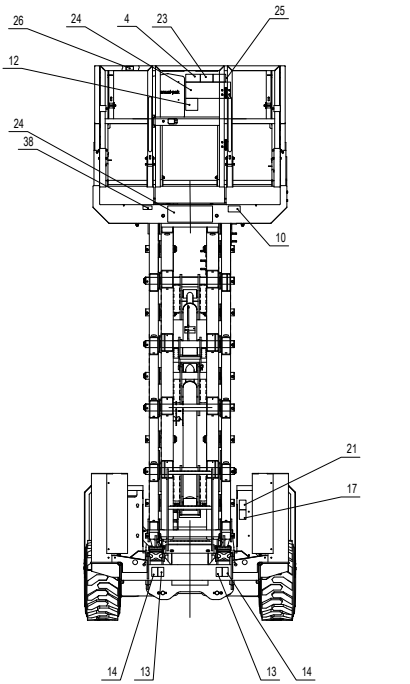
DECALS/NAMEPLATES(ANSI)



Decals position for models without outriggers

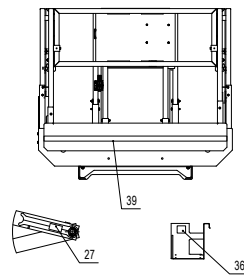


Decals position for models without outriggers



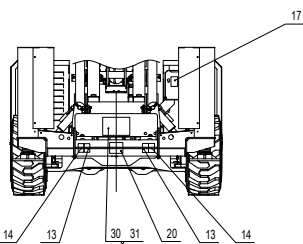
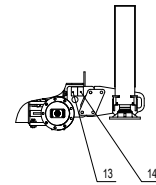
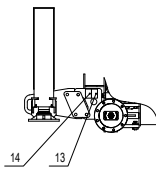
Decals position for models with outriggers

Decals position for models with outriggers



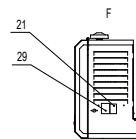
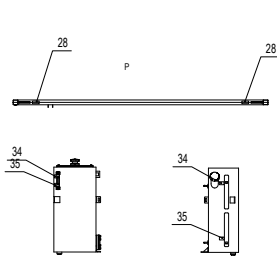
Decals position for models without outriggers

Decals position for models without outriggers



Decals position for models with outriggers

Decals position for models with outriggers





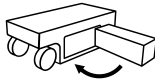
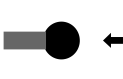
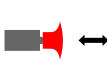



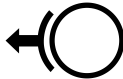




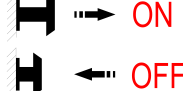


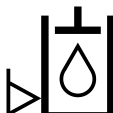
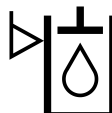


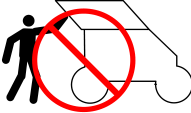





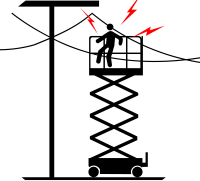
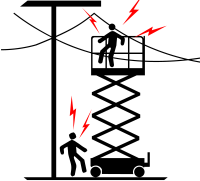
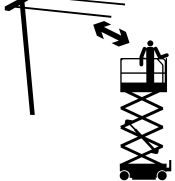

No.	Part No.	Description	Qty.	Remarks
	102009103008	Decals(ANSI)-1018RD	1	
	102010103008	Decals(ANSI)-1218RD	1	
1	101048103025	Decal-SINOBOOM	2	
2	101012100029	Decal-Crush hazard	4	
3	101012100018	Decal-Crush hazard	4	
4	101012100027	Decal-Read manuals	2	
5	101012100030	Decal-Bulkhead overhaul	2	
6	101014100013	Decal-Crush hazard	4	
7	102010103011	Decal-Outrigger load against ground 2300kg	4	
8	102010103010	Decal-Tire load against ground 2400kg	4	
9	101012100026	Decal-Forklift pockets	4	
10	101058103001	LOGO-IPAF	1	
11	101012100009	Decal	2	
12	101040103013	Decal-Electrocution hazard	3	
13	101014100021	Decal-Transport tiedown	4	
14	101014100020	Decal-Lifting points	4	
15	102004100007	Decal-Explosion hazard	1	
16	104009100021	Decal-Diesel fuel	1	
17	101012100012	Decal-High pressure hazard	2	
18	102004100029	Decal-4WD	2	
19	101012100011	Decal-Emergency lowering	1	
20	102004100008	Decal-Transport tiedown	1	
21	102004100003	Decal-Burn hazard	2	
22	101012100001	Decal-No smoking or fires	1	
23	101012100007	Decal-Tipping hazard	1	
24	102009103006	Decal-Operation requirements	2	1018RD
	102010103006	Decal-Operation requirements	2	1218RD
25	101012100019	Decal-Tipping hazard	1	
26	102004100040	Decal-Crush hazard	1	
27	101014100026	Decal-Safety arm	2	
28	101016100030	Decal-Lanyard anchorage	8	
29	101016100031	Decal-Main power disconnect switch	1	
30	102001103004	Nameplate-ANSI	1	
31	215050000012	Blind rivet 4×8-ZnD GB/T 1261	4	
32	102001103016	Decal-LOGO, white	2	
33	102009103001	Decal-3369RD	2	

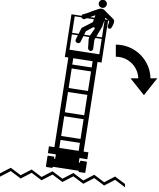
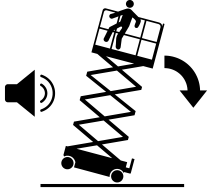
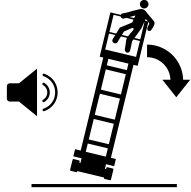
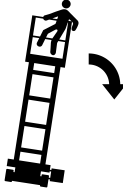

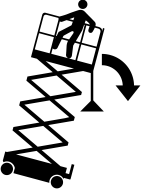

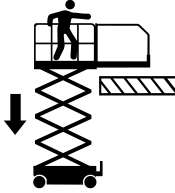

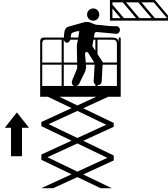
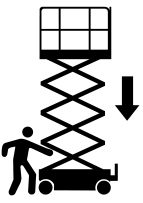
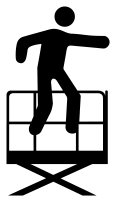

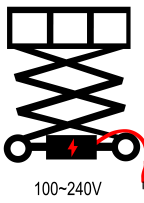
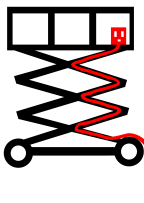
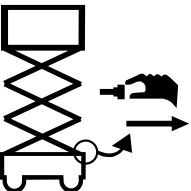
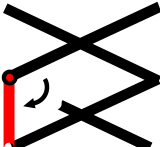
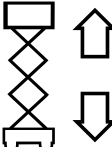
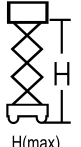
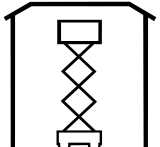
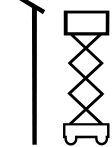






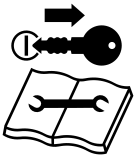


No.	Part No.	Description	Qty.	Remarks
	102010103001	Decal-4069RD	2	
34	104011100010	Decal-Hydraulic oil level	2	
35	104011100003	Decal-Hydraulic oil level	2	
36	101055103015	Decal-Emergency stop button	1	
37	104009100022	Decal-Hydraulic oil	1	
38	101040103015	Decal-Annual inspection	1	
39	216060000004	Decal-Caution tape, 50mm wide	2	










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APPENDIX 1: SYMBOLS AND DESCRIPTION

SYMBOLS CHART

 Read maintenance manual	 Anchor point allows only 1 person to tie	 Close the chassis door box	 Press the change valve	 Repeatedly move manual brake release valve
 Wind speed	 Chemical burns hazards	 Wedge the wheel	 Release the brake	 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 position	 Hydraulic oil level - high position	 Temperature	 Change the tires of the same specification
 Only trained maintenance personnel can access the bulkhead	 Read operation manual	 Add lubricant	 Crushing hazard- Please wear work shoes	 Danger of hot, high pressure fluids
 Collision hazards-Release brake on ramp	 Electrocution hazards on platform	 Electrocution hazards on the ground and platform	 Keep a safe distance from power lines	 Tip-over hazards-Avoid uneven ground

 <p>Tip-over hazards-Avoid uneven ground</p>	 <p>Tip-over hazards- Never use machine during strong, gusty wind</p>	 <p>Tip-over hazards- Never use machine during strong, gusty wind</p>	 <p>Tip-over hazards- Never leave chassis door open</p>	 <p>Tip-over hazards- Never push or pull objects outside platform</p>
 <p>Tip-over hazards- Never suspend objects from platform</p>	 <p>Tip-over hazards- Never place ladders and scaffolding on the platform</p>	 <p>Collision hazards- Never lower extended platform without checking for nearby obstacles</p>	 <p>Collision hazards- Never raise platform without checking for overhead obstacles</p>	 <p>Crushing hazards- Keep hands away from nearby obstacles when raising platform</p>
 <p>Crushing hazards- Keep hands away from scissor arms when lowering platform</p>	 <p>Fall hazards- Never climb on guardrails of platform</p>	 <p>Fall hazards- Never climb on scissor arms</p>	 <p>100-240V Battery charging plug</p>	 <p>Platform power plug</p>
 <p>Emergency lowering handle position</p>	 <p>Open the safety arm</p>	 <p>The platform moves up and down</p>	 <p>H(max) Maximum height of platform</p>	 <p>Indoor use</p>
 <p>Outdoor use</p>	 <p>The side force</p>	 <p>Electrocution hazards</p>	 <p>Wear protective clothing and glasses</p>	 <p>Battery explosion hazard</p>
 <p>No smoking</p>	 <p>No smoking</p>	 <p>Only professional maintenance</p>	 <p>Improve point</p>	 <p>Lashing points</p>

		personnel can start the maintenance		
 <p>Tire to ground load</p>	 <p>Forklift fork position</p>	 <p>Platform carrying capacity</p>	 <p>Carrying capacity of fixed and extended platform</p>	 <p>Hydraulic oil filler</p>
 <p>Horn</p>	 <p>Tool or weight</p>	 <p>Fast/high speed</p>	 <p>Slow/low speed</p>	

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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			
<p>NOTE:</p> <ol style="list-style-type: none"> 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 results are "NO", the machine must be stopped, and re-inspected after repair is completed and the box marked "inspection" must 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				
A-10 Inspect Engine Intake System				
A-11 Inspect Engine Belt				
A-12 Inspect Fuel Filter				
A-13 Inspect Cooling Fan				
A-14 Functional Tests				
A-15 Perform Maintenance after 30 Days				
Checklist B Procedures				
Items	YES/Machine is in Good Condition	NO/Machine Has Damage or Malfunction	REPAIRED/ Machine Has Been Repaired	Problem Description
B-1 Inspect Electrical Wiring				

REPAIR & INSPECTION REPORT				
B-2 Inspect Rim ,Tire and Fasteners				
B-3 Inspect Hydraulic Oil				
B-4 Inspect Cooling System				
B-5 Replace Fuel filter				
B-6 Inspect Air filter of Hydraulic Tank				
B-7 Replace High-Pressure Filter Element				
B-8 Replace Engine Air Filter Element				
B-9 Inspect the Battery				
B-10 Inspect Engine Exhaust System				
B-11 Inspect Drive Reducer Oil Level				
B-12 Test Oscillate Outriggers				
B-13 Test Drive Speed				
B-14 Test Tilt Protection System				
B-15 Test Brake 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 Engine Oil				
C-3 Replace Engine Oil Filter				
C-4 Test Weighing System				
C-5 Test Secondary Lowering				
Checklist D Procedures				
Items	YES/Machine is in Good Condition	NO/Machine Has Damage or Malfunction	REPAIRED/ Machine Has Been Repaired	Problem Description

REPAIR & INSPECTION REPORT				
D-1 Replace Drive Reducer Gear Oil				
D-2 Inspect Scissor Arm Sliders				
D-3 Replace Hydraulic Oil				
D-4 Replace Hydraulic Tank Suction Filter				
D-5 Inspect Scissor Arm Bearing				
User				
Inspector Signature				
Inspector Date				
Inspector Title				
Inspector Company				
<p>Notes:</p> <ol style="list-style-type: none"> 1. The Repair & Inspection Report shall include the inspection table of each regular inspection. 2. Duplicate the Repair & Inspection Report for each inspection. Store the completed tables for 10 years or until the machine is no longer in use or as required by machine owner/company/custodian. 3. Use the following table to note the results. After each section is complete, mark the appropriate box. 4. 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". Select the appropriate inspection procedure based on the inspection type. <p>Select the procedures as appropriate for the type of inspection.</p>				

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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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