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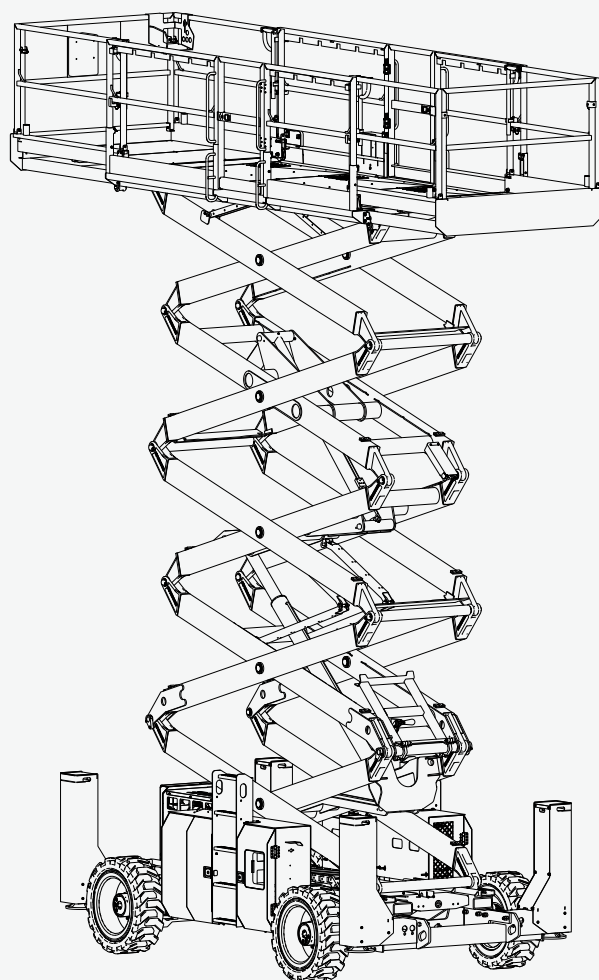
Rev: B

Mar. 2022

Operation Manual

1323RD/4389RD

1623RD/5389RD



ANSI AS/NZS S EAC GB

SINOBOOM



WARNING

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

Manual revision history:

REV	DATE	DESCRIPTION	REMARK
A	Jul, 2021	Original issue of the manual	
B	Mar, 2022	Updated manual, added Yanmar engine information etc.	

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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*** of the *Operation Manual* for details.)

Models	Trade Identification		Serial Numbers
	Metric	Imperial	
1323RD	1323RD	4389RD	0201200100 to present
1623RD	1623RD	5389RD	0201300109 to present

NOTE:

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

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STATEMENTS

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

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

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

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INTRODUCTION

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

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

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

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

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

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1

MACHINE SPECIFICATIONS

Table 1-1 1323RD specifications

MEASURE	1323RD (METRIC)	4389RD (IMPERIAL)
DIMENSIONS		
Max. platform height	13.1 m	42ft 11.7in
Max. working height	15.1 m	49ft 6.5in
Max. horizontal reach (rear extension platform extended)	1.2 m	3ft 11.2in
Max. horizontal reach (front extension platform extended)	1.5 m	4ft 11.1in
Overall length	4.88 m	16ft
Overall width	2.28 m	7ft 5.7in
Overall height (stowed, rails folded)	2.22 m	7ft 3.4in
Overall height (stowed, rails up)	2.98 m	9ft 9.3in
Wheelbase	2.84 m	9ft 3.8in
Wheel span	1.95 m	6ft 4.7in
Ground clearance	0.36 m	1ft 2.2in
Tire size (diameter × width / type)	33×12-20/solid	315/55D20/foam-filled
Platform dimension (Length × Width × Height)-6.5 m Platform	3.96 m×1.82 m×1.1 m	13ft×6ft×3ft 7in
Platform dimension (Length × Width × Height)-7.4 m Platform	4.84 m×1.82 m×1.1 m	15ft 10.6in×6ft×3ft 7in
PERFORMANCE		
Rated platform capacity	680 kg	1499 lb
Individual extension platform capacity	227 kg	500 lb
Max. platform occupancy	7 persons	
Drive speed (stowed)	0 ~ 6.1 km/h	0 ~ 3.8 mph
Drive speed (raised)	0 ~ 1.1 km/h	0 ~ 0.68 mph
Up time (no load)	40 ~ 50 s	
Down time (no load)	34 ~ 44 s	
Gradeability	50% (26.6°)	
Max. allowable inclination (front-to-back)	3°	

Table 1-1 1323RD specifications (continued)

MEASURE	1323RD (METRIC)	4389RD (IMPERIAL)
Max. allowable inclination (side-to-side, outrigger retracted/extended)	2°/0.8°	
Max. outrigger leveling angle (front-to-back)	7°	
Max. outrigger leveling angle (side-to-side)	12°	
Turning radius (inside)	2.2 m	7ft 2.6in
Turning radius (outside)	5.3 m	17ft 4.7in
Max. allowable side force	400 N	90 lbf
Max. operating noise	86 dB	
POWER		
Drive mode (drive×steer)	4WD×2WS	
Engine (rated power, RPM)	36.3 kW, 2800 rpm (Deutz D2011 L03i) 35.5 kW, 3000 rpm (Yanmar 4TNV88C-DFLT) 36.4kW, 3000 rpm (Yanmar 4TNV88-BDFLTC) 35.3kW, 3000 rpm (Yanmar 4TNV88-ZCDCSI)	
Fuel tank capacity	110 L	24 gal (UK)/29 gal (US)
Hydraulic tank capacity	140 L	30.8 gal (UK)/37 gal (US)
Hydraulic system pressure	24 MPa	3481 psi
Battery specification (voltage, capacity, rate of discharge)	12 V, 110 Ah, 5 hr	
Power system voltage	12 VDC	
System control voltage	12 VDC	
GROUND BEARING INFORMATION		
Max. tire load	3900 kg	8598 lb
Tire contact pressure	720 kPa	104 psi
Max. outrigger load	3200 kg	7055 lb
Outrigger contact pressure	630 kPa	91 psi
ENVIRONMENT		
Max. allowable wind speed (indoor)	0 m/s	0 mph
Max. allowable wind speed (outdoor)	12.5 m/s	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

Table 1-1 1323RD specifications (continued)

MEASURE	1323RD (METRIC)	4389RD (IMPERIAL)
Max. allowable ambient relative humidity	90%	
Storage condition	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		
Total weight	7700 kg	16976 lb

Table 1-2 1623RD specifications

MEASURE	1623RD (METRIC)	5389RD (IMPERIAL)
DIMENSIONS		
Max. platform height	16.2 m	53ft 1.8in
Max. working height	18.2 m	59ft 8.5in
Max. horizontal reach (rear extension platform extended)	1.2 m	3ft 11.2in
Max. horizontal reach (front extension platform extended)	1.5 m	4ft 11.1in
Overall length	4.88 m	16ft
Overall width	2.28 m	7ft 5.7in
Overall height (stowed, rails folded)	2.44 m	8ft
Overall height (stowed, rails up)	3.21 m	10ft 6.3in
Wheelbase	2.84 m	9ft 3.8in
Wheel span	1.95 m	6ft 4.7in
Ground clearance	0.36 m	1ft 2.2in
Tire size (diameter × width / type)	33×12-20/solid	315/55D20/foam-filled
Platform dimension (Length × Width × Height)-6.5 m Platform	3.96 m×1.82 m×1.1 m	13ft×6ft×3ft 7in
Platform dimension (Length × Width × Height)-7.4 m Platform	4.84 m×1.82 m×1.1 m	15ft 10.6in×6ft×3ft 7in
PERFORMANCE		
Rated platform capacity	680 kg	1499 lb
Individual extension platform capacity	227 kg	500 lb
Max. platform occupancy	4 persons	
Drive speed (stowed)	0 ~ 6.1 km/h	0 ~ 3.8 mph
Drive speed (raised)	0 ~ 1.1 km/h	0 ~ 0.68 mph

Table 1-2 1623RD specifications (continued)

MEASURE	1623RD (METRIC)	5389RD (IMPERIAL)
Uptime (no load)	70 s ~ 90 s	
Downtime (no load)	45 s ~ 55 s	
Gradeability	40% (22°)	
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)	7°	
Max. outrigger leveling angle (side-to-side)	12°	
Turning radius (inside)	2.2 m	7ft 2.6in
Turning radius (outside)	5.3 m	17ft 4.7in
Max. allowable side force	400 N	90 lbf
Max. operating noise	86 dB	
POWER		
Drive mode (drive×steer)	4WD×2WS	
Engine (rated power, RPM)	36.3 kW, 2800 rpm (Deutz D2011 L03i) 35.5 kW, 3000 rpm (Yanmar 4TNV88C-DFLT) 36.4kW, 3000 rpm (Yanmar 4TNV88-BDFLTC) 35.3kW, 3000 rpm (Yanmar 4TNV88-ZCDCSI)	
Fuel tank capacity	110 L	24 gal (UK)/29 gal (US)
Hydraulic tank capacity	140 L	30.8 gal (UK)/37 gal (US)
Hydraulic system pressure	24 MPa	3481 psi
Battery specification (voltage, capacity, rate of discharge)	12 V, 110 Ah, 5 hr	
Power system voltage	12 VDC	
System control voltage	12 VDC	
GROUND BEARING INFORMATION		
Max. tire load	3900 kg	8598 lb
Tire contact pressure	720 kPa	104 psi
Max. outrigger load	3200 kg	7055 lb
Outrigger contact pressure	630 kPa	91 psi
ENVIRONMENT		
Max. allowable wind speed (indoor)	0 m/s	0 mph
Max. allowable wind speed (outdoor)	12.5 m/s	28 mph

Table 1-2 1623RD specifications (continued)

MEASURE	1623RD (METRIC)	5389RD (IMPERIAL)
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 ambient relative humidity	90%	
Storage condition	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		
Total weight	8780 kg	19357 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 lubricant should be added in accordance with the environmental temperature.
- c) In cold weather, auxiliary devices are needed to start the machines.
- 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

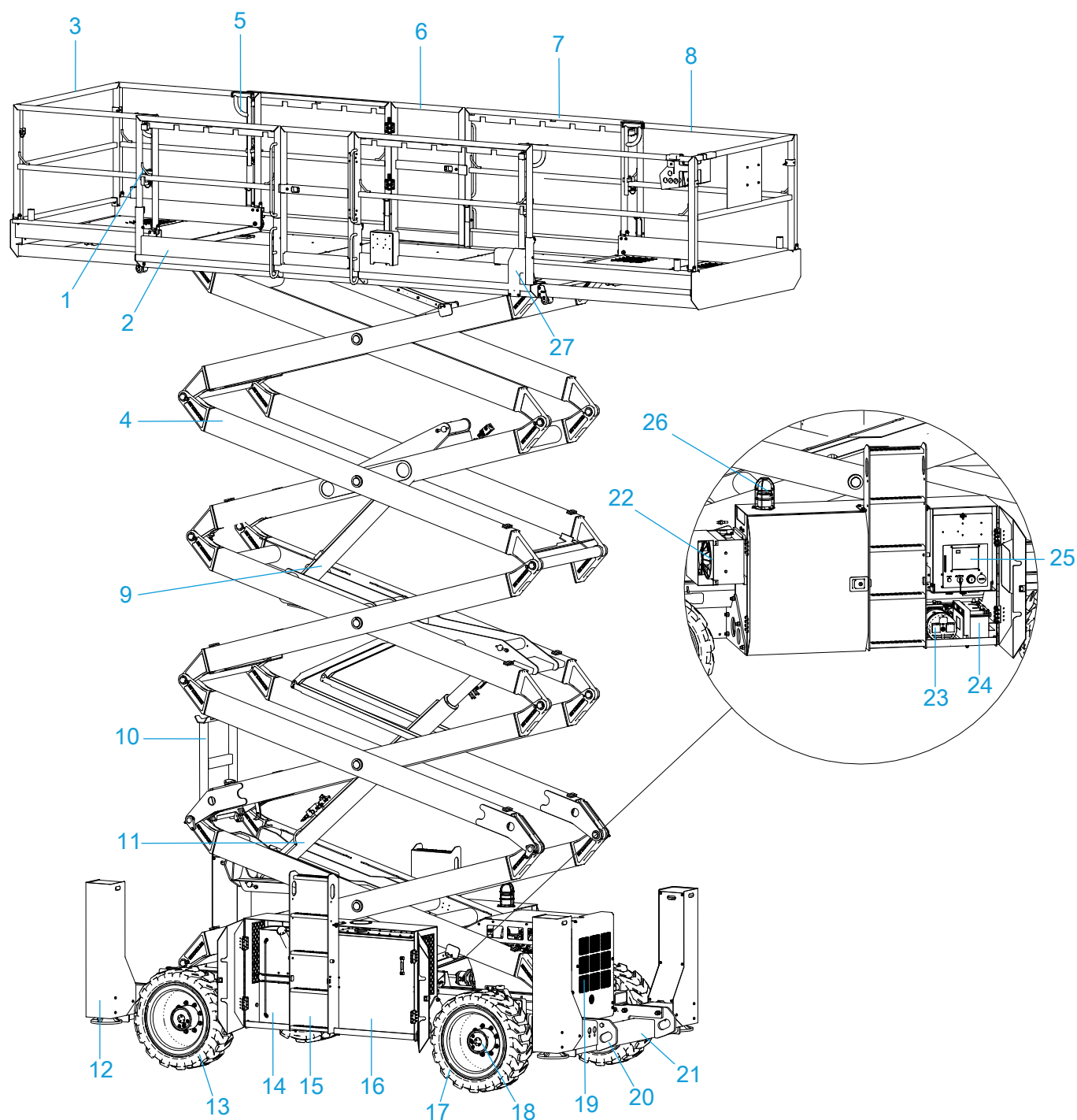


Figure 2-1

Table 2-1

1. Lanyard anchorage point	10. Safety Arm	19. Engine (inside the engine cover)
2. Fixed Platform	11. Lower Lift Cylinder	20. Transport tie-down position
3. Extended Platform	12. Outrigger	21. Chassis Assembly
4. Scissor Assembly	13. Non-steering Wheel	22. Oil cooler
5. Platform extension locking handle	14. Fuel Tank	23. Generator
6. Platform Entry Gate	15. Ladder	24. Maintenance-free battery
7. Fixed Platform Rail	16. Hydraulic Oil Tank	25. Ground Controller
8. Extended Platform Rail	17. Steer Wheel	26. Warning Light
9. Upper Lift Cylinder	18. Reducer	27. AC Power Socket

Machine positions

Stowed position:

The machine comes in stowed position when fully retracted.

Non-operating position:

The machine remains in non-operating position when the down limit switch does not disengage.

Operating/raised position:

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

The platform height (from ground to platform floor) is $3\pm0.3\text{m}$ (9ft 10in $\pm$ 12in) when the down limit switch disengages.

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

Maximum platform capacity:

Table 3-2

1323RD	
Platform retracted	680 kg (1499 lb)
Platform extended-extension platform only (single)	227 kg (500 lb)
1623RD	
Platform retracted	680 kg (1499 lb)
Platform extended-extension platform only (single)	227 kg (500 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 1.1 km/h (0.68 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 use the machine to push or 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 parts of 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 or fasten any overhanging load on or 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 any battery that weighs less than the original battery (27kg [60 lb]). The battery not only provides power, but also acts as counterweight, which is quite important to maintain the stability of the machine.
- Do not use the platform to push other machines or 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 place loads 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 the 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 1.1 km/h (0.68 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 (28 mph). If the wind speed increases to beyond 12.5 m/s (28 mph) after the platform is lifted, retract the

⚠ WARNING

UNSAFE JOBSITE HAZARDS

platform and stop operating the machine.

- Never use any devices 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.
- With the machine retracted, be careful and slow down when the machine is moving on uneven terrain, crushed stone, unstable or slippery 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 pay attention to 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 climbing ability or gradeability is suitable for machines with platform retracted.

1323RD gradeability: 50% (26.6°)

1623RD gradeability: 40% (22°)

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 function).
- 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 leaning, fastening or binding.
- Stunt or imprudent use of the machine.
- Overloaded or over-moment situation.
- Other situations as specified in the Manuals.

⚠ WARNING

UNSAFE OPERATION HAZARDS



- Do not use the machine to push or 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 parts of 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 use any battery that weighs less than the original battery (27kg [60 lb]). The battery not only provides power, but also acts as counterweight, which is quite important to maintain the stability of the machine.
- 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 other machines or objects.
- Do not allow the platform to touch nearby objects.

⚠ WARNING

UNSAFE OPERATION HAZARDS

- Do not tie the platform onto nearby objects.
- Do not place loads outside the platform.
- When the platform is caught or stuck or when other objects in the vicinity impede its normal movement, do not use the platform controller to lower the platform. If you intend to lower the platform with the ground controller, you must operate it only after all personnel have left the platform.
- 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.

⚠ 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.

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**

- 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%).

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.

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4 JOBSITE INSPECTION



WARNING



UNSAFE OPERATION HAZARD

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

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

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

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

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

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

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

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

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5 PRE-OPERATION INSPECTION

WARNING



UNSAFE OPERATION HAZARD

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

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

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

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

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

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

TIPS FOR CONDUCTING A PRE-OPERATION INSPECTION

- The operator shall be responsible for performing the “pre-operation inspection” and routine maintenance as stated in this manual.
- Before each shift change, the operator must conduct a pre-operation inspection to find out whether the machine has obvious problems before performing a pre-operation function test.
- The pre-operation inspection also helps the operator to determine whether the machine requires routine maintenance.
- See the list of machine components in **2 Machine Components, page 2-1**. Check the machine for any modified, damaged, loose or missing parts.
- Never use a machine that has damaged or modified parts. Mark the machine and stop using the machine if it is found to be damaged or modified.
- As specified by the manufacturer, only qualified maintenance technicians can maintain the machine. 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*.


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.

CONDUCTING A PRE-OPERATION INSPECTION

Before starting the machine, check whether the following requirements are met:

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

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
- Safety arm
- 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.

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.

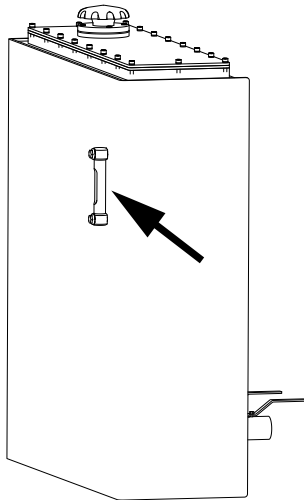


Figure 5-1

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

Table 5-1

CUSTOMER REQUIREMENTS	HYDRAULIC OIL MARK
Normal-temperature region 0°C to 40°C (32°F to 104°F)	L-HM46
Cold region	L-HV32

CUSTOMER REQUIREMENTS

HYDRAULIC OIL MARK

-25°C to 25°C (-13°F to 77°F)

High-temperature region
greater than 40°C (104°F)

Extremely cold region
less than -30°C (-22°F)

L-HM68

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 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 5-2

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.

INSPECTING FUEL LEVEL

NOTICE

Make 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.

- Open the rear right door of chassis, and locate the fuel tank.

- Inspect the fuel level to ensure it is within the marking range of sight gauge.

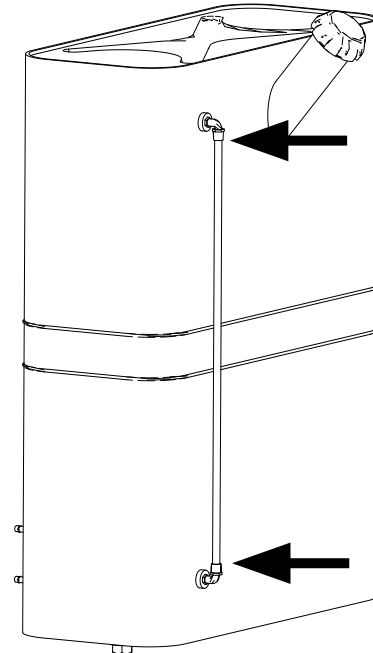


Figure 5-2

- If the fuel level is below the MIN position, add fuel before resuming work.
- Ensure the fuel tank body and ports are free of leakage.
- The engine must be off when adding fuel.
- Open the cap of fuel tank, add fuel as needed. Never overfill the tank, it is recommended to add to 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
-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 at operating temperatures below 0°C and min. cetane number of 40 at operating temperatures over 0°C. When the cetane number of the diesel 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.

INSPECTING COOLANT LEVEL (WATER-COOLED ENGINE)

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

WARNING

HIGH TEMPERATURE AND HIGH PRESSURE HAZARDS

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



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.

NOTICE

Turn off the engine before inspection.

1. Turn off the engine, and remove the engine cover after the engine cools down.
2. Open the cover of coolant box over the radiator to inspect the coolant level.

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.

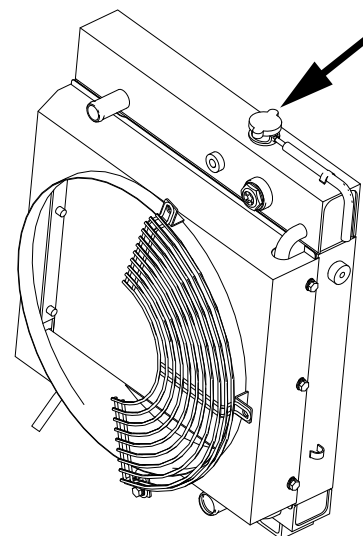


Figure 5-3

3. The coolant level should be at the filling 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 coolant prepared by mixing ethylene glycol (ethylene and propene) with water in proportion. The water quality must meet the requirements as listed in the table below.

Table 5-4

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

NOTICE

- Do not apply sealing additive to the cooling system, otherwise it will cause blockage to the low-fluidity area, radiator and engine oil cooler, or damage the water pump sealing.
- Do not apply soluble engine oil to the cooling system, otherwise it will corrode the brass and copper, damage the surface of heat exchanger, sealing and hose.
- The water added into the coolant must meet the requirements of calcium and magnesium less than 170ppm, chloride less than 40ppm and sulphur less than 100ppm. Excessive calcium and magnesium can lead to scale formation, and excessive chloride and sulfate can corrode the cooling system.

INSPECTING THE BATTERY

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.



WARNING

ELECTROCUTION HAZARD



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



WARNING

CHEMICAL BURN HAZARD



- Avoid battery acid spillage or contact with unprotected skin. If the battery acid comes into contact with the skin, wash it immediately with plenty of water and seek medical attention immediately.
- In case of battery acid spillage, use water mixed with baking soda to neutralize the acid.

- Check the battery level. The discharged capacity shall not exceed 80% of the total capacity of the battery. Charge the battery immediately after each discharging.
- Ensure the battery cells are wired reliably with the locking nuts torqued to the specifications as below:

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

NOTICE

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

- Ensure the battery negative and positive poles are correctly connected.
- Ensure the battery connections are not corroded.
- Check the battery electrolyte level is proper (for lead-acid battery requiring maintenance).
- Check the battery box for accumulated water, if any, clear the water.

- Check the internal and external paint of battery for damage, if any, touch up the damaged paint immediately to prevent corrosion and keep the box insulated.

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

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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.

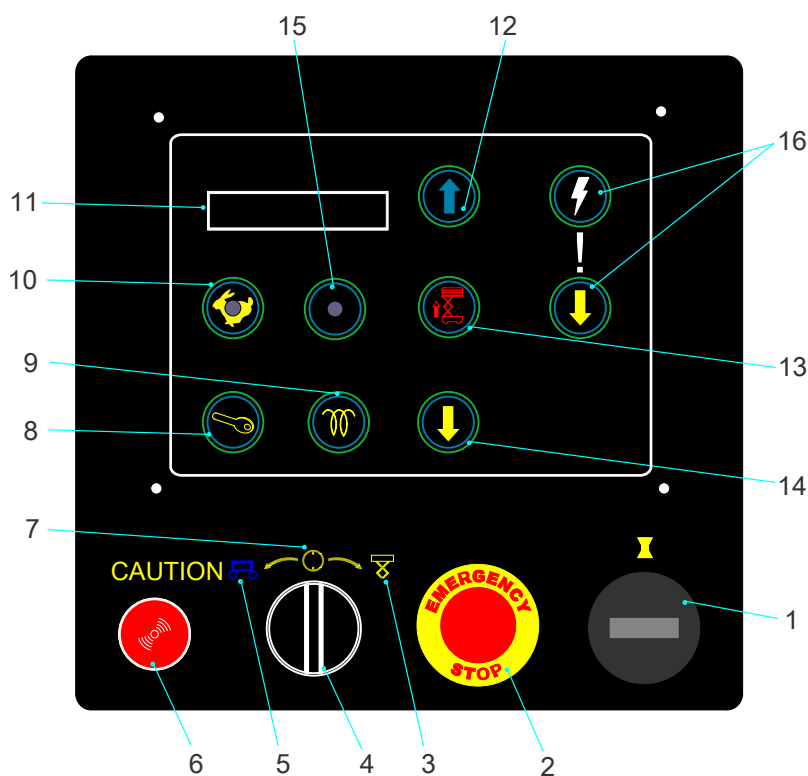


Figure 6-1 Ground controller (DTC system)

Table 6-1

1. Hour meter	7. OFF position	13. Platform up/down enable switch
2. Emergency stop button	8. Glow plug 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 speed select switch (with indicator light)	16. Emergency lowering switch
5. Ground position	11. LCD screen	
6. Buzzer	12. Platform up switch	

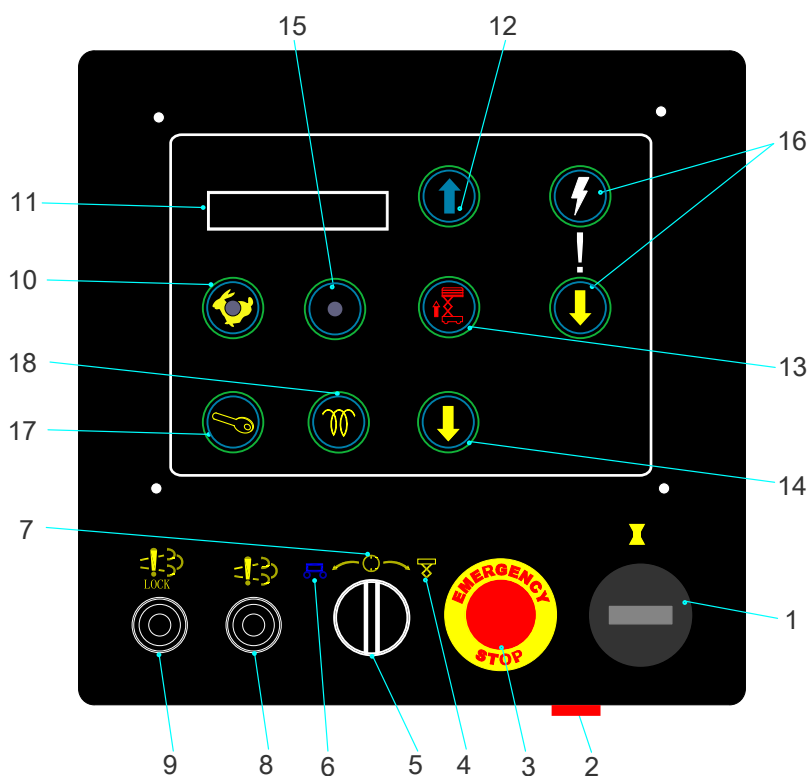


Figure 6-2 Ground controller (DTC system)-for EU Stage 5 engines

Table 6-2

1. Hour meter	7. OFF position	13. Platform up/down enable switch
2. Buzzer	8. Regen request switch	14. Platform down switch
3. Emergency stop button	9. Regen interlock switch	15. Overload indicator light
4. Platform position	10. Engine speed select switch (with indicator light)	16. Emergency lowering switch
5. Key switch (Ground/Platform select switch)	11. LCD screen	17. Engine start switch
6. Ground position	12. Platform up switch	18. Glow plug 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. Ensure the LCD screen is lit and reads "SYSTEM READY".

NOTICE

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

GROUND/PLATFORM SELECT SWITCH



1. Turn the Ground/Platform select switch on ground controller to Ground position, all functions will only be operative on the ground controller, while the platform controller will be inoperative.
2. Turn the Ground/Platform select switch on ground controller to Platform position, all functions will only be operative on the platform controller, while the ground controller will be 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 should be inoperative.
2. Pull out the emergency stop button on ground controller to ON position, and press the engine start switch, the engine will be normally started.

GLOW PLUG SWITCH



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

Electrically-controlled engines can be preheated automatically.

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 out, indicating the engine is at low idle speed.

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

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 up/down enable switch, the intended function will be inoperative.
2. Press the platform up/down 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 descend and the alarm sounds.

EMERGENCY LOWERING



After pressing the emergency lowering combination buttons, the platform can be lowered, even though the engine is not started.

REGENERATION FUNCTION



1. Run the engine at low idle speed until the coolant temperature reaches 60°C.
 2. Move the regen interlock switch (toggle switch) upward.
 3. Press and hold the regen request switch (self-reset switch) for 10s, and the regen execution indicator light at the hour meter shall be lit at this time.
 4. Release the regen request switch for 3s, and the regen request indicator light and the regen execution indicator light on the hour meter shall be lit and flashing respectively at this time.
 5. Press and hold the regen request switch for 3s. At this time, the high exhaust temperature indicator light and regen execution indicator light at the hour meter shall be on and lit respectively, the idle speed of the engine shall be increased automatically and the regeneration function shall be performed.
- When performing the regeneration function, other actions cannot be performed simultaneously. After the operation is completed, move the regen interlock switch downward to turn off the regeneration function, or wait for 30mins to exit the state automatically.
 - Normally, 50 hours after the regeneration operation, the regeneration can be performed again. In case of a regeneration alarm, the regeneration function will not be subject to the restriction.

TESTING THE GROUND CONTROLLER (SINOBOOM CONTROL SYSTEM)

NOTICE

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

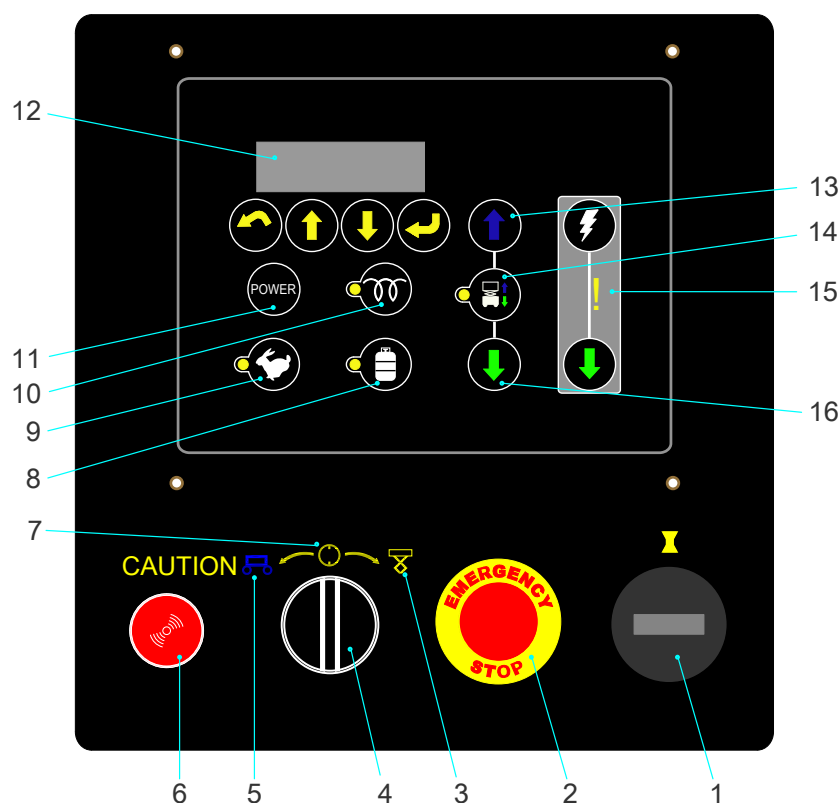


Figure 6-3 Ground controller (Sinoboom control system)

Table 6-3

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
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	

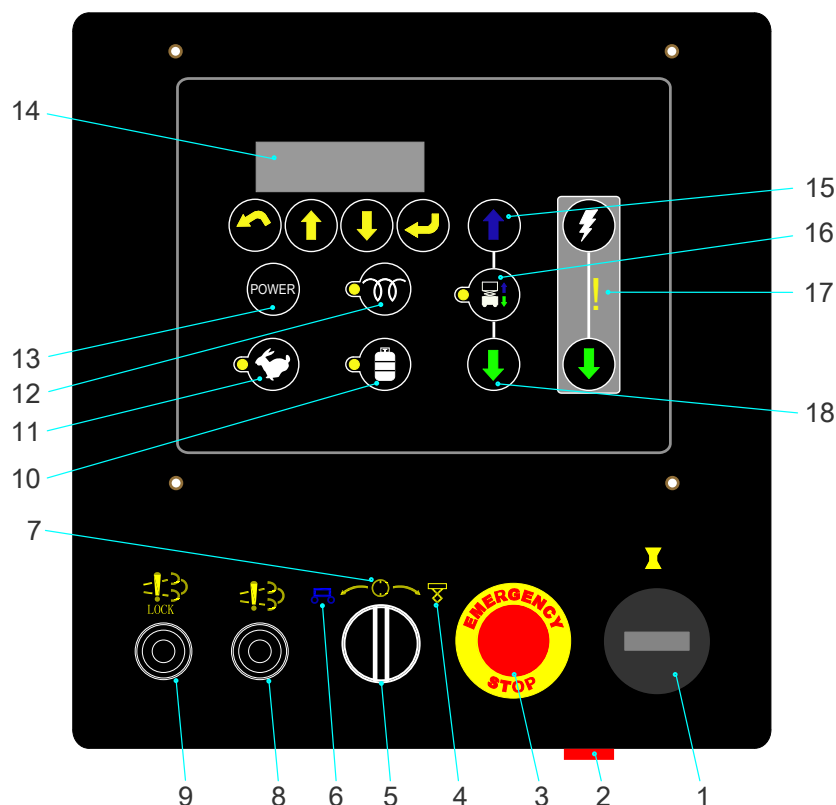


Figure 6-4 Ground controller (Sinoboom control system)-for EU Stage V engines

Table 6-4

1. Hour meter	7. Neutral position	13. Ignition switch
2. Emergency stop button	8. Regeneration request switch	14. LED screen
3. Platform control position	9. Regeneration interlock switch	15. Platform up switch
4. Key switch (Ground/Platform select switch)	10. Natural gas switch (not used)	16. Platform up/down enable switch
5. Ground control position	11. Engine speed select switch	17. Emergency lowering combination switch
6. Buzzer	12. Glow plug switch	18. Platform down switch

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.**

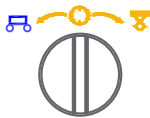
PREPARATION

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

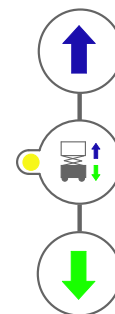


After pressing the engine speed select switch, the button should be lit, indicating the engine is at high idle speed; by pressing the button again, the button shall go out, indicating the engine is at low idle speed.

Note: The engine is defaulted to 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.

EMERGENCY LOWERING



After pressing the emergency lowering combination buttons, the platform can be lowered, even though the engine is not started.

REGENERATION FUNCTION



1. Set the engine at low idle speed, and wait for the coolant temperature to reach 60°C.
2. Push upward the regeneration interlock switch (-toggle switch).
3. Press and hold the regeneration request switch (self-reset switch) for 10s, and the regeneration execution indicator light at the hour meter will be lit.
4. Release the regeneration request switch for 3s, and the regeneration request indicator light and regeneration execution indicator light at the hour meter will be lit and flashing separately.
5. Press and hold the regeneration request switch for 3s, and the high exhaust temperature indicator light and regeneration execution indicator light at the hour meter will be lit, the engine speed will be automatically increased, and the regeneration will be performed.

Note:

- Other actions cannot be performed while the regeneration is executed. After completing regeneration operation, push down the regeneration interlock switch to turn off the regeneration function, or wait for half an hour to automatically exit this state.
- Under normal circumstances, the next regeneration operation cannot be executed until 50 hours after the previous regeneration operation. But in the event of a regeneration alarm, this restriction is not working.

TESTING THE PLATFORM CONTROLLER (DTC SYSTEM)

NOTICE

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

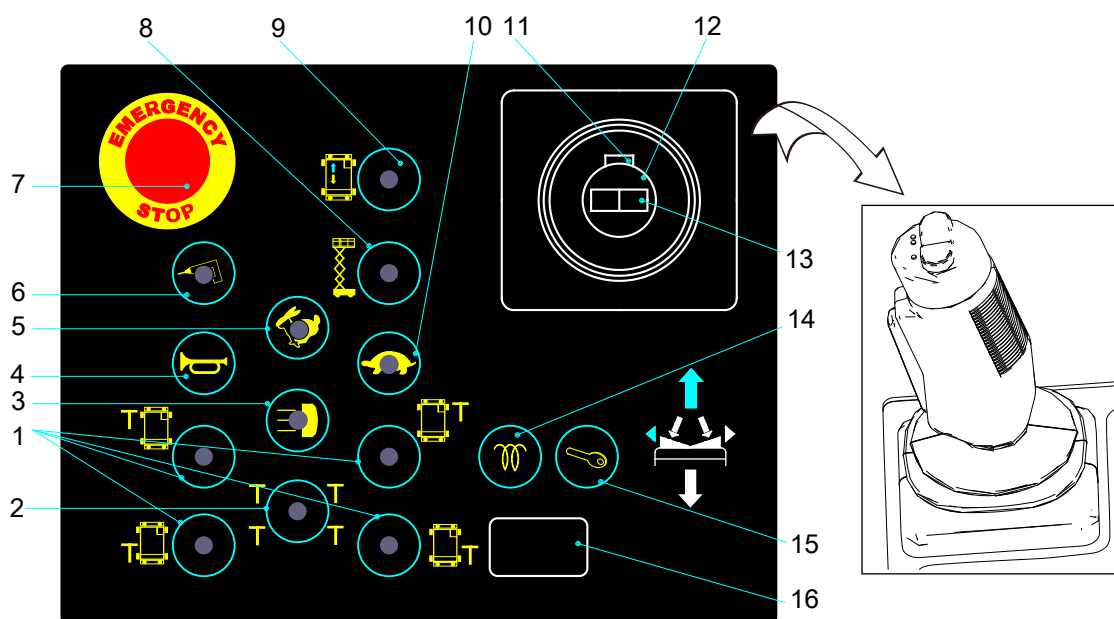


Figure 6-5 Platform controller (DTC system)

Table 6-5

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.

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.

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 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.

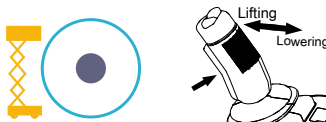
Note: The engine is running at low idle speed by default.

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

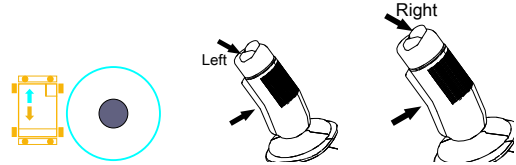


1. Start the engine.
2. Press the platform lift switch, the switch should be lit.
3. Hold the joystick enable switch and slowly deflect forward the joystick, the platform should rise.
4. Hold the joystick enable switch and slowly deflect backward the joystick, the platform should descend with the alarm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

STEER THUMB ROCKER SWITCH

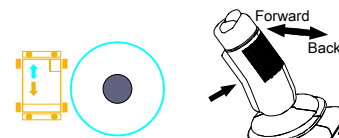
NOTICE

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.

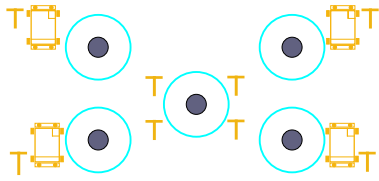
DRIVE SPEED SELECT SWITCH



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.

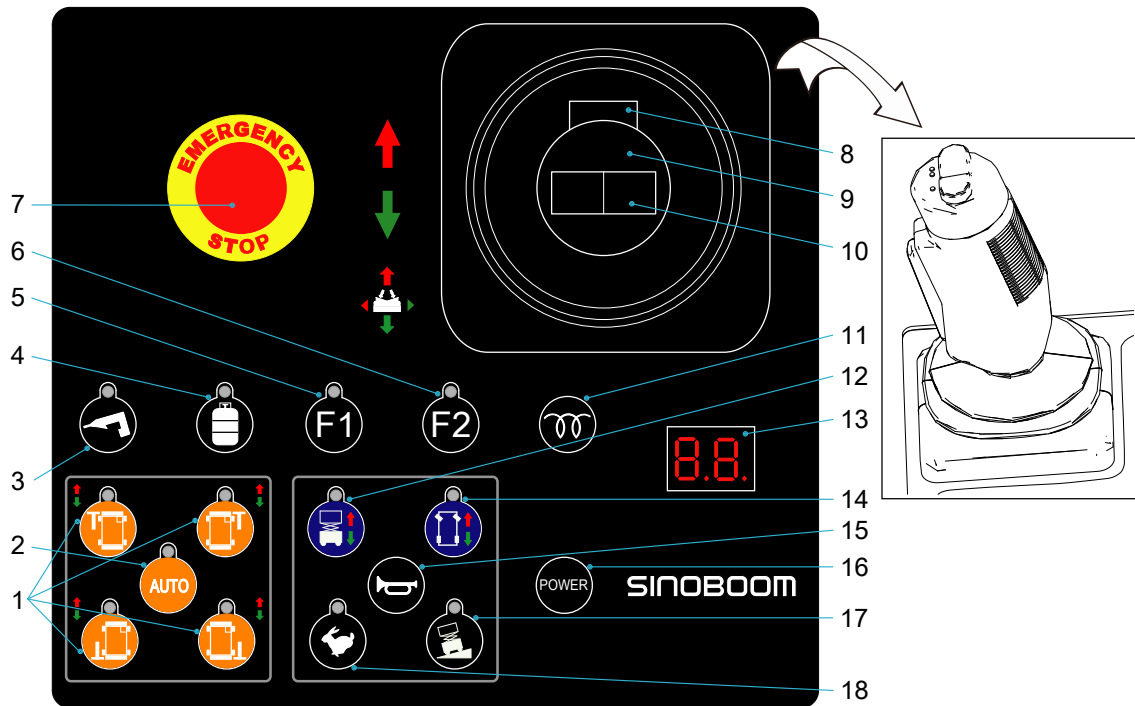


Figure 6-6 Platform controller (Sinoboom control system)

Table 6-6

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.

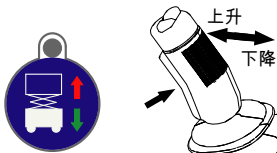
ENGINE SPEED SELECT SWITCH



- 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



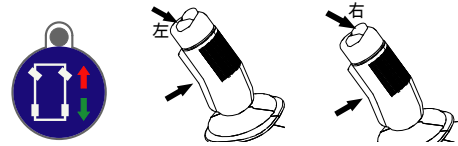
1. Start the engine.
2. Press the platform up/down enable switch, the indicator light should be lit and the lift mode is activated.
3. Hold the joystick enable switch and slowly push forward the joystick, the platform should rise.
4. Hold the joystick enable switch and slowly pull backward the joystick,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

NOTICE

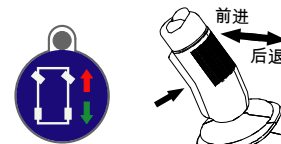
When testing the steer/drive functions, the operator should stand in the platform facing towards the machine steer direction.



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.

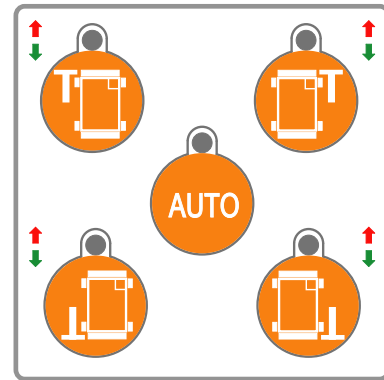
CLIMBING MODE



- 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 controller to the platform control position.
2. Pull out the emergency stop buttons on both the ground and platform controllers to the 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 to a height and release the joystick

6. Shut off the engine.
7. Press simultaneously the both emergency lowering switches.
8. The platform should lower until properly in place, and the alarm should sound while the platform is lowering.

TESTING THE LEVEL SENSOR

 **WARNING**

UNSAFE OPERATION HAZARDS



- 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

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

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 6.1±0.6Km/h (3.79±0.37mph), or the drive time for 40m (131 ft) is 19 ~ 23s.
8. Hold the joystick enable switch and slowly deflect forward the joystick to full stroke.
9. Press the drive high/low speed switch on platform controller to select the low drive speed.
10. The max drive speed of the machine in stowed position is 1.1±0.1Km/h (0.68±0.06mph), or the drive time for 20m (65.6 ft) is 53 ~ 64s.

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 is $1.1 \pm 0.1 \text{ Km/h}$ ($0.68 \pm 0.06 \text{ mph}$), or the drive time for 20m (65.6 ft) is 53 ~ 64s.
10. Hold the joystick enable switch and slowly deflect forward the joystick to full stroke.
11. Press the drive high/low speed switch on platform controller to select the low drive speed.
12. The max drive speed of the machine in stowed position is $1.1 \pm 0.1 \text{ Km/h}$ ($0.68 \pm 0.06 \text{ mph}$), or the drive time for 20m (65.6 ft) is 53 ~ 64s.

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.

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.

TESTING THE WEIGHING SYSTEM

The platform weighing system is optional. Make sure your machine has this protection function before checking this function.

1. Park the machine on flat, level and firm ground. Lubricate the bearings and sliding slots.
2. Using the ground controller, lift and lower the platform without load for two cycles, the machine should operate without shaking or other abnormalities.
3. With the platform raised by about 1m, gradually add loads to the platform.

Table 6-7

Mdoels	Test Results
1323RD	When the weight does not exceed 680 kg (1499 lb), ensure that the platform is able to rise to the highest position. When the platform load is greater than or equal to 816 kg (1799 lb), the platform lifting height should be no greater than 3.2±0.5m (10ft 6in±1ft 8in).
1623RD	When the weight does not exceed 680 kg (1499 lb), ensure that the platform is able to rise to the highest position. When the platform load is greater than or equal to 816 kg (1799 lb), the platform lifting height should be no greater than 3.2±0.5m (10ft 6in±1ft 8in).

NOTICE

When the temperature of hydraulic oil is low, the viscosity will increase, which will have a significant impact on the pressure detection. If the environmental temperature difference between the place of the end customer of the machine and the place of machine manufacturer factory is $\geq 10^{\circ}\text{C}$ (50°F), or if the hydraulic oil temperature is lower than 15°C (59°F), an alarm failure will occur when the rated load is lower than the standard rated load (the "OL" symbol appears on the platform controller screen or the ground controller screen), please re-calibrate the weighing 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 button on the platform controller and ground controller to OFF, all functions will be inoperative.
2. Push the power-off switch on the left side of chassis to OFF, all functions will get inoperative.

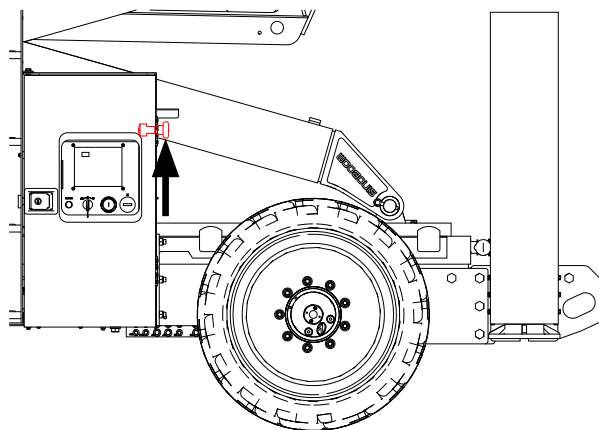


Figure 7-1

3. To restore operating any function, return the emergency stop buttons and power-off switch to their original positions.

NOTICE

If the platform controller displays the number "02", push in 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 6-16](#).

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

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.**

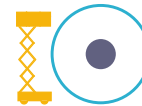
Before operation:

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

NOTICE

- *If the engine fails to get started immediately, do not keep starting the engine for too long; if a restart still fails, allow the starter to cool down for 2–3min; if the engine still fails to get started after several attempts, please reference the Maintenance Manual.*
- *Before applying any load, 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 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

Use the color-coded direction arrows on the platform controller to identify the travel direction of the machine.

NOTICE

Machine travel speed is restricted when the platform is raised.

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:

1. Determine the gradeability (climbing ability) of the machine.
- 2.

MODELS	MAX SLOPE RATING
1323RD	50%/26°
1623RD	40%/22°

3. Ensure the machine is in stowed position.
4. Ensure the slope angle is smaller than the angle of the machine's climbing capacity.

NOTICE

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

To determine the slope grade:

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

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

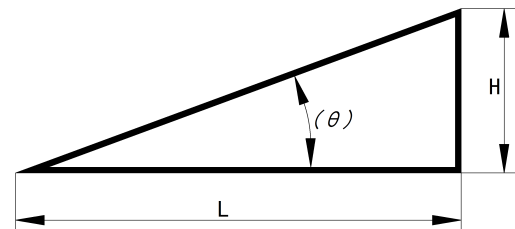


Figure 7-2

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

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

NOTICE

The machine must not travel for over 2min on the maximum permissible slope grade to prevent the tires running suspended, and the temperature of motor housing shall not exceed 70°C.

EXTENDING AND RETRACTING THE PLATFORM

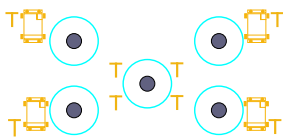
1. Raise the platform extension locking handle to horizontal.
2. Push the handle to extend the platform to the intended position. Do not stand in the platform extension while attempting to extend the platform.

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, other than 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 individual 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.

When any outrigger is in contact with the ground, the drive and steer functions will be disabled.

1323RD: When the outriggers are retracted, the max lifting height should not exceed 13m (42.65ft).

1623RD: When the outriggers are retracted, the max lifting height should not exceed 9m (29.52 ft).

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8 TRANSPORTING AND LIFTING THE MACHINE

WARNING

TRANSPORTATION AND LIFTING HAZARD



- Use a forklift or crane with proper lifting capacity to lift the machine. Use good judgment and planning to control the machine.
- Transport vehicles must be parked on level ground.
- Make sure to prevent the transport vehicle from moving 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 [1 Machine Specifications, page 1-1](#).
- Before transportation and hoisting, please check whether the rigging anchor point and its attached structure are in good condition.
- Make sure the machine is on a horizontal plane or fixed before releasing the brakes.
- When removing the wire rope safety pin, prevent the guardrail from falling. The guardrail must be held tight at all times when descending.
- Never transport people on the machine while the machine is being towed or while the machine is engaged in towing or lifting operations.
- When using a forklift or crane to lift the machine, pay attention to prevent the machine from colliding with nearby objects.
- Lock the wheels of the machine after it has been loaded to prevent the machine from rolling.

NOTICE

Do not pull/drag 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: Release and turn over the manual disengage cap and bolt it down.

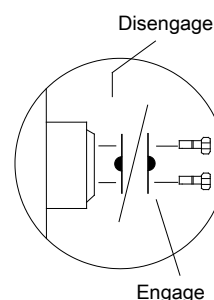


Figure 8-1

2. Be sure the winch line has been properly secured to the drive chassis tie-down points, and the path is clear of obstructions.
3. Reverse the procedures described to re-engage the brake.

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 platforms.
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.

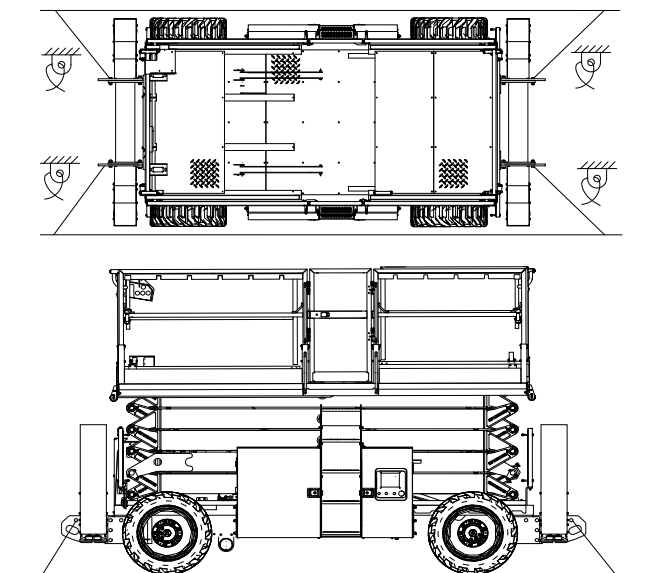


Figure 8-2

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.

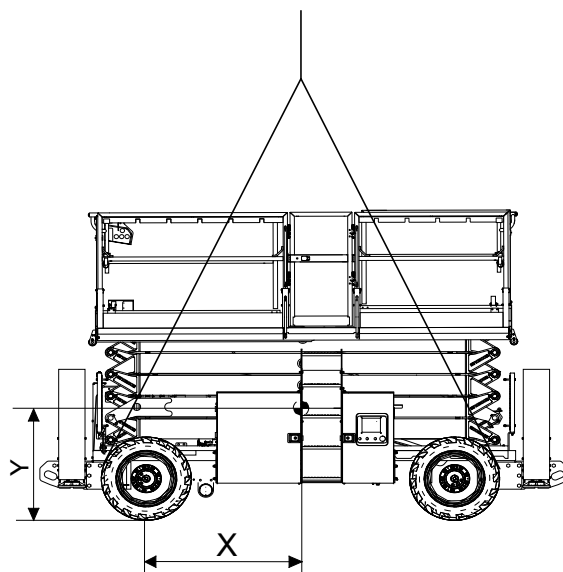


Figure 8-3

Table 8-1

Models	X	Y
1323RD	1900 mm (74.8 in.)	1000 mm (39.4 in.)
1623RD	1900 mm (74.8 in.)	1000 mm (39.4 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 rigging with appropriate length.

LIFTING THE MACHINE WITH A CRANE

Follow these requirements when lifting the machine by crane:

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

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 template 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 record the results. After each section is complete, mark the appropriate box.
5. If any inspection results are marked as "NO", the machine must be stopped and re-inspected after repair is completed and the box marked "- REPAIRED" shall be checked. Select the appropriate inspection procedure based on the inspection type.

Table 9-3

REPAIR & INSPETION 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 Engine Intake System				
A-10 Inspect Engine Belt				
A-11 Inspect Fuel Filter				
A-12 Inspect Cooling Fan				
A-13 Inspect Coolant Level (Water-cooled Engine)				
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 & INSPETION 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 Inspect Carbon Brush of Motor				
C-6 Inspect Raising Limit Switch				
C-7 Inspect Staged 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				
Inspection Date				
Inspector Title				
Inspector Company				

MAJOR MODIFICATION AND REPAIR RECORD

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

Table 9-4

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

10 DECALS/NAMEPLATES INSPECTION

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

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.

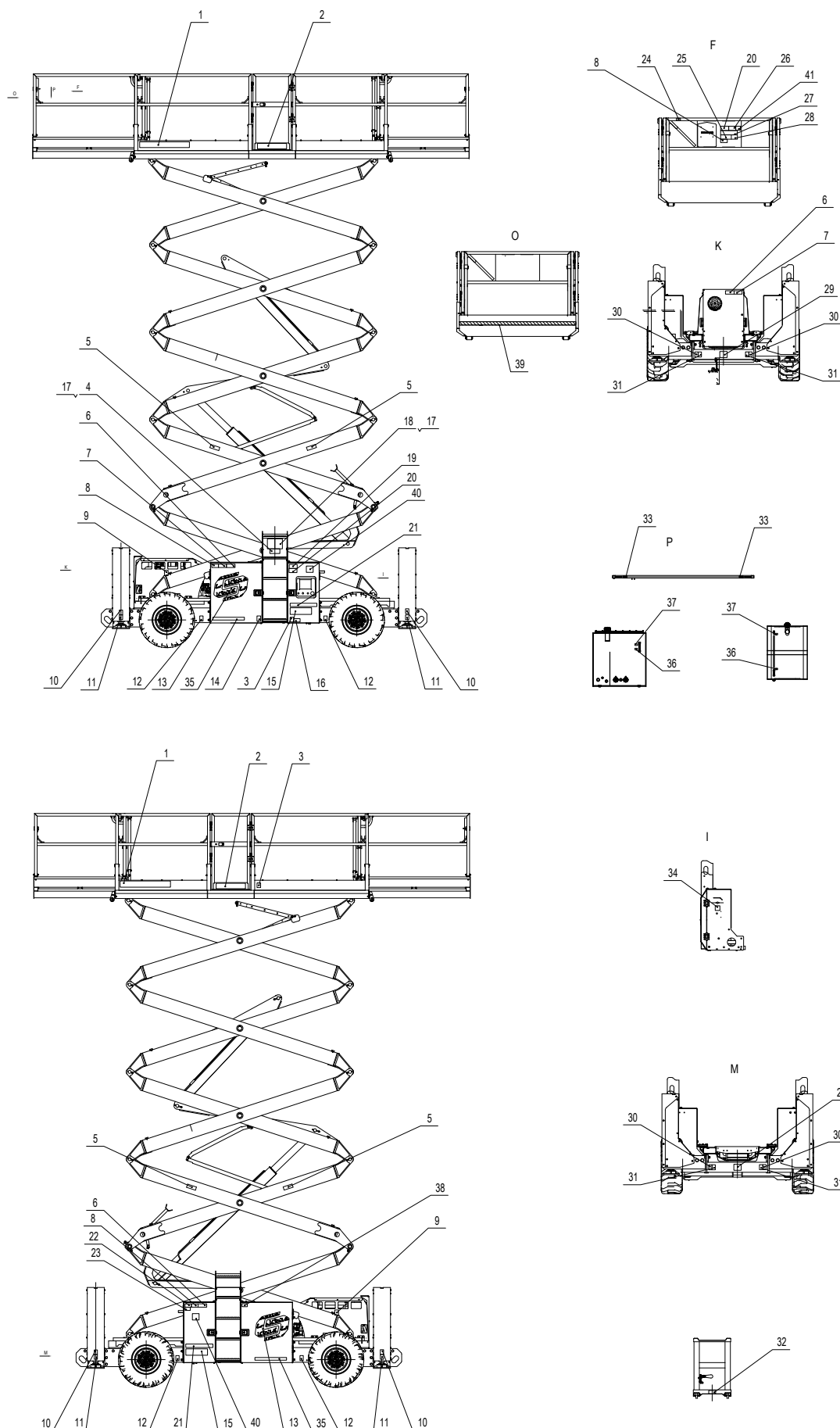
Do not operate machines without decals/nameplates.

 **WARNING**

 **UNSAFE OPERATION HAZARD**

All safety decals must be legible to alert personnel of safety hazards. Replace any illegible or missing decals immediately. Safety decals 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.

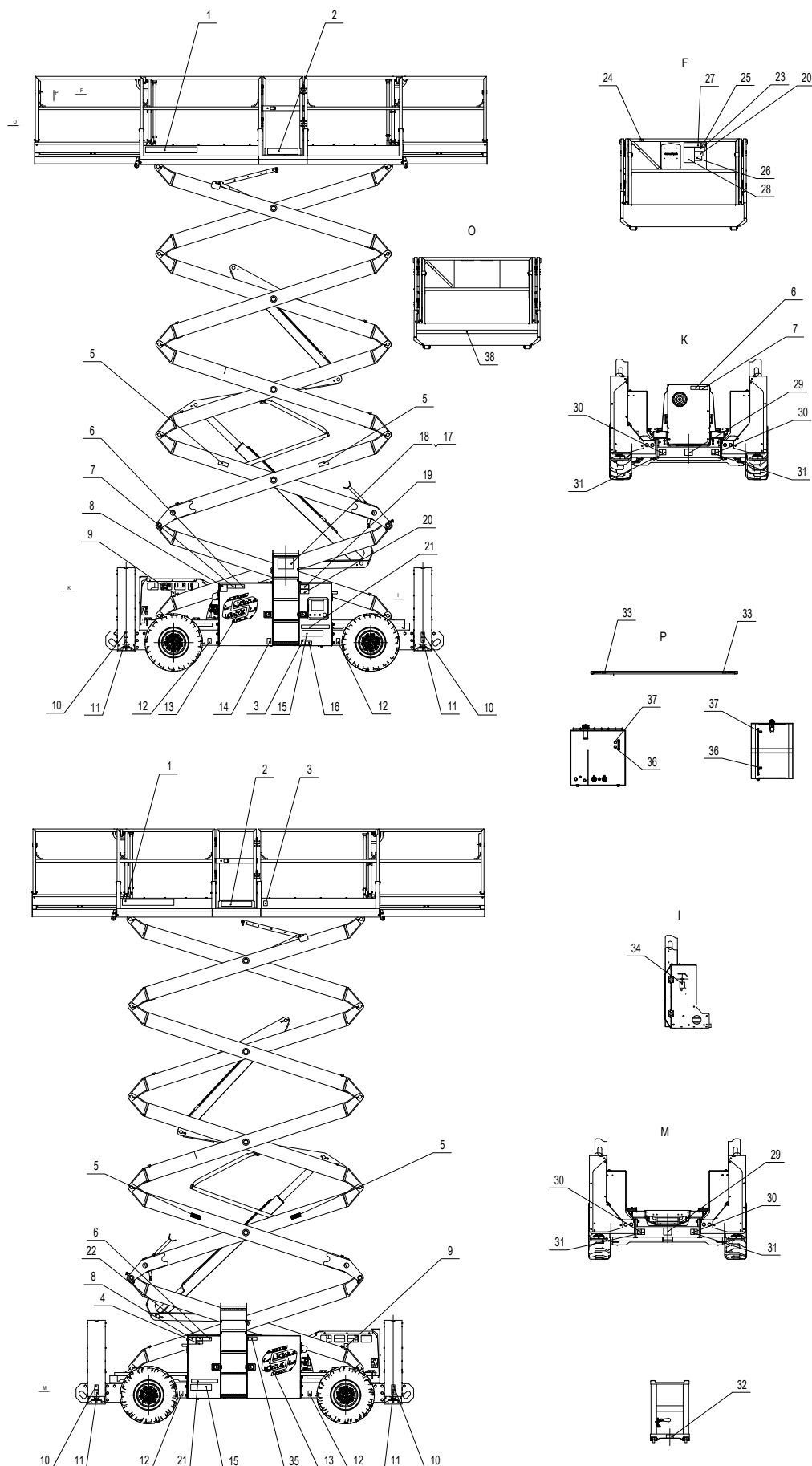
DECALS/NAMEPLATES(GB)



No.	Part No.	Description	Qty.	Remarks
	102006100015	Decals (GB)-1323RD	1	
	102001100013	Decals (GB)-1623RD	1	
1	101048103025	Decal-SINOBOOM	2	
4	102012103004	Decal-1323RD use requirements	2	
	102006100008	Decal-1623RD use requirements	2	
3	101012100009	Decal	2	
4	102001103000	Label-D436-L3i-CN3 CODE C3OI36.3 environmental compliance	1	
5	101012100018	Decal-Crush hazard	4	
6	101012100029	Decal-Crush hazard	3	
7	101012100030	Decal-Bulkhead overhaul	2	
8	101012100005	Decal-Electrocution hazard	3	
9	102004100003	Decal-Burn hazard	2	
10	102013103002	Decal-Outrigger load against ground 3200kg	4	
11	102001100003	Decal-Crush hazard	4	
12	102013103001	Decal-Tire load against ground 3900kg	4	
13	102001103016	Decal-LOGO, white	2	
14	101012100012	Decal-High pressure hazard	1	
15	102012103002	Decal-1323RD	2	
	102013103003	Decal-1623RD	2	
16	101012100001	Decal-No smoking or fires	1	
17	102001103001	Nameplate-GB	1	
18	215050000012	Blind rivet 4×8-ZnD GB/T 12618.2	8	
19	102004100022	Decal-Tipping hazard	1	
20	101012100027	Decal-Read manuals	2	
21	102006100011	Decal-4WD	2	
22	102004100007	Decal-Explosion hazard	1	
23	104009100019	Decal-Diesel fuel	1	
24	102001100001	Decal-Crush hazard	1	
25	102001100005	Decal-Tipping hazard	1	
26	101012100007	Decal-Tipping hazard	1	
27	102012103003	Decal-1323RD use requirements	1	
	102001100015	Decal-1623RD use requirements	1	
28	101012100019	Decal-Tipping hazard	1	
29	102004100008	Decal-Transport tie-down point	2	
30	101014100020	Decal-Lifting points	4	
31	101014100021	Decal-Transport tie-down point	4	

No.	Part No.	Description	Qty.	Remarks
32	101014100026	Decal-Safety arm	1	
33	101016100030	Decal-Landyard anchorage point	16	
34	101056103002	Decal-Main power disconnect switch	1	
35	101014100034	Decal-Contact information	2	
36	104011100003	Decal-Hydraulic oil level	2	
37	104011100010	Decal-Hydraulic oil level	2	
38	104009100018	Decal-Hydraulic oil	1	
39	216060000004	Decal-Caution tape, 50mm wide	2	
40	101014100036	Decal-Warranty	2	
41	101055103016	Decal-Emergency stop button	1	

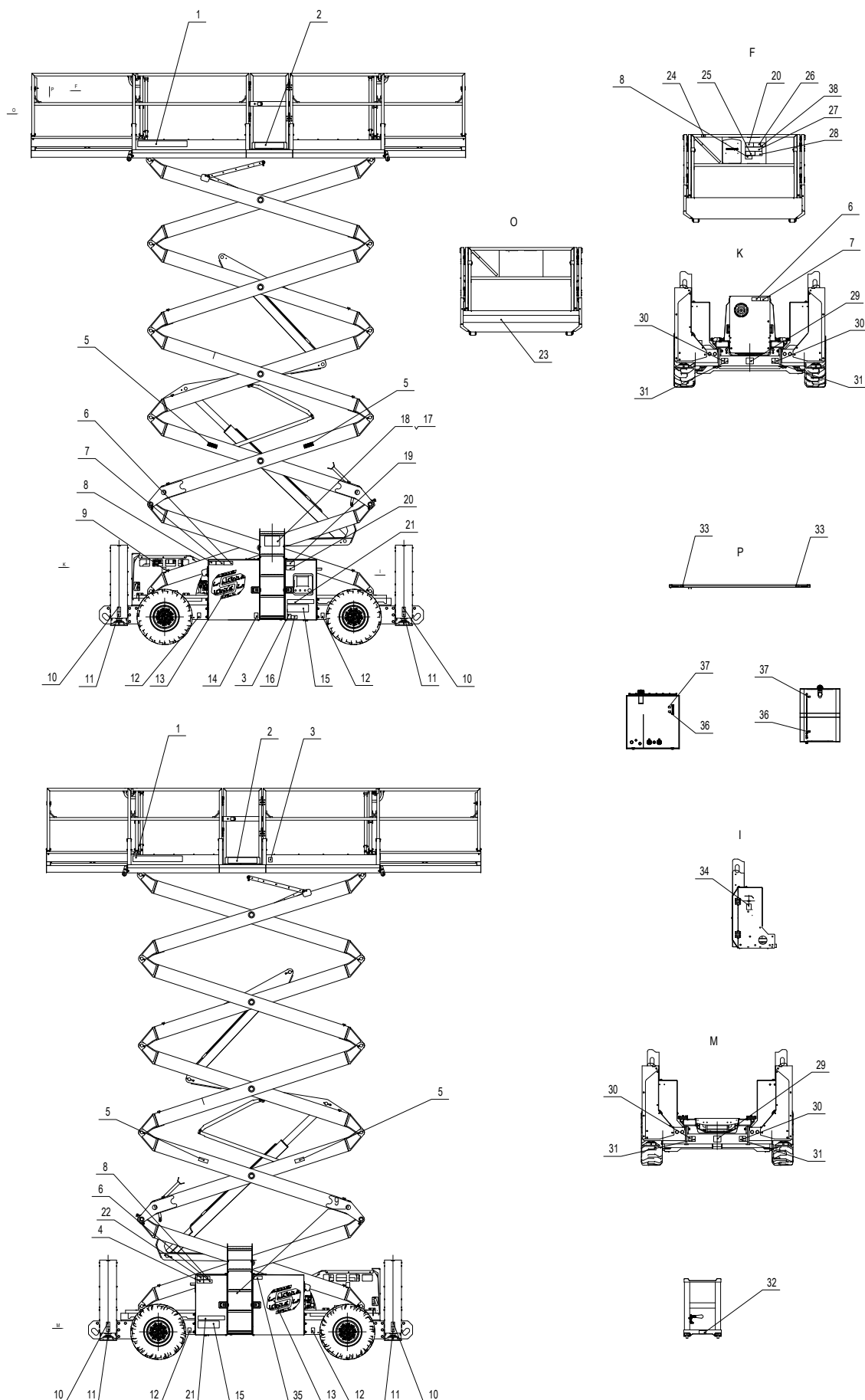
DECALS/NAMEPLATES(AS)



No.	Part No.	Description	Qty.	Remarks
	102006100014	Decals (AS)-1323RD	1	
	102001100012	Decals (AS)-1623RD	1	
1	101048103025	Decal-SINOBOOM	2	
2	102012103004	Decal-1323RD use requirements	2	
	102006100008	Decal-1623RD use requirements	2	
3	101012100009	Decal	2	
4	104009100021	Decal-Diesel fuel	1	
5	101012100018	Decal-Crush hazard	4	
6	101012100029	Decal-Crush hazard	3	
7	101012100030	Decal-Bulkhead overhaul	2	
8	101055103019	Decal-Electrocution hazard	2	
9	102004100003	Decal-Burn hazard	2	
10	102013103002	Decal-Outtrigger load against ground 3200kg	4	
11	102001100003	Decal-Crush hazard	4	
12	102013103001	Decal-Tire load against ground 3900kg	4	
13	102001103016	Decal-LOGO,white	2	
14	101012100012	Decal-High pressure hazard	1	
15	102012103002	Decal-1323RD	2	
	102013103003	Decal-1623RD	2	
16	101012100001	Decal-No smoking or fires	1	
17	102001103002	Nameplate-AS	1	
18	215050000012	Blind rivet 4×8-ZnD GB/T 12618.2	4	
19	102004100022	Decal-Tipping hazard	1	
20	101012100027	Decal-Read manuals	2	
21	102006100011	Decal-4WD	2	
22	102004100007	Decal-Explosion hazard	1	
23	101055103015	Decal-Emergency stop button	1	
24	102001100001	Decal-Crush hazard	1	
25	102001100005	Decal-Tipping hazard	1	
26	101012100007	Decal-Tipping hazard	1	
17	102012103003	Decal-1323RD use requirements	1	
	102001100015	Decal-1623RD use requirements	1	
28	102004100015	Decal-General safety rules	1	
29	102004100008	Decal-Transport tie-down point	2	
30	101014100020	Decal-Lifting points	4	
31	101014100021	Decal-Transport tie-down point	4	

No.	Part No.	Description	Qty.	Remarks
32	101014100026	Decal-Safety arm	1	
33	101016100030	Decal-Lanyard anchorage point	16	
34	101016100031	Decal-Main power disconnect switch	1	
35	104009100022	Decal-Hydraulic oil	1	
36	104011100003	Decal-Hydraulic oil level	2	
37	104011100010	Decal-Hydraulic oil level	2	
38	216060000004	Decal-Caution tape, 50mm wide	2	

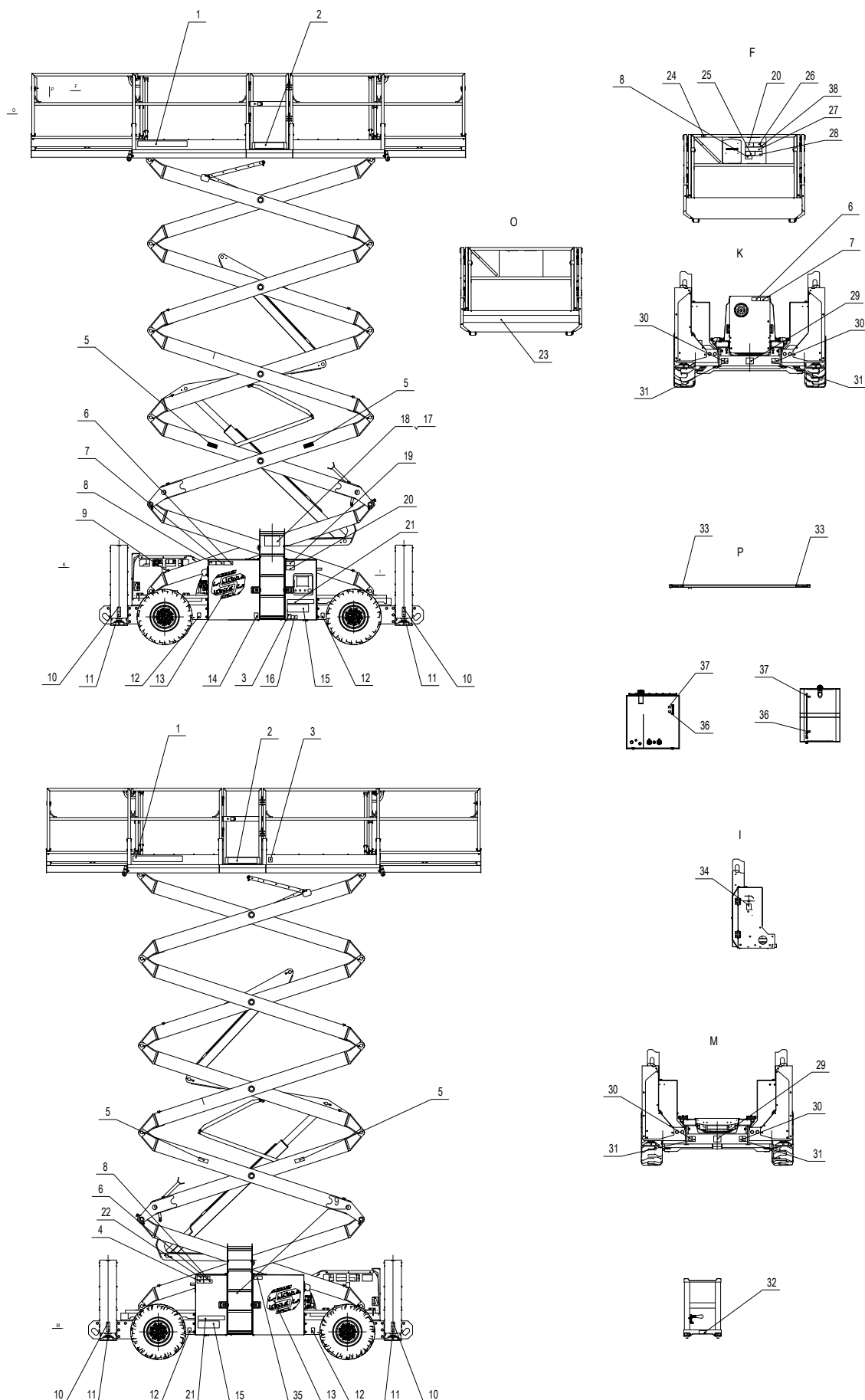
DECALS/NAMEPLATES(CE-IMPERIAL)



No.	Part No.	Description	Qty.	Remarks
	102006100013	Decals (CE-Imperial)-1323RD	1	
	102013103004	Decals (CE-Imperial)-1623RD	1	
1	101048103025	Logo-SINOBOOM	2	
2	102012103004	Decal-1323RD use requirements	2	
	102006100008	Decal-1623RD use requirements	2	
3	101012100009	Decal	2	
4	104009100021	Decal-Diesel fuel	1	
5	101012100018	Decal-Crush hazard	4	
6	101012100029	Decal-Crush hazard	3	
7	101012100030	Decal-Bulkhead overhaul	2	
8	101012100005	Decal-Electrocution hazard	3	
9	102004100003	Decal-Burn hazard	2	
10	102013103002	Decal-Outtrigger load against ground 3200kg	4	
11	102001100003	Decal-Crush hazard	4	
12	102013103001	Decal-Tire load against ground 3900kg	4	
13	102001103016	Decal-LOGO,white	2	
14	101012100012	Decal-High pressure hazard	1	
15	102012103001	Decal-4389RD	2	
	102013103005	Decal-5389RD	2	
16	101012100001	Decal-No smoking or fires	1	
17	102001103003	Nameplate-CE	1	
18	215050000012	Blind rivet 4×8-ZnD GB/T 12618.2	4	
19	102004100022	Decal-Tipping hazard	1	
20	101012100027	Decal-Read manuals	2	
21	102006100011	Decal-4WD	2	
22	102004100007	Decal-Explosion hazard	1	
23	216060000004	Decal-Caution tape, 50mm wide	2	
24	102001100001	Decal-Crush hazard	1	
25	102001100005	Decal-Tipping hazard	1	
26	101012100007	Decal-Tipping hazard	1	
27	102012103003	Decal-1323RD use requirements	1	
	102001100015	Decal-1623RD use requirements	1	
28	101012100019	Decal-Tipping hazard	1	
29	102004100008	Decal-Transport tie-down point	2	
30	101014100020	Decal-Lifting points	4	
31	101014100021	Decal-Transport tie-down point	4	

No.	Part No.	Description	Qty.	Remarks
32	101014100026	Decal-Safety arm	1	
33	101016100030	Decal-Lanyard anchorage point	16	
34	101016100031	Decal-Main power disconnect switch	1	
35	104009100022	Decal-Hydraulic oil	1	
36	104011100003	Decal-Hydraulic oil level	2	
37	104011100010	Decal-Hydraulic oil level	2	
38	101055103015	Decal-Emergency stop button	1	

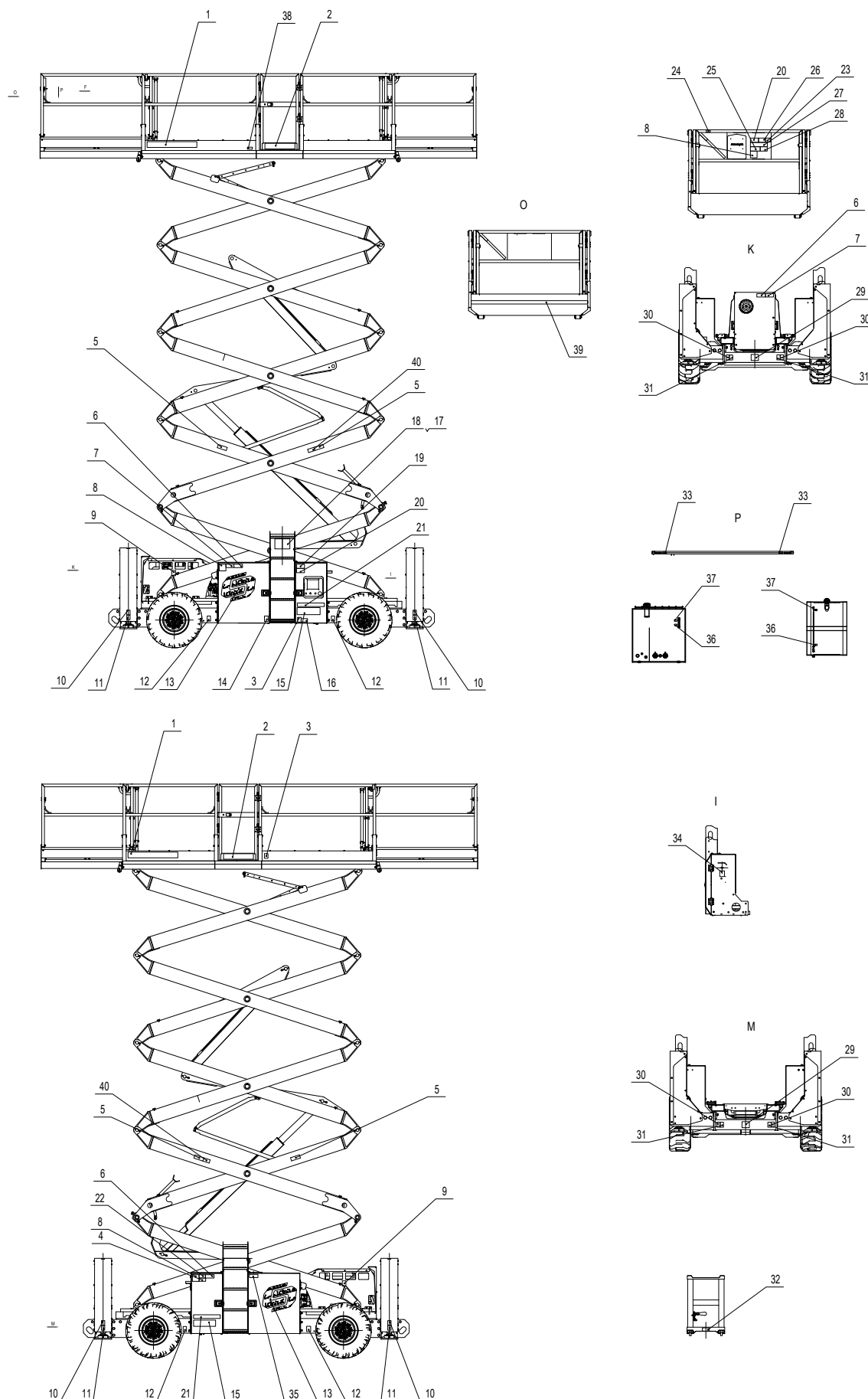
DECALS/NAMEPLATES(CE-METRIC)



No.	Part No.	Description	Qty.	Remarks
	102012103005	Decals (CE-Metric)-1323RD	1	
	102001100014	Decals (CE-Metric)-1623RD	1	
1	101048103025	Logo-SINOBOOM	2	
2	102012103004	Decal-1323RD use requirements	2	
	102006100008	Decal-1623RD use requirements	2	
3	101012100009	Decal	2	
4	104009100021	Decal-Diesel fuel	1	
5	101012100018	Decal-Crush hazard	4	
6	101012100029	Decal-Crush hazard	3	
7	101012100030	Decal-Bulkhead overhaul	2	
8	101012100005	Decal-Electrocution hazard	3	
9	102004100003	Decal-Burn hazard	2	
10	102013103002	Decal-Outtrigger load against ground 3200kg	4	
11	102001100003	Decal-Crush hazard	4	
12	102013103001	Decal-Tire load against ground 3900kg	4	
13	102001103016	Decal-LOGO,white	2	
14	101012100012	Decal-High pressure hazard	1	
15	102012103002	Decal-1323RD	2	
	102013103003	Decal-1623RD	2	
16	101012100001	Decal-No smoking or fires	1	
17	102001103003	Nameplate-CE	1	
18	215050000012	Blind rivet 4×8-ZnD GB/T 12618.2	4	
19	102004100022	Decal-Tipping hazard	1	
20	101012100027	Decal-Read manuals	2	
21	102006100011	Decal-4WD	2	
22	102004100007	Decal-Explosion hazard	1	
23	216060000004	Decal-Caution tape, 50mm wide	2	
24	102001100001	Decal-Crush hazard	1	
25	102001100005	Decal-Tipping hazard	1	
26	101012100007	Decal-Tipping hazard	1	
27	102012103003	Decal-1323RD use requirements	1	
	102001100015	Decal-1623RD use requirements	1	
28	101012100019	Decal-Tipping hazard	1	
29	102004100008	Decal-Transport tie-down point	2	
30	101014100020	Decal-Lifting points	4	
31	101014100021	Decal-Transport tie-down point	4	

No.	Part No.	Description	Qty.	Remarks
32	101014100026	Decal-Safety arm	1	
33	101016100030	Decal-Lanyard anchorage point	16	
34	101016100031	Decal-Main power disconnect switch	1	
35	104009100022	Decal-Hydraulic oil	1	
36	104011100003	Decal-Hydraulic oil level	2	
37	104011100010	Decal-Hydraulic oil level	2	
38	101055103015	Decal-Emergency stop button	1	

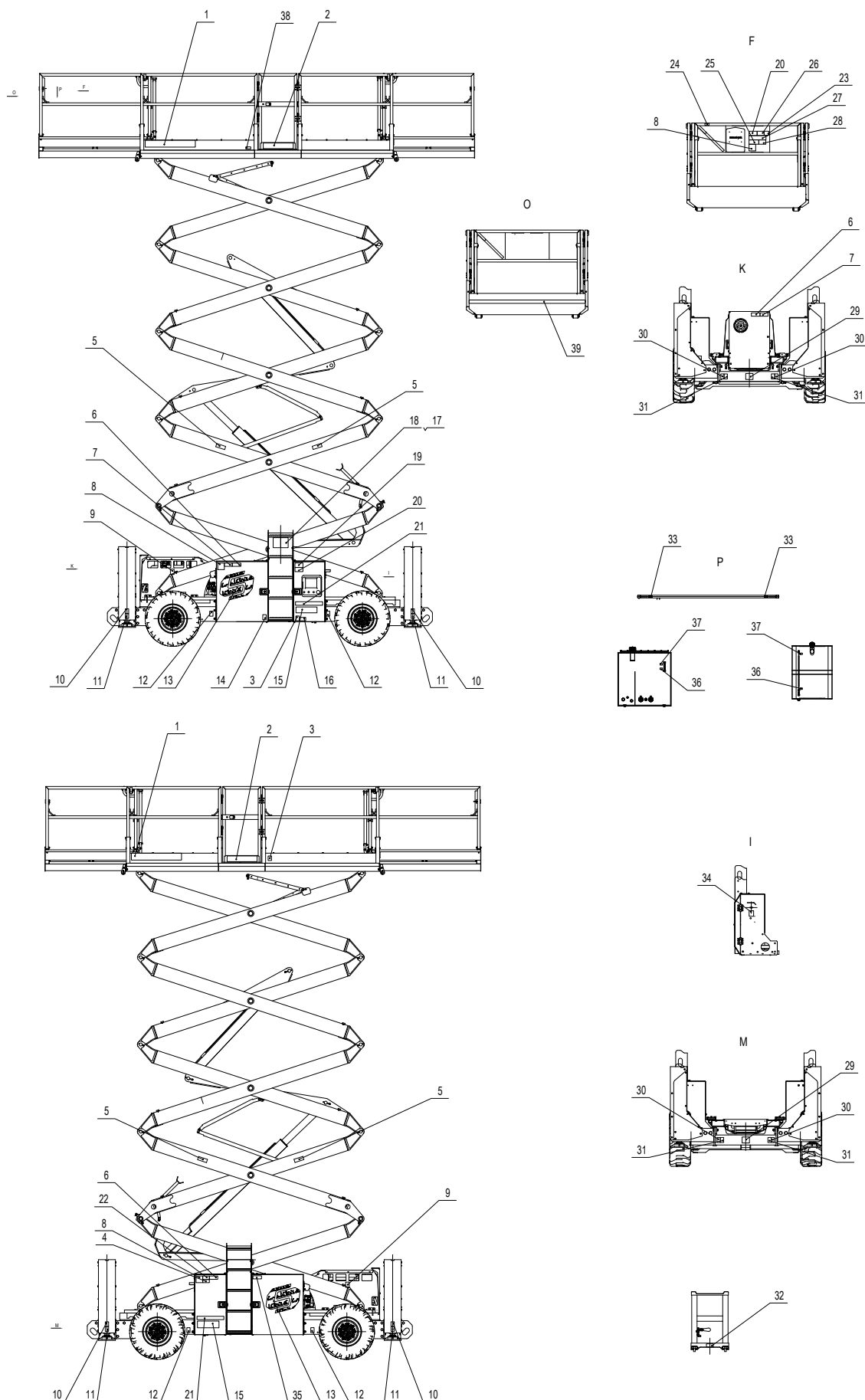
DECALS/NAMEPLATES(CSA)



序号	部件编号	说明	数量	备注
	102006103007	Decals (CSA)-1323RD	1	
	102001103012	Decals (CSA)-1623RD	1	
1	101048103025	Logo-SINOBOOM	2	
2	102006103001	Decal-1323RD use requirements	2	
	102001103011	Decal-1623RD use requirements	2	
3	101012100009	Decal	2	
4	104009100021	Decal-Diesel fuel	1	
5	101012100018	Decal-Crush hazard	4	
6	101012100029	Decal-Crush hazard	3	
7	101012100030	Decal-Bulkhead overhaul	2	
8	101040103013	Decal-Electrocution hazard	3	
9	102004100003	Decal-Burn hazard	2	
10	102013103007	Decal-Outrigger load against ground 3200kg	4	
11	102001100003	Decal-Crush hazard	4	
12	102013103006	Decal-Tire load against ground 3900kg	4	
13	102001103016	Decal-LOGO,white	2	
14	101012100012	Decal-High pressure hazard	1	
15	102012103001	Decal-4389RD	2	
	102013103005	Decal-5389RD	2	
16	101012100001	Decal-No smoking or fires	1	
17	102001103005	Nameplate-CSA	1	
18	215050000012	Blind rivet 4×8-ZnD GB/T 12618.2	4	
19	102004100022	Decal-Tipping hazard	1	
20	101012100027	Decal-Read manuals	2	
21	102006100011	Decal-4WD	2	
22	102004100007	Decal-Explosion hazard	1	
23	101055103015	Decal-Emergency stop button	1	
24	102001100001	Decal-Crush hazard	1	
25	102001103008	Decal-Tipping hazard	1	
26	101012100007	Decal-Tipping hazard	1	
27	102006103000	Decal-1323RD use requirements	1	
	102001103010	Decal-1623RD use requirements	1	
28	101012100019	Decal-Tipping hazard	1	
29	102004100008	Decal-Transport tie-down point	2	
30	101014100020	Decal-Lifting points	4	
31	101014100021	Decal-Transport tie-down point	4	

序号	部件编号	说明	数量	备注
32	101014100026	Decal-Safety arm	1	
33	101016100030	Decal-Lanyard anchorage point	16	
34	101016100031	Decal-Main power disconnect switch	1	
35	104009100022	Decal-Hydraulic oil	1	
36	104011100003	Decal-Hydraulic oil level	2	
37	104011100010	Decal-Hydraulic oil level	2	
38	101040103015	Decal-Annual inspection	1	
39	216060000004	Decal-Caution tape, 50mm wide	2	
40	104011100021	Decal-Crush hazard	2	

DECALS/NAMEPLATES(ANSI)



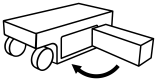
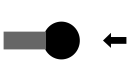
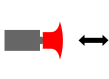
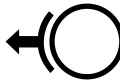
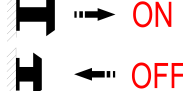
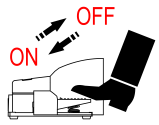
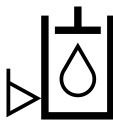
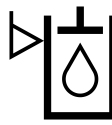
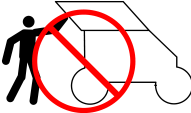
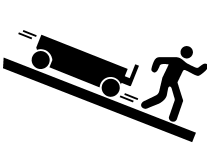
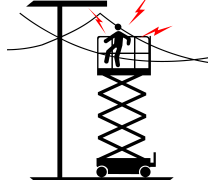
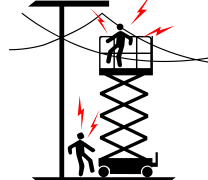
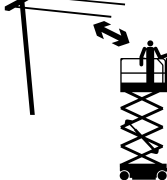
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	102006103008	Decals (ANSI)-1323RD	1	
	102001103006	Decals (ANSI)-1623RD	1	
1	101048103025	Logo-SINOBOOM	2	
4	102006103001	Decal-1323RD use requirements	2	
	102001103011	Decal-1623RD use requirements	2	
3	101012100009	Decal	2	
4	104009100021	Decal-Diesel fuel	1	
5	101012100018	Decal-Crush hazard	4	
6	101012100029	Decal-Crush hazard	3	
7	101012100030	Decal-Bulkhead overhaul	2	
8	101040103013	Decal-Electrocution hazard	3	
9	102004100003	Decal-Burn hazard	2	
10	102013103007	Decal-Outrigger load against ground 3200kg	4	
11	102001100003	Decal-Crush hazard	4	
12	102013103006	Decal-Tire load against ground 3900kg	4	
13	102001103016	Decal-LOGO,white	2	
14	101012100012	Decal-High pressure hazard	1	
15	102012103001	Decal-4389RD	2	
	102013103005	Decal-5389RD	2	
16	101012100001	Decal-No smoking or fires	1	
17	102001103004	Nameplate-ANSI	1	
18	215050000012	Blind rivet 4×8-ZnD GB/T 12618.2	4	
19	102004100022	Decal-Tipping hazard	1	
20	101012100027	Decal-Read manuals	2	
21	102006100011	Decal-4WD	2	
22	102004100007	Decal-Explosion hazard	1	
23	101055103015	Decal-Emergency stop button	1	
24	102001100001	Decal-Crush hazard	1	
25	102001103008	Decal-Tipping hazard	1	
26	101012100007	Decal-Tipping hazard	1	
27	102006103000	Decal-1323RD use requirements	1	
	102001103010	Decal-1623D use requirements	1	
28	101012100019	Decal-Tipping hazard	1	
29	102004100008	Decal-Transport tie-down point	2	
30	101014100020	Decal-Lifting points	4	
31	101014100021	Decal-Transport tie-down point	4	

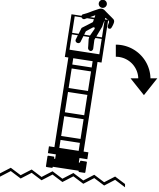
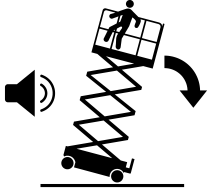
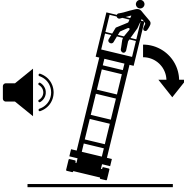
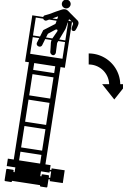
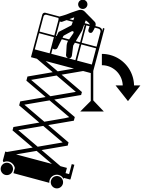
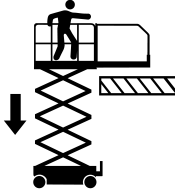
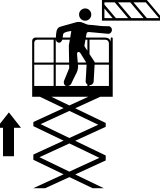
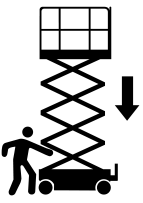
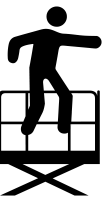
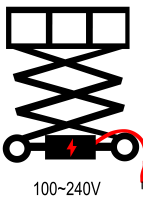
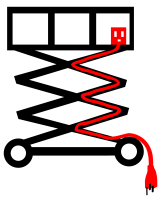
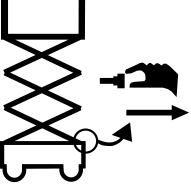
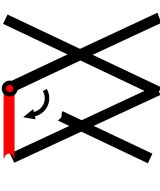
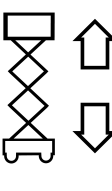
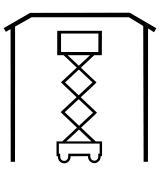
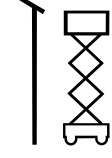
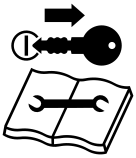
No.	Part No.	Description	Qty.	Remarks
32	101014100026	Decal-Safety arm	1	
33	101016100030	Decal-Lanyard anchorage point	16	
34	101016100031	Decal-Main power disconnect switch	1	
35	104009100022	Decal-Hydraulic oil	1	
36	104011100003	Decal-Hydraulic oil level	2	
37	104011100010	Decal-Hydraulic oil level	2	
38	101040103015	Decal-Annual inspection	1	
39	216060000004	Decal-Caution tape, 50mm wide	2	

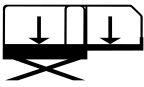
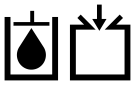
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APPENDIX 1: SYMBOLS AND DESCRIPTION

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

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

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

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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			
NOTE: 1. Prepare the machine before delivery, which includes performing a pre-delivery inspection, following maintenance procedures and performing functional inspections. 2. Use the table to record the results. After each section is complete, mark the appropriate box. 3. Record the inspection results. If any inspection 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 Engine Intake System				
A-10 Inspect Engine Belt				
A-11 Inspect Fuel Filter				
A-12 Inspect Cooling Fan				
A-13 Inspect Coolant Level (Water-cooled Engine)				
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				
B-2 Inspect Rim, Tire and Fasteners				

REPAIR & INSPECTION REPORT				
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 Inspect Carbon Brush of Motor				
C-6 Inspect Raising Limit Switch				
C-7 Inspect Staged Lowering				
Checklist D Procedures				
Items	YES/Machine is in Good Condition	NO/Machine Has Damage or Malfunction	REPAIRED/Machine Has Been Repaired	Problem Description
D-1 Replace Drive Reducer Gear Oil				

REPAIR & INSPECTION REPORT				
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				
Inspection Date				
Inspector Title				
Inspector Company				
NOTES: 1. The Repair & Inspection Report shall include the inspection form of each regular inspection. 2. Duplicate the Repair & Inspection Report template for each inspection. Store the completed forms for 10 years or until the machine is no longer in use or as required by machine owner/company/custodian. 3. Use the form to record the results. After one item is complete, mark the appropriate box. 4. Record the inspection results. If any inspection item is marked as "NO", the machine must be stopped and re-inspected after repair is completed, and the box marked "REPAIRED" shall be checked. Select the appropriate inspection procedure based on the inspection type.				

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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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