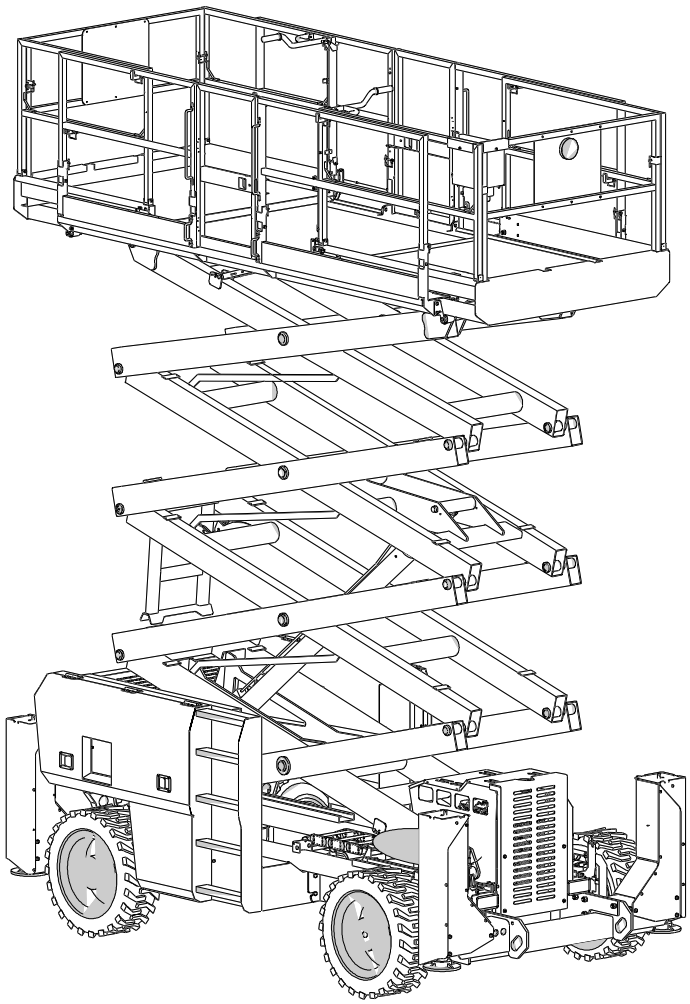
UpRight
POWERED ACCESS

X43RT / X52RT

Operator Manual



(EN) Manual part number 510352-000 for serial numbers 10000 to current.

Aug 09

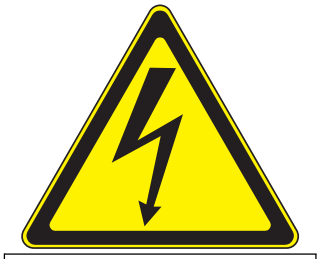
OPERATION MANUAL

WARNING

All personnel shall carefully read, understand and follow all safety rules and operating instructions before operating or performing maintenance on any UpRight aerial work platform.

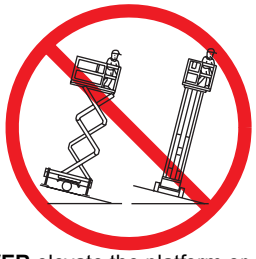
Safety Rules

Electrocution Hazard



THIS MACHINE IS NOT INSULATED!

Tip Over Hazard



NEVER elevate the platform or drive the machine while elevated unless the machine is on a firm, level surface.

Collision Hazard

NEVER position the platform without first checking for overhead obstructions or other hazards.

Fall Hazard

NEVER climb, stand, or sit on platform guardrails or midrail.

USE OF THE AERIAL WORK PLATFORM: This aerial work platform is intended to lift persons and his tools as well as the material used for the job. It is designed for repair and assembly jobs and assignments at overhead workplaces (ceilings, cranes, roof structures, buildings etc.). All other uses of the aerial work platform are prohibited!

THIS AERIAL WORK PLATFORM IS NOT INSULATED! For this reason it is imperative to keep a safe distance from live parts of electrical equipment!

Exceeding the specified permissible maximum load **is prohibited!** See “Special Limitations” on page 4 for details.

The use and operation of the aerial work platform as a lifting tool or a crane (lifting of loads from below upwards or from up high on down) **is prohibited!**

NEVER exceed the manual force allowed for this machine. See “Special Limitations” on page 4 for details.

DISTRIBUTE all platform loads evenly on the platform.

NEVER operate the machine without first surveying the work area for surface hazards such as holes, drop-offs, bumps, curbs, or debris; and avoiding them.

OPERATE machine only on surfaces capable of supporting wheel loads.

NEVER operate the machine when wind speeds exceed this machine’s wind rating. See “Beaufort Scale” on page 4 for details.

IN CASE OF EMERGENCY push EMERGENCY STOP switch to deactivate all powered functions.

IF ALARM SOUNDS while platform is elevated, STOP, carefully lower platform. Move machine to a firm, level surface.

Climbing up the railing of the platform, standing on or stepping from the platform onto buildings, steel or prefab concrete structures, etc., **is prohibited!**

Dismantling the swing gate or other railing components **is prohibited!** Always make certain that the swing gate is closed and securely locked!

It is prohibited to keep the swing gate in an open position (held open with tie-straps) when the platform is raised!

To extend the height or the range by placing of ladders, scaffolds or similar devices on the platform **is prohibited!**

NEVER perform service on machine while platform is elevated without blocking elevating assembly.

INSPECT the machine thoroughly for cracked welds, loose or missing hardware, hydraulic leaks, loose wire connections, and damaged cables or hoses before using.

VERIFY that all labels are in place and legible before using.

NEVER use a machine that is damaged, not functioning properly, or has damaged or missing labels.

To bypass any safety equipment **is prohibited** and presents a danger for the persons on the aerial work platform and in its working range.

NEVER charge batteries near sparks or open flame. Charging batteries emit explosive hydrogen gas.

Modifications to the aerial work platform **are prohibited** or permissible only at the approval by **UpRight.**

AFTER USE, secure the work platform from unauthorized use by turning both keyswitches off and removing key.

The driving of MEWPs on the public highways is subject to regulations made under the Road Traffic Acts.

Important

Read, understand and obey these safety rules and operating instructions before operating this machine.
Only trained and authorized personnel shall be permitted to operate this machine. This manual should be considered a permanent part of your machine and should remain with the machine at all times. If you have any questions, please call UPRIGHT.

Contents

Owners, Users and operators:

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

1. Comply with employer, job site and governmental rules.
2. Read, understand and follow the instructions in this and other manuals supplied with this machine.
3. Use good safe work practices in a commonsense way.
4. 0nly have trained / certified operators, directed by informed and knowledgeable supervision, running the machine.

If there is anything in this manual that is not clear or which you believe should be added, please contact us.

Contact us:

Danger

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

Do Not Operate Unless:

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

☑ **1 Avoid hazardous situations.**

Know and understand the safety rules before going on to the next section.

2 Always perform a pre-operation inspection.

3 Always perform function tests prior to use.

4 Inspect the workplace.

5 Only use the machine as it was intended.

☑ You read, understand and obey the manufacturer's instructions and safety rules—safety and operator's manuals and machine decals.

☑ You read, understand and obey employer's safety rules and worksite regulations.

☑ You read, understand and obey all applicable governmental regulations.

☑ You are properly trained to safely operate the machine.

Decal Legend

UPRIGHT product decals use symbols, color coding and signal words to identify the following:

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

⚠DANGER Red—used to indicate the presence of an imminently hazardous situation which, if not avoided, will result in death or serious injury.

⚠WARNING Orange—used to indicate the presence of a potentially hazardous situation which, if not avoided, could result in death or serious injury.

⚠CAUTION Yellow with safety alert symbol-used to indicate the presence of a potentially hazardous situation which, if not avoided, may cause minor or moderate injury.

NOTICE Yellow without safety alert symbol—used to indicate the presence of a potentially hazardous situation which, if not avoided, may result in property damage.

⚠ Electrocution Hazards

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

Maintain safe distances from electrical power lines and apparatus in accordance with applicable governmental regulations and the following chart.

Voltage Phase to Phase	Minimum Safe Approach Distance Meters
0 to 300V	Avoid Contact
300V to 50KV	3.05
50KV to 200KV	4.60
200KV to 350KV	6.10
350KV to 500KV	7.62
500KV to 750KV	10.67
750KV to 1000KV	13.72

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

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

Do not operate the machine during lightning or storms.

Do not use the machine as a ground for welding.

⚠ Tip-over Hazards

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

Maximum capacity – X43RT

Maximum occupants 7

Models with one extension deck

Platform retracted 680 kg

Only platform 454 kg

Only extension deck 227 kg

Only Extension deck 227kg

Only platform 454kg

Models with one extension deck

Platform retracted 680 kg

Platform with one extension deck 454 kg

Platform with one extension deck 227kg

For each extension deck 227 kg

Only Extension deck 227kg | Only platform 227kg | Only Extension deck 227kg

Maximum capacity – X52RT

Maximum occupants 6

Models with one extension deck

Platform retracted 680 kg

Only platform 454 kg

Only extension deck 227 kg

Only Extension deck 227kg

Only platform 454kg

Models with one extension deck

Platform retracted	680 kg
Platform with one extension deck	454 kg
Platform with one extension deck	227kg
For each extension deck	227 kg

Only Extension deck	Only platform	Only Extension deck
227kg	227kg	227kg

Do not raise the platform unless the machine is on a firm, level surface.

Do not drive over 1.1 km/h with the platform raised.

Do not depend on the tilt alarm as a level indicator.

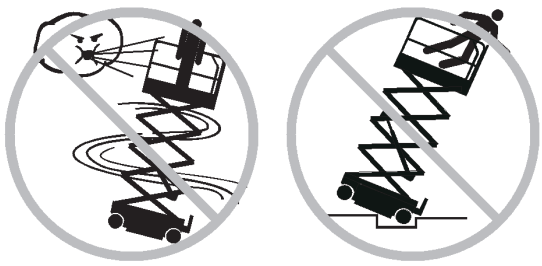
The tilt alarm sounds on the chassis and in the platform when the machine is on a slope.

If the tilt alarm sounds:

Lower the platform. Move the machine to a firm, level surface. If the tilt alarm sounds when the platform is raised, use extreme caution to lower the platform.

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

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



Do not use the platform controls to free a platform that is caught, snagged or otherwise prevented from normal motion by an adjacent

structure. All personnel must be removed from the platform before attempting to free the platform using the ground controls.

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

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

Do not use the machine as a crane.

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

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

Do not contact adjacent structures with the Platform

Do not alter or disable the limit switches.

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

Maximum allowable manual force 400 N

Do not tie the platform to adjacent structures.

Do not place loads outside the platform perimeter.

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

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

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

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

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

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

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

Do not drive the machine on a slope that exceeds the slope and side slope rating of the machine.

Slope rating applies to machines in the stowed position.

X43RT

Maximum slope rating, stowed position 50%

Maximum side slope rating, stowed position 50% (26°) **X52RT**

Maximum slope rating, stowed position 40%

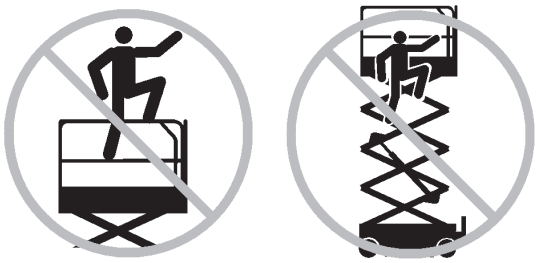
Maximum side slope rating, stowed position 40% (22°)

Note: Slope rating is subject to ground conditions and adequate traction.

⚠ Fall Hazards

The guard rail system provides fall protection. If occupant(s) of the platform are required to wear personal fall protection equipment (PFPE) due to job site or employer rules, PFPE equipment and its use shall be in accordance with the PFPE manufacturer's instructions and applicable governmental requirements.

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



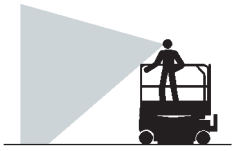
Do not climb down from the platform when raised.

Keep the platform floor clear of debris.

Close the entry gate before operating.

Do not operate the machine unless the guard rails are properly installed and the entry is secured for operation.

⚠ Collision Hazards

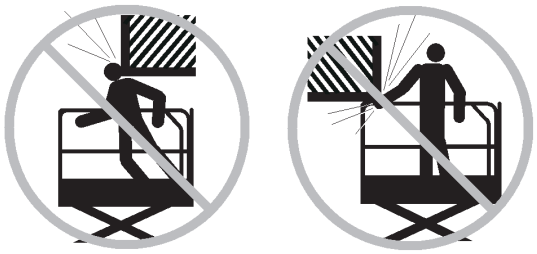


Be aware of limited sight distance and blind spots when driving or operating.

Be aware of extended platform position(s) when moving the machine.

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

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



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

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

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

No stunt driving or horseplay while operating a machine.

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

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

⚠ Component Damage Hazards

Do not use any battery or charger greater than 12V to jump-start the engine.

Do not use the machine as a ground for welding.

⚠ Explosion and Fire Hazards

Do not start the engine if you smell or detect liquid petroleum gas (LPG), gasoline, diesel fuel or other explosive substances.

Do not refuel the machine with the engine running.

Refuel the machine and charge the battery only in an open, well-ventilated area away from sparks, flames and lighted tobacco.

Do not operate the machine in hazardous locations or locations where potentially flammable or explosive gases or particles may be present.

Do not spray ether into engines equipped with glow plugs.

⚠ Damaged Machine Hazards

Do not use a damaged or malfunctioning machine.

Conduct a thorough pre-operation inspection of the machine and test all functions before each work shift. Immediately tag and remove from service a damaged or malfunctioning machine.

Be sure all maintenance has been performed as specified in this manual and the appropriate UPRIGHT service manual.

Be sure all decals are in place and legible.

Be sure the operator's, safety and

responsibilities manuals are complete, legible and in the storage container located in the platform.

⚠ Crushing Hazards

Keep hands and limbs out of scissors.

Use common sense and planning when operating the machine with the controller from the ground. Maintain safe distances between the operator, the machine and fixed objects.

Maintain a firm grasp on the platform rail when removing the rail pins. Do not allow the platform guard rails to fall.

⚠ Bodily Injury Hazard

Always operate the machine in a well-ventilated area to avoid carbon monoxide poisoning.

Do not operate the machine with a hydraulic oil or air leak. An air leak or hydraulic leak can penetrate and/or burn skin.

Improper contact with components under any cover will cause serious injury. Only trained maintenance personnel should access compartments. Access by the operator is only advised when performing a pre-operation inspection. All compartments must remain closed and secured during operation.

⚠ Outrigger Safety

Do not lower the outriggers unless the machine is on a firm surface. Avoid drop-offs, holes, unstable or slippery surfaces and other possible hazardous conditions.

When the auto level function is not being used and the outriggers are being lowered individually, the steer-end outriggers must be lowered first.

Do not raise the platform unless the machine is level. Do not set the machine up on a surface where it cannot be leveled using only the outriggers.

Do not raise the platform unless all four outriggers are properly lowered, the footpads are in firm contact with the ground and the machine is level.

Do not adjust the outriggers while the platform is raised.

Do not drive while the outriggers are lowered.

⚠ Battery Safety

⚠ Burn Hazards

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

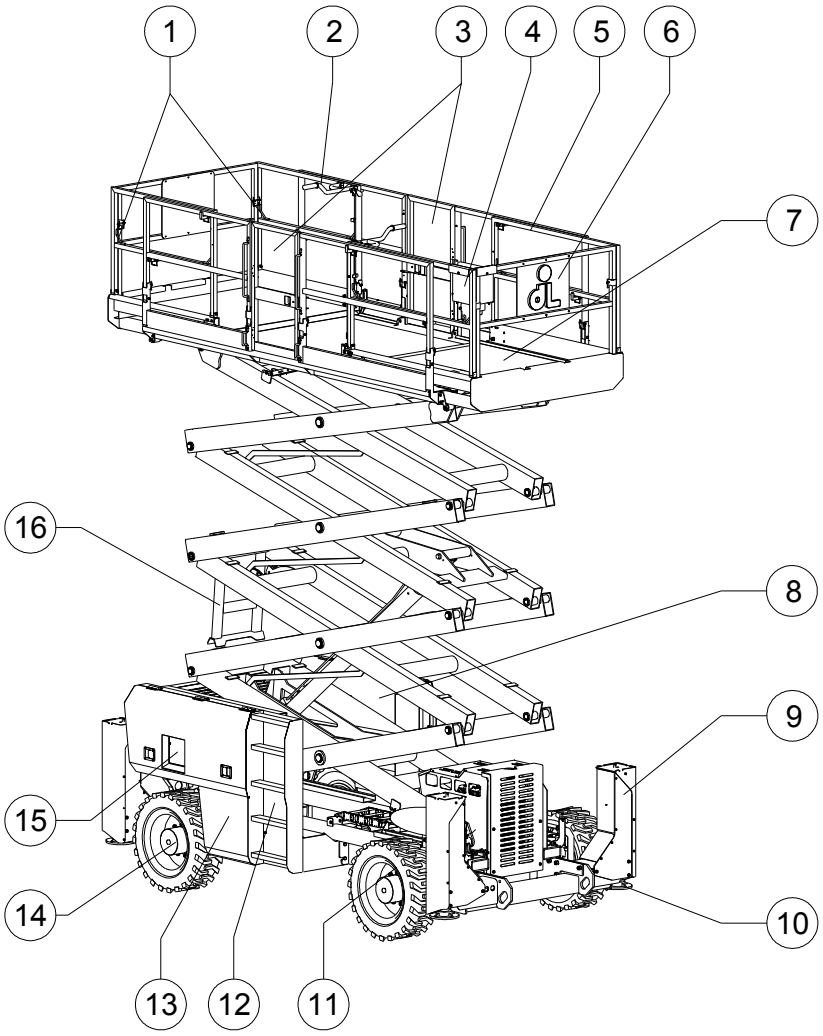
Avoid spilling or contacting battery acid. Neutralize battery acid spills with baking soda and water.

⚠ Explosion Hazard

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

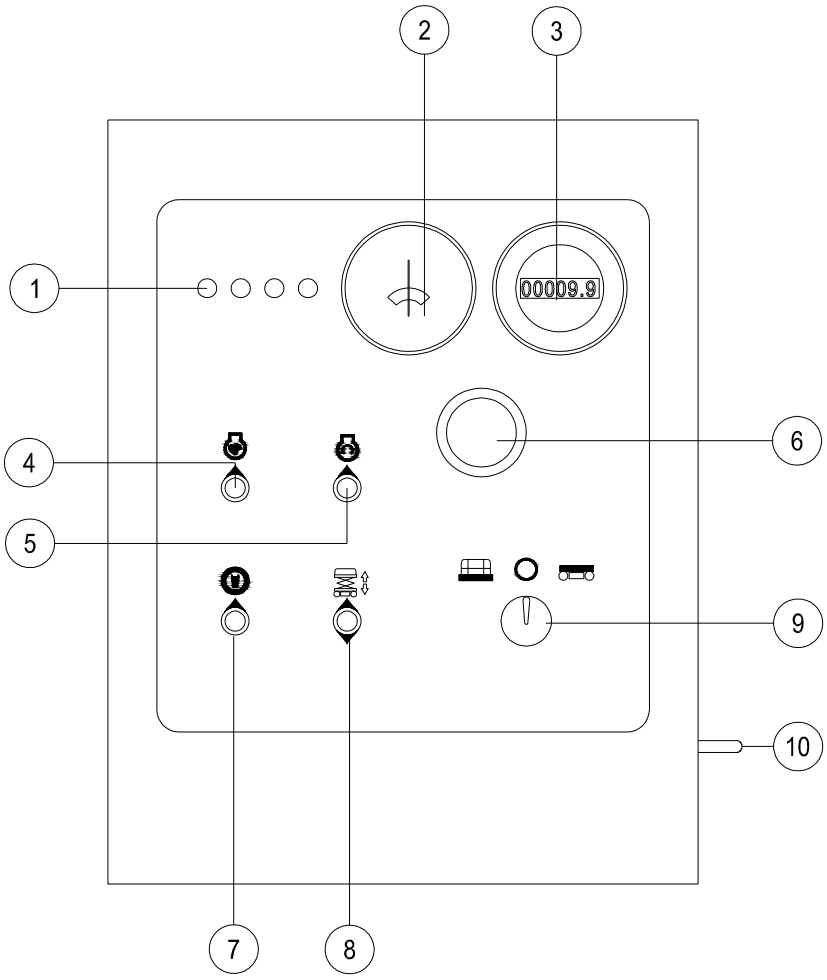
⚠ Electrocution Hazard

Avoid contact with electrical terminals.



1 Lanyard anchorage point
2 Platform extension lock handle
3 Platform entry gate
4 Platform controls
5 Platform guard rails
6 Manual storage container
7 Platform extension
8 Hydraulic tank (behind cover)
9 Outrigger housing (if equipped)
10 Outrigger footpad (if equipped)
11 Steer tire
12 Entry ladder
13 Fuel tank (behind cover)
14 Non-steer tire
15 Ground controls with LCD readout screen
16 Safety arm (hidden from view)

Control Panel



Ground Control Panel

1 LCD indicator light

2 Fuel meter

3 Hour meter

4 Idle select switch

5 Engine start switch

6 Red Emergency Stop button

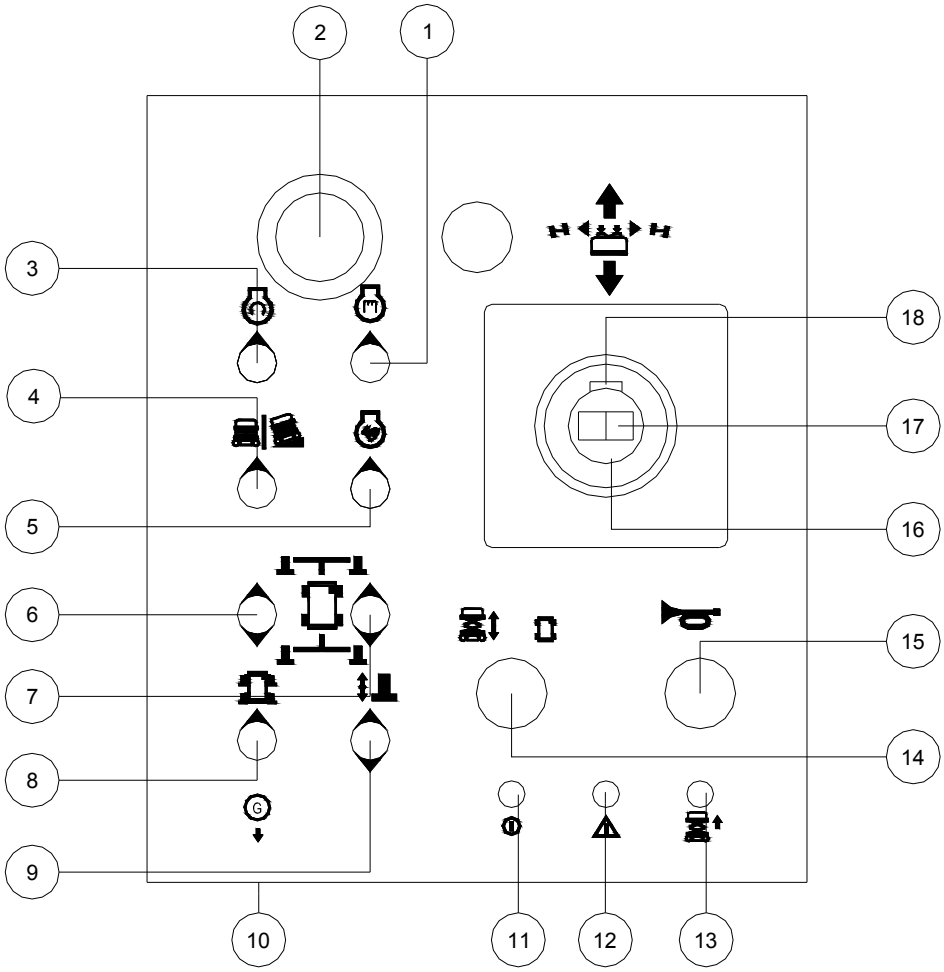
7 Lift function enable switch

8 Platform up / down switch

9 Key switch for platform / off / ground control selection

10 Outrigger auxiliary retract switch

Control Panel



Platform Controls

1 Engine glow plug switch
2 Red Emergency Stop button
3 Engine start switch
4 Machine on incline switch
5 Idle select switch
6 Left outrigger control switch
7 Right outrigger control switch
8 Outrigger auto level switch
9 Outrigger extend / retract switch
10 Auxiliary lowering function switch
11 Power indicator light
12 Alarm indicator light
13 Lift function indicator light
14 Lift function enable switch
15 Horn button
16 Proportional control handle for drive function
17 Thumb rocker switch for steer function
18 Function enable switch

Pre-operation Inspection

Do Not Operate Unless:

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

1 Avoid hazardous situations.

2 Always perform a pre-operation inspection.

Know and understand the pre-operation inspection before going on to the next section.

3 Always perform function tests prior to use.

4 Inspect the workplace.

5 Only use the machine as it was intended.

Fundamentals

It is the responsibility of the operator to perform a pre-operation inspection and routine maintenance.

The pre-operation inspection is a visual inspection performed by the operator prior to each work shift. The inspection is designed to discover if anything is apparently wrong with a machine before the operator performs the function tests.

The pre-operation inspection also serves to determine if routine maintenance procedures are required. Only routine maintenance items specified in this manual may be performed by the operator.

Refer to the list on the next page and check each of the items.

If damage or any unauthorized variation from factory delivered condition is discovered, the machine must be tagged and removed from service.

Repairs to the machine may only be made by a qualified service technician, according to the manufacturer's specifications. After repairs are completed, the operator must perform a pre-operation inspection again before going on to the function tests.

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

Pre-operation Inspection

☐ Be sure that the operator's, safety and responsibilities manuals are complete, legible and in the storage container located in the platform.

☐ Be sure that all decals are legible and in place. See Decals section.

☐ Check for engine oil leaks and proper oil level. Add oil if needed. See Maintenance section.

☐ Check for hydraulic oil leaks and proper oil level. Add oil if needed. See Maintenance section.

☐ Check for engine coolant leaks and proper level of coolant. Add coolant if needed. See Maintenance section.

☐ Check for battery fluid leaks and proper fluid level. Add distilled water if needed. See Maintenance section.

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

☐ Electrical components, wiring and electrical cables

☐Hydraulic hoses, fittings, cylinders and manifolds

☐ Fuel and hydraulic tanks

☐ Drive motors

☐ Wear pads

☐ Tires and wheels

☐ Engine and related components

☐ Limit switches, alarms and horn

☐ Nuts, bolts and other fasteners

☐ Platform overload components

☐ Platform entry gate

☐ Beacon and alarms (if equipped)

☐ Safety arm

☐ Platform extension(s)

☐ Scissor pins and retaining fasteners

☐ Platform control joystick

☐ Generator (if equipped)

☐ Outrigger housings and footpads (if equipped)

Check entire machine for:

☐ Cracks in welds or structural components

☐ Dents or damage to machine

☐ Be sure that all structural and other critical components are present and all associated fasteners and pins are in place and properly tightened

☐ Side rails are installed and rail pins and bolts are fastened

Observe and Obey:

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

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

Maintenance Symbols Legend

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

 Indicates that tools will be required to perform this procedure.

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

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

Check the Batteries

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

⚠WARNING Electrocution hazard

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

⚠WARNING Bodily injury hazard

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

1. Put on protective clothing and eye wear.
2. Be sure that the battery cable connections are tight and free of corrosion.
3. Be sure that the battery hold-down bars are secure.
4. Remove the battery vent caps.
5. Check the battery acid level. If needed, replenish with distilled water to the bottom of the battery fill tube. Do not overfill.
6. Install the vent caps.

Check the Engine Oil Level

Maintaining the proper engine oil level is essential to good engine performance and service life.

Operating the machine with an improper oil level can damage engine components.

NOTICE Check the oil level with the engine off.

1 Release the latches on the engine tray and fully slide the engine tray out.

2 Check the oil level dipstick. Add oil as needed.

Perkins 404C-22

Oil Type	5W-30
Oil Type - cold conditions	0W-20

Check the Hydraulic Oil Level

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

NOTICE Perform this procedure with the platform in the stowed position and the engine off.

1 Visually inspect the sight gauge located on the side of the hydraulic oil tank.

⊙Result: The hydraulic oil level should be within the top 5 cm of the sight gauge.

2 Add oil if necessary. Do not overfill.

Hydraulic oil specifications

-18℃～-5℃	10W
-18℃～99℃	10W-20,10W-30

Check the Engine Coolant Level

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

Check the fluid level in the radiator. Add fluid as needed.

⚠WARNING Bodily injury hazard

Fluids in the radiator are under pressure and extremely hot. Use caution when removing cap and adding fluids.

Scheduled Maintenance

Maintenance performed quarterly, annually and every two years must be completed by a person trained and qualified to perform maintenance on this machine according to the procedures found in the service manual for this machine.

Machines that have been out of service for more than three months must receive the quarterly inspection before they are put back into service.

Function Tests

Do Not Operate Unless:

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

1 Avoid hazardous situations.

2 Always perform a pre-operation inspection.

3 Always perform function tests prior to use.

Know and understand the function tests before going on to the next section.

4 Inspect the workplace.

5 Only use the machine as it was intended.

Fundamentals

The function tests are designed to discover any malfunctions before the machine is put into service.

The operator must follow the step-by-step instructions to test all machine functions.

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

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

1 Select a test area that is firm, level and free of obstruction.

At the Ground Controls

2 Pull out the platform and ground red Emergency Stop buttons to the on position.

3 Turn the key switch to ground control.

⊙ Result: The LCD indicator will light one by one.

4 Start the engine. See Operating Instructions section.

Test Emergency Stop

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

⊙ Result: The engine should turn off and no functions should operate.

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

Test Up/Down Functions and Function Enable

The audible warnings on this machine come from the same central alarm. The horn is a constant tone. The descent alarm sounds at 60 beeps per minute. The alarm that goes off when the machine is not level sounds.

7 Do not move the lift function enable switch up. Move up and hold the platform switch.

⊙ Result: No function should operate.

8 Move and hold the lift function enable switch up. Move and hold the platform up switch up.

⊙ Result: The platform should raised .

9 Move up and hold the lift function enable switch. Move down and hold the platform down switch.

⊙ Result: The platform should lower then stop at the height is 2 m (X43RT) or 3m (X52RT). The descent alarm should sound while the platform is lowering.

10 Move up and hold the lift function enable switch. Move down and hold the platform down switch.

⊙ Result: The platform should lower to end. The descent alarm should sound while the platform is lowering.

Test the Auxiliary Lowering

11 Move up and hold the lift function enable switch and raise the platform approximately 60 cm.

12 Push in the red Emergency Stop button to shut off the engine.

13 Pull out the red Emergency Stop button to the on position.

14 Move down and hold the engine start switch. Move down and hold the platform down switch.

⊙ Result: The platform should lower.

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

At the Platform Controls

Test Emergency Stop

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

⊙ Result: No functions should operate.

17 Pull the red Emergency Stop button out to the on position.

⊙ Result: The LED indicator light should come on.

Test the Horn

18 Push the horn button.

⊙ Result: The horn should sound.

Test Up/Down Functions and Function Enable

19 Start the engine.

20 Activate the up/down rocker switch in the direction indicated by the up arrow.

⊙ Result: The platform should not raised.

21 Push and hold the lift function enable button.

22 Activate the up/down rocker switch in the direction indicated by the up arrow.

⊙ Result: The platform should raise.

23 Push and hold the lift function enable button.

24 Activate the up/down rocker switch in the direction indicated by the down arrow.

⊙ Result: The platform should lower. The descent alarm should sound while the platform is lowering.

Test the Steering

Note: When performing the steer and drive function tests, stand in the platform facing the steer end of the machine.

25 Press and hold the function enable switch on the control handle.

26 Depress the thumb rocker switch on top of the control handle in the direction identified by the left triangle on the control panel.

⊙ Result: The steer wheels should turn in the direction that the left triangle points on the control panel.

27 Depress the thumb rocker switch in the direction identified by the right triangle on the control panel.

⊙ Result: The steer wheels should turn in the direction that the right triangle points on the control panel.

Test Drive and Braking

28 Press and hold the function enable switch on the control handle.

29 Slowly move the control handle in the direction indicated by the up arrow on the control panel until the machine begins to move, then return the handle to the center position.

⊙ Result: The machine should move in the direction that the up arrow points on the control panel, then come to an abrupt stop.

30 Press and hold the function enable switch on the control handle.

31 Slowly move the control handle in the direction indicated by the down arrow on the control panel until the machine begins to move, then return the handle to the center position.

⊙ Result: The machine should move in the direction that the down arrow points on the control panel, then come to an abrupt stop.

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

Test Limited Drive Speed

32 Push and hold the lift function enable button. Raise the platform approximately 2 m (X43RT) or 3m (X52RT) from the ground.

33 Press and hold the function enable switch on the control handle.

34 Slowly move the control handle to the full drive position.

⊙ Result: The maximum achievable drive speed with the platform raised should not exceed 31 cm/s. If the drive speed with the platform raised exceeds 31 cm/s, immediately tag and remove the machine from service.

Test the Tilt Sensor Operation

Note: Perform this test from the ground with the platform controller. Do not stand in the platform.

35 Fully lower the platform.

36 Drive both wheels on one side onto an 18 cm block.

37 Raise the platform at least 2 m (X43RT) or 3m (X52RT).

⊙ Result: The platform should stop and the tilt alarm will sound. The indicator light on the lift function enable button will be red.

38 Turn the lift function enable switch to drive function.

39 Move the drive control handle in the direction indicated by the up arrow, then move the drive control handle in the direction indicated by the down arrow.

⊙ Result: The drive function should not work in either direction.

40 Turn the lift function enable switch to lift function.

41 Lower the platform and drive the machine off the block.

Test the Up Limit Switch and the Outriggers

42 Push and hold the lift function enable button. Raise the platform.

⊙ Result: The platform should raise to 9 m and then stop. The platform should not raise above 9 m unless the outriggers are lowered.

43 Turn the lift function enable switch to drive function. Drive the machine forward.

⊙ Result: The drive function should not operate.

44 Turn the lift function enable switch to lift function.

45 Lower the platform. If the platform is higher than 2 m (X43RT) or 3m (X52RT) from the ground, the outriggers will not lower.

46 Lower the platform to the end.

47 Move the outrigger extend / retract switch down.

48 Move outrigger auto leveling switch up.

⊙ Result: The outriggers should extend and level the machine. A beep will sound when the machine is level.

49 Raise the platform.

⊙ Result: The platform should raise to full height.

50 Lower the platform.

Test Auxiliary Lowering

51 Push and hold the lift function enable button and raise the platform approximately 60 cm.

52 Push in the red Emergency Stop button to shut off the engine.

53 Pull out the red Emergency Stop button to the on position.

54 Move the auxiliary lowering function switch up. Push and hold the lift function enable button. Activate the up/down rocker switch in the direction indicated by the down arrow.

⊙ Result: The platform should lower.

Test Outrigger Auxiliary Retract

55 Lower the platform to the lowest position.

56 Operator comes back to the ground control. Operation the machine on the ground control.

57 Open the ground control gate. Move down and hold the engine start switch.

58 Move up the outrigger auxiliary retract switch.

⊙ Result: The outrigger should retract.

Workplace Inspection

Do Not Operate Unless:

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

1 Avoid hazardous situations.

2 Always perform a pre-operation inspection.

3 Always perform function tests prior to use.

4 Inspect the workplace.

Know and understand the workplace inspection before going on to the next section.

5 Only use the machine as it was intended.

Fundamentals

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

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

Workplace Inspection

Be aware of and avoid the following hazardous situations:

- Drop-offs or holes
- Bumps, floor obstructions or debris
- Sloped surfaces
- Unstable or slippery surfaces
- Overhead obstructions and high voltage conductors
- Hazardous locations
- Inadequate surface support to withstand all load forces imposed by the machine
- Wind and weather conditions
- The presence of unauthorized personnel
- Other possible unsafe conditions

Do Not Operate Unless:

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

1 Avoid hazardous situations.

2 Always perform a pre-operation inspection.

3 Always perform function tests prior to use.

4 Inspect the workplace.

5 Only use the machine as it was intended.

Fundamentals

The Operating Instructions section provides instructions for each aspect of machine operation.

It is the operator's responsibility to follow all the safety rules and instructions in the operator's, safety and responsibilities manuals.

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

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

Emergency Stop

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

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

Starting the Engine

1 At the ground controls, turn the key switch to the desired position.

2 Be sure both ground and platform control red Emergency Stop buttons are pulled out to the on position.

3 Move up and hold the glow plug switch for 3 to 5 seconds.

4 Move the engine start switch up.

If the engine fails to start after 15 seconds of cranking, determine the cause and repair any malfunction. Wait 60 seconds before trying to start again.

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

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

Operation from Ground

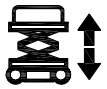
1 Turn the key switch to ground control.

2 Pull out both ground and platform red Emergency Stop buttons to the on position.

3 Start the engine.

To Position Platform

1 Move up and hold the lift function enable switch.



2 Move up or down the platform up/down switch to activate the up function or the down function.

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

Engine Idle Select

Select the engine idle (rpm) by moving the idle select switch. There are three settings for engine idle.

- Indicator light off: low idle
- Indicator light blinking: high idle activated by any function enable button
- Indicator light on: high idle

Operation from Platform

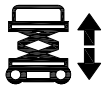
1 Turn the key switch to platform control.

2 Pull out the ground and platform red Emergency Stop buttons to the on position.

3 Start the engine.

To Position Platform

1 Turn the lift function enable switch to lift function.



2 Push and hold the lift function enable button.

3 Activate the up/down rocker switch in the desired direction.

To Steer

1 Turn the lift function enable switch to drive function.

2 Press and hold the function enable switch on the controller.

3 Turn the steer wheels with the thumb rocker switch located on the top of the control handle.

To Drive

1 Press and hold the function enable switch on the control handle.

2 Increase speed: Slowly move the control handle off center.

Decrease speed: Slowly move the control handle toward center.

Stop: Return the control handle to center or release the function enable switch.

Use the direction arrows on the platform controls and on the platform to identify the direction the machine will travel.

Machine travel speed is restricted when the platform is raised.

Drive Select Switch

Machine on incline symbol:

Low range operation for inclines

Indicator Light On Red

If the indicator light is on red, push in and pull out the red Emergency Stop button to reset the system.

If the light stays red, tag and remove the machine from service.

Driving on a slope

Determine the slope and side slope ratings for the machine and determine the slope grade.

X43RT

Maximum slope rating, stowed position 50% , Maximum side slope rating, stowed position 50%

X52RT

Maximum slope rating, stowed position 40%, Maximum side slope rating, stowed position 40%

Note: Slope rating is subject to ground conditions and adequate traction.

To determine the slope grade

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

You will need:

Carpenter's level straight piece of wood, at least 1 m long tape measure

Lay the piece of wood on the slope.

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

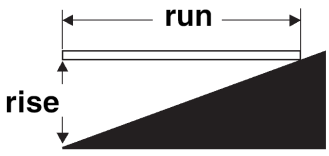
While holding the piece of wood level, measure the distance from the bottom of the piece of wood to the ground.

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

Example:

Run = 3.6 m

Rise = 0.3 m



0.3 m ÷ 3.6 m = 0.083 x 100 = 8.3%

To Extend and Retract Platform

1 Lift the platform extension lock handle to the horizontal position.

2 Push the platform extension lock handle to extend the platform to the desired position.

Do not stand on the platform extension while trying to extend it.

3 Lower the platform extension lock handle.

Auxiliary Lowering

At the Ground Controls

In the event of a power failure, use the backup auxiliary lowering function.

At the Platform Controls

Move the auxiliary lower switch down. Turn the lift function enable button to lift function enable and activate the up/down rocker switch in the down direction.

Operation from Ground with Controller

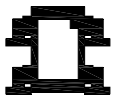
Maintain safe distances between operator, machine and fixed objects.

Be aware of the direction the machine will travel when using the controller.

Outrigger Operation (if equipped)

1 Position the machine below the desired work area.

Note: The engine must be running for the outriggers to operate.

2 Moe up and hold the auto level switch. 

3 Move the outrigger extend / retract switch in the down direction. The outriggers will extend and level the machine. A beep will sound when the machine is level.

The indicator light on the lift function enable button will turn red when one but not all outriggers are down. All drive and lift functions are disabled.

The light turns green on the lift function enable button and on the individual outrigger buttons when all the outriggers are in firm contact with the ground.

The drive function is disabled while the outriggers are down.

To control individual outriggers

1 Move the outrigger extend / retract switch down to enable the extend function.

2 Move the left outrigger control switch up. The LF outriggers will begin to extend.

Move the left outrigger control switch down. The LR outriggers will begin to extend.

3 Move the outrigger extend / retract switch up to enable the retract function.

4 Move the left outrigger control switch up. The LF outriggers will begin to retract.

Move the left outrigger control switch up. The LR outriggers will begin to retract.

5 Move the outrigger extend / retract switch down to enable the extend function.

6 Move the right outrigger control switch up.

The RF outriggers will begin to extend.

Move the right outrigger control switch down. The RR outriggers will begin to extend.

7 Move the outrigger extend / retract switch up to enable the retract function.

8 Move the right outrigger control switch up. The RF right ahead outriggers will begin to retract.

Move the right outrigger control switch up. The RR outriggers will begin to retract.

Outrigger Auxiliary Retract

1 The platform must be in the lowest height. Operation the machine on the ground control.

2 Open the ground control gate. Move down and hold the engine start switch.

3 Move up the outrigger auxiliary retract switch.

Fall Protection

Personal fall protection equipment (PFPE) is not required when operating this machine. If PFPE is required by job site or employer rules, the following shall apply:

All PFPE must comply with applicable governmental regulations and must be inspected and used in accordance with the manufacturer's instructions.

After Each Use

1 Select a safe parking location—firm level surface, clear of obstructions and traffic.

2 Lower the platform.

3 Turn the key switch to the off position and remove the key to secure from unauthorized use.

4 Chock the wheels.

Transport and Lifting Instructions

Observe and Obey:

√ Common sense and planning must be applied to control the movement of the machine when lifting it with a crane or forklift.

√ The transport vehicle must be parked on a level surface.

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

√ Be sure the vehicle capacity, loading surfaces and chains or straps are sufficient to withstand the machine weight. See the serial label for the machine weight.

√ The machine must be on a level surface or secured before releasing the brakes.

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

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

Free-wheel Configuration for Winching

Chock the wheels to prevent the machine from rolling.

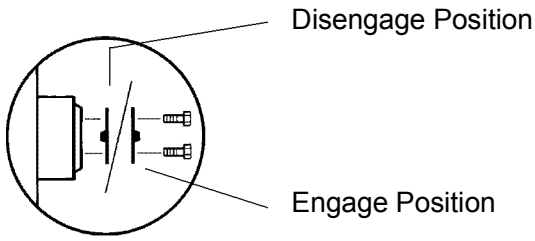
2WD models: Release the non-steer wheel brakes by turning over the torque hub disconnect caps (see below).

4WD models: Release the wheel brakes by turning over all four torque hub disconnect caps (see below).

Be sure the winch line is properly secured to the drive chassis tie points and the path is clear of all obstructions.

Reverse the procedures described to re-engage the brakes.

Note: The pump free-wheel valve should always remain closed.



Securing to Truck or Trailer for Transit

Always chock the machine wheels in preparation for transport.

Retract and secure the extension deck(s).

Use the tie-down points on the chassis for anchoring down to the transport surface.

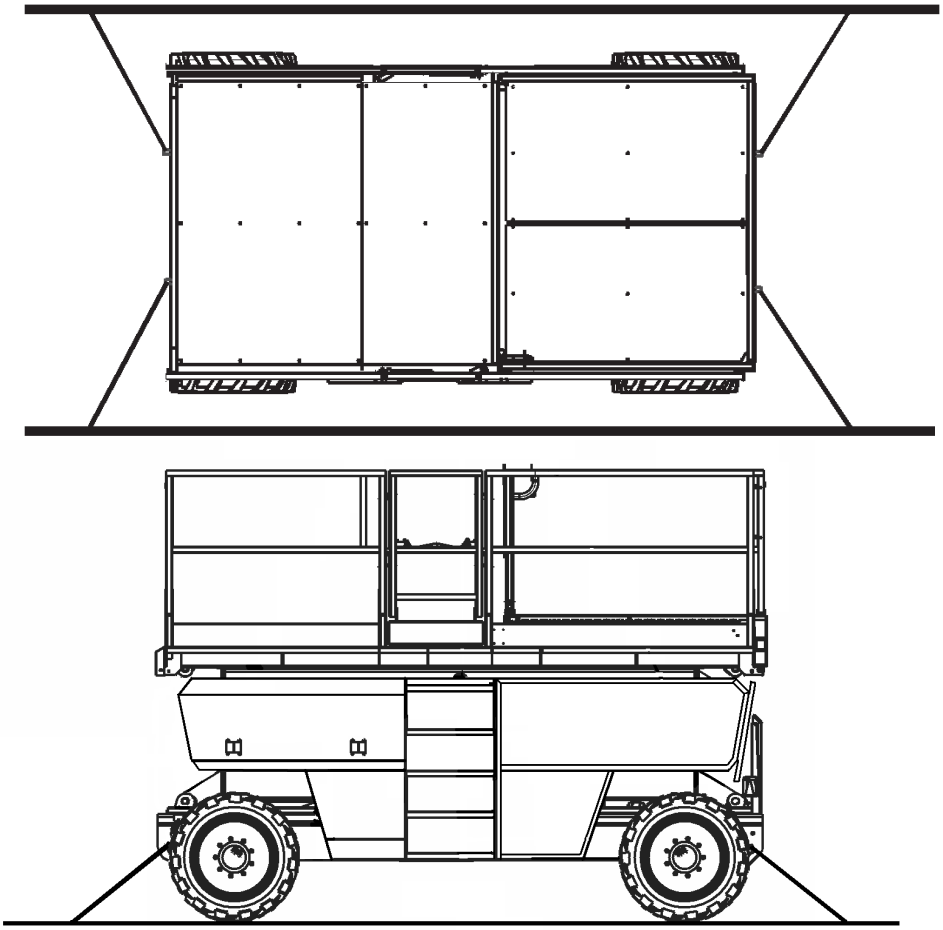
Use a minimum of four chains or straps.

Use chains or straps of ample load capacity.

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

Inspect the entire machine for loose or unsecured items.

If the railings have been folded down, secure them with straps before transporting.



Transport and Lifting Instructions

Observe and Obey:

√ Only qualified riggers should rig and lift the machine.

√ Be sure the crane capacity, loading surfaces and straps or lines are sufficient to withstand the machine weight. See the serial plate for the machine weight.

Center of gravity	X Axis	Y Axis
X43RT without outriggers	1.95 m	1.0 m
X43RT with outriggers	2.0 m	1.0 m
X52RT	2.0 m	1.0 m

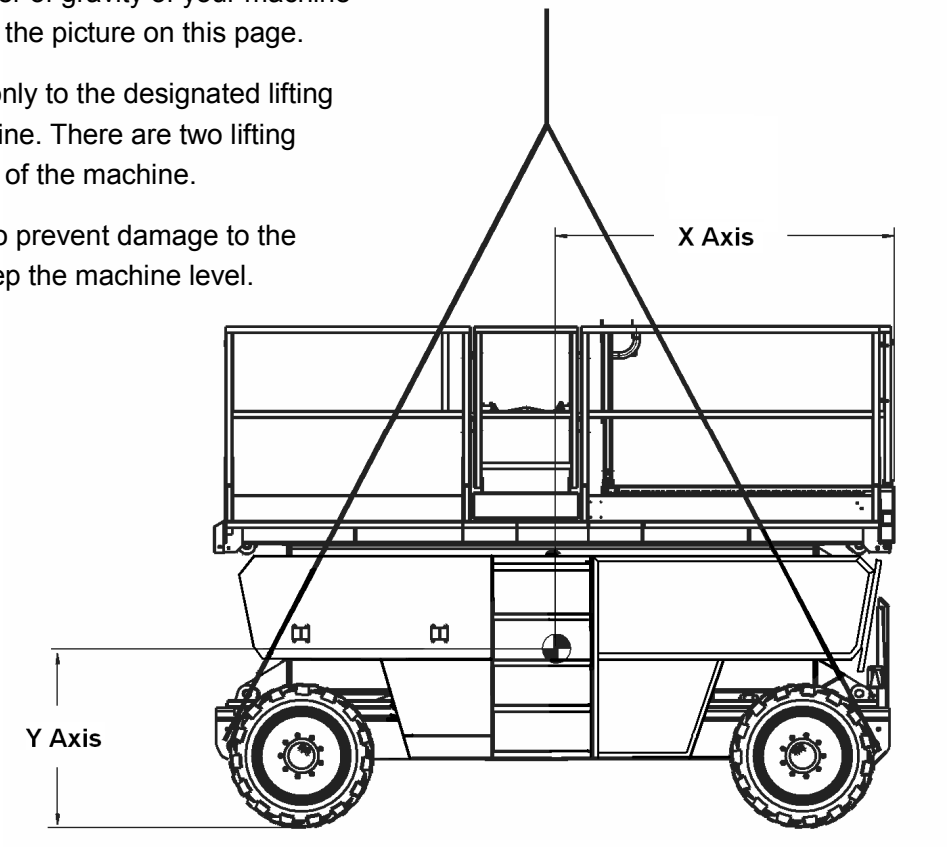
Lifting Instructions

Fully lower the platform. Be sure the extension decks, controls and covers are secure. Remove all loose items on the machine.

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

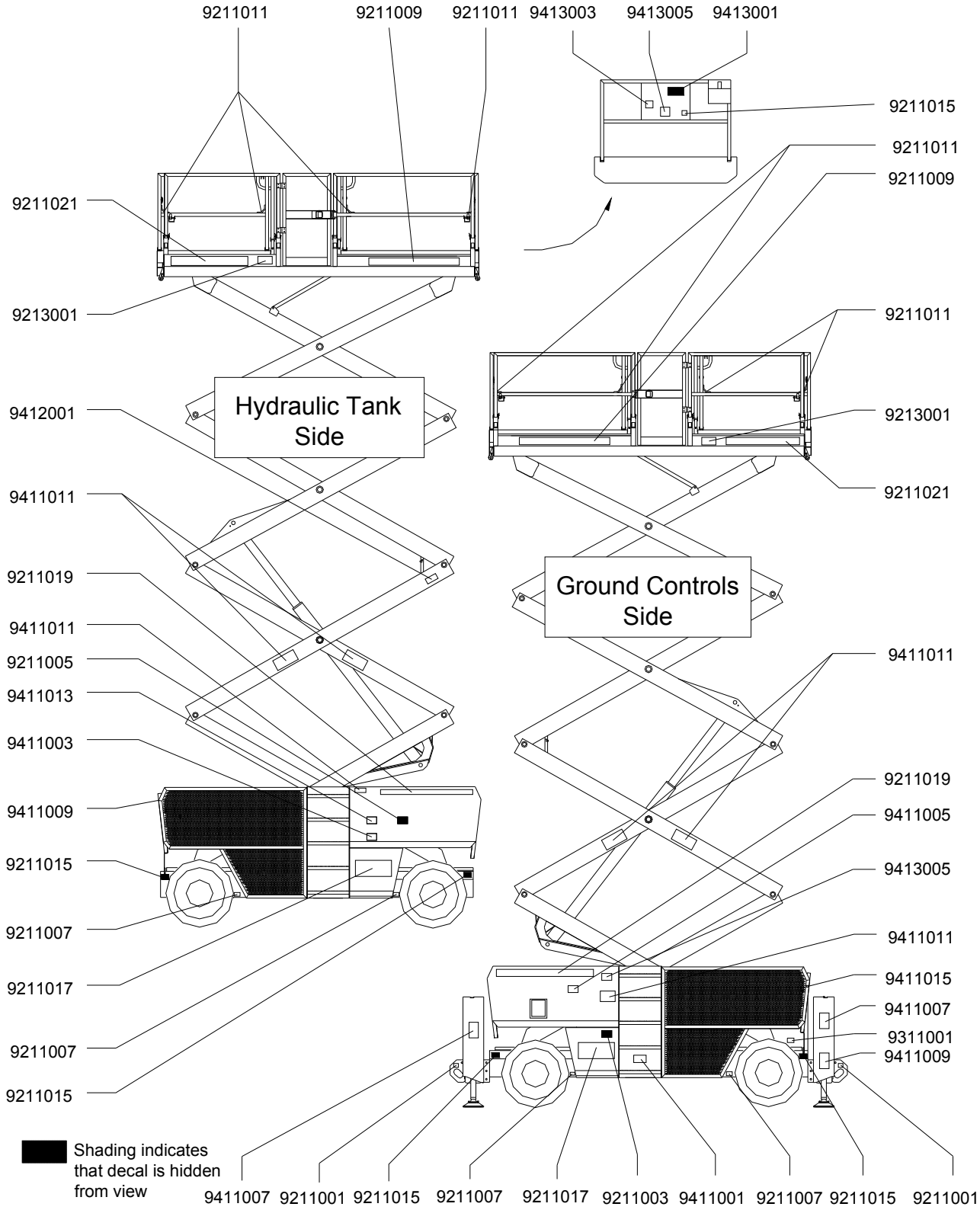
Attach the rigging only to the designated lifting points on the machine. There are two lifting points on each end of the machine.

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



X43RT

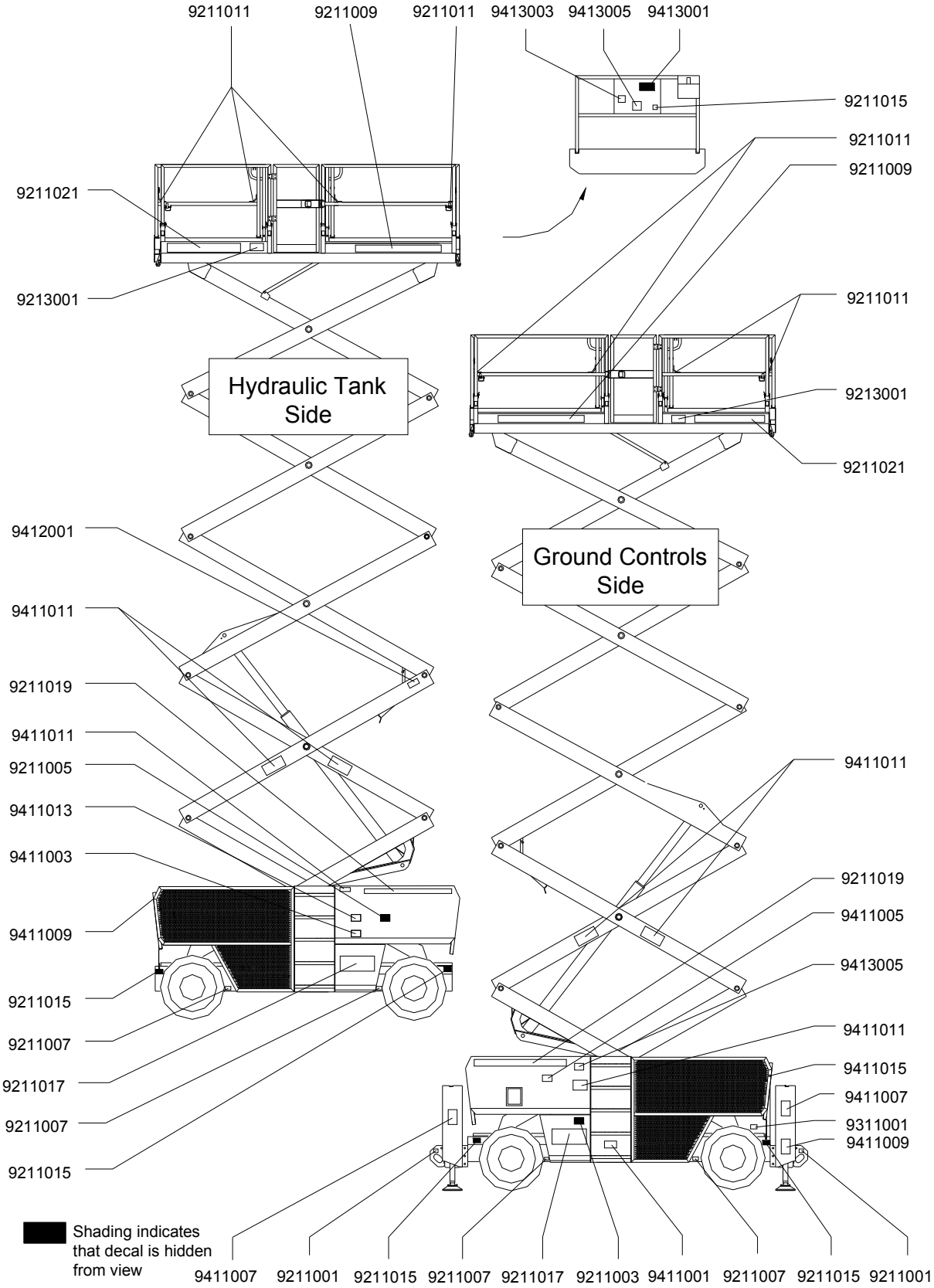
Green - used to indicate operation or maintenance information.



Decals

X52RT

Green - used to indicate operation or maintenance information.



Decal Inspection

Use the pictures on the next page to verify that all decals are legible and in place.

Below is a numerical list with quantities and descriptions.

X43RT X52RT

Part No.	Description	QTY.
9211001	Label-Lifting Hanging Department	4
9211003	Label-Diesel	1
9211005	Label-Hydraulic Oil	1
9211007	Label-Wheel Maximum Load	4
9211009	Maximum Capacity 1500lbs/680kg	2
9211011	Label-Lanyard Anchorage	8
9211015	Label-Direction al Arrows	5
508235-001	Cosmetic-4×4	2
510347-000	X52RT (510347-000 X43RT)	2
9213001	Notice- Maximum Side Force 90lbs/400N	2
9311001	Label- Inspection	1
9411001	Danger-Explosion/Burn Hazard	1
9411003	Danger-Crushing Hazard	1
9411005	Danger-Tip-over Hazard	1
9411007	Warning-Crushing Hazard	4

Part No.	Description	QTY.
9411009	Warning-Crushing Hazard	1
9411011	Warning-Crushing Hazard	1
9411013	Warning-Injection Hazard	1
9411015	Caution-Restricting Access	1
9412001	Danger-Crushing / Burn Hazard	4
9413001	Danger-General Safety Rules	
9413003	Danger-Tip Alam	
9413005	Danger-Tip-over Hazard	

Specifications

Model X43**RT**

Height, working maximum	15 m
Height, platform maximum	13 m
Height, stowed maximum Rails up	2.98 m
Height, stowed maximum Rails lowered	2.28 m
Width, standard tires	2.3 m
Length, platform retracted Models with one extension deck	3.94 m
Length, platform extended Models with one extension deck	5.4 m
Length, platform retracted Models with two extension decks	3.98 m
Length, platform extended Models with two extension decks	6.6 m
Length, platform retracted Models with outriggers Models with two super decks	4.88 m
Maximum load capacity	680 kg
Maximum wind speed	12.5 m/s
Wheelbase	2.9 m
Turning radius (outside)	5.2 m
Turning radius (inside)	2.04 m
Ground clearance	22 cm
Weight (Machine weights vary with option configurations)	See Serial Label
Gradeability	50%
Controls	Proportional
AC outlet in platform	Standard

Maximum hydraulic pressure (functions)	241.3 bar
Tire size - standard tires	12 x 21.5
Platform dimensions	
Platform length x width	3.8 x 1.8 m
Platform extension length	1.5 m
Drive speeds	
Stowed, maximum	6 km/h
Platform raised, maximum	1.1 km/h 12.2 m/39 sec
Airborne noise emissions Maximum sound level at normal operating workstations (A-weighted)	80 dB
Floor loading information	
Tire load, maximum	2041 kg
Outrigger load, maximum (if equipped)	2126 kg
Tire contact pressure	8.80 kg/cm 862 kPa
Occupied floor pressure	735 kg/m^2 7.21 kPa

Note: Floor loading information is approximate and does not incorporate different option configurations.

It should be used only with adequate safety factors.

Continuous improvement of our products is a UPRIGHT policy. Product specifications are subject to change without notice or obligation.

Specifications

Model X52**RT**

Height, working maximum	18 m
Height, platform maximum	16 m
Height, stowed maximum Rails up	2.98 m
Height, stowed maximum Rails lowered	2.28 m
Width, standard tires	2.3 m
Length, platform retracted Models with one extension deck	3.94 m
Length, platform extended Models with one extension deck	5.4 m
Length, platform retracted Models with two extension decks	3.98 m
Length, platform extended Models with two extension decks	6.6 m
Length, platform retracted Models with outriggers Models with two super decks	4.88 m
Maximum load capacity	680 kg
Maximum wind speed	12.5 m/s
Wheelbase	2.9 m
Turning radius (outside)	5.2 m
Turning radius (inside)	2.04 m
Ground clearance	22 cm
Weight	See Serial Label
(Machine weights vary with option configurations)	
Gradeability	40%
Controls	Proportional
AC outlet in platform	Standard

Maximum hydraulic pressure (functions)	241.3 bar
Tire size - standard tires	12 x 21.5
Platform dimensions	
Platform length x width	3.8 x 1.8 m
Platform extension length	1.5 m
Drive speeds	
Stowed, maximum	6 km/h
Platform raised, maximum	1.1 km/h 12.2 m/39 sec
Airborne noise emissions	80 dB
Maximum sound level at normal operating workstations (A-weighted)	
Floor loading information	
Tire load, maximum	2041 kg
Outrigger load, maximum (if equipped)	2126 kg
Tire contact pressure	8.80 kg/cm 862 kPa
Occupied floor pressure	735 kg/m^2 7.21 kPa

Note: Floor loading information is approximate and does not incorporate different option configurations.

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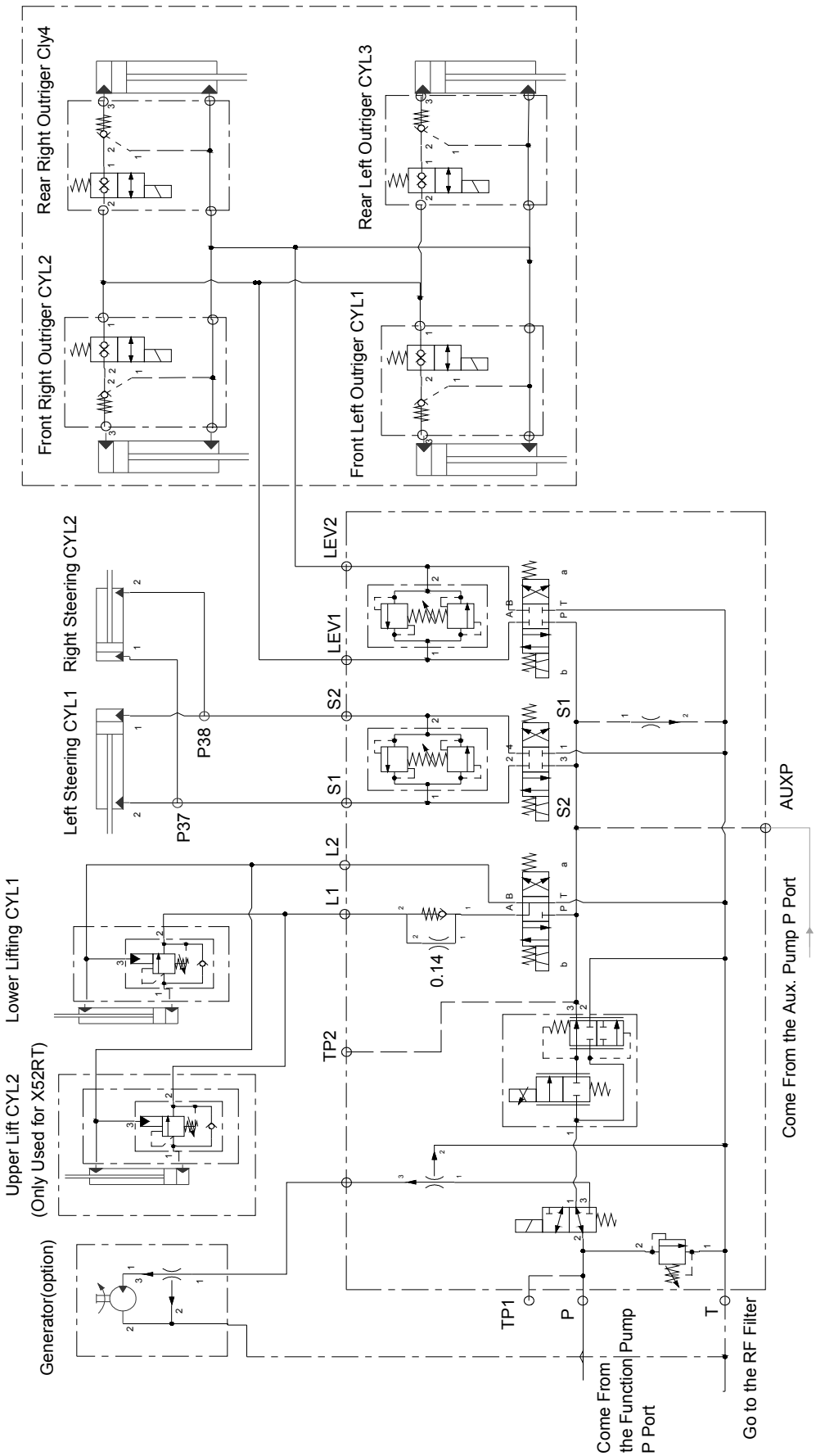
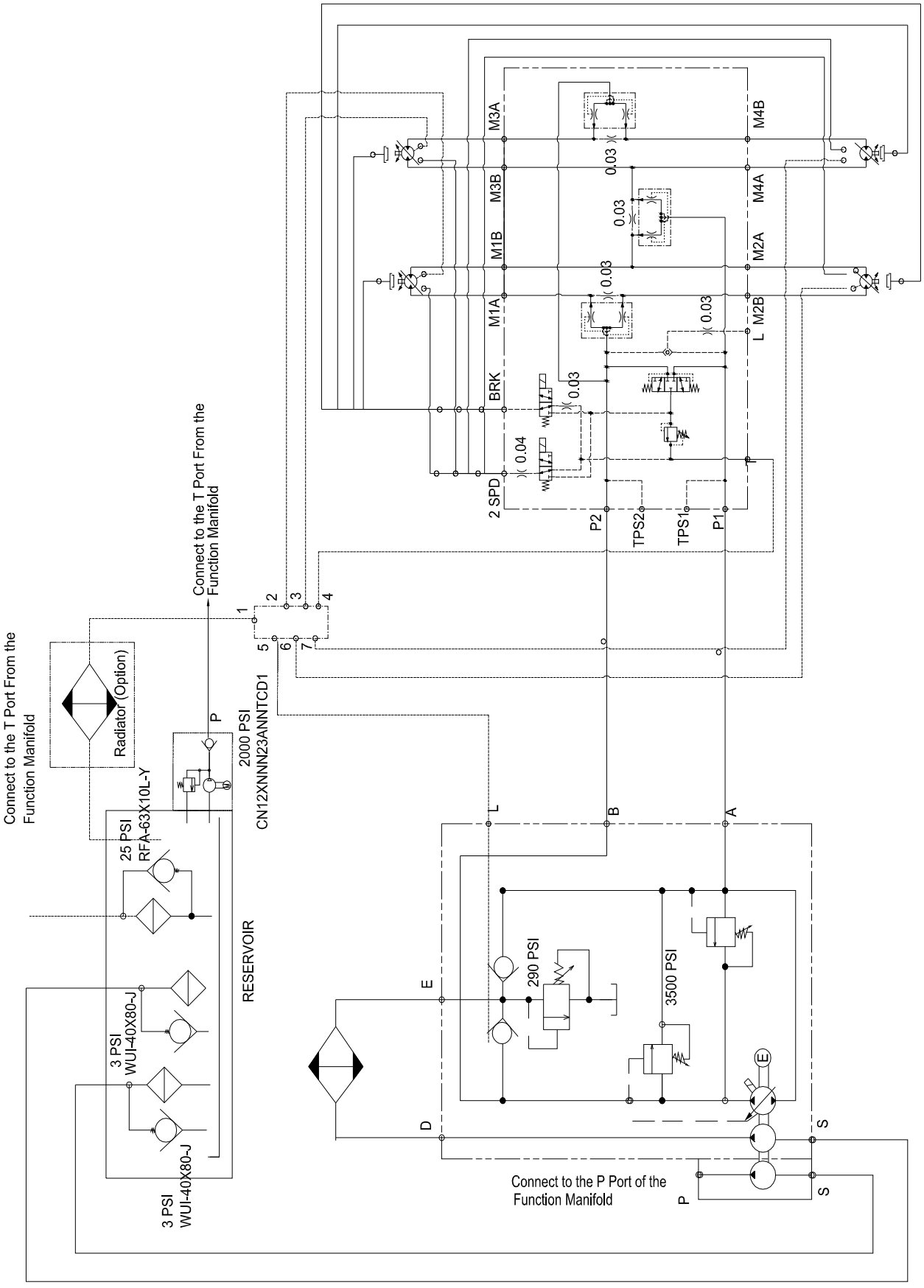
Schematic

Hydraulic Schematic – Function model



Schematic

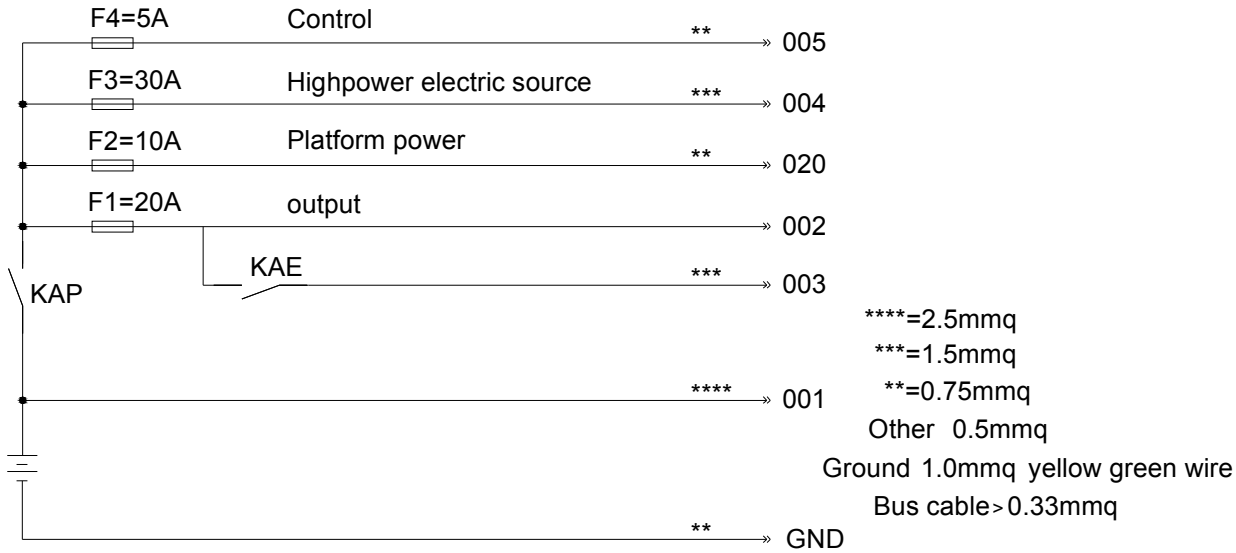
Hydraulic Schematic – Drive model



Schematic

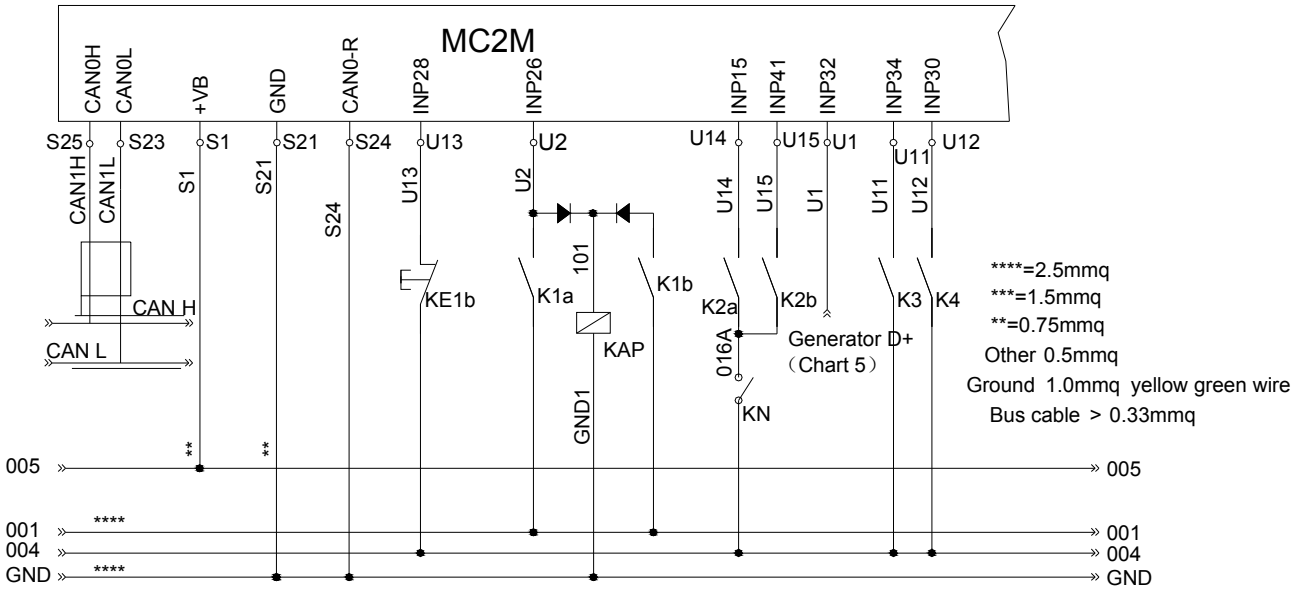
Electrical Schematic

- Ground control MIDAC



Symbol	Description
F4	Control fuse
F3	High-power electric source fuse
F2	Platform power fuse
F1	Output fuse
KAP	Power intermediate relay
KAE	Emergency Stop intermediate relay

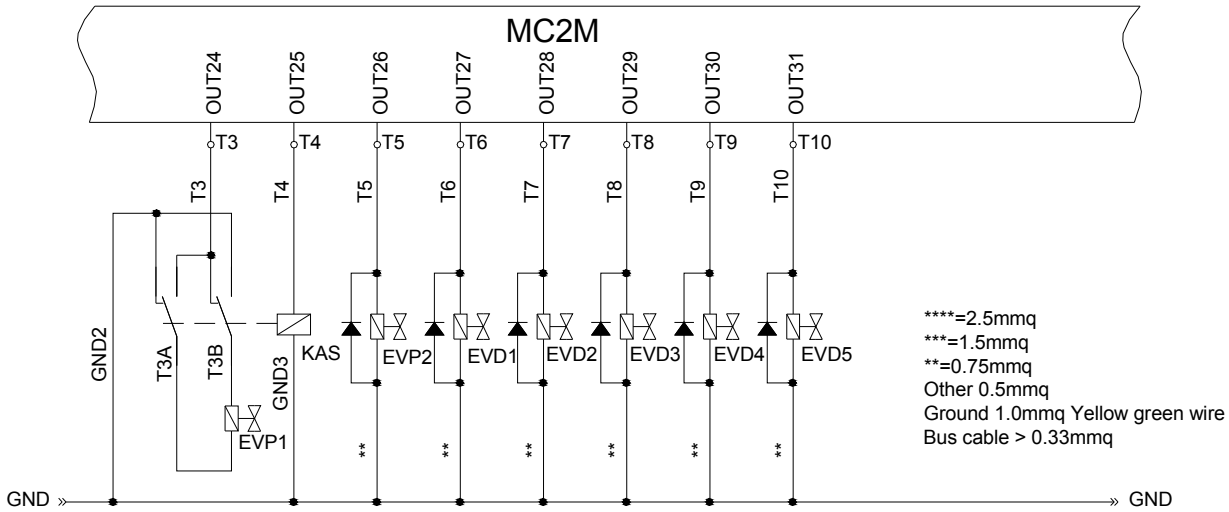
- Ground control wiring



Symbol	Description
K1a	Ground operation switch
K1b	Platform operation switch
K2a	Platform up switch
K2b	Platform down switch
KAP	Power intermediate relay
KAE	Emergency Stop intermediate relay
KN	Lift function enable switch
KE2	Ground emergency stop switch
K3	Engine start switch
K4	Accelerograph switch

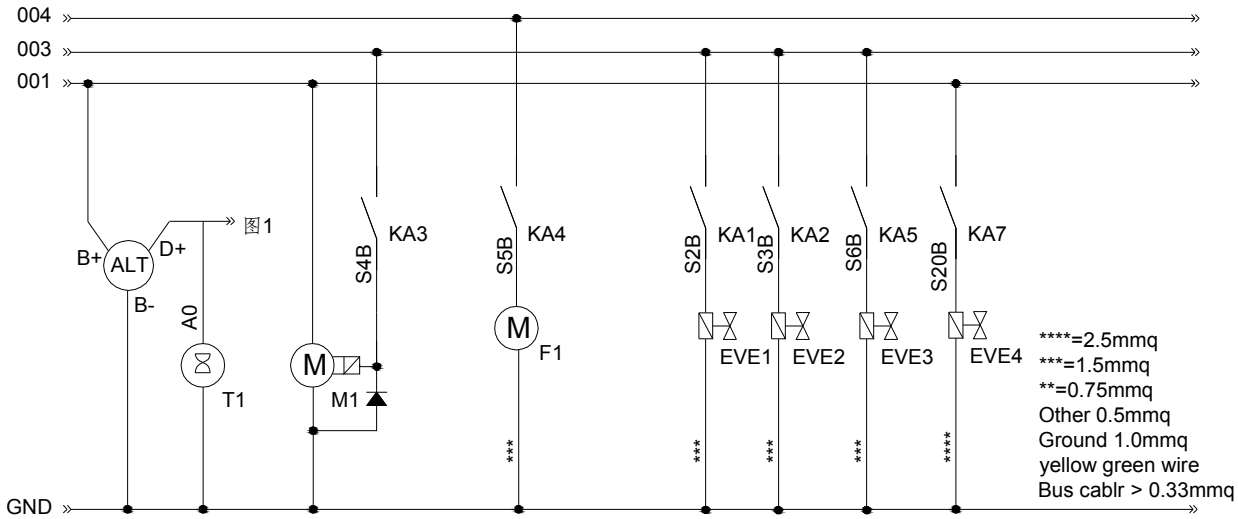
Schematic

- Ground control wiring



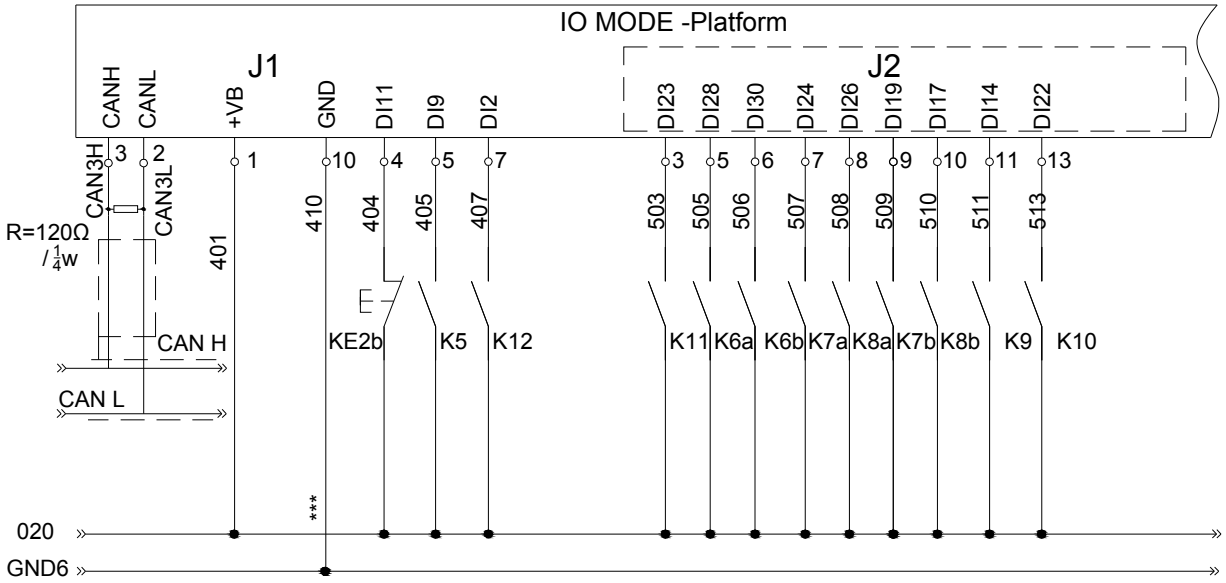
Symbol	Description
EVD1	Hydraulic generator solenoid valve
EVD2	Turn left solenoid valve
EVD3	Turn right solenoid valve
EVD4	Motor variable solenoid valve
EVD5	Brake solenoid valve
EVP1	Drive variable solenoid valve
EVP2	Speed regulation proportional solenoid valve
KAS	Drive solenoid operated directional valve

- Engine exterior wiring



Symbol	Description
T1	Hour meter
M1	Auxiliary pump
F1	Oil cooler fan
EVE1	Engine start coil
EVE2	Engine stop coil
EVE3	Engine starting aid coil
EVE4	Accelerograph electromagnetism coil
KA1	Engine start relay
KA2	Engine stop relay
KA3	Auxiliary pump relay
KA4	Oil cooler fan relay
KA5	Engine starting aid relay
KA6	Horn relay
KA7	Accelerograph electromagnetism relay

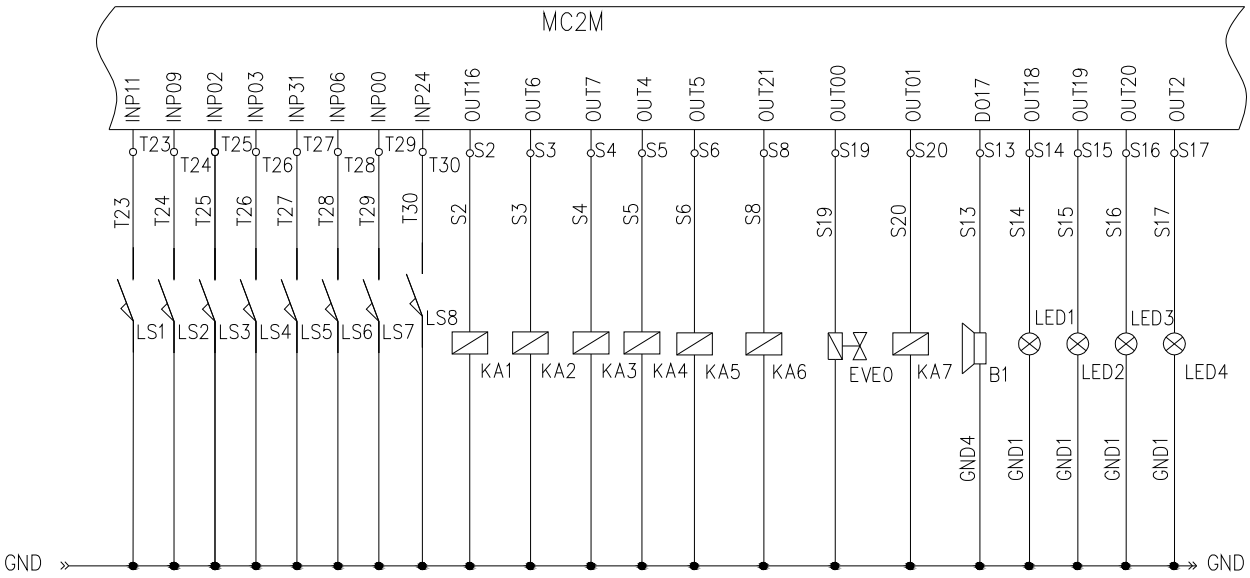
- Platform IO-MODE wiring



Symbol	Description
KE2	Platform emergency Stop bottom
K5	Drive speed switch
K6a	Outrigger retract switch
K6b	Outrigger extend switch
K7a	LF outrigger select switch
K8a	RF outrigger select switch
K7b	LR outrigger select switch
K8b	RR outrigger select switch
K9	Hydraulic generator start
K10	Auto-leveling select switch
K11	Engine start switch
K12	Engine start aid switch

Schematic

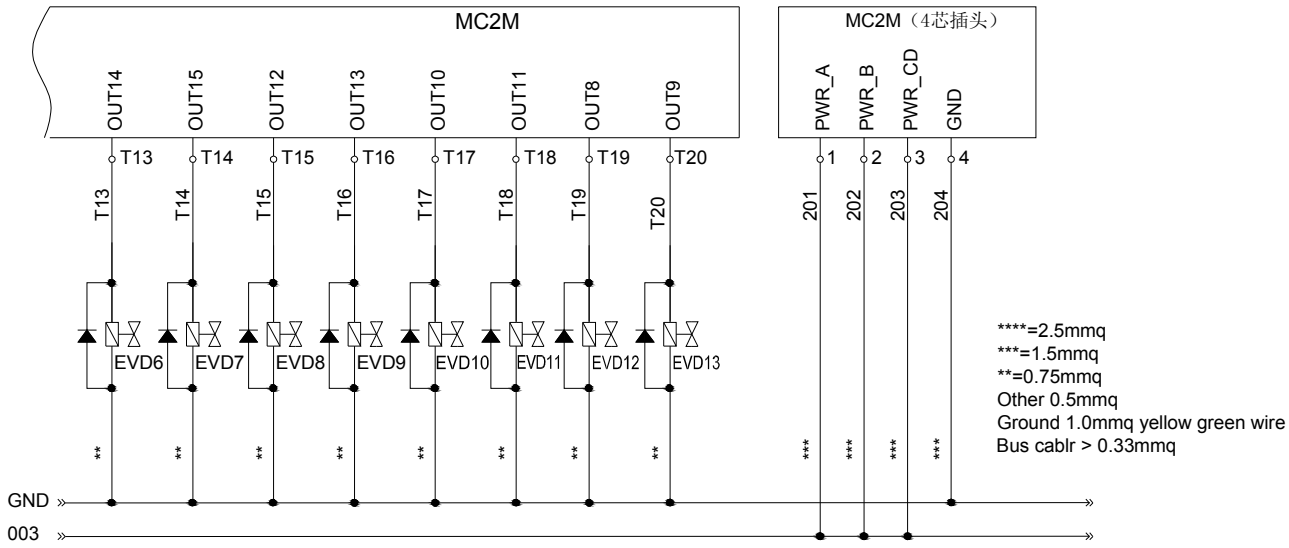
- Ground control wiring



Symbol	Description
KA1	Engine start relay
KA2	Engine stop relay
KA3	Auxiliary pump relay
KA4	Oil cooler fan relay
KA5	Engine start aid relay
KA6	Horn relay
KA7	Accelerograph electromagnetism relay
LS1	LF outrigger limit switch
LS2	RF outrigger limit switch
LS3	LR outrigger limit switch
LS4	RR outrigger limit switch
LS5	9 meters limit switch
LS6	2 meters limit switch
LS7	Max. height limit switch
LS8	Min. height limit switch
B1	Alarm buzzer
EVEO	Accelerograph holding relay

Schematic

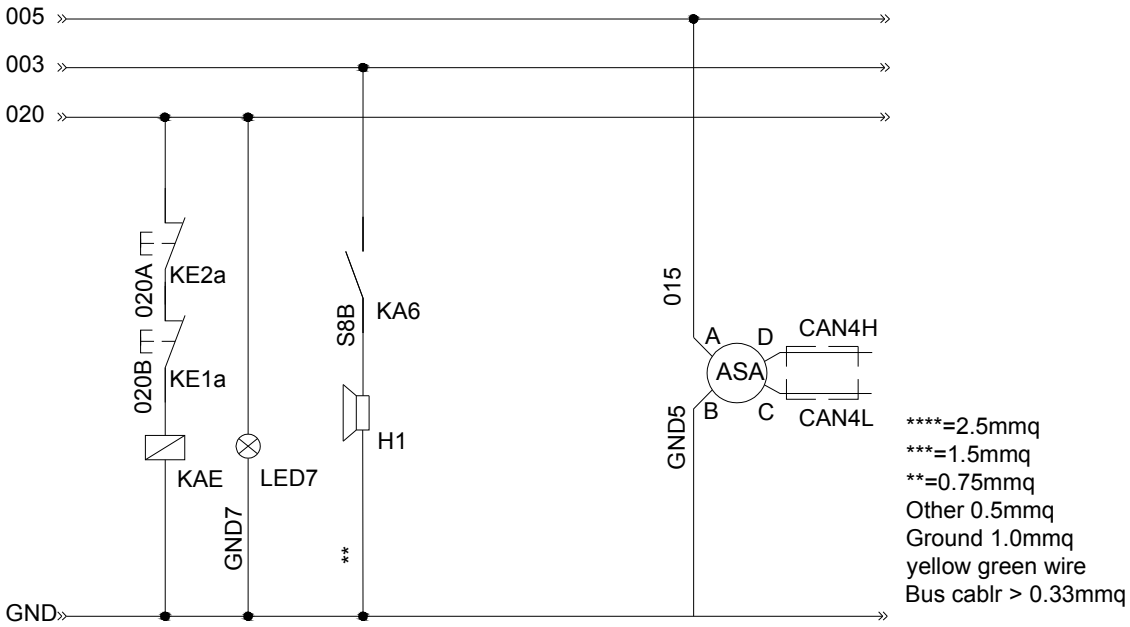
- Ground control wiring



Symbol	Description
EVD6	LR outrigger solenoid valve
EVD7	RF outrigger solenoid valve
EVD8	LR outrigger solenoid valve
EVD9	RR outrigger solenoid valve
EVD10	Outrigger retract solenoid valve
EVD11	Outrigger extend solenoid valve
EVD12	Platform up solenoid valve
EVD13	Platform down solenoid valve

Schematic

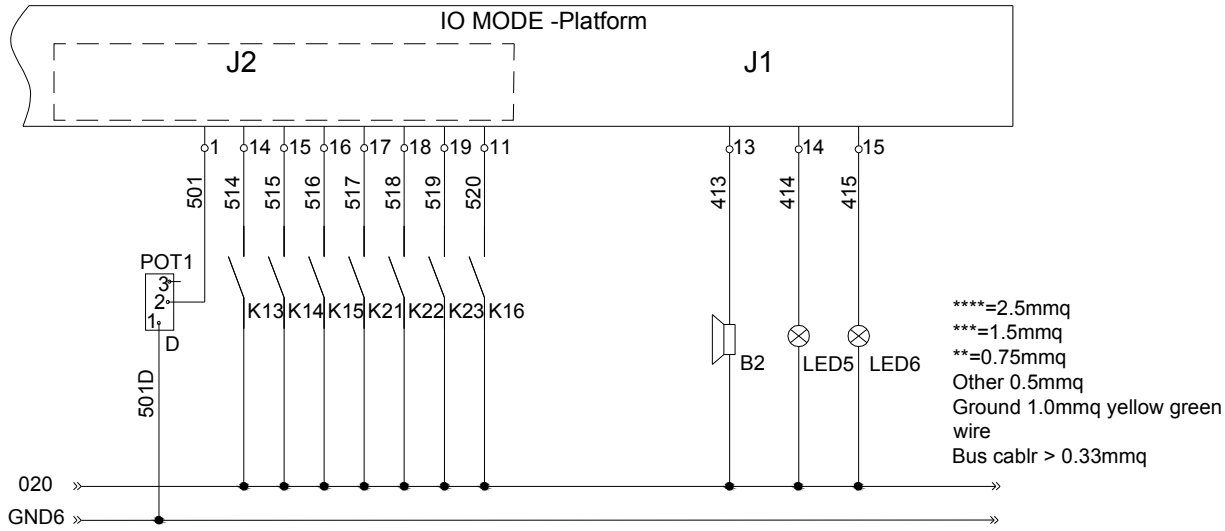
- Ground exterior wiring



Symbol	Description
KE1	Ground emergency stop bottom
KE2	Platform emergency stop bottom
LED7	Platform power indicator
KA6	Horn relay
H1	Horn

Schematic

- Platform IO-MODE wiring



Symbol	Description
POT1	Drive handle Hall effect generator
K13	Horn bottom
K14	Up / down switch
K15	High speed switch
K16	Hydraulic generator start
K21	Deadman bottom
K22	Turn left bottom
K23	Turn right bottom
LED5	Alarm flashing beacon
LED6	Lift limit flashing beacon

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