



Operator's Manual

Serial Number Range

Z-40/23N
Z-40/23N RJ

from Z4007-100

CE

with
Maintenance
Information

First Edition
Third Printing
Part No. 114304

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, call Genie Industries.

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This machine complies with EN 60204-1 in regards to ambient air temperature limitations and maximum operating altitude.

Printed on recycled paper

Printed in U.S.A.



Introduction

Owners, Users and Operators:

Genie 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 **Only 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.

Internet: www.genielift.com

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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.

Introduction

Hazard Classification

Genie uses symbols, color coding and signal words to identify the following:



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

▲ DANGER

Red

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

▲ WARNING

Orange

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

▲ CAUTION

Yellow

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

NOTICE

Blue

Indicates a hazardous situation which, if not avoided, could result in property damage.

Intended Use

This machine is intended to be used only to lift personnel, along with their tools and materials to an aerial work site.

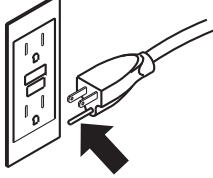
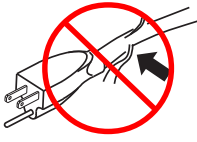


Safety Sign Maintenance

Replace any missing or damaged safety signs. Keep operator safety in mind at all times. Use mild soap and water to clean safety signs. Do not use solvent-based cleaners because they may damage the safety sign material.

Symbol and Hazard Pictorials Definitions

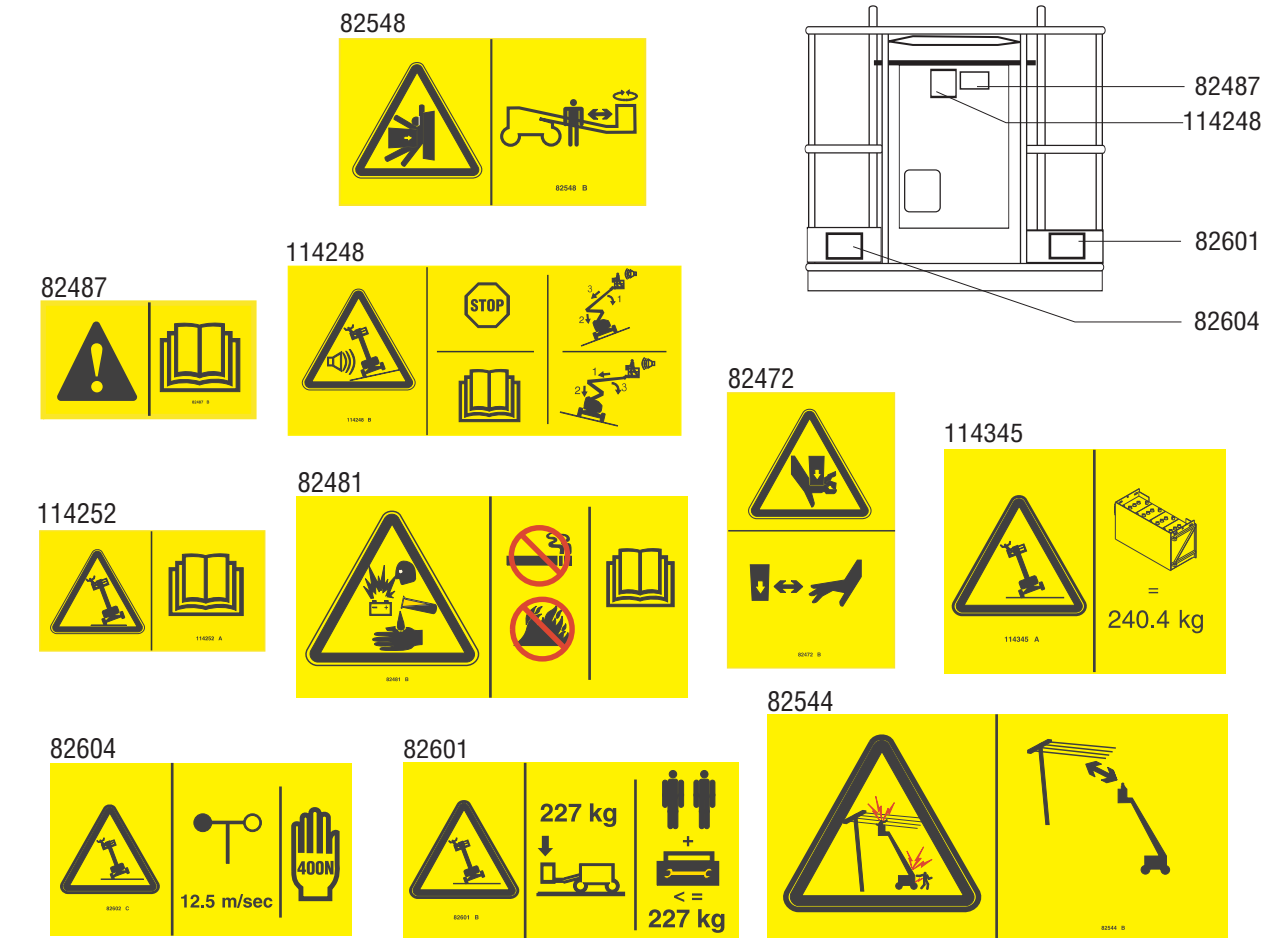
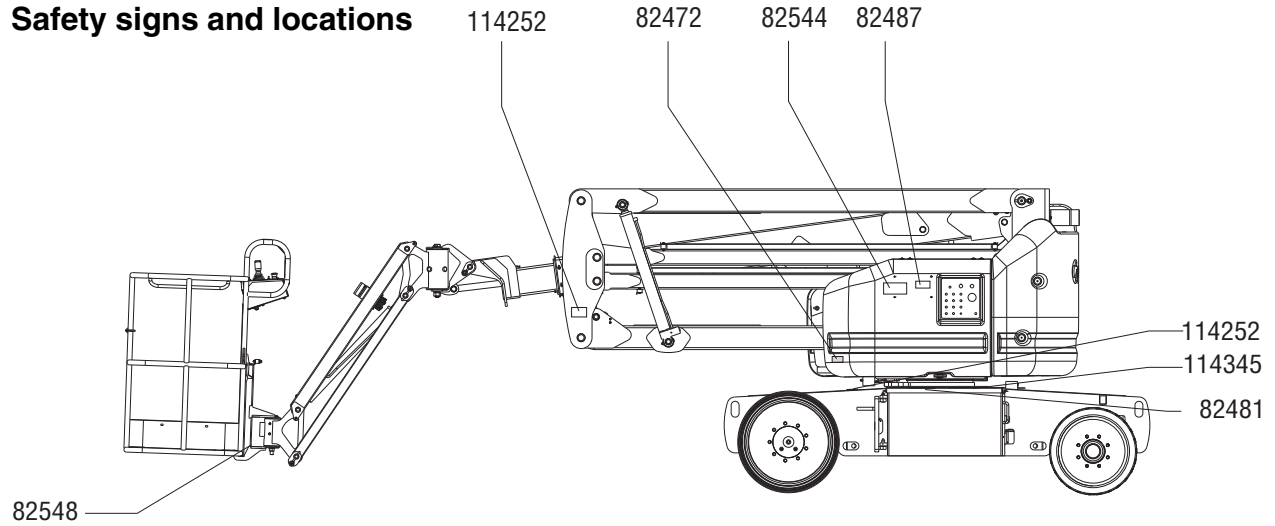
				
Crush Hazard	Electrocution Hazard	Fire Hazard	Explosion Hazard	Burn Hazard
				
Fall Hazard	Crush Hazard	No Open Flames	Tip-over Hazard	No Smoking
				
Voltage rating for power to platform	Pressure rating for air line to platform	Electrocution Hazard	Maximum Manual Force	Maximum Wind Speed
				
Keep off this surface.	Keep away from moving parts.	Maintain required clearance.	Keep away from path of moving platform.	Only trained maintenance personnel should access compartments.
	<p>Recovery procedure if tilt alarm sounds while elevated.</p>  			
Read the operator's manual.	<p>Platform uphill:</p> <ol style="list-style-type: none"> 1 Lower primary 2 Lower secondary 3 Retract primary <p>Platform downhill:</p> <ol style="list-style-type: none"> 1 Retract primary 2 Lower secondary 3 Lower primary 	Platform tie-down instructions	Chassis tie-down instructions	

Symbol and Hazard Pictorials Definitions

 <p>Grounded AC 3-wire outlet only</p>	 <p>Replace damaged wires and cords</p>	 <p>Lanyard attachment point</p>	 <p>Wheel load</p>	 <p>Batteries used as counterweight</p>
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General Safety

Safety signs and locations



General Safety

Safety signs and locations

82473



82481



114252



114345



114334



82548



82544



114247



114252

82473

82544

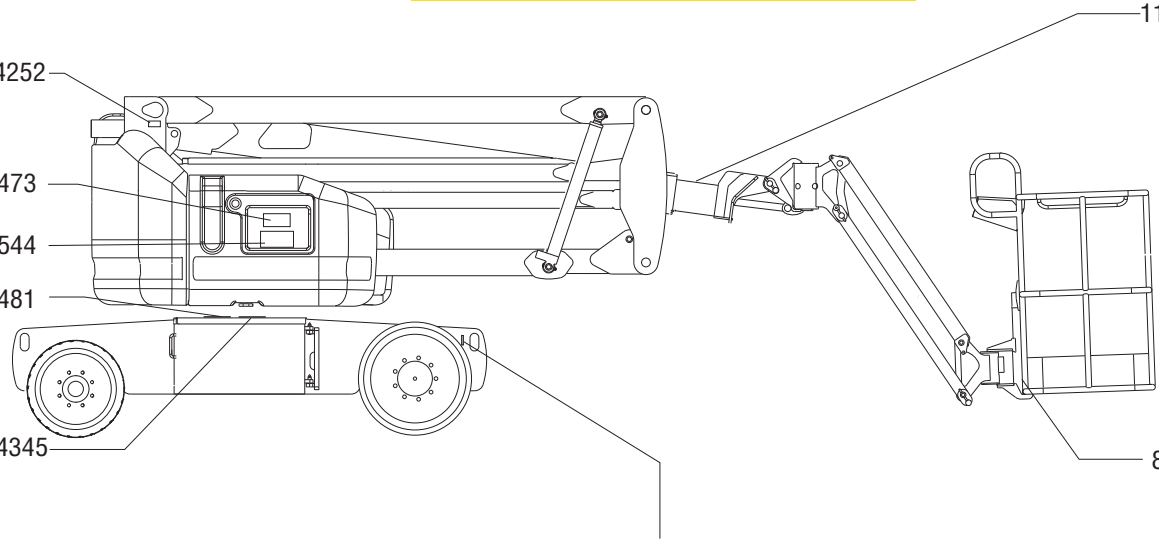
82481

114345

114334

114247

82548



Personal Safety

Fall Protection

Personal fall protection equipment (PFPE) is required when operating this machine.

Occupants must wear a safety belt or harness in accordance with governmental regulations. Attach the lanyard to the anchor provided in the platform.

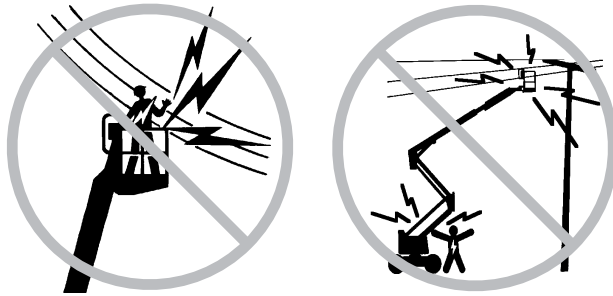
Operators must comply with employer, job site and governmental rules regarding the use of personal protective equipment.

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

Work Area Safety

⚠️ Electrocutation Hazards

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



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

Line Voltage	Required Clearance
0 to 50KV	3.0 m
50 to 200KV	4.6 m
200 to 350KV	6.1 m
350 to 500KV	7.6 m
500 to 750KV	10.6 m
750 to 1000KV	13.7 m

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 shall not exceed the maximum platform capacity.

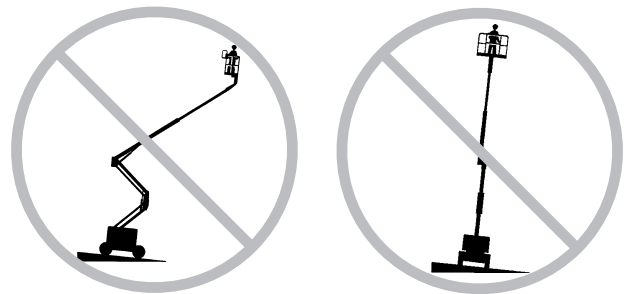
Maximum platform capacity	227 kg
Maximum occupants	2

The weight of options and accessories, such as pipe cradles, panel cradles and welders, will reduce the rated platform capacity and must be factored into the total platform load. See the decals with the options and accessories.

If using accessories, read, understand and obey the decals and instructions with the accessory.

Do not alter or disable the limit switches.

Do not raise or extend the boom unless the machine is on a firm, level surface.



Do not depend on the tilt alarm as a level indicator. The tilt alarm sounds in the platform only when the machine is on a severe slope.

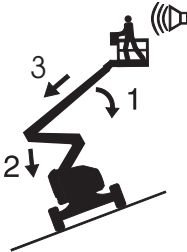
Work Area Safety

If the tilt alarm sounds while the boom is lowered:
Do not extend, rotate or raise the boom above horizontal. Move the machine to a firm, level surface before raising the platform.

If the tilt alarm sounds when the platform is raised:
Use extreme caution. Identify the condition of the boom on the slope as shown below. Follow the steps to lower the boom before moving to a firm, level surface. Do not rotate the boom while lowering.

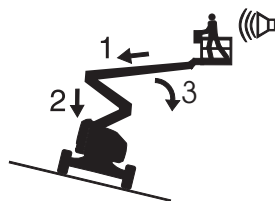
If the tilt alarm sounds with the platform uphill:

- 1 Lower the primary boom.
- 2 Lower the secondary boom.
- 3 Retract the primary boom.



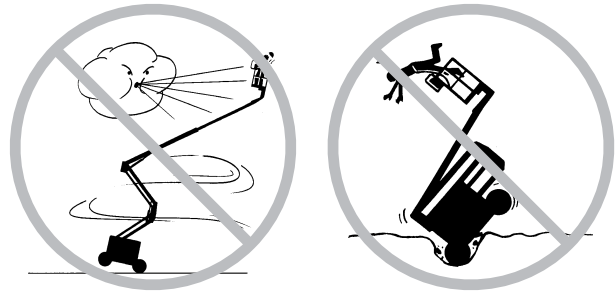
If the tilt alarm sounds with the platform downhill:

- 1 Retract the primary boom.
- 2 Lower the secondary boom.
- 3 Lower the primary boom.



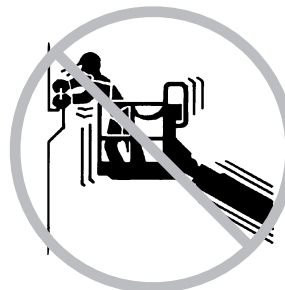
Do not raise the boom when wind speeds may exceed 12.5 m/s. If wind speeds exceed 12.5 m/s when the boom is raised, lower the boom and do not continue to operate the machine.

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.



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 boom raised or extended.



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

Maximum allowable manual force
400 N

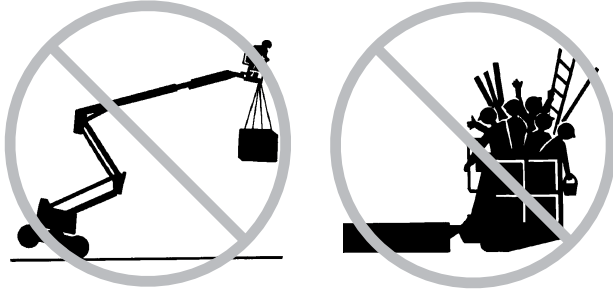
Do not alter or disable machine components that in any way affect safety and stability.

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

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.

Work Area Safety

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



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 and lug nuts are properly tightened.

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.

Do not use batteries that weigh less than the original equipment. Batteries are used as counterweight and are critical to machine stability. Each battery must weigh a minimum of 105 lbs / 47.6 kg. Each battery box including batteries must weigh a minimum of 530 lbs / 240.4 kg.

Do not use the machine as a crane.

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

Do not contact adjacent structures with the boom.

Do not tie the boom or platform to adjacent structures.

Do not place loads outside the platform perimeter.

⚠ Operation on Slopes Hazards

Do not drive the machine on a slope that exceeds the maximum uphill, downhill or side slope rating of the machine. Slope rating applies only to machines in the stowed position.

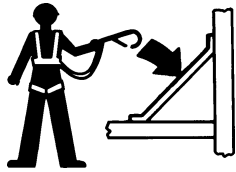
Maximum slope rating, stowed position

Platform downhill	30% (17°)
Platform uphill	20% (11°)
Side slope	25% (14°)

Note: Slope rating is subject to ground conditions and adequate traction. See Driving on a Slope in the Operating Instructions Section.

Work Area Safety

Fall Hazards



Occupants must wear a safety belt or harness in accordance with governmental regulations. Attach the lanyard to the anchor provided in the platform.

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.

Lower the platform entry mid-rail or close the entry gate before operating.

Do not enter or exit the platform unless the machine is in the stowed position and the platform is at ground level.

Collision Hazards



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

Be aware of the boom position and tailswing when rotating the turntable.

Operators must comply with employer, job site and governmental rules regarding the 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 the color-coded direction arrows on the platform controls and drive chassis for drive and steer functions.

Do not lower the boom 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.



Work Area Safety

Do not operate a boom in the path of any crane 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.

⚠ Bodily Injury Hazard

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.

⚠ Explosion and Fire Hazards

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.

⚠ 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 Genie 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 on the platform.

⚠ Component Damage Hazard

Do not use the machine as a ground for welding.

Lockout After Each Use

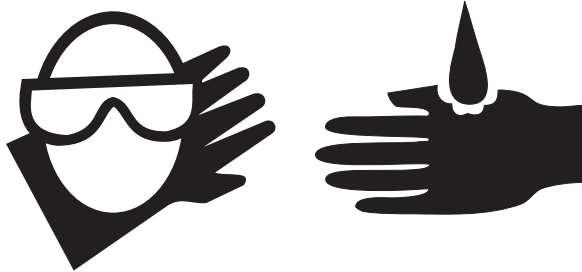
- 1 Select a safe parking location—firm level surface, clear of obstruction and traffic.
- 2 Retract and lower the boom to the stowed position.
- 3 Rotate the turntable so that the boom is between the non-steer wheels.
- 4 Turn the key switch to the off position and remove the key to secure from unauthorized use.
- 5 Chock the wheels.

Work Area Safety

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.

The battery pack must remain in the upright position.

Do not expose the batteries or the charger to water or rain.

Explosion Hazards



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

The battery pack cover must remain off during the entire charging cycle.

Do not contact the battery terminals or the cable clamps with tools that may cause sparks.

Component Damage Hazards

Do not use any battery charger greater than 48V to charge the batteries.

Both battery packs must be charged together.

Disconnect the battery pack plug before removing the battery pack.

Electrocution Hazards



Connect the battery charger to a grounded, AC 3-wire electrical outlet only.

Inspect daily for damaged cord, cables and wires. Replace damaged items before operating.

Avoid electrical shock from contact with battery terminals. Remove all rings, watches and other jewelry.

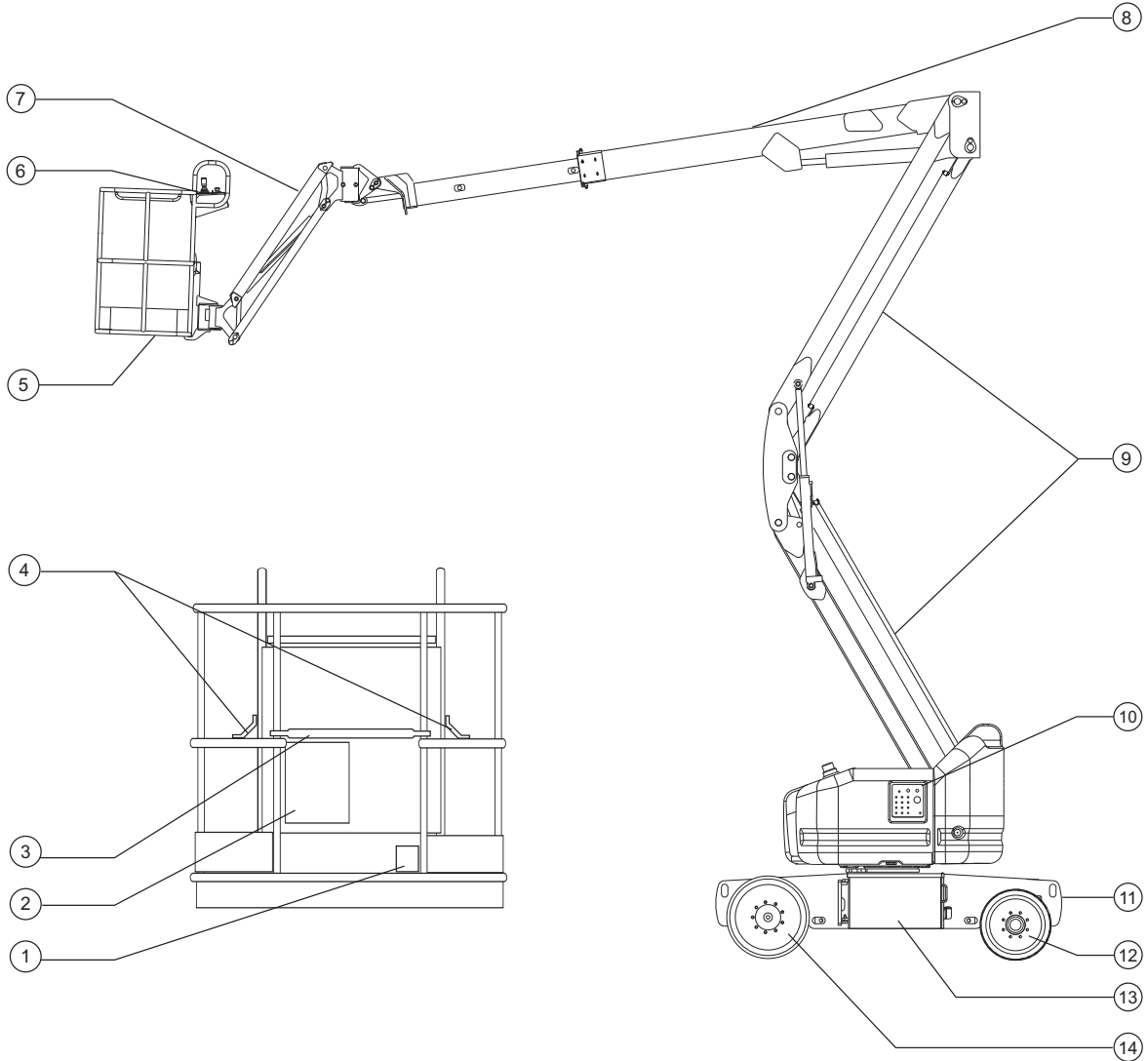
Tip-over Hazard

Do not use batteries that weigh less than the original equipment. Batteries are used as counterweight and are critical to machine stability. Each battery must weigh a minimum of 105 lbs / 47.6 kg. Each battery box including batteries must weigh a minimum of 530 lbs / 240.4 kg.

Lifting Hazard

Use a forklift to remove or install the battery packs.

Legend

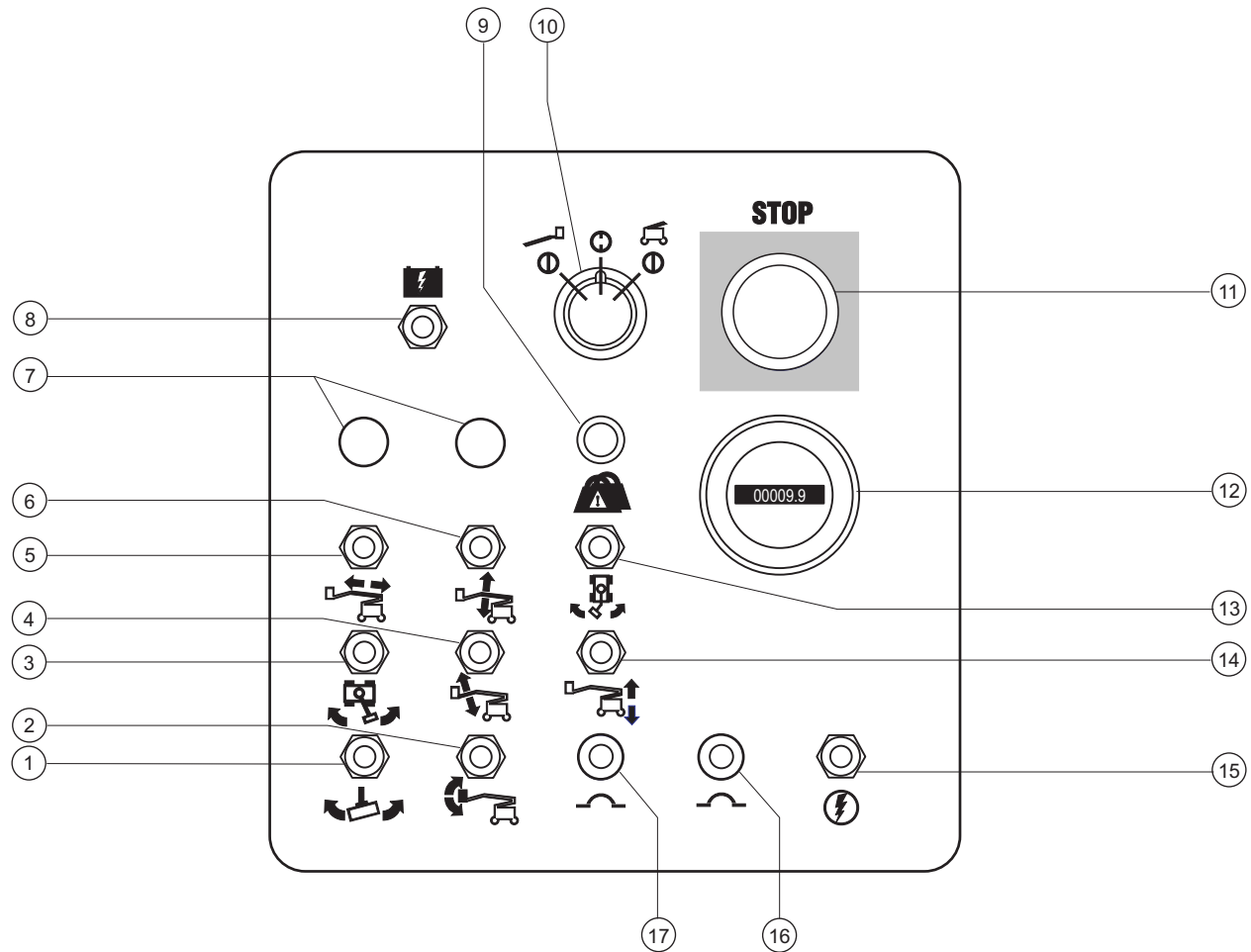


- 1 Foot switch
- 2 Manual storage container
- 3 Sliding mid-rail
- 4 Lanyard anchorage point
- 5 Platform
- 6 Platform controls
- 7 Jib boom

- 8 Primary boom
- 9 Secondary boom
- 10 Ground controls
- 11 Power to charger (between tires)
- 12 Steer tire
- 13 Battery box
- 14 Non-steer tire



Controls



Ground Control Panel

- | | |
|--------------------------------------|---|
| 1 Platform rotate switch | 9 Platform overload indicator light |
| 2 Platform level switch | 10 Key switch for platform/off/ground selection |
| 3 Turntable rotate switch | 11 Red Emergency Stop button |
| 4 Jib boom up/down switch | 12 Hour meter |
| 5 Primary boom extend/retract switch | 13 Z-40/23N RJ: Jib rotate switch |
| 6 Primary boom up/down switch | 14 Secondary boom up/down switch |
| 7 Used for optional equipment | 15 Function enable switch |
| 8 Auxiliary power switch | 16 15A circuit breaker (48V) |
| | 17 15A circuit breaker (24V) |



Controls

Ground Control Panel

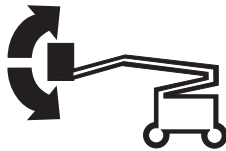
1 Platform rotate switch

Move the platform rotate switch to the right and the platform will rotate to the right. Move the platform rotate switch to the left and the platform will rotate to the left.



2 Platform level switch

Move the platform level switch up and the level of the platform will raise. Move the platform level switch down and the level of the platform will lower.



3 Turntable rotate switch

Move the switch to the right and the turntable will move to the right. Move the switch to the left and the turntable will move to the left.



4 Jib boom up/down switch

Move the switch up and the jib boom will raise. Move the switch down and the jib boom will lower.



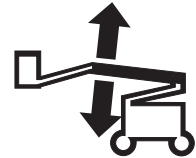
5 Primary boom extend/retract switch

Move the switch to the left and the boom will extend. Move the switch to the right and the boom will retract.



6 Primary boom up/down switch

Move the switch up and the primary boom will raise. Move the switch down and the primary boom will lower.



7 Used for optional equipment

8 Auxiliary power switch

Use auxiliary power if the primary power source fails.

Simultaneously hold the auxiliary power switch to either side and activate the desired function.

9 Platform overload indicator light

Light flashing indicates the platform is overloaded and no functions will operate.

Remove weight from the platform until the light goes off.

10 Key switch for platform/off/ground selection

Turn the key switch to the platform position and the platform controls will operate. Turn the key switch to the off position and the machine will be off. Turn the key switch to the ground position and the ground controls will operate.

11 Red Emergency Stop button

Push in the red Emergency Stop button to the off position to stop all functions. Pull out the red Emergency Stop button to the on position to operate the machine.

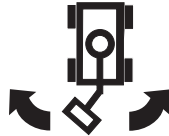
Controls

12 Hour meter

The hour meter displays the number of hours the machine has operated.

13 Z-40/23N RJ: Jib rotate switch

Move the jib rotate switch to the right and the jib will move to the right. Move the jib rotate switch to the left and the jib will move to the left.



14 Secondary boom up/down switch

Move the switch up and the secondary boom will raise. Move the switch down and the secondary boom will lower.



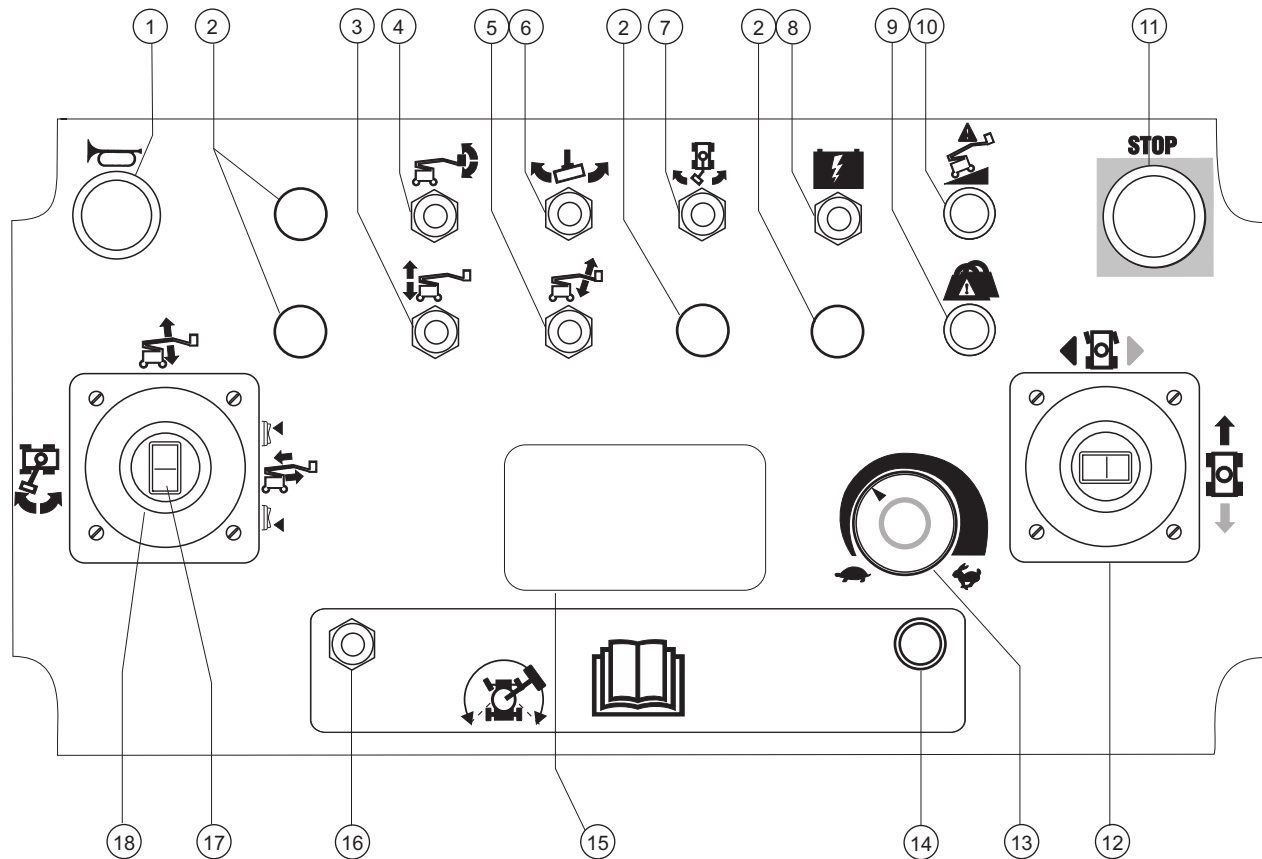
15 Function enable switch

Move the function enable switch to either side to enable the functions on the ground control panel to operate.

16 15A circuit breaker (48V)

17 15A circuit breaker (24V)

Controls



Platform Control Panel

- 1 Horn button
- 2 Used for optional equipment
- 3 Secondary boom up/down switch
- 4 Platform level switch
- 5 Jib boom up/down switch
- 6 Platform rotate switch
- 7 Z-40/23N RJ: Jib rotate switch
- 8 Auxiliary power switch
- 9 Platform overload indicator light
- 10 Machine not level indicator light

- 11 Red Emergency Stop button
- 12 Proportional control handle for drive function and thumb rocker for steer function
- 13 Boom function speed controller
- 14 Drive enable indicator light
- 15 LCD display
- 16 Drive enable switch
- 17 Thumb rocker switch for primary boom extend / retract function
- 18 Dual axis proportional control handle for primary boom up/down and turntable rotate left/right functions

Controls

Platform Control Panel

1 Horn button

Push the horn button and the horn will sound.
Release the horn button and the horn will stop.

2 Used for optional equipment

3 Secondary boom up/down switch

Move the switch up and the secondary boom will raise.
Move the switch down and the secondary boom will lower.



4 Platform level switch

Move the platform level switch up and the level of the platform will raise. Move the platform level switch down and the level of the platform will lower.



5 Jib boom up/down switch

Move the switch up and the jib boom will raise. Move the switch down and the jib boom will lower.



6 Platform rotate switch

Move the platform rotate switch to the right and the platform will rotate to the right. Move the platform rotate switch to the left and the platform will rotate to the left.



7 Z-40/23N RJ: Jib rotate switch

Move the jib rotate switch to the right and the jib will move to the right. Move the jib rotate switch to the left and the jib will move to the left.



8 Auxiliary power switch

Use auxiliary power if the primary power source fails.
Simultaneously hold the auxiliary power switch to either side and activate the desired function.

9 Platform overload indicator light

Light flashing indicates the platform is overloaded and no functions will operate.
Remove weight from the platform until the light goes off.

10 Machine not level indicator light

The machine not level indicator light will come on when the tilt alarm sounds.

11 Red Emergency Stop button

Push in the red Emergency Stop button to the off position to stop all functions. Pull out the red Emergency Stop button to the on position to operate the machine.

12 Proportional control handle for drive function and thumb rocker for steer function

Move the control handle in the direction indicated by the blue arrow on the control panel and the machine will drive forward. Move the control handle in the direction indicated by the yellow arrow and the machine will drive backwards.

Press the left side of the thumb rocker and the machine will steer to the left. Press the right side of the thumb rocker and the machine will steer to the right.

13 Boom function speed controller

Turn the dial to increase or decrease the speed of the machine functions.

14 Drive enable indicator light

Light on indicates that the boom has moved just past either non-steer wheel and drive function has been interrupted.

Controls

15 LCD Display

Display screen for system fault information and battery charge level.

16 Drive enable switch

To drive when the drive enable light is on, hold the drive enable switch to either side and slowly move the drive control handle off center. Be aware that the machine may move in the opposite direction that the drive and steer controls are moved.

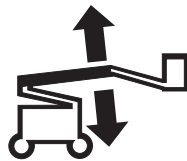
17 Thumb rocker switch for primary boom extend/retract function

Press the bottom of the thumb rocker switch to extend the primary boom. Press the top of the thumb rocker switch to retract the primary boom.



18 Dual axis proportional control handle for primary boom up/down and turntable rotate left/right functions

Move the control handle up and the primary boom will raise. Move the control handle down and the primary boom will lower.



Move the control handle to the right and the turntable will move to the right. Move the control handle to the left and the turntable will move to the left.



Inspections



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.

Pre-operation Inspection 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.

Inspections

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 Inspections section.
- Check for hydraulic oil leaks and proper oil level. Add oil 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
- Hydraulic tank
- Drive and turntable motors and drive hubs
- Boom wear pads
- Tires and wheels
- Limit switches and horn
- Alarms and beacons (if equipped)
- Nuts, bolts and other fasteners
- Platform entry mid-rail or gate

Check entire machine for:

- Cracks in welds or structural components
- Dents or damage to machine
- Excessive rust, corrosion or oxidation
- Be sure that all structural and other critical components are present and all associated fasteners and pins are in place and properly tightened.
- Be sure that both battery packs are in place and properly connected.
- After you complete your inspection, be sure that all compartment covers are in place and latched.

Inspections



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.

Function Test 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 Turn the key switch to ground control.
- 3 Pull out the red Emergency Stop button to the on position.
- ⊙ Result: The beacon (if equipped) should flash.

Test Emergency Stop

- 4 Push in the red Emergency Stop button to the off position.
- ⊙ Result: All functions should not operate.
- 5 Pull out the red Emergency Stop button to the on position.

Inspections

Test Machine Functions and Descent Alarm

6 Do not hold the function enable switch to either side. Attempt to activate each boom and platform function toggle switch.

- ⦿ Result: All boom and platform functions should not operate.

7 Hold the function enable switch to either side and activate each boom and platform function toggle switch.



- ⦿ Result: All boom and platform functions should operate through a full cycle. The descent alarm should sound while the boom is lowering.

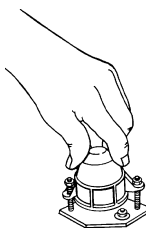
Test the Tilt Sensor

8 Pull out the platform red Emergency Stop button to the on position. Turn the key switch to platform control.

9 Open the turntable cover on the side opposite the ground controls and locate the tilt sensor.

10 Press down one side of the tilt sensor.

- ⦿ Result: The alarm, located in the platform, should sound.



Test Auxiliary Controls

11 Turn the key switch to ground control.

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

13 Simultaneously hold the auxiliary power switch on and activate each boom function toggle switch.



Note: To conserve battery power, test each function through a partial cycle.

- ⦿ Result: All boom functions should operate.

At the Platform Controls

14 Turn the key switch to platform control.

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

- ⦿ Result: SYSTEM READY will appear on the LCD display screen.

Test Emergency Stop

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

- ⦿ Result: The LCD display screen will be blank.

17 Test each machine function.

- ⦿ Result: All functions should not operate.

18 Pull out the red Emergency Stop button.

Test the Horn

19 Push the horn button.

- ⦿ Result: The horn should sound.

Test the Foot Switch

20 Do not press down the foot switch. Test each machine function.

- ⦿ Result: The machine functions should not operate.

Test Machine Functions and Descent Alarm

21 Press down the foot switch.

22 Activate each machine function control handle or toggle switch.

- ⦿ Result: All boom and platform functions should operate through a full cycle. The descent alarm should sound while the boom is lowering.

Inspections

Test the Steering


- 23 Press down the foot switch.
- 24 Press the thumb rocker switch on top of the drive control handle in the direction indicated by the blue triangle on the control panel.
- ⦿ Result: The steer wheels should turn in the direction that the blue triangles point on the drive chassis.
- 25 Press the thumb rocker switch in the direction indicated by the yellow triangle on the control panel.
- ⦿ Result: The steer wheels should turn in the direction that the yellow triangles point on the drive chassis.

Test Drive and Braking

- 26 Press down the foot switch.
- 27 Slowly move the drive control handle in the direction indicated by the blue 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 blue arrow points on the drive chassis, then come to an abrupt stop.
- 28 Slowly move the drive control handle in the direction indicated by the yellow 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 yellow arrow points on the drive chassis, then come to an abrupt stop.

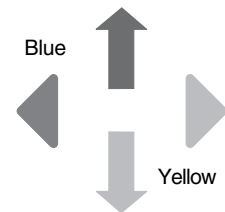
Note: The brakes must be able to hold the machine on any slope it is able to climb.

Test the Drive Enable System

- 29 Press down the foot switch and lower the boom to the stowed position.
- 30 Rotate the turntable until the boom moves past one of the non-steer wheels.
- 
- ⦿ Result: The drive enable indicator light should come on and remain on while the boom is anywhere in the range shown.
- 31 Move the drive control handle off center.
- ⦿ Result: The drive function should not operate.
- 32 Move and hold the drive enable toggle switch to either side and slowly move the drive control handle off center.
- ⦿ Result: The drive function should operate.

Note: When the drive enable system is in use, the machine may drive in the opposite direction that the drive and steer control handle is moved.

Use the color-coded direction arrows on the platform controls and the drive chassis to identify the direction of travel.



Inspections

Test Limited Drive Speed

- 33 Press down the foot switch.
- 34 Raise the primary boom approximately 91 cm.
- 35 Slowly move the drive control handle to the full drive position.
 - ⦿ Result: The maximum achievable drive speed with the primary boom raised should not exceed 30 cm per second.
- 36 Lower the primary boom to the stowed position.
- 37 Raise the secondary boom approximately 91 cm.
- 38 Slowly move the drive control handle to the full drive position.
 - ⦿ Result: The maximum achievable drive speed with the secondary boom raised should not exceed 30 cm per second.
- 39 Lower the secondary boom to the stowed position.
- 40 Extend the primary boom approximately 60 cm.
- 41 Slowly move the drive control handle to the full drive position.
 - ⦿ Result: The maximum achievable drive speed with the primary boom extended should not exceed 30 cm per second.
- 42 Retract the boom.

If the drive speed with the primary boom raised, the secondary boom raised or the primary boom extended exceeds 1 foot / 30 cm per second, immediately tag and remove the machine from service.

Test Auxiliary Controls

- 43 Pull out the red Emergency Stop button to the on position.
- 44 Press down the foot switch.
- 45 Simultaneously hold the auxiliary power switch on and activate each function control handle or toggle switch.

Note: To conserve battery power, test each function through a partial cycle.

- ⦿ Result: All boom and steer functions should operate. Drive functions should not operate with auxiliary power.

Test the Lift/Drive Select Function

- 46 Press down the foot switch.
- 47 Move the drive control handle off center.
- 48 Activate each boom function toggle switch.
 - ⦿ Result: No boom functions should operate. The machine will move in the direction indicated on the control panel.

Inspections



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.

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

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.

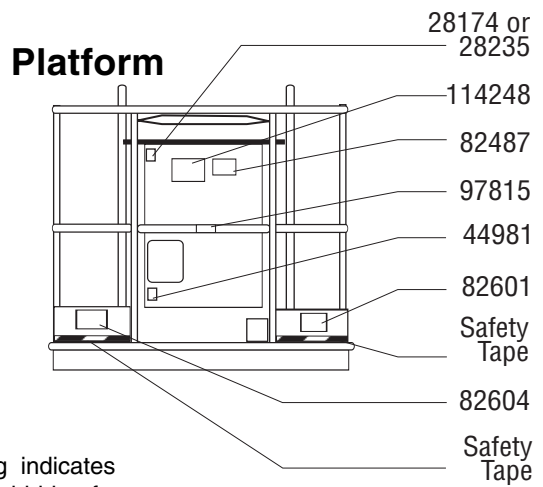
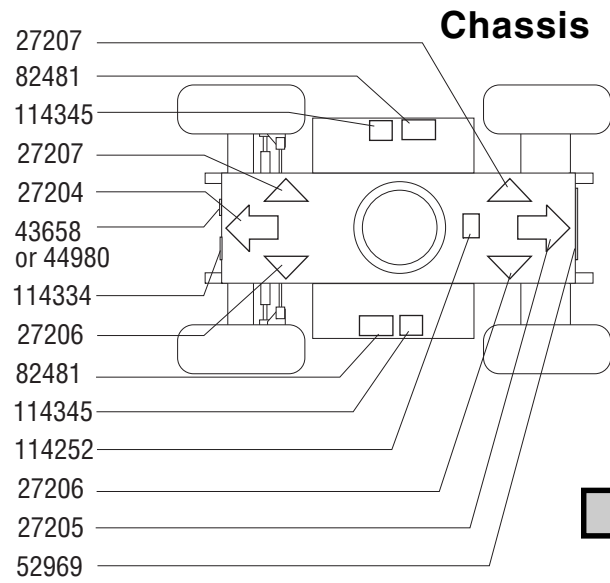
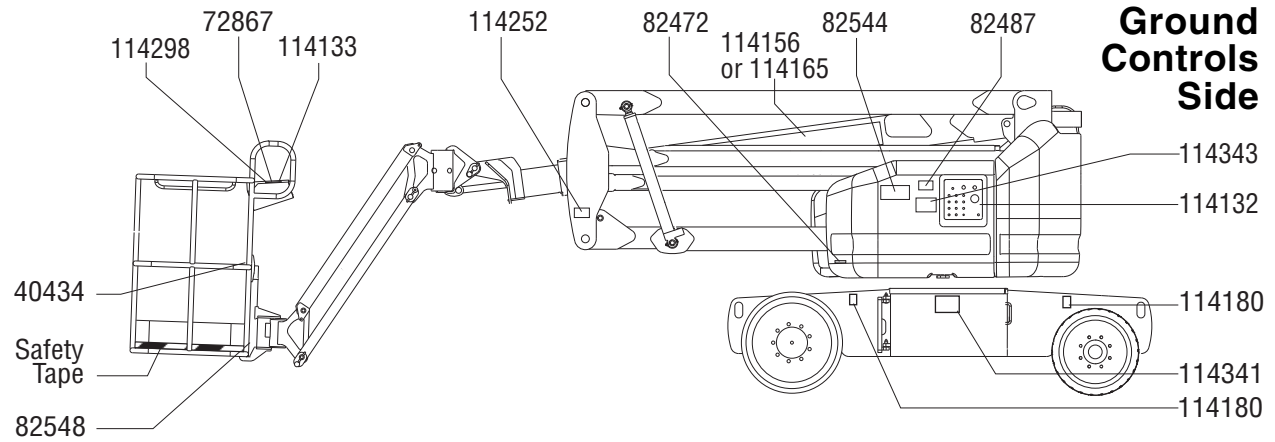
Inspections

Decals Inspection

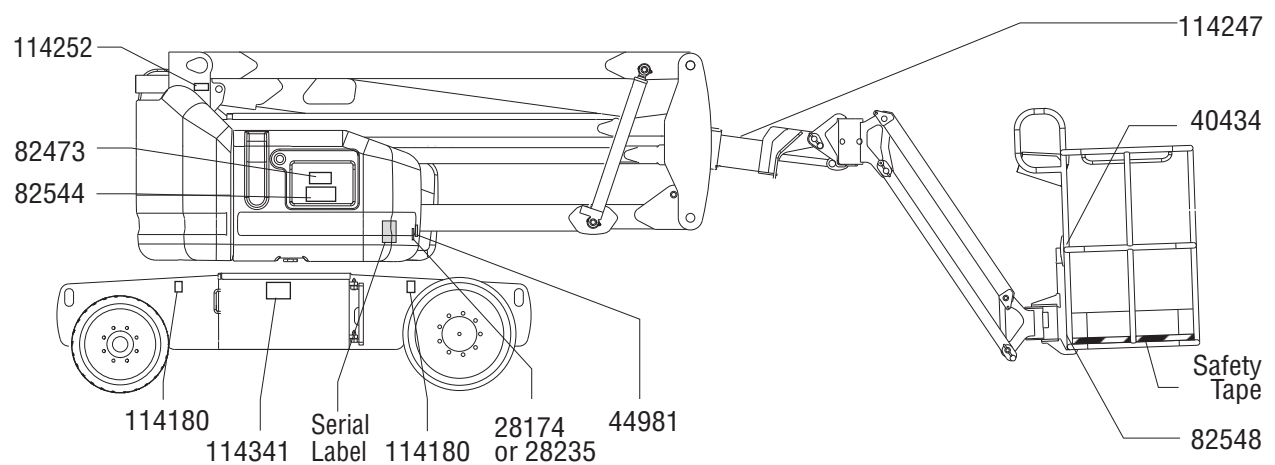
Use the pictures on the next page to verify that all decals are legible and in place.

Part No.	Decal Description	Quantity	Part No.	Decal Description	Quantity
27204	Arrow - Blue	1	82601	Label - Maximum Capacity	1
27205	Arrow - Yellow	1	82604	Label - Max Manual Force, 400 N	1
27206	Triangle - Blue	2	97815	Label - Lower Mid-rail	1
27207	Triangle - Yellow	2	114132	Ground Control Panel	1
28174	Label - Power to Platform, 230V	2	114133	Platform Control Panel	1
28235	Label - Power to Platform, 115V	2	114156	Cosmetic - Genie Z-40/23N	1
40434	Label - Lanyard Anchorage	2	114165	Cosmetic - Genie Z-40/23N RJ	1
43658	Label - Power to Charger, 230V	1	114180	Label - Wheel Load	4
44980	Label - Power to Charger, 115V	1	114247	Label - Fall Hazard	1
44981	Label - Air Line to Platform	2	114248	Label - Tilt Alarm	1
52969	Cosmetic - Genie Boom	1	114252	Label - Tip-over Hazard	3
72867	Label - Lights (option)	1	114298	Label - Drive Enable Patch	1
82472	Label - Crushing Hazard	1	114334	Label - Electrocution Hazard, AC Power Supply	1
82473	Warning - Compartment Access	1	114343	Label - Emergency Down	1
82481	Label - Battery Safety	2	114341	Label - Transport Diagram	2
82487	Label - Read the Manual	2	114345	Label - Tip-over Hazard, Batteries	2
82544	Label - Electrocution Hazard	2			
82548	Label - Platform Rotate	2			

Inspections



■ Shading indicates decal is hidden from view, i.e. under covers



Operating Instructions



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.

Operating Instructions

Emergency Stop

Push in either the ground or platform red Emergency Stop button to the off position to stop all machine functions.

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

Selecting and operating the ground controls will override the platform red Emergency Stop button.

Auxiliary Controls

Use auxiliary power if the primary power source fails.

- 1 Turn the key switch to ground or platform control.
- 2 Pull out the red Emergency Stop button to the on position.
- 3 Press down the foot switch when operating the auxiliary controls from the platform.
- 4 Simultaneously hold the auxiliary power switch on and activate the desired function.



The drive function will not operate with auxiliary power.

Operation from Ground

- 1 Turn the key switch to ground control.
- 2 Pull out the red Emergency Stop button to the on position.

To Position Platform

- 1 Hold the function enable switch to either side.
- 2 Move the appropriate toggle switch according to the markings on the control panel.



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

Operation from Platform

- 1 Turn the key switch to platform control.
- 2 Pull out both ground and platform red Emergency Stop buttons to the on position.

To Position Platform

- 1 Set the boom function speed controller to the desired speed.

Note: Drive and steer functions are not affected by the boom function speed controller.

- 2 Press down the foot switch.
- 3 Move the appropriate toggle switch according to the markings on the control panel.

To Steer

- 1 Press down the foot switch.
- 2 Turn the steer wheels with the thumb rocker switch located on top of the drive control handle.

Use the color-coded direction triangles on the platform controls and the drive chassis to identify the direction the wheels will turn.

Operating Instructions

To Drive

- 1 Press down the foot switch.
- 2 Increase speed: Slowly move the drive control handle off center.
Decrease speed: Slowly move the drive control handle toward center.
Stop: Return the drive control handle to center or release the foot switch.

Use the color-coded direction arrows on the platform controls and the drive chassis to identify the direction the machine will travel.

Machine travel speed is restricted when the boom is raised or extended.

Drive Enable

Light on indicates that the boom has moved just past either non-steer wheel and drive function has been interrupted.



To drive, hold the drive enable switch to either side and slowly move the drive control handle off center.

Be aware that the machine may move in the opposite direction that the drive and steer controls are moved.

Always use the color-coded direction arrows on the platform controls and the drive chassis to identify the direction the machine will travel.

▲ Driving on a Slope

Determine the uphill, downhill and side slope ratings for the machine and determine the slope grade.



Maximum slope rating, platform downhill (gradeability): 30% (17°)



Maximum slope rating, platform uphill: 20% (11°)



Maximum side slope rating: 25% (14°)

Note: Slope rating is subject to ground conditions and adequate traction. The term gradeability applies to the platform downhill configuration only.

Be sure the boom is below horizontal and the platform is between the non-steer wheels.

Operating Instructions

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

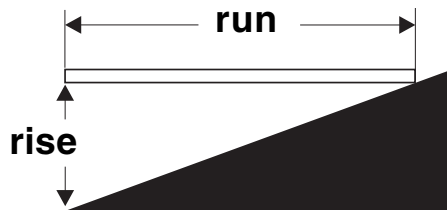
Lay the piece of wood on the slope.

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 vertical 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:



Piece of wood = 3.6 m

Run = 3.6 m

Rise = 0.3 m

$0.3 \text{ m} \div 3.6 \text{ m} = 0.083 \times 100 = 8.3 \% \text{ grade}$

If the slope exceeds the maximum uphill, downhill or side slope rating, then the machine must be winched or transported up or down the slope. See Transport and Lifting section.

Machine Not Level Indicator Light



Light on indicates the machine is not level. The tilt alarm will be sounding when this light is on and the LCD screen on the platform control panel will say MACHINE IS NOT LEVEL.

Move the machine to a firm level surface.

Platform Overload Indicator Light



Light flashing indicates the platform is overloaded and no functions will operate. The LCD screen on the platform control panel will say PLATFORM IS OVERLOADED.

Remove weight from the platform until the light goes off.

Operating Instructions



Battery and Charger Instructions

Observe and Obey:

- Do not use external charger or booster batteries.
- Charge the batteries in a well-ventilated area.
- Use proper AC input voltage for charging as indicated on the charger.
- Use only Genie authorized batteries and charger.
- Do not operate the machine with the battery charger plugged in.

To Charge Batteries

- 1 Be sure the batteries are connected before charging the batteries.
- 2 Open the battery compartment. The compartment should remain open for the entire charging cycle.

Maintenance-free batteries

- 1 Connect the battery charger to a grounded AC circuit.
- 2 The charger will indicate when the battery is fully charged.

Standard Batteries

- 1 Remove the battery vent caps and check the battery acid level. If necessary, add only enough distilled water to cover the plates. Do not overfill prior to the charge cycle.
- 2 Replace the battery vent caps.
- 3 Connect the battery charger to a grounded AC circuit.
- 4 The charger will indicate when the battery is fully charged.
- 5 Check the battery acid level when the charging cycle is complete. Replenish with distilled water to the bottom of the fill tube. Do not overfill.

Dry Battery Filling and Charging Instructions

- 1 Remove the battery vent caps and permanently remove the plastic seal from the battery vent openings.
- 2 Fill each cell with battery acid (electrolyte) until the level is sufficient to cover the plates.

Do not fill to maximum level until the battery charge cycle is complete. Overfilling can cause the battery acid to overflow during charging. Neutralize battery acid spills with baking soda and water.

- 3 Install the battery vent caps.
- 4 Charge the battery.
- 5 Check the battery acid level when the charging cycle is complete. Replenish with distilled water to the bottom of the fill tube. Do not overfill.



Observe and Obey:

- ☑ Genie Industries provides this securement information as a recommendation. Drivers are solely responsible for making sure machines are properly secured and the correct trailer is selected pursuant to US Department of Transportation regulations, other localized regulations, and their company policy.
- ☑ Genie customers needing to containerize any lift or Genie product should source a qualified freight forwarder with expertise in preparing, loading and securing construction and lifting equipment for international shipment.
- ☑ Only qualified aerial lift operators should move the machine on or off the truck.
- ☑ 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. Genie lifts are very heavy relative to their size. See the serial label for the machine weight.
- ☑ Be sure the turntable is secured with the turntable rotation lock before transporting. Be sure to unlock the turntable for operation.
- ☑ Do not drive the machine on a slope that exceeds the uphill, downhill or side slope rating. See Driving on a Slope in the Operating Instructions section.

Transport and Lifting Instructions

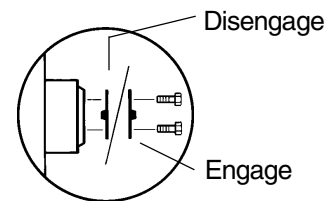
- ☑ If the slope of the transport vehicle bed exceeds the uphill or downhill maximum slope rating, the machine must be loaded and unloaded using a winch as described. See the Specifications section for the slope ratings.

Free-wheel Configuration for Winching

Chock the wheels to prevent the machine from rolling.

Release the non-steer wheel brakes by turning over the drive hub disconnect caps.

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

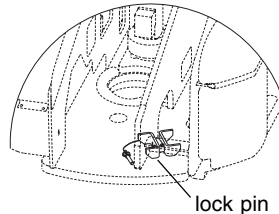


Reverse the procedures described to re-engage the brakes.

Transport and Lifting Instructions

⚠ Securing to Truck or Trailer for Transit

Always use the turntable rotation lock pin each time the machine is transported. The lock pin is located under the turntable on the hydraulic tank side of the machine.



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

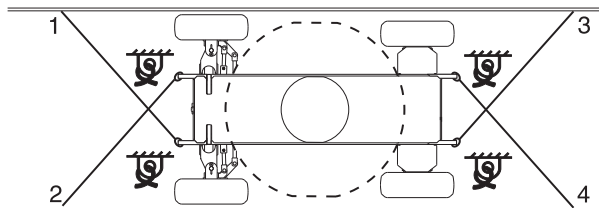
Inspect the entire machine for loose or unsecured items.

Securing the Chassis

Use chains of ample load capacity.

Use a minimum of 4 chains.

Adjust the rigging to prevent damage to the chains.

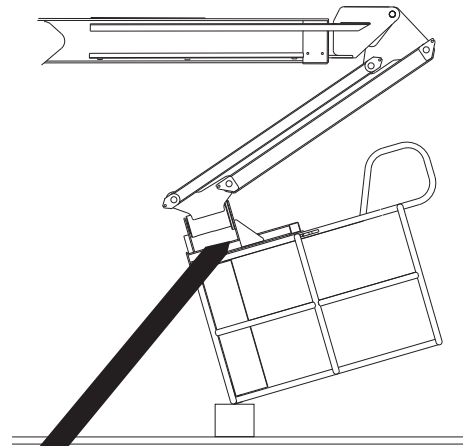


Securing the Platform

Make sure the jib and platform are in the stowed position.

Place a block under the edge of the platform beneath the platform entry.

Secure the platform with a nylon strap placed over the platform mount near the platform rotator (see below). Do not use excessive downward force when securing the boom section.



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 label for the machine weight.

Lifting Instructions

Fully lower and retract the boom. Fully lower the jib. Remove all loose items on the machine.

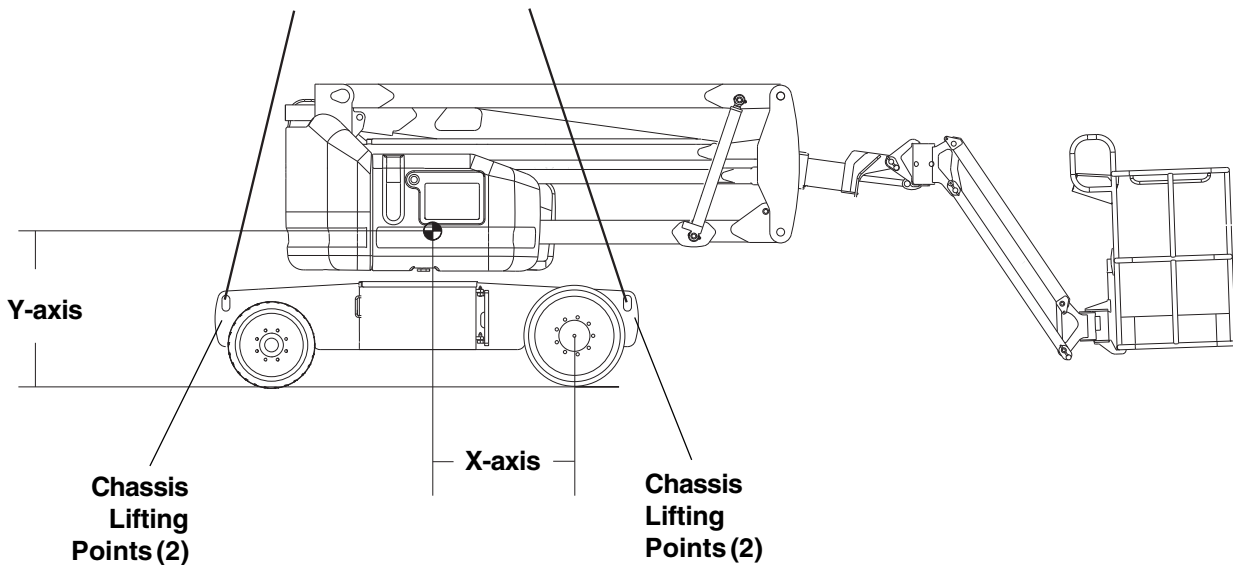
Use the turntable rotation lock to secure the turntable.

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

Attach the rigging only to the designated lifting points on the machine. There are four lifting points on the chassis.

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

X Axis	92.0 cm
Y Axis	1.0 m



Maintenance



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.
- ☑ Use only Genie approved replacement parts.

Maintenance Symbols Legend

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.

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.

- 1 Be sure that the boom is in the stowed position, then visually inspect the sight gauge located on the side of the hydraulic oil tank. Add oil as needed.
- ⊙ Result: The hydraulic oil level should be at the FULL mark on the side of the hydraulic tank.

Hydraulic oil specifications

Hydraulic oil type	Chevron Rykon Premium MV equivalent
--------------------	--

Maintenance

Check the Batteries



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

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

⚠ 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 brackets are in place and secure.

Standard Batteries

- 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.

Note: Adding terminal protectors and a corrosion preventative sealant will help eliminate corrosion on the battery terminals and cables.

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.

Specifications

Model	Z-40/23N RJ
Height, working maximum	14.2 m
Height, platform maximum	12.3 m
Height, stowed maximum	1.9 m
Horizontal reach maximum	6.9 m
Width	1.5 m
Length, stowed	6.5 m
Maximum load capacity	227 kg
Maximum wind speed	12.5 m/s
Wheelbase	1.9 m
Turning radius (outside)	3.2 m
Turning radius (inside)	89 cm
Turntable rotation	355°
Turntable tailswing	12.7 cm
Jib rotation, horizontal	180°
Jib rotation, vertical	130°
Power source	8 Group 903, L-16, 6V 390AH Batteries
Drive speed, stowed	6.0 km/h
Drive speed, booms raised	1 km/h 12.2 m/45 sec
Maximum inclination of chassis	refer to serial label
Airborne noise emissions Maximum sound level at normal operating workstations (A-weighted)	73 dB
Vibration value does not exceed	2.5 m/s ²
Ground clearance, minimum	17.7 cm
Controls	24V DC proportiona

Weight (Machine weights vary with option configurations. See serial label for specific machine weight.)	6940 kg
Platform dimensions, 4 foot (length x width)	1.2 m x 76 cm
Platform leveling	self-leveling
Platform rotation	180°
AC outlet in platform	standard
Hydraulic pressure, max (boom functions)	186 bar
System voltage	48V DC
Tire size - steer tires	22 x 7 x 17.5
Lug nut torque (dry)	169 Nm
Lug nut torque (lubricated)	127 Nm
Tire size - non-steer tires	26 x 7 x 22
Lug nut torque (dry)	169 Nm
Lug nut torque (lubricated)	127 Nm

Maximum slope rating, stowed position

Platform downhill	30% (17°)
Platform uphill	20% (11°)
Side slope	25% (14°)

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

Floor loading information

Tire load, maximum	3583 kg
Tire contact pressure	14.0 kg/cm ² 1379 kPa
Occupied floor pressure	1816 kg/m ² 17.8 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 Genie policy. Product specifications are subject to change without notice or obligation.



Specifications

Model	Z-40/23N
Height, working maximum	14.2 m
Height, platform maximum	12.3 m
Height, stowed maximum	1.2 m
Horizontal reach maximum	6.9 m
Width	1.5 m
Length, stowed	6.6 m
Maximum load capacity	227 kg
Maximum wind speed	12.5 m/s
Wheelbase	2.0 m
Turning radius (outside)	3.3 m
Turning radius (inside)	89 cm
Turntable rotation	355°
Turntable tailswing	11.4 cm
Jib rotation, vertical	135°
Power source	8 Group 903, L-16, 6V 390AH Batteries
Drive speed, stowed	6.0 km/h
Drive speed, booms raised	1 km/h 12.2 m/45 sec
Maximum inclination of chassis	refer to serial label
Airborne noise emissions Maximum sound level at normal operating workstations (A-weighted)	73 dB
Vibration value does not exceed	2.5 m/s ²
Ground clearance, minimum	16.5 cm
Controls	24V DC proportional

Weight	6908 kg
(Machine weights vary with option configurations. See serial label for specific machine weight.)	
Platform dimensions, 4 foot (length x width)	1.2 m x 76 cm
Platform dimensions, 5 foot (length x width)	1.4 m x 76 cm
Platform leveling	self-leveling
Platform rotation	180°
AC outlet in platform	standard
Hydraulic pressure, max (boom functions)	186 bar
System voltage	48V DC
Tire size - steer tires	22 x 7 x 17.5
Lug nut torque (dry)	169 Nm
Lug nut torque (lubricated)	127 Nm
Tire size - non-steer tires	26 x 7 x 22
Lug nut torque (dry)	169 Nm
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Maximum slope rating, stowed position

Platform downhill	30% (17°)
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Tire contact pressure	14.0 kg/cm ² 1379 kPa
Occupied floor pressure	1816 kg/m ² 17.8 kPa

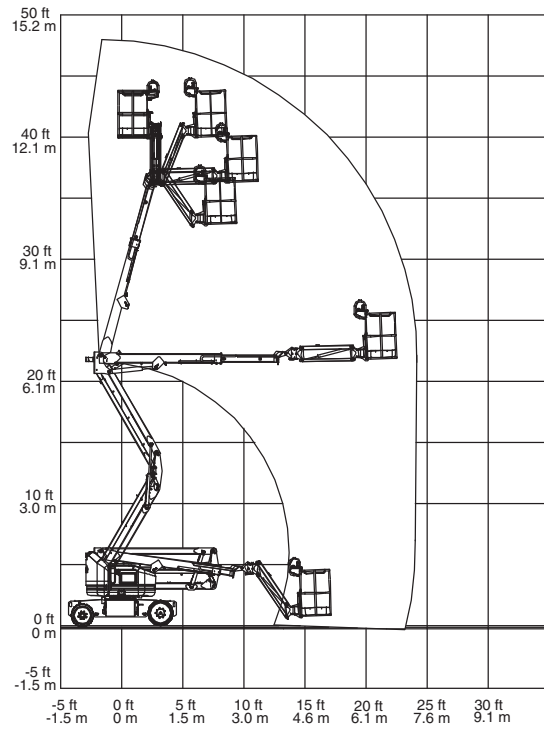
Note: Floor loading information is approximate and does not incorporate different option configurations. It should be used only with adequate safety factors.

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

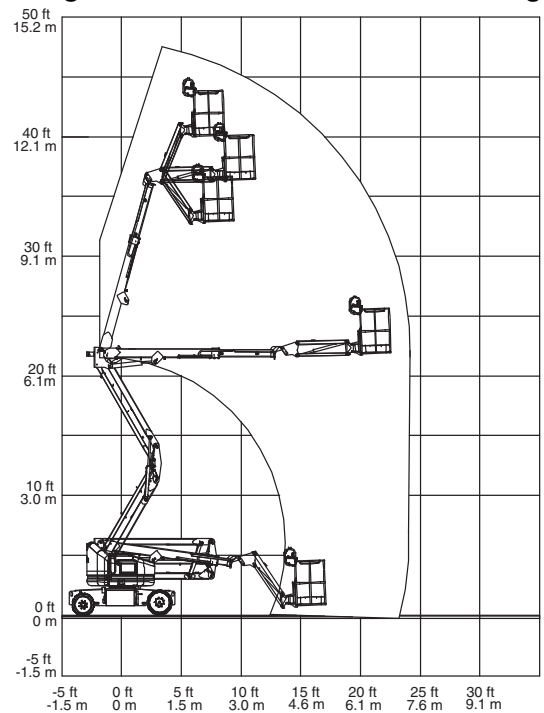


Specifications

Range of motion - models with rotating jib



Range of motion - models without rotating jib



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