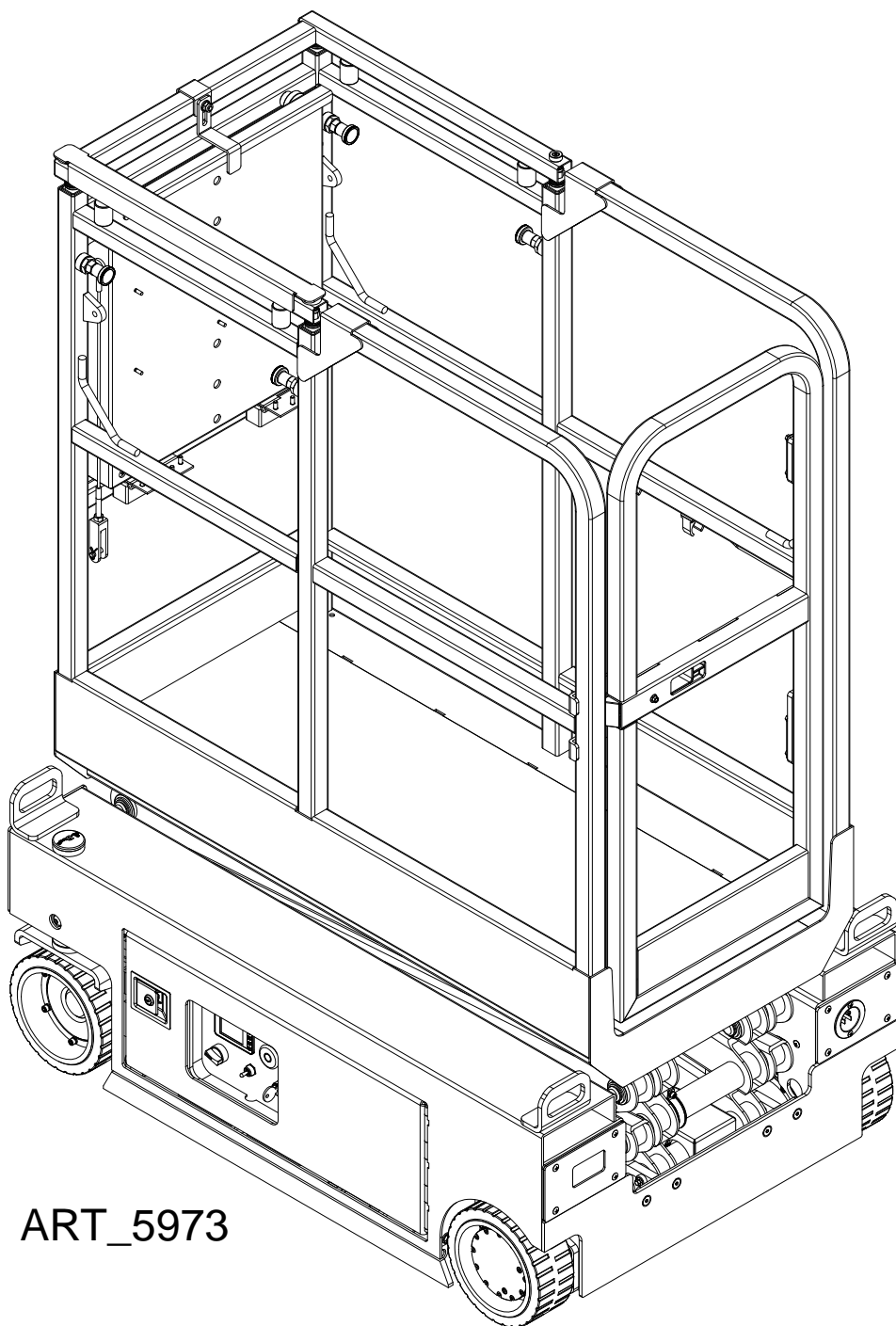




# Operator's Manual

## Nano10<sup>®</sup>-XD



ART\_5973

Serial Number Range  
18000000 - Up

Part # 96250  
July 2023

## Revision History

Date	Reason for Update
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## MEC Aerial Work Platforms

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## Introduction

This Operator's Manual has been designed to provide you, the owner, user or operator, with the instructions and operating procedures essential to properly and safely operate your MEC Aerial Work Platform for positioning personnel, along with their necessary tools and materials, to overhead work locations.

**This Operator's Manual and other manuals provided by MEC on the machine must be read and understood prior to operating your MEC Aerial Work Platform. The operator should not accept operating responsibility until he/she has read and understands the operator's manual as well as having operated the MEC Aerial Work Platform under supervision of an authorized, trained and qualified operator.**



**It is essential that the operator of the aerial work platform is not alone at the workplace during operation.**

**Modifications of this machine from the original design and specifications without written permission from MEC are strictly forbidden. A modification may compromise the safety of the machine, subjecting the platform occupants and personal around the machine to serious injury or death.**

Your MEC Aerial Work Platform has been designed, built, and tested to provide safe, dependable service. Only authorized, trained and qualified personnel shall be allowed to operate or service the machine.

MEC, as manufacturer, has no direct control over machine application and operation. Proper safety practices are the responsibility of the owner, user and operator.

**If there is a question on application and/or operation contact:**



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## Safety

**DO NOT operate this machine until you have read and understood this manual, have performed the Workplace Inspection, Pre-Start Inspection and Routine Maintenance, and have completed all the test operations detailed in the Operating Instructions section.**

Failure to read, understand and follow all safety rules, warnings, and instructions could result in serious injury or death. For your safety and the safety of those around you, you must operate your machine as instructed in this manual.

MEC designs aerial work platforms to safely and reliably position personnel, along with their necessary tools and materials, at overhead work locations. The owner/user/operator of the machine should not accept responsibility for the operation of the machine unless properly trained.

ANSI and other applicable standards identify requirements of all parties who may be involved with self-propelled elevating work platforms. The Manual of Responsibilities is considered a part of this machine and can be found in the manual compartment, located at the platform control station. To ensure safe use of machine, inspections and training specified in ANSI/SIA A92.22 & A92.24 must be performed at designated intervals as prescribed.



This product can expose you to chemicals known to the State of California to cause cancer and birth defects or other reproductive harm. For more information go to [www.p65warnings.ca.gov](http://www.p65warnings.ca.gov).

## Safety Alert Symbols & Fall Protection

MEC manuals and decals use symbols, colors and signal words to help you recognize important safety, operation and maintenance information.



**RED and the word DANGER** – Indicates an imminently hazardous situation which, if not avoided, will result in death or serious injury.



**ORANGE and the word WARNING** – Indicates a potentially hazardous situation which, if not avoided, could result in death or serious injury.



**YELLOW with alert symbol and the word CAUTION** – Indicates a potentially hazardous situation which, if not avoided, may result in minor or moderate injury.



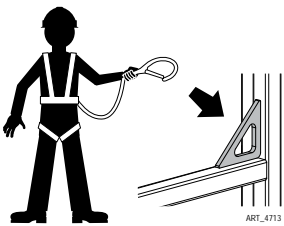
**YELLOW without alert symbol and the word CAUTION** – Indicates a potentially hazardous situation which, if not avoided, may result in property damage.



**GREEN and the word NOTICE** – Indicates operation or maintenance information.

### Fall Protection

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



**If required by your employer or job site**, use personal fall protection equipment (PFPE) when operating this machine.

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

Fall restraint must be properly attached to a designated anchorage point when driving or operating the machine. Attach only one fall restraint to each anchorage point.

# Specifications

Height, Working Maximum <sup>1</sup>	Indoor	16.4 ft	5.0 m
	Outdoor	13.5 ft	4.3 m
Height, Platform Maximum	Indoor	9.8 ft	3.0 m
	Outdoor	7.5 ft	2.3 m
Height, Stowed Maximum		5.3 ft	1.60 m
Maximum Personnel	Indoor	1	
	Outdoor	1	
Manual Force	Indoor	45 lbs	200 N
	Outdoor	45 lbs	200 N
Width		30.3 in	0.77 m
Length, Platform		45.7 in	1.16 m
Platform Dimensions (Length x Width)		44.1 x 23.6 in	1.16 x 0.6 m
Maximum Load Capacity		500 lbs	227 kg
Maximum Wind Speed		0 mph	0 m/s
Wheelbase		37.4 in	0.95 m
Max Wheel Load		520 lbs	235 Kg
Turning Radius	Inside	17.7 in	0.45 m
	Outside	47.2 in	1.20 m
Ground Clearance		2.4 in	6.0 cm
Ground Clearance (Pothole Guards Deployed)		0.6 in	1.6 cm
Weight <sup>5</sup>		1,235 lbs	560 Kg
Controls		Proportional	
AC Outlet In Platform		Standard	
System Voltage		24 V	
Tire Size		7.9 x 3 in	200 x 80 mm
Airborne Noise Emissions <sup>2</sup>		<70 dB (Vibration value does not exceed 2.5m/s <sup>2</sup> )	
Maximum Slope Rating, Stowed Position <sup>3</sup>		25% (14°)	
Maximum Side Slope Rating, Stowed Position <sup>3</sup>		25% (14°)	
Maximum Working Slope		X-1.5°, Y-3°	
Chassis Inclination		1.5 Side	3.0 Inline
Max Wind Speed		28 mph	12.5 m/s
Drive Speeds			
Stowed, Maximum		2.5 mph	4.0 km/h
Platform Raised, Maximum		0.25 mph	0.4 km/h
Floor Loading Information			
Tire Load, Maximum		727 lbs	330 kg
Tire Contact Pressure		145 psi	10.2 kg/cm <sup>2</sup> (997.5 kPa)
Occupied Floor Pressure <sup>4</sup>		194 psf	938.1 kg/m <sup>2</sup> (9.2 kPa)
Battery			
Voltage		12.8V DC	
Quantity		2	
Battery Capacity, Maximum		63 AH	
Meets requirements of ANSI A92.20-2020 and CSA B354.6-2019.			
<sup>1</sup> Working Height adds 6 feet (2 m) to platform height.			
<sup>2</sup> Maximum sound level at normal operating workstations (A-weighted)			
<sup>3</sup> Slope rating is subject to ground conditions and adequate traction.			
<sup>4</sup> Floor loading information is approximate and does not incorporate different option configurations.			
<sup>5</sup> Weight may increase with certain options.			
This applies to machines from serial # 18000375			



# Safety Rules



**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 — operator's manual 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.

## The relevant conditions of using the equipment

The surface of the worksite should be flat and hard with no obstacles in air and the safety distance between the equipment and high-tension line is adequate.

- The environment temperature should be within: -4°F(-20°C) - 104°F(40°C).
- The environment humidity ≤ 90%.
- Electrical power: AC 110~230V±10%, 50~60Hz.

## 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

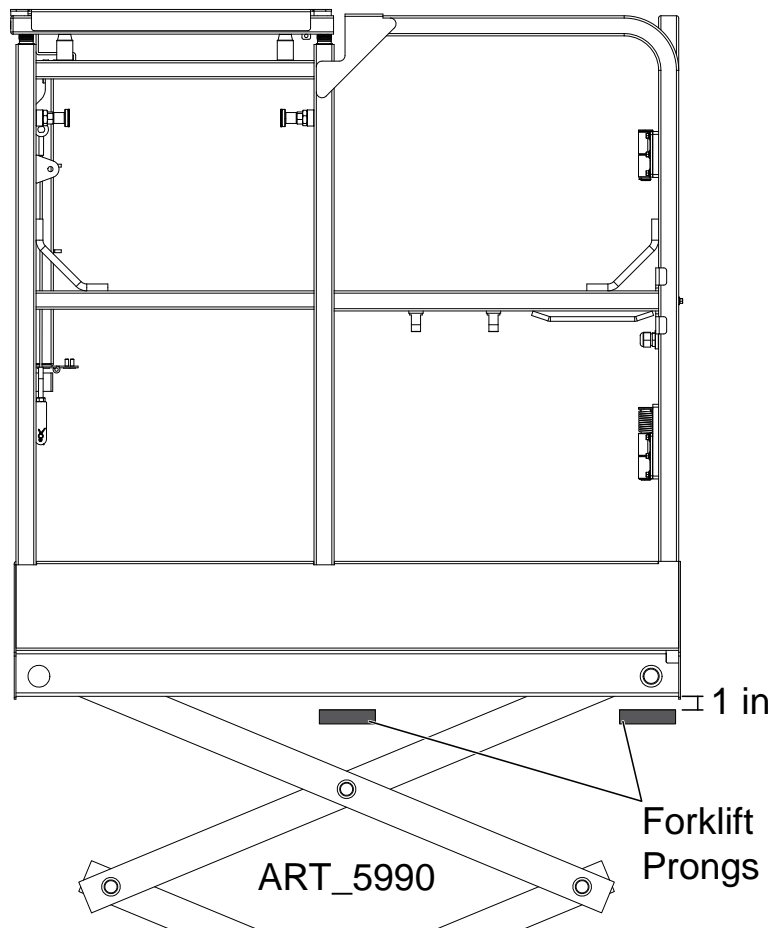
Replace any missing or damaged safety signs. Keep operator safety in mind at all times. Use mild soap and water to clean safety signs. Do not use solvent-based cleaners because they may damage the safety sign material.

## Maintenance Safety



**BEFORE PERFORMING MAINTENANCE ON THE LIFT ACTUATOR, SUPPORT THE PLATFORM WITH A FORKLIFT.**

**NEVER** perform work on the machine with the platform elevated without placing forklift prongs around 1 inch (25 mm) under the platform to support the platform as is shown below.



## Hazards

### Electrocution Hazard

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	
0 to 300V	Avoid Contact	
300V to 50kV	10 ft	3.05 m
50kV to 200kV	15 ft	4.60 m
200kV to 350kV	20 ft	6.10 m
350kV to 500kV	25 ft	7.62 m
500kV to 750kV	35 ft	10.67 m
750kV to 1,000kV	45 ft	13.72 m

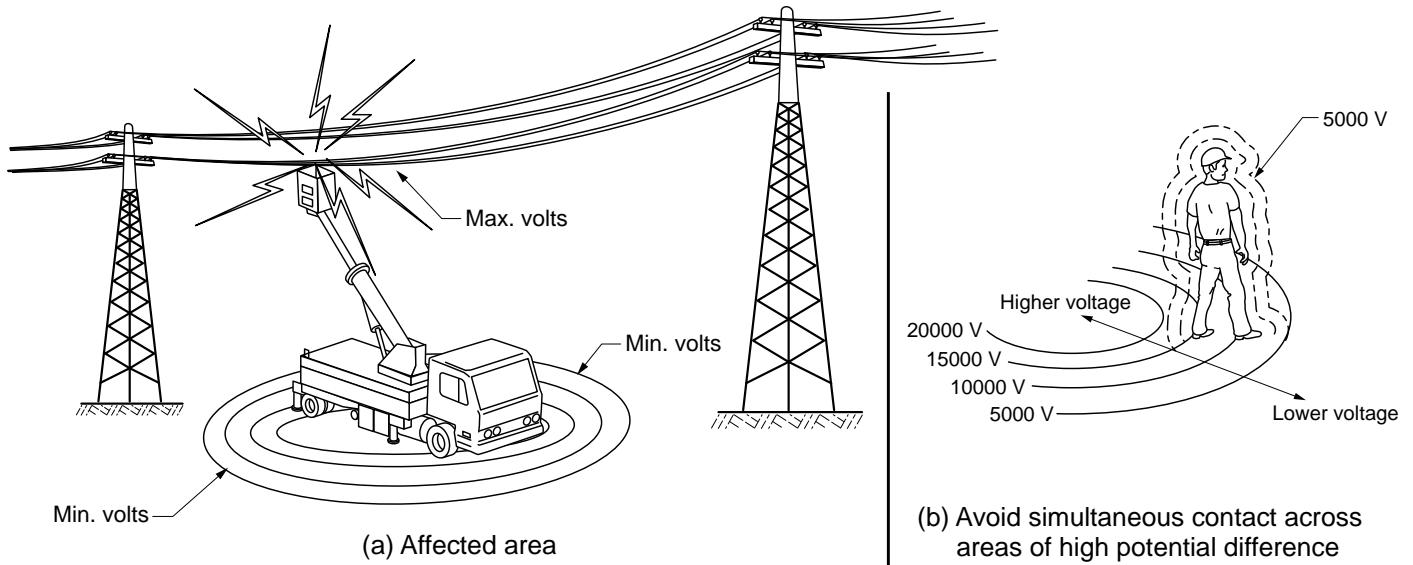
Keep away from the machine if it contacts energized power lines. Personnel on the ground or in the platform must not touch or operate the machine until energized power lines are shut off.

Do not use the machine as a ground for welding.

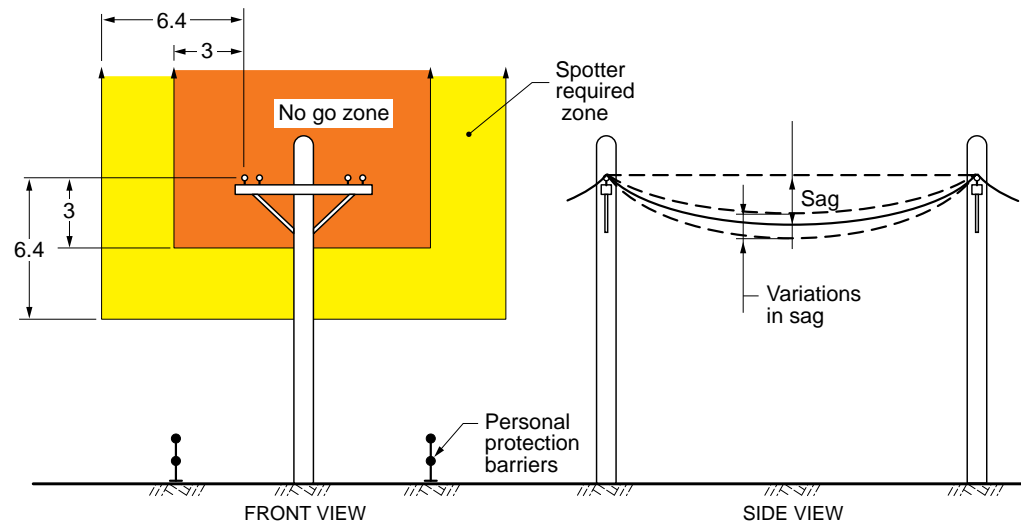
### Energized Conductor Contact Hazard

When working in the area of energized conductors the user shall direct and the operator shall comply with the requirements to:

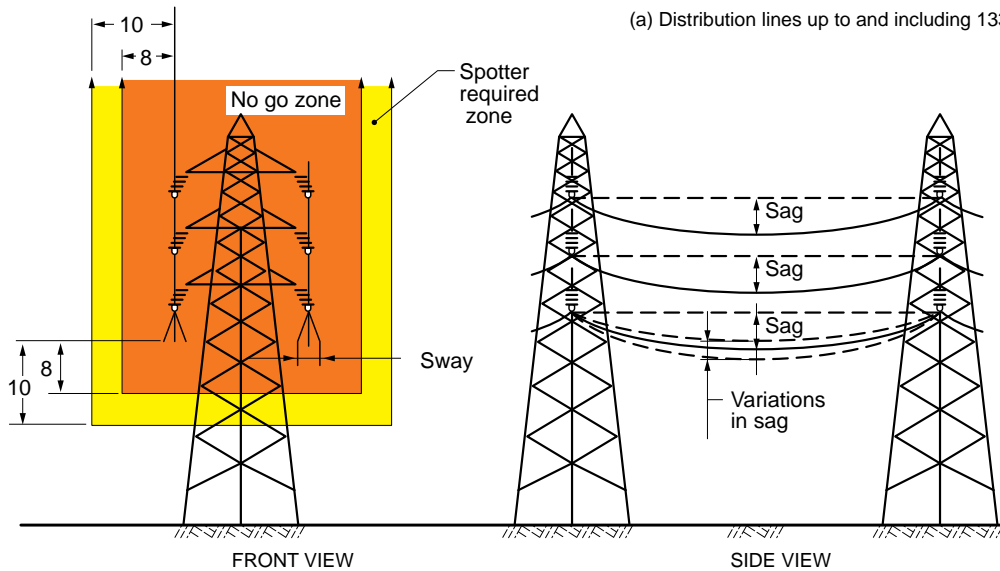
- Stay at least 10 feet away from power lines with any part of their body, conductive object or any part of the MEWP.
- If work requires working nearer than 10 feet, stop and consult a qualified person with respect to electrical transmission and distribution to have appropriate measures taken (such as de-energizing and grounding).
- If there is a question that the power lines may carry more than 50kV, consult a qualified person with respect to electrical transmission and distribution before proceeding.
- If working or approaching closer than explained above, it shall only be done by a qualified person with respect to electrical transmission and distribution. Only qualified persons may work on electric circuit parts or equipment that has not been de-energized. Such persons shall be capable of working safely on energized circuits and shall be familiar with the proper use of special precautionary techniques, personal protective equipment, insulating and shielding materials and insulated tools.



CLEARANCES FROM LIVE AERIAL CONDUCTORS



(a) Distribution lines up to and including 133 kV



(b) Transmission lines greater than 133 kV

LEGEND

- = No shading, in the front views, indicates no proximity requirements
- = Light shading indicates spotter is required
- = Heavy shading indicates the NO GO ZONE

## Tip-over Hazard

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

Maximum Platform Capacity Rated		
Maximum Occupants	Indoors	1
	Outdoors	1
Maximum Platform Load		500 lbs (227 kg)

## Work Area Safety

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

Do not drive over 0.25 mph (0.4 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.



When using the machine outside, do not raise the platform when wind speeds may exceed 28 mph (12.5 m/s). If wind speeds exceed 28 mph (12.5 m/s) when the platform is raised, lower the platform and do not continue to operate the machine.

Do not switch to Indoor mode unless the wind speed is 0 mph (0 m/s).

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 push off or pull toward any object outside of the platform.



Maximum Allowable Manual Force		
	Manual Force	Maximum Occupants
Indoors	45 lbs (200 N)	1
Outdoors	45 lbs (200 N)	1

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 operate the machine with the chassis trays open.

Do not make contact with adjacent structures with the platform.

Do not alter or disable the limit switches.

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 replace items critical to machine stability with items of different weight or specification.

Do not use batteries that weigh less than the original equipment. Batteries are used as counterweights and are critical to machine stability. Each battery must weigh 40 lbs (18 kg). The batteries must weigh a minimum of 80 lbs (36 kg).

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, toe boards or guard rail system can increase the weight in the platform and the surface area of the platform or the load.

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 the 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 the lug nuts are properly tightened.

### **Crushing Hazard**

Keep hands and limbs out of scissors. Keep hands clear when folding rails.

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

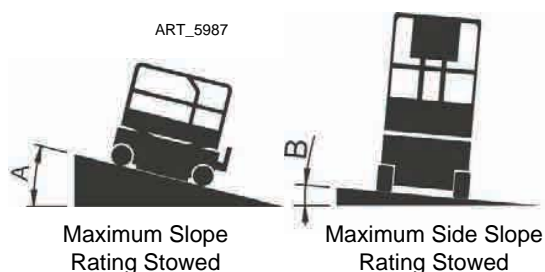
Use common sense and planning when operating the machine with the controller from the ground. Maintain safe distances between the operator, the machine and fixed objects.

## Operation on Slopes Hazard

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

Slope rating applies to machines only in the stowed position.

A	B
25% (14°)	25% (14°)



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

## Fall Hazard

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 gate is secured for operation.

Do not enter or exit the platform unless the machine is in the stowed position.



## Collision Hazard

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

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



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Check the worksite for overhead obstructions or other possible hazards.

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



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

Observe and use color-coded direction arrows on the platform controls 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 Hazard**

Do not use any battery charger greater than 24V to charge the batteries. The charger must match the battery type. Lithium batteries can not be charged with a lead-acid battery charger. Lead-acid batteries can not be charged with a lithium battery charger.

Pressure relief valves are used as breathable plugs.

The battery must always be kept clean and dry in order to prevent leakage currents. Do not rinse with water or wipe with a wet towel.

Please do not change the location of the battery, and it can't be inverted. Do not block the vent hole of safety valve. Do not use the machine as a ground for welding.

### **Explosion and Fire Hazard**

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

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

### **Damaged Machine Hazard**

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.

Be sure all decals are in place and legible.

Be sure the operator's manual is complete, legible and in the storage container located in the platform.

### **Bodily Injury Hazard**



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.

## Battery Safety

### Burn Hazard

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.

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

If a lithium batteries catches fire it can release toxic gases so maintain distance from the burning battery and call emergency services or use a lithium-fire approved fire extinguisher.



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### Explosion Hazard

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

The battery tray should remain open during the entire charging cycle.

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



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### Electrocution/Burn Hazard

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

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

Metallic parts of the battery cells are always electrified. Therefore, no foreign objects or tools may be placed on the batteries.

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 counterweights and are critical to machine stability. Each battery must weigh 40 lbs (18 kg). The batteries must weigh a minimum of 80 lbs (36 kg).

**Lifting Hazard**

Use the appropriate lifting techniques when lifting batteries.

When handling lithium battery, be careful and make sure that the lithium batteries do not collide or impact other objects.

**Battery Environmental Hazard**

For lead-acid batteries, a temperature of 86°F (30°C) is considered the rated temperature. Higher temperatures reduce the service life, while lower temperatures reduce the available capacity. 113°F (45°C) is the upper limit temperature and is not permissible as an operating temperature.

The rated temperature range for lithium battery is -22°F (-30°C) to 131°F (55°C). If it is found that the temperature of the battery exceeds 140°F (60°C) during use, the battery should be stopped immediately and put aside separately.

Batteries must not be exposed to sunlight without protection.

**Transportation and Storage Hazard**

Charge the battery as soon as receiving the machine or after long distance transportation.

When the battery is stored for a long time, it needs to be charged regularly. Failure to charge in time may permanently damage the battery.

**Pollution Hazard**

Disposal of old batteries must comply with job site and governmental rules.

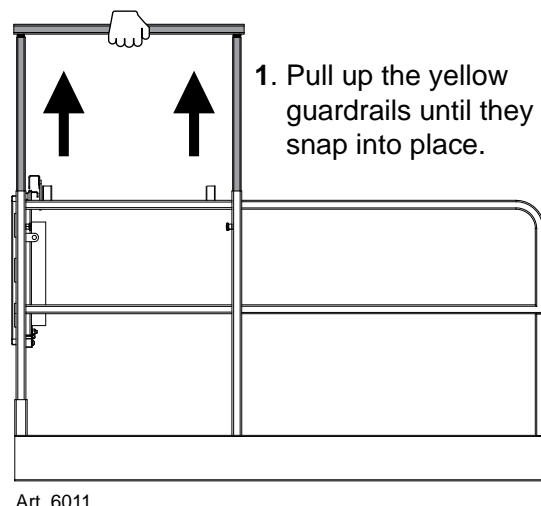
**Lockout after Each Use**

1. Select a safe parking location - firm level surface, clear of obstruction 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. Push in the red Emergency Stop buttons to the "OFF" position.
5. Charge the batteries.

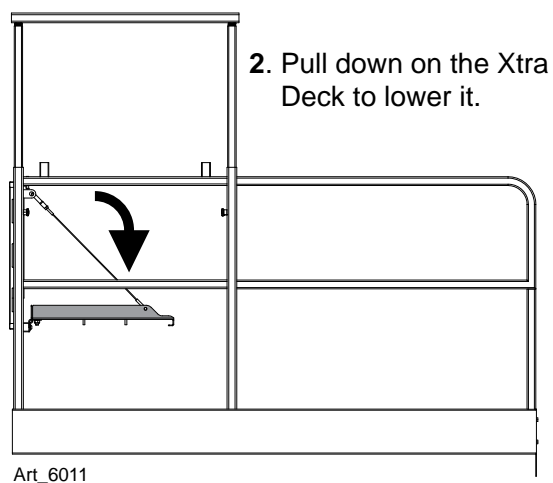
## Xtra Deck Deployment and Stowing

**Warning! Only 1 person is allowed on the machine when the Xtra Deck is deployed.**

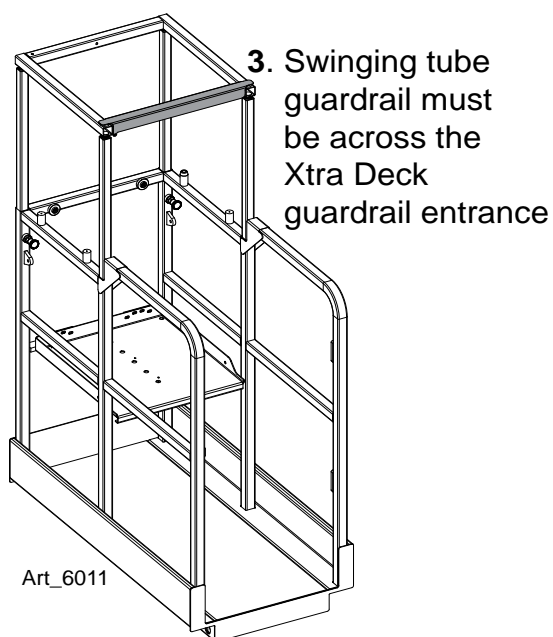
1. Extend the telescopic guardrails (painted yellow) until all 4 pins snap into holes when the guardrails reach the extended position.



2. Pull firmly on the Xtra Deck to release it from the magnets and fold down the Xtra Deck.



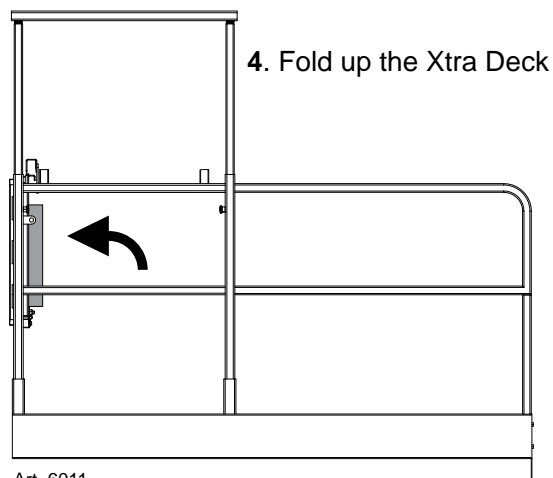
3. Once on the Xtra Deck lift-up and engage the swinging tube guardrail to enclose the Xtra Deck on all 4 sides.



**Important: Maximum capacity - 1 person - 250 lbs (113Kg)**

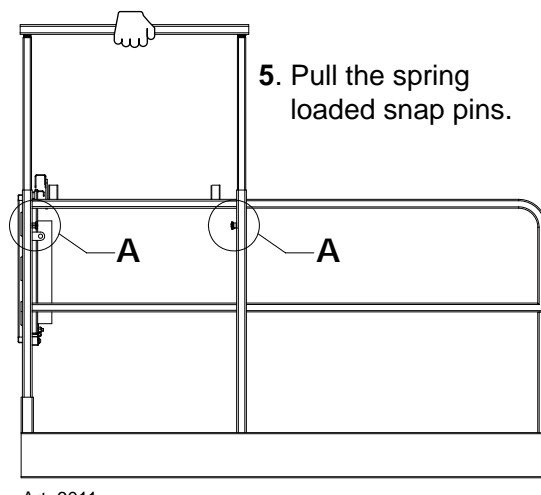
The control box may be placed on the upper telescopic guardrail and the machine controlled as instructed in this manual.

4. To stow first dis-engage the swinging tube guardrail and step down. Fold-up the Xtra Deck until the magnets pull it into the retained vertical position.

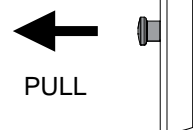


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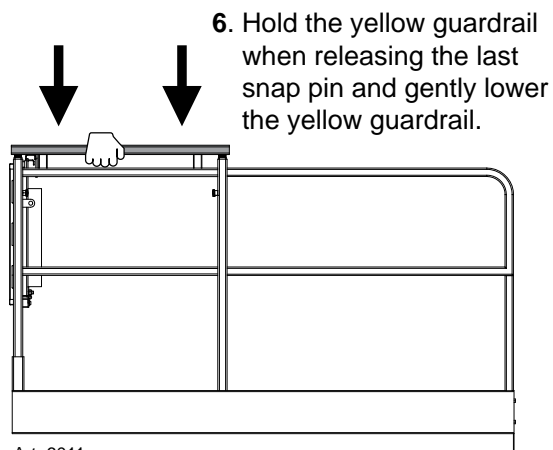
5. Pull each spring loaded snap pin individually but when releasing the last snap pin hold the yellow upper guardrail in the center on either the left hand or right hand side.



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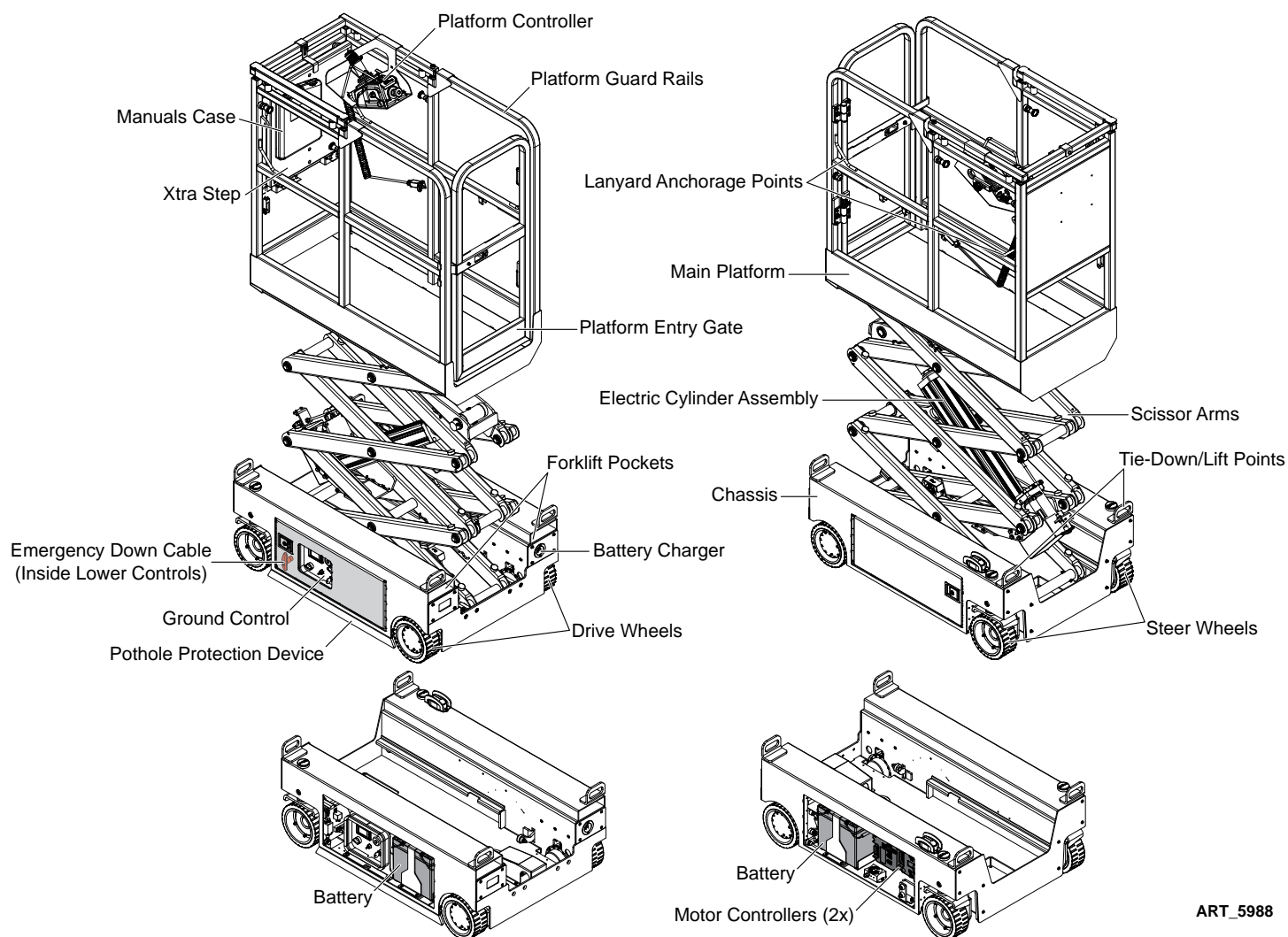
**Detail A**

6. When pulling and releasing the last pin support the weight of the yellow upper guardrail in the center of either the left hand or right hand yellow guardrail.
7. Gently lower the telescopic guardrail to the lowered position.



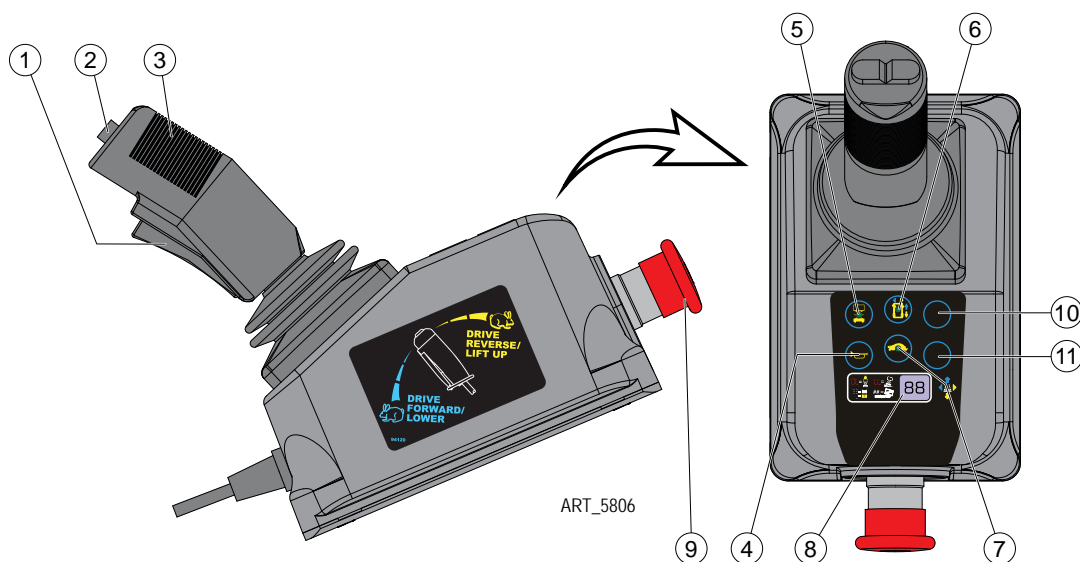
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# Component Locations



ART\_5988

## Upper Controls



**ALWAYS be aware of the machine's position and of your surroundings before activating any control function.**

Control		Description	
1	Function Enable Switch	Function Enable Switch for LIFT & DRIVE & STEER functions.	
2	Thumb Rocker Switch	Press the thumb rocker switch in either direction to activate steer function.	
3	Proportional Control Handle	DRIVE	Proportionally controls Forward and Reverse travel.
		LIFT	Proportionally controls Lift and Lower functions.
4	Horn Button	Press to sound warning horn.	
5	Lift Select	Press this button to select the Lift function.	
6	Drive Select	Press this button to select the drive function.	
7	Drive Speed Button	Press this button to activate the slow or fast drive function.	
8	LED Display	Indicates the state of battery charge and displays diagnostic codes when necessary.	
9	Emergency Stop Switch	Press the EMERGENCY STOP switch at any time to stop all machine functions. Pull the button out to the "ON" position to operate the machine.	
10	Reservation Button 1	Only used for Brake Release Operation on page 33.	
11	Reservation Button 2	Only used for Brake Release Operation on page 33.	

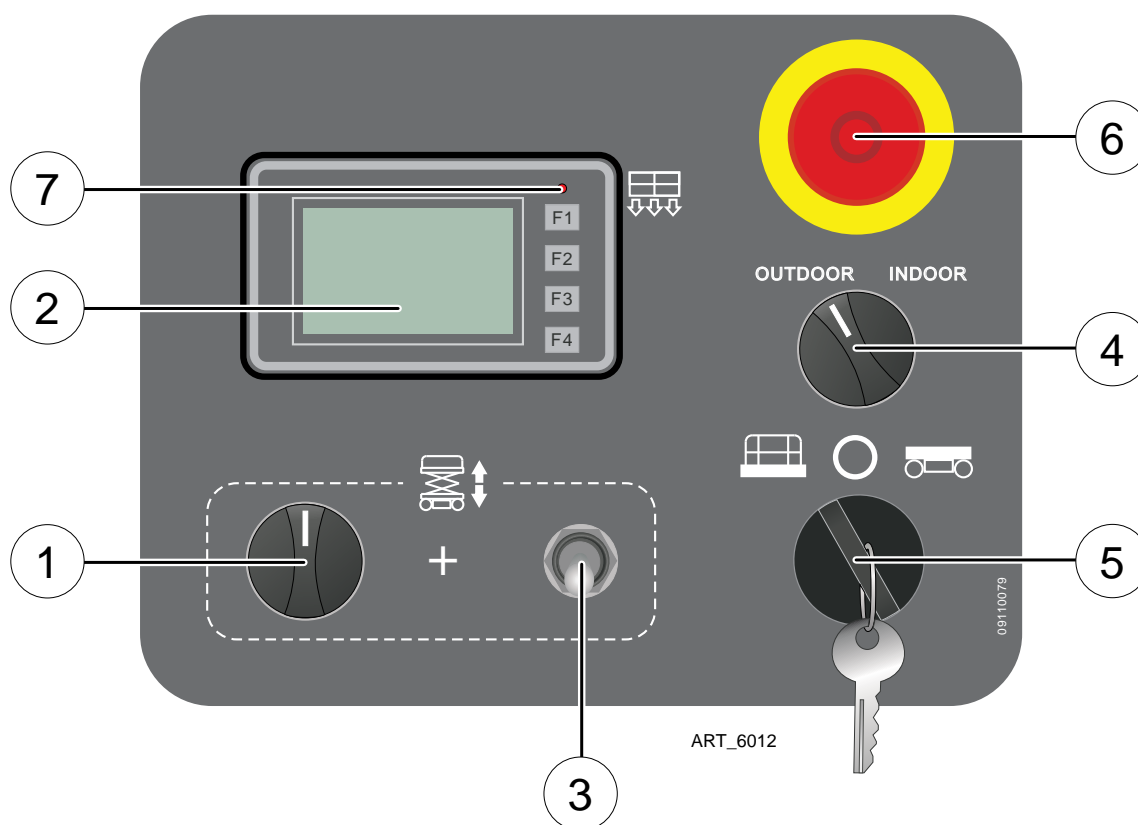
### Lift function

- Press the Lift Select switch. Squeeze the Function Enable Switch then move the control handle in the direction indicated by the yellow arrow and the platform will raise. Squeeze the Function Enable Switch then move the control handle in the direction indicated by the blue arrow and the platform will lower. The descent alarm will sound while the platform is lowering.

### Drive function

- Press the Drive Select switch. Squeeze the Function Enable Switch then move the control handle in the direction indicated by the blue arrow on the control panel and the machine will move in the direction that the blue arrow points. Squeeze the Function Enable Switch then move the control handle in the direction indicated by the yellow arrow on the control panel and the machine will move in the direction that the yellow arrow points.

## Lower Controls



**ALWAYS be aware of the machine's position and of your surroundings before activating any control function.**

Control		Description	
1	Function Enable Button	Turn the Function Enable Button right and hold to be able to enable the Platform Up / Down Switch function.	
2	Led Readout Screen	Diagnostic readout and battery charge indicators.	
3	Platform Up / Down Switch	Turn right and hold the Function Enable Button (#1) while pressing the switch up and the platform will raise. Turn right and hold the Function Enable Button (#1) while pressing the switch down and the platform will lower.	
4	Outdoor/Indoor Switch	OUTDOOR	Select to limit the maximum height when outdoors.
		INDOOR	Select to allow unrestricted height when indoors.
5	Key Switch	PLATFORM	Turn the key switch to the platform position and the platform controls will be selected.
		OFF	Turn the key switch to the "OFF" position and the machine will be off.
		BASE	Turn the key switch to the base position and the ground controls will be selected.
6	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	
7	Overload Indicator Light	Light on indicates when platform is overloaded. Remove excess weight.	

## 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. 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.

### 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 Service section of the Service & Parts manual.



## Pre-operation Inspection Report

	Be sure that the operator's manual is 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 battery fluid leaks and proper fluid level. Add distilled water if needed. (Sealed AGM-type batteries don't require maintenance.)

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

	Electrical components, wiring and electrical cables
	Battery pack and connections
	Drive motors
	Wear pads
	Tires and wheels
	Ground strap
	Limit switches, alarm, beacon and rotary sensor
	Nuts, bolts, and other fasteners
	Platform overload components
	Platform entry gate
	Scissor pins and retaining fasteners
	Platform control joystick
	Brake release components
	Pothole guard

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
	Be sure side rails are installed and rail pins and bolts are fastened.
	Be sure that the chassis trays are closed and latched and the batteries are properly connected.

## 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. 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.

### 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

# Maintenance Inspection Report

## Nano10® Scissor

Fleet Equipment Number \_\_\_\_\_ Date \_\_\_\_\_

Inspector Name \_\_\_\_\_ Inspector Co. \_\_\_\_\_

Model Number \_\_\_\_\_ Address \_\_\_\_\_

Serial Number \_\_\_\_\_

Hour Meter \_\_\_\_\_ Signature \_\_\_\_\_

Machine Owner & address \_\_\_\_\_

### Maintain all service records in accordance with ANSI A92.24-2019

\*If an inspection receives an "N", remove from service. Once repaired, place an "R" in the box.

\*Refer to the proper service manual for specific information, settings and torque specifications.

**Key** Y = Yes, Acceptable N = No, Remove from Service R = Repaired O = Not Applicable

☐ **QUARTERLY** - Inspect only those marked "Q"

☐ **ANNUAL** - Inspect all items

	Q/A	Y/N/O	R
<b>DECALS:</b>			
Legible - undamaged/readable	Q		
Capacity decal correct for model	Q		
<b>RAILS:</b>			
Not damaged, all in place	Q		
All rail fasteners secure	Q		
Entry gate secure, closes properly	Q		
Manual box in good condition	Q		
Operators Manual in manual box	Q		
<b>PLATFORM EXTENSION:</b>			
Rolls in and out freely	Q		
Lock holds deck in place	Q		
Release pedal moves freely (lube)	Q		
<b>ELEVATING ASSEMBLY:</b>			
Scissor Slide Blocks, lubed	Q		
Maintenance Stand, good condition	Q		
Beam structures: Straight, no cracks	A		
Welds: secure, no cracks	A		
Retaining Rings	A		
Cylinder Pins, secure	A		
<b>ELECTRICAL:</b>			
GFCI operates correctly	Q		
Wire harnesses good condition, secure	A		
Comm cable no damage, secure	A		
<b>BASE:</b>			
Fasteners tight	Q		
Cover panels secure	Q		
Welds	A		

	Q/A	Y/N/O	R
<b>WHEELS:</b>			
Tire damage	Q		
Lug nuts (Wheel mounting) torqued correctly	Q		
King Pins lubed	A		
<b>COMPONENT AREA:</b>			
Lift Actuator, no signs of lube leakage	Q		
Steer Actuators, Secure, no damage, leakage	Q		
Electrical Cables, secure, tight, no damage	Q		
Batteries, secure, charged, Cables clean and tight	Q		
Motor controllers secure, Cables tight	Q		
Panel Display, Readable, operable	Q		
Emergency stop, cuts power/operation	Q		
Battery switch cuts battery feed	Q		
Pothole System, Bars deploy completely	Q		
Doors, move easy, latch securely	A		
Platform Control, operate correctly, decals readable	Q		
<b>OPERATIONAL INSPECTION:</b>			
All functions, operate smooth and quiet	Q		
All functions, speeds correct	Q		
Upper control box, operates correctly	Q		
Emergency Down, operates correctly	Q		
Limit switches slows drive when elevated	Q		
Pothole switch test	Q		
Steering moves smoothly, wheels parallel at center	Q		
Indoor/outdoor limit switch set test	Q		
**Check Platform Overload Sensing operation	Q		

\*\*For machine equipped with Platform Overload Protection system only

# Function Tests

## Do Not Operate Unless:

- You learn and practice the principles of safe machine operation contained in this operator's manual.
  - Avoid hazardous situations. Know and understand the safety rules before going on to the next section.**
  - Always perform a pre-operation inspection.
  - Always perform function tests prior to use.
  - Inspect the workplace.
  - 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.

- Select a test area that is firm, level and free of obstruction.
- Be sure the battery pack is connected.
- Pull out the main power switch to "ON" position.

## At the Ground Controls

- Pull out both the platform and ground red Emergency Stop button to the "ON" position.
- Turn the key switch to the ground control.
- Observe the LED readout screen on the platform controls.



Art. 5673 Platform Display

Indicates key is in the ground position.

- Result:** The LED should look like the picture at right.
- Observe the LED readout screen on the window.
    - Result:** The LED will come on and display system ready.

## Test Emergency Stop

- Push in the ground red Emergency Stop button to the "OFF" position.
  - Result:** No functions should operate.
- Pull out the red Emergency Stop button to the "ON" position.

## Test Up/Down Functions

A buzzer with different sound frequency is controlled in central system. The descent alarm sounds at 60 beeps per minute. The alarm that goes off when the pothole guards have not deployed sounds at 180 beeps per minute. The alarm that goes off when the machine is not level sounds at 180 beeps per minute. The machine is equipped with an automotive-style horn.

10. Do not press the function enable button.
11. Press the Platform Up/Down switch.
  - **Result:** The platform should not raise.
12. Do not press the Platform Up/Down switch.
13. Press the function enable button right and hold.
  - **Result:** No function should operate.
14. Press and hold the function enable button then move up and hold the Platform Up/Down switch.
  - **Result:** The platform should raise.
15. Press and hold the function enable button then move down and hold the Platform Up/Down switch.
  - **Result:** The platform should lower to end. The descent alarm should sound while the platform is lowering.

### Test the Emergency Lowering

16. Press and hold the function enable button then move up and hold the Platform Up/Down switch raise the platform approximately 23.6 in (60 cm).
17. Push in the ground red Emergency Stop button to the "OFF" position.
18. Open the cover pull the red emergency lowering knob.
  - **Result:** The platform should lower. The descent alarm will not sound.
19. Turn the key switch to the platform control.
20. Pull out the red Emergency Stop button to the "ON" position.

### At the Platform Controls

#### Test Emergency Stop

21. Push in the platform red Emergency Stop button to the "OFF" position.
  - **Result:** No functions should operate.
22. Pull out the red Emergency Stop button to the "ON" position.
  - **Result:** The LED indicator light should come on.

#### Test the Horn

23. Push the horn button.
  - **Result:** The horn should sound.

#### Test Function Enable and Up/Down Functions

24. Do not hold the function enable switch on the control handle.
25. Slowly move the control handle in the direction indicated by the blue arrow, then in the direction indicated by the yellow arrow.
  - **Result:** No functions should operate.
26. Press the lift function select button.
27. Press and hold the function enable switch on the control handle.
28. Slowly move the control handle in the direction indicated by the blue arrow.
  - **Result:** The platform should raise. The pothole guards should deploy.
29. Release the control handle.
  - **Result:** The platform should stop raising.
30. Press and hold the function enable switch. Slowly move the control handle in the direction indicated by the yellow 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.

31. Press the drive function select button. The indicator light should turn on.
32. Press and hold the function enable switch on the control handle.
33. Depress the thumb rocker switch on top of the control handle in the direction identified by the blue left arrow on the control panel.
  - **Result:** The steer wheels should turn in the direction that the blue left arrow points on the control panel.
34. Depress the thumb rocker switch in the direction identified by the yellow right arrow on the control panel.
  - **Result:** The steer wheels should turn in the direction that the yellow right arrow points on the control panel.

## Test Drive and Braking

35. Press the drive function select button. The indicator light should turn on.
36. Press and hold the function enable switch on the control handle.
37. Slowly move the 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 control panel, then come to an abrupt stop.
38. Press and hold the function enable switch on the control handle.
39. Slowly move the 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 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

40. Press and hold the function enable switch. Raise the platform approximately 3.3 ft (1 m) from the ground.
  - **Result:** The pothole guards should deploy.
41. Press and hold the function enable switch on the control handle.
42. Slowly move the control handle to the full drive position.
  - **Result:** The maximum achievable drive speed with the platform raised should not exceed 0.36 ft per second (11.1 cm/s).
  - If the drive speed with the platform raised exceeds 0.36 ft per second (11.1 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.

43. Fully lower the platform.
44. Place a 1.2×7.9 in (3×20 cm) or similar piece of wood under both wheels on one side and drive

the machine up onto them.

45. Raise the platform approximately 3.3 ft (1 m) from the ground.

- **Result:** The platform should stop and the tilt alarm will sound at 180 beeps per minute. The platform controls LED readout should display LL.

46. Press the drive function select button.

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

48. Move the control handle in the direction indicated by the blue arrow, then move the control handle in the direction indicated by the yellow arrow.

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

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

## Test the Pothole Guards

**Note:** The pothole guards should automatically deploy when the platform is raised. The pothole guards activate another limit switch which allows the machine to continue to function. If the pothole guards do not deploy, an alarm sounds and the machine will not drive and lift.

50. Raise the platform.

- **Result:** When the platform is raised approximately 3.3 ft (1 m) from the ground, the pothole guards should deploy.

51. Press on the pothole guards on one side, and then the other.

- **Result:** The pothole guards should not move.

52. Lower the platform.

- **Result:** The pothole guards should return to the stowed position.

53. Place a 1.2×7.9 in (3×20 cm) or similar piece of wood under a pothole guard. Raise the platform.

- **Result:** When the platform is raised approximately 4.3 ft (1.3 m) from the ground, the pothole alarm will sound at 180 beeps per minute, and the platform controls LED screen readout should display 18.

54. Press the drive function select button.

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

56. Move the control handle in the direction indicated by the blue arrow, and then move the control handle in the direction indicated by the yellow arrow.

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

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

58. Depress the thumb rocker switch on top of the control handle in the direction identified by the blue and yellow arrow on the control panel.

- **Result:** The steer function should not work in either direction.

59. Lower the platform and remove the 1.2×7.9 in (3×20 cm) wood block.

## Test the Indoor/Outdoor select Functions

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

60. Turn the key switch to ground control position.

61. Turn the Indoor/Outdoor switch to Outdoor mode.

62. Move up and hold the Platform Up/Down switch. Raise the platform to the highest position and measure the platform height.

- **Result:** The platform height shall not exceed 7.5 ft (2.3 m).

63. Turn the Indoor/Outdoor switch to Indoor mode.

64. Move up and hold the Platform Up/Down switch. Raise the platform to the highest position and

measure the platform height.

- **Result:** The platform continued to rise to a height of about 9.8 ft (3 m).

65. Fully lower the platform.

66. Turn the key switch to platform control position.

67. Turn the Indoor/Outdoor switch to Outdoor mode.

68. Press the lift function select button.

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

70. Slowly move the control handle in the direction indicated by the blue arrow. Raise the platform to the highest position and measure the platform height.

- **Result:** The platform height shall not exceed 7.5 ft (2.3 m).

71. Turn the Indoor/Outdoor switch to Indoor mode.

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

73. Slowly move the control handle in the direction indicated by the blue arrow. Raise the platform to the highest position and measure the platform height.

- **Result:** The platform continued to rise to a height of about 9.8 ft (3 m).

74. Fully lower the platform.



## 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. 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.

### Fundamentals

Vibrations emitted by these machines are not hazardous to an operator in the work platform. The machine can be used to position personnel with their tools and supplies at position above ground level and can be used to reach work areas located above and over machinery or equipment.

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 manual.

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 manual. 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.

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

### Emergency Lowering

1. Open the cover for the lower controls and pull the red emergency lowering knob.

### Operation from Ground

1. Be sure the battery pack is connected before operating the machine.
2. Turn the key switch to the ground controls.
3. Pull out the red Emergency Stop button to the "ON" position at both the ground and platform controls.

### To Position Platform

1. Press and hold the function enable switch.
2. Move the Platform Up/Down switch according to the markings on the control panel.

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

### Operation from Platform

1. Be sure the battery pack is connected before operating the machine.
2. Turn the key switch to platform control.
3. Pull out the red Emergency Stop button to the "ON" position at both the ground and platform controls.

### To Position Platform

1. Press the lift function select button.
2. Press and hold the function enable switch on the control handle.
3. Move the control handle according to the markings on the control panel.

### To Steer

1. Press the drive function select button.
2. Press and hold the function enable switch on the control handle.
3. Turn the steer wheels with the thumb rocker switch located on the top of the control handle.

### To Drive

1. Press the drive function select button.
2. Press and hold the function enable switch on the control handle.
3. 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 color-coded direction arrows on the platform controls to identify the direction the machine will travel.

Machine travel speed is restricted when the platform is raised.

Battery condition will affect machine performance. Machine drive speed and function speed will drop when the battery level indicator is flashing.

### To select drive speed

The drive controls can operate in two different drive speed modes. When the drive speed button light is on, slow drive speed mode is active. When the button light is off, fast drive speed mode is active.

Press the drive speed button to select the desired drive speed.

### Driving on a slope

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

- Maximum slope rating, stowed position: 25%
- Maximum side slope rating, stowed position: 25%.

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

Press the drive speed button to the fast drive speed mode.

## 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 3.3 ft (1 m) long
- Tape measure

Lay the piece of wood on the slope.

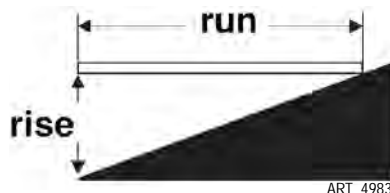
At the downhill end, lay the level on the top edge of the piece of wood and lift the end until the piece of wood is level.

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 = 12 ft / 3.6 m
- Rise = 12 in / 0.3 m
- $12 \text{ in} \div 144 \text{ in} = 0.083 \times 100 = 8.3\%$
- $0.3 \text{ m} \div 3.6 \text{ m} = 0.083 \times 100 = 8.3\%$



If the slope exceeds the maximum slope or side slope rating, the machine must be winched or transported up or down the slope. See Transport and Lifting section on page 33.

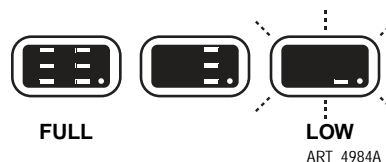
## Operation from Ground with Controller

Maintain safe distances between operator, machine and fixed objects.

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

## Battery Level Indicator

Use the LED readout screen to determine the battery level.



## Battery and Charger Instructions

### Observe and Obey:

- Do not use an external charger or booster battery.
- Charge the battery in a well-ventilated area.
- Use proper AC input voltage for charging as indicated on the charger.

### Charging Instructions for Lead-acid Batteries

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.
6. Be sure the batteries are connected before charging.

### Maintenance-free Battery Charging

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

### Charging Instructions for Lithium Batteries

1. During the charging operation, personnel should take care of and keep an eye on the lithium batteries. During the charging process the plug and socket make full contact, the charging equipment should work normally, and the connection points of the battery pack should make full contact. If something goes wrong, it needs to be fixed before it can be charged.
2. During charging and discharging cycles, avoid water and other conductive objects splashing on the battery cover and poles.
3. Avoid charging at temperatures below 32°F (0°C) to ensure good battery life.

## Transport and Lifting

### 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.
- 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. 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 on page 30.
- 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.

### Brake Release Operation

1. Chock the wheels to prevent the machine from rolling.
2. Turn the key switch to the platform position. With the platform E-Stop pushed in, press and hold the two Reservation Buttons on the platform controller at the same time while pulling out the E-Stop on the upper control box. Within 8 seconds, the display will show “- -” indicating that the system is in the configuration mode, release both the Reservation Buttons.
3. Press and hold the Turtle button for 5 seconds then the display will show a solid “br”. The alarm will sound and the brakes will be released.
4. If you want to cancel the brake release, just press any E-Stop or turn off the key switch.

Towing the machine is not recommended. If the machine must be towed, do not exceed 2.5 mph (4.0 km/h).

### After the machine is loaded:

1. Push in both ground and platform red Emergency Stop buttons to the “OFF” position.
2. Turn the key switch to the “OFF” position.
3. Chock the wheels to prevent the machine from rolling.

### Securing to Truck or Trailer for Transit

- Always chock the machine wheels in preparation for transport.
- Turn the key switch to the “OFF” position and remove the key before transporting.
- Inspect the entire machine for loose or unsecured items.
- Use the tie-down points on the chassis for anchoring down to the transport surface.
- Use a minimum of four chains or straps with an ample load capacity.
- If the railings have been folded down, secure them with straps before transporting.

### Lifting the Machine with a Forklift

- Be sure the controls and component trays are secure. Remove all loose items on the machine.
- The platform must remain fully lowered during all loading and transport procedures.
- Use the forklift pockets located on both sides of the ladder.
- Position the forklift forks in position with the forklift pockets.
- Drive forward to the full extent of the forks.
- Raise the machine 6 in (15 cm) and then tilt the forks back slightly to keep the machine secure.
- Be sure the machine is level when lowering the forks.

## Storage

### Observe and Obey:

- The storage of the machine shall be as follows. Incorrect storage may affect the performance and service life of the machine.
  1. The machine should be stored indoors and the ground should be firm and level. If the machine should be stored outdoors then the machine should be covered to prevent damage from water and other environment factors.
  2. Ensure the machine has been cleaned and is functional before placed in storage. Repair or maintain it if necessary.
  3. Place the machine in a suitable position so as to drive or move the machines conveniently.

### Rust protection

1. Inspect the paint before the machine is stored and repaint the machine to protect it from rust.
2. For moving parts, grease can be applied to prevent rust, such as bearings, joints and sliding rails.



**Any machine that has been stored for a long time can't be used until it has been inspected and maintained according to the daily check procedure.**

The following conditions can result in permanent battery damage:

- The battery was not charged in time when the machine displays “36” or “68” alarm code during operation.
- Leaving the key switch, emergency switch or power switch in the “ON” position.
- Forgetting to charge the battery regularly when storing the machine for a long time may permanently damage the battery.

### Storing Lead-acid Batteries

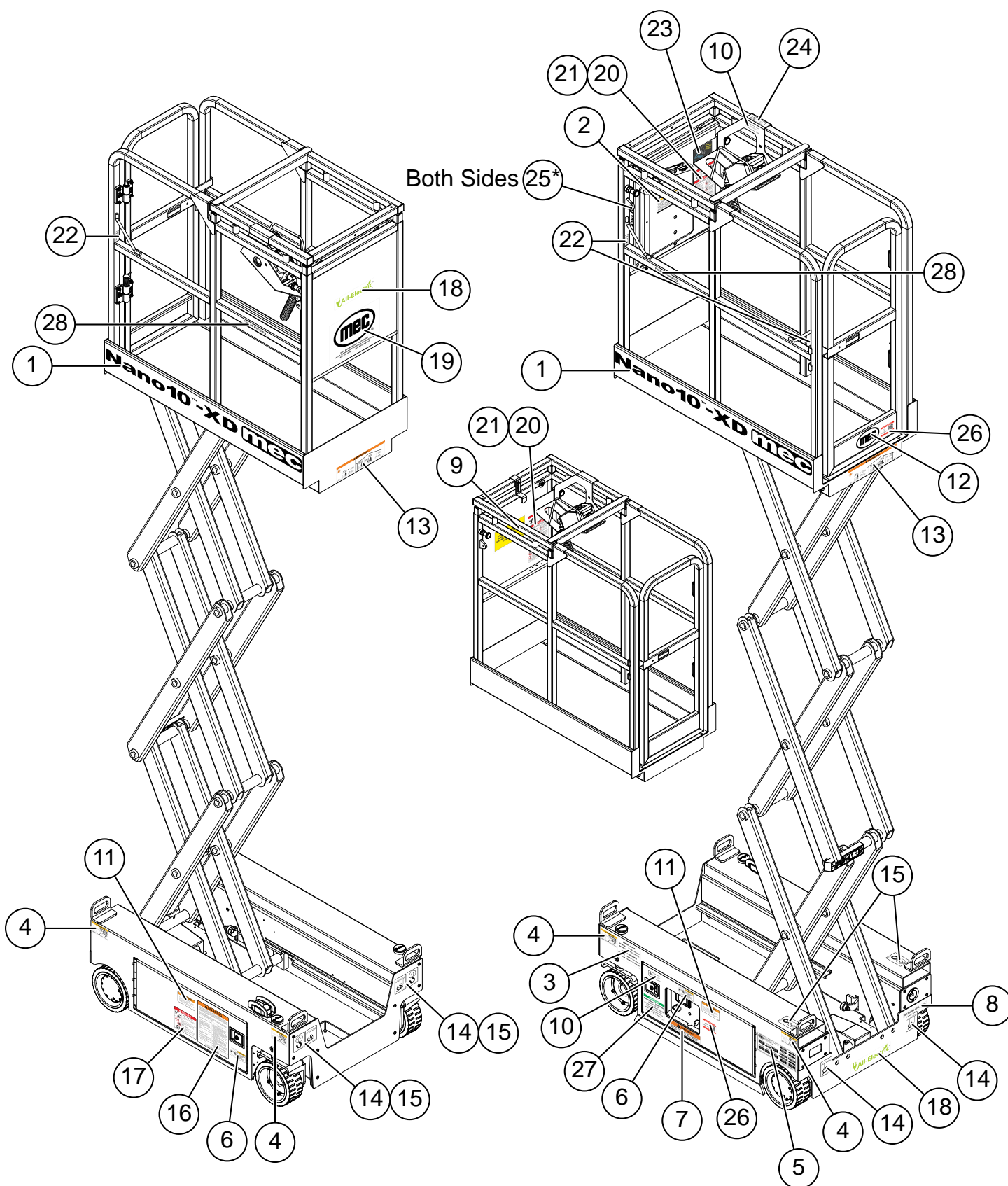
1. When storing the machine for a long time (**one month to six months**) be sure to turn off the main power switch, the key switch is set to off and key is removed, emergency stop switches are pushed in, and fully charge the machine. In order to ensure that these batteries stay ready for operation, the following charging procedures must be applied:
  - Check the voltage of each battery on the machine once a month to ensure that the voltage of battery is not lower than 12.6V, otherwise please charge the machine immediately.
2. When storing the machine for a long time (**half a year or more**), the batteries should be fully charged and then removed from the machine. Keep the batteries clean and ensure that nothing is placed on the top of batteries.
  - To disconnect batteries first disconnect the wire from the negative pole then disconnect the wires from the positive pole.
  - To connect batteries first connect the positive power wires to the positive pole. Then connect the negative cable to the negative pole.
  - In order to ensure that these batteries stay ready for operation, the batteries should be charged once a time every quarter.

**Storing Lithium Batteries**

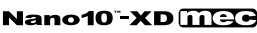
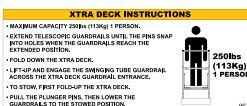
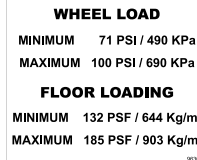
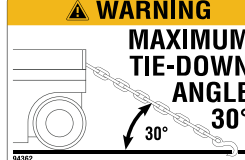

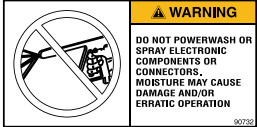



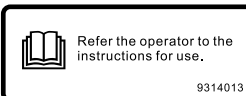
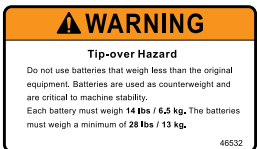
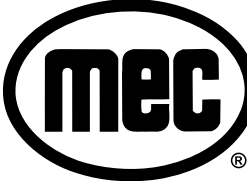
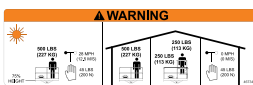
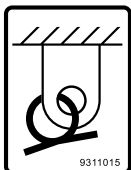
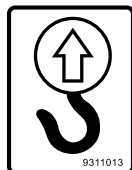




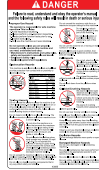


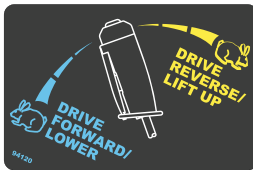



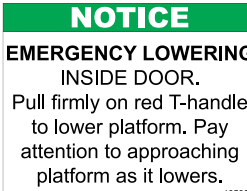

1. When storing the machine for a week or more, be sure to turn off the main power switch, the key switch is set to off and key is removed, emergency stop switches are pushed in, and fully charge the machine.
2. In order to avoid the loss of power and the impact on the service life of the battery, the negative pole of the battery should be removed and the lithium batteries should be charged regularly once a month.
3. Lithium batteries should be stored in a dry, frost-free room.
4. Avoid contact between lithium batteries and corrosive objects, and keep away from places with fire sources and heat sources. The electrode should be insulated when stored (e.g. cover with protective cover) to ensure that no metal part is exposed to prevent short circuit.



# Decals



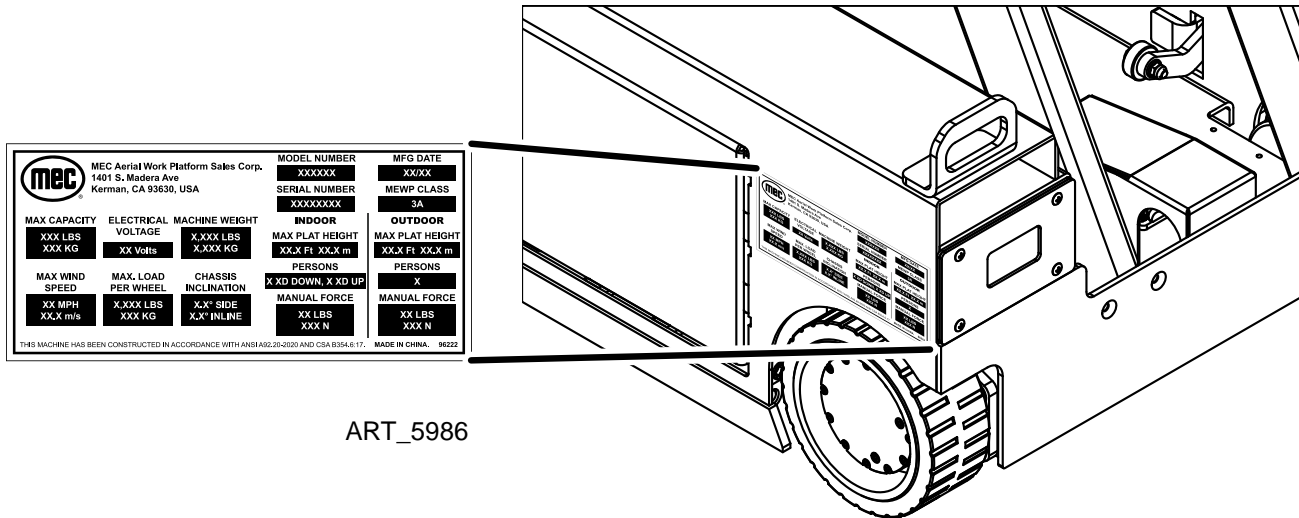


<p><b>1</b></p>  <p>95919 Qty. - 2</p>	<p><b>2</b></p>  <p>95208 Qty. - 1</p>	<p><b>3</b></p>  <p>96307 Qty. - 1</p>	<p><b>4</b></p>  <p>94362 Qty. - 4</p>	<p><b>5</b></p>  <p>96222 Qty. - 1</p>
<p><b>6</b></p>  <p>90732 Qty. - 2</p>	<p><b>7</b></p>  <p>42534 Qty. - 1</p>	<p><b>8</b></p>  <p>90750 Qty. - 1</p>	<p><b>9</b></p>  <p>95389 Qty. - 1</p>	<p><b>10</b></p>  <p>41639 Qty. - 2</p>
<p><b>11</b></p>  <p>46532 Qty. - 2</p>	<p><b>12</b></p>  <p>95301 Qty. - 1</p>	<p><b>13</b></p>  <p>46734 Qty. - 2</p>	<p><b>14</b></p>  <p>41635 Qty. - 4</p>	<p><b>15</b></p>  <p>41634 Qty. - 4</p>
<p><b>16</b></p>  <p>41649 Qty. - 1</p>	<p><b>17</b></p>  <p>41641 Qty. - 1</p>	<p><b>18</b></p>  <p>95626 Qty. - 2</p>	<p><b>19</b></p>  <p>90719 Qty. - 1</p>	<p><b>20</b></p>  <p>43885 Qty. - 2</p>
<p><b>21</b></p>  <p>41647 Qty. - 2</p>	<p><b>22</b></p>  <p>41648 Qty. - 3</p>	<p><b>23</b></p>  <p>94120 Qty. - 1</p>	<p><b>24</b></p>  <p>41640 Qty. - 1</p>	<p><b>25</b></p>  <p>95188 Qty. - 2</p>
<p><b>26</b></p>  <p>96221 Qty. - 2</p>	<p><b>27</b></p>  <p>46533 Qty. - 1</p>	<p><b>28</b></p>  <p>94865 Qty. - 2</p>		

# Serial Plate

## Serial Plate Location

The serial plate is attached to the machine at the time of manufacture. Important information about the machine is recorded on the serial plate.



## Serial Plate Description

**MODEL NUMBER:** Identifies the machine.

**MFG DATE:** Month / Year of manufacture.

**SERIAL NUMBER:** Identifies a machine with reference to its original owner. Refer to the number when requesting information or ordering parts.

**MEWP CLASS:** MEWP=Mobile Elevating Work Platform

**MAX. CAPACITY:** The maximum safe load (material, persons + equipment) which can be correctly placed on the platform at any elevation.

**ELECTRICAL VOLTAGE:** The voltage at which this machine operates.

**MAX. PLATFORM HEIGHT (INDOOR):** The indoors maximum attainable height measured from level ground surface to platform floor.

**PERSONS (INDOOR):** The maximum number of occupants indoors.

**MANUAL FORCE (INDOOR):** Amount of manual force need to move machine indoors.

**MAX. PLATFORM HEIGHT (OUTDOOR):** The outdoors maximum attainable height measured from level ground surface to platform floor.

**PERSONS (OUTDOOR):** The maximum number of occupants outdoors.

**MANUAL FORCE (OUTDOOR):** Amount of manual force need to move machine indoors.

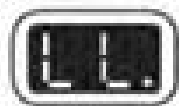
**MACHINE WEIGHT:** The weight of the machine with no options.

**MAX WIND SPEED:** The maximum wind speed for safe working conditions.

**MAX. LOAD PER WHEEL:** The maximum safe weight applied to each wheel. Calculated with all available options installed.  $Fw = 30\% (Wm + Wc + Wopt)$

**CHASSIS INCLINATION:** The angle at which the tilt alarm sounds.

## Fault Codes



Art\_5533

The LED readout screen displays fault codes that provide information about the machine operating status and about malfunctions. The fault codes listed in the following charts describe malfunctions and can aid in troubleshooting the machine by pinpointing the area or component affected.

List of Fault Codes		
Display	Description	Lift Reaction
01 System Initialization Fault	System Initialization Fault	Disables All Motion
02 System Communication Fault	System Communication Fault	Disables All Motion
03 Invalid Option Setting Fault	Invalid Option Setting Fault	Disables All Motion
04 Calibration Incomplete	Calibration Incomplete	Warning Only
05 Left MC Fault	Left MC Fault	Disables All Motion
06 Right MC Fault	Right MC Fault	Disables All Motion
07 Lift MC Fault	Lift MC Fault	Disables All Motion
08 Steer MC Fault	Steer MC Fault	Disables All Motion
09 Left MC Communication Fault	Left MC Communication Fault	Disables All Motion
10 Right MC Communication Fault	Right MC Communication Fault	Disables All Motion
11 Pump MC Communication Fault	Pump MC Communication Fault	Disables All Motion
12 Steer MC Communication Fault	Steer MC Communication Fault	Disables All Motion
13 Chassis Up or Down Switch ON	Chassis Up or Down Switch ON	Disables All Motion
14 Load Sensor Communication Fault	Load Sensor Communication Fault	Disables All Motion
18 Pothole Guard Fault	Pothole Guard Fault	Disable Lifting and Driving
31 Load Sensor Fault	Load Sensor Fault	Disables All Motion
32 Angle Sensor Fault	Angle Sensor Fault	Disables All Motion
36 Low Battery Limp	Low Battery Limp	Drive speed limit
37 Battery Sleep	Battery Sleep	Warning Only
42 Platform Left Button ON	Platform Left Button ON	Warning Only
43 Platform Right Button ON	Platform Right Button ON	Warning Only
46 Platform Enable Button ON	Platform Enable Button ON	Disable Platform Control

The following codes are retrieved from the ECU Display only.		
Display	Description	Lift Reaction
47 Joystick Not In Neutral	Joystick Not In Neutral	Drive speed limit
68 Battery Low Voltage Fault	Battery Low Voltage Fault	Disables All Motion
80 Platform Load is over 80%	Platform Load is over 80%	Warning Only
90 Platform Load is over 90%	Platform Load is over 90%	Warning Only
99 Platform Load is over 99%	Platform Load is over 99%	Warning Only
100 Machine Inclined	Machine Inclined	Disable Lifting and Driving
100 Platform Overloaded	Platform Overloaded	Disable All Motion
101 Restore Parameters to Default	Restore Parameters to Default	Warning Only
102 Battery is draining	Battery is draining	Battery is draining

List of Fault Codes (Motor Controller)		List of Fault Codes (Motor Controller)	
Display	Description	Display	Description
1037	Contactors Closed	2216	EB. Coil Open
1038	Contactors Open	2218	Sens Mot Temp KO
1060	Capacitor Charge	2220	Vkey Off Shorted
1062	TH. Protection	2223	Contactors Coil Short
1065	Motor Temperat.	2227	Current Sensor Fault
1066	Battery Low	2229	Hard Fault
1080	Forward and backward	2230	Contactors Coil Open
1153	Encoder Error	2248	No CAN Msg.
1175	Speed FB. Error	3037	Contactors Closed
1177	EB. Coil Short	3038	Contactors Open
1178	Motor Temp. Stop	3060	Capacitor Charge
1180	Overload	3062	TH. Protection
1196	Motor Phase Short	3065	Motor Temperat.
1200	Vdc Off Shorted	3066	Battery Low
1202	Vdc Link Overv.	3080	Forward and backward
1207	Motor Phase Open	3153	Encoder Error
1211	Stall Rotor	3175	Speed FB. Error
1212	Parameter Error	3177	EB. Coil Short
1216	EB. Coil Open	3178	Motor Temp. Stop
1218	Sens Mot Temp KO	3180	Overload
1220	Vkey Off Shorted	3196	Motor Phase Short
1223	Contactors Coil Short	3200	Vdc Off Shorted
1227	Current Sensor Fault	3202	Vdc Link Overv.
1229	Hard Fault	3207	Motor Phase Open
1230	Contactors Coil Open	3211	Stall Rotor
1248	No CAN Msg.	3212	Parameter Error
2037	Contactors Closed	3216	EB. Coil Open
2038	Contactors Open	3218	Sens Mot Temp KO
2060	Capacitor Charge	3220	Vkey Off Shorted
2062	TH. Protection	3223	Contactors Coil Short
2065	Motor Temperat.	3227	Current Sensor Fault
2066	Battery Low	3229	Hard Fault
2080	Forward and backward	3230	Contactors Coil Open
2153	Encoder Error	3248	No CAN Msg.
2175	Speed FB. Error	4038	Main Contactors Open
2177	EB. Coil Short	4062	TH. Protection
2178	Motor Temp. Stop	4180	Overload
2180	Overload	4202	Over Voltage Fault
2196	Motor Phase Short	4211	Stall Rotor
2200	Vdc Off Shorted	4220	Low Voltage Fault
2202	Vdc Link Overv.	4229	Hard Fault
2207	Motor Phase Open	5180	Overload
2211	Stall Rotor	5211	Stall Rotor
2212	Parameter Error		

Charger Fault code list		
Fault code	Fault Cause	Remark (Internal personnel analysis)
E01 bAt	The battery is not well connected or battery reversely connected or battery damage	The battery pack voltage is less than 3V
E02 AC	Abnormal AC Power Input (Voltage)	< 85 VAC or > 270 VAC
E03 Hot	Charger High Temperature Protection	> 95°C
E04 bAt	Battery High Temperature Protection	> 65°C
E05 Err	Output Current is too large	> (Rated current + 3) A
E06 bAt	Battery Voltage is too high	3V/Cell
E07	CAN_ID conflict	
E08	The software runs incorrectly and the pointer overflows	The curve parameter is wrong
E10	Relay closure timeout	20 minutes timeout
E11	Single battery failure	Charge for 2 hours, voltage < 2V/Cell
E91	TmainI timeout	Hoppecke battery Specific Code (Battery factory requirements)
E92	Capacity overflow error	
E93	Charging timeout	
E94	Low battery voltage	
E96	Pre-charge error	
U01	Failed to open directory	
U02	File calibration error	
U03	File does not match the machine	
U04	Comprehensive error	
U05	Need to re-flash	
U06	Indicates that the USB is locked	

Charger Warning Code List		
Warning Code	Fault Cause	Remark
INI	HP battery low voltage wait 10 minutes	Not Used
bns	BMS Control mode Battery Management Control for Lithium-ion Batteries	Check battery temperature, connections.
Het	BMS Request heating of the Lithium-ion battery	Heat Batteries before charging



# MEC Parts Order Form

Phone: 559-842-1523

Fax: 559-400-6723

Email: [Parts@mecawp.com](mailto:Parts@mecawp.com)

**Please Fill Out Completely:**

**Date:** \_\_\_\_\_

**Account:** \_\_\_\_\_

**Bill to:** \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

**Ordered By:** \_\_\_\_\_

**Your Fax No.:** \_\_\_\_\_

**Ship to:** \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

**Purchase Order Number** \_\_\_\_\_

*\*\* All orders MUST have a Purchase Order Number*

**Ship VIA** \_\_\_\_\_

*\*\*Fed Ex shipments require Fed Ex account number*

Part Number	Description	Quantity	Price

All back-ordered parts will be shipped when available via the same ship method as original order unless noted below:

\_\_\_\_\_ Ship complete order only - No Backorders

\_\_\_\_\_ Ship all available parts and contact customer on disposition of back-ordered parts

\_\_\_\_\_ Other (Please specify)

Signature \_\_\_\_\_



## Limited Owner Warranty

MEC Aerial Platform Sales Corp. warrants its equipment to the original purchaser against defects in material and/or workmanship under normal use and service for one (1) year from date of registered sale or date the unit left the factory if not registered. MEC Aerial Platform Sales Corp. further warrants the structural weldments of the main frame and scissor arms to be free from defects in material or workmanship for five (5) years from date of registered sale or date unit left the factory if not registered. Excluded from such warranty is the battery(s) which carries a ninety (90) day warranty from described purchase date. Warranty claims within such warranty period shall be limited to repair or replacement, MEC Aerial Platform Sales Corp's option, of the defective part in question and labor to perform the necessary repair or replacement based on MEC Aerial Platform Sales Corp's then current flat rate, provided the defective part in question is shipped prepaid to MEC Aerial Platform Sales Corp. and is found upon inspection by MEC Aerial Platform Sales Corp. to be defective in material and/or workmanship. MEC Aerial Platform Sales Corp. shall not be liable for any consequential, incidental or contingent damages whatsoever. Use of other than factory authorized parts; misuse, improper maintenance, or modification of the equipment voids this warranty. The foregoing warranty is exclusive and in lieu of all other warranties, express or implied. All such other warranties, including implied warranties of merchantability and of fitness for a particular purpose, are hereby excluded. No Dealer, Sales Representative, or other person purporting to act on behalf of MEC Aerial Platform Sales Corp. is authorized to alter the terms of this warranty, or in any manner assume on behalf of MEC Aerial Platform Sales Corp. any liability or obligation which exceeds MEC Aerial Platform Sales Corp's obligations under this warranty.



# MEC Aerial Work Platforms

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