Nano SP Plus

Operating and Maintenance Manual

Original Instructions

JLG POWER TOWERS

CONTENTS

INTRODUCTION

The Nano SP Plus (referred to as "the machine" in this manual) is a simple, safe and efficient self-propelled alternative to scaffold, ladder and non-powered work at height solutions, for use by 1 person, for internal or external applications.

It is suitable for any application provided it is used within its specified operating parameters. If used for hazardous applications such as shot blasting, welding, paint spraying or with any other hazardous materials, then measures must be taken to ensure it does not become damaged in any way which may impair safety or reliability. Additional protection for the operator may be required in some cases, which is the responsibility of the operator and/or the operator's employer.

The purpose of this manual is to provide essential basic information required to operate and maintain the machine.

This is not a workshop manual. Please contact the manufacturer or their agent for specific operation and maintenance information if in doubt.

The health and safety of the operator or maintenance technician is the responsibility of the individual and/or their employer and not Power Towers Ltd.

OPERATING SPECIFICATIONS

Working Dimensions

Maximum Working Height	4.50 m
Maximum Platform Height	2.50 m
Platform Dimensions	1.00 m x 0.73 m
Platform Dimensions (Extended)	2.00 m x 0.73 m
Maximum Working Footprint	2.22 m x 0.76 m
Safe Working Load	200 kg
Number Of Persons Plus Allowance	1 Person Plus 120 kg
Maximum Manual Force	200 N
Maximum Gradient For Operation	1°
Maximum Wind Force	12.5 m/s
Maximum Total Weight With Payload	750 kg
Maximum Castor Point Load	240 kg (2.35 kN)
Maximum Wheel Force	240 kg (2.35 kN)
Maximum Drive Speed	1.40 m/s (5.04 kph)
Slow Drive Speed	0.30 m/s (1.08 kph)
Elevated Drive Speed	0.24 m/s (0.86 kph)
Sound Pressure Level	Less than 70 dBA

Closed Dimensions

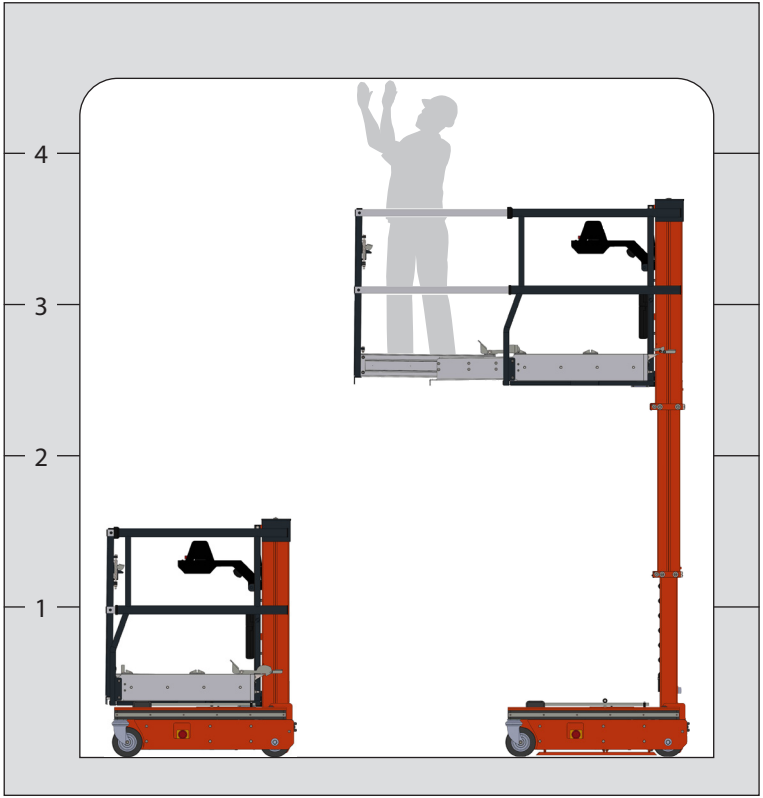
Length	1.25 m
Width	0.75 m
Height	1.59 m
Weight	550 kg

Power Source

24 V DC Electric Motor

Battery Charger Specification

Input Voltage	110-130 V AC or 180-265 V AC
Frequency	45-65 Hz
Output	24 V DC, 8A



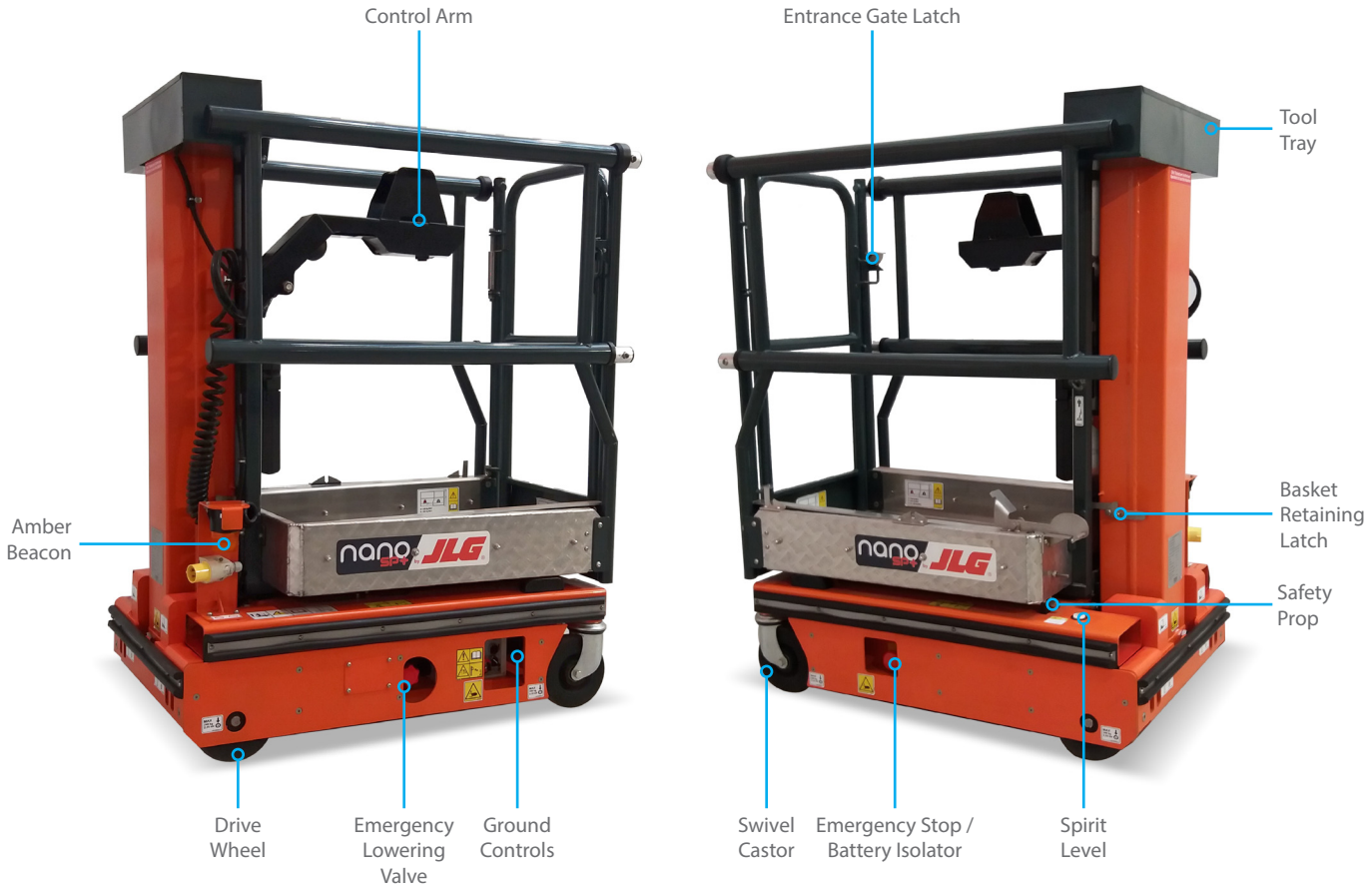
DO'S

1. Read and adhere to the instructions on the machine and in the Instruction Guide and Operator Manual.
2. Ensure pre-operation checks and operations are carried out in the manner described.
3. Use only on hard, level surfaces able to support the weight of the machine (e.g. concrete floor, tiled floor, hard wood floor).
4. Ensure operator is fit and does not suffer from fear of heights.
5. Ensure guardrail gate is closed and latched before elevation. Only enter and exit the platform through the gate.
6. Ensure work area around the machine is cordoned off from pedestrians and other traffic. Ensure non-operating persons are at least 1.8m (6') away from the machine.
7. Ensure the correct safety equipment is worn by the operator and ground persons during operation. Ensure loose fitting clothing or long hair is secured and will not become entangled in equipment.
8. Ensure the Basket is correctly positioned so as not to come into contact with fixed or moving objects.
9. Ensure the machine is always driven in a safe and sensible manner. Do not drive on a public highway.
10. Ensure to be careful not to collide with objects when driving the machine.
11. Ensure that the safe working load is evenly distributed in the basket.
12. Always ensure your body and limbs are within the guardrail when elevating.
13. Avoid contact with fixed objects (walls, buildings, etc) and moving objects (cranes, vehicles, etc).
14. Before operation, check the work area for overhead hazards and other potential obstructions.

DON'TS

1. Never exceed the safe working load 200kg (1 person plus tools).
2. Never use in wind speeds in excess of 12.5m/s.
3. Never use the machine on sloping or uneven ground.
4. Never use the machine as a goods lift or crane.
5. Never exceed horizontal forces (maximum horizontal force 200N), and never work in a way to create a swaying motion of the platform.
6. Never drive the machine near holes in the floor (or edge of concrete slab, manholes, drains etc).
7. Never use in the vicinity of live conductors. This machine is not insulated.
8. Never extend the height or reach of the work platform by using boxes, steps, ladders.
9. Never modify the machine in any way without the full approval of the manufacturer.
10. When used outdoors never attach signs or boards or any object which might increase the wind force to the machine and affect stability.
11. Never exit or enter the work platform other than when it is in the transport position and only via the access gate.
12. Never use the machine in an explosive or hazardous environment. This machine is not approved for hazardous environments.
13. Never use the machine if you are fatigued.
14. Never use the machine inappropriately or for 'horseplay.'
15. Never use the machine if under the influence of drugs or alcohol.
16. Never use the machine if suffering from poor health or using medication which might impair the safe operation of the machine.
17. Never use the machine if vision is impaired by bright lighting.
18. Never push the machine on sloping surfaces without the use of a safe method.
19. Never push or pull objects with the platform.
20. Never attach loads such as boards or pipes outside the guardrails unless authorised to do so by the manufacturer. Never carry materials directly on platform guard rails unless approved by Power Towers Ltd.
21. Never use a malfunctioning machine.

PRIMARY COMPONENT LOCATIONS



OPERATING PROCEDURES

It is the owners and/or the users responsibility to ensure that the machine is maintained and operated in accordance with the operation and maintenance procedures contained within this manual.

It is essential to be familiar with the correct operating procedures.

The operator must have adequate training for this type of platform.

While no special Personal Protective Equipment (PPE) is required to operate the machine, the operator should wear PPE appropriate for the working environment.

If, after conducting a risk assessment a safety harness is required, then a 'fall restraint' type harness should be worn, with a very short lanyard that is attached to the harness point on the platform.

Operating procedures are divided into three key areas:

1. Pre-operation checks.
   What to do before operating the machine.

2. Normal operation.
   How to use the machine safely.

3. Emergency operation.
   How to lower the machine without power or in the event of operator incapacity.

PRE-OPERATION CHECKS

1. Visually inspect the machine for any signs of damage to handrails, platform, lifting structure, chassis, pothole mechanism, hydraulic pipes, cables, castors and fixed wheels.
2. Check spirit level is intact and bubble is visible.
3. Check gate closes when released.
4. Check all hydraulic connections are secure and there are no oil leaks. Ensure hydraulic oil is at correct level. Do not over fill.
5. Check castor wheels and castor fixings.
6. Check ground conditions are suitable. Ground must be hard and level.
7. Check the area around the machine is cordoned off from pedestrians and other traffic. Check the area is free of debris, tools and equipment.
8. Ensure the battery isolator and emergency stop buttons are released.
9. Ensure the battery is fully charged, referring to the joystick LED (green = charged).
10. Check emergency stops and emergency lowering works correctly.
11. Check pothole mechanism works correctly.
12. Check platform extension works correctly.
13. Check drive and steer functions work correctly by selecting slow speed in closed position first, followed by fast speed. Check automatic elevated drive speed is engaged by elevating 0.5m. Then select drive; the joystick right-hand mode light (orange or green) should be flashing and drive speed should be slightly slower than slow closed speed. Check machine brakes when joystick is released.
14. Check castor locks work correctly.

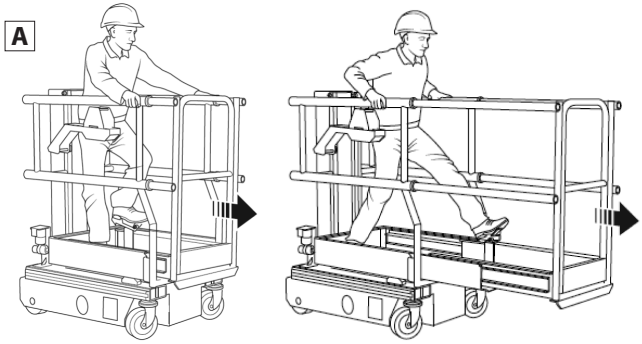
PLATFORM OPERATION

This machine is fitted with a double extension cantilever platform, which combines very compact closed dimensions with a large extended platform work area. This has been achieved with a unique telescopic slide mechanism and a variable payload system, whereby the load capacity of the platform is automatically limited towards the entrance gate end of the platform.

The platform extension is achieved with two extending floor sections with rollers running in specially manufactured channels. The guard rail tubes are telescopic.

To extend the platform **(A)** from the closed transport position, depress the foot pedal lock with your left foot and push the tray forward, initially by hand but then with your foot against the pedal, until fully extended.

To retract the platform **(B)**, release the foot pedal lock with your left foot and pull the gate towards you via the top telescopic handrails. When you can comfortably reach the gate top rail from the rear of the platform, pull the top rail of the gate until the platform is fully retracted and the foot pedal hooks into the stowage tab.

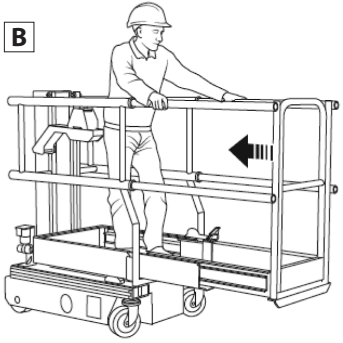


When extending or retracting the platform, do not stand on the moving floor elements. Additionally, do not extend or retract the platform with any more than a maximum of 20kgs on the moving floor elements.

To ensure the maximum reliability of the sliding elements it is essential to keep them clean and free from debris.

The machine is rated to carry a load of 120kg at the gate end of the platform, which progressively increases to 200kg toward the mast end of the platform.

The platform variable payload system allows the operator to carry 200kg over approximately 3/4 of the platform area. However, as this load is moved toward the entrance gate, the load sensing system will prevent the operation of the machine, sounding a warning alarm and flashing red LED at the platform. The load sensing system will also detect movement inertia so it is preferable to keep the payload toward the mast end of the platform.



Any payload should always be distributed as evenly over the platform area as possible.

When extending the platform ensure the platform area into which the platform is extending is free from obstructions or moving objects so that no harm or injury can be inflicted on the operator or anybody else.

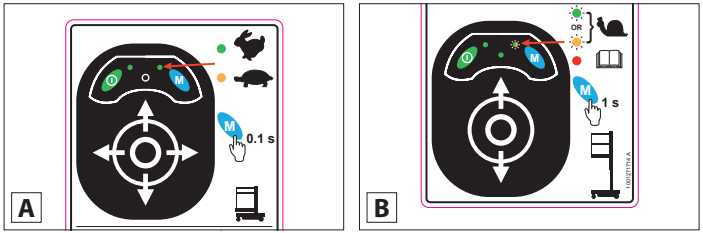
NORMAL OPERATION

Only use the machine on hard level surfaces.
Ensure a person is available at ground level to assist in case of emergency.

1. Check spirit level to ensure machine is level.
2. Release the emergency stop / battery isolator at the side of the chassis.
3. Turn the ignition key in the ground emergency stop button and release. The power light will illuminate.
4. Select platform on the ground control panel.
5. Enter the basket via the gate and ensure the gate is closed and latched.
6. The ideal position to operate the machine is to stand facing the gate with your back against the mast.
7. Press the green button on the joystick controller to switch it on.
8. Select function by pressing the blue button on the joystick controller. Press and immediately release to select drive speed. The right hand LED will illuminate (green = fast, orange = slow) **(A)**. Press and hold for 1 second to select lift function. The centre LED will illuminate **(B)**.

When drive is selected, move the joystick forwards, backwards, left and right to move the machine. Drive speed is variable depending on how far the joystick is moved. To stop the machine, release the joystick. Take particular care when driving in fast speed with cantilever deck is extended as quick turns may be awkward to control in confined areas. Always select slow speed when driving in congested and confined areas.

When lift function is selected, move the joystick forwards (towards gate) to elevate and backwards to descend. Always check for overhead obstructions, and ensure your body and limbs are within the platform, when elevating.



BATTERY CHARGING (110V or 230V IP65 CHARGER)

The battery charger is located under the checkerplate cover **(A)**.

The charging point is located at the rear of the machine **(B)**, and is fitted with either a 110V or 230V plug, depending on which charger is fitted.

The battery charging LEDs are visible on the side of the charger **(C)**.

Ensure the battery isolator is switched off when charging.

1. Check battery fluid levels.
2. Only charge in a well ventilated area.
   Note: points 1 and 2 only applicable to Lead Acid Batteries.
3. Connect charging plug to power supply.
4. The "Test" LED will illuminate **(C, circled)**. If flashing a fault is indicated. Disconnect and reconnect to the power supply. If flashing continues, seek technical support.
5. The LEDs will illuminate in sequence. When "Storage" LED is illuminated the charge is complete.
6. Disconnect from the power supply.

Charge status is also indicated by the colour of the LED adjacent to the green button on the joystick controller. Red indicates that the machine is not charged, Amber indicates that the machine has a partial charge, and Green indicates the machine is fully charged **(D, circled)**.

The battery charger can be connected to the mains supply at any time or left for extended periods. The machine can be operated when the charger is connected, although this is not recommended. All power supplies should be protected with a suitable Residual Current Device (RCD).

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EMERGENCY OPERATION

In the event of an emergency:

To stop the platform moving

1. Press the emergency stop button located on the platform controls **(A, circled)** or machine chassis **(B, circled)**.
2. Twist button to release.

In the event of operator incapacity or complete power failure:

To lower the platform using emergency lowering valve

1. Locate the emergency lowering handle at the side of the machine **(C, circled)**.
2. Pull the handle to lower the platform.
3. Keep clear of the descending structure.
4. Release the handle at any time to stop the descent.

In the event of tilt alarm activation:

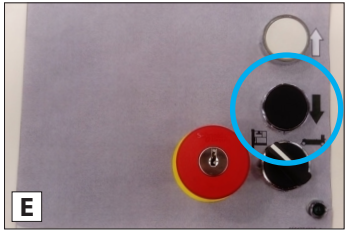
To lower the platform using platform or ground controls

1. The tilt alarm will deactivate the control joystick and operate a red warning light and alarm on the platform controls.
2. Check the area below the platform is clear of obstructions.
3. Press the black button on the platform **(D, circled)** or ground controls **(E, circled)** to descend.
4. Release the button at any time to stop the descent.

In the event of load sensing or pot hole alarm activation:

To lower the platform using emergency lowering valve

1. The red warning light and alarm will activate, and all platform controls and ground controls will be deactivated.
2. Remove the load.
3. Locate the emergency lowering handle at the side of the machine.
4. Pull the handle to lower the platform.
5. Keep clear of the descending structure.
6. Release the handle at any time to stop the descent.



Please note that whilst the machine is extremely simple to maintain, all work must be carried out by a competent person.

DAILY MAINTENANCE

Before removing the chassis covers, first ensure the machine is in the fully lowered (transport) position, then switch off by depressing the emergency stop/battery isolator button located on the chassis.

Use appropriate safety and personal protective equipment where necessary.

Tilt cage by releasing two basket retaining latches on cage mount. Pull and lift cage frame from gate end and cage will lift and tilt assisted by two gas struts. Ensure that the gas struts are fully extended and safety prop, located on the chassis, is in place before working under the raised cage **(A)**.

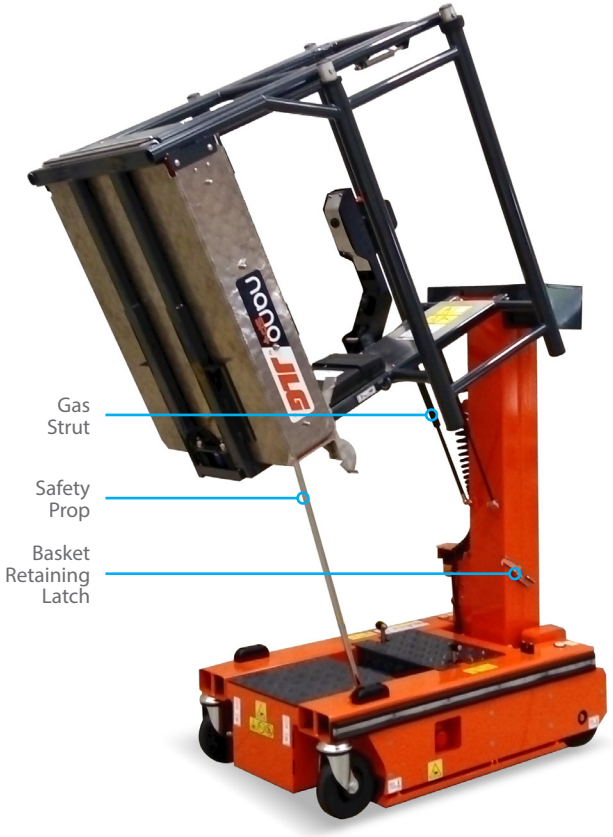
Unscrew the black retaining knobs and lift out the chassis covers.

1. Check Battery Electrolyte Level (Lead Acid batteries only). Remove battery cover and battery caps. Ensure the electrolyte covers the plates by approximately 1 – 2mm. Replenish with distilled water to this level, only if the electrolytic level is below the top of the plates.
2. Check Hydraulic Oil Level.
   Ensure the tank is not overfilled. The level must only be checked when the machine is in the transport position. The correct level in this position is approximately 3/4 from the base of the tank.
3. Ensure there is no obvious mechanical damage to the handrails, gate, lifting structure or chassis.
4. Check the castors and wheels are undamaged, rotate freely and fixings are secure.
5. Check hydraulic connections around the pump and base of cylinder are secure and undamaged.
6. Check battery terminal connections are tight.
7. Check spirit level is undamaged and bubble is visible.
8. Check all functions operate correctly including movement alarm and emergency stops.
9. Ensure mast surfaces are clean and not greased.

WEEKLY MAINTENANCE

1. Check fixings are secure on wheels, castors, cage pivot, platform tray and cantilever deck stops.
2. Check battery terminal connections are tight.
3. Check mast rollers and mast surfaces for damage or ingrained debris and check brushes brush against the mast.
4. Check main control cable is not damaged and is held at each end with a cable clip.
5. Check that the cantilever deck slides and operates smoothly, the stop pads prevent it extending too far and all fixings are secure.

When replacing components for any reason, only use OEM specification parts, either supplied from the manufacturer or authorised in writing by the manufacturer. Warranties and design approvals will be void if alternative components are fitted.
It is essential to obtain manufacturer's approval of any alteration which might affect stability, strength or performance, in writing before proceeding.



HYDRAULIC OIL

Ensure the machine is in the fully lowered position before undertaking any maintenance work on the hydraulic system.

The hydraulic oil must be replaced on an annual basis. If the oil is not replaced, then premature wear and failure of components will occur.

The oil must only be changed when the machine is in the transport position.

Remove the filler cap and use a suitable hydraulic oil syphon to syphon the oil from the tank.

Refill the tank with grade 32 mineral oil.

WHEELS AND CASTORS

It is essential that the drive wheels and castors are maintained in good condition at all times.

Check all wheels are free from damage and tyre wear.

Check both drive wheels turn freely and are not rubbing on the chassis side panels. Check the drive wheel fixings are tight. Check drive wheel axle circlips are present.

Check castors swivel freely. Check castor fixings are tight.

MAST MAINTENANCE

The mast sections run on maintenance free rollers, and on the outer mast surface where the roller runs, a brush is fitted to keep the mast surface clean, preventing debris from collecting on the roller. In addition to these rollers, there are six external plastic screws fitted, which act to hold the mast sections together in torsion. These screws are fitted with M24 lock nuts and can easily be identified at the lower end of the mast sections. Inside the mast there are additional wear pads and rollers, which can be accessed from the top of the mast. These items are not adjustable, and it is very unlikely that any wear will occur.

The mast is raised and lowered with a multistage hydraulic piston, which raises the outer mast section first, followed by the middle mast section. When the mast is lowered, the sections close in the reverse sequence i.e. the middle section and outer section close together until the bottom of the middle section contacts the lower rest buffers, and the outer section continues to close over the middle section. It is essential the mast closes in this sequence.

To ensure the mast sections move in the correct sequence, and do not bind, ensure the wear screws are not over tightened as follows: Ensure the gap between the overlapping mast section and the inner mast section is even on both sides. The distance is approximately 12mm, but may vary slightly due to manufacturing tolerances.

Loosen the wear screw lock nut and turn the screw until it just contacts the inner mast surface. Do not force the screw. Tighten the locknut using caution not to shear the screw thread. Raise and lower the mast to check it does not bind.

In practice, it is far more likely that the screws may wear so an excessive gap between the mast section and the wear screw develops. This will be evident by free sideways movement of the basket. If this free movement is thought to be excessive, check the gap between the screw and the mast with a feeler gauge. The correct gap should be no more than 0.2mm, although the mast is serviceable with a gap up to 0.5mm.

Mast wear screw adjustment

TILT SWITCH CHECK

Elevate platform a small distance and drive machine down or up a gentle slope of around 3 degrees. Machine should stop travelling and sound alarm.

To check the correct operation of the tilt switch raise the platform from the transport position a small distance (e.g. 50mm) on truly level ground. Position a suitable lever under one side of the platform and raise this side of the machine from the ground. The tilt switch should operate when the drive wheel is approximately 25 - 30mm from the ground. This should really be repeated from both sides of the machine to compensate for out of level ground. i.e. you might have 20mm one side and 40mm the other side.

When the platform is in the transport position i.e. fully closed, the alarm and cut out should not operate when the above test is repeated. If the cut out and alarm does operate when in the transport position then it is most likely the limit switch is not adjusted correctly or is faulty.

The limit switch and wiring are installed so that in a failure mode condition the system will operate in the safe condition only i.e. tilt switch operates and cuts out lift when out of level tolerance exceeded.

PLATFORM LOAD SENSING CHECK

With the platform in the retracted position, place 200kgs in the platform. Elevate the platform from the ground controls so the platform floor is approximately 2.0m from the ground. The addition of a small extra load should operate the alarm (there is a small delay from switching to alarm sounding), up to a maximum of 40 kgs additional load when the payload is placed towards the rear of the platform.

Note: it is only possible to lift up to 120kgs if the load is placed at the gate end of the platform.

MAINTENANCE FREQUENCY SUMMARY

The machine must have a thorough examination by a competent person at six monthly intervals.

MAINTENANCE FREQUENCY TABLE				
Item	Daily	Monthly	6 Months	12 Months
Battery And Connections	●			
Hydraulic Oil Level	●			
Visual Inspection	●			
Castors And Drive Wheels	●			
Spirit Level	●			
High/Low Drive Speed	●			
Tilt Switches	●			
Mast And Rollers		●		
Motor Gearboxes		●		
Cantilever Platform		●		
Thorough Examination			●	
Change Hydraulic Oil				●

THOROUGH EXAMINATION must include checking:

All electrical connections, including battery.
All hydraulic connections and cylinder for leaks.
All connections to powerpack are secure.
Condition of control levers and switches.
Condition of handrails.
Condition and operation of gate and gate latch.
Condition and operation of extending platform.
Condition of lifting structure and chassis.
Condition of swivel castors.
Condition of motor gearboxes and drive wheels.
Condition of spirit level.
Condition of component and battery covers.
Condition of all labelling.
Carry out a full operation check and load test.
Carry out an overload test.

TRANSPORTATION

The machine must always be transported in the upright position. Do not lay the machine flat.

The machine can be loaded onto a transport vehicle via a forklift, tail-lift, or ramp and winch. Ensure the transport vehicle is parked on a level surface. Never drive the machine up a ramp greater than 5 degrees.

If using a forklift to transport the machine, adjust the width of the forklift tines to fit the machine's forklift pockets, then fully slide in the tines and lift machine.

If using a ramp and winch, connect the winch to the machine, then walk alongside the machine to control the drive function and winch from this position.

If tying down the machine using straps or chains, th eplatform must be fully lowered to the stowed position with the machine securely tied down to the truck or trailer deck.

Never place a strap through the platform or handrails., which may result in machine damage. Do not use escessive force when tightening straps or chains.

STORAGE

If the machine is to be stored for more than one month, the following precautions should be taken.

Ideally, the battery charger should be switched on. The charger has an inbuilt maintenance mode, and will maintain the battery in good condition indefinitely. If a Lead-Acid battery is fitted then the electrolyte level must still be checked periodically (not required if an AGM battery is fitted). If this is not practical, then the charger should be switched on once a week for 30 minutes. This is especially important in cold conditions.

The hydraulic oil must be replaced (recommended after 3 months of non-use).

If the storage period is for an undetermined period then it is advisable that the battery is removed and stored in a secure battery storage container, and all external electrical and hydraulic connections are wax coated to prevent corrosion.

Upon removal from storage and prior to returning to use, check that the machine inspection certificate is current, in accordance with the requirements of the local authorities. Ensure that the pre-operation checks are carried out thoroughly.

WARRANTY

Your Nano SP Plus (The Machine) is covered by a parts and components warranty as stated in the purchase terms and conditions (excluding battery and battery charger).

The Manufacturer, Power Towers Ltd (The Company), undertakes to replace or repair, free of charge, any defective part or component which the company considers to be due to faulty workmanship or material, within the warranty period, except for:

Defects arising from neglect, misuse or unauthorised modifications.

Damage caused by abuse, misuse, dropping or other similar damage caused by or as a result of failure to follow transportation, storage, installation, loading or operation instructions.

Alterations, additions or repairs carried out by persons other than the Manufacturer or their recognised distributors.

Transportation or shipment costs to and from the Manufacturer or their recognised agents, for repair or assessment against a warranty claim, on any machine or component.

Materials and/or labour costs to renew, repair or replace components due to fair wear and tear.

Faults arising from the use of non-standard or additional parts, or any consequential damage or wear caused by the fitting or use of such parts.

IMPORTANT

Warranty may at the sole discretion of the manufacturer, be voided if the scheduled service/inspections are not carried out in accordance with this manual.

The Manufacturer and/or their recognised agents, directors, employees or insurers will not be held liable for consequential or other damages, losses or expenses in connection with or by reason of or the inability to use the machine for any purpose.

MODIFICATIONS

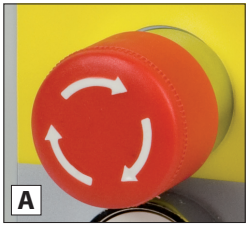
If additional equipment or any third party work, modifications or alterations are to be carried out on the machine which will involve any welding, drilling or any form of cutting or distortion of materials, full written approval must be obtained from the Manufacturer prior to the work being carried out.

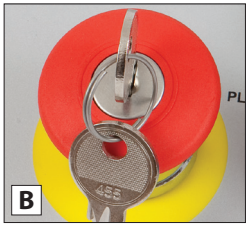
OPTIONS AND ACCESSORIES

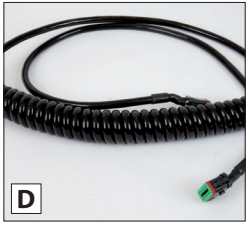
For further information regarding options and accessories available for the Nano SP Plus, please contact the Manufacturer.

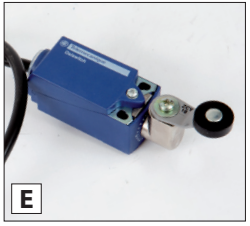
	ELECTRICAL PARTS	Part No.
A	Emergency Stop Button	PTE003
B	Emergency Stop Key Switch	PTNSPE614
C	Joystick Controller	PTNSPE601
D	Coiled Cable	1001269254
E	Elevated Drive Speed Limit Switch	PTNSPE650
F	Tilt Alarm Override Switch	PTNSPE649
G	Load Sensing Limit Switch	PTNSPE648
H	Tilt Alarm Module	PTNSPE603
I	Ground Controls And Tilt Switch	1001269252
J	Selector Switch	PTNSPE643
K	Amber Beacon	PTNSPE612
L	110V Surface Mount Plug	PTNSPE645
*	Black Push Button	PTE007
*	White Push Button	PTE006
*	Red LED	PTNSPE626

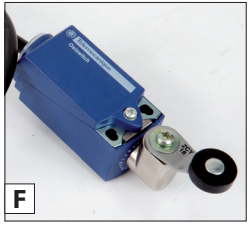
* Item not shown here

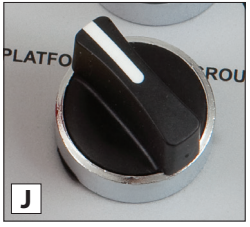


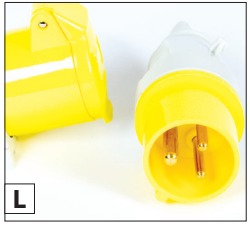






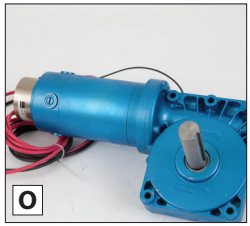






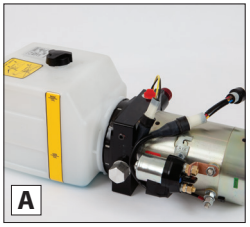
ELECTRICAL PARTS		Part No.
M	Emergency Stop Battery Isolator	PTNSPE621
N	Electronic Control Unit (ECU)	PTNSPE602
O	Drive Motor / Gearbox Left Side	PTNSPE616L
*	Drive Motor / Gearbox Right Side	PTNSPE616R
*	Battery Charger 24/8 180-265V IP65	PTNSPE630E
*	Battery Charger 24/8 110-130V IP65	PTNSPE630U
*	AGM Battery 12V	1001277683

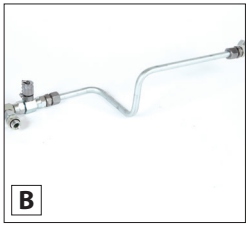
* Item not shown here

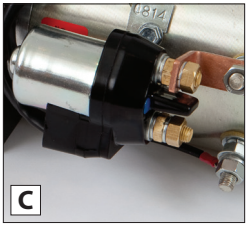


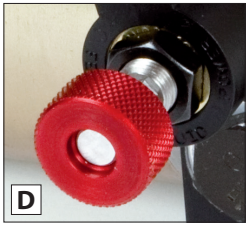
HYDRAULIC PARTS		Part No.
A	Powerpack	PTNSPH551
B	Hydraulic Pipe	1001283874
C	Start Solenoid	PTNH252
D	24V Powerpack Solenoid With Valve	1001268978
*	Powerpack Valve Cartridge	PTNH256
*	Cylinder	PTNSPH560
*	Cylinder Seal Kit	PTNH277
*	Male Stud With Built In Seal	1001283541
*	Male Stud With Restricted Orifice	1001283875

* Item not shown here



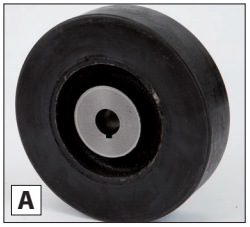


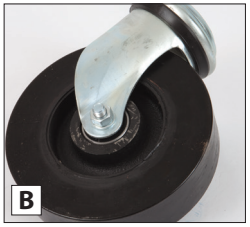


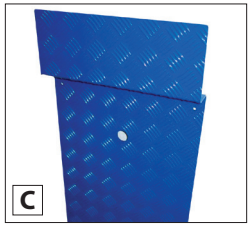


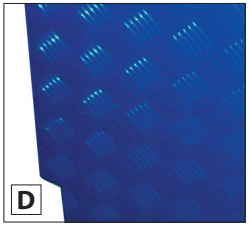
	MECHANICAL PARTS	Part No.
A	Drive Wheel	PTNSPM500
B	Swivel Castor	PTNSPM501
C	Battery Cover Plate	PTNSPM521
D	ECU Cover Plate	PTNSPM522
E	Fixed Frame Assembly	PTNSP2M801
*	Gate Frame	PTNSP2M822
*	Sliding Handrail	1001278680
*	Sliding Handrail With Collar	1001278681
F	Gate	PTNSP2M804
G	Fixed Tray	PTNSP2M805
H	Sliding Tray	PTNSP2M807
I	Middle Tray	PTNSP2M806
*	Fixed Tray Channel	PTNSP2M809
*	Middle Tray Inner Left Roller Axle Plate	1001267848
*	Middle Tray Inner Right Roller Axle Plate	1001267849
*	Middle Tray Outer Left Roller Axle Plate	1001267850
*	Middle Tray Outer Right Roller Axle Plate	1001267851

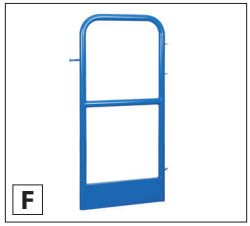
* Item not shown here

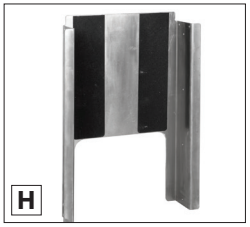


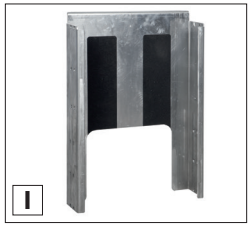




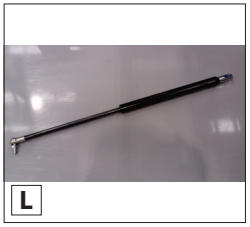


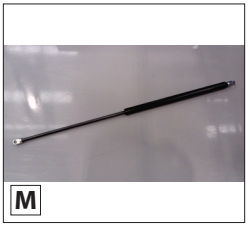


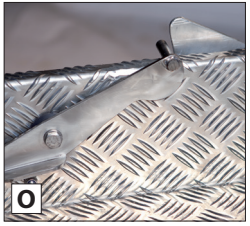


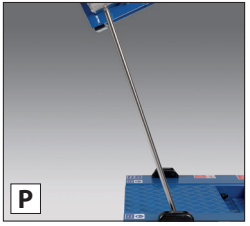


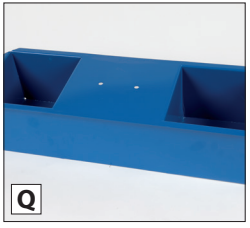
MECHANICAL PARTS		Part No.
K	Control Arm (Fabrication Only)	1001268391
L	Gas Strut Large	PTNSPM520
M	Gas Strut Small	1001291880
N	Gas Strut Control Arm	PTNSPM519
O	Catch Pedal	PTNSP2M823
P	Basket Safety Prop	PTNSPM529
Q	Tool Tray	PTNSPM505



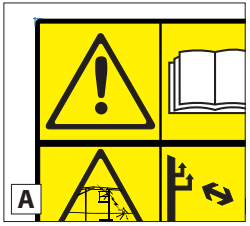


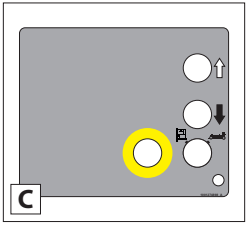


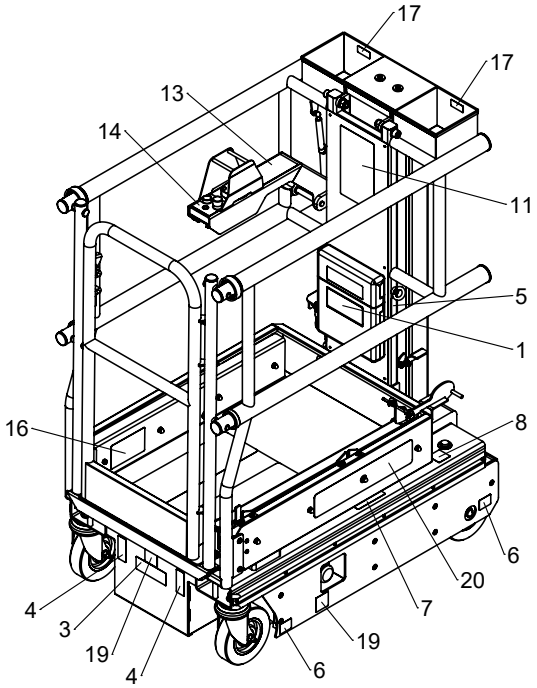




MISCELLANEOUS PARTS		Part No.
A	Decal Sheet	1001287529
B	Logo	PTNSP2M900
C	Ground Controls Decal	1001274898



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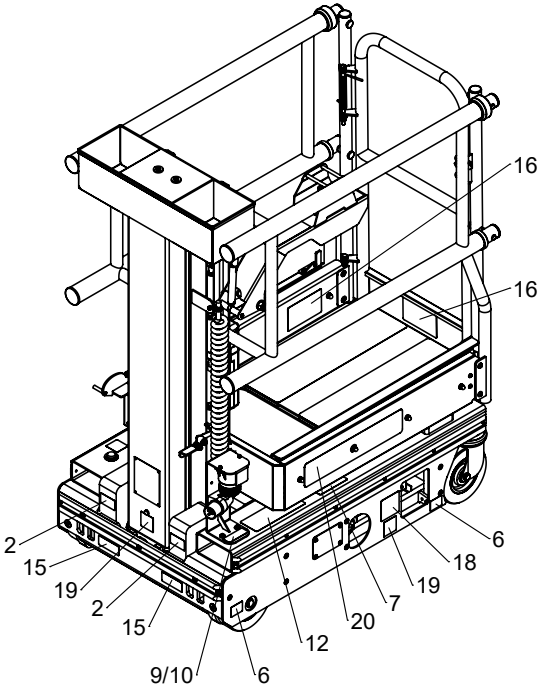
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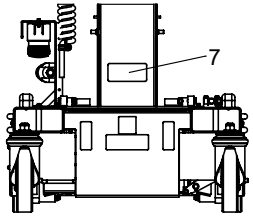
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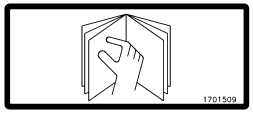
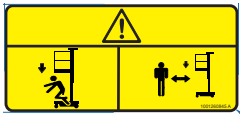
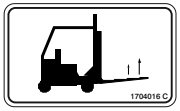
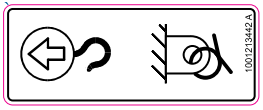
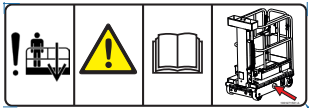
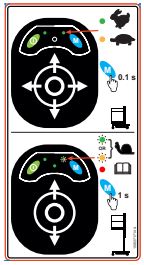
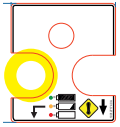
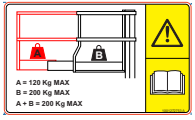
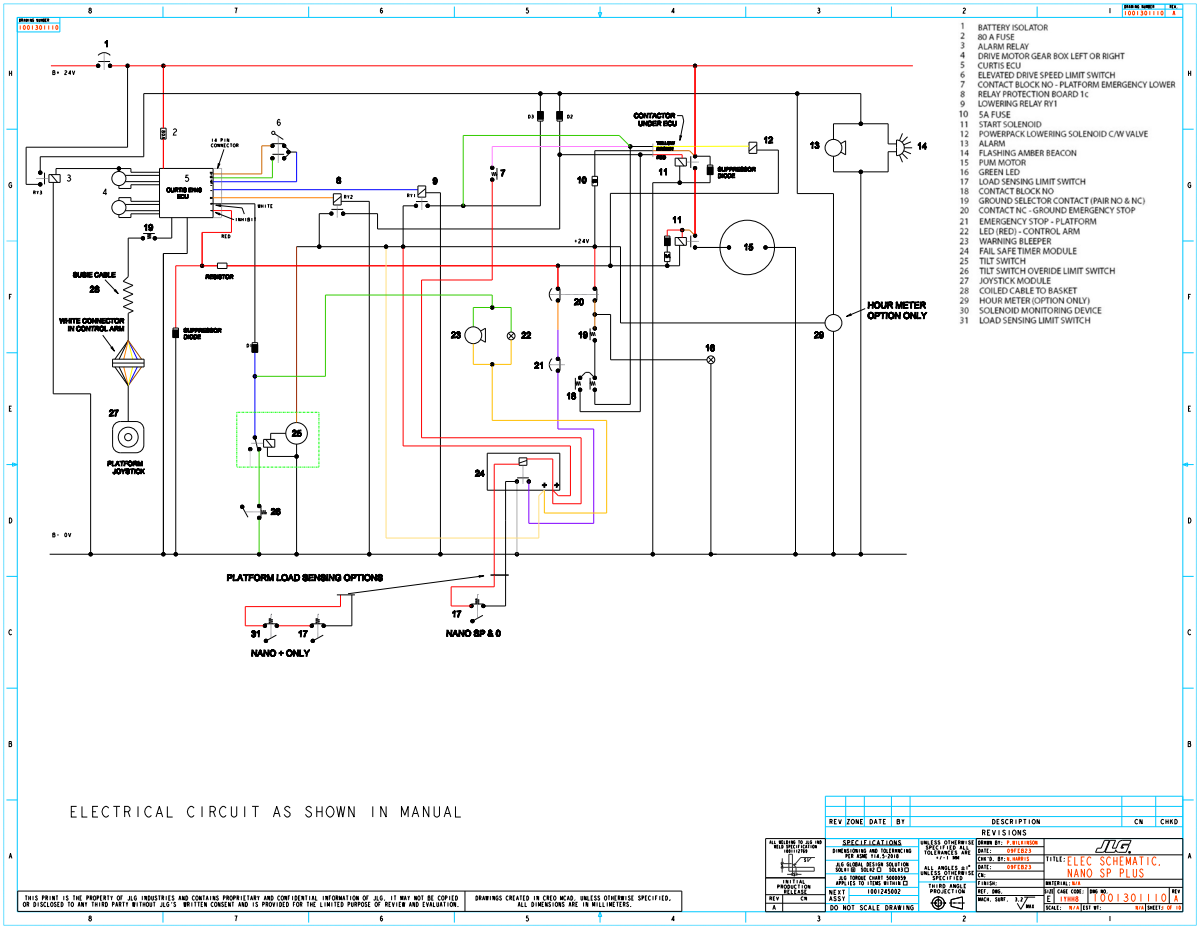
1		1701509 Manual	7		1001260845 Crushing
2		1704016 Fork Lift	8		1001261089 Spirit Level
3		1705670 Fire Hazard	9		1001267015 Electrical Warning
4		1001213442 Lift And Tie Down	10		1001267016 Electrical Warning
5		1001260837 Lanyard Attach	11		1001271165 Electrical Warning
6		1001260839 Wheel Load			

12		1001271501 Manual Descent	17		1001272770 Max Tray Load
13		1001271714 Controller Bottom Half	18		1001273344 Electrical Warning
			19		1001273897 Crush Hazard
14		1001271740 Controller Top Half	20		PTNSP2M900 Nano SP Plus Logo (Pair)
15		1001272107 Lift And Tie Down			
16		1001272753 Platform Load			



ELECTRICAL CIRCUIT AS SHOWN IN MANUAL

REVISIONS

REV	ZONE	DATE	BY	DESCRIPTION	CN	CHKD

SPECIFICATIONS

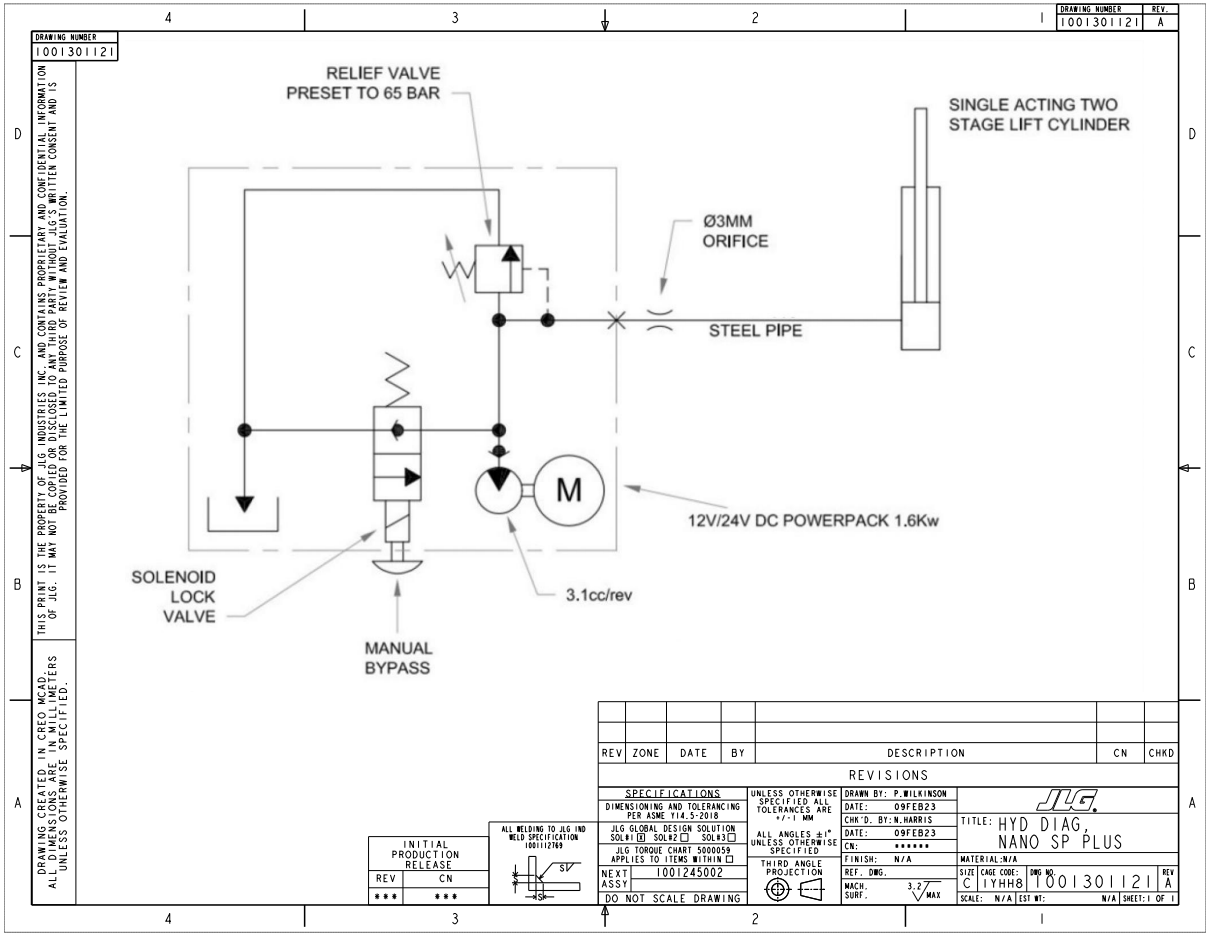
DRAWN BY: P.BILLINSON
DATE: 09FEB23
CHK'D. BY: S.HARRIS
DATE: 09FEB23
CN:
FINISH:
MATERIAL: N/A
REF. DWG.
MACH. SURF. 3.2 MAX
NEXT ASSY 1001245002
DO NOT SCALE DRAWING

JLG

TITLE: ELEC SCHEMATIC, NANO SP PLUS

SIZE: E | CAGE CODE: 11988 | DWG NO. 1001301110 | REV A
SCALE: N/A | WEIGHT: N/A | SHEET: 1 OF 1

DRAWINGS CREATED IN CREO MCAD. UNLESS OTHERWISE SPECIFIED, ALL DIMENSIONS ARE IN MILLIMETERS.


DRAWING NUMBER
1001301121
REV.
A
RELIEF VALVE
PRESET TO 65 BAR
SINGLE ACTING TWO
STAGE LIFT CYLINDER
Ø3MM
ORIFICE
STEEL PIPE
M
12V/24V DC POWERPACK 1.6Kw
3.1cc/rev
SOLENOID
LOCK
VALVE
MANUAL
BYPASS
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DRAWING CREATED IN CREO MCAD.
ALL DIMENSIONS ARE IN MILLIMETERS
UNLESS OTHERWISE SPECIFIED.
REV ZONE DATE BY DESCRIPTION CN CHKD
REVISIONS
SPECIFICATIONS
DIMENSIONING AND TOLERANCING PER ASME Y14.5-2018
JLG GLOBAL DESIGN SOLUTION SOL#1 SOL#2 SOL#3
JLG TORQUE CHART 5000059 APPLIES TO ITEMS WITHIN
NEXT ASSY 1001245002
DO NOT SCALE DRAWING
UNLESS OTHERWISE SPECIFIED ALL TOLERANCES ARE +/-1 MM
ALL ANGLES ±1° UNLESS OTHERWISE SPECIFIED
THIRD ANGLE PROJECTION
DRAWN BY: P.WILKINSON
DATE: 09FEB23
CHK'D. BY:N.HARRIS
DATE: 09FEB23
CN: ******
FINISH: N/A
REF. DWG.
MACH. SURF. 3.2 MAX
JLG
TITLE: HYD DIAG, NANO SP PLUS
MATERIAL:N/A
SIZE C CAGE CODE: 1YHH8 DWG NO. 1001301121 REV A
SCALE: N/A EST WT: N/A SHEET: 1 OF 1
INITIAL PRODUCTION RELEASE
REV CN
*** ***
ALL WELDING TO JLG IND WELD SPECIFICATION 1001127169
SV
SK

EC DECLARATION OF CONFORMITY

Manufacturer:	**Power Towers Ltd.**	Technical File:	**JLG EMEA B.V.**
Address:	**Unit 3 Leicester Distribution Park Sunningdale Rd. Leicester LE3 1UX**		**Polarisavenue 63, 2132 JH Hoofddorp The Netherlands**
Contact:	**Phillip Godding**	Position:	**Senior Manager - Product Safety& Reliability**
Machine Type:	**Mobile Elevating Work Platform**		
Model Type:	**Nano SP Plus**		
Serial Number:			
Notified Body:	**SGS Fimko Ltd**		
Identification Number	**0598**		
Address:	**Takomotie 8 00380 Helsinki Finland**		
Certificate Number:	**MD-431**		
Reference Standards:	**EN 280:2013+ A1:2015,**		

JLG Power Towers. hereby declares that the above mentioned product conforms with the requirements of:
2006/42/EC **Machinery Directive**

Signed: _____ Date: _____
Name: Phillip Godding Position: Senior Manager - Product Safety
Place: Hoofddorp, The Netherlands

Remark:
This declaration conforms with the requirements of annex II-A of the council directive 2006/42/EC
Any modification to the above described machine violates the validity of this declaration
The above machine fulfils all relevant provisions of directive 2006/42/EC and conformity with standard: EN 280: 2013+A1:2015 .The machine has been load tested to 125% safe working load in accordance with EN 280: 2013+A1:2015 clauses 6.1.4.2.3.3, 6.1.4.3 and 6.1.4.5

UKCA Certification And Marking

This machine is utilising the UK Department for Business, Energy and Industrial Strategy guidance regarding UKCA marking and certification published on the 14th November 2022, thus allowing the machine to be placed on the UK market with a CE marking and certification until the 31st December 2024.

Description	Work Carried Out	Date

Description	Work Carried Out	Date

Description	Work Carried Out	Date

Description	Work Carried Out	Date

Power Towers Ltd
Unit 3
Leicester Distribution Park
Sunningdale Road
Leicester
LE3 1UX
United Kingdom
Tel: +44 (0) 116 200 1757
www.powertowers.com