



Working Dimensions

Maximum working height: 4.50 m
Maximum platform height: 2.50 m
Platform dimensions: 1.00 m x 0.73 m
Working footprint: 1.19 m x 0.75 m
Safe working load: 200 kg (1 person plus tools)
Maximum manual force: 200 N
Max. gradient for operation: 0°
Max. wind force: Indoor use 0 mph
Manual push force on level ground: 9 kg
Maximum total weight inc payload: 485 kg
Maximum castor point load: 180 kgs (1.77 kN)
Max. wheel force: 1.75 kN

Closed Dimensions

Length: 1.195 m
Width: 0.750 m
Height: 1.560 m
Weight: 285 kg

Power Source

Standard 12v DC Electric Motor
Or 240V AC Electric Motor 13A Supply
Or 110V AC Electric Motor 16A Supply

Battery Charger Specification

Input Voltage:
If single voltage: 90-135V AC (UK)
180-265V AC (non-UK)
If dual voltage: 90-265V AC
Frequency: 45-65 Hz
Output: 12V DC, 7A
Power sound level: Less than 70dB

nano

Content

Page

3 – 4	Battery Maintenance
5	Battery Charging Fault
6	Checking for Oil Leaks
7	How to Change the Oil in the Hydraulic System
8	Adjusting the Wear Screws (Mast Section)
9	Castor and Wheel Maintenance
10	Replacement of Castor Wheel
11	Gate Latch Adjustment
12 – 13	Removing or Replacing the Hydraulic Pipe
14 – 15	Remove or Replace the Emergency Lowering Valve
16 – 18	Removing or Replacing the Lift Cylinder
19 – 20	Removal and Assembly of the Telescopic Mast

Battery Maintenance

Please ensure, the unit is isolated and you use the correct PPE as indicated.



Check the electrolyte level in each of the battery cells. The electrolyte should be covering the plates by one to two millimetres



Check the connections and make sure the battery is clean



Using a hydrometer, check the specific gravity of each cell in the battery. The hydrometer should read between **1.28** and **1.285**, and all cells should be equal.



Use a voltmeter to check the voltage. The reading should be approximately 13 volts.

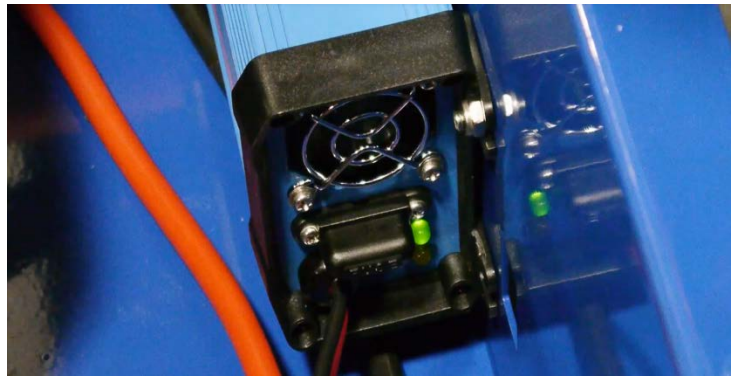


Battery Charging Fault

Please ensure, the unit is isolated and you use the correct PPE as indicated.

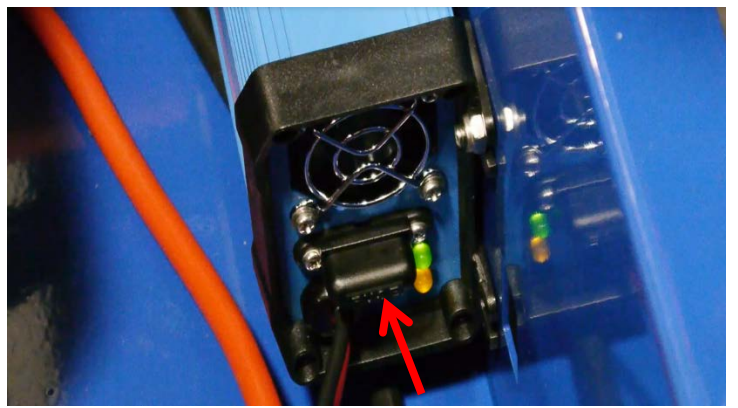


Check the battery charger lights when first switched on (Display Green LED On, Amber LED blinking fast is bulk load, blinking slow is absorption, on float, off storage.)

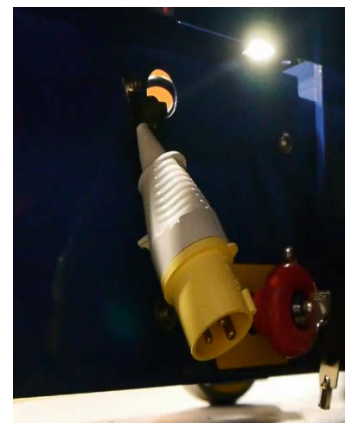


If the both charger lights flash slowly, check the fuse, battery connections and then the battery condition as outlined in the chapter: 'Battery Maintenance. Fuse can be found underneath the fuse cover on the charger.

Fuse cover can be identified by the red arrow.



If there are no lights on the charger, check the supply connections which can be found on the right hand side of the chassis



Checking for Oil Leaks

Please ensure, the unit is isolated and you use the correct PPE as indicated.



Remove covers spine end cap and the chassis top cover and check the pipe end connections at the base of the lift cylinder ensure the union is torque to **40Nm** and also check the connections on top of the power pack.



Check the lowering valve spool and the valve screw cartridge on the side of the power pack.



How to Change the Oil in the Hydraulic System

Please ensure, the unit is isolated and you use the correct PPE as indicated.



Use a syringe to empty the hydraulic reservoir.



Refill with **4.5 litres** of grade **32 mineral oil**.



Elevate the machine from the Pendant controls to ensure the platform reaches full travel. If not add a little more oil.
Do not keep the pump running with no oil in the tank.



Adjusting the Wear Screws (Mast Section)

Please ensure, the unit is isolated and you use the correct PPE as indicated.



Raise the mast sections using the lift control to gain comfortable access to the wear screws. Align the outer section to the inner section so that the gap between the inner section and the outer section is equidistant from side to side. (18mm)



Screw in the four side wear screws, so that they just make contact with the **0.2 feeder gauge**, slightly back if the gauge cannot be withdrawn, and tighten the lock nut. Repeat the process for the middle mast section to lower the mast.



Adjust the two rear plastic wear screws in a similar manner. It is not possible to adjust the clearance between the inner and outer sections with the rear screws. Remove. Operate the lift function to ensure the outer and middle sections do not bind. Back off slightly any wear screws found to be pinching so that both mast sections travel up and down freely.



Castor and Wheel Maintenance

Please ensure, the unit is isolated and you use the correct PPE as indicated.



Ensure the Castor bolt is torqued to **55Nm**, If the castor bolts are to be found to be worn then replace with PT-M-170. Again ensure this is tightened and torqued to **55Nm**.



Ensure the wheel spins freely and rotates on the castor if the wheel doesn't move freely after being tightened to the required torque then fit a spacer washer. Check for any damage, the breaking latch moves freely and the castor is not twisted.



Replacement of Castor Wheel

Please ensure, the unit is isolated and you use the correct PPE as indicated.



Raise the machine from the ground with a suitable hoist or block the front of the machine so the castor wheels are clear of the ground by approximately 50 millimetres. Undo the fixing bolt and remove the castor.



Refitting is a reverse of this procedure but it is essential to fit a spacer washer but when tightening the fixing bolt, ensure it is torque to **55Nm**, ensure the wheel moves freely.



Gate Latch Adjustment

Please ensure, the unit is isolated and you use the correct PPE as indicated.



Offer the gate to the hinges and pass the long pivot bolt downward through the top hinge bracket. When feeding downward, slide the bolt through the spring until just before passing through the lower hinge bracket. Twist the lower arm of the spring behind the gate upright and then pass the pivot bolt through the lower hinge.



Allow the gate to close, and check that the “U” pin locates correctly in the jaw of the of the gate latch. If the “U” pin is too low, raise the pivot bolt slightly above the lower hinge and fit one or two M10 washers as required. Pass the pivot bolt all the way through the hinge plates, fit and tighten a lock nut and washer



Removing or Replacing the Hydraulic Pipe

Please ensure, the unit is isolated and you use the correct PPE as indicated.



Lower the platform to the transport position, raise the cage and lock the gas strut. Open the manual emergency lowering valve and allow the oil to drain to the tank for a minute or two.

Direction of twist is indicated by the red arrow.



Remove the spine end cap and then disconnect the hydraulic connection to the cylinder



Move to the top of the power pack and remove the chassis cover. Identify the steel pipe connection and undo the fittings. There may be a very small amount of oil loss at this time. The pipe now can be withdrawn.



The new pipe is refitted in the reverse sequence. Ensure to connect both ends of the pipe loosely to ensure correct alignment and then tighten the cylinder connection first, taking care not to twist the pipe. It may be necessary to slacken the two power pack mounting screws located under the middle of the power pack to enable correct alignment.



Remove or Replace the Emergency Lowering Valve

Please ensure, the unit is isolated and you use the correct PPE as indicated.



Fully lower the platform and open the emergency-lowering valve for a minute or two, to fully drain the oil. To open the emergency lowering valve push the milled knobs in and slightly turn anticlockwise.

Direction of twist is indicated by the red arrow.



Raise the platform and lock the gas strut. Either lift the machine on a suitable hoist or raise the base of the machine on the emergency lowering valve side and chock up in a safe manner.



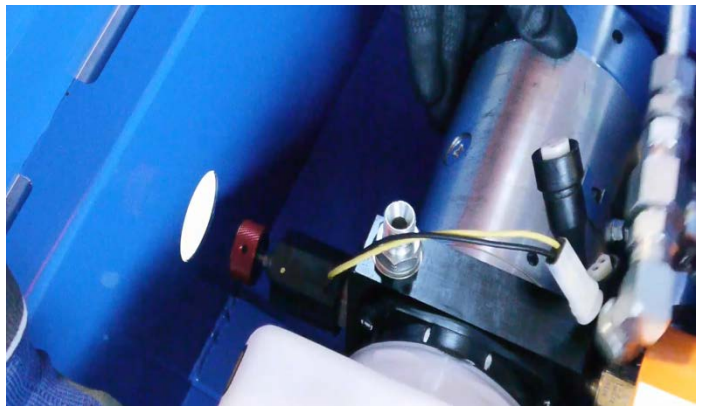
Place some oil soak cloths around the power pack pipe connection and undo the pipe connection. Locate the spine cap and remove, loosen the pipe, there may be a small amount of oil spillage. Locate the two power pack fixing screws, located under the base of the machine, below the centre of the power pack and undo



Move the power pack sideways to gain full access to the lowering valve. Remove the knurled knob and solenoid, and then the valve cartridge



Refit the new or repaired valve cartridge and reassemble using the reverse sequence. Set the knurled knob in the normally closed locked position to close the emergency lowering valve push in and slightly turn clockwise, check that the machine elevates, and remains stationary when elevated, when the machine is back on the ground in a stable condition.



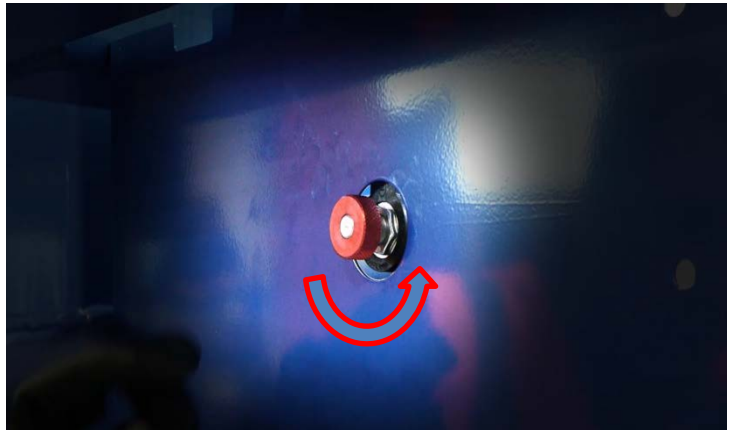
Removing or Replacing the Lift Cylinder

Please ensure, the unit is isolated and you use the correct PPE as indicated.



Open the emergency lowering valve and ensure the platform is fully lowered. Allow the oil to drain for a minute or two. To open the emergency lowering valve push the milled knobs in and slightly turn anticlockwise.

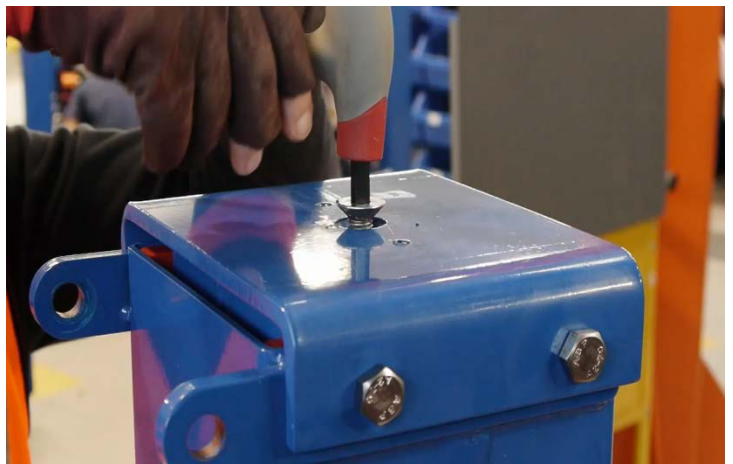
Direction of twist is indicated by the red arrow.



Remove the tool tray on top of the mast.



Remove the countersunk screw in the centre of the mast cap.



Undo the four bolts situated around the mast cap and remove.



Remove the Spine End Cap.



Place suitable oil soak rags on the floor around the base of the machine at the rear, Disconnect the hydraulic pipe from the cylinder, around 0.25 litres of oil may be lost. It may be essential to loosen the pipe on top of the power pack.



With a sling or hoist lift the cylinder clear of the machine. Reverse the procedure to refit the cylinder. When reassembling the mast cap please ensure to apply a small amount of **Loctite 648** to the locking bolts and torque to **30 Nm**.

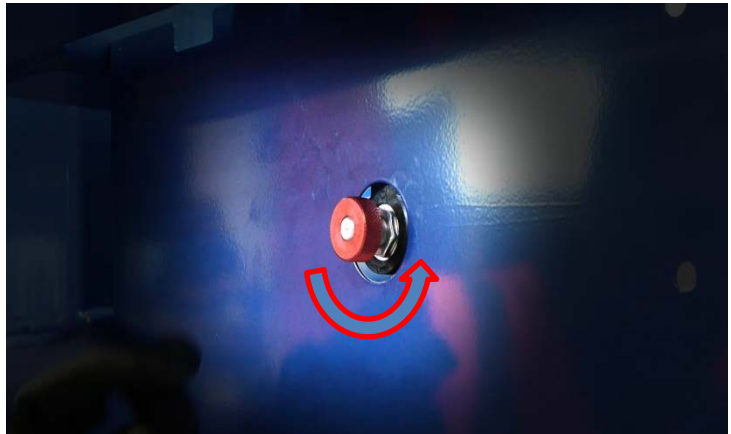


Removal and Assembly of the Telescopic Mast

Please ensure, the unit is isolated and you use the correct PPE as indicated.



Fully lower the platform and open the emergency-lowering valve for a minute or two, to fully drain the oil. To open the emergency lowering valve push the milled knobs in and slightly turn anticlockwise. Display push and turn anticlockwise.



Tilt the platform upward and support with a sling or hoist. Remove the gas strut.



Lower the cage and undo the two main fixing bolts. With the sling or hoist, remove the complete cage.



Remove the tool tray on top of the mast. Remove the countersunk screw in the centre of the mast cap. Undo the four bolts surrounding the mast cap and remove.



With the hoist, raise the mast outer section a short distance to a convenient position and remove the roller and wear screws. When removed lift the mast section clear of the mast using the hoist taking care to clear the inner stop blocks as the mast is raised.



Repeat the process for the mast middle section. Access can now be gained for any maintenance or remedial work required. Reverse the procedure to reassemble the mast and platform. When reassembling the mast cap please ensure to apply a small amount of **Loctite 648** to the locking bolts and torque to **30 Nm**

