Moshon DATA

"Imparting knowledge"

EuroNCAP 5 Lamp Street Light System

Models: MD-SLZ, SLS, SLKZ, SLKS

User Manual

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INTRODUCTION

Thank-you for choosing Moshon Data.

The NCAP lighting system is a complete 5-streetlamp system designed and tailored specifically for the NCAP AEB VRU night testing procedure.

Moshon Data has worked very closely with both lighting and mast manufactures to create a lighting solution that provides everything you need to start testing from the day of delivery.

Additional models have been created (MD-SLKZ, MD-SLKS) to provide the user with exacting degree alignment of the masts using a turnable, keyed mast.

Bases for the masts can be chosen to have either a mobile 4 wheeled base (MD-Base), or a Q-Pod tripod.

This manual covers the installation, cabling, raising and lowering procedure for the full system.

SCOPE OF DELIVERY

All MD lighting system products are supplied complete with cables, manuals, adapter fittings etc. Everything you need to start night testing.

Qty	Description
5	Schuch or Zeta luminaire fitting and cable
5	Pneumatic mast (Keyed or standard)
5	Nylon head Adapter plate – allows fitting of luminaire to mast head
5	Q-Pod or MD-Base*
1	3 Way 16A splitter
2	2 Way 16A splitter
1	10 m high quality HO7RN-F rubber cable.
4	25 m high quality HO7RN-F rubber cable.
10	Q-Pod Weight bags* (Not applicable if MD-Base is supplied)

*With the exception of sand and concrete for the weight bags and 4 wheeled bases.
Not included for logistical reasons - will drastically reduce shipping and handling costs.

Where an MD-Base is supplied, it will be neccesary to fill the shell with concrete before use. Instructions on how to do this are in this manual.

OVERVIEW OF SYSTEM

There are four models offered by Moshon data. These are shown in the table below.

Model	Luminaire head	Mast type	Base type
MD-SLZ	Zeta SmartScape Nano	Standard Pneumatic	4 wheel MD-Base or Q-pod
MD-SLS	Schuch 48 2403 ABX CL	Standard Pneumatic	4 wheel MD-Base or Q-pod
MD-SLKZ	Zeta SmartScape Nano	Keyed Pneumatic	4 wheel MD-Base or Q-pod
MD-SLKS	Schuch 48 2403 ABX CL	Keyed Pneumatic	4 wheel MD-Base or Q-pod

SPECIFICATIONS

Parameter	MD-SLZ	MD-SLS	MD-SLKZ	MD-SLKS
Luminaire power	8-50 W	49 W	8-50 W	49 W
Luminous eficacy	140 lm/W (@42 w)	121 lm/W	140 lm/W	121 lm/W
Luminous flux	-	5200 lm	-	5200 lm
Ambient temperature	-20 - +45°C	-	-20 - +45°C	-
Input Voltage	240 or 24 V	240 V	240 or 24 V	240 V
IP Water Ingress Rating	IP66 (head) IP44 (connectors)	IP66 (head) IP44 (connectors)	IP66 (head) IP44 (connectors)	IP66 (head) IP44 (connectors)
Maximum wind speed resistance	56 mph	56 mph	56 mph	56 mph

Q-POD

The deployment of the Q-Pod ready for mast attachment is as follows.

Pull out the main central leg to release the other three legs from achor point

Pull straight the three Q-Pod feet

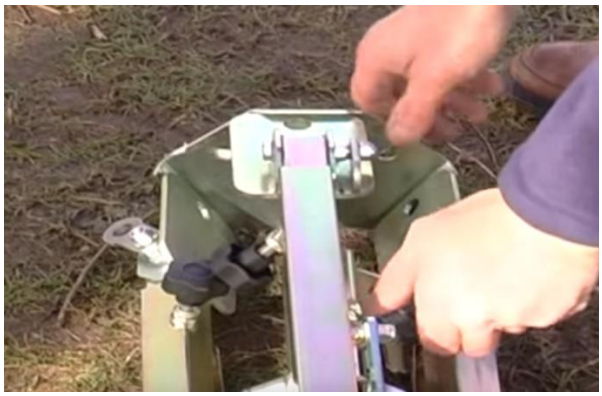
Stand Q-pod upright and turn the centre knob to locate centre pole as required

Pull down the centre column to open out the legs, and secure as shown

Adjustments can be made to each leg to level up the frame to the ground. To do this, use a 90 deg angle measuring device such as a set square to adjust the tripod to the ground as required

For full stability of the mast, the final step is to hang two weight bags full of sand from each carabiner found at the top of the Q-Pod

Collapsing the Q-Pod is the reversal of above, the feet are pulled back, and tucked behind the curved edges of the central foot to hold in place during transportation.



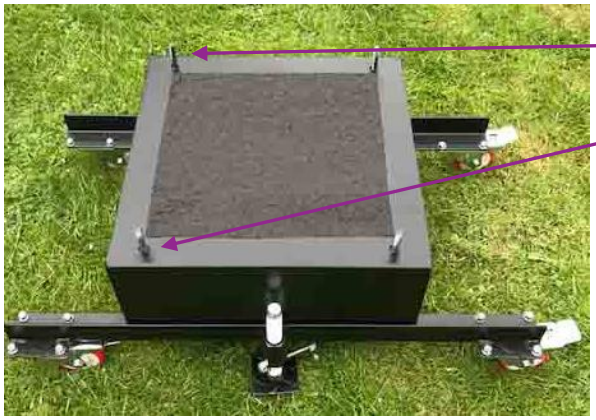
MD-BASE

The MD-Base comes to you as an empty shell – as shown lelow.

The shell must be filled with concrete before first use. The concrete is a mixture of cement, sand (aggregate) and water.

To do this, find a level area of ground (this is very important) then fill the structure with concrete to the very top lip.

Please be VERY careful not to get cement on the four studs in each corner.



Once the concrete has dried, attach the bolt down mast base to the top ond bolt down with the four nuts supplied.

MAST ATTACHMENT

Q-Pod

With the Q-Pod deployed and adjusted level to the ground, the mast can be attached.


Offer the thumbscrew at the lower end of the mast to the bottom Q-Pod slot, without lowering it fully into the slot…


Locate the top slot and align the top thrumbscrew on the mast to the top slot on the Q-Pod and drop it into place. Tighten up both thumbscrews to secure. A large washer should be positioned behind each thumbscrew.

MD-Base

Attaching the mast to the MD-Base is much the same as with the Q-Pod.

Move to the desired position, the base should already be level to the ground by design, but just check that this is the case with a set square.

Then lock each of the wheels by pressing down the foot lever.

Lower the two support plates to the ground for extra stability.

LUMINAIRE FITTING AND USAGE

There are two types of luminaire offered by Moshon Data - Zeta and Schuch.

The luminaire consits of the following parts:

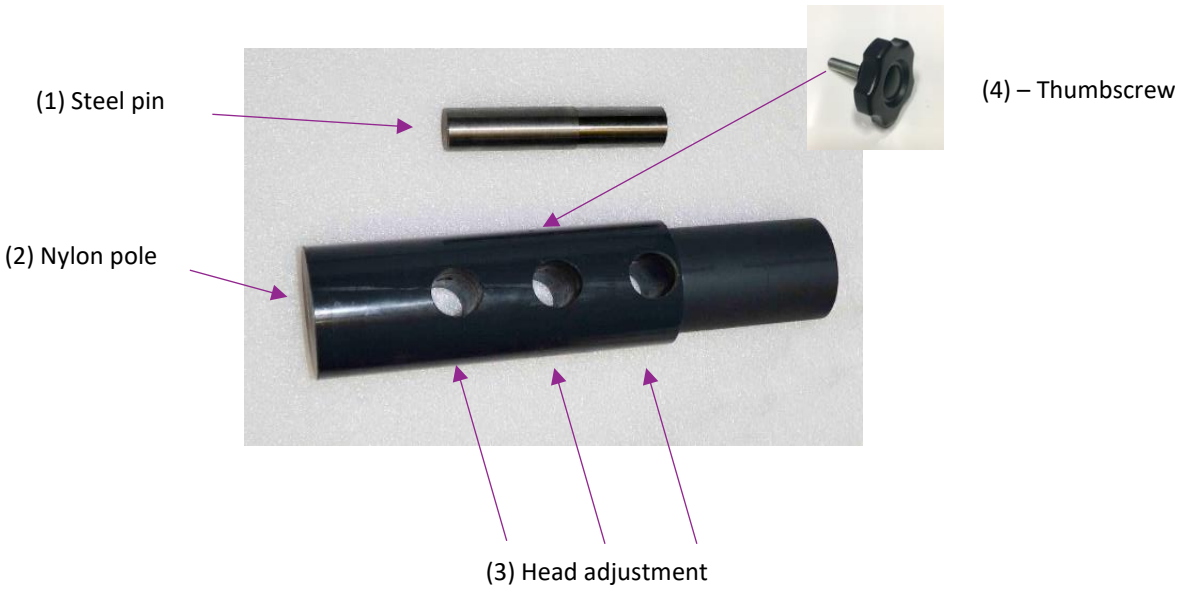
- The luminaire fitting (Zeta or Schuch)
- Nylon adapter pole – three adjustable positions
- Locating pin – long cylinder metal pin
- Black thumb screw

Attachment

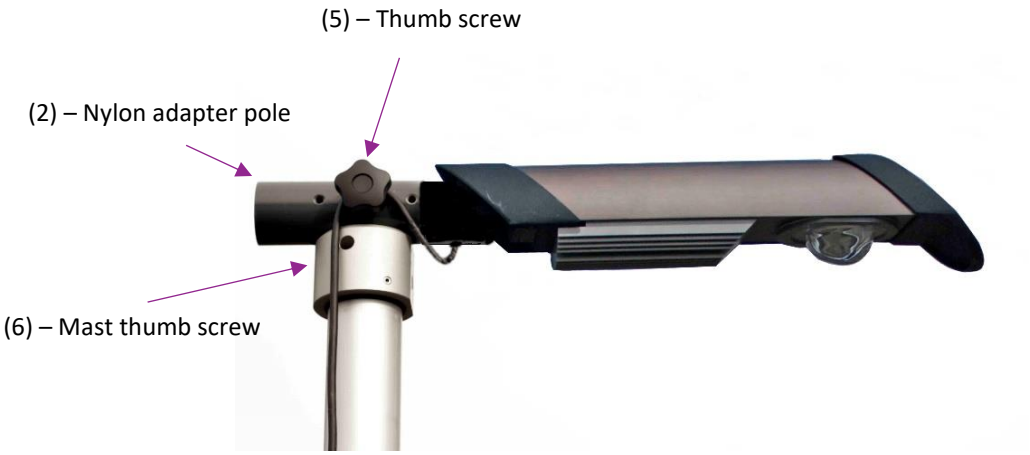
The luminaire head is attached to the top of the mast using the Nylon adapter plate as shown below.

There are three possible places the steel pin (1) can be located in the Nylon pole (2), allowing adjustment of the head (3) to be made further into the test area, or away as required.

Once the locating pin is in the preffered position, turn the thumb screw (4) clockwise to tighten onto the pin.



Once the locating pin is in place, drop the visible part of the pin of the luminair into the top of the mast and tigiten the thumb screw (3) found at the very top of the mast, onto the steel pin (location of thumbscrew shown only, thumb screw not visible in the image).

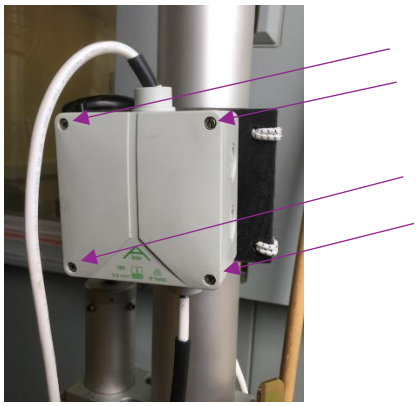


Once tight, the cable can be routed nicely around the top thumb screw as shown.

Overdrive option - Zeta only

The Zeta system models are capable of being adjusted to suit the light envirionment. They use an overdrive option (included by default in MD-Lighting Systems) to increase the light output sufficiently to ensure there will be full coverage over the test area to the specification. Please check the latest NCAP protocol for the definition of what that is.

To operate dimmer, remove the front panel from the control box using a standard screwdriver.



Remove screws to reveal dimmer toggle

While using a lightmeter, turn the dimming toggle up and down from 0-5 to adjust the output luminance until it is the correct lux reading for the test.

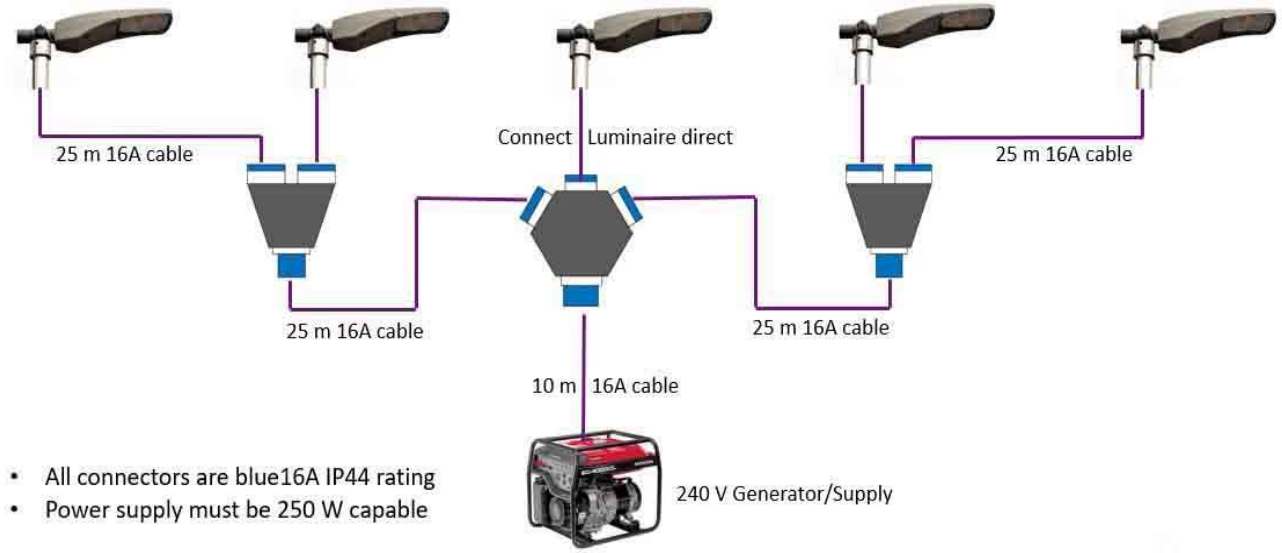
Once the correct adjustment has been made, reseal the box so that it cannot be accidently alterred during the test, and also to protect it from the environment.

CABLING DIAGRAM

All cables are supplied with the system to power up all five lights.

Connectors are IP44 rated and will provide protection from intrusion of water.

The diagram below shows how it all connects together.



- All connectors are blue16A IP44 rating
- Power supply must be 250 W capable

TAKING LIGHT READINGS

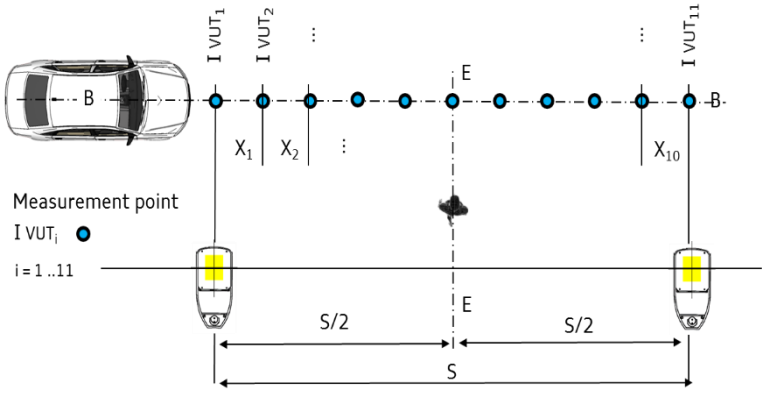
We recommend the use of a high quality lightmeter such as the Konica Minolta T-10A to take each measurement. This offers high accuracy and resolution of data, and is specified in the Euro NCAP protocol, also proved important from within our own tests at Moshon Data.

Please refer to the Euro NCAP AEB VRU protocol for EPT and VUT light paths to be tested using the lux meter, also for the current illuminance ranges allowable for each test path.

An example of a typical EPT and VUT light measurment path is shown below.

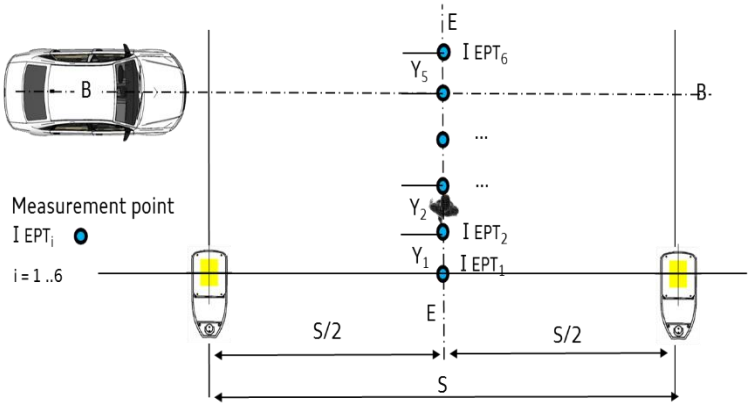
VUT Path

'S' is typically 25 m, the light points 'X' are divided equally across the test path.



EPT Path

Light measure points 'Y' are the divided equally between the lamp centre to VUT path distance, then one more the other side of the VUT path.



MAST OVERVIEW

Each mast is a very high quality tubular telescopic structure, made from stainless steel and other high quality materials. It is capable of handling wind speeds up to 56 mph provided it is used as intructed with the use of sandbags etc (Based on the 6 meter 80mm diameter mast and standard light fitting)

Risks connected with the use of the mast

The telescopic mast has three main 'risk' conditions associated with its use. These instructions must be followed to assure operational safety and minimise these risks.

1. The first risk is the mast falling on its side, caused by the action of wind on the mast and/or bad fixing of attached items.

2. The second is related to the possibility of vertical descent of the mast, together with all appliances fixed to it.

   This may occur in exceptional conditions only when extending the mast, and in the case of a major air loss, caused by a sudden malfunction of a seal, damage to the mast or problems related to extreme temperatures. In this case it is possible for the mast to retract rapidly damaging itself and may cause harm or damage if within range. This can be avoided by using the locking system on each section as indicated in this manual. When extending the mast, it is necessary to maintain a safe distance in relation to the appliances fixed to the mast.

3. The third risk condition is related to the possibility of contact with overhead obstructions, particularly electric cables. This can only be avoided by the user who must consider the extended height of the mast and the existence of ovehead obstructions. Please note that for high tension lines, it is possible to cause a discharge just by proximity, even without contact with the line. Risk connected with atmospheric events such as lightning must also be considered, it may be necessary to adopt precautions such as grounding dispersal devices and maintaining an appropriate distance.

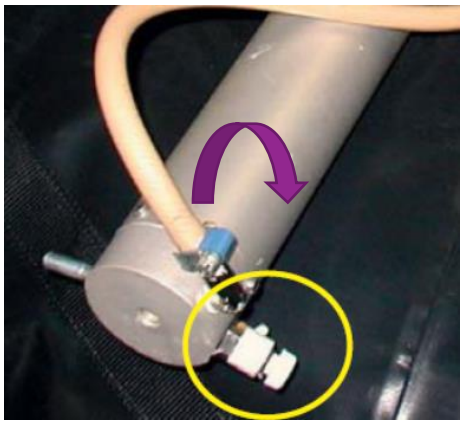
MAST RAISING PROCEDURE

To raise the mast:

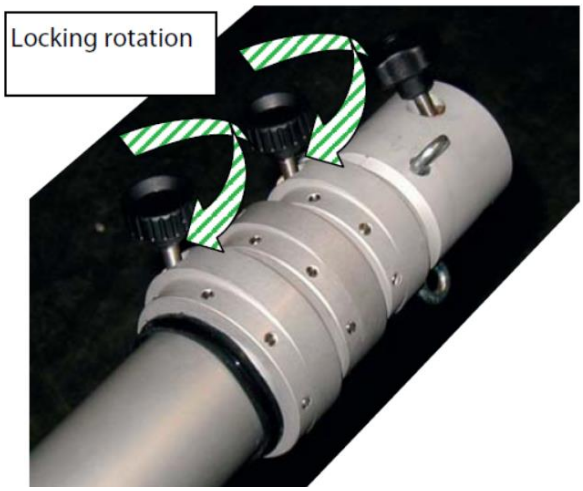
1. Place the mast on the Q-Pod or base as required, checking the mast is vertical and not in the way of electrical lines and other obstacles. It will need to be level to the ground.

2. Close the air valve located at the bottom of the pump, one on the base of the mast

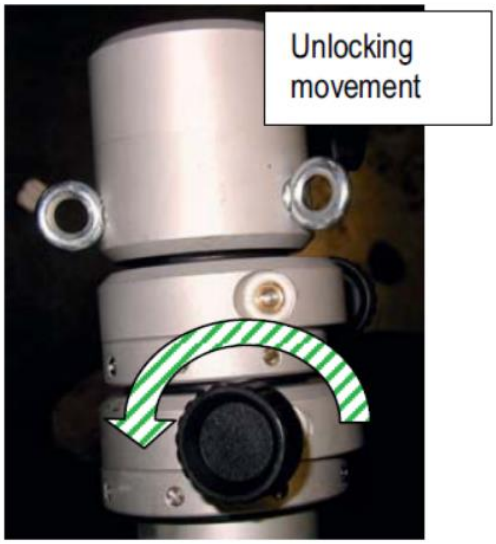
   Rotate Clock Wise to do this



3. Check and lock each mast section to avoid sudden extension.



4. Unlock the first, uppermost section by fully rotating the knob anti-clockwise



5. Extend fully the first section using the hand pump. When fully extended lock the section by turning knob clockwise and proceed with the second section (next one down from top) by unlocking it, pumping, locking and so on until the desired height is reached or to complete extension of the mast.

MAST LOWERING PROCEDURE

To lower the mast:

1. Lower the mast one section at the time, starting from the largest, lowest section.
2. Unlock the section and release the air valve.
3. Proceed in the same manner with all sections
4. When the mast is fully retracted, lock all sections in order to maintain stability.

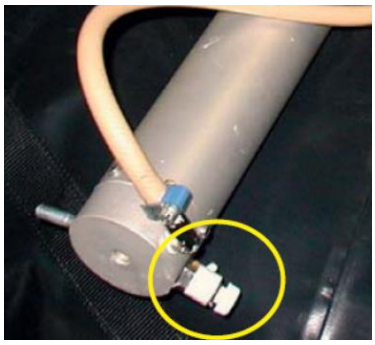
MAST MAINTENANCE NOTES

Ordinary Maintenance

At the end of each use, when retracting the mast, clean the outside using a damp cloth in order to remove dirt or dust. Check general conditions of the structure, eventual air leaks and wear due to corrosion or other.

Use in cold weather

With particularly low temperatures mast retraction may become difficult, caused by internal ice. In this case the user must wait for a temperature rise and purge all condensed water in the mast; this operation can be carried out when the mast is retracted by using the bleed valve at the bottom of the mast.

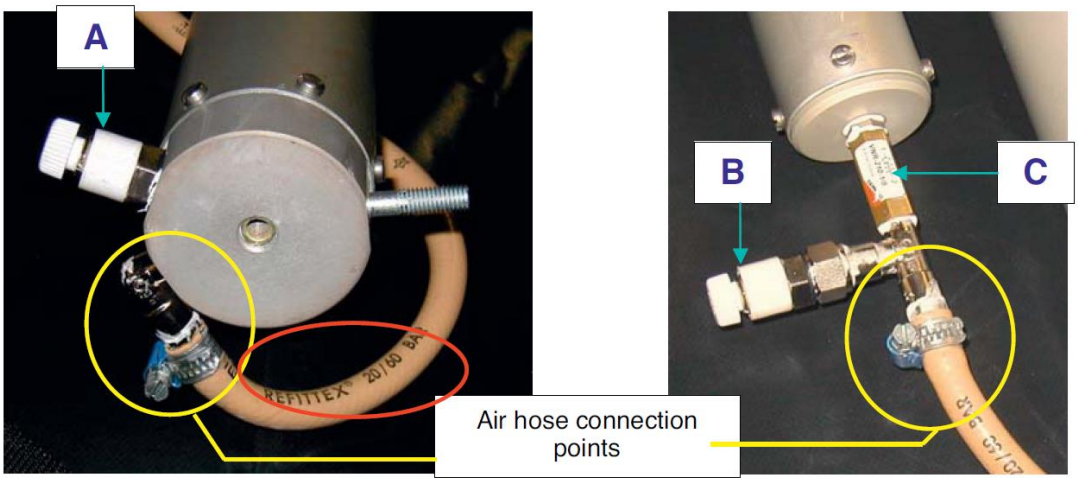


The presence of other residue (apart from water) might indicate internal damage to the mast.

The limit for low temperatures is – 25 °C . However special seals for lower temperatures are available on request.

Air Circuit Malfunction

The mast hand pump is supplied with a pneumatic circuit using a high resistance flexible tube which can withstand pressures of 20 [bar] (see red circle in below picture), excluding any failure due to pneumatic reasons. All connection points are fixed via metal band; it is advisable to perform a pre-use check and look for any damage to the system.



Parts Replacement

There are no user serviceable parts, but after prolonged usage, there may be areas that require some attention. These are listed as follows.

- Mast Seal Replacement - Each section of the mast has a seal that may eventually wear out
- Air Release Valve Replacement – In the event an air release valve should not functioning it is necessary to replace it
- Flexible Air Hose Replacement
- Locking Device Replacement

Please contact us for assistance if you suspect any of the areas above, we can arrange either a service or repair as appropriate.