

# PLM-18-4XCAT6-ACPS

Pneumatic Light Mast  
Extends to 20 Feet  
Internal Cable



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# Safety Information



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**Always follow the Operating Instructions**

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**PLM Telescopic Masts** are considered to be temporary structures and should not be expected to withstand all weather conditions indefinitely. For wind speeds in excess of those stated it is essential for the life of the mast and the safety of the operating personnel, to retract the mast. In all cases refer to label supplied with mast to find actual design parameters.

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Do **NOT** operate the mast in weather conditions that may cause danger to the operators, any personnel or equipment. Do **NOT** exceed the **MAXIMUM** weather conditions stated.

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Installation **MUST be** carried out by authorized personnel

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**Larson Electronics Pneumatic Masts** can be heavy and care should be taken when lifting and transporting them

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Ensure the area in which the mast raised is free of any overhead obstructions and power lines.

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**DO NOT** operate the mast Outside of the operating temperature range  $-30^{\circ}\text{C}$  to  $+70^{\circ}\text{C}$  and at wind speeds or head loads in excess of those recommended

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Ensure that the head load is securely mounted to the mast

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If **Guy Wires** are used, once in position they can become a potential trip hazard. Ensure they are either clearly marked with a visual indicator or an exclusion zone around the mast is setup.

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**ALWAYS** Consult the supplier/manufacturer prior to the use of standard commercially available compressors.

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**DO NOT** operate at pressures above those recommended. Over pressurization severely strains the collar and base section screws and can, in extreme circumstances, force a collar off and allow the tube to blow out.

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**DO NOT** attempt to rotate the mast unless fitted with a rotating system.

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Since telescopic masts are essentially composed of sliding sections, care should be taken to keep them clean and lubricated. **Please see Maintenance section**

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If a tube section sticks during the extension of a mast severely enough to cause it to crash into its relevant collar, the cause must be investigated **immediately**. Failure to do so will result in progressive mechanical damage. The most common causes are as follows:



**Lack of lubrication**

**Bent or damaged section** (Usually caused by overloading mast and/or operating at too high a wind speed)

If there is no obvious reason for a section to stick, that section must be removed for inspection and possibly also the next largest section into which it slides. **Please see Maintenance section**

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Precautions should be taken to prevent lightning strikes to the light mast and equipment installed on it

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The warranty will be invalidated in the event that:

- Specified oils and lubricants are not used
- Recommended service intervals are not maintained
- The mast is operated only partially pressurized or extended
- The mast is operated within a moving vehicle or moving trailer
- Maximum working pressures, loading or wind loading are exceeded
- The mast is operated at temperatures outside the recommended range
- Non-accredited installation, or service work is undertaken
- The installation and operating instructions are not adhered to

Failure to observe any of the warnings in this manual may result in personal injury, death, or equipment damage. Larson Electronics, LLC accepts no responsibility or liability for unauthorized use or actions outside of those recommended.

## Mast Installation and Mounting

### Mast Mounting

There are several mounting arrangements available for the installation of masts. They can be mounted either internally or externally to a vehicle or building. Various mounting solutions are available from [LarsonElectronics.com](http://LarsonElectronics.com)

### Mounting Plates

Use 1/2-13 Grade 8 Bolts. It is important that the correct size bolts are used. It is important also when bolting to a vertical surface to ensure that the structure is strong enough or suitably reinforced to take the loads. If any doubt, please contact Larson Electronics, LLC for specific loadings for the mast.

Install the mounting plate through the predrilled mounting holes. Once the mounting plate has been installed, slide the mast in the plate while ensuring the cord/tube will fit through the hole on the base.

Once in place, tighten the hand screws for a firm grip. Continue the installation once the mast is securely mounted.

### Mounting Head

Identify mounting plate on top of mast. Configure load to match plate and mount to mast. Do not exceed 150lbs capacity!

Connect cable as required.

# Compressor

If the mast is supplied with a compressor, please refer to the compressor manual for installation and operation. Air line simply pushes into the blue Mast Inlet Valve. Press the blue ring inwards while pulling air line to remove.

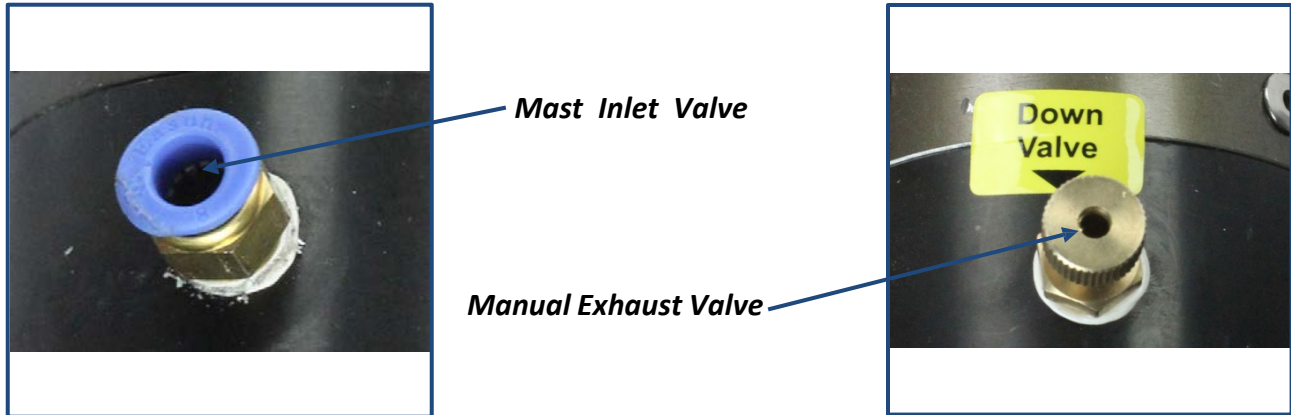


Fig 5: Valves

## Mast Operating Instructions



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Ensure the mast is mounted securely before deploying.

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**DO NOT** remove the Mast Exhaust Valve in an attempt to retract a Mast more quickly, especially when the Mast is carrying a heavy head load, since this action removes control over the rate of descent. In extreme cases, the uncontrolled collapse of a Mast can lead to the head load being damaged, together with applying shock loads to the Mast fixings.

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## Raising the Mast

Raising the PLM Mast can be done manually or through the use of an Air Compressor.

### Pneumatically

1. Close the mast exhaust valve by turning in a clockwise direction until finger tight.
2. Attach the compressor/foot pump to the mast via the inlet valve show in Fig.5
3. Activate the air supply.
4. When the top section is fully extended switch off the compressor. If equipped with a pressure switch, the air compressor will automatically shutoff once the appropriate air pressure is reached.

## Lowering the Mast Sections

1. Ensure the air compressor is turned off.
2. Gently open the exhaust valve until each section has lowered completely.

# Maintenance & Repair

## Routine Maintenance



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*Only use oils/lubricants recommended by LARSON ELECTRONICS, LLC. Failure to do so may invalidate the warranty*

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Inspect and lubricate mast sections at four-week intervals or every 200 operations, whichever occurs first. If the mast has been used in a dusty environment, resulting in a buildup of contaminants and/or old lubricant on the surface of the tubes, remove by wiping each section with an oil soaked cloth.

To protect the seals oil should be injected into the Oil Holes located in the collar. Alternatively, proprietary oil misters may be incorporated within the air supply line. During periods of sustained cold and freezing conditions LARSON ELECTRONICS, LLC recommends the use of Kilfrost Lubricant.

To prevent the buildup of water inside the mast when not in use LARSON ELECTRONICS, LLC recommends the use of a mast cover, in addition the exhaust valve may be left open.

## Long Duration Storage

If possible, store in an upright position to prevent seal distortion.

## Fault Finding



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*Under no circumstances should the air pressure be increased above the levels stipulated on the mast label, in an attempt to force the mast. Over pressurization severely strains the collar and base section screws and can, in extreme circumstances, force a collar off and allow the tube to blow out.*

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### **If the mast will not extend please check the following:**

1. Is the mast exhaust valve open or leaking?  
Action: Close or replace valve
2. Is the air inlet valve leaking?  
Action: Replace valve
3. Are any of the mast seals leaking?  
Action: see "Leaking Seal's"
4. Are any of the mast sections damaged?  
Action: Contact Larson Electronics, LLC for repair.

## Replacement Parts

The PLM light mast is designed to provide years of reliable performance. Should the need for replacement parts arise, please contact Larson Electronics at the contact information below.

Should further information not covered by these instructions be required, please contact Larson Electronics at 1-800-369-6671 or [sales@larsonelectronics.com](mailto:sales@larsonelectronics.com) for further assistance.

Please visit [LarsonElectronics.com](http://LarsonElectronics.com) for Warranty and Return information.