



## **ELECTRO SCREW MECHANICAL MAST**

# **SAFETY PRECAUTIONS,INSTALLATION,OPERATION & MAINTENANCE MANUAL**

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## Part 1

### SAFETY PRECAUTIONS

1. Make sure the area above mast is free of obstructions and electric wires before operation, which may be conducting.
2. Use the mast in a well-ventilated area away from open flame, arcing equipment, alcohol and gas.
3. Deploy the mast on a flat place when grounding mounting instead of inclined surface before extending the mast.
4. Don't move the mast while it is being raised.
5. Always ensures that all electric circuits to the mast and distribution box are properly tagged and energized during operation.
6. Refrain from applying a stream or high pressure water directly to the distribution box and motor.
7. Make sure the mast and motor is well assembled with mast driving box, vehicle, trailer and concrete mounting brackets before operation.

## Part 2

### MAST INSTALLATION

1. Match holes for the base of mast and support bracket, creating mounting places in the host site (see the installation dimension in **REFERENCED ILLUSTRATION** in 5.1 ). The mast should be as verticality as possible.
2. Note that there is 1 drain hole on the bottom of mast (see the picture in **REFERENCED ILLUSTRATION** in 5.2 ) to drain off rain water and condensation. The surface to the drain hole must allow for drainage.
3. Mount our support bracket with our setscrew and flat washer or customer supplied stainless steel fasteners with flat washer and means to prevent loosening. Secure the base of the mast with our setscrew and flat washer or customer supplied stainless steel fasteners with flat washer and means to prevent loosening.

4. Mount our pvc coil and aluminum bracket(see the picture in REFERENCED ILLUSTRATION in 5.3 )or customer supplied cable protection for power cable application.
5. Guy ropes fitted if required.

## Part 3

### MAST OPERATION

#### 3.1 Powered Operation:

1. This mast system is designed to operate on 220V AC power, the operator plugs the distribution box to power up the system.
2. Mast control is wired for handheld control for raising or lowering the mast.
3. As long as the switch is engaged long enough in the up position in the control, the mast will raise to its maximum extension and automatically stop with the help of full extension limit switch. If the up switch is released before the maximum extension the mast will quickly stop.
4. As long as the switch is engaged long enough in the down position in the control, the mast will retract to its minimum retraction and automatically stop with the help of full retraction limit switch. If the down switch is released before the minimum retraction the mast will quickly stop.

#### 3.2 Manual Operation:

Use the hand crank provided to raise(clockwise) or to lower(counter-clockwise) the mast. The limit switches are not in effect during manual operation. There are mechanical hard stops in the mast collar and mast screw to stop the mast safely.

### 3.3 Manual Operation Illustration:

use the motor hand  
crank to raise or lower  
the mast manually



motor hand  
crank core



## Part 4

### MAST MAINTENANCE

1. Using a soft, non-abrasive cloth to wipe and clean the mast display.
2. Use water when cleaning rubber or plastic material. Use soap and water when cleaning the mast tube's exterior surfaces. Use banana oil only when cleaning grease and oil spots on the metal surfaces, the frequent using of banana oil may take polish off the mast.
3. Lubrication of motor. Tianhe reducer motor need not to be lubricated any more, we have lubricated enough in the driving box before delivering, which can supply with grease to the motor.
4. Lubrication of mast. Only professional or trained worker is required for the following operation:
  - a. Extending mast to a certain height for removing mast collars mounting screws and collars.
  - b. Using an oil can or eye dropper, apply 3 to 5 drops of SAE 30 (preferred) or 15W40 engine oil to pulley wheels.
  - c. Wipe off excess oil. Replace pulley wheels and mast collars.
  - d. Don't lubricate the mast tubes, which may cause attraction of dust and contaminants from the air.

5. a. Stop using electro mast when strange noise arises from the mast body, professional or trained worker is required to remove the mast and examine the parts inside.

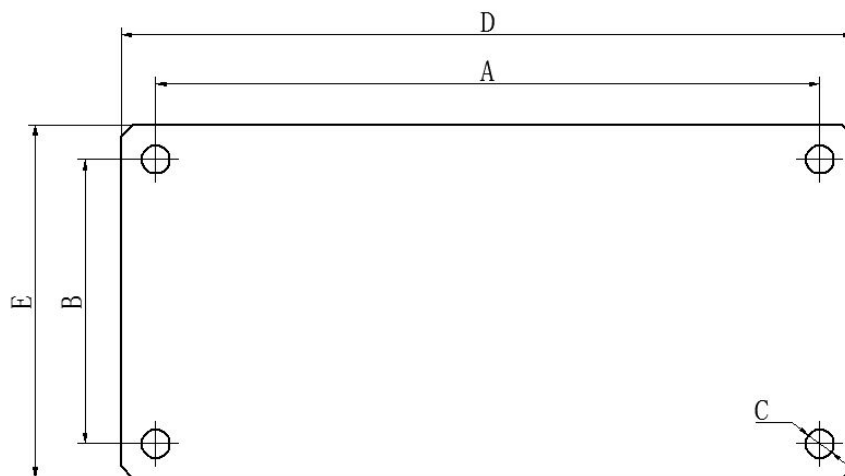
b. The tubes inside the electro mast body extends and retracts proportionally and smoothly at the same time under normal condition. Stop using the mast when the tubes move unproportionally, slackly or noise spreads from mast collars.

## Part 5

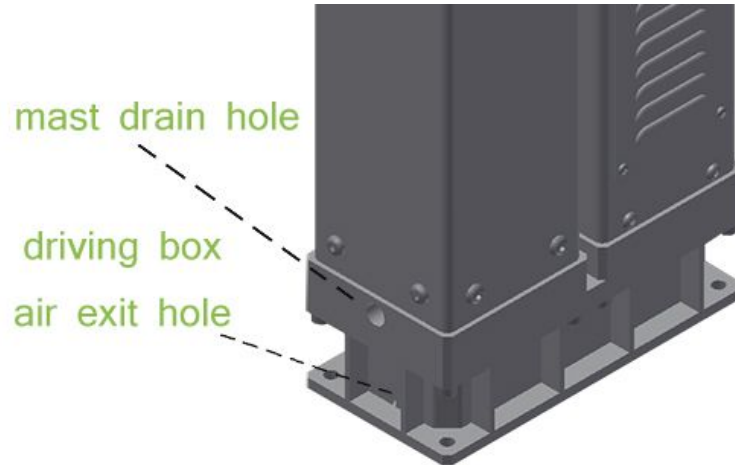
### REFERENCED ILLUSTRATION

#### 5.1 Mast base installation dimension.

Model	A	B	C	D	E
MEE-60*5	292	125	Φ 12.5	322	155
MEE-90*7	353	160	Φ 15	393	200



5.2 Mast drain hole and driving box air exit hole.



5.3 Mast pvc coil(NY coil) solution for cable application.



## 5.4 Electro screw mechanical mast CAD dimensional drawing.

