

# AP3X Robot

## Quick Installation Guide

### Applicable Models

AP3X-1130-1653

AP3X-1130-1654

AP3X-1600-1653

AP3X-1600-1654

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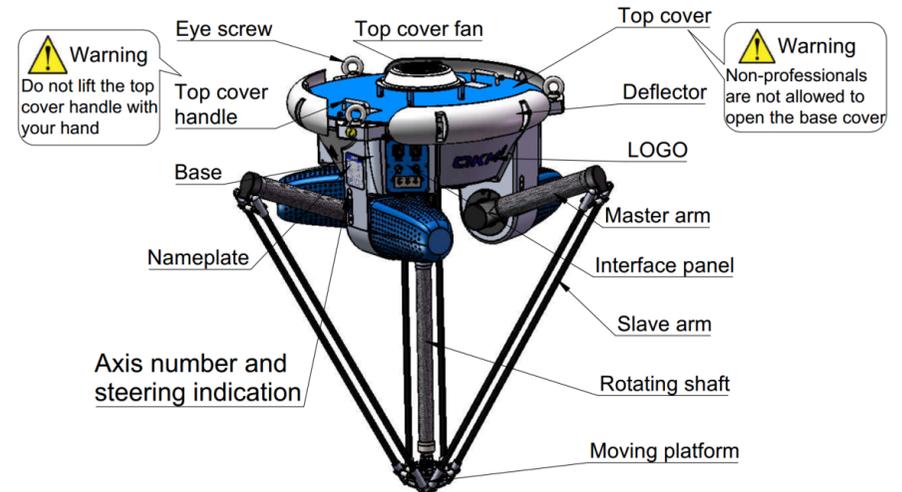
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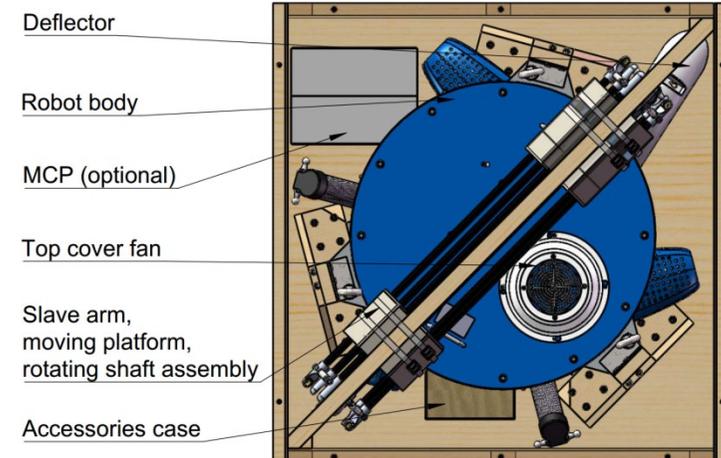
## I. Overall Structure



### NOTE

The 4-axis robot is equipped with a rotating shaft while the 3-axis robot has no rotating shaft; the moving platform structure of the 4-axis robot is different from that of the 3-axis robot.

## II. Unpacking



### III. Installation of Fan



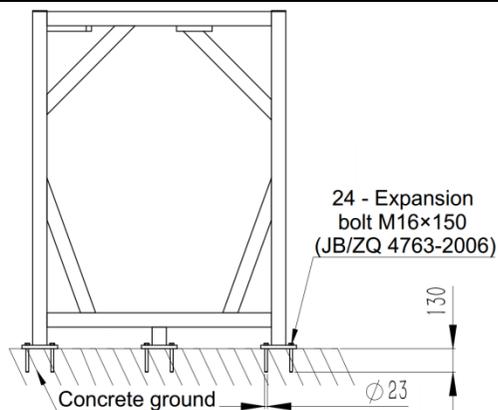
1. Remove the packing belt from the fan and loosen the fixing screws.
2. Adjust the fan to the corresponding four fixing columns. Apply the fan onto the fixing screws through hole 1. Turn the fan so that the screws are located at hole 2, then tighten the screws with an M4 Allen wrench.
3. Connect the fan cable to the FAN interface.

### IV. Installation of Rack



#### NOTE

The base frame shown in the figure is a sample rack for reference. Users can choose or manufacture their own base frames according to needs.



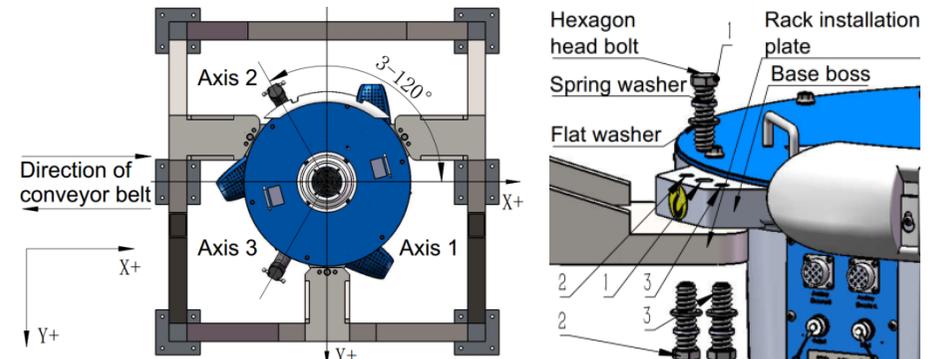
Fix the base frame at the desired position with four M16×150 expansion bolts and the pre-tightening force of the bolts should be 125 Nm.

### V. Installation of Base

According to the installation space, the installation of the base is as follows: (1) Downward installation: The base bosses should be above the installation plate of the base frame; (2) Upward installation: The base bosses should be under the installation plate of the base frame.

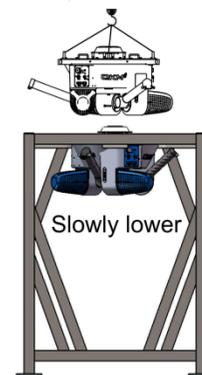
#### ① Downward installation

- Diagram of the downward-installation base and the base frame (bolts 1, 2, and 3 correspond to holes 1, 2, and 3 respectively)
- Bolt model: M16×28 hexagon head bolt

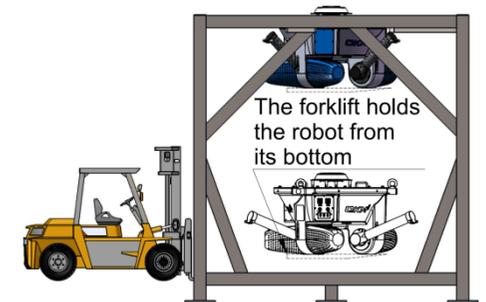


- Lifting equipment is used

- Forklift is used



1. Hoist the base to the top of the base frame with the lifting equipment, slowly lower and adjust it to the installation



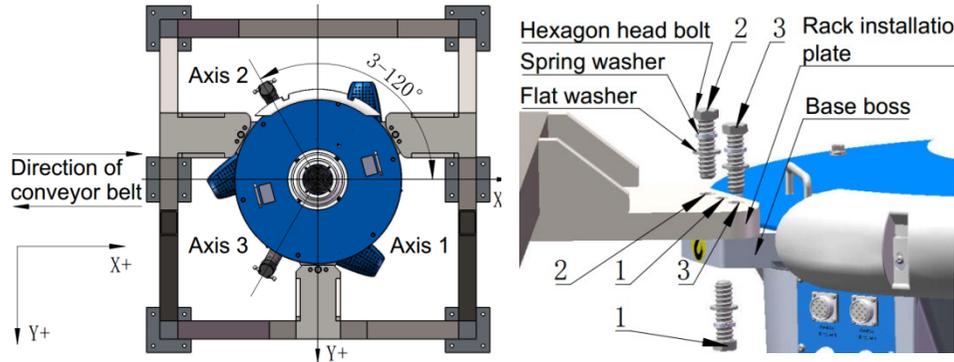
1. Fork the base into the base frame with the forklift.
2. Slowly lift and adjust it to the installation

position shown in the figure above.

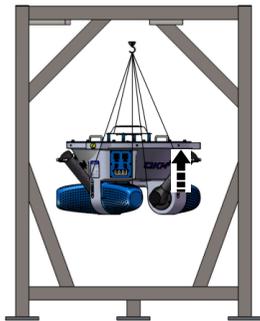
2. Install bolts into the corresponding mounting holes.

## 2 Upward installation

- Diagram of the upward-installation base and the base frame (bolts 1, 2, and 3 correspond to holes 1, 2, and 3 respectively)
- Since the base bosses are located under the installation plate of the base frame, eye screws cannot be used in this way.



- Lifting equipment is used

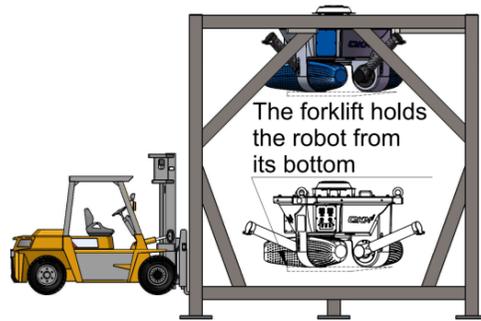


1. Transfer the base into the base frame.
2. Adjust the robot with the lifting equipment to the installation position as shown in the figure above.
3. Install the bolts into the corresponding mounting holes.

position as shown in the figure above.

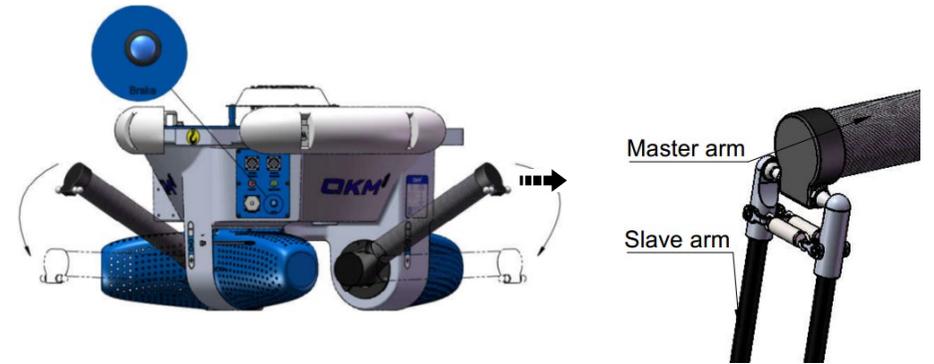
3. Install the bolts into the corresponding mounting holes after removing the eye screws.

- Forklift is used



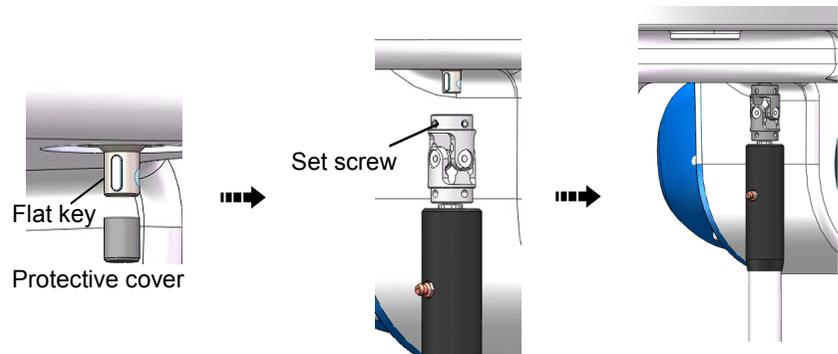
1. Transfer the base into the base frame.
2. Slowly lift and adjust it to the installation position as shown in the figure above.
3. Install the bolts into the corresponding mounting holes after removing the eye screws.

## VI. Installation of Slave Arm



1. Connect the POWER on the panel 3 of the robot to the power supply to power on the robot. Press and hold the "Brake" button on the panel 1. Manually move the three master arms of the robot to the installation position 2.
2. Pull the spring at the end of the slave arm. Buckle the ball hinges of the slave arm with the ball head of the master arm, and naturally sag the slave arm. Install the three sets of slave arms in this way.

## VII. Installation of Rotating Shaft

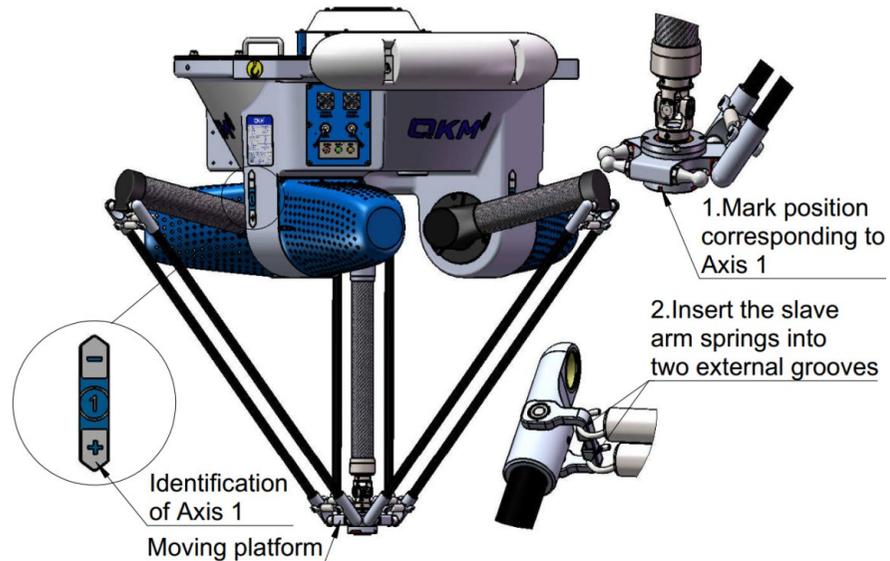


1. Remove the protective cover and loosen the set screws at the shaft side of the universal

joint with the H2.5 Allen wrench.

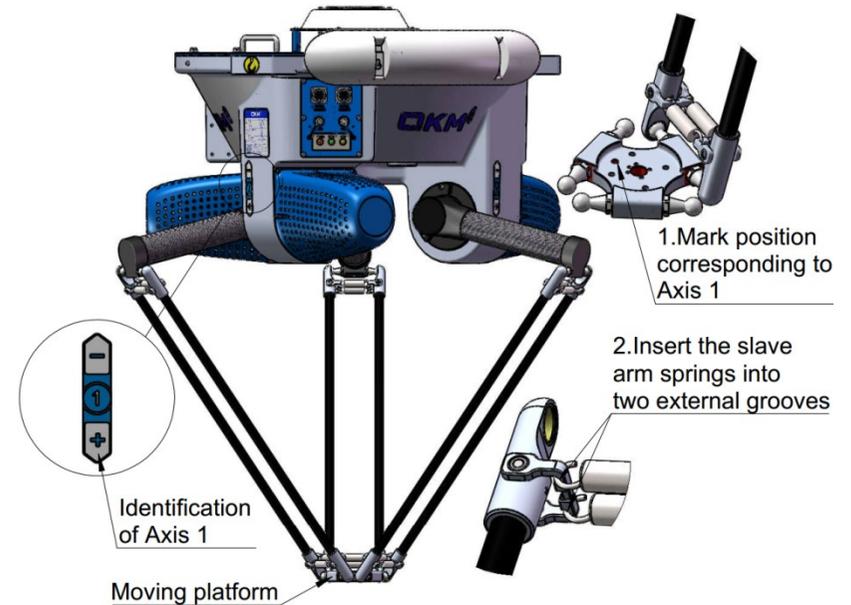
2. Align the keyway of the universal joint with the flat key of the connecting shaft, and insert the flat key upward to fit into the keyway.
3. Ensure that the set screws at the shaft side of the universal joint are aligned with the counter bores at the shaft end. Tighten the set screws, and then those at the flat key position. Apply threadlocker on the screws (Loctite 222 recommended).

## VIII. Installation of Moving Platform (4-Axis)



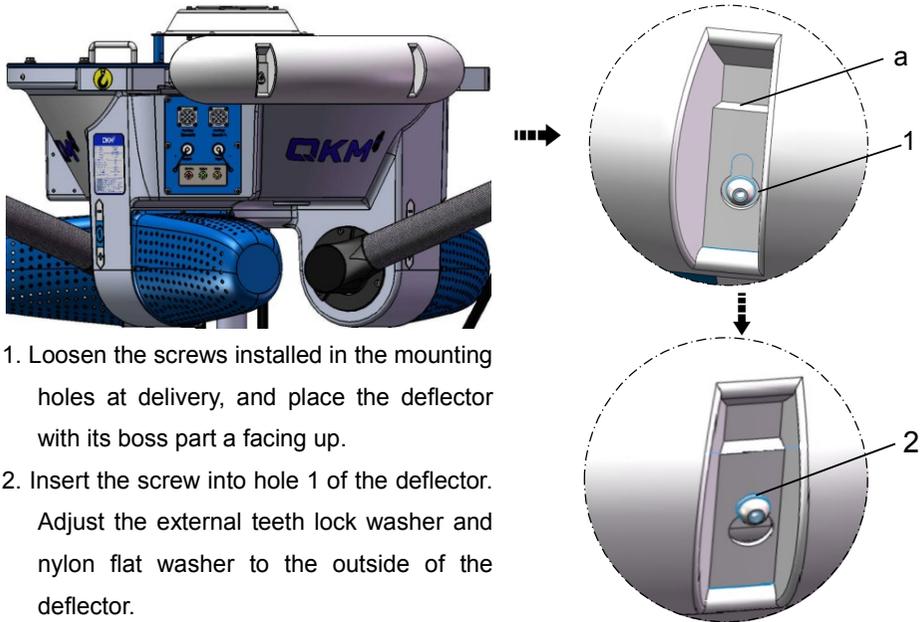
1. Align the side of the mark position of the moving platform to Axis 1 of the master arm.
2. Buckle the ball head of the moving platform with the ball hinge at one end of the slave arm, then complete the buckling of the other two sets of ball heads with the ball hinges in turn.

## IX. Installation of Moving Platform (3-Axis)



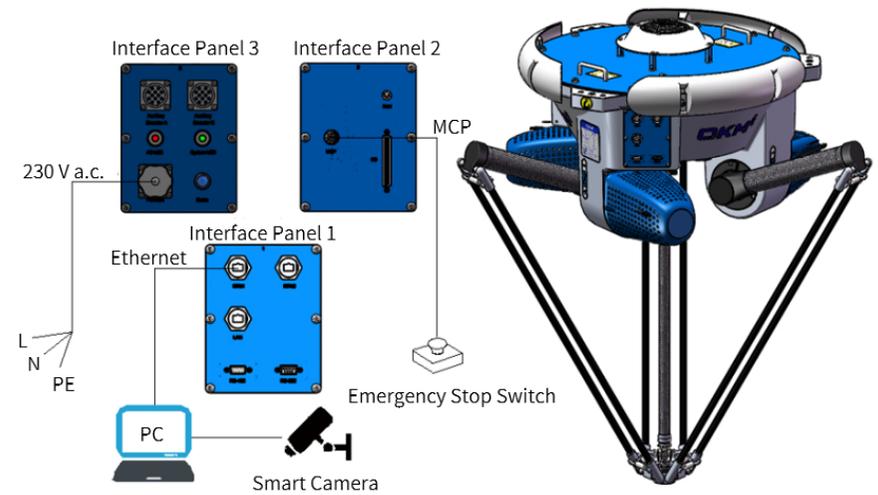
1. Place the moving platform with its bosses facing up and align its mark position to Axis 1 of the master arm.
2. Buckle the ball head of the moving platform with the ball hinge at one end of the slave arm, then complete the buckling of the other two sets of ball heads with the ball hinges in turn.

## X. Installation of Deflector



1. Loosen the screws installed in the mounting holes at delivery, and place the deflector with its boss part a facing up.
2. Insert the screw into hole 1 of the deflector. Adjust the external teeth lock washer and nylon flat washer to the outside of the deflector.
3. Move the deflector down and adjust it to hole 2, and then install all the other deflectors in turn.

## XI. Electrical Connection



1. Connect the POWER on the panel 3 to the 230 V a.c. power supply.
2. Connect the Ethernet interface on the panel 1 to the computer.
3. Connect the MCP interface on the panel 2 to the emergency stop button cable connector.