

# Vacuum Lifter Instruction Manual

MODEL: XR-Q500

Version: XR-V20190420



## Preface

First of all, thank you for choosing the air-shaken arm feeding machine produced by our company, which is a kind of equipment used in the laser cutting machine plate feeding equipment independently developed by our company.

This manual describes the installation and use of this laser cutting machine air shaker arm loader. Please read and understand this instruction manual carefully before using this device. Open the package, please check whether the accessories are complete against the packing list, if there is any omission, please contact us as soon as possible.

This machine has the characteristics of light structure, convenient disassembly and assembly, wide range of uses, etc., and can handle 500KG load.

**This product has the following salient features:**

1. High stability and simple operation. Using the pneumatic assist principle, the handling process of the workpiece can be completed by simply operating the control button.
2. High efficiency and short handling cycle. When feeding, the operator can control the movement of the workpiece in the space with a small force, and can be stopped at any position, making the handling process easy, fast and consistent.
3. High safety performance, set up a gas out-of-air protection device. When the air supply is suddenly interrupted, the plate will remain in its original position for a period of time. Easy for the operator to remove the plate.
4. The main components are made of internationally renowned brand products, and the quality is guaranteed. The instruction manual details the use of the method and precautions, for better operation of the equipment, please read this manual carefully and keep it properly before use.

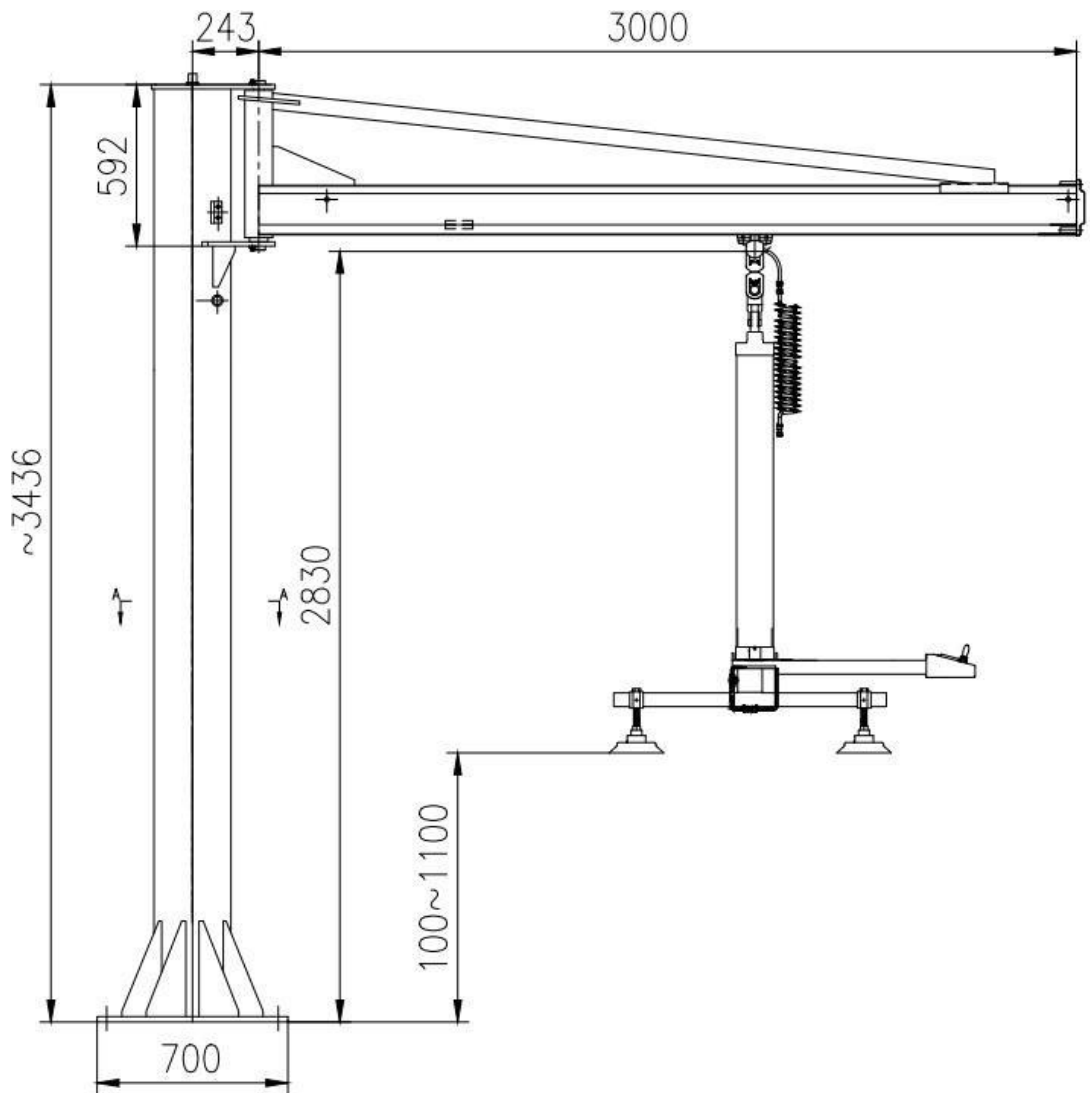
— The performance parameters of the air-shaken arm loader

Working radius: 700 ~ 3000mm (can be customized without standard) Lifting stroke: 1000mm

Cantilever rotation angle range: 0 ~ 270 ° Rated load: 500kg

Plate size: 3000mm \*1500mm air supply pressure: 0.6 ~ 0.8MPa

Suction cup lift height range: 100 ~ 1100mm (from the ground)



## 二. The handling and installation of the pneumatic shaker arm loader

### 2.1 Precautions

When the pneumatic boom loader arrives at the installation position, it must be operated in strict accordance with the measures described in the instructions, please read and understand the following instructions in detail::

## **Danger**

- 1, should use a crane or forklift to carry the loader, can not manually support the loader body!
2. During handling, the staff cannot climb the suction cup holder or stand under the suction cup holder!
3. When installing the air source, it must be connected after the air is cut off, and the target sign must be set!
4. Before starting the loading machine, you need to confirm whether the installation of each system is correct to ensure safety!
5. When the vacuum pressure gauge pressure is lower than 0.04MPa, it is forbidden to suck the plate!
6. The customer carries out product transformation without authorization, which is not within the scope of the company's warranty, and the company is not responsible!

## **Attention**

1. It is strictly forbidden for the loader to exceed the maximum load, otherwise it will cause serious consequences!

2. The operation of the loading machine must be entrusted to the personnel with operational qualifications!
3. It is forbidden to enter the activity range of the loading machine to avoid personal injury!
4. The operation and maintenance personnel of the loading machine must wear safety protective equipment!
5. It is forbidden to contact moving mechanical parts to prevent personal injury!

## **2.2 The installation environment of the air-shaken arm loader.**

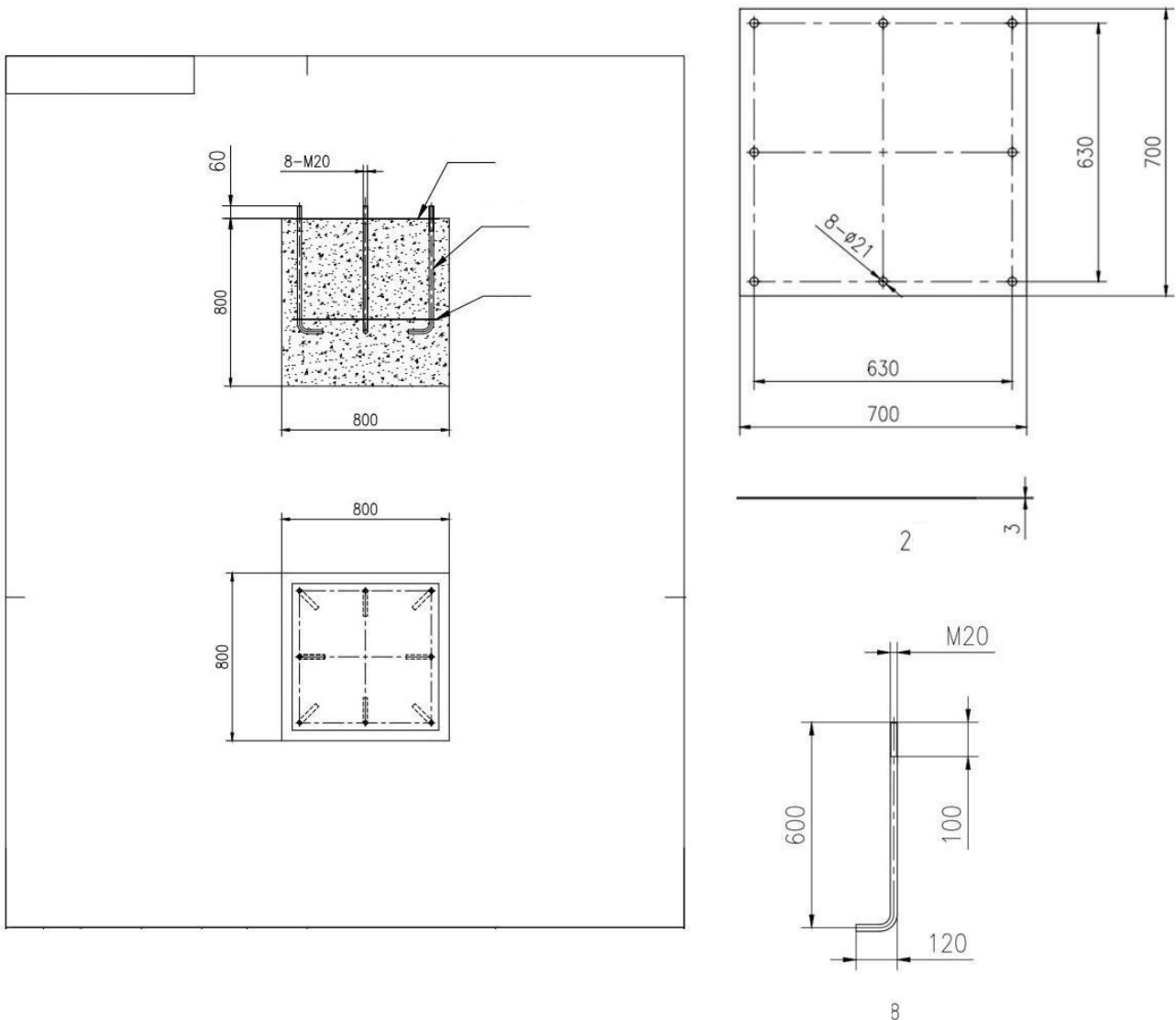
1. Please ensure that the level of the installation ground is within  $2^\circ$  of  $\pm$ .
2. Make sure to prefabricated the foundation according to the foundation map provided by our company.
3. Make sure that the position of the anchor screws is correct.
4. The working environment temperature must be between  $-5^\circ\text{C}$  and  $45^\circ\text{C}$ .
5. The relative humidity is between 35% and 85%, and there is no condensation.
6. Ensure that the installation location is free of flammable and corrosive liquids and gases.
7. Ensure that the installation position is not affected by excessive vibration.
8. The air supply pressure of the air source is in the range of  $0.6\sim 0.8\text{MPa}$  (within 10% of the  $\pm$ ).
9. The unit of use of this product ensures that the installation position has enough manipulator movement space, and pays attention to the safety isolation belt in the activity area of the loading machine.

## 2.3 Air shake arm loading machine prefabricated foundation foundation

The pneumatic boom loader must have a precast concrete foundation, which is secured through the base bolt mounting hole using high-strength bolts. The base dimensions are shown in the following figure:

Installation Instructions:

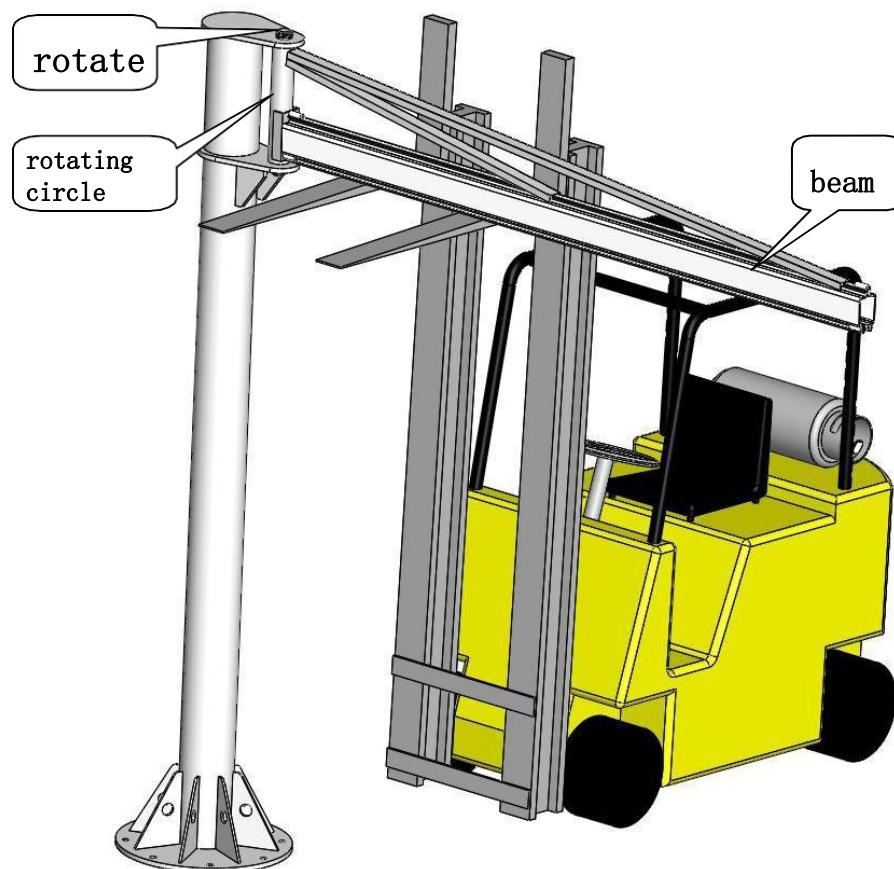
1. Embedded steel plate size: 700mm\*700mm\*3mm (2 pieces).
2. Anchor bolt screw M20 (8 pieces), tooth length 80mm, tooth area leakage ground height 60mm.
3. The screw must be aligned with the preset pad positioning hole ( $\varnothing 21$ ) when installing the foundation.



## 2.4 Air shake arm loading machine assembly

Installation of the mechanical body:

1. Use forklift or crane assist, put the column chassis on the pre-positioned foundation, and lock the anchor bolts.
2. Use a forklift to lift the beam, align the center hole of the rotating round pipe with the fixed hole at the top of the column, load the upper latch into the rotating round pipe from the upper end, insert the bearing into the lower end of the circular tube (note: the side with the large outer ring is on the top), and then insert the lower latch from the lower end.
3. The upper and lower latches are locked with locking plates.





#### 4. Connection of pneumatic pipelines:

1. The pressure regulator is installed on the column, the input port is connected to the external air source, and the output end is connected to the inner end of the spring pipe of the beam with  $\varphi 12$  gas pipe.
2. Install the cylinder and suction cup holder and connect the pipeline, and place it on the tray under the beam (about 200mm)
3. Connect the outer end of the beam spring tube with the spring tube and the input end of the suction cup group.
4. Open the external air source, pull the lid of the regulator upwards, and adjust the pressure to 0.6-0.8Mpa.
5. Dial the lever on the operation panel to the descending position, lift the cylinder shaft, and then connect the cylinder and beam

#### 2.5 Commissioning of pneumatic shaker arm loader:

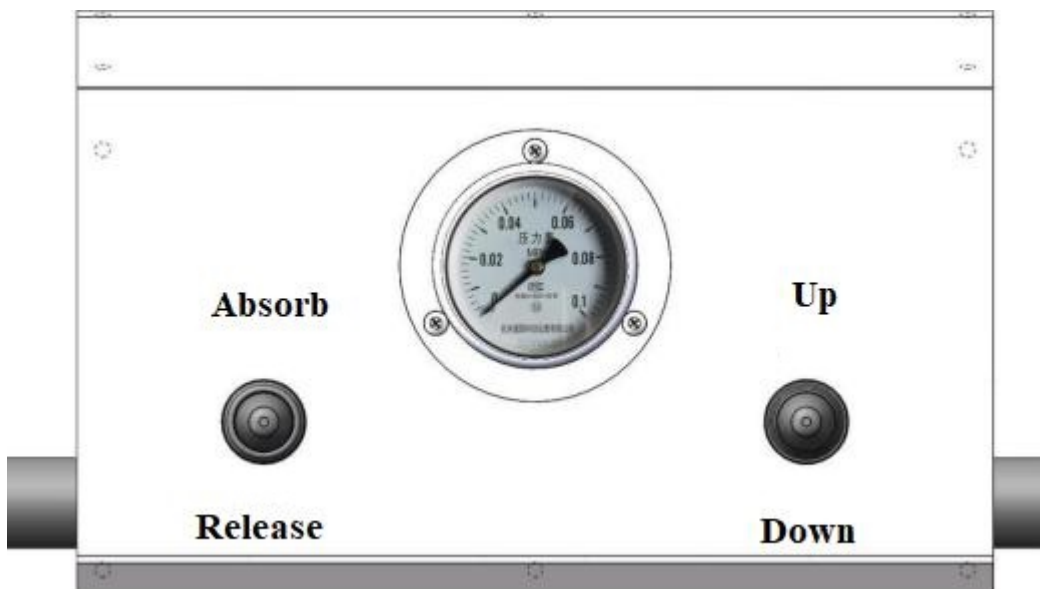
1. Pull the lid of the regulator up, adjust the air pressure to 0.6 ~ 0.8MPa, and then gently press down to reset.
2. Toggle the [rising/falling] switch on the operation panel to control the rise and fall of the suction cup group, and adjust the appropriate lifting and lowering speed by adjusting the screws on the speed control valve on the cylinder (the adjustment screw at the upper end of the cylinder adjusts the rising speed, and the screw at the lower end of the cylinder adjusts the falling speed)
- 3, suction plate: the suction cup set moved to the plate, toggle the [suction] switch, observe whether the vacuum pressure gauge pressure can be higher than 0.04MPa, below 0.04MPa should check whether the pipeline and switch are leaking, above this value can be used normally.
4. Release plate: the lever is dialed to the release position, and the release confirmation switch is pressed with the left thumb, and the lever is controlled with the right thumb to lift the suction cup group.

### ≡、 The way to use the air-shaken arm loader

#### **3.1 Precautions before use:**

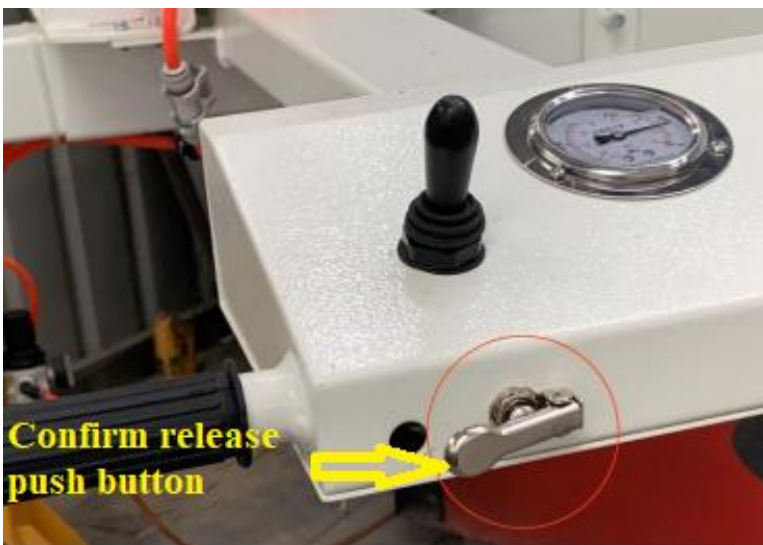
1. The operator must be specially trained, and can only be put on the job after passing the examination, and strictly abide by the safety operation procedures.
2. Do not carry other objects other than the specified plate.
3. Do not handle plates weighing more than 500kg.
4. Do not leave unguarded loads in the air.
5. Check whether the bolt fasteners are loose, and if there is looseness, they should be tightened in time.
6. Connect the air source and adjust the air source pressure to 0.6~0.8MPa
7. Check whether there is any damage to the lips of each suction cup

#### **3.2 Introduction to the function of the air-shaken arm loader handheld box**



**【Suction】** : Suction cup set vacuum switch, flip the switch upwards to start the vacuum system, suck the plate.

**【Release】**: Suction cup set vacuum switch, flip the switch down to turn off the vacuum system, while holding the release confirmation button to blow air into the suction cup to destroy the vacuum, release the plate.



**【Up】**: Suction cup group lifting control switch, up toggle the switch, suction cup group rise.

**【Down】** : Suction cup group lifting control switch, downward toggle switch, suction cup group down.

#### **四、 The maintenance and maintenance of the air-shaken arm loader**

The use of mechanical components and control systems of this equipment requires regular maintenance and maintenance. Before the loader is serviced and maintained and before entering the suction cup rack safety area, make sure to turn off the air supply and remove the air source connector.

##### **4.1 Daily inspection of loading machine:**

1. Check the pressure and air dryness of the air pressure source, and remove

the moisture of the air source binary.

2. Check whether the vacuum generator is normal.
3. Check whether the mechanical body and hydraulic station are clean and dust-free.

#### **4.2 Weekly maintenance of the loader:**

1. Wipe and clean the mechanical body and tighten the bolts in each part.
2. Check the pressure of the air pressure source and the dryness of the air, and filter the drainage of the regulator.
3. Check whether the vacuum negative pressure gauge is normal.
4. Check whether the locking screw is loose.

#### **4.3 Monthly maintenance of the loader:**

1. Wipe the dust on the manipulator's arm to ensure that the manipulator is clean.
2. Check whether the pneumatic plug has loose fastening.
3. Readjust the running speed of each action.
4. Check whether the trachea has damage and the pressure of the air source and the dryness of the air, and filter the regulator to drain the water.
5. Check whether the bolts of all moving parts are loose and tightened, and add lubricating oil to an appropriate amount.