Mechanical Truck Lift Manual

1. Overview:

Mechanical car lift adopts electric drive mode. When working, it is operated through the electric control cabinet. The planetary cycloid pinwheel reduces speed, the lead screw rotates, and the nut drives the bracket to move up and down. The support fork moves up and down with the bracket to support and lift the car wheel. It has reasonable design, novel structure, strong and durable, large lifting tonnage, flexible movement, wide application of car models, easy operation and maintenance, etc. Because it adopts mobile operation mode, it can be installed and used indoors and outdoors. It is an ideal car lifting equipment for the automobile maintenance and manufacturing industries to improve production efficiency, enhance warranty quality, and improve the working environment.

2. Main Applications:

This machine is mainly suitable for lifting and repairing various passenger cars and trucks weighing less than 10 tons in automobile manufacturing plants and automobile repair industries. It can lift the car to a suitable height, allowing workers to smoothly enter and exit the bottom of the car, replacing the transmission trench operation method.

3. Main technical parameters:

Lifting weight: 7.5T*4 column

Lifting range: 1500mm

Output speed: 50r/min

Rising speed: 600mm/mm

Motor power: 4×3kw

Power supply voltage: 380/415V 50/60HZ 3PH or Customized

Total weight: 3200kg

4.Basic structure and working principle:

This machine adopts electric drive mode, mobile wheel lifting, it is composed of low frame, column, reducer, lead screw, nut, bracket, fork frame, fork and electrical control cabinet. When working, through electric control operation, reducer drive, lead screw rotates, nut drives the bracket, fork frame and wheel lifting. Due to the different wheel diameters, the fork of this machine can be adjusted according to the wheel size to suit the lifting of wheels of various models.

5. Safety protection device：

1、 There is a steel safety nut under the working nut (see the schematic diagram of the working nut safety structure).

When the working nut is suddenly damaged due to wear or other reasons, the safety nut under the working nut will hold it. Because there is a steel ball rolling device, when the working nut is damaged and falls on the working nut, the working nut and the lifting nut body will idle under the action of the steel ball, neither going up nor down, thus playing a safety role.

2、 A lifting travel limit device is provided at the upper and lower ends of each column to ensure automatic shutdown in case of overtravel during operation.

3、 An electromagnetic clutch is installed at the top of the reducer motor to ensure that the lift can be braked quickly during the ascent or descent process.

4、The traveling wheels are equipped with a hydraulic lifting device. When the lift is moving, the hydraulic jack lever is pulled to make the chassis leave the ground for easy movement. When lifting, the jack release pedal is stepped on to make the chassis fall to the ground to ensure the lifting is safe, stable and does not move.

6. Operation Instructions：

1. Before use, check whether all fasteners are loose during transportation or use, and whether all lubricating parts, lead screws, screw nuts, guide wheels, and travel wheels are lubricated. After everything is ready, connect the power supply and the lines of the four columns and travel switches to the terminal block behind the electric control cabinet in the order of the electric control cabinet.

2. After the power cord is connected, press the total movement to rise and fall, the single machine to rise and fall, and touch the travel switches of each column by hand to see if they work, and whether the indication of the lifting button switch is the same as the lifting direction of the lift. If different, please swap the two-phase lines of the power cord or motor line.

3. After the no-load test is no problem, load lifting can be carried out. When lifting a load, lower the lift to the lowest position, push the forks of the four-post lift to the position where the four wheels can be lifted, press the total lift switch, and the lift starts to lift the car. When it reaches the highest position, any one of the lifts can touch the travel switch to automatically stop. When lowering, press the total lowering switch, and the lift starts to lower the car. When it reaches the lowest position, any one of the lifts can touch the travel switch to automatically stop.

4. The single lift switch is used to adjust the balance of each fork. When adjusting the balance, it must be done when the upper and lower travel switches are not working.

7.Maintenance and care：

1. The machine should be wiped and cleaned frequently to keep the appearance of the lift clean.

2. The bearings at the upper and lower ends of the screw cylinder should be lubricated once every two years.

3. The guide wheel and the travel wheel should be lubricated once every two weeks.

4. The screw cylinder and the screw nut should be lubricated once a week.

5. The reducer should be filled with No. 00 grease once every two years.

6. Before work every day, the working nut insurance mechanism should be checked first (see Figure 1). The gap between the ball seat and the insurance nut at the factory is 11±1mm. When it is worn to less than 7mm, it indicates that the working nut has been severely worn and should be replaced immediately. In addition, the upper and lower travel switches should be checked frequently to see if they are sensitive and reliable to ensure that the insurance

mechanism is safe and reliable.

7. The friction plate of the electromagnetic clutch should be checked regularly for wear. If the friction plate is damaged, it should be replaced immediately. If the nut slides after shutdown, the spring adjustment bolt of the clutch can be adjusted to increase its friction and prevent it from sliding.

8. Precautions：

1. When the lift is in operation, it is strictly forbidden for anyone to enter under the car to prevent unsafe accidents.

2. After the lift is finished, the power switch must be turned to the "OFF" position.

3. During the lifting process, the lift should not be shut down entirely by the upper and lower travel switches. Because the travel switch is controlled by the upper and lower limits, it should be shut down according to the actual working height during use to avoid damage caused by multiple lifting and collision of the travel switch.

4. When the gap between the ball seat and the insurance nut of the working nut insurance mechanism is less than 7mm, the working nut should be replaced immediately. Do not rely entirely on the insurance mechanism until the working nut is fully worn out.

9. Common electrical faults and troubleshooting methods：

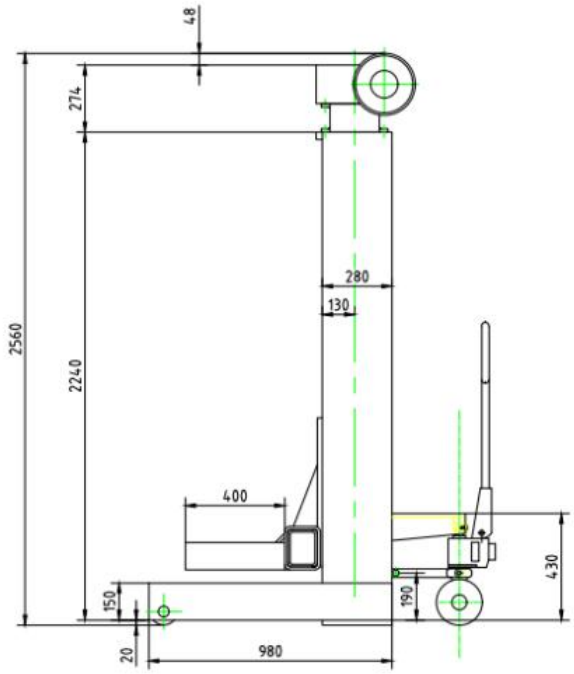
Fault	Cause	Treatment method
All column or single column move does not work	Total or single action does not work	Turn on the power and check the switch
	One or more motors are out of phase or overloaded	Check each motor
	The No. 1 column up or down switch is damaged and the line is blocked.	Repair or replace the travel switch and connect the circuit
The motor of column No. 1 works, but column No. 2 and the main control do not work	The travel switch for the rise or fall of the No. 1 column is damaged, and the line is blocked	Repair or replace the travel switch, connect the travel switch circuit
The motors of column No. 1 and No. 2 work, but column No. 3 and No. 4 do not work	The travel switch for the rise or fall of the No. 3 column is damaged, and the line is blocked	Repair or replace the travel switch, connect the travel switch circuit
The motors of the columns 1, 2, and 3 are working, but the motor 4 is not working	The travel switch for the rise or fall of the No. 4 column is damaged, and the line is blocked	Repair or replace the travel switch, connect the travel switch circuit
The motor of the lift can only work in one direction	The travel switch on the opposite end is blocked, and the line is blocked	Repair or replace the travel switch, connect the travel switch circuit
The lifting button of the lift is opposite to the actual one	The input line of the power supply motor is opposite	Adjust the power supply or motor phase line

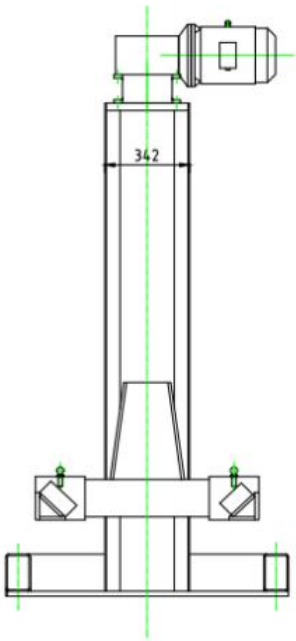
10. Attached photos

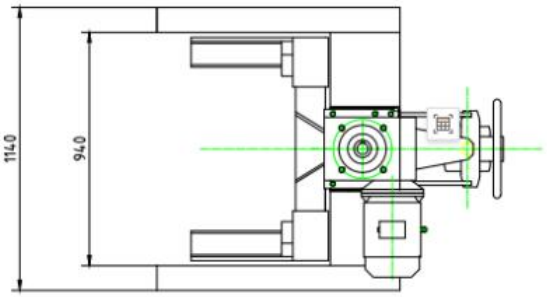
1. Appearance structure diagram

2. Schematic diagram of working nut

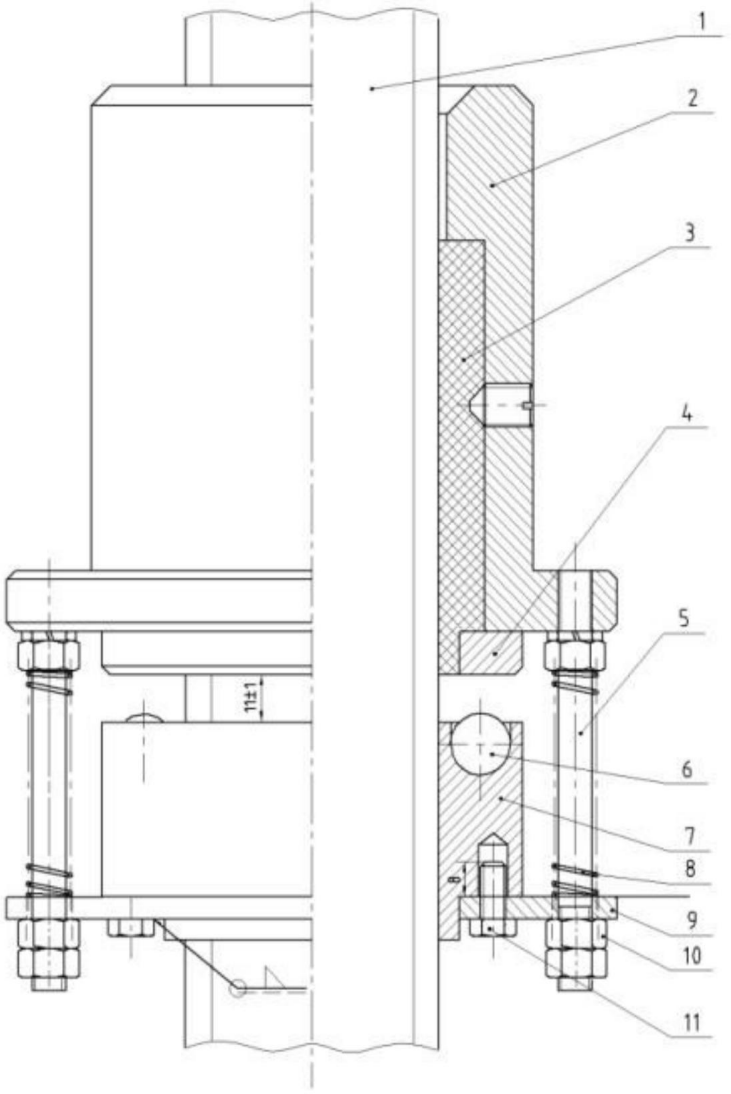
3. Electrical schematic diagram







SCHEMATIC DIAGRAM OF THE WORKING NUT SAFETY MECHANISM



1. Lifting screw 2.Lifting nut body 3.Lifting nut
4.Steel ball friction pad 5.Adjustment screw
6.Steel Ball 7.Safety nut 8.spring 9.Hanging board
10.Hexagonal nut 11.Hexagon bolts

GAS SCHEMATIC DIAGRAM OF AUTOMOBILE ELEVATOR