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ERG  
CONTAINER LOADING AND UNLOADING  
AUTO-CONVEYOR

《Operation and Maintenance Manual》

A large, faint watermark of the Ergate Technology logo is centered on the page. It consists of the Chinese characters "埃给特科技" in a light red color and the English text "Ergate Technology" in a light blue color, all enclosed within a light blue circular graphic element.

埃给特科技  
Ergate Technology

Ningbo Ergate Intelligent Technology Co., Ltd

7<sup>th</sup> July of 2023

## DIRECTORY

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Dear clients, thank you very much for purchasing our company's ergonomics: ERG container loading and unloading belt conveyor machine. In order to ensure your long-term satisfactory use of this equipment, please carefully read this operation and maintenance manual before use

The manual provides a detailed description of the operating methods and precautions when using the equipment. Improper use can cause unexpected malfunctions and even serious consequences. To ensure the safety of your personal, equipment, and property, please read this manual carefully before using this device, and use it correctly based on a correct understanding of its functions, performance technical indicators, and usage methods. And in the future installation, handling, operation, debugging, and maintenance process, follow and execute. Incorrect use will hinder the normal operation of the equipment, reduce its service life, and cause malfunctions. Please keep it properly after use.

Before installation, operation, maintenance, and inspection of this equipment, it is necessary to thoroughly read this user manual and other auxiliary materials in order to use them correctly. The following items may cause personal injury or serious damage to the equipment. Please conduct a strict inspection before use.

## **一. Safety Warning**

### **1. Danger**

The danger warning is to draw your attention to the danger, otherwise it may result in serious injury or death. If appropriate preventive measures are not taken, accidents will definitely occur.

1.1 During the operation or movement of the ERG auto truck loading and unloading conveyor, no one is allowed to cross or cross the ERG self truck loading and unloading conveyor, otherwise it will cause injury or death. It



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is strictly prohibited for ERG to load and unload the conveyor on its own while passengers are traveling.

## **2. Warning**

The warning prompt is to alert you to the danger, otherwise it may result in injury or death. If appropriate preventive measures are not taken, accidents may occur

2.1 The ERG auto loading and unloading conveyor must send a signal before operation, otherwise it cannot be started.

2.2 The ERG auto loading and unloading conveyor is driven by an electric motor. When carrying out any maintenance work, it is necessary to confirm that the power supply has been cut off. The so-called 'cutting' means that maintenance personnel hang out tags, lock them out, and remove cables from the power supply center. Any other understanding is inaccurate. Failure to do so may result in personal injury and equipment damage.

## **3. Watch out**

The caution prompt is to alert you to the danger, otherwise it may cause personal injury or equipment damage. This type of danger is usually not serious, but the consequences of development are terrifying. If appropriate preventive measures are not taken, fatal injuries may even occur.

3.1 Ensure that there are no flammable or explosive materials on the reducer, coupling cover, and motor, otherwise it may cause a fire due to the equipment overheating and igniting combustible materials.

## **4. Safety knowledge**

4.1 Maintain a certain distance from all moving components and machines, and ensure that loose clothing (especially at the collar, cuffs, trouser legs, etc.) is not worn during inspection during the operation of the ERG self loading and



unloading conveyor.

4.2 Only after checking and confirming that all components have been correctly installed can the ERG self loading and unloading conveyor be started.

4.3 Ensure that all bolts and fasteners are in place and tightened correctly.

## 二. Note

### 1. Preventing electric shock

1.1 When the equipment is running, please do not open the cabinet door or the junction box cover, otherwise electric shock may occur.

1.2 When cutting off power for maintenance, please confirm that the power indicator light of this electrical cabinet is off, and use tools such as a multimeter to confirm before proceeding with work.

1.3 Please conduct grounding work between various parts of the equipment.

1.4 Please do not operate the equipment with wet hands to prevent electric shock.

1.5 For cables, please do not damage them. Applying excessive stress to the cables can cause hazards such as short circuits, electric shock, etc

### 2. Prevent&caution a fire

2.1 Please install the equipment away from flammable and explosive materials or equipment, otherwise it may cause a fire.

2.2 The connecting cables between the equipment and the outside should be strictly selected according to the regulations in this manual and reliably connected, otherwise it may become the cause of a fire.

2.3 When installing this device, please do not block the forced ventilation opening of the device, otherwise it may become the cause of a fire.

### 3. Caution of damage

3.1 Please do not apply voltage beyond the specifications in the user manual to each terminal, otherwise it may become the cause of equipment explosion or



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damage.

3.2 Please do not mistake the connection of the terminals, otherwise it may become the cause of equipment explosion and damage.

3.3 After long-term storage of the equipment (more than 1 year), it must be inspected and confirmed by professional personnel before use, otherwise it may become the cause of equipment explosion and damage.

3.4 After the equipment is damp, it must be thoroughly dried and inspected by professional personnel before use, otherwise it may become the cause of equipment explosion and damage.

3.5 After long-distance transportation or accidents such as falls or collisions, equipment must be inspected to confirm that there are no components. Only after the phenomenon of detachment or damage occurs can it be used, otherwise it may become the cause of equipment explosion or damage.

3.6 The installation position of the control cabinet must have reliable lightning protection and grounding measures, otherwise it may become the cause of equipment explosion and damage.

3.7 In non debugging state, it is not allowed to manually cover up various detection switches, otherwise equipment damage and personal accidents may occur.

4. Please pay full attention to the following types of precautions. Improper use can sometimes cause unexpected malfunctions and injuries, leading to electric shock.

4.1 When transporting and installing equipment, please use the correct lifting and handling tools to prevent damage. Do not let it fall or be subjected to strong impacts.

4.2 Do not directly press heavy objects and other debris onto the product.

4.3 The installation direction must be strictly followed.

4.4 It is strictly prohibited to mix conductive foreign objects such as screws, metal sheets, and combustible foreign objects such as oil inside the frequency conversion control cabinet.

4.5 The debugging and maintenance work should be carried out by professional

technical personnel.

4.6 Do not modify the equipment.

When the equipment is shut down for a long time without use, please turn off the main power supply of the equipment.

4.7 When the equipment is shut down for a long time without use, please turn off the main power supply of the equipment.

4.8 The placement of electrical cabinets must comply with relevant fire regulations, reserve pedestrian access, and do not place obstacles.

4.9 The transported items should be placed gently on the tape surface near the middle position.

4.10 It is prohibited to use hard objects to strike the equipment.

4.11 It is prohibited to scratch the surface of the tape with a blade or sharp object.

4.12 After the movable frame is extended, external force should not be used to force the movable frame to sway laterally, in order to avoid causing the frame to jam and causing the tape to deviate.

4.13 When using the equipment, if it is found that the conveyor belt has deviated to one side of the drum, the machine should be immediately stopped and the belt should be.

4.14 Only after adjusting to a reasonable position can it be restarted for use.



Deviation prohibited operation

4.15 adhesive tape, if any abnormal noise or stuck sound is found in the equipment, the machine should be immediately stopped for inspection.

4.16 Only after troubleshooting is it allowed to restart and use.

4.17 When maintaining the equipment, be sure to cut off the power supply and hang warning signs to indicate.

4.18 Personnel are strictly prohibited from crossing or passing through equipment.



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4.19 It is strictly prohibited for personnel to sit, lie, or walk on the adhesive tape surface.

4.20 It is strictly prohibited to clean debris on the tape conveyor during equipment operation.

4.21 Non professional personnel are strictly prohibited from carrying out daily operations and maintenance work.

4.22 It is strictly prohibited to use hands or other parts of the body to come into contact with the moving parts of the tape machine, such as the tape and drum.

4.23 It is strictly prohibited to touch the movable gap structure and moving parts of the frame with hands or other parts of the body.

### **三. Conveyor structure principle and brief function introduction**

The ERG auto container loading and unloading conveyor is mainly used in cross-border e-commerce overseas warehouses for goods with a large number of SKUs, including various outer packaging (cardboard boxes, plastic bags, etc.), various shapes and volumes (long, square, round, flat), and irregular parts weighing no more than 50K. It replaces traditional telescopic machines for efficient, safe, labor-intensive, and low-cost loading and unloading of goods

1. The ERG auto container loading and unloading conveyor adopts a large number of ergonomic principles in its design, which enable the lifting mechanism, left and right rotation and swing mechanism of the operating platform and unloading section belt conveyor, allowing the operator to adjust the position in the height and width direction of the container at will, and drag the goods onto the belt conveyor with the minimum force and shortest distance (instead of laboriously moving), achieving labor-saving, efficient, and safe.

2. The ERG auto container loading and unloading conveyor adopts AGV steering wheel control technology and battery power supply, which enables it to use its



own power to cross the warehouse and climb slopes, solving the problem of large volume and weight of traditional telescopic machines that are not easy to move. It can achieve one machine with multiple ports and reduce the overall operating cost.

3. The ERG auto container loading and unloading conveyor can choose to achieve bidirectional transportation and loading and unloading of materials according to customer needs.

#### 四、Type and main technical parameters

The ERG auto container loading and unloading conveyor is composed of ① AGV steel wheel self driving and control system, ② servo controlled operating platform lifting system; ③ Turning and lifting mechanism of loading and unloading conveyor section; ④ Main control cabinet and front operation panel control system; ⑤ Flexible and expandable drum conveyor line; ⑥ The basic form of warning, reminder signs, safety devices, and infrared sensors is shown in Figure 1



图 1

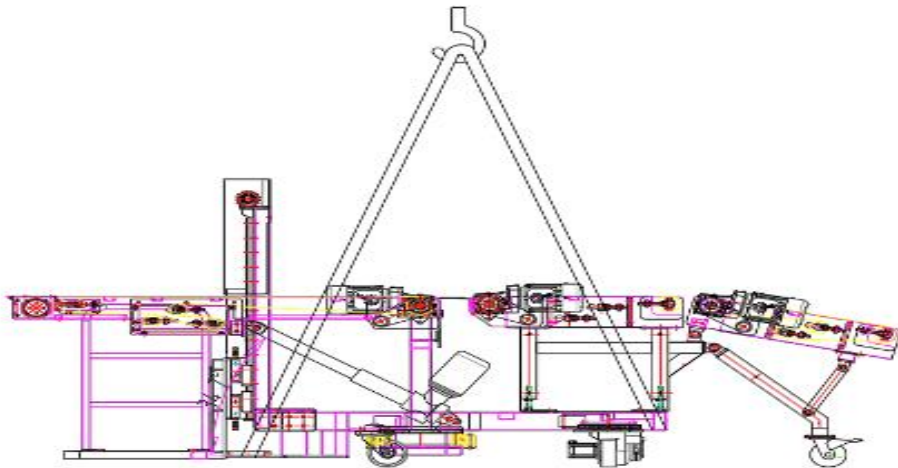
Main Parametres:

1. Conveying capacity:  $\leq 50\text{kg/PCS}$ .
2. Conveying speed: 15-35m/s.

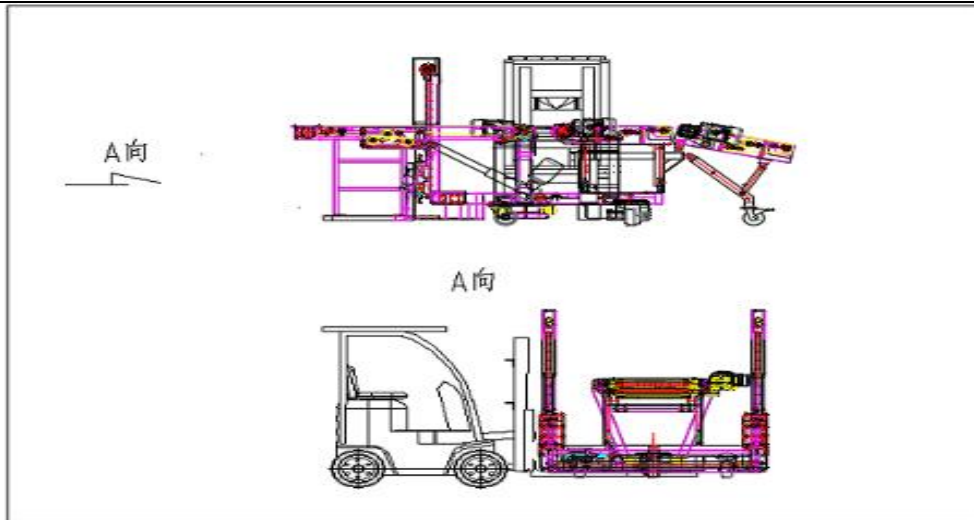
3. Transmission power: 0.75kw \* 3.
4. Lifting power: 0.75kw.
5. Walking speed: 5m/min.
6. Belt deviation:  $\leq 20\text{mm}$ .
7. Transportation form: optional for bidirectional transportation loading and unloading
8. Operation mode: Three operations: front-end operation panel, main control cabinet, and remote control device.
9. Input voltage: 3P AC380V  $\pm 10\%$  Frequency: 50  $\pm 1\%$  Hz.
10. Overall weight: 1200-1500kg.
11. Overall size: L3500 \* W1500 \* H1500 MM.

## 五: Lifting&Handling

1. equipment lift



2. forklift transportation





3. Precautions for lifting and handling: When handling equipment, nylon straps should be installed according to the position shown in the diagram (with a lifting capacity of more than 3 tons). Before lifting and handling, the equipment should be retracted back to its starting position. When lifting and handling, do not touch the button box and electric control box, and avoid the AGV steering wheel and servo lifting device on the chassis. At the same time, be careful not to press the lifting equipment onto parts such as wires and oil pipes to avoid damage. When lifting, soft substances should be used to separate the contact areas on the equipment surface to avoid damaging the paint on the equipment surface. When lifting and handling, it should be smooth to avoid collision and vibration damage to the equipment.

## **六、 Inspection and adjustment before use**

### **1、 check and exam**

The ERG auto container loading and unloading conveyor is a complete machine, and its belt operation, telescopic performance of the movable rack and various mechanisms on the chassis are adjusted before leaving the factory top note. However, due to long-distance transportation, professional personnel ERG should conduct a comprehensive inspection and debugging of the loading and unloading conveyor equipment before use. Delivery for use after performance and indicators have met the usage requirements

### **2、 adjustment**

#### **2. Idle transfer**

2.1.1 Before trial operation, tighten the conveyor belt and apply sufficient tension to ensure that the ERG self loading and unloading conveyor does not slip on the transmission drum during startup and transportation. (Our company has already adjusted it before leaving the factory)

2.1.2 During operation, if any slipping, deviation or other abnormal phenomena of the conveyor belt are found, it should be immediately stopped for adjustment.

2.1.3 When installing and debugging the ERG self loading and unloading conveyor or

during mechanical and operational processes, if the conveyor belt deviates, the reason for the deviation should be determined based on the operating direction and deviation direction of the conveyor belt, and the supporting rollers and each directional roller should be adjusted separately. This adjustment often does not have an immediate effect and should be observed for a period of time before making a judgment. If the conveyor belt deviates to the other side after adjustment, local adjustments should be made in the adjusted idlers.

2.1.4 When the conveyor belt deviates at the drum, it generally deviates to which side and has been adjusted in the past. The adjustment method is to adjust the position of the drum through the adjusting bolts at the drum bearings.

**2.2** Adjust the operating tension of the conveyor belt to determine the required tension based on the transportation volume and distance. When the belt ERG self loading and unloading conveyor is working normally, its initial tension must meet the condition of no slipping. The initial tension changes with the change of conveying volume and length. Excessive tension can lead to early damage to the conveyor belt, while too little tension can cause the conveyor belt to slip. Therefore, it is necessary to adjust the initial tension of the conveyor belt. The adjustment should be made to ensure that the conveyor belt does not slip on the transmission drum.

### **2.3. The following issues should be noted during trial operation**

Firstly, conduct a no-load test run, with a running time of no less than 2 hours. Observe, inspect, and adjust each component to prepare for the load test run.

1. Observation content and equipment adjustment during no-load test run: During the test run, it is necessary to carefully observe the operation of various parts of the equipment and make timely adjustments if any problems are found.

2. Observe whether there is any rubbing phenomenon between each operating component (usually there is abnormal noise when there is interference), especially if it rubs against the conveyor belt, it should be handled in a

timely manner to prevent damage to the conveyor belt.

3. The conveyor belt has no deviation, and if it deviates, it should be adjusted.
4. Check all parts of the equipment for abnormal sounds and vibrations.
5. Check for oil leakage in the reducer and other lubrication parts.
6. Check whether the temperature rise of lubricating oil and bearing is normal.
7. Check if the tensioning device operates well and if there are any signs of jamming.
8. Check if the connecting bolts of the foundation and various components are loose.

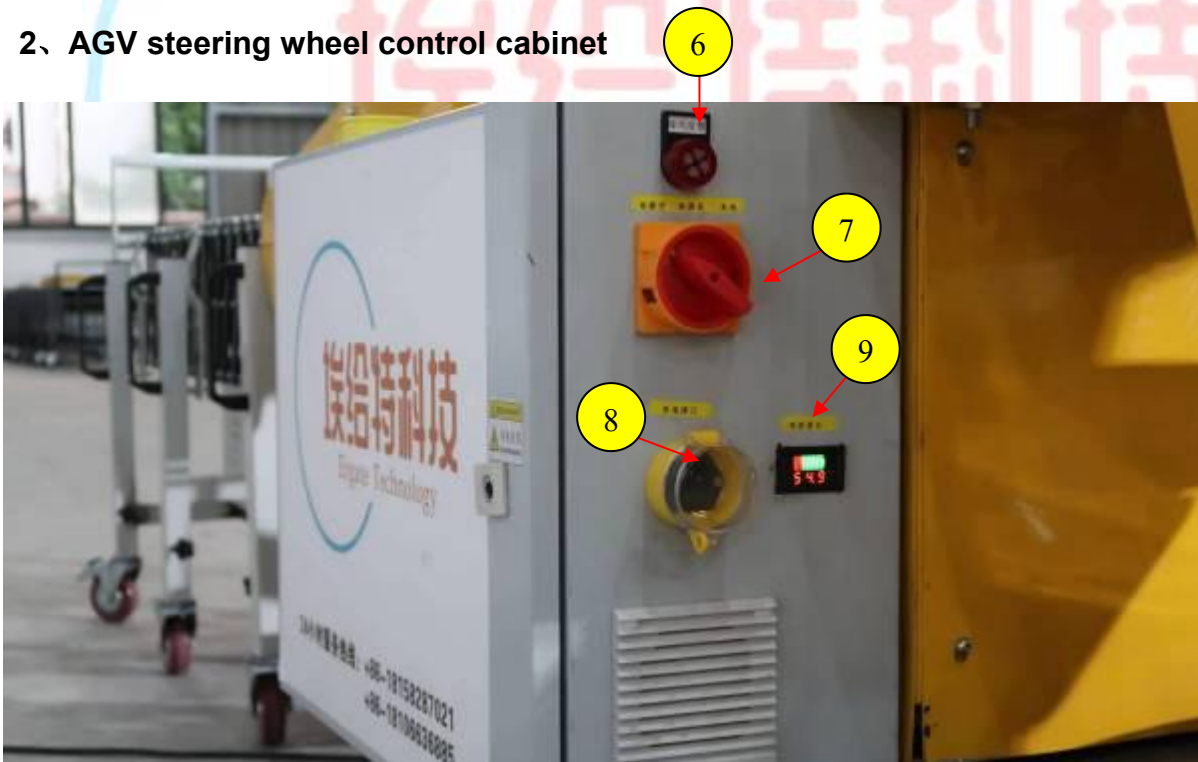
## 七、Diagram of button operation

### 1. Layout diagram of main control cabinet



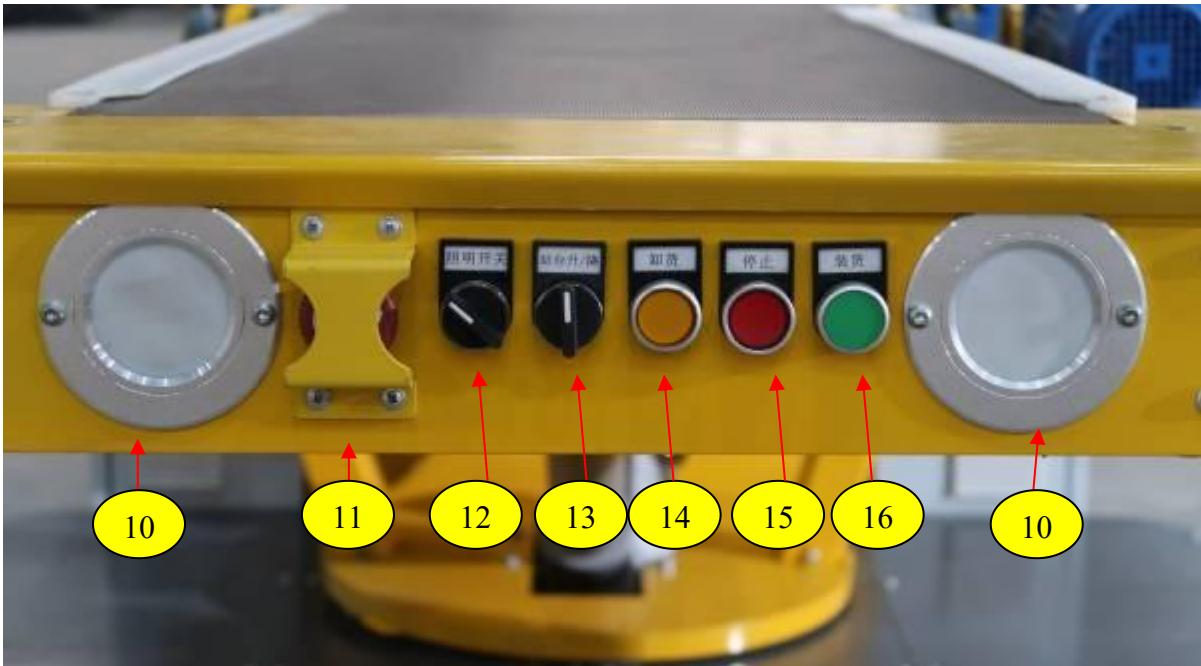


## 2、AGV steering wheel control cabinet



## 3、Front operation control panel





- 1: Main control cabinet power input.
- 2: Main control cabinet power output.
- 3: The fault indicator light of the main control cabinet lights up when a fault occurs.
- 4: Beep alarm: When a malfunction occurs, beep alarm at a certain time rhythm.



5. Main control cabinet isolation switch: Turn on the power by rotating it 90 degrees before starting the machine.
6. The AGV control cabinet fault indicator light comes on when a fault occurs.
7. AGV control cabinet isolation switch: Turn on the power by rotating it 90 degrees before starting.
8. AGV steering wheel charging switch.
9. AGV steering wheel charging power indicator.
10. LED lighting.
11. Emergency stop button; Press the emergency stop button in any emergency situation, and rotate to release it when it is cleared.
12. LED lighting switch.
13. Separate lifting switch for the operating platform.
14. Unloading switch: The belt is rotating forward.
15. Stopswitch: The belt stops running.
16. Loading switch, belt reversal.
17. Master switch: When the lever is pulled up and down, the operating platform and the unloading section belt conveyor are synchronized and linked; When pulled forward or backward, the AGV steering wheel moves forward or backward.

## 八、Preparation before startup

1. Check that the power supply voltage is single-phase 220V, 50Hz, and the capacity is 16A.
2. The control power supply is DC 24V safe voltage.
3. Confirm that there are no unsafe conditions (for equipment and human health) on the ERG self loading and unloading machine.
4. Confirm that the operation head of the Kill switch on the control cabinet and operation box is in the out position, and the equipment has no fault alarm. After inspection and confirmation, the following operations can be carried out.
5. Connect the input/output power supply of the main control cabinet, and the white power indicator light on the cabinet will light up.
6. Turn the isolation switch on the left side of the main control cabinet to the ON position and connect the main power supply.
7. Turn the isolation switch on the left side of the AGV steering wheel control cabinet to the ON position and connect the power supply;



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8. Check the AGV steering wheel for battery level indication. If the battery level indication is less than 50%, turn on the charging switch to charge.

Note: When using for the first time, the above operations need to be carried out; In the future: when starting up, simply rotate the QSO conversion switch of the main control cabinet to the ON position and connect the main power supply; When shutting down, simply rotate the QSO conversion switch of the control cabinet to the OFF position and turn off the main power supply.

## 九、Operating instructions

1. Select the running direction: Press the loading button on the front operation panel, and the belt conveyor will run in the forward direction; Press the unloading button on the front operation panel, and the belt conveyor will run in reverse. Front end belt conveyor up and down operation: The front end main switch is lifted upwards (linked to the platform lifting), the middle relay is closed, the belt conveyor swings up, and the button is released to stop the belt conveyor from swinging up; When the belt conveyor swings up to the limit travel switch or magnetic switch, the belt conveyor stops swinging up. The front main switch is pressurized downwards (linked to the platform lifting), the middle relay is engaged, and the belt conveyor swings downwards. Release this button, and the belt conveyor swings downwards to stop; When the belt conveyor swings to the limit stroke switch or magnetic switch, the belt conveyor stops swinging.

2. Platform up and down operation: Rotate the platform up and down knob on the front operation panel and the up position or front main switch to raise the platform. The relay is engaged, and the lifting system starts. The ERG self loading and unloading conveyor station platform rises. When the station platform rises to the limit stroke switch or magnetic switch, the station platform stops rising; Rotate the platform up and down knob on the front operation panel and press down on the down position or front main switch. The relay is engaged, and the lifting system starts. The ERG self loading and unloading conveyor station platform descends. When the station platform descends to the limit travel switch or magnetic switch, the station platform stops descending.

3. Self operation: When carrying out loading and unloading operations inside the container, it is necessary to pull the main switch to move forward or backward for forward or backward operations. If performing a left or right turn, in order to ensure personal safety, it is necessary to stand outside the equipment and use the remote control device to link two buttons for left or right turn operations.

4. When the operation of the belt conveyor poses a threat to human health and equipment, the emergency stop button on the control cabinet or operation box should be immediately pressed to stop the operation of the belt conveyor. When the motor is overloaded or short-circuited, the circuit breaker trips or the frequency converter protection function acts, the faulty contact acts, and the belt conveyor stops running; Beep alarm sounds, first identify the cause of overload or short circuit, troubleshoot, and then start the belt conveyor.

## 十、Maintenance

The ERG auto container loading and unloading conveyor and its main components should be well maintained according to regulations, and the moving parts and driving devices should be regularly inspected, adjusted, maintained, and cleaned. These operations should only be carried out after the equipment is stationary and the driving device is turned off.

### 1、Maintenance and Repair

1.1 Under normal circumstances, the ERG auto loading and unloading conveyor requires no-load starting and avoids short-term starting.

1.2 It is necessary to regularly check the gearbox for oil leakage, and regularly adjust and supplement the oil filling amount in a reasonable and timely manner.

1.3 A scream at the transmission drum indicates that the conveyor belt is slipping, and it should be checked for tension.

1.4 Regularly check and adjust the deviation of the conveyor belt at all points



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of operation in a timely manner.

1.5 All protective devices for the 1.5 ERG auto loading and unloading conveyor must be complete, and a dedicated person must be assigned to regularly inspect and verify to ensure the reliability of its operation.

1.6 The inspection and adjustment of the ERG auto container loading and unloading conveyor during operation or use shall be carried out with protective devices installed, except in cases where the protective devices cannot be removed and the described operation cannot be carried out. If certain protective devices have to be removed, necessary precautions should be taken and access to areas with bite hazards should be strictly prohibited.

1.7 If the protective area to be removed is located in the work area or aisle, these areas must be enclosed during equipment operation to prevent personnel from approaching.

1.8 When repairing the protective device, the ERG must stop the loading and unloading conveyor on its own. The drive device cannot be started before proceeding, and the protective device should be installed before restarting. If repairs have to be carried out on unprotected operating equipment, there must be a guardian guarding the personnel at work. The guardian should be familiar with the measures to be taken in each situation and should be close to the next device that can be stopped at any time.

## 2. Maintenance cycle

### 2.1 Daily inspection

2.1.1 Inspect whether the conveyor belt of the whole machine operates normally, and whether there is any abnormal phenomenon such as grinding, deviation, etc.

2.1.2 Whether the temperature of reducer, motor and all roller bearings is normal.

2.1.3 Is there any leakage in the reducer.

2.1.4 Inspect the oil seals and bearings of all drums for wear.

## 2.2 weekly inspection

Perform daily inspection items and add the following additional inspection items to check the oil level of the gearbox. If necessary, add the specified level of oil.

2.3 In addition to the daily and weekly inspection items for monthly and annual inspections, the following additional items are added:

2.3.1 Check the wear of all drum oil seals and bearings.

2.3.2 Add oil to all drum bearings and clean any dirt on the drum.

2.3.3 Clean the gearbox, replace the lubricating oil, and analyze the next oil change cycle.

2.3.4 Check the wear of all oil seals and bearings.

2.3.5 Check the service life of the battery, and replace it in a timely manner if it is fully charged and abnormal.

The reducer is shipped without oil. Before testing, lubricating oil should be added according to its user manual. For lubrication of other parts, please refer to The following table:

NO.	use position	Lubrication method	Brand	Standard number	Oil change interval
1	<b>reducer</b> Motor	oil bath	LCKC220	GB5903-1995	6-8month

2	Drive drum bearing	Pressure injection	2 # lithium grease	GB7323—94	half month
3	Active telescopic bearing	Pressure injection	2 # lithium grease	GB7323—94	half month

### 十一、Fault analysis and troubleshooting

Common faults and handling methods are shown in the table below:

NO	Common faults	Common faults analyze	processing method
1	The motor cannot start or immediately slowdown after	<ol style="list-style-type: none"> <li>1. line fault</li> <li>2. voltage drop</li> <li>3. Contactor failure</li> <li>4. Continuous operation within 1.5 seconds</li> </ol>	<ol style="list-style-type: none"> <li>1. check the wiring</li> <li>2. Check voltage</li> <li>3. Check overload electrical appliances</li> <li>4. Reduce the number of operations</li> </ol>
2	Electric motor heating	<ol style="list-style-type: none"> <li>1. Due to overloading, over length, or conveyor belt jamming, Increase the running resistance and overload the motor.</li> <li>2. Due to poor lubrication conditions in the transmission system, the power of the motor increases</li> <li>3. Dust accumulation in the air inlet or radial heat sink of the motor fan worsens the heat dissipation conditions.</li> </ol>	<ol style="list-style-type: none"> <li>1. Measure the power of the motor, identify the cause of load operation, and take targeted measures.</li> <li>2. Timely supplement lubrication for each transmission part</li> <li>3. Remove dust</li> </ol>

3	Reducer overheating	<p>1.Excessive or insufficient oil in the reducer 2. Excessive oil usage time 3. Deterioration of lubrication conditions, resulting in bearing damage ;</p>	<p>1. Inject oil according to the specified amount 2. Clean the interior, replace oil or bearings in a timely manner, and improve lubrication conditions.</p>
4	Belt deviation	<p>1. The rack and drum are not adjusted straight 2. The axis of the roller is not perpendicular to the centerline of the conveyor belt</p>	<p>1. Adjust it on the rack or roller to ensure that it remains stable 2. Keep it flat and straight Use the idler to adjust the position and correct the deviation of the conveyor belt</p>
5	Aging and tearing of conveyor belt	<p>1. Friction between the conveyor belt and the frame results in rough edges on the belt, Cracking 2. The conveyor belt is torn due to interference with fixed hard objects 3. Poor storage and excessive tension;</p>	<p>1. Adjust in a timely manner to avoid long-term conveyor belts Deviation 2. Prevent the conveyor belt from hanging onto fixed components or falling into metal structural components in the conveyor belt. 3. Store according to the conveyor belt storage requirements</p>
6	belt break	<p>1. The material of the belt is not suitable, and it becomes hard and brittle when exposed to water or cold 2. Long term use of conveyor belts results in reduced strength 3. The quality of the conveyor belt joint is poor, and local cracks are not repaired or repainted in a timely manner</p>	<p>1. Select materials with stable mechanical and physical properties Make high-quality belt cores. 2. Replace damaged or aged conveyor belts in a timely manner. 3. Regularly observe the joints and promptly handle any problems found</p>
7	Track slip	<p>1. Insufficient tension of conveyor belt and excessive load 2. Due to water spraying, the friction coefficient between the transmission drum and the conveyor belt decreases</p>	<p>1. Readjust the tension or reduce the operation Capacity 2. Eliminate water splashing and increase tension</p>

8	The power indicator light is off	<ol style="list-style-type: none"> <li>1 The power supply is not connected</li> <li>2. Circuit breaker QF01 is disconnected</li> <li>3. Switch tripped, circuit short circuited</li> <li>4. Indicator light HL01 is damaged</li> </ol>	<ol style="list-style-type: none"> <li>1. Connect the power supply</li> <li>2. Connect circuit breaker QF01</li> <li>3. Check the circuit and close the switch</li> <li>4. Replace the indicator light</li> </ol>
9	Alarm reminder always on	<ol style="list-style-type: none"> <li>1. The emergency stop button is pressed down</li> <li>2. The emergency stop contact is damaged</li> </ol>	<ol style="list-style-type: none"> <li>1. Unscrew the emergency stop button operating head</li> <li>2. Replacement</li> </ol>
10	Platform cannot move up/down do	<ol style="list-style-type: none"> <li>1. Limit switch action</li> <li>2. Emergency stop button pressed</li> <li>3. Motor overload, switch trip</li> </ol>	<ol style="list-style-type: none"> <li>1. Operate in the opposite direction</li> <li>2. Unscrew the emergency stop button operating head</li> <li>3. See page 15</li> </ol>
11	Press the belt conveyor start button belt conveyor not	<ol style="list-style-type: none"> <li>1. The protection current setting of the frequency converter is too low</li> <li>2. Emergency stop button pressed</li> <li>3. Motor overload, switch trip</li> </ol>	<ol style="list-style-type: none"> <li>1. Set the appropriate current value according to the load</li> <li>2. Unscrew the emergency stop button operating head</li> <li>3. See page 15</li> </ol>
12	Belt conveyor does not operate up/down	<ol style="list-style-type: none"> <li>1. Limit switch action</li> <li>2. Emergency stop button pressed</li> <li>3. Motor overload, switch trip</li> </ol>	<ol style="list-style-type: none"> <li>1. Operate in the opposite direction</li> <li>2. Unscrew the emergency stop button operating head</li> <li>3. See page 15</li> </ol>



13	Beep alarm light alarm, continuous motor overload: fault  Intermittent: Up/Down/Platform Up/Platform Down Action Indication	1. The overload current value of the frequency converter is set too low 2. Emergency stop fault 3. Motor overload 4. The insulation impedance of the motor decreases, the impedance of the three-phase winding is unbalanced, and the motor is damaged	1. Set the current value of the frequency converter according to the nameplate 2. Unscrew the emergency stop button operating head or replace the button contact. 3. Check for mechanical jamming and eliminate it 4. Test the insulation impedance of the motor, check if the impedance of the three-phase winding is balanced, and replace the motor
14	AGV steering wheel does not operate	1. AGV main cabinet not powered on 2. Remote control device lacks power 3. The remote control device has low battery and needs to be charged.	1. Power on the main electrical cabinet 2. Replace the built-in battery of the remote control device 3. Charge the remote control device or replace the battery.

## 十二、Appendix

### 1. List of special tools and spare parts accompanying random shipment

List of Random Spare Parts

No	Component Name	Specification and model	Quantities	Unit	Note
1	deep groove ball bearing	6206-zz	4	pcs	
2	Suspended bearing	UCFB206	2	pcs	
3	EMERGENCY STOP	CHTAI NP2-BC42	1	pcs	rotating reduction
4	normally closed contact	BE102	3	pcs	
5	normal open point	BE1013	3	pcs	



6	indicator	ND16-22DS/4 AC 220V white	1	pcs	
7	Fusible core	RT28N-32X 1P 2A	2	pcs	
8	Master switch	XD2PA24CR	1	pcs	
9	Illuminated button	NP2-BW3561 24V LED	2	pcs	One yellow/one green

List of random tools

No	Tool name	Quantities	Unit	Note
1	Hexagon wrench	1	set	
2	adjustable wrench	1	pcs	6mm~32mm
3	Slotted screwdriver small	1	pcs	3*75mm
4	Cross screwdriver large	1	pcs	5*150mm