

Runding Machinery
6-Meter Production Line
[Aerated Concrete Production Equipment]
[Cutting Machine]

INSTRUCTION MANUAL

Runding Machinery

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Due to equipment updates, some contents may change. Runding reserves the final right of interpretation for this manual.

Equipment Safety and Precautions

1. Electrical:

The cutting machine set uses a three-phase AC power supply with a voltage of 380V~400V. Contact with exposed live parts may cause electric shock. Non-professional electrical maintenance personnel are strictly prohibited from maintaining electrical equipment and must maintain a safe distance from exposed live parts.

To ensure the safe and normal use of electrical equipment, equipment management personnel with professional qualifications should regularly inspect the following:

- 1) Whether the terminal bolts are loose, and if there are any disconnected or loose wires;

- 2) Whether there is garbage or debris in the drag chain or drag chain trough;
- 3) Whether the insulation parts of electrical appliances and circuits are defective or damaged;
- 4) Whether the electrical cabinets and boxes are rusted, water-infiltrated, contaminated, or exposed to high temperatures that are detrimental to normal operation;
- 5) Test the action of leakage protection switches and thermal relays to confirm normal response.
- 6) No clothing, teacups, tableware, tools, or other items are stored inside the electrical cabinets.

2. Mechanical:

During the operation of mechanical equipment, accidental injuries such as pinching and scratching are likely to occur. Operators should strictly follow the "Equipment Operation Procedures". In case of failure or problems, report to relevant technical personnel for handling in time.

To avoid personal or property losses during the use of mechanical equipment, equipment management personnel should regularly inspect the following:

- 1) No miscellaneous items, tools, clothing, etc. should be placed on the cutting machine cover plate. The cover plate must not be loose or have its bolts removed;
- 2) Equipment safety facilities (railings, cover plates, etc.) must be structurally complete and fully functional, and must not be dismantled or damaged;
- 3) Small parts and tools should not be placed on the back cover of the motor to prevent damage to the cooling fan blades during operation; the motor back cover should not be blocked or buried, and the motor surface should be free of obvious accumulated material or oil stains, so as to avoid damage due to poor ventilation and heat dissipation.
- 4) All kinds of fasteners should be reliably tightened, without any unnecessary shaking, vibration, or noise.

When the cutting tractor is running, it is strictly forbidden to stand or walk in the cutting flushing ditch. When the cross-cutting machine is working, no personnel are allowed under the equipment. It is strictly forbidden to stand (squat) or sit (or lean) on the cutting trolley to follow along, to prevent being scratched by cutting blades or cutting wires.

3. Start-up and Shutdown:

Before starting the machine, the operator should first check whether the water, electricity, and gas supply to the equipment are normal, whether the equipment

appearance is abnormal, whether there are any personnel or debris within the operating range of the equipment, whether the emergency stop switch and safety facilities are effective, and whether there are any equipment maintenance safety warning signs. Start-up is only allowed after confirmation.

In case of equipment suspension or accident, the emergency button should be pressed. After the accident is handled, it should be restored in time.

When the equipment is out of service, the main power supply should be turned off, and the equipment should be effectively cleaned and lubricated.

4. Passageways:

No debris is allowed within 1m around the equipment to avoid affecting equipment observation, maintenance, and cleaning.

5. Labor Protection:

During equipment operation, relevant labor protection devices should be worn as required by the "Equipment Operation Procedures", such as work clothes, gloves, safety helmets, goggles, masks, and safety shoes.

6. Equipment Maintenance and Cleaning:

When maintaining or cleaning the equipment, the main power supply of the equipment must be turned off, the shift manager must be informed, and maintenance instruction signs must be hung or posted.

7. Safety Inspection:

Equipment operators should regularly inspect the equipment and the surrounding environment as required and fill in the relevant inspection records. During equipment inspection, pay attention to maintaining a safe distance from the moving parts of the equipment to prevent pinching or impact.

8. Safety Signs:

"Beware of wire breakage and ejection injury" and "Caution for Pinching" safety signs should be posted on the columns on both sides of the longitudinal cutting machine.

"Strictly No Standing or Walking in Front (or Below) of Equipment Operation" and other safety signs should be posted on the columns on both sides of the cross-cutting machine.

Product Overview

The cutting machine set is suitable for the six-side cutting of the green body in the aerated concrete workshop. The cut green body forms semi-finished products of slabs or blocks that meet national standards.

The step-type cutting machine set is the core special equipment for aerated concrete production. It plays the most critical role and significance in the aerated concrete production process. It is a major (or critical) equipment in the workshop and requires key management and strict maintenance. Once a major failure occurs in part of the equipment or components of the step-type cutting machine set during the aerated concrete production process and cannot be repaired for a long time, it may cause dozens of molds of green bodies in the pre-curing room to harden, resulting in huge losses and seriously affecting the continuity and stability of production. The step-type cutting machine set directly affects the product qualification rate. It is necessary to regularly verify and adjust the operating accuracy of the equipment to achieve the best operating state and reduce production losses.

Structural Features and Working Principle

The cutting machine set consists of cutting machine tracks, longitudinal (cross) cutting trolleys, a pre-cutting unit, a longitudinal cutting machine, a cutting trolley replacement device (or replacement rod), a cross-cutting machine, a green body surface cleaning machine, and other single equipment or components.

[Diagram Description: 1-Cutting machine track, 2-Longitudinal cutting trolley, 3-Pre-cutting unit, 4-Longitudinal cutting machine, 5-Green body lifting device, 6-Cross-cutting machine, 7-Vacuum suction hood, 8-Waste cleaning machine, 9-Cross-cutting trolley]

The overhead turnover and transfer trolley places the side plate of the mold car turned 90° flat on the longitudinal cutting trolley (2). The demolding device acts to release the side plate. The overhead turnover and transfer trolley lifts slightly upwards and moves towards the bottom of the mold, so that the mold is separated from the side plate and the green body. The green body is ready and waiting for cutting. After the cutting machine allows the cutting signal, the longitudinal cutting trolley (2) carries the side plate and the green body to run towards the cutting machine. When passing through the pre-cutting unit (3), the pre-cutting wire pre-cuts the "bread head" of the green body and the material of the mold frame, reducing the cutting thickness of the green body surface planer (within about 5mm), to ensure that the surface of the green body is flat and smooth after being cut by the green body surface planer.

After being cut by the green body surface planer, the longitudinal cutting trolley (2) continues to carry the side plate and the green body forward. If the green body is a slab product, the green body surface planer will control the cutting size of the green body between the two large surfaces according to the slab size. During the forward process, the slab notch cutter will cut the two large surfaces of the green body into long strip notches for stacking multiple slabs according to the required specifications and shapes. After reaching the required slab length, the notch cutter will automatically retract, and the bread head side green body surface planer will automatically retract inward to form the block cutting size. If the green body is a block product, the green

body surface planer directly cuts the size between the two large surfaces into the required block size, and the slab notch cutter does not perform a cutting action.

After the pre-cutting unit (3) is completed, the longitudinal cutting trolley (2) continues to move forward, and the cutting wire arranged by the longitudinal cutting machine (4) performs horizontal layered cutting on the green body, so that the green body is cut into long strip plates. At this time, pay attention to the alignment of the notch position and the horizontal cutting position of the wire.

After the longitudinal cutting machine (4) is completed, the longitudinal cutting trolley (2) continues to move forward to the position of the green body lifting device (5). The lifting device (5) acts to lift the side plate and the green body upwards. The longitudinal cutting trolley (2) returns to its original position to wait for the next mold, while the cross-cutting trolley (9) moves to the position below the cross-cutting machine (6) to wait for loading the cut green body and side plate.

The cross-cutting machine (6) cuts the green body vertically into the required plate shape according to the set slab (or block) size when the lifting device (5) rises. The vacuum suction hood (7) at the top of the cross-cutting machine sucks up the top skin waste of the green body. After the cutting is completed, the lifting device (5) moves the side plate and the green body down to the cross-cutting trolley (9). When the cross-cutting trolley (9) carries the green body out of the cross-cutting machine (6) station, the vacuum suction hood (7) releases, and the top skin waste falls into the waste slurry channel under the cutting machine.

The cross-cutting trolley (9) moves towards the semi-finished product transfer trolley. When passing through the waste cleaning machine (8), low-pressure compressed air blows and washes the cut green body surface and top surface, blowing away the adhering garbage formed by wire and notch cutter cutting, making the surface of the slab (block) clean and tidy.

The green body and side plate cleaned by the waste cleaning machine (8) are carried by the cross-cutting trolley (9) to walk directly below the semi-finished product transfer trolley, and the semi-finished product transfer trolley lifts away the side plate and the green body.

The step-type cutting machine set can realize the six-side cutting and forming of the green body in the aerated concrete production process. It is the most core and critical equipment in the aerated concrete production workshop. Its equipment status and operating accuracy directly affect the production efficiency and product qualification rate of aerated concrete.

Technical Features

General performance parameter table of the step-type cutting machine set:

Item	Unit	Cutting	Pre-cutting	Longitudinal Cutting	Cross-cutting	Waste Cleaning
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			Trolley	Unit	Machine	Machine	Machine
Drive Mode			Chain	None	None	Chain	
External Dimensions	Length	mm	4926	5675	8030	8572	2864.7
	Width	mm	1910	2870	2870	2920	300
	Height	mm	1165	2580	2520	4038	2467
Running Speed		m/min	0~16.2			0~8	
Motor Power		kw	4kwX2	None	None	3+4	
Running Cycle		Min/Mold	4.5 (Reference value)				

Note: 10 sets of longitudinal cutting wire columns, fixed at both ends.

Installation and Commissioning

The step-type cutting machine set should be installed according to the design drawings. Pay attention to the position and direction of each equipment or component during installation.

1. Foundation Requirements:

1) The allowable deviation of the foundation relative to the design requirements for positioning is $\pm 20\text{mm}$. The allowable deviation of the reference point elevation is 0~-10mm (the pit bottom can be lower but not higher, and the clearance size can be larger but not smaller).

2) The foundation embedded parts should be slightly higher than the concrete surface. The surface of the embedded parts should be flat and free of oil stains. The allowable position error is $\pm 5\text{mm}$, and the elevation error is 0~-10mm (the track foundation concrete must not be higher than the surface of the embedded parts).

3) The centerline of the cutting machine track should be parallel to the centerline of the autoclave track.

4) Set out lines according to the design drawings and the on-site building axis. If there is any misalignment or missing of embedded parts, contact the design unit in time.

2. Installation Conditions:

1) The foundation concrete strength reaches more than 75%, and the concrete and embedded parts surface are cleaned.

2) There are no errors in the foundation setting out, or changes have been made according to the design unit's requirements and the foundation acceptance has been passed.

3) All parts and materials have been transported to the site, and have passed the unpacking inspection and acceptance.

4) The ground in the lifting and transportation area is flat and solid. Construction tools, machinery, and materials are all in place. Temporary electricity facilities are complete, leakage switches are in good condition, and the leakage test action is normal.

5) Indoor operations are required, or outdoor operations must be free of rain, snow, and strong wind.

3. Installation Procedures and Precautions:

1) Engrave center marks on the embedded center mark plates according to the foundation setting out position.

2) Pull out the track installation datum line with steel wire according to the center mark on the embedded center mark plate.

3) Install the cutting trolley running track according to the track installation datum line. The cutting trolley running track near the ground turnover table side is the reference track and should be installed first.

5) Place the reference track in position in order.

6) Adjust the first section of the track according to the steel wire position, elevation, and the lateral levelness of the track top surface. When it meets the requirements, fix the bottom foot of the rail beam.

7) Initially align the next section of the track with the first section of the track. Adjust the next section of the track according to the steel wire position, elevation, and the lateral levelness of the track top surface. When it meets the requirements, fix the bottom foot of the rail beam, and install in sequence.

8) After the installation of the reference track is completed, it should be accepted according to the acceptance standard requirements. After passing the acceptance, install the non-reference side track.

9) Install the non-reference side track according to steps 2) to 8).

10) Weld and repair the track joints and grind the surface flat. Weld and reinforce the cover plate at the appropriate position of the rail beam, and conduct a comprehensive acceptance of the track installation quality.

11) Install the main (driven) sprocket and power device of the chain tractor. Pay attention to the levelness of the base, the symmetry and parallelism of the track center during installation.

12) Install the drag chain trough and traction chain bracket from low to high according to the elevation. The drag chain trough and traction chain bracket should be kept horizontal and parallel to the cutting trolley track, and the traction chain bracket should be at the same height and aligned with the entry and exit position of the sprocket chain. The traction chain bracket should bend slightly downward at the chain entry and exit position to facilitate the chain entry and exit alignment. The joints of the drag chain trough and traction chain bracket must not be obviously misaligned and should be welded and ground flat.

13) Check the installation dimensions of the cutting trolley running wheels (diagonal, wheel spacing, etc.). If they do not meet the requirements, adjust them in time.

14) Hoist the cutting trolley onto the cutting machine track in place. Pay attention to the installation direction of the cutting trolley wheels matching the trapezoidal track.

15) Check the clearance between the wheel and the track when unloaded. If the clearance is too large, adjust it.

16) Hoist each single equipment (pre-cutting unit, longitudinal cutting machine, cross-cutting machine, green body surface cleaning machine) and place them in position according to the ground setting out position (a total station can be used to directly set out the position coordinates of the equipment on the foundation).

17) Install each single equipment according to the design elevation and the centerline of the cutting machine track as the reference, and pay attention to the parallelism between the equipment centerline and the cutting machine track centerline.

18) Install the cutting trolley replacement device or replacement rod system according to the drawing design position. The four side plate support points should be kept horizontal. The side plate support opening spacing and the symmetry relative to the cutting track centerline should meet the requirements. The support points should be arranged in the center relative to the length direction of the cutting trolley to make the side plate evenly stressed and reduce side plate deformation.

19) The bottom feet of the cutting trolley replacement device or replacement rod system should be firmly installed and fully welded to prevent deformation or anchor 脱落 after being stressed.

20) Manually push the cutting trolley to run on the cutting machine track. The operation should have no obvious resistance, collision, or squeezing.

- 21) Install the traction chain, cutting trolley drag chain, drag chain cable, and electrical switch bracket.
- 22) Install the cutting machine cover plate and cutting trolley baffle.
- 23) Adjust the position, spacing, and plumbness of the green body surface planer and the slab notch planer.
- 24) Adjust the plumbness and horizontal height of the longitudinal cutting machine wire column, so that the horizontal cutting error between each cutting wire is less than the specified value.
- 25) Adjust the levelness of the cross-cutting machine lifting frame and the parallelism between the cross-cutting machine centerline and the cutting track centerline.
- 26) Check and adjust the cross-cutting machine frame lifting guide column. The four columns should be parallel to each other and perpendicular to the ground plane.
- 27) Adjust the angle of each blowing port of the green body surface cleaning machine to make them collinear and parallel to the frame.
- 28) Install the compressed air pipeline system. Each single equipment should be connected to the branch pipeline separately from the main gas pipe, and each should be equipped with a stop valve and an air source treatment device. The gas supply pipeline of the green body surface cleaning machine should be equipped with related supporting valves such as air distribution cylinder, solenoid valve, and pressure reducing valve.
- 29) Install the corresponding electrical control devices.

4. Commissioning Requirements:

- 1) When the cutting trolley traction chain is not installed, manually push the cutting trolley to walk, confirm that the walking resistance is normal, and the cutting trolley walks without vibration or jittering.
- 2) After the cutting trolley traction chain is installed, the traction chain should be properly tensioned, and check whether the chain coincides with the center plane of the sprocket teeth, and whether the chain runs smoothly.
- 3) Observe the oil level indicator window of the walking, lifting, and swinging reducers. If there is no oil or lack of oil, add suitable industrial gear oil according to the equipment maintenance requirements until the oil level is close to the middle of the oil level indicator window (Note: If the reducer is marked as having been refueled, do not add more). Add 2# extreme pressure lithium-based grease to the walking wheels and clamping wheel bearings.
- 4) Perform point-to-point test run of the equipment, confirm and adjust the rotation direction. The equipment running direction should be the same as the direction indicated on the operation console.

5) Start each equipment to run, check whether the stop button and emergency stop button can be controlled normally, check whether the no-load current is normal, and check whether the equipment runs without swinging, vibration, abnormal noise, or other abnormal conditions.

6) Check whether the position and levelness of the side plate placed by the overhead turnover and transfer trolley on the cutting trolley (or replacement rod) meet the requirements. Check whether the position of the green body surface planer and slab notch cutter is reasonable, whether there is any collision with the cutting trolley, whether the side plate replacement cutting trolley process is smooth, whether the position changes after replacement, whether there is clearance at each side plate support point, and whether the side plate is shaking.

7) Check and adjust the cutting wire spacing of the longitudinal cutting machine to ensure that the cutting size meets national standards.

8) Check whether the lifting and swinging of the cross-cutting machine are smooth, and whether there is any jamming, abnormal noise, or vibration.

5. No-load Trial Run:

The no-load trial run of the equipment needs to run continuously for 5 cycles, and check the following items:

1) Check whether the temperature rise of the motor and reducer is normal (the maximum working temperature of bearings and motor shall not exceed 60°C).

2) Check the operation of the replacement device.

3) Check whether the equipment runs smoothly and normally, and whether the noise and vibration meet the requirements.

Usage and Operation Methods

When the step-type cutting machine set is in the power-on state, the "System Power" indicator light is always on, and normal operation can be performed at this time. When the step-type cutting machine set is in the power-off state, the "System Power" indicator light is off, and the step-type cutting machine set will not respond to any operation at this time.

Manual Operation:

Before manually operating the step-type cutting machine set, you should first point-to-point check that the equipment running direction is consistent with the operation direction, the cutting wire and tools have been correctly hung or adjusted according to production requirements, each positioning and limit sensor is working normally, and the emergency stop switch is working normally before starting the operation.

The following conditions must be met before operating the step-type cutting machine set:

1. No personnel are allowed to stand or walk within the travel or lifting range of the cutting equipment;
2. Each related sensor must not be artificially blocked or malfunctioning;
3. The emergency stop switch must be in the relaxed state;
4. There is no relevant induction signal from the cutting trolley travel limit position sensor;
5. The frequency converter has no fault;
6. The relevant air switch and thermal relay have not tripped.

Step-type cutting machine set operation interface schematic diagram: [Description: Cross-cutting lower stop time, slab length, swing motor running speed, boundary position, cross-cutting motor deceleration speed, tool buttons]

You can click on the yellow block area with the left mouse button to input relevant parameters with the keyboard. These parameters will be used in both manual and automatic operation. The "Boundary Position" refers to the distance from the start of the longitudinal cutting trolley to the start of the slab notch cutting. This parameter, together with the "Slab Length" parameter, is used to control the starting position and cutting length of the slab notch.

The white box in the lower left of the above interface is the manual operation button. Click with the left mouse button to start the relevant function. The text box turns red, and a black "√" is displayed in the white box.

Step-type cutting machine set status display interface schematic diagram: [Description of status indicators for positions and limits]

Precautions:

During equipment operation, pay attention that the compressed air pressure shall not be lower than 0.4MPa to prevent the cutting wire from not being effectively tensioned due to low pressure.

In the production process, each cutting blade and wire should be cleaned in time. If there is too much debris, it should be cleaned mold by mold to prevent scratches on the product surface and affect the product appearance quality.

Failure Analysis and Troubleshooting

Failure Phenomenon	Possible Cause	Solution
Cutting trolley runs with large vibration	Track installation does not meet requirements	Adjust track installation
	Sprocket slipping	Check sprocket wear and chain tension
	Traction chain slipping	Tension chain or replace sprocket
	Running bearing damage	Repair and replace bearing
Grease stains on the bottom of the green body after cutting	Side plate uneven or placed off-position	Clean cutting trolley side plate support points
		Check side plate support point level and limit
Green body shakes obviously during cross-cutting	Side plate obviously deformed	Replace side plate
	Cutting trolley side plate support point not level	Check side plate support point level
Cutting trolley replacement misalignment	Stop position sensor not adjusted properly	Adjust stop position sensor
	Replacement device installed improperly	Check and adjust replacement device
	Running motor brake	Check and modify electrical circuit or

	not timely	program
	Running motor brake effect poor	Check and adjust motor brake
Equipment does not act when operating	Equipment operation locking conditions not met	Check input signal required for corresponding action
	Air switch not closed	Pull down air switch and push again
	Frequency converter fault	Check frequency converter and reset
	Line damaged or broken	Check electrical line
	Motor brake (brake pad) not open	Check brake and related circuit
	Motor damaged	Check motor with megohmmeter (shaker)
	Motor overload trip	Check thermal relay
	Transmission key or bolt damaged or 脱落	Check and repair corresponding mechanical transmission parts
Cutting surface rough or pitted	Cutting green body too soft	Control green body cutting hardness
Machine body vibrates during green body surface cutting	Cutting green body too hard	

Upper block misalignment after cross-cutting	Cutting green body too hard	
Severe corner dropping at rear section of green body during longitudinal cutting	Cutting green body too hard	
	Wire too thick or distribution too concentrated	Replace or adjust longitudinal cutting wire
Longitudinal cutting accuracy poor	Wire column not equal height	Adjust wire column height
Cutting wire easy to break	Wire too thin or poor material	Replace cutting wire
	Compressed air pressure too high	Adjust compressed air pressure
	Wire cuts into slab steel bar	Adjust slab steel bar feeding position
Green body vertical fracture during longitudinal cutting	Green body toughness insufficient	Increase dry material proportioning usage
	Side plate deformed and concave	Replace or repair side plate
	No interception pre-cut set between slab sections	Set interception between slab sections
Cross-cutting wire cannot cut to bottom	Compressed air pressure insufficient	Adjust compressed air pressure

	Wire too long	Replace cutting wire
	Cutting green body too hard	Control green body cutting hardness
	Cutting cylinder air leakage	Replace cutting cylinder
	Cutting frame not lowered in place	Check and adjust frame positioning switch
Cross-cutting swing noise large	Eccentric wheel bearing wear	Replace eccentric wheel bearing
Cross-cutting swing frame slides down	Lifting motor brake poor	Check motor brake pad and contactor

Maintenance

1. Reducer lubricating oil: Domestic use L-CKC220 extreme pressure industrial gear oil or international use ISO VG220 lubricating oil.
2. During use, check the lubricating oil level weekly. If the oil level is low, add lubricating oil in time. When adding lubricating oil, the oil level height should be at the middle position of the upper and lower limits of the oil mark (horizontal type), and at the oil level line position of the oil mark (vertical type). Reference empty machine refueling amount: SKZN26-T2: 2.8L, SKZN36-T2: 3.8L, SKZN46-T1: 2.8L.
3. Lubricating oil replacement system: Change the oil after the first run of 300 hours, and then replace it every 5000~8000 hours.
4. When adding oil to the reducer, unscrew the oil cup cover to add oil. When draining the oil, unscrew the drain bolt at the lower part of the reducer to release the dirty oil. The oil cup cover and drain bolt must be tightened to prevent oil leakage.
5. Before using the reducer, unscrew the spiral plug of the vent hole and replace it with an oil cup cover (vent plug). The oil cup cover should be able to maintain ventilation to prevent oil leakage due to temperature rise and pressure. The vent should be kept clean to prevent the reducer cooling machine from inhaling dust.

6. Walking wheels, sprockets, and other bearings should be filled with 2# extreme pressure lithium-based grease (EP-2, such as Spheerol EPL 2).
7. Drive chain lubrication should use special lubricating oil for chains. If necessary, sewing machine oil can be used as an alternative. Try not to use engine oil (strong dust absorption, poor penetration). The use of butter (basically no penetration) is prohibited. The chain lubrication cycle should be no less than once a day or use automatic lubrication equipment (such as needle valve oil cup) for lubrication.
8. Generally, bearing seats and sprocket bearings do not need greasing, but the dustproof work of the grease port should be done well. When replacing grease, the bearing and bearing cavity should be thoroughly cleaned first, and no dust, impurities, fibers, etc. should be left. After the bearing is dry, fill the bearing rolling body cavity with grease, and then install the bearing into the equipment. During the installation process, mixing of dust and impurities into the grease is strictly prohibited.
9. Regardless of whether the equipment is used or not, the grease must be replaced every 12 months. When replacing the grease, the equipment must be disassembled, the bearing and bearing cavity cleaned, and the wear of the inner and outer rings of the bearing and the bearing clearance should be checked.
10. Do not add grease too full. Too much grease will increase the operating resistance and temperature of the equipment.
11. The allowable maximum working temperature for motors, reducers, and bearings is 70°C.
12. It is not allowed to inject unclean or corrosive lubricating oil, or mix and inject lubricating oil of different brands and grades.
13. It is recommended to use L-HM46 high-definition high-pressure anti-wear hydraulic oil for the cutting trolley hydraulic oil station (GB11118.1-2011 "Hydraulic Oil" or ISO11158:2009, NAS9, reference refueling amount 80L). Use clean special refueling tools when refueling. The oil should be filtered by filter paper or filter element. The oil level should be near the middle of the oil mark.
14. The hydraulic oil should be filtered or replaced every 12 months. Excessive impurities, moisture, and bubbles in the hydraulic oil will affect the operation of the hydraulic system.
15. The working temperature of the hydraulic oil station should be 10~55°C. When the temperature is too low, preheat the machine before production or use external heating for preheating. When the temperature is high, use a radiator to dissipate heat from the refueling pipeline.
16. The hydraulic oil return filter element should be replaced in time (replace about every three months).
17. Recommended maintenance and replacement cycle: Under normal production (two-shift system), cross-cutting machine lifting bearing 12 months, cross-cutting

swing bearing bush 6 months, walking wheel bearing and sprocket bearing 3 months, walking sprocket 6 months, wheel 12 months.

18. Recommended reducer maintenance cycle: 12 months. When maintaining, all bearings and severely worn transmission parts should be replaced. When maintaining the reducer, pay attention to keeping the inner cavity of the reducer clean. If necessary, use diesel to clean (after cleaning with diesel, add half of the lubricating oil, start the reducer and run for 1 minute, then release the waste oil, and re-add lubricating oil according to the regulations).

Equipment Storage, Packaging and Transportation

The step-type cutting machine set should be fixed with brackets or pallets during storage and transportation, and moving parts shall not be compressed or squeezed.

1. The hydraulic system must not enter water.
2. Moving parts shall not be deformed or damaged, and the surface should be rust-proofed.
3. When components are stored outdoors, the motor should be packaged for waterproofing.
4. Each component shall not be dragged on the ground to prevent surface scratches.
5. Before equipment commissioning, the rust prevention and paint protective cover should be thoroughly cleaned.

List of Important Purchased Parts

No.	Name	Specification/Model	Qty	Remarks
1	Cutting trolley running reducer	K77-29.27-YZPEJ5.5KW-4P-M1-J2-A+B	1 set	According to actual configuration
2	Cross-cutting lifting secondary reducer	KA107-22.62-AD6-M1	2 sets	
3	Cross-cutting lifting primary reducer	K77-13.52-YVPEJ-11KW-4P-M1-J2-A+B	1 set	
4	Cross-cutting swing	KB67-6.57-YVP3KW-4P-	1 set	

	reducer	M4-J1-A+B		
5	Bearing	21313CC	8 pcs	Cutting trolley
6	Running mechanism bearing	UCFU bearing 210	4 pcs	
7	Bearing	6210-Z	2 pcs	
8	Ultra-thin cylinder	SDAS-100X15-B-G-2	6 pcs	Pre-cutting unit
9	Tensioning cylinder	SDA-40X80-B	4 pcs	
10	Ultra-thin cylinder	SDAS-100X30-B-G-2	16 pcs	
11	Tensioning cylinder	SDAS-40x70-B-G-2	20 pcs	Longitudinal cutting machine
12	Cross-cutting lifting chain	24A-2	26 pcs	Cross-cutting machine
13	Bearing	UCP218	8 pcs	
14	Bearing	UCP210	4 pcs	
15	Deep groove ball bearing	6021	4 pcs	

16	Joint bearing	GE30C	4 pcs	
17	Tensioning cylinder	SDA-40X60	65 pcs	
18	Deep groove ball bearing	6014	24 pcs	
19	Connecting rod joint bearing	GE30ES	10 pcs	
20	Swing rod bearing	61912	4 pcs	
21	Angular contact ball bearing	7212C	8 pcs	
22	Compressed air blow nozzle	727-15		Waste cleaning machine

Note:

1. Due to special customer needs or design updates and improvements of the equipment manufacturer, some contents of this manual may not match the site or physical objects. If such a situation occurs, please contact the after-sales service department of the equipment manufacturer.