Cleveland Equipment

CE-D1Z Material Conveyor Instruction Manual

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Contents

I Basic introduction:

Thank you very much for using our CE-D1Z Material Conveyor, in order to maximize reflected the superiority of the conveyor performance, we introduce the performance of CE-D1Z Material Conveyor and operation usage in detail.

CE-D1Z Material Conveyor is mainly used in vertical conveying of granule material, such as the food of good mobility, crops, pharmacy, and chemical products. CE-D1Z Material Conveyor, combination weigher and packaging machine compose the quantitative automatic packaging systems, widely used in food packaging industry.

NOTICE

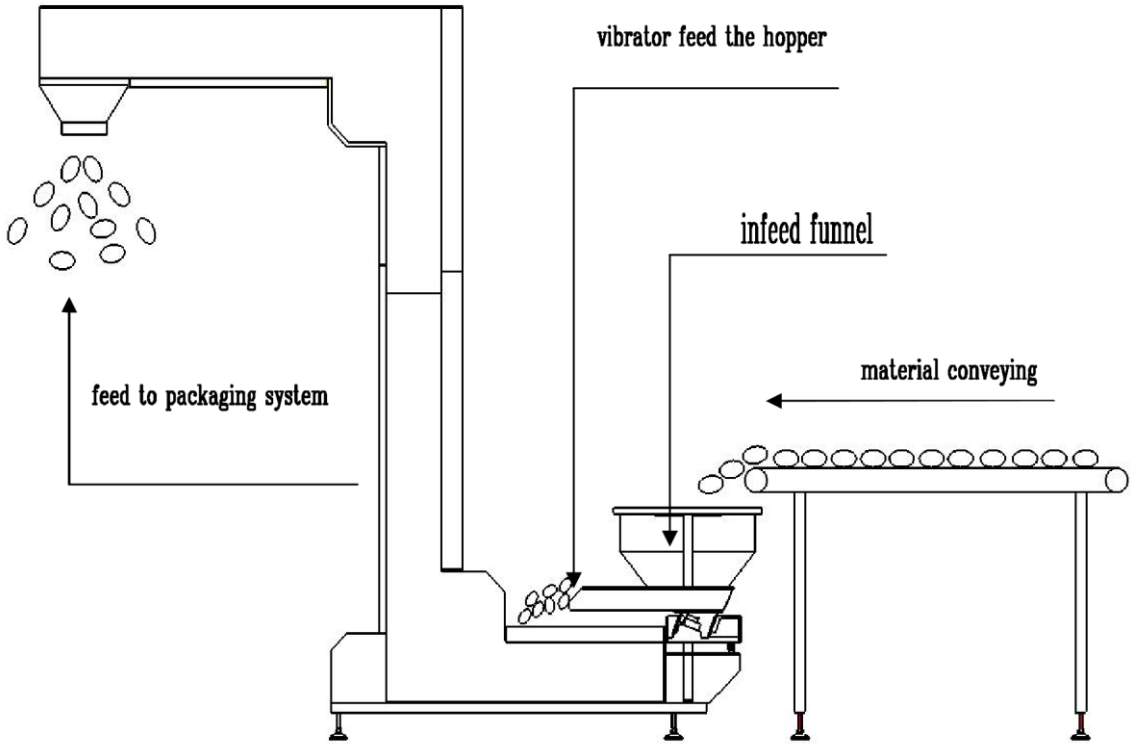
- No bumping or strong pressures on hoppers, in case of destroying the hoppers.
- According to production requirements select the corresponding conveying capacity.
- Electric control box must be kept clean, dry, only allow a full-time staff to open, in order to prevent the mal-operation fault from happening.
- Turn off the power before repairing and cleaning the machine
- When machine fails, firstly must turn off the power, professional is allowed to check and repair the machine.
- It is prohibited to touch the running mechanical components and electrical parts when the machine is running.

II. Specifications

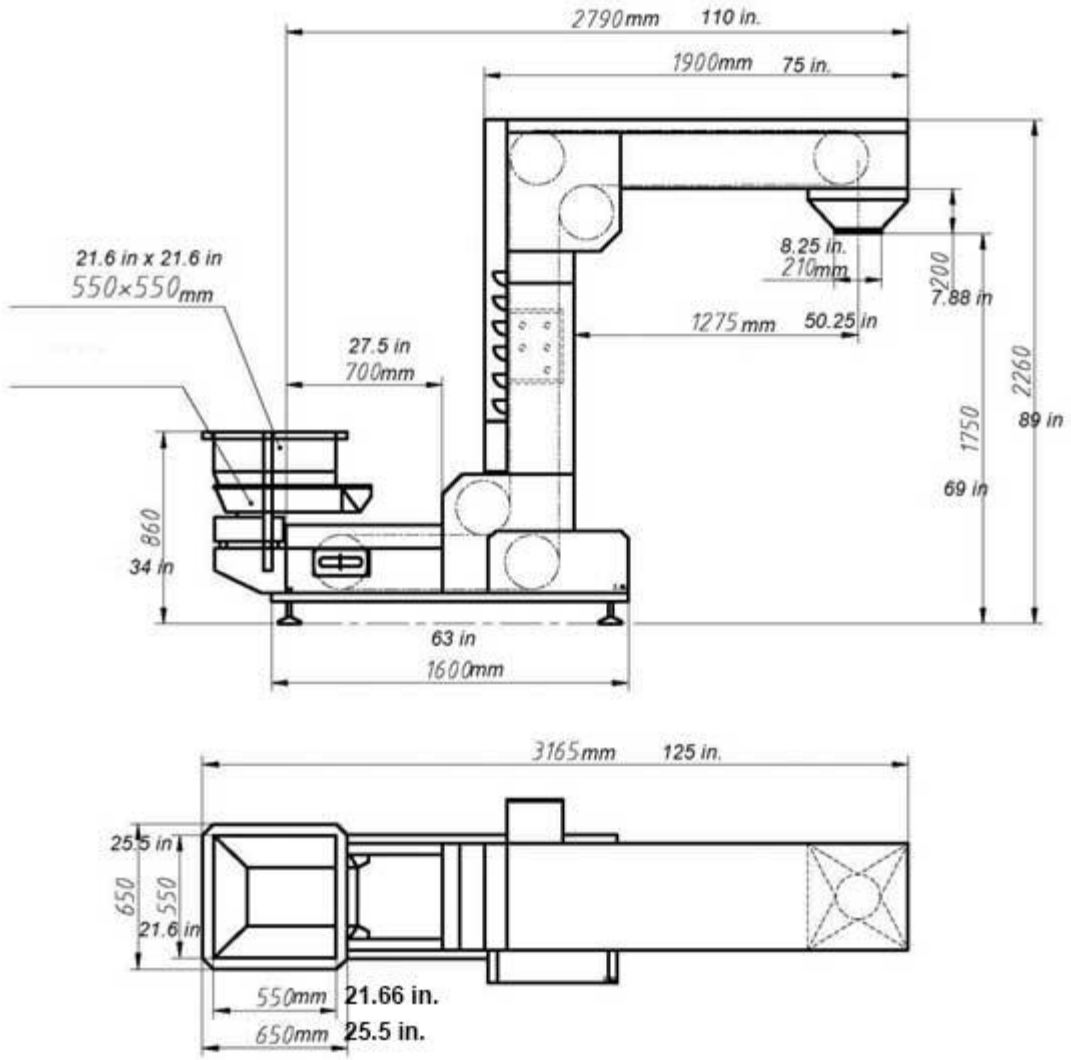
- Infeed Supply Hopper Volume: 100L
- Bucket volume: 1.8L
- Bucket size: (L) 420x (W) 140x (H) 70
- Conveying volume: 3～6m ^{3} /h
- Electrical power: 0.75KW（50HZ，2.0A)
- Voltage: 220V,50/60HZ
- Vibrator amplitude Max: 4mm (Dual Vibrator, Max voltage220V)
- Multi-weigh conveyor has overload protection function, machinery torque limiter and electric time relay compose overload protection system. Effectively protect the motor, chain and hopper.
- Reliable security, conveyor automatically turn off when open the back cover in running in order to prevent accidents.
- Back cover with a plexiglass can see the operation of hopper clearly.
- Hopper has strong anti-pressure ability; the patterns can prevent the viscous material attaching the hopper.

III. Working Theory

When the CE-D1Z Material Conveyor receives the work signal, the three-phase asynchronous motor transports materials to packaging system with driving chain and hopper. While motor is at working as well as the vibrator, and adding materials to the hopper. (As shown in the following chart)



IV. Machine structure



V. Installation diagram

1. Open the wooden box, take out the components and put them away. Loosen the standing bolt of the motor cover, the feeding cover (Chart 5), and the chain of motor gear (chart 6); ensure the bottom of the conveyor stably in place.

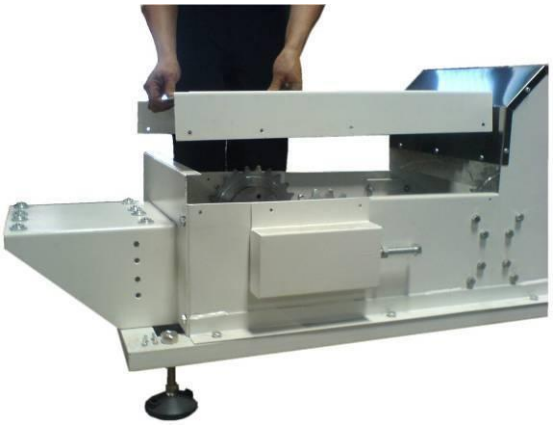


Chart 5

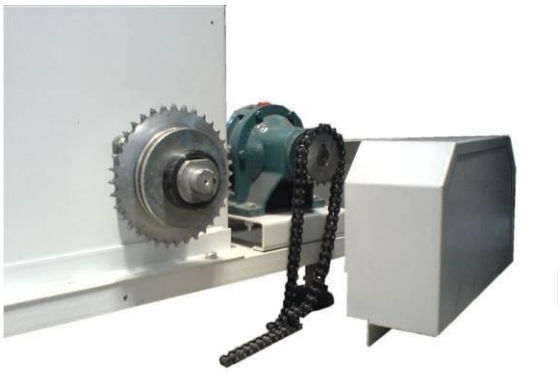


Chart 6

2. Install the both upper sides boards of vertical plate, there is unique corresponding number on each part. Use connecting link to connect the two side boards, there are 4 M10X25 in standing bolt of connecting link and 4 M10X20 outside, and notice distinguish between them. Otherwise anti-loaded may hit the outer edge of hopper. (Chart 7)

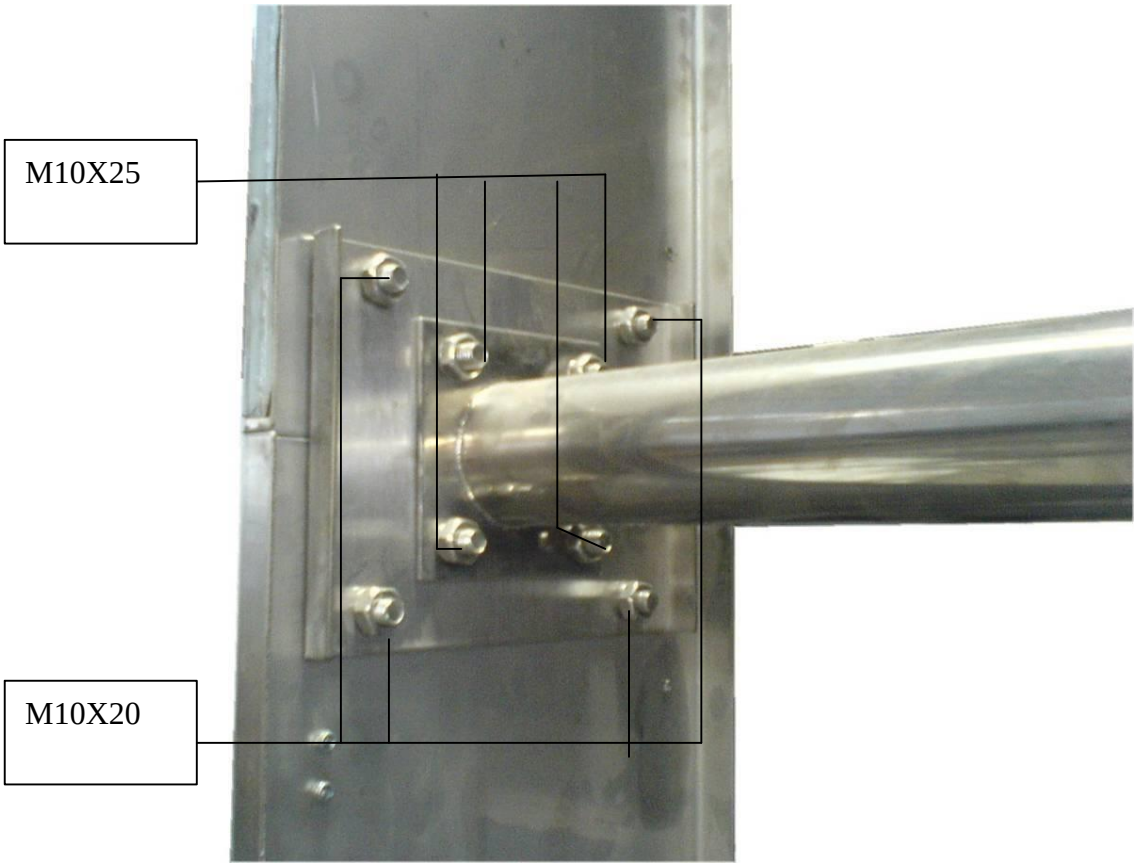


Chart 7

3. Install the upper sprocket wheel: put a sprocket wheel with rubber ring onto the upper front-end of the conveyor, and sprocket wheel with rubber gasket on the left and make sure keeping them stable with bolt, the remaining two sprocket wheels on the corresponding positions(Chart 8).

Chart 8

4. Install the chain: After installing the machine frame and sprocket wheel well, install the chain which has two specifications No. 1 and No. 2 (Chart 9), first install No. 1 chain on the left of conveyor advancing direction, number 2 on right. Installation method as follows: first put No. 1 chain onto the lower bracket (note that the chain bolt should be inside), then penetrate rotation sprocket wheel, along the guide groove of frame penetrate next sprocket wheel from bottom-up, and then penetrate drive sprocket and tension sprocket from top-down to make the ring-shaped closed, then connecting of Fittings, (the direction see chart 10). Use the same method to install the second chain. Special remind: When the second chain reaches the drive sprocket wheel, must set the pin roll of the two chains to align (shown as Chart 11 or Chart 9), and put into drive sprocket wheel synchronously, if not the two pins are not parallel, which would tilt hopper.

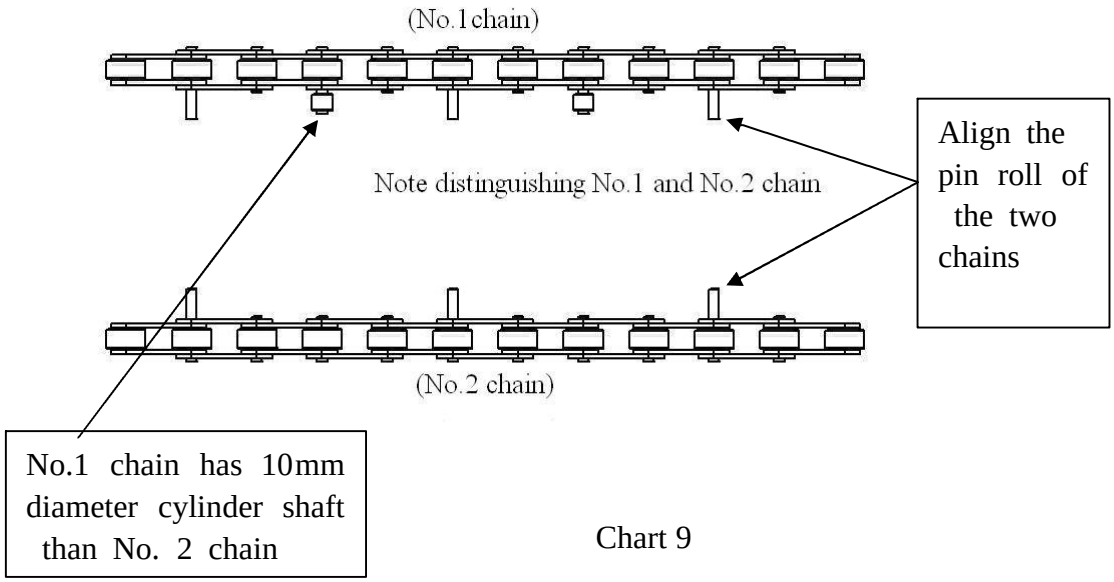


Chart 9

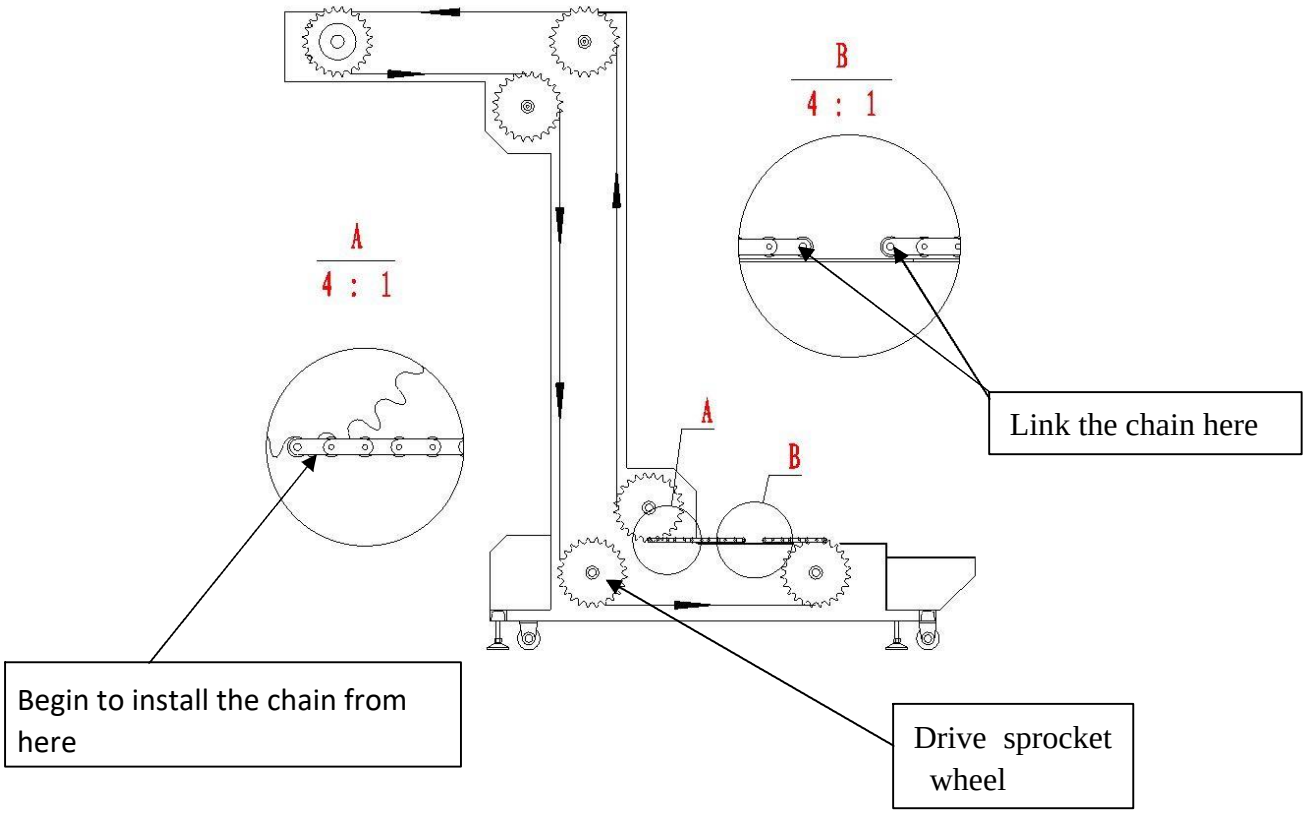

B
4 : 1
A
4 : 1
A
B
Link the chain here
Begin to install the chain from here
Drive sprocket wheel

Chart 10

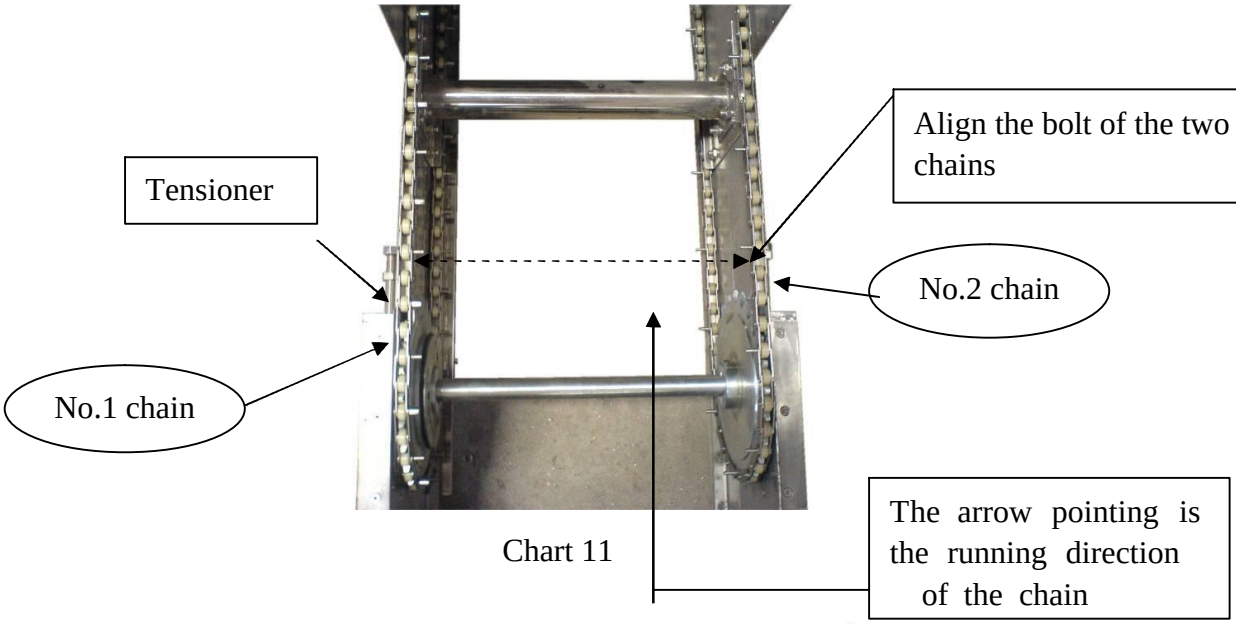
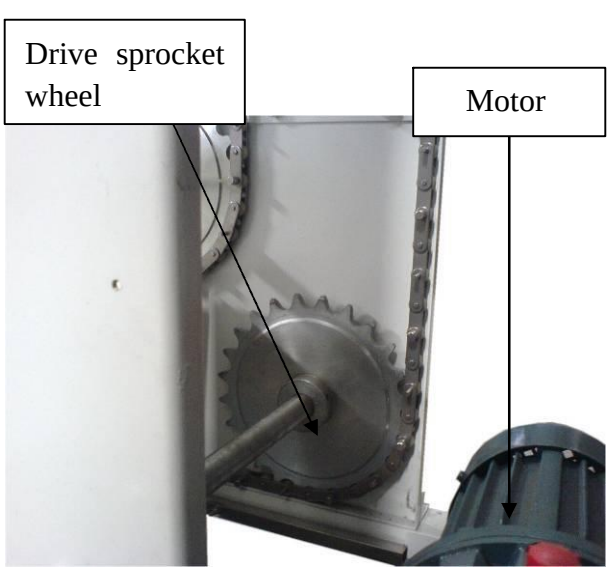


Chart 11



After two chains are installed well, adjust the tensioner so as to keep the chain at appropriate scale, the two chains must be consistent. Pulling the chain, ensure it run freely, there is no stuck situation, or to check the installation and co-ordination of sprocket wheel.

5. Install hopper: After installing the chain, you can start to install hopper, the method and the direction of installing hoppers as shown (Chart 12). When installing about 10 hoppers at interval, pull the chain up, transport the installed hoppers to the top horizontal position of conveyor, and then continue installing other hoppers. This benefit is when continuing installing hoppers it will not lead to the hoppers falling automatically, cause danger and damage hoppers, even if the upper part is too light and the lower part is too heavy. When 89 hoppers are installed and the motor is not loaded drive

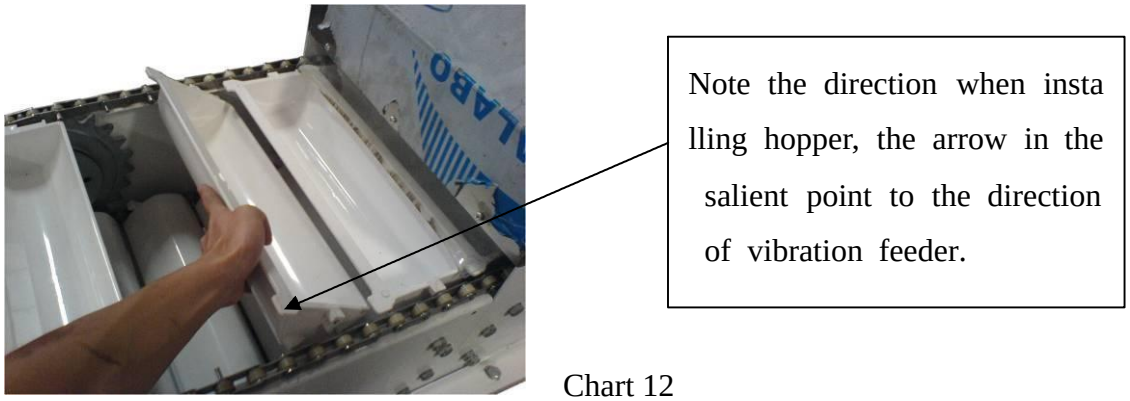


Chart 12

chain, electrify to confirm the correct rotation direction, so as to avoid damage to hopper after the turn. After confirming, connect the transmission chain and electrify, rotate once with the point moving stepping methods, and make sure it can rotate continuous when no card chain .When running, check whether the rotation is normal or not and the abnormal noise.

6. Re-installed the motor cover and feeding flap, install the former cover A, B and the back cover A, B. The installed conveyor should be shown as (Chart 13):

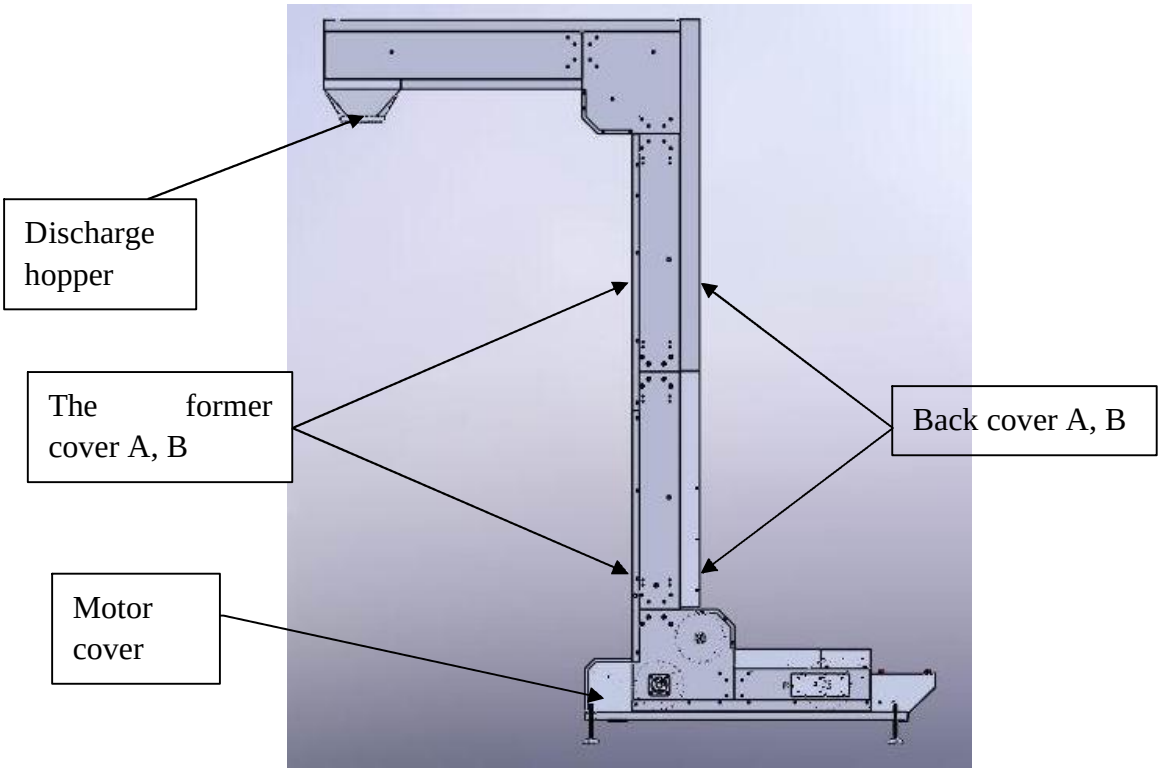


Chart 13

7. The installation of vibrator and storage hopper: put the eight spring of vibrator (by number) align the 8 fixed tablets of machines frame and lay down (as shown in Chart 14). Then install the vibrospade. The third step is to install the supporting frame of storage hopper, the last step is to install storage hopper. The installed conveyor is shown as Chart 15.

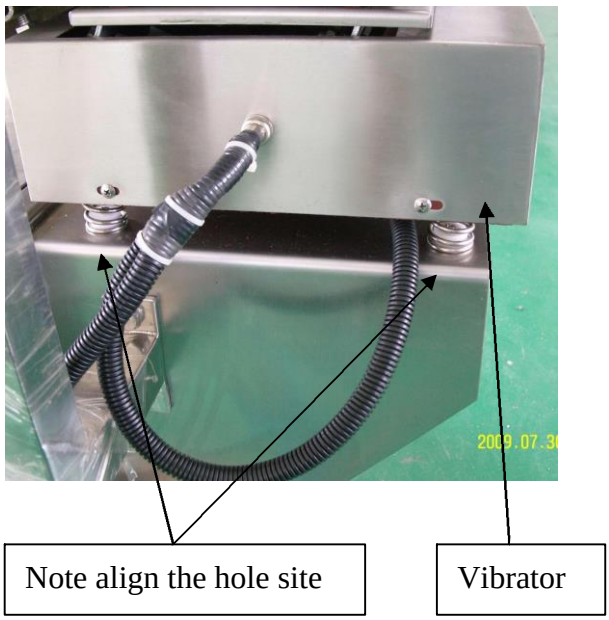


Chart 14

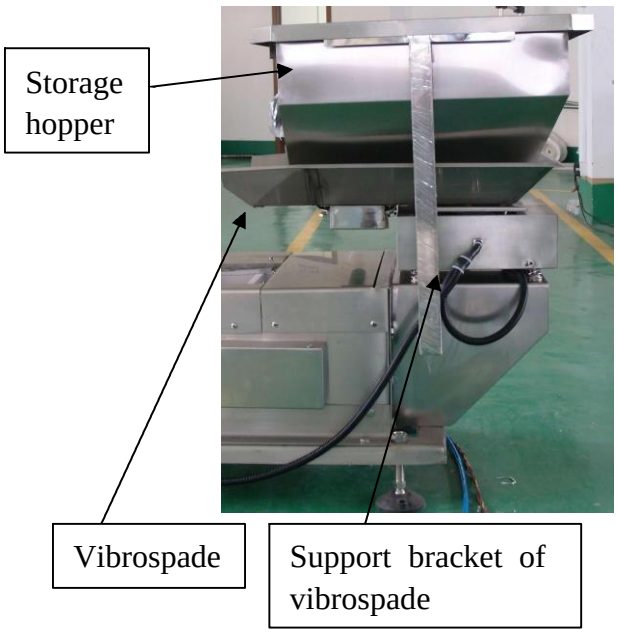
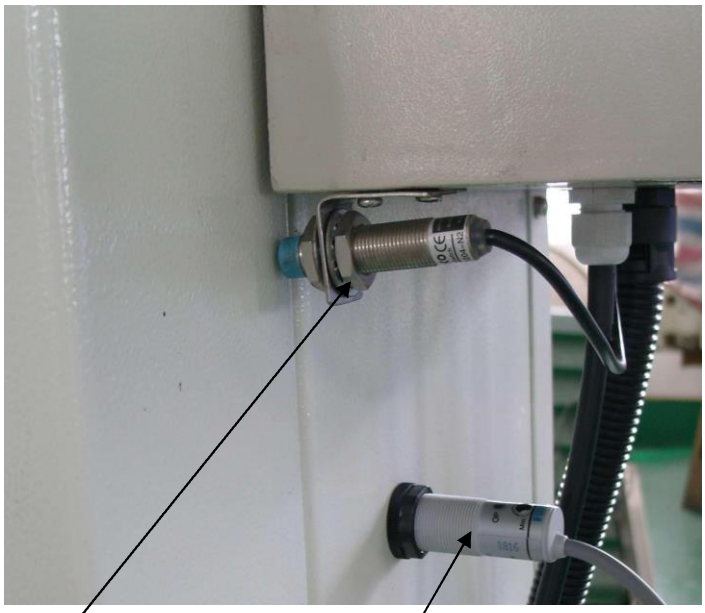


Chart 15

8. The installation of distribution boxes, proximity switches, and slow reflective switches. First install distribution box (Chart 16), notice the numbers on distribution box and the numbers on bracket should be the same. Complete installation, and then install the proximity switch, which is used for preventing the happening of safety accidents when open the door and turn off machine. After the installation, check whether the proximity switches is in the scope of its detection. The final step is to install slower reflective switch, after installation check whether it occurs interference with the hopper, whether it is in its detection range. This switch with the torque force limiter and the time relay compose overload protection system. As shown in Chart 17.

Distribution box

Chart 16



Proximity switch

Slow reflective switch

Chart 17

9. Electrical circuit: the electrical circuit as chart, it can be connected with the frequency converter or use input switching circuit of three-phase four-wire, which will be told when buying. Use 220V input voltage when adopting frequency converter, and can adjust the speed, vibrator can adjust amplitude. May choose manual point moving or combination weigher controlling automatic feeding, wiring methods refer to route map.

VI. Daily Operation

●The CE-D1Z Material Conveyor has manual and automatic function:

① the operation methods of manual function： Put tilt switch to manual gear (see Chart 18), press the inching switch, when need to turn off the conveyor, move tilt switch to middle position from manual gear.

② the operation methods of auto function: After the operator starts auto function, the conveyor is on waiting the starting state of after equipment. Such as the combination weigher, achieving automated feeding to meet the transportation requirements. Operation methods are: move tilt switch to auto gear (see Chart 19), at this time connecting control signal of after equipment (such as the combination weigher), the conveyor will run immediately.

Chart 18

Chart 19

The adjustment of vibrator amplitude: The sizes of vibrator amplitude can affect the conveying capacity and packaging speed of conveyor. The bigger the amplitude is, the greater the upgrading volume is. Customers can adjust the amplitude according to their demand. Operation methods: start the manual function of conveyor, then open distribution box (as the arrow place in Chart 20), rotate around the regulating gear of voltage regulator to change the vibrator amplitude, and then press on the inching switch. Repeat this operation till satisfy.

Chart 20

● The adjustment of conveying speed: the conveying speed affects the packaging speed. The conveying speed can be set up according to their requirement. The specific operation methods as following: start the manual function, open the distribution box, and rotate the regulating gear of frequency converter (as the arrowhead in Chart 20), then press the inching switch, change the conveying speed. As usual, we propose the frequency converter ≤50Hz。

● The settings of time relay (as the arrowhead in above Chart 20): generally speaking, the parameters of time relay has been installed before leaving factory, but the customers can setup parameters according to their demand. When setting parameter, according to the frequency of frequency converter to adjust the preset time of time relay, the two preset time of time relay must be the same. If the frequency of frequency converter is bigger, the time will be set smaller. Frequency ≥ 50HZ, timing for three seconds; frequency ≥ 30HZ, timing for 4 seconds. Users can test whether the timeset is reasonable. The operation steps as following:

① According to the frequency of frequency converter adjust time relay, set timing time.
② Contact the inching switch.
③Observe whether the conveyor will stop after running for a while. This attributes the preset time is too short. Repeat steps to adjust the preset time a little smaller, till the conveyor can work normally.

Note: the preset time set-up should not be too long, longer is not conducive to the overload protection.

VII. Troubleshooting

●Hopper drop down during running. First check whether the hopper is damaged, if not, then check whether the bolt on loading hopper of the two chain of conveyor is aligned. The bolt mal-position will cause hopper to drop down and crush hopper. If not aligned, please adjust sliding bearing to make the two aligned.

●Motor rotating but not conveyor chain. (1): check whether the friction film of the torque limiter in main drive shaft has any loose. (As shown in the following chart (Chart 21)), if has, please adjust the bolt locking, but do not over-locking so as not to take any overload protection effect. (2): check whether the timeset of time relay and speed are in conflict, if wrong, it can not stop machine to protect the chain in time, then check whether the materials jam the chain, clearing the above situation, please check whether the bearing of every driving part wears out and sticks to rotate for lacking of lubrication.

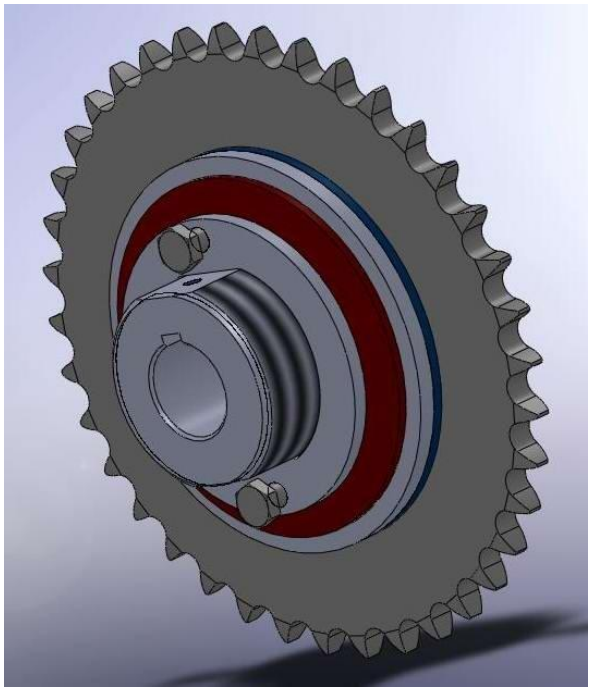


Chart 21

●Vibrator amplitude is too small or even no variation. (1): check whether there is poor contact to the wiring port. (2): check whether there is any damage to the vibration.

VIII. Maintenance and repair

Clean and maintain the equipment regularly according to the specific circumstances, which can ensure the normal operation and use of conveyor and improve the service efficiency of equipments.

●Pay attention to clean the fuselage and the hopper frequently. The scattering of dust and other impurities need to cleanup regularly. (Deal with discretion based on the specific circumstances).

●View timely and add lubricating oil to the bearings and the driving component. The lubrication of speed reducer operates by handling instruction. (Adding lubrication should be appropriate, not too much or too little)

●Check the situation of the rotation of delivery chain and sprocket wheel and its abrasion regularly, without any drop, whether there is any loose to the friction film of the torque limiter in main drive shaft, if the problem, settle timely.

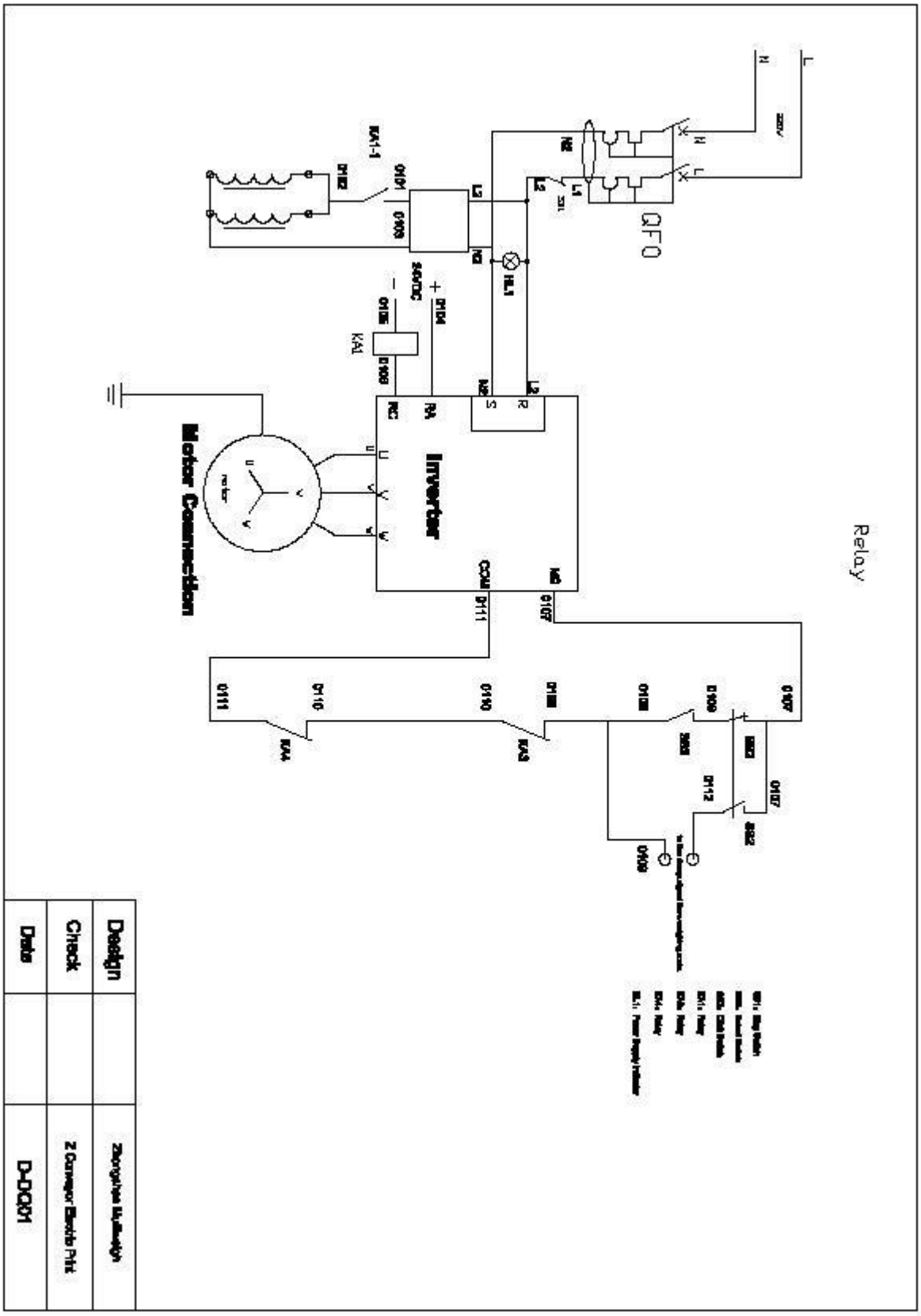
●Clean up and check the slow reflex switch regularly and keep them clean. Switch, torque limiter and time relay compose the overload protection function. If the switch covered with dust may cause the failure of it, which will not make the overload protection effect.

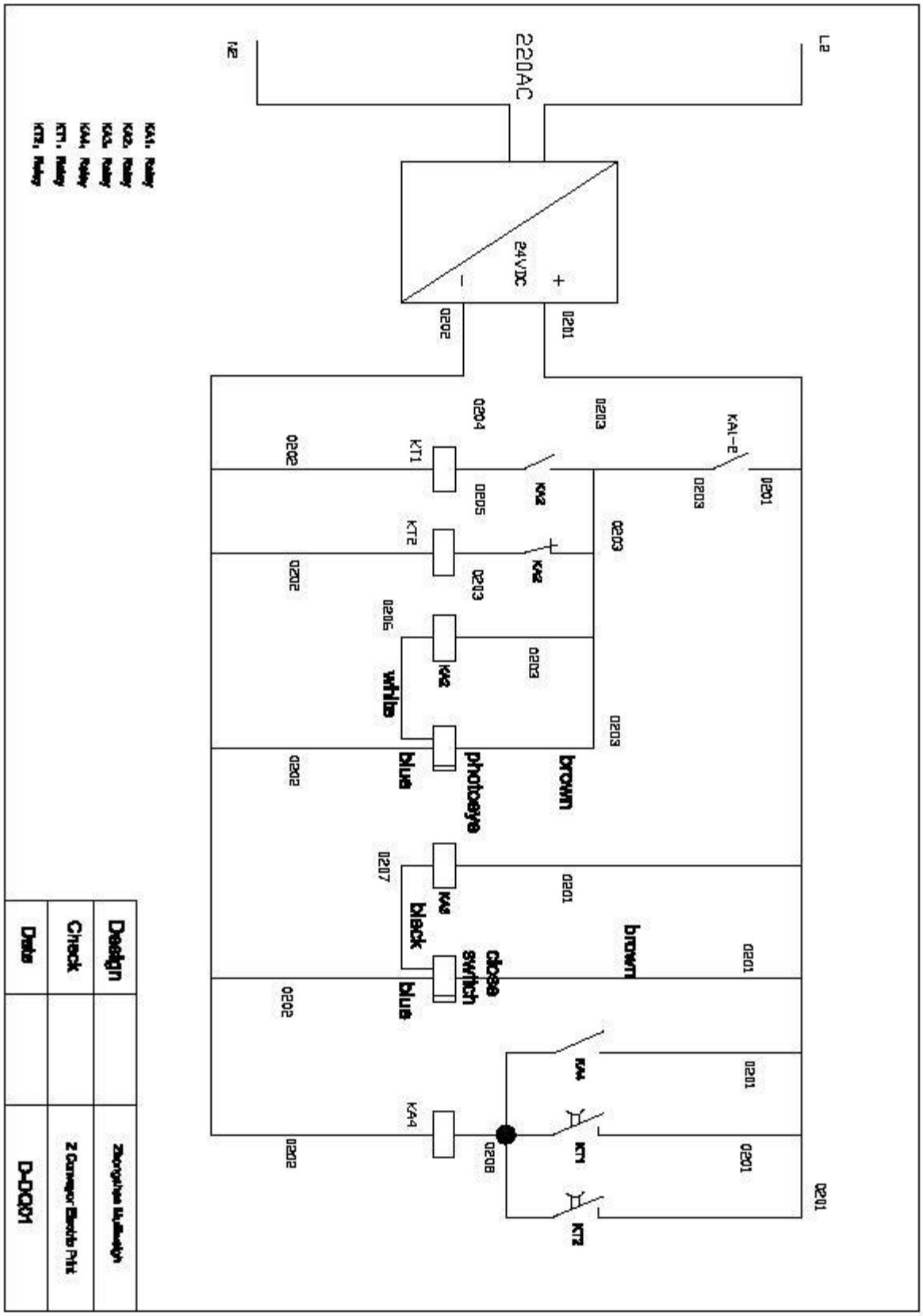
●Check whether the pull of tension device is appropriate regularly, whether the activities position is flexible; the conveying chain in operation process should maintain a relatively stable tension force in order to maintain the chain smooth running. If the tension force of conveying chain is inadequate, please adjust the sliding bearing in the lower part of conveyor timely. (Note:
Both sides need to be adjusted).

IX. Transportation and storage

- Loading and unloading carefully to avoid damage to the machine.
- Pay attention to the position of the whole packing box in transportation process, the packing box should be set according to the deposite arrow pointing of packing box, so as to avoid inversion and occurring collision of components and take a toll.
- Pay attention to rainproof and waterproof in transportation process.
- The place of storage should be ventilatory and dry, but also should keep away from the acid and alkali substances, in order to avoid corrosion to the machine.

X. Electrical wiring diagram

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photoeye
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KA3. Relay
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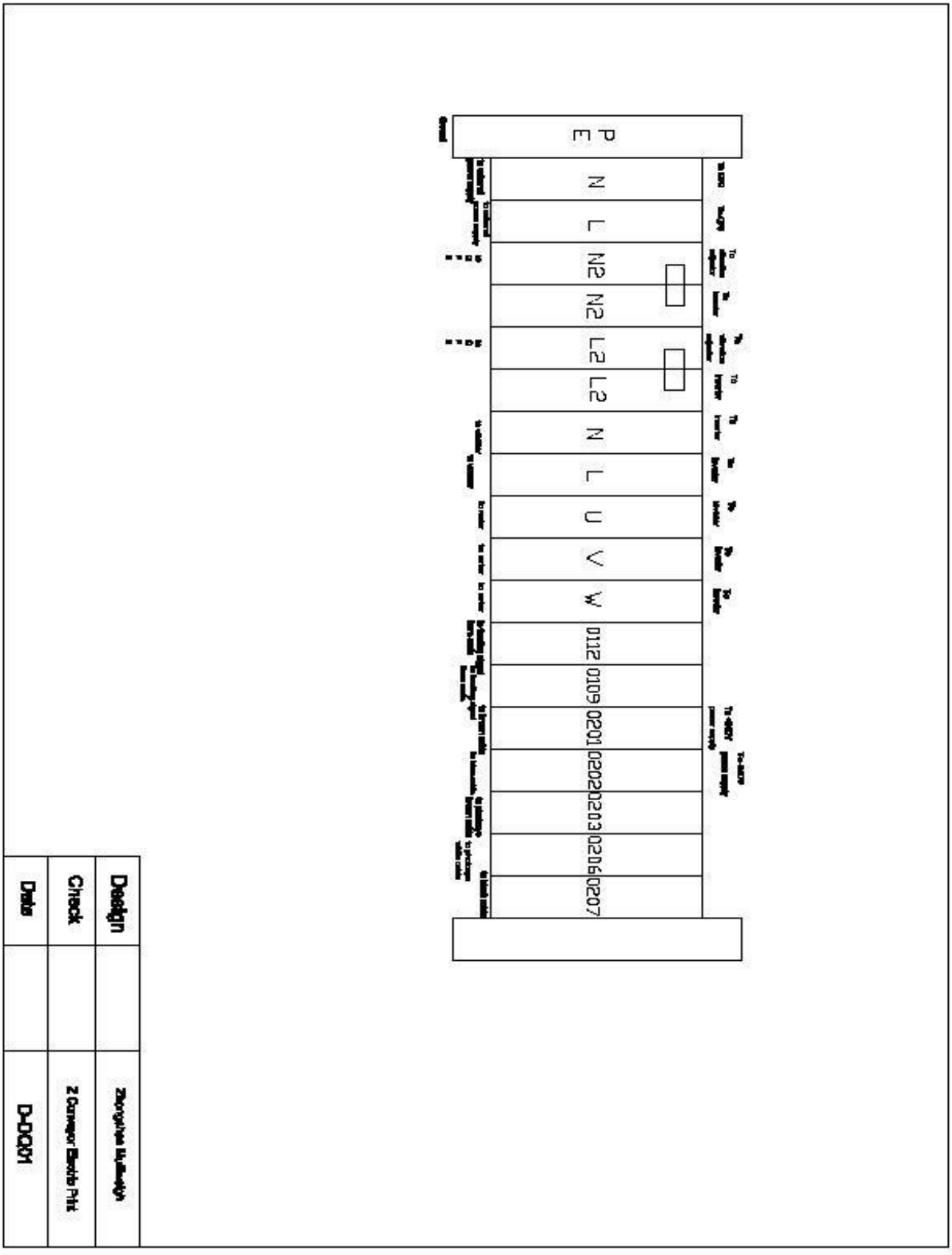
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