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Product description of belt conveyor

Abstract: Belt conveyor is a logistics transport machinery widely needed in many industrial sectors. Due to the wide variety and wide specifications of belt conveyor, it can be applied to the logistics transportation requirements of chemical industry, light industry, food, food, building materials, post and telecommunications and many other departments. Also can satisfy the wharf, yard, warehouse, workshop and other line delivery requirements. Belt conveyor is the conveying machinery for conveying materials and traction work piece with tape, steel belt, steel fiber belt, plastic belt and chemical fiber belt. The characteristic is that the conveyor belt which carries the material is also the traction of the transmission, which is different from the other conveyors. It is the most widely used in continuous conveyor, and it is mainly adhesive tape.

1. The composition and characteristics of belt conveyor

Belt conveyor is mainly composed of drive, drive roller, redirection roller, conveyor belt, roller, or roller type parts, tensioning device, support components such as several major parts, safety protection device.

It has the following characteristics:

(1) simple structure.

The structure of belt conveyor is only composed of the above-mentioned parts, which can be manufactured in a standardized way and can be assembled and assembled as needed. The structure is very simple.

(2) large delivery capacity.

The throughput can range from a few kilograms per hour to a few thousand tons, and is continuously transported continuously.

(3) long delivery distance.

Single machine length can reach more than a dozen kilometers, in foreign already very popular, the middle does not need any reprint point.

(4) wide range of conveying materials.

Belt conveyor belt with wear-resistant, acid and alkali resistant, oil resistant, flame retardant and other performance, and high and low temperature resistance, can be made according to the need, and can transport a variety of bulk material, block material, chemicals, clinker and concrete.

(5) strong adaptability to line.

The conveyor line can be horizontal or inclined, or bend in horizontal direction or vertical direction, so it is limited by terrain conditions.

(6) the handling material is convenient.

The belt conveyor can be installed and unloaded at any point according to the process requirements.

(7) high reliability.

Because the structure is simple, the moving part is light weight, as long as the conveyor belt is not torn, the life can last for more than ten years, and the metal structure part, as long as the rust is good, the few decades will not be bad.

(8) maintenance costs are low.

Belt conveyor moving parts are only roller and roller, and conveyor belt is very wear-resisting. It is much less worn than other conveyance machines.

In addition, belt conveyor has the characteristics of low operation cost, low energy consumption, low energy consumption and high efficiency.

2. The composition and working principle of belt conveyor

（1）The main layout of belt conveyor is:

horizontal conveyor, tilt conveyor, tilt - horizontal conveyor, level - tilt conveyor, level - tilt - horizontal conveyor, long-distance conveyor, etc.

（2）composition and working principle of belt conveyor:

General belt conveyor is mainly composed of drive, drive roller, redirection roller, conveyor belt, roller, or roller type parts, tensioning device, support components such as several major parts, safety protection device.

The rack and adjustable foot are connected by a connecting plate.

Each front and rear of the rack are equipped with a transmission and redirection roller for the traction belt and changing the direction of the conveyor belt.

The driving device is the power part of belt conveyor.

It is mainly composed of motor, speed reducer and driving roller.

The driving form is mainly driven by head drive and middle drive roller.

The function of the driving roller is to drive the power of the driving device and pass through the friction to the parts that are made by the conveyor belt.

The two ends of the transmission drum and the axle are mounted on the drive rack or the rack, and the driving drum shaft is equipped with the driving sprocket.

Drive the drive roller through the chain drive to drive the conveyor belt.

The tensioning device is designed to keep the conveyor belt tight enough to ensure that the conveyor belt is not skidded with the driving drum, so that the conveyor belt can run smoothly and smoothly.

The tensioning drum of belt conveyor and tensioning device are generally installed on the drive frame. The tensioning device is generally used to adjust the tensioning force of the conveyor belt.

3. Transmission line of belt conveyor:

The motor is driven by the motor sprocket, which drives the sprocket through the chain.

Drive the sprocket driving the driving drum.

Due to the conveyor belt is around between the cylinder and the redirection roller drive, through the tensioning device and the transport with partial device adjustment make enough tension around the above between rollers, and makes the conveyor belt can run smoothly.

4. Use and maintenance of belt conveyor

(1) when the equipment opens, check whether the equipment parts are complete and the information is complete.

(2) unless specially designed and made, light belt conveyor is generally not able to operate in corrosive or explosive environments.

If there are special requirements such as anticorrosive, non-toxic, heat-resistant, wear-resisting and oil resistant, special design should be specially designed.

(3) the conveyor must be used in accordance with the material characteristics and throughput, and must not be overused. It must prevent blockage and overflow, and keep the conveying smooth.

(4) after installing the conveyor belt, it is not allowed to use the fire and welding machine to process the rack.

(5) the width of conveying material characteristics must meet the requirements.

(6) before the belt conveyor is used, ensure that the power supply and the product require the same voltage and frequency.

The grounding line should be confirmed well before starting.

(7) when the belt conveyor is running, the goods are installed to avoid serious impact on the conveyor, so as to avoid damaging the equipment.

(8) when the belt conveyor fails to issue at run time, it shall promptly press the emergency stop switch and cut off the power supply. Before the failure is eliminated, the equipment shall not be operated.

(9) when the belt conveyor is in operation, it is strictly prohibited to enter the dangerous zone of the belt.

As the belt between the conveyor belt and the driving drum, the belt between the conveyor belt and the redirection roller, and the squeeze area between the conveyor belt and the roller.

(10) when the belt conveyor is running, it is strictly forbidden to cross or pass through the conveyor.

(11) it is strictly forbidden to transport personnel with non-manned conveyor.

(12) it is strictly forbidden to deposit inflammable, explosive materials and all other materials, such as oil pollution or coal powder, by the conveyor or its operating area.

(13) in operation, the conveyor's fire should be shut down before putting out the fire.

(14) after the belt conveyor is used, check whether the fasteners are loose and tighten again.

(15) drive device reducer in belt conveyor. After 15 days of operation, new lubricants should be replaced and cleaned.

Replace the lubricating oil after 6 months of continuous operation.

(16) belt conveyor motor sprocket and drive sprocket, the end face of the teeth should be on the same plane, the chain is kept clean, the lubricating oil is properly added, and the lubrication chain has the proper tensioning force.

(17) belt conveyor should be kept with proper and sufficient tensioning force.

(18) belt conveyor belt should be kept clean and the surface shall not be scratched.

The conveyor belt should not be in direct contact with any corroded articles (unless specially designed) so as not to affect the service life of the conveyor belt.

5. Installation and commissioning.

installer

(1) the longitudinal center line of the equipment is determined according to the installation diagram of the belt conveyor, which is the installation benchmark of the whole conveyor.

(2) if that is associated with conveyor equipment has been installed in place, installation time, with the correlation dimension of adjacent equipment as the main basis to determine its center line, so, more can guarantee the stability of conveyor system can be worked on.

(3) determine the center position, according to the installation drawing frame connected to the leg up, the drive and motor installed, and then put away belt, install the redirection roller, drive roller, tension roller, installation of motor sprocket and roller sprocket (installation shall ensure that the two sprockets end) in the same plane, adjust the motor position so that the chain has enough degree of tension.

Finally adjust the tensioning device so that the belt has sufficient tensioning force.

(4) mounting support

(5) installing guardrail, electrical control system, sprocket, etc.

(6) Boot test. Adjust the parts that do not meet the design requirements and specifications. Adjust the belt to keep the belt from running.

The debugging of belt conveyor

(1) adjust the height of the design support to the conveyor, and maintain the good plane state of the belt.

The belt must have a proper tensioning force.

Adjustable tensioning rod to tighten and loosen the belt to ensure proper tension of the belt.

(2) the belt must not run sideways.

It is normal that the belt will leap slightly when the conveyor is running.

If the scope of motion is too large, the upper bracket must be adjusted to make the momentum of the smaller the better.

(3) after normal test, the conveyor should be carried out for 10-20 hours of no-load running, and the problem should be solved in time to ensure the reliability of the official operation.

The conveyor should meet the following standards during installation

(1) the overall assembly of the whole machine is allowed to be carried out on site.

(2) the straightness tolerance of the center line of the conveyor frame is 5mm in any 25m length.

(3) for roller type belt conveyor, the roller top should be located on the same plane, any difference in height between the top three roller that face Δ h, should be no greater than 1.2 mm.

(4) for the tray conveyor, the top of the board should be in the same plane as the top of the two rollers.

(5) the vertical tolerance of the roller axis of the conveyor line and the center line of the frame shall be 1/500 of the length of the roller axis.

All rollers on the conveyer should be flexible.

(7) conveyor operation should be stable and reliable.

The transmission parts such as the chain should not be pulsed or stuck in the operation. The driving device should be free of abnormal vibration.

(8) when the conveyor is running, its overall noise should be no greater than 85dB.

(9) the moving section of the conveyor should set up the positioning device at its limit position to prevent it from turning or falling on its own.

(10) the curved section of the conveyor should be equipped with a protective and guiding device.

(11) the chain transmission should be provided with a protective cover.

(12) tensioning device should be flexible and free of jam.

(13) the driving device should run smoothly, lubricate well, and the reducer is free of oil.

(14) various electromechanical protection devices should be sensitive and accurate.

The protection device must meet the requirements of the installation procedures of the department concerned.

(15) the conveyor chain should meet the requirements of GB1243.1. The sprocket should meet the requirements of GB1244 and the belt should meet the requirements of GB524.

6. Belt conveyor vulnerable parts

（1）turn the bearing of the roller

（2）Top and bottom roller

7. Common failures and troubleshooting methods

Note: please contact us if you find any special problems.

Number	Phenomena	Reasons	Solution
①	The belt is on the side of the belt	Offset unadjusted	Adjust the bracket until the problem is solved
		The transmission is not adjusted to the cylinder	Adjust the gradient of horizontal position
②	The transmission device has abnormal vibration and noise	The sprocket end is not aligned	Pull down the shield and adjust the end face of the two sprockets
		The chain is loose	Adjust the motor position to tighten the chain properly
		Chain lubrication	Use a brush to add proper lubricant to the chain
③	The drum made a piercing sound	It could be bearing damage	Timely replacement of bearing
④	Transmission capacity is greatly reduced	The belt is not tight enough	Tension belt
		Belt creep	Clean belt, roller and oil
		The motor was damaged by improper use	Repair or replace the motor
⑤	The stents were unstable and wobbly	The fastener is loose	Retighten the relevant fasteners