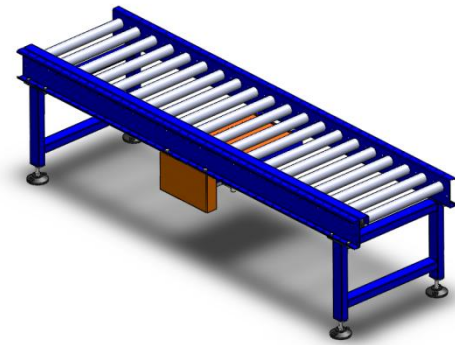


## Equipment Description

### 1.1. Double Chain Roller Conveyor



#### Main Mechanical Structure and Features:

- Roller: Double chain roller with  $\phi 50 \times 1.5$ mm dimensions, with maintenance-free deep groove ball bearings at both ends, and the roller body made of galvanized carbon steel.



- Frame: Made of 3mm steel plate, laser-cut and CNC cold-formed, dimensions: 1504020mm.
- Legs: Welded 60\*40mm square tubes, bolted to the connection plate and frame, adjustable foot base connected to the ground, conveyor height adjustable by +25mm. Cup feet are equipped with standard black plastic M14 adjustable cup feet.
- Drive Unit: Motor-driven.
- Surface Coating: Frame, legs, guide components, and other parts are first rust-proofed with wire brushes, sandpaper, etc., degreased by acid pickling, phosphating, and then coated with electrostatically sprayed epoxy resin powder and baked. The spraying color is specified by the party A.
- Purchased Components Configuration: SEW motor, Hangzhou Donghua chain.

#### Main Performance and Parameters:

- Conveyor Speed: 30m/min
- Roller Spacing: 127mm
- Conveyed Items: Cartons
- Load Capacity: max 50kg/m

## 1.2. Multi-V Belt Roller Conveyor

Main Mechanical Structure and Features:



- Roller: Multi-V belt roller with  $\phi 50 \times 1.5$ mm dimensions, with maintenance-free deep groove ball bearings at both ends, and the roller body made of galvanized carbon steel.



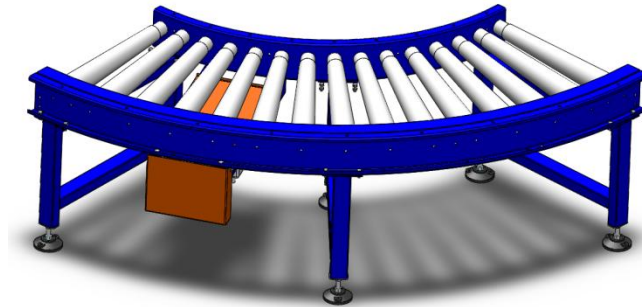
- Frame: Made of 3mm steel plate, laser-cut and CNC cold-formed, dimensions: 1204017mm.
- Legs: Welded 60\*40mm square tubes, bolted to the connection plate and frame, adjustable foot base connected to the ground, conveyor height adjustable by +25mm. Cup feet are equipped with homemade foot sleeves.
- Drive Unit: Motorized roller.
- Surface Coating: Frame, legs, guide components, and other parts are first rust-proofed with wire brushes, sandpaper, etc., degreased by acid pickling, phosphating, and then coated with electrostatically sprayed epoxy resin powder and baked. The spraying color is specified by the party A.
- Purchased Components Configuration: Motorized roller adopts Zhengyuan, multi-V belts adopt Weigl.

Main Performance and Parameters:

- Conveyor Speed: 5-90m/min
- Roller Spacing: 60-120mm
- Conveyed Items: Cartons
- Load Capacity: max 50kg/m

### 1.3. Double Chain Curve Conveyor

Main Mechanical Structure and Features:



- Roller: Double chain roller with  $\phi 50 \times 1.5$ mm dimensions, with maintenance-free deep groove ball bearings at both ends, the roller body made of galvanized carbon steel, and externally covered with hard plastic cone sleeves.



- Frame: Made of 3mm steel plate, laser-cut and CNC cold-formed, dimensions: 1504020mm.
- Legs: Welded 60\*40mm square tubes, bolted to the connection plate and frame, adjustable foot base connected to the ground, conveyor height adjustable by +25mm. Cup feet are equipped with standard black plastic M14 adjustable cup feet.
- Drive Unit: Motor-driven.
- Surface Coating: Frame, legs, guide components, and other parts are first rust-proofed with wire brushes, sandpaper, etc., degreased by acid pickling, phosphating, and then coated with electrostatically sprayed epoxy resin powder and baked. The spraying color is specified by the party A.
- Purchased Components Configuration: SEW motor, chain from Hangzhou Donghua.

Main Performance and Parameters:

- Conveyor Speed: 25m/min
- Conveyed Items: Cartons
- Load Capacity: max 75kg/unit

#### 1.4. Multi-V Belt Curve Conveyor

Main Mechanical Structure and Features:



- Roller: Multi-V belt roller with  $\phi 50 \times 1.5$ mm dimensions, with maintenance-free deep groove ball bearings at both ends, the roller body made of galvanized carbon steel, and externally covered with hard plastic cone sleeves.

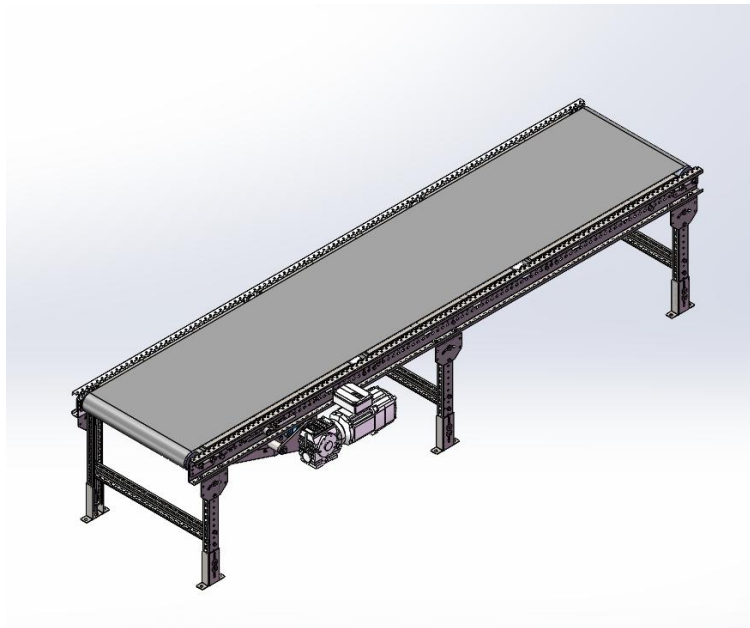


- 
- Frame: Made of 3mm steel plate, laser-cut and CNC cold-formed, dimensions: 1204017mm.
- Legs: Welded 60\*40mm square tubes, bolted to the connection plate and frame, adjustable foot base connected to the ground, conveyor height adjustable by +25mm. Cup feet are equipped with homemade foot sleeves.
- Drive Unit: Motorized roller.
- Surface Coating: Frame, legs, guide components, and other parts are first rust-proofed with wire brushes, sandpaper, etc., degreased by acid pickling, phosphating, and then coated with electrostatically sprayed epoxy resin powder and baked. The spraying color is specified by the party A.
- Purchased Components Configuration: Motorized roller from Zhengyuan, multi-V belts from Weigl.

Main Performance and Parameters:

- Conveyor Speed: 5-90m/min
- Conveyed Items: Cartons
- Load Capacity: max 50kg/unit

## 1.5. Belt Conveyor



A belt conveyor is a conveying device driven by a motorized drum to move materials forward along a circular conveyor belt. Belt conveyors come in various forms, including horizontal conveyance, inclined conveyance, and decline conveyance. In this project, they are mainly categorized as flat belts, incline belts, and decline belts.

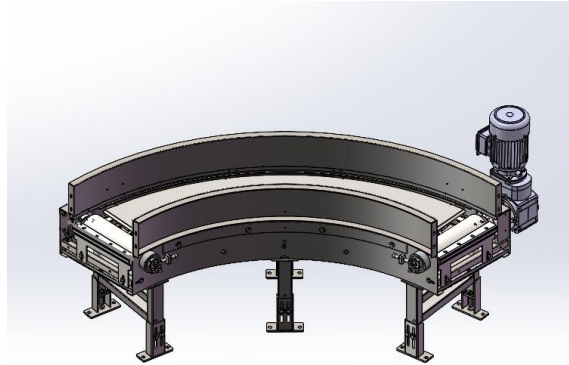
### Main Mechanical Structure and Features:

- Body: Formed by cold-rolled steel plate, dimensions: 1204017mm.
- Legs: Welded 60\*40mm square tubes, bolted to the connection plate and frame, adjustable foot base connected to the ground, conveyor height adjustable by +25mm. Cup feet are equipped with homemade foot sleeves.
- Drive Unit: Consists of drive drum, tension drum, tracking roller, drive frame, etc.
- Surface Coating: Frame, legs, guide components, and other parts are first rust-proofed with wire brushes, sandpaper, etc., degreased by acid pickling, phosphating, and then coated with electrostatically sprayed epoxy resin powder and baked. The spraying color is specified by party A.
- Purchased Components Configuration: Motor from SEW, belt from Yongli, bearing seat from TR, bearings from Habbax.

### Main Performance and Parameters:

- Conveyor Speed: 5-90m/min
- Conveyed Items: Cartons
- Load Capacity: max 75kg/m

## 1.6. Belt Curve Conveyor



A belt curve conveyor utilizes side bend chains driven by tapered roller chain wheels to drive the curved belt, completing the material's curved transportation.

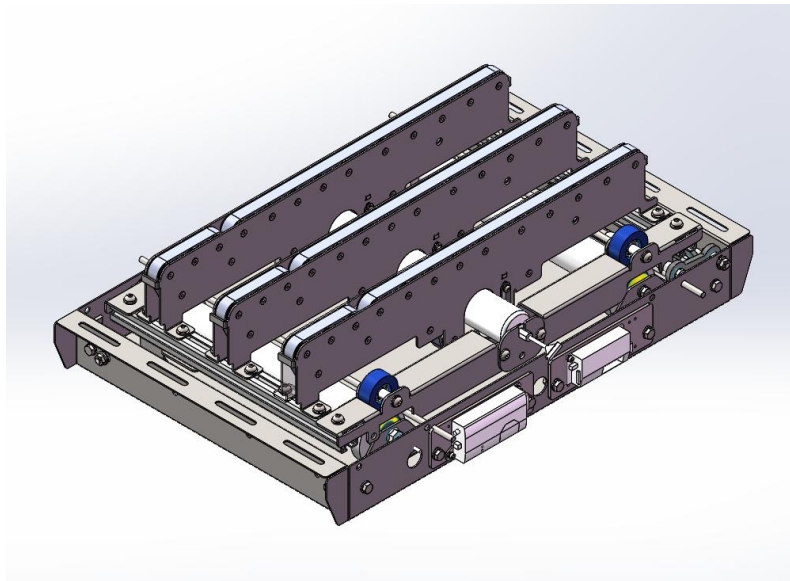
### Main Mechanical Structure and Features:

- Body: Formed by welding 3mm steel plate after cold bending, with integrated frame support plate.
- Legs: Welded 60\*40mm square tubes, bolted to the connection plate and frame, adjustable foot base connected to the ground, conveyor height adjustable by +25mm. Cup feet are equipped with homemade foot sleeves.
- Drive Unit: Motor and chain drive.
- Surface Coating: Frame, legs, guide components, and other parts are first rust-proofed with wire brushes, sandpaper, etc., degreased by acid pickling, phosphating, and then coated with electrostatically sprayed epoxy resin powder and baked. The spraying color is specified by party A.
- Purchased Components Configuration: Motor from SEW, belt from Yongli, bearing seat from TR, bearings from Habbax.

### Main Performance and Parameters:

- Conveyor Speed: 5-90m/min
- Conveyed Items: Cartons
- Load Capacity: max 75KG/unit

## 1.7. Transfer Conveyor



A transfer conveyor is utilized to change the direction of movement of packages from roller conveyors by 90 degrees, serving as a lifting and transferring device. Typically, it remains in a low position. When goods are conveyed onto the transfer conveyor, sensors detect their presence, prompting the transfer conveyor to elevate to a height above the conveyor, transferring the goods to adjacent conveyors. Once the goods are delivered, the transfer conveyor lowers back to its low position.

### Main Mechanical Structure and Features:

- **Lifting Mechanism:** An electric drum rotates to drive a cam, causing the transfer component to swing up and down.
- **Transfer Mechanism:** Utilizes a belt for transfer, driven by an electric drum.
- **Positioning Detection for Lifting:** Proximity switches for detection.
- **Surface Coating:** Frame, mounting plates, and other components undergo rust removal with wire brushes, sandpaper, etc., degreasing by acid pickling, phosphating, then coated with electrostatically sprayed epoxy resin powder and baked. The resin thickness ranges from 60 $\mu$ m to 90 $\mu$ m. The color is specified by party A.
- **Purchased Components Configuration:** The lifting mechanism and transfer utilize electric drums from Zhengyuan, with bearings from Habbax.

### Main Performance and Parameters:

- **Conveyor Speed:** 30m/min
- **Lifting Stroke:** 15mm
- **Lifting Time:** 0.5sec

## 1.8. Embedded Transfer Conveyor



An embedded transfer conveyor is employed to change the direction of movement of packages from roller conveyors by 90 degrees, acting as a lifting and transferring device. Typically, it remains in a low position. When goods are conveyed onto the transfer conveyor, sensors detect their presence, prompting the transfer conveyor to elevate above the conveyor, transferring the goods to adjacent conveyors. Once the goods are delivered, the transfer conveyor descends back to its low position.

### Main Mechanical Structure and Features:

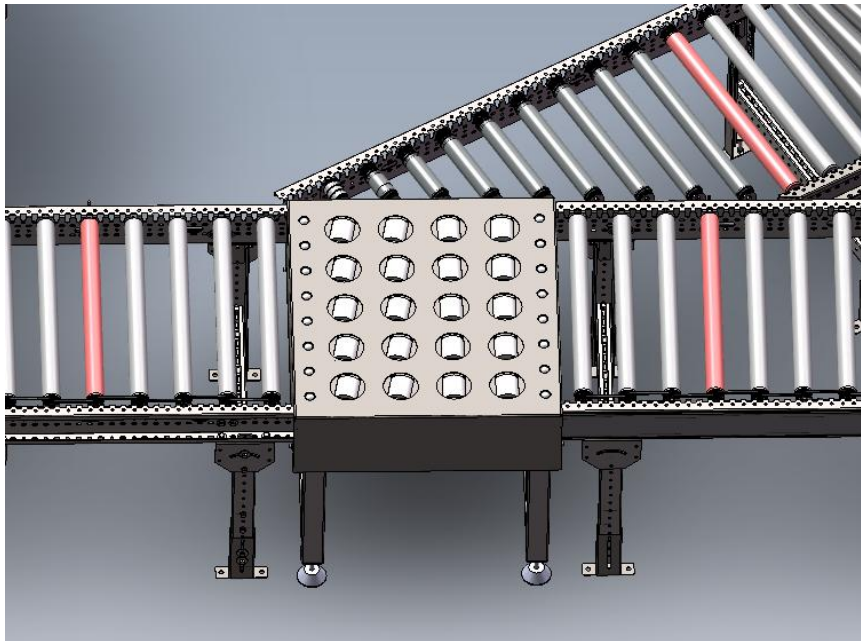
- **Lifting Mechanism:** An electric drum rotates to drive a cam, causing the transfer component to swing up and down.
- **Transfer Mechanism:** Utilizes a belt for transfer, driven by an electric drum.
- **Positioning Detection for Lifting:** Proximity switches for detection.
- **Surface Coating:** Frame, mounting plates, and other components undergo rust removal with wire brushes, sandpaper, etc., degreasing by acid pickling, phosphating, then coated with electrostatically sprayed epoxy resin powder and baked. The resin thickness ranges from 60 $\mu$ m to 90 $\mu$ m. The color is specified by party A.
- **Purchased Components Configuration:** The lifting mechanism and transfer utilize electric drums from Zhengyuan, with bearings from Habbax.

### Main Performance and Parameters:

- **Conveyor Speed:** 30m/min
- **Lifting Stroke:** 5mm
- **Lifting Time:** 0.3sec



### 1.9. Swivel Wheel Sorting Machine



A swivel wheel sorting machine is a diverter device powered by miniature electric drums. The swivel wheel assembly can be set to rotate at angles of  $30^\circ$ ,  $60^\circ$ , or  $90^\circ$ . Its default state is with the miniature electric drum parallel to the main conveyor, aligned with the direction of conveyance. When goods are conveyed onto the sorting machine, sensors detect their presence, prompting the swivel wheel assembly to rotate and transfer the goods to adjacent conveyors. Once the goods are delivered, the rollers swivel back to their original position.

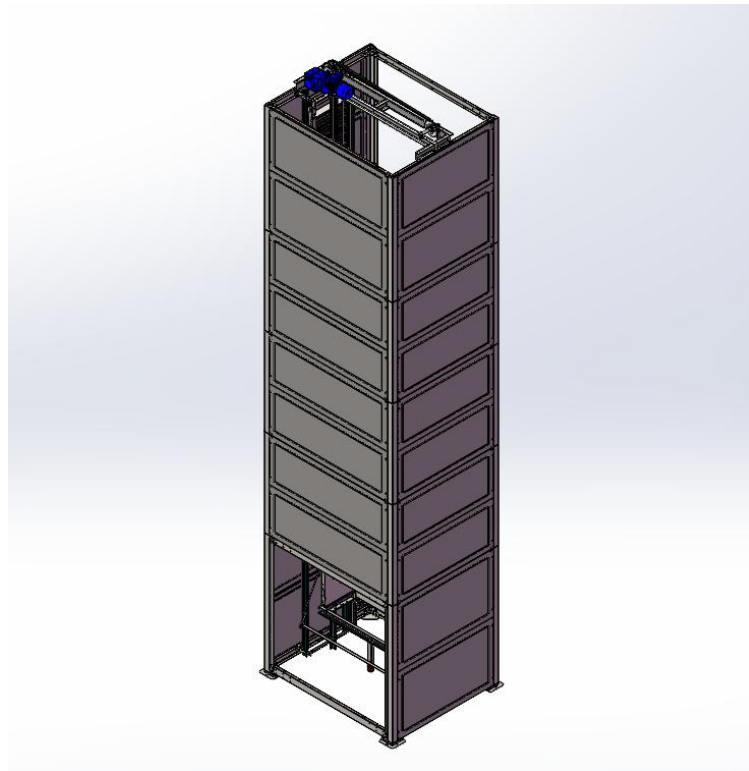
#### Main Mechanical Structure and Features:

- **Rotation Mechanism:** Utilizes a stepper motor to drive interconnected articulated chain mechanisms to swing. The stepper motor ensures precise rotation angles according to the program, ensuring smooth operation.
- **Conveyance Mechanism:** Utilizes miniature electric drums to meet conveying requirements, with adjustable speed.
- **Surface Coating:** Frame, mounting plates, and other components undergo rust removal with wire brushes, sandpaper, etc., degreasing by acid pickling, phosphating, then coated with electrostatically sprayed epoxy resin powder and baked. The resin thickness ranges from  $60\mu\text{m}$  to  $90\mu\text{m}$ . The color is specified by party A.
- **Purchased Components Configuration:** High-quality stepper motor for the motor, TR for seat bearings, and Habbax for bearings.

#### Main Performance and Parameters:

- Conveyor Speed: 60m/min
- Rotation Angle:  $30^\circ$ ,  $60^\circ$ ,  $90^\circ$
- Rotation Time: 0.3sec

## 1.10. Reciprocating Lift Conveyor



The working principle of a reciprocating lift conveyor involves the drive unit driving the chain through sprockets. The ends of the chain are connected to the load platform and counterweight components respectively. The upward and downward movement of the load platform is achieved by reversing the motor.

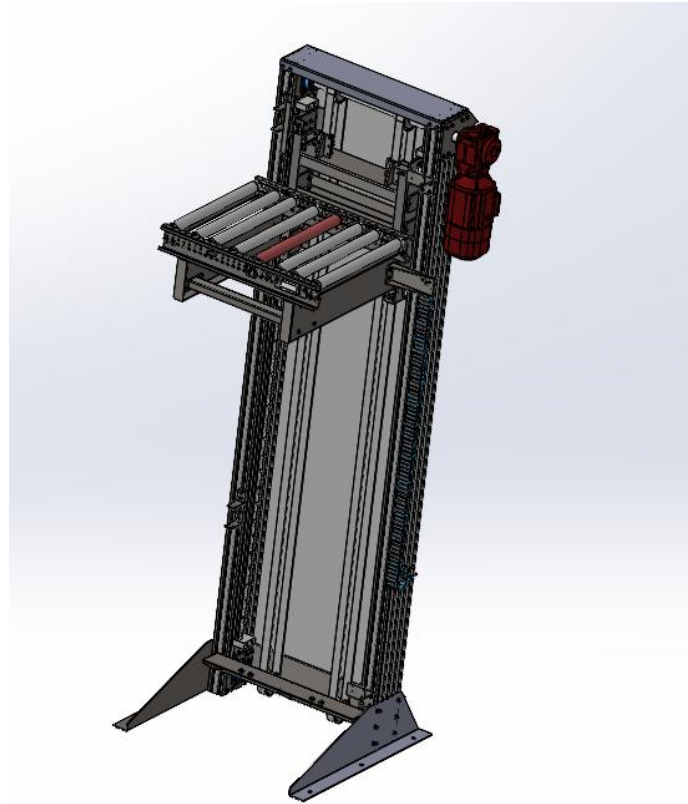
### Main Mechanical Structure and Features:

- Body: Constructed from cold-rolled steel plate.
- External Enclosure: Utilizes wire mesh enclosures.
- Load Platform: Formed by cold-rolled steel plate and assembled into a single unit.
- Surface Coating: Frame, mounting plates, and other components undergo rust removal with wire brushes, sandpaper, etc., degreasing by acid pickling, phosphating, then coated with electrostatically sprayed epoxy resin powder and baked. The resin thickness ranges from 60 $\mu$ m to 90 $\mu$ m. The color is specified by party A.
- Purchased Components Configuration: SEW for the motor, Hangzhou Donghua for chains, TR for seat bearings, and Habbax for bearings.

### Main Performance and Parameters:

- Conveyor Speed: 18m/min
- Lifting Speed: 35-70m/min
- Transported Items: Cartons
- Weight Capacity: max 200KG

## 1.11 Lift Conveyor



The lift conveyor is designed for changing the elevation of smaller packages efficiently.

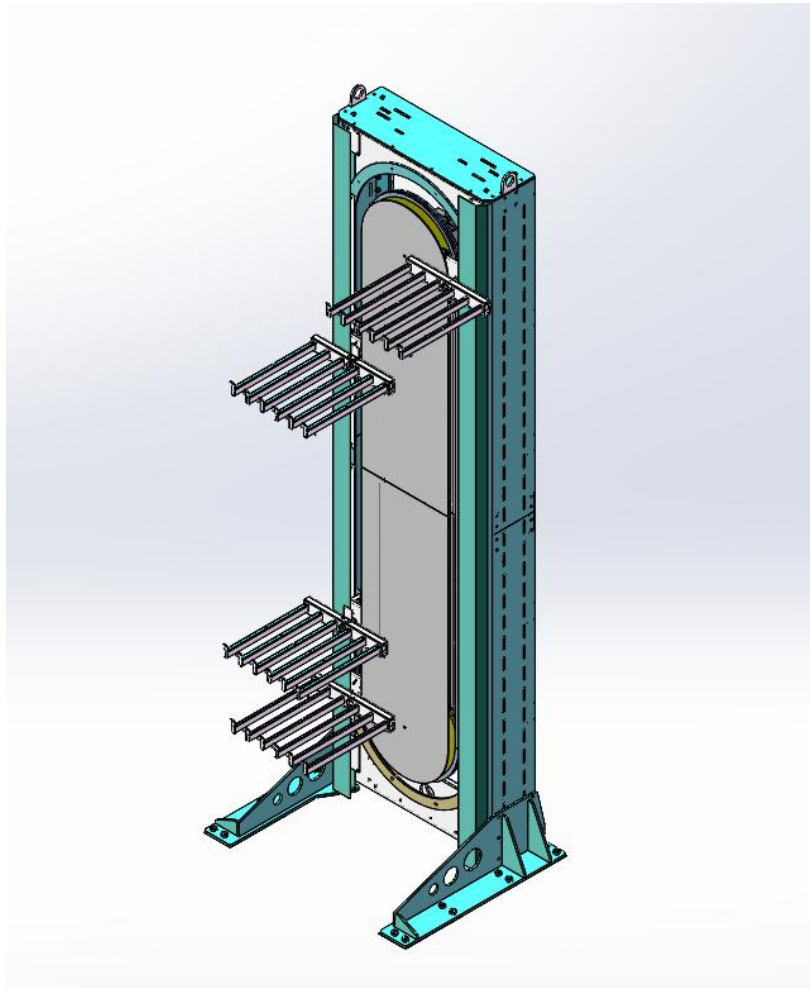
### Main Mechanical Structure and Features:

- Body: Constructed from aluminum alloy profiles.
- Load Platform: Formed by cold-rolled steel plate and assembled into a single unit.
- Cargo Conveyor: Utilizes a multi-wedge belt roller conveyor, as described above.
- Surface Coating: Frame, mounting plates, and other components undergo rust removal with wire brushes, sandpaper, etc., degreasing by acid pickling, phosphating, then coated with electrostatically sprayed epoxy resin powder and baked. The resin thickness ranges from 60 $\mu$ m to 90 $\mu$ m. The color is specified by party A.
- Purchased Components Configuration: SEW for the motor, domestically sourced high-quality synchronous belts, TR for seat bearings, and Habbax for bearings.

### Main Performance and Parameters:

- Conveyor Speed: 30m/min
- Lifting Speed: 30m/min
- Transported Items: Cartons
- Weight Capacity: max 50KG

## 1.12 Vertical Sorting Machine



The main working principle of the vertical sorting machine involves the rotation of two large sprockets, one above and one below, connected by chains, forming a loop. Cargo fork components attached to the chains pick up items from the roller conveyor as they pass through, and then deposit them onto another section of conveyor, completing the sorting process.

The vertical sorting machine can accommodate multiple inputs and outputs or continuous input and output from the same port.

### Main Mechanical Structure and Features:

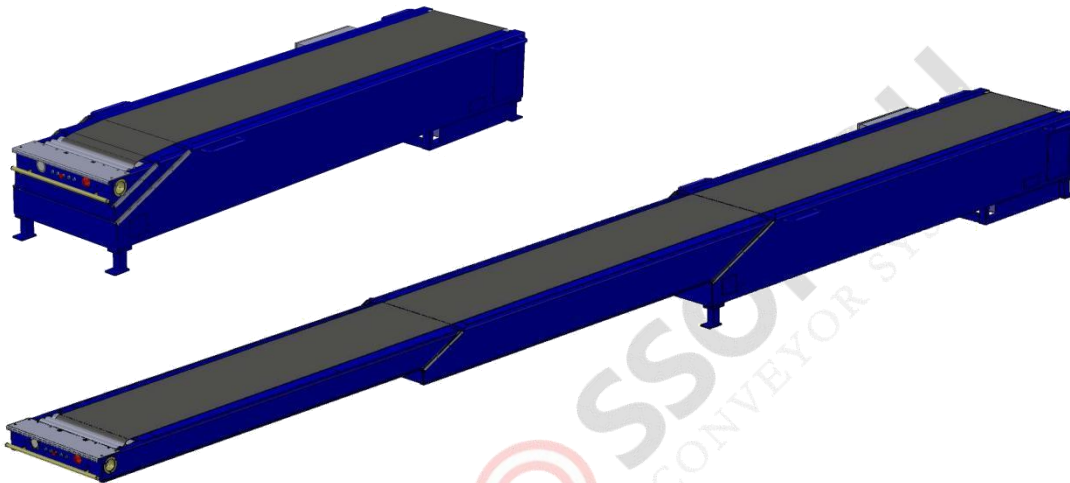
- **Body:** The frame is constructed from Q235/t5 hot-rolled steel plate, and the chain guard is made of polymer material.
- **Support:** Folded plate welded support, made by bending and welding 5mm hot-rolled steel plate, bolted to the frame, adjustable by connecting the foot base to the ground, with a conveyor surface height adjustment of +25mm.
- **Drive Unit:** Motor-driven.
- **Surface Coating:** Frame, mounting plates, etc., undergo rust removal with wire brushes, sandpaper, etc., degreasing by acid pickling, phosphating, then coated with electrostatically sprayed epoxy resin powder and baked. The resin thickness ranges from 60 $\mu$ m to 90 $\mu$ m. The color is specified by party A.

- Purchased Components Configuration: SEW for the motor, Donghua for the chain, TR for seat bearings, and Habbax for bearings.

#### Main Performance and Parameters:

- Conveyor Speed: 30m/min
- Transported Items: Cartons or material boxes, maximum outer dimensions (LxW): 600x400.
- Equipment Noise:  $\leq 75$ dB(A)

#### 1.13 Expandable Belt Conveyor



The expandable belt conveyor is an ordinary belt conveyor with an added telescopic mechanism, allowing the conveyor to extend and retract in the longitudinal direction. Users can adjust the length of the conveyor according to their requirements using control buttons.

Customers can purchase expandable belt conveyors with automatic lifting and lowering devices to control the height of the conveyor ends as needed for their specific application scenarios.

The expandable belt conveyor can transport items bidirectionally and can extend or retract while in operation, greatly increasing productivity. It can also be used in conjunction with other conveying equipment or material sorting systems to automate material handling in warehouses, such as loading and unloading of vehicles, and finds wide applications in industries like express delivery, postal services, and tobacco warehousing.

Suitable Types of Cargo: Cartons, turnover boxes, woven bags, express parcels, and other non-bulk transportable items.

#### Main Mechanical Structure and Features:

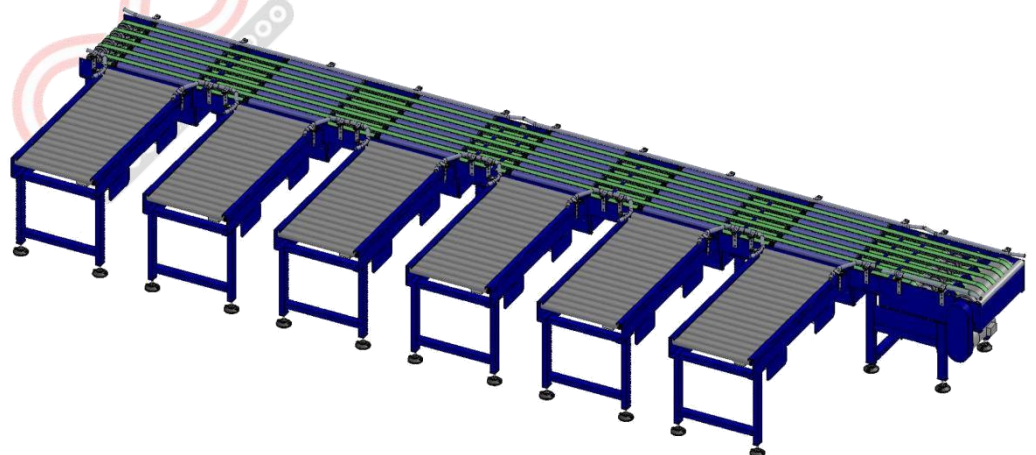
- Belt: High-strength PVC silent belt with steel buckle connectors for easy maintenance.

- Body: Each section is made of Q345B cold-bent steel, thick-walled square pipes, and other welded components, assembled in a drawer-like manner. Each section is equipped with anti-lateral swing and vertical guide wheels, with brushes on the sides to prevent foreign objects from falling in.
- Rollers: Support rollers are galvanized steel with precision bearings. Drive, tension, and redirection rollers are made of carbon steel, precision machined, and installed with high-quality self-aligning bearings or bearing housings.
- Functions: Equipped with sound and light warning lights, anti-collision barriers, LED lighting, photoelectric counting, manual inching, and continuous operation functions.
- Wiring: Internal wiring uses cable carriers with plug-in connectors for easy maintenance.
- Surface Coating: Frames, mounting plates, etc., undergo rust removal, degreasing, phosphating, electrostatic spraying of epoxy resin powder, and baking. The resin thickness ranges from 60 $\mu$ m to 90 $\mu$ m. The color is specified by party A.
- Purchased Components Configuration: SEW for the motor, Ammeraal Beltech for the belt, NSK for bearings, Donghua for the chain, Siemens PLC, Danfoss inverter, SICK photoelectric sensors, Igus cable carriers, Schneider for low-voltage electrical components and limit switches.

#### Main Performance and Parameters:

- Load Capacity:  $\leq 50\text{Kg/m}$
- Belt Width: 800mm
- Expansion Speed: 20~30m/min (Variable frequency speed control)
- Conveyor Speed: 10m/min (Variable frequency speed control)
- Equipment Noise:  $\leq 75\text{dBA}$

#### 1.14 Narrow Belt Sorter



The narrow belt sorter adopts a modular structure, mainly composed of a drive section, intermediate section, and tail section. Each part can form an independent assembly unit, with the intermediate section consisting of multiple sections according to the conveying length requirements.

The narrow belt sorter mainly consists of two systems: the narrow belt conveyor and the lifting transfer. The items are placed on the narrow belt and move along with it. When reaching the sorting position, the lifting transfer operates. Rollers between the narrow belts rise, lifting the items. The rollers rotate, and the items are sorted out in the direction of rotation.

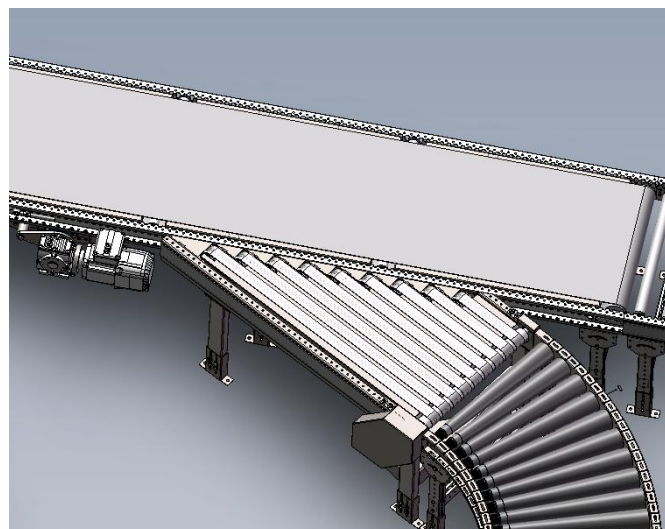
#### Main Mechanical Structure and Features:

- **Belt:** The belt is a low-friction PVC belt with heat-fused joints, resulting in minimal noise. The intermediate roller bracket is in a groove form, facilitating the installation and removal of the narrow belt. The narrow belt is automatically tensioned by independent cylinders, with the tension force adjusted by a filter pressure reducing valve. One-way valves are installed on the tensioning cylinders to maintain pressure, preventing belt slackening and deviation after air loss.
- **Body:** The frame is made of Q235/T4 hot-rolled steel plate, and the belt drag plate is made of ultra-high molecular weight polyethylene (UHMWPE).
- **Transfer Device:** It uses sleeve rollers and pneumatic lifting devices with quick exhaust valves for high lifting efficiency.
- **Surface Coating:** Frame, mounting plates, and other parts undergo rust removal, degreasing, phosphating, electrostatic spraying of epoxy resin powder, and baking. The resin thickness ranges from 60 $\mu$ m to 90 $\mu$ m. The color is specified by Party A.
- **Purchased Components Configuration:** SEW for the motor, SIGLING for the belt, TR for the bearing seat, and HA for the shaft.

#### Main Performance and Parameters:

- **Conveying Speed:** 80m/min
- **Sorting Efficiency:** 2000 pieces/hour
- **Conveyable Items:** Suitable for conveying boxes with a width  $\geq$ 200mm
- **Equipment Noise:** 75dBA
- 

#### 1.15 Narrow Belt Merge Conveyor



The main working principle of the multi-column narrow belt merge conveyor is that the reduction motor on the drive frame rotates the drive rollers through chains or synchronous belts. The drive rollers drive multiple narrow belts to operate. Due to the different lengths of each narrow belt, a certain angle is formed, generally 30°, to facilitate connection with the main belt conveyor. When goods run on the belt, it drives the process of diverting or merging.

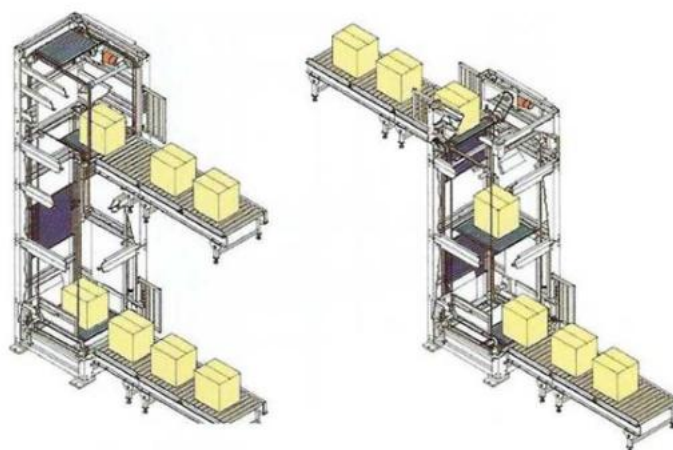
#### Main Mechanical Structure and Features:

- **Belt:** The belt is a PVC belt with heat-fused low-friction guide strips, resulting in minimal noise and avoiding deviation. The narrow belts are individually tensioned, and the tension can be adjusted by screws on the tensioning device.
- **Body:** The frame is made of Q235/T4 hot-rolled steel plate, and the belt drag plate is made of ultra-high molecular weight polyethylene (UHMWPE).
- **Surface Coating:** Frame, mounting plates, and other parts undergo rust removal, degreasing, phosphating, electrostatic spraying of epoxy resin powder, and baking. The resin thickness ranges from 60μm to 90μm. The color is specified by Party A.
- **Purchased Components Configuration:** SEW for the motor, YONGLI for the belt, TR for the bearing seat, and HA for the shaft.

#### Main Performance and Parameters:

- **Conveying Speed:** 5-90m/min
- **Conveyable Items:** Belt width 60mm, center distance between belts: 100mm; Suitable for conveying boxes with a width  $\geq 200$ mm
- **Equipment Noise:**  $\leq 75$ dB(A)

#### 1.16 Continuous Lift Conveyor



The continuous lift conveyor is used for transporting goods from the horizontal direction to the vertical direction. It features a small footprint, fast operation, quietness, and



safety. With conveyor lines configured at the entrance and exit, it can automatically complete the up and down transportation of goods, making it suitable for transporting goods between floors in factories and logistics centers.

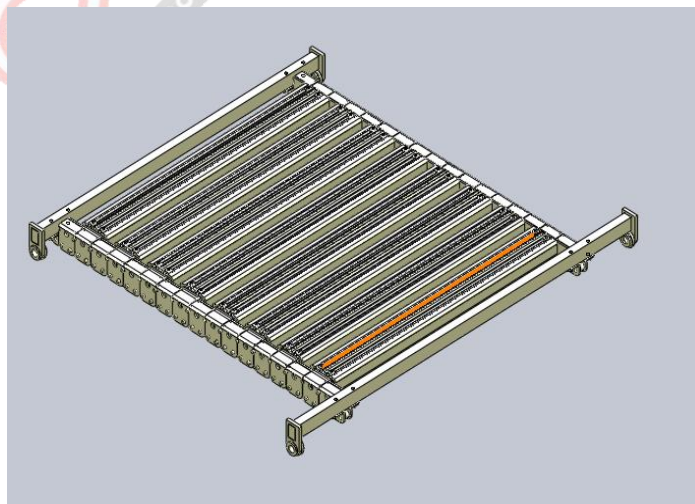
The Z-shaped lift conveyor is designed to transport goods in a "Z" direction, where goods enter from one side and exit from the opposite side, with the direction of transport from bottom to top. The C-shaped lift conveyor, on the other hand, transports goods in a "C" direction, with the entrance and exit on the same side and the direction of transport from top to bottom.

The continuous lift conveyor is a specialized equipment for continuously lifting or lowering unit goods. Its efficient design, low cost, and small footprint make it highly efficient compared to screw-type lift conveyors. It is also more efficient than reciprocating lift conveyors.

Applicable transported items include plastic turnover boxes, paper packaging, tooling plates, and hard-surfaced items with continuous carrying surfaces.

#### Main Mechanical Structure and Features:

- **Frame:** The frame adopts a modular structure, mainly consisting of upper, middle, and lower frames. The number and length of the middle frames can be adjusted to meet different lifting height requirements. The upright columns in the frame are made of C-shaped cold-formed steel, welded on one side, and then connected into independent frames by bolts.
- **External Enclosure:** Steel wire mesh or iron plate is used for external enclosure.
- **Load Platform:** The load platform is composed of aluminum profiles connected by pallet chains. The load platform is equipped with different U-shaped connectors at the front and rear, which are connected to the lifting chain through these connectors and move with the lifting chain.



- **Surface Coating:** Parts such as the frame and mounting plate undergo rust removal, degreasing, phosphating, and then surface electrostatic spraying of epoxy resin powder, followed by baking. The resin thickness is between 60μm and 90μm. The color is specified by Party A.
- **Purchased Components Configuration:** SEW for the reduction motor, Hangzhou Donghua for the chain, special chains for the pallet chain, TR for the bearing seat, and HA for the bearings.

#### Main Performance and Parameters:

- Load Capacity:  $\leq 50\text{kg/item}$
- Lifting Speed: 30m/min (variable frequency speed regulation)
- Noise: 75dBA

