Modular belt conveyor WL222X

System information

System overview

FlexLink's newly developed stainless steel conveyor is designed to fit into demanding primary and secondary packaging applications. It addresses important aspects of today's packing processes, such as being easy to clean, smooth handling of products, safe for operators, robust design, long life, and easy to maintain with a low cost of ownership.

The modularized and standardized design ensures fast set up, and facilitates rapid future extensions and changes.

Separation of larger surfaces

To simplify cleaning and to ensure consistent results, larger surfaces have been separated to improve access between them for cleaning and inspection of results. This separation also improves drainage and speeds up the drying process after cleaning. Also, the bearings are separated 25 mm from the framework with spacers to prevent contamination.
Small contact surfaces
To make the cleaning process faster and consistent, the small contact surfaces within the frame have been designed in order to eliminate hard-to-reach areas.

No open threads
Due to the difficulties of keeping open threads clean, all threads in the conveyor are covered from the top down to the floor.

Reduction of sharp corners
To achieve efficient and consistent cleaning results, it is important to avoid sharp corners that are hard to clean. Both inside and outside of the framework, smooth edges have been added at perpendicular contact surfaces to aid operators when cleaning the conveyor in both wet and dry applications.

No flat surfaces for better drainage
In wash-down environments, it is important to have proper drainage of water and other liquids. The WLX design has been optimized in this regard by selecting different manufacturing processes to create shapes that enable efficient drainage. This will also have an important impact on its ability to be cleaned in dry environments in both primary and secondary packaging lines.

Belt width 152/203/304/456/608 mm

Technical specifications
- Maximum speed: 40 m/min
- Maximum conveyor length: 20 m
- Max single item weight: up to 30 kg
- Total load on a conveyor: 300 kg
- Max product weight per belt pitch: 1,5 kg/slide rail
- Max permissible pull force (with bends): 500 N
- Max permissible pull force (without bends): 1200 N
The modular plastic belt conveyor in five widths – 222, 273, 374, 526 and 678 mm – can be built as straight sections or in S, U or L-shape with 30, 45, 60, 90° (180° only for 222 and 273) horizontal bend, or combinations thereof. Vertical bends are available in 5° (3° only for 222 and 273) positive or negative.

Kit for conveyor beam end, always included in:
- End drive units
- Idler end units
- Plain bends
- Vertical bends
Modular belt, Radius flush grid, curve-running

The belt consists of plastic hinged links connected by plastic rods. The wide belts are woven together by links that are 102 mm, 124 mm, and 180 mm wide. The assembled belt forms a wide, flat, and tight conveyor surface. Five standard widths of belt can be delivered: 152 mm, 203 mm, 304 mm, 456 mm, and 608 mm.

Standard belt colour is white but blue belts can also be ordered.

Belts with polyamide pins are available for dry or semi-wet applications. In constant wet applications, belts with acetal pins must be used. This is due to the fact that polyamide pins will absorb water and swell in wet applications, and acetal pins will squeak in dry environments.

Travel direction of the belts:

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Technical characteristics

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Belt width</td>
<td>152 mm</td>
</tr>
<tr>
<td>Modular belt weight (Acetal)</td>
<td>1.15 kg/m</td>
</tr>
<tr>
<td>Modular belt height</td>
<td>13 mm</td>
</tr>
<tr>
<td>Belt pitch</td>
<td>25.4 mm</td>
</tr>
<tr>
<td>Max. permissible belt tension without bends</td>
<td>1200 N</td>
</tr>
<tr>
<td>Max permissible belt tension through a bend: Belt width 152</td>
<td>500 N</td>
</tr>
<tr>
<td>Temperature range (Acetal)</td>
<td>1 °C to +40 °C</td>
</tr>
</tbody>
</table>

For other temperatures request for quotation

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Tools and accessories

The belt should be pretensioned with a return slack of about 25 mm. Too much belt slack is a safety risk as the belt can hang below the side of the conveyor beam. A belt tensioner tool (5118803) is available in order to facilitate installation of the belt and minimize the amount of slack in the return belt.

Ordering information

The belt is delivered in assembled 1 m lengths. To calculate the total length required, remember to add for belt consumed by the idler and drive units.
Modular belts

**Radius flush grid belt, Wet**

Plain belt
- Belt material: Acetal (POM)
- Pin material: Acetal (POM), white
- Length: 1 m
- 152 mm wide, White
- 152 mm wide, Blue

**Radius flush grid belt, Dry**

Plain belt
- Belt material: Acetal (POM)
- Pin material: Polyamide (PA), brown
- Length: 1 m
- 152 mm wide, White
- 152 mm wide, Blue

**Radius flush grid belt, Dry (Spare part only)**

Plain belt
- Belt material: Acetal (POM)
- Pin material: Polyamide (PA), brown
- Length: 1 m
- 152 mm wide, White
- 152 mm wide, Blue

**Note!** For use with belt delivered before April 2019

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**Belt tensioner tool for radius flush grid**

Belt tensioner tool

**5118803**

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**Radius flush grid belt, Wet (Spare part only)**

Plain belt
- Belt material: Acetal (POM)
- Pin material: Acetal (POM), white
- Length: 1 m
- 152 mm wide, White
- 152 mm wide, Blue

**Note!** For use with belt delivered before April 2019

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**WLTP 1A152 L W**

**WLTP 1A152 L WB**

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**WLTP 1A152**

**WLTP 1A152 B**
Conveyor beams are normally not symmetrical, which is why they have an upstream and downstream end. An arrow label on the conveyor beam side indicates the appropriate top belt travel direction to ensure correct assembly.

Components such as plain bends, etc., cannot be placed too close to an End drive unit. Therefore, the minimum permissible length for conveyor beam sections when connecting to an End drive unit is 844 mm. This ensures a sufficient amount of return belt tension directly after the drive sprocket to avoid slack close to the sprocket wheel. The return belt hanging between the first two belt guides provides this belt tension (called back tension). For more information see WLX Engineering guidelines.

Connecting brackets have to be ordered separately when joining End drives, idler ends, conveyor beams, etc. When joining two conveyor beams, a beam spacer kit must be ordered separately.

### Conveyor dimensions

<table>
<thead>
<tr>
<th>Component</th>
<th>Value (mm)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Conveyor width A</td>
<td>222</td>
</tr>
<tr>
<td>Usable belt width B</td>
<td>152</td>
</tr>
<tr>
<td>Top of belt:</td>
<td></td>
</tr>
<tr>
<td>WLTP 1A</td>
<td>52</td>
</tr>
<tr>
<td>WLTP 1B</td>
<td>49</td>
</tr>
</tbody>
</table>

**Frame profiles and cross bars**

In order to facilitate cleaning, the top belt can be lifted up and the outer slide rails can be folded back.

For hygiene reasons, the WLX system is based on an easy-to-clean, free hanging return belt.

Elongation of the belt due to load is normally evenly distributed on the return side and along the whole conveyor, and placement of the belt guides for the return belt is critically important for proper conveyor system performance. Conveyor beams can be ordered from 142 mm up to 3000 mm and are always pre-engineered and configured according to the rules that must be followed.

Conveyor beams are normally not symmetrical, which is why they have an upstream and downstream end. An arrow label on the conveyor beam side indicates the appropriate top belt travel direction to ensure correct assembly.

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Connecting brackets have to be ordered separately when joining End drives, idler ends, conveyor beams, etc. When joining two conveyor beams, a beam spacer kit must be ordered separately.
Technical specifications

Minimum permissible conveyor beam length to be connected:

WLCBX 3A
Standard length 3000 mm
6 mm space, easy to clean

Example

WLCBX LA
L = 1700 mm
6 mm space, easy to clean

Top belt travel direction

(WL min = 142)
L min = 844
(min = 900)

(WL min = 573)
Conveyor frame components

Conveyor beam, Easy Clean

Conveyor beam, WL222X
Length 3 m (3000 ±1,2 mm)
Length to order (142- 2999 mm)
Weight, 1 m, incl. belt: 14 kg/m

WLCBX 3A222
WLCBX LA222

Connecting bracket kit

Connecting Bracket
For beam
Including 4 pcs M10 screws

WLCJX 10X56

Beam spacer Kit for WL222

Beam spacer kit
WLCEX A222

Recommended Torx tool for fasten spacer
Size T30

Beam support brackets

Beam support bracket (A)
Including 6 pcs M10 screws

WLCSX 10X56

Beam support bracket (B)
Including 2 pcs M10 screws
and 2 pcs spacer WLRDX M10X25

WLCSX 10

Beam support bracket (C)
Adjustable ±40°

WLCSX 10X56V40
Slide rail

Slide rail, length 3 m
Slide rail (A) Outer slide rail (B)

WLCRX 3
WLCRX 3 B

Connecting Strip

Connecting strip kit
Must be ordered in multiples of 10

WLAHX 100

Drill fixture for connecting strip

Contains drill fixtures for both WLCRX 3 and WLCRX 3B

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End Drive Units - Introduction

A soft motor start is recommended for use with high-speed and long conveyors. This is because these types of modular belts are quite heavy, and the free hanging return belt can begin to oscillate momentarily during startup.

A grease nipple is included in all flange bearings. The bearings are initially filled with FDA-approved, food-grade grease (NSF H1).

End drive units including SEW motors IP 65, can be ordered with food-grade oil and stainless steel hollow shafts in the web-based configurator.

Technical specifications
Maximal speed.............................. 40 m/min
Number of teeth on sprocket wheel ... 16

Belt tensioner unit
A belt tensioner unit should always be placed near the End drive unit and its use is recommended:
- for long conveyors >20 meters
- for long conveyors >15 m and a speed of >30 m/min
- for conveyors with frequent starts/stops, especially if the load is high
- if an End drive unit needs to be placed close to a plain bend
- if an End drive unit needs to be placed on the lower part next to a conveyor slope section
- for short conveyors where the belt slack length is insufficient to lift the belt for cleaning

Ordering information
Drive units with motors must be specified using the web-based configurator. The configurator provides detailed information and step-by-step guidance in the specification process. A product code string is generated, containing the specification details. See next page for examples of code strings.

Drive units without motors can be ordered using the designations in the catalogue.
- Connecting brackets have to be ordered separately.
- Slide rail must be ordered separately.

Dimension
Note that dimensions relating to drive unit motors depend on the motor specified during the configuration.
## Drive units – configuration strings

Below are two examples of text strings obtained from the configurator with explanations.

### Drive unit with fixed speed motor

<table>
<thead>
<tr>
<th>Item no</th>
<th>A</th>
<th>B</th>
<th>D</th>
<th>E</th>
<th>G</th>
<th>H</th>
<th>I</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>HNP</td>
<td>L</td>
<td>V4</td>
<td>SA37</td>
<td>50/230</td>
<td>0,18kW</td>
<td>TF</td>
</tr>
</tbody>
</table>

### Drive unit with variable speed motor

<table>
<thead>
<tr>
<th>Item no</th>
<th>A</th>
<th>B</th>
<th>D</th>
<th>E</th>
<th>F</th>
<th>G</th>
<th>J</th>
<th>K</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>HPV</td>
<td>L</td>
<td>V6-15</td>
<td>SA37</td>
<td>MM03</td>
<td>50/380-500</td>
<td>C</td>
<td>P</td>
</tr>
</tbody>
</table>

### Item no - Drive type

- **WLEBX**: End drive

### A – 0-Unit

- **HNP**: Direct drive, no slip clutch
- **V**: Variable speed

### B – Motor position

- **L**: Left
- **R**: Right

### D – Speed

- **V...**: Fixed speed... m/min
- **V...-...**: Variable speed range...-... m/min

### E – Gearbox

- **SA37**: SEW motor type SA37
- **WA30**: SEW gear box type WA30

### F – Movimot size

- **MM03**: SEW Movimot type, 0.37 kW
- **MM05**: SEW Movimot type, 0.55 kW
- **MM07**: SEW Movimot type, 0.75 kW
  (position is omitted for fixed speed motors)

### G – Electrical environment

- **50/230**: 50 Hz, 230 V
- **50/400**: 50 Hz, 400 V
- **60/230**: 60 Hz, 230 V
- **60/460**: 60 Hz, 460 V
- **50/380-500**: SEW Movimot variable speed motor

### H – Motor power

- **... kW**: Motor power, kW
  (position is omitted for variable speed motors)
  (see position F)

### I – Thermal protection

- **No**: No thermal protection

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TF: Thermal protection type TF
TH: Thermal protection type TH
(position is omitted for variable speed motors)

J – Hybrid cable

- **No**: No hybrid cable
- **C**: Hybrid cable included in SEW Movimot
  (position is omitted for fixed speed motors)

K – Fieldbus

- **No**: No fieldbus
- **P**: Profibus fieldbus, maintenance switch
- **D**: DeviceNet fieldbus, maintenance switch
  (position is omitted for fixed speed motors)
End drive units

End drive unit Easy Clean, Radius flush grid 222

* Use online configurator when ordering
Effective track length: 0.80 m
Weight, incl belt: 11 kg

Belt tensioner unit

Belt tensioner for:
WL222X
5124676
Required extra belt length
0.55 m
Weight, incl belt: 13 kg

WLEBX A222
WLEBX0A222NLP
WLEBX0A222NRP

Fixed/variable speed*
Without motor:
Transmission on left side
Transmission on right side
Idler end units – Introduction

Chain guidance at end of conveyor
The idler end unit is used to guide the chain from the return side of the conveyor up to the top side with a minimum of friction. The chain is guided by two or more idler wheels on a common, rotating shaft supported by ball bearings.

Ordering information
- Connecting strips are included with the idler end units.
- Slide rail must be ordered separately.

Idler units

Idler end unit, WL222

* Use online configurator when ordering
Effective track length: 0,80 m
Weight, incl belt: 11 kg
Plain Bends - Introduction

When using radius flush grid belts in plain bends, the belt pull force will be concentrated on the outer part of the belt. A certain straight section is needed before and after the bend in order to transfer the load between the outer belt section and evenly distribute it to the straight belt section. This is critical before entering another plain bend, end drive unit, etc. This required straight section is always integrated in the plain bend itself (250 mm for WL222X and WL273X, 300 mm for WL374X, 450 mm for WL526X, and 600 mm for WL678X).

Plain bend placement, as for all other Flexlink conveyors, should always be considered. A plain bend placed too far downstream on a conveyor generates unnecessary belt pull. Also, placement of a plain bend too close to an end drive unit can lead to an unnecessary slack increase and a separate slack unit must be added. Always use the Flexlink calculation tool (FLCT) to calculate the resulting pull forces.

Plain bend, Easy Clean 30°

Plain bend, Easy Clean, 45°

Plain bend, 45°±1°

Plain bend, Easy Clean 60°

Plain bend, 60°±1°

Plain bend, Easy Clean, 30°

Plain bend, Easy Clean, 45°

Plain bend, Easy Clean, 60°

Plain bend, Easy Clean, 30°

Plain bend, Easy Clean, 45°

Plain bend, Easy Clean, 60°
Plain Bends (continued)

Plain bend, Easy Clean 90°

Plain bend, 90°±1°
R = 412±10 mm
* Use online configurator when ordering
Effective track length: 2,6 m
Weight, incl belt: 24 kg

WLBPX 90A222

Plain bend, Easy Clean 180°

Plain bend, 180°±1°
R = 412±10 mm
* Use online configurator when ordering
Effective track length: 4,1 m
Weight, incl belt: 34 kg

WLBPX 180A222

Vertical bends

Vertical bend, Easy Clean, 5° (pos.)

Vertical bend 5°, pos
* Use online configurator when ordering
Effective track length: 2,1 m
Weight, incl belt: 21 kg

WLBVX 5A222P

Vertical bend, Easy Clean, 5° (neg.)

Vertical bend 5°, neg
* Use online configurator when ordering
Effective track length: 2,1 m
Weight, incl belt: 20 kg

WLBVX 5A222N

Vertical bend, Easy Clean, 3° (pos.)

Vertical bend 3°, pos
* Use online configurator when ordering
Effective track length: 2,1 m
Weight, incl belt: 20 kg

WLBVX 3A222N

Vertical bend, Easy Clean, 3° (neg.)

Vertical bend 3°, neg
* Use online configurator when ordering
Effective track length: 2,1 m
Weight, incl belt: 20 kg

WLBVX 3A222N

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Plain Bends - Introduction 105
Conveyor supports

Support modules must be specified using the web-based configurator. There, a product code string is generated that contains the specification details (E.g., WLUFX S01-WL374X-900).

**Support module, single leg**

![Image of Support module, single leg](image1)

**WLUFX S04**

**Support module, single leg WLUFX S04**

**Parameter**

<table>
<thead>
<tr>
<th>Option</th>
<th>660-1500 mm</th>
</tr>
</thead>
<tbody>
<tr>
<td>Foot type</td>
<td>XCFSX 16x80 H</td>
</tr>
<tr>
<td></td>
<td>XCFSX 16x80 HA</td>
</tr>
<tr>
<td></td>
<td>XCFSX 16x80</td>
</tr>
<tr>
<td></td>
<td>XCFSX 16x80 A</td>
</tr>
<tr>
<td>Bracket type</td>
<td>WLCSX 10X56</td>
</tr>
<tr>
<td></td>
<td>WLCSX 10</td>
</tr>
</tbody>
</table>

**Foot holder for adjustable foot**

![Image of Foot holder](image2)

**XCFCX 16x100**

**Adjustable foot**

![Image of Adjustable foot](image3)

**M16**

**XCFSX 16x80 A**

**XCFSX 16x80 HA**

**XCFSX 16x80 H**

**M16, Anchoring**

**M16, EHEDG/3A**

**M16, EHEDG/3A, Anchoring**

**Max**

**Min**

**Ø 15 mm**

**Top of belt:**

660 - 1500 mm

**Foot type:**

XCFSX 16x80 H

XCFSX 16x80 HA

XCFSX 16x80

XCFSX 16x80 A

**Bracket type:**

WLCSX 10X56

WLCSX 10

WLCSX 10X56V40