Modular belt conveyor WL678X

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.

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): 1000 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 Belts - Introduction

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 color 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.

Flat top belt, straight running
The belt has a minimal number of seams and has open hinges that are easy to clean. The belt is white and is available with acetal pins for wet applications.

Travel direction of the belts:

Technical characteristics

<table>
<thead>
<tr>
<th>Belt width</th>
<th>608 mm</th>
</tr>
</thead>
<tbody>
<tr>
<td>Modular belt weight (Acetal)</td>
<td>4.57 kg/m</td>
</tr>
<tr>
<td>Radius flush grid</td>
<td>4.78 kg/m</td>
</tr>
<tr>
<td>Flat top belt</td>
<td></td>
</tr>
<tr>
<td>Modular belt height</td>
<td></td>
</tr>
<tr>
<td>Radius flush grid</td>
<td>13 mm</td>
</tr>
<tr>
<td>Flat top belt</td>
<td>10 mm</td>
</tr>
<tr>
<td>Belt pitch</td>
<td>25.4 mm</td>
</tr>
<tr>
<td>Max. permissible belt tension</td>
<td></td>
</tr>
<tr>
<td>Belt width 304</td>
<td>670 N</td>
</tr>
<tr>
<td>Belt width 456 and 608</td>
<td>1000 N</td>
</tr>
<tr>
<td>With bend</td>
<td>1000 N</td>
</tr>
<tr>
<td>Without bend</td>
<td>1200 N</td>
</tr>
<tr>
<td>Temperature range (Acetal)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>1 °C to +40 °C</td>
</tr>
<tr>
<td></td>
<td>For other temperatures request for quotation</td>
</tr>
</tbody>
</table>

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
608 mm wide, White
608 mm wide, Blue
WLTP 1A608L W
WLTP 1A608L WB

Radius flush grid belt, Dry

Plain belt
Belt material Acetal (POM)
Pin material Polyamide (PA), brown
Length 1 m
608 mm wide, White
608 mm wide, Blue
WLTP 1A608L
WLTP 1A608L B

Flat top belt

Flat top belt
Belt material Acetal (POM)
Pin material Acetal (POM), white
Length 1 m
608 mm wide
WLTP 1B608 W

Radius flush grid belt, Wet

Plain belt
Belt material Acetal (POM)
Pin material Acetal (POM), white
Length 1 m
608 mm wide, White
608 mm wide, Blue
WLTP 1A608L W
WLTP 1A608L WB

Belt tensioner tool for radius flush grid

Belt tensioner tool
5118803
Radius flush grid belt, Wet (Spare part only)

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

WLTP 1A608 W
WLTP 1A608 WB

Note! For use with belt delivered before April 2019

Radius flush grid belt, Dry (Spare part only)

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

WLTP 1A608
WLTP 1A608 B

Note! For use with belt delivered before April 2019
Conveyor Beams - Introduction

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.
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</th>
</tr>
</thead>
<tbody>
<tr>
<td>Conveyor width A</td>
<td>678 mm</td>
</tr>
<tr>
<td>Usable belt width B</td>
<td>608 mm</td>
</tr>
<tr>
<td>Top of belt:</td>
<td></td>
</tr>
<tr>
<td>WLTP 1A</td>
<td>52 mm</td>
</tr>
<tr>
<td>WLTP 1B</td>
<td>49 mm</td>
</tr>
</tbody>
</table>
Technical specifications

Minimum permissible conveyor beam length to be connected:

In order to simplify the cleaning process FlexLink can offer belt lift arms for straight conveyors. Contact FlexLink for more information.
Conveyor frame components

**Conveyor beam, Easy Clean**

Conveyor beam, WL678X
- Length 3 m (3000 ±1.2 mm)
- Length to order (142-2999 mm)
- Weight, 1 m, incl. belt: 25 kg/m

**WLCBX 3A678**
**WLCBX LA678**

**Connecting bracket kit**

Connecting Bracket
- For beam
- Including 4 pcs M10 screws

**WLCJX 10X56**

**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**

**Beam spacer Kit for WL678**

Beam spacer kit

**WLCEX A678**

Recommended Torx tool for fasten spacer
- Size T30

Torx

Spacer
Slide rail

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

Connecting Strip

Connecting strip kit  WLAHX 100
Must be ordered in multiples of 10

Drill fixture for connecting strip

Contains drill fixtures for both  5118922
WLCRX 3 and WLCRX 3B
End drive units

Drive unit types

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.

Motor specifications

Motors are available for 230/400 V, 50 Hz and 230/460 V, 60 Hz. Variable speed motors are SEW Movimot, 380–500 V. Note that variable speed motors include a control box that adds 120 mm to the width of the motor.

IP55 available with standard oil.
IP65 available with food grade oil.

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>0,18 kW</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

### 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
- **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 unit Easy Clean, Radius flush grid 678

**WLEBX A678**

- Fixed/variable speed*
- Without motor:
  - Transmission on left side
  - Transmission on right side

* Use online configurator when ordering

Effective track length: 0.80 m
Weight, incl belt: 24 kg

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End drive unit Easy Clean, Flat top 678

**WLEBX B678**

- Fixed/variable speed*
- Without motor:
  - Transmission on left side
  - Transmission on right side

* Use online configurator when ordering

Effective track length: 0.80 m
Weight, incl belt: 25 kg
End drive unit S, Radius flush grid 678

End drive unit
Fixed/variable speed
Without motor:
Transmission on left side
Transmission on right side

WLEBX A678 S
WLEBX0A678NLP S
WLEBX0A678NRP S

* Use online configurator when ordering
Effective track length: 0,75 m
Weight, incl belt: 23,2 kg

End drive unit J, Radius flush grid 678

End drive unit
Fixed/variable speed
Without motor:
Transmission on left side
Transmission on right side

WLEBX A678 J
WLEBX0A678NLPJ
WLEBX0A678NRPJ

* Use online configurator when ordering
Effective track length: 1,5 m
Weight, incl belt: 39,1 kg

Belt tensioner unit

Belt tensioner for: WL678X
Required extra belt length
Weight, incl belt: 23 kg

Effective track length: 0,75 m
Weight, incl belt: 23 kg

Effective track length: 1,5 m
Weight, incl belt: 39,1 kg
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 unit, WL678

Idler unit (For conveyors with plain bends) WLEJX 300A678

Idler unit (Only for straight conveyors) WLEJX 300B678

Idler unit, WL678 S

* Use online configurator when ordering
Effective track length: 0.75 m
Weight, incl belt: 18.2 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 (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, 30°±1°

R=1650±10 mm

WLBPX 30A678

* Use online configurator when ordering
Effective track length: 4.5 m
Weight, incl belt: 66 kg

Plain bend, Easy Clean 45°

Plain bend, 45°±1°

R=1650±10 mm, WL626

WLBPX 45A678

* Use online configurator when ordering
Effective track length: 5.5 m
Weight, incl belt: 77 kg

Plain bend, Easy Clean 60°

Plain bend, 60°±1°

R=1650±10 mm

WLBPX 60A678

* Use online configurator when ordering
Effective track length: 6.5 m
Weight, incl belt: 91 kg
Plain Bends (continued)

**Plain bend, Easy Clean 90°**

![Diagram of a 90° plain bend]

Plain bend, 90°±1°  
R=1650±10 mm  
**WLBPX 90A678**

* Use online configurator when ordering  
Effective track length: 8.6 m  
Weight, incl belt: 113 kg

**Vertical bends**

**Vertical bend, Easy Clean, 5° (pos.)**

![Diagram of a 5° vertical bend (positive)]

Vertical bend 5°, pos  
**WLBVX 5A678P**

* Use online configurator when ordering  
Effective track length: 2.1 m  
Weight, incl belt: 39 kg

**Vertical bend, Easy Clean, 5° (neg.)**

![Diagram of a 5° vertical bend (negative)]

Vertical bend 5°, neg  
**WLBVX 5A678N**

* Use online configurator when ordering  
Effective track length: 2.1 m  
Weight, incl belt: 39 kg
Support System Modules - Introduction

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  WLUFX S04

Support module, single leg  WLUFX S04

Parameter  Option
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

Foot holder for adjustable foot

Foot holder
Including 2 pcs M10 screws  XCFCX 16x100

Adjustable foot

Adjustable foot
M16
M16, Anchoring
M16, EHEDG/3A
M16, EHEDG/3A, Anchoring

Support module type H  WLUFX S01

Support module type H, WLUFX S01

Parameter  Option
Platform
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

Adjustable foot

Adjustable foot
XCFSX 16x80
XCFSX 16x80 A
XCFSX 16x80 H
XCFSX 16x80 HA