Modular belt conveyor WL222X

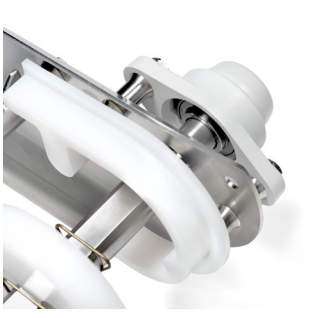
Contents

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

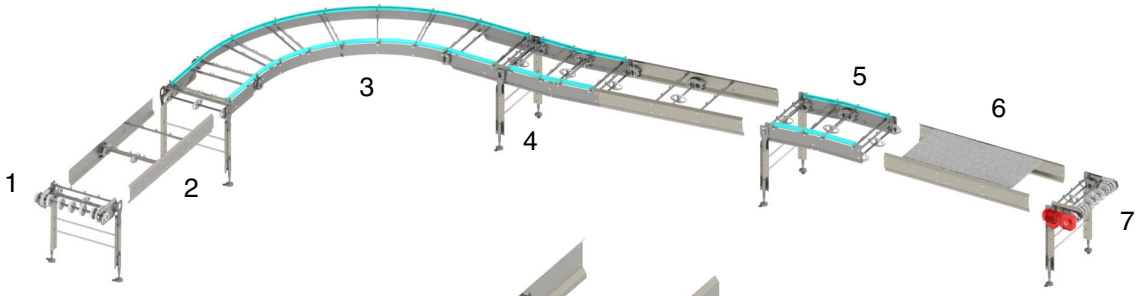
In wash-down environments, it is important to have proper drainage of water and other liquids. The WLX design has been optimized in this regard by selecting different manufacturing processes to create shapes that enable efficient drainage. This will also have an important impact on its ability to be cleaned in dry environments in both primary and secondary packaging lines.

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

Technical specifications

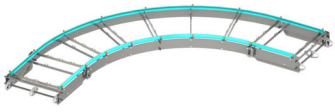
Maximum speed:	40 m/min
Maximum conveyor length:	20 m
Max single item weight:	up to 30 kg
Total load on a conveyor:	300 kg
Max product weight per belt pitch:	1,5 kg/slide rail
Max permissible pull force (with bends):	500 N
Max permissible pull force (without bends):	1200 N

Conveyor sections



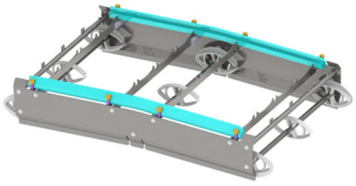
1. Idler end units

2. Conveyor beams

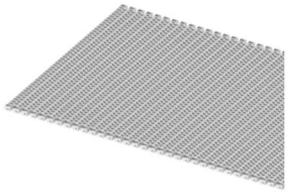


3. Plain bends

4. Support modules



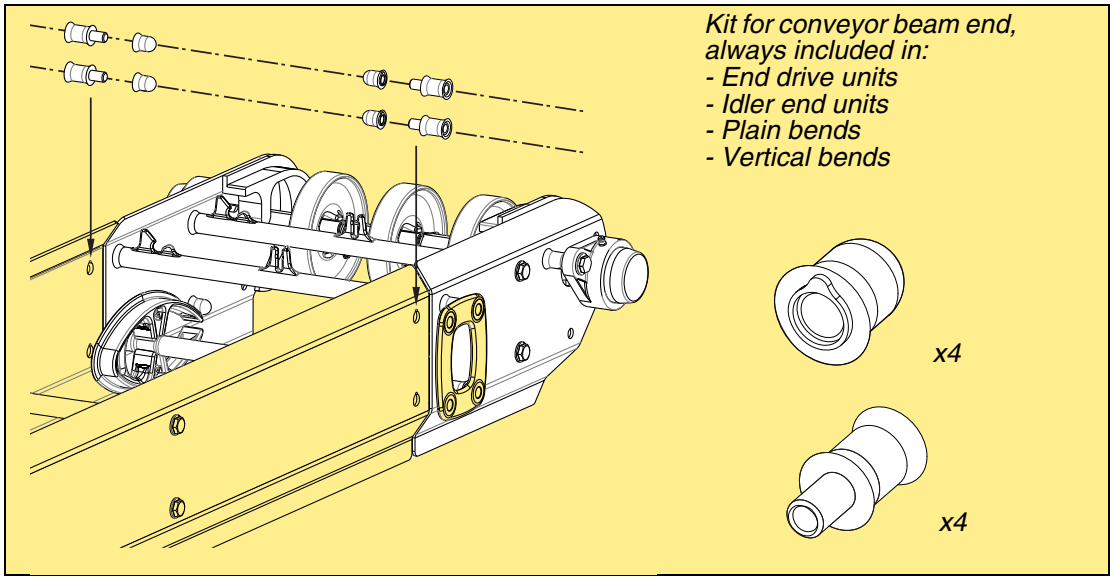
5. Vertical bends

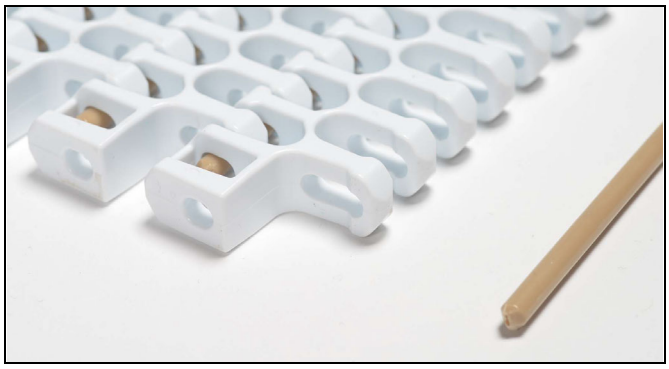


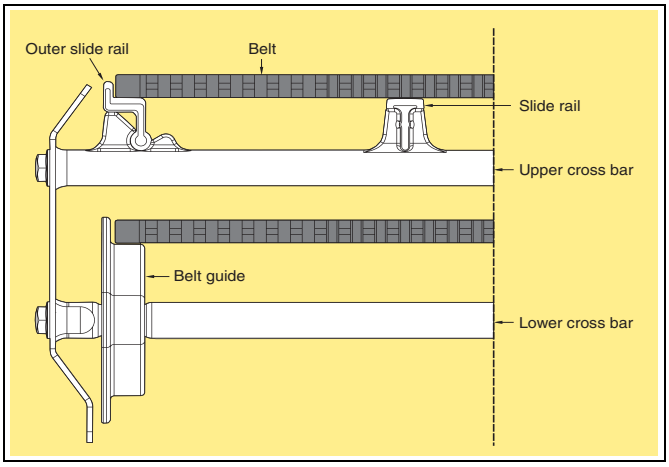
6. Modular belts

7. End drive units

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.







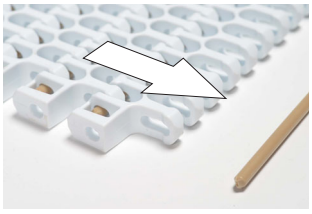
Modular belt, Radius flush grid, curve-running

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:



Radius flush grid

Technical characteristics

Belt width	152 mm
Modular belt weight (Acetal) Radius flush grid	1,15 kg/m
Modular belt height Radius flush grid	13 mm
Belt pitch	25,4 mm
Max. permissible belt tension without bends	1200 N
Max permissible belt tension through a bend: Belt width 152	500 N

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.

reddot award 2016
honourable mention industrial design

WLX, the modular wide belt conveyors with stainless steel beam, received the Honourable Mention provided by the Red Dot jurors for a particularly well-executed aspect of design work. Products which impress with a well-thought-out detail solution are awarded this honourable mention.

3-A®
75-01

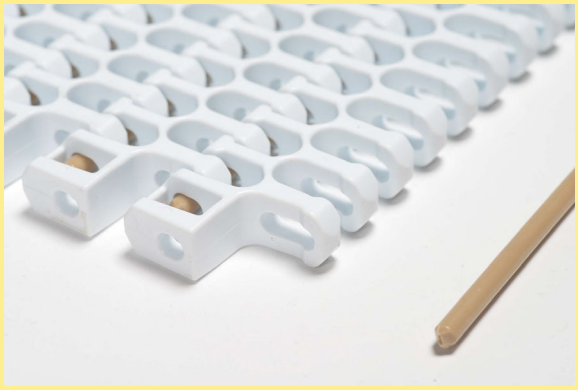
FlexLink supply a 3-A qualified WLX conveyor.
For more information, contact your local sales office.

Radius flush grid belt, Wet

Plain belt
Belt material Acetal (POM)
Pin material Acetal (POM), white
Length 1 m

152 mm wide, White	**WLTP 1A152L W**
152 mm wide, Blue	**WLTP 1A152L WB**

Radius flush grid belt, Dry



Plain belt
Belt material Acetal (POM)
Pin material Polyamide (PA), brown
Length 1 m

152 mm wide, White	**WLTP 1A152L**
152 mm wide, Blue	**WLTP 1A152L B**

Belt tensioner tool for radius flush grid

Belt tensioner tool	**5118803**

Radius flush grid belt, Wet (Spare part only - Available as request for quote item)

Plain belt
Belt material Acetal (POM)
Pin material Acetal (POM), white
Length 1 m

152 mm wide, White	**WLTP 1A152 W**
152 mm wide, Blue	**WLTP 1A152 WB**

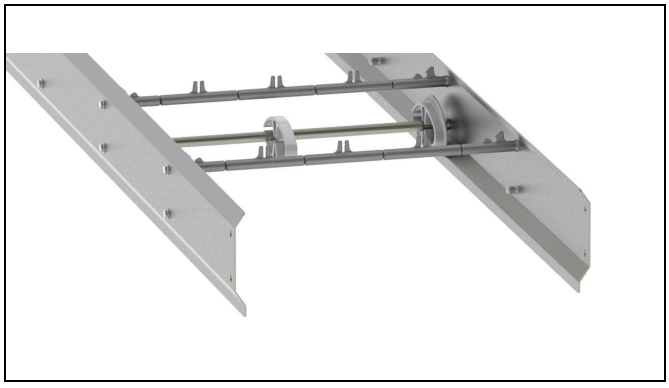
Note! *For use with belt delivered before April 2019*

Radius flush grid belt, Dry (Spare part only - Available as request for quote item)

Plain belt
Belt material Acetal (POM)
Pin material Polyamide (PA), brown
Length 1 m

152 mm wide, White	**WLTP 1A152**
152 mm wide, Blue	**WLTP 1A152 B**

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



Conveyor frame structure

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.

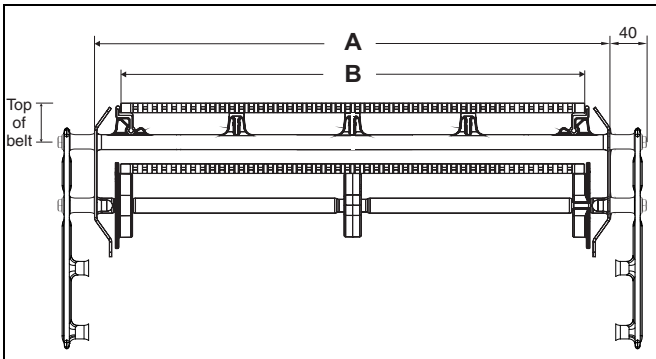
Conveyor beams are normally not symmetrical, which is why they have an upstream and downstream end. An arrow label on the conveyor beam side indicates the appropriate top belt travel direction to ensure correct assembly.

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.

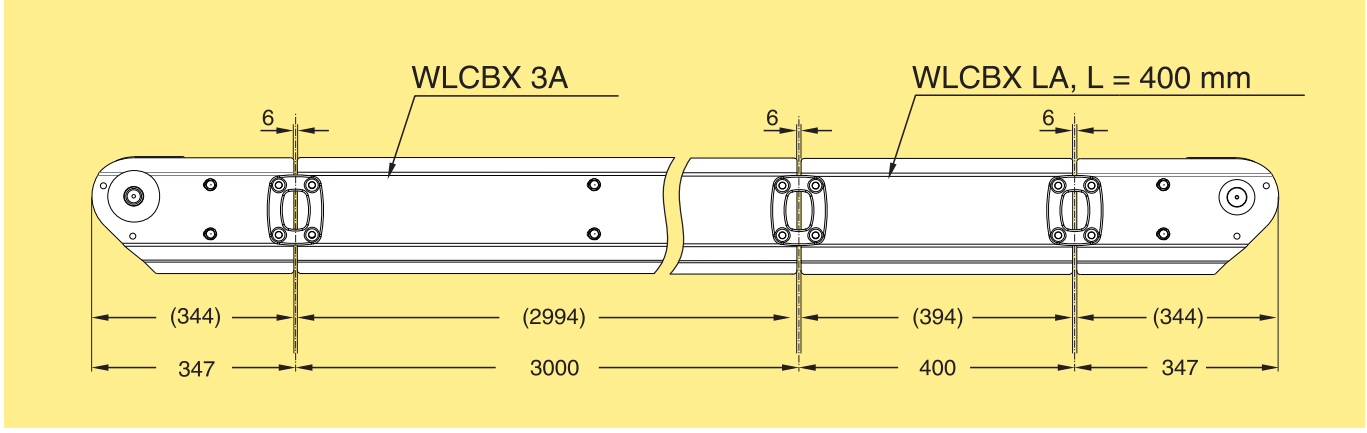
Connecting brackets have to be ordered separately when joining End drives, idler ends, conveyor beams, etc.

When joining two conveyor beams, a beam spacer kit must be ordered separately.

Conveyor dimensions

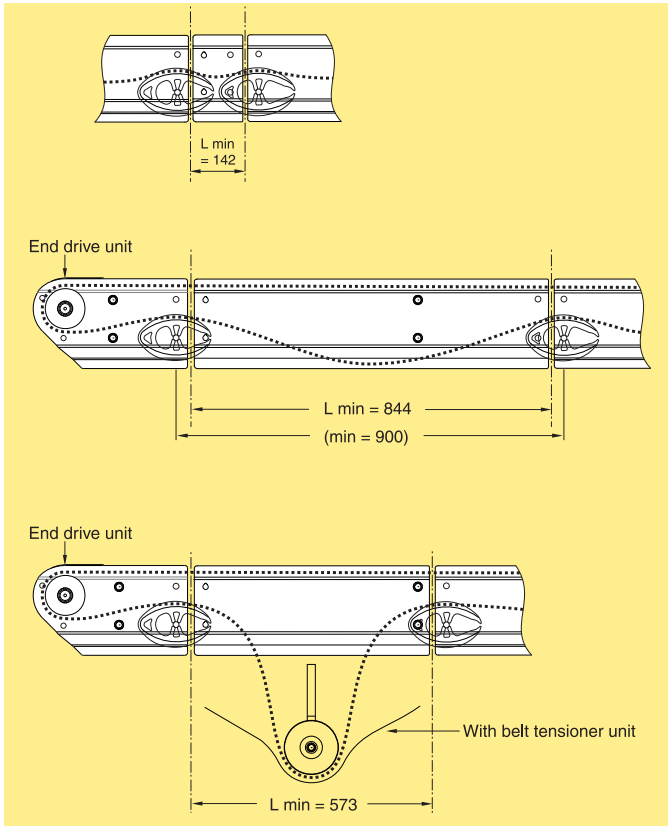


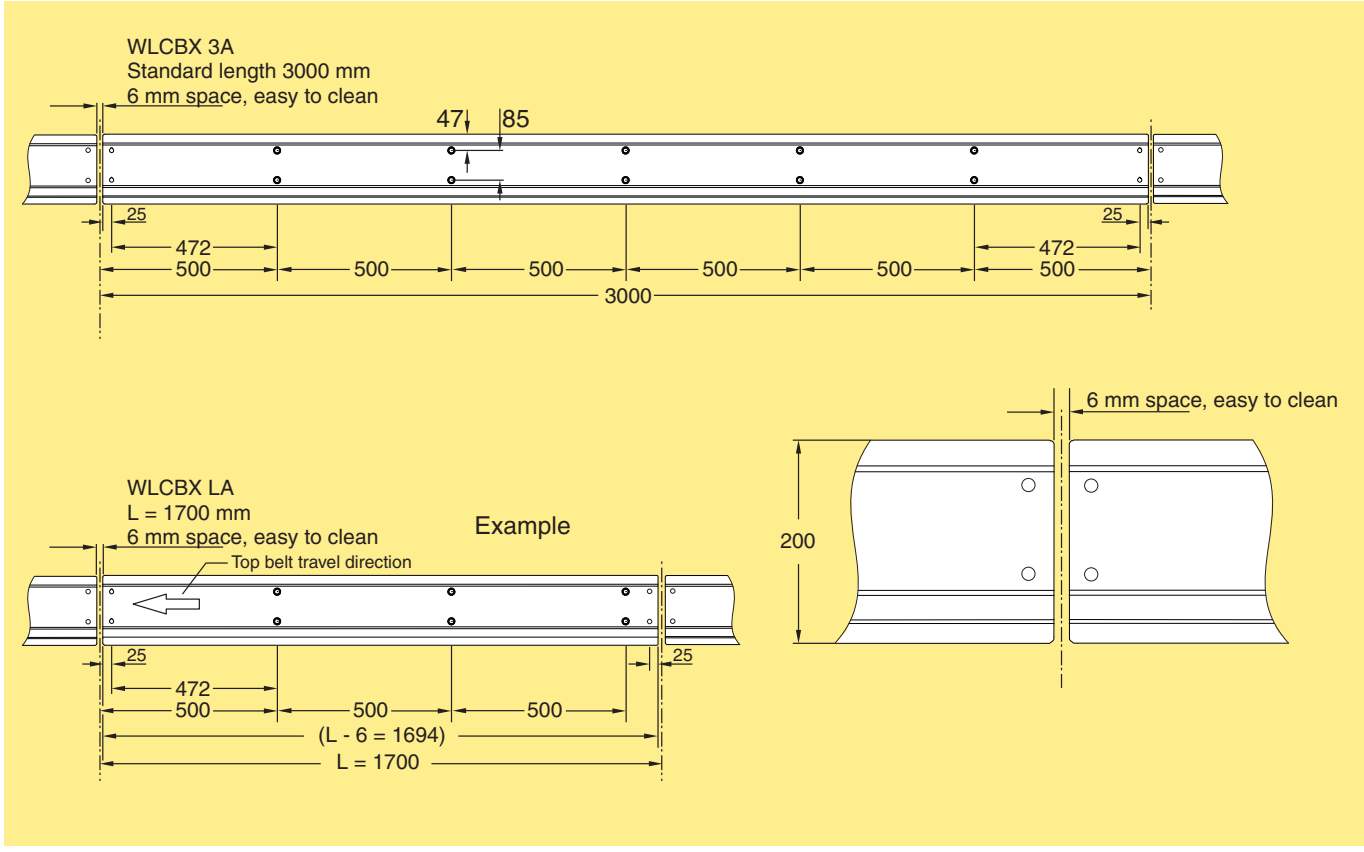
	WL222X
Conveyor width A	222 mm
Usable belt width B	152 mm
Top of belt:	
WLTP 1A	52 mm
WLTP 1B	49 mm



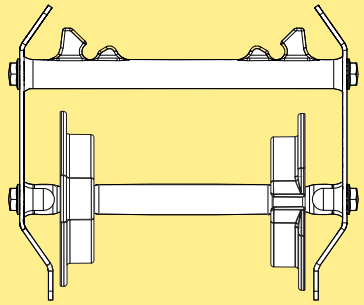
Technical specifications

Minimum permissible conveyor beam length to be connected:



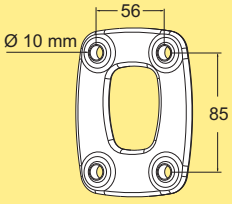


Conveyor beam, Easy Clean



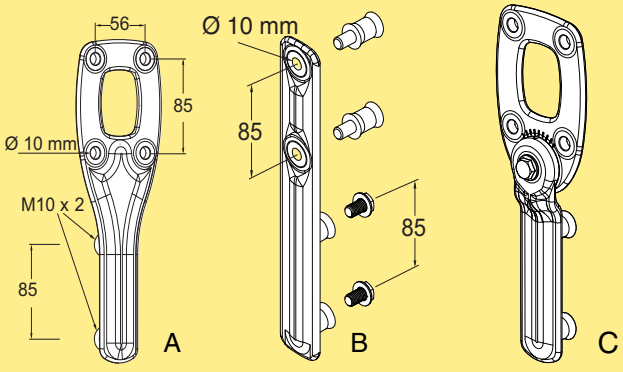
Conveyor beam, WL222X
Length 3 m (3000 ±1,2 mm) **WLCBX 3A222**
Length to order (142- 2999 mm) **WLCBX LA222**
Weight, 1 m, incl. belt: 14 kg/m

Connecting bracket kit



Connecting Bracket
For beam
Including 4 pcs M10 screws **WLCJX 10X56**

Beam support brackets

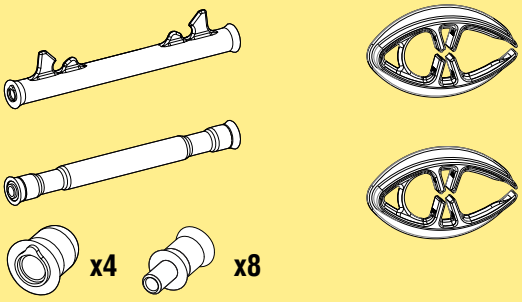


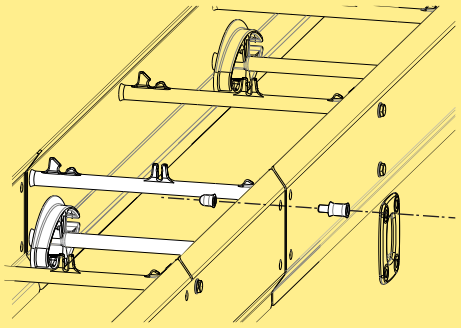
Beam support bracket (A)
Including 6 pcs M10 screws **WLCSX 10X56**

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**

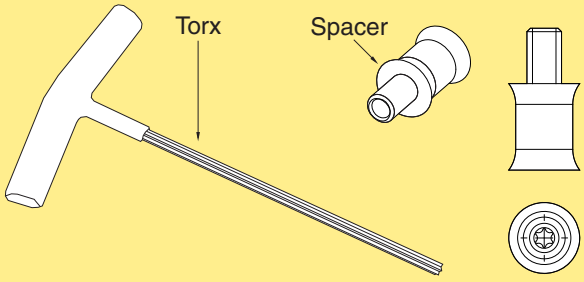
Beam spacer Kit for WL222





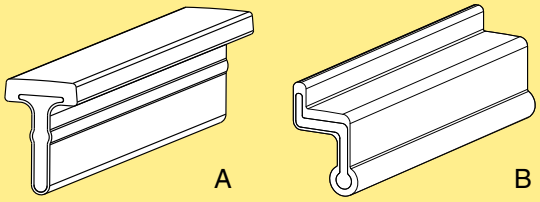
Beam spacer kit **WLCEX A222**

Recommended Torx tool for fasten spacer
Size T30



Slide rail

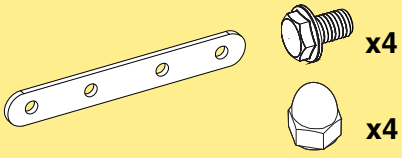
Slide rail



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

WLCRX 3
WLCRX 3 B

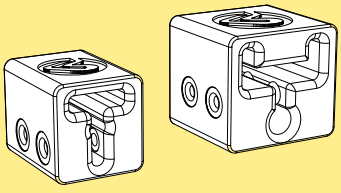
Connecting Strip



Connecting strip kit
Contains 10 pcs.

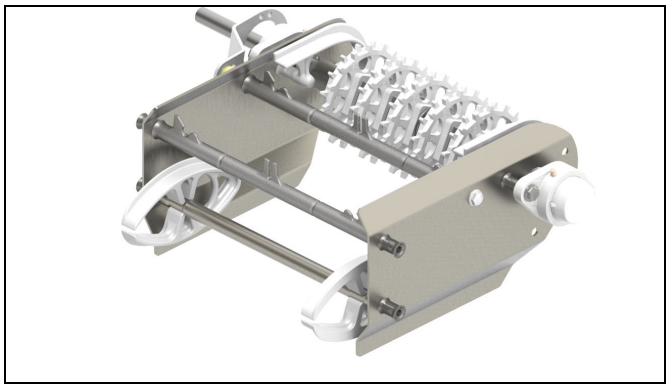
WLAHX 100

Drill fixture for connecting strip



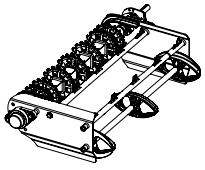
Contains drill fixtures for both WLCRX 3 and WLCRX 3B

5118922



End drive unit

End drive units

Size	Direct drive, no slip clutch
Drive unit types	 F, V

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

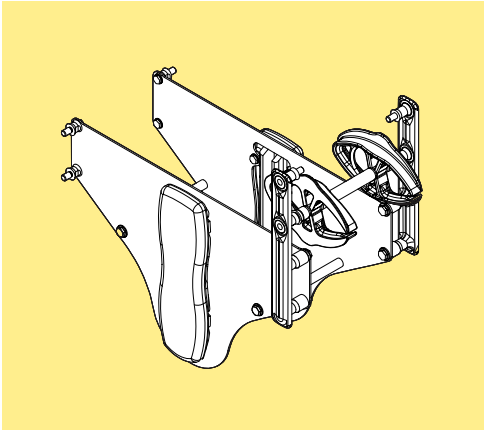
- for long conveyors >15 m and a speed of >30 m/min

- 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

Item no	A		B		D		E		G		H		I
	HNP	-	L	-	V4	-	SA37	-	50/230	-	0,18kW	-	TF

Drive unit with variable speed motor

Item no	A		B		D	E		F		G		J		K
	HPV	-	L	-	V6-15	SA37	-	MM03	-	50/380-500	-	C	-	P

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

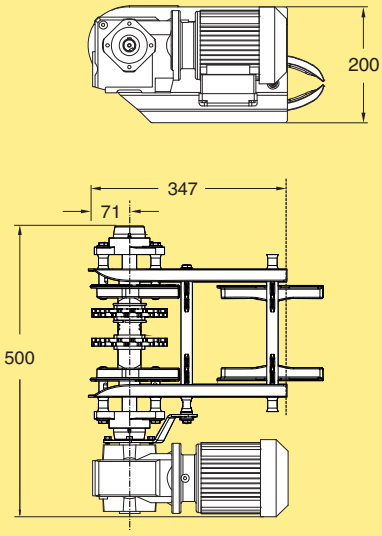
J – Hybrid cable

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)

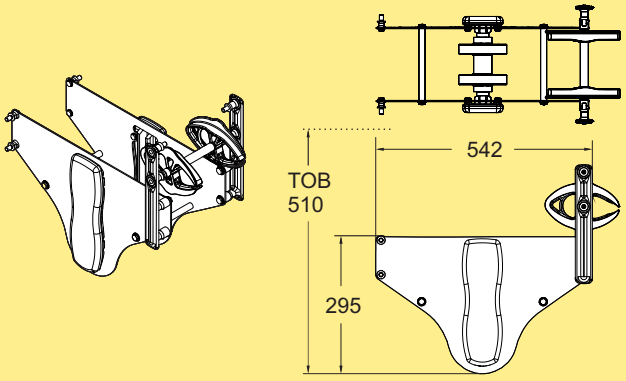
End drive unit Easy Clean, Radius flush grid 222



End drive unit **WLEBX A222**
Fixed/variable speed*
Without motor:
Transmission on left side **WLEBX0A222NLP**
Transmission on right side **WLEBX0A222NRP**

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

Belt tensioner unit

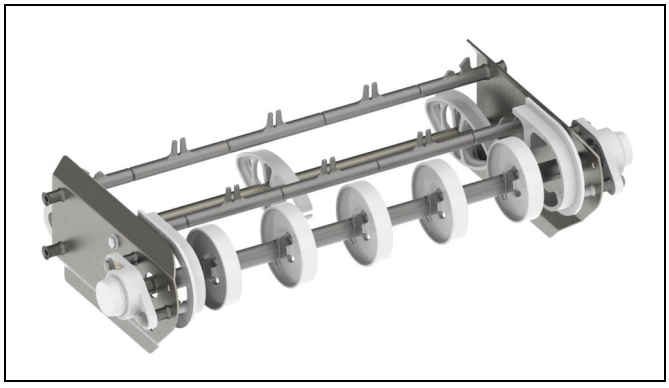


Belt tensioner for:
WL222X **5124676**

Required extra belt length **0,55 m**

Weight, incl belt: 13 kg

Idler end units – Introduction



Idler end unit

Chain guidance at end of conveyor

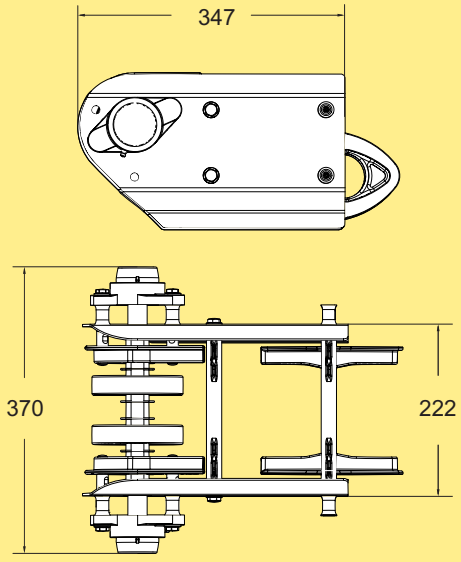
The idler end unit is used to guide the chain from the return side of the conveyor up to the top side with a minimum of friction. The chain is guided by two or more idler wheels on a common, rotating shaft supported by ball bearings.

Ordering information

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

Idler units

Idler end unit, WL222



Idler end unit **WLEJX 300A222**

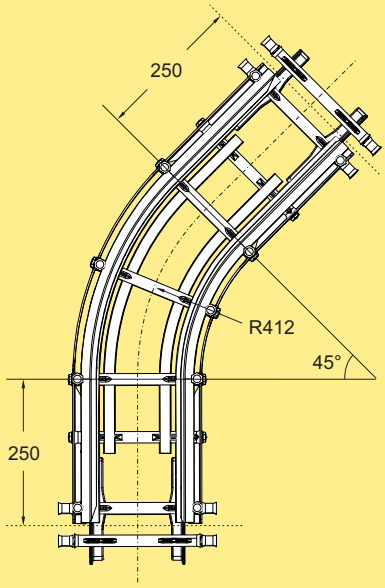
** Use online configurator when ordering*
Effective track length: 0,80 m
Weight, incl belt: 11 kg

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, 45°



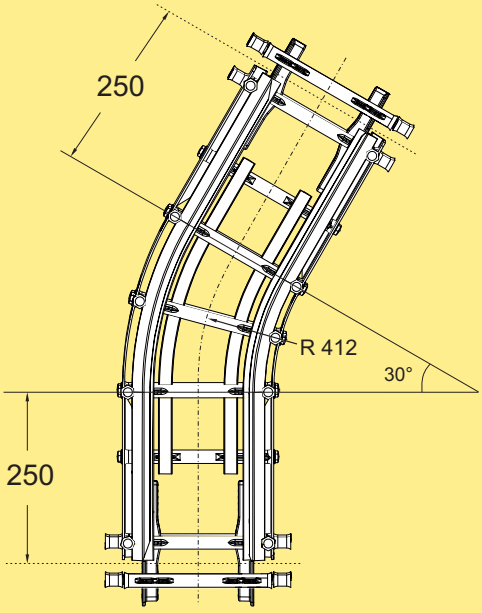
Plain bend, 45°±1°

R=412±10 mm

WLBPX 45A222

** Use online configurator when ordering*
Effective track length: 1,8 m
Weight, incl belt: 20 kg

Plain bend, Easy Clean 30°



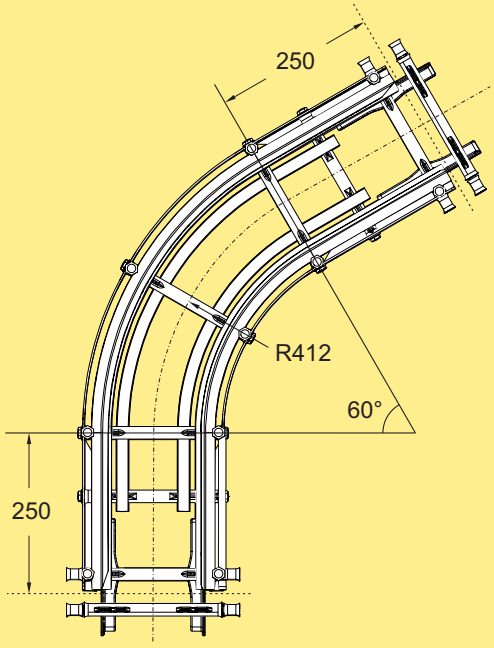
Plain bend, 30°±1°

R=412±10 mm

WLBPX 30A222

** Use online configurator when ordering*
Effective track length: 1,6 m
Weight, incl belt: 19 kg

Plain bend, Easy Clean 60°



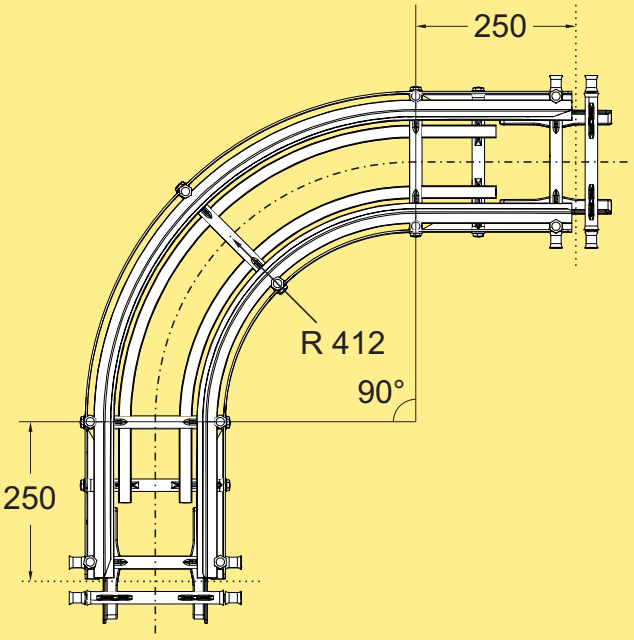
Plain bend, 60°±1°

R=412±10 mm

WLBPX 60A222

** Use online configurator when ordering*
Effective track length: 2,1 m
Weight, incl belt: 22 kg

Plain bend, Easy Clean 90°

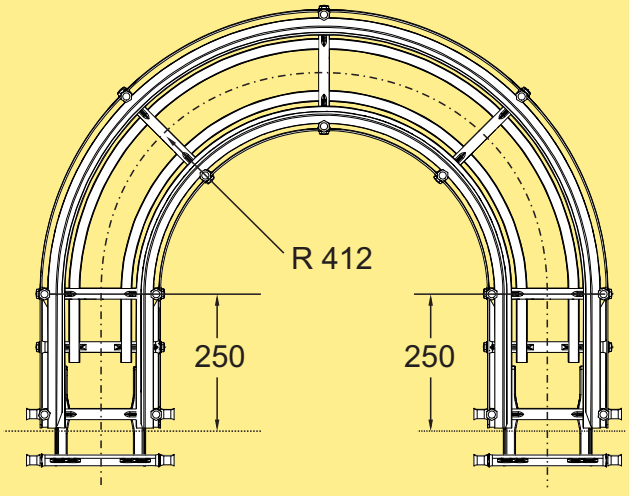


Plain bend, 90°±1°
R=412±10 mm

WLBPX 90A222

** Use online configurator when ordering*
Effective track length: 2,6 m
Weight, incl belt: 24 kg

Plain bend, Easy Clean 180°



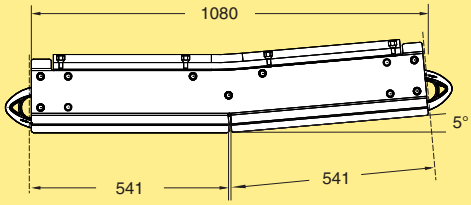
Plain bend, 180°±1°
R=412±10 mm

WLBPX 180A222

** Use online configurator when ordering*
Effective track length: 4,1 m
Weight, incl belt: 34 kg

Vertical bends

Vertical bend, Easy Clean, 5° (pos.)

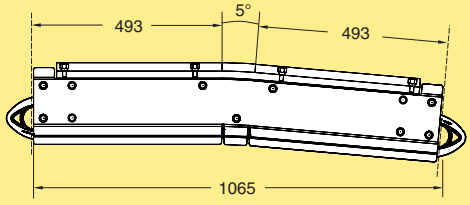


Vertical bend 5°, pos

WLBVX 5A222P

** Use online configurator when ordering*
Effective track length: 2,1 m
Weight, incl belt: 21 kg

Vertical bend, Easy Clean, 5° (neg.)

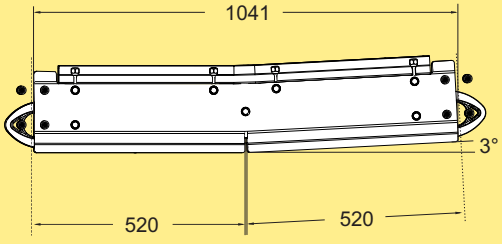


Vertical bend 5°, neg

WLBVX 5A222N

** Use online configurator when ordering*
Effective track length: 2,1 m
Weight, incl belt: 20 kg

Vertical bend, Easy Clean, 3° (pos.)

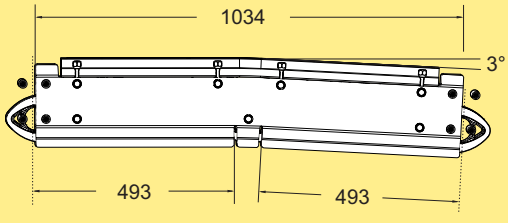


Vertical bend 3°, pos

WLBVX 3A222N

** Use online configurator when ordering*
Effective track length: 2,1 m
Weight, incl belt: 20 kg

Vertical bend, Easy Clean, 3° (neg.)



Vertical bend 3°, neg

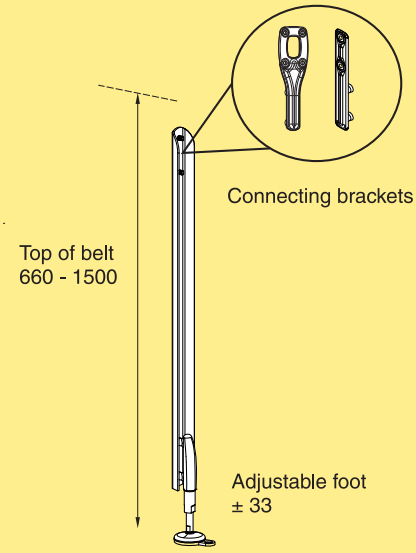
WLBVX 3A222N

** Use online configurator when ordering*
Effective track length: 2,1 m
Weight, incl belt: 20 kg

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

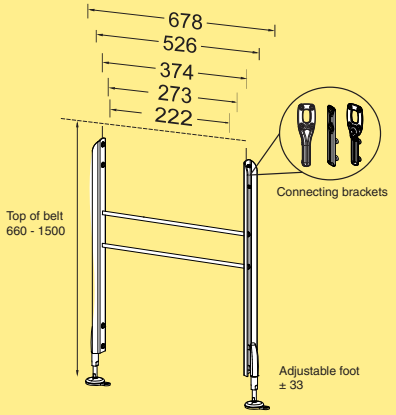


Support module, single leg **WLUFX S04**

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

Support module, type H

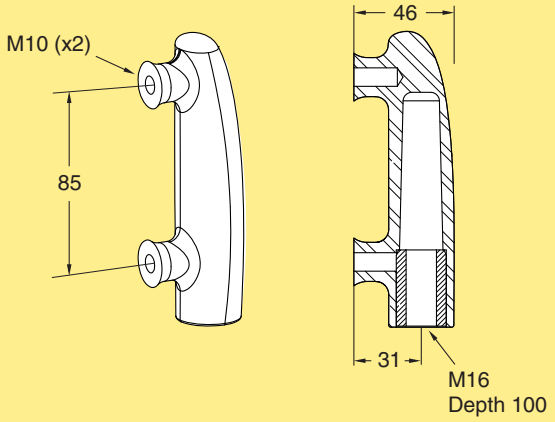


Support module type H **WLUFX S01**

Support module type H, WLUFX S01

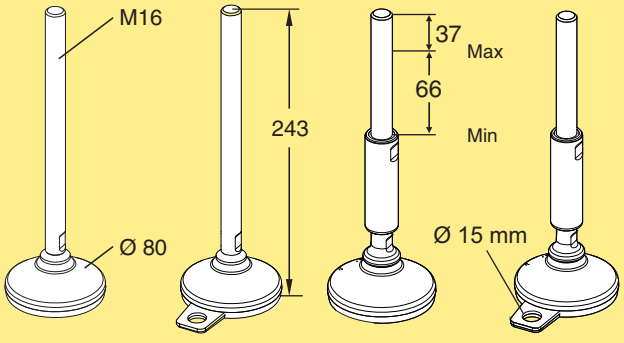
Parameter	Option
Platform	WL222X
	WL273X
	WL374X
	WL526X
	WL678X
Top of belt:	660-1500 mm
Foot type:	XCFSX 16x80 H
	XCFSX 16x80 HA
	XCFSX 16x80
	XCFSX 16x80 A
Bracket type:	WLCSX 10X56
	WLCSX 10
	WLCSX 10X56V40

Foot holder for adjustable foot



Foot holder
Including 2 pcs M10 screws **XCFCX 16x100**

Adjustable foot



Adjustable foot

M16	**XCFSX 16x80**
M16, Anchoring	**XCFSX 16x80 A**
M16, EHEDG/3A	**XCFSX 16x80 H**
M16, EHEDG/3A, Anchoring	**XCFSX 16x80 HA**

