

Conveyor assembly manual

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Introduction

About this manual

Introduction

The main purpose of this manual is to help self-building end users, with little or no prior experience, to assemble a FlexLink conveyor system.

Each chapter includes detailed instructions and pictures showing how to assemble the different parts. Most pictures in the manual include parts from the XL conveyor system, but all instructions are applicable to the XS, XL, XM, XH and XK systems unless otherwise noted. Operations that apply only to the XK conveyor system are described in a separate chapter.

Document disposition

The document is divided into the following five main parts:

- Installation site preparations
- Tools and fasteners
- Cutting FlexLink beams
- Assembly
- Start-up and testing

Installation site preparations

Assembly planning

Work systematically:

- 1 Prepare by studying your assembly drawing.
- 2 Ensure that the necessary tools are available.
- 3 Make sure you have all the materials and components needed to assemble the conveyor system. Check with the parts list.
- 4 Make sure you have enough floor space to mount the conveyor system.
- 5 Check to see if the floor at the installation site is even, so that all feet can be properly attached to the floor.

Assembly order

The following list can be used as a checklist during your conveyor assembly work:

Activity	Starts on
Cut all beams into suitable lengths	page 5
Connect feet and structural beams	page 7
Mount conveyor beam support brackets	page 19
Assemble conveyor beams and mount them on to the support structure	page 21
Mount drive and idler units to the ends of the conveyor	page 22
Mount slide rail on to the conveyor beam	page 26
Loosen the drive unit slip clutch	page 34
Run a short piece of chain through the conveyor to check that there are no obstructions	page 34
Assemble and mount the chain on to the conveyor	page 33
Mount guide rail, drip trays and other accessories on to the conveyor	page 38
Tighten the slip clutch to a suitable friction	page 66
Read <i>Final preparations</i> at the end of this manual	page 54

Go to page 55 for special information relating to conveyor system XK.

Tools

General tools



To assemble a FlexLink conveyor, you will need most of the tools listed on the following pages. Not all are essential, but they will make your assembly work easier and more efficient.

Hand tools

- 10 and 13 mm box wrench
- Cutters (for cutting slide rail)
- Set of metric Allen keys
- Roller thread fluteless tap and tap wrench (M6 and M8)
- Countersink bit
- Tape measure
- In addition, the tools listed below can be useful:
- Files
- Socket wrench
- Screw-driver
- Pliers
- Knife (for cutting off plastic screw heads)
- Soft faced hammer
- Clamp (for chain installation)
- Level

Power tools

- Cross-cut circular saw for aluminium
- Hand drill
- Drill bit (for fixing of slide rail):
- XS: $\varnothing 3,2$ mm, XL/XM/XH/XK: $\varnothing 4,2$ mm

FlexLink tools

Rivet crimping pliers

- XS ($\varnothing 3$ mm): **3924776**
- XL/XM/XH ($\varnothing 4$ mm): **3925800**

Rivet crimping clamp

- XS ($\varnothing 3$ mm): **3924770**
- XL/XM/XH ($\varnothing 4$ mm): **3923005**

The riveting tools have replaceable pads. By replacing the pads you can use the same riveting tool for 3 mm and 4 mm rivets.

Drill fixture for installation of slide rail

- XS ($\varnothing 3,2$ mm): **3924774**
- XL/XM/XH/XK ($\varnothing 4,2$ mm): **3920500**

Mounting tool for slide rail

- XS/XL: **XLMR 140**
- XM: **XMMR 140**
- XH: **XHMR 200**
- XK: **XKMR 200**

Mounting toolkit for guide rail (XK)

- 3926757**
- Each kit is delivered with two tools.

Pin insertion tool for chain

- XS/XL: **XLMJ 4**
- XM: **XMMJ 6**
- XH: **XHMJ 6**
- XK: **XKMJ 8**

Guide rail bending machine

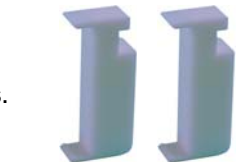
- 3922963** (not shown)

Drill fixture for fastener yokes

- XCAD 18**

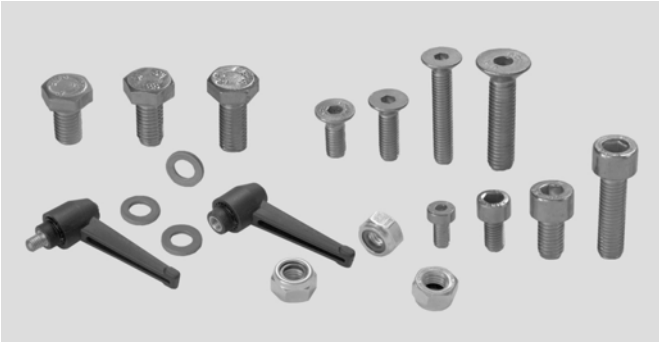
To drill for fastener yokes (page 17–18), the 10 mm drill insert has to be removed. The drill insert is secured by a locking screw.

With the stop tongue down, the fixture is inserted into the T-slot of the beam until stop, and then locked. The hole will be drilled 22 mm from the beam end and centered by the fixture.



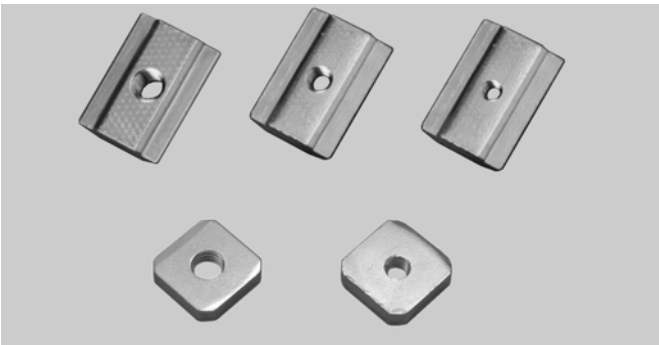
Fasteners

1. Standard screws, nuts, washers



M6S, MC6S, MF6S, M6M, BRB 8,4×16, XLAL

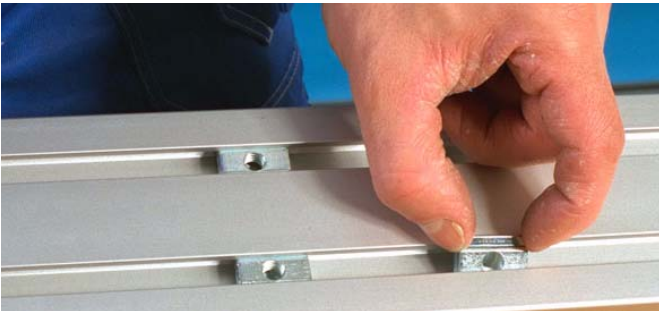
2. Slot nuts and square nuts



XCAN, XLAQ

Square nuts can be used in support beams and small beams instead of XCAN nuts, but they can also be used in conveyor beams as opposed to XCAN nuts. They do not stay in place in vertical positions and have to be inserted from the beam end.

When using XLAQ square nuts, remember to put in a sufficient number before completing the assembly.



XCAN

On the support beam, the slot nut can be entered into the T-slot from the beam side. It will stay in position in vertical T-slots because of a thin leaf spring.

For small beams (e.g. XCBB ..x24x44), the nut must be entered from the beam end because of the design of those beams.

IMPORTANT

Slot nuts can not be used with conveyor beams. (This does not apply to the XK conveyor system.)

3. Connecting strips



X..CJ

Connecting strips are used for joining beams together, end to end. Use Allen key and set screws when attaching the connecting strip to the beam.

4. T-bolts



XLAT

T-bolts can be entered from the beam side, and when turned 90° they will stay in place after tightening with nuts (XLAN 8) and washers (BRB 8,4×16). The indication groove in the T-bolt should be at 90° to the conveyor T-slot.

T-bolts are used when attaching support brackets, guide rails and drip trays to the conveyor beam. Do not use T-bolts with support beams!

Cutting FlexLink beams

Beam lengths

If you have ordered 3 m or 6 m beams, they will need to be cut into suitable lengths before assembly. Study your drawing to determine the beam lengths that are required. The FlexLink catalogue 5147, chapter CS, contains a formula for calculation of cutting lengths for support beams.

Saw requirements

The circular cross-cut saw for aluminium must have a higher speed than when cutting steel, and a carbide tip blade adapted for aluminium products in order to give a nice and clean cut.

The saw should have the ability of cutting the largest profile in one single cutting action.

Working site

You should use a special area for cutting beams in order to keep the assembly area clean.

Quality of cut

If burrs are evident, they must be removed prior to assembly.

Make sure the cut is straight for proper assembly.

SAFETY

All safety precautions issued by the cutting saw manufacturer should be followed at all times.

Assembly

Introduction

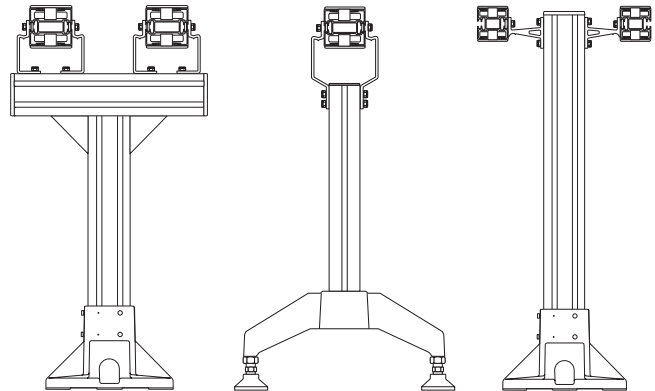


Component groups

The basic FlexLink conveyor structure consists of five component groups:

- support structure
- conveyor beams, straight sections and bends
- drive and idler units
- chain
- other accessories (guide rail, drip trays etc.)

The first step in the assembly process is to assemble the support structure, which consists of feet, support beams and beam connectors. Most conveyor support designs are based on vertical support beams combined, if necessary, with horizontal support beams. There are also a number of different feet and beam connectors, so check which ones are used in your application. Some examples are shown below.



IMPORTANT

You must work in accordance with your layout, and make sure that the conveyor is supported at regular intervals not exceeding 3 m.

Feet

Introduction

Feet are attached to the support beams, and come in a number of configurations. Follow the mounting instructions for the type of foot used in your application.

Mounting feet

XCFF:

Box wrench	13 mm
Connecting strips (included)	
Hex head screws (included)	M6S 8x16
Washers (included)	BRB 8,4x16

Mounting



1 Insert hex head screws and washers into the holes on the side of the foot.

Use the screws to fasten connecting strips to the inner side of the foot. Tighten loosely.



2 Slide the connecting strips into the structural beam T-slots.



3 Raise the beam from the bottom of the foot approximately 50 mm, to allow for height adjustment later in the assembly.



4 Tighten the screws using a wrench.

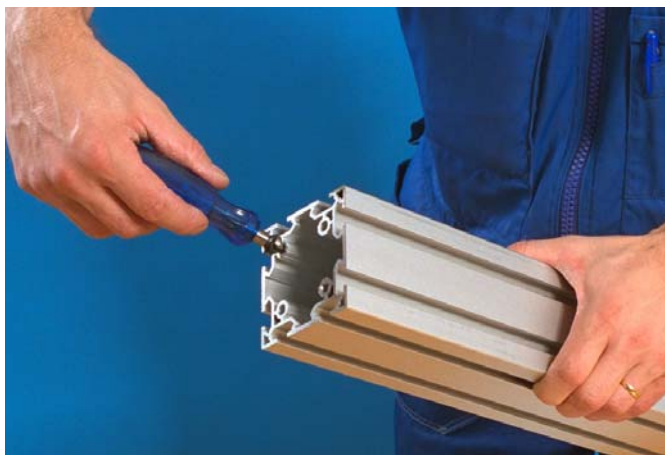
Feet (continued)

Deburring and threading beam ends

Before mounting foot plate XCFB 88/44 F, end plate XCFE and mounting plate XCFB, the holes in the beam cross-section must be deburred and threaded.

Countersink	
Roller thread fluteless tap	M6/M8

Mounting:



1 Deburr the holes using a countersink.



2 Thread the holes using a 6 mm or 8 mm roller thread fluteless tap, depending on beam and component type.

Attaching feet using end plates

XCFE

End plates are used as attachment for adjusting feet and castors, and are screwed onto the support beam ends before the actual foot is mounted.

Countersink	
Roller thread fluteless tap	M6/M8
Allen key	5 mm

Mounting:



1 Attach the end plate to the beam by inserting four hex socket head screws into the holes on the end plate.



2 Tighten the screws using an Allen key.

Feet (continued)

Mounting adjusting feet

XCFS 12×68

Wrench	19 mm
Nut (included)	M12
Washer (included)	For M12 screw

Mounting:



1 Screw the foot onto the XCFE end plate.



2 Tighten the nut using a wrench.

XLFS 8

Foot XLFS 8 can be mounted directly onto beams XCBM/ XCBR 44 or directly into any T-slot.

Connection to beam XCBM/XCBR 44:

- 1** Attach an end plate to the beam end.
- 2** Screw the foot onto the end plate and tighten with nut.

Connection to structural beam T-slot:

- 1** Insert a slot nut into the structural beam T-slot.
- 2** Screw the foot onto the beam and tighten with nut.

Feet (continued)

Mounting castors onto end plate

XCAG 80

Allen key	5 mm
Screw (included)	K6S 12x25
Washer (included)	For M12 screw

Mounting:



- 1** Insert screw (K6S 12x25) into the screw hole located on the castor yoke. Add washer.



- 2** Screw the castor onto the XCFE mounting plate using an Allen key.

Feet (continued)

Mounting castors to structural beam T-slot:

XCAG 80

Box wrench	13 mm
Screw (included)	M6S 8x25
Filling washer (included)	3905065
Washer (included)	BRB 8,4x16
Slot nut (included)	XLAQ 8

Mounting:



- 1 The picture shows the mounting order for castor fasteners.



- 2 Insert screw and filling washer into the screw hole located on the castor yoke. Add washer and slot nut.



- 3 Slide the foot into the structural beam T-slot.



- 4 Screw the castor onto the beam using a wrench.

Feet (continued)

Mounting foot plates

XCFB...F

Countersink	
Roller thread fluteless tap	M8
Allen key	5 mm
Hex socket head screws	MF6S 8×30

Mounting:



- 1 Deburr and thread beam ends before mounting the foot plate. (See page 8)



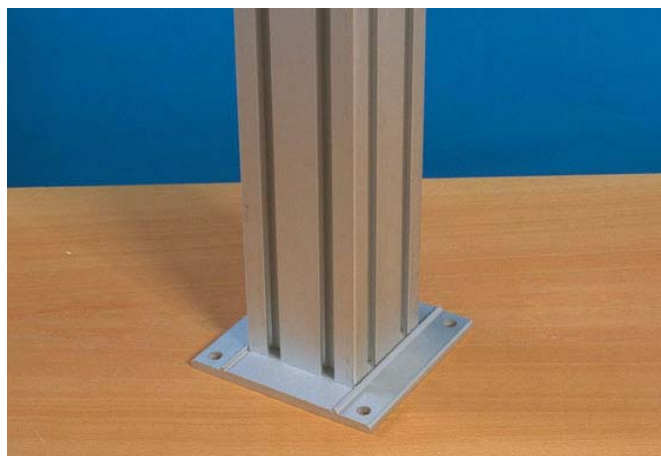
- 2 a) Mount the foot plate onto an XCBL 88×88 mm light support beam using four M6 screws at the corners of the plate.

Mount the foot plate onto an XCBL 44×44 mm light support beam using four M6 screws at the corners of the beam.



- b) For the XCBM 88×88 beam, you can also use four M8 screws at the centre of the plate.

For the XCBM 44×44 beam, you can also use one M8 screw at the centre of the plate.



Feet (continued)

Mounting polyamide feet

XEFG

Polyamide feet are used with 64 mm structural beams only.

Allen key	5 mm
Hex socket head screws (included)	MC6S 8x16

Mounting:



- 1 Mount the foot onto the beam end by sliding the foot compression clamps into the beam T-slot.



- 2 Tighten the screws. The recommended tightening torque is 15 Nm.

Adjusting mounts and vibration absorbers

XLFS 20 P, XLFJ 69

Mounting:



- 1 Adjusting mounts are screwed onto the bottom of the foot and fastened with the locking nuts that are included.



- 2 Vibration absorbers are snapped on to the bottom of the adjusting mounts.

Feet (continued)

Height adjustment assembly

XEFU 500

Used with XEFG 70 T foot only.

Allen key	5 mm
Lock brackets (included)	3903139
Hex socket head screws (included)	MC6S 8x20

Mounting:



- 1** Attach the height adjustment assembly to the foot by sliding the lock brackets into the slots on the beam.



- 2** Insert screws.



- 3** Tighten screws using an Allen key. The recommended tightening torque is 15 Nm.



- 4** Insert the beam into the adjustment assembly and set it at the required height.

Fasten the beam using the adjustment assembly locking levers.

Beam connectors

Introduction

Structural beams can be connected to each other in a number of ways. Three different methods are described on the following pages.

Connecting beams using mounting plates

XCFB

Deburr and thread beam ends before assembly. (See page 8):

Countersink	
Roller thread fluteless tap	M6
Box wrench	10 mm
Allen key	5 mm
Hex socket head screws	MF6S 8x30
Hex head screws	M6S 8x16
Washers	BRB 8,4x16
Slot nuts	M8 thread

Mounting:



1 Attach a mounting plate to the beam end using MF6S 8x30 hex socket head screws and washers.



2 Tighten the screws using an Allen key.



3 Insert slot nuts into the T-slots of the transverse beam.



4 Screw the mounting plate onto the side of the transverse beam using hex head screws M6S 8x16.

Beam connectors (continued)

Connecting beams using angle brackets

XMFA, XLFA

Angle brackets are used to connect beams end-to-side or side-to-side.

Box wrench	10 mm
Screws	M6S 8×16
Slot nuts	M8 thread
Washers	BRB 8,4×16

Mounting:



- 1 Three different kinds of slot nuts can be used when mounting angle brackets: connecting strip XLCJ 5×76, square nut XLAQ 8 or slot nut XCAN 8.



- 2 Insert the required amount of slot nuts into the structural beam T-slot. Mount the angle bracket using screws and washers.



- 3 Mount the angle bracket to the transverse beam in the same manner. Tighten all screws.

Beam connectors (continued)

Connecting beams using fastener yokes 1 XCAF

Method 1 – beam end against beam side

Drill	Ø 18,25
Drill fixture	XCAD 18
Allen key	5 mm
Hex socket head screws (included)	MC6S
Slot nut (included)	

Mounting:



1 The fastener yokes shown in the pictures are for 64 mm structural beams.



2 Use an XCAD 18 drill fixture to drill a 18,25 mm hole through the end of the beam. While drilling in aluminium, be sure to lubricate the drill bit with methyated spirits.



3 Place a fastener yoke in the hole and insert one 6x30 hex head screw on each side. Insert a slot nut into the transverse beam.



4 Tighten the screws using an Allen key. (The recommended tightening torque for a lubricated joint is 10 Nm.)

Beam connectors (continued)

Connecting beams using fastener yokes 2

XCAF

Method 2 – beam end against beam end

Allen key	5 mm
Screws	MC6S 6x50
Nuts	XLAN 6

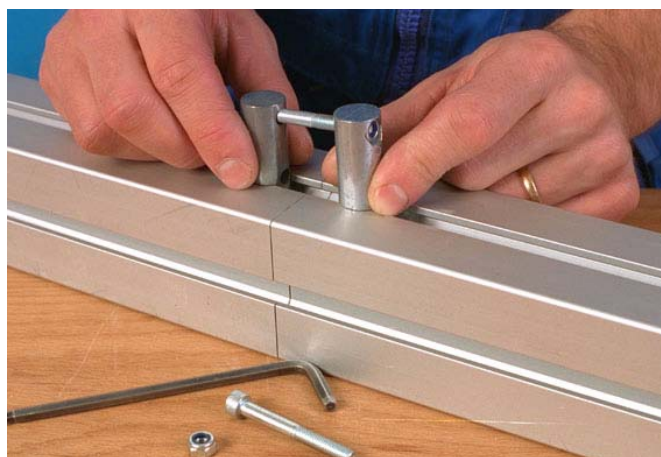
Mounting:



1 Two fastener yokes are required when mounting beam end against beam end.



2 Use an XCAD 18 drill fixture to drill a 18,25 mm hole through the end of the beam. While drilling in aluminium, be sure to lubricate the drill bit with methylated spirits.



3 Connect the two fastener yokes with one screw and nut. Place the yokes in the holes of the beams.



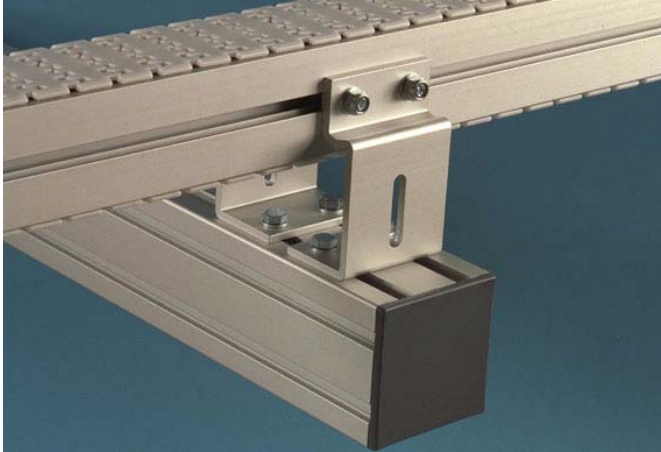
4 Connect the yokes on the other side of the beam. Tighten both screws.

Conveyor beams

Introduction

Conveyor beams are mounted on to the support structure by means of support brackets. There are three different types of conveyor beam support brackets. They all serve the same purpose but are connected to the structural beams in different ways.

Beam support brackets



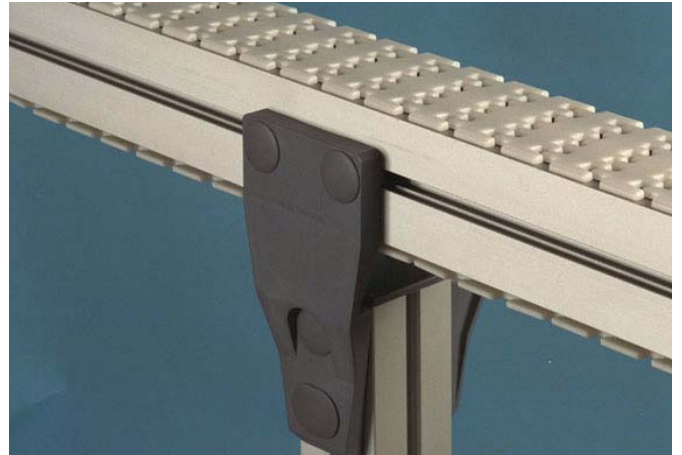
Type A: XLCT.

Type A brackets are used with crossing 64 mm or 88 mm support beams. These brackets can also be used as drip tray connectors



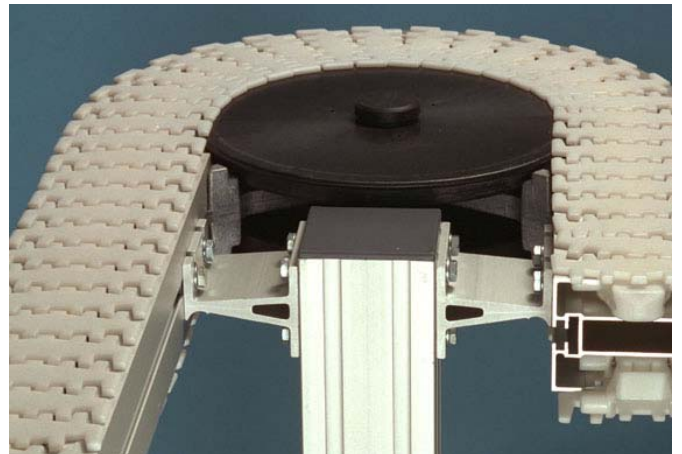
Type B: X..CS.. (aluminium)

Type B brackets are used with vertical support beams and are made from either aluminium or polyamide. The aluminium types can be used instead of drip tray brackets. (See example on page 48)



Type B: X..CS.. (polyamide)

When attaching plastic beam support brackets, always use a flat washer between nut and bracket. The nuts can be covered by plastic plugs.



Type C: XLCU 73

Type C brackets are used for connecting two parallel conveyor beams to an 88 mm vertical support beam.

Conveyor beams (continued)

Mounting conveyor beam support brackets

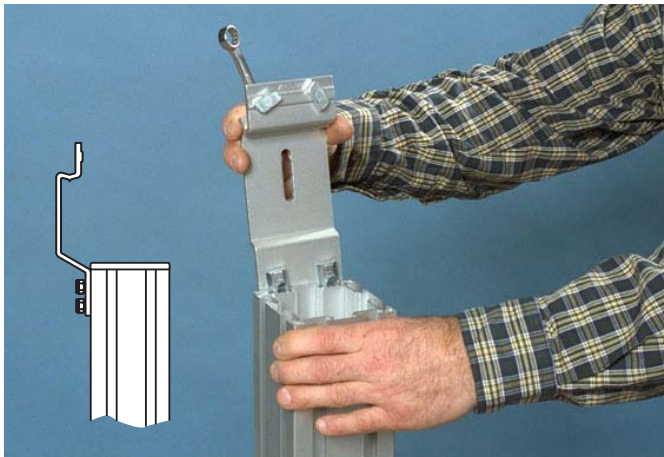
X..CT, X..CU, X..CS

Start by erecting structural beams and attach one conveyor beam support bracket to each beam.

It may be easier not to mount the second bracket until slide rail has been mounted and, if using catenary or end drive unit, the chain has been installed.

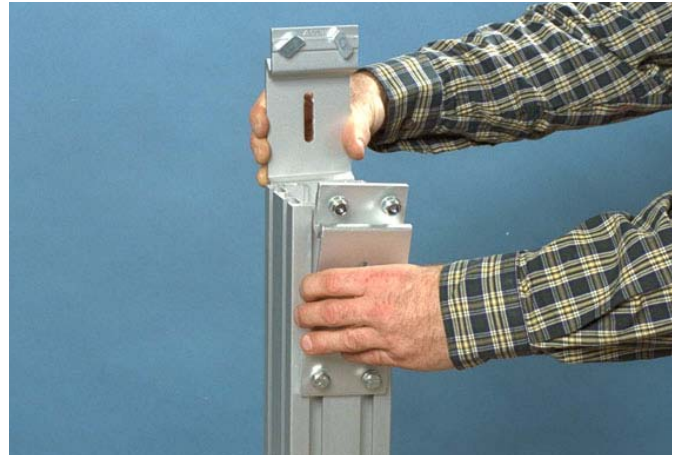
Box wrench	13 mm
Hex head screws	M6S 8×16
Slot nuts	XCAN 8
Washers	BRB 8,4×16
T-bolts	XLAT 17
Nuts	XLAN 8
Washers	BRB 8,4×16

Mounting



- 1** Attach screws, nuts and washers to the support bracket before mounting. (Screws and slot nuts are support beam fasteners, T-bolts and nuts are conveyor beam fasteners.)

Slide the slot nuts of one support bracket into the support beam T-slots. Tighten the screws. Make sure that the support bracket is aligned with the beam cross-section as shown in the drawing.



- 2** Insert the slot nuts of the second support bracket into the support beam T-slots. Slide the bracket down so that it does not protrude above the cross-section of the beam.



- 3** Use a soft hammer to mount an end cap on to the support beam.



- 4** Mount the first support bracket to the conveyor beam. Pull the second bracket up and insert the T-bolts into the conveyor beam T-slot. Tighten the nuts.

Conveyor beams (continued)

Assembling conveyor beams

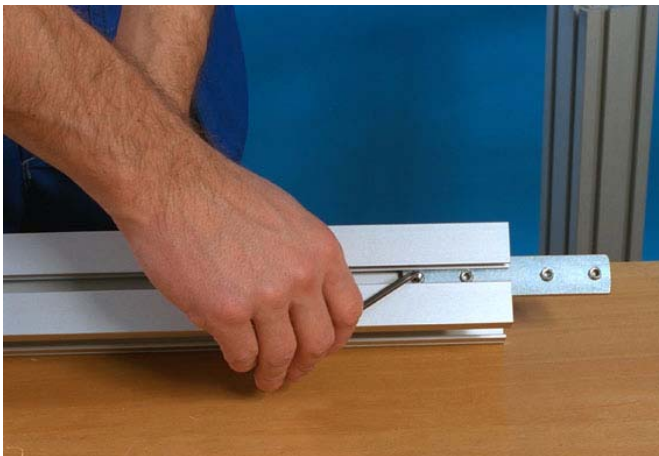
The next step is to connect conveyor beams – straight sections and bends – to each other. Connect all conveyor beams according to the instructions below.

Straight sections	X..CB
Wheel bends	X..BH
Horizontal plain bends	X..BP
Vertical plain bends	X..BV

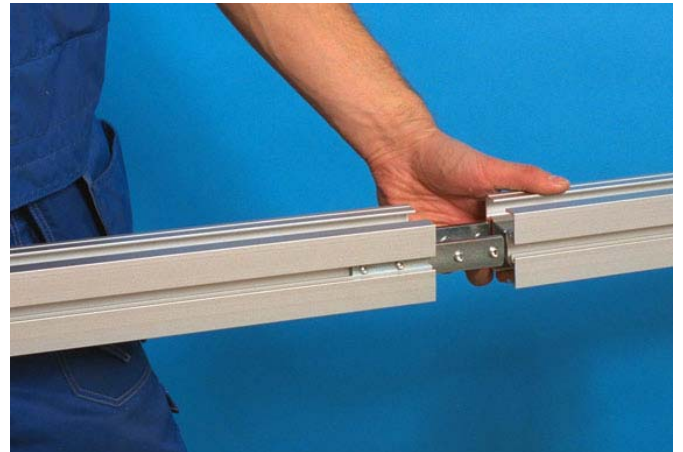
Allen key 4 mm

Connecting strips with set screws XLCJ

Mounting:



- 1** Connect two conveyor beam ends by inserting connecting strips into the beam T-slots. Use two connecting strips per beam joint.



- 2** Make sure that the set screws do not prevent the connection strips from sliding into place.



- 3** Tighten the set screws using an Allen key.

Assemble the entire conveyor beam structure in the same way. If the conveyor beam is too long to mount onto the support structure in one continuous length, assemble shorter lengths and connect them to each other once fastened to the support beams.

Drive units

Introduction

Step three is to mount drive and idler units to the frame structure. All drive and idler units come with connecting strips included. Attach them to the conveyor beam using an Allen key and the set screws that are included.

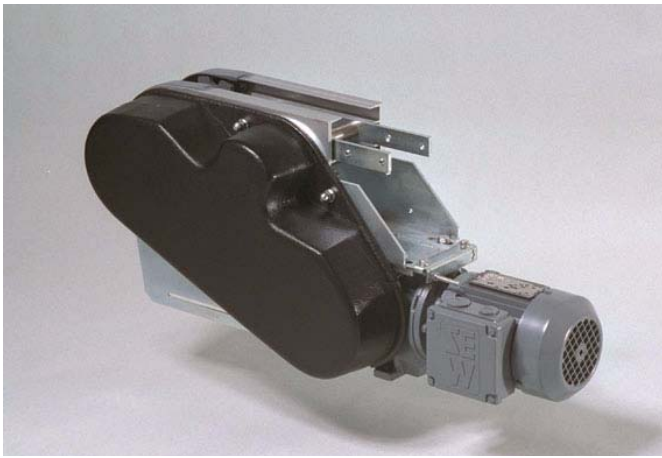
Drive units can be attached to supports of various kinds; check your drawing to see how your conveyor is designed.

It should be remembered that conveyor chains should always be pulled, not pushed, by the drive unit.

Mounting of end drive unit

X..EB 5 H

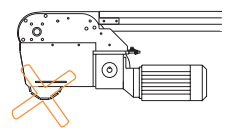
Allen key 4 mm



Caution:



When installing a drive unit, ensure that the slip clutch is fully released.



The conveyor chain catenary of end drive units must be maintained during the system lifetime. When the conveyor chain is visible through the slot in the side-plate, it must be shortened.

Mounting:



1 Mount the end drive unit on to the end of the conveyor:

Release the four set screws that are inserted into the drive unit connecting strips. Insert the connecting strips into the T-slot of the beam you want attached to the end drive unit.

Make sure that the set screws do not prevent the connecting strips from sliding into place.

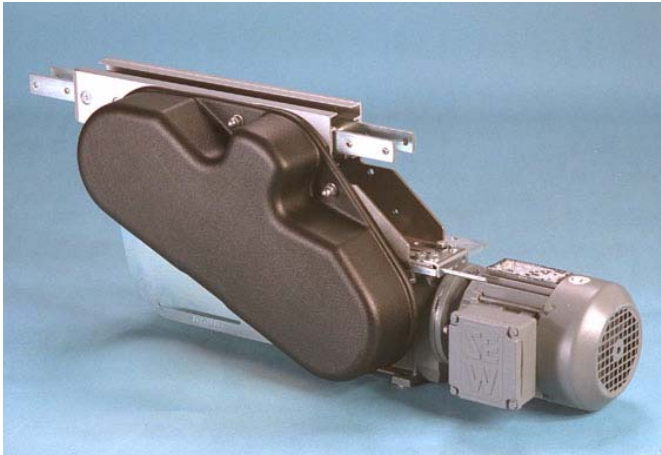


2 Tighten the set screws using an Allen key.

Drive units (continued)

Intermediate drive unit

X..ER 5 H



Intermediate drive units can be installed anywhere along the conveyor, although it should be mounted as close to the end of the conveyor as possible.

Attach the drive unit to the conveyor beam using the connecting strips that are included. (See mounting instructions for end drive unit, page 22)

Caution:



When installing a drive unit, ensure that the slip clutch is fully released. The area near the guides for the return loop of the chain should not be accessible during conveyor operation.

There must be no conveyor chain catenary when using intermediate drive units.

Catenary drive unit

X..EC 5 H



Catenary drive units are used in “endless chain” conveyor systems with no return chain.

Catenary drive units can be installed anywhere along the conveyor length.

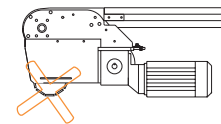
Attach the drive unit to the conveyor beam using the connecting strips that are included. (See mounting instructions for end drive unit, page 22)

Adjustment of the position of the bridge area may be necessary, depending on weight and shape of the products that are being transported. Adjust the bridge by loosening the two screws on the side below the bridge, and then loosening the four remaining screws. Adjust the bridge position and tighten all screws.

Caution:



When installing a drive unit, ensure that the slip clutch is fully released.



The bridge area where the chain goes down should not be accessible during conveyor operation. The conveyor chain slack of catenary drive units must be maintained during the system lifetime.

When the conveyor chain is visible through the slot in the plastic cover, it must be shortened.

Horizontal bend drive unit

X..EW 180/5 H



The horizontal bend drive unit is used for endless conveyors with no return chain.

Attach the drive unit to the conveyor beam using the connecting strips that are included. (See mounting instructions for end drive unit, page 22)

Caution:



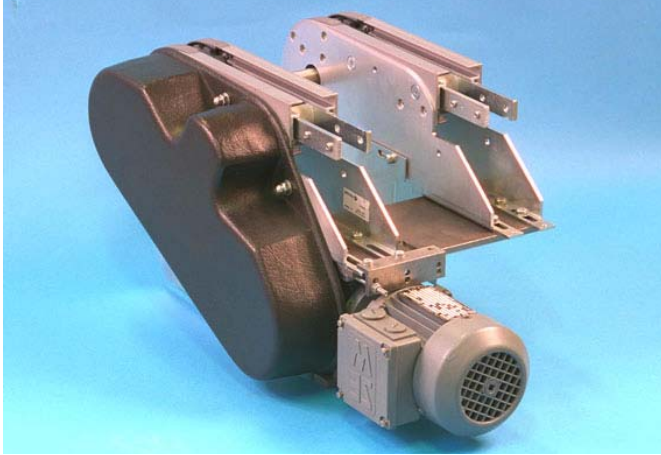
When installing a drive unit, ensure that the slip clutch is fully released. There must be no conveyor chain catenary when using horizontal bend drive units.

The drive wheel should not be accessible during conveyor operation.

Drive units (continued)

Double drive unit

X..EB 5 HD



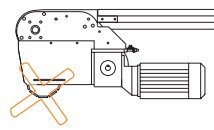
C/C 55 (XS), 66 (XL), 86 (XM), 106 (XH) and 106 (XK) drive units are supplied with four connecting strips. However, since space is limited, only the two outer connecting strips can be used for beam attachment. (See mounting instructions for end drive unit, page 22)

C/C 90–350 (XS), 110–350 (XL), 130–350 (XM), 150–350 (XH) and 150–350 (XK) drive units are connected to the beam with four connecting strips. (See mounting instructions for end drive unit, page 22)

Caution:



Ensure that the shaft is not accessible during conveyor operation.



When installing a drive unit, ensure that the slip clutch is fully released.

The conveyor chain catenary of double drive units must be maintained during the system lifetime.

When the conveyor chain is visible through the slot in the side-plate, it must be shortened.

Idler units

Introduction

Idler units are used to guide the conveyor chain into the return side of the conveyor. Connecting strips are already attached to the unit.

Idler end unit

X..EJ



Idler bend unit

X..EK



The 90° idler bend can only be used with a return chain together with the XL conveyor system.

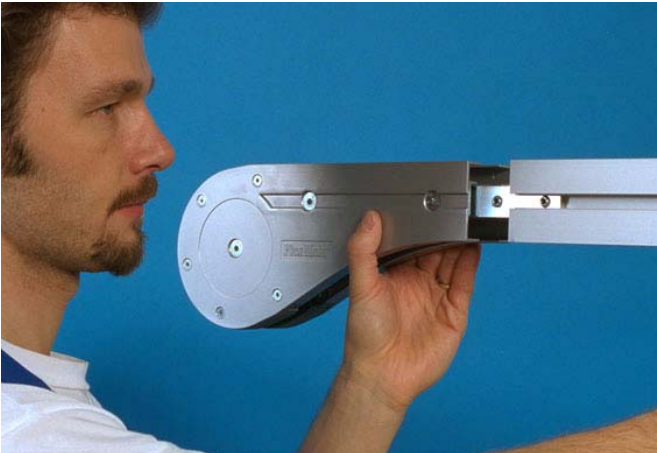
Idler units (continued)

Mounting idler units

Allen key

4 mm

Mounting:



- 1 Insert the idler unit connecting strips into the T-slots of the beam end.



- 2 Secure the idler unit to the beam using an Allen key to tighten the set screws.

Caution:



The opening between the links when they turn around the idler could be a risk. Idler ends should not be accessible during conveyor operation. (For mounting of idler end protective cover, see next page.)

Mounting idler end protective cover

Allen key

Mounting:



- 1 Remove three of the five M5x10 screws that holds the idler end side plate in position.



- 2 Slide the cover onto the idler end unit.



- 3 Insert and tighten the three M5 screws that are delivered with the cover

Slide rail and support rail

Introduction

XLCR

The slide rail is attached to the sides of the conveyor beam to reduce chain friction where the chain would otherwise be in direct contact with the beam profile. It is very important that the slide rail is installed properly, so that the chain can run without disruption.

When the conveyor is to be mounted high above ground level, it might be easier to mount the slide rail onto a conveyor section while the conveyor beam is still on the floor. If doing so, leave an extra end, approximately 300 mm longer than the beam, so that it can be cut off and adjusted when the beam is finally installed.

Slide rail beam attachment

Tools:

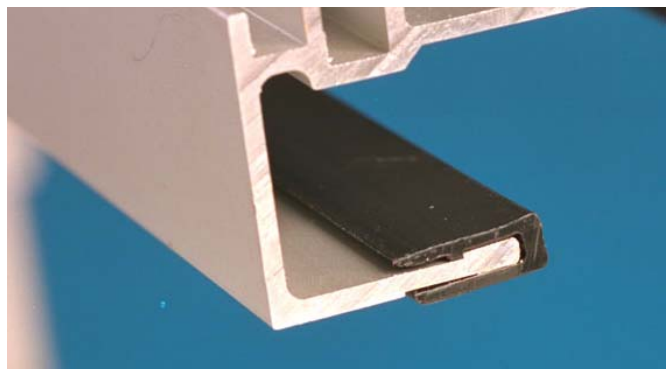
Slide rail installation tool

Cutting pliers

Mounting:



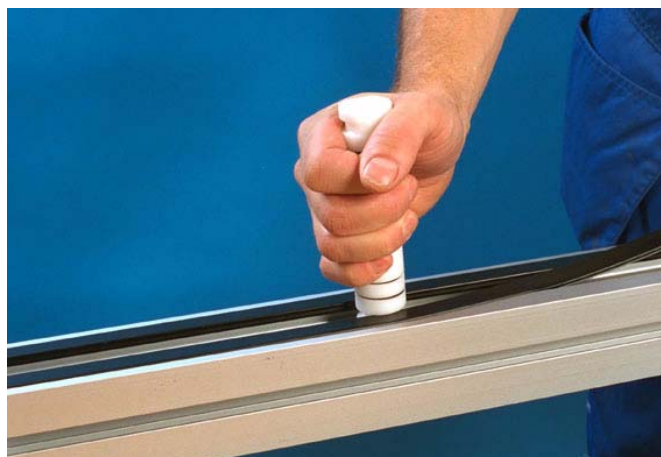
1 Start at an idler end unit. Separate the top and bottom flange of the slide rail at the end of the rail and press it into place.



2 Make sure that you mount the slide rail so that it snaps on to the beam. The different types of slide rail do not look alike, so check which flange should be on top.



3 Use the slide rail mounting tool to press the slide rail into place. One end of the tool is used when slide rail is mounted onto only one side of the beam, and the other end is used when you mount slide rail onto the second side.



4 Do not forget to mount slide rails both underneath and on the upper side of the beam (unless top running chain only).

Slide rail and support rail (continued)

Joining slide rail ends

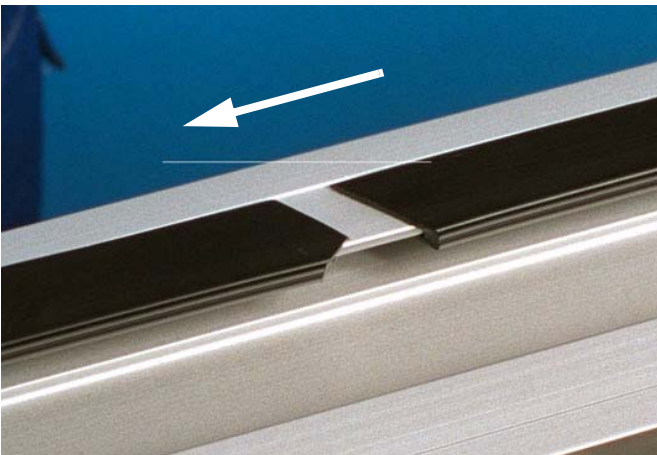
Cutting pliers

Mounting:



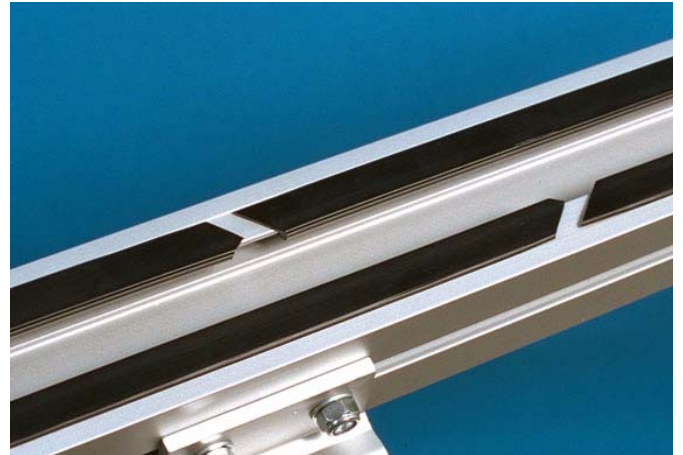
- 1 Cut both slide rail ends in a 45° angle.

The beginning of a new slide rail section (in the direction of travel) must be cut back a small angle.



- 2 Allow a space of approximately 10 mm between two slide rail ends.

The arrow indicates travel direction.



- 3 Do not place two slide rail joints opposite each other. Make sure there is a distance of at least 100 mm between them to make the chain run smoother.

This does not apply to slide rail that begins by an idler unit or after a drive unit, where joints are always parallel.

Try to let the slide rail run in as many continuous lengths as possible, except in circumstances stated below:

- It is recommended to use short slide rails (2–3 m) where chemicals may have an effect on the slide rail composition.
- It is important to cut the slide rail and allow for elongation in high load areas. Cutting is required in wheel bends (see following page), by idler units and where the conveyor will be heavily loaded, especially by the drive units. This prevents the slide rail from stretching out and entering into the drive unit, which may block the chain.
- Never join slide rail in horizontal or vertical bends, since forces are higher on the slide rail in these sections. Instead, place the joint before the bend.
- Avoid joining slide rails on top of conveyor beam joints.

Slide rail and support rail (continued)

Mounting slide rail in wheel bends

Cutting pliers

Before wheel bend:

Mounting:



1 Cut the slide rail end in a 45° angle.



2 The slide rail must be longer than the conveyor beam itself, and there should be a 10 mm distance between the slide rail and the wheel of the bend.

Make sure that the end of the slide rail is not bent up or down.

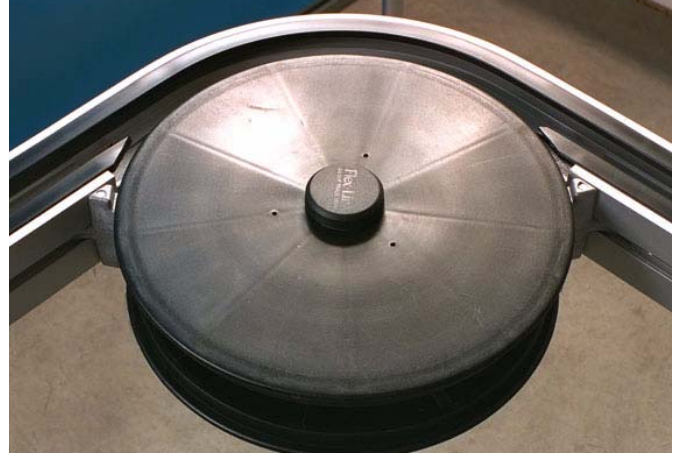
After wheel bend:

Mounting:



1 Cut the slide rail in a 45° angle with a short back cut.

The slide rail must be longer than the conveyor beam itself, and there should be a 2 mm distance between the slide rail and the wheel of the bend.



2 In the outer bend, make sure that the slide rail is properly connected to the conveyor beam profile.

Horizontal plain bends

In plain bends with small radii, the slide rail for the inner bend should be cut so that it is only 10 mm wide in the bend. This is to prevent an uneven slide rail surface. Stretch the rail while mounting.

Note:



Plain bends with small radii should be avoided, if at all possible. Always consult FlexLink Systems for design assistance.

Slide rail and support rail (continued)

Fixing slide rail to the conveyor beam

Hand drill

Drill fixture for slide rail 4,2 mm (XS: 3,2 mm)

Countersink

The beginning of each slide rail section must be fixed to the beam, since the chain will cause the slide rail to be pushed forward. Slide rail which moves into a wheel bend or a drive unit can block the chain completely.

There are two different methods for fixing slide rail to the conveyor beam: using aluminium rivets or plastic screws. Either method can be used, but the riveting method is more secure if the conveyor will run with high operational speed or be heavily loaded.

Drilling slide rail

Procedure:



- 1 Drill two holes near the beginning of each slide rail section. Use the drill fixture to ensure clean-cut holes and the correct location of the holes. For drill bit radius, see table.

The holes must be at the leading edge of the joint piece, in the direction of travel, to hold the slide rail in place when the conveyor is in use. Use a well-sharpened drill-bit.

The arrow indicates running direction.

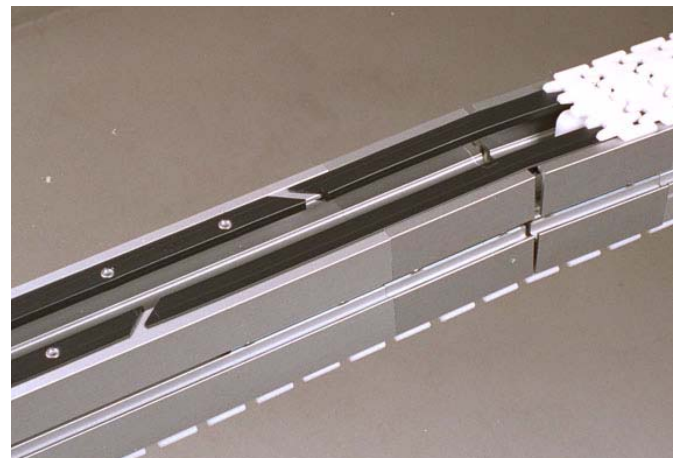


- 2 Use a countersink to deburr and countersink the holes. Also make sure that there are no metal filings left underneath the slide rail.

Conveyor system	Drill bit diameter	Rivet
XS	Ø3,2 mm	XLAH 3x6
XL/XM/XH	Ø4,2 mm	XLAH 4x6

Slide rail in conveyor beam section XLCH 5 V

When using articulated beam section XLCH 5 V, the slide rail must be mounted across the entire beam section, and cut off at the beginning of the following beam section.



Slide rail and support rail (continued)

Method 1: Using aluminium rivets

Rivet crimping pliers/rivet crimping clamp

Aluminium rivets

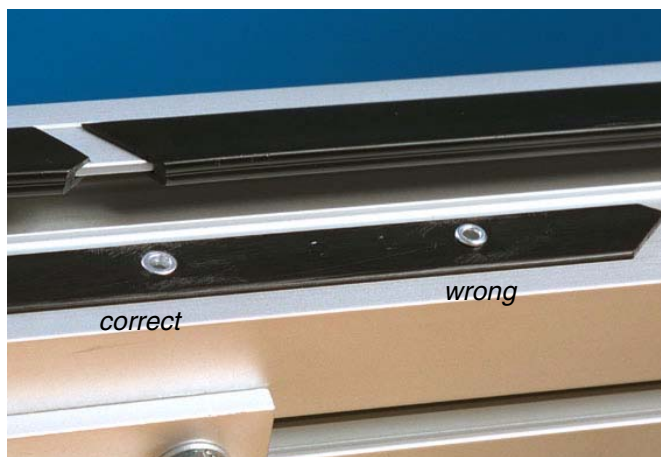
Mounting:



- 1 Insert rivets in the holes, using rivet crimping pliers or a rivet crimping clamp. For type of rivet, see table on previous page.

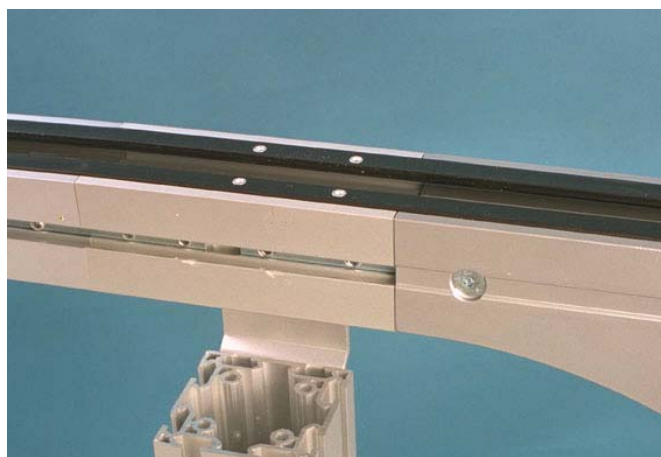


- 2 If working space is limited, the rivet crimping clamp might be easier to use. The two crimping tools perform the same task, but the pliers are more efficient and easier to use.



- 3 Check that the rivets do not protrude over the surface of the slide rail.

Check both top and underneath surface of slide rail for protruding metal.



- 4 Keep a distance of approximately 30 mm between rivets and idler unit. This is in case the idler unit has to be removed after conveyor system assembly.

Slide rail and support rail (continued)

Method 2: Using plastic screws

Pliers/screwdriver

Knife

Hammer

Plastic screws

XLAG 5

An alternative to aluminium rivets is to use plastic screws XLAG 5:

Mounting:



1 Press or screw the screws into the holes using a pair of pliers or a screwdriver.

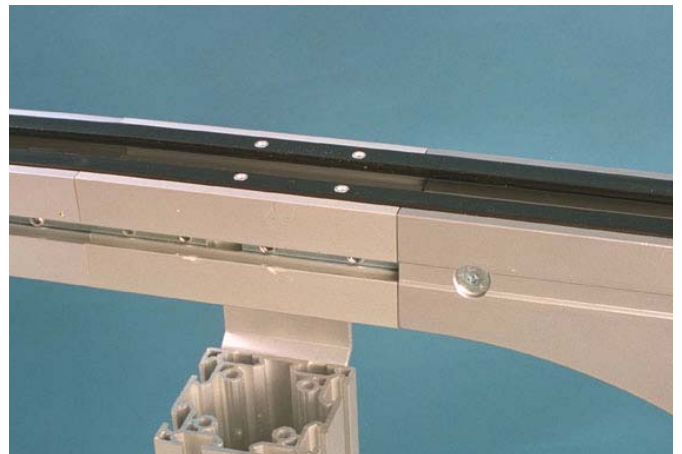


2 Cut off the screw heads by using a knife and a hammer. The cut should be made away from the joint, in the direction of chain travel.



3 Make sure the slide rail surface is smooth and that screws do not protrude over the surface of the slide rail. If the surface should be uneven, file the edges smooth.

Check both top and underneath surface of slide rail for protruding plastic or metal.

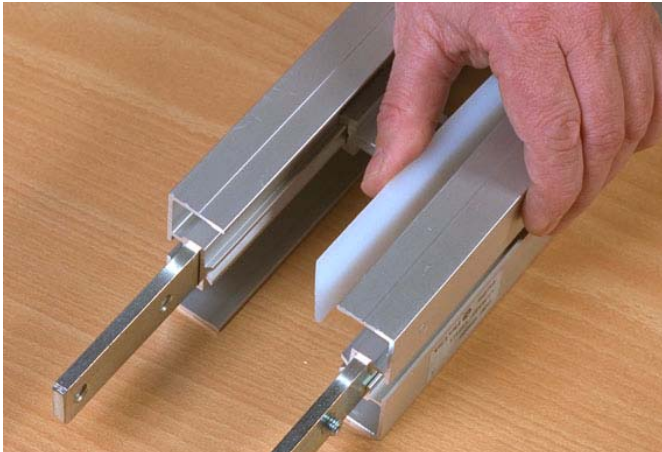


4 Keep a distance of approximately 30 mm between screws and idler unit. This is in case the idler unit has to be removed after conveyor system assembly.

Slide rail and support rail (continued)

Mounting support rail in plain bends

Mounting:



- 1** Cut the support rail in a 45° angle. The cut should be made at the leading edge of the rail, in the direction of travel, to ensure a smooth entrance of the chain.



- 2** Mount the support rail on the inside of the beam profile. Let the rail run along the entire bend, including the straight sections of each end.



- 3** Cut the rail at the other end in a 90° angle using a knife and a soft hammer.



- 4** Drill a hole at the first end (in the direction of travel) of the inner bend using a 4,2 mm drill bit. Leave a distance of 20 mm between the hole and the beam end. Deburr the hole.



- 5** Clamp the support rail to ensure a proper fit. Insert a short piece of rail between the clamp and the support rail to get a tight grip. Repeat this procedure along the entire bend.



- 6** Insert a plastic XLAG 5 screw in the drilled hole and tighten it. Make sure that the screw enters the support rail.

Chain

Introduction

When all beams have been assembled and the slide rail is in place, it is time to assemble and mount the chain on to the conveyor system.

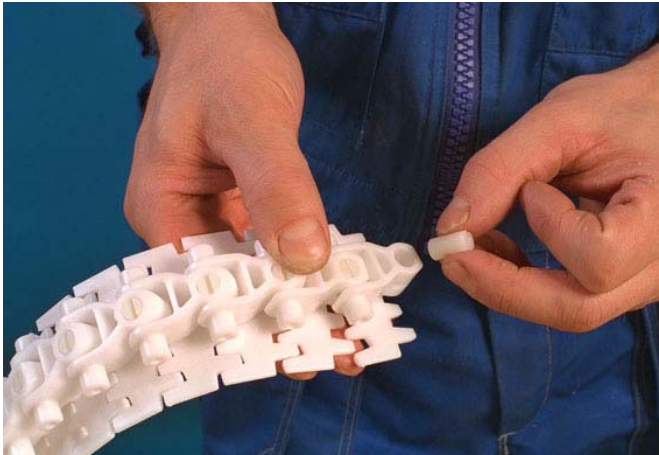
Joining chain ends

Assemble the chain by inserting the steel pin that comes with each chain link, into the opposite end of another link. Do this by using the FlexLink pin insertion tool.

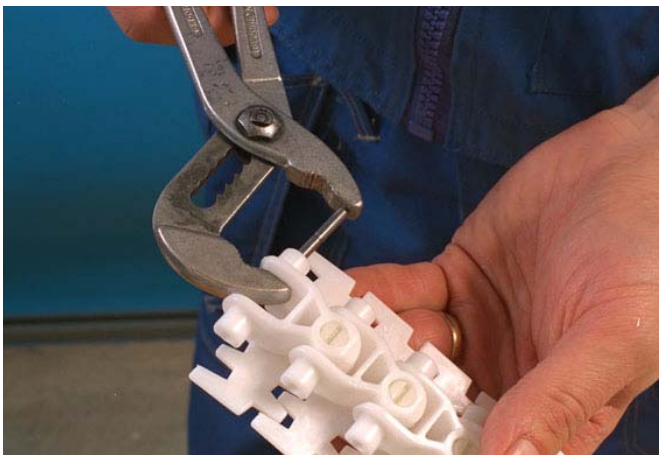
Pliers

FlexLink chain tool

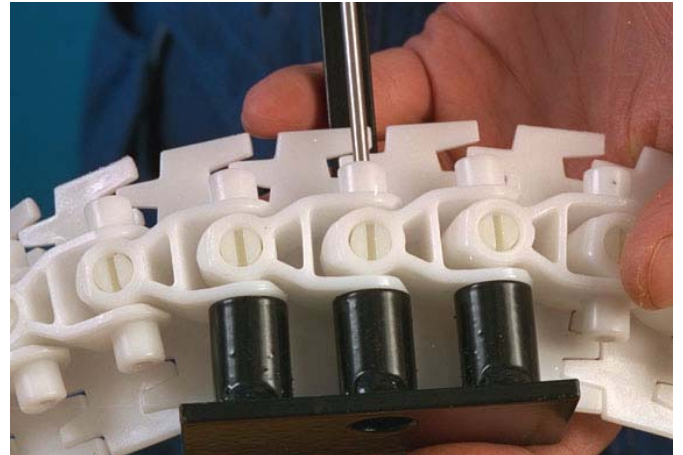
Mounting:



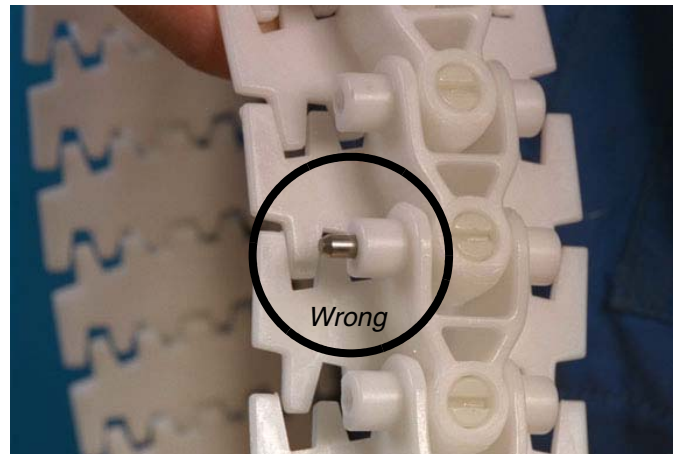
1 Insert the plastic pivot with the slot facing outward.



2 Insert the steel pin halfway, using a pair of pliers. Always use new steel pins and plastic pivots when joining chain ends.



3 Line the FlexLink chain tool up with the pin. Slowly depress the trigger until the pin seats.



4 Check that the chain is flexible in the joint, and that the pin does not stick out or go through the other side.

Taking the chain apart:

- 1 Line the chain tool up with the pin.
- 2 Depress the trigger until the pin pops out.
- 3 Depress lever, pull insertion pin out.
- 4 Pull chain apart.

Chain (continued)

Mounting preparations

Procedure:



1 Remove the drive unit transmission cover.



2 Release the slip clutch so that the drive shaft is free to turn. (Slip clutch adjustment, see page 66)

With the slip clutch loose, make sure that the motor is turning in the correct direction.



3 Remove the side plate on the drive unit.



4 Before mounting, run a short piece of chain (0,5 m) through the conveyor to ensure a smooth running system. If any obstructions are found, they should be removed and the checking process repeated.

Chain (continued)

Mounting the chain

Make sure that the slip clutch is released allowing the drive shaft to turn freely. (See previous page.)

Pin insertion tool

X..MJ

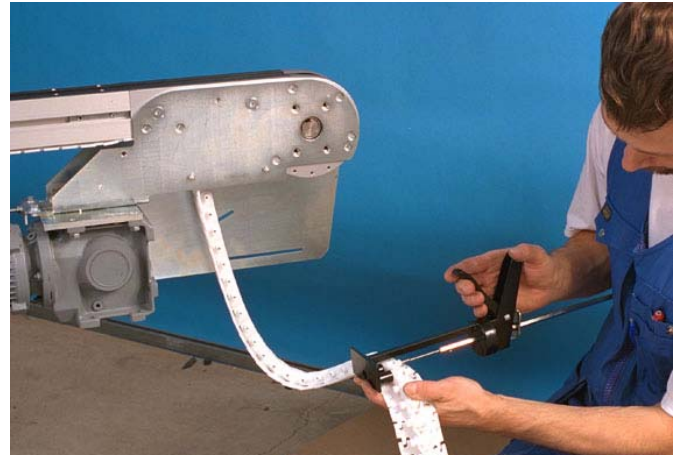
Mounting:



- 1** Insert the chain into the underside of the drive unit. Make sure the chain will be moving in the correct direction, as indicated by the arrow located at the side of all chain links.



- 2** Feed the chain along the conveyor by pulling it through the idler unit and back to the drive unit.



- 3** Join 5 meter lengths of chain when necessary.



- 4** Stretch the chain and remove links if necessary, so that the chain will exhibit some slack at the drive unit. (Length adjustment, see page 37)
Connect the chain ends. (See page 33)

Chain (continued)

Mounting the chain using a beam section for chain installation

X_CC 160/XKCC 200

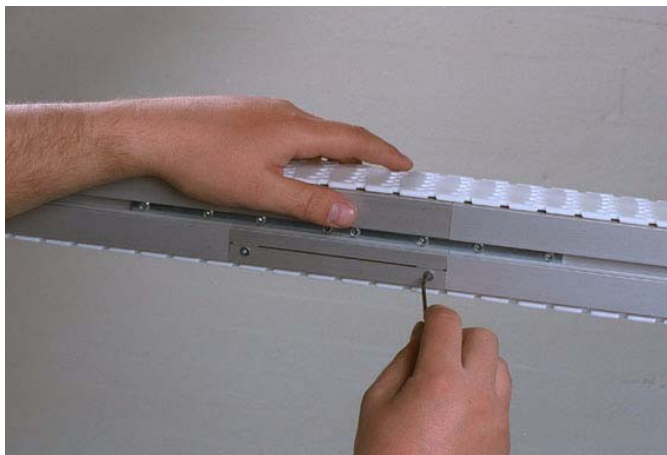
Allen key

Pin insertion tool

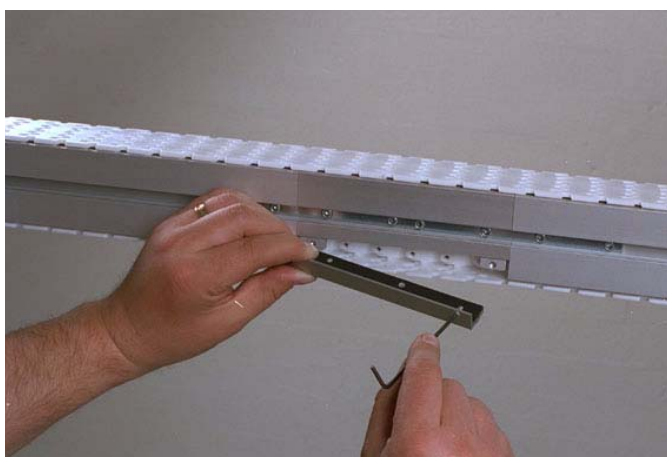
X..MJ

Clamp

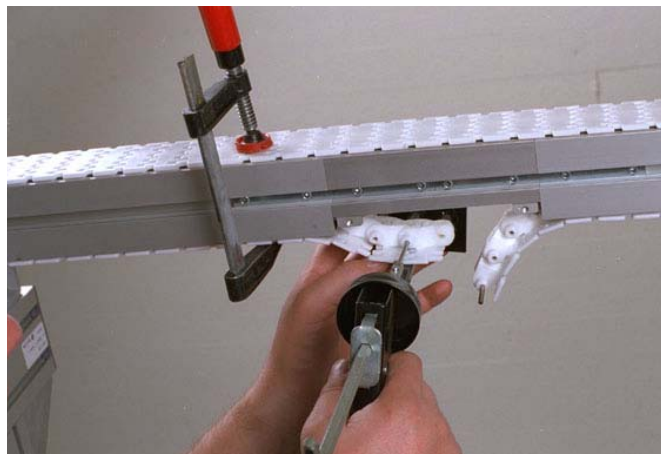
Mounting:



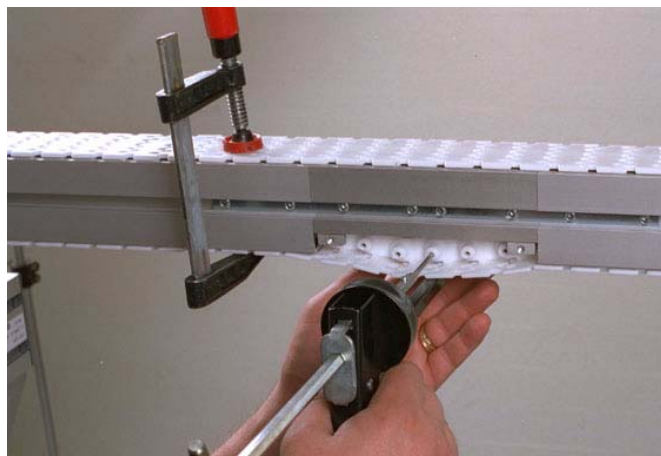
1 Loosen the screws on the beam section flanges.



2 Remove the flange so that the chain becomes accessible.



3 Clamp the chain to the beam profile. Use the FlexLink chain tool to remove a steel pin from the chain, so that two links are separated.



4 Remove excess links and use the chain tool to put the chain back together again.

Chain (continued)

Length adjustment of the conveyor chain

End drive units, catenary drive units

- 1** Adjustment of the conveyor chain is carried out at the drive end of the conveyor.
- 2** The transmission guard cover must be removed from the drive unit and the slip clutch disengaged or transmission chain removed. The conveyor chain should now be free to travel within the conveyor beam profile.
- 3** Catenary protection plates should also be removed to allow easy access for the conveyor chain pin insertion tool.
- 4** The conveyor chain should be tensioned within the conveyor system by pulling down the conveyor chain at the chain catenary in the underside of the drive unit. Clamp across the conveyor chain to trap the chain on to the beam profile. The clamp should be placed over the edges of the drive unit to reduce the risk of damage to the aluminium profile.
- 5** Remove all slack links from the conveyor chain using the pin insertion tool.
- 6** Rejoin the conveyor chain using a new steel pin and plastic pivot.
- 7** Remove the chain clamp and replace the catenary protection plate and transmission chain. The slip clutch should also be reset.

- 8** Replace the transmission guard cover. The conveyor is now ready for operation.

Intermediate drive units, horizontal bend drive units

- 1** Conveyors which have no conveyor chain catenary should be assembled with a special section of conveyor beam (X..CC), which allows for the chain to be easily inserted and adjusted for tension. (See previous page.)
- 2** Remove the lower part of this conveyor beam section by releasing the four screws.
- 3** Lift the chain from this section of the beam and clamp the conveyor chain as described above. Adjust the chain tension as for end and catenary drive units.

In a wheel bend drive, the outer aluminium profile can be removed by slackening the set screws in the beam connecting strips. The slide rail must be fitted to allow the removal of this section.

- 1** After removal of the outer aluminium profile, the conveyor chain can be pulled out of the wheel bend disc. Lift the chain upwards.
- 2** Remove chain links using the pin insertion tool.
- 3** New steel pins and plastic pivots must be used when rejoining chain ends.
- 4** The tensioned chain can now be pulled back into position on the bend guide disc, and the outer profile put into place.

Guide rail system

Introduction

Guide rails are used to guide products being conveyed, but also to prevent them from falling off the conveyor.

Guide rails are supported by guide rail brackets attached to the sides of the conveyor beam. Follow the mounting instructions for the type of bracket used in your application.

Brackets should be placed approximately 500 to 1000 mm apart depending on type of product and if accumulation occurs or not. If brackets are spaced at greater distances than 1000 mm, there is a possibility that guide rails will become deformed due to excessive force.

Mounting fixed guide rail brackets (aluminium)

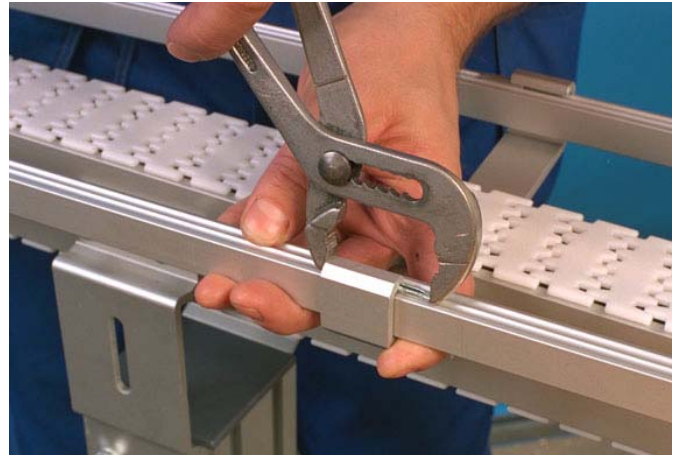
XLRB,XLRA

Box wrench	13 mm
Pliers	
T-bolts	XLAT 17
Nuts	XLAN 8
Washers	BRB 8,4×16
Spring pins	XLAP 28

Mounting:



- 1 Attach guide rail brackets along the conveyor, using T-bolts and nuts. The distance between brackets should be approximately 0,5–1,0 m.



- 2 Use a pair of pliers to insert a spring pin between the guide rail bracket and the guide rail.

Note



Do not tighten screws if angle plates are to be attached to the conveyor. (Angle plates, see page 46.)

Guide rail system (continued)

Distance pieces (spacers)

XLRD 6/XLRD 6 P

Distance pieces can be used to increase the maximum track width, and are placed between the guide rail bracket and the conveyor beam. For the XL conveyor system, distance piece XLRD 6 P can also be used to fasten angle plates. (See picture on page 46)

Longer T-bolts must be used if distance pieces are used with guide rail brackets.

Mounting guide rail brackets (polyamide)

The adjustable guide rails, polyamide, include components for construction of a wide variety of guide rail configurations. This includes basic fixed types as well as high and wide guide rails in various adjustable configurations.

The pictures below show one possible way to assemble guide rail brackets. The examples shown on the following page are assembled in a similar way.

Socket wrench	13 mm
Allen key	5 mm
T-bolts	XLAT 17
Nuts	XLAN 8
Washers	BRB 8,4×16

Mounting:



1 Fasten a guide rail bracket support to the conveyor beam using T-bolt, nut and washer.



2 Attach a guide rail clamp to the bracket. Tighten the screw.



3 Attach the guide rail to the clamp. Tighten the screw.



Important:



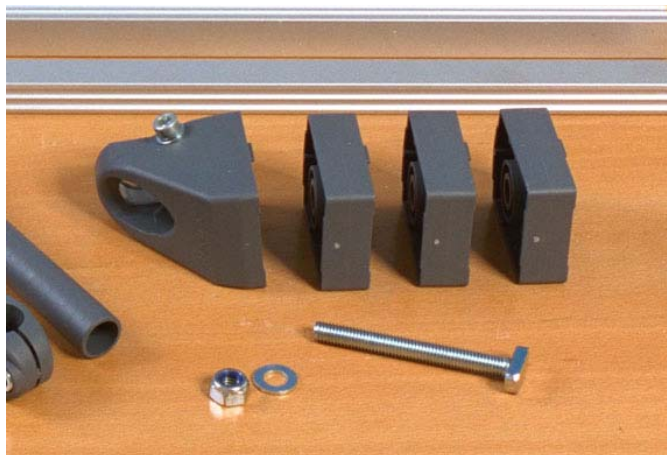
Do not over-tighten screws!

Guide rail system (continued)

Application examples

Some examples of adjustable guide rail applications are shown below:

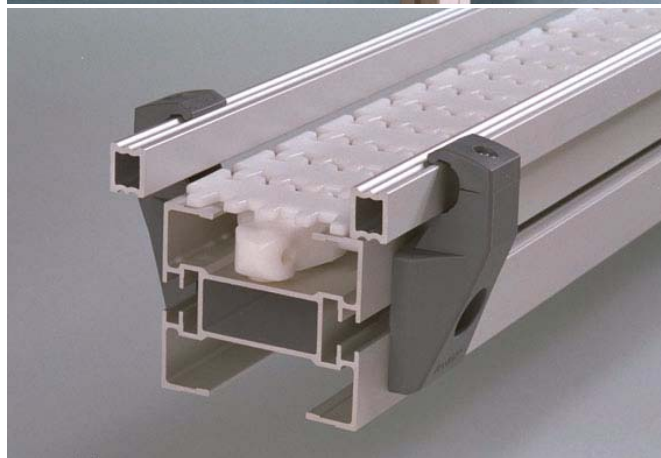
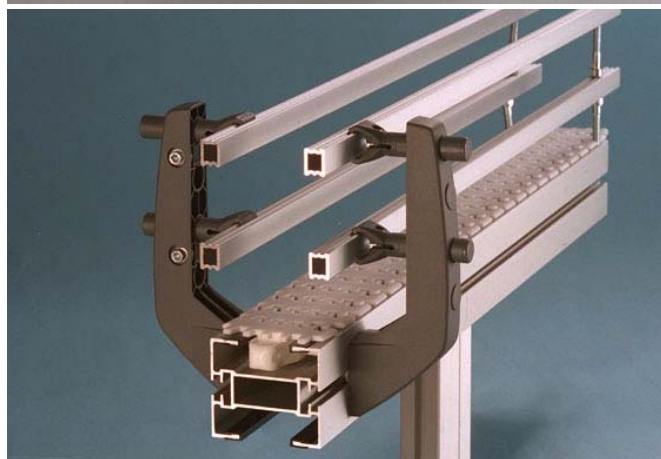
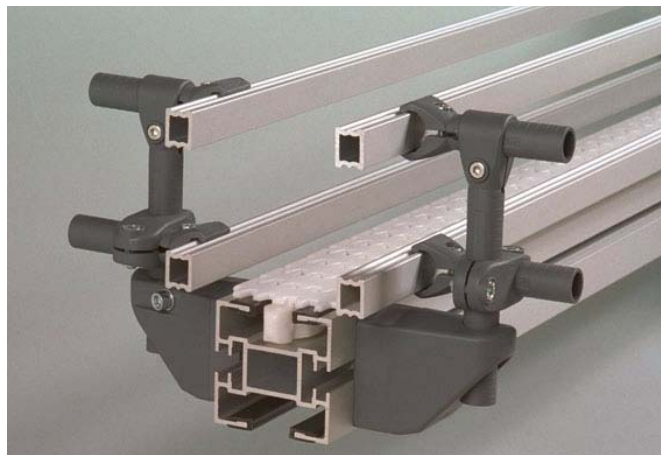
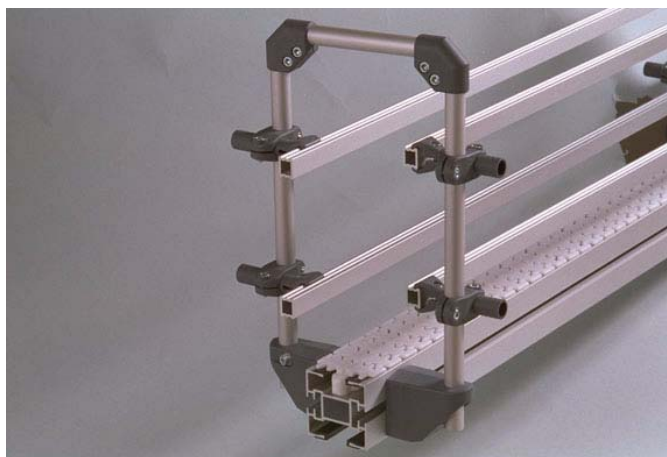
Examples:



Distance pieces XLRD can be used to increase track width. Use T-bolts or stud bolts when mounting the bracket support and distance pieces to the conveyor beam.



Pieces of XLRN spacer beam can be used to increase track width instead of distance pieces. Do not forget to place an XLRD spacer beam connector between the spacer beam and the conveyor beam.



Guide rail system (continued)

Built-up guide rail brackets

Built-up guide rail brackets are made up from pieces of small beam with T-slots on three or four sides. The beam is cut to suitable lengths and connected to form brackets with the desired height and width.

Special fittings are used to connect the beam pieces to each other, to the conveyor beam and to the guide rail. It is possible to use more than one guide rail on each side.

There are several types of built-up guide rail brackets (L brackets). Assembly instructions for two different types are described on the following pages.

Allen key	5 mm
Box wrench	13 mm
Beam	XCBB 3x24x34/44
Inner fitting/corner fitting	XMRY 20/XMRW 20
Inner fitting	XMRX 20
Guide rail bracket	XLRC 20/20A
T-bolts	XLAT 17
Nuts	XLAN 8
Washers	BRB 8,4x16
End caps	XCBE 24x34/24x44

Mounting:



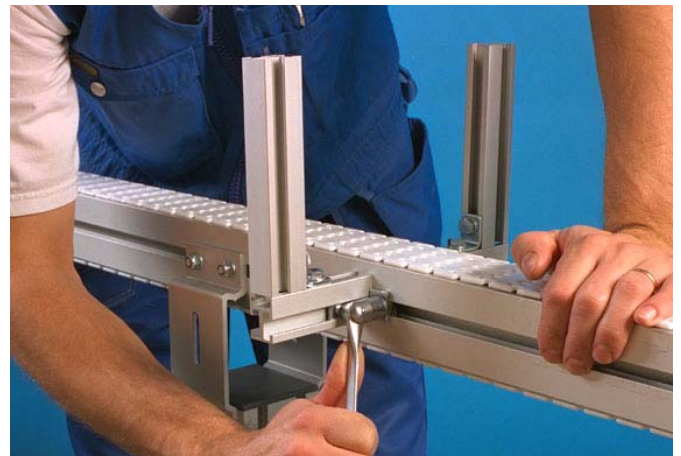
1 a) L bracket Type 1: Use a XMRY 20 inner fitting to connect two beam pieces. Tighten screws.



b) L bracket Type 2: Use a XMRW 20 corner fitting to connect two beam pieces that have been cut in a 45° angle.



2 Attach two XMRX 20 inner fittings to the end of the L-bracket.



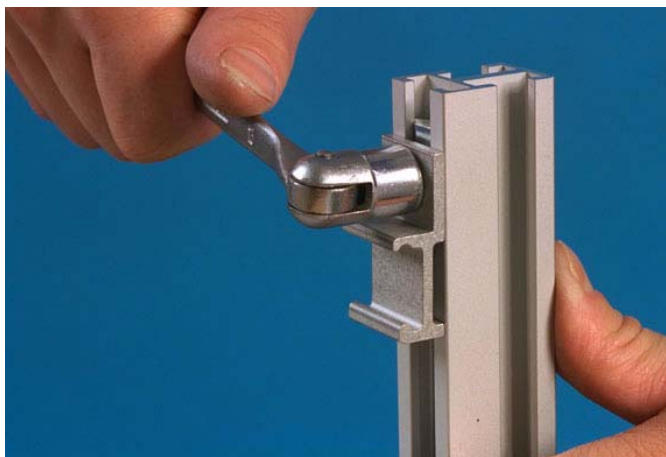
3 Mount the bracket to the conveyor beam using T-bolts, nuts and washers.

Guide rail system (continued)

Mounting guide rail bracket to L-beam:



1 a) Attach guide rail bracket XLRC 20 A using slot nut and an Allen key.



b) Attach guide rail bracket XLRC 20 using a hex head screw and slot nut.



2 Fasten end caps at the ends of all beams using a soft faced hammer.



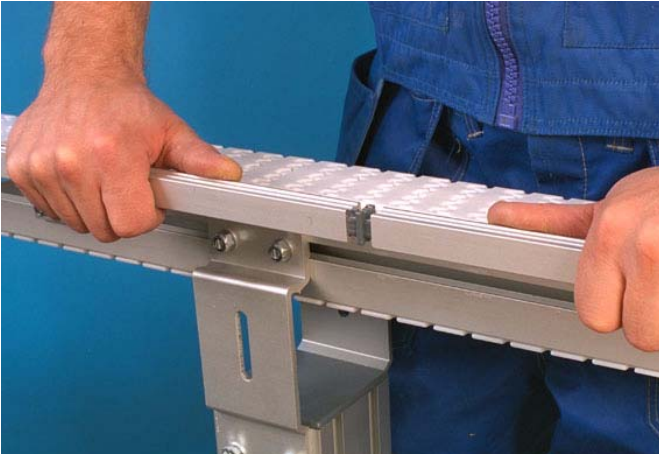
3 Attach guide rail to the brackets using spring pins and a pair of pliers.

Guide rail system (continued)

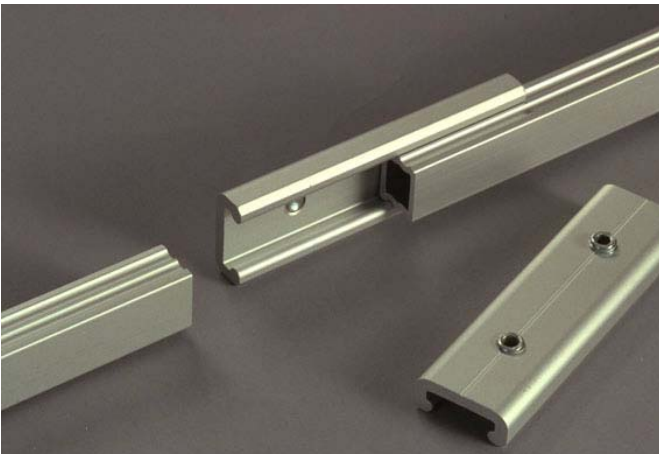
Connecting guide rails

For connection of guide rails, you will need connecting plugs (XLRJ 10/15) or connecting sleeves (XLRJ 100).

Mounting



Connecting plugs are pressed into two guide rail ends.



Connecting sleeves are fastened to the guide rail ends with set screws and an Allen key.

Make sure you place the connecting sleeves on the outer side of the guide rail.

Guide rail ends

XLRE 10/15

Mounting:



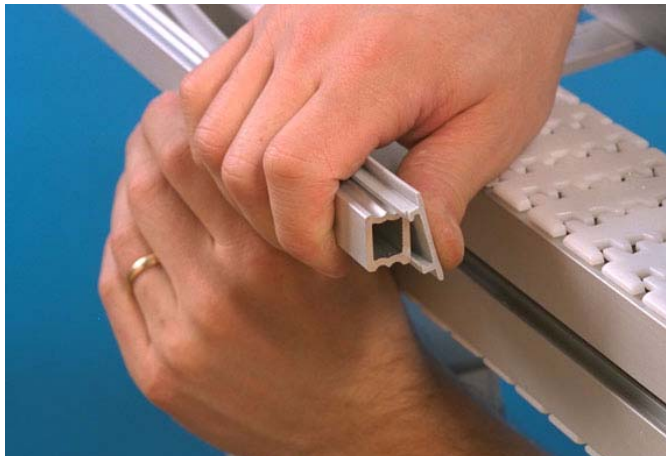
Plug all guide rail ends with end plugs. Use a soft faced hammer when inserting the plugs.

Guide rail system (continued)

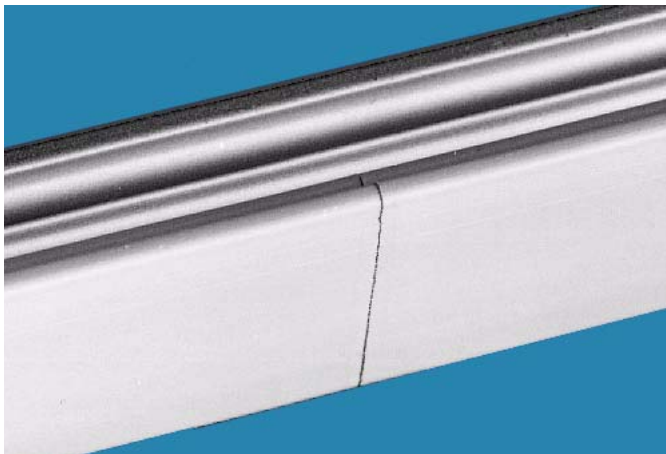
Guide rail cover

XLRT

Mounting:



To prevent products from being scratched, a plastic guide rail cover can be snapped on to the inside of the guide rail (15 mm guide rail only).



Make sure that all cover joints are smooth, so that products do not get caught or damaged. Do not join covers on top of guide rail joints.

Guide discs/guide rails in bends

XLRG

At the inner bend of horizontal wheel bends, a plastic guide disc can be used instead of regular guide rail.

Mounting:



1 Remove the wheel bend cap.



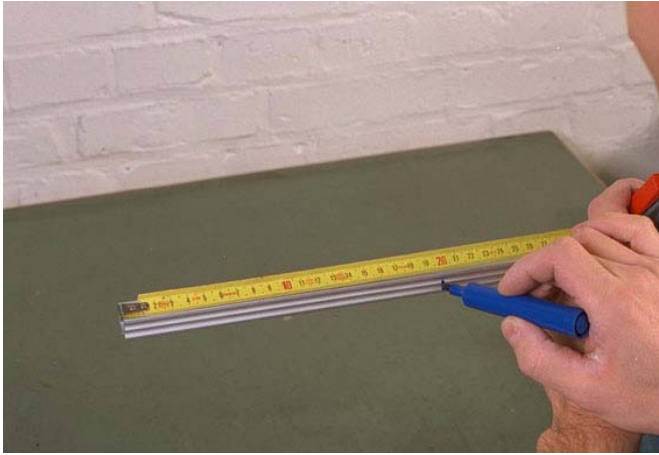
2 Press the guide disc into place on top of the wheel bend.

Guide rail system (continued)

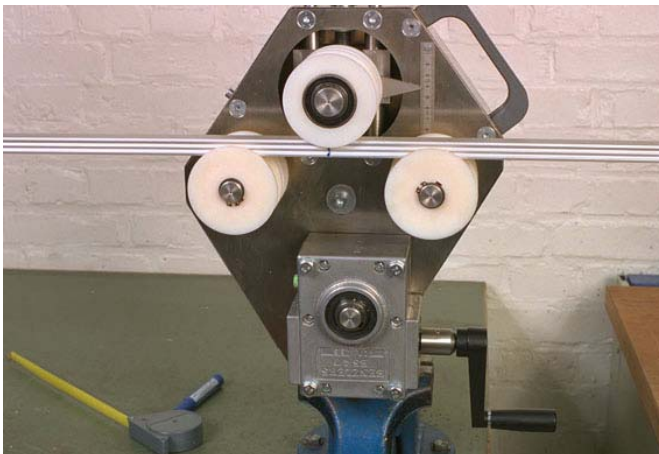
Bending guide rail

If the construction of your conveyor system requires customized guide rail bends, you can use the FlexLink guide rail bending machine (3922963) to bend them according to your own requirements:

Mounting:



- 1 Mark the length of the rail to be bent. Leave an approximately 200 mm straight section at each end.



- 2 Place the rail horizontally between the top wheel and the lower wheels.

When bending guide rail, you should start bending from the centre of the required radius.



- 3 Operate the crank to run the rail back and forth while lowering the upper wheel step by step until the desired radius and angle is achieved.



To calculate the length of guide rail to be bent, use the following formula:

$$L = (6,28 \times r \times \alpha) / 360$$

L= length of bend, r=radius, α =desired angle, degrees

Add for straight section

If multiple bends with the same radius are to be made, note the final position of the upper wheel indicator scale to ensure correct radius of subsequent rails.

It is possible to bend angles up to 180°. Minimum radius is 100 mm.

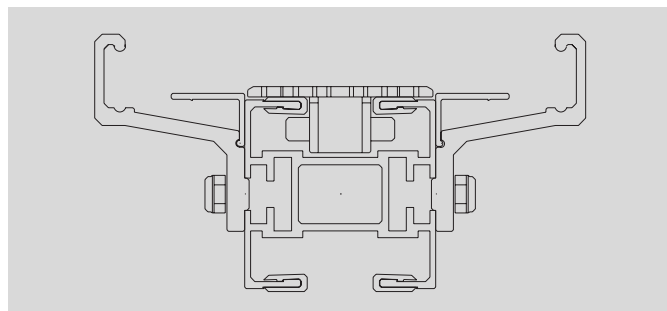
Angle plates

Introduction

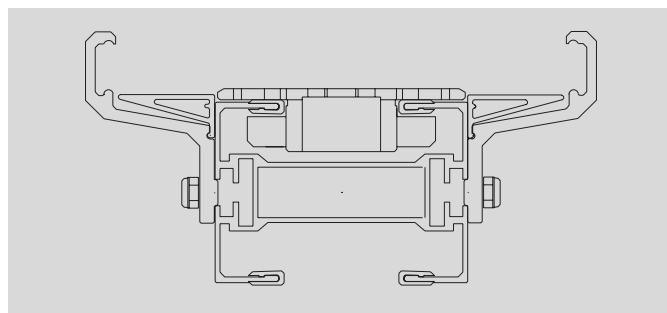
X..RP, X..RM

If there is a risk that products will fall off while being conveyed, the gap between the actual conveyor and the guide rails can be filled with angle plates. These are attached to the beam by means of guide rail brackets and T-bolts.

Guide rail brackets should be placed across all joints between angle plates to ensure smooth and durable joints. 10 mm guide rail is required if guide rail brackets 35x30 are being used to fasten angle plates



Angle plates and guide rail brackets (48x30) for the XL conveyor system.



Angle plates and guide rail brackets (49x42) for the XM and XH conveyor systems.

Mounting angle plates

Box wrench	13 mm
T-bolts	XLAT 17
Nuts	XLAN 8
Washers	BRB 8,4x16

Mounting:



Attach guide rail brackets to the conveyor beam without tightening the nuts. Fasten the angle plate by inserting it into the slot on the side of the guide rail bracket. Tighten screws.



XL conveyor system:

In addition to guide rail brackets, distance pieces XLRD 6 P can be used to fasten angle plates.

Drip trays and drip catchers

Introduction

General information

Drip tray attachment requires drip tray brackets, which are screwed on to the side of the conveyor beam. It is recommended that one bracket is positioned at each end of the drip tray, as well as one additional bracket per meter if the length of the drip tray exceeds one meter.

The screw slots in the drip tray brackets make it possible to adjust the height of the drip tray below the conveyor beam. If you have drain outlets along the drip tray system, for example, you may want to have inclining drip trays so that waste fluid flows to these outlets.

Using drip trays as a safety guard

The XLDB 21x100 drip tray bracket is equipped with a key hole function. When mounted in the upper "hole" of the key hole, the drip tray serves as a safety guard, preventing access to the return side of the chain. (See fig. 1 below.)

Caution:



Drip pans with sealing joints may be stiff to mount on to the drip tray. You should therefore avoid holding your fingers between the drip pan and the drip tray as you are pressing the pan towards the

drip tray (see illustration below). The resistance could suddenly release and may cause fingers to get caught. (See fig. 2 below.)

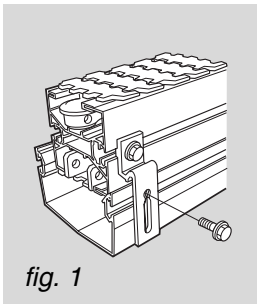


fig. 1

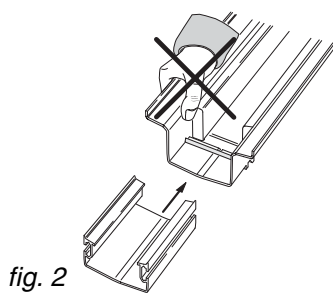


fig. 2

X_DT and XHDS cutting lengths

How to use the table:

- 1 Measure the length of conveyor X_CB or X_CB_N, under which you will mount the drip tray.
- 2 In the table, look up the products that will be mounted adjacent to the drip tray. Read the value where the row and the column corresponds.
- 3 Add the values from the table to the total length of the conveyor beam, as measured in step 1. If the value in the table is negative, it should be subtracted from the total length of the conveyor beam.
- 4 Cut drip trays X_DT and drip catchers XHDS to the calculated lengths.

Drip tray/ drip catcher	X_DC	X_DD	X_DE	X_DH	X_DJ	X_DV-B*	X_DV-E**
XSDT	0	+39	+35	-24	-10	+80	+110
XLDT	0	+55	+35	-25	-10	+80	+110
XMDT	0	+59	+35	-25	-10	+80	+110
XHDT	0	+31	+35	-25	-10	+80	+110
XKDT	0	+11	+35	-77	-20	+80	+115
XHDS Lx83 XHDS Lx53	0	-20	0	-130	-80	+20	+135

* The wide, inlet, end of a drip pan for vertical bend.

** The narrow, outlet, end of a drip pan for vertical bend.

Example

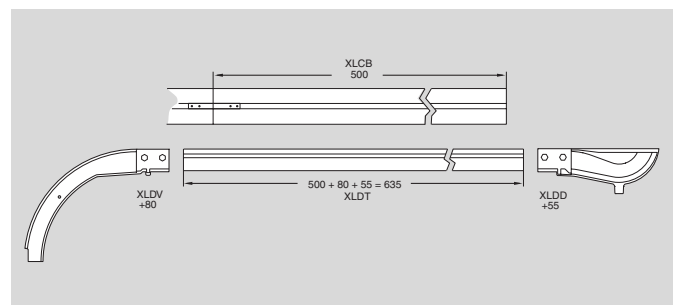
An XL conveyor beam is 500 mm long.

The XLDT drip tray that is to be placed underneath the beam will be connected to one XLDV drip pan for vertical bend, and one XLDD end pan for idler end unit.

The table for cutting lengths reads +80 for XLDT/X_DV, and +55 for XLDT/X_DD.

This means that the length of the drip tray should be $500 + 80 + 55 = 635$ mm.

See illustration below.



Drip trays and drip catchers (continued)

Mounting drip trays

X_DT

Connect drip trays to each other using connecting strips (XLCJ 5×140) and set screws. Use silicone caulk to seal joints.

Box wrench	13 mm
T-bolts	XLAT 17
Nuts	XLAN 8
Washers	BRB 8,4×16
Square nuts	XLAQ 8
Screws	M6S 8×16
Connecting strips	XLCJ 5×76
Drip tray bracket	XLDB 21×100

Mounting:



- 1** Use T-bolts, nuts and washers to attach the drip tray brackets to the conveyor beam T-slot.



- 2** Insert the required number of square nuts in the drip tray T-slot. Attach the drip tray to the drip tray brackets. Do not tighten the screws fully.

Attach pans and end cap to the drip tray by inserting square nuts into the slots on the drip tray. Tighten the screws using a wrench.



- 3** Adjust the position of the drip tray. Tighten all screws.



- 4** If Type A or B beam support brackets with screw slots are being used, drip tray brackets may not be needed. The drip trays can then be attached directly on to the beam support brackets if they are wide enough.

Drip trays and drip catchers (continued)

Drip pans, end pans, end caps

Drip pan for horizontal bend X..DH

End pan X..DE

End cap X..DC

End pan for idler end unit X..DD

Drip tray connector X..DJ

In addition to regular drip trays, you will need drip pans, end pans and/or end caps. Drip pans are used in bends, and end pans and caps are used at the ends of the drip tray. The pans are equipped with threaded outlets so that waste fluid can be drained into waste reservoirs.

Box wrench	13 mm
Square nuts	
Screws	M6S 8x16
Washers	BRB 8,4x16

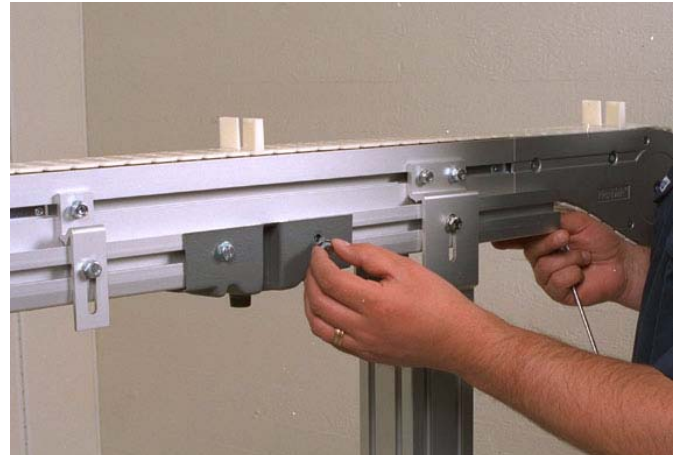
Mounting:



- 1** Attach square nuts to one end of the drip pan and tighten them loosely. (Use one pair with X_DC, X_DD and X_DE; two pairs with X_DJ and X_DH.) Slide the drip pan on to a drip tray section.



- 2** Slide the next drip tray section (if required), with the square nuts attached, on to the drip pan.



- 3** Insert screws and brackets and tighten them loosely.



- 4** Adjust the position of the drip tray and tighten the screws.

Drip trays and drip catchers (continued)

Drip pan for vertical bend X..DV

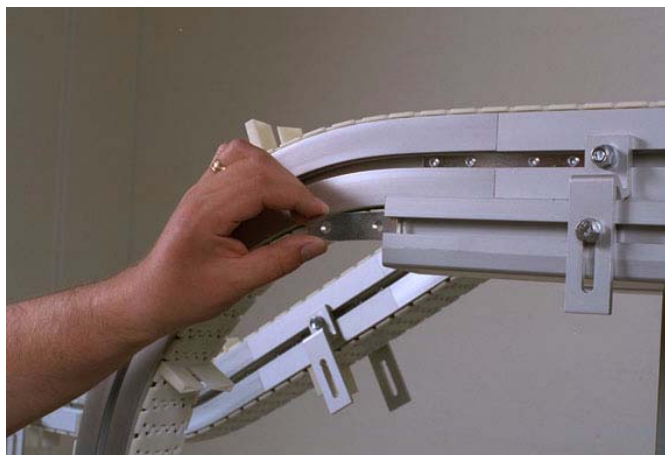
Box wrench	13 mm
Square nuts	
Screws	M6S 8×16
Washers	BRB 8,4×16
Supporting brackets	
Screws	M6S 5×6
Washers	BRB 5,3×10

Mounting:



- 1** a) Mount two square nuts on to the drip pan.

If supporting brackets are required (for XH and XK 90° vertical bends), mount them on to the vertical bends. Do not tighten the screws fully.



- b) If 90° bend, insert the square nuts directly into the conveyor beam T-slot.



- 2** Mount the drip pan on to the beam. Do not tighten the screws fully. Check that the drip pan follows the curve of the conveyor beam. If not, adjust the position of the pan until it does.

If used, attach the supporting brackets to the conveyor beam T-slots.



- 3** Tighten the screws.

Drip trays and drip catchers (continued)

Side-mounted drip catcher

XHDS

The purpose of side-mounted drip catchers is to guide waste fluid into the drip tray when there is a risk that drips will fall outside the tray, i.e. the products being conveyed are wider than the track width itself.

Drip catchers are not available for the XS conveyor system.

One XHDR 23 drip catcher assembly is required for each drip catcher end, and one additional bracket assembly for each meter if the length of the drip catcher exceeds one meter.

For cutting lengths, see page 47.

Box wrench	13 mm
Drip catcher bracket assembly	XHDR 23
T-bolts (included)	XLAT 17
Nuts (included)	XLAN 8
Washers (included)	BRB 8,4×16

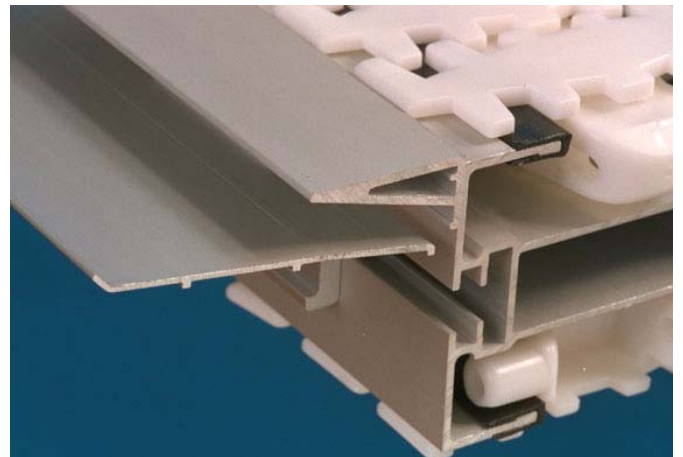
Mounting:



- 1 Fasten the bracket assembly to the beam by tightening the nut to the right.



- 2 Fasten the drip catcher to the bracket assembly by tightening the left nut. Use silicone caulk to seal joints if necessary.



- 3 The slot on the bracket assembly also allows angle plate attachment.

Front piece

Introduction

The front piece is attached to a vertical or an inclined part of a conveyor, to prevent products from falling off. It consists of one straight section and one upper and one lower bend.

The front piece is connected to the conveyor beam by means of a linkage kit (X..VK) and bend supports (X..VS).

Box wrench	13 mm
Front piece	X..VF 3/6
Upper bend	X..VA 60R460
Lower bend	X..VB 60R335
Sliding strip	X..VG 2
Linkage kit	X..VK 43/93
Locking levers	X..VS 43/93

Front piece assembly

Mounting:



1 Connect straight piece and bends using the connecting strips that are included.



2 Tighten the screws using a box wrench.

Sliding strip attachment

To prevent direct contact between the products and the front piece surface, an X..VG 2 plastic sliding strip must be inserted into the front piece.

Mounting:



1 Slide the strip into the slot on the inner side of the front piece, before mounting the front piece on to the conveyor beam.

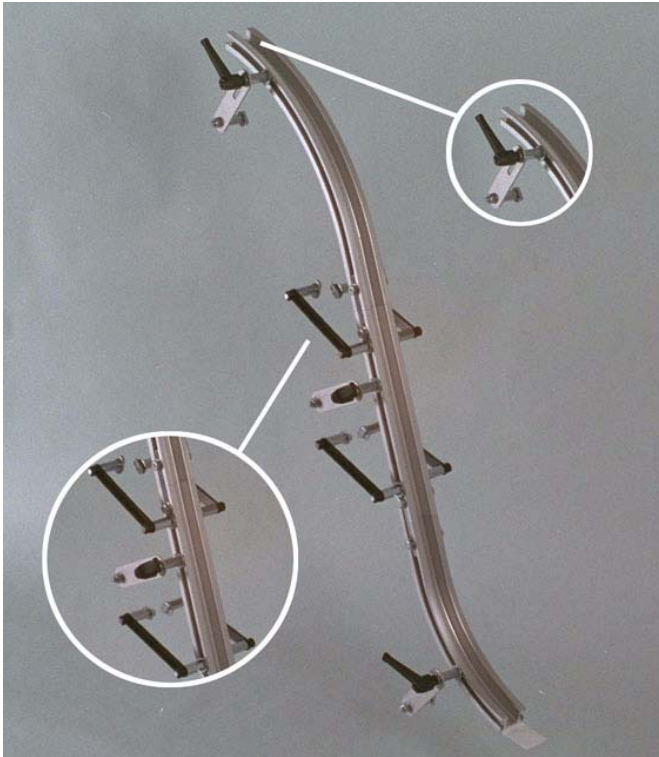


2 For safe entry of the products being conveyed, the protruding end of the sliding strip must be slightly bent away from the conveyor chain surface to give a “funneling” effect. (Use heater) Fasten the sliding strip to the front piece using rivets.

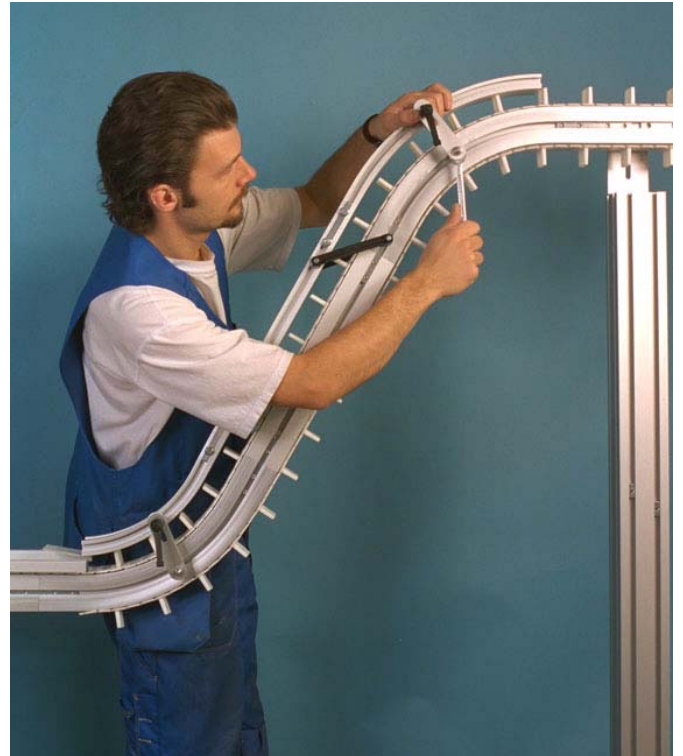
Front piece (continued)

Mounting front piece

Mounting:



1 The front piece is fastened to the conveyor by means of a linkage kit (1) and locking levers (2).



3 Attach bend supports and locking device to the front piece and conveyor beam. Bend supports are mounted on one side only.



2 Attach the support pairs, two on each side, first to the front piece and then to the conveyor beam T-slot, using a 13 mm wrench.



4 Adjust the height of the front piece using the locking levers on the bend supports and locking device.

Final preparations

Plug beam ends

Ensure that end caps (XCBE) have been fitted to all aluminium profile ends. The beam profiles should be deburred before fixing end caps. It may be necessary to tap the cap into position using a soft-faced hammer.

Anchor feet to the floor

After the assembly of all components it may be necessary to anchor the conveyor support feet to the floor. Use a type of fastener that is right for the kind of floor where the conveyor is installed.

Instability of the conveyor during operation may result in a dangerous operating environment or damage the conveyor components.

Other preparations

- Adjust the height of the structural beam if necessary.

- Make sure that the installation is stable and that all screws have been properly tightened.
- Use a plummet and/or water-level to make sure that the construction is not askew.
- Make sure that all electrical equipment is properly connected.
- Make sure that the conveyor is running in the correct direction before starting the conveyor! Never run the conveyor with tightened slip clutch until you have ensured that the running direction is correct.
- Tighten the slip clutch to a suitable friction. (Slip clutch adjustment, see page 66)
- Make sure that the transmission cover is attached to the drive unit.
- In pallet installations, make sure that all pneumatic equipment is properly connected.

Remember that conveyor chains should always be pulled, not pushed, by the drive unit.

Conveyor system XK

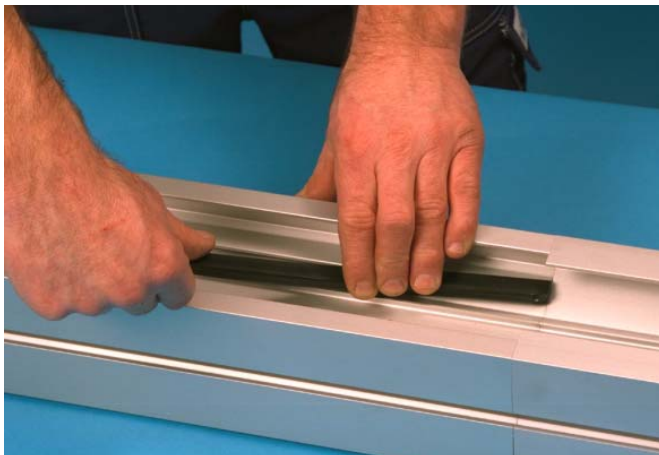
Installation of slide rail on conveyor beam XKCB N

Cutting pliers	
Hammer	
Screwdriver	
Clamp	
Knife	
Drill	
Drill bit	Ø4,2 mm
Drill fixture	3920500
Plastic screws	XWAG 5

Mounting:



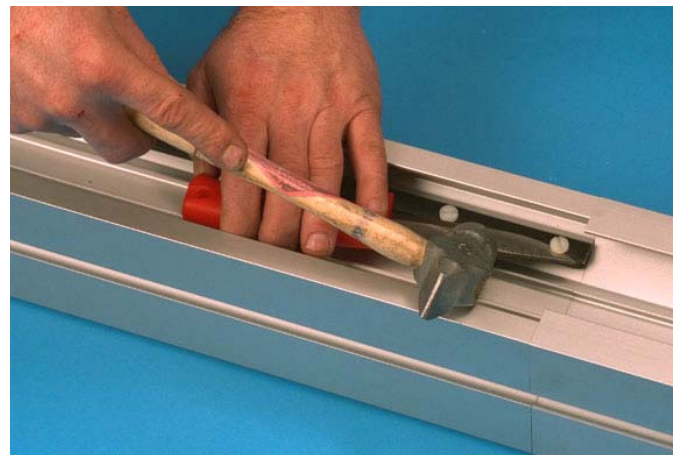
1 Cut the slide rail in a 45° angle.



2 Mount slide rail on the lower flange of the conveyor beam.



3 Drill holes for plastic XWAG 5 screws.



4 Use a screwdriver to insert the screws. Cut off the screw heads using a knife and a hammer. File off protruding edges.



5 On the upper flange of the slide rail, use the drill fixture to drill two holes in the slide rail before it enters the XKCB N beam.

Conveyor system XK (continued)



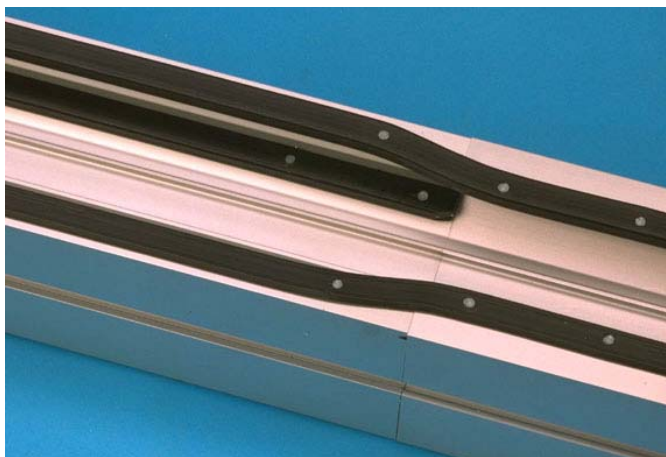
- 6** Use a screwdriver to insert the screws. Cut off the screw heads using a knife and a hammer. File off protruding edges. The cut should be made away from the joint, in the direction of travel.



- 9** Install the chain as shown in the picture.



- 7** Use a clamp to press the slide rail on to the beam flange where the type N beam begins.



- 8** Drill one additional hole and insert a screw in the slide rail at the beginning of the type N beam section.

Conveyor system XK (continued)

Installation of slide rail in XK plain bends

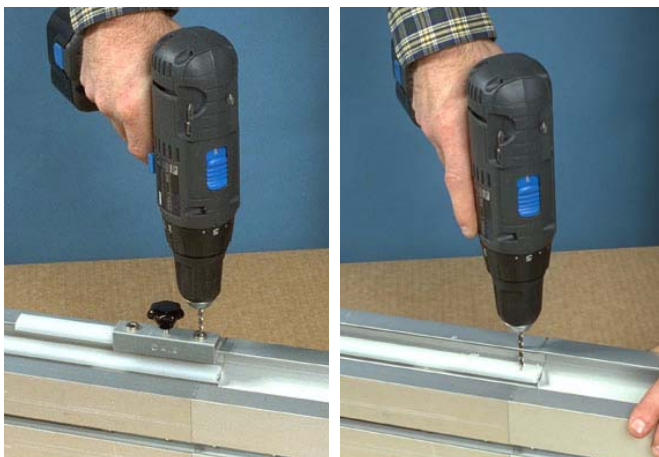
Plain bends increase the tension in the chain and cause higher stress on the slide rail. It is therefore recommended that slide rail is used on both the upper and lower flanges in XK horizontal plain bends.

Cutting pliers	
Knife	
Hammer	
Screwdriver	
Drill	
Drill bit	Ø 4,2 mm
Drill fixture	3920500

Mounting:



- 1 Cut the slide rail slightly, to ensure a smooth entry of the chain. Mount slide rail on the lower flange of the conveyor beam.



- 2 Mount a short piece of slide rail on the upper flange. Use the drill fixture to drill holes through the slide rail on the upper and lower flange. Use a drill bit that is long enough to drill through both flanges.



- 3 Remove the upper slide rail section. Anchor the lower slide rail to the beam using XWAG 5 plastic screws. Cut off all screw heads. File off protruding edges. The cut should be made away from the joint, in the direction of travel.

Repeat the procedure for the opposite side.



- 4 Install slide rail on the upper flanges.

XK pallet system

Installation of pallet locating station

It is very important that the foot is positioned correctly and anchored to the floor before the locating station is mounted.

Tape measure	
Plumb bob	
Drill	
Drill bit	
Allen key	5 mm, 6 mm
Spanner	13 mm
Screws	M6S 8x20, M6S 8x16
Nuts	XCAN 8
Washers	BRB 8,4x16

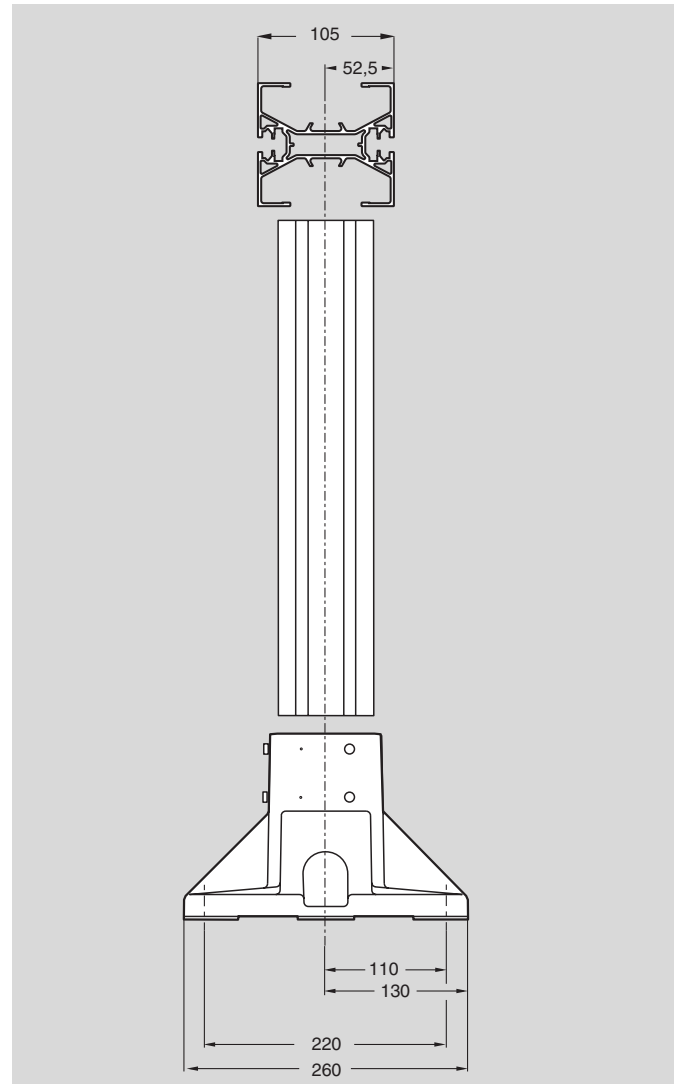
Mounting



- 1 Plumb from both sides of the conveyor beam, and mark the width of the beam on the floor.



- 2 Mark the centre point between the two marks.



- 3 From the mark, add 130 mm in each direction to get the width of the foot. Place the foot in the correct position.

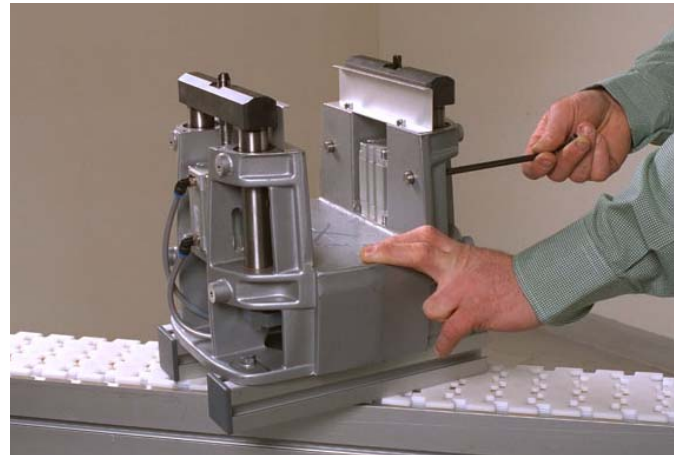


- 4 Drill holes in the floor, for the attachment of the foot.

XK pallet system (continued)



5 Fasten the foot to the floor.



8 Tighten the guide pins on one side. Loosen the other pair.



6 Remove the cover from the locating station. Mount a pair of XCBM 44 beams (≈ 270 mm long) underneath the locating station, using M6S 8x20 screws, washers and XCAN 8 slot nuts.



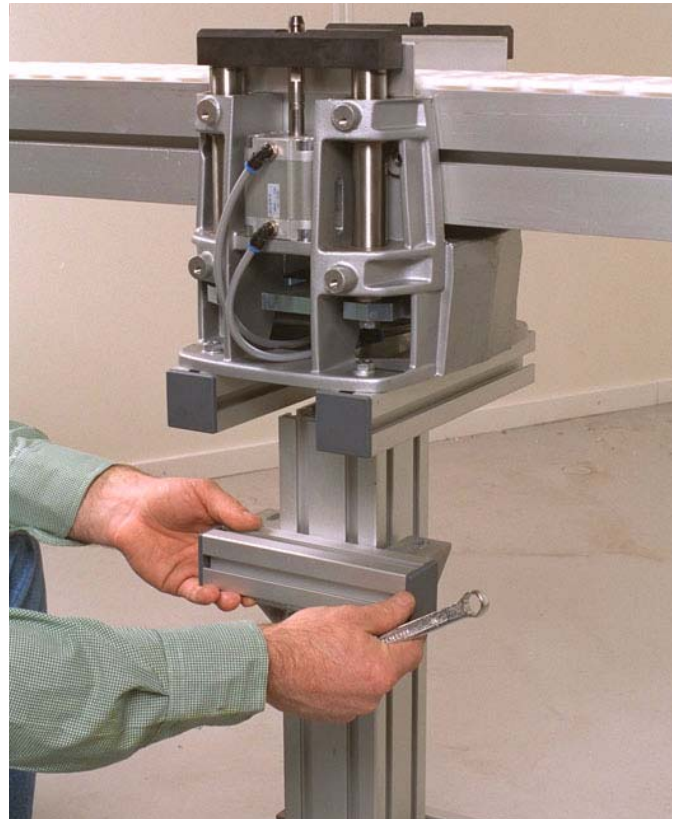
9 Insert square nuts in the vertical beam T-slots. Use angle brackets to mount short pieces of XCBM 44 beam on the vertical beam.



7 Tighten all screws.



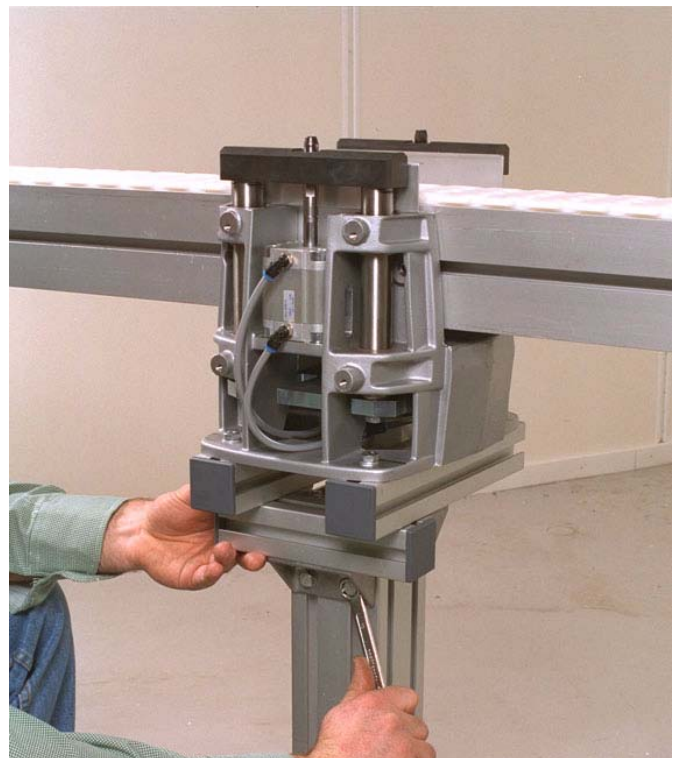
10 Lift up the locating station and fit the guide pins into the T-slot on one side of the conveyor beam.



12 Position the locating station in the correct position on the conveyor beam. Raise the lower pair of beams so that they meet the upper beam pair.



11 Tighten the two remaining guide pins.



13 Tighten the angle bracket screws.

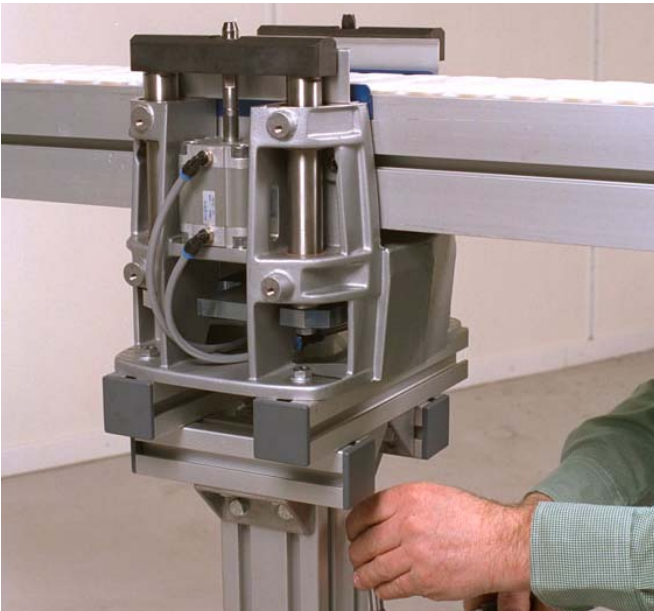
XK pallet system (continued)



14 Place two distance pieces (2,5 mm thick) between the locating station and the conveyor beam, one on each side of the beam, to keep the locating station centered.



17 Mount the pallet stop.



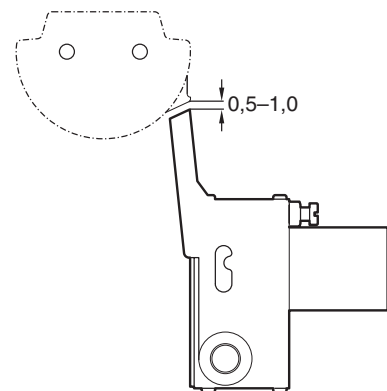
15 Connect the four beam pairs together using angle brackets.



18 Position the pallet stop by placing a pallet onto the locating station. Then tighten the pallet stop 0,5–1,0 mm in front of the pallet (see drawing).



16 Mount the cover on to the locating station.



XK pallet system (continued)

Installation of guide rail for XK pallet system

Spanner	13 mm
Slide rail mounting tool	3926757
Set-square	
Drill	
Drill bit	Ø 4,2 mm
Cutting pliers	
Set screw	SK6SS 4x20
Screws	XLAT 17
Nuts	XLAN 8
Washers	BRB 8,4x16

Mounting:



- 1** Cut guide rail to the correct length (length of the corresponding conveyor beam $\pm 1,0$ mm). Mount a piece of straight guide rail. Use set-square and mounting tool for correct positioning. Adjust the end of the rail to be in line with the conveyor beam joint. Tighten the screws.



- 2** Mount guide rail on the opposite side of the track (in line with the first).



- 3** If a drip catcher kit is to be used, the inner drip catcher must be pre-mounted by using a short piece of guide rail for adjustment.



- 4** Mount the guide rails for the inner and outer sections of the bend. Do not tighten the guide rail brackets until the next straight rail section is positioned and tightened.



- 5** Mount the next straight guide rail section: check that the guide rail is aligned with the conveyor beam joint. Tighten the guide rail bracket fasteners.

XK pallet system (continued)



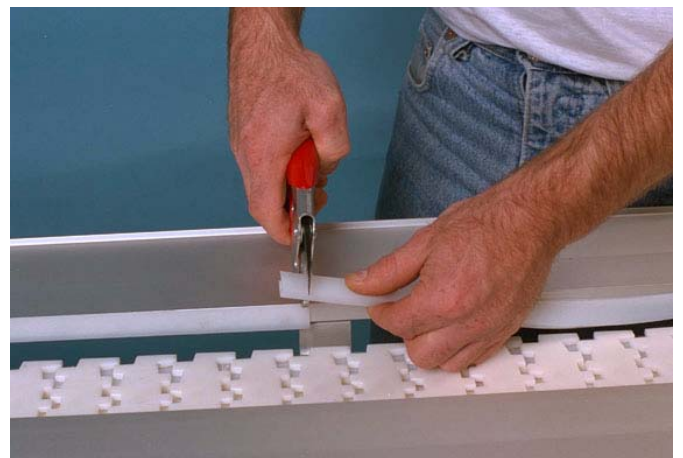
6 Mount the opposite guide rail section. Check that the guide rail joints are aligned. Tighten the guide rail bracket fasteners.



9 Drill two holes in the slide rail and fix it with plastic screws.



7 Adjust the position of the bend and fasten the connecting strips and guide rail brackets.



10 Install the rest of the slide rail using the mounting tool. Cut the slide rail so that all joints are smooth (do not cut in an angle).



8 Start mounting the slide rail approximately 200 mm before the bend.



11 Mount the outer drip catcher in the bend. Mount set screws as guide pins.



12 Check that the slot in the special guide rail section for locating station is properly positioned compared to the rulers on the locating station.

Use set screws as guide pins to connect two guide rail sections.

Start-up and testing

Safety considerations

To eliminate the risk of accidents, it is important to be aware of certain areas of the conveyor where special caution is required, during installation, operation and maintenance. Some areas present a higher danger to personal safety, and because of this various kinds of safety devices need to be installed.

- All pinch and shear points as well as other exposed moving parts that present a hazard to employees at their workstations or their passageways must be safeguarded.
- Cleated conveyor chains are more susceptible of creating pinch and shear points than plain chain.
- When two or more pieces of equipment are interfaced, special attention must be given to the interfaced area to ensure proper safeguarding.
- For overhead equipment, guards must be provided if products may fall off the equipment for some reason. The same applies to all incline, decline and vertical conveyors.

Safeguarding can be achieved by:

- Location – locate the hazardous area out of reach of the personnel involved.
- Guards – mechanical barriers preventing entry into the hazardous area or protecting against falling goods.
- Control devices – machine controls preventing or interrupting hazardous conditions.
- Warnings – instructions, warning labels, or sound or light signals, alerting on hazardous conditions. Warnings shall be used when other means of safeguarding will impair the function of the installation.

Caution:



It must be difficult to bypass or inactivate safeguards during operation!

Safety devices should be designed to minimize discomfort or difficulties for operators.

Slip clutch adjustment

Introduction

The slip clutch on the drive unit is a safety device which allows the chain to stop if the load becomes excessive. It has two purposes:

- Prevent damage to conveyor
- Prevent damage to the products on the conveyor

Where a slip clutch is fitted, it must be adjusted so that it does not slip whenever the drive unit is started under full load. The installation is carried out as follows:

Preparations for adjustment

- 1 Stop the conveyor.
- 2 Ensure that the conveyor can not be started accidentally. For example: unplug the electric power plug.
- 3 Remove any load on the conveyor.

Caution:

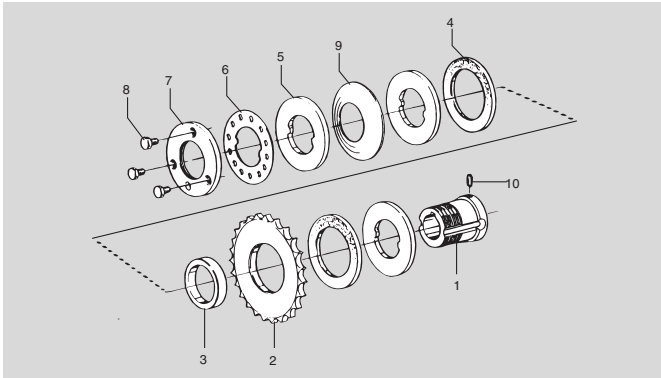


If you try to adjust the slip clutch when there is still load on the conveyor, the accumulated tension in the chain can cause severe injuries when you release the clutch.

Slip clutch should not be adjusted until

- 1 Motor direction is confirmed
- 2 Conveyor is fully assembled

Adjustment



- 1 Remove the transmission cover.
- 2 Unscrew the three screws (8) so that the outer ring (7) can be rotated freely.
- 3 Hand-tighten the outer ring (7) to stop (no tools!).
- 4 Look for the desired maximum traction force in the table to the right and determine the X value for that force.
- 5 **Positive X-value:** (If the X value is negative ($X \leq 0$) ignore step 5 and go to step 6.) Turn the outer ring (7) counter-clockwise the number of divisions given by the table, i.e. the X value. One division is defined as

the angle (30°) between adjacent holes in the stop ring (6). Check that screws (8) align with the holes in the stop ring (6).

- 6 **Negative X-value:** (If the X value is positive ($X \geq 0$) ignore step 6 and go to step 7.) Turn the outer ring (7) clockwise with a hook wrench, the number of divisions given by the table, i.e. the X value. One division is defined as the angle (30°) between adjacent holes in the stop ring (6). Check that screws (8) align with the holes in the stop ring (6).
- 7 Tighten the three screws (8) to stop. Use 10 mm wrench

Important:



The slip clutch is not a personal safety device. It is primarily intended to protect the equipment.

Clutch adjustment table

F_{max} is the desired maximum traction force applied to the chain by the drive unit. The clutch will start slipping at forces above F_{max} .

Note

The values in the table are approximate and apply to new slip clutches.

F max (N)			X (div.)	F max (N)			X (div.)
XS XL	XM XH XW	XK		XM XH	XW XK	XK	
450	450	100	19	1200	1200	1400	6
475	475	200	18	1300	1500		5
	525	300	17	1400	1600		4
	575	400	16	1525	1700		3
	625	500	15		1800		2
	675	600	14		1900		1
	725	700	13		2000		0
	775	800	12		2100		-1
	825	900	11		2200		-2
	875	1000	10		2300		-3
	925	1100	9		2400		-4
	1000	1200	8		2500		-5
	1100	1300	7				

Example (XM, XH or XW conveyors)

You wish to set the clutch so that it permits a maximum traction force of 900 N. Above that load, the clutch should release.

From the table you find that the ring must be released at least 9 divisions from hand-tightened position. Since the ring should be turned by complete steps, you should select 9 steps. This corresponds to three quarters ($\frac{3}{4}$) of a full turn. The clutch will release at approximately 925 N. If you release the ring by 10 divisions the clutch will release at 875 N.

Also see formulas for chain tension calculations in the main conveyor catalogue, chapter "Multiflexing conveyors", section "Engineering guidelines".

Start-up

Lubrication

The conveyor chain is lubrication-free. However, for some specific applications where the operating environment is particularly hostile, regular lubrication of the slide rail/conveyor chain will result in a lower coefficient of friction, longer life and reduced running costs. Use a silicone-based lubricant (LDSS 450 or an equivalent lubricant).

Wear

The degree of wear on a conveyor depends on a number of factors, such as:

- running time
- load, contact pressure
- speed
- product accumulation
- sharp or rough products
- chemicals
- foreign particles, e.g. chips, grinding particles, broken glass, sand, sugar
- temperature
- plain bends

Try to minimize the running time for the conveyor by stopping it when there is no transport.

Multiple horizontal and vertical plain bends in a conveyor will often result in increased wear. One reason is that the friction losses are large in plain bends. Also, the contact surface between chain and slide rail is small and the chain pull is acting towards the slide rail in the bends.

Run-in period

Two or three days are usually enough as a run-in period. During this time, the conveyor should be cleaned a couple of times to remove dust:

- 1** Remove the chain and clean it with warm water (50°), use soap if necessary.
- 2** Clean the conveyor beam itself
- 3** Re-install the chain.

After run-in, wear will be minimal, unless particles from the product or process reach the conveyor continuously.

Chain elongation

During the run-in period, regular checks should be made to the elongation of the conveyor chain. This is especially important if the conveyor is transporting high loads or is of long overall length.

Regular inspections of the chain elongation are important. The chain should be shortened after a run-in time of 40 hours. Further inspections should be made at 200, 500 and then at 1000 hour intervals.

Troubleshooting

Jerky running

Cause	Corrective action
Damaged or badly fitted slide rail	Inspect and replace as necessary.
Wrongly adjusted slip clutch	Check and adjust slip clutch.
Worn transmission parts	Check/replace transmission chain, chain drive sprocket.
Conveyor chain is too tight/loose	Tension conveyor chain correctly.
Dirty conveyor	Clean conveyor chain/slide rail. Lubricate with silicone based lubricant.

Drive unit is running, conveyor chain is not

Cause	Corrective action
Wrongly adjusted slip clutch	Check adjustment of slip clutch.
Friction discs in slip clutch are worn or contaminated	Check and replace if necessary.
Damaged/badly fitted slide rail	Check the free running of the conveyor chain.
Transmission products are not fitted	Check and fit.

Motor overheating on drive unit

Cause	Corrective action
Overloaded conveyor	Remove products from conveyor and test run. Check actual conveyor load against recommended loading.
Gearbox leaking oil	Check output shaft seal and area around motor/gearbox interface.
Dirty conveyor	Clean the conveyor chain with warm water (50°).

Noise

Cause	Corrective action
Worn or damaged bearings in drive unit	Check/replace drive unit.
Damaged/badly fitted slide rail	Check the free running of the conveyor chain, especially in slide rail joints.
Excessive conveyor speed	Lower speed. Check actual load against recommended loading.
Incorrect conveyor chain tension	Lengthen/shorten conveyor chain.

Abnormal wear on plastic parts

Cause	Corrective action
Overloaded conveyor	Remove products from conveyor and test run. Check the free running of the conveyor chain.
	Check actual conveyor load against recommended loading.
Ambient temperature too high	Check against recommended temperature for conveyor.
Chemicals in the environment are affecting plastic parts	Check in FlexLink main catalogue (section TR) for listing of incompatible chemicals.
Damage due to ingress of contaminant	Clean the system.
Particles, swarf etc.	Remove source of contamination.