

Product overview

Standard aluminium conveyor systems



FlexLink standard conveyors X45 XS XL X85 XH XK XB

Together, the FlexLink standard conveyor product lines cover a wide range of applications. These multiflexing conveyor systems use plastic chains in many configurations. The chain design permits horizontal as well as vertical change of direction. Chain widths range from 43 mm up to 295 mm, for product widths up to 400 mm. Each system consists of a wide range of modular components which can be fitted using simple hand tools.

Pallet handling products (XLP X85P XKP)

Catalogue sections XLP/X85P/XKP contain special products for pallet handling, including pallets, pallet locating stations, pallet stop cylinders and pallet transfer stations. The systems are based on conveyor components from the standard conveyor lines.

The X85 and XK pallet handling system also includes divert/merge devices for easy transfer of pallets between conveyors.

PO

X45

XS

XL

XLP

X85

X85P

XH

XK

XKP

XB

GR

CS

XT

XC

XF

XD

FST

XMY

XLX

XXM

GRX

CSX

ELV

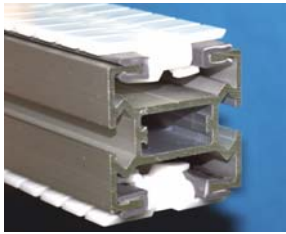
CTL

TR

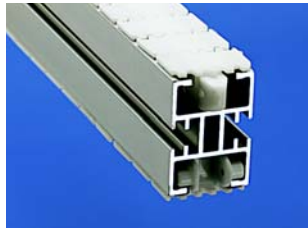
APX

IDX

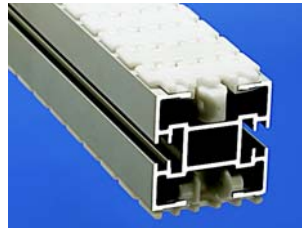
**Conveyor system
X45/X45e
(43 mm chain)**



**Conveyor system XS
(44 mm chain)**



**Conveyor system XL/XLP
(63 mm chain)**



**Conveyor system X85/X85P
(83 mm chain)**



Features

Very compact conveyor system for small and light items. Modular design concept for simplified engineering, fast configuration and ordering.

The X45e drive unit and puck handling units offers unique possibilities for easy and efficient control of single piece flow system.

Examples of application areas

All types of small products down to 10 mm diameter. Pharmaceutical bottles and perfume bottles. Puck handling of products like test tubes for blood and urine, small bottles, cosmetics.

Features

Chain permits transport of very small items which are otherwise difficult to handle. Compact and neat design.

Examples of application areas

Small ball bearings, perfume bottles, pharmaceutical bottles, sintered metal components.

Features

Suitable for a wide range of applications. Preferable in high speed applications. Includes components for pallet handling (XLP) and vertical wedge conveyors.

Examples of application areas

Tissue paper, gear wheels, aerosol cans, medium size ball bearings, piston parts, yoghurt, fuel injectors, dry batteries, plastic bottles, tape cassettes, matches, cheese boxes, coffee and tea packages.

Features

Suitable for a wide range of applications. Higher capacity than XS and XL. Includes components for pallet handling (X85P) and vertical wedge conveyors.

Examples of application areas

Ball valves, water meters, disk drives, pie packages, plastic bottles, beverage cans, products on pallets, paint cans, socks.

**Conveyor system XH
(103 mm chain)**



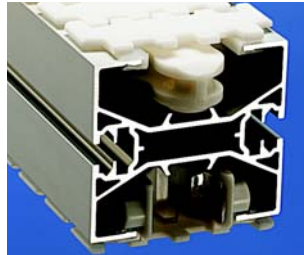
Features

Suitable for larger items, especially if point of balance is somewhat off-center. Higher capacity than XS and XL.

Examples of application areas

Large ball bearings, turbo rotors, safety belt brackets, electric motors, shock absorbers, video cassettes, steering arm components, boxes.

**Conveyor system XK/XKP
(102 mm chain)**



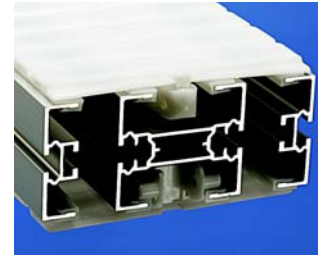
Features

Suitable for larger items, especially if point of balance is somewhat off-center. Higher capacity than other types. Includes components for pallet handling (XKP).

Examples of application areas

Ball and roller bearings, heavy boxes, gear wheels, motor parts on pallets, disk brakes, hydraulic pumps

**Conveyor system XB
(175 mm/295 mm chain)**



Features

Chain travels on four slide rails. Wide track sideflexing safety chain. Compact horizontal and vertical bends. Suitable for soft packages

Examples of application areas

Large cardboard boxes, products in soft plastic bags. Examples: detergent powder, wrapped tissue paper rolls, food products, personal care products

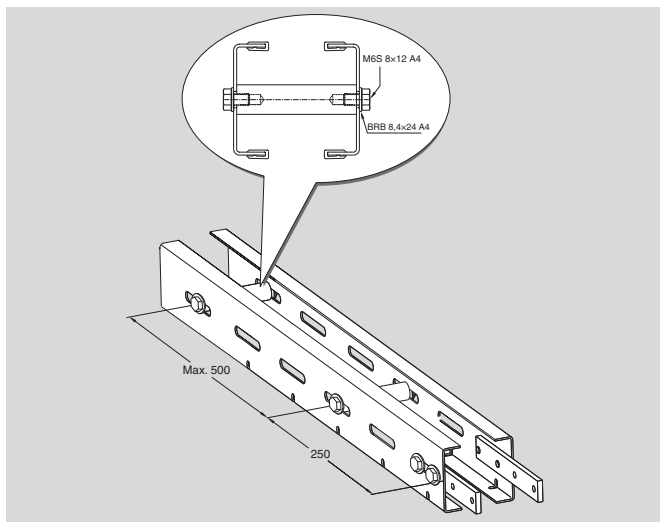
Stainless steel conveyor systems

Half beams and spacers

The conveyor beam consists of two stainless steel profiles joined by spacers, which are installed minimum every 500 mm (see figure). Additional spacers and mounting hardware can be ordered.

A variety of types of slide rail from the standard Flex-Link range may be used. In this way, every system can achieve an ideal combination of low friction and optimum hygiene.

The return side of the beam has draining holes for easy disposal of waste fluids and to facilitate cleaning.



Material specifications

Alloy 1.4301/SS 2333/AIS 304
Gauge 2 mm

P0
X45
XS
XL
XLP
X85
X85P
XH
XK
XKP
XB
GR
CS
XT
XC
XF
XD
FST
XMY
XLX
XMX
GRX
CSX
ELV
CTL
TR
APX
IDX

Hygienic conveyor system XMY (83 mm chain)



Features

Split beam in stainless steel. Return chain runs in enclosed bottom profile. Open design, optimized for easy cleaning. High speed operation. Standard XM chain.

The hygienic conveyor system uses the standard 83 mm plastic chain, travelling in easy-to-clean stainless steel beams. It is designed for speeds ranging from 5 m/min to 100 m/min. Design focus was to meet the requirements of the dairy, food and personal products industries with regard to hygiene, safety, speed, and environment.

Examples of application areas

Plastic bottles, packaged dairy products, beverage cans, food products.

Stainless steel conveyor system Series X (63/83 mm chain)



Features

Split beams in stainless steel for easy cleaning. High resistance to aggressive chemicals. Matching drive units, idlers and guide rail and support components. Standard XL/XM chain.

XL and XM conveyors Series X are stainless steel designs adapted to the requirements of the food processing, pharmaceutical and hygiene industries. The Series X system is designed for easy integration with aluminium systems.

Examples of application areas

Aerosol cans, liquid soap in plastic bags, soft cheese, detergent powder, tissue paper rolls, food products, personal care products.

Module based conveyor systems

Twin-track pallet conveyor system XT



Features

Twin-track flexible plastic chain pallet conveyor system. Modular design concept for simplified engineering and ordering. Fast configuration and plug-and-play capability for improved productivity.

Pallet conveyor system XT is well suited for manual and automatic assembly and test systems in the automotive and electrical/electronics industries. It can handle square and rectangular pallets from 240 mm × 240 mm up to 640 mm × 640 mm.

Examples of application areas

Manual and automatic assembly and test systems in the automotive and electrical/electronics industries. Examples: assembly and transport of receivers, computers, gear boxes, medical equipment, sewing machines, cell phones, housings, pumps, and air filters.

Guide rail components (GR)

Catalogue section *Guide rail components* deals with various types of guide rails and guide rail support components. Those products are used with several of the FlexLink conveyor systems. A number of pre-designed guide rail structures are shown as examples. New components are available for building automatically adjustable guide rail systems, accommodating products with different widths.

Conveyor support components (CS)

The FlexLink conveyors are held in place by a well balanced range of support components, with beam support brackets, support beams, feet, etc.

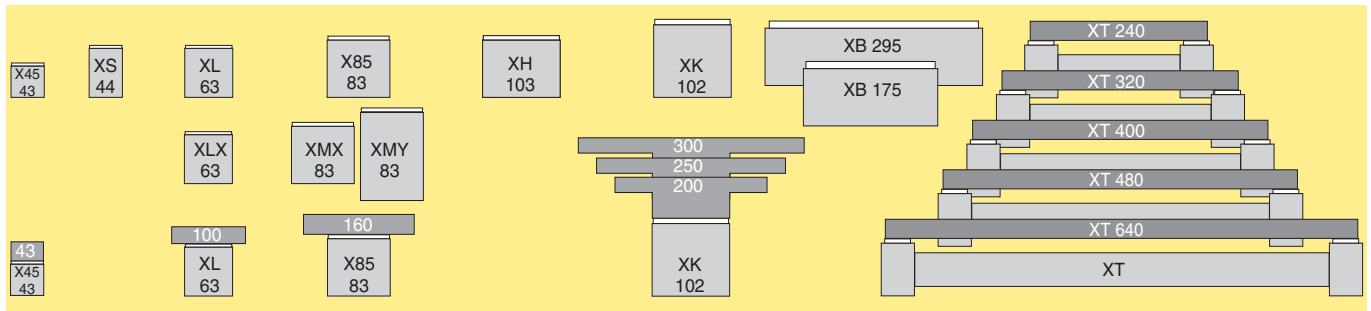
A number of pre-designed support structures are shown as examples.

Conveyor structures built from aluminium beams with standardized T-slots simplify attachment of components and accessories.

X45
XS
XL
XLP
X85

Conveyor comparison chart

X85P



XH
XK
XKP
XB

Simplified end views of FlexLink conveyor beams, drawn to the same relative scale. Numeric values are widths in mm.

Legend

- Light grey: Conveyor beams
- Dark grey: Pallets or puck
- White: Chain
- XL/XM X: Stainless steel conveyor

GR
CS
XT
XC
XF
XD
FST
XMY
XLX
XMX
GRX
CSX
ELV
CTL
TR
APX
IDX

Typical standard conveyor components

Feet and support beams



Beam support brackets



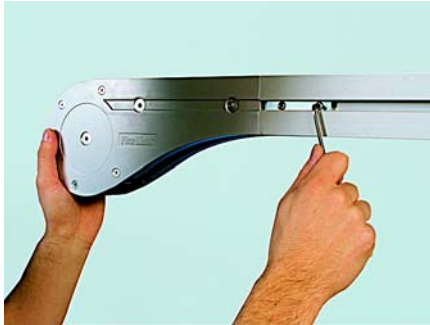
Conveyor beams and bends



Drive units



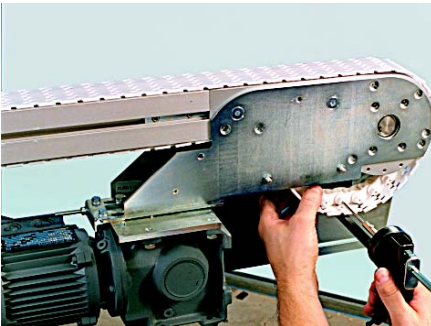
Idlers



Slide rail



Conveyor chain



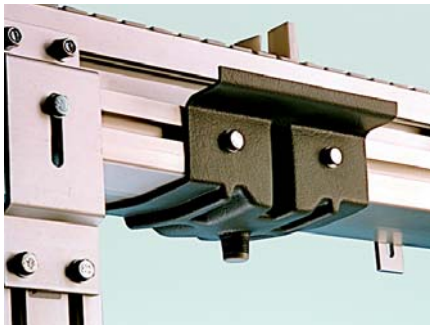
Guide rail brackets



Guide rails



Drip trays and drip pans



Conveyor component overview

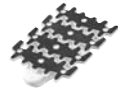
P0

Chain products X45, XS, XL, X85, XH, XK

Plain chain



Steel top chain



Friction top chain



Universal chain



Cleated chain Type A



Cleated chain Type B



Cleated chain Type C



Cleated chain Type D



Cleated chain Type G



Flexible cleat chain Type B



Flexible cleat chain Type C



Flexible cleat chain Type D



Roller top chain



Roller cleat chain



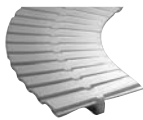
Steel chain



X45
XS
XL
XLP
X85
X85P
XH
XK
XKP
XB

Chain products XB

Plain chain



Friction top chain

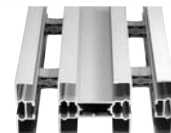


Roller cleat link



Conveyor beam XB

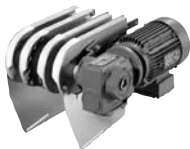
Conveyor beam section



GR
CS
XT
XC

Drive units and idlers XB

End drive units



Idler end unit



Bends XB

Horizontal plain bends



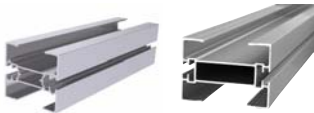
Vertical bends



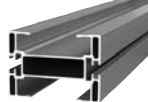
XF
XD
FST
XMY

Conveyor beams X45, XS, XL, X85, XH, XK

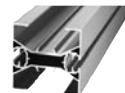
Standard



Reinforced (XH only)



XK, standard



XK, Type N



XLX
XMX
GRX

Conveyor beam support brackets X45, XS, XL, X85, XH, XK, XB

Type CT, aluminium



Type CS, aluminium



Type CS, polyamide



Type CU, aluminium



CSX
ELV
CTL

Conveyor support products (support beams, feet, etc.) are presented in catalogue section *Conveyor support components* (CS). For additional beam types, connectors, etc., see *Structural system XC/XD/XF* (page 23).

A range of pre-engineered support solutions are available. Please contact FlexLink Systems for more information.

TR
APX
IDX

Drive units and idler units X45, XS, XL, X85, XH, XK

X45 End drive unit 24V



End drive units



End drive units, direct drive



End drive units, double



X45 End drive unit 400V



Intermediate drive units



Catenary drive units



Horizontal bend drive units



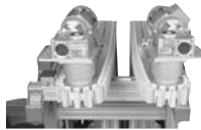
X45 Idler end



Synchronous drive units



End drive units



Idler units



Bends X45, XS, XL, X85, XH, XK

Wheel bends (not X45)



Horizontal plain bends



Vertical bends



Accessories XS, XL, X85, XH, XK

Angle plates



Angle plates for bends



Front piece



Drip trays



Drip pans for wheel bends



Drip pans for vertical bends



Guidance X45, XS, XL, X85, XH, XK, XB

Guide rail profiles



Flexible roller guide rail



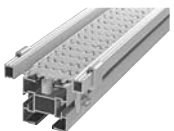
Guide discs (not XB)



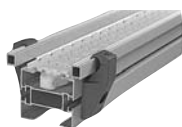
Built-up guide rail brackets



Fixed guide rail brackets, aluminium



Fixed guide rail brackets, polyamide



Adjustable guide rail brackets, aluminium

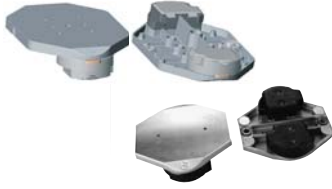


Adjustable guide rail brackets, polyamide

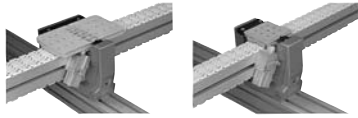


Pallet handling components XL, X85, XK

Product carriers (pallets)



Pallet locating station



Diverter kits



Guide rails for bend



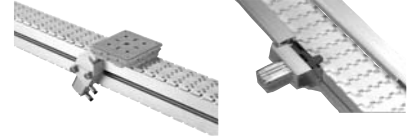
Diverting and merging modules X85



Merge kits



Pallet stop device



Locating modules X85



Combined divert-merge kits

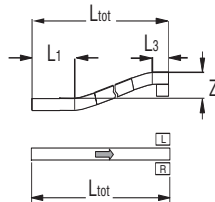


Modular conveyor system X45 – Conveyor modules

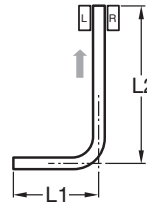
Straight conveyor



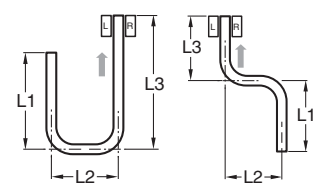
Vertical conveyor



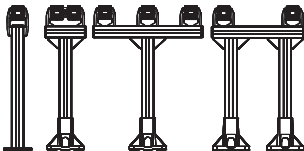
Single bend conveyor



Two bend conveyor



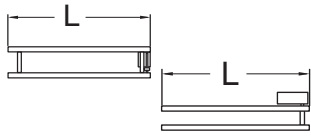
Support module



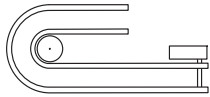
- X45
- XS
- XL
- XL P
- X85
- X85 P
- XH
- XK
- XKP
- XB
- GR
- CS
- XT
- XC
- XF
- XD
- FST
- XYM
- XLX
- XXM
- GRX
- CSX
- ELV
- CTL
- TR
- APX
- IDX

Modular pallet conveyor system XT – Conveyor modules

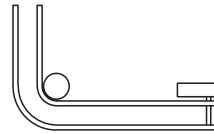
Straight conveyor



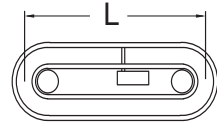
J shape conveyor



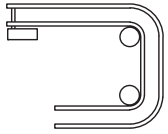
L shape conveyor



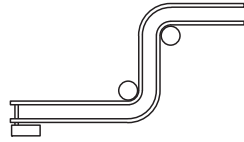
Closed loop conveyor



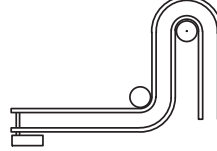
U shape conveyor



Z shape conveyor

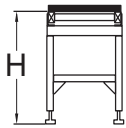


F shape conveyor

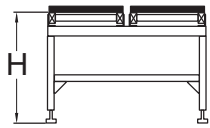


Modular pallet conveyor system XT – Support modules

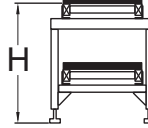
Single module support



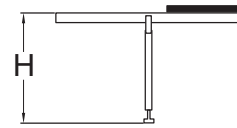
Parallel module support



Two-level module support

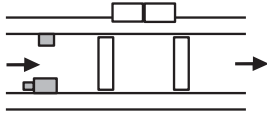


Wheel bend support

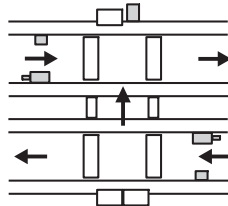


Modular pallet conveyor system XT – Transfer modules

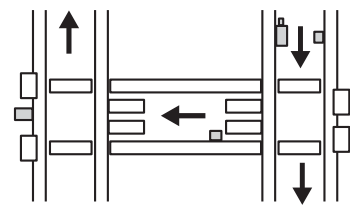
Transfer module S



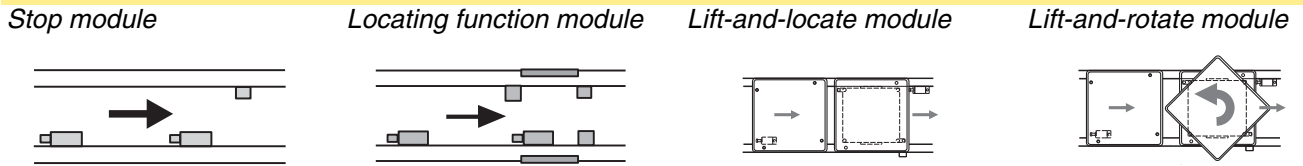
Transfer module R



Transfer module M



Modular pallet conveyor system XT – Stop/locate modules



Stainless steel conveyor system Series X – Chains

Plain chain *Friction top chain*



Series X – beams and beam support brackets

Conveyor beam *Beam support bracket*



Series X – drive units and idlers

End drive units *Idler end unit*



Series X – guide rail system

Guide rail profiles *Guide rail brackets*



Series X – bends

Wheel bends *Horizontal plain bends*



Vertical bends



Series X – support

Support components



Hygienic conveyor Series XMY – chain and beam

Plain chain *Conveyor beam*



Series XMY – drive unit and idler

End drive unit *Idler unit*



Series XMY – transfer unit Series XMY – bends

Transfer unit *Wheel bends* *Horizontal plain bends* *Vertical plain bends*



P0
X45
XS
XL
XLP
X85
X85P
XH
XK
XKP
XB
GR
CS
XT
XC
XF
XD
FST
XMY
XLX
XMX
GRX
CSX
ELV
CTL
TR
APX
IDX

Series XMY – guide rail system

Guide rail kits



Series XMY – support system

Support components



Technical data – conveyors

Drive unit capacity

The required motor output power P depends on

- Traction force F
- Chain speed v

The following equation applies:

$$P [W] = 1/60 \times F [N] \times v [m/min]$$

The maximum permissible traction force of the various drive units, and other useful parameters, are shown in the following tables. Also see diagrams on page 19.

More information

Detailed information about the drive units can be found in “Drive unit guide” and “Spare parts”. See “Technical library” on the FlexLink website. For information about drive units with variable speed motors, see Technical reference on page 403.

Drive unit specifications

End drive unit

	XS	XL	X85	XH	XK	XB
Number of teeth on sprocket wheel	16	C: 11 M: 11 H: 16	C: 9 M: 9 H: 12	12	11	12
Chain pitch (mm)	25,4	25,4	33,5	35,5	38,1	33,5
Maximum traction force (N)						
Type CN_P		300	300			
Type MN_P		500	800			
Type H, H_P, HN_P	500	500	1250	1250	2500	1250
Standard					1250	

Double drive unit

	XS	XL	X85	XH	XK
Number of teeth on drive wheel	16	16	12	12	11
Chain pitch (mm)	25,4	25,4	33,5	35,5	38,1
Maximum traction force (N)	500	500	1250	1250	1250
c/c distance between the two lanes (mm)	55 or 90–350	66 or 110–350	86 or 130–350	106 or 150–350	106 or 150–350

Intermediate drive unit

	XL	X85	XH
Number of teeth on drive wheel	11	9	9
Chain pitch (mm)	25,4	33,5	35,5
Maximum traction force (N)	200	200	200

Catenary drive unit

	XL	XH	XK
Number of teeth on drive wheel	16	12	11
Chain pitch (mm)	25,4	35,5	38,1
Maximum traction force (N)			
Type H	500	1250	2500
Standard			1250

Horizontal bend drive unit

	XS	XL	X85	XH	XK
Pitch diameter (mm)	300	300	320	340	400
Maximum traction force (N)	200	200	200	200	200

Direct drive unit for wedge conveyor

See “End drive units”, above.

Synchronous drive unit for wedge conveyor

	XL	X85
Number of teeth on drive wheel	16	12
Chain pitch (mm)	25,4	33,5

Temperatures

What temperatures can a FlexLink conveyor operate in?

A flex link conveyor can operate in temperatures between –20 °C and +60 °C.

Temperatures up to +100 °C can be taken for short periods. This is mainly for cleaning and rinsing.

What happens if these limits exceed?

In cases where the recommended specifications have not been followed, such as in very warm and cold conditions, this will change the properties of the materials used.

FlexLink cannot guarantee components and their functionality in case these recommendations are not followed.

Chain tension limits

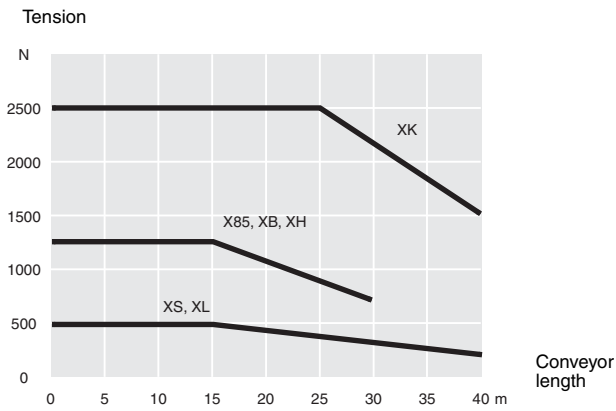
To determine the maximum chain tension allowed, it is necessary to take conveyor speed and conveyor length into consideration. Check diagram 1 and 2 and use the lowest tension value obtained.

Note

The FlexLink drive unit configurator on the web always proposes a motor strong enough to utilize the maximum permissible chain tension as specified in the diagrams below. Variable speed motors at very low frequencies can sometimes drop below the specified tension. Always check motor data if high pulling force is critical.

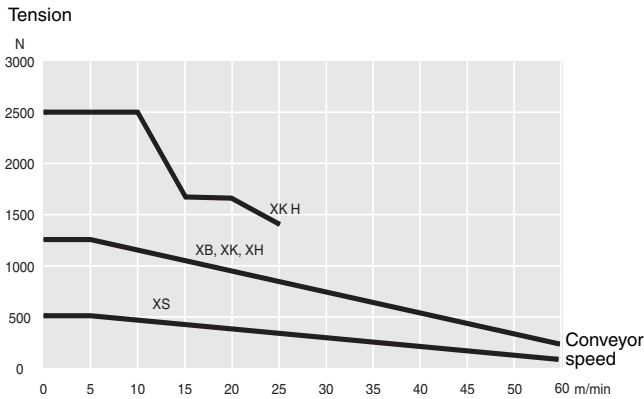
Maximum permissible chain tension

Diagram 1A



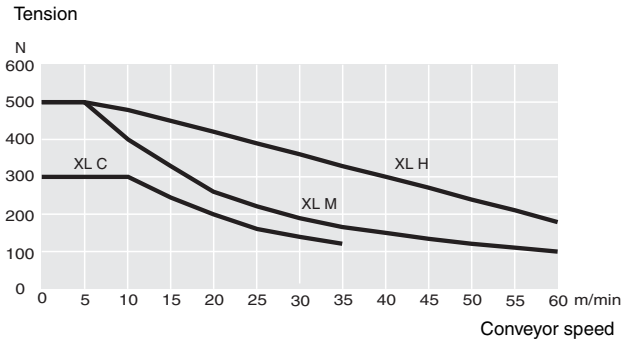
Tension/length diagram

Diagram 2A



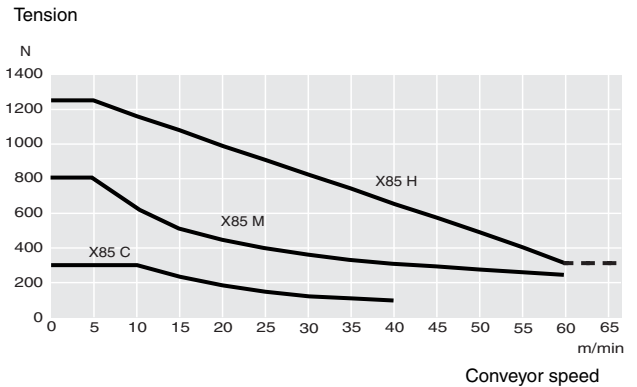
Tension/speed diagram, XS, XB, XK conveyors

Diagram 2B



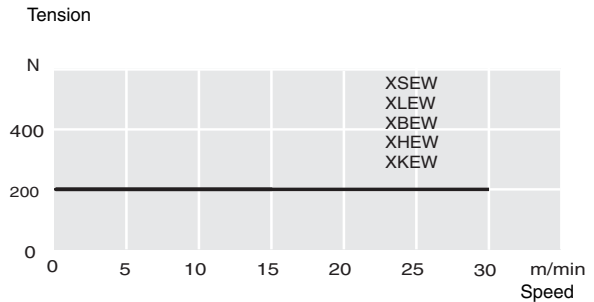
Tension/speed diagram, XL Type C/M/H

Diagram 2C



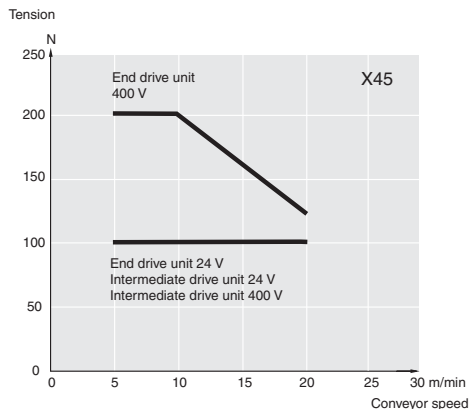
Tension/speed diagram, X85 C/M/H

Diagram 2D



Tension/speed diagram, Horizontal bend drive units

Diagram 2E



Tension/speed diagram, X45 Drive units

P0
X45
XS
XL
XLP
X85
X85P
XH
XK
XKP
XB
GR
CS
XT
XC
XF
XD
FST
XMY
XLX
XMX
GRX
CSX
ELV
CTL
TR
APX
IDX

Selecting the right chain material

Links

The base link parts of the chain links have the same basic shape, and the same technical properties. Five different materials are used. The standard material is acetal resin (POM). Two different types of acetal resin are used:

POM A: Acetal resin with silicone additive

POM B: Acetal resin, silicone free

Strength values at 20 °C:

Product (POM)	XS, XL	X85, XH, XB	XK	XT	XT Compact
Maximum working tension	500 N	1250 N	2500 N	900 N	180 N

The other materials are not as strong as POM:

- Polyester (PBT): 50 % of POM value
- Polyvinylidene fluoride (PVDF) and conductive POM: 40 % of POM value.
- Intrinsically static dissipative (ISD) POM: see the following table.

Product (POM ISD)	XL 3925934	X85 5110430	XH	XT	XT Compact
Maximum working tension	425 N	400 N	550 N	450 N	180 N

Pivots

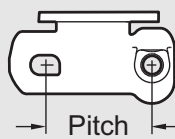
Most pivots are made in materials as specified in the table below. Otherwise the material is specified next to the link designation.

Link	POM	POM (ISD)	PBT	PVDF
Pivot	PA66	PA66 (ISD)	PA66	PVDF

Chain pitch and weight

The *Chain guide* lists the weight of most links. To calculate chain weight, you need to know the chain pitch (see picture below), the weight of the plastic pivot, the weight of the steel pin, and the cleat separation. See the following table.

Parameter	FlexLink conveyor type						
	XS XL	X85	XH	XK	XB	XT	XT Com- pact
Chain pitch, mm	25,4	33,5	35,5	38,1	33,5	25,4	12,7
Plastic pivot weight, g	1	2	3	5	2	1	n.a.
Steel pin weight, g	4	10	17	24	10	3	1



Note

Some of the chains require modification of the drive units. There may also be limitations on minimum bend radius.

Material abbreviations

Material abbreviation	Material
POM*	Acetal resin
POM* polished	Acetal resin, polished surface
POM*, pivot PVDF	Acetal resin, pivot: PVDF
POM* GY	Acetal resin, grey
POM* BK	Acetal resin, black
POM* COND	Acetal resin, conductive
POM* ISD NAT	Acetal resin ISD, natural colour
POM* ISD GY	Acetal resin ISD, grey
PBT	Polyester
PVDF	Polyvinylidene fluoride
PVDF, pivot PA66	Polyvinylidene fluoride, pivot: PA66
POM* + steel	Acetal resin, steel top
POM* + SS	Acetal resin, stainless steel top
PA	Polyamide

*Two different types of acetal resin are used:

POM A: Acetal resin with silicone additive

POM B: Acetal resin, silicone free

Chain strength and expansion vs. temperature

Temperature °C	-20	0	20	40	60	80	100	120
Tensile strength factor	1,2	1,1	1,0	0,9	0,8	0,6	0,5	0,3
Linear expansion %	-0,4	-0,2	0	0,2	0,5	0,8	1,0	1,3

Service factor

The maximum permissible chain tension (see diagrams 1 and 2) depends on the number of conveyor starts and stops per hour. Many conveyors run continuously, whereas others start and stop frequently. It is obvious that frequent starts and stops increase the stress on the chain.

The service factor (see table below) is used to derate for high frequency of starts and stops and for high chain speeds. Divide the tension limit obtained from the graphs by the service factor to get the derated tension limit. A high service factor can be reduced by providing a soft start/stop function.

Operating conditions	Service factor
Low to moderate speed or max. 1 start/stop per hour	1,0
Max. 10 starts/stops per hour	1,2
Max. 30 starts/stops per hour	1,4
High speed, heavy load, or more than 30 starts/stops per hour	1,6

Important

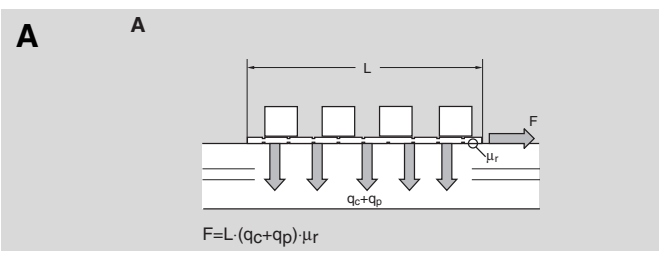
The chain tension calculations are made to ensure that the capacity of the drive unit is sufficient, but not excessive, in relation to the strength and friction of the chain. The calculations do not take into account the increased wear resulting from the higher friction in plain bends.

Chain tension calculations

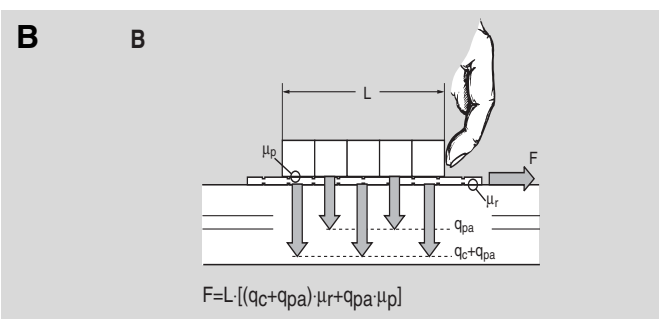
Chain tension

The tension building up in the chain can be divided into several components:

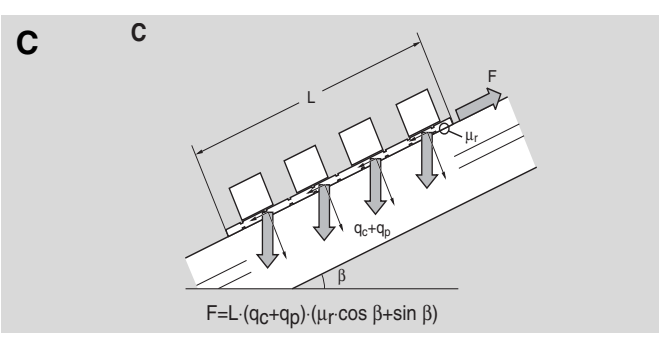
- 1 Friction between unloaded chain and slide rails, for example on the underside of the conveyor beam.
- 2 Friction between loaded chain and slide rails (Figure A).



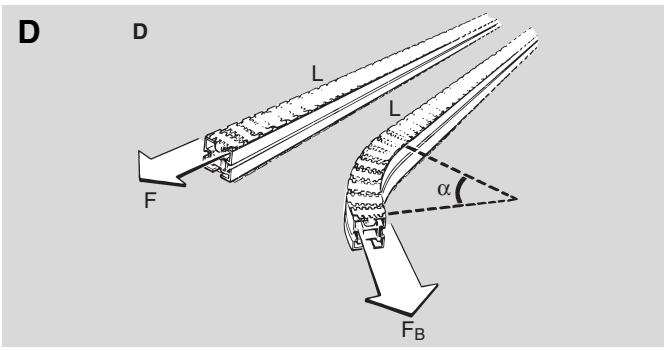
- 3 Friction between accumulating products and top surface of chain (Figure B).



- 4 Gravity force acting on products and chain in inclines and verticals (Figure C).



- 5 Added friction in plain bends. This friction is proportional to the chain tension on the low-tension side of the bend. This means that the actual friction depends on the position of the bend in the conveyor (Figure D).



Traction force

The traction force F required to move the chain depends on the following factors:

- Conveyor length L
- Product gravity load per m
 - Transport q_p
 - Accumulation q_{pa}
- Chain gravity load per m q_c
- Friction coefficient
 - Between chain and slide rail μ_r
 - Between chain and products μ_p
- Bend factor, α° plain bend (hor./vert.) $k\alpha$
- Inclination angle β

Bend factors

Each plain bend introduces a bend factor $k\alpha$. This factor is defined as the ratio between chain tension measured just after the bend and that measured before the bend.

The bend factor depends on

- the amount of direction change of the bend (angle α)
- the coefficient of friction, μ_r , for the friction between chain and slide rails.

When the conveyor is dry and clean, the friction coefficient, μ_r , will be close to 0,1.

The bend factor must be used since the frictional force of a plain bend depends not only on the chain and product weight and the coefficient of friction, but also on the actual tension of the chain through the bend. This tension causes additional pressure to the conveyor beam and slide rail from the chain. The additional force is directed towards the centre of the bend.

Calculation of this additional force is more complicated, since the chain tension varies through the conveyor, being maximum at the “pull” side of the drive unit, and virtually zero at the inlet of the return chain. The bend factor provides a means of including the added friction in bends into the calculations.

The same bend factors apply to horizontal and vertical plain bends. See the table.

Note

Horizontal plain bends should only be used in exceptional cases. For normal applications, use wheel bends.

Bend type (vertical or horizontal plain bend)	30°	45°	60°	90°
Bend factor $k\alpha$	1,2	1,3	1,4	1,6

Features

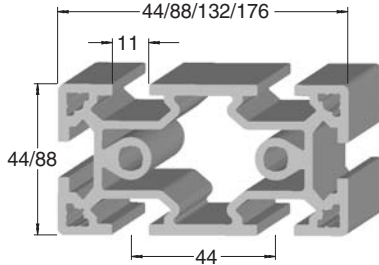
- A wide range of modular extruded aluminium beams with uniform T-slots.
- Standard component assortment for every application area.
- Easy to assemble, adjust, and dismantle using simple hand tools.

- Short time from concept to finished design.
- No welding or painting necessary.

Examples of application areas

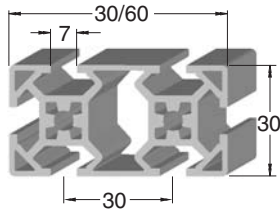
Frameworks, workbenches, enclosures, special machinery, pick-and-place units, gantry robots

XC – heavier frameworks and machine stands



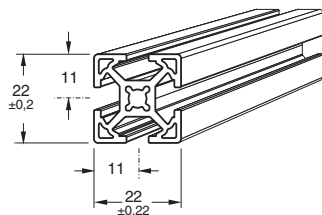
FlexLink structural system XC is based on the module 44 mm and offers sturdy components which provide high load capacity for both static and linear motion systems. It is used within a wide range of applications, from frameworks, work benches and enclosures to special machinery, pick and place units and gantry robots.

XF – compact and light enclosure applications



The FlexLink XF system is based on the module 30 mm. It consists of a range of standard components, with emphasis on enclosure applications.

XD – compact and light automation applications



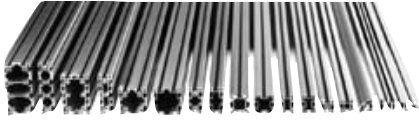
FlexLink structural system XD is based on the module 22 mm. The system focuses on compact, light automation applications. It consists of a comprehensive range of standard components and read-made functional units for linear and rotary motion.

X45
XS
XL
XLP
X85
X85P
XH
XK
XKP
XB
GR
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XT
XC
XF
XD
FST
XMY
XLX
XMX
GRX
CSX
ELV
CTL
TR
APX
IDX

Structural systems component overview

Beams XC

Support beams/Enclosure beams



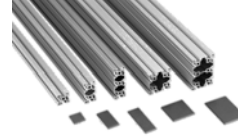
Beams XF

Support beams/Enclosure beams



Beams XD

Support beams/Enclosure beams



Connectors

Angle brackets



Mounting plates



Slot fasteners



Small fittings



Feet

Feet, aluminium



Feet, polyamide



Foot plates



Adjustable feet



Castors



End plates



Floor attachment brackets



Enclosure components

Profiles for sliding door, Slide strip



Profiles for enclosures



Enclosure strips



Hinges, Multiblock



Handle



Enclosure connectors



Corner bracket kit



Ball latch lock kit



Safety switch kits



Components for linear motion and rotating motion

Sliding element for T-slot



Sliding elements for guide profile



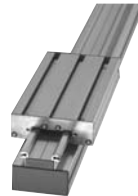
Wheels, Wheel yoke



Runners for steel shaft



Roller units for linear beams



Joint, Extruded joint



Conduit elements

Cable duct

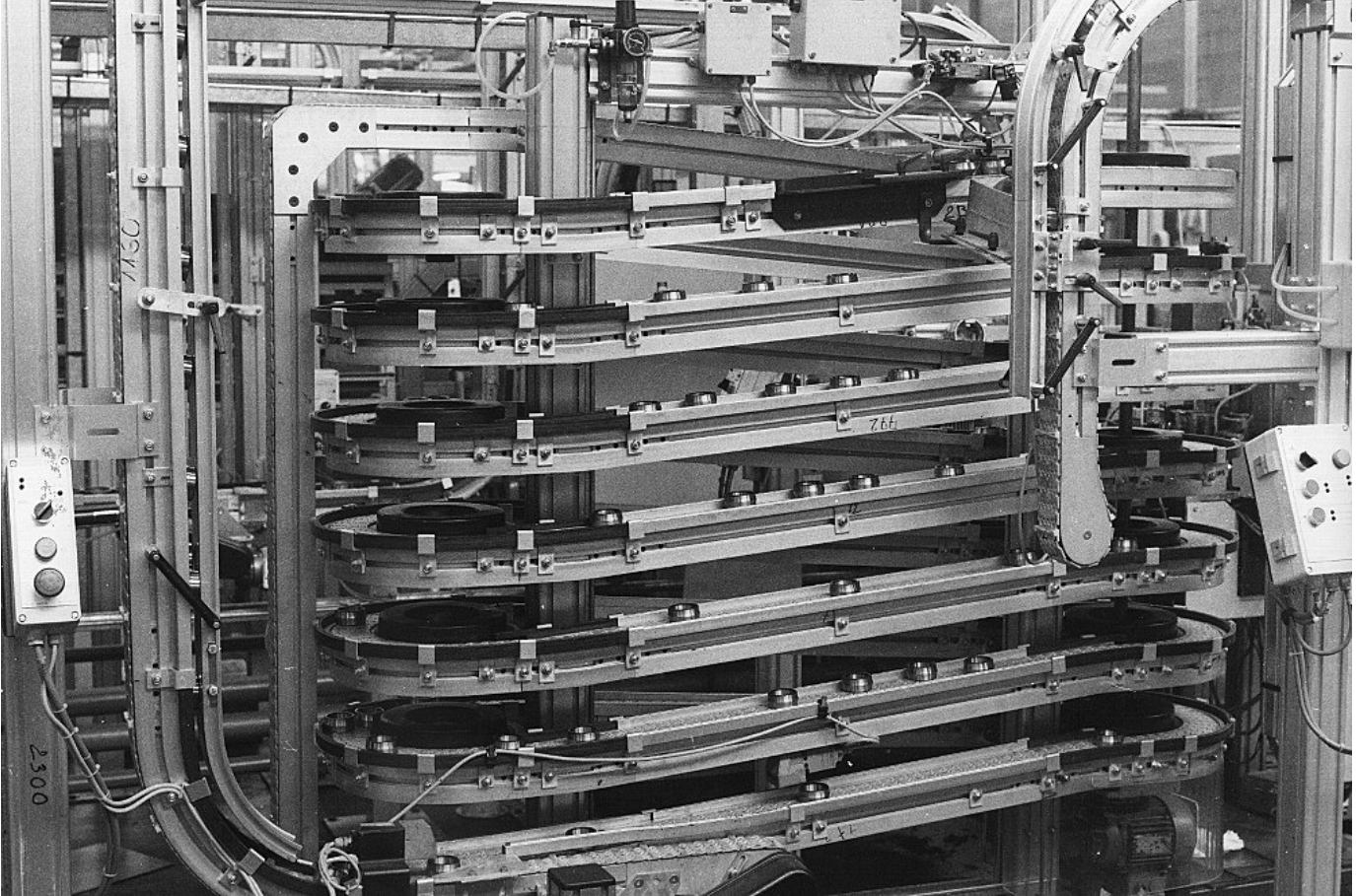


Cable duct with divider



- X45
- XS
- XL
- XLP
- X85
- X85P
- XH
- XK
- XKP
- XB
- GR
- CS
- XT
- XC
- XF
- XD
- FST
- XTY
- XLX
- XXM
- GRX
- CSX
- ELV
- CTL
- TR
- APX
- IDX

Introduction



Critical factor

To achieve an operational installation which is reasonably safe for all people involved in its use and maintenance, it is necessary to consider certain aspects. This is done when designing a conveyor system. The chain is generally the critical factor to consider with guarding.

Safeguarding

All pinch and shear points as well as other exposed moving parts that present a hazard to people at their workstations or their passageways must be safeguarded. Overhead conveyors must be guarded to prevent objects falling. Cleated conveyor chains are more hazardous in creating more pinch and shear points than plain conveyor chains.

Safeguarding can be achieved by:

- Location

Location of the hazardous area away from the area occupied by personnel, wherever possible.

- Guards

Mechanical barriers preventing entry into the hazardous areas or protecting against falling objects.

- Control devices

Machine controls which prevent the interruption of hazardous operations/conditions.

- Warnings

Instructions, warning labels, or sound/light signals which alert to hazardous conditions.

Safeguarding should be designed to minimize discomfort or difficulties to the operator. Bypassing or overriding the safeguarding during operation should be difficult.

Warning labels etc. should only be used when all other means of safeguarding will impair the function of the installation or are not cost effective.

The degree of safeguarding required should be identified during the implementation of the essential safety requirement during the design process.

Special considerations

When correctly applied, the FlexLink family of components are safe to use and maintain. It is however necessary for those responsible for design, installation, operation and maintenance of the FlexLink installation to be aware of certain areas where special attention is required.

All drive units with slip clutch

- Before adjusting the slip clutch it is necessary to remove all objects from the chain to remove any remaining chain tension.
- Adjustment should be conducted in accordance with the maintenance procedures.
- All drive units, except the direct drive units, are fitted with transmission chain covers. these covers must be fitted before unit is operated.

Note

The slip clutch is not a personnel safety device, but a device to protect the conveyor equipment.

End drive units

- The chain slack (catenary) of the end drive units must be maintained during the system lifetime.
- If side plates are fitted, the chain must be shortened if the chain becomes visible below the level of the side plates.
- The opening between the links when they turn round the end roller could be a risk. Drive ends should not be accessible during conveyor operation wherever possible.

For coupled drive units, safety protection should be applied to the connecting shaft.

Intermediate drive units

- The area near the guides for the return loop of the chain should not be accessible during conveyor operation.

Catenary drive unit

- The 'bridge' area where the chain goes down into the drive should not be accessible during conveyor operation.

Horizontal bend drive unit

- The drive wheel and the transmission chain should not be accessible during the conveyor operation.

Idler units

- The opening between the links when they turn round the idler roller could be a risk. Idler ends should not be accessible during conveyor operation wherever possible.

Wheel bends

- Guarding may be required at wheel bends depending upon location of bends and load applied to the conveyor.

Cleated chains

- Any application incorporating cleated chains requires careful safety consideration. Pinch and shear points are generated throughout the assembly of the incorporated components. Therefore generous guarding should always be employed to fully protect within user operating limitations.
- There is a higher risk of product damage when using cleated chains. Special attention must be given to operator access in the event of products becoming trapped or similar.

Maintenance

The maintenance routine of FlexLink conveyors should also include procedures to ensure that the guarding remains securely fastened and effective (if not interlocked via control system etc.).

FlexLink components are continuously reviewed to improve performance either by design modification or material upgrade. In all these reviews user safety is our primary consideration.

All associated technical data are retained at the manufacturers address.

Control system

Before operating or completing any maintenance on control system, read the associated section as supplied with the equipment documentation.

If there are any questions as to the safe operating procedures of the equipment supplied, please contact FlexLink Systems immediately.

X45
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XD
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XMY
XLX
XMX
GRX
CSX
ELV
CTL
TR
APX
IDX

System maintenance

Introduction

The following section is designed to offer assistance for your planned maintenance schedule. It may become evident that the suggested maintenance intervals can be extended to accommodate your local environmental conditions.

Maintenance of the FlexLink conveyor systems should only be carried out by competent persons, who are familiar with FlexLink equipment. If there is any doubt as to the most suitable procedure for maintenance, consult your FlexLink supplier.

Non FlexLink equipment

Equipment and components which are not from the FlexLink family of products should be maintained and serviced in accordance with their respective manufacturer's instructions.

Safety considerations

Before starting any maintenance on your FlexLink equipment, the following safety instructions must be observed:

- All electricity must be switched off.
- Make sure that the motor switch is also switched off and locked in the "off" position.
- Pneumatic and/or hydraulic power must be disconnected and any pressure accumulation released.
- Products being transported should, if possible, be removed from the conveyor chain.
- Staff affected must be informed that maintenance work is being undertaken.

Warning

Do not climb onto the equipment.