Conveyor system X45

Contents

Introduction	49
System information X45	
Technical characteristics	
Basic and common guidelines X45C and X45H	52

Conveyor System X45C

Conveyor – introduction	53
Conveyor modules X45C	54
X45C components	
Beams	
Slide rail	
Slide rails	
Drive and idler units X45C - introduction	60
End drive units	6
Intermediate drive units	63
Basic units	64
Idler units	64
Wheel bends	
Plain bends	66
Vertical bends	67
Enclosure components X45C and X45H	67
Guide rail system	
Conveyor support	67

Conveyor System X45H

Conveyor – introduction	68
Puck handling	
X45H components	
Chains X45H	
Chain accessories X45H	

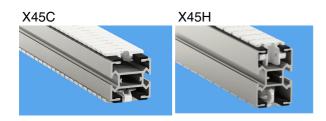
Puck handling functions X45e for X45C and $\,^{\hbox{\scriptsize XH}}$ X45H

Maximum permissible weight X45C and X45H	82
Conveyor noise level X45C	83
Overall installation dimensions	83
Divert functions and kits	84
Merge functions and kits	86
Combined Divert/Merge	88
Transfer	91
Stop	94
Locating unit	
Puck handling	97
RFID components	
Sensor maximum queue	
•	

Introduction



Chain width 43 mm



Features

The X45 is a very compact conveyor system for handling small and light products.

Examples of application areas

All types of small products down to 10 mm diameter. Typical products transported directly on the conveyor are XF pharmaceutical bottles, perfume bottles and smaller products/packages up to 100 mm wide. Puck handling of products like test tubes for blood and urine, small bottles, cosmetics and electrical parts such as batteries.

ELV

P0

CC

X45

XS

X65

X65P

X85

X85P

XK

XKP

X180

X300

GR

CS

XT

HU

WL

WK

XC

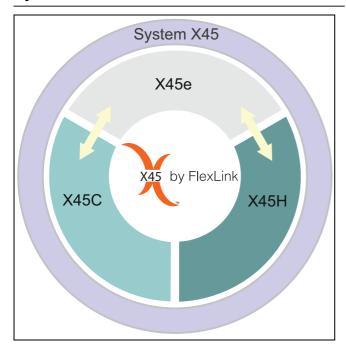
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System information X45



Conveyor X45C and X45H

The **X45** offer includes a range of conveyor modules both for handling products directly on chain or handling X45 standard pucks.

The **X45C** conveyor is a light weight platform including both normal 3 phase AC motors and 24V DC motors with built in intelligence.

The **X45H** conveyor is a high capacity conveyor platform. It is normally used in combination with X45C when handling longer transportation and systems requiring more bends and higher speed.

Puck handling equipment X45e

X45e includes a range of function units for puck handling such as Divert, Merge, Stop or Locating. There are units handling both single pucks and train of pucks.

X45e functions includes 24V motors with embedded controls that can reduce the total lead time significantly from system design to ramp-up of the line. Each function motor include possibilities to connect to a network and in/out signals

Standard X45 pucks are available in two types, with or without lock for rotating

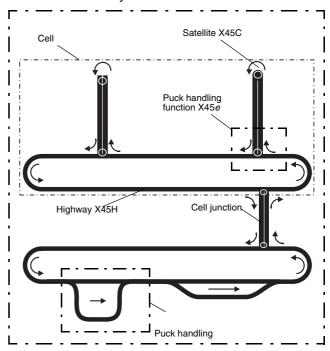
Divert/merge devices

Divert/merge devices are used for routing products by dividing or combining product flows. Usually there is a main conveyor, a "highway" (X45H), and separate subordinated conveyors, "satellites" (X45C).

On the satellites, products can be subjected to various operations such as turning, grinding, assembly or testing, without disturbing the main flow. After the operations, the products return to the highway.

A combination of a highway and one or more satellites is often called a cell. Using puck handling functions (X45e), it is possible to build cell junctions which facilitate transfer of a puck from one cell to another. See figure below.

System X45



System	X45C	X45H	CC	
Beam width	45 mm	45 mm	X45	
Chain width	43 mm	43 mm	A43	
Chain pitch	12,7 mm	25,4 mm	XS	
Drive unit capacity	100- 200 N	900N	X65	
Chain tension limit	200 N (100 N Conductive)	900 N		
Item width	10-100 mm	10-100 mm	X65P	
Maximum conveyor length	6 m (4 m Conductive)	25 m	X85	
Maximum weight on conveyor	30 kg	125 kg	X85P	
Maximum load per 100 mm conveyor length	800 g (100 g/ link)	4000 g (1000 g/ link)	XH XK	
Maximum single item weight, horizontal transport	800 g	8000 g	XKP	
Conveyor speed	Variable speed 5-20 m/min	Fixed speed 5, 10, 15, 20, 30, 40, 50, 60 m/min (Max 20 with pallet)		
Horizontal plain bends:	30°/45°/90°/180°	30°/45°/90°	X300	
Radius 150 mm	Note! Maximum 2 bends/conveyor or max 270° total	-		
Horizontal wheel bends	45°/90°/180°	45°/90°/180°	CS	
Vertical bends:	5°/15°	5°/15°		
Radius	400 mm	358 mm/515 mm	XT	
	Note! 2 bends/conveyor (maximum)		HU	
Electrostatic discharge feature (ESD)	Standard/Conductive	Standard	WL	
Example: Max permis product wei	Max permissible puck weight ssible (base, fixture, product) (ght 200 g Max 250 g/ puck	Example: Max permissible puck weight Max permissible (base, fixture, product) product weight 2000 g Max 250 g/ puck	WK	
Max 100 g/ link		Max 1000 g/ link	XC	
	Puck Ø 43.7	- Puck Ø 43,7	XF	
Max permissible	e single item weight 800 g	Max permissible single item weight 8000 g	XD	
		>= 100 mm (8 links)	ELV	
>=	= 100 mm (8 links) —————		CTL	

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Basic and common guidelines X45C and X45H

The following guidelines must be considered when engineering conveyor:

1 Conveyor length

Maximum permissible conveyor length: See "Technical characteristics" on page 51.

2 Plain bends (only applies to X45C)

Horizontal conveyor modules can include maximum two Plain bends 30, 45, 90 or 180°. Different plain bends can be mixed, but the sum of the two bends may not exceed 270°.

Horizontal conveyor modules in conductive versions may not exceed 180°

3 Guide rails

Guide rails for straight standard conveyor modules can be adapted for products up to maximum 100 mm width. Guide rails for standard conveyor modules with horizontal bends can be adapted for products up to maximum 100x200 mm (WxL).

4 Conductive version

Conveyor modules are available in standard or conductive chain and slide rail materials versions.

5 RFID option

RFID is available for controlling puck handling functions.

Conveyor System X45C

Conveyor – introduction



Configuration of X45C

The modular conveyor system X45C makes it very easy and fast to create simple as well as advanced layouts. A range of conveyor modules can be ordered:

- Straight horizontal conveyors
- Horizontal conveyors with one or two bends
- Vertical conveyors, transporting products from one level to another

Also a range of single and multi-lane support modules can be chosen.

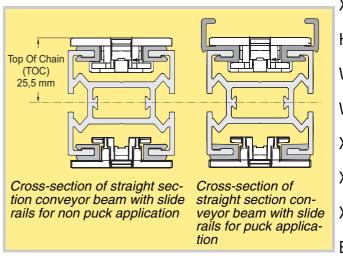
The conveyor modules can be divided into:

- Standard conveyor modules
- Conveyor modules for puck handling

Configuration of X45C is done using FlexLink Online Store or the design tool FLDT.

Beam design

The X45C beams are designed for rigidness, smooth running and low noise. The T-slots ensure easy but rigid attachment of accessories such as guide rail brackets. Connecting strip kit XUCJ 50 is placed in the middle of the beam keeping the T-slots free.



P0

CC

X45

XS

X65

X85

X85P

XK

XKP

X180

X300

GR

CS

XT

HU

WL

WK

XC

XF

XD

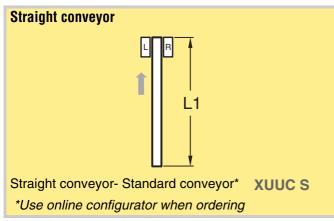
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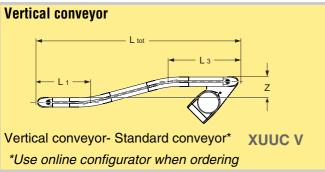
CTI

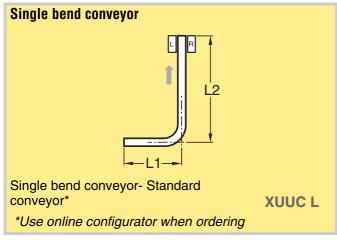
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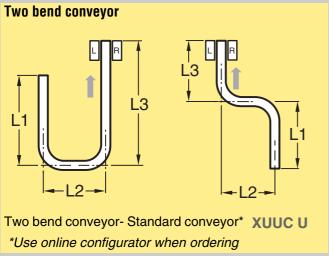
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Conveyor modules X45C

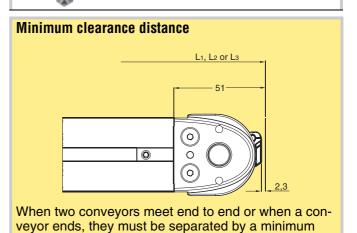








Support modules – single and multi-lane						
	5995387	Single diecast				
	5995388	Single end adjustable				
	5995389	Single end guide roller				
	5995390	Single foot plate				
	5995392	Single XB				
	5995393	Multi single 2 lane				
T	5995394	Multi single 3 lane				
	5995395	Multi single 4 lane				
	5995396	Multi double 2lane				
TI.	5995397	Multi double 3 lane				
	5995398	Multi double 4 lane				



clearance distance.

Р0

CC

XKP

X180

X300

GR

CS

XT

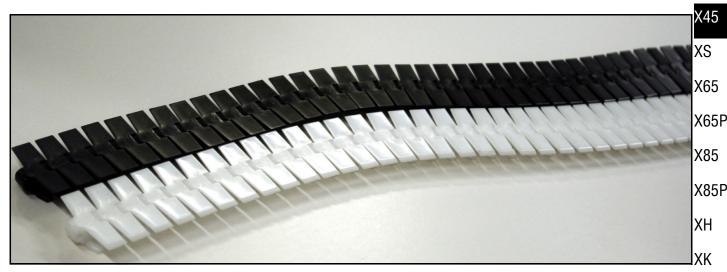
HU

WL

WK

XC

Chains – introduction



Chain types

The conveyor chain is designed for smooth running, minimum wear and low noise level at normal speeds.

Chain

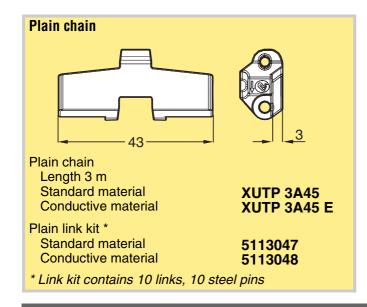
- Plain chain
- Plain chain conductive
- Friction top chain
- Friction top chain, conductive
- Flexible cleat chain

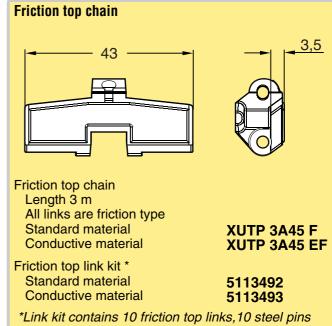
Plain chain can be used up to 5°±2° slopes, depending on the friction coefficient between product and chain.

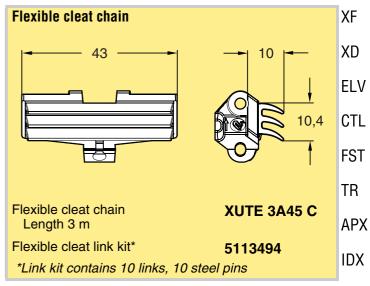
Friction top chain increases the friction between product and chain and can often be used for 15° slopes.

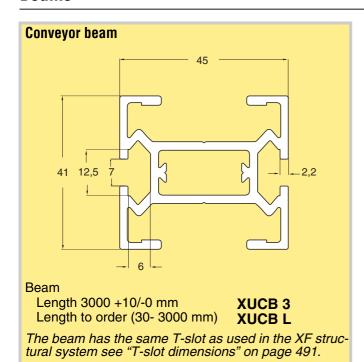
Flexible cleat chain is used for wedge conveyors elevating products or straight horizontal transfers.

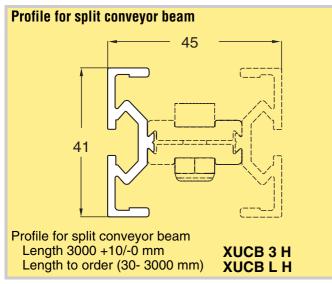
-For individual weights up to 500 g

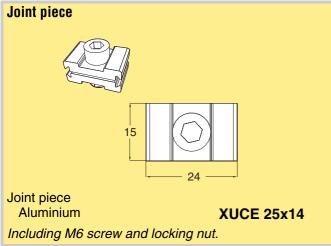


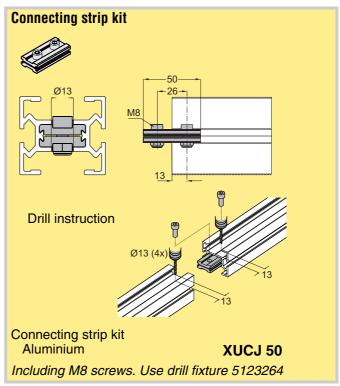


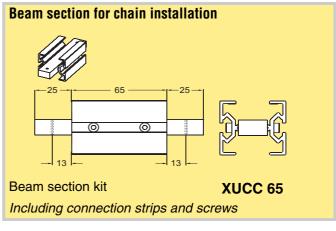


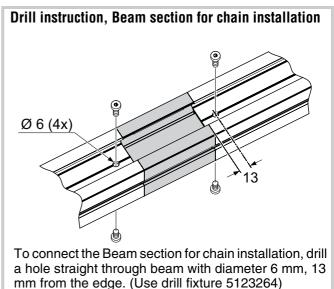












CC

X45

XS

X65

X65P

X85

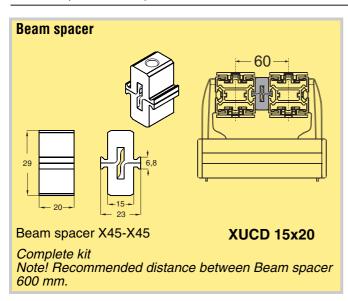
X85P

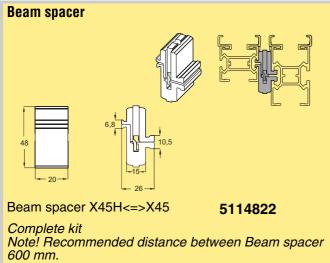
XH

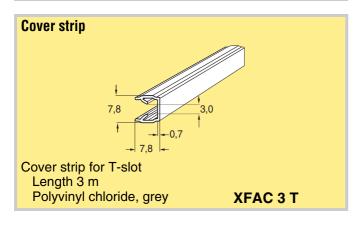
XK

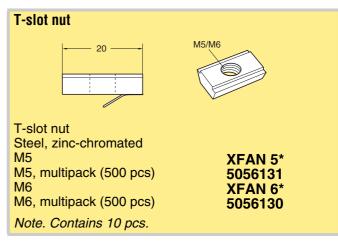
XKP

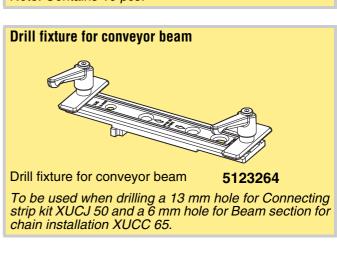
X180











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Slide rail

The slide rails are designed for long service life, smooth running, low elongation and minimized risk of failure. Several options exist for high performance operation. Slide rail types include

- Type H high wear resistance (standard)
- Type E conductive

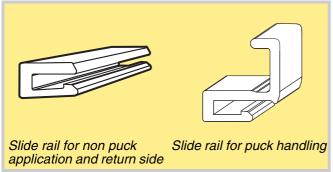
All slide rails can be mounted to the conveyor beams without using rivets for anchoring.

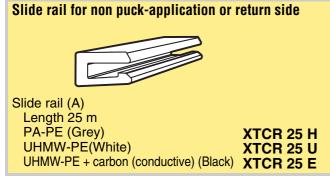
Two slide rail profiles

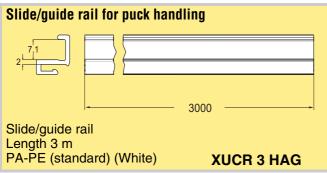
Slide rails are available in two profile designs: Slide rail for non puck-application and slide rail for puck handling.

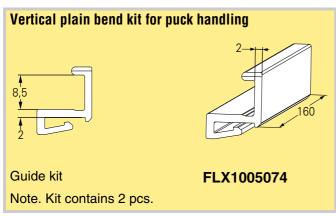
Slide rails to be used for conveyors for puck handling					
For straight sections For plain bends R150 For the return side of the conveyor beam					
Standard	XUCR 3 HAG	FLX1004554 and FLX1004555	XTCR 25 H	To be used with standard chains	

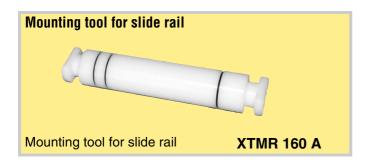
Slide rails to be used for standard conveyors					
Standard	XTCR 25 H	To be used with standard chains			
Conductive XTCR 25 E To be used with conductive chains					

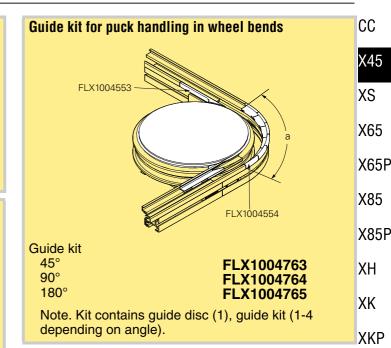


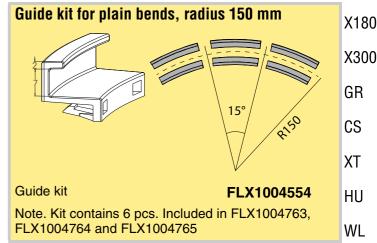


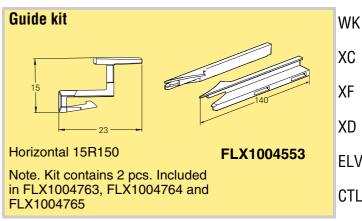






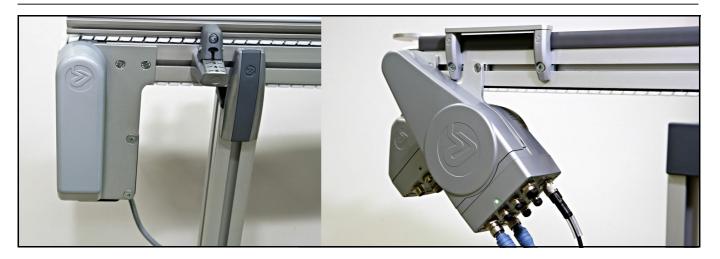






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Drive and idler units X45C – introduction



Drive unit X45C

The drive unit is an active function with the main purpose of driving the chain of a conveyor. The X45C system include 24V and 380-440V drive units. Drive units are available as end drive and intermediate drive units.

24 Volt drive unit

The 24V smart motor is equipped with a permanent magnetic (PM) motor and a built in embedded controller. The unit has interfaces to PROFINET and Ethernet/IP and connections for 8 in and 4 out signals. The embedded controller enables local decisions directly down in the drive unit giving a big advantage regarding software developing, electrical design and electrical installation.

The drive unit has a variable speed ranging from 5 m/min to 20 m/min with a maximum traction force of 100N over the whole speed range. Each side is equipped with a LED indicating its status.

The drive unit has two main alternatives of receiving commands. In the local mode the drive unit starts immediately or by one of the digital input signals. In the line control mode the drive unit receives commands over the Ethernet/IP or PROFINET

If the motor are in local mode only power (24VDC) is needed to work properly

For more detailed information about the function see User documentation

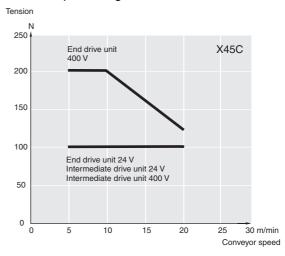
380-440V drive unit

The 380-440V, 50/60Hz drive unit is available in a range of fixed speeds between 5-20m/min, see table below. The traction force depends on the speed with a maximum of 200N.

This drive is without built in intelligence or network possibilities. Start and stop function is handled by the power supply

For U.S market see Technical bulletin 5519EN-1

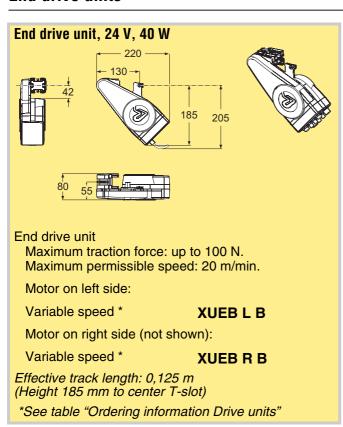
Tension/speed diagram, X45C Drive units

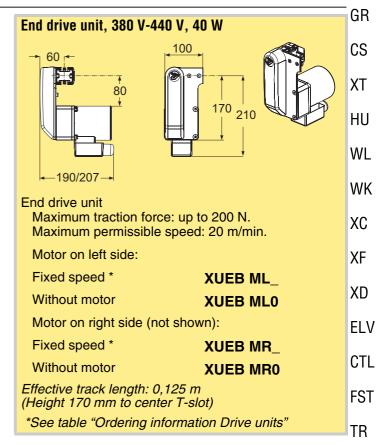


Ordering information Drive units				P0					
Туре	Designation	Designation Cha		Chain pull Speed in meters per minute 50/60 H			0/60 Hz	00	
		100 N	200 N	4,2/5	8,5/10	13,5/16	17/20	5-20	CC
24V End drive unit, motor on left side	XUEB L B	Х						Х	X45
24V End drive unit, motor on right side	XUEB R B	Х						Х	7.10
24V Intermediate drive unit, motor on left side	XUER L A B	Х						Х	XS
24V Intermediate drive unit, motor on right side	XUER R A B	Х						Х	VOE
380- 440V End drive unit, motor on left side	XUEB ML1		Х	Х					X65
	XUEB ML2		Х		Х				X65F
	XUEB ML3		Х			Х			
	XUEB ML4		Х				Х		X85
380- 440V End drive unit, motor on right side	XUEB MR1		Х	Х					X85F
	XUEB MR2		Х		Х				VOOL
	XUEB MR3		Х			Х			XH
	XUEB MR4		Х				Х		
380- 440V Intermediate drive unit, motor on left or right side	XUER M1 A	Х		Х					XK
	XUER M2 A	Х			Х				XKP
	XUER M3 A	Х				Х			VIVI
	XUER M4 A	Х					Х		X180
			1	1		1	1	1	1

End drive units

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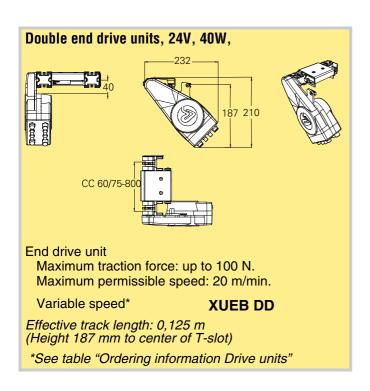


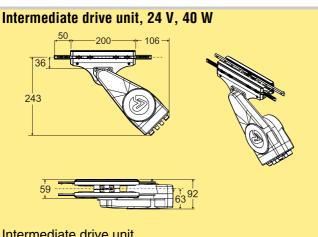
X300

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End drive units 61





Intermediate drive unit

Maximum traction force: up to 100 N. Maximum permissible speed: 20 m/min.

Motor on left side:

Variable speed * **XUER L A B**

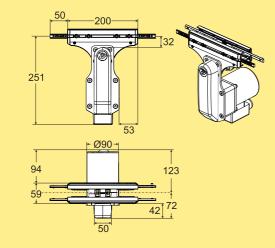
Motor on right side (not shown):

Variable speed * **XUERRAB**

Effective track length: 0,45 m (Height 240 mm to center T-slot)

* See table "Ordering information Drive units"

Intermediate drive unit, 380 V-440 V, 40 W



Intermediate drive unit

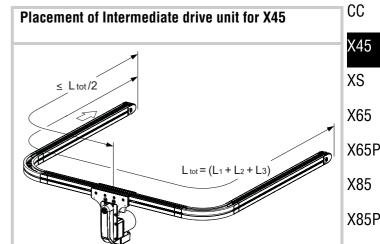
Maximum traction force: up to 100 N. Maximum permissible speed: 20 m/min.

Motor on left or right side:

Fixed speed * XUER M_A Without motor **XUER MO A**

Effective track length: 0,45 m (Height 225 mm to center T-slot)

*See table "Ordering information Drive units"



CC

X45

XS

X65

X65P

X85

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XK

XKP

X180

X300

GR

CS XT

HU

WL

WK

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XF

XD

ELV

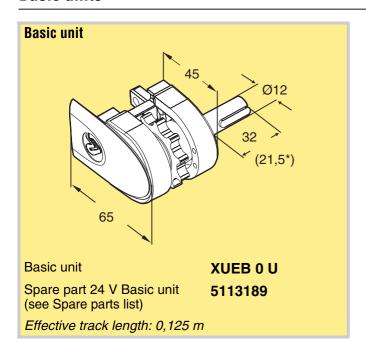
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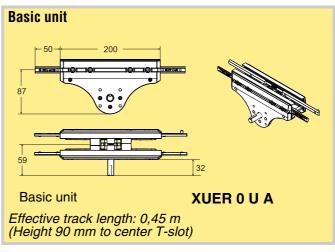
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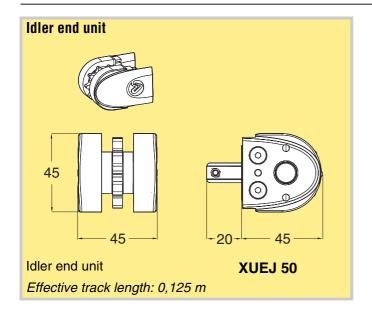
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Basic units

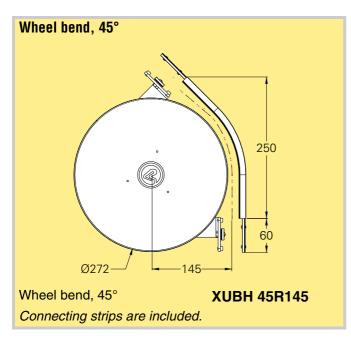


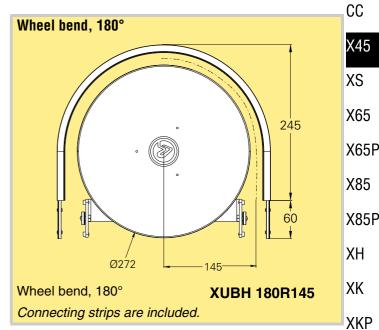


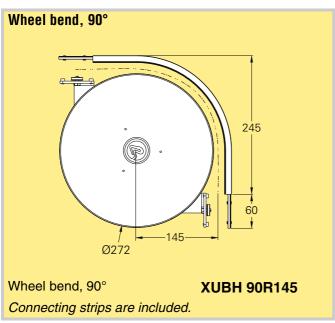
Idler units



Wheel bends PO







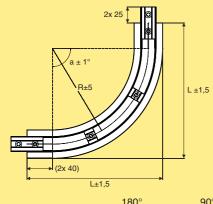
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WK
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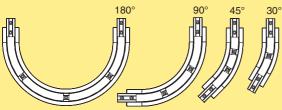
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APX

Plain bends







Item no	Angle (a)	Radius (R)	Length (L)
XUBP 30R150	30° ±1°	150 ±5 mm	160 mm
XUBP 30R210	30° ±1°	210 ±5 mm	190 mm
XUBP 45R150	45° ±1°	150 ±5 mm	190 mm
XUBP 45R210	45° ±1°	210 ±5 mm	232 mm
XUBP 90R150	90° ±1°	150 ±5 mm	212 mm
XUBP 90R210	90° ±1°	210 ±5 mm	272 mm
XUBP 180R150	180° ±1°	150 ±5 mm	212 mm
XUBP 180R210	180° ±1°	210 ±5 mm	272 mm
XUBP 45TYP5	15°-45° ±1°	R=210-500 ±10 mm	
XUBP 90TYP5	46°-90° ±1°	R=210-500 ±10 mm	
XUBP 45TYP10	15°-45° ±1°	R=501-1000 ±10 mm	
XUBP 90TYP10	46°-90° ±1°	R=501-1000 ±10 mm	
	(Maximal tot 270°)		

u	nın	ho	nd	30°
	17111	1111		-711
	ıuıı	NU	ııu,	vv

Effective track lengths: R150: 0,16 m 1-way (0,32 m 2-way)

XUBP 30R150

Effective track lengths: R210: 0,20 m 1-way (0,40 m 2-way)

XUBP 30R210

Plain bend, 45°

Effective track lengths:R150: 0,21 m 1-way (0,42 m 2-way)

XUBP 45R150

Effective track lengths:R210: 0,25 m 1-way (0,50 m 2-way)

XUBP 45R150

Plain bend, 90°

Effective track lengths:R150: 0,34 m 1-way (0,68 m 2-way)

Effective track lengths:R210: 0,43 m 1-way (0,86 m 2-way)

XUBP 90R150

XUBP 90R210

Plain bend, 180°

Effective track lengths:R150: 0,60 m 1-way (1,2 m 2-way) XUBP 180R150
Effective track lengths:R210: 0,90 m 1-way (1,8 m 2-way) XUBP 180R210

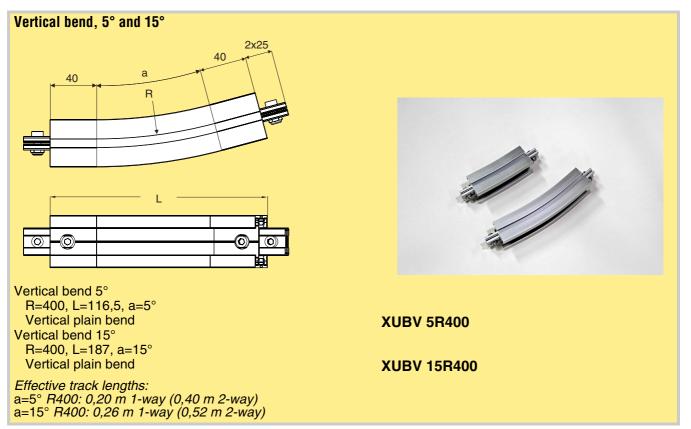
Plain bend, 15°-45°, 46°-90°

 Plain bend, 15° - 45° ± 1° , R=210-500±10 mm
 XUBP 45TYP5

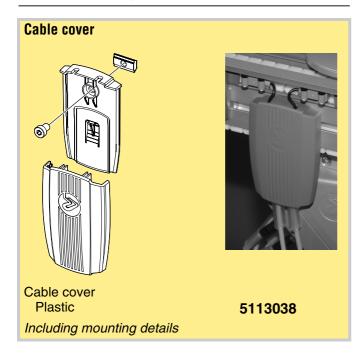
 Plain bend, 46° - 90° ± 1° , R=210-500±10 mm
 XUBP 90TYP5

 Plain bend, 15° - 45° ± 1° , R=501-1000±10 mm
 XUBP 45TYP10

 Plain bend, 46° - 90° ± 1° , R=501-1000±10 mm
 XUBP 90TYP10



Enclosure components X45C and X45H



Guide rail system

See "Guide rail components" on page 303

Conveyor support

See "Conveyor support components" on page 331

X85 X85P XH XK XKP X180 X300 GR CS XT HU WL WK XC XF XD **ELV** CTL **FST** TR APX

IDX

CC

X45

XS

X65

X65P

Conveyor System X45H

Conveyor - introduction

The X45H conveyor is high capacity conveyor system for handling small products and can easily integrated with X45 conveyors enable the advantage of running longer conveyors with more bends and with higher speed than X45.

Puck handling

The standard pucks for X45 can run on the X45H conveyors. Slide rails with integrated rail for puck handling are available for straight conveyors as well as for bends.

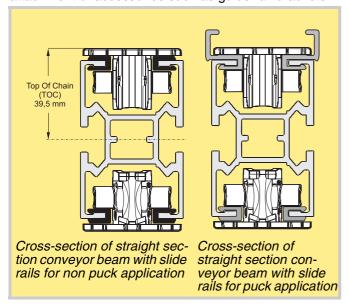
A number of puck handling functions for diverting and merging is available.



The standard guide components can be used.

Beam design

The X45H beams are designed for rigidness, smooth running and low noise. The T-slots ensure easy but rigid attachment of accessories such as guide rail brackets.



CC

X45

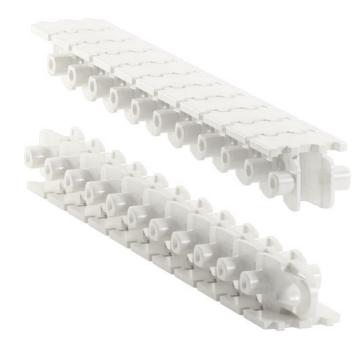
XS

X65

X85

X85P

Chains - introduction



Chain types

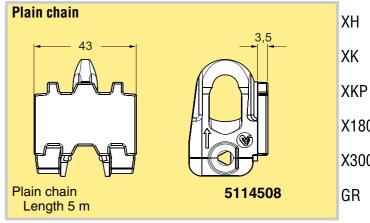
The conveyor chain is designed for smooth running, minimum wear and low noise level at normal speeds.

Chain

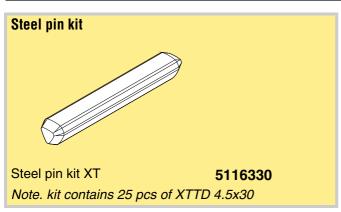
Plain chain

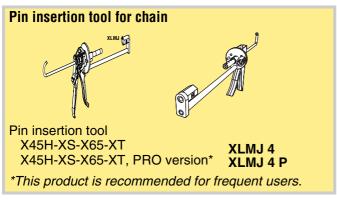
Plain chain can be used up to 5°±2° slopes, depending X65P on the friction coefficient between product and chain.

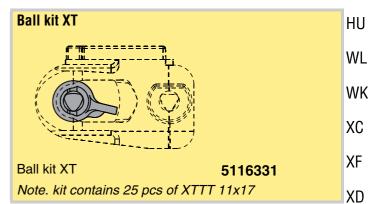
Chains X45H



Chain accessories X45H







X180 X300

GR CS

XT

WL

WK

XC

XF XD

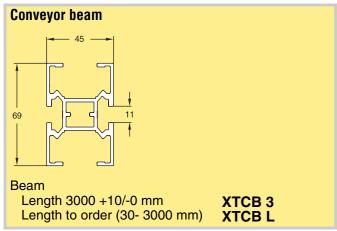
ELV

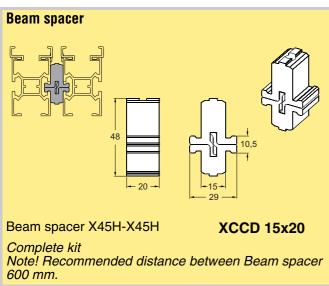
CTI

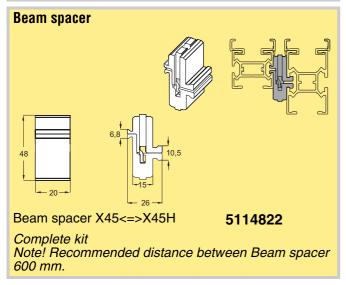
FST

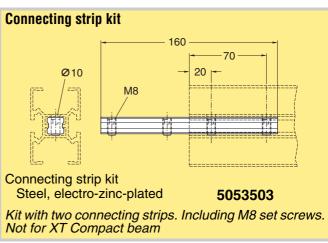
TR

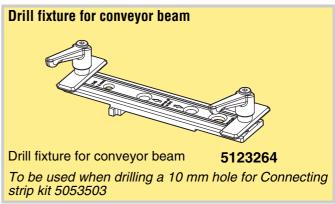
APX

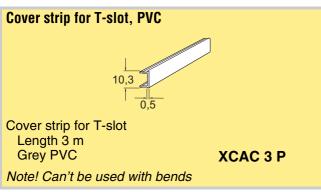


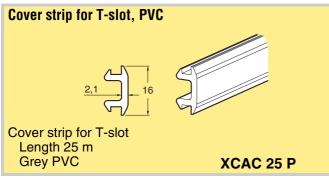


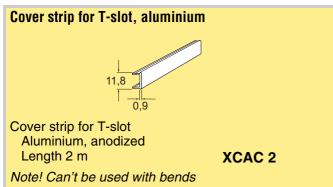












X45

CC

XS

X65

X65P

X85

X85P

XΗ

XK

XKP

X180

X300

GR

CS

XT

HU

WL

WK

XC

XF

XD

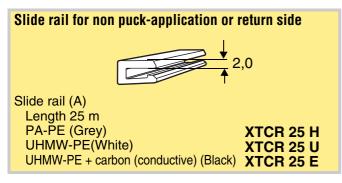
ELV

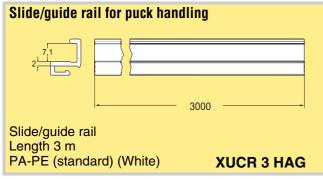
CTL

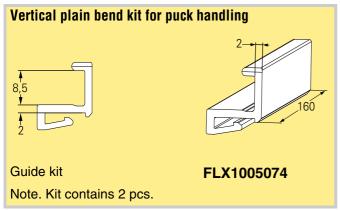
FST

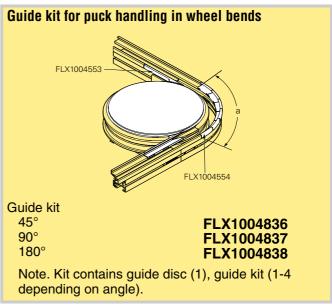
TR

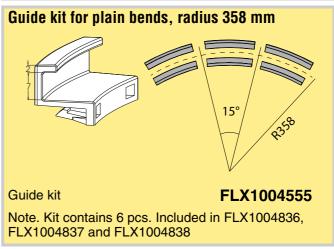
APX

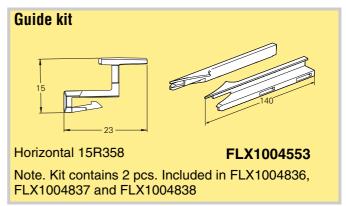














XS

X65

X65P

X85 X85P

XH

XK

XKP

X180

X300

GR

CS

XT

HU

WL

WK

XC

XF

XD

ELV

CTL

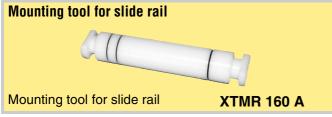
FST

TR

APX





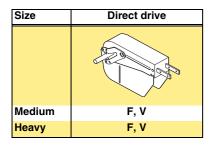


Drive unit types

The X45H system includes direct drive units, Heavy and Medium

Available motors include variable speed types (V) as well as fixed speed motors (F).

End drive units



Motor specifications

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

IP55 available with standard oil.

IP65 available with food grade oil.

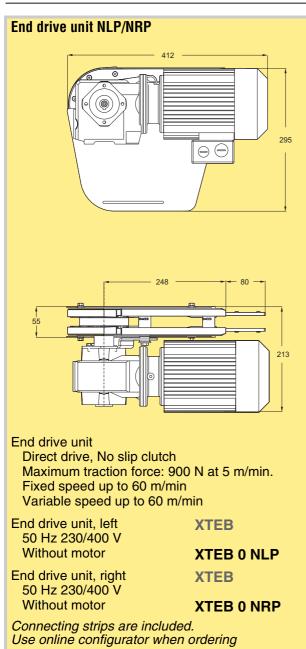
Ordering information

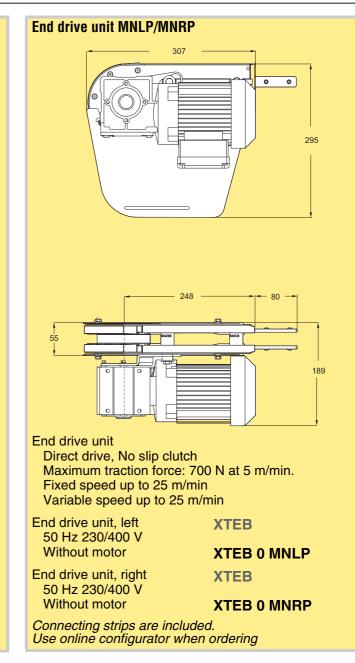
Drive units with motors must be specified using the webbased configurator. The configurator provides detailed information and step-by-step guidance in the specification process. A product code string is generated, containing the specification details. See section CC for examples of code strings.

Drive units *without* motors can be ordered using the designations in the catalogue.

Dimension

Note that dimensions relating to drive unit motors depend on the motor specified during the configuration.





TR

APX

IDX

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X45

XS

X65

X65P

X85

X85P

XΗ

XK

XKP

X180

X300

GR

CS

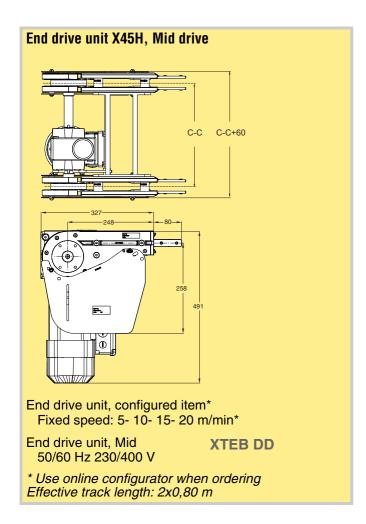
XT

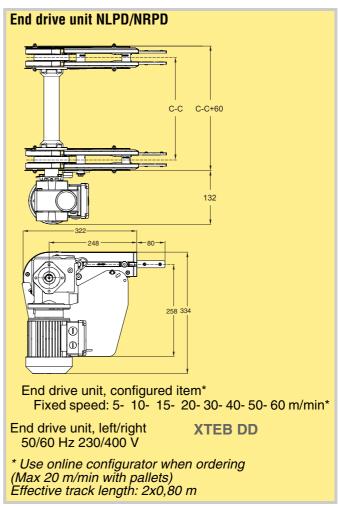
HU

WL

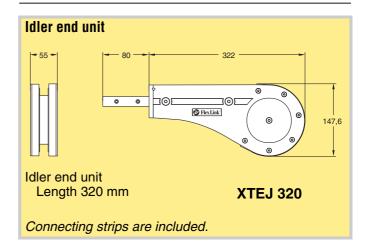
WK

XC

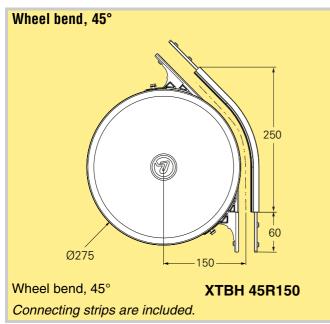


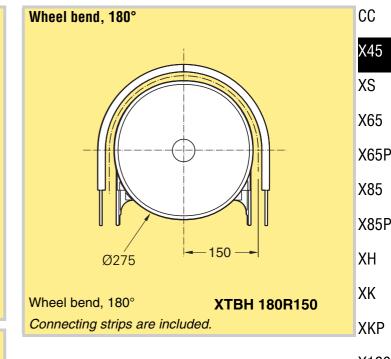


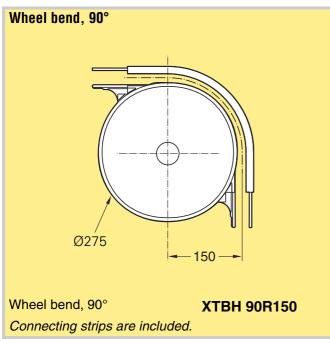
Idler end unit



Wheel bends PO







X180 X300 GR

CS

XT

HU

WL WK

XC

XF

XD

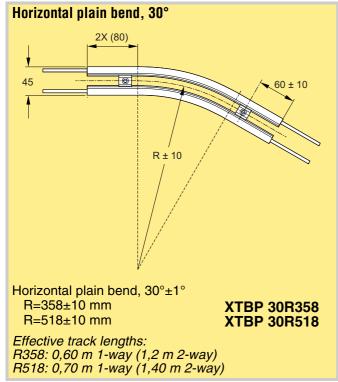
ELV

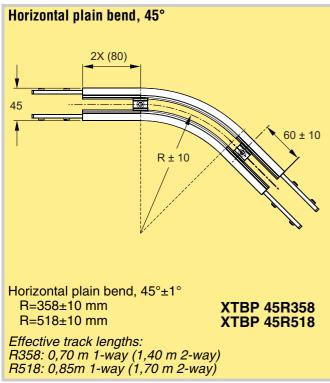
CTL

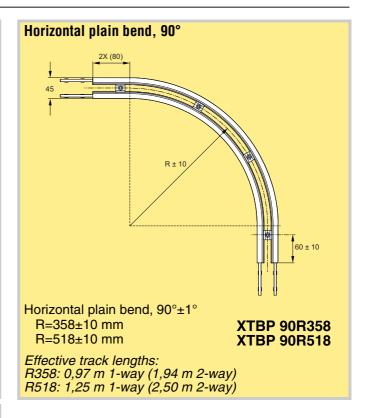
FST

TR APX

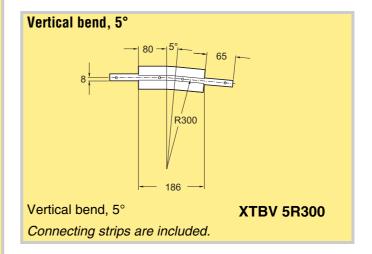
Horizontal plain bends



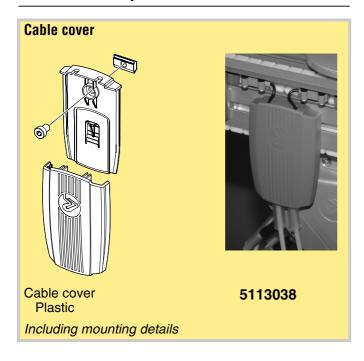




Vertical bends



Enclosure components X45C and X45H



Guide rail system

See "Guide rail components" on page 303

Conveyor support

See "Conveyor support components" on page 331

P0

CC

X45

XS

X65

X65P

X85

X85P

XH

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XK

XKP

X180

X300

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APX

Puck handling functions X45e for X45C and X45H

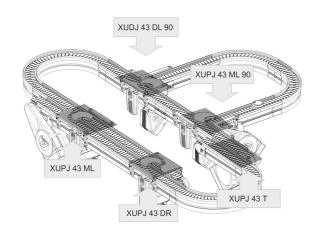
Conveyor functions for puck handling X45C and X45H

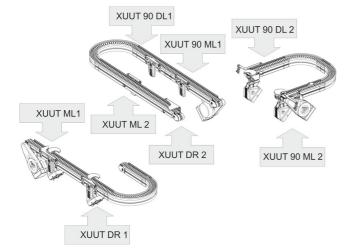
Conveyor function kits for puck handling are used for handling individual products on standard pucks (carrier) XUPP 43 and XUPP 43 T. A whole range of functions such as Divert, Merge, Combined Divert/ Merger, Stop and Locating can easily be integrated to X45C and X45H conveyors.

This makes it easy and fast to create layouts for routing, balancing, buffering and positioning of pucks. RFID identification in the pucks enables one piece track and trace and logistic control for the production line.

Typical conveyor layouts for puck handling

The figures shows a typical conveyor layouts for puck handling. A system that includes a mix of X45C and X45H conveyors with X45e kits for handling the puck functions in the system.





Configuration X45e kit for X45C and X45H

Functional X45e kits are available with the following functions: Divert, Merge, Combined Divert/Merge, Transfer, Locate and Stops.

Configuration procedure

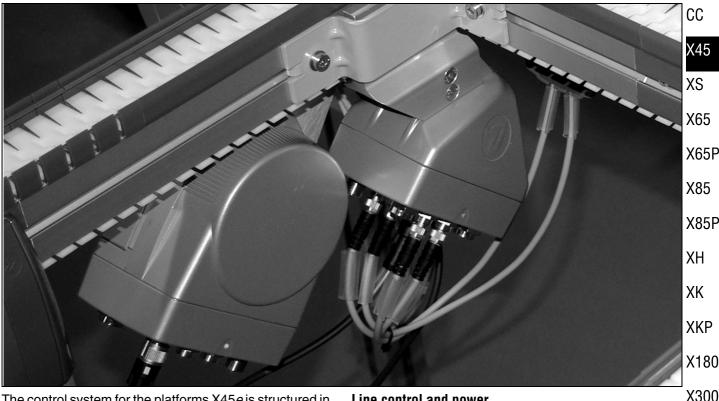
All functions are delivered with an assembly instruction that contains detailed information about or how to:

- Bill of material (BOM)
- · Function origin.

(Identification of the function origin. All components are mounted from this point.)

- Cutting Slide Rail
- How to cut different types
- Motor Assembly
- · Mounting Motor
- Mounting Guide Rails
- Mounting Sensors

The instructions are included with the kit or can be downloaded at our website www.flexlink.com



The control system for the platforms X45e is structured in an object oriented way. All puck function motors in the platform have embedded control units and local sensors are connected directly to each motor unit. This layout gives a big advantage regarding software developing, electrical design and electrical installation.

Function control

The motor unit consists of a motor, circuit boards and eight connectors in an encapsulated housing. There are two types of motor units, the drive unit and the function unit. All that differs on these variants are the motor and the mechanical housing.

Function units X45e

Each function unit includes an embedded controller for handling local decisions within the function area. The unit is equipped with 8 input signals and 4 output signals for connection to sensors and other function units and equipment. The motor unit has a LED on each side indicating the status.

The motors can be autonomously controlled only by the input of the local sensors or controlled from a line controller over a EtherNet/IP or PROFINET network.

If the motors are in autonomous mode they only need power (24VDC) to work properly.

All software in the X45e motors are preloaded and the behavior of the motors can be adjusted to different performance (such as function type, speed and angle settings) by connecting a computer via the USB connector

For more detailed information about the function see User documentation

Line control and power

A line controller can be interlinked via an external Ether-Net/IP or PROFINET network. RFID reader/writers can be connected to the same network via a control interface unit. All dynamic route handling has to be implemented in CS the line controller. The main electrical cabinet supplies the motor units with power, 24 VDC. The power is divided XT in safe and continuous power in order to have the possibilities to implement emergency or safety stops.

X45e units equipped with the old version of Device NET Interface are available to order as RFQ item. Contact FlexLink for more info.

CC

X45

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X65P

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X180

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XD

ELV

CTI

FST

TR

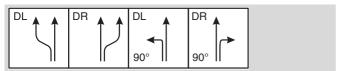
APX

Diverters, Mergers, Combined Diverters/Mergers and Transfers for Puck handling



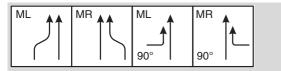
Diverters

Diverters are used to split a flow of pucks from one line into two. The lines can be parallel or in a 90° angle.



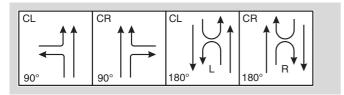
Mergers

Mergers are used to combine the flow from two lines into one. The lines can be parallel or in a 90° angle.



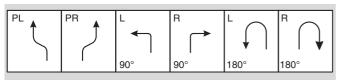
Combined Diverter/merger

A combined diverter/merger is used to create a sub line for example to guide pucks out and in on a satellite conveyor from the main conveyor. They can also be used as "shortcuts".

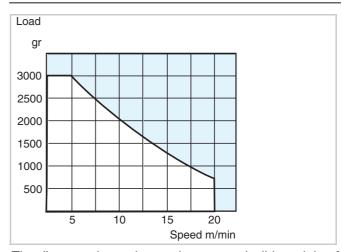


Transfers

Transfers are used to transfer the puck between the conveyors in a system. The parallel transfers are passive but the 90° and 180° angled transfers are driven by a motor.

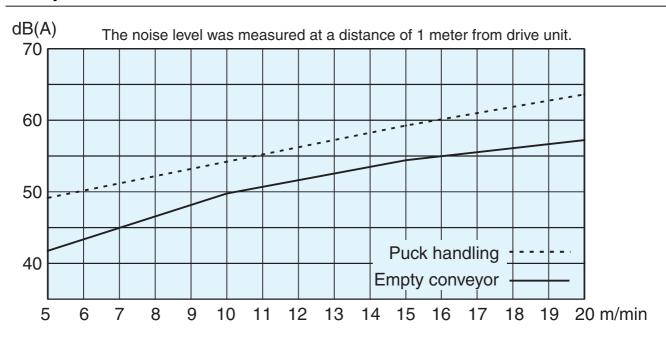


Maximum permissible weight X45C and X45H

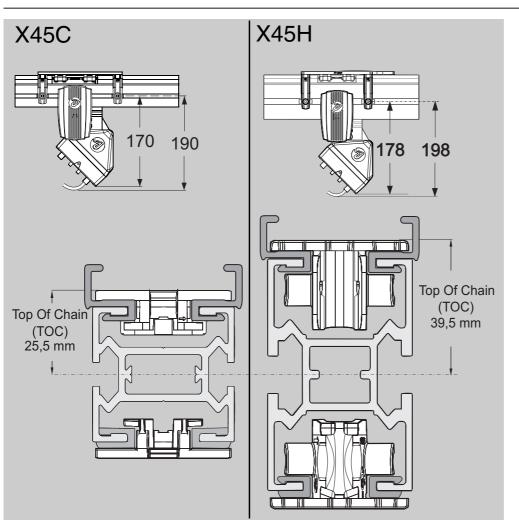


The diagram shows the maximum permissible weight of a group of pucks (product weight + puck weight) that the functions Divert, Merger, Combined Diverter/Merger, Stop and Locating are capable stopping, as a function of the conveyor speed.

Conveyor noise level X45C



Overall installation dimensions



The figure shows the overall installation dimensions for function units X45C and X45H and Top Of Chain (TOC)

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Р0

CC

X45

XS

X65

X65P

X85

X85P

XΗ

XK

XKP

X180

X300

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CS

XT

HU

WL

WK

XC

XF

XD

ELV

CTL

FST

TR

APX

Divert functions and kits

The diverter is an active unit with one infeed and two outfeed conveyors.

There are four different variants of the diverter.

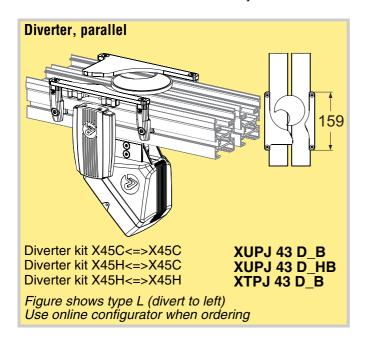
- Diverter, Parallel, Left
- Diverter, Parallel, Right
- Diverter, 90°, Left
- Diverter, 90°, Right

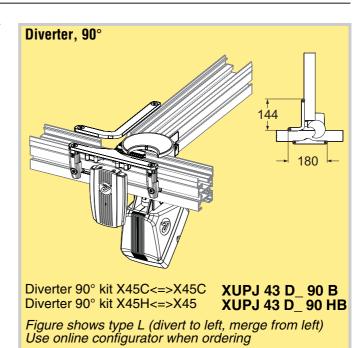
The unit has two positions for photoelectric sensors. The first one is used for sensing the queue status of the infeed conveyor. This sensor can be replaced by a RFID read/write head.

When a puck arrives the rotation disc opens up to receive the puck. The second sensor is used for detecting that the puck has reached the gap of the rotation disc. This is the trigger signal for the main rotation of the rotation disc, with a puck in the gap.

The decision of which outfeed conveyor to release the puck on can be received from the external bus, via a local sensor or from a predetermined pattern.

For more detailed information about the function, see User documentation in Technical library at *flexlink.com*





Function structure list, Divert functions and kits

Function		Direction	Designation	Layout
	Parallel	Diverter kit X45C<=>X45, Left	XUPJ 43 DL B	↑
		Diverter kit X45H<=>X45C, Left	XUPJ 43 DLH B	
		Diverter kit X45H<=>X45H, Left	XTPJ 43 DL B	
Divert		Diverter kit X45C<=>X45, Right	XUPJ 43 DR B	↑
		Diverter kit X45H<=>X45C, Right	XUPJ 43 DRH B	
Divoit		Diverter kit X45H<=>X45H, Right	XTPJ 43 DR B	
	90°	Diverter 90° kit X45C<=>X45C, Left	XUPJ 43 DL 90 B	
		Diverter 90° kit X45H<=>X45C, Left	XUPJ 43 DL 90HB	
		Diverter 90° kit X45C<=>X45C, Righ	XUPJ 43 DR 90 B	
		Diverter 90° kit X45H<=>X45C, Right	XUPJ 43 DR 90HB	

Р0

CC

X45

XS

X65

X65P

X85

X85P

XΗ

XK

XKP

X180

X300

GR

CS

XT

HU

WL

WK

XC

XF

XD

ELV

CTL

FST

TR

APX

Merge functions and kits

The merger is an active unit with two infeed and one outfeed conveyor.

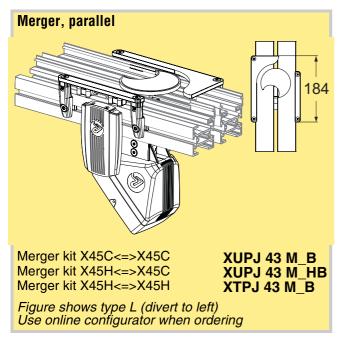
There are four different variants of the merger.

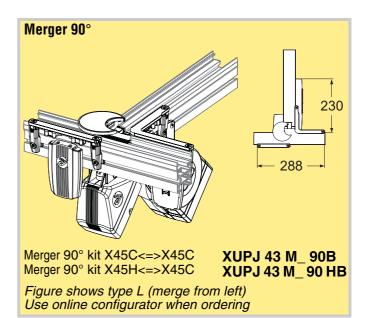
- Merger, Parallel, Left
- · Merger, Parallel, Right
- Merger, 90°, Left
- · Merger, 90°, Right

The unit has two sets of guide brackets each containing two photoelectric sensors. The first sensor position on each side is used for sensing the queue status of the infeed conveyors. These queue sensors are the trigger signal for the merger to move the rotation disc to one of the two receive positions. This is done either clockwise or counter clockwise depending on which conveyor to receive pucks from.

The last sensor is used for sensing pucks in the gap of the rotation disc. This is the trigger signal for the main rotation of the rotation disc, with a puck in the gap. When the rotation disc has reached the release position the cycle is complete and the unit waits for a new puck to arrive.

For more detailed information about the function, see User documentation in Technical library at *flexlink.com*





Function structure list, Merger functions and kits

Function		Direction	Designation	Layout
	Parallel	Merger kit X45C<=>X45C, Left	XUPJ 43 ML B	
		Merger kit X45H<=>X45C, Left	XUPJ 43 MLH B	
		Merger kit X45H<=>X45H, Left	XTPJ 43 ML B	
	90°	Merger kit X45C<=>X45C, Right	XUPJ 43 MR B	
		Merger kit X45H<=>X45C, Right	XUPJ 43 MRH B	
Merge		Merger kit X45H<=>X45H, Right	XTPJ 43 MR B	
		Merger 90° kit X45<=>X45C, Left	XUPJ 43 ML 90 B	
		Merger 90° kit X45H<=>X45C, Left	XUPJ 43 ML 90HB	
		Merger 90° kit X45C<=>X45C, Right	XUPJ 43 MR 90 B	1
		Merger 90° kit X45H<=>X45C, Right	XUPJ 43 MR 90HB	

P0

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X65 X65P

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TR

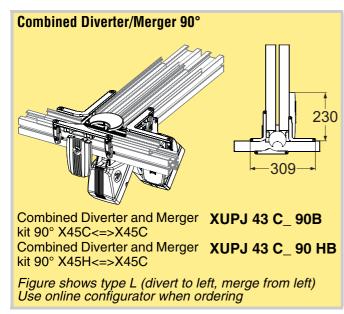
APX

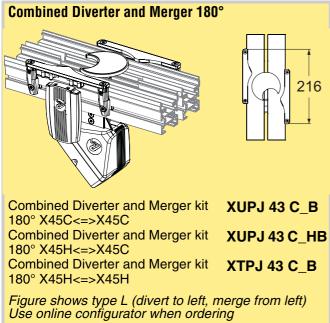
Combined Divert/Merge

A Combined Diverter/Merger is used to create a sub line for example to guide pucks out and in on a satellite conveyor from the main conveyor. They can also be used as "shortcuts".

This function has the behaviour from both the diverter and the merger. The prioritized order can be predetermined or decided dynamically from a line controller.

For more detailed information about the function, see User documentation in Technical library at *flexlink.com*





Function structure list, Combined Diverter/Merger

Function		Direction	Designation	Layout	
	Parallel	Combined Divert/Merge kit X45C<=>X45C, Left	XUPJ 43 CL B		
		Combined Divert/Merge kit X45C<=>X45H, Left	XUPJ 43 CLH B		
		Combined Divert/Merge kit X45H<=>X45H, Left	XTPJ 43 CL B		
		Combined Divert/Merge kit X45C<=>X45C, Right	XUPJ 43 CR B	↑	
Combined Divert/Merge		Combined Divert/Merge kit X45C<=>X45H, Right	XUPJ 43 CRH B		
		Combined Divert/Merge kit X45H<=>X45H, Right	XTPJ 43 CR B		
	90°	Combined Divert/Merge kit X45C<=>X45C, Left	XUPJ 43 CL 90 B		
		Combined Divert/Merge kit X45C<=>X45H, Left	XUPJ 43 CL 90HB		
		Combined Divert/Merge kit X45C<=>X45C, Right	XUPJ 43 CR 90 B	1	
		Combined Divert/Merge kit X45C<=>X45H, Right	XUPJ 43 CR 90HB		

P0

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XS

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XK

XKP

X180

X300

GR

CS

XT

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WL

WK

XC

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XD

ELV

CTL

FST

TR

APX

Combined Diverter/Merger for handling train of products

This combined diverter/merger unit is handling train of products. It require a gap in the product flow during function operation change. Gaps are normally created by stop units located on each incoming conveyor. The decision of which outfeed conveyor to release the pucks on

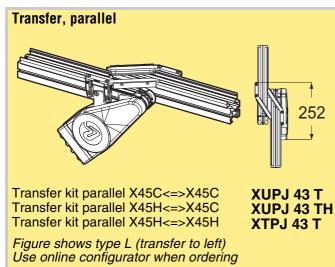
can be received from the external bus, via a local sensor or from a predetermined pattern. For more detailed information about the function, see User documentation in Technical library at flexlink.com

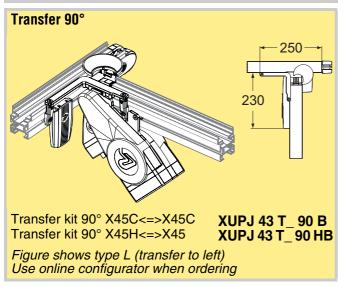
Function	Direction	Designation	Function alternatives
Combined Divert/Merge Train product handling	Diverter/Merge kit X45C<=>X45	XUPJ 43 DT B	→
	Diverter/Merge kit X45H<=>X45C,	XUPJ 43 DTH B	→ →
	Divert/Merge kit X45H<=>X45H	XTPJ 43 DT B	→ →

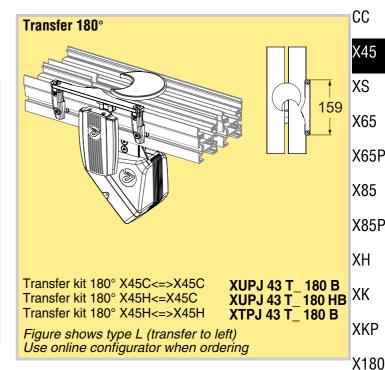
Transfer PO

Transfers are used to transfer the puck between the conveyors in a system.

For more detailed information about the function, see User documentation in Technical library at *flexlink.com*







X300

GR

CS

XT

HU

WL

WK

XC

XF

XD

ELV

CTL

FST

TR

APX

Function structure list, Transfer, parallel and $90^{\rm o}$

Function		Direction	Designation	Layout	
		Transfer kit, parallel, left, X45C<=>X45	XUPJ 43 T	Л	
		Transfer kit, parallel, left, X45H<=>X45C	XUPJ 43 TH		
	Parallel	Transfer kit, parallel, left, X45H<=>X45H	XTPJ 43 T		
	T di diioi	Transfer kit, parallel, right, X45C<=>X45C	XUPJ 43 T		
		Transfer kit, parallel, right, X45H<=>X45C	XUPJ 43 TH		
Transfer		Transfer kit, parallel, right, X45H<=>X45H	XTPJ 43 T		
	90°	Transfer kit, 90, left, X45C<=>X45C	XUPJ 43 TL 90 B		
		Transfer kit, 90, left, X45H<=>X45C	XUPJ 43 TL 90HB		
		Transfer kit, 90, right, X45C<=>X45C	XUPJ 43 TR 90 B		
		Transfer kit, 90, right, X45H<=>X45C	XUPJ 43 TR 90HB		

Function structure list, Transfer 180°

Function		Direction	Designation	Layout	
Transfer 180°		Transfer kit, 180, left, X45C<=>X45C	XUPJ 43 TL 180B		
		Transfer kit, 180, left, X45H<=X45C	XUPJ 43 TL 180HB		
		Transfer kit, 180, left, X45H=>X45C	XTPJ 43 TL 180UB		
	180°	Transfer kit, 180, left, X45H<=>X45H	XTPJ 43 TL 180B	▼	
		Transfer kit, 180, right, X45C<=>X45C	XUPJ 43 TR 180B		
		Transfer kit, 180, right, X45H<=X45C	XUPJ 43 TR 180HB		
		Transfer kit, 180, right, X45H=>X45C	XTPJ 43 TR 180UB		
		Transfer kit, 180, right, X45H<=>X45H	XTPJ 43 TR 180B	◎ ▼	

Р0

CC

X45

XS

X65

X65P

X85

X85P

XH

XK

XKP

X180

X300

GR

CS

XT

HU

WL

WK

XC

XF

XD

ELV

 CTL

FST

TR

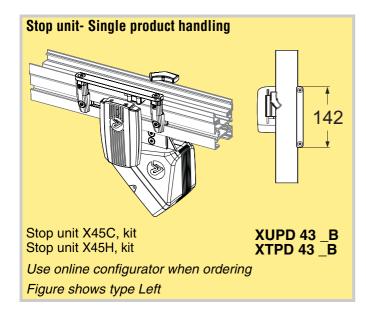
APX

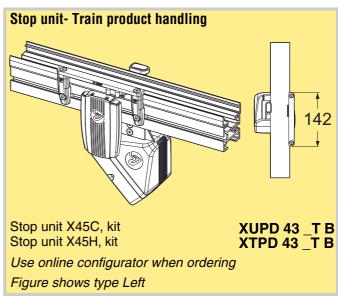
Stop unit is an active unit acting on a single conveyor.

The unit has only one photoelectric sensor. This detects a puck in the queue. The default position of the stop unit is closed, i.e. it is able to resist a queue of pucks. If the stop is deactivated the unit opens up to receive a puck.

This unit can be controlled either via the external bus or in local mode by a signal in the local digital input.

For more detailed information about the function, see User documentation in Technical library at *flexlink.com*





Function structure list, Stop unit

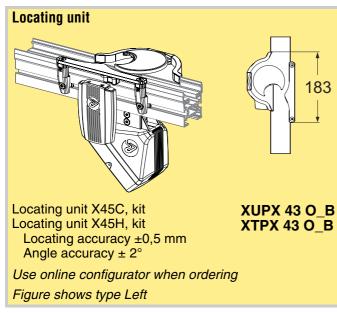
Function	Direction	Designation	Layout
	Stop unit kit, X45C Left	XUPD 43 L B	
Stop unit Single product	Stop unit kit, X45H Left	XTPD 43 L B	
handling	Stop unit kit, X45C Right	XUPD 43 R B	
	Stop unit kit, X45H Right	XTPD 43 R B	
Function	Direction	Designation	Layout
	Stop unit kit, X45C	XUPD 43 LT B	
	Left	XUPD 43 LI B	
Stop unit	Stop unit kit, X45H Left	XTPD 43 LT B	
Stop unit Train product handling	Stop unit kit, X45H		

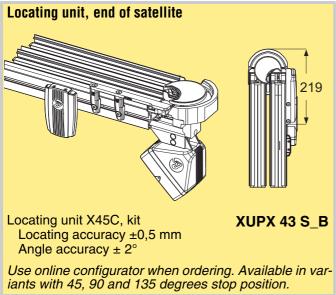
Locating unit P0

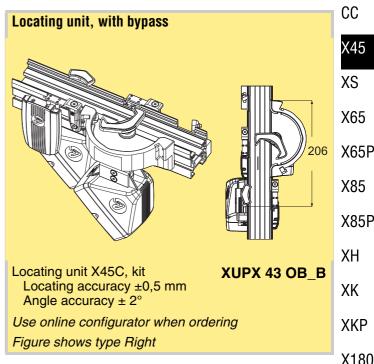
Locating unit is an active unit acting on a single conveyor.

The station has only one photoelectric sensor. This is detecting that the puck has reached the gap of the rotation disc. The locating station can also be equipped with a RFID read/write head on the locating position. The station can be controlled either via the external bus or using only local control.

For more detailed information about the function, see User documentation in Technical library at *flexlink.com*







CC

X45

XS

X65

X85

X85P

XH

XK

XKP

X180

X300

GR

CS XT

HU

WL

WK

XC

XF

XD

ELV

CTL

FST

TR

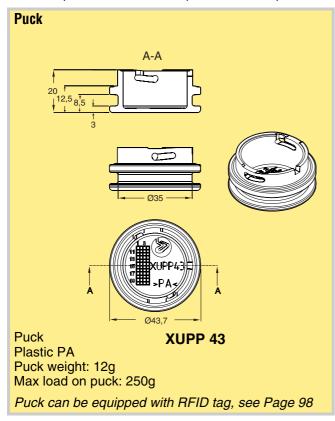
APX

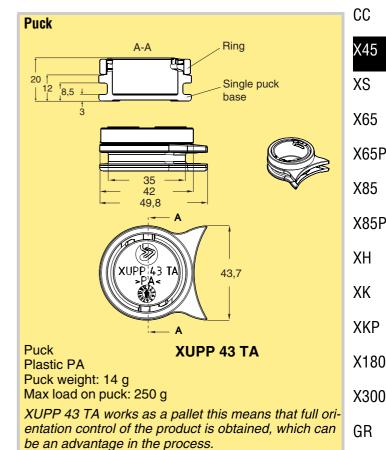
Function	Direction	Designation	Item	Layout
	X45C, Left, kit	XUPX 43 OL B		
 	X45H, Left, kit	XTPX 43 OL B		
Locating unit	X45C, Right, kit	XUPX 43 OR B		
	X45H, Right, kit	XTPX 43 OR B		
Locating unit, end of satellite	X45C, Left, kit	XUPX 43 SL B		
	X45C, Right, kit	XUPX 43 SR B		
Locating unit, locating with by- pass	X45C, Left, kit	XUPX 43 OBL B		
	X45C, Right, kit	XUPX 43 OBR B		
XUPP 43 T The rotating disc guides the puck sideways out the conveyor into the locating position. A spring function included in the rotating disc presses the puck towards a v-shaped block. In this position to puck is locked vertical and can take limited vertical to puck is locked vertical and can take limited vertical and in the X, Y-plane. Accuracy: Locating ±0,5 mm Angle ± 2°				

Puck handling

A complete Puck XUPP 43 or XUPP 43 TA consists of a base and a ring part.

Function of the ring is to allow the function disc in all different function units, to rotate without getting force from the other pucks that can be in queue in a line up situation.





The puck will be a bit more stable as more of the sur-

Puck can be equipped with RFID tag, see Page 98

P0

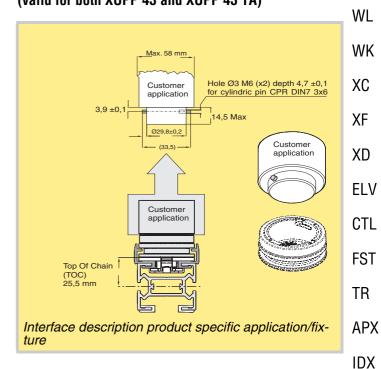
CS

XT

HU

Product specific application/fixture (valid for both XUPP 43 and XUPP 43 TA)

face area is in contact with the conveyor.



RFID components

RFID tag

The RFID tag is a circular tag with a diameter of 30 mm operating at the frequency of 13.56 MHz. The memory available is 1024 bit or 16 kbit.

Read/ write head

The read/write head exchanges data with the passive RFID tags at a maximum distance of 50 mm.

The read/write head has an M12 connector. The M12 cable is connected to a control interface unit.

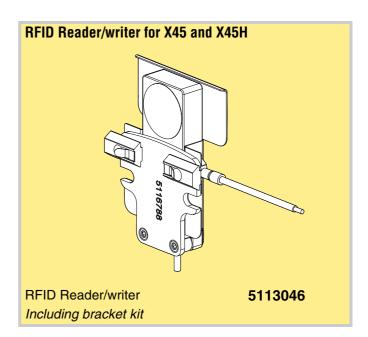
Control interface unit

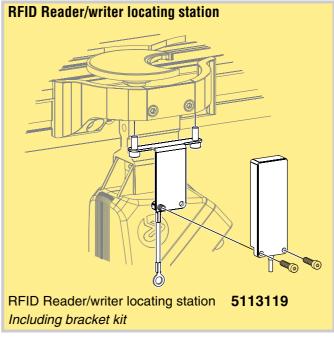
Every read/write head has to be connected to a control interface unit. These units exist in different variants that can connect up to four read/write heads each.

They are equipped with interfaces for some of the most common field bus system, Profibus, PROFINET, Ethernet and DeviceNet and Interbus, as well as with serial interfaces.

For more detailed information about the function, see User documentation.





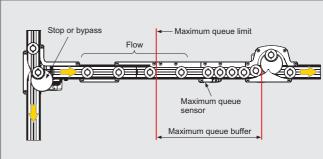


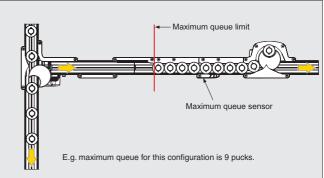
CC

In order to prevent any jam in the production flow, a maximum queue sensor can be connected. It will read if a unexpected long queue occurs, a signal will be received by the embedded software in previous function motor in the flow and stop the feed or feed through to another flow

Sensor maximum queue 55 100 45 Sensor maximum queue X45C Sensor maximum queue X45H Sensor maximum queue X45H 5116932 Figure shows type Left Including mounting hardware and Cable cover 5113038

Maximum queue





X45

XS

X65

X65P

X85

X85P

XH

XK

XKP

X180

X300

GR

CS

XT

HU

WL

WK

XC

XF

XD

ELV

CTL

FST

TR

APX