

X65 pallet system

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Pallet system with standard modules and RFID

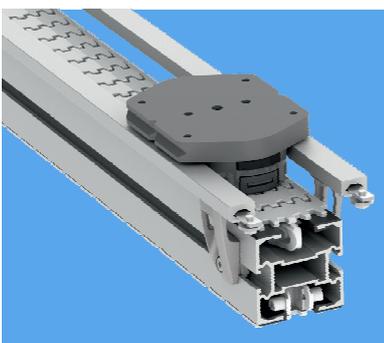


Based on modules

The X65 pallet system is a complete system for handling individual products on product carriers (pallets). An automated system is built on configurable standard modules.

Standard modules make it very easy and fast to create simple as well as advanced layouts for routing, balancing, buffering and positioning of pallets. RFID identification in the pallets enables one piece track and trace and logistic control for the production line.

X65 pallet, chain width 63 mm



Application areas

Examples of application areas are transport and assembly of spark plugs, gear wheels, fuel injectors, hydraulic pistons, headlights, brake cylinders, cellular phones, and hard disk drives.

Technical characteristics

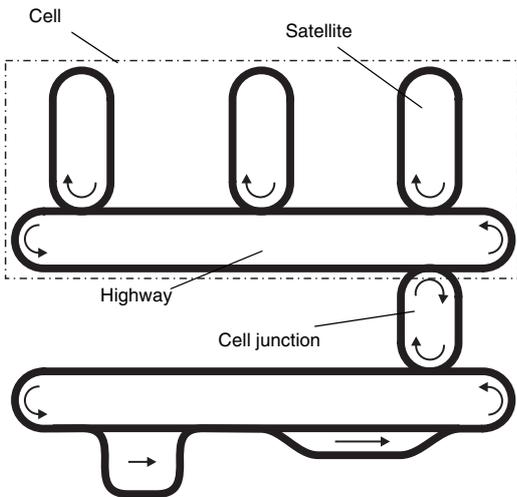
| | |
|-------------------------|---------------------------------------|
| Pallet sizes (W×L×H): | 100 mm × 128 mm × 41 mm |
| Pallet weight: | 0,220 kg |
| Maximum load on pallet: | 3,0 kg (including pallet and fixture) |
| Locating accuracy: | ± 0,1 mm |

Divert/merge devices

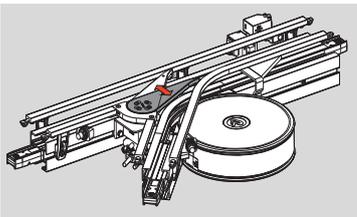
Divert/merge devices are used for routing products by dividing or combining flows of products. Usually there is a main conveyor, a “highway”, and separate subordinated conveyors, “satellites”.

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 can return to the highway.

A combination of a highway and one or more satellites is often called a cell. Using divert/merge modules, it is possible to build cell junctions which facilitate transfer of a pallet from one cell to another. See figure.

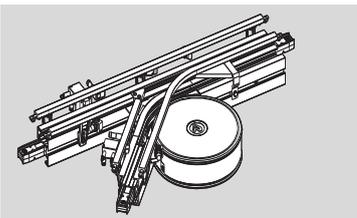


Divert modules



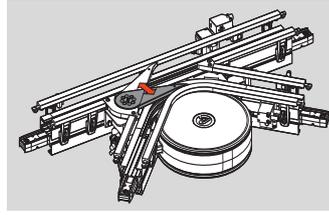
Divert modules for guiding the flow of products off the highway into a satellite are available in four basic types: 45° left/right and 90° left/right.

Merge modules



Merge modules for guiding products from a satellite back to the highway are available in four basic versions: 45° left/right and 90° left/right.

Combined divert/merge modules



Combined divert/merge modules which permit products to be guided into a satellite, or be returned back to the highway, or circulate on the satellite, are called divert/merge combinations. They are available in four basic versions: 45° left/right and 90° left/right.

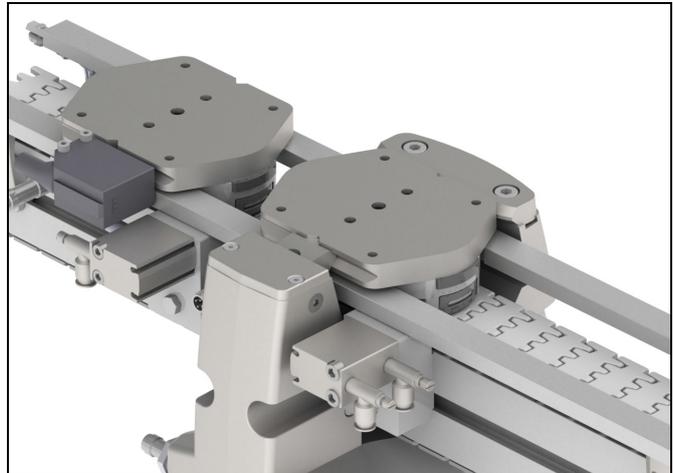
Configurator tool

The divert/merge/combination modules can be individually configured to the right pallet size using the configurator tool. The configurator tool will create a geometrically correct 3D CAD-model that can be inserted in the layout. The configured module will include the function, stops, conveyor beams, wheel bends and guide rails.

Configurable options include:

- Sensors: Yes/No
- RFID: Yes/No

Pallet positioning functions



The pallet locating station for the X65 pallet system is used for positioning of pallets. The pallets are stopped by a pneumatically controlled stop device near the desired position.

A proximity switch is used to indicate that a pallet is in the locating station.

A locating cross wedge is activated to one side of the pallet lifting the pallet against a V-ruler on the opposite side of the pallet.

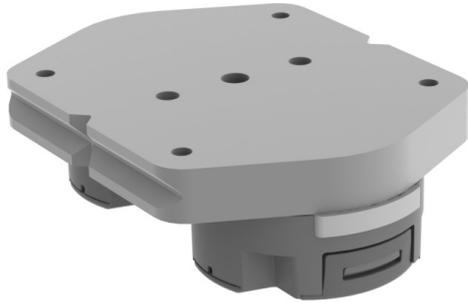
The locating accuracy is within +/-0,1 mm.

A regular stop device type XLPD can be used.

Configurable options include:

- Sensors and brackets
- RFID readers and brackets

Pallet



The X65 pallet can be adapted to specific requirements such as

- Low friction
- Fast indexing
- Easy attachment of fixtures
- Low cost

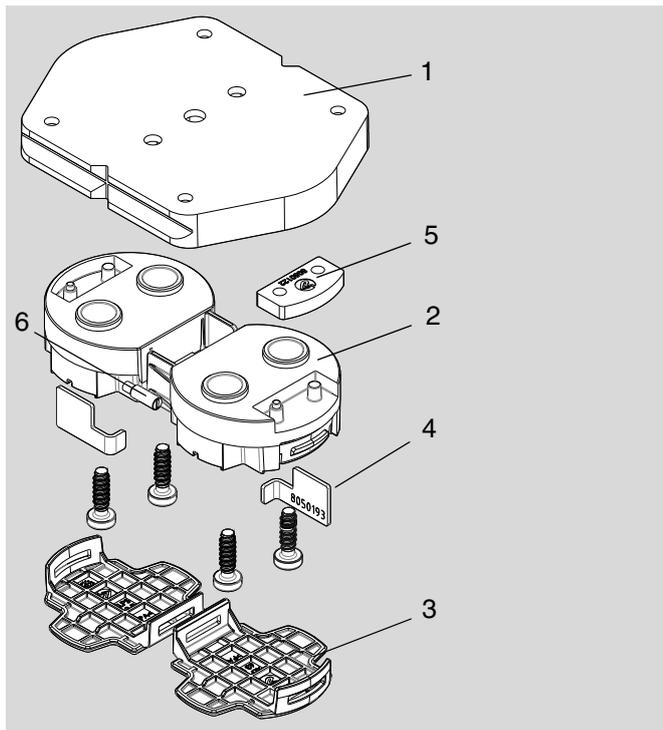
A pallet consists of an injection molded (1) pallet base (PA66) and two (2) plastic pucks with (3) slide plates at the bottom. Product-specific fixtures are attached to the pallet base.

Two V-grooves on the side provide high locating accuracy at the locating station.

Guide holes in the pallet base plate ensure high accuracy for the product-specific fixture in relation to the V-grooves.

An (4) initiator plate for position sensors is integrated in each guide disc. The pallets are delivered with a (5) shock absorber in the front guide disc.

An (6) RFID tag holder is integrated in the underside of the pallet base.



RFID

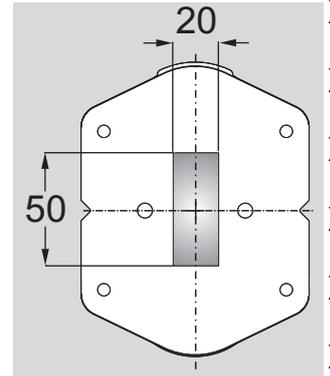
- The pallet plate is equipped with a socket for an IFM RFID tag
- IFM read on the fly at speeds up to 30 m/min

Features

- Attachment holes for fixture
- One optional plate under the pallet for fast loading

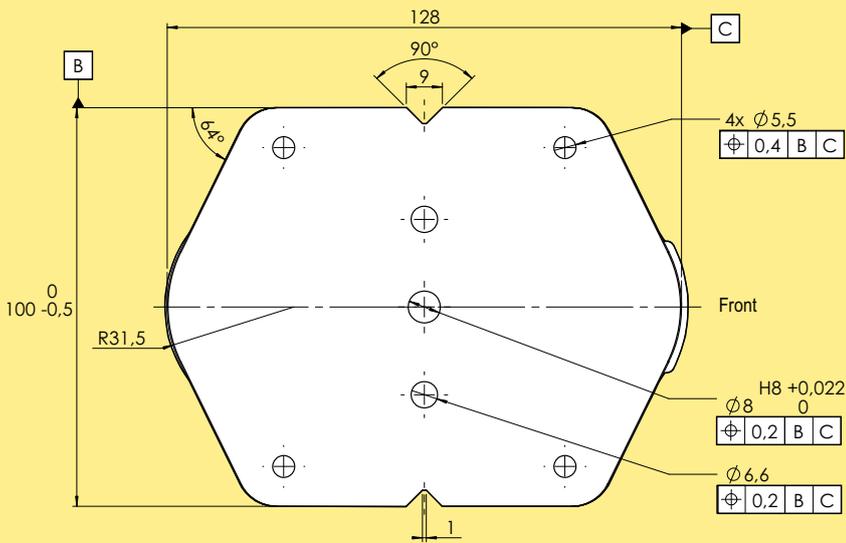
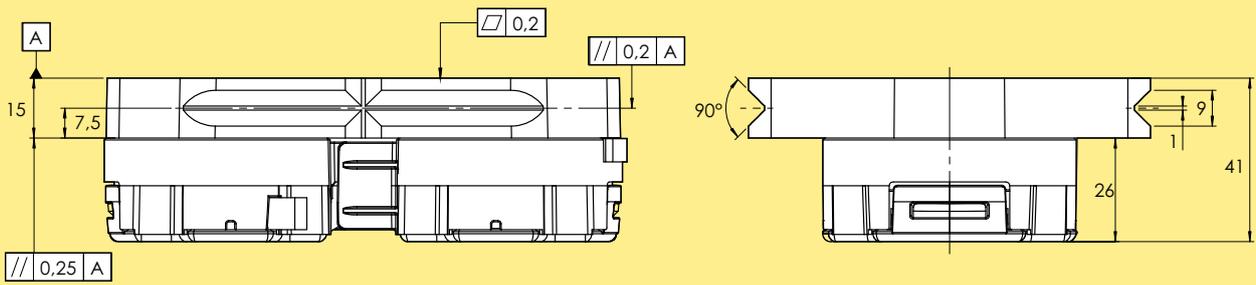
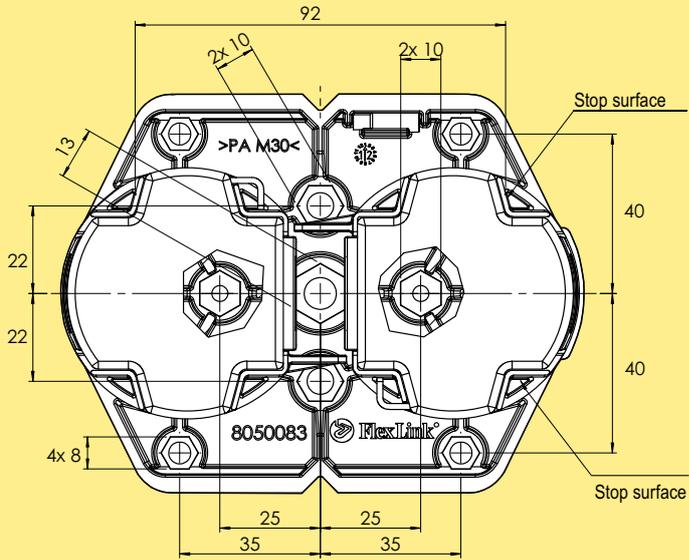
Pallet loading

The centre of gravity of the product on the pallet (including fixture) must be located inside a 20 mm x 50 mm rectangle on the pallet. See figure.



Pallet X65

Pallet 100 mm × 128 mm



Pallet 100x128, h=41

XLPP 100x128

Guide disc

Guide disc, with plastic plate (Rear)* **XLPG 63 P**
 Guide disc, plastic plate (Front)** **XLPG 63 DP**

*) Including slide plate, initiator plate.
 **) Including slide plate, shock absorber, initiator plate.
 Note. Contains 10 pcs.

Slide plate kit, plastic, snap-on

Slide plate, PA-PE **XLPS 63 P**
 Note. Kit contains 10 pcs

Shock absorber kit

Shock absorber kit **8050135**
 Note. Each pallet is delivered with one shock absorber 8050122.
 Note. Kit contains 10 pcs

Initiator plate kit

Initiator plate **8050161**
 Note. Each pallet is delivered with two initiator plates.
 Note. Kit contains 10 pcs

Screw kit

Screw kit **8050162**
 Note! Each pallet is delivered with four screws that holds the Guide discs.
 Note. Kit contains 20 pcs

Chains

Plain chain

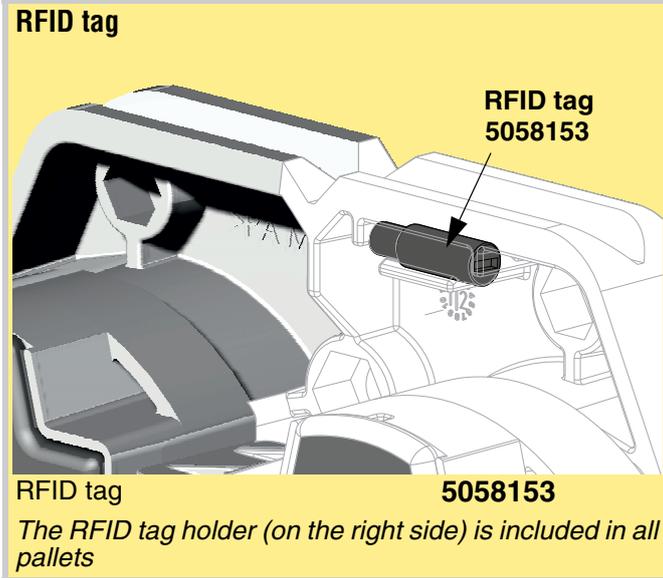
Plain chain Length 5 m **XLTP 5A65**
 Plain link kit * **5117329**
 Plain chain (Ultra low wear) Length 5 m **XLTP 5A65 C**
 Plain link kit (Ultra low wear) **5117371**
 *Link kit contains 10 links, 10 pivots, 10 steel pins

RFID components

RFID tag

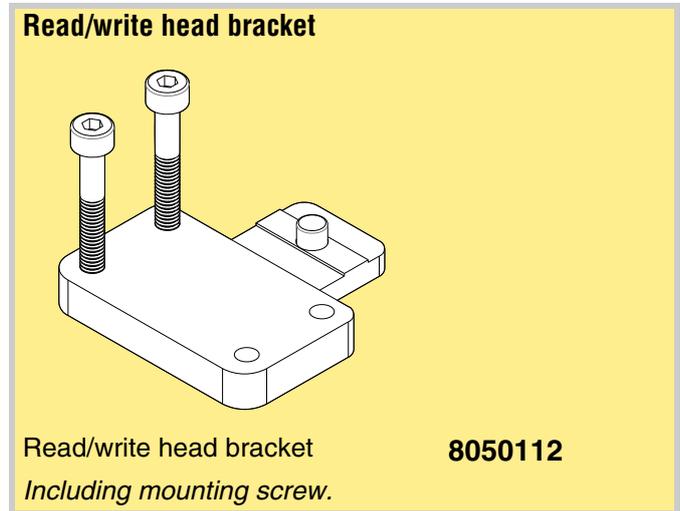
The RFID tag can be read reliably at speeds up to 30 m/min. The tag has an M5 grub screw like design and is mounted in a plastic holder.

| | |
|---------------------|---------------------------------|
| Threaded type | M5x16,5mm |
| Operating frequency | 125 kHz |
| Memory [BIT] | 224 (7 pages with 32 bits each) |

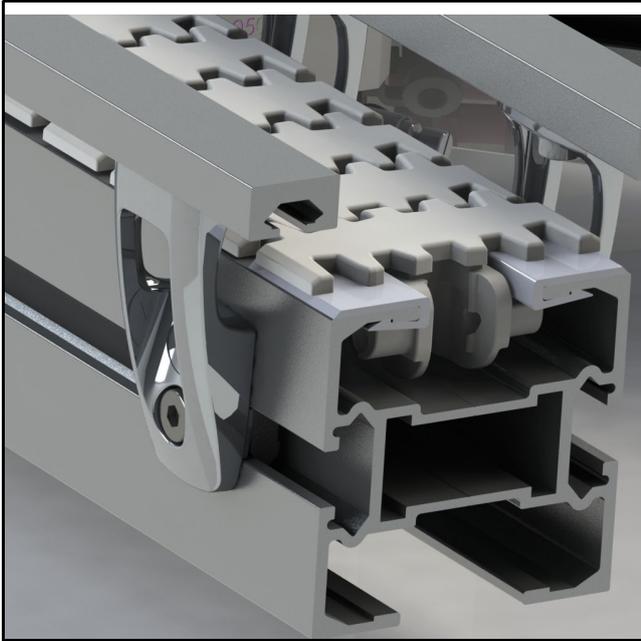


Read/write head

The read/write heads exchange data with the passive RFID tags at a maximum distance of 20 mm. The read/write head has an M12 connector. The M12 cable is connected to an M12 ASi socket. Up to 31 read/write heads can be connected to one ASi system.

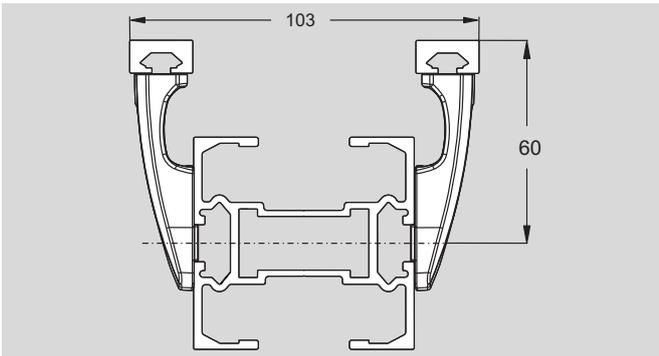


Guide rails for pallets – introduction



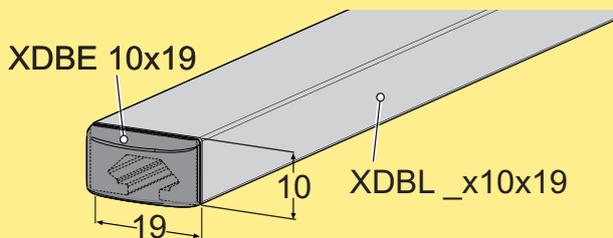
Guide rail types

Aluminium guide rails for X65 pallets are available as straight sections and as pre-bent curve sections for 30°, 45°, 90° and 180° wheel bends.



Straight guide rails for X65 pallets

Guide rail, aluminium



Guide rail

Length 3 m

Length to order (max 3 m)

End cap kit, polyamide, (contain 10 pcs)

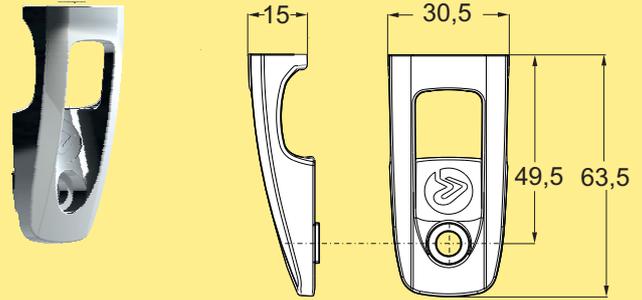
XDBL 3x10x19

XDBL Lx10x19

XDBE 10x19

Guide rail bracket for X65 pallets

Guide rail bracket



Guide rail bracket for X65 pallets **XLRB 10x50**

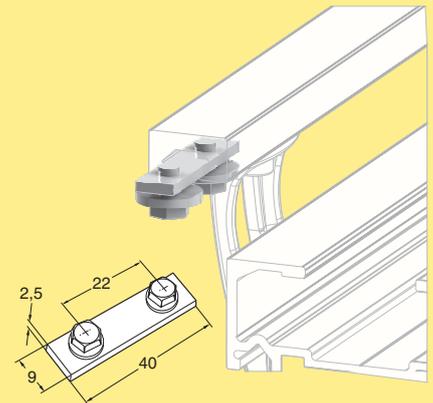
Mounting hardware included:

To guide rail: ISO 4762 M5x10-8.8-A2K (screw), XDAN 5 A (nut)

To beam: DIN 7984 M6x12-8.8-A2K (screw), XCAN 6 (nut)

Connecting strips

Connecting strips for guide rail

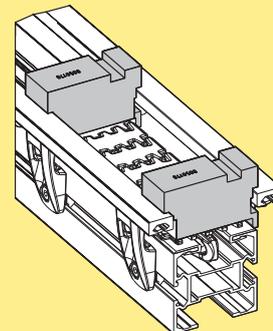


Connecting strip

XDCJ 9x40

Mounting tool for guide rails

Mounting tool

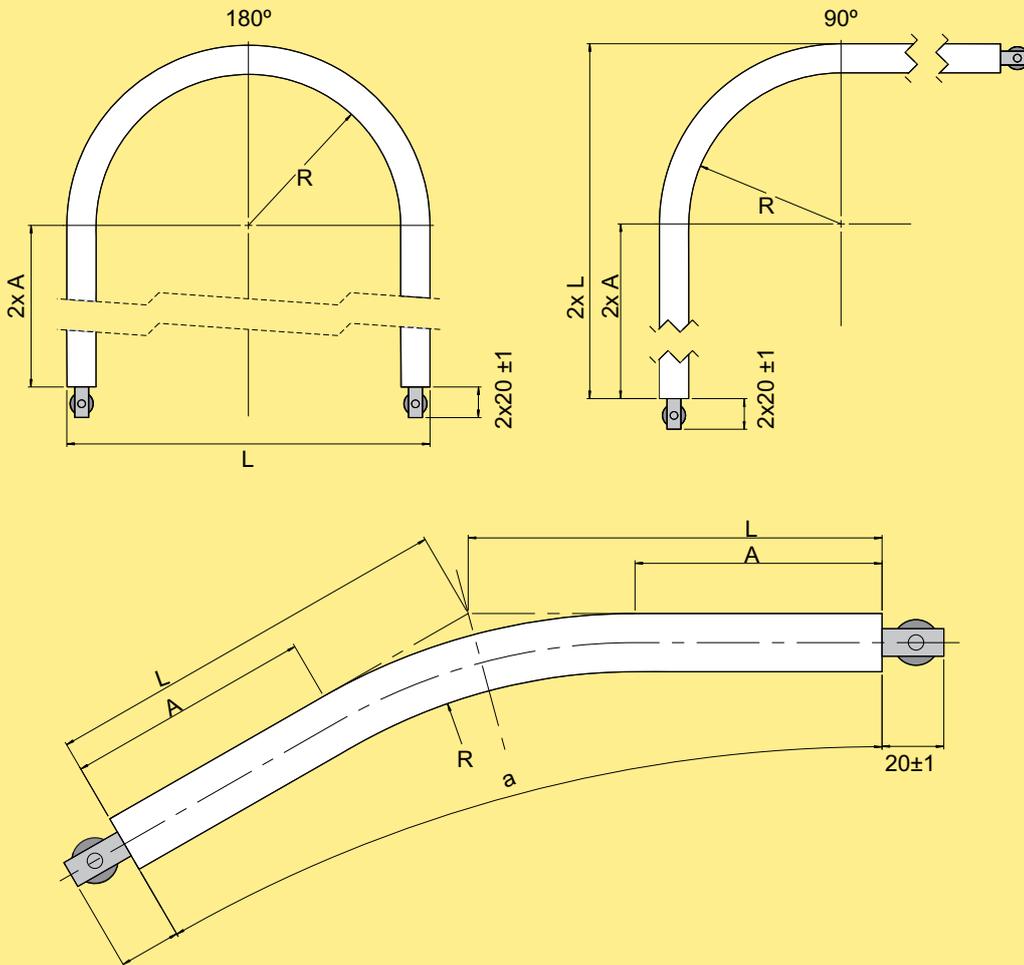


Mounting tool
(Contain 2 pcs)

8050178

Guide rails for wheel bends

Guide rails for wheel bends



| Designation | Angle (a) | Radius (R) | Length (L) | Length (A) |
|-------------|-----------|------------|------------|------------|
| 8050163 | 30° | 98,6 | 281,5 | 250 |
| 8050164 | 45° | 98,6 | 298,7 | 250 |
| 8050165 | 90° | 98,6 | 367,6 | 250 |
| 8050166 | 180° | 98,6 | 235,2 | 250 |
| 8050167 | 30° | 182,6 | 134 | 80 |
| 8050168 | 45° | 182,6 | 163,5 | 80 |
| 8050169 | 90° | 182,6 | 281,6 | 80 |
| 8050157 | 180° | 182,6 | 403,2 | 80 |

Guide rail for wheel bend

For 30° wheel bend, inner
 For 45° wheel bend, inner
 For 90° wheel bend, inner
 For 180° wheel bend, inner

8050163
8050164
8050165
8050166

For 30° wheel bend, outer
 For 45° wheel bend, outer
 For 90° wheel bend, outer
 For 180° wheel bend, outer

8050167
8050168
8050169
8050157

Including connecting strips



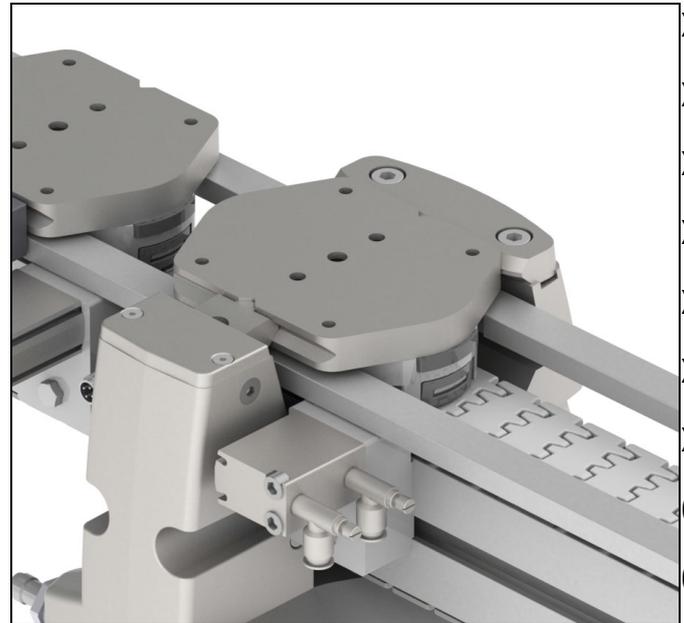
Principles of operation

The Locating station for the X65 pallet system are used for positioning of pallets. The pallets are stopped by a pneumatically controlled stop device near the desired position.

A proximity switch is used to indicate that a pallet is in the locating station.

A locating cross wedge is activated to one side of the pallet lifting the pallet against a V-ruler on the opposite side of the pallet.

The locating accuracy is within +/-0,1 mm.



Locating module

Locating modules are components for positioning pallets in preparation for operations such as assembly, machining or testing.

The Locating module will be delivered complete with conveyor beam, guide rails and guide rail brackets, stops and sensor brackets for M12 sensors, for installation into a conveyor line.

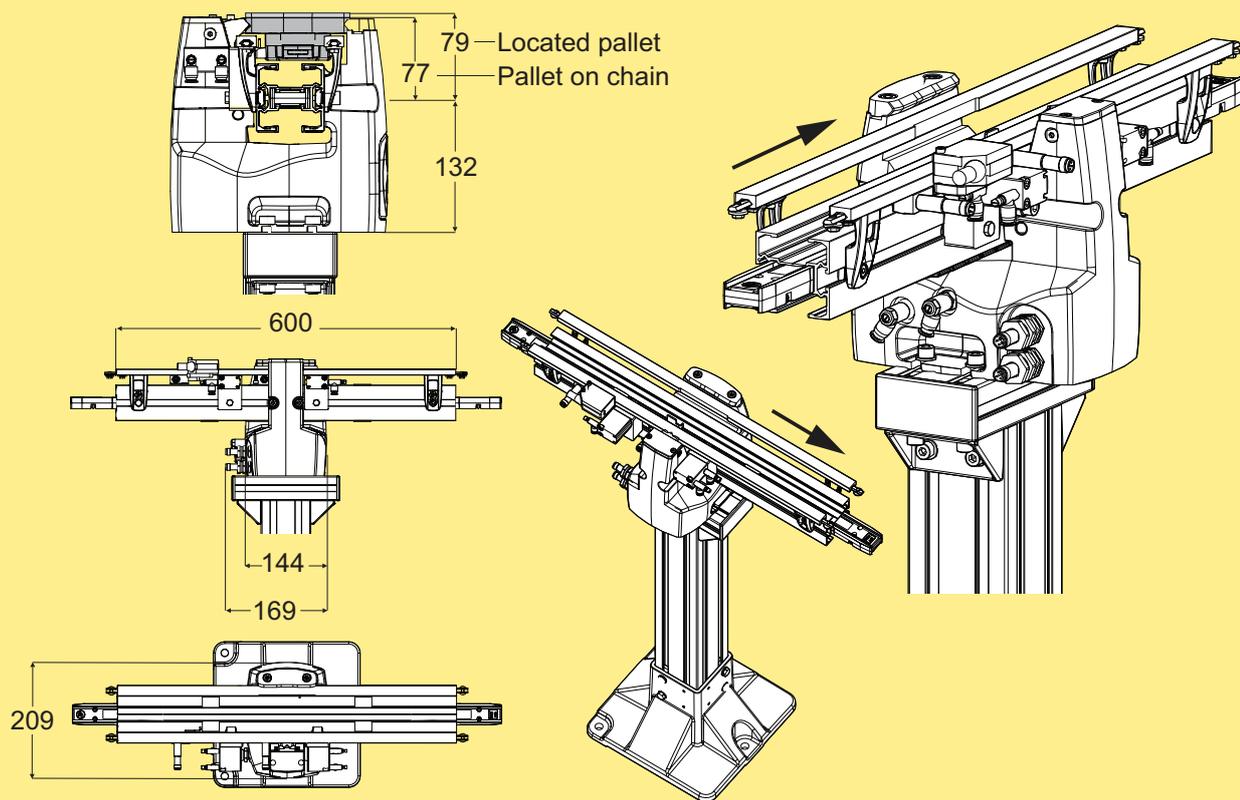
The sensor for “pallet in locating position” is always included but other sensors, supports and RFID readers are optional.

Ordering information

Use the online configurator to order Locating module. In the configuration process, sensor types and RFID readers are specified.

Locating module

Locating module



Locating module*

XLUL 11 A

**Use online configurator when ordering*

For detailed technical information, see the website <http://www.flexlink.com>.

Max total vertical load (including pallet and product) in located position is 300 N.

Effective track length: 0,6 m 1-way (1,2 m 2-way).

Locating accuracy ($\pm 0,1$ mm)



Common information

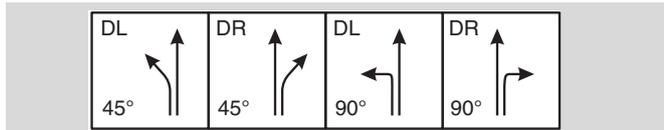
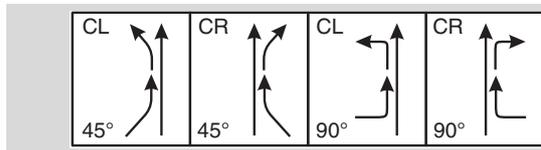
- Air pressure between 6-8 bar
- For safety reasons, the pallet stop is blocking the flow in case of a pressure drop, preventing pallets from travelling uncontrolled along the conveyor.

Divert and merge modules

A combined divert/merge device is used to guide selected pallets from a main conveyor (highway) into a satellite conveyor and back. The combination also permits recirculating the pallets on the satellite until the pallet is ready to return to the highway.

Divert modules

Divert modules are used to guide selected pallets from one conveyor to another.

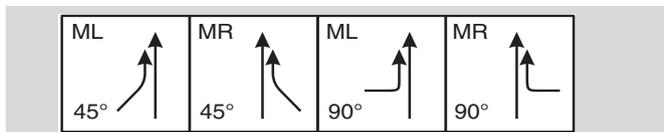
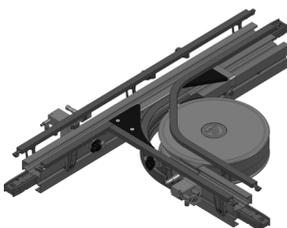


Ordering information

Diverting/merging modules must be ordered using the online configurator. To use the configurator, it is necessary to login to www.flexlink.com. First-time users need to register. After logging in, just go to “My FlexLink” and select “Order online” in the drop-down menu. Then select “Configure modules”. Several configuration choices are presented. Click on the desired product and follow the instructions on the screen.

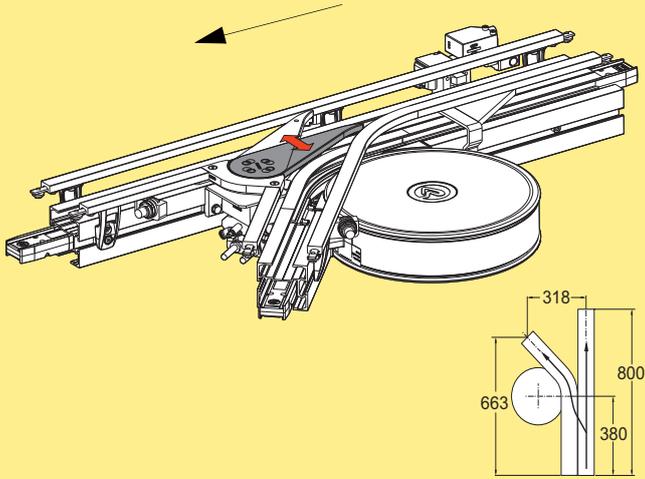
Merge modules

Merge devices are used to guide pallets back from a satellite conveyor into the main conveyor (highway).



Divert modules

Divert module 45°

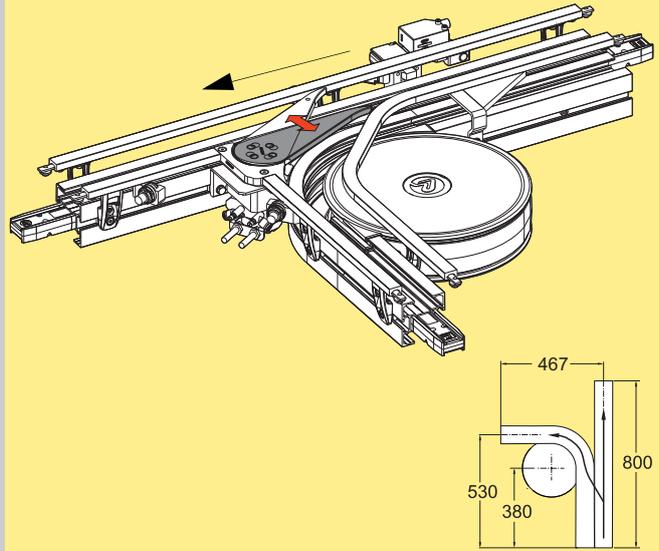


Divert module 45° * **XLUT 45 D**

Figure shows type L (divert to left)
*Use online configurator when ordering

Effective track length: 1,55 m 1-way (3,1 m 2-way)

Divert module 90°



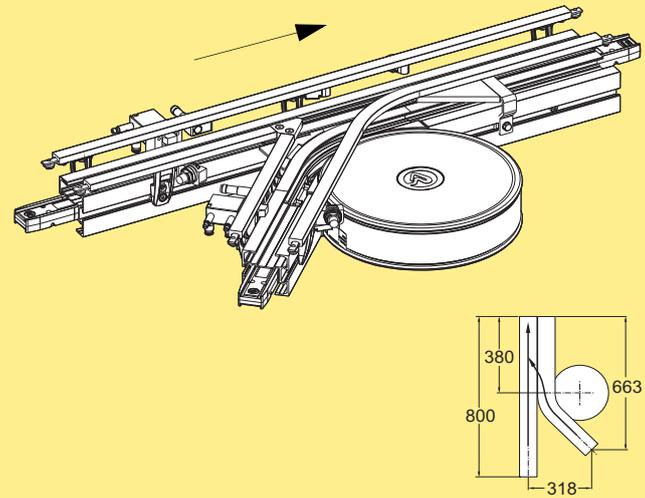
Divert module 90° * **XLUT 90 D**

Figure shows type L (divert to left)
*Use online configurator when ordering

Effective track length: 1,68 m 1-way (3,35 m 2-way)

Merge modules

Merge module 45°

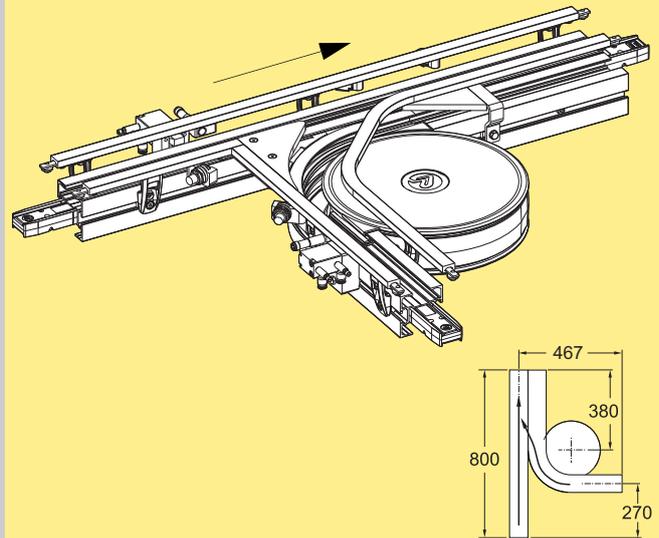


Merge module 45° * **XLUT 45 M**

Figure shows type R (merge from right)
*Use online configurator when ordering

Effective track length: 1,55 m 1-way (3,1 m 2-way)

Merge module 90°



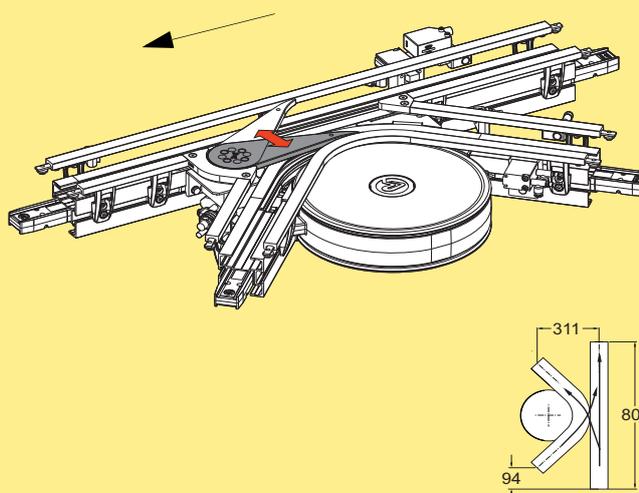
Merge module 90° * **XLUT 90 M**

Figure shows type R (merge from right)
*Use online configurator when ordering

Effective track length: 1,68 m 1-way (3,35 m 2-way)

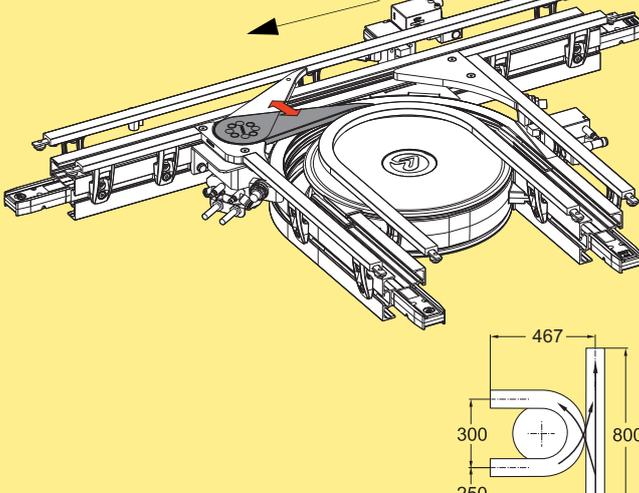
Divert and merge modules

Divert and merge module 45°



Divert and merge module 45° * **XLUT 45 C**
 Figure shows type L (divert to left, merge from left)
 *Use online configurator when ordering
 Effective track length: 1,54 m 1-way (3,07 m 2-way)

Divert and merge module 90°



Divert and merge module 90° * **XLUT 90 C**
 Figure shows type L (divert to left, merge from left)
 *Use online configurator when ordering
 Effective track length: 1,79 m 1-way (3,57 m 2-way)

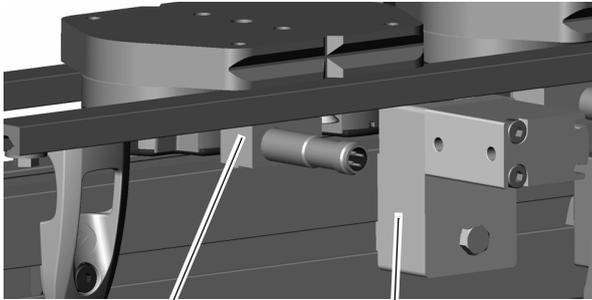
- PO
- CC
- X45
- XS
- X65
- X65P**
- X85
- X85P
- XH
- XK
- XKP
- X180
- X300
- GR
- CS
- XT
- HU
- WL
- WK
- XC
- XF
- XD
- ELV
- CTL
- FST
- TR
- APX
- IDX

Pallet stops

Principles of operation

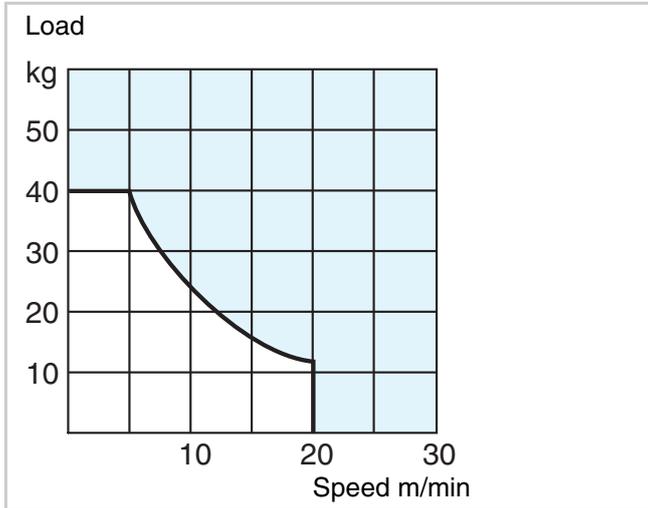
Pneumatic pallet stops are used to stop pallets at selected positions along the line. Proximity sensors can be attached to the stop using bracket XLPB 12 H. An initiator plate, page 149 is attached to the front guide disc of the pallet.

The stop is double-acting, but also includes an integrated spring for stop out if air supply is cut off.



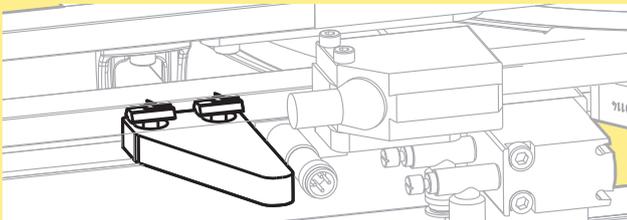
XLPB 12 H

XLPD 20x10 X65



The diagram shows the maximum permissible weight of a group of pallets (product weight + pallet weight) that the Stop device is capable of stopping, as a function of the conveyor speed.

Protective cover for horizontal proximity switch

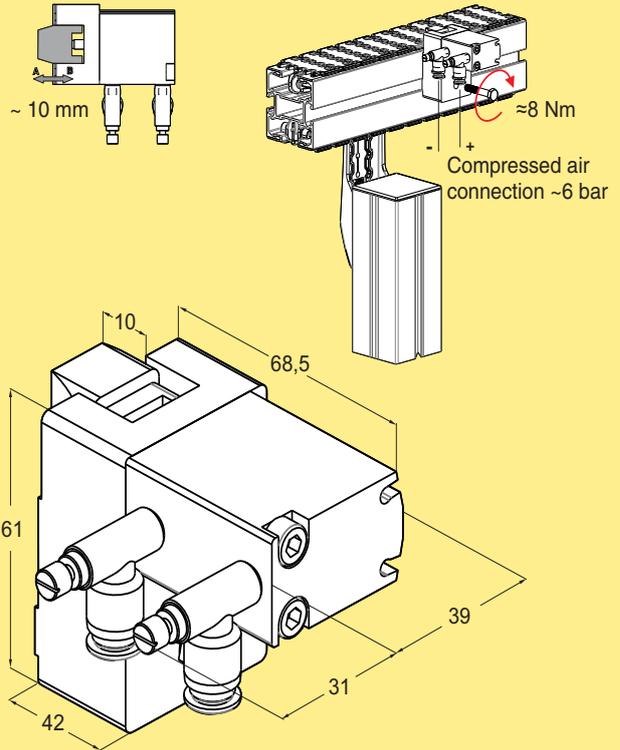


Protective cover for horizontal proximity switch

8050175

Including mounting hardware

Pneumatic pallet stop

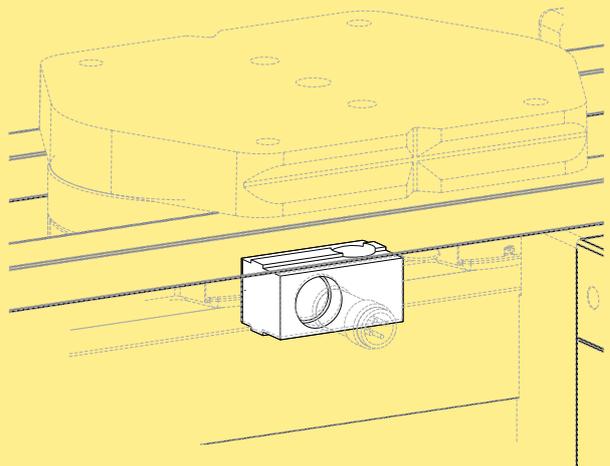


Pneumatic pallet stop, incl. throttle valves

XLPD 20x10 X65

Including mounting hardware.

Bracket for horizontal proximity switch



Bracket for horizontal proximity switch

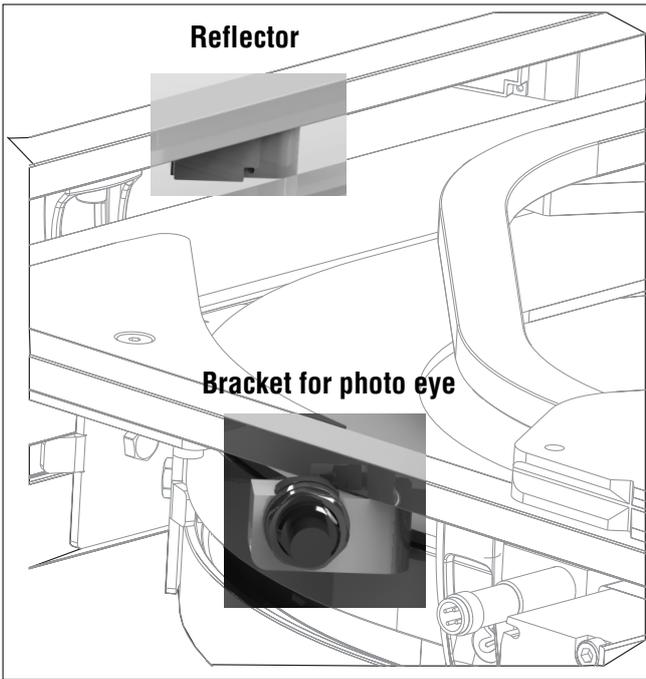
For M12 sensors

XLPB 12 H

Sensors should have a sensing distance of 8 mm
Screw, washer and nut for the clamp part are included.
Mounting to pallet stop XLPD 20x10: X65
MC6S 5x12, BRB 5.3x10
Mounting to T-slot:
MC6S 5x12, BRB 5.3x10, XCAN 5

Accessories

PO
 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
 IDX



Reflector

14

15

18.6

12.1

23

Reflector **8050114**
 Including mounting hardware.

Bracket for photo eye

15

M18

22

45

Bracket for photo eye **8050137**
 Including mounting hardware

