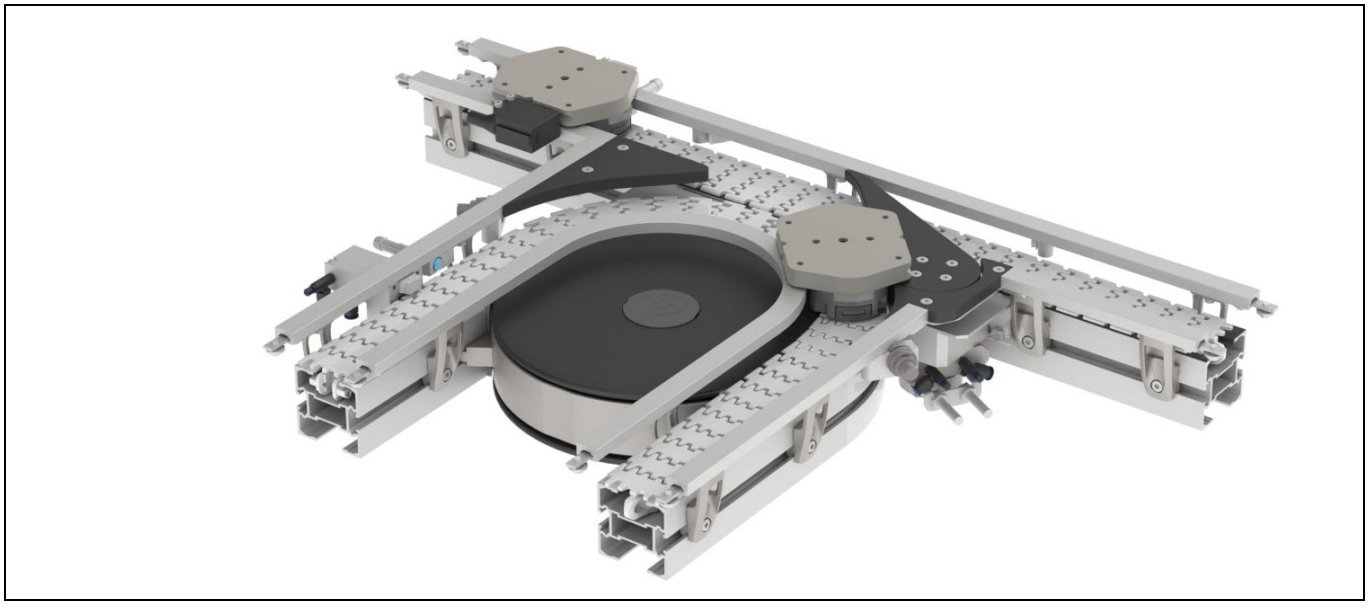
X65 pallet system

Contents

Pallet system with standard modules and RFID

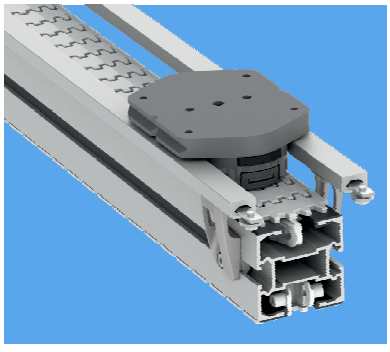


Based on modules

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

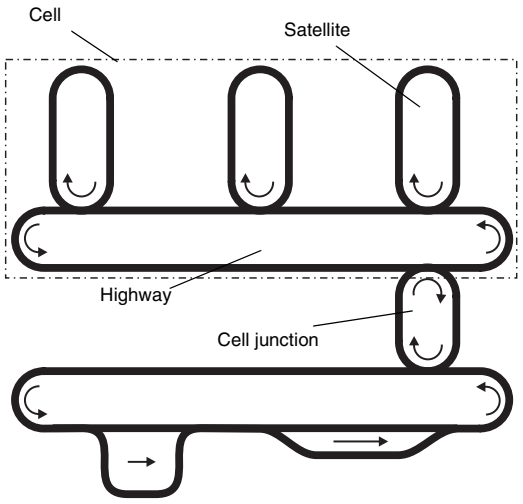
Pallet sizes (W×L×H):	100 mm ×128 mm x41 mm
Pallet weight:	0,220 kg
Maximum load on pallet:	3,0 kg (including pallet and fixture)
Locating accuracy:	± 0,1 mm

Divert/merge devices

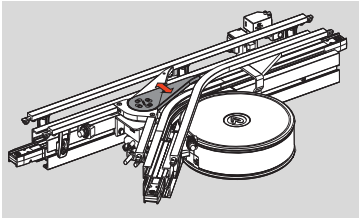
Divert/merge devices are used for routing products by dividing or combining flows of products. Usually there is a main conveyor, a “highway”, and separate subordinated conveyors, “satellites”.

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.

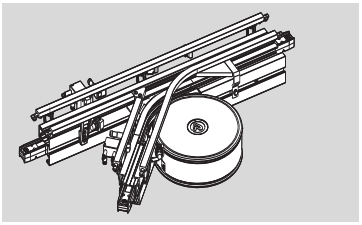


Divert modules



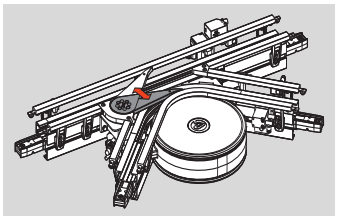
Divert modules for guiding the flow of products off the highway into a satellite are available in four basic types: 45° left/right and 90° left/right.

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.

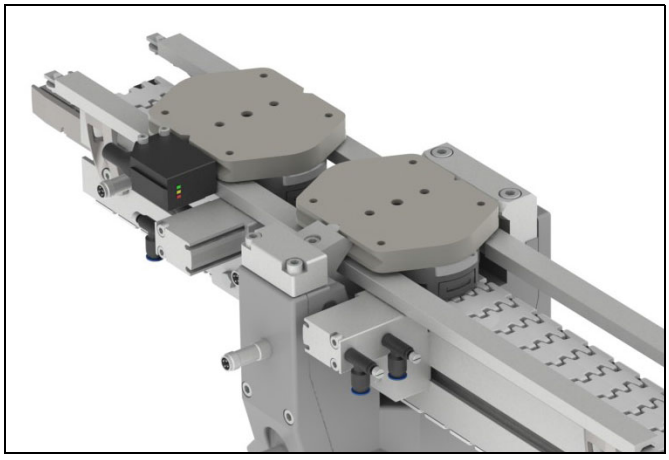
Configurator tool

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.

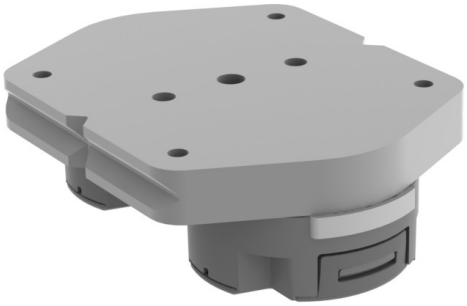
The locating accuracy is within +/-0,1 mm.

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

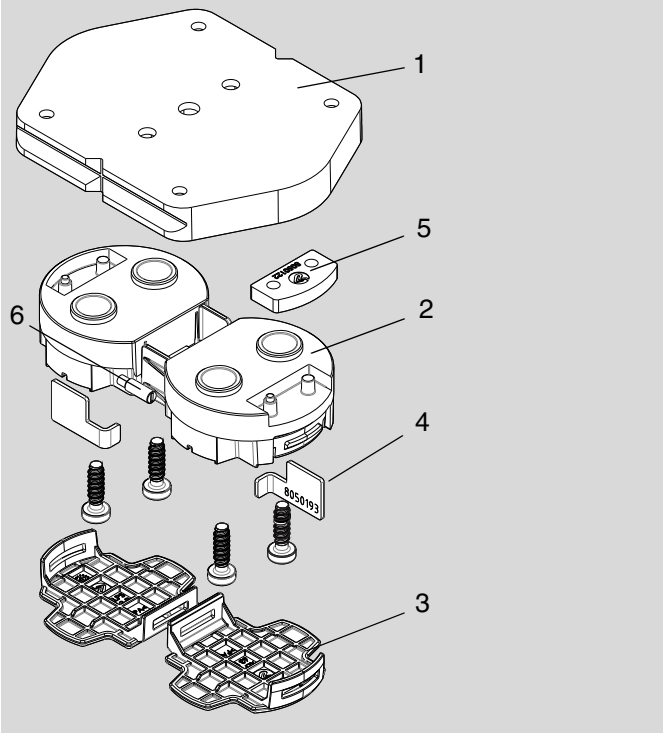
A pallet consists of an injection molded (1) pallet base (PA66) and two (2) plastic pucks with (3) slide plates at the bottom. Product-specific fixtures are attached to the pallet base.

Two V-groves 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-groves.

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

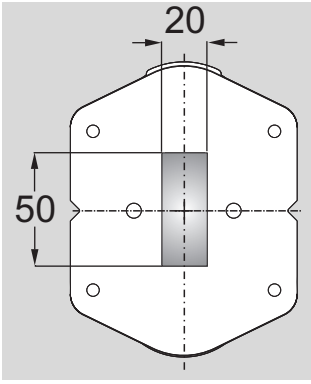
- The pallet plate is equipped with a socket for an IFM RFID tag
- IFM read on the fly at speeds up to 30 m/min

Features

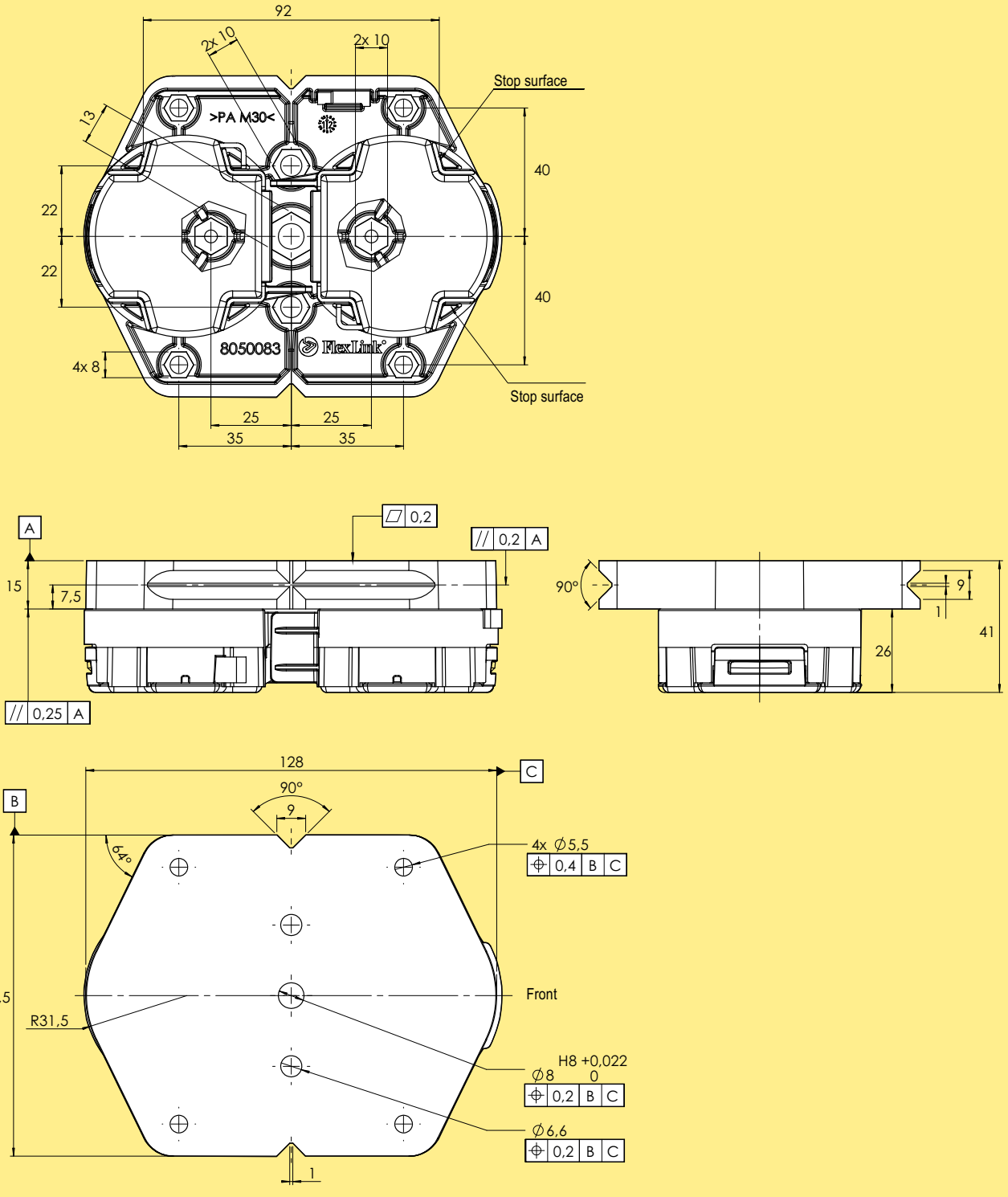
- Attachment holes for fixture
- One optional plate under the pallet for fast loading

Pallet loading

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



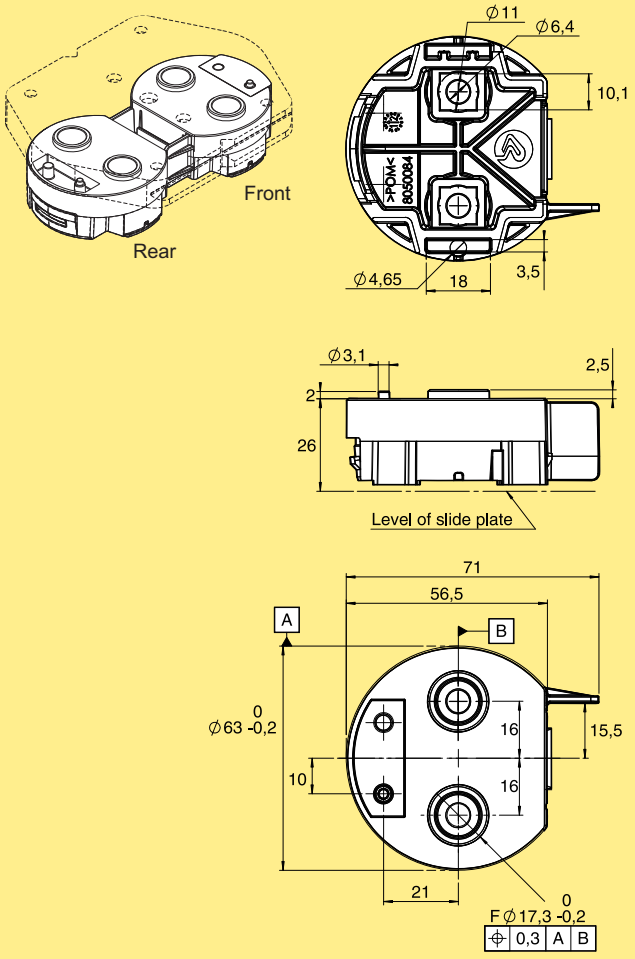
Pallet 100 mm × 128 mm



Pallet 100×128, h=41

XLPP 100×128

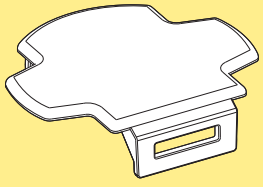
Guide disc



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, polyamide **XLPS 63 P**

Note. Kit contains 10 pcs

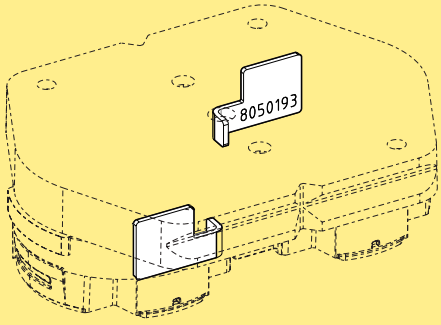
Shock absorber kit

Shock absorber kit **8050135**

Note. Each pallet is delivered with one shock absorber 8050122.

Note. Kit contains 10 pcs

Initiator plate kit

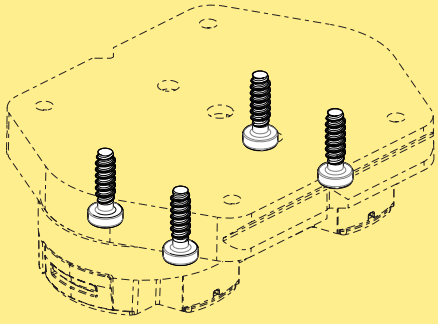


Initiator plate **8050161**

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.

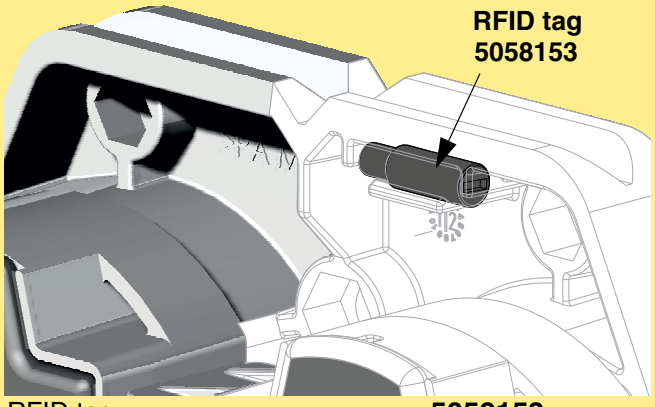
Note. Kit contains 20 pcs

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)

RFID tag



RFID tag **5058153**

The RFID tag holder (on the right side) is included in all pallets

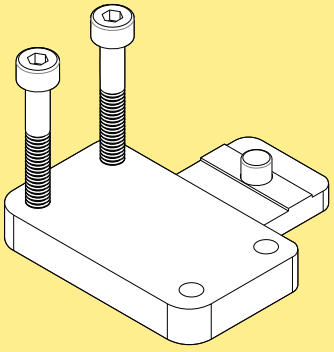
Read/write head

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.

Read/write head

Read/write head **5058152**

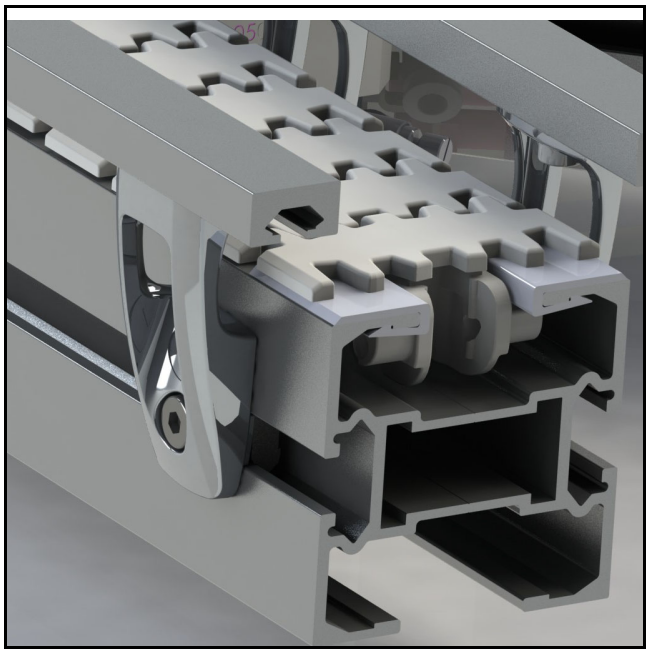
Read/write head bracket



Read/write head bracket **8050112**

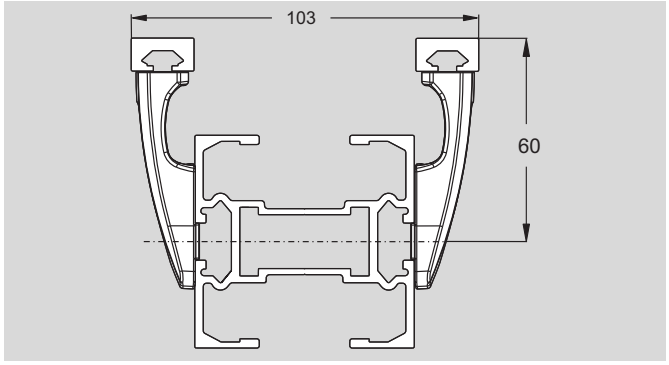
Including mounting screw.

Guide rails for pallets – introduction



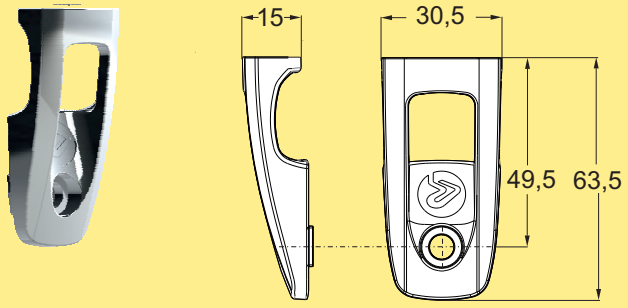
Guide rail types

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.



Guide rail bracket for X65 pallets

Guide rail bracket

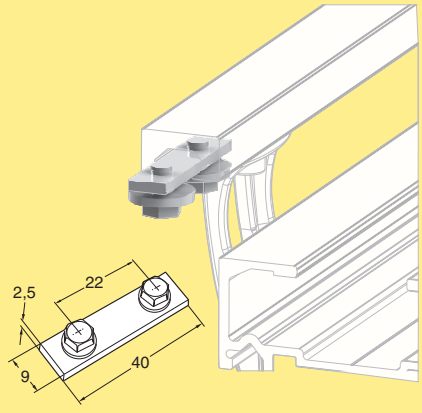


Guide rail bracket for X65 pallets **XLRB 10×50**

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

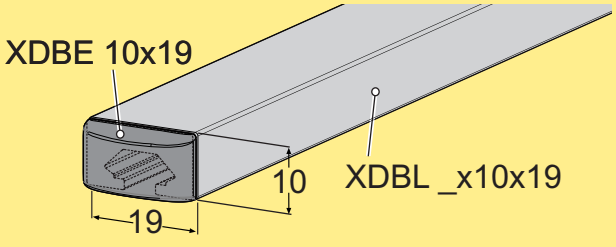
Connecting strips for guide rail



Connecting strip **XDCJ 9x40**

Straight guide rails for X65 pallets

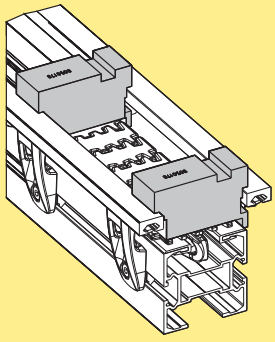
Guide rail, aluminium



Guide rail
Length 3 m **XDBL 3×10x19**
Length to order (max 3 m) **XDBL L×10x19**
End cap kit, polyamide, (contain 10 pcs) **XDBE 10x19**

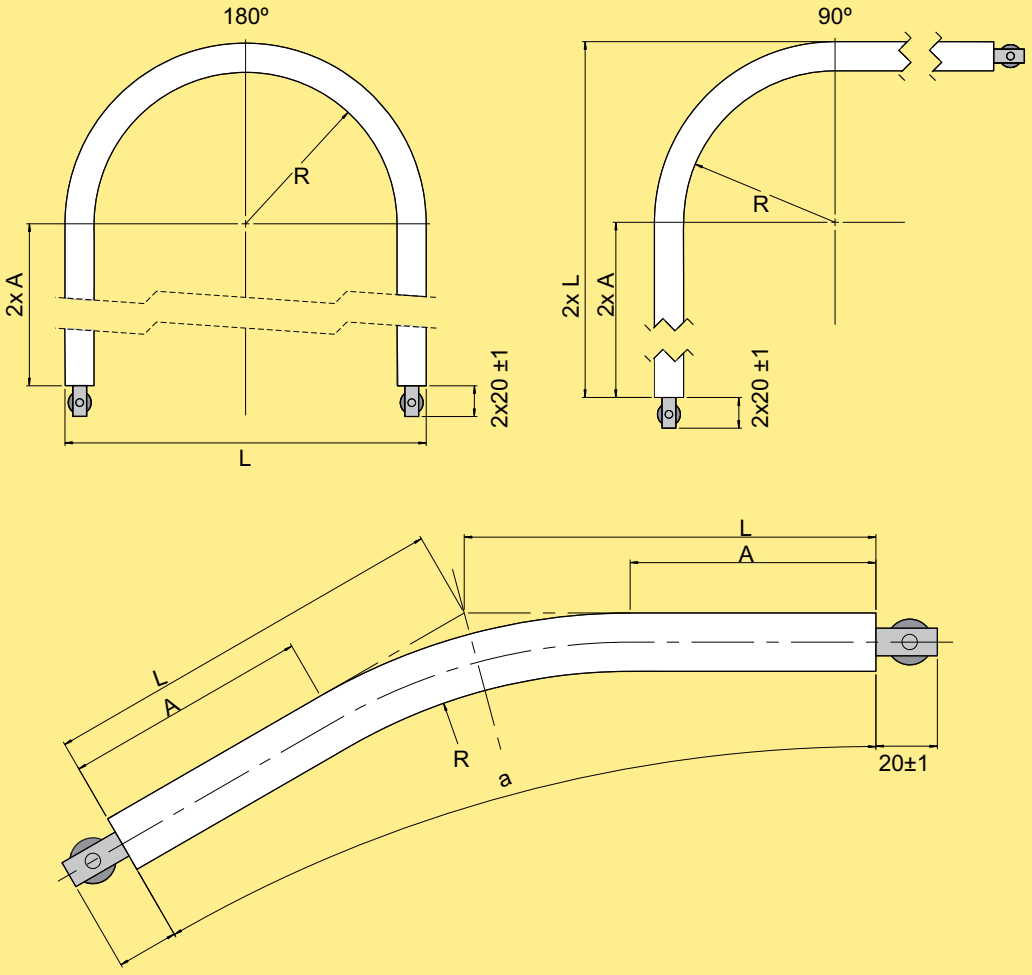
Mounting tool for guide rails

Mounting tool



Mounting tool *(Contain 2 pcs)* **8050178**

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	**8050163**
For 45° wheel bend, inner	**8050164**
For 90° wheel bend, inner	**8050165**
For 180° wheel bend, inner	**8050166**
For 30° wheel bend, outer	**8050167**
For 45° wheel bend, outer	**8050168**
For 90° wheel bend, outer	**8050169**
For 180° wheel bend, outer	**8050157**

Including connecting strips

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.

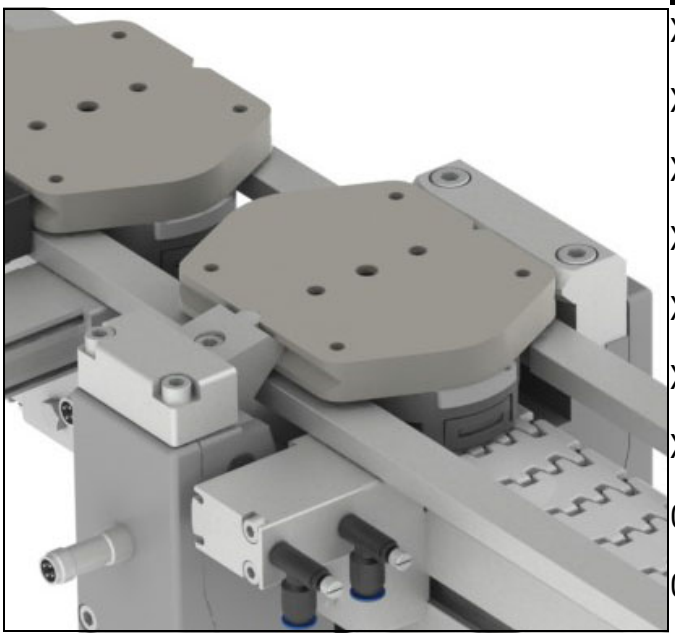
Principles of operation

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.

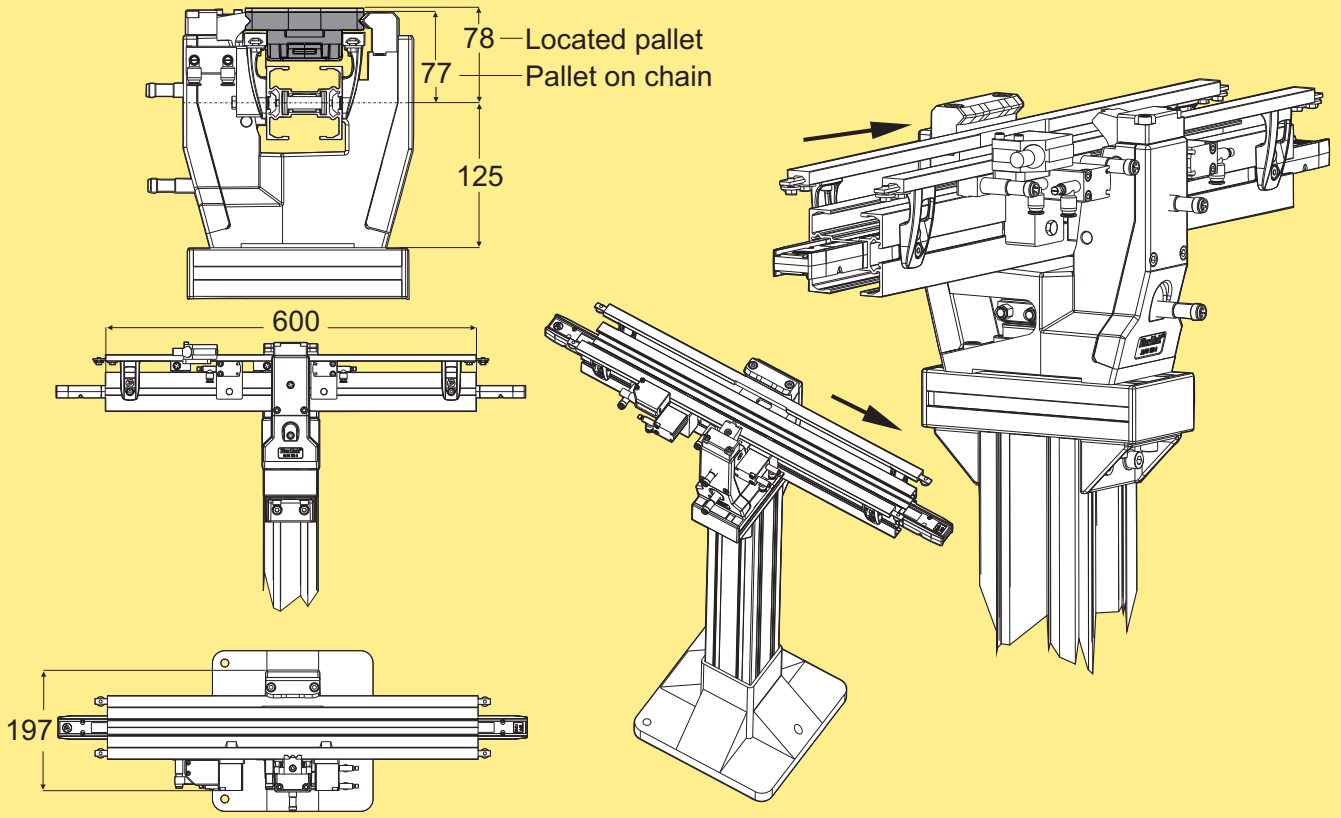
A proximity switch is used to indicate that a pallet is in the locating station.

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.



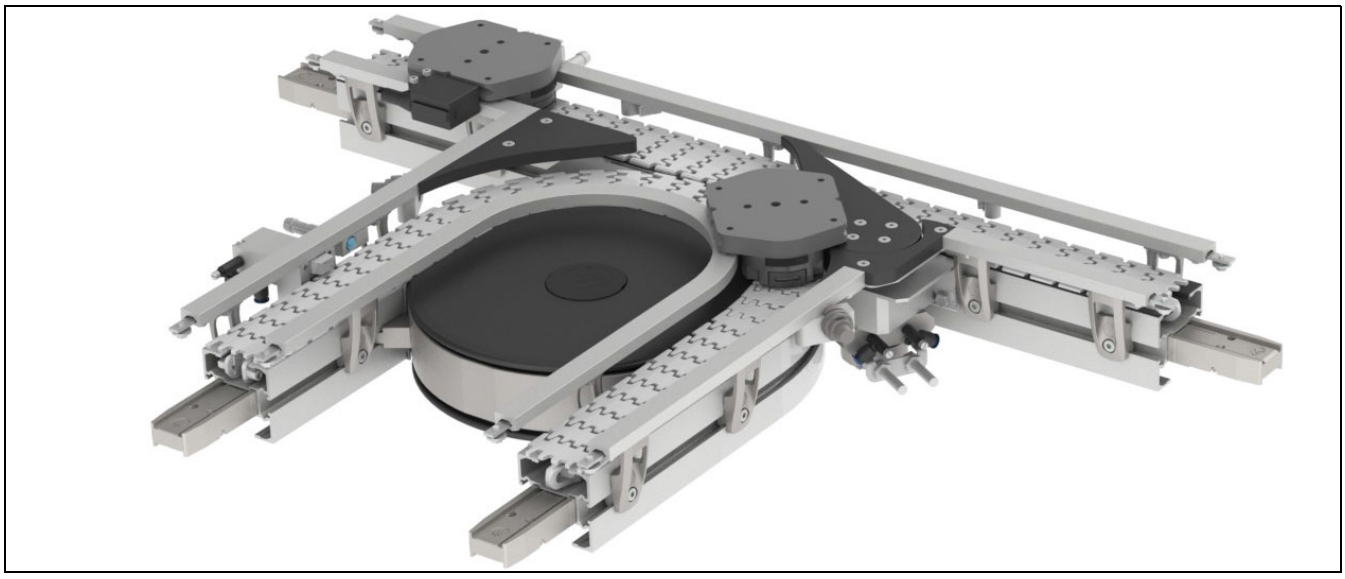
Locating module



Locating module* **XLUL 11**

**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 (±0,1 mm)

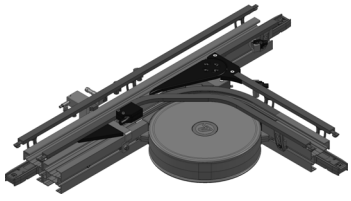


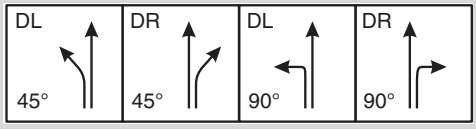
Common information

- 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 modules

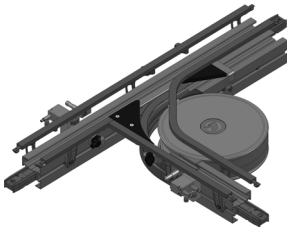
Divert modules are used to guide selected pallets from one conveyor to another.

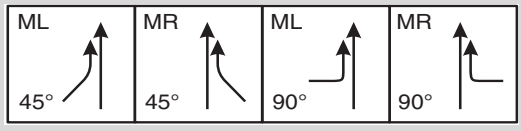




Merge modules

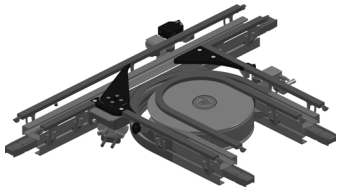
Merge devices are used to guide pallets back from a satellite conveyor into the main conveyor (highway).

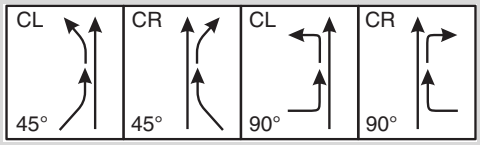




Divert and merge modules

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.



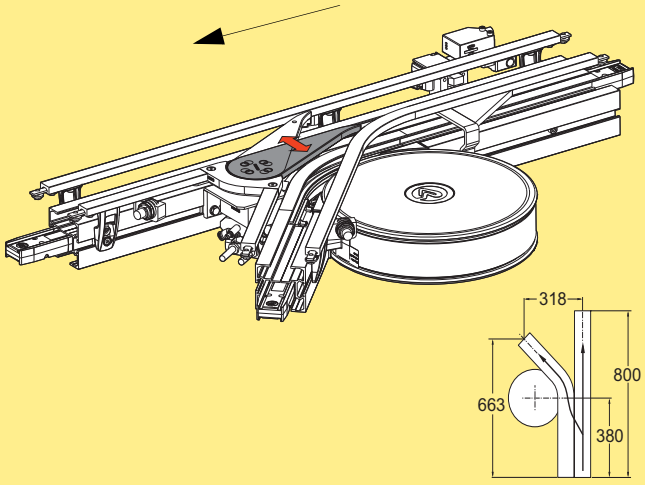


Ordering information

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.

Divert modules

Divert module 45°

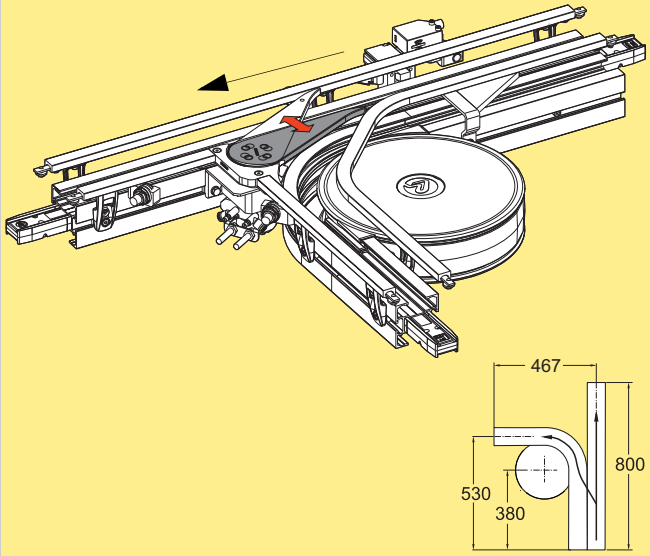


Divert module 45° * **XLUT 45 D**

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°



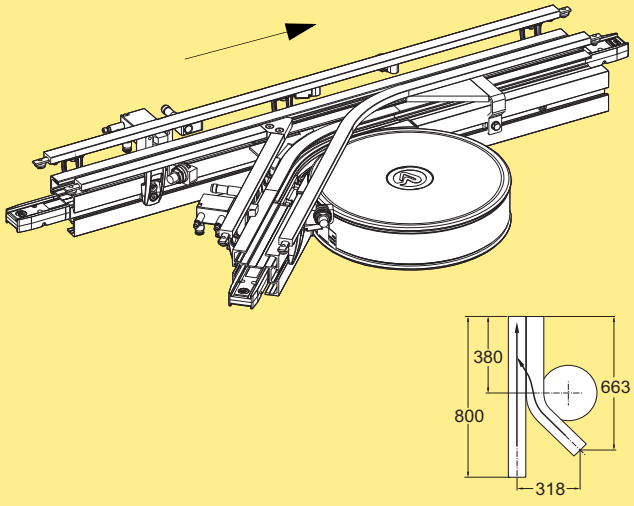
Divert module 90° * **XLUT 90 D**

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°

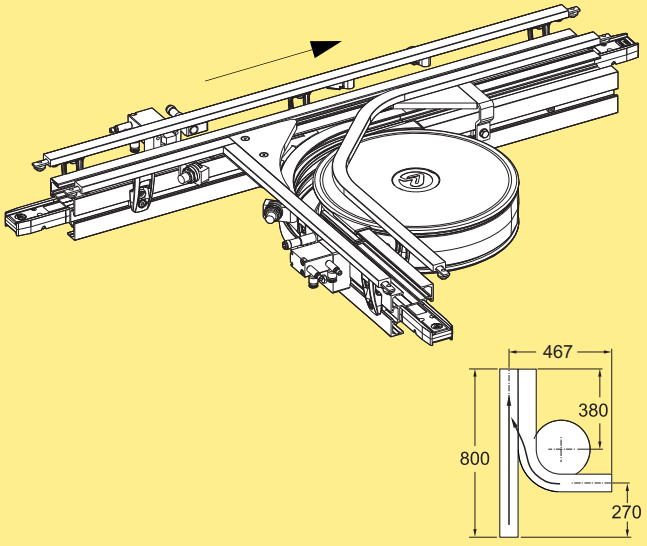


Merge module 45° * **XLUT 45 M**

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°

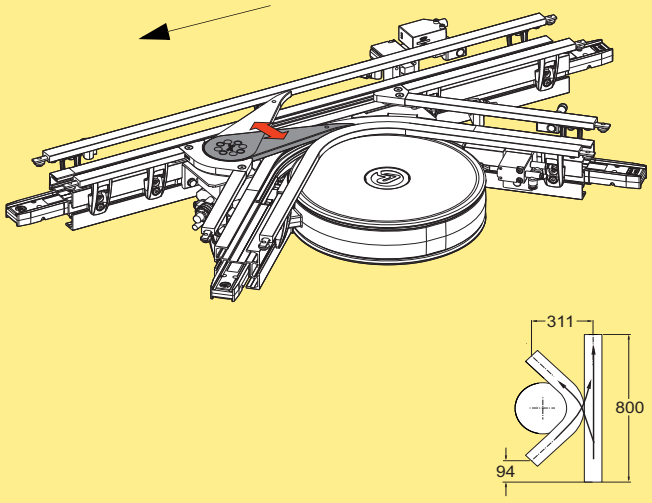


Merge module 90° * **XLUT 90 M**

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 module 45°

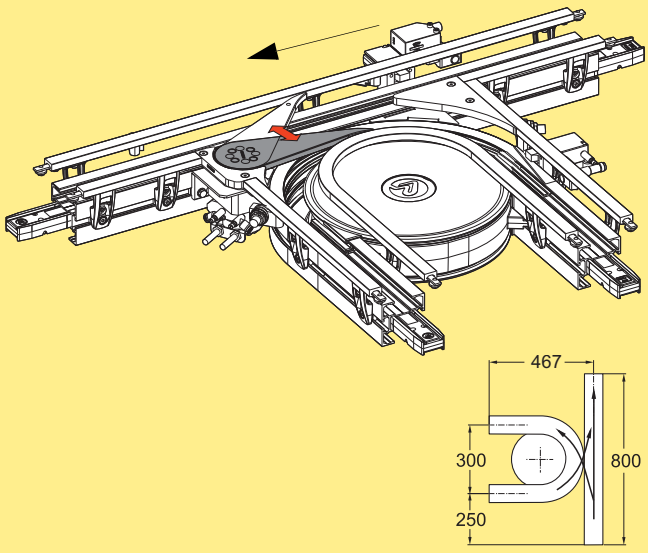


Divert and merge module 45° * **XLUT 45 C**

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*

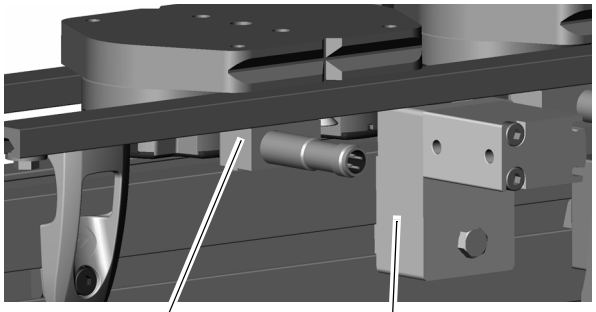
Effective track length: 1,79 m 1-way (3,57 m 2-way)

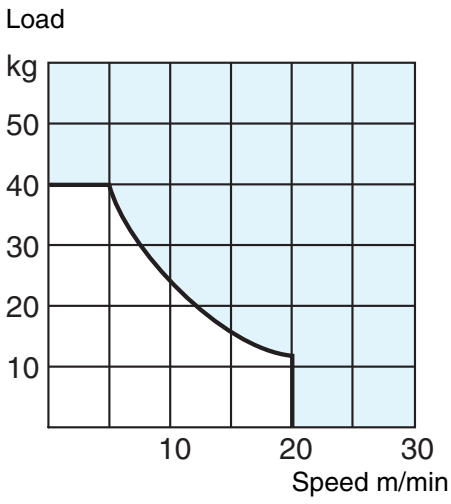
Pallet stops

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.

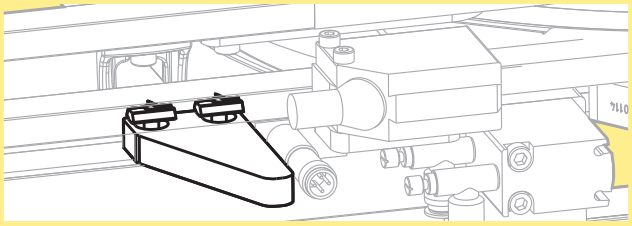
The stop is double-acting, but also includes an integrated spring for stop out if air supply is cut off.





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.

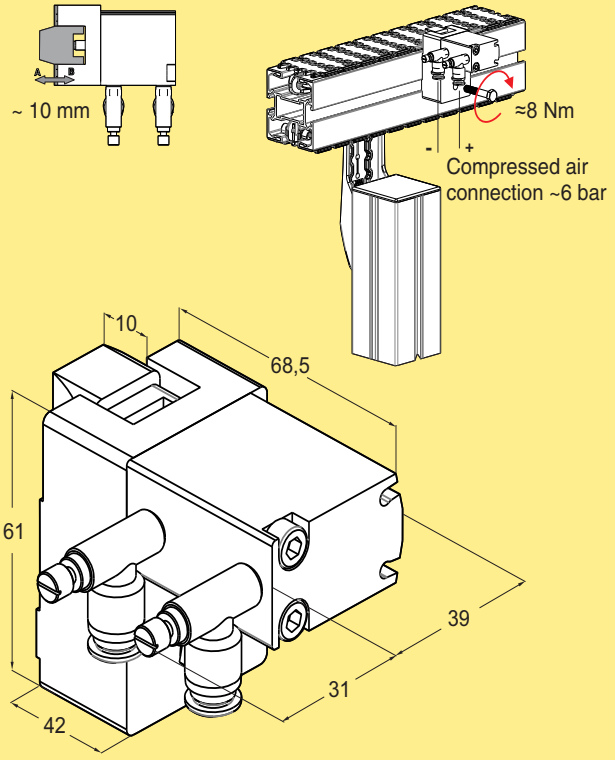
Protective cover for horizontal proximity switch



Protective cover for horizontal proximity switch **8050175**

Including mounting hardware

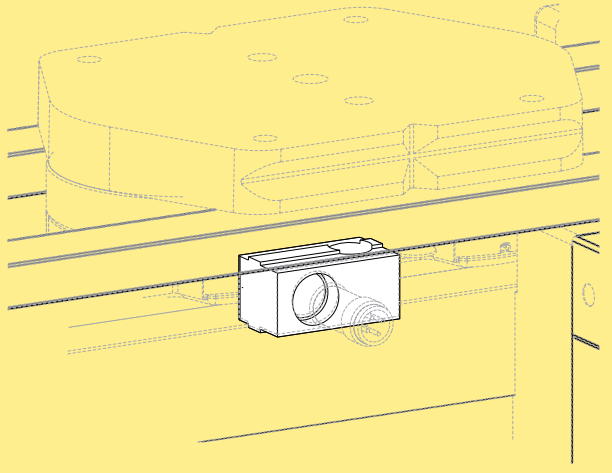
Pneumatic pallet stop



Pneumatic pallet stop, incl. throttle valves **XLPD 20×10 X65**

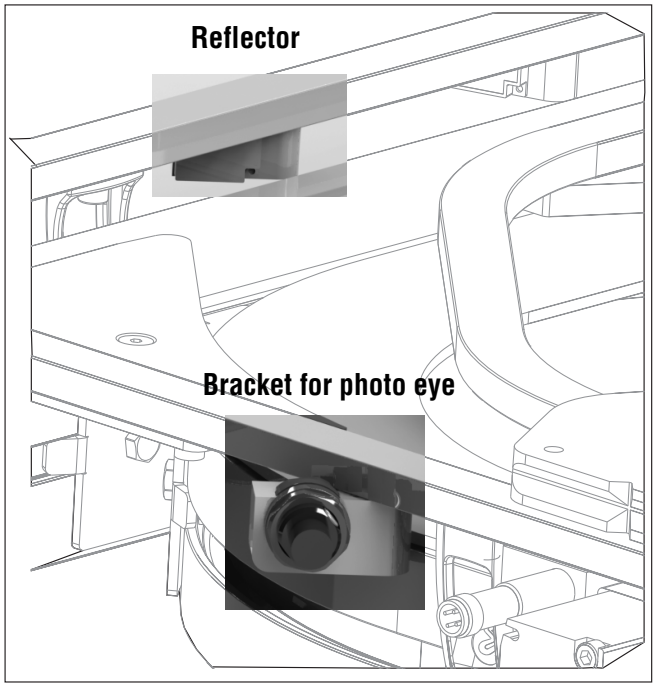
Including mounting hardware.

Bracket for horizontal proximity switch

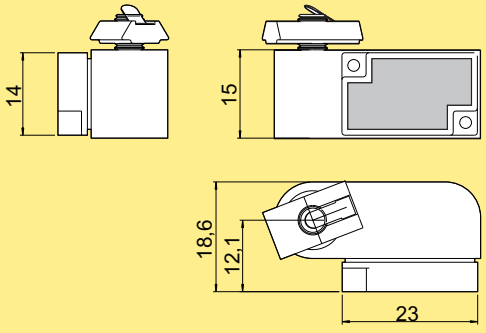


Bracket for horizontal proximity switch
For M12 sensors **XLPB 12 H**

Sensors should have a sensing distance of 8 mm
Screw, washer and nut for the clamp part are included.
Mounting to pallet stop XLPD 20×10: X65
MC6S 5×12, BRB 5.3×10
Mounting to T-slot:
MC6S 5×12, BRB 5.3×10, XCAN 5



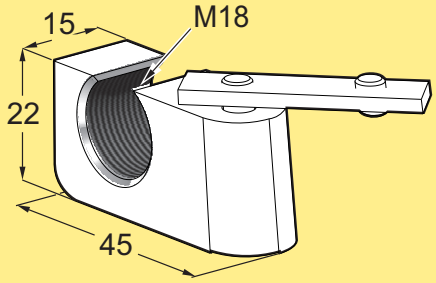
Reflector



Reflector **8050114**

Including mounting hardware.

Bracket for photo eye



Bracket for photo eye **8050137**

Including mounting hardware

