HU pallet system

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Pallet system with standard modules

FlexLink's HU pallet system is primarily designed to be well positioned for demanding applications within the automotive segment.

Lean-Green-Clean

It addresses important aspects of today's focus on:
- Available production time
- Energy consumption
- Electro mechanical functions
- Operator safety / ergonomics
- Cleanliness
- Noise

Pre-defined modules

The platform is based on a smart twin-track conveyor, designed for heavy loads up to 200 kg per pallet. It can be an all-electrical solution. The pallet functions are delivered in partly pre-assembled, standardized modules. This shortens installation time.

Smart integrated motors

The system has high connectivity and is equipped with smart integrated motors, which cut excessive working time as well as reduce wear and energy consumption. The smart integrated motors also reduce the number of stops and dampers.

Double speed zones

By adding the speed booster function, for example in an operation station defined as a bottleneck, the speed of a single pallet can be doubled, and the pallet change-over time reduced by 50%.

Examples of application areas

Manual and automatic assembly and test systems in the automotive and electrical/electronics industries.

Examples of products

Powertrain: Wheel suspension, brake discs, drive shafts, couplings, gearboxes, motor blocks, crankshafts.

Powertrain (electric vehicles): electric motors, batteries, battery packs.

Cooling systems, car seats, kitchen appliances.

Large bearings, for wind mills/wheels/railways. Wheels for heavy air crafts, car instrument kits.

Standardized controls

CC

X45

XS

X65

X65P

X85

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The HU platform is developed with a modular design approach dividing the product into functions that can be combined into a complete system. In the same way, HU uses the FlexLink Controls Platform (FCP), to provide pre-engineered control solutions for each module. When you use these standardized controls, a lot of the module specific logic programming can be downloaded, and thereby less time is needed to set up each module.

HU also uses smart devices from the FlexLink Device Platform (FDP). These devices are versatile and can be used in many different applications. The Standard Controls Distributed Controller (SCDC) works as a gateway between the standardized modules and the PLC. The SCDC also makes it possible to add more equipment.

Line bus
Ethernet/IP or Profinet

Module bus
CANopen

Module I/O
(I/O or IO-Link)
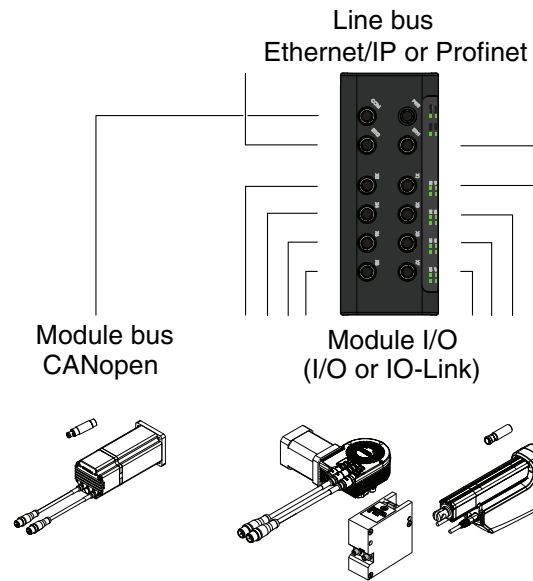
SCDC connection capabilities

When designing the HU layout, FlexLink Design Tool (FLDT) will help you configure the modules. This ensures that the needed control hardware is included and that an I/O mapping for all signals is generated. The SCDC itself is a part of the line delivery but is ordered as a separate module.

Devices

The details of the integrated motors (SCMDs), power distribution boxes (SCPDs) and SCDCs used in the HU system are described in the controls chapter of the FlexLink aluminum assortment catalogue. See the technical library at FlexLink.com for an HU spare parts list.

The 24VDC high torque stepper SCMD is a vital device for the transfer modules handling all movements. We recommend that the SCMDs are controlled by the SCDC.

The HU modules are powered by 24VDC and are delivered with standard controls power distribution boxes (SCPDs) simplifying the cable management.

Sensors

All pallet position sensors in the HU platform are inductive 4 mm sensing range.

Software and electrical design

The SCDCs and SCMDs are delivered with the latest firmware. The firmware can be upgraded with new revisions after delivery.

A PLC template project that includes function blocks for all module variants, and example code on how to program the line logic, is prepared. For more information, contact your local sales office. With these modular function blocks, that also have prepared HMI screens, the system can be customized and quickly commissioned. Templates are prepared for both for Siemens and Rockwell PLCs.

All modules have pre-designed EPLAN drawings where all IOs are visible and how they connect with the SCDC.

Cable kits

At delivery, the modules are equipped with all required cables for both power and communication. When a module is configured, a specific cable kit dedicated for the ordered variant is generated. The cables are delivered with a connector assembled in one end. During installation, cut each cable to the appropriate length and assemble with the end connector. All CANopen components are daisy chained with T-connectors.

RFID

Modules can be ordered with RFID readers. The reader is mounted below the center of the pallet and reads the tags from beneath. Each pallet can be ordered with an RFID holder in the bottom center area. The RFID unit is an M18 read / write head that communicates via CANopen. We recommend that the RFID is connected to an SCDC.

Drive motor

The drive motor of the twin track conveyor is a 120Hz three phase motor that has to be controlled by a frequency inverter.

Three different communication methods are available for the frequency inverter: EtherNet/IP, PROFINET or standard I/O. Safe torque off (STO) can be selected when using EtherNet/IP and PROFINET.

Every inverter is delivered in parts containing wire unit, drive unit, communication unit and a hybrid cable.

Stop/Dampers

The stop and damper units are available in electric and pneumatic versions. Both versions are controlled by discrete I/O, preferably connected to the SCDC.
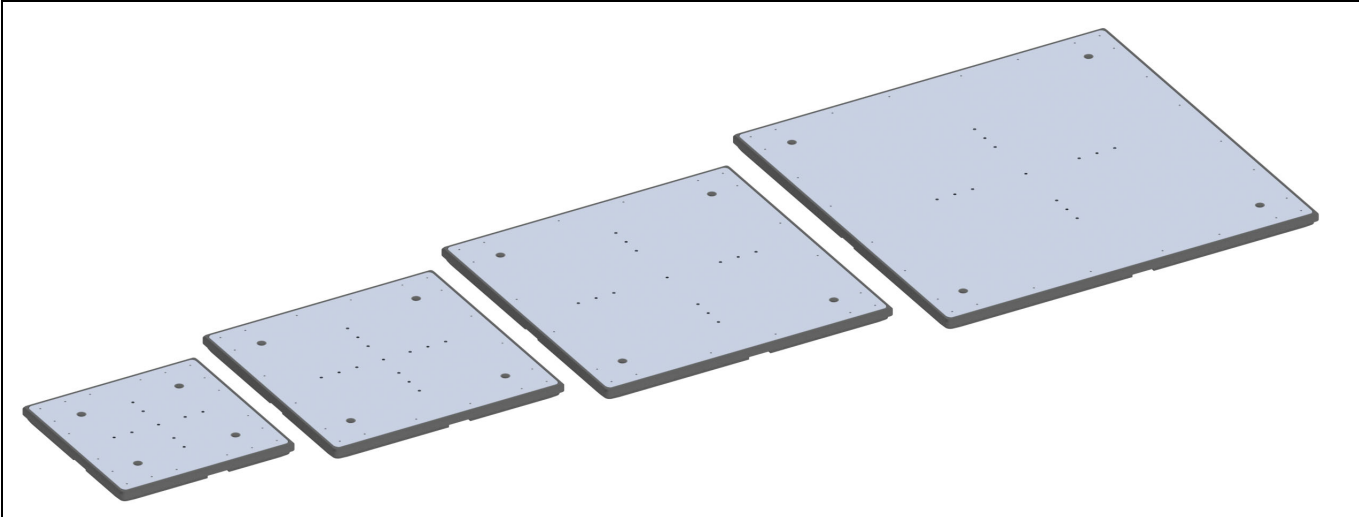
For pneumatic versions, no pneumatic valves are included in the delivery, but the SCDC can still be used for the control.

Linear actuator

For the locating unit there are two linear actuators that fixates the pallet. These have integrated controllers and sensors. The control interface is discrete I/O signals.

Technical characteristics

System	HU
Pallet	Pallet size:480x480 up to 1040x1040
Pallet thickness	12 mm and 20 mm
Permitted load/100 mm pallet length	20 kg
Max pallet weight	200 kg
Pallet material	Aluminium plate and conductive plastic frame
Chain type	Steel roller top chain with or without protection
Chain lubrication	Automatic lubrication unit
Chain option	For clean environments, roller top chain (no lubrication required)
Max accumulated weight on a single conveyor	1000 kg
Conveyor length (drive unit without slack unit)	363-20000 mm
Conveyor speed	5-15 m/min
Drive unit motor	Lenze 120 Hz incl. frequency inverter
Power source, Transfer module	Electric 24 V (pneumatic stop as an option)
Power source, Stop modules	Electric 24V (pneumatic stop as an option)
Repeatability, Stop module	+/-1 mm (pneumatic version as an option)
Power source, Locating unit	Electric, 24 V (pneumatic stop as an option)
Repeatability, Locating unit	+/-0,1 mm
Max vertical force, Locating unit	5000 N (pallet weight included)
Speed booster	Double the pallet speed locally
Queue damping option	Gently handling of the pallets in a queue
Controller, SCDC	Interface for all modules and devices.
RFID	13,56 MHz
Noise level	< 68 dBA

Pallets

PO

CC

X45

XS

X65

X65P

X85

X85P

XH

XK

XKP

X180

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Introduction

Nine standard pallet sizes are available from 480x480 mm up to 1040x1040 mm. A pallet can be configured and ordered with two alternative pallet plate thicknesses, 12 and 20 mm. Pallets are either fully assembled or ordered unassembled for easier customized machining of the pallet plate. For locally customized pallet plates the pallet frames can be delivered separately. Pallets are equipped with a predefined hole pattern.

The underneath frame includes initiator plates for detecting the pallet position in the conveyor.

The bushing holes are equipped with protection plugs from above for personal safety.

An RFID holder can be ordered as an option. The holder will be positioned at the center of the pallet bottom. The RFID tag is not included and has to be ordered separately.

Pallets can be specified using the web-based configurator or via FlexLink Design Tool. The configurator provides detailed information and step-by-step guidance in the specification process. A product code string is generated, containing the specification details.

Choices:

When the following questions have been answered, the pallet is fully defined:

Question	Choices	Description code
Pallet width PW?	480 mm	480
	640 mm	640
	800 mm	800
	1040 mm	1040
Pallet length PL?	480 mm	480
	640 mm	640
	800 mm	800
	1040 mm	1040
Pallet plate?	Thickness 12 mm	12
	Thickness 20 mm	20
	No plate	No
Locating bushings?	yes	LB
	no	No
RFID tag holder?	Yes	RF
	no	No
Delivery form?	Assembled	A
	Unassembled kit	K

Configurator output example:

| Item No	Description
HUPP	480x480-12-LB-RF-A

Pallet width (PW) × pallet length (PL)

PL is the pallet dimension in the direction of pallet movement in the main flow. In some modules the pallet moves "sideways", for example when transferred from one line to another (see next figure).

A)
HUUT EO 480x640

B)
HUUL E11 480x640

B)
HUUL E11 640x480

640
480
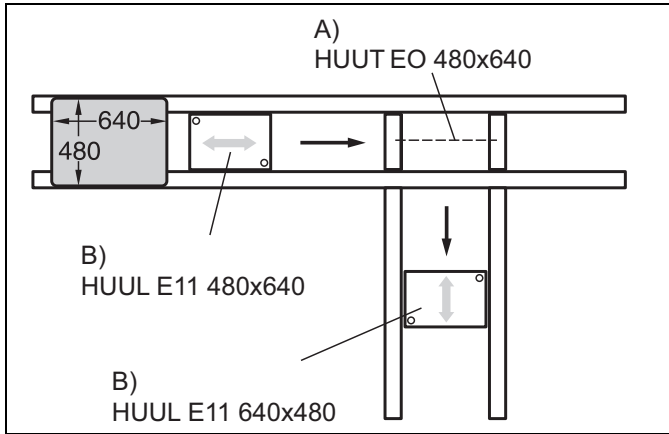
A) Transfer module B) Locating module

Max permissible pallet total weight vs pallet length PL:

(2 kg/cm)

kg

224
208
192
176
160
144
128
112
96
80
64
48
32
16
0

160 240 320 400 480   640   800   1040

PL
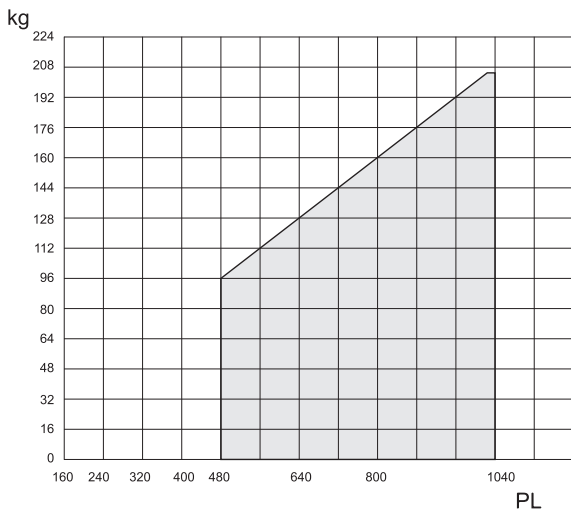
(PL= pallet length, Kg = max total weight on pallet)

Material specifications

Pallet plate..................... 12 mm or 20 mm ±0,1 Alumin-
ium plate
Frame .... Electrically conductive
UHMW-PE
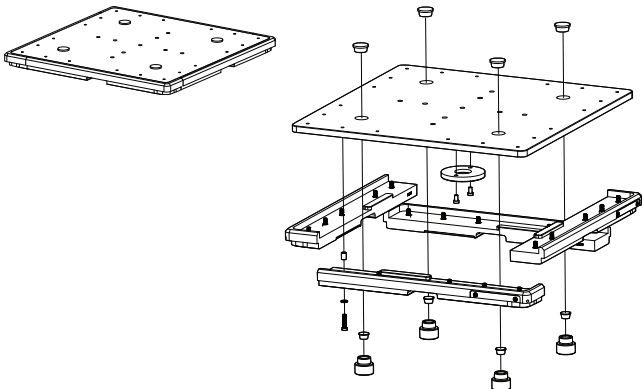
Pallet loading

Centre of gravity on the pallet (including fixture) should be located within the grey marked area according to the picture below.

PL

PL/3

PW PW/3
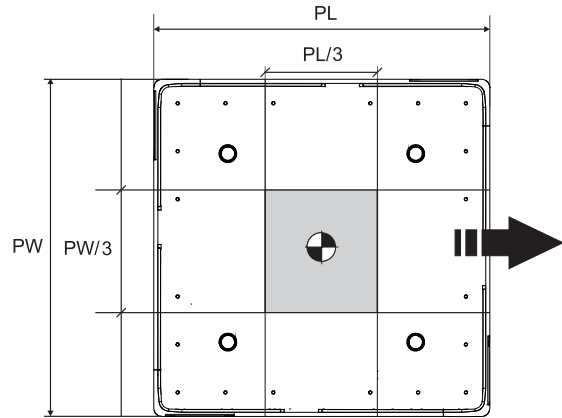
Centre of gravity when using transfers

PL

PL/9

PW PW/3
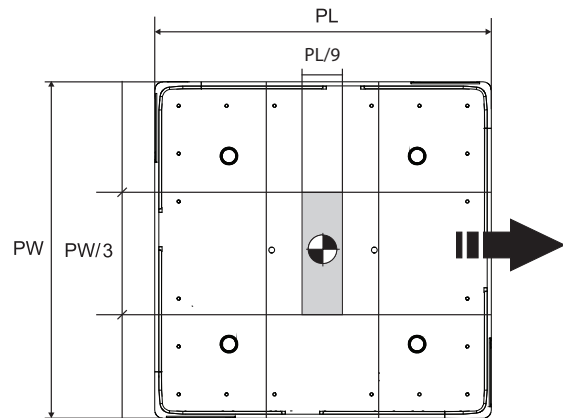
Technical specifications

- Maximum load on the pallet is 2 kg per 10 mm of pallet length (PL).

- The table below shows maximum pallet load for each pallet size. Max. total weight is 200 kg.

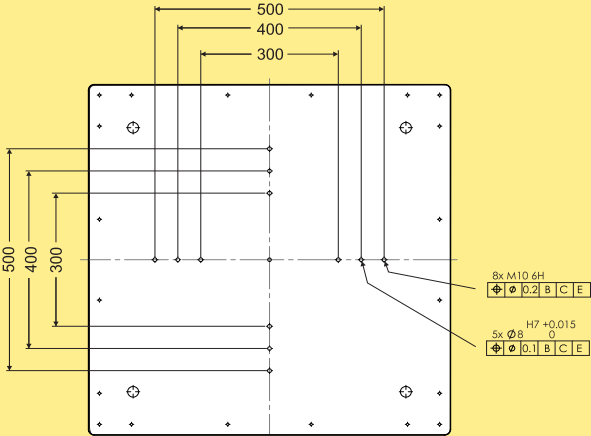 The shortest side may determine the maximum load on the pallet.

HUPP 480x800 ≤ 160 kg

HUPP 480x800 ≤ 96 kg

Longest side

Shortest side

HUPP 480x800 ≤ 96 kg

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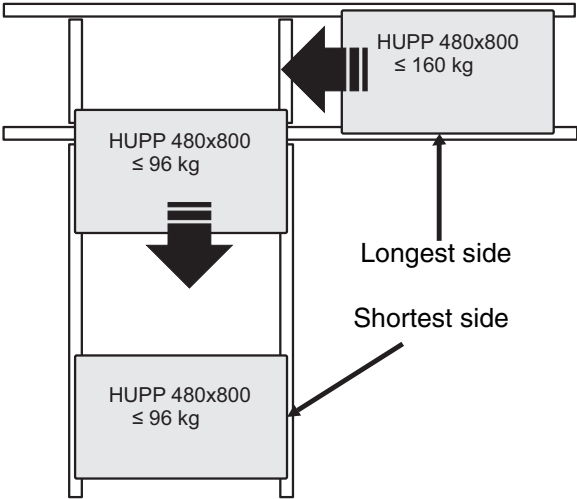
HUPP				2 kg/cm limited by shortest side		2 kg/cm limited by longest side		
PW	PL	Pallet plate thickness (mm)	Pallet weight (kg)	Max permissible total pallet weight	Max load on pallet (kg)	Max permissible total pallet weight	Max load on pallet (kg)	Only pallet frame (kg)
480	480	12	10	96	86	96	86	2,4
	640		13		83	128	115	2,8
	800		16		80	160	144	3,2
640	640		16	128	112	128	112	3,2
	800		20		108	160	140	3,6
	1040		26		102	200	174	4,3
800	800		25	160	103	160	135	4
	1040		31		97	200	169	4,7
1040	1040		40	200	88	200	160	5,4
480	480	20	15	96	81	96	81	2,4
	640		19		77	128	109	2,8
	800		24		72	160	136	3,2
640	640		25	128	103	128	103	3,2
	800		31		97	160	129	3,6
	1040		40		88	200	160	4,3
800	800		38	160	122	160	122	4
	1040		49		111	200	151	4,7
1040	1040		63	200	137	200	137	5,4

Pallet fixture holes

Pallet dimension 480x480

5x Ø8   H7 +0.015 0
⊕ ø 0.1 B C E

4x M10 6H
⊕ ø 0.2 B C E
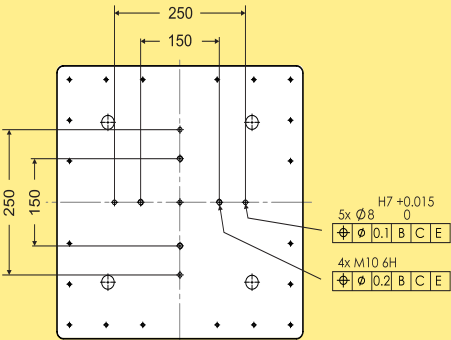
Pallet dimension 800x800

8x M10 6H
⊕ ø 0.2 B C E

5x Ø8   H7 +0.015 0
⊕ ø 0.1 B C E

Pallet dimension 480x640

5x Ø8   H7 +0.015 0
⊕ ø 0.1 B C E

6x M10 6H
⊕ ø 0.2 B C E
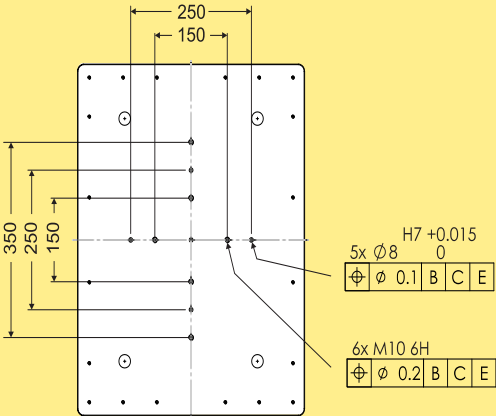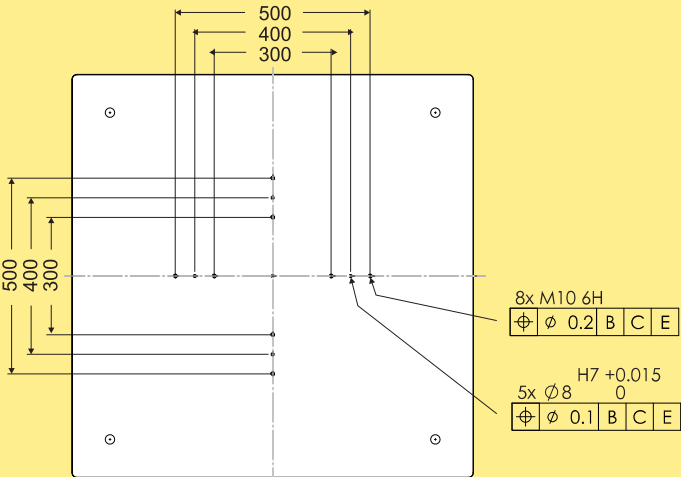
Pallet dimension 1040x1040

8x M10 6H
⊕ ø 0.2 B C E

5x Ø8   H7 +0.015 0
⊕ ø 0.1 B C E

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XC

XF

XD

ELV

SC

FST

TR

APX

IDX

Pallet PW×PL

PW +12

PW

PW -124

PW - 205

11

4x ⌀ 24

P6 -0.018
   -0.031

⌀ 0.1 A B

32/40

60

B

A

20

5120526

PL +12

PL

PL -124

PL - 205

70

35

Pallet PW × PL mm

HUPP PW×PL

When ordering, insert the pallet width and the pallet length instead of PW×PL in the designation.

For building non-standard pallets in combination with customer supplied pallet plates. The bushings are designed for plate thickness 12 mm but can be used for 20 mm plates also and should be press-fitted into ⌀24 mm P6 holes.

Pallet accessories

Bushing kit
  Bushing x4   **5129111**

Bushing kit
  Plug Kit dia.
  24 mm, for
  pallets with-
  out bushings **5130751**

Plug Kit, for
  pallets with
  bushings   **5129681**

Mounting tool
for bushings   **FLX1000817**

RFID components

Pallet HUPP can be configured and ordered including a RFID tag holder but the RFID tag itself has to be ordered separately. Two standard tag sizes are available, 1024b or 16kb.

If the RFID option is ordered for a HU function module (locating module, stop module, transfer module) the RFID reader/writer and attachment is included in the module delivery.

RFID

RFID tag IQC33-30, 16 kbit, 1 pcs	**5113120**
RFID tag IQC21-30 P, 1024 bit, 25 pcs	**5113121**
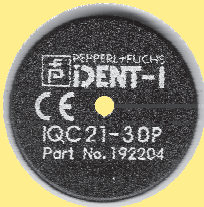
5113121   5113120

RFID

Holder for RFID tag, dia. 30 mm   **5129117**
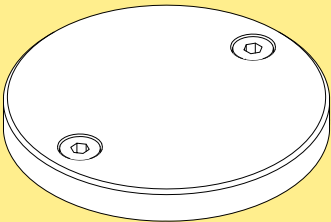
Chains introduction

Two types of roller top chains can be selected, see table for more information. Both chains are robust and durable pallet carriers in tougher production environments even for heavy pallets HUPP up to 200 kg. The free running roller top chain reduces the queue forces and the energy consumption drastically compared to standard chains or belts. The roller top chains are supported by stainless steel rails inside the conveyor beam and the chain can carry pallet loads up to 20 kg/100 mm pallet length. The chain type SP require recurrent lubrication while the chain type SC is maintenance free (see table).

Due to the roller top chain design the pallet transport speed can locally and dynamically be doubled by adding a Speed booster unit. This is useful for example to reduce pallet exchange time in an operation identified as a production flow bottleneck. For detailed information, see section; Speed Booster. All chains are delivered including one connecting link.

Chain data

Designation	Use	Description	Lubrication required
HUTR_SP	Standard Chain	Chain with steel rollers, incl. protection	Yes
HUTR_SC	Chain for clean environment and for reversible drive	Offset steel rollers. Maintenance free	No

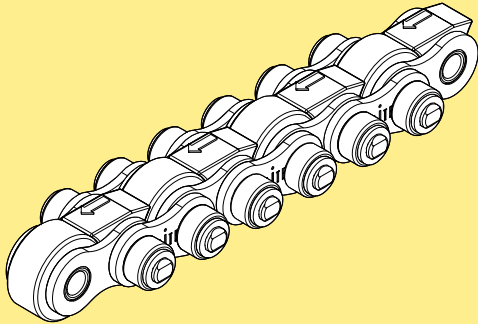## Roller top chain, Clean environment
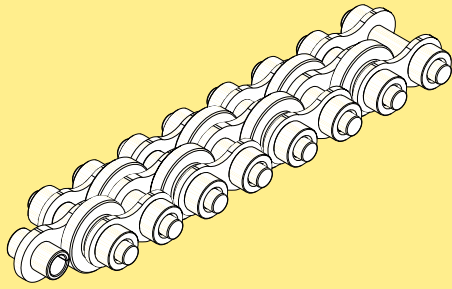
Roller top chain
    Clean environment
    steel rollers, 12m   **HUTR 12B SC**
    steel rollers, 3 m   **HUTR 3B SC**
    steel rollers, 6 m   **HUTR 6B SC**

For reversible drive

Roller top chain, incl. protection

Roller top chain, incl. protection
    steel rollers,12 m   **HUTR 12B SP**
    steel rollers, 3 m   **HUTR 3B SP**
    steel rollers, 6 m   **HUTR 6B SP**

PO

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X180

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ELV

SC

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IDX

Chain accessories

Chains (3m, 6m and 12m) are all delivered with a connecting link included.

A chain breaker tool is needed to trim chains on site.

The amount of extra connecting links has to be calculated manually and ordered separately.

The chain tool is used to thread the chain trough the conveyor beam.

Connecting link for HUTR SC & HUTR SP
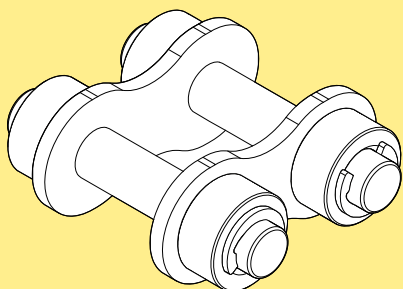
Connecting link   **5129562**

Note: Contains 10 pcs.

Chain breaker tool
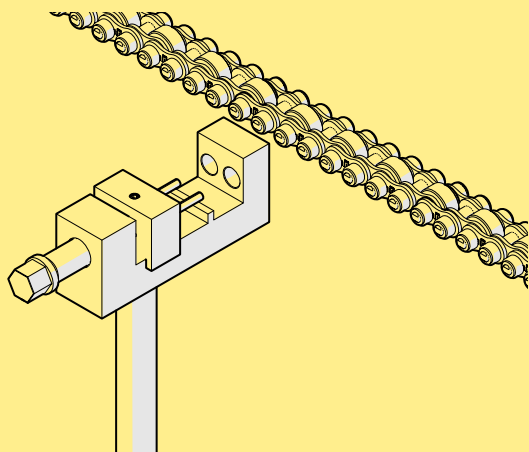
Chain breaker tool   **HUMJ 08B**

Chain tool
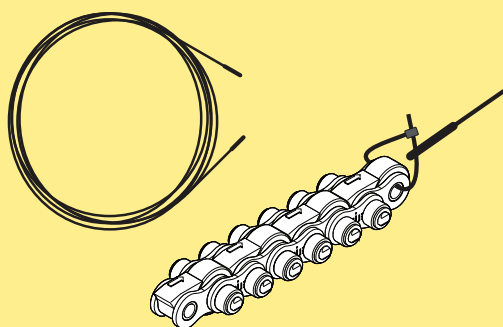
Chain tool 10 m   **FLX1001938**

Conveyor beam section introduction

Conveyor beam sections are delivered as a pair with integrated slide rails. Cross bars are not included as conveyor supports and many modules act as cross bars when built into the conveyor beam section. A cross bar has to be added to the order separately and used if the distance between two cross bars is more than 1500 mm.

To connect two Conveyor beam sections, 6 pcs connection strips are needed. HUCB LD can be ordered in free length and by using FlexLink Design Tool pre-drilled holes can be included in HUCB LD for mounting the speed boosters at site.

The conveyor beams have a very high bending stiffness and only require Support modules every 3 meters.

A slot is integrated on both sides of the conveyor beam and can be used for cabling of sensor cables etc.

Slots to be used for cabling.

CC

X45

XS

X65

X65P

X85

X85P

XH

XK

XKP

X180

X300

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XF

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ELV

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APX

IDX
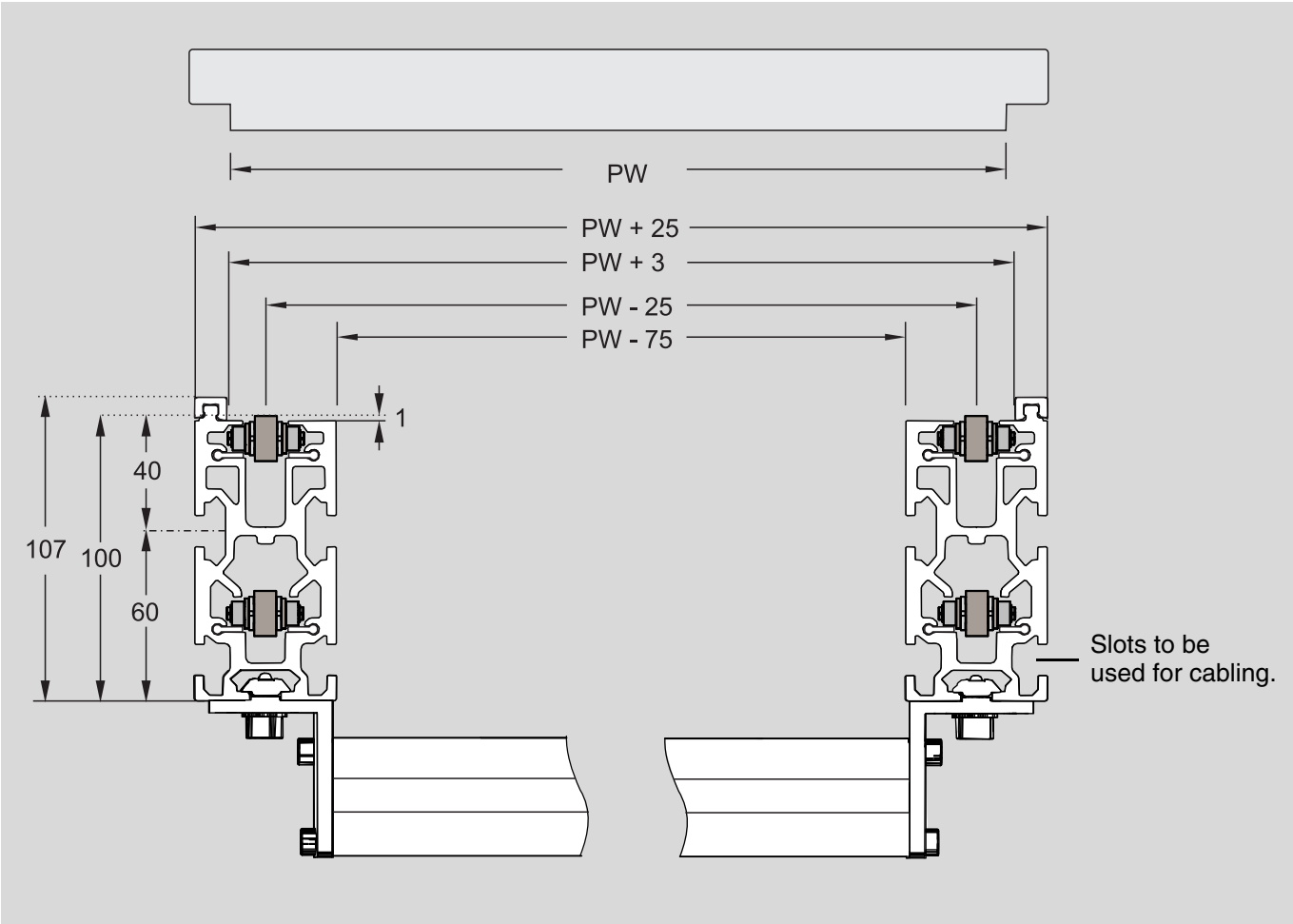
Conveyor beam section (pair)
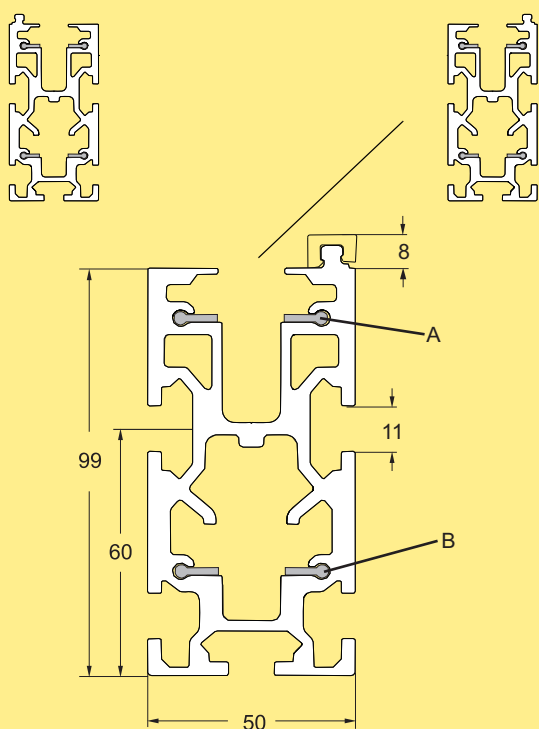
A= Steel slide rail, B = Plastic slide rail

Conveyor beam section
   Length 3000 mm   **HUCB 3D**
   Length to order (111- 3000 mm)   **HUCB LD**

The beam comes in pair of two and has the same T-slot as used in the XC structural system. Connecting strip XLCJ 5x140.

Conveyor beam accessories

Slide rails are included in the Conveyor beam sections but can be ordered as spare parts if needed. HUCR 3 T for the top and HUCR 3 H for the bottom.

Note!
Guide rail cover HURT 25 H is not included in the conveyor beams sections and has to be ordered separately. Cover strips XCAC_ can be used to close T-slots if needed.

Extra cross bars to be used if the distance between two existing cross bars is more than 1500mm. Fasteners are included.

Support included in all modules normally carrying a stop or damper. Can be ordered separately for customized purposes.

Connecting strip
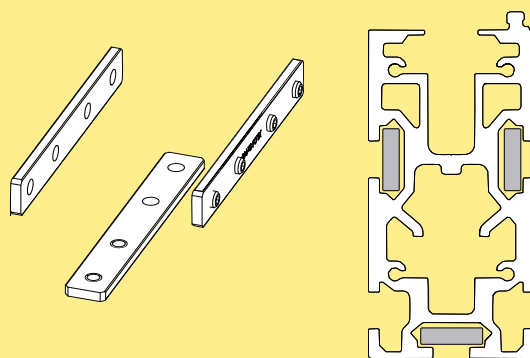
Connecting strip   **XLCJ 5X140**
Including M8 screws. Contains 10 pcs.

Cross bar
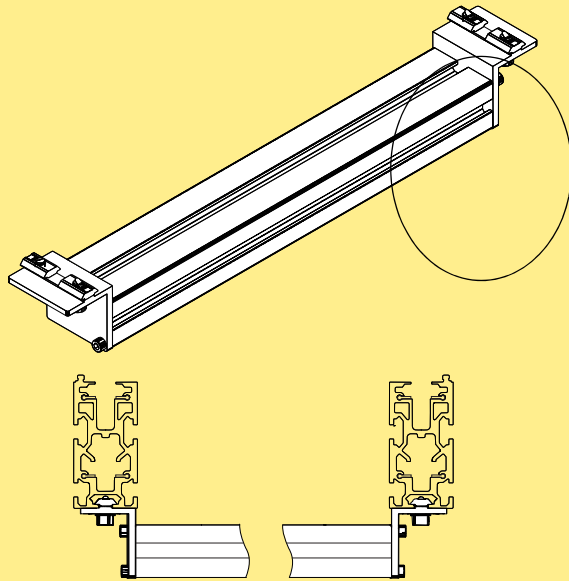
Cross bar kit
  PW 480   **5130198**
  PW 640   **5130199**
  PW 800   **5130200**
  PW 1040   **5130201**

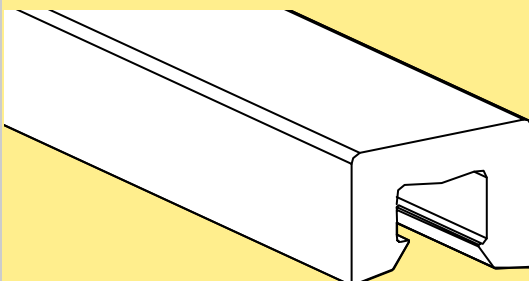## Slide rail

Slide rail
  Plastic PA-PE (grey)   **HUCR 3 H**
  Stainless steel   **HUCR 3 T**

Guide rail cover
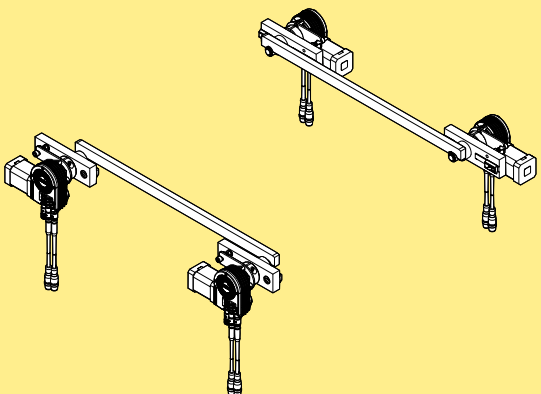
Guide rail cover 25 m
  Plastic PA-PE (grey)   **HURT 25 H**

Cover strip

Cover strip for T-slot
  Polyvinyl chloride, grey, 25 m   **XCAC 25 P**
  Aluminum 2 m   **XCAC 2**

Speed booster

Speed booster

HUES SB480
HUES SB640
HUES SB800
HUES SB1040

Accessories kit
Contains required parts for
electrical installation (3x Y-con-
nectors, 11x Sensor cables, 1x
Power box).

FLX1001063

*Beams are delivered with pre-drilled holes for speed
booster installation when ordering system in FlexLink
design tool.*

Due to the roller top chain concept, the pallet transport
speed can locally and dynamically be doubled by adding
a Speed booster unit. This is useful for example to reduce
pallet exchange time for a specific operation identified as
a bottle neck in a production flow without doubling the
overall speed for the conveyor. The Speed booster func-
tion can be selected and automatically integrated in the
delivery for the following modules:

- Stop module HUUS S11

- Queue stop module HUUS Q11

- Locating module HUUL L11

- Transfer modules HUUT_ type SI, MI, MO, MR

The function is achieved by dynamically raising a ruler
underneath the chain touching the mid roller. The roller is
forced to rotate which results in double pallet speed
locally.

Drive units – introduction

PO

CC

X45

XS

X65

X65P

X85

X85P

XH

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XKP

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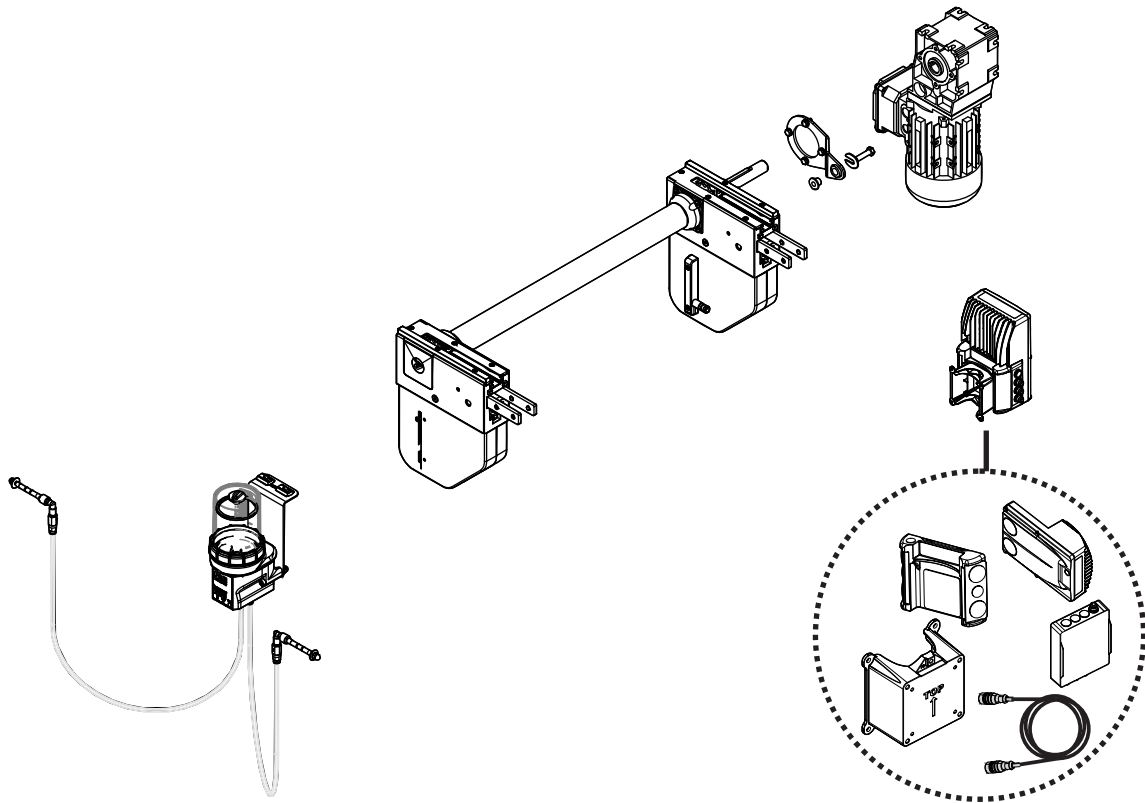
Drive unit types

The HU system includes direct driven units, and motors with 120 Hz. Two types of End drive units can be ordered:

- End drive unit incl. slack unit for conveyor length up to max 20 m.

- End drive unit without slack for conveyor length up to max 2 m.

Slack sensor

Slack sensors indicate when it is time for service and to shorten the chain slack.

Motor specifications

Motors are available for: 400/480 VAC 50/60 Hz.

These Lenze motors (120 Hz) are not possible to run without a frequency converter. The motors will be delivered with a ICN8 connector. The frequency converters (Motec) can be ordered in different bus options (PROFINET, EthereNet/IP) or stand alone (I/O). They also exist in SafeTorque versions (for PROFINET and EtherNet/IP). These Motec units are delivered with an adapter plate for wall mounting. The cable from the Motec to the motor is delivered with an ICN8 connector.

Lubrication unit

The lubrication unit includes nozzles ready to be installed into the End drive unit. All installation material is included in the delivery and the unit can easily be connected to the control system.

X2
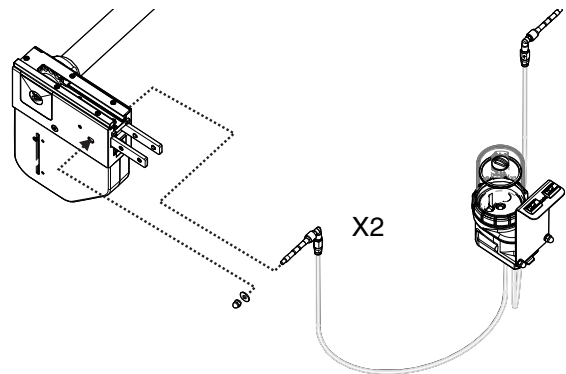
Ordering information

Drive units with motors must be specified using the web-based 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.

Drive units *without* motors can be ordered using the designations in the catalogue but can also be ordered via the configurator.
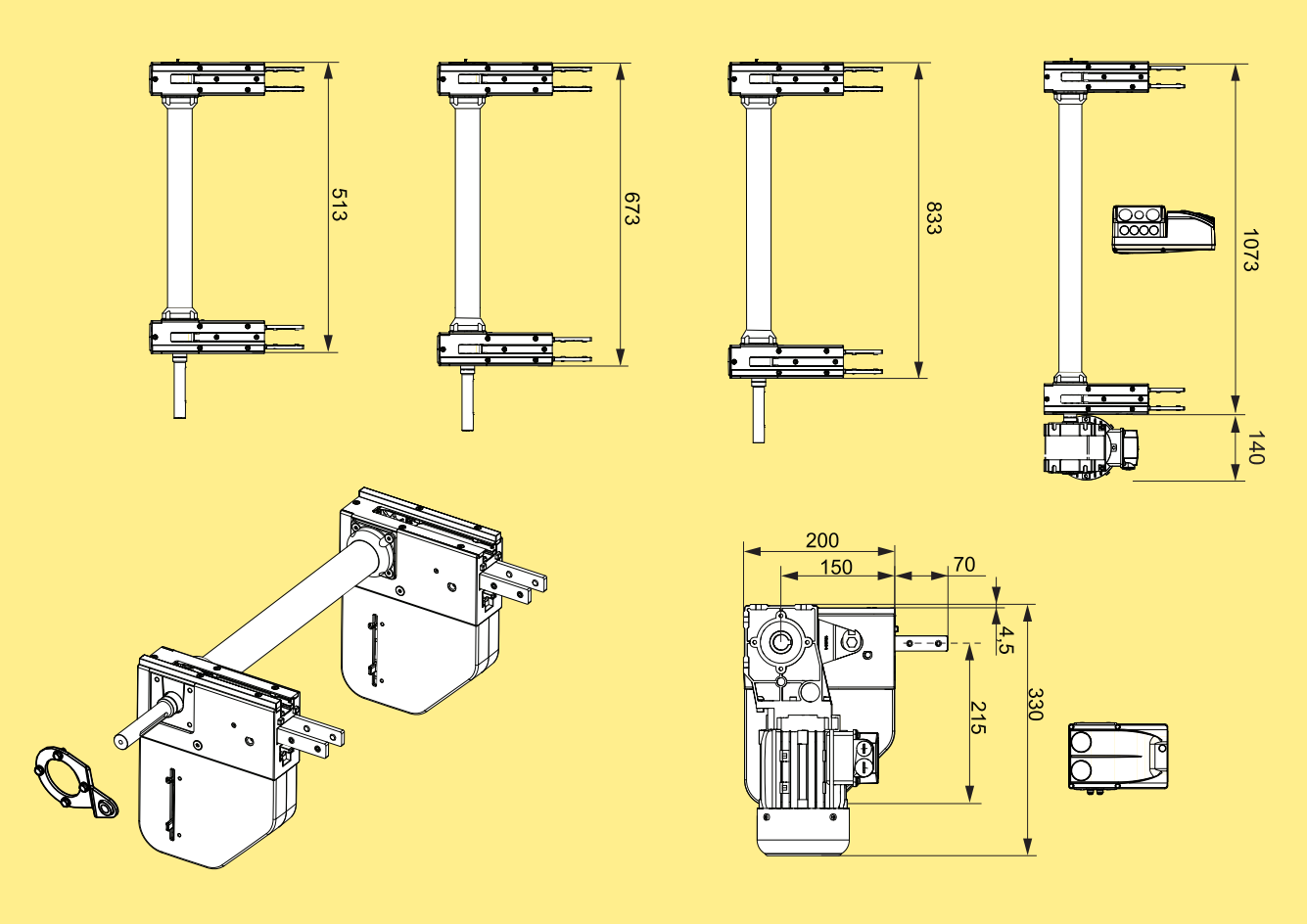
The SEW adapter kit extends the drive shaft and supports fitting SEW SA37 motors to the drive unit.

• Torque arm is always included.

Question	Choices	Description code
Pallet width PW?	480 mm	480
	640 mm	640
	800 mm	800
	1040 mm	1040
Motor position?	Left	L
	Right	R
Motor	No	No
	Yes	G500
Nominal conveyor speed	No Motor	V0-0
	Speed 5-15 m/min	V5-15
Guided?	Yes	G
	No	No
Slack sensor? (only valid for Guided =No)	Yes	S
	No	No
*Frequency inverter?	Yes	C
	No	No
	Profinet	N
	Ethernet/IP	EI
	Standard I/O	IO
	Profinet+Safe torque off	NSTO
	Ethernet+Safe torque off	EISTO
Lubrication unit	Yes	LU
	No	No

Configurator output example:

Item No	Description
HUEB 200	480-L-G500-V5/15-No-S-NSTO-LU

End drive units HU

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

513
673
833
1073
140

200
150
70
4,5
215
330

| Left and right drive unit, with pallet guiding, configured item* Pallet width 480, 640, 800 and1040 mm	**HUEB 200**
Left and right drive unit, with pallet guiding, without motor Pallet width 480 mm Motor on left side Motor on right side	**HUEB 0 NLPD480** **HUEB 0 NRPD480**
Left and right drive unit, with pallet guiding, without motor Pallet width 640 mm Motor on left side Motor on right side	**HUEB 0 NLPD640** **HUEB 0 NRPD640**
Left and right drive unit, with pallet guiding, without motor Pallet width 800 mm Motor on left side Motor on right side	**HUEB 0 NLPD800** **HUEB 0 NRPD800**
Left and right drive unit, with pallet guiding, without motor Pallet width 1040 mm Motor on left side Motor on right side	**HUEB 0 NLPD1040** **HUEB 0 NRPD1040**

*Use online configurator when ordering*
Effective track length: 2x0,125 m

End drive unit guided

513	673	833	1073

200 | 70 | 107
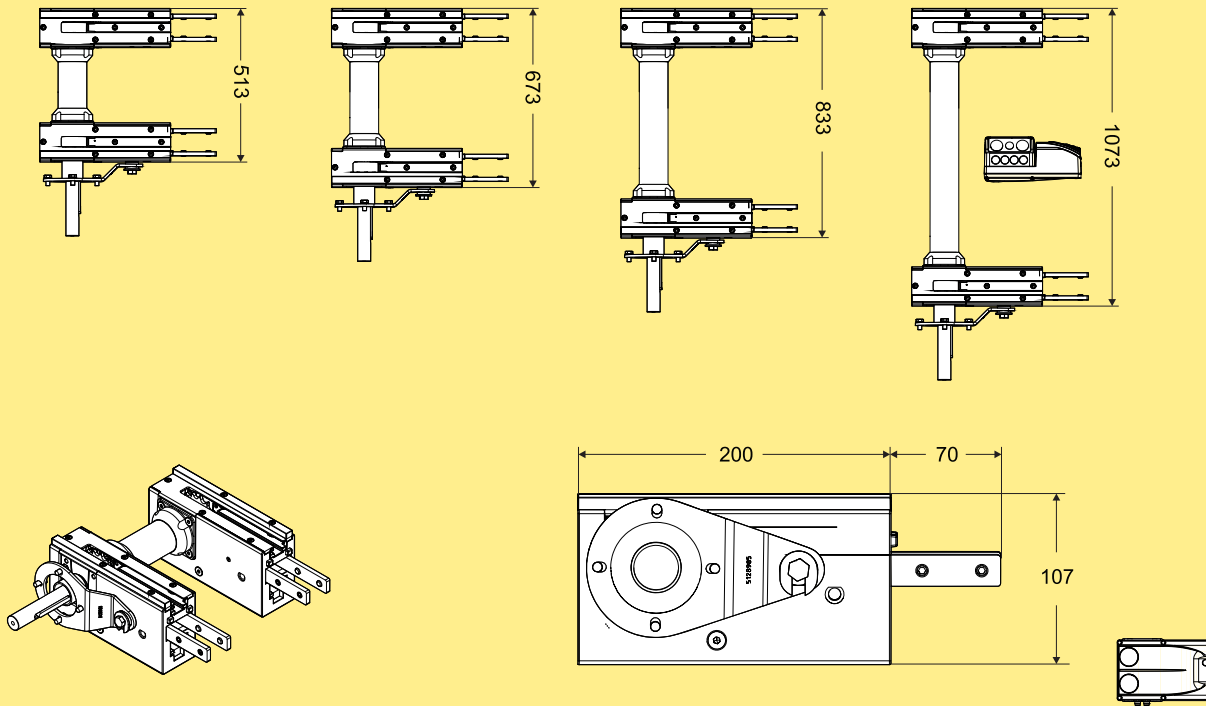
Left and right drive unit, configured item* Pallet width 480, 640, 800 and1040 mm	**HUEB 200**
Left and right drive unit, with pallet guiding, without motor Pallet width 480 mm Motor on left side Motor on right side	**HUEB 0 NLGPD480** **HUEB 0 NRGPD480**
Left and right drive unit, with pallet guiding, without motor Pallet width 640 mm Motor on left side Motor on right side	**HUEB 0 NLGPD640** **HUEB 0 NRGPD640**
Left and right drive unit, with pallet guiding, without motor Pallet width 800 mm Motor on left side Motor on right side	**HUEB 0 NLGPD800** **HUEB 0 NRGPD800**
Left and right drive unit, with pallet guiding, without motor Pallet width 1040 mm Motor on left side Motor on right side	**HUEB 0NLGPD1040** **HUEB 0NRGPD1040**

Use online configurator when ordering
Effective track length: 2x0,125 m

End drive units accessories

Sensor bracket kit
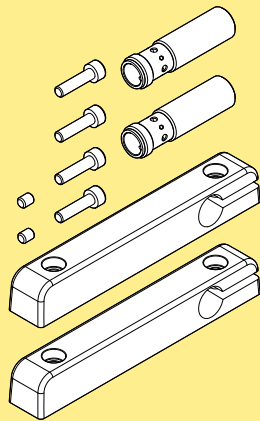
Chain slack sensors **FLX1000491**

Torque arm kit
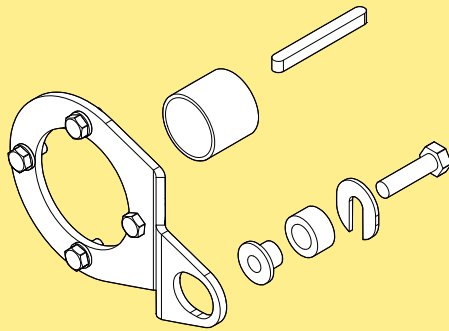
For Lenze G500-B45 and SEW
SA37 **5130414**

Motor/Gear
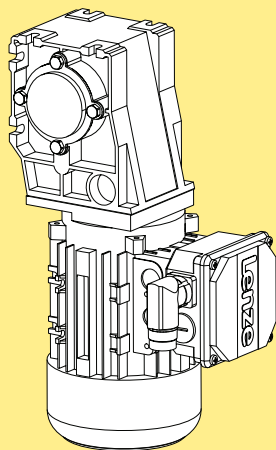
Lenze 61074650 **5130012**

Frequency inverter
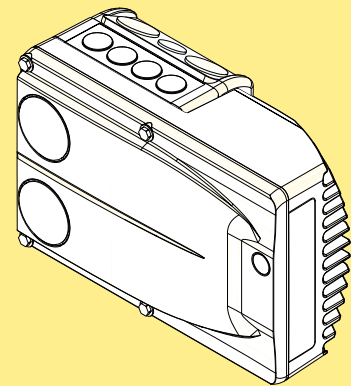
Frequency inverter
PROFINET & STO **5130014**
PROFINET **5130015**
Ethernet/IP & STO **5130016**
Ethernet/IP **5130017**
Standard I/O **5130018**
Motor cable included

Lubricate unit
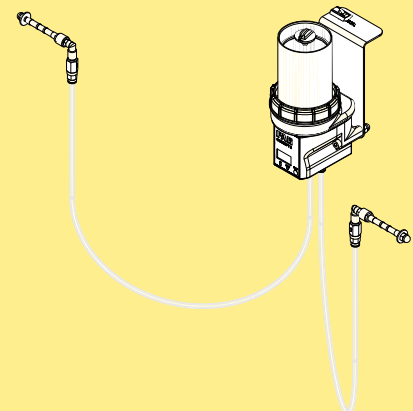
Lubricate unit, (without oil) **5131172**
Including all cables
Recommended oil, Klüber Structovis GHD

SEW adapter kit
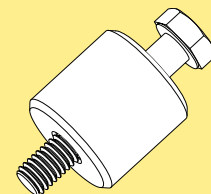
Adapter kit for SA37 **FLX1009734**

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

Idler end unit Introduction

The idler end can be used for all types of roller chains of type HUTR. The length of this compact idler end is 50 mm. A cam is supporting the chain. The energy losses are low due to the chain roller concept.

Idler end unit

A pair of idler units (left/right) **HUEJ 50 LR**
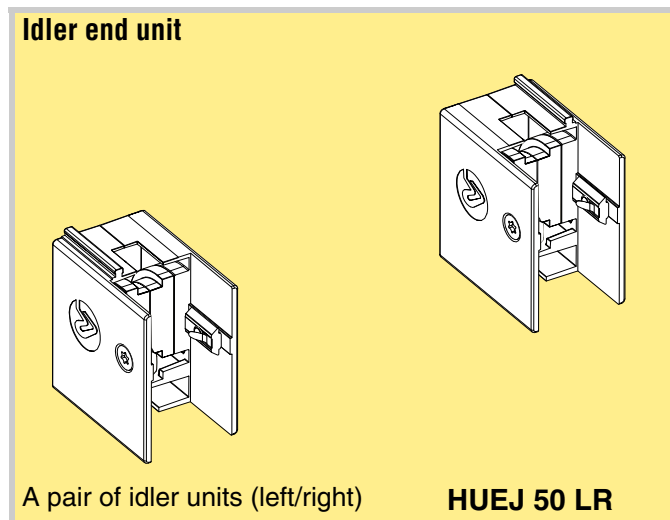
Locating modules

The Locating module is used to position the pallet in preparation for operations such as assembly, machining or testing. The locating module lifting mechanism is driven by two electric actuators. The two locating pins are both placed and fixed on one side in the same lift ruler which eliminate all need for fine adjustments or jam risk between pins and pallet bushings. The unit has an repeatability of +/-0,1 mm (x, y, z). Max permissible load/ruler including pallet weight is 2500 N. Modules are delivered including all installation material incl. sensors and cables. In addition, RFID reader/writer and speed booster are included if selected. See section for standardized controls in the FlexLink aluminum assortment catalogue for detailed information.

When you order through FlexLink Design Tool, you can include beams with pre-drilled holes for installation when selecting a speed booster.

Question	Choices	Description code
Pallet width PW?	480 mm	480
	640 mm	640
	800 mm	800
	1040 mm	1040
Pallet length PL?	480 mm	480
	640 mm	640
	800 mm	800
	1040 mm	1040
Type of stop unit?	Electric	E
	Pneumatic	P
	Pneumatic incl. sensor	PS
Speed booster?	Yes	SB
	No	No
RFID writer/reader?	Yes	RF
	No	No

Configurator output example:

Item No	Description
HUUL 11	480x480-E-SB-RF

Locating module

Configured item — HUUL E11

<2500 N
<2500 N

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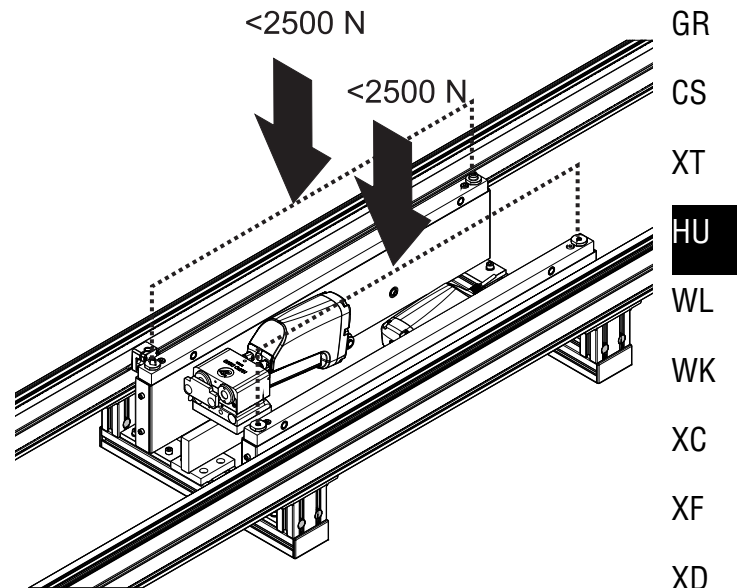
Transfers

There are 5 different types of standard transfer modules.

HUUT EO: End (of a conveyor), Out feeding

HUUT SI: Start (of a conveyor), In feeding

HUUT MO: Mid (of a conveyor), Out feeding

HUUT MI: Mid (of a conveyor), In feeding

HUUT MR: Mid (of a conveyor), Return feeding
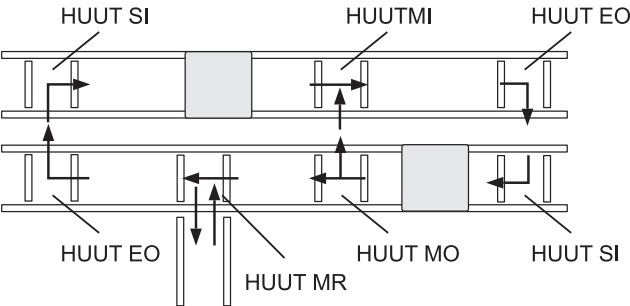
In all Transfer modules both pallet transport and pallet lift function are electrically driven by step motors. Together with the controller, SCDC, this enables smooth and silent pallet movements. Damped stops can be eliminated for all pallet "In feeding" (SI, MI and MR) as the pallet speed can be ramped down in a very controlled way. For pallet transfer a Roller top chain of type HUTR _B SC is used and no lubrication is needed in any transfer module. The Roller top chain steel rollers roll on an underneath steel bar which has very low friction and wear, but is a very rigid and robust support for transporting heavier pallets. Modules are delivered including all installation material incl. sensors and cables. In addition, RFID reader/writer and speed booster are included if selected. See section for standardized controls in the FlexLink aluminum assortment catalogue for detailed information.

When selecting a speed booster, you can include beams with pre-drilled holes for installation when ordering through FlexLink Design Tool.

For personal safety HUUT SI and HUUT EO are equipped with stop kits that are placed at the conveyor ends. This eliminates the risk of a pallet falling off at the conveyor end.
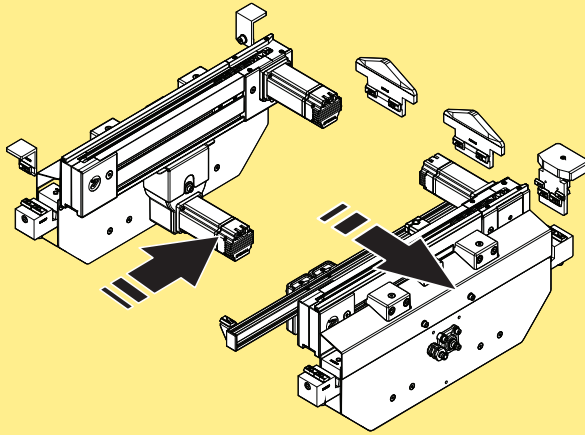

(5131129 = Stop kit)
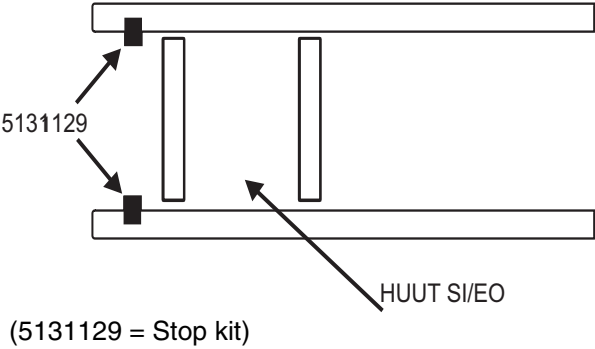
Transfer module
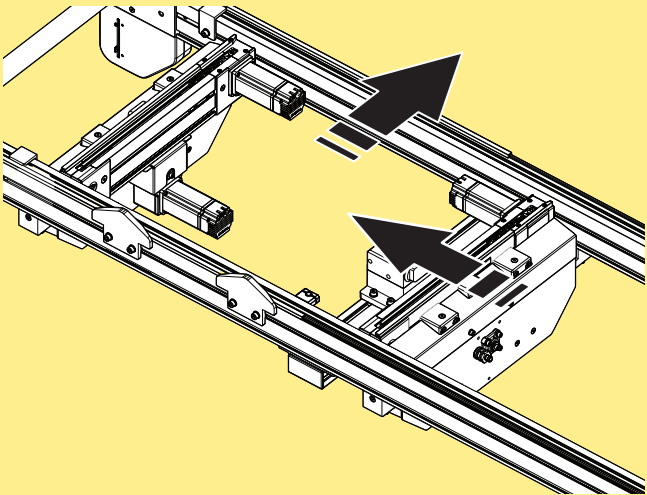
End main to cross   **HUUT EO**

Question	Choices	Description code
Pallet width PW?	480 mm	480
	640 mm	640
	800 mm	800
	1040 mm	1040
Pallet length PL?	480 mm	480
	640 mm	640
	800 mm	800
	1040 mm	1040
Type of damper unit?	Electric	E
	Pneumatic	P

Configurator output example:

Item No	Description
HUUT EO	480x480-E

Transfer module

Cross to start main   **HUUT SI**

Question	Choices	Description code
Pallet width PW?	480 mm	480
	640 mm	640
	800 mm	800
	1040 mm	1040
Pallet length PL?	480 mm	480
	640 mm	640
	800 mm	800
	1040 mm	1040
Speed booster?	Yes	SB
	No	P

Configurator output example:

Item No	Description
HUUT SI	480x480-SB

Transfer module
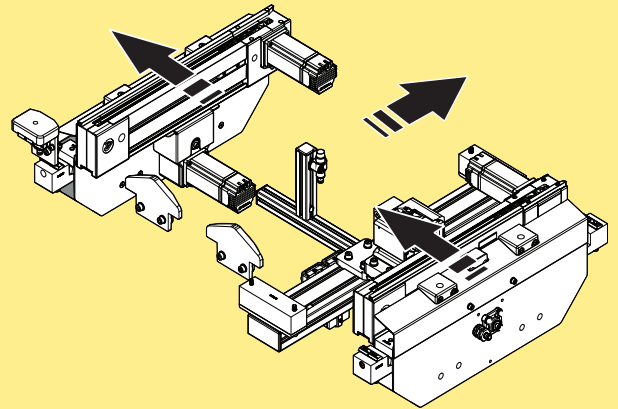
Mid main to cross   **HUUT MO**

Question	Choices	Description code
Pallet width PW?	480 mm	480
	640 mm	640
	800 mm	800
	1040 mm	1040
Pallet length PL?	480 mm	480
	640 mm	640
	800 mm	800
	1040 mm	1040
Type of stop unit?	Electric	E
	Pneumatic	P
Speed booster?	Yes	SB
	No	P
RFID reader/writer	Yes	RF
	No	No

Configurator output example:

Item No	Description
HUUT MO	480x480-E-SB-RF

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

Transfer module
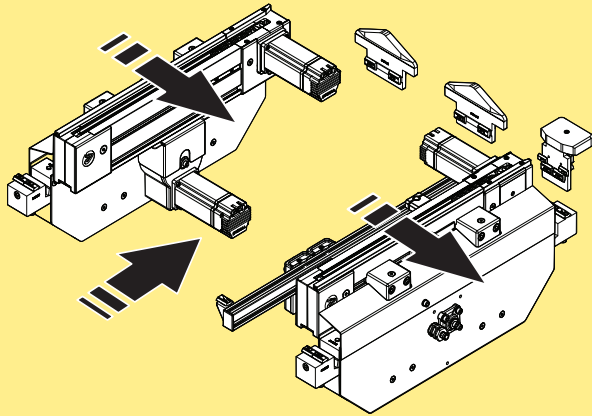
Cross to mid main   **HUUT MI**

Transfer module
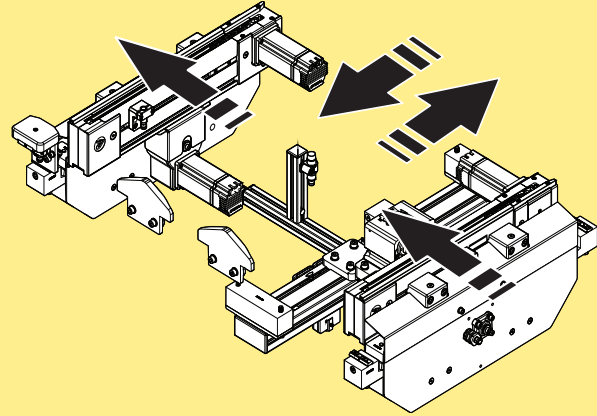
Mid main to bidirectionally cross   **HUUT MR**

Question	Choices	Description code
Pallet width PW?	480 mm	480
	640 mm	640
	800 mm	800
	1040 mm	1040
Pallet length PL?	480 mm	480
	640 mm	640
	800 mm	800
	1040 mm	1040
Speed booster?	Yes	SB
	No	P

Configurator output example:
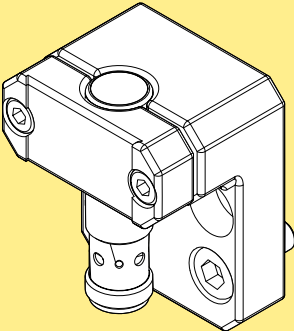
Item No	Description
HUUT MI	480x480-SB

Question	Choices	Description code
Pallet width PW?	480 mm	480
	640 mm	640
	800 mm	800
	1040 mm	1040
Pallet length PL?	480 mm	480
	640 mm	640
	800 mm	800
	1040 mm	1040
Type of stop unit?	Electric	E
	Pneumatic	P
Speed booster?	Yes	SB
	No	P
RFID reader/writer	Yes	RF
	No	No

Configurator output example:

Item No	Description
HUUT MR	480x480-E-SB-RF

Transfer modules accessories

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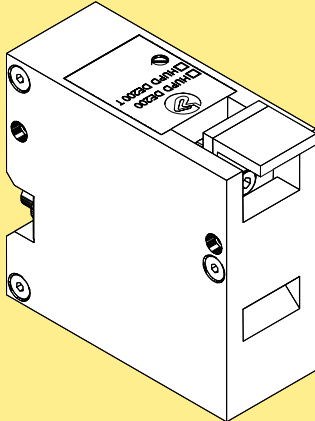
Sensor

Sensor
   Complete kit
   (Incl. sensor, bracket XTPB
   V002, sensor, cable, connectors
   and fasteners)

FLX1000736

Sensor

Sensor
   Complete kit
   (Incl. sensor, bracket XTPB
   V003, sensor, cable, connectors
   and fasteners)

FLX1000740

Pallet stop, pneumatic

Pallet stop, damped 260 kg

HUPD D260
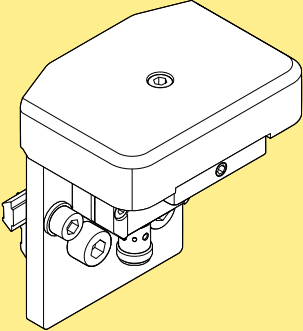
Pallet stop, electric

Pallet stop, damped 200 kg
   for transfer

HUPD DE200 T

Special cable
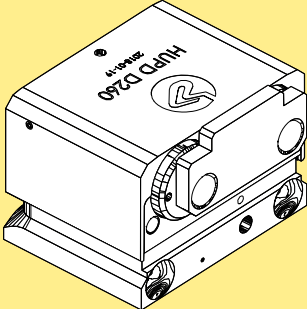
Cable for electric stops
   (for HUPD DE200, HUPD
   DE200T and HUPD DE410)

5129331

Maximum permissible pallet weight vs conveyor speed for the pallet stops:

	Conveyor speed m/min		
	5	**10**	**15**
HUPD DE200 (T)	200 kg	160 kg	120 kg
HUPD D260	260 kg	230 kg	200 kg

Maximum permissible pallet weight vs conveyor speed:

	Conveyor speed m/min		
	5	**10**	**15**
HUPA MCE270	270 kg	210 kg	195 kg
HUPA MC270	270 kg	210 kg	190 kg

Transfer damper, electric
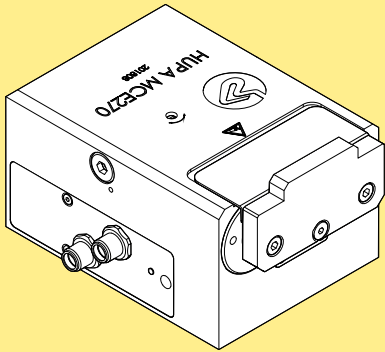
Electric damper	**HUPA MCE270**

Transfer damper, pneumatic
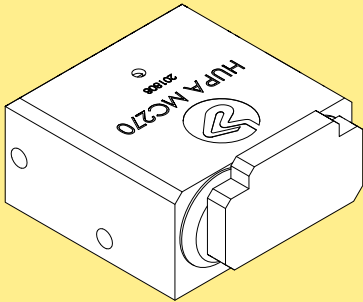
Pneumatic damper	**HUPA MC270**

Special cable

Cable for electric damper (for HUPD MCE270)	**5129520**

Stop kit, traverse
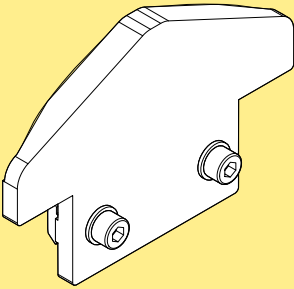
Including all fasteners	**5131147**

Stop kit, longitudinal
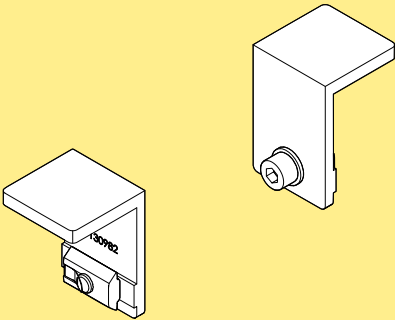
Including all fasteners	**5131129**

Stop modules

There are two types of Stop modules:

- Single pallet stop module HUUS S11 to be used for a manual workstation or a low accuracy stop position.

- Queue stop module HUUS Q11 to be used for queue of pallets (2 pallets or more).

Modules are delivered including all installation material including sensors and cables. In addition, RFID reader/writer and speed booster are included if selected. See section for standardized controls in the FlexLink aluminum assortment catalogue for detailed information.

When selecting a speed booster, you can include beams with pre-drilled holes for installation when ordering through FlexLink Design Tool.
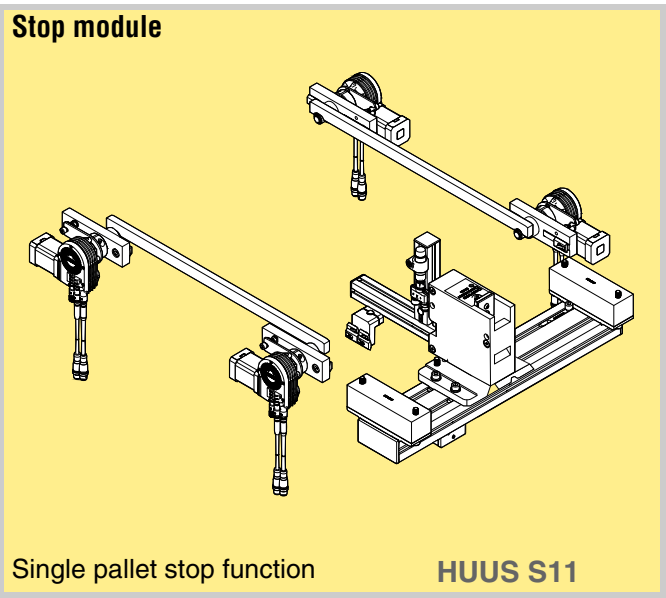
Ordering HUUS S11

Question	Choices	Description code
Pallet width PW?	480 mm	480
	640 mm	640
	800 mm	800
	1040 mm	1040
Pallet length PL?	480 mm	480
	640 mm	640
	800 mm	800
	1040 mm	1040
Type of stop unit?	Electric	E (HUPD DE200)
	Pneumatic	P (HUPD D260)
	Pneumatic incl. sensors	PS
Speed booster?	Yes	SB
	No	No
RFID reader/writer?	Yes	RF
	No	No

Configurator output example:

Item No	Description
HUUS S11	480x480-E-SB-RF

Stop module

Single pallet stop function   **HUUS S11**

Stop module

Queue stop   **HUUS Q11**

PO
CC
X45
XS
X65
X65P
X85
X85P
XH
XK
XKP
X180
X300
GR
CS
XT
HU
WL
WK
XC
XF
XD
ELV
SC
FST
TR
APX
IDX
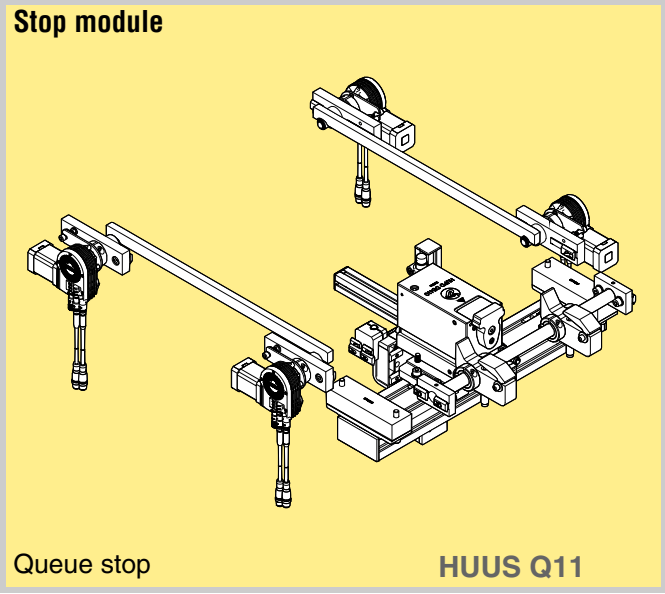
Ordering HUUS Q11

Question	Choices	Description code
Pallet width PW?	480 mm	480
	640 mm	640
	800 mm	800
	1040 mm	1040
Pallet length PL?	480 mm	480
	640 mm	640
	800 mm	800
	1040 mm	1040
Type of stop unit?	Electric	E
	Pneumatic	P
	Pneumatic incl. sensors	PS
Stop unit size?	Electric:	
	max 200 kg	200 (HUPD DE200)
	Max 400 kg	400 (HUPD DE410)
	Pneumatic:	
	max 260 kg	260 (HUPD D260)
	max 500 kg	500 (HUPD D500
Number of queue damper start kits?	0,1 ,2, ...n (max 4)	QDn (See stop module accessories)
Number of extra queue damper arms per start kit?	0,1,2	Dn
	No	
Speed booster?	Yes	SB
	No	No
RFID reader/ writer?	Yes	RF
	No	No

Configurator output example:

Item No	Description
HUUS Q11	480x480-E-200-QD4-D1-SB-RF

Stop module accessories

Maximum permissible weight of a group of pallets:

	Conveyor speed m/min		
	5	**10**	**15**
HUPD DE200 (T)	200 kg	160 kg	120 kg
HUPD DE410	410 kg	300 kg	220 kg
HUPD D260	260 kg	230 kg	200 kg
HUPD D500	500 kg	330 kg	240 kg

Pallet stop, electric
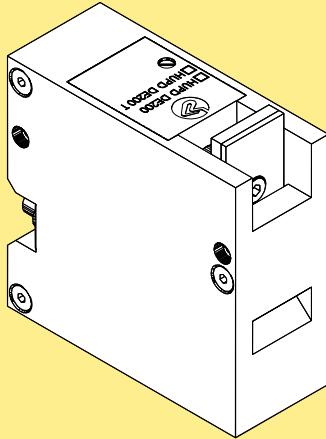
Pallet stop, damped 200 kg **HUPD DE200**

Queue stop, electric
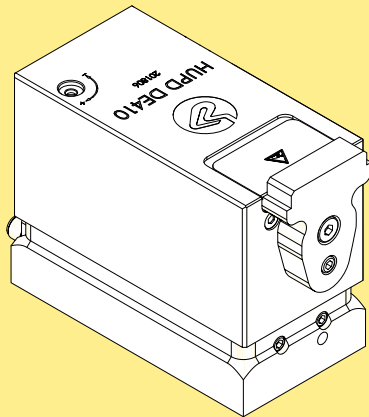
Pallet stop, damped 410 kg **HUPD DE410**

Cable

Cable for electric stops **5129331**

Pallet stop, pneumatic
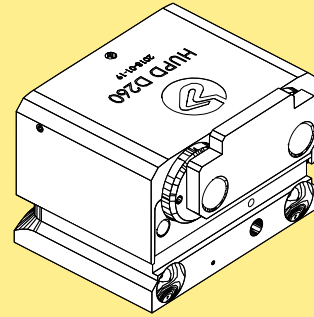
Pallet stop, damped 260 kg **HUPD D260**

Queue stop, pneumatic
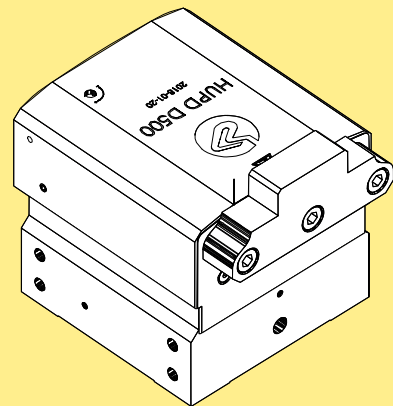
Pallet stop, damped 500 kg **HUPD D500**

Support
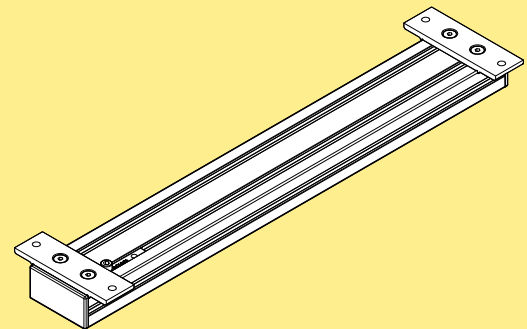
Support kit
PW 480 **5129860**
PW 640 **5129861**
PW 800 **5129862**
PW 1040 **5129863**

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

Queue damper

A queue damper is used when noise level and gentle handling of the product is important. It also reduces the impact from the pallet that goes into the framework of a line. It is an option that can be ordered together with a queue stop.

Function: When the first pallet enters a queue the damped stop stops the pallet in a smooth way. At the same time the queue damper is "activated" by the rear end of the first pallet. So before the second pallet hits the first one it is damped by the queue damper. Without queue damper, the second palette would hit the first (still standing) pallet with full speed.

One queue damper can be placed for each possible end position of a pallet in a queue. For example a queue stop function for max 3 pallets should contain one damped stop and 2 queue dampers.

Number of queue damper arms needed

Queue damper start kit	
Queue damper start kit	
PW 480	**HUPA DQ 480**
PW 640 (picture)	**HUPA DQ 640**
PW 800	**HUPA DQ 800**
PW 1040	**HUPA DQ 1040**
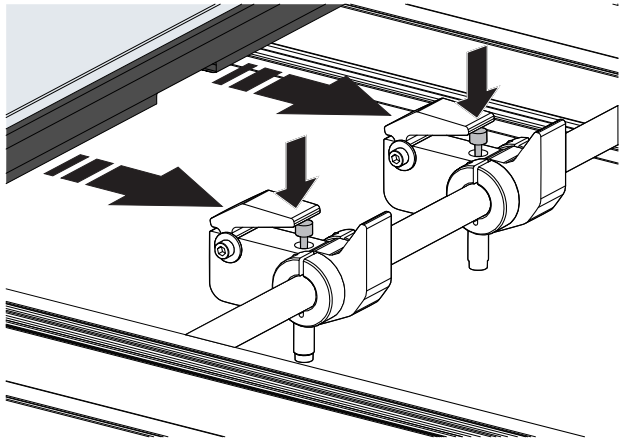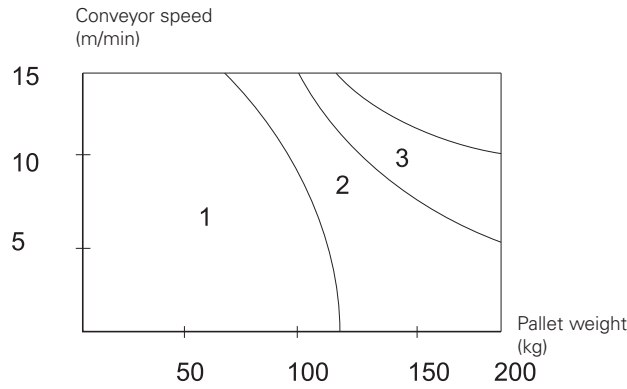
Queue damper
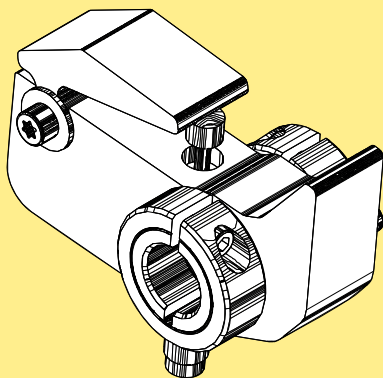
Queue damper arm	
Queue damper arm	**HUPA DQ**

Connecting kits

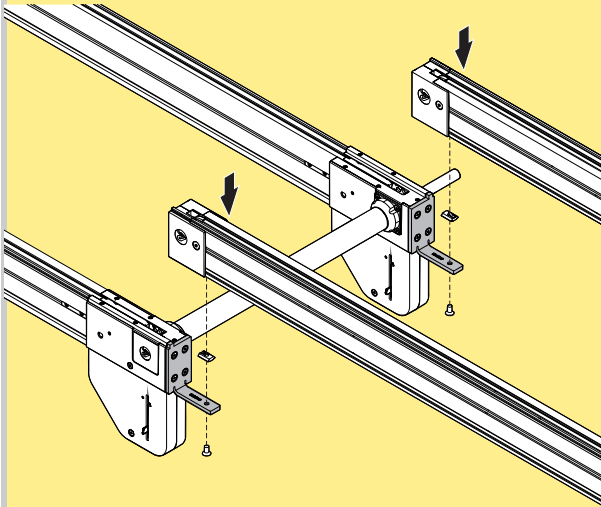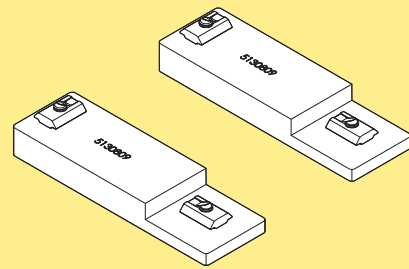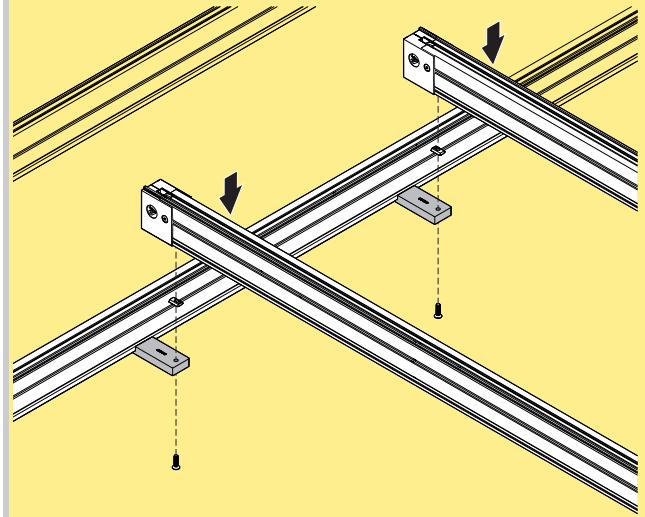## Connecting kit, end-to-end
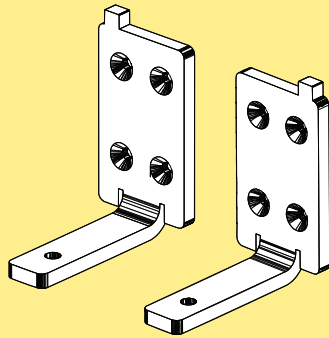
Connecting kit (incl. left and right)   **5131154**
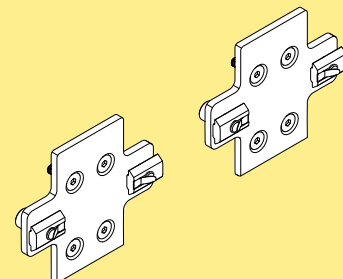*Including fasteners*

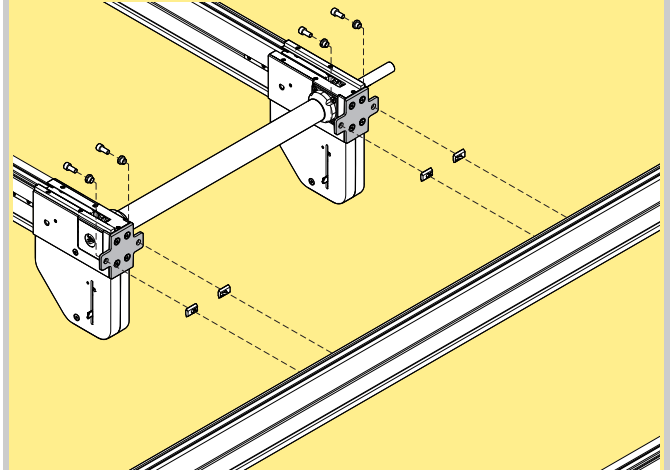## Connecting bracket kit, beam side to Idler end unit

Connecting kit, one pair   **5131153**
Including fasteners
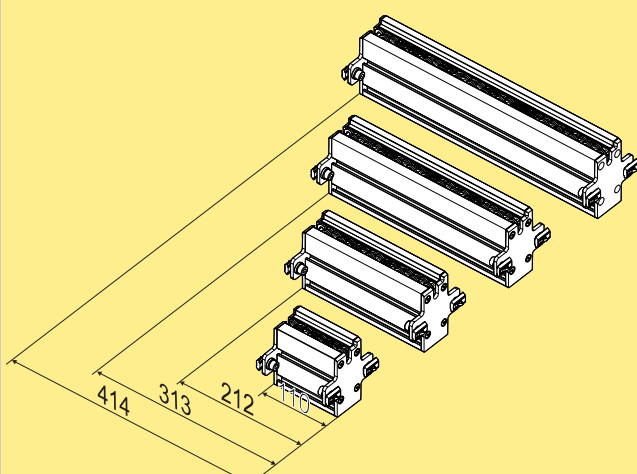
Connecting bracket kit, end drive unit to beam side

Connecting kit, one pair   **5131158**
Including fasteners

PO

CC

X45

XS

X65

X65P

X85

X85P

XH

XK

XKP

X180

X300

GR

CS

XT

HU

WL

WK

XC

XF

XD

ELV

SC

FST

TR

APX

IDX

Roller bridges

Roller bridge
Length 110 for all widths   **FLX1001828**
Length 212 for 640, 800 and 1040   **FLX1001829**
Length 313 for 800 and 1040   **FLX1001830**
Length 414 for 1040   **FLX1001831**

Note. Comes in pair of two.
Including all fasteners.
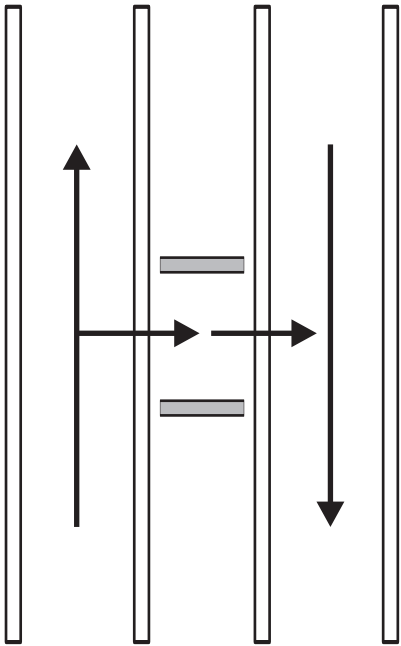
Support modules

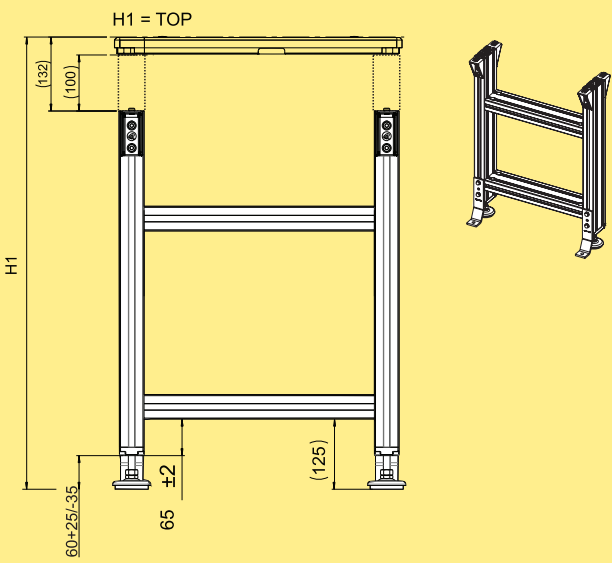Two types of support modules are available for one- and two level systems.

PO

CC

X45

XS

X65

X65P

X85

X85P

XH

XK

XKP

X180

X300

GR

CS

XT

HU

WL

WK

XC

XF

XD

ELV

SC

FST

TR

APX

IDX

Support module

Type H — HUUF S01

Note: TOP = Top of Pallet

Support module
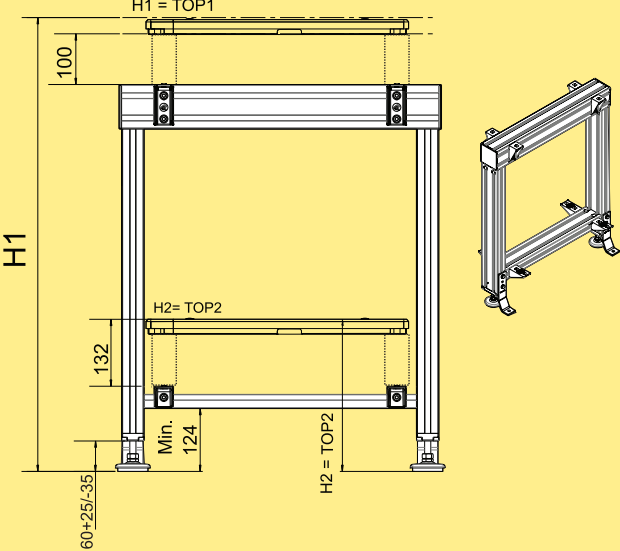
Two levels — HUUF S03

Note:
TOP1= Top of pallet upper level
TOP2= Top of pallet lower level

HUUF S01

Question	Choices (mm)	Description code
Pallet width PW?	480	480
	640	640
	800	800
	1040	1040
Top of pallet?	400 ≤ H1 ≤ 1500	H1*
Floor attachment?	Yes	FA
	No	No

Configurator output example:

Item No	Description
HUUF S01	480-400-FA

HUUF S03

Question	Choices (mm)	Description code
Pallet width PW?	480	480
	640	640
	800	800
	1040	1040
TOP upper level (H1)?	600 ≤ H1 ≤ 1500	H1*
TOP lower level (H2)?	300 ≤ H2 ≤ H1-300	H2*
Floor attachment?	Yes	FA
	No	No

Configurator output example:

Item No	Description
HUUF S01	480-600-300-FA

*H1 and H2 is based on 12 mm pallet.

Stay for support module
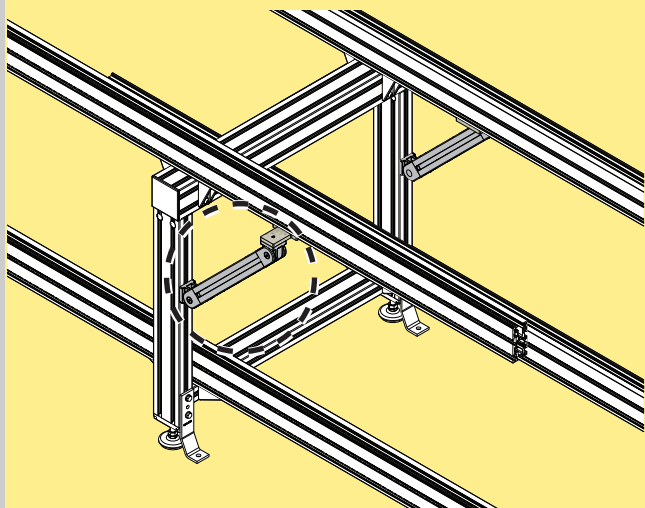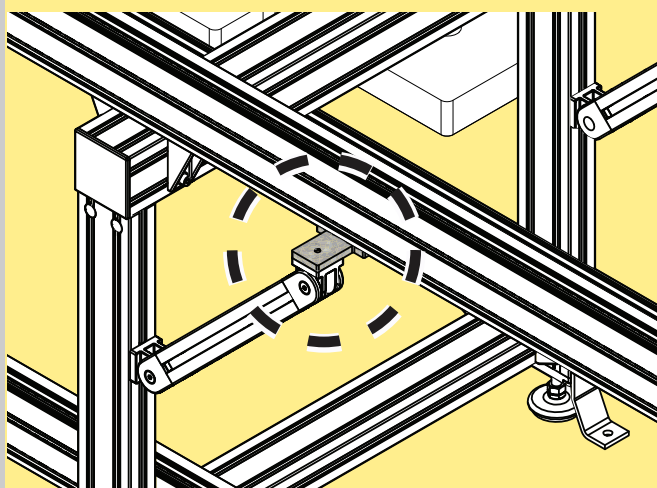

Support modules   **5130101**

Bracket for stay

For support module HUUF S03   **FLX1000790**