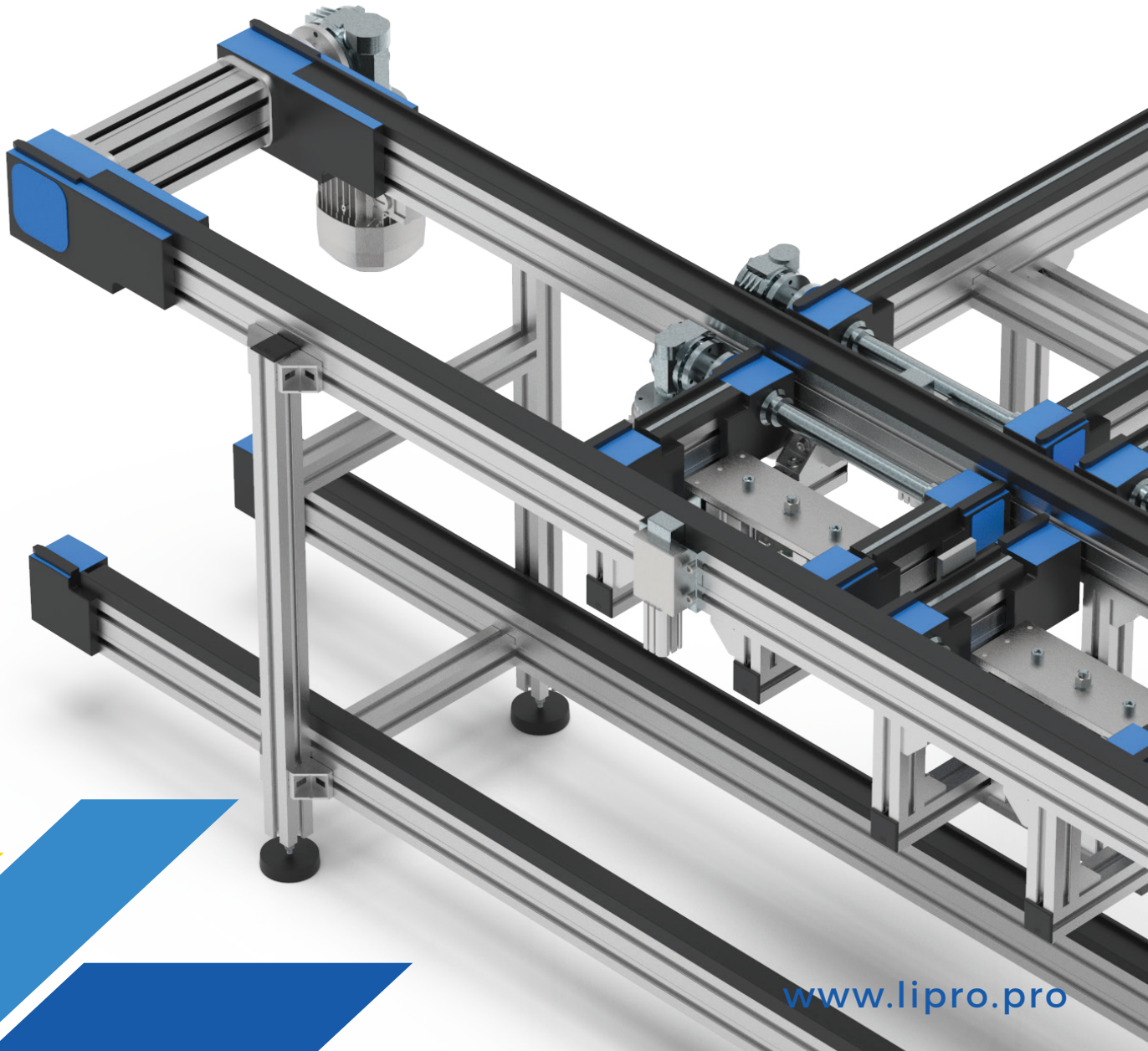
LIPRO

TRANSPORT SYSTEMS



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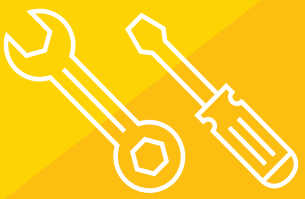
DESIGN ASSISTANCE

TURNING IDEAS INTO PRODUCTS

GUARANTEE AND SERVICE



Fast and quality customer service

SINCE 1998

TRANSPORT SYSTEMS

Transport systems in the industry are an indispensable part of work processes.

Chain pallet systems PSC-90,
belt pallet systems PSB-60, PSB-90
and roller tracks PSR-50/60
cover the majority of the needs for services and other transports in production processes. All three transport systems enable product accumulation, thereby reducing the storage surface and shortening the transport time. The advantages of the mentioned systems are their flexibility and their modular construction option.

In this manner we are able to freely choose and add necessary modules, from a simple track to a large and complex system.

All the existing modules may be re-used in new setups. Special attention in designing the systems was paid to the use of standard elements and their aesthetic appearance.

The catalogue present standard solutions. Contact our technical support for special designs.

Simplifying and
improving things ...

PRESENTATION OF LIPRO

The LIPRO systemic solutions offer added value and enable high productivity, flexibility and optimisation of working processes.

TÜV AUSTRIA CERTIFIED TÜV AUSTRIA CERT GMBH
EN ISO 9001
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EN ISO 14001
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TÜV AUSTRIA CERTIFIED TÜV AUSTRIA CERT GMBH
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EN ISO 14001
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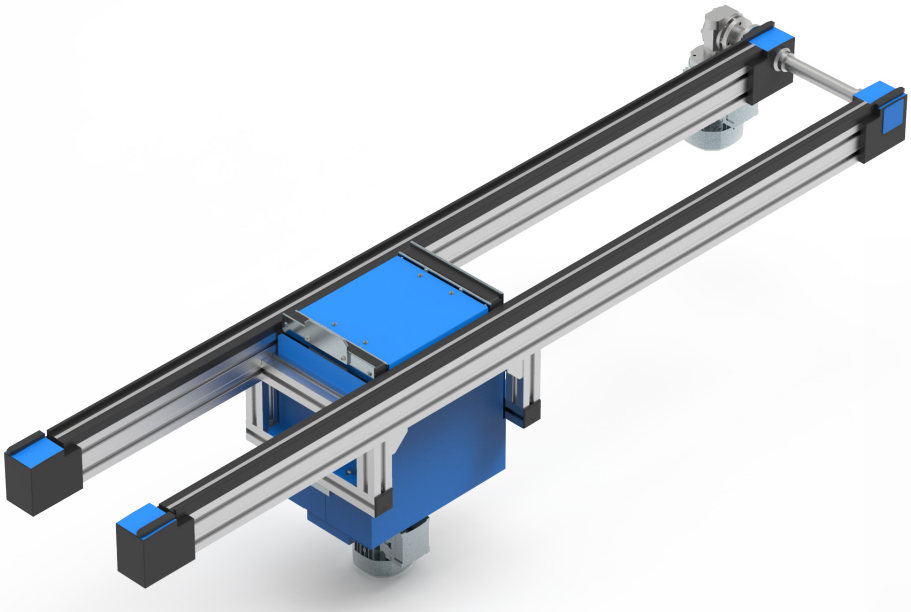
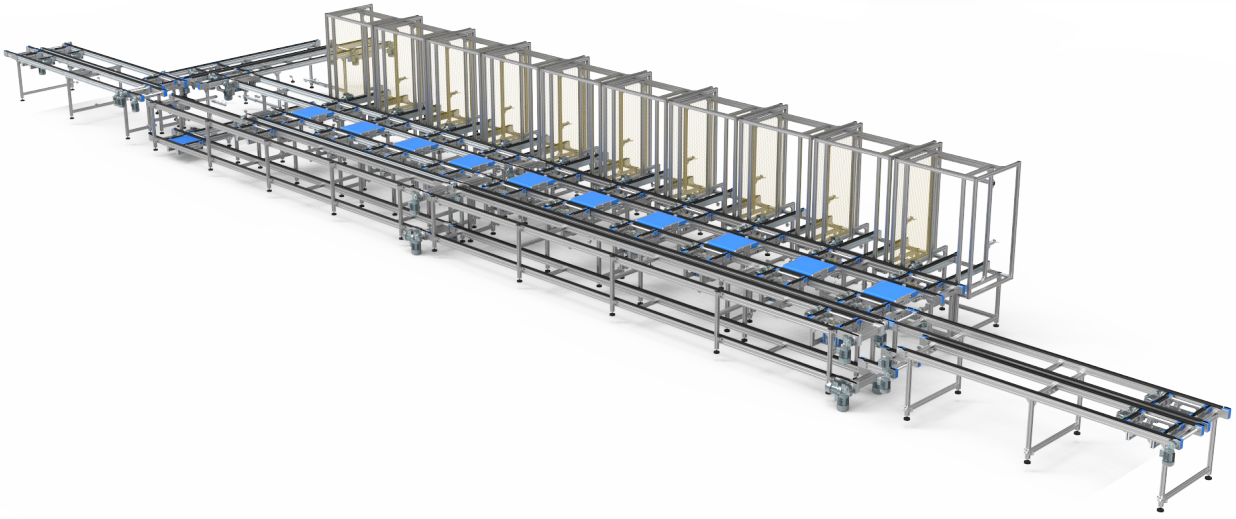
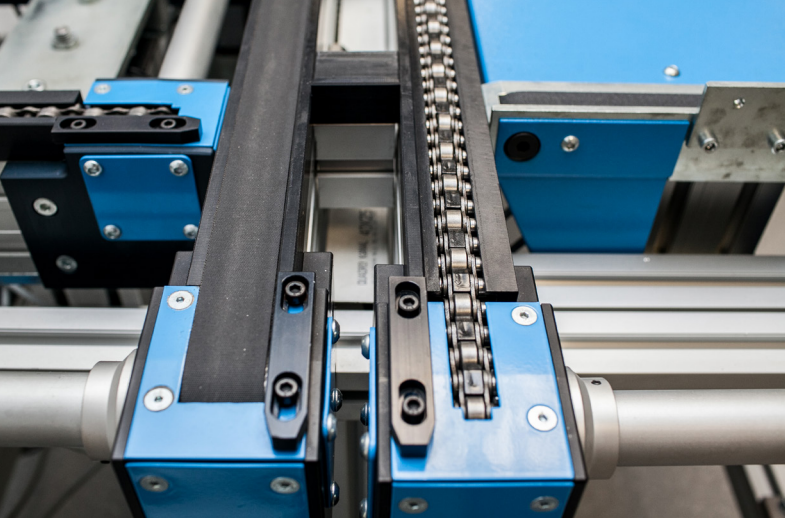
LIPRO was established in 1998 and since then it has been present on the Slovenian, European and global markets. A quality support to our esteemed business partners enabled LIPRO to develop into a recognisable and well-organised production automation company.

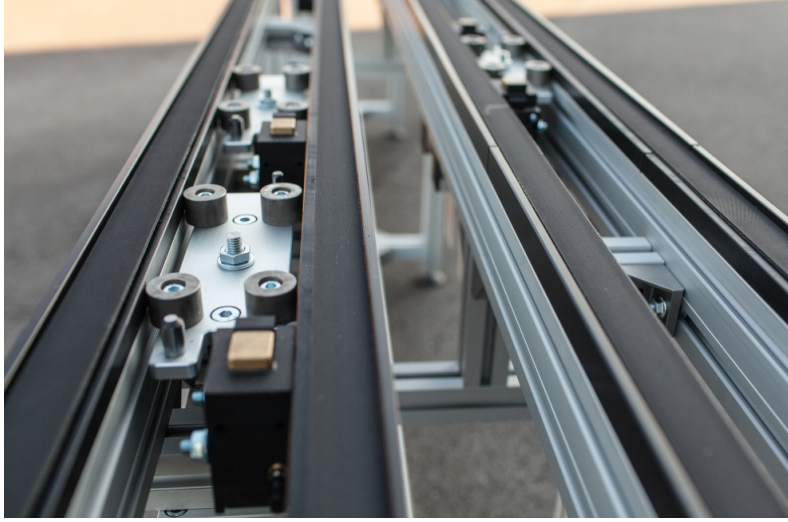
Gregor Pribac,
General Manager

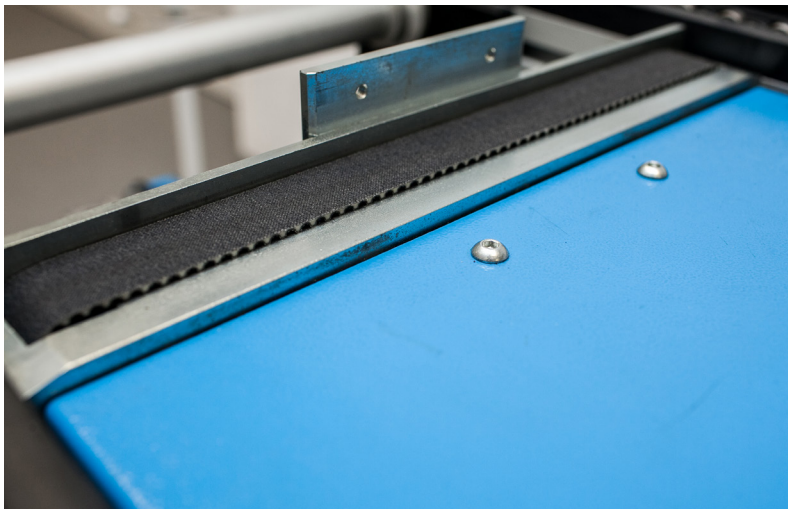
LIPRO









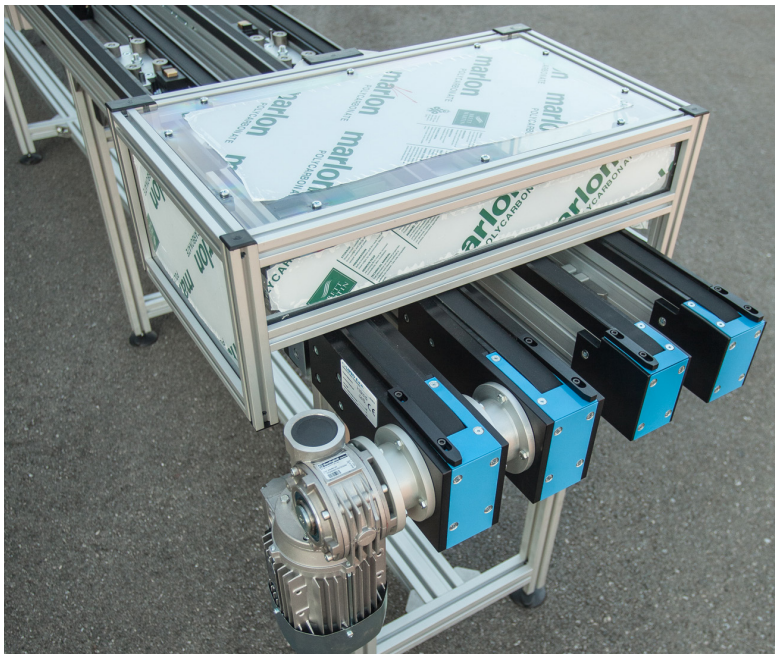


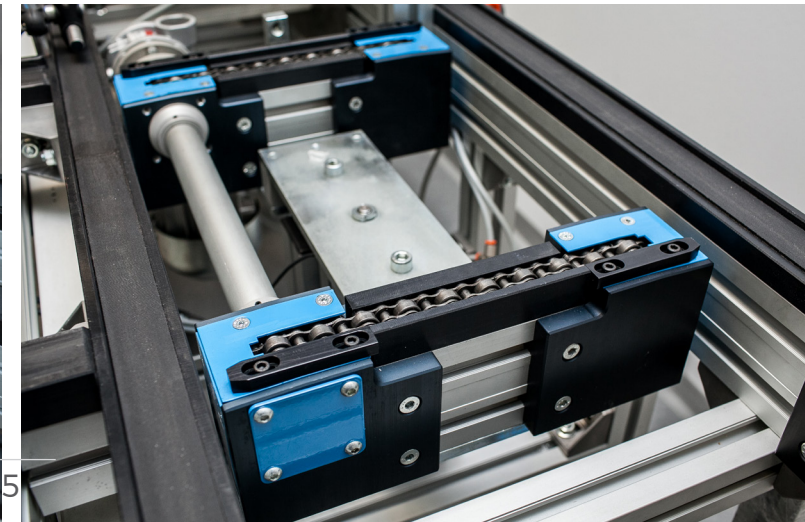
PSC–90

PSB–60

PSB–90

PSR–50/60





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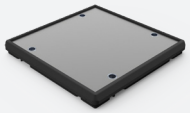
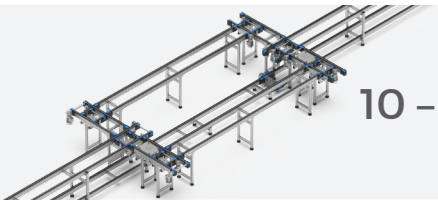
PALLET  8 – 9

CHAIN PALLET
PSC SYSTEM–90  10 – 21

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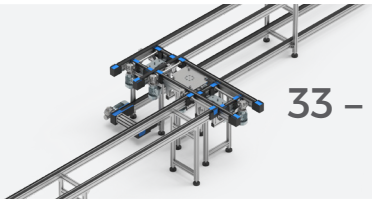
BELT PALLET
PSB SYSTEM–90  33 – 42

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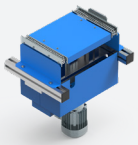
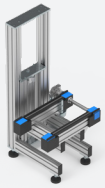
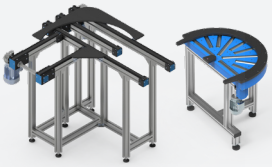
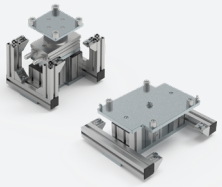
TRANSVERSAL MODULES  60 – 76

LIFTS  77 – 80

CURVES 90°/180°  81 – 86

POSITIONING AND ROTATING MODULES  87 – 90

CONTROLS 91 – 104

PALLET

Pallets are intended for transporting workpieces over the pallet system using a belt, chain or roller track.

Pallets have integrated sleeves that enable accurate centring at centring stations up to +/– 0.1 mm.

* Contact our technical support for special designs.

Pallet

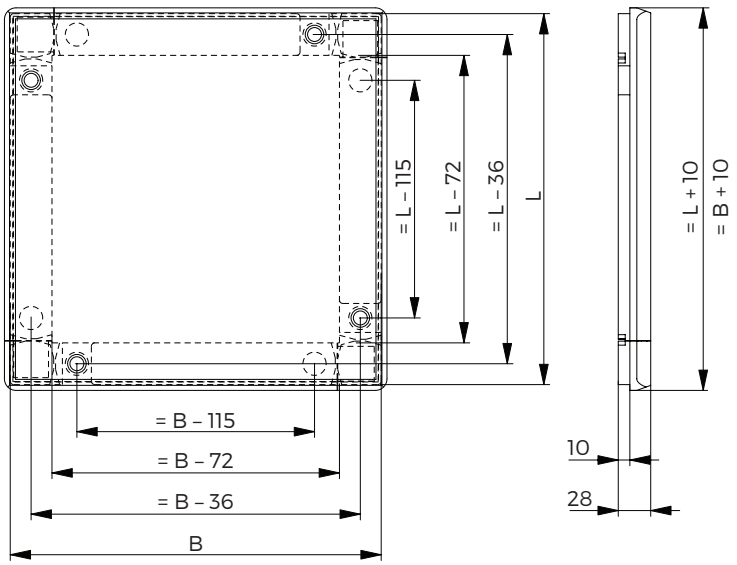
ESD

PSC–90

PSB–60

PSB–90

PSR–50/60



Code

EXAMPLE OF ORDERING

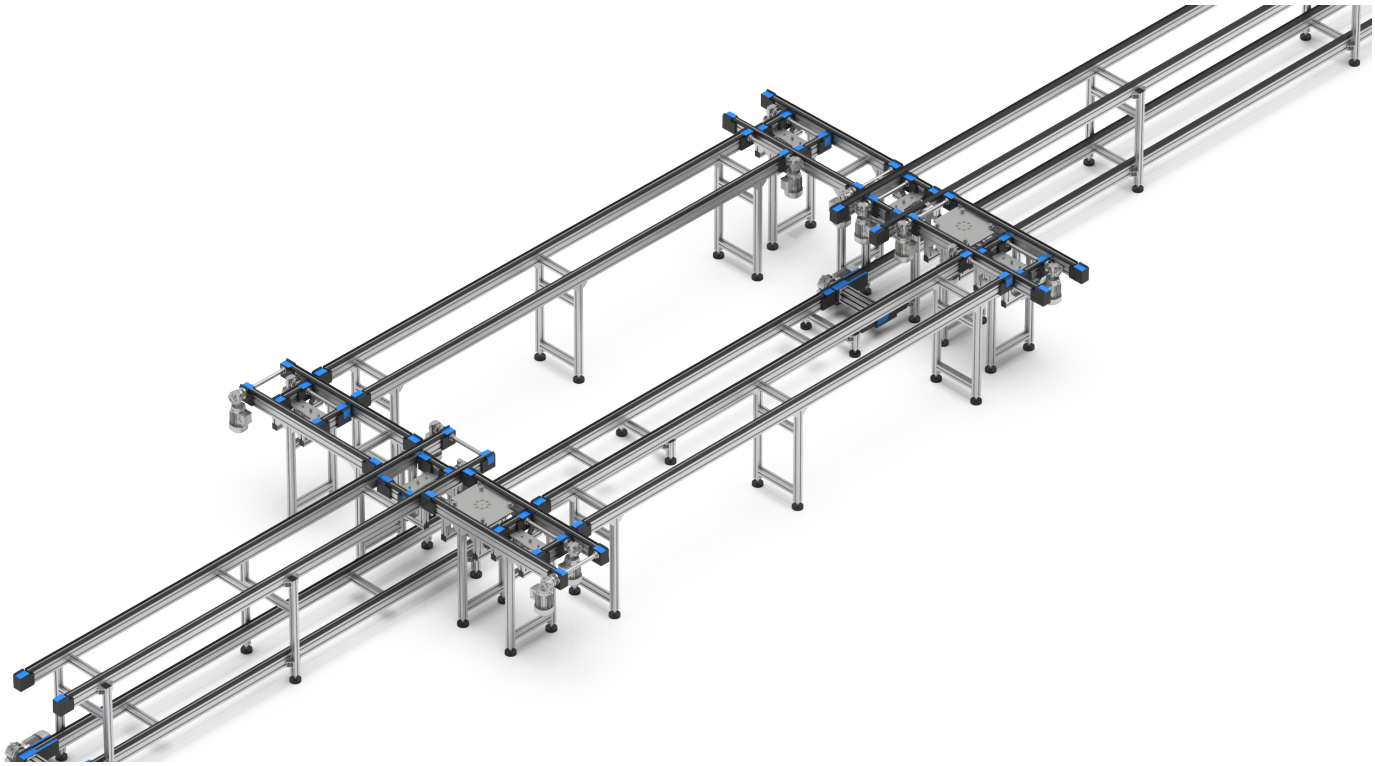
17PA	–	160	–	160	–	FE	–	4,8
		B		L		Plate		

B	Pallet width	160 – 800 mm
L	Pallet length	160 – 1 040 mm
Plate	Plate material	Fe – iron, Al – aluminium
	Plate thickness	4.8 mm / 8 mm / 13 mm

B	L	Iron – Fe		Aluminium – Al		Aluminium – Al	
(mm)	(mm)	(mm)	(kg)	(mm)	(kg)	(mm)	(kg)
*160	*160	4.8	0.9				
160	240	4.8	1.4				
240	240	4.8	2.1				
160	320	4.8	1.8				
240	320	4.8	2.8				
320	320	4.8	4.3	8	2.1		
240	400	4.8	4.1	8	2.0		
320	400	4.8	5.3	8	2.7		
400	400	4.8	6.6	8	3.4	13	5.3
320	480	4.8	6.4	8	3.2	13	5.1
400	480	4.8	7.8	8	4.0	13	6.4
480	480	4.8	9.3	8	4.9	13	7.7
400	640	4.8	10.4	8	5.4	13	8.6
480	640	4.8	12.3	8	6.5	13	10.3
640	640	4.8	16.3	8	8.7	13	13.8
400	800					13	10.8
480	800					13	12.9
640	800					13	17.3
800	800					13	21.7
640	1 040					13	22.5
800	1 040					13	28.2
B =	L =						

CHAIN PALLET SYSTEM

PSC–90



The **PSC–90** pallet system is suitable for transporting heavier and larger loads. Thanks to the accumulation chain with free-rotating rollers it is possible to achieve accumulation and move loads up to 1,500 kg or 1 kg/cm using a single drive module.

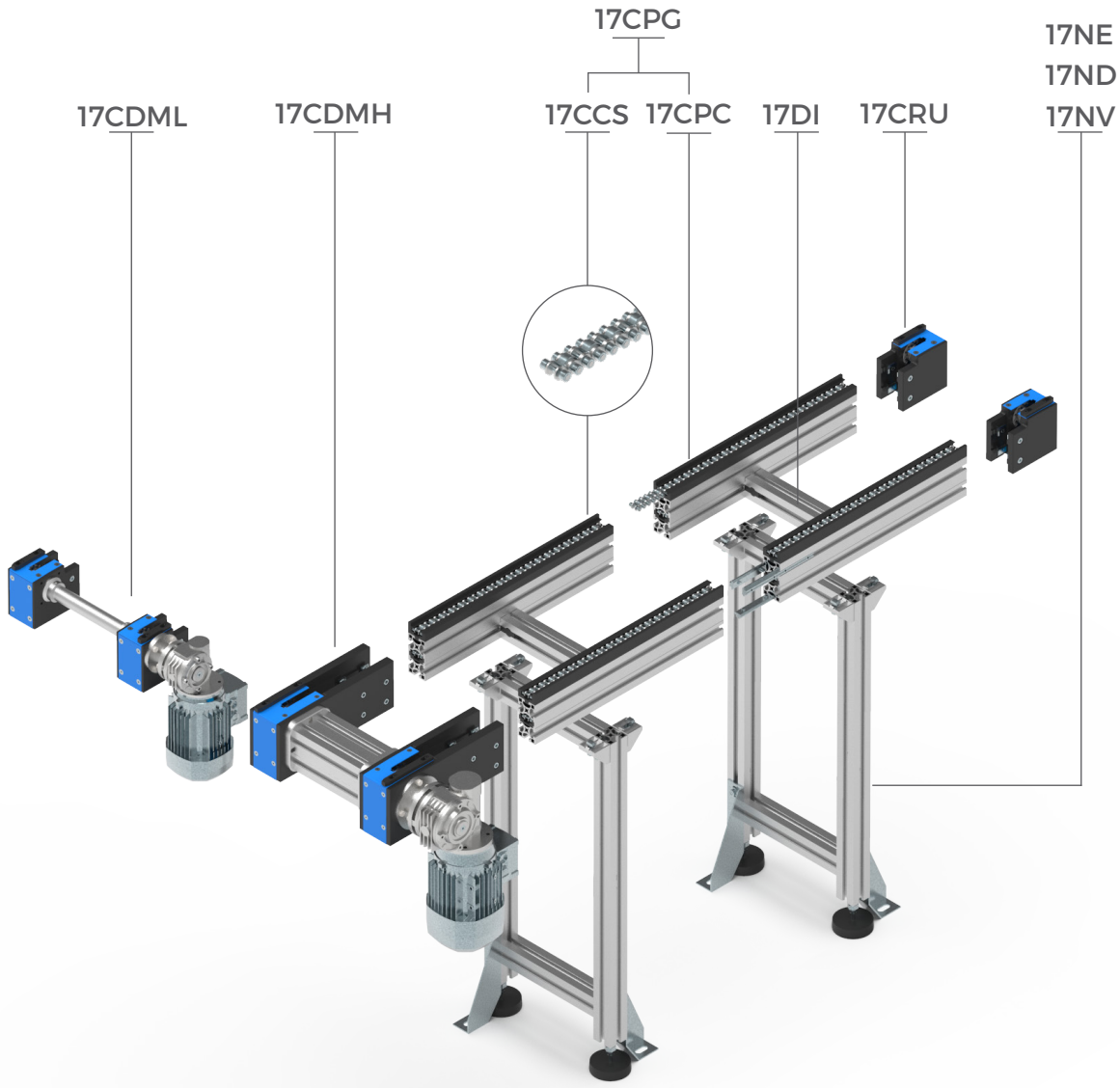
A new combination of profiles and chains is very robust and virtually does not require additional maintenance.

* Contact our technical support for special designs.

Chain pallet system

ESD

PSC-90



Drive module – heavy
17CDMH
p. 12–13

p. 16–17

Return module
17CRU

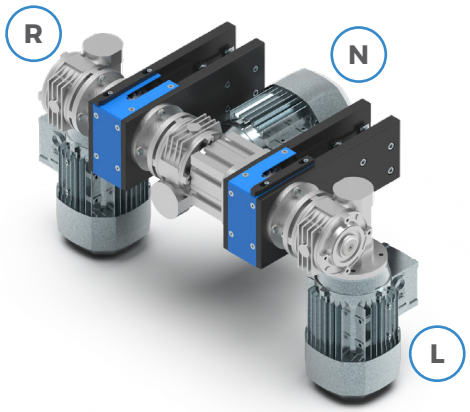
Drive module – light
17CDML
p. 14–15

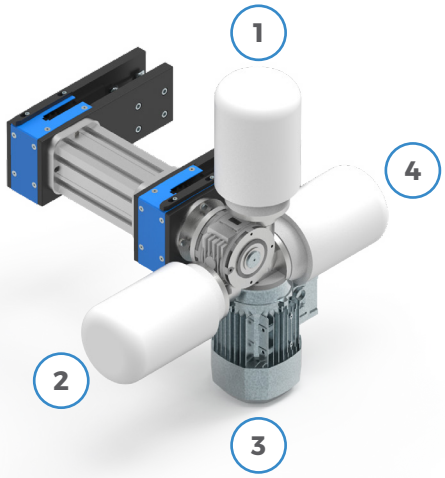
p. 18–19

Chain track
17CPG

DRIVE MODULE – HEAVY

17CDMH





The heavy drive module is intended for driving the chain pallet system in relation to the transport track and return module.

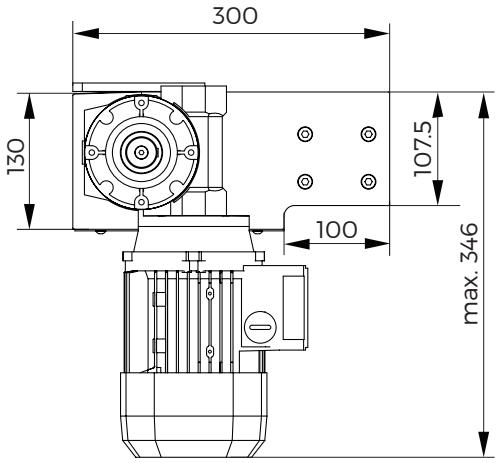
Its purpose is to drive the track up to its maximum load with accumulation FG = 1,500 kg.

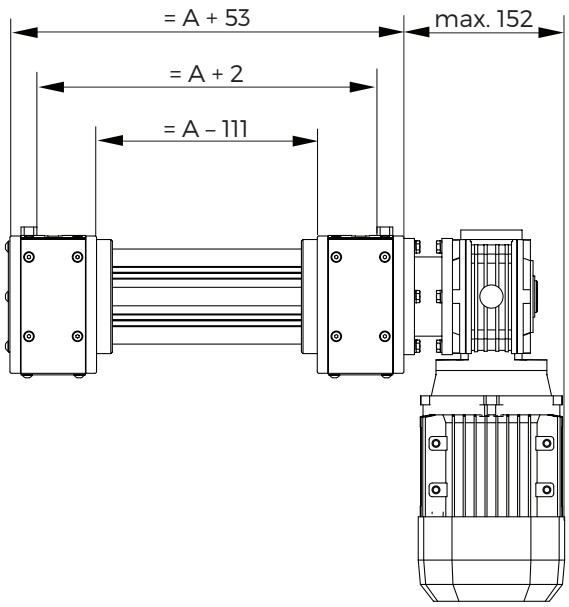
The electric motor may be positioned on the right (R), left (L) or inside (I).

Drive module – heavy

ESD

PSC-90





Code

EXAMPLE OF ORDERING

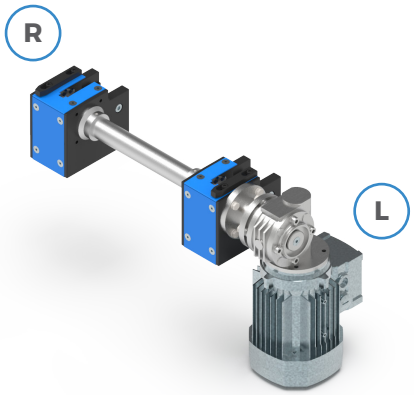
17CDMH	–	320	–	L	–	3	–	4,5
		A		B		C		D

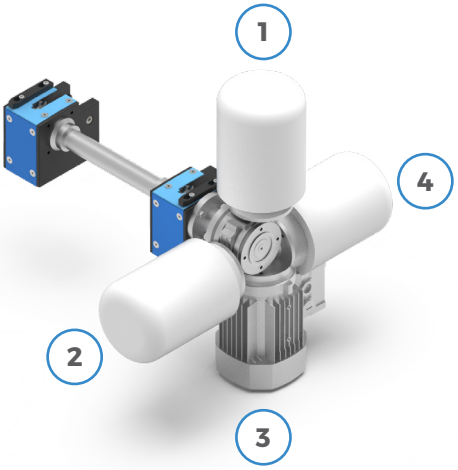
A	Pallet width	240 – 1 200 mm
B	Drive position	L = left, R = fight, *I = internal (A > 320 mm)
C	Motor reducer position	1 – 2 – 3 – 4
D	Speed	4.5 – 31.8 m/min
	Track length	**min.** 500 mm – **max.** 12 000 mm
	Track load capacity	**max.** 15 000 N

Motor	Reducer	kW	(m/min) The underlined speeds are recommended
BN63 B4	BN 14 VF49 P i = 100; i = 80; i = 70	0.18	4.5 – 5.6 – 6.4
BN71B4	BN 14 VF49 P i = 60; i = 45; i = 36; i = 28	0.37	7.4 – 9.9 – 12.4 – 15.9
BN71B4	BN 14 VF49 P i = 24; i = 18; i = 14	0.55	18.5 – 24.8 – 31.8

DRIVE MODULE – LIGHT

17CDML





The light drive module is intended for driving the chain pallet system in relation to the transport track and return module.

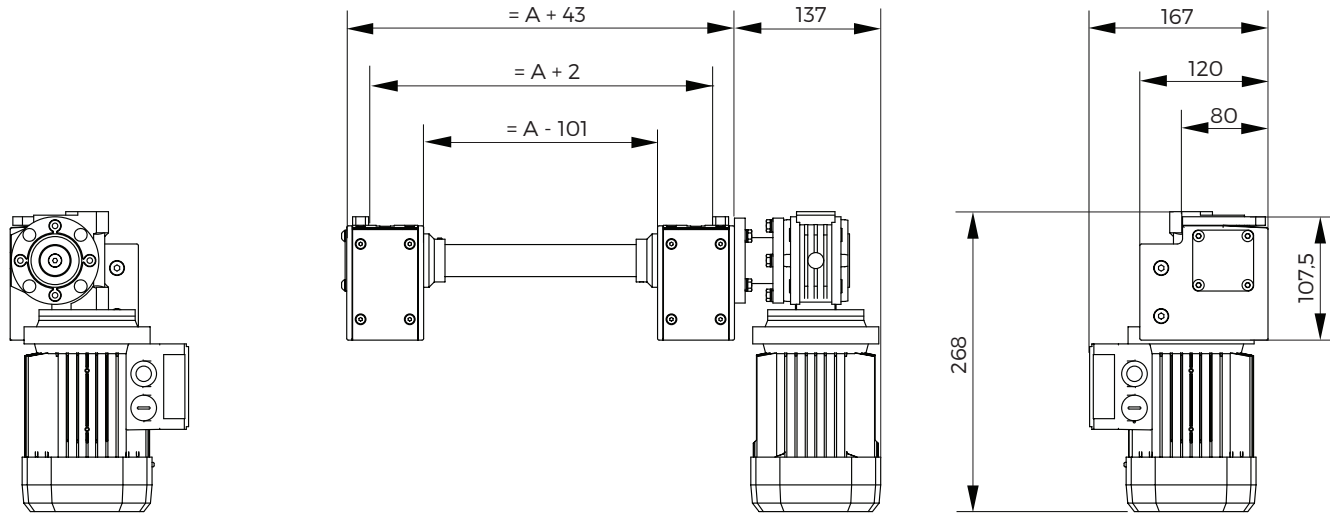
Its purpose is to drive the track up to its maximum load with accumulation FG = 350 kg.

The electric motor may be positioned on the right (R) or left (L).

Drive module – light

ESD

PSC-90



Code

EXAMPLE OF ORDERING

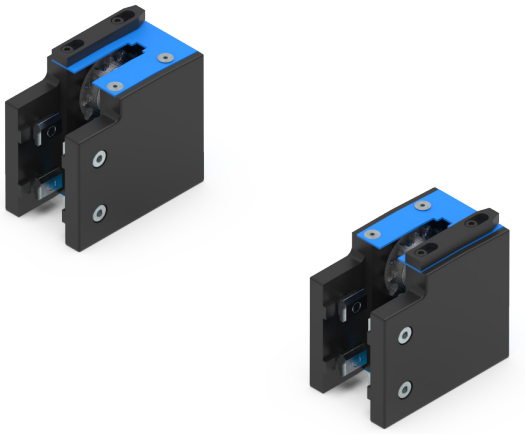
17CDML	–	320	–	L	–	3	–	3,9
		A		B		C		D

A	Pallet width	160 – 1,200 mm
B	Drive position	L = left, R = right
C	Motor reducer position	1 – 2 – 3 – 4
D	Speed	3.9 – 23.3 m/min
	Track length	min. 250 mm – max. 5 000 mm
	Track load capacity	max. 3 500 N

Motor	Reducer	kW	(m/min) The underlined speeds are recommended
BN63 B4	BN 14 VF30 P i = 60; i = 40; i = 30	0.18	3.9 – 5.8 – 7.8
BN63 B4	BN 14 VF30 P i = 20; i = 15; i = 10	0.18	11.7 – 15.5 – 23.3

RETURN MODULE

17CRU

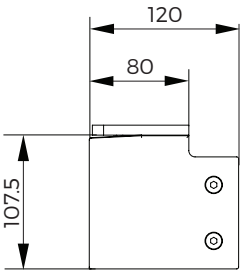


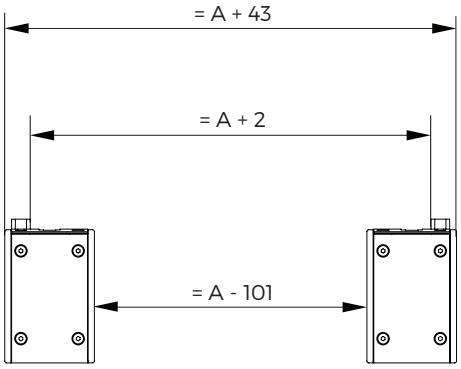
The function of the return module is to return the chain to the **17CDMH** or **17CDML** drive module.

Return module

ESD

PSC-90

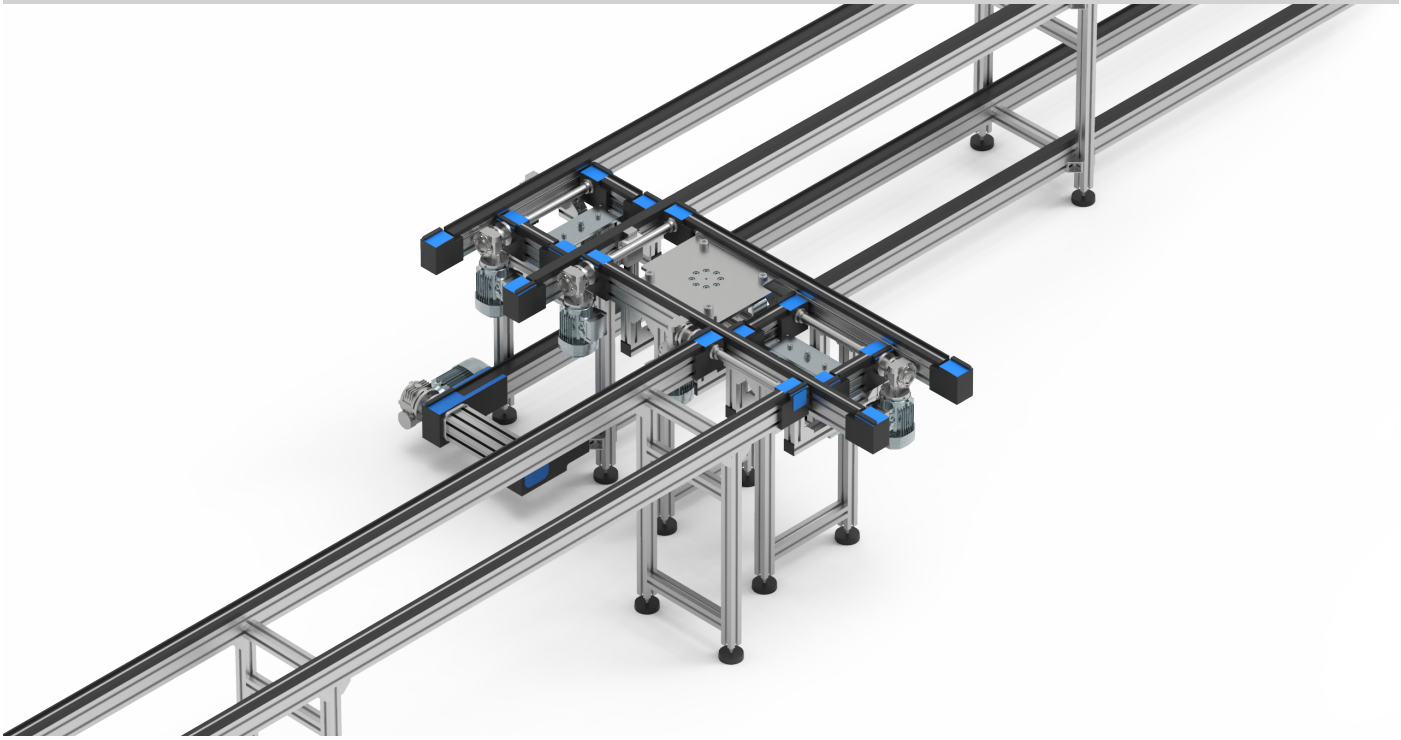




Code

EXAMPLE OF ORDERING

17CRU



CHAIN TRACK

17CPG

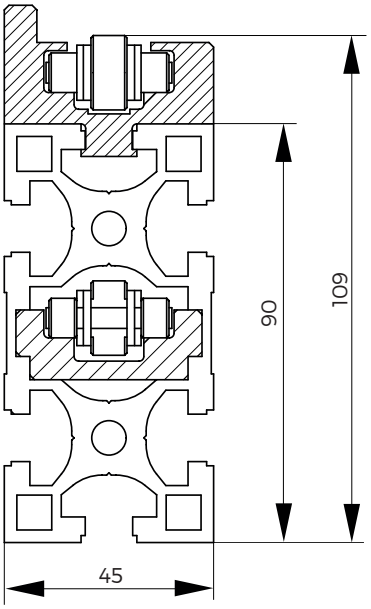
The **17CDMH** or **17CDML** drive module and **17CRU** return module assembly forms the transport track.

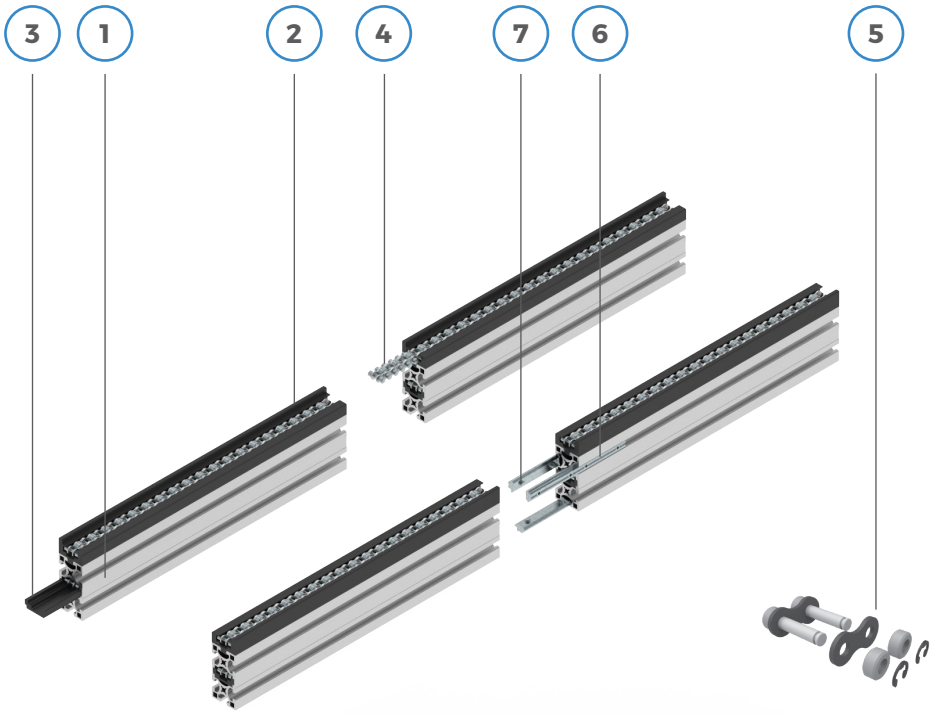
The track consists of an anodised aluminium profile, upper PE-guide profile and internal PE-guide profile.

Chain track

ESD

PSC-90





Code

EXAMPLE OF ORDERING

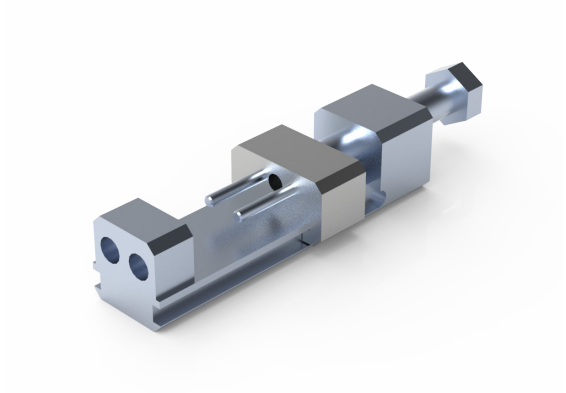
17CPG 10 000

			NAME	UNIT
17CPG	1	10012	Al. profile 45 x 90 H	m
	2	16100	Guide profile – upper	m
	3	16101	Guide profile – lower	m
	4	16A055	Chain 1/2"	m
	5	16A056	Chain coupling	pcs
	6	11095	Linear coupling	pcs
	7	11034	Threaded pin M8 x 14	pcs

Track length	**min.** 300 mm – **max.** 12 000 mm

CHAIN TOOL

17PCM000



ESD

PSC-90

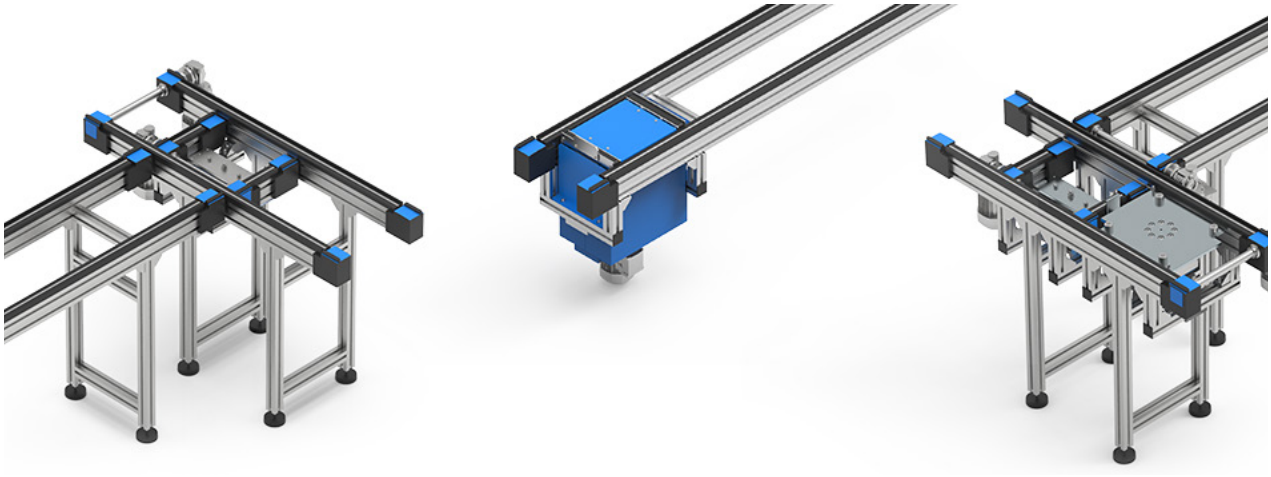
Code

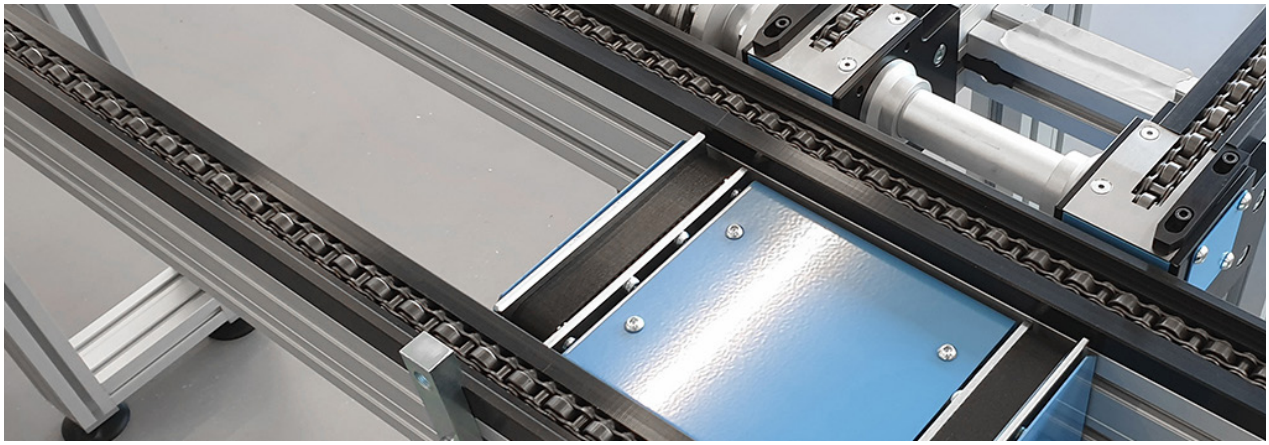
EXAMPLE OF ORDERING

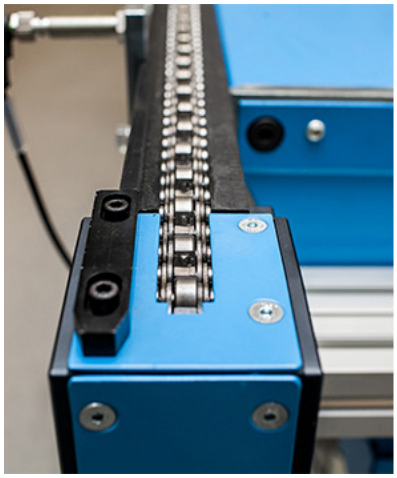
17PCM000

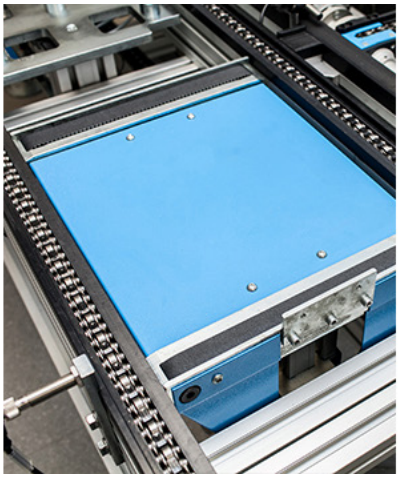
The chain tool is used to disassemble the chain links.

The chain is positioned into the tool on one side of the fitting and on the other side two needles, which split the riveted chain link, are tightened with a wrench.



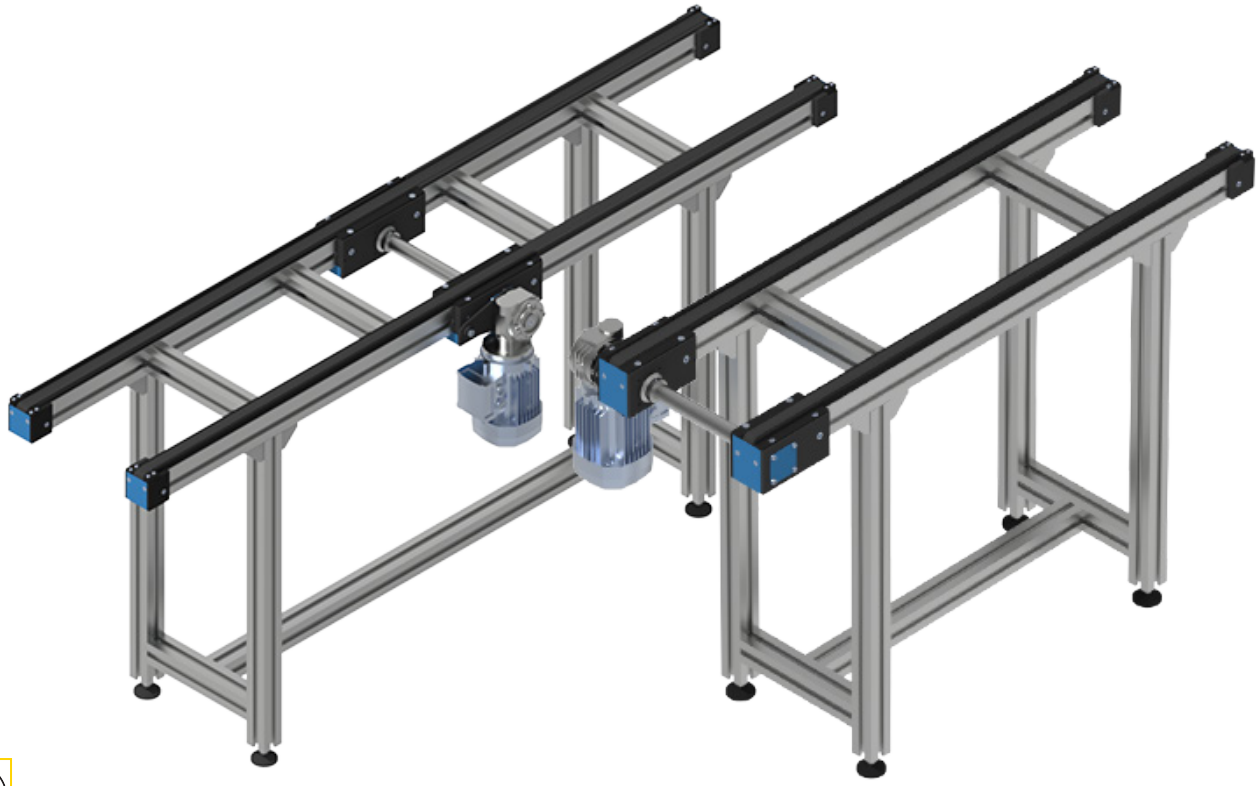






BELT PALLET SYSTEM

PSB-60

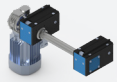


ESD

PSB-60

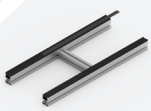
The **PSB-60** pallet system is frequently used in dry and clean environments where higher ISO "clean room" are required. **PSB-60** is suitable for smaller and lighter loads and carries a total of up to 60 kg.

Drive module – Direct
17BTDMD
p. 23–25



p. 29–30
Return module
17BTRU

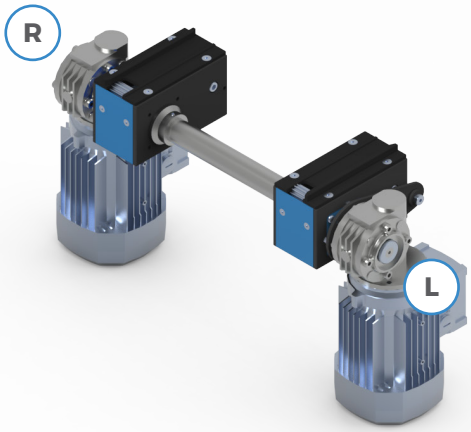
Drive module – Central
17BTDMC
p. 26–28

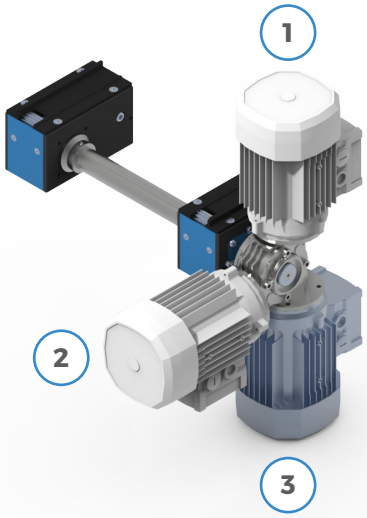


p. 31–32
Belt track
17BTPG

DRIVE MODULE – DIRECT

17BTDMD





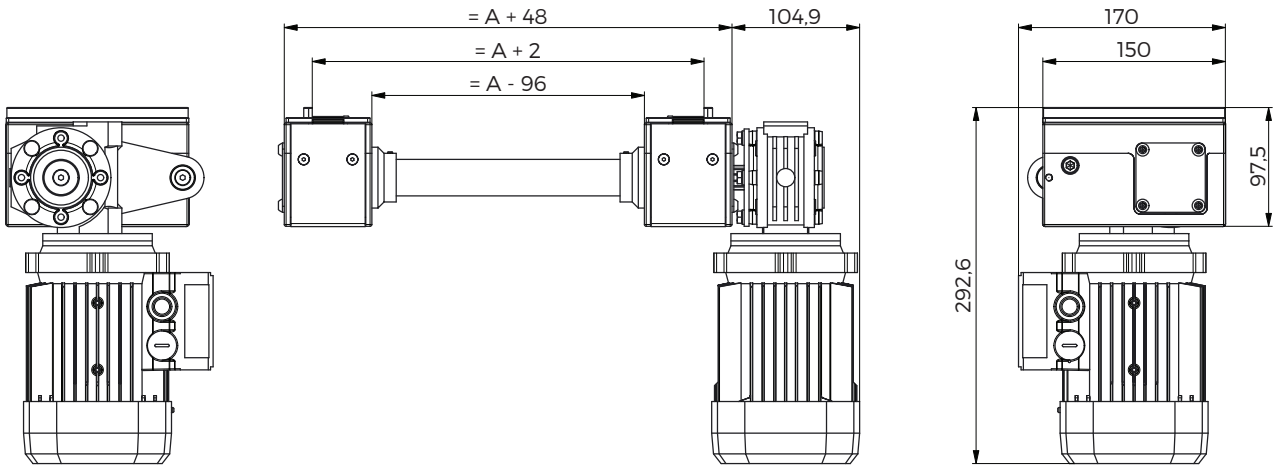
The direct drive module is intended for driving the belt pallet system in relation to the transport track and return module.

Its purpose is to drive the track up to its maximum load with accumulation FG = 60 kg. The electric motor may be positioned on the right (R) or left (L).

Drive module – direct

ESD

PSB–60



Code

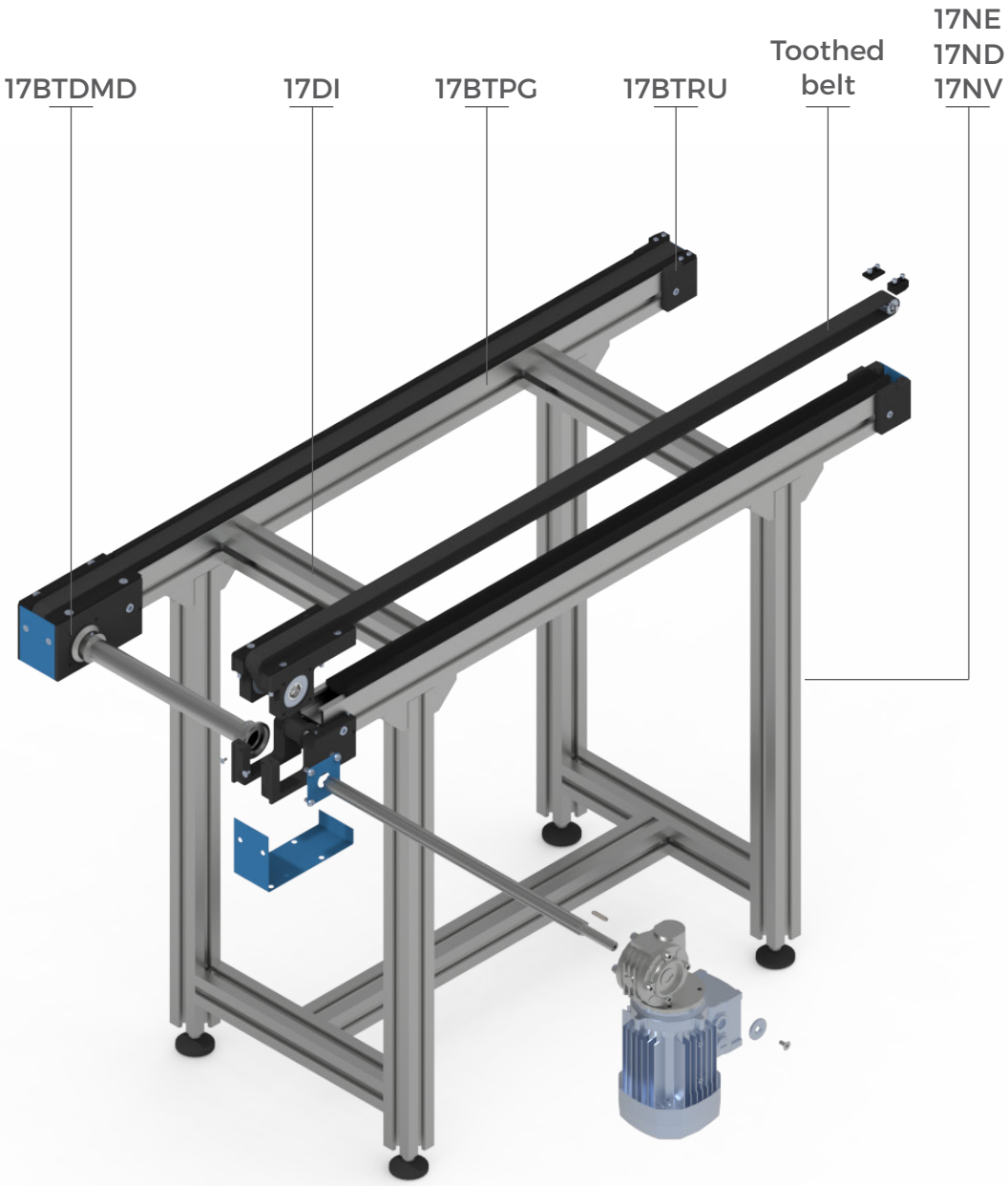
EXAMPLE OF ORDERING

17BTDMD	–	320	–	L	–	3	–	2,9
		A		B		C		D

A	Pallet width	160 – 480 mm
B	Drive position	L = left, R = right
C	Motor reducer position	1 – 2 – 3
D	Speed	2,9 – 25 m/min
	Track length	**min.** 290 mm – **max.** 6 000 mm
	Track load capacity	**max.** 600 N

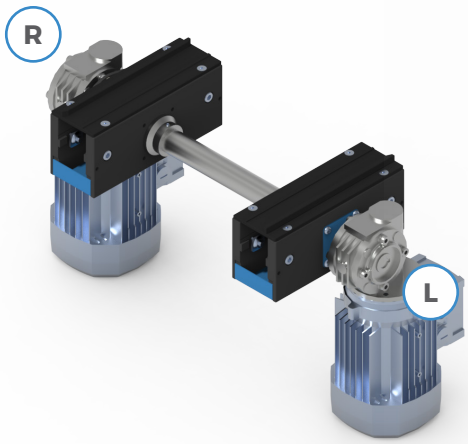
Motor	Reducer	kW	(m/min)
BN63 B4	BN 14 VF30 P i = 60; i = 40; i = 30; P i = 20; i = 15; i = 10; i = 7	0,18	2,9 – 4,4 – 5,8 – 8,7 – 11,7 – 17,5 – 25

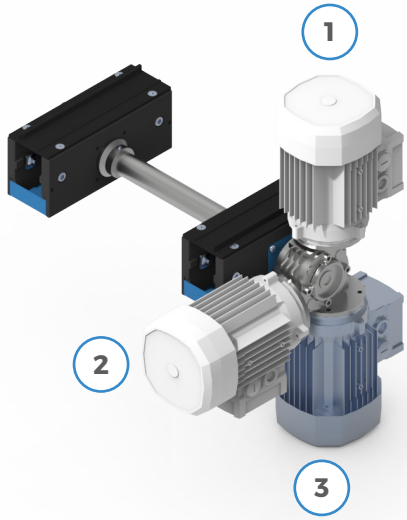
PSB-60 Belt pallet system - Direct



DRIVE MODULE – CENTRAL

17BTDMC





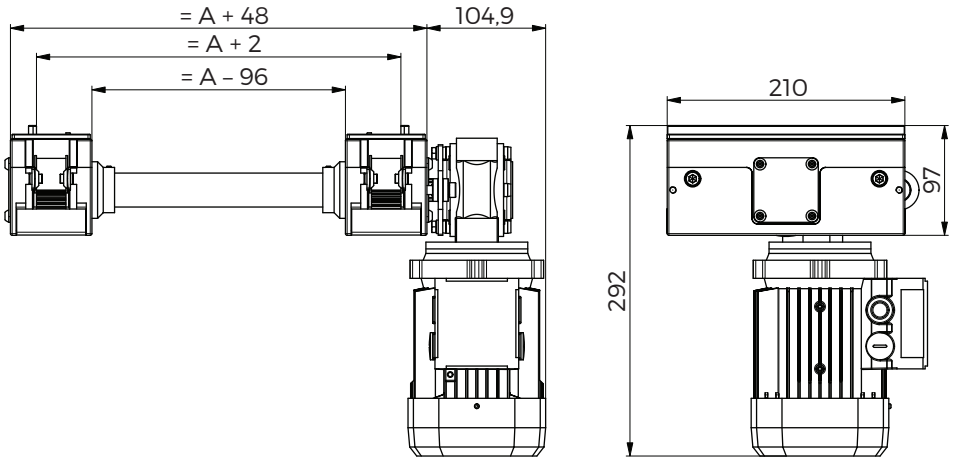
The central drive module is intended for driving the belt pallet system in relation to the transport track and return module.

Its purpose is to drive the track up to its maximum load with accumulation FG = 60 kg. The electric motor may be positioned on the right (R) or left (L).

Drive module – central

ESD

PSB–60



Code

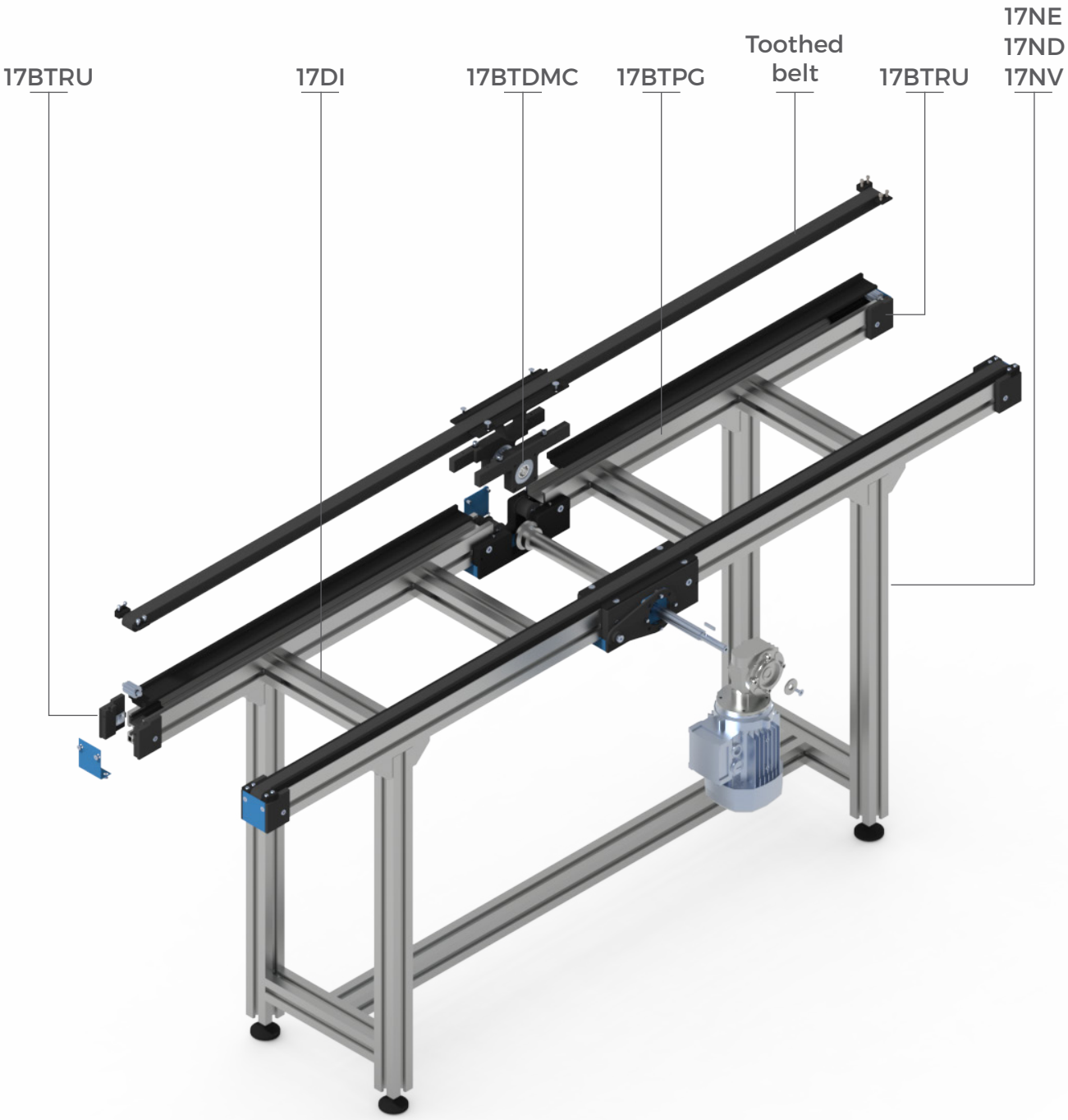
EXAMPLE OF ORDERING

17BTDMC	–	320	–	L	–	3	–	2,9
		A		B		C		D

A	Pallet width	160 – 480 mm
B	Drive position	L = left, R = right
C	Motor reducer position	1 – 2 – 3
D	Speed	2,9 – 25 m/min
	Track length	min. 490 mm – max. 6 000 mm
	Track load capacity	max. 600 N

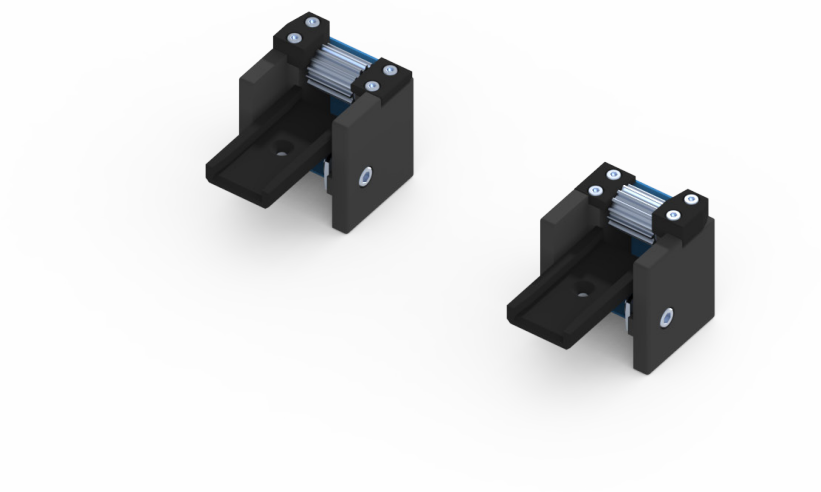
Motor	Reducer	kW	(m/min)
BN63 B4	BN 14 VF30 P i = 60; i = 40; i = 30; P i = 20; i = 15; i = 10; i = 7	0,18	2,9 – 4,4 – 5,8 – 8,7 – 11,7 – 17,5 – 25

PSB-60 Belt pallet system - Central



RETURN MODULE

17BTRU

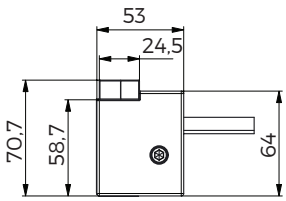


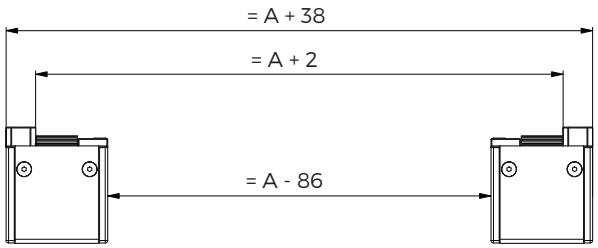
The function of the return module is to return the belt to the **17BTDMD** or **17BTDMC** drive module.

Return module

ESD

PSB-60

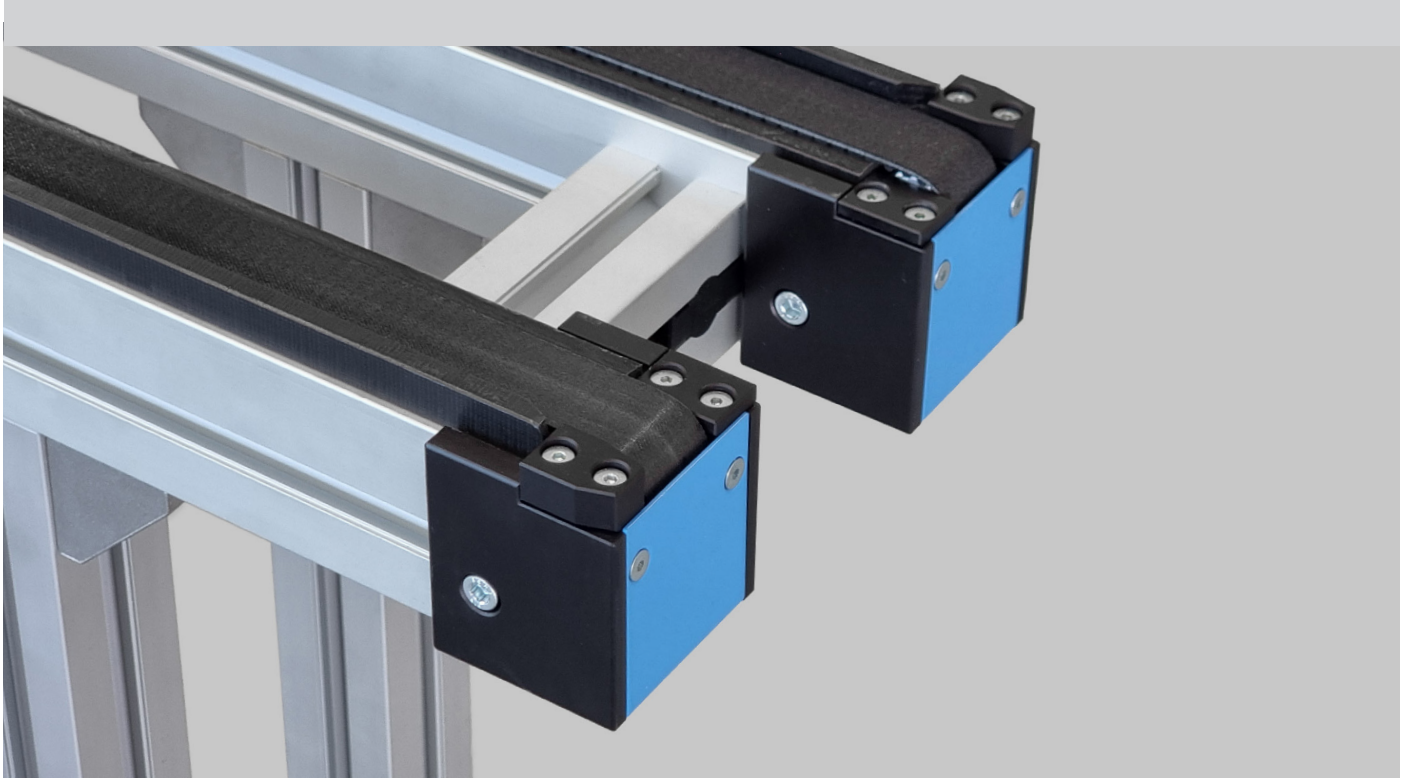




Code

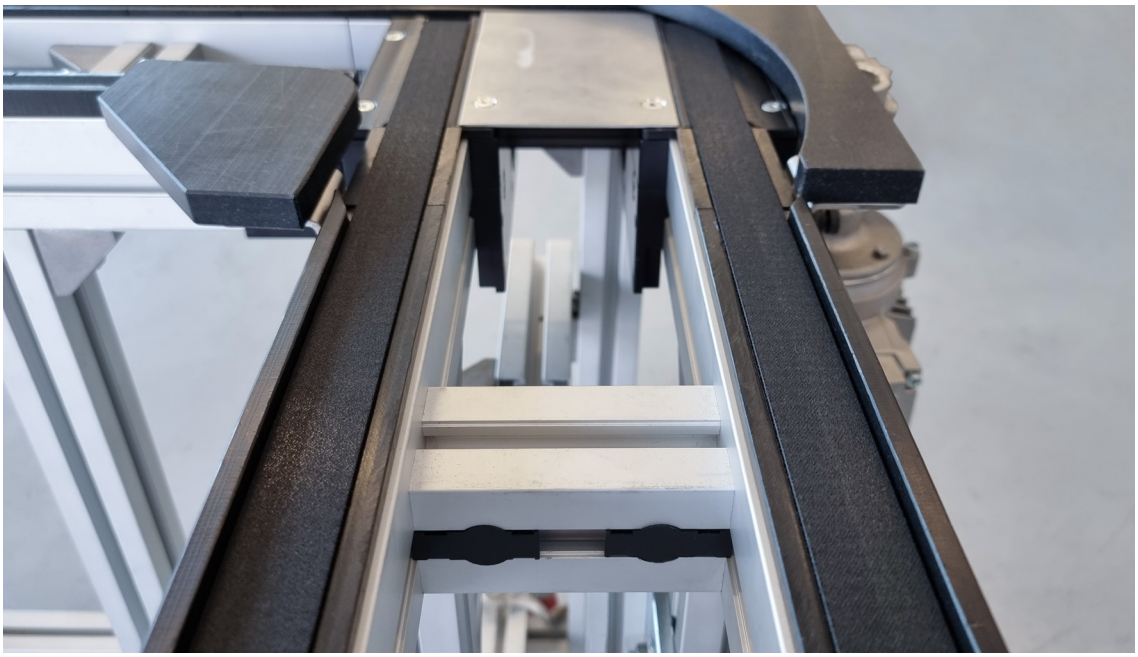
EXAMPLE OF ORDERING

17BTRU



TOOTHED BELT TRACK

17BTPG



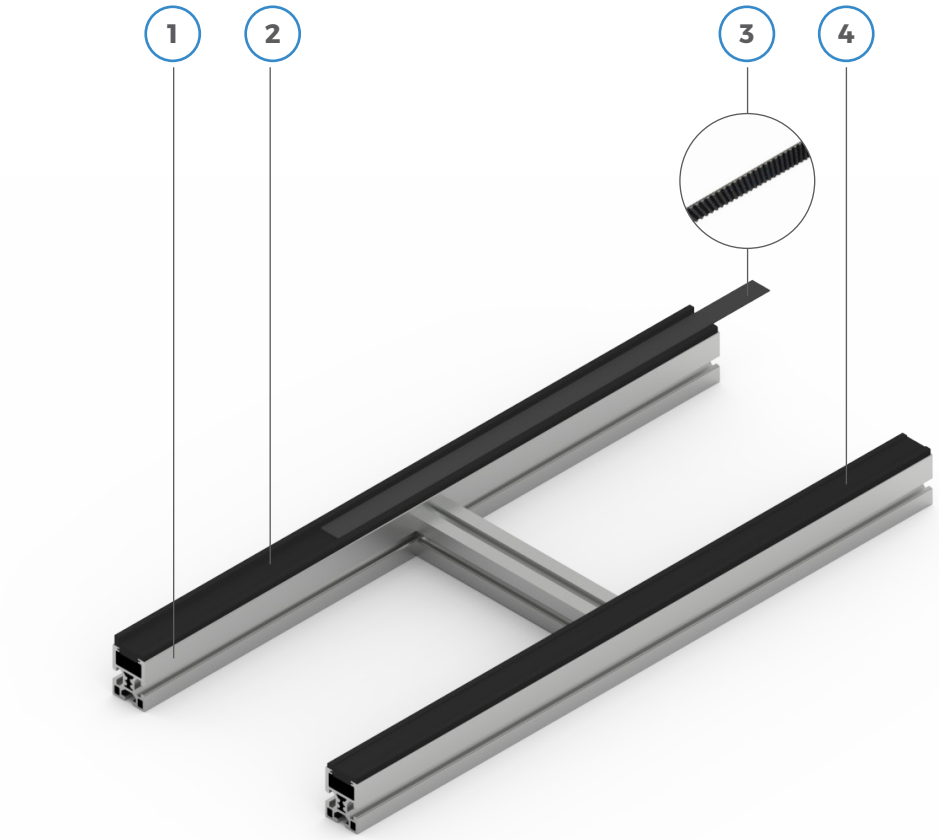
The **17BTDMD** or **17BTDMC** drive module and **17BTRU** return module assembly forms the transport track.

The track consists of an anodised aluminium profile, upper PE-guide profile.

Toothed Belt Track

ESD

PSB-60



Code

EXAMPLE OF ORDERING

17BTPG 6 000

			NAME	UNIT
17BTPG	1	10030	Al. profile 45 x 60 L	m
	2	16410	Belt guide with edge	m
	3	/	Toothed belt	m
	4	16411	Belt guide without edge	m

Track length	**min.** 1,000 mm – **max.** 6 000 mm

BELT PALLET SYSTEM

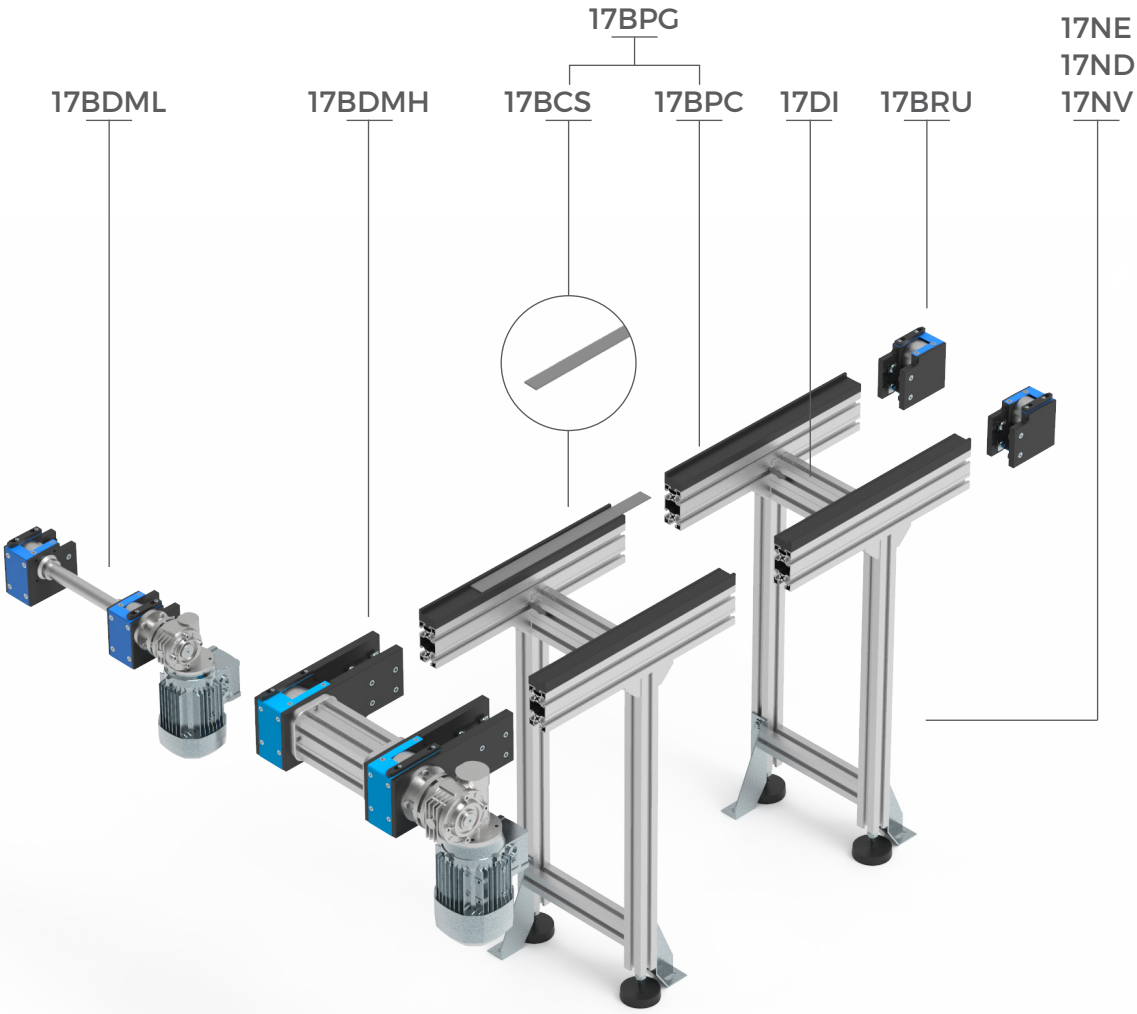
PSB-90

ESD

PSB-90

The **PSB-90** pallet system is frequently used in dry and clean environments where higher ISO "clean room" are required. **PSB-90** is suitable for smaller and lighter loads and carries a total of up to 350 kg or 1 kg/cm using a single drive module.

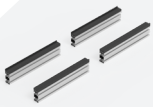
Belt pallet system



Drive module – heavy
17BDMH
p. 34–35

p. 39–40
Return module
17BRU

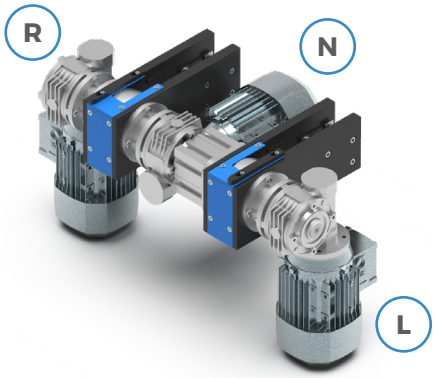
Drive module – light
17BDML
p. 37–38

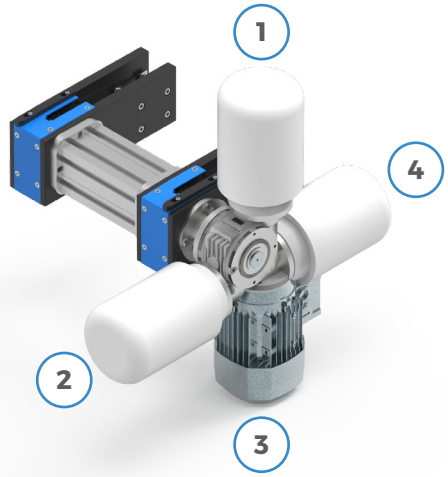


p. 41–42
Belt track
17BPG

DRIVE MODULE – HEAVY

17BDMH





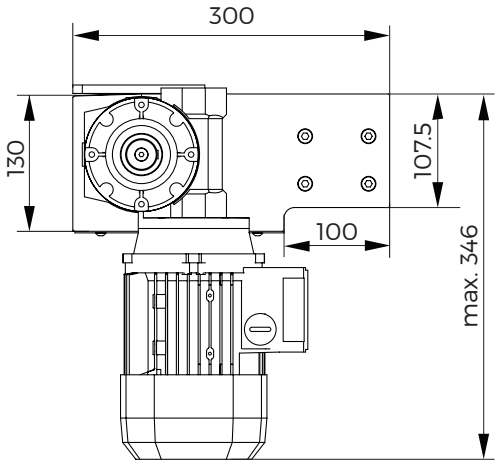
The heavy drive module is intended for driving the belt pallet system in relation to the transport track and return module.

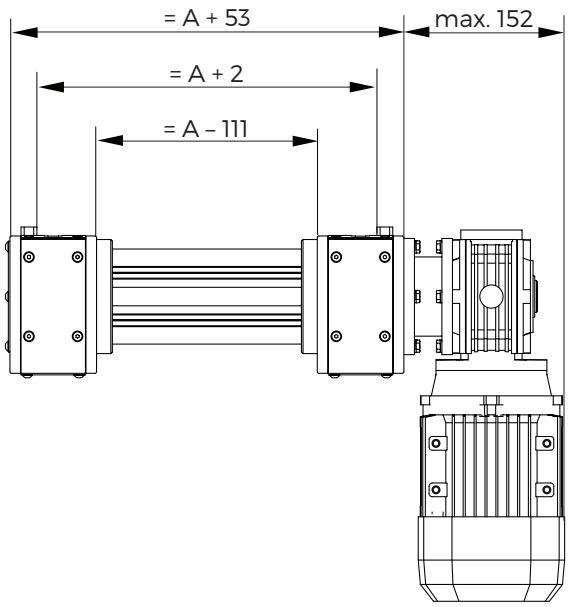
Its purpose is to drive the track up to its maximum load with accumulation FG = 350 kg. The electric motor may be positioned on the right (R), left (L) or inside (I).

Drive module – heavy

ESD

PSB–90





Code

EXAMPLE OF ORDERING

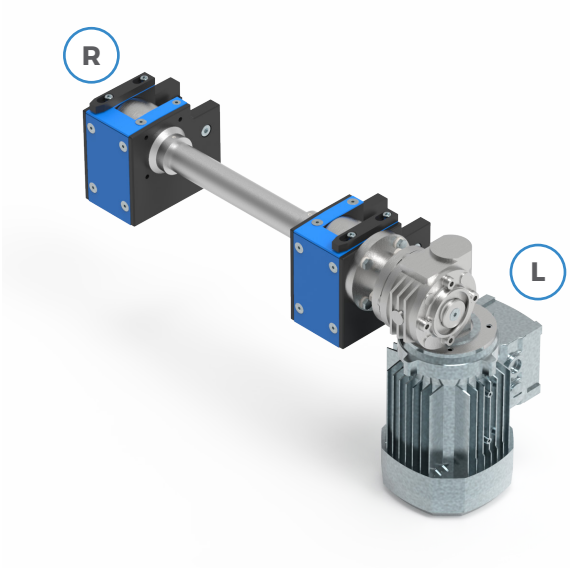
17BDMH	–	320	–	L	–	3	–	5
		A		B		C		D

A	Pallet width	240 – 1 200 mm
B	Drive position	L = left, R = fight, *I = internal (A > 320 mm)
C	Motor reducer position	1 – 2 – 3 – 4
D	Speed	5 – 36 m/min
	Track length	min. 650 mm – max. 8 000 mm
	Track load capacity	max. 3 500 N

Motor	Reducer	kW	(m/min) The underlined speeds are recommended
BN63 B4	BN 14 VF49 P i = 100; i = 80; i = 70	0.18	5 – 6.3 – 7.2
BN71B4	BN 14 VF49 P i = 60; i = 45; i = 36; i = 28	0.37	8.4 – 11.2 – 14 – 18
BN71B4	BN 14 VF49 P i = 24; i = 18; i = 14	0.55	20.9 – 28.1 – 36

DRIVE MODULE – LIGHT

17BDML



The light drive module is intended for driving the belt pallet system in relation to the transport track and return module.

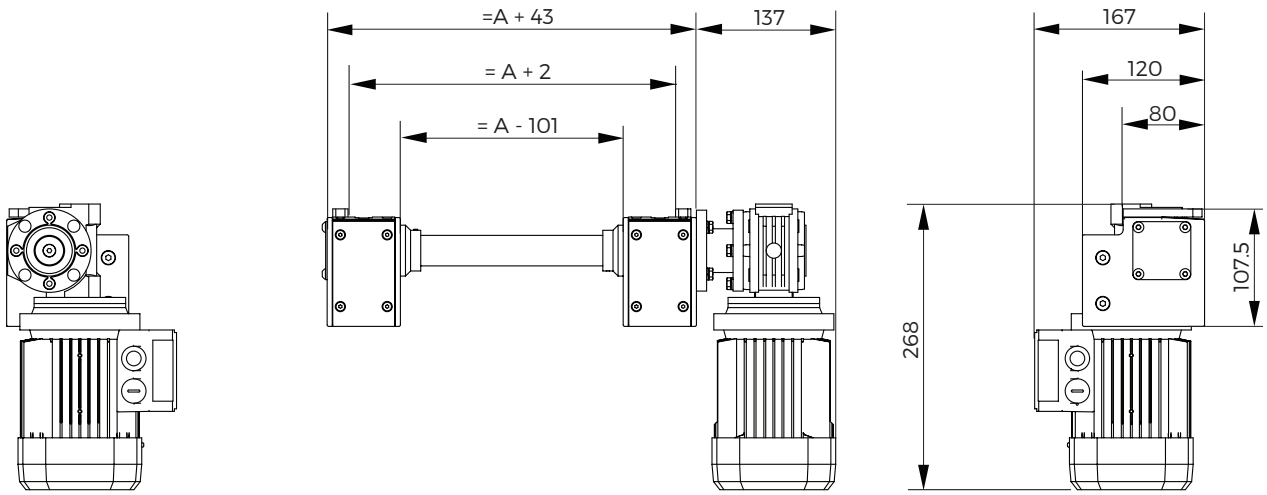
Its purpose is to drive the track up to its maximum load with accumulation FG = 60 kg.

The electric motor may be positioned on the right (R) or left (L).

Drive module – light

ESD

PSB–90



Code

EXAMPLE OF ORDERING

17BDML	–	320	–	L	–	3	–	4,8
		A		B		C		D

A	Pallet width	160 – 1 200 mm
B	Drive position	L = left, R = right
C	Motor reducer position	1 – 2 – 3 – 4
D	Speed	4.8 – 29 m/min
	Track length	**min.** 450 mm – **max.** 3 000 mm
	Track load capacity	**max.** 600 N

Motor	Reducer	kW	(m/min) The underlined speeds are recommended
BN63 B4	BN 14 VF30 P i = 60; i = 40; i = 30	0.18	4.8 – 7.3 – 9.7
BN63 B4	BN 14 VF30 P i = 20; i = 15; i = 10	0.18	14.5 – 19.3 – 29

RETURN MODULE

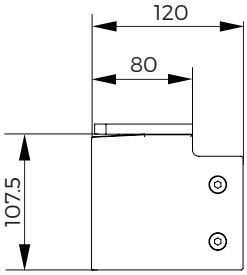
17BRU

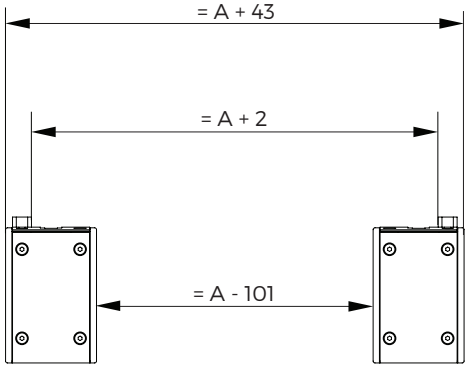
The function of the return module is to return the belt to the **17BDMH** or **17BDML** drive module.

Return module

ESD

PSB-90

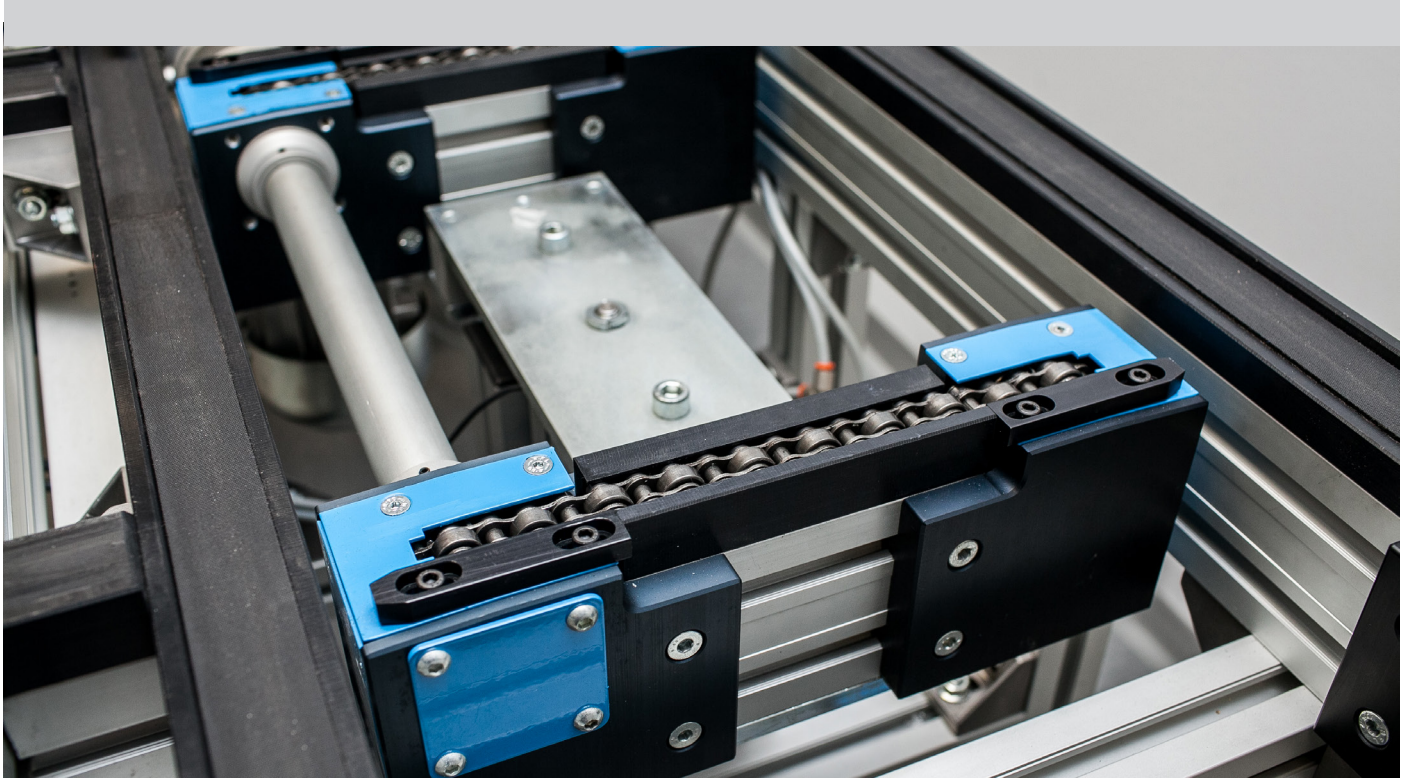




Code

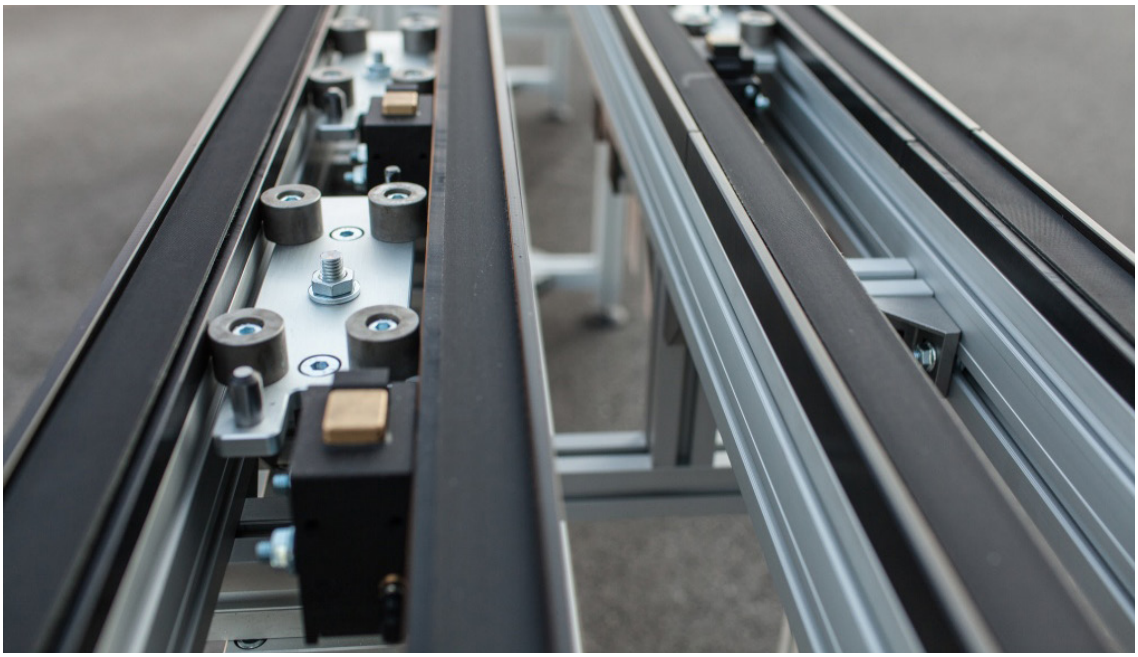
EXAMPLE OF ORDERING

17BRU



BELT TRACK

17BPG



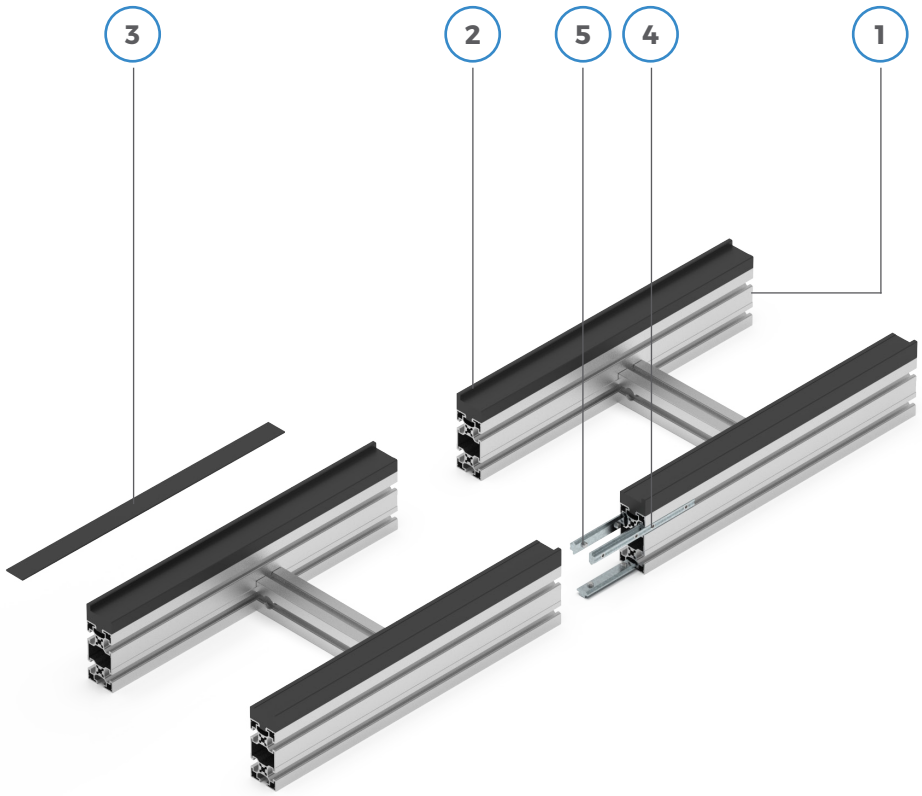
The **17BDMH** or **17BDML** drive module and **17BRU** return module assembly forms the transport track.

The track consists of an anodised aluminium profile, upper PE-guide profile.

Belt track

ESD

PSB-90



Code

EXAMPLE OF ORDERING

17BPG 8 000

			NAME	UNIT
17BPG	1	10011	Al. profile 45 x 90 L	m
	2	16102	Guide profile – upper	m
	3	16A058	Belt T= 1.7 mm at 17BDML	m
	4	11095	Linear coupling	pcs
	5	11034	Threaded pin M8 x 14	pcs

Track length	**min.** 1,000 mm – **max.** 8 000 mm

ROLLER PALLET SYSTEM

PSR-50/60

Roller tracks of various designs are used to transport bulk and palletised material and packaging of different materials and dimensions in the industry:
– Driven roller track – heavy drive **17RDMH,**
– Driven roller track – light drive **17RDML,**
– Driven roller track with electric roller **17RDMM,**
– Non-driven roller track **17RTR.**

Roller with a 50 or 60 mm diameter are used in all the above roller tracks. The permitted load of the roller tracks is up to 500 kg/m.

*For special designs of the roller tracks, such as arches, etc., contact our technical support.

Roller pallet system

Driven roller track – heavy drive **17RDMH** p. 45–48

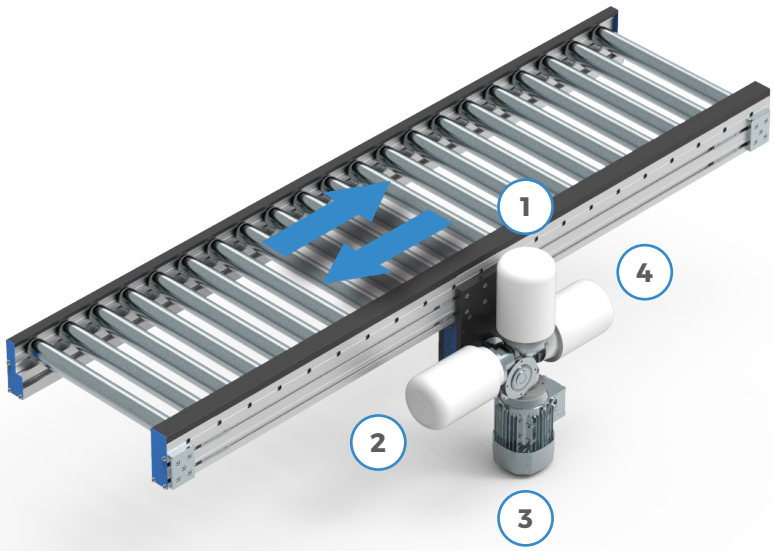
p. 53–54 Driven roller track with electric roller **17RDMM**

Driven roller track – light drive **17RDML** p. 49–52

p. 55–56 Non-driven roller track **17RTR**

DRIVEN ROLLER TRACK – HEAVY DRIVE

17RDMH



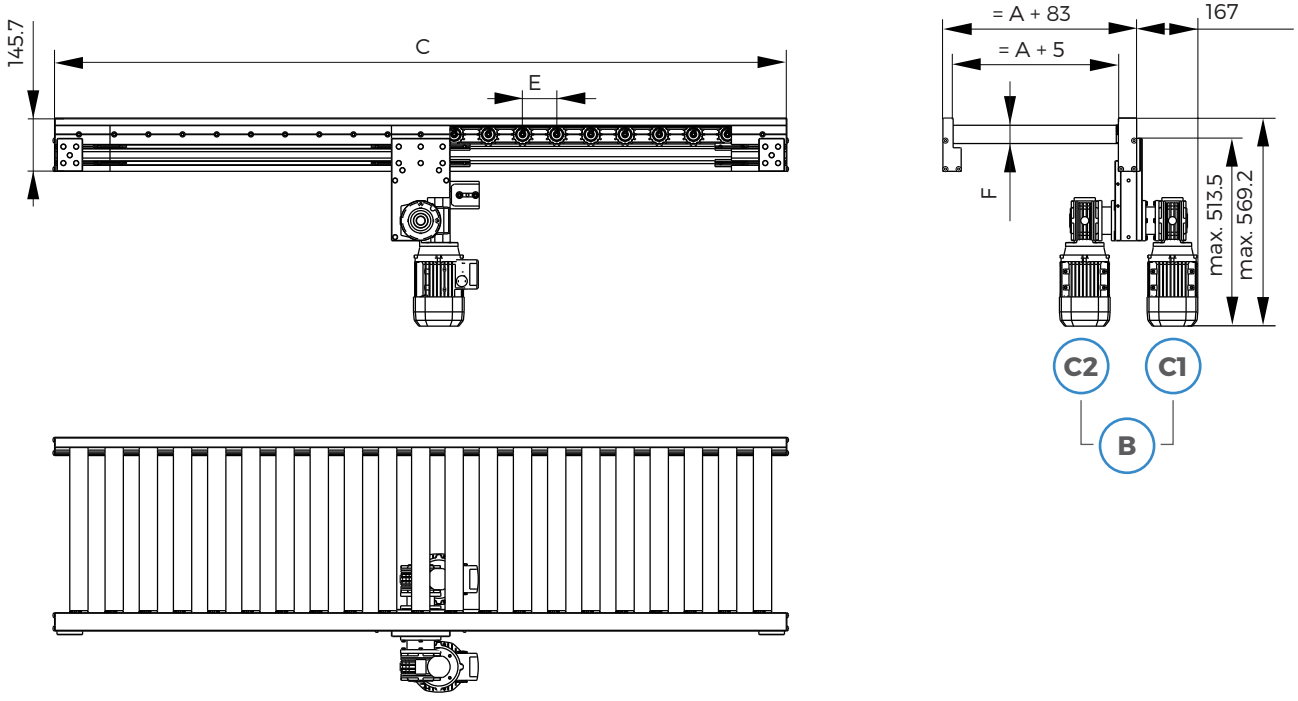
The driven roller track with heavy drive enables longer roller tracks and higher loads. As opposed to the light drive it may operate in both directions.

*See the attached table for the track structure.

Driven roller track – heavy drive

ESD

PSR-50/60



Code

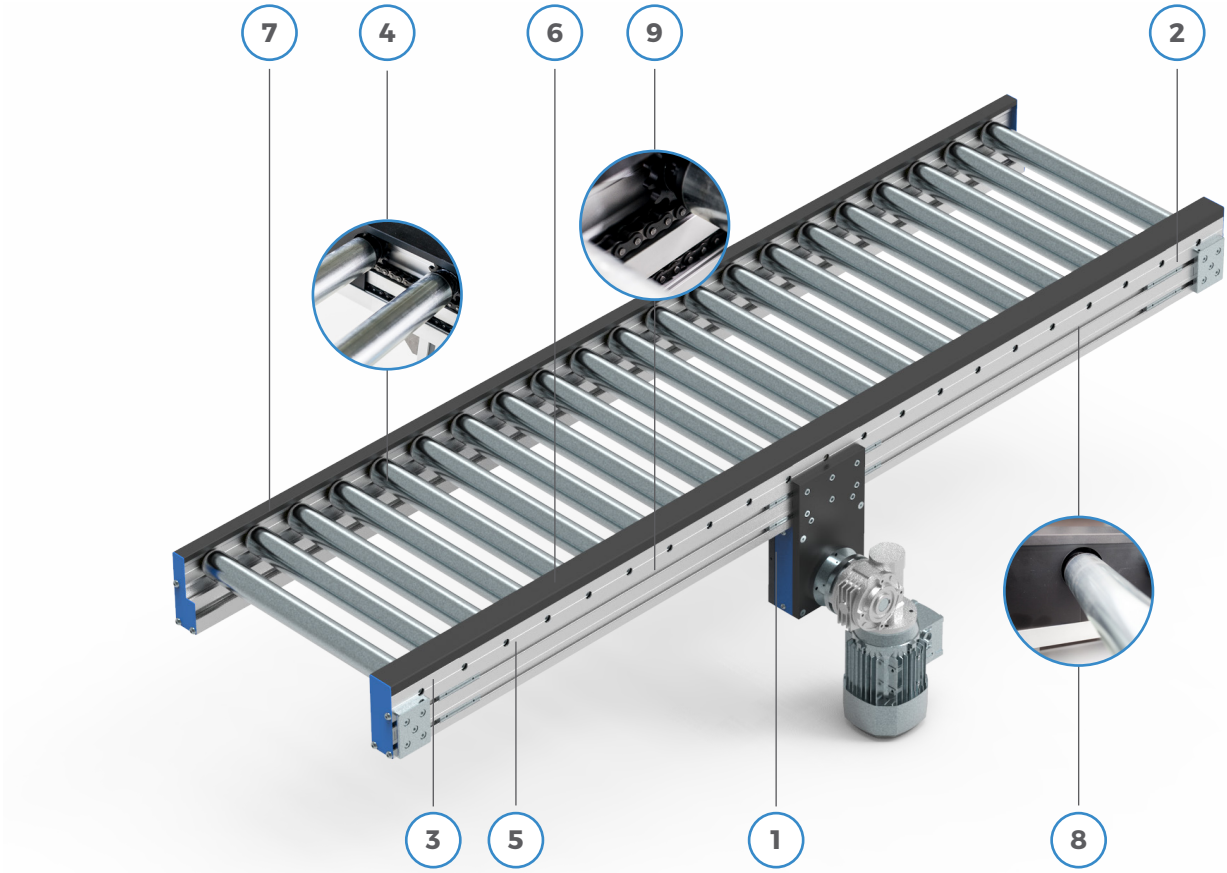
EXAMPLE OF ORDERING

17RDMH	– 400	– C1	– 2 000	– 3	– 120	– 50	– 3,9	– F
	A	B	C	D	E	F	G	H

A	Load width	**min.** 200 mm – **max.** 1 200 mm
B	Drive position	**C1** = external, **C2** = internal
C	Track length	**min.** 460 mm – **max.** 15 000 mm
D	Motor reducer position	**C1** = 1 – 2 – 3 – 4; **C2** = 2 – 3 – 4
E	Step between rollers	**min.** 65 mm
F	Roller diameter	**ϕ50/ϕ60**
G	Speed	**3.9 – 40.3 m/min**
H	Roller type	**Fx** = fixed, **Ac** = accumulation, **Pvc** = PVC-coating, **Zn** = zinc-plated
	Track load capacity	**max.** 20 000 N

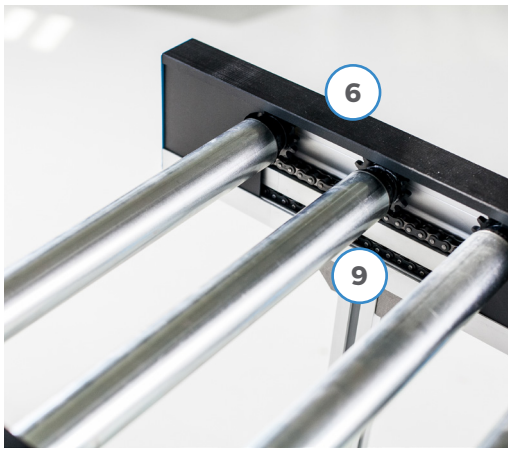
Roller	Motor	Reducer	kW	(m/min)
ϕ50	BN71B4	BN 14 VF49 P i = 60; i = 45; i = 36 i = 28; i = 24; i = 18; i = 14; i = 10; i = 7	0.37	3.9 – 5.2 – 6.6 – 8.4 – 9.8 – 13.1 – 16.8 – 23.5 – 33.6
ϕ60				4.7 – 6.3 – 7.9 – 10.1 – 11.7 – 15.7 – 20.2 – 28.2 – 40.3

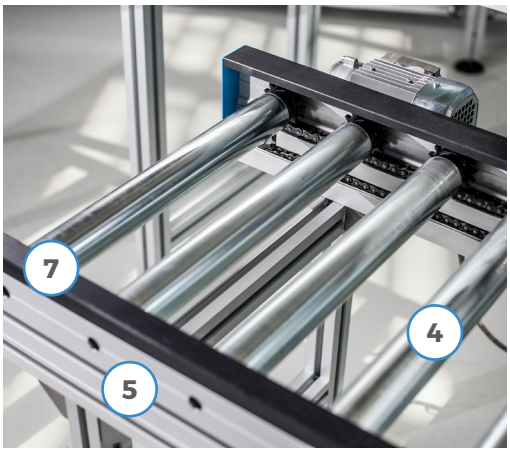
Driven roller track – heavy drive



1	Drive module – heavy
2	Return L
3	Return R
4	Sprocket roller Ø50/Ø60
5	Roller track profile
6	Guide profile – wide
7	Guide profile – narrow
8	Chain guard
9	Chain

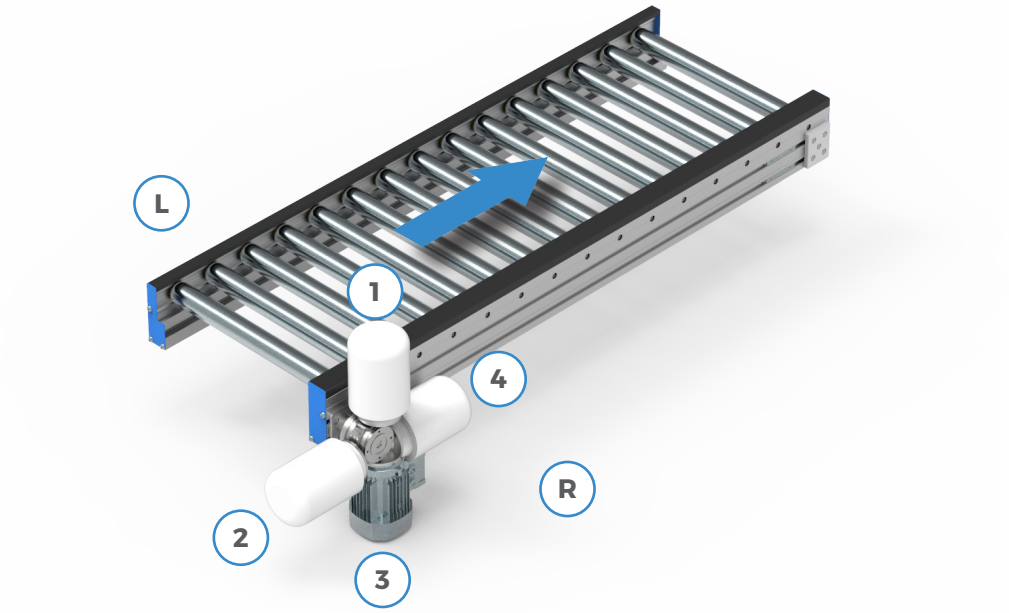
Driven roller track – heavy drive





DRIVEN ROLLER TRACK – LIGHT DRIVE

17RDML



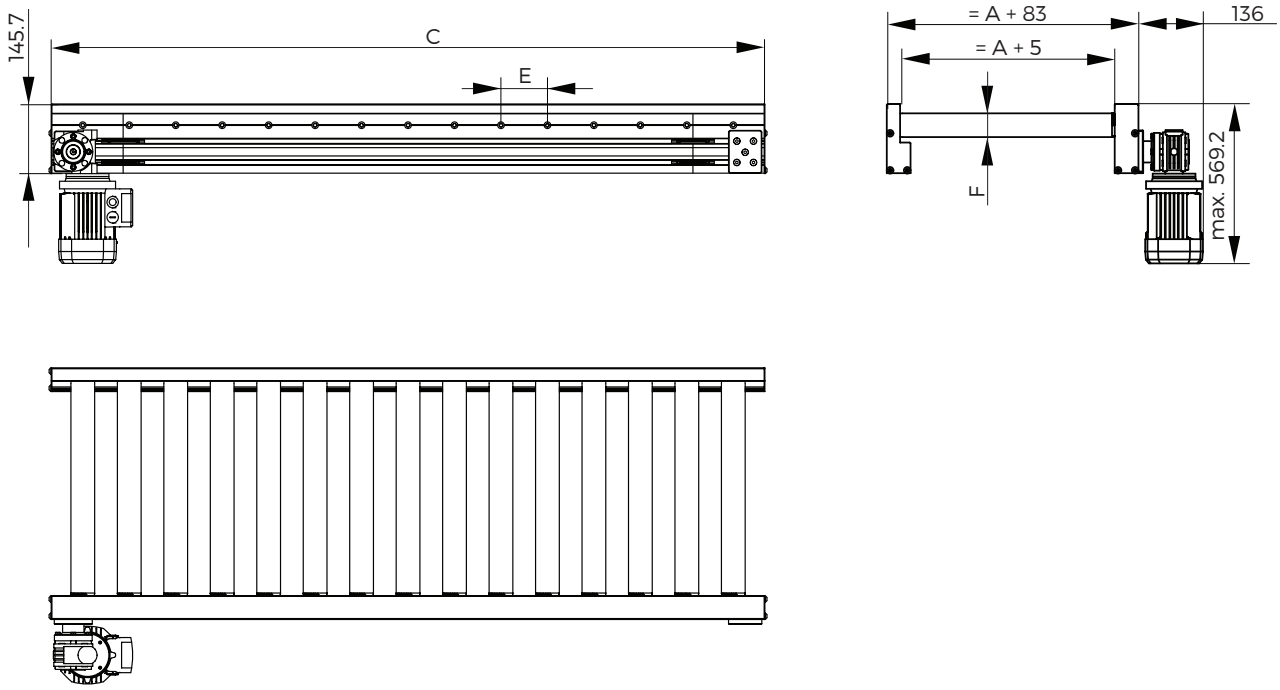
The driven roller track with light drive enables shorter roller tracks and smaller loads.

*See the attached table for the track structure.

Driven roller track – light drive

ESD

PSR–50/60 ⊙⊙⊙⊙



Code

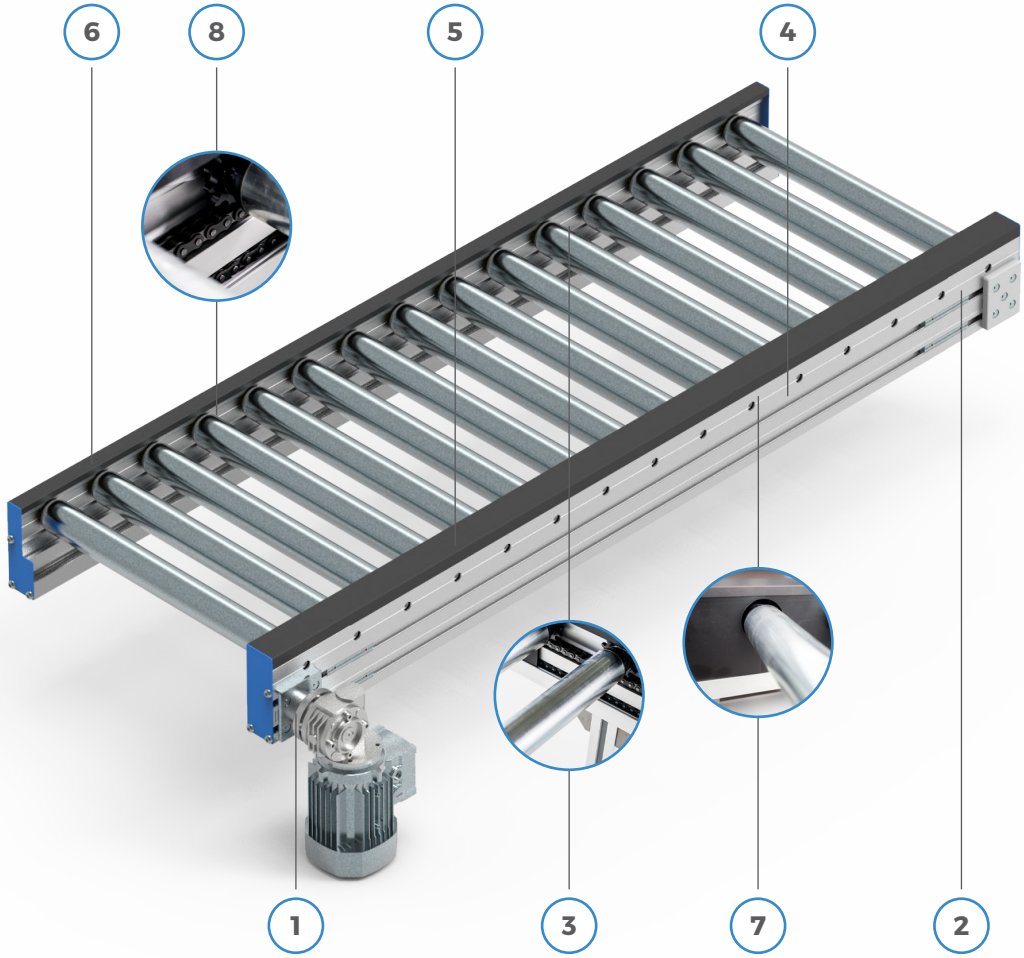
EXAMPLE OF ORDERING

17RDML	–	400	–	R	–	2 000	–	3	–	120	–	50	–	3,2	–	F
		A		B		C		D		E		F		G		H

A	Load width	**min.** 200 mm – **max.** 1 200 mm
B	Drive position	**L** = left, **R** = right
C	Track length	**min.** 300 mm – **max.** 6 000 mm
D	Motor reducer position	**1 – 2 – 3 – 4**
E	Step between rollers	**min.** 65 mm
F	Roller diameter	**ϕ50/ϕ60**
G	Speed	**3.2 – 33 m/min**
H	Roller type	**Fx** = fixed, **Ac** = accumulation, **Pvc** = PVC–coating, **Zn** = zinc-plated
	Track load capacity	**max.** 10 000 N

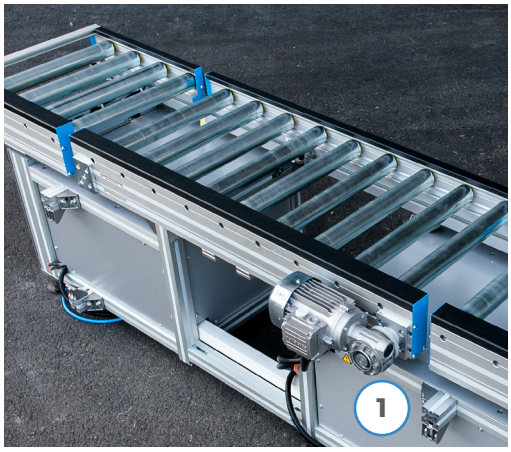
Roller	Motor	Reducer	kW	(m/min)
ϕ50	BN63B4	BN 14 VF30 P i = 60; i = 40; i = 30 i = 20; i = 15; i = 10; i = 7	0.18	3,2 – 4,8 – 6,4 – 9,6 – 12,8 – 19,3 – 27,5
ϕ60				3,8 – 5,8 – 7,7 – 11,6 – 15,4 – 23,1 – 33

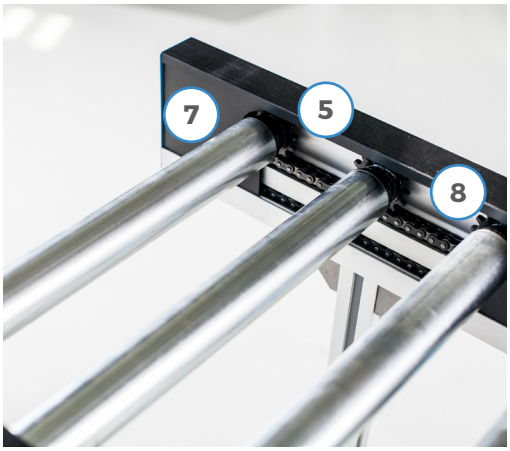
Driven roller track – light drive

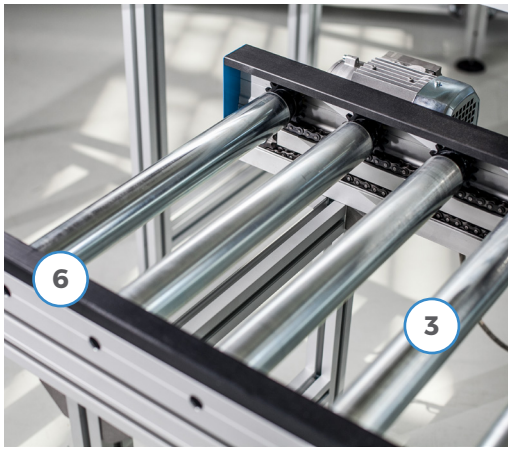


1	Drive – light
2	Return – L/R
3	Sprocket roller Ø50/Ø60
4	Roller track profile
5	Guide profile – wide
6	Guide profile – narrow
7	Chain guard
8	Chain

Driven roller track – light drive

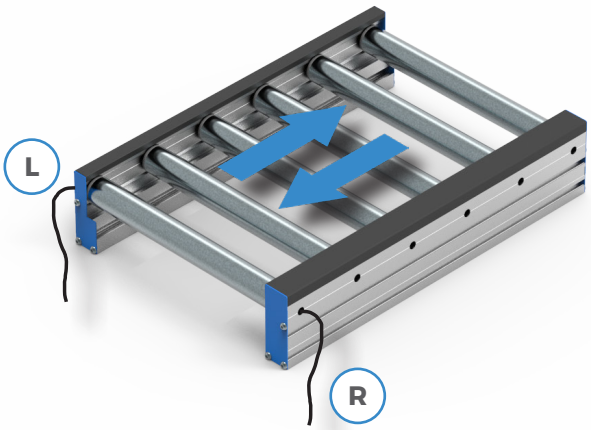






DRIVEN ROLLER TRACK WITH ELECTRIC ROLLER

17RDMM

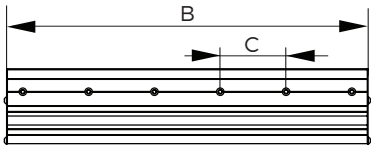


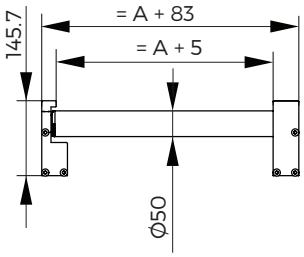
The **17RDMM** roller track contains an electric drive roller which may drive up to 9 roller using the belt. The electric driven roller is used for shorter roller tracks and smaller loads.

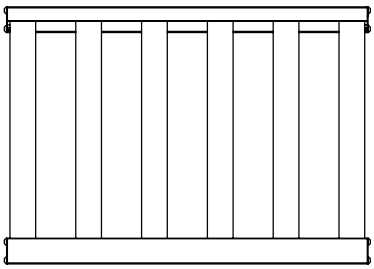
Driven roller track with electric roller

ESD

PSR-50/60 ⊙⊙⊙⊙







Code

EXAMPLE OF ORDERING

17RDMM	–	400	–	1 000	–	120	–	6
		A		B		C		D

A	Load width	**min.** 300 mm – **max.** 1 200 mm
B	Track length	**min.** 60 mm – **max.** 1 000 mm
C	Step between rollers	**min.** 60 mm – **max.** 200 mm
D	Speed	**6 – 54 m/min**
	Track load capacity	**max.** 500 N

Roller	Motor	Transmission ratio	W	(m/min) The underlined speeds are recommended
Ø50	24VDC Two-stage	9:1 – 9:1 reduced – 21.1	11	54 – 42 – 24
	24VDC Three-stage	30.1 – 37.1 – 37.1 reduced		18 – 12 – 6

NON-DRIVEN ROLLER TRACK

17RTR

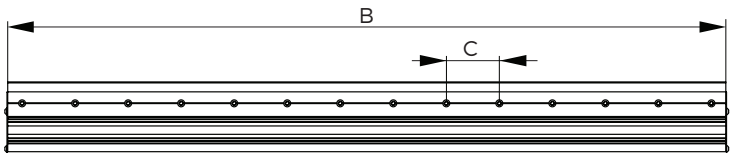
The non-driven roller track is intended for the free flow of products or packaging with a level lower surface on the basis of manual movement or gravitation.

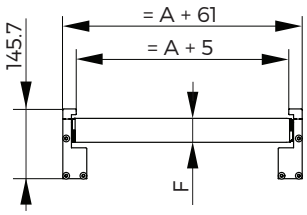
The maximum load depends on the dimensions and design of the rollers.

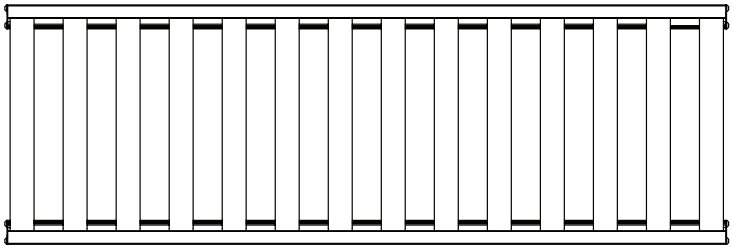
Non-driven roller track

ESD

PSR–50/60 ⊙⊙⊙⊙







Code

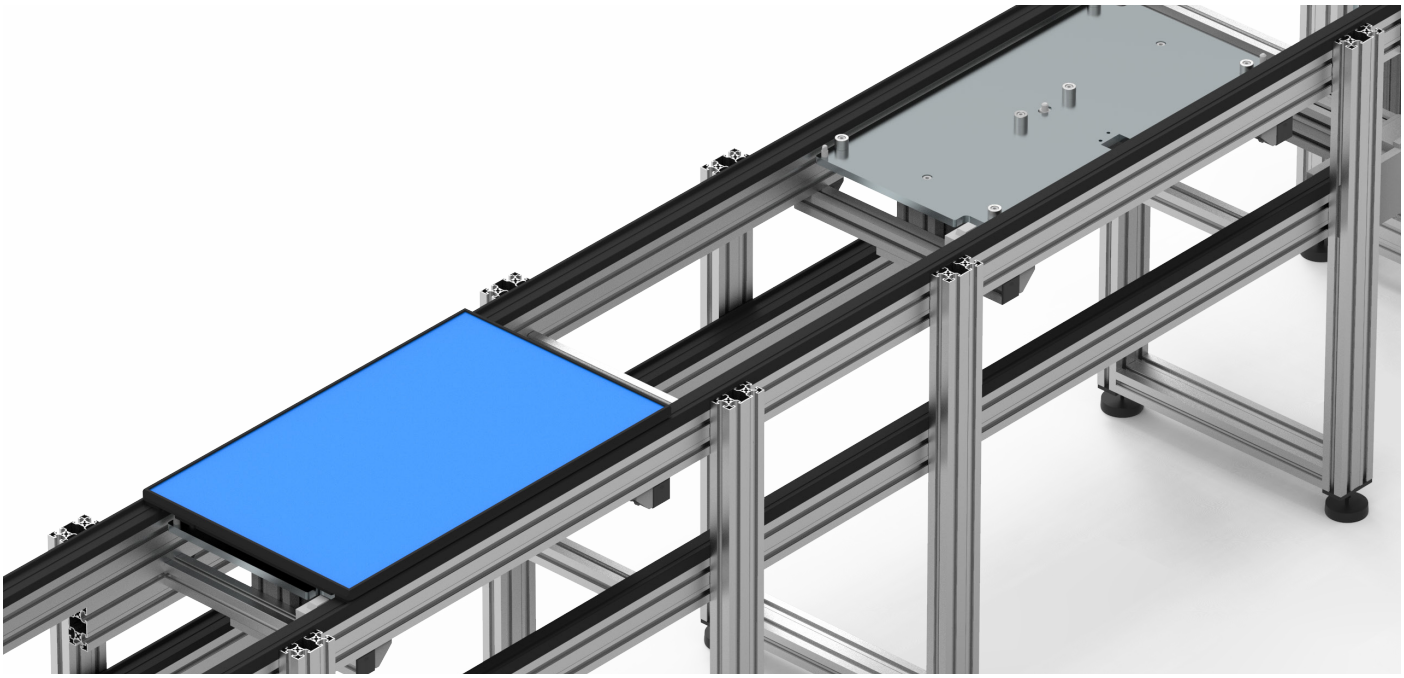
EXAMPLE OF ORDERING

	17RTR	–	400	–	1 000	–	120	–	50
			A		B		C		F

A	Load width	**min.** 100 mm – **max.** 1 200 mm
B	Track length	**min.** 60 mm – **max.** 10 000 mm
C	Step between rollers	**min.** 55 mm
F	Roller diameter	ϕ50/ϕ60

SUPPORT FRAMES AND SPACERS

17NE/ND/NV, 17DI



The support frames are designed so as to support transport track at a certain height. They are divided into 3 groups:
– **17NE**: support frame – single level
– **17ND**: support frame – two levels
– **17NV**: support frame – two tracks

Support frames are installed evenly along the entire length of the transport track, usually one pair every 2,000 mm.
Spacers are used to connect transport tracks and determine the entire length of the pallet system.

* Contact our technical support for special designs.

Support frames

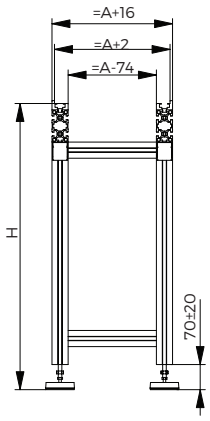
ESD

PSC–90

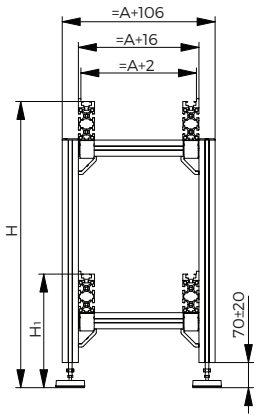
PSB–60

PSB–90

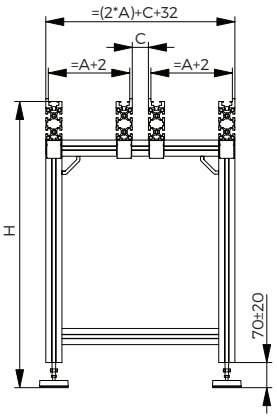
PSR–50/60



17NE



17ND



17NV

Code

EXAMPLE OF ORDERING

	17NE	–	100	–	250	–	/	–	/
	1		2		3		4		5

1	TYPE	17NE	17ND	17NV
2	A	100 – 1,200	100 – 1,200	100 – 480
3	H	250 – 1,200	500 – 1,200	250 – 1,200
4	H_1		250 – 900	
5	C			45 – 155

1	Ordering CODE	NAME
6	11121	Angle piece – base
	11052	Flanged nut
	11047	Hammer-head screw

Spacers

ESD

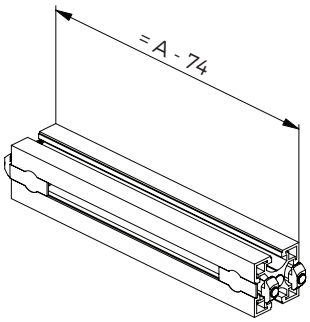
PSC–90

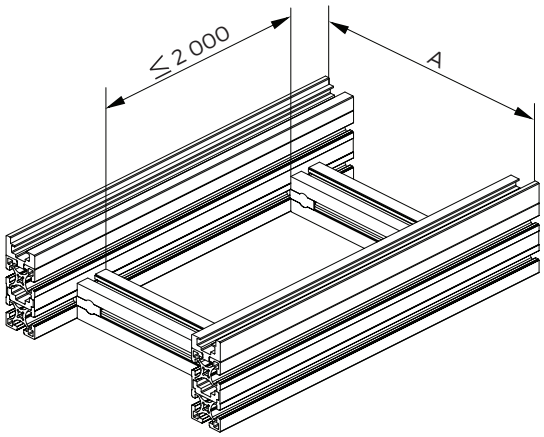
PSB–60

PSB–90

Spacers are used to connect transport tracks and determine the entire length of the pallet system.

The number of spacers determines the load and length of the transport track.





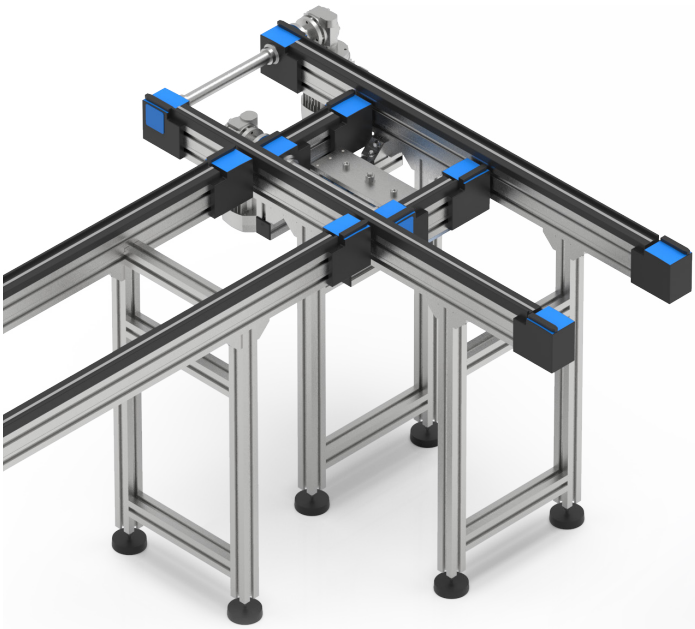
Code

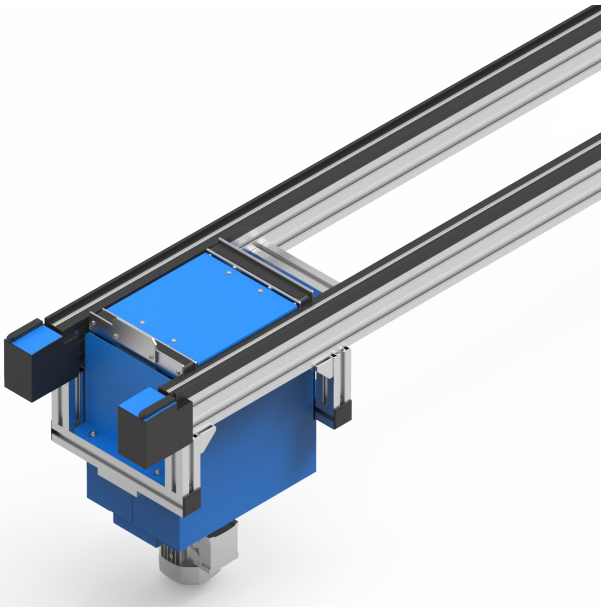
EXAMPLE OF ORDERING

	17DI	–	**240**
			A

A	Pallet width	**min.** 100 mm – **max.** 1 200 mm

TRANSVERSAL MODULES





Transversal modules are used to move the pallet by 90° horizontally from one track to the other. All transversal modules contain a pneumatic cylinder for vertical lifting and an electric motor that drives the chain or belt.

Any transversal module may be used on the **PSC90** as well as the **PSB90** module.

Contact our technical support for the ***PSR-50/60** design and special designs.

Transversal module with timing belt – 2 positions **17M2B** p. 61–62

p. 69–70 Transversal module with chain – 2 positions **17M2C**

Transversal module with timing belt – 3 positions **17M3B** p. 63–64

p. 71–72 Transversal module with chain – 3 positions **17M3C**

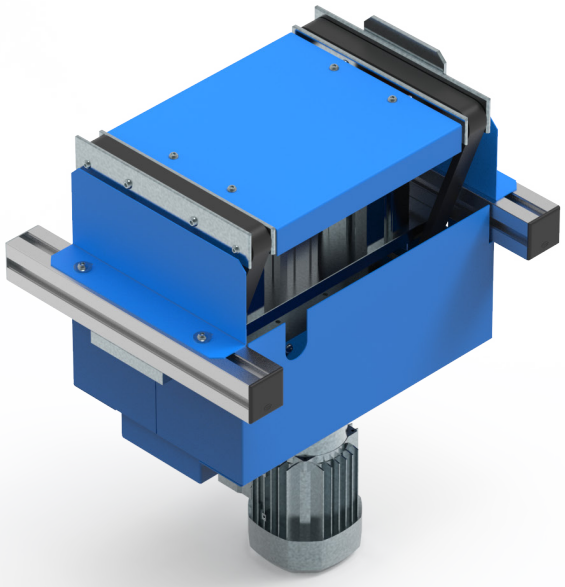
Transversal module with timing belt – 2 positions **17M2B** p. 65–66

p. 73–74 Transversal module with chain – 2 positions **17M2C**

Transversal module with timing belt – 3 positions **17M3B** p. 67–68

p. 75–76 Transversal module with chain – 3 positions **17M3C**

Transversal module with timing belt (2 positions)



The belt transversal module with 2 positions is equipped with a pneumatic cylinder and electric motor that drives the timing belt.

This transversal module is mainly used at the end of the tracks where the direction of the pallets may continue only at a 90° angle. For this reason the transversal module functions at the lower position of the PN-cylinder as a stopper for the pallet, and in the upper position the module is above the track and transfers the pallet to the track next to it.

The module does not include:
- el. switches for the pneumatic cylinder.
- flow regulators for the pneumatic cylinder.

* Contact our technical support for special designs.

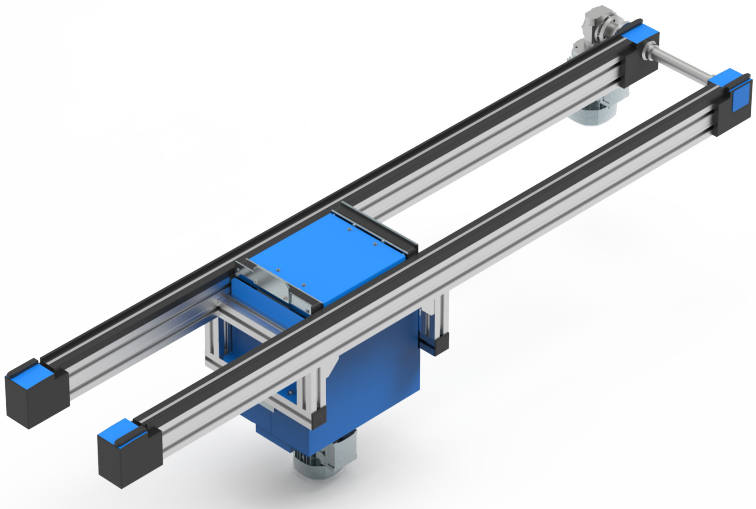
Transversal module with timing belt (2 positions)

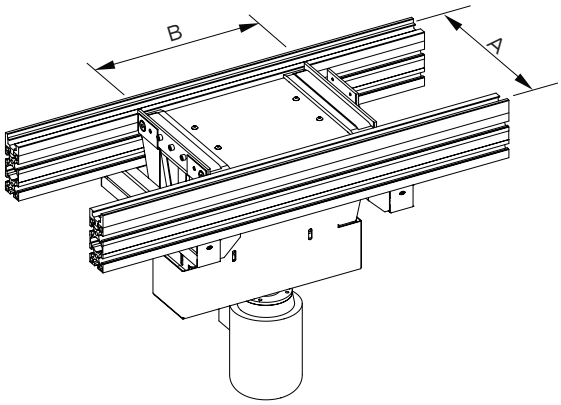
ESD

PSC-90

PSB-60

PSB-90





Code

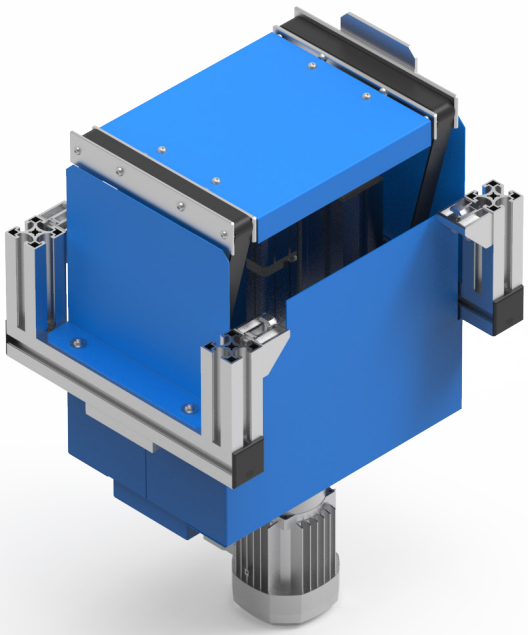
EXAMPLE OF ORDERING

	17M2B	–	240	–	320	–	4.6
			A		B		C

A	Pallet width	**min.** 240 mm – **max.** 400 mm
B	Pallet length	**min.** 240 mm – **max.** 640 mm
C	Speed	4,6 – 27,4 m/min
	Track load capacity	**B** = 240 mm = **max.** 500 N **B** > 240 mm = **max.** 800 N

Motor	Reducer	kW	(m/min) The underlined speeds are recommended
BN63 B4	BN 14 VF30 P i = 60; i = 40; i = 30; P i = 20; i = 15; i = 10	0,18	4,6 – 6,9 – 9,1 – 13,7 – 18,3 – 27,4

Transversal module with timing belt (3 positions)



The belt transversal module with 3 positions is equipped with two pneumatic cylinders and electric motor that drives the timing belt.

This transversal module may be used anywhere on the track, where the direction of the pallets continues at a 90° angle or straight ahead. For this reason the transversal module is completely hidden under the track at the lower position of the PN–cylinder and ensures a smooth transition of the pallets; in the middle position it functions as a stopper for the pallet, and in the upper position the module is above the track and transfers the pallet to the track next to it.

The module does not include:
– el. switches for the pneumatic cylinder,
– flow regulators for the pneumatic cylinder.

* Contact our technical support for special designs.

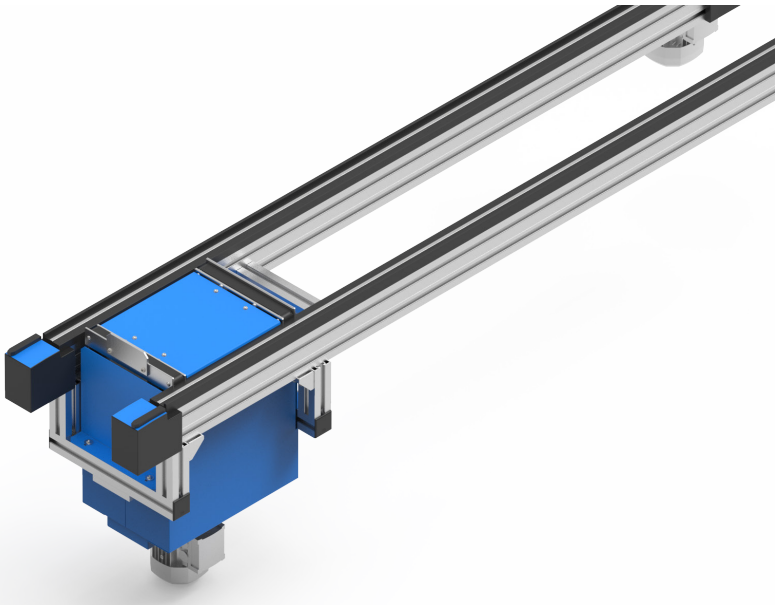
Transversal module with timing belt (3 positions)

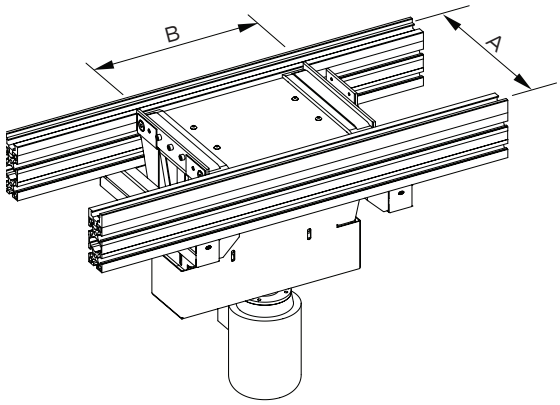
ESD

PSC-90

PSB-60

PSB-90





Code

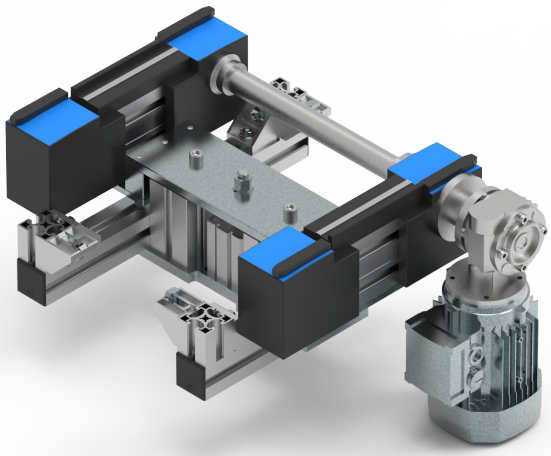
EXAMPLE OF ORDERING

	17M3B	–	240	–	320	–	4.6
			A		B		C

A	Pallet width	**min.** 240 mm – **max.** 400 mm
B	Pallet length	**min.** 240 mm – **max.** 640 mm
C	Speed	4.6 – 27,4 m/min
	Track load capacity	**B** = 240 mm = **max.** 500 N **B** > 240 mm = **max.** 800 N

Motor	Reducer	kW	(m/min) The underlined speeds are recommended
BN63 B4	BN 14 VF30 P i = 60; i = 40; i = 30; P i = 20; i = 15; i = 10	0,18	4,6 – 6,9 – 9,1 – 13,7 – 18,3 – 27,4

Transversal module with timing belt (2 positions)



The belt transversal module with 2 positions is equipped with a pneumatic cylinder and electric motor that drives the timing belt.

This transversal module is mainly used at the end of the tracks where the direction of the pallets may continue only at a 90° angle. For this reason the transversal module functions at the lower position of the PN-cylinder as a stopper for the pallet, and in the upper position the module is above the track and transfers the pallet to the track next to it.

The module does not include:
– el. switches for the pneumatic cylinder,
– flow regulators for the pneumatic cylinder.

* Contact our technical support for special designs.

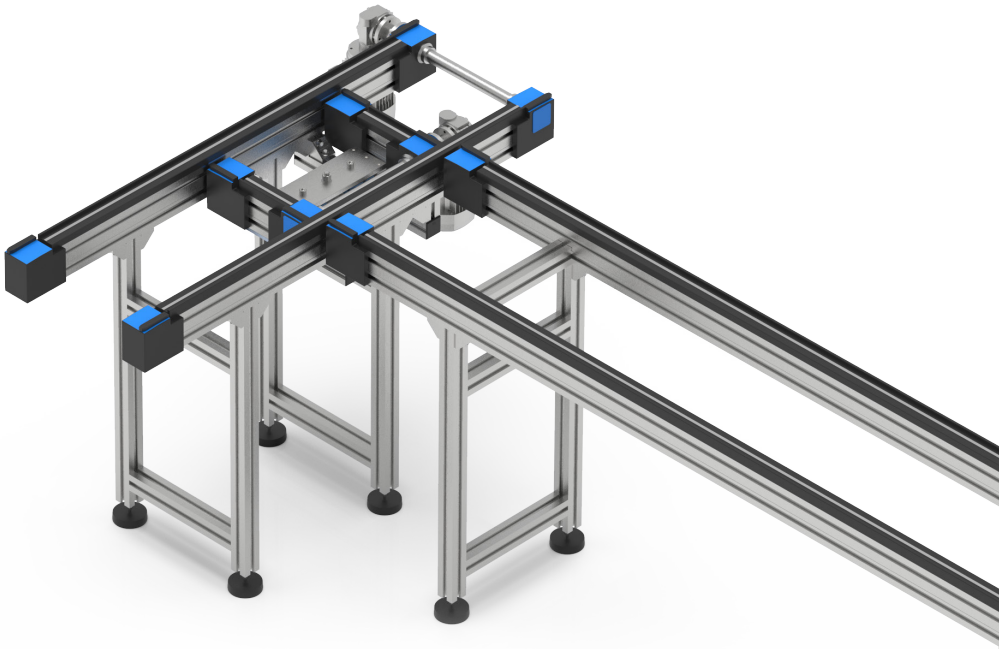
Transversal module with timing belt (2 positions)

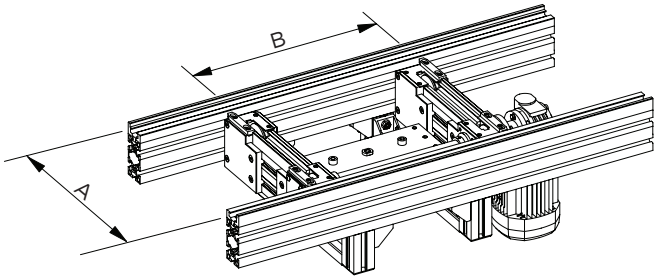
ESD

PSC-90

PSB-60

PSB-90





Code

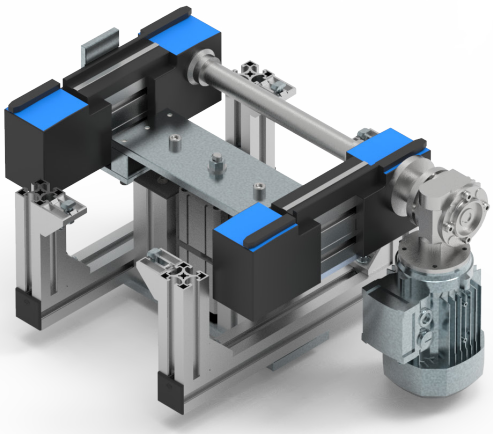
EXAMPLE OF ORDERING

	17M2B	–	240	–	320	–	4.6
			A		B		C

A	Pallet width	**min.** 240 mm – **max.** 400 mm
B	Pallet length	**min.** 240 mm – **max.** 640 mm
C	Speed	4.6 – 27.4 m/min
	Track load capacity	**B** = 240 mm = **max.** 500 N **B** > 240 mm = **max.** 800 N

Motor	Reducer	kW	(m/min) The underlined speeds are recommended
BN63 B4	BN 14 VF30 P i = 60; i = 40; i = 30; P i = 20; i = 15; i = 10	0,18	4,6 – 6,9 – 9,1 – 13,7 – 18,3 – 27,4

Transversal module with timing belt (3 positions)



The belt transversal module with 3 positions is equipped with two pneumatic cylinders and electric motor that drives the timing belt.

This transversal module may be used anywhere on the track, where the direction of the pallets continues at a 90° angle or straight ahead. For this reason the transversal module is completely hidden under the track at the lower position of the PN–cylinder and ensures a smooth transition of the pallets; in the middle position it functions as a stopper for the pallet, and in the upper position the module is above the track and transfers the pallet to the track next to it.

The module does not include:
– el. switches for the pneumatic cylinder,
– flow regulators for the pneumatic cylinder.

* Contact our technical support for special designs.

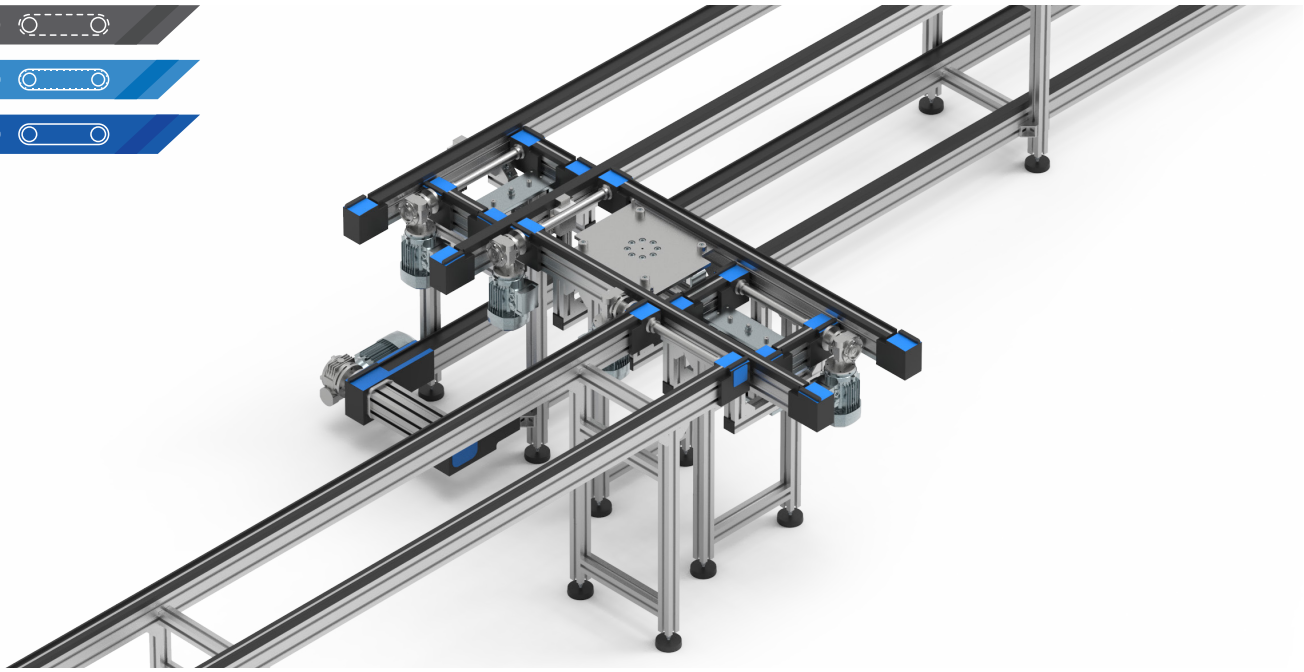
Transversal module with timing belt (3 positions)

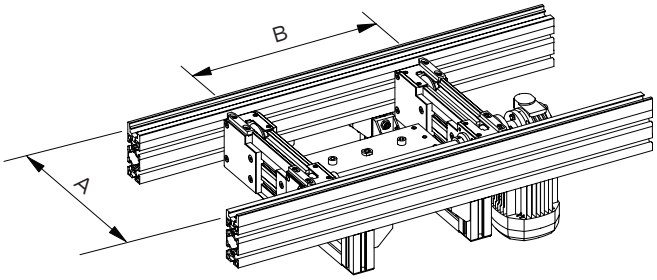
ESD

PSC–90

PSB–60

PSB–90





Code

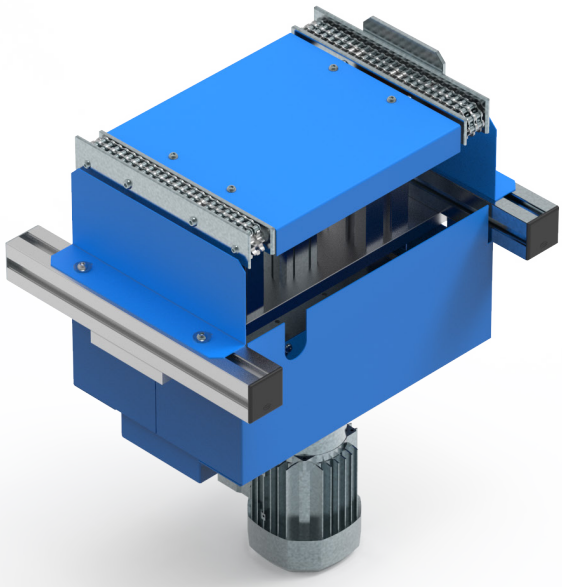
EXAMPLE OF ORDERING

	17M3B	–	240	–	320	–	4.6
			A		B		C

A	Pallet width	**min.** 240 mm – **max.** 400 mm
B	Pallet length	**min.** 240 mm – **max.** 640 mm
C	Speed	4.6 – 27,4 m/min
	Track load capacity	**B** = 240 mm = **max.** 500 N **B** > 240 mm = **max.** 800 N

Motor	Reducer	kW	(m/min) The underlined speeds are recommended
BN63 B4	BN 14 VF30 P i = 60; i = 40; i = 30; P i = 20; i = 15; i = 10	0,18	4,6 – 6,9 – 9,1 – 13,7 – 18,3 – 27,4

Transversal module with chain (2 positions)



The chain transversal module with 2 positions is equipped with a pneumatic cylinder and electric motor that drives the chain.

This transversal module is mainly used at the end of the tracks where the direction of the pallets may continue only at a 90° angle. For this reason the transversal module functions at the lower position of the PN-cylinder as a stopper for the pallet, and in the upper position the module is above the track and transfers the pallet to the track next to it.

The module does not include:
- el. switches for the pneumatic cylinder,
- flow regulators for the pneumatic cylinder.

* Contact our technical support for special designs.

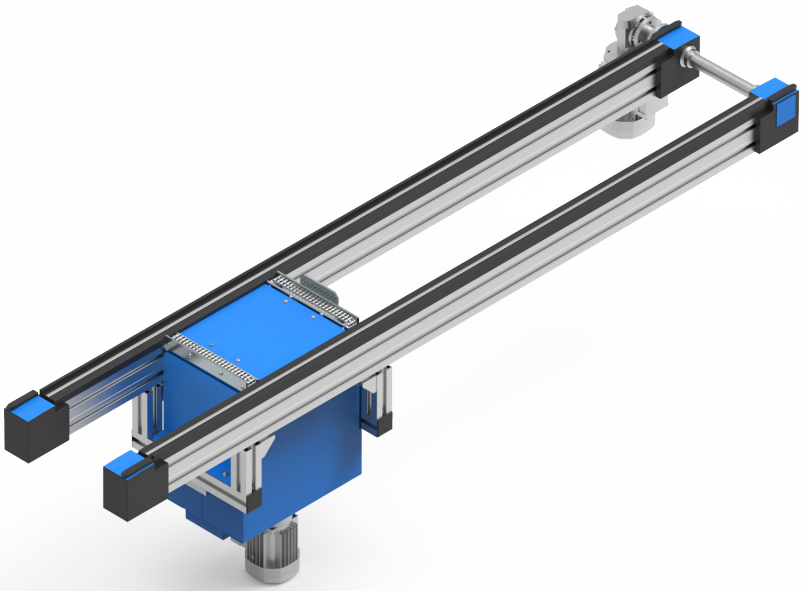
Transversal module with chain (2 positions)

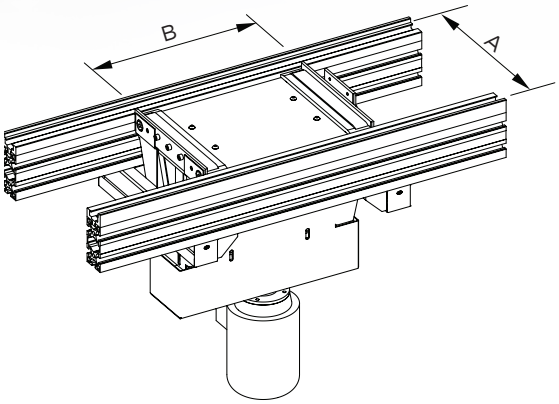
ESD

PSC-90

PSB-60

PSB-90





Code

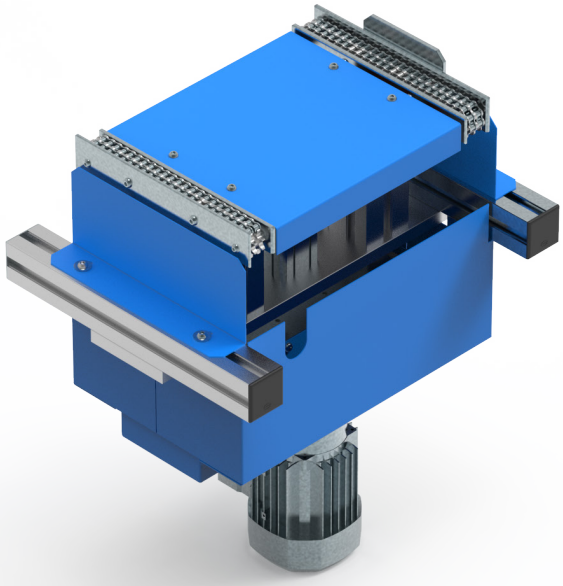
EXAMPLE OF ORDERING

		17M2C	–	240	–	320	–	2,9
				A		B		C

A	Pallet width	**min.** 240 mm – **max.** 400 mm
B	Pallet length	**min.** 240 mm – **max.** 640 mm
C	Speed	2.9 – 17,7 m/min
	Track load capacity	**B** = 240 mm = **max.** 500 N **B** > 240 mm = **max.** 800 N

Motor	Reducer	kW	(m/min) The underlined speeds are recommended
BN63 B4	BN 14 VF30 P i = 60; i = 40; i = 30; P i = 20; i = 15; i = 10	0,18	2,9 – 4,4 – 5,9 – 8,9 – 11,8 – 17,7

Transversal module with chain (3 positions)



The chain transversal module with 3 positions is equipped with two pneumatic cylinders and electric motor that drives the chain.

This transversal module may be used anywhere on the track, where the direction of the pallets continues at a 90° angle or straight ahead. For this reason the transversal module is completely hidden under the track at the lower position of the PN–cylinder and ensures a smooth transition of the pallets; in the middle position it functions as a stopper for the pallet, and in the upper position the module is above the track and transfers the pallet to the track next to it.

The module does not include:
– el. switches for the pneumatic cylinder,
– flow regulators for the pneumatic cylinder.

* Contact our technical support for special designs.

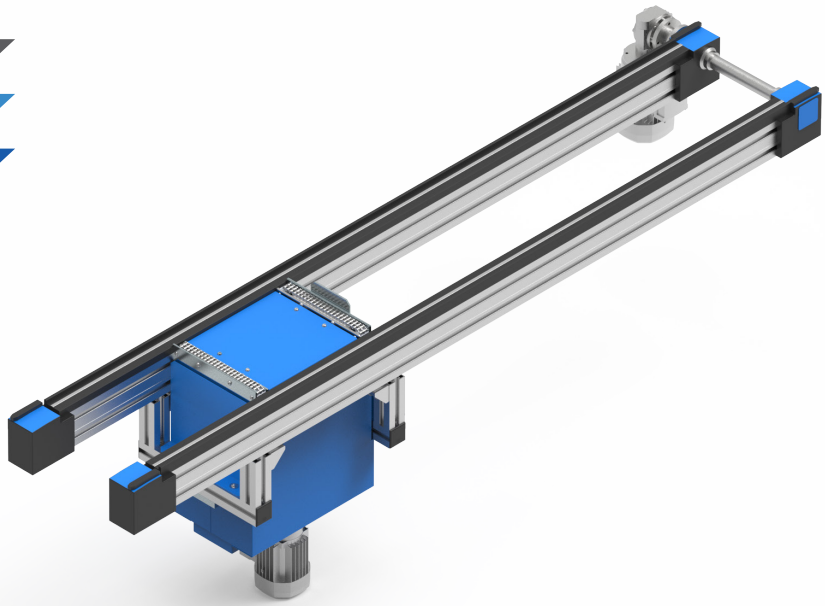
Transversal module with chain (3 positions)

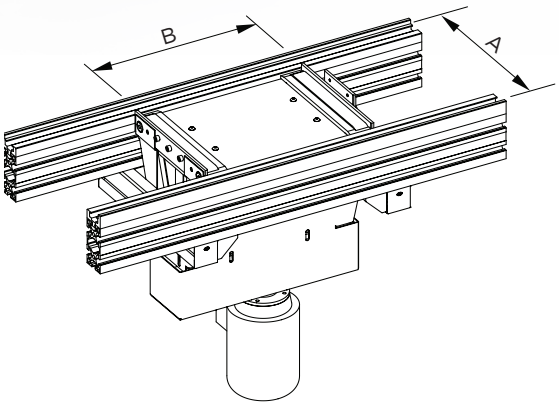
ESD

PSC-90

PSB-60

PSB-90





Code

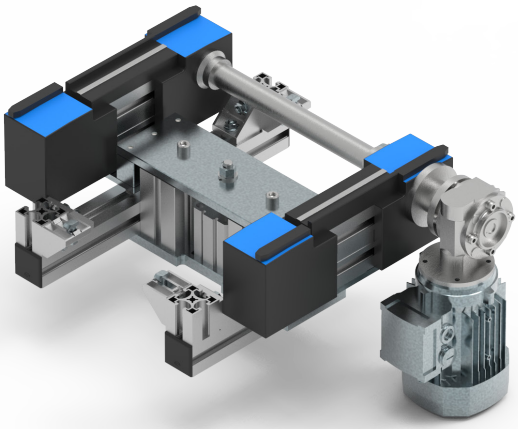
EXAMPLE OF ORDERING

	17M3C	–	240	–	320	–	2,9
			A		B		C

A	Pallet width	**min.** 240 mm – **max.** 400 mm
B	Pallet length	**min.** 240 mm – **max.** 640 mm
C	Speed	2,9 – 17,7 m/min
	Track load capacity	**B** = 240 mm = **max.** 500 N **B** > 240 mm = **max.** 800 N

Motor	Reducer	kW	(m/min) The underlined speeds are recommended
BN63 B4	BN 14 VF30 P i = 60; i = 40; i = 30; P i = 20; i = 15; i = 10	0,18	2,9 – 4,4 – 5,9 – 8,9 – 11,8 – 17,7

Transversal module with chain (2 positions)



The chain transversal module with 2 positions is equipped with a pneumatic cylinder and electric motor that drives the chain.

This transversal module is mainly used at the end of the tracks where the direction of the pallets may continue only at a 90° angle. For this reason the transversal module functions at the lower position of the PN-cylinder as a stopper for the pallet, and in the upper position the module is above the track and transfers the pallet to the track next to it.

The module does not include:
- el. switches for the pneumatic cylinder,
- flow regulators for the pneumatic cylinder.

* Contact our technical support for special designs.

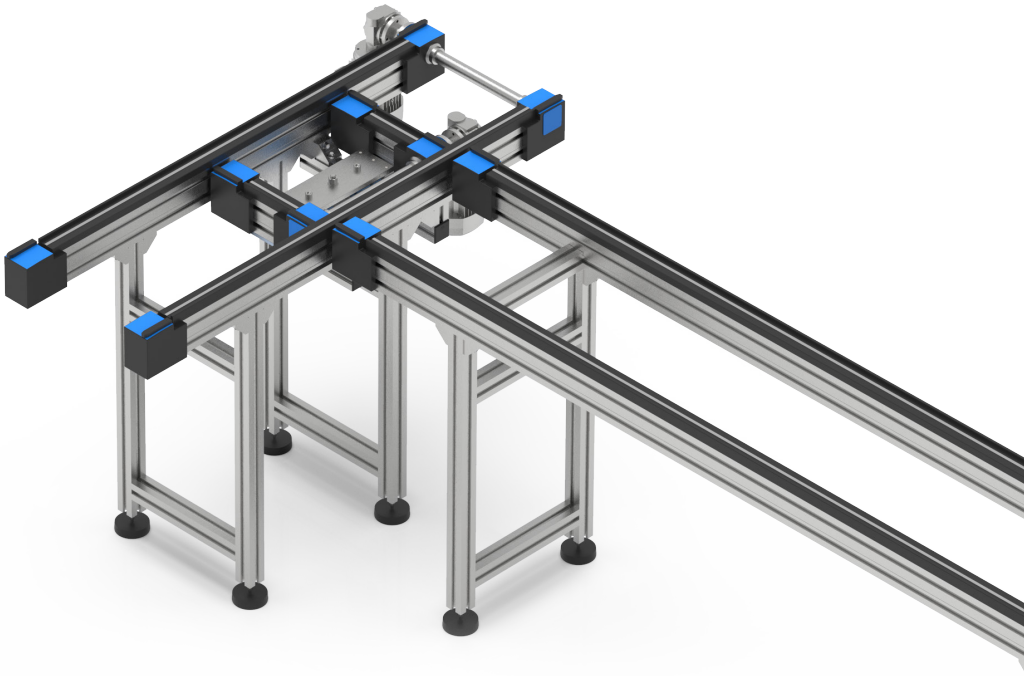
Transversal module with chain (2 positions)

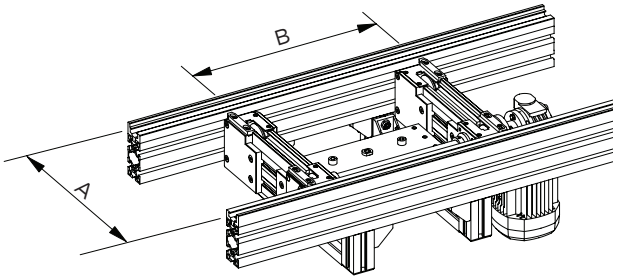
ESD

PSC-90

PSB-60

PSB-90





Code

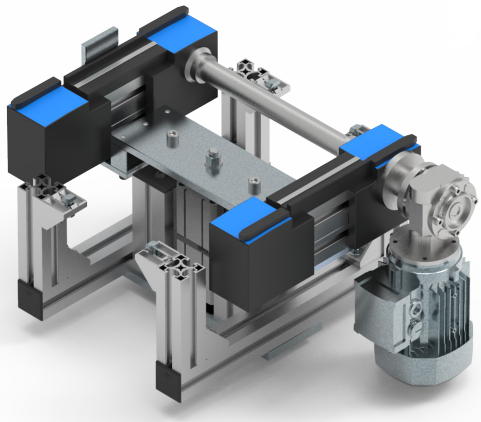
EXAMPLE OF ORDERING

17M2C	–	370	–	370	–	2,9	–	R	–	3
		A		B		C		D		E

A	Pallet width	**min.** 370 mm – **max.** 1 200 mm
B	Pallet length	**min.** 370 mm – **max.** 1 200 mm
C	Speed	2,9 – 17,7 m/min
D	Drive position	L = left R = right
E	Motor reducer position	3 – 4
	Track load capacity	**B** = 370 – 400 mm = **max.** 800 N **B** = 400 – 480 mm = **max.** 1 200 N **B** > 480 mm = **max.** 1 800 N

Motor	Reducer	kW	(m/min) The underlined speeds are recommended
BN63 B4	BN 14 VF30 P i = 60; i = 40; i = 30; P i = 20; i = 15; i = 10	0,18	2,9 – 4,4 – 5,9 – 8,9 – 11,8 – 17,7

Transversal module with chain (3 positions)



The chain transversal module with 3 positions is equipped with two pneumatic cylinders and electric motor that drives the chain.

This transversal module may be used anywhere on the track, where the direction of the pallets continues at a 90° angle or straight ahead. For this reason the transversal module is completely hidden under the track at the lower position of the PN–cylinder and ensures a smooth transition of the pallets; in the middle position it functions as a stopper for the pallet, and in the upper position the module is above the track and transfers the pallet to the track next to it.

The module does not include:
– el. switches for the pneumatic cylinder,
– flow regulators for the pneumatic cylinder.

* Contact our technical support for special designs.

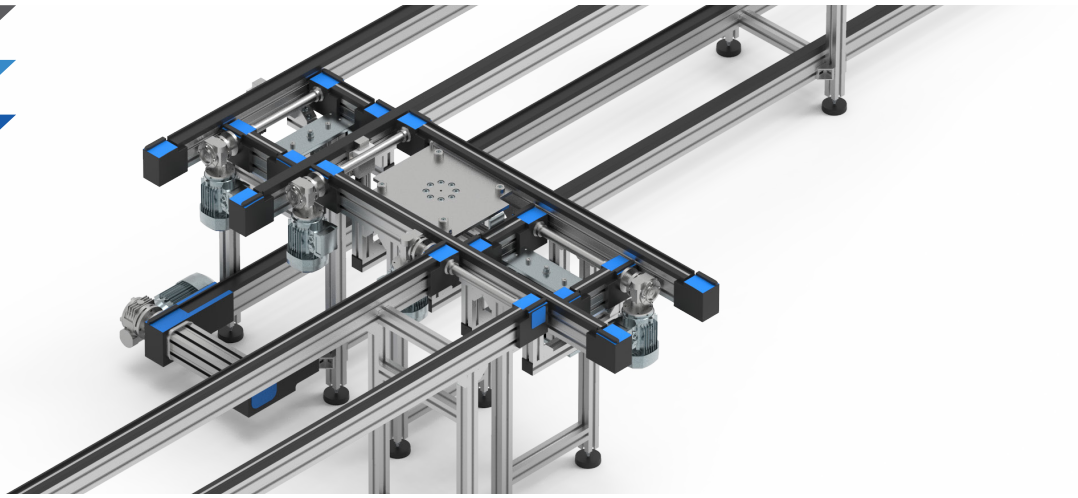
Transversal module with chain (3 positions)

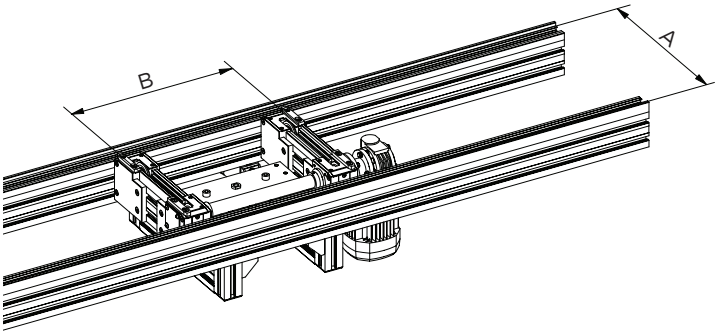
ESD

PSC–90

PSB–60

PSB–90





Code

EXAMPLE OF ORDERING

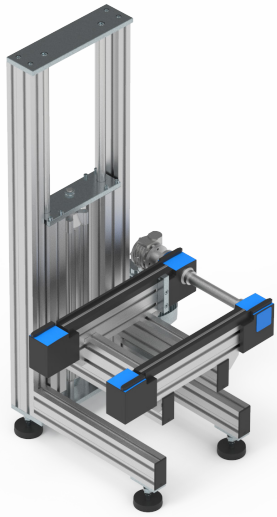
	17M3C	–	370	–	370	–	2,9	–	R	–	3
			A		B		C		D		E

A	Pallet width	**min.** 370 mm – **max.** 1 200 mm
B	Pallet length	**min.** 370 mm – **max.** 1 200 mm
C	Speed	**2,9 – 17,7 m/min**
D	Drive position	**L** = left, **R** = right
E	Motor reducer position	**3 – 4**
	Track load capacity	**B** = 370 – 400 mm = **max.** 800 N **B** = 400 – 480 mm = **max.** 1 200 N **B** > 480 mm = **max.** 1 800 N

Motor	Reducer	kW	(m/min) The underlined speeds are recommended
BN63 B4	BN 14 VF30 P i = 60; i = 40; i = 30; P i = 20; i = 15; i = 10	0,18	2,9 – 4,4 – 5,9 – 8,9 – 11,8 – 17,7

LIFTS

17DP, 17DE, 17DV



Lifts are used to move the pallet vertically from one transport track to another.

There are three types of lifts:
- pneumatic lift **17DP**
- electric lift **17DE**
- lift with spindle **17DV**

Any lift may be used for **PSC-90**, **PSB-60**, **PSB-90** and also **PSR-50/60**.

* Contact our technical support for special designs.

Pneumatic lift

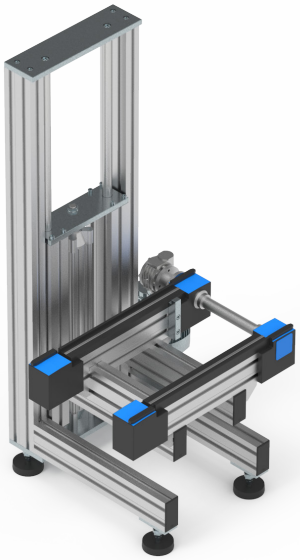
ESD

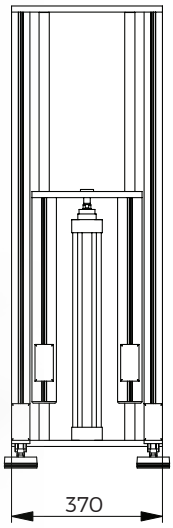
PSC-90

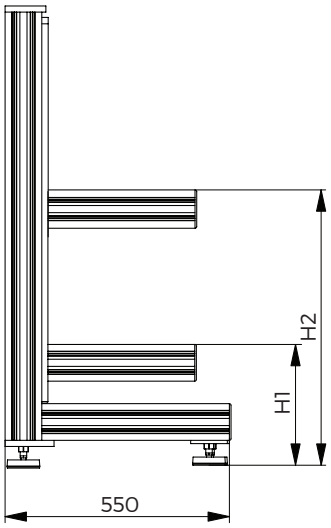
PSB-60

PSB-90

PSR-50/60







The **17DP** pneumatic lift is used for shorter travel and allows only two stopping position.

There are three types of pneumatic lifts:
- light pneumatic lift equipped with a PN-cylinder and round linear guides,
- medium pneumatic lift equipped with a PN-cylinder, rail linear guides and linear carts,
- heavy pneumatic lift equipped with a PN-cylinder, rail linear guides, linear carts and pneumatic brakes.

The lift does not include:
- el. switches for the pneumatic cylinder,
- flow regulators for the pneumatic cylinder.

* For more information contact our technical service.

Code

EXAMPLE OF ORDERING

		17DP	– 240	– 800	
			H_1	H_2	
H_1	Height				**min.** 200 mm
H_2	Height				**max.** 1 200 mm
	Load capacity				**max.** 1 000 N

Electric lift

ESD

PSC–90

PSB–60

PSB–90

PSR–50/60

The **17DE** electric lift is used for longer travel and enables several stopping positions.
It is equipped with a counterweight, electric motor with brake and chain lifting system.

* For more information contact our technical service.

Code

EXAMPLE OF ORDERING

		17DE – / – /	
		H_1	H_2
H_1	Height	Please contact our technical support.	
H_2	Height		
	Load capacity	Please contact our technical support.	

Lift with spindle

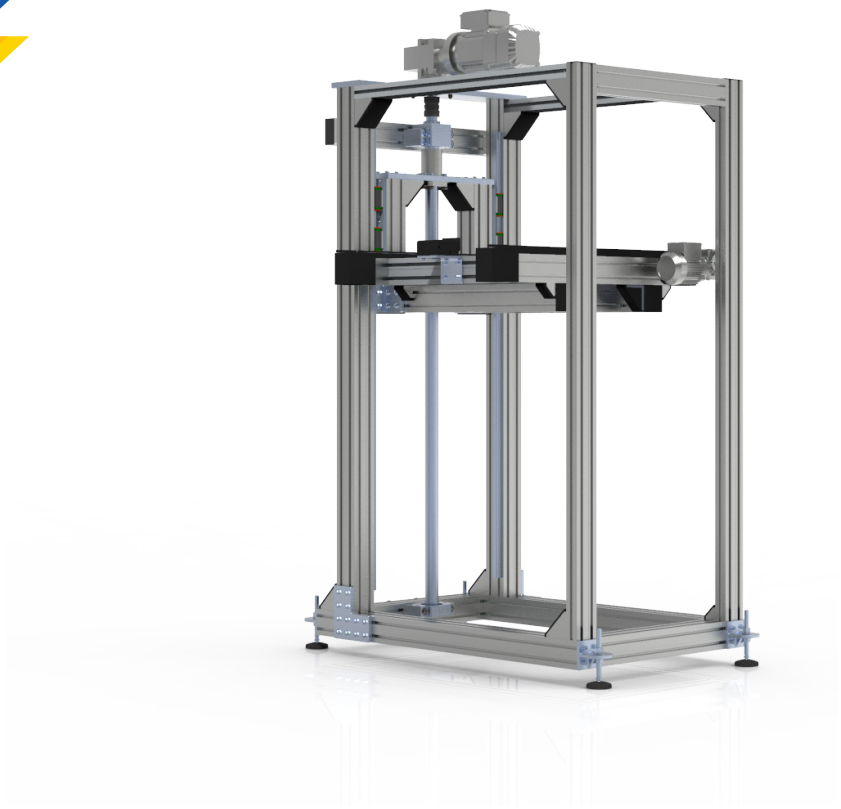
ESD

PSC–90

PSB–60

PSB–90

PSR–50/60



The **17DV** lift with spindle enables very accurate operation and several stopping positions. It is equipped with a spindle, el. motor with brake, rail linear guides and linear carts.

* For more information contact our technical service.

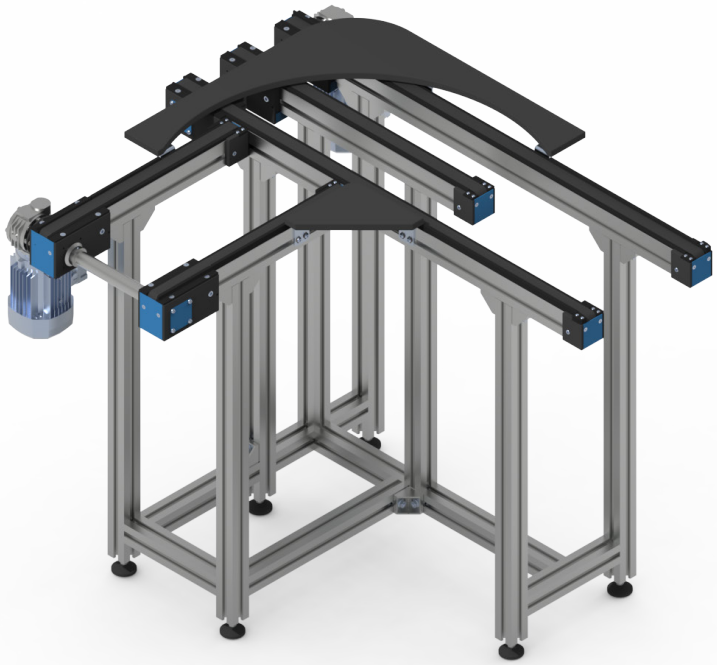
Code

EXAMPLE OF ORDERING

		17DV – / – /	
		H_1	H_2
H_1	Height	Please contact our technical support.	
H_2	Height		
	Load capacity	Please contact our technical support.	

CURVE PSB-60

17BTK90



Curves are used in order to change the path of the pallet or load, whereby the pallet does not change the orientation (the front side is always in front).

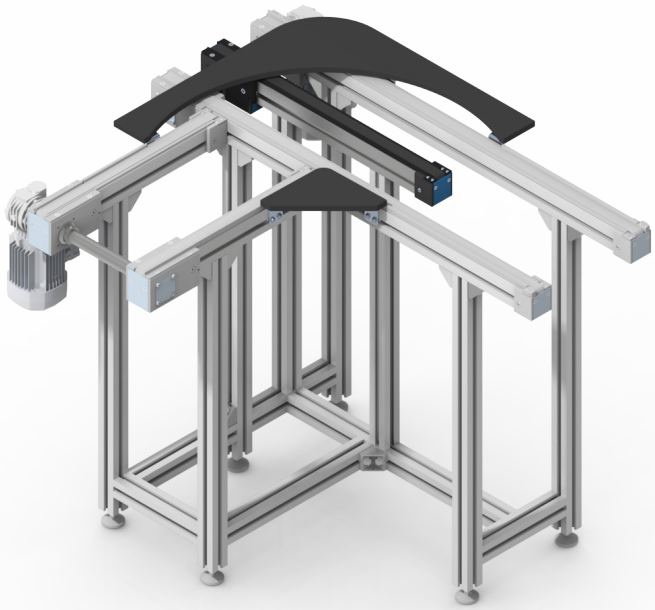
Warning!
Accumulation on the arch may be avoided by a stopper before the curve.

* For more information contact our technical service.

90° curve

PSB-60

A	B
240	240
	320
320	240
	320
	400
400	320
	400



*For pallets smaller than 240 mm, please contact our technical service.

Code

EXAMPLE OF ORDERING

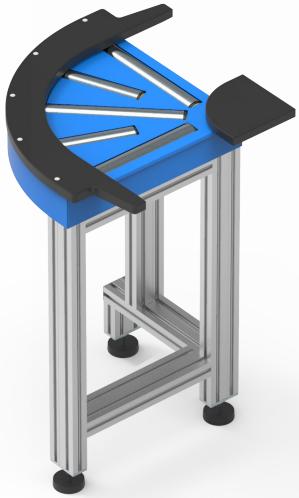
17BTK90	–	320	–	320	–	2,9	
		A		B		D	

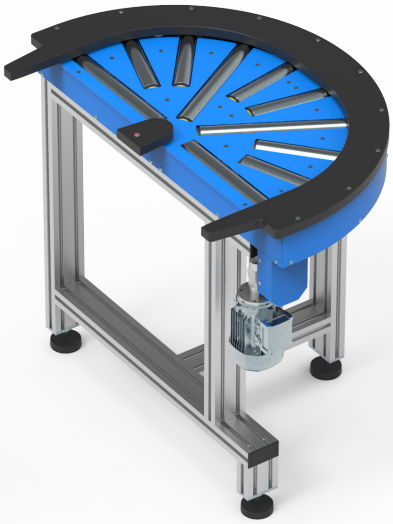
A	Pallet width	**min.** 240 mm – **max.** 400 mm
B	Pallet length	**min.** 240 mm – **max.** 400 mm
D	Speed	2,9 – 25 m/min
	Track load capacity	**max.** 600 N

Motor	Reducer	kW	(m/min)
BN63 B4	BN 14 VF30 P i = 60; i = 40; i = 30; P i = 20; i = 15; i = 10; i = 7	0,18	2,9 – 4,4 – 5,8 – 8,7 – 11,7 – 17,5 – 25

ROLLER CURVES

17K90, 17K180





Roller curves are used in order to change the path of the pallet or load, whereby the pallet does not change the orientation (the front side is always in front).

Warning!
Accumulation on the arch may be avoided by a stopper before the curve.

* For more information contact our technical service.

90° roller curve

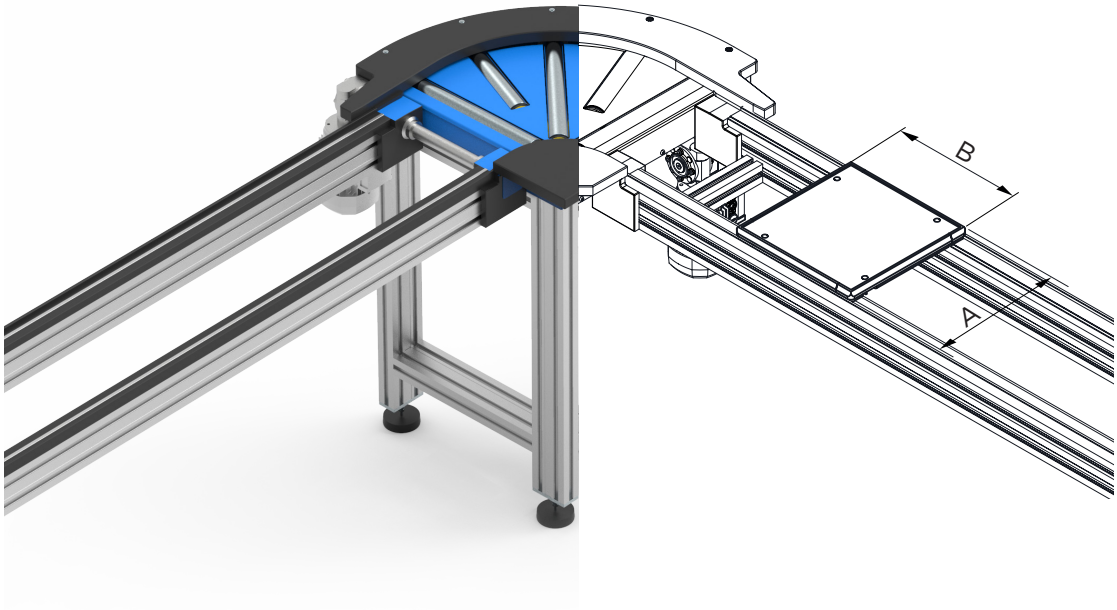
ESD

PSC-90

PSB-90

PSR-50/60

A	B
160	160
	240
240	160
	240
	320
320	240
	320
	400
400	320
	400



Code

EXAMPLE OF ORDERING

17K90	–	160	–	160	–	3.2	
		A		B		D	

A	Pallet width	**min.** 160 mm – **max.** 800 mm
B	Pallet length	**min.** 160 mm – **max.** 800 mm
D	Speed	3,2 – 27.5 m/min
	Track load capacity	**max.** 500 N

Motor	Reducer	kW	(m/min) The underlined speeds are recommended
BN63 B4	BN 14 VF30 P i = 60; i = 40; i = 30; P i = 20; i = 15; i = 10; i = 7	0,18	3,2 – 4,8 – 6,4 – 9,6 – 12,8 – 19,3 – 27,5

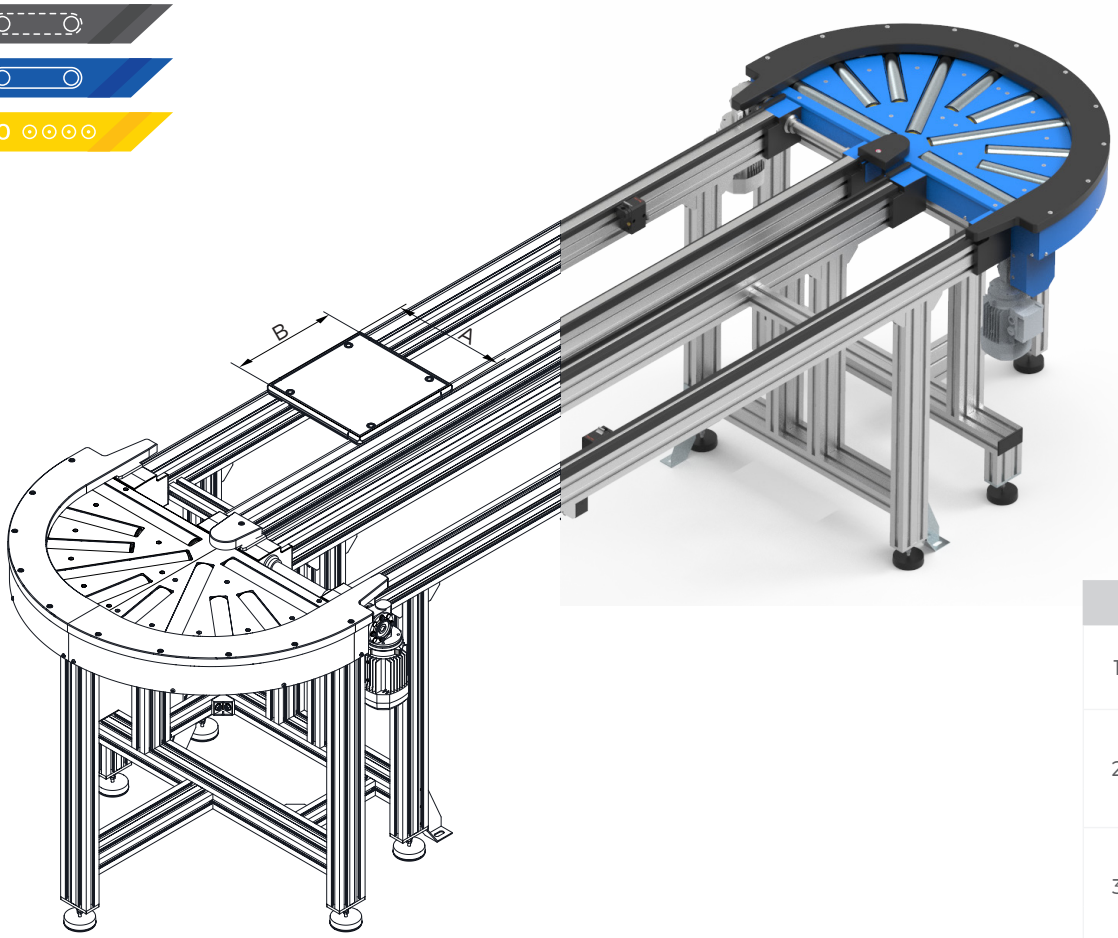
180° roller curve

ESD

PSC-90

PSB-90

PSR-50/60



A	B
160	160
	240
240	160
	240
	320
320	240
	320
	400
400	320
	400

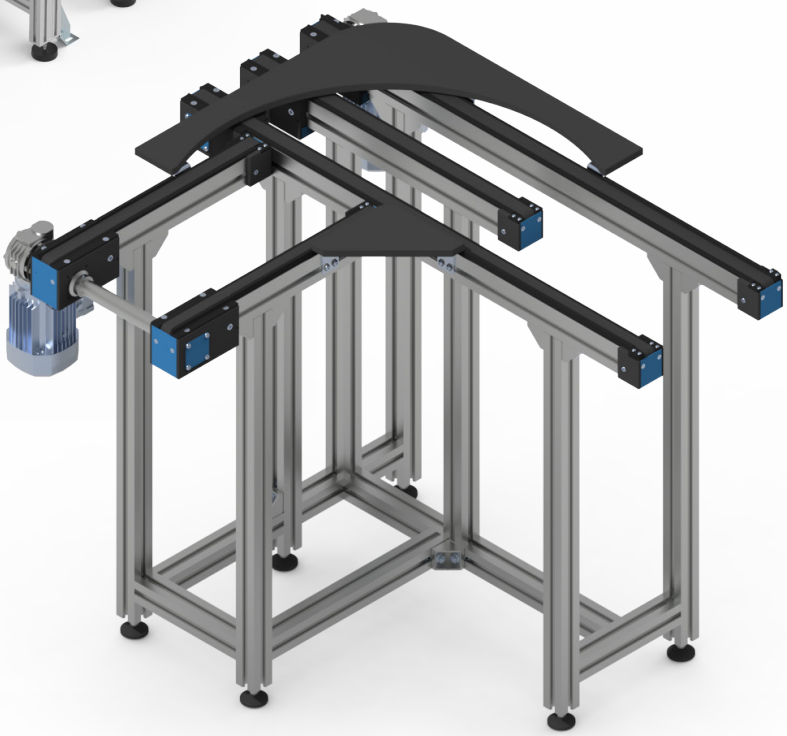
Code

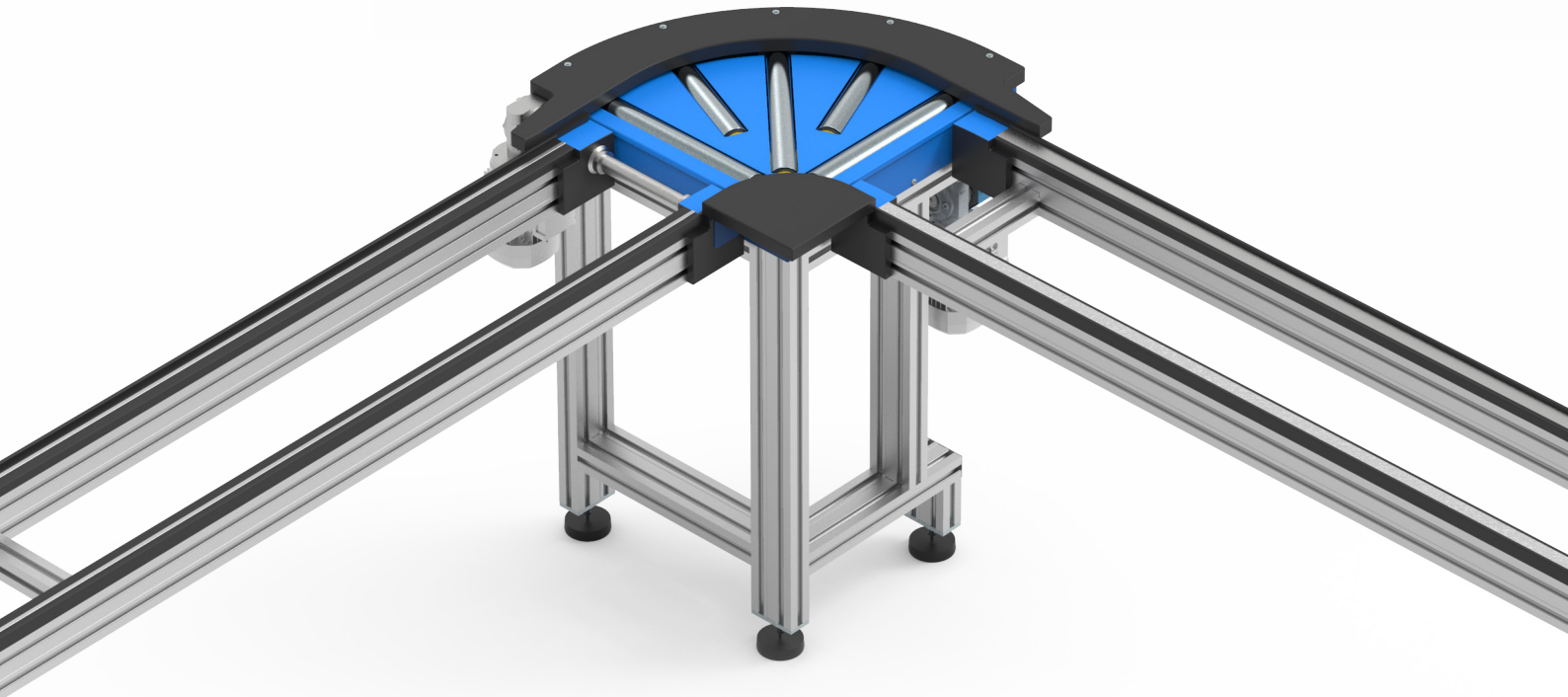
EXAMPLE OF ORDERING

17K180	–	320	–	L	–	3,2
		A		B		D

A	Pallet width	**min.** 160 mm – **max.** 800 mm
B	Pallet length	**min.** 160 mm – **max.** 800 mm
D	Speed	3,2 – 27,5 m/min
	Track load capacity	**max.** 500 N

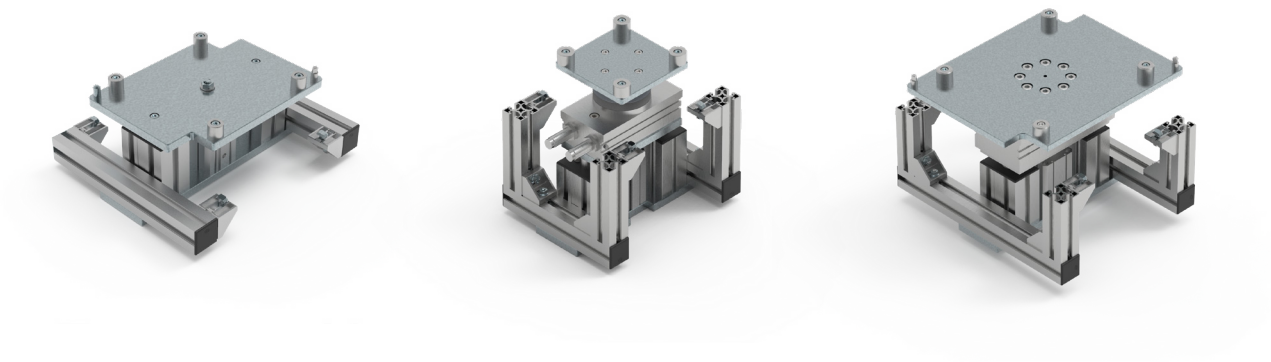
Motor	Reduktor	kW	(m/min) Priporočene so podčrtane hitrosti
BN63 B4	BN 14 VF30 P i = 60; i = 40; i = 30; P i = 20; i = 15; i = 10; i = 7	0,18	3,2 – 4,8 – 6,4 – 9,6 – 12,8 – 19,3 – 27,5





POSITIONING AND ROTATING MODULE

17CM, 17OM, 17COM



When there is a need for accurate centring or for changing the pallet's orientation in the working process, the positioning or rotating module is used.

* For more information and special designs contact our technical service.

Positioning module

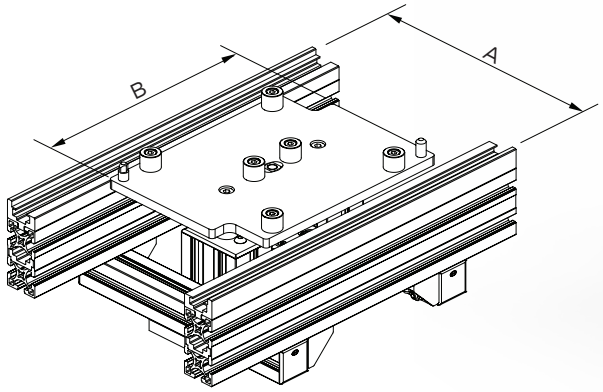
ESD

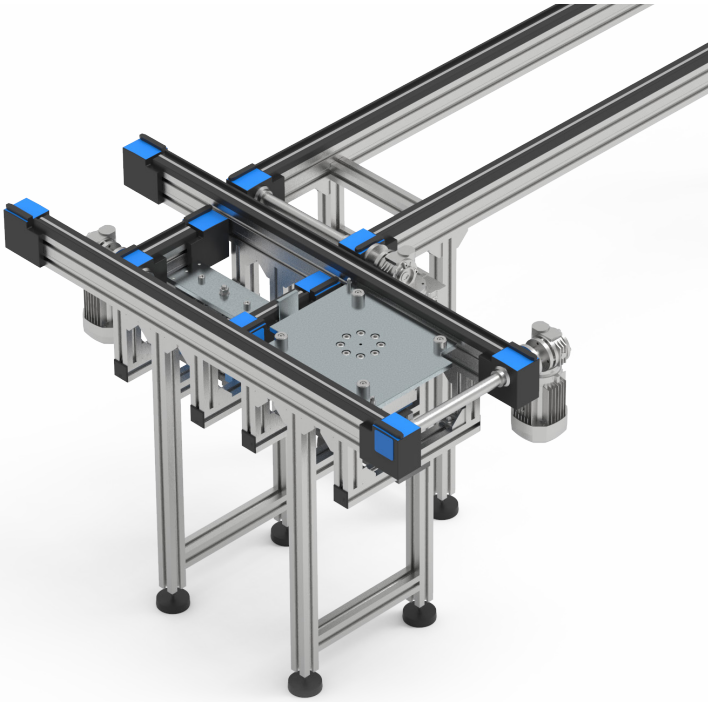
PSC-90

PSB-60

PSB-90

Positioning modules are suitable for various pallet dimensions and weights.
They enable centring with high tolerance: +/- 0.1 mm.





Code

EXAMPLE OF ORDERING

		17CM	–	160	–	160	–	30
				A		B		H

A	Pallet width	**min.** 160 mm – **max.** 800 mm
B	Pallet length	**min.** 160 mm – **max.** 800 mm
H	Standard travel	**30 mm**
	Travel	**min.** 30 mm – **max.** 400 mm
	Load capacity	**B** = 160 – 240 mm = **max.** 800 N **B** = 240 – 400 mm = **max.** 1 200 N **B** > 400 mm = **max.** 1 800 N

Rotating module

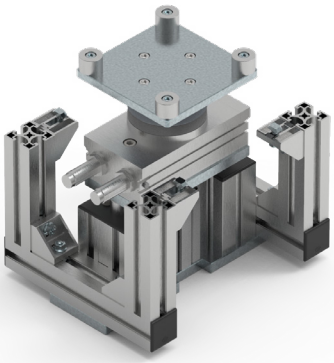
ESD

PSC–90

PSB–60

PSB–90

The rotating module is required whenever it is necessary to change the pallet's orientation from 0° to 180°.



Code

EXAMPLE OF ORDERING

	170M	–	160	–	160	–	50
			A		B		H

A	Pallet width	**min.** 160 mm – **max.** 800 mm
B	Pallet length	**min.** 160 mm – **max.** 800 mm
H	Standard travel	**50 mm**
	Travel	**min.** 50 mm – **max.** 400 mm
	Load capacity	**B** = 160 – 240 mm = **max.** 800 N **B** = 240 – 400 mm = **max.** 1 200 N **B** > 400 mm = **max.** 1 800 N

Positioning-rotating module

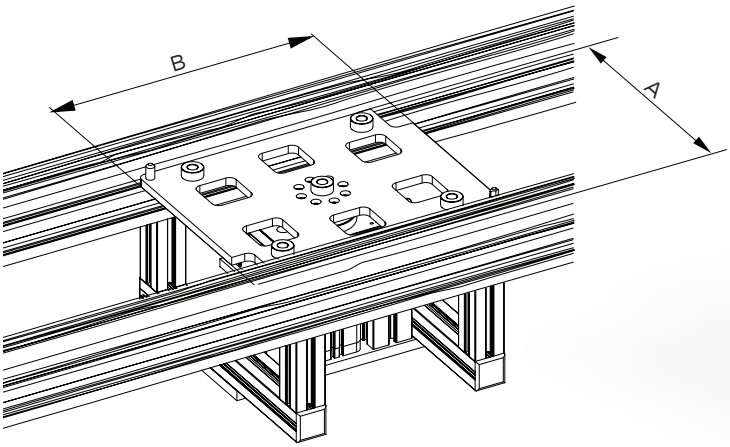
ESD

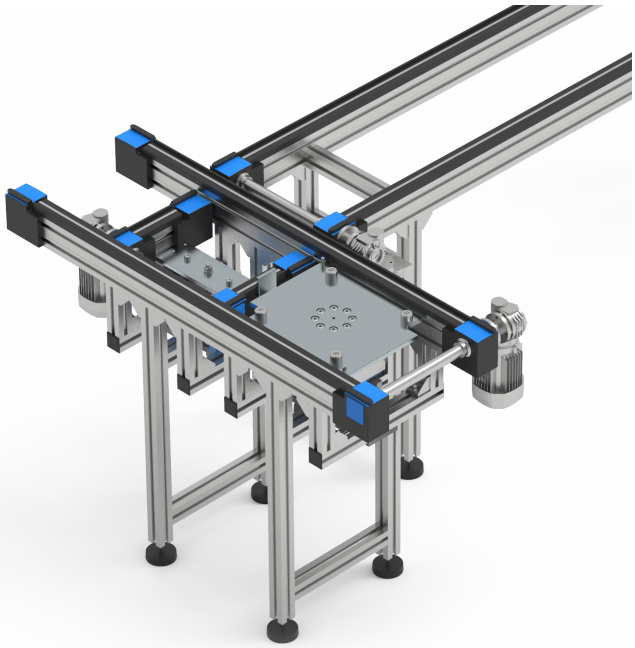
PSC-90

PSB-60

PSB-90

Positioning-rotating modules are suitable for various pallet dimensions and weights. They enable centring with high tolerance: +/- 0,1 mm and enable changing the pallet's orientation from 0° to 180°.





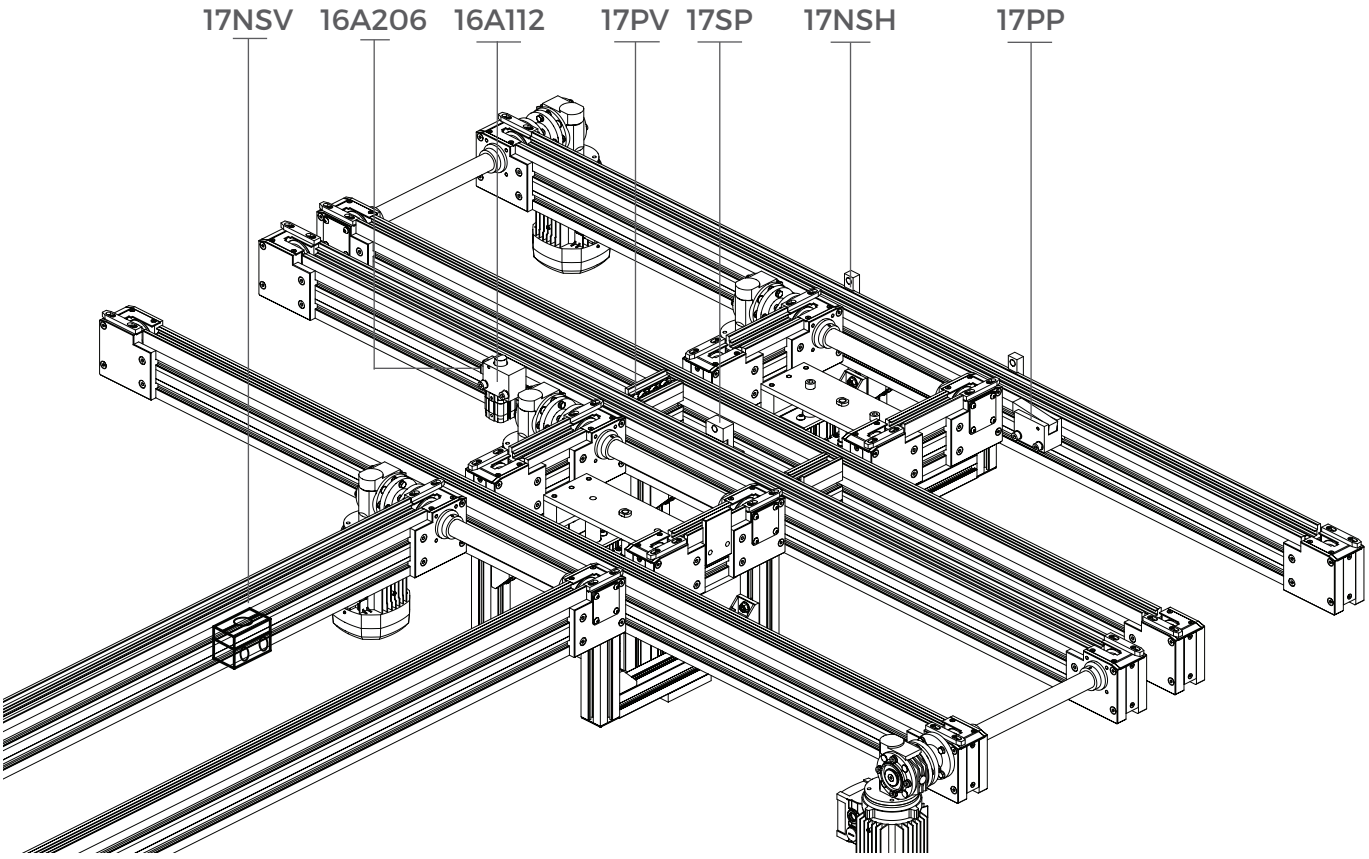
Code

EXAMPLE OF ORDERING

		17COM	–	160	–	160	–	50
				A		B		H

A	Pallet width	**min.** 160 mm – **max.** 800 mm
B	Pallet length	**min.** 160 mm – **max.** 800 mm
H	Standard travel	**50 mm**
	Travel	**min.** 50 mm – **max.** 400 mm
	Load capacity	**B** = 160 – 240 mm = **max.** 800 N **B** = 240 – 400 mm = **max.** 1 200 N **B** > 400 mm = **max.** 1 800 N

CONTROLS



The controls are used to stop, separate and locate the pallet on the pallet system.

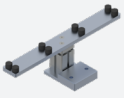
Stopper and sensor bracket **16A112, 16A206** p. 92

Stopper **16A235, 16A236** p. 93–94

Transversal stopper **17SP000** p. 95

Anti-return stop **17PP000** p. 96

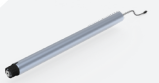
Roller stopper **17RST** p. 97



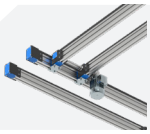
Sensor bracket – horizontal **17NSH 000** p. 98

Sensor bracket – vertical **17NSV 000** p. 99

Transitional rollers **17PV** p. 100



Electric roller p. 101



Connecting coupling **17VE 00** p. 102-104

ASU-400-EW-09-100 stopper and sensor bracket

ESD

PSC–90

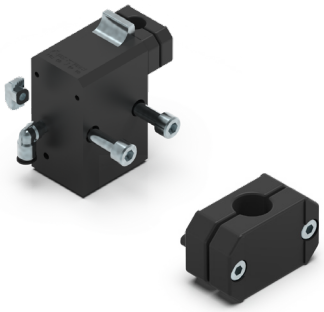
PSB–60

PSB–90

The **16A112** stopper stops one or more pallets at certain locations.

*The set contains screws for attachment to the transport track.
The **16A206** sensor bracket is suitable for the M12 x 1 sensor. Material: PA.

*The set contains screws for attachment to the stopper.



Code

EXAMPLE OF ORDERING

		16A112	+	**16A206**					
		Stopper		Sensor bracket for the stopper					
Speed	**v = m/min**	**6**	**9**	**12**	**15**	**18**	**24**	**30**	**36**
ASU – 400	weight (kg)	0 – 400	0 – 300	0 – 250	0 – 220	0 – 200	0 – 110	0 – 65	0 – 50

ASM-400-EW-09 stopper with absorption

ESD

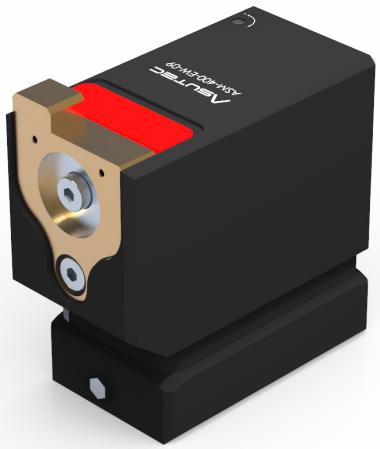
PSC–90

PSB–60

PSB–90

The **16A235** stopper stops one or more pallets at certain locations. It uses absorption to reduce the pallet's vibrations while stopping.

*The set contains screws for attachment to the transport track.



Code

EXAMPLE OF ORDERING

16A235

Stopper with absorption

Speed	v = m/min	9	12	15	18	24	30	36
ASM – 400	weight (kg)	5 – 400	5 – 280	5 – 255	5 – 240	5 – 200	5 – 180	5 – 120

ASMNG-80-EW-08-100 stopper with absorption

ESD

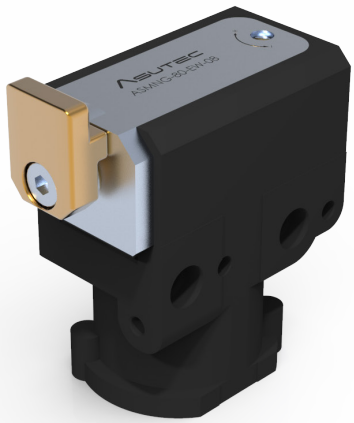
PSC–90

PSB–60

PSB–90

The **16A236** stopper stops one or more pallets at certain locations. It uses absorption to reduce the pallet's vibrations while stopping.

*The set contains screws for attachment to the transport track.



Code

EXAMPLE OF ORDERING

16A236

Stopper with absorption

Speed	v = m/min	6	9	12	15	18	24	30
ASMNG – 80	weight (kg)	1 – 80	1 – 60	1 – 50	1 – 45	1 – 37	1 – 28	1 – 20

Transversal stopper

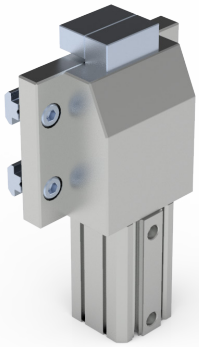
ESD

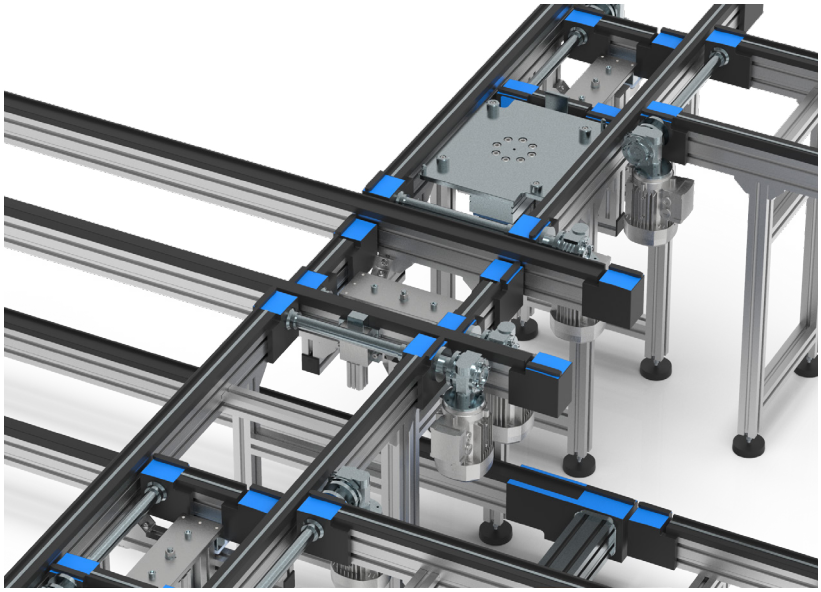
PSC–90

PSB–60

PSB–90

The **17SP000** transversal stopper is used when two transversal transport track are connected to the longitudinal track.





Code

EXAMPLE OF ORDERING

17SP000
Transversal stopper

Anti-return stop

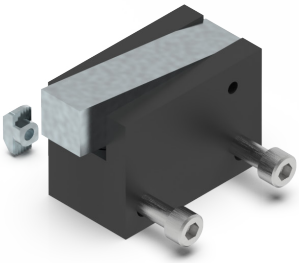
ESD

PSC-90

PSB-60

PSB-90

Prevents the pallet moving to the opposite direction while stopping.



Code

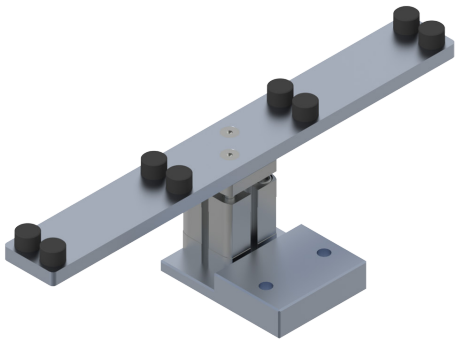
EXAMPLE OF ORDERING

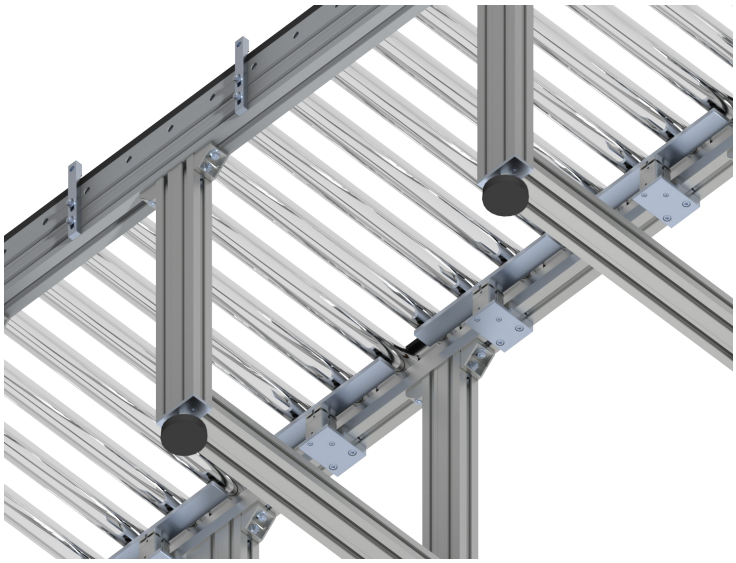
17PP000
Anti-return stop

Roller stopper

PSR–50/60

Stops accumulation rollers on the driven roller track.





Code

EXAMPLE OF ORDERING

17RST
Roller stopper

Sensor bracket – horizontal

ESD

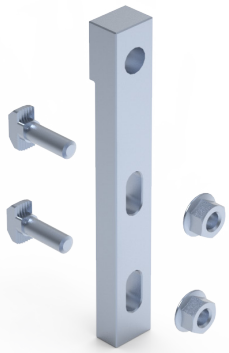
PSC–90

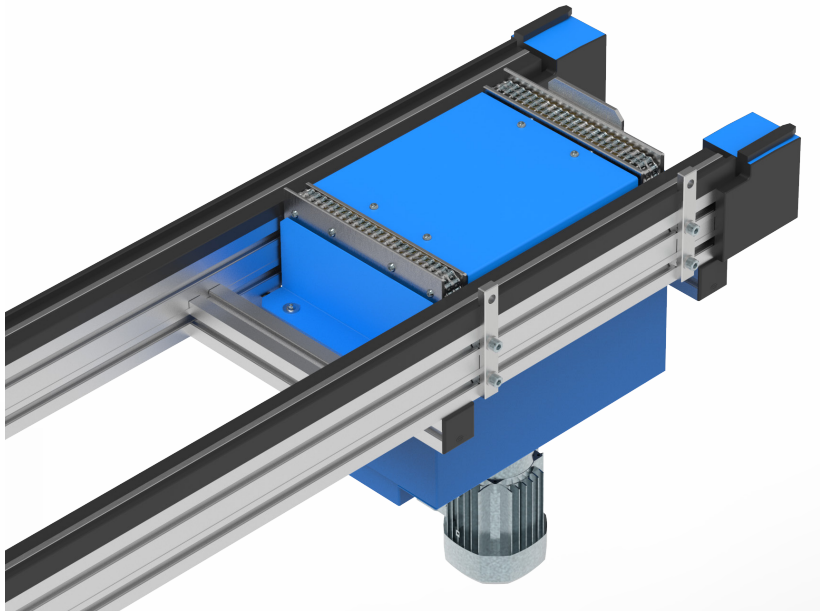
PSB–60

PSB–90

The **17NSH000** sensor bracket is suitable for the M12 x 1 sensor. Material: zinc-plated iron.
It is also intended for stopping the pallet at the end of the tracks.

*The set contains screws for attachment to the transport track.





Code

EXAMPLE OF ORDERING

17NSH 000
Sensor bracket – horizontal

Sensor bracket – vertical

ESD

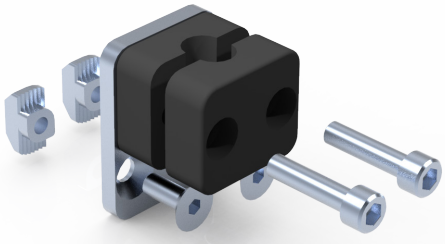
PSC–90

PSB–60

PSB–90

The **17NSV000** sensor bracket is suitable for the M12 x 1 sensor. Material: PA.

*The set contains screws for attachment to the transport track.



Code

EXAMPLE OF ORDERING

17NSV 000
Sensor bracket – vertical

Transitional rollers

ESD

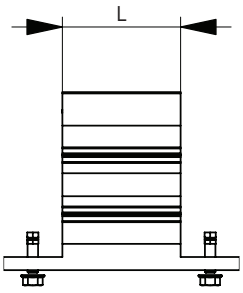
PSC–90

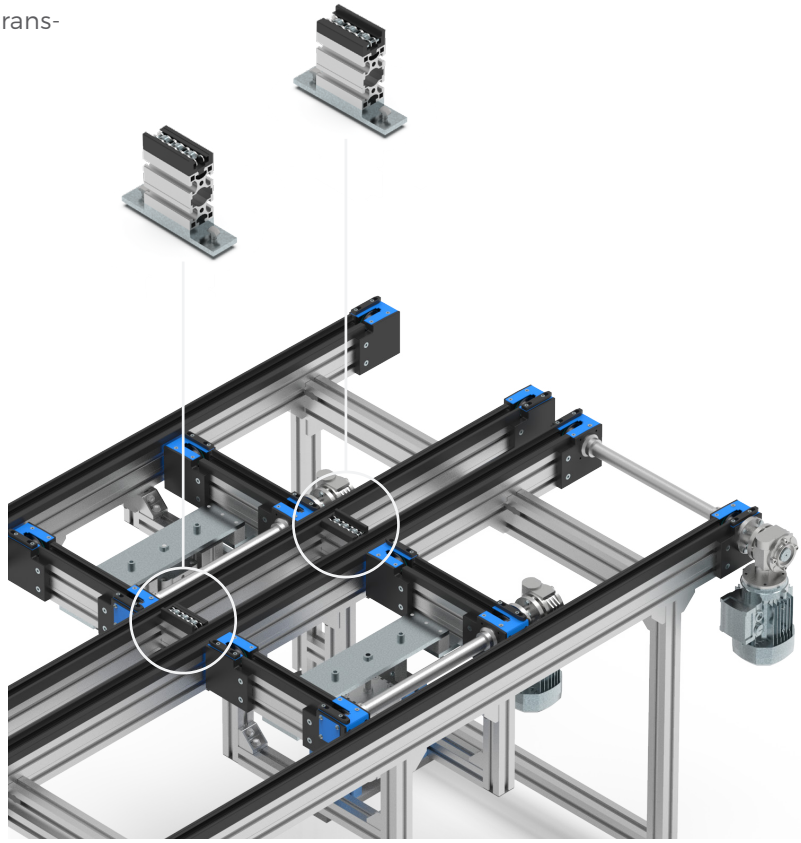
PSB–60

PSB–90

The **17PV** transitional rollers are used between two transversal modules in order to facilitate the transfer of pallets between two parallel transport tracks.

*The set contains screws for attachment to the transport track.





Code

EXAMPLE OF ORDERING

	17PV	–	160
			L

L	Length	**min.** 45 mm

Electric roller

ESD

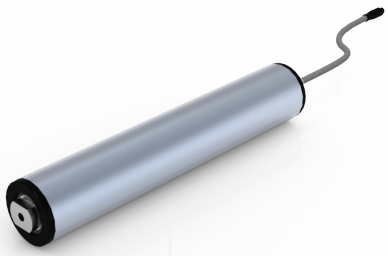
PSC-90

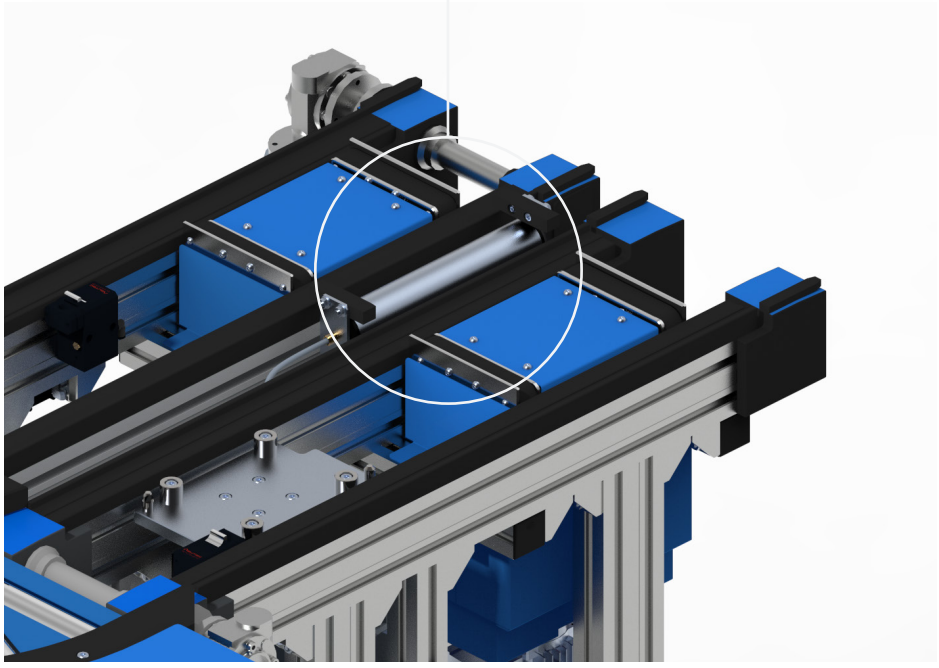
PSB-60

PSB-90

The electric roller is used when the gap between two parallel transport tracks is too large to use transitional rollers.

* For more information contact our technical service.





Connecting coupling I

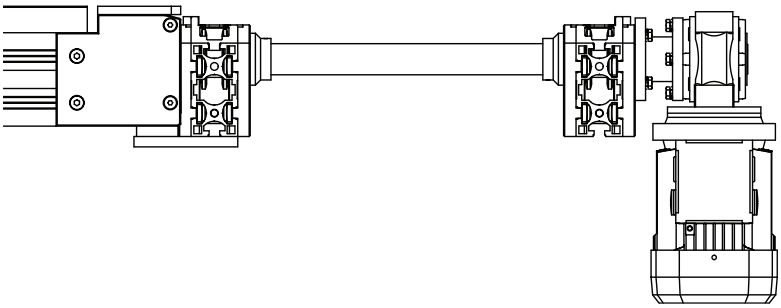
ESD

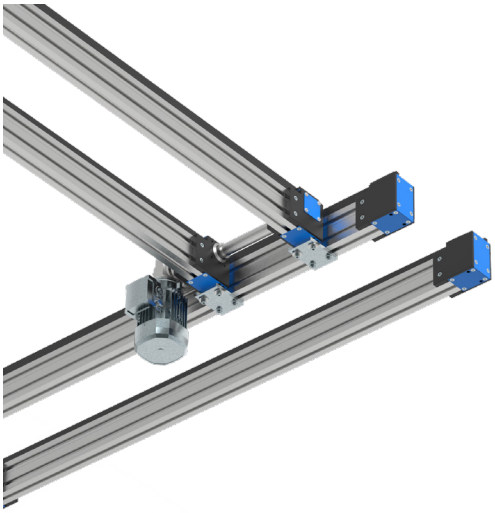
PSC-90

PSB-90

The connecting coupling between **17CDML/17BDML** and **17CRU/17BRU**.

The kit consists of:
- 2x connecting plate
- connecting elements





Code

EXAMPLE OF ORDERING

17VE 001
Connecting coupling I

Connecting coupling II

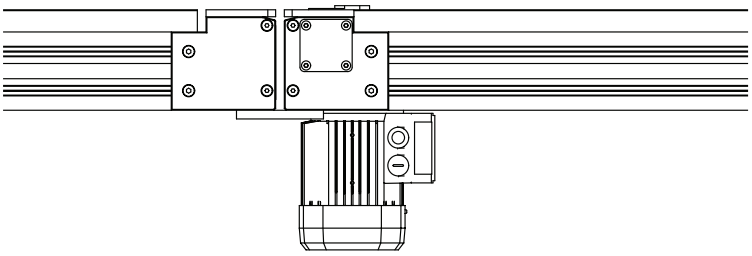
ESD

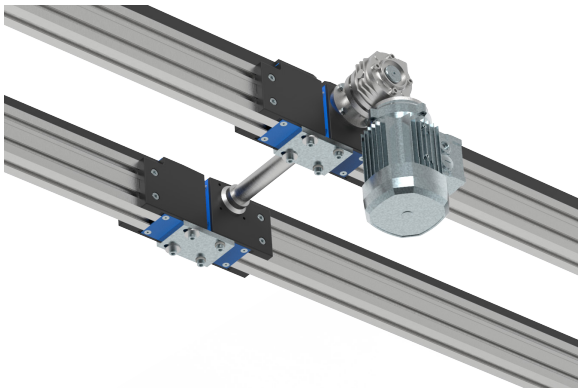
PSC–90

PSB–90

The connecting coupling between **17CDML/17BDML** and **17CRU/17BRU**.

The kit consists of:
– 2x connecting plate
– connecting elements





Code

EXAMPLE OF ORDERING

17VE 002
Connecting coupling II

Connecting coupling III

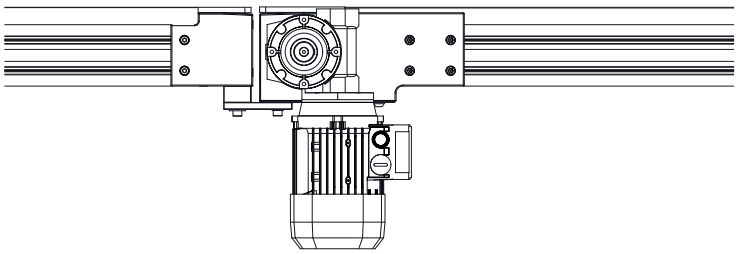
ESD

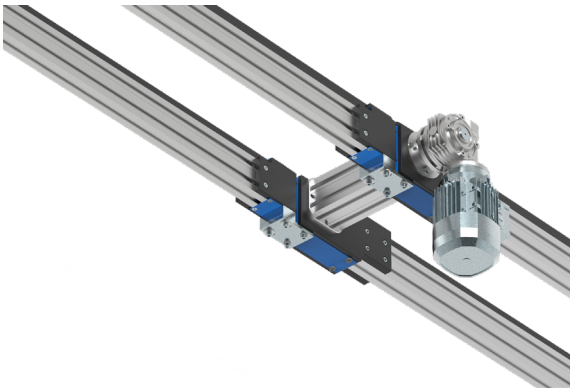
PSC–90

PSB–90

The connecting coupling between **17CDMH/17BDMH** and **17CRU/17BRU**.

The kit consists of:
– 2x connecting plate
– connecting elements





Code

EXAMPLE OF ORDERING

17VE 003
Connecting coupling III

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