

MiniTec FMS SYSTEM

Flexible Modular System



PRODUCTS



SOLUTIONS



SERVICE

FMS SYSTEM

All information in this catalog has been carefully checked. For any errors or incomplete information we can not accept any liability.

We reserve the right for technical changes, particularly those serving the technical improvement.

Our kit is designed primarily for indoor use. Outdoor applications require separate consideration.

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	INTRODUCTION	4	CHAPTER 3	CONVEYORS	18
	THE COMPANY	4		LIGHT BAND/CHAIN CONVEYOR	21
	GENERAL CHARACTERISTICS	7		LIGHT BAND/BAND CONVEYOR	21
	TECHNICAL DATA	10		HEAVY BAND/CHAIN CONVEYOR	22
				HEAVY BAND/BAND CONVEYOR	22
				LIGHT CHAIN/CHAIN CONVEYOR	23
				HEAVY CHAIN/CHAIN CENTRAL CON.	23
				HEAVY CHAIN/CHAIN CONVEYOR	24
CHAPTER 1	PROFILE SYSTEMS	12	CHAPTER 4	SUPPORTS	25
	ALUMINUM PROFILES	13		SIMPLE SUPPORT LEG	26
	SERIES 30	13		DOUBLE HORIZONTAL SUPPORT	26
	SERIES 45	13		DOUBLE VERTICAL SUPPORT	27
	SERIES 90	14			
	FMS SERIES	14			
CHAPTER 2	WORKPIECE CARRIER	15	CHAPTER 5	TRANSFERS	28
	PLATE WORKPIECE CARRIER	16		KEEPING PALLET ORIENTATION	29
	FRAME WORKPIECE CARRIER 35X35	16		TURNING DISC	29
	FRAME WORKPIECE CARRIER 45X45	17		CHAIN CURVE	29
				FLAT CURVE	30
				TURNTABLE	30
				CHANGING PALET ORIENTATION	31
				FLAT TRANSFER	31
				ROLLER TRANSFER	31
				BELT TRANSFER	32
				CHAIN TRANSFER	32

CHAPTER 6	LIFTS	33	CHAPTER 9	ACCESSORIES	48
	PNEUMATIC LIFT	34		FMS ACCESSORIES	49
	ELECTRIC LIFT	34			
CHAPTER 7	WORKPIECE CARRIER POSITIONERS	35	CHAPTER 10	APPLICATION EXAMPLES	54
	INDEPENDENT POSITIONER LIFT	36			
	LIFT-POSITIONING UNIT	36			
	LIFT-POSITIONING-UNIT WITH WEDGE	37			
	LIFT-TURNING UNIT	37			
CHAPTER 8	STOPPERS	38			
	UNDAMPED	39			
	PNEUMATIC	39			
	ELECTRIC	40			
	DAMPED	41			
	PNEUMATIC	41			
	ELECTRIC	42			
	ANGLE DAMPERS	43			
	INDEX CYLINDERS	44			
	ANTI-BOUNCE STOPS	45			
	SWITCH HOLDERS	46			



MiniTec Some data



1986

Foundation



60

Million Euros
turnover (2020)



60

Sales and service
partners
all over the world



420

Employees of which
250 worldwide



11

Locations: Germany,
China, Slovakia,
Slovenia, Spain,
United States,
France, England.

THE ART OF SIMPLICITY

MiniTec has developed continuously from a specialist for miniature guides to a leading technology company and special machine manufacturer.

Today our 420 experts at 11 locations in Germany, France, USA, United Kingdom, Spain, Slovenia and China develop tailored solutions for our clients. Over 60 partners worldwide ensure reliable service and competent consulting.

Based on our construction system we implement sophisticated solutions for a variety of tasks in all industrial sectors. Among our clients are important industrial companies worldwide. We are working on trend-setting developments in Ergonomics and Industry 4.0 cooperation with leading research institutes, such as the DFKI or the Fraunhofer Institute. MiniTec Smart Solutions GmbH, which develops interactive assistance systems for manual assembly, ensures the transfer of scientific findings into practice. The motto for our complete solutions matches closely the high technical demand: The Engineers Choice.



MiniTec has become one of the specialist companies in chain and belt FMS conveyors. A company in evolution and constant development of products and special machines to meet the needs of our customers.

The company

We have been innovating quality products for various industries for more than 30 years, from a modular system to a complete customized solution.

What began in 1986 with miniature linear guides, has grown into a globally recognized, full-service provider with more than 420 employees at 11 plants and more than 60 partners and service bases globally, as well as proprietary production facilities in Germany, China, Slovakia, Slovenia, Spain, United States, France and United Kingdom.

Modular System

Our modular system and our linear technology are based on the same principle. Our designers and engineers are passionate about the principles that characterise all MiniTec products: the greatest possible simplicity, no machining, unlimited application possibilities with few components and consistent compatibility. We constantly strive to avoid senseless product diversity. Shortest assembly time, avoidance of processing and reduced storage have highest priority. We also pay special attention to ergonomic design of our components. Well-known companies worldwide use our components for equipment, automation technology and plant construction with success. In cooperation with leading research institutes, the system is constantly being further developed to meet the latest requirements. Our customers benefit from our intensive cooperation in scientific projects such as SmartFactory and the latest findings in workplace design. Future-oriented research results are thus incorporated into our development at an early stage.

Integral service

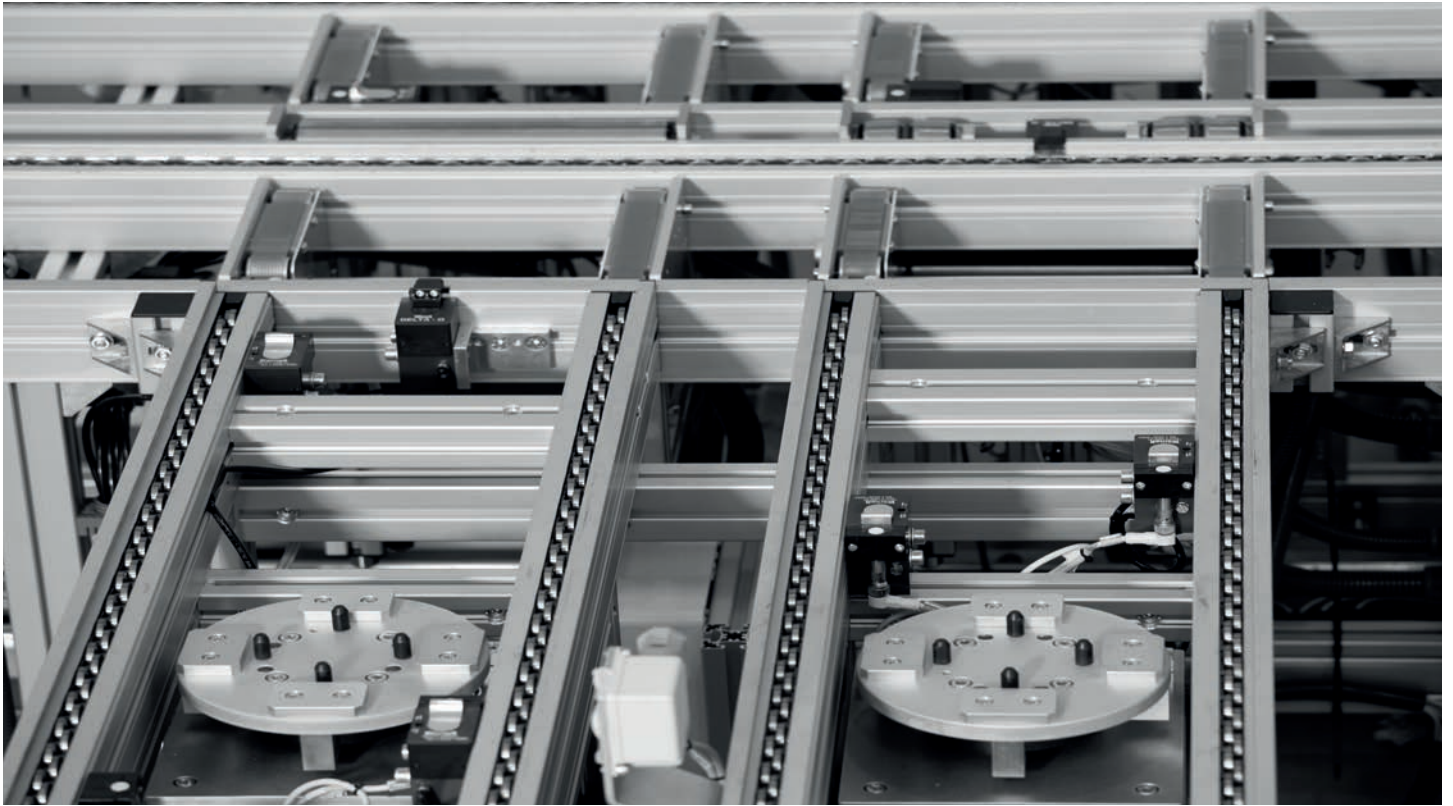
Our technical department develops various solutions with our FMS system for any branch of industry. In continuous cooperation with our clients, from all the departments of our company, we try to provide the best service in all phases of each project. We analyze the needs of each client, develop technical solutions, electrical designs, manufacture of control and automation cabinets, installation and commissioning. All of this, ensuring economic solutions with transport technologies to complete your production lines.

Quality

Our FMS transport system complies with all safety and quality standards. All of our components have been designed and tested under real operating conditions, to achieve a reliable and durable transport system. In all the lines sent from our facilities, each and every one of the assembled components has been tested. All MiniTec products comply with the ISO 9001 quality certification.

Environmental Protection

The careful use of resources and active environmental protection are among the principles of our corporate philosophy. Compliance with the environmental protection criteria is controlled in accordance with DIN EN ISO 14001 and regularly checked by external auditors. This also includes the responsible use of energy and the continuous improvement of energy efficiency.

FLEXIBLE ASSEMBLY SYSTEM | **FMS**

Our FMS (Flexible Modular System) assembly lines provide the optimal solution for the assembly and/or assembly of serial parts both manually and automatically: automotive components (seats, headlights, dash boards, etc.), household appliances (dishwashers, washing machines, etc.) and others sectors (food, glassware, pharmaceuticals, cosmetics, etc). Numerous installations for prestigious suppliers of recognized brands guarantee the reliability and quality of this system for many years.

FMS assembly lines are flexible pallet or workpiece transport systems, which can be transported through of conveyor belts, toothed belts or accumulation roller chains.

The pallets are stopped through pneumatic or electric stops with or without damping depending on the needs of each project. We have a wide range of stops indicated for each case.

We also offer a wide variety of indexers/positioners adaptable to the load and/or dimensions of the pallet to be indexed. These systems are used when a precise stop is required to perform automated operations with a robot or manipulator. Our positioners guarantee high precision and repeatability.

Ch. 2 WORKPIECE CARRIER

p.15

- Easily machined aluminium sheet.
- Accessible from all sides, even underneath.
- Feet of anti-static polyethylene.
- Wheels on corners reduce lateral friction and improve guidance.
- Centring ferrules for precision docking.
- Special pieces for position detection.

Ch. 6 LIFTS

p.33

- Electrical or pneumatic vertical displacement.
- Guidance by ball runners on prismatic rails.

Ch. 3 HEAVY BAND/ROLLER CONVEYOR

p.18

- Variety of models for most applications.
- Continuous mode operation.
- Allow pallets to accumulate.
- Constructed with extruded aluminium sections.
- Easily enlarged/reusable.
- Specific parts for position detection.
- Maximum load 50 kg/m.
- Low noise level.

Ch. 7 POSITIONING LIFTS

p.35

- Lift and position the pallet with precision for automatic operations.
- The rotating model permits the pallet's orientation to be altered.

Ch. 5 180° TURNTABLE

p.28

- Simple design.
- Without any control devices.
- Practically maintenance-free.
- Maintains pallet orientation.

Ch. 5 FLAT CURVE

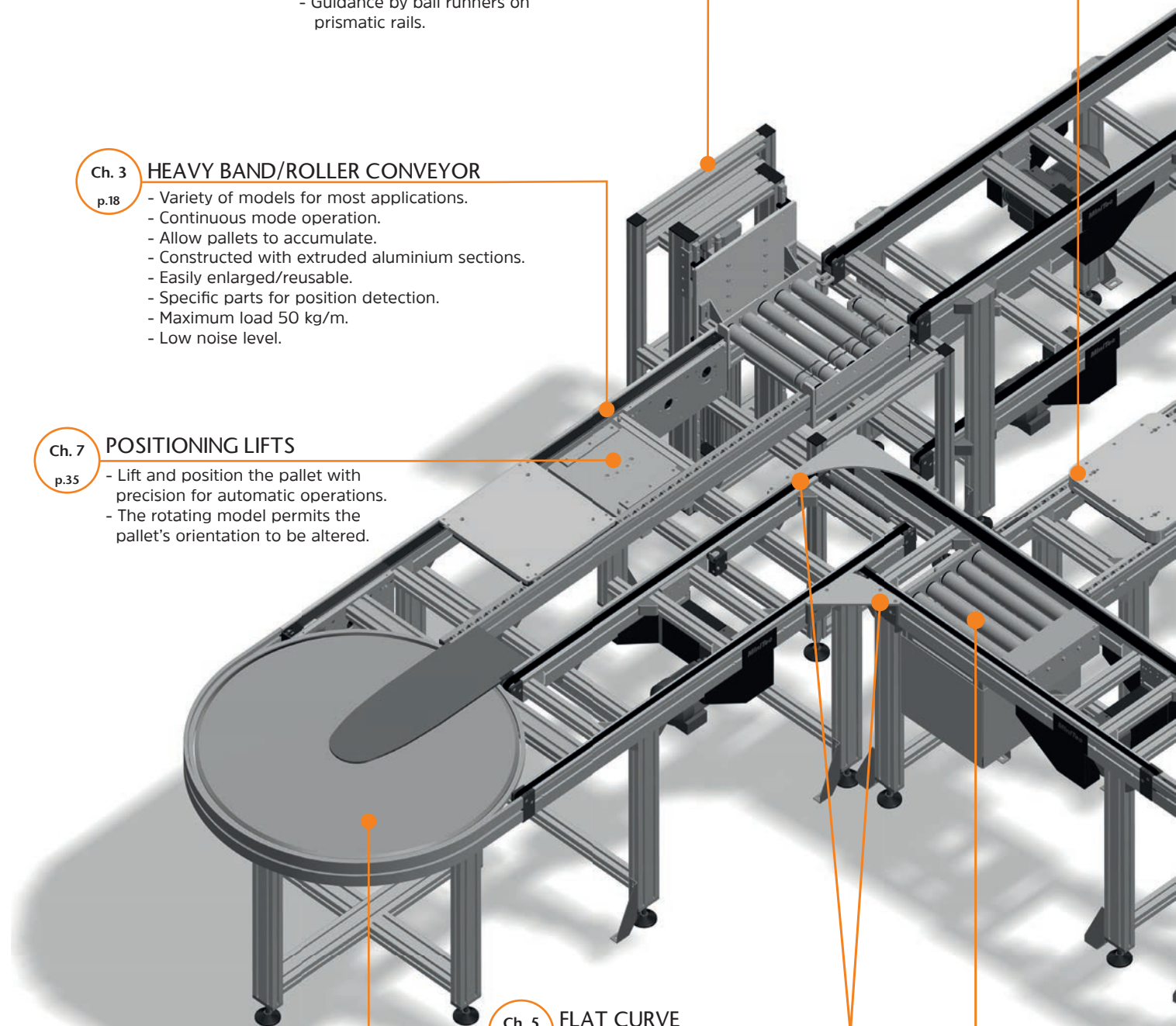
p.28

- Divert pallet at 90°.
- Maintains pallet orientation.
- Motorization not required due pallet inertia.

Ch. 5 ROLLER TRANSFER

p.28

- Minimum space occupied.
- Easy integration.
- Elevate and transfer the pallet at 90°.
- Doesn't maintain pallet face travel direction.



90° TURNTABLECh. 5
p.28

- Simple design.
- Without any control devices.
- Practically maintenance-free.
- Maintains pallet orientation.

STOPPERSCh. 8
p.38*Detaining stoppers*

- In various sizes, with or without dampers, make pallet dosing possible.

Switch Holders

- Various types of switch holders to ensure pallet presence/transit control.

LIFT-POSITIONING-UNIT WITH WEDGECh. 7
p.35

- Lifts and positions the pallet.
- Supports vertical forces of up to 10.000 kg.

FLAT TRANSFERCh. 5
p.28

- Divert pallet at 90°.
- For Band FMS.
- Transfer due pallet inertia.
- Doesn't maintain pallet face travel direction.

SUPPORTCh. 4
p.25

- Structure in aluminum profile.
- Die-cast aluminum feet with anti slip rubber.
- Steel folded floor mounting angle.

HEAVY CHAIN/CHAIN CONVEYORCh. 3
p.18

- Variety of models for most applications.
- Continuous mode operation.
- Allow pallets to accumulate.
- Constructed with extruded aluminium sections.
- Easily enlarged / reusable..
- Specific parts for position detection.
- Maximum load 200 kg/m.

CHAIN CURVECh. 5
p.28

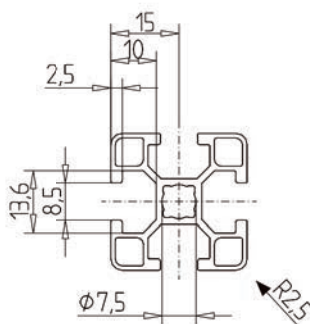
- Accumulation roller chain transfer.
- Divert pallets at any angles without level change.
- Maintains pallet orientation.
- Accumulation allowed.

PROFILE SERIES 30

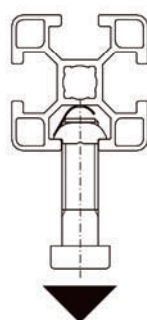
GROOVES

One system for profiles 16 to 60 mm.
The grooves are identical for all profiles.
Groove width: 8,5 - 0,3 mm.

BASIC DIMENSIONS

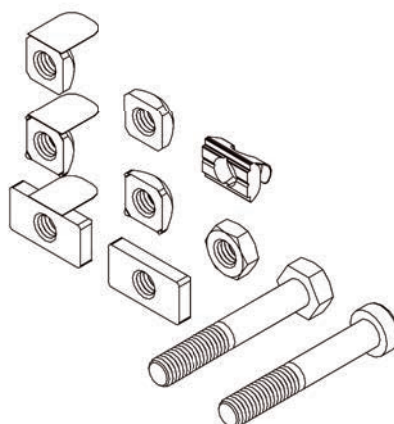


LOAD CAPACITY



$F = 2.600 \text{ N}$

USABLE SCREWS AND NUTS

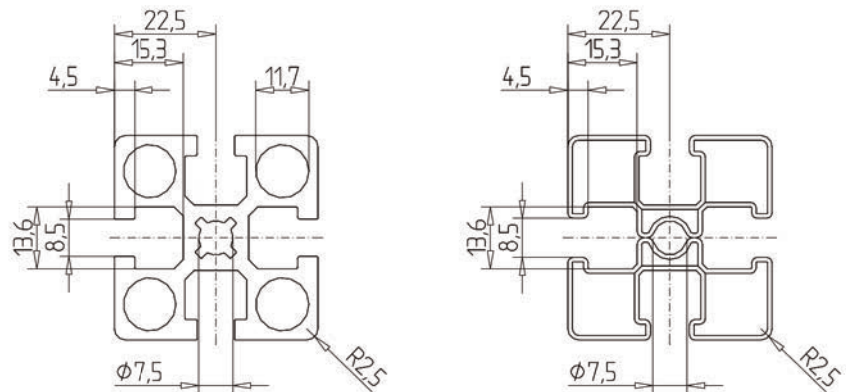


PROFILE SERIES 45

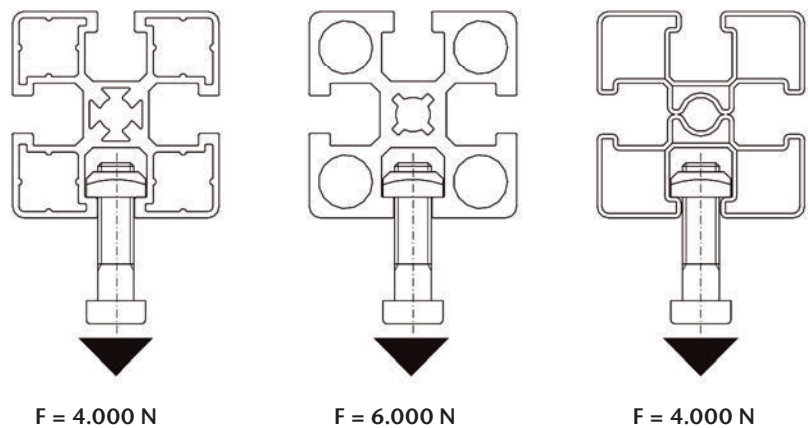
GROOVES

One system for profiles from 19 to 270 mm. The grooves are identical in all profiles. Groove width: 8.5 - 0.3 mm. The grooves are designed to accept DIN M8 screws with 13 mm head diameter and 13 mm outer nuts. Square and hexagon nuts and screws are secured against rotation.

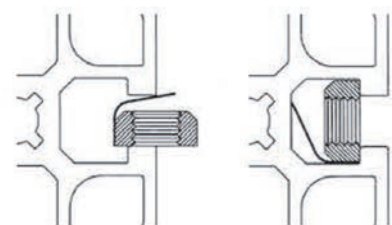
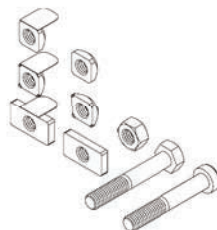
BASIC DIMENSIONS



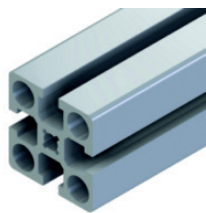
LOAD CAPACITY



USABLE SCREWS AND NUTS



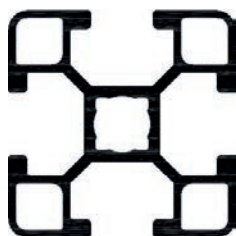
Sliding nuts can be swivelled in at any point of the profil.



ALUMINUM PROFILES

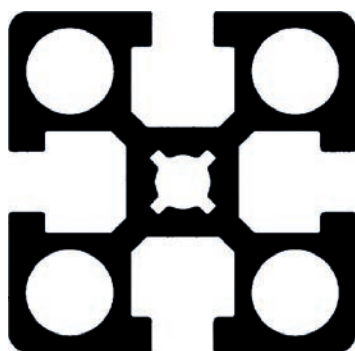
PROFILE SECTIONS

PROFILES SERIES 30

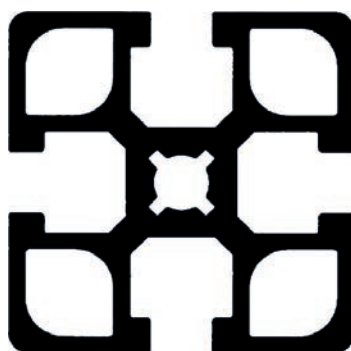


30 x 30
20.1068/0

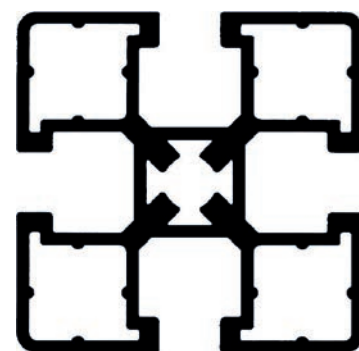
PROFILES SERIES 45



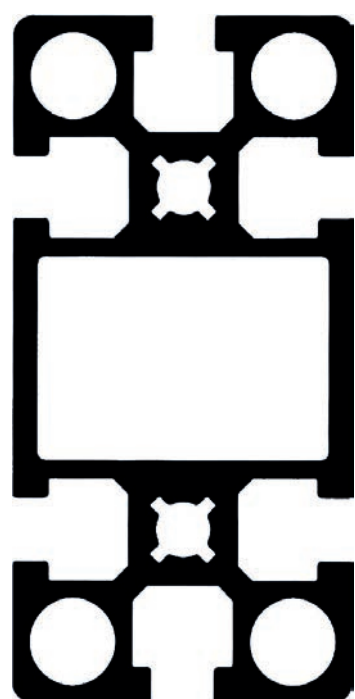
45 x 45
20.1006/0



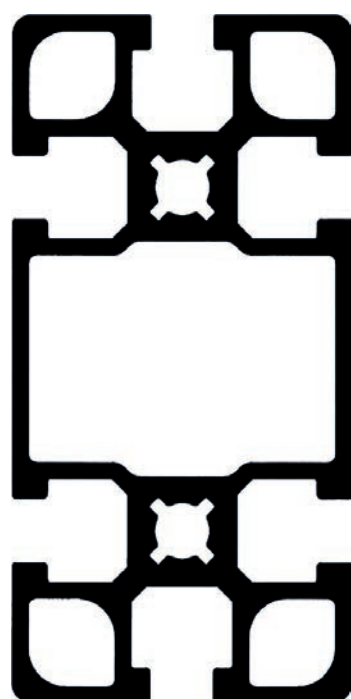
45 x 45 F
20.1033/0



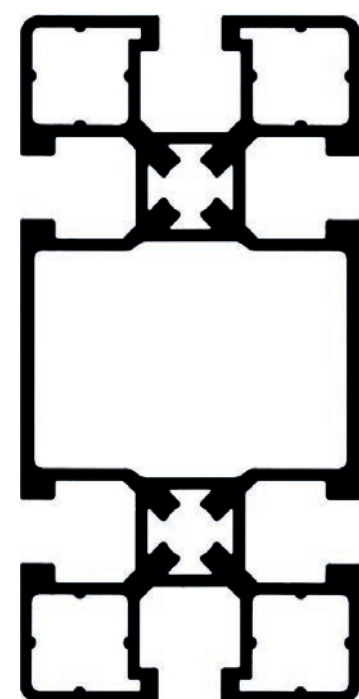
45 x 45 UL
20.1063/0



45 x 90
20.1009/0

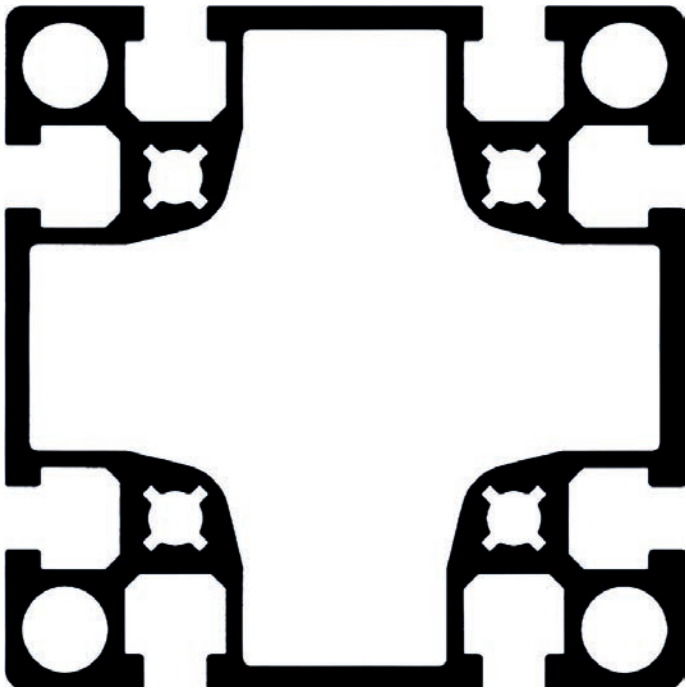


45 x 90 F
20.1032/0

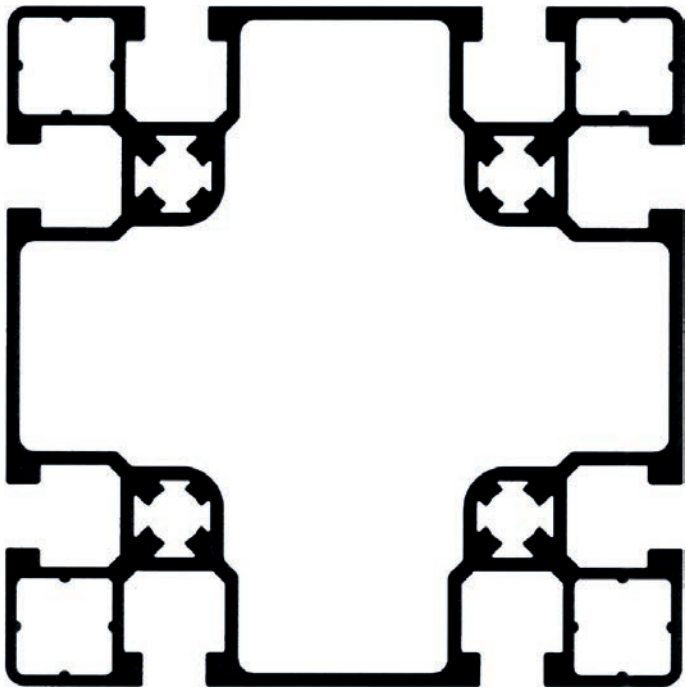


45 x 90 UL
20.1067/0

PROFILE SECTIONS

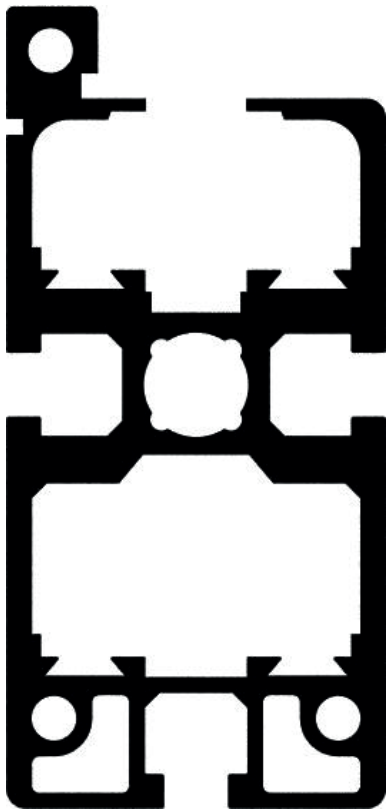


90 x 90 L
20.1010/0

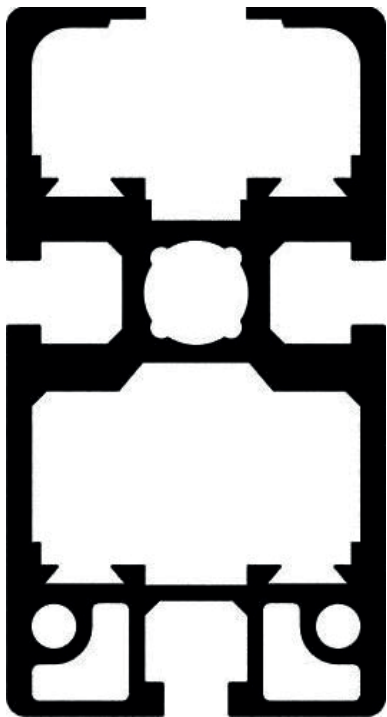


90 x 90 UL
20.0999/0

FMS PROFILES



50 x 106
53.1901/0



50 x 94
53.1850/0



PLATE WORKPIECE CARRIER | *PALP*

16



FRAME WORKPIECE CARRIER 35X35 | *PALM35*

16

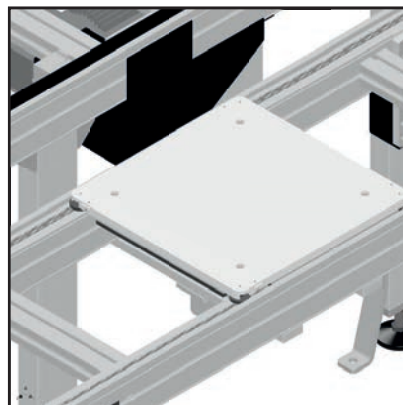
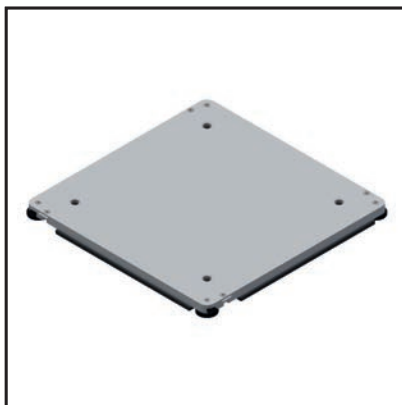
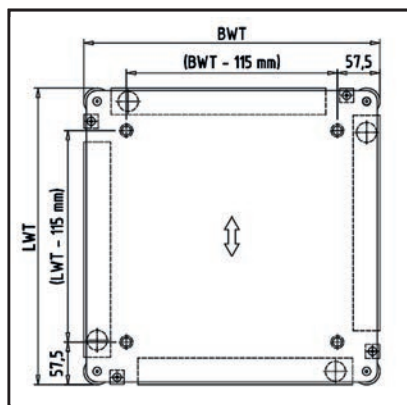


FRAME WORKPIECE CARRIER 45X45 | *PALM45*

17

PLATE WORKPIECE CARRIER

Part no. 54.5001/0



TECHNICAL CHARACTERISTICS

- Anodized aluminum plate, thickness 15 mm.
- Polyethylene slides.
- 4 indexing bushings.
- 4 lower detection points.
- Minimum size 160x160 mm, maximum size on request.

APPLICATIONS

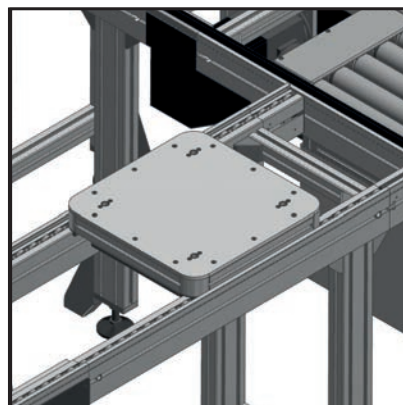
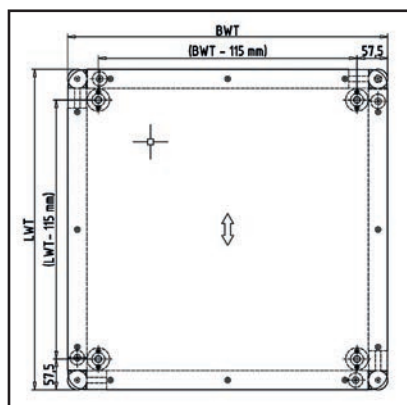
- Support and transport of parts, for all types of industries.

OPTIONS

- Side detection.
- Piece-holder tooling.
- Special machining.
- Polyurethane bumpers for shock absorption.
- Coding system.
- All these options on request.

FRAME WORKPIECE CARRIER 35X35

Part no. 54.5003/0



TECHNICAL CHARACTERISTICS

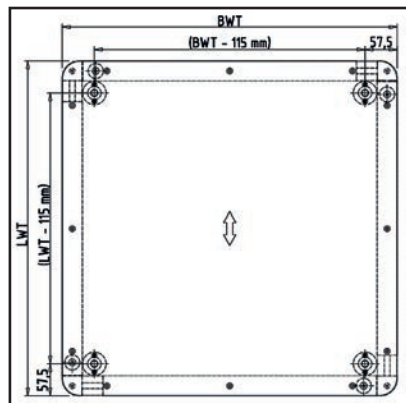
- 35x35 profile frame and 8 mm anodized aluminum plate.
- Polyethylene slides.
- 4 indexing bushings.
- 4 lower detection points.
- The frame pallet is recommended for medium and large sizes (from 600x600 to 1.000x2.000 mm).

APPLICATIONS

- Support and transport of parts, for all types of industries.

OPTIONS

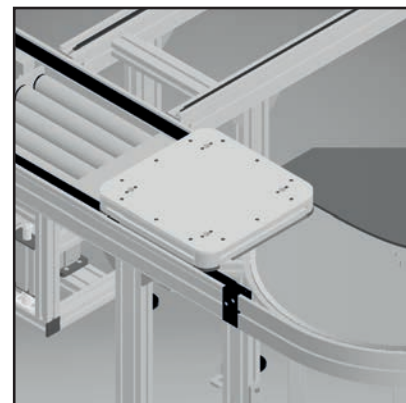
- Side detection.
- Piece-holder tooling.
- Special machining.
- Polyurethane bumpers for shock absorption.
- Coding system.
- All these options on request.

FRAME WORKPIECE CARRIER 45X45*Part no. 54.5005/0***TECHNICAL CHARACTERISTICS**

- 45x45 profile frame and 8 mm anodized aluminum plate.
- Polyethylene slides.
- 4 indexing bushings.
- 4 lower detection points.
- The frame pallet is recommended for medium and large sizes (from 600x600 to 1.000x2.000 mm).

**APPLICATIONS**

- Support and transport of parts, for all types of industries.

**OPTIONS**

- Side detection.
- Piece-holder tooling.
- Special machining.
- Polyurethane bumpers for shock absorption.
- Coding system.
- All these options on request.



LIGHT BAND/CHAIN CONVEYOR | *TBCL* 21



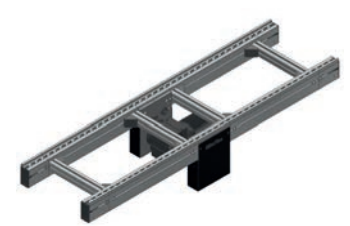
LIGHT BAND/BAND CONVEYOR | *TBBL* 21



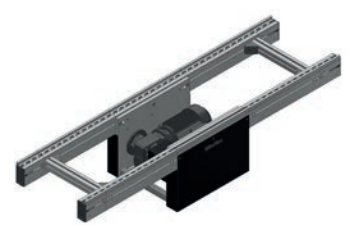
HEAVY BAND/CHAIN CONVEYOR | *TBCP* 22



HEAVY BAND/BAND CONVEYOR | *TBBP* 22



LIGHT CHAIN/CHAIN CONVEYOR | *TCCL* 23



HEAVY CHAIN/CHAIN CENTRAL CONVEYOR | *TCCPC* 23




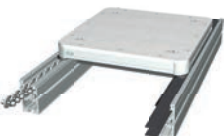





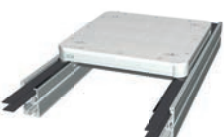














HEAVY CHAIN/CHAIN CONVEYOR | *TCCP* 24

GEAR MOTOR CHARACTERISTICS

SPEEDS AND LOADS RELATION TABLE

Recommended gear motors according to the relation between speed and maximum total load in accumulation.

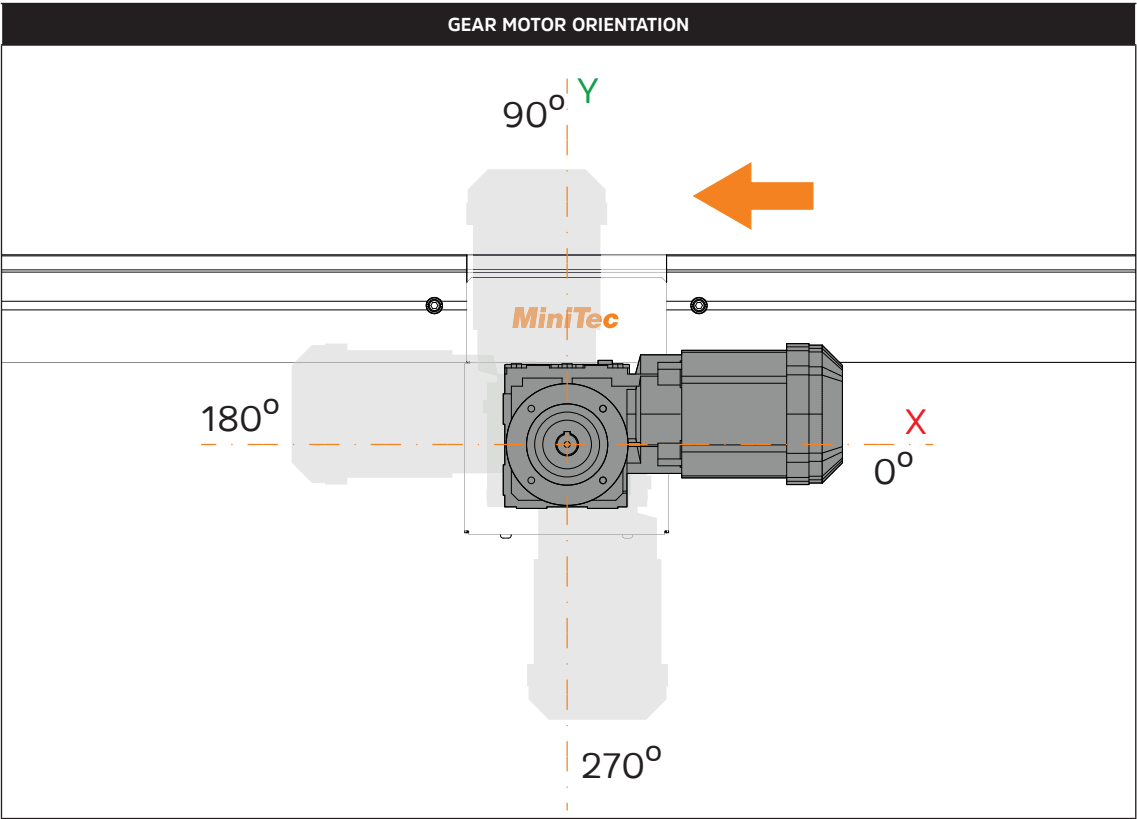
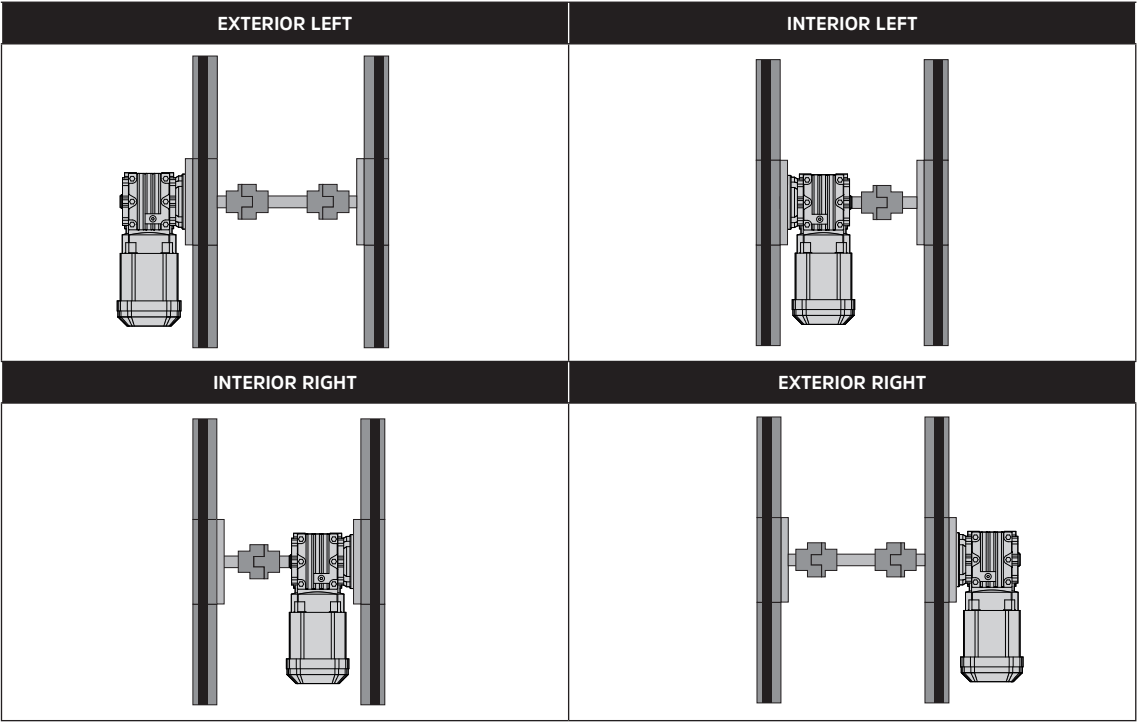
 kg				
<1200	TCCP/TCCPC	TCCP/TCCPC	TCCP/TCCPC	TCCP/TCCPC
<1000				
<800				
<400	TCCL	TCCL	TCCL	TCCL
<350				
<300	TBCP TBBP	TBCP TBBP	TBCP TBBP	TBCP TBBP
<250				
<200				
<150	TBCL TBBL	TBCL TBBL	TBCL TBBL	TBCL TBBL
<100				
<80				
<60	TBCL TBBL	TBCL TBBL	TBCL TBBL	TBCL TBBL
<50				
FMS	6	9	12	15
	v in m/min			

FMS	TRANSMISSION TYPE			MODEL	PAGE
TBCL	Light Band/Chain				21
TBCP	Heavy Band/Chain				22
TBBL	Light Band/Band				21
TBBP	Heavy Band/Band				22
TCCL	Light Chain/Chain				23
TCCPC	Heavy Chain/Chain Central				23
TCCP	Heavy Chain/Chain				24

GEAR MOTOR MOUNTING POSITION & ORIENTATION

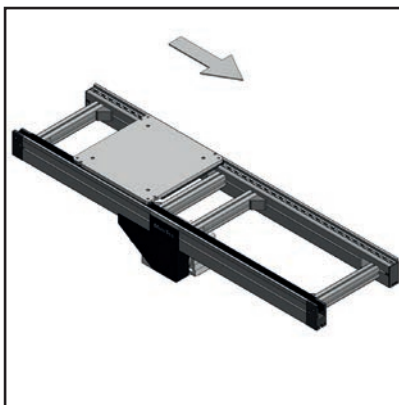
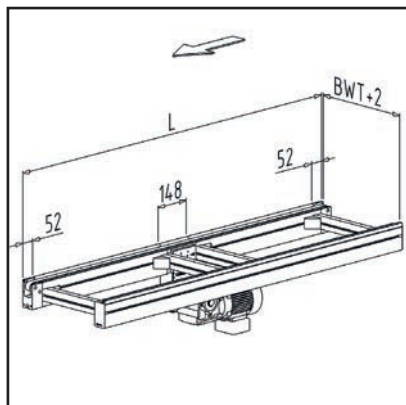
There are different mounting variants in the positioning and orientation of the motorization in the adaptable conveyors for different situations. It is necessary to indicate the conveying direction. The suitable motor type and gear box are chosen

depending on load, conveyor length, and speed. Also with different position of terminal box and input cable (data sheets on request).



LIGHT BAND/CHAIN CONVEYOR - TBCL

Part no. 54.5007/0

**TECHNICAL CHARACTERISTICS**

- Conveyor for loads up to 100 kg.
- Maximum conveyor length 6.000 mm.
- Maximum load 50 kg/m.
- Speed between 6 m/min and 18 m/min. (Other speeds on request).
- Brand, position and orientation of the motor to be defined.
- Configurable drive position.

APPLICATIONS

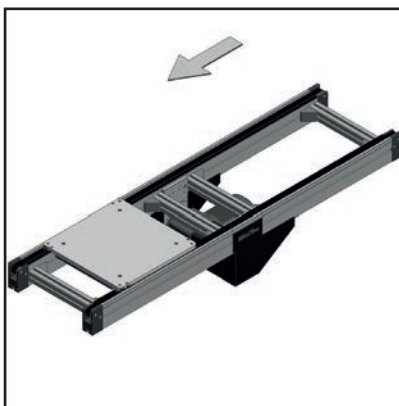
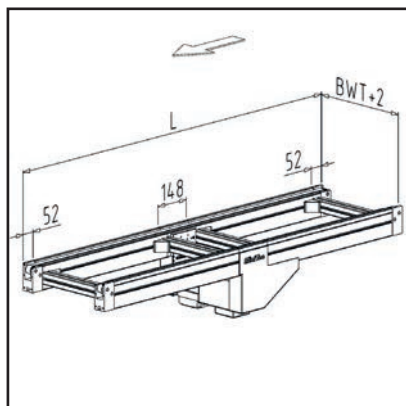
- Component transport for all types of industries.
- For environments free of oil and grease.
- Low noise level.

OPTIONS

- Side profile guide protection for pallets with metal slides, (see page 50).
- Profile without upper side guide.
- Reversible direction of advance.
- All these options on request.

LIGHT BAND/BAND CONVEYOR - TBBL

Part no. 54.5008/0

**TECHNICAL CHARACTERISTICS**

- Conveyor for loads up to 100 kg.
- Maximum conveyor length 6.000 mm.
- Maximum load 50 kg/m.
- Speed between 6 m/min and 18 m/min. (Other speeds on request).
- Brand, position and orientation of the motor to be defined.
- Configurable drive position.

APPLICATIONS

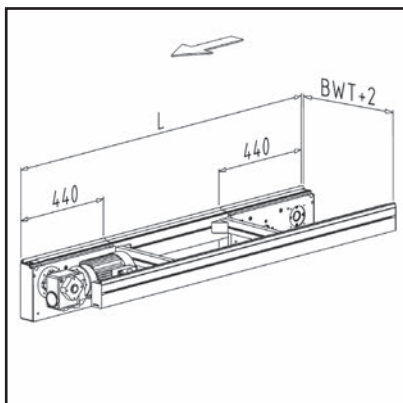
- Component transport for all types of industries.
- For environments free of oil and grease.
- Low noise level.

OPTIONS

- Side profile guide protection for pallets with metal skids, (see page 50).
- Profile without upper side guide.
- Reversible direction of advance.
- All these options on request.

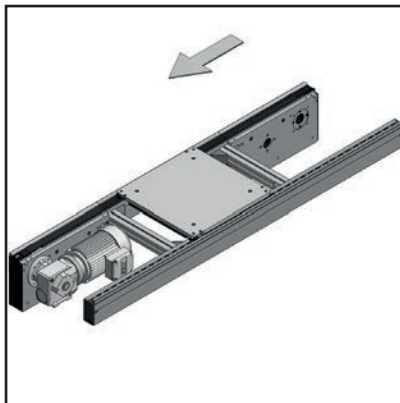
HEAVY BAND/CHAIN CONVEYOR - TBCP

Part no. 54.5009/0



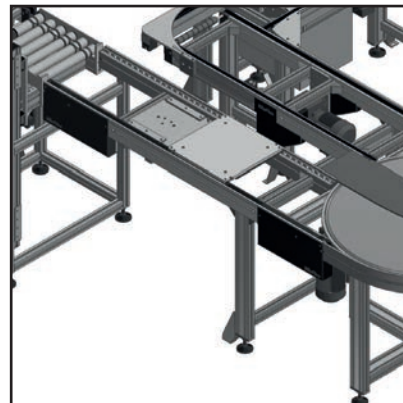
TECHNICAL CHARACTERISTICS

- Conveyor for loads up to 300 kg.
- Minimum conveyor length 2.000 mm and maximum 50.000 mm.
- Maximum load 50 kg/m.
- Speed between 6 m/min and 18 m/min. (Other speeds on request).
- Brand, position and orientation of the motor to be defined.
- Configurable drive position.



APPLICATIONS

- Component transport for all types of industries.
- For environments free of oil and grease.
- Low noise level.

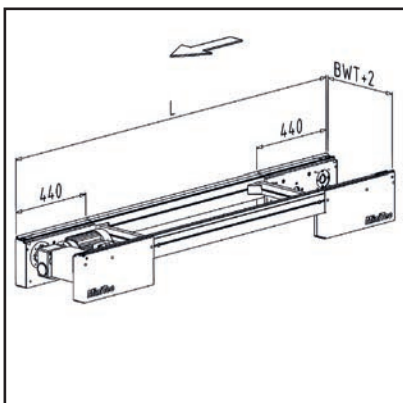


OPTIONS

- Side profile guide protection for pallets with metal skids, (see page 50).
- Profile without upper side guide.
- All these options on request.

HEAVY BAND/BAND CONVEYOR - TBBP

Part no. 54.5010/0



TECHNICAL CHARACTERISTICS

- Conveyor for loads up to 300 kg.
- Minimum conveyor length 2.000 mm and maximum 50.000 mm.
- Maximum load 50 kg/m.
- Speed between 6 m/min and 18 m/min. (Other speeds on request).
- Brand, position and orientation of the motor to be defined.
- Configurable drive position.



APPLICATIONS

- Component transport for all types of industries.
- For environments free of oil and grease.
- Low noise level.

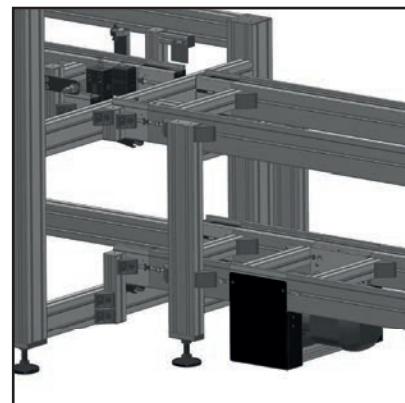
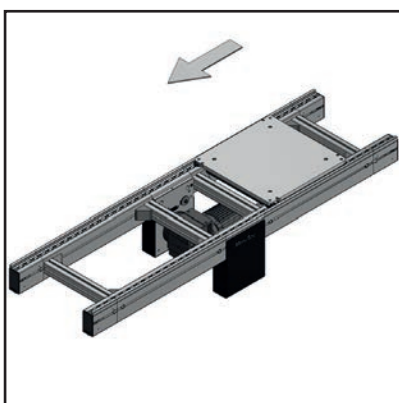
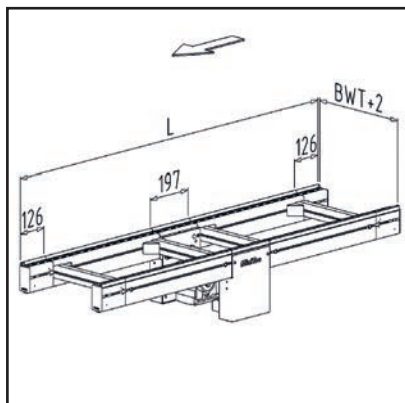


OPTIONS

- Side profile guide protection for pallets with metal skids, (see page 50).
- Profile without upper side guide.
- All these options on request.

LIGHT CHAIN/CHAIN CONVEYOR - TCCL

Part no. 54.5011/0

**TECHNICAL CHARACTERISTICS**

- Conveyor for loads up to 400 kg.
- Minimum conveyor length 449 mm and maximum 6.000 mm.
- Maximum load 200 kg/m.
- Speed between 6 m/min and 12 m/min. (Other speeds on request).
- Brand, position and orientation of the motor to be defined.
- Configurable drive position.

APPLICATIONS

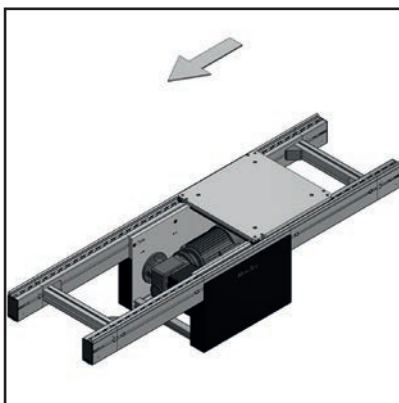
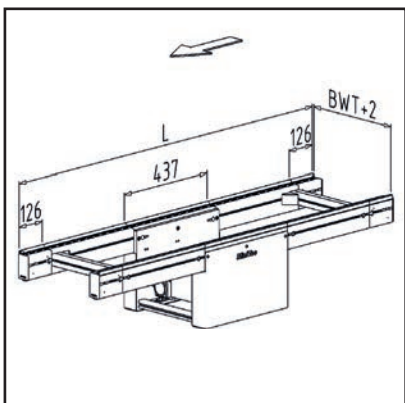
- Component transport for all types of industries.
- For environments free of oil and grease.
- Low noise level.

OPTIONS

- Reversible direction of advance.
- Side profile guide protection for pallets with metal skids, (see page 50).
- Pallet accelerator (see page 49).
- Profile without upper side guide.
- Automatic lubrication.
- All these options on request.

HEAVY CHAIN/CHAIN CENTRAL CONVEYOR - TCCPC

Part no. 54.5012/0

**TECHNICAL CHARACTERISTICS**

- Conveyor for loads up to 1.200 kg.
- Minimum conveyor length 1.000 mm and maximum 20.000 mm.
- Maximum load 200 kg/m.
- Speed between 6 m/min and 12 m/min. (Other speeds on request).
- Brand, position and orientation of the motor to be defined.
- Configurable drive position. Automatic chain tensioner.
- Not reversible.

APPLICATIONS

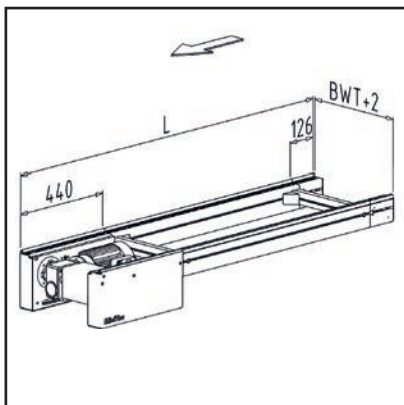
- Component transport for all types of industries.
- Clean environment or with presence of oils or fats.
- Low noise level.

OPTIONS

- Side profile guide protection for pallets with metal skids, (see page 50).
- Pallet accelerator (see page 49).
- Profile without upper side guide.
- Automatic lubrication.
- All these options on request.

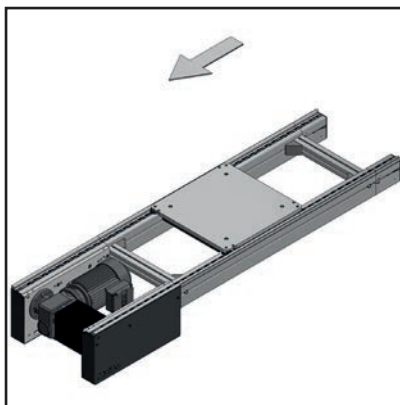
HEAVY CHAIN/CHAIN CONVEYOR - TCCP

Part no. 54.5013/0



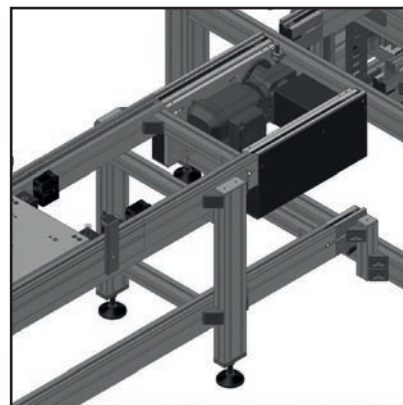
TECHNICAL CHARACTERISTICS

- Conveyor for loads up to 1.200 kg.
- Minimum conveyor length 1.000 mm and maximum 20.000 mm.
- Maximum load 200 kg/m.
- Speed between 6 m/min and 12 m/min. (Other speeds on request).
- Brand, position and orientation of the motor to be defined.
- Drive position at end. Automatic chain tensioner.
- Not reversible.



APPLICATIONS

- Component transport for all types of industries.
- Clean environment or with presence of oils or fats.
- Low noise level.



OPTIONS

- Side profile guide protection for pallets with metal skids, (see page 50).
- Pallet accelerator (see page 49).
- Profile without upper side guide.
- Automatic lubrication.
- All these options on request.



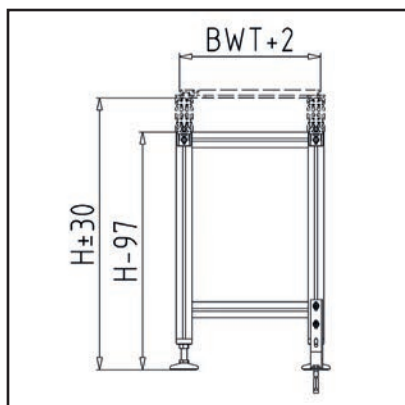
SIMPLE SUPPORT LEG | *APS* 26

DOUBLE HORIZONTAL SUPPORT | *APDH* 26

DOUBLE VERTICAL SUPPORT | *APDV* 27

SIMPLE SUPPORT LEG - APS

Part no. 54.5015/0

**TECHNICAL CHARACTERISTICS**

- Structure in aluminum profile.
- Aluminum feet with non-slip rubber.
- Maximum distance between supports 2.000 mm.
- Height adjustment ± 30 mm.
- Ground fixing kit.

APPLICATIONS

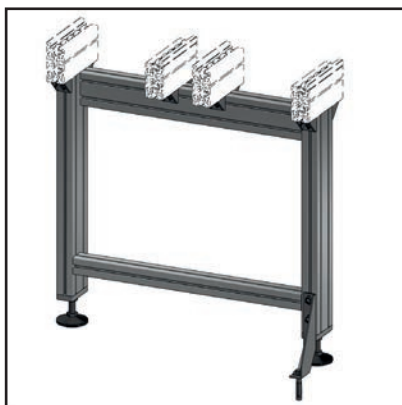
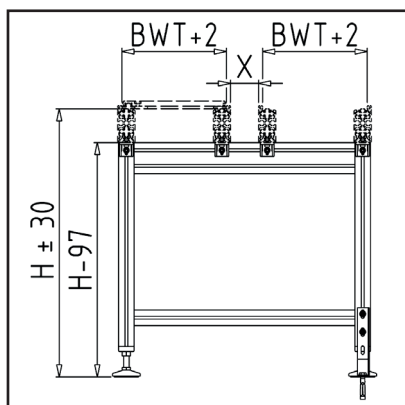
- Height adjustable structures.
- Easy line tilt.
- Fixation on articulated feet.

OPTIONS

- Clamping kit supply.
- Steel structure possibility.

HORIZONTAL DOUBLE SUPPORT - APDH

Part no. 54.5016/0

**TECHNICAL CHARACTERISTICS**

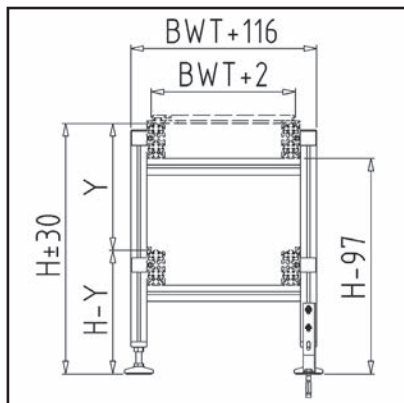
- Structure in aluminum profile.
- Aluminum feet with non-slip rubber.
- Maximum distance between supports 2.000 mm.
- Height adjustment ± 30 mm.
- Ground fixing kit.

APPLICATIONS

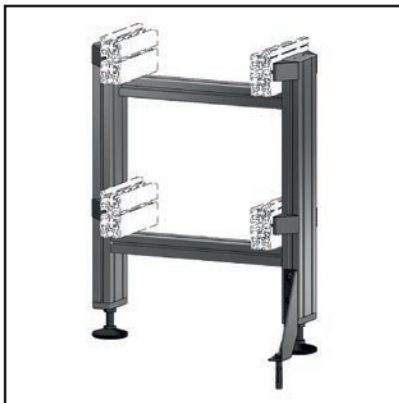
- Fixation on articulated feet.
- Height adjustable structures.
- Lines in parallel, (turning discs).

OPTIONS

- Supply of a fastening kit to the profile.
- Steel structure possibility.

VERTICAL DOUBLE SUPPORT - APDV*Part no. 54.5017/0***TECHNICAL CHARACTERISTICS**









- Structure in aluminum profile.
- Aluminum feet with non-slip rubber.
- Maximum distance between supports 2.000 mm.
- Height adjustment ± 30 mm.
- Ground fixing kit.

**APPLICATIONS**

- Fixation on articulated feet.
- Height adjustable structures.
- Double height lines, (elevator/descender).

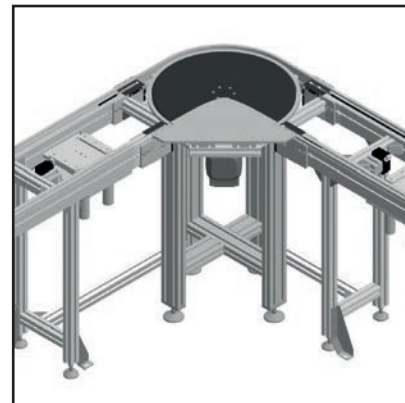
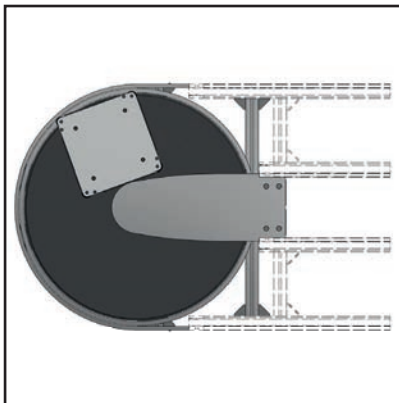
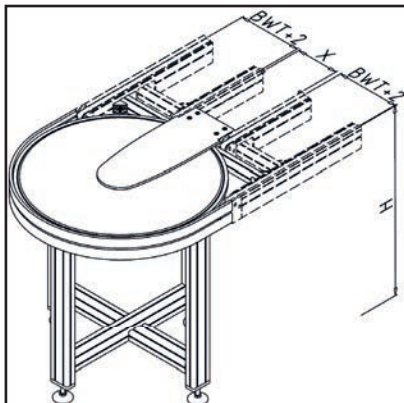
**OPTIONS**

- Profile fastening kit supply
- Steel structure possibility.

	TURNING DISC <i>DGI</i>	29
	CHAIN CURVE <i>CCA</i>	29
	FLAT CURVE <i>CPL</i>	30
	TURNTABLE <i>MGI</i>	30
	FLAT TRANSFER <i>TPL</i>	31
	ROLLER TRANSFER <i>TRO</i>	31
	BELT TRANSFER <i>TCO</i>	32
	CHAIN TRANSFER <i>TCA</i>	32

TURNING DISC - DGI

Part no. 54.5020/0

**TECHNICAL CHARACTERISTICS**

- Curve module with its own drive.
- Speed between 6 m/min and 12 m/min.
- Maximum weight of the pallet 100 kg.
- Disc diameter between 400 and 1.500 mm.
- 10 mm hard anodized and rectified aluminum disc.
- Pallet diversion for various angles without level change.
- Maintain the orientation of the pallet.
- Accumulation not allowed.

APPLICATIONS

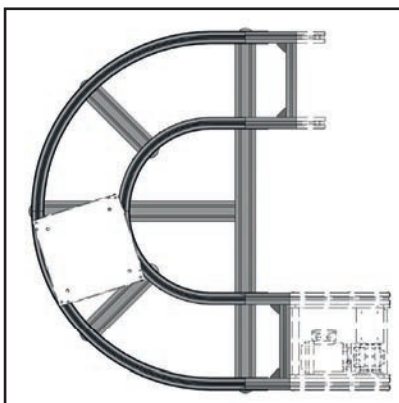
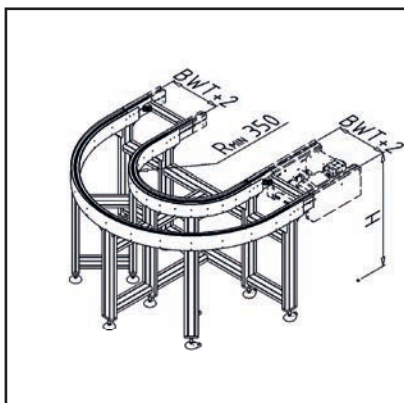
- Simple and robust solution.
- Low maintenance solutions
- Without control elements.
- Pallet transfer without changing pallet direction.

OPTIONS

- Standard angles of 90° and 180°.
- Possibility of any angle, on request.

CHAIN CURVE - CCA

Part no. 54.5021/0

**TECHNICAL CHARACTERISTICS**

- Speed between 6 m/min and 12 m/min.
- Accumulation roller chain transfer.
- Pallet diversion for various angles without level change.
- Maintain the orientation of the pallet.
- Accumulation allowed.
- It is not necessary to add new gear motors.

APPLICATIONS

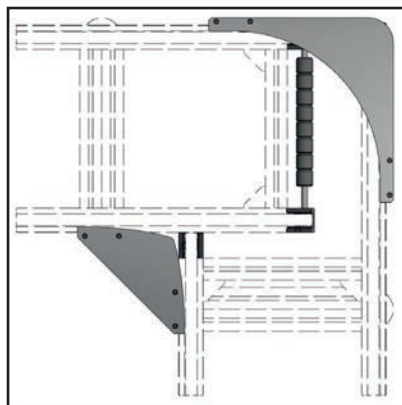
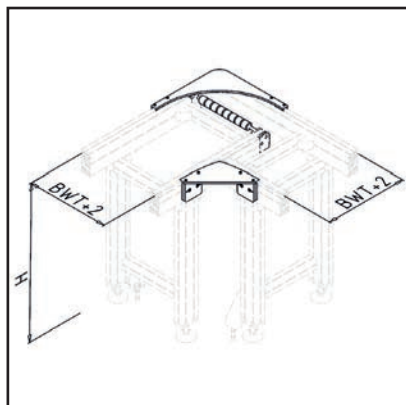
- Simple and robust solution.
- Economical solution.
- Less number of gear motors.

OPTIONS

- Standard angles of 90° and 180°.
- Possibility of any angle, on request.

FLAT CURVE - CPL

Part no. 54.5022/0



TECHNICAL CHARACTERISTICS

- 80°shore polyurethane roller material.
- Deflection of pallets at 90°.
- Maintain the orientation of the pallet.
- Accumulation not allowed.
- Take advantage of the inertia of the pallet, it does not require adding energy or control.

APPLICATIONS

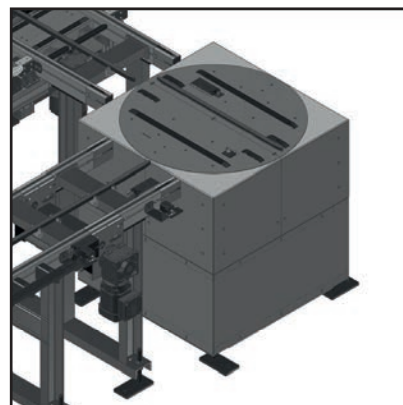
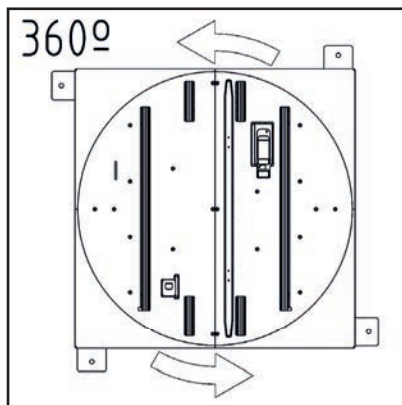
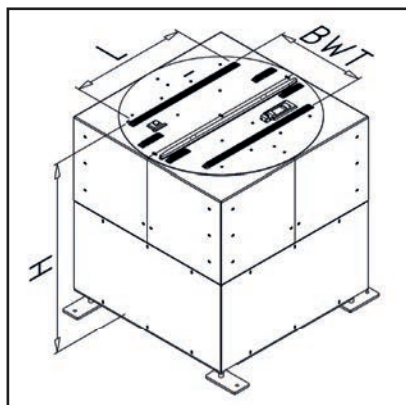
- Simple solution.
- Economical solution.

OPTIONS

- Fixed angle of 90°.

TURNTABLE - MGI

Part no. 54.5023/0



TECHNICAL CHARACTERISTICS

- Pallet size to consult according to application.
- Rotation regulation stops.
- Rotates to maintain or change the advance face of the pallet.
- 90 and 180° turns.
- Maximum weight of the pallet 100 kg. Other weights on request.

APPLICATIONS

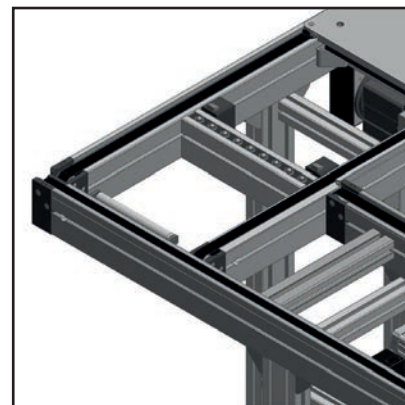
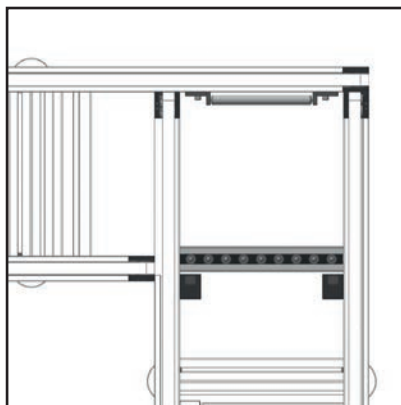
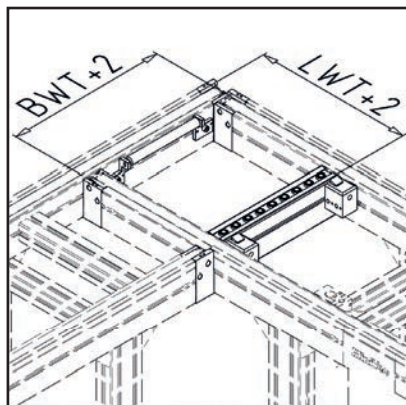
- Changing the pallet orientation in conveying direction.

OPTIONS

- Suitable for all FMS lines.
- Pneumatic and electric turns according to weights and speeds.

FLAT TRANSFER - TPL

Part no. 54.5024/0

**TECHNICAL CHARACTERISTICS**

- Deflection of pallets at 90°.
- It does not maintain the pallet orientation in conveying direction.
- Take advantage of the inertia of the pallet, it does not require adding energy or control.

APPLICATIONS

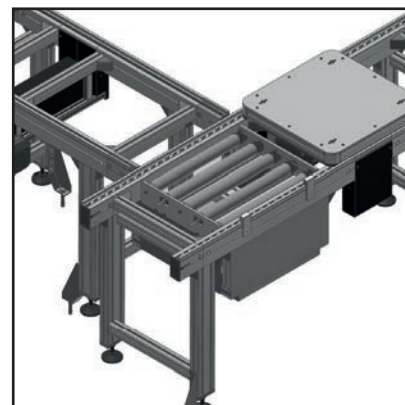
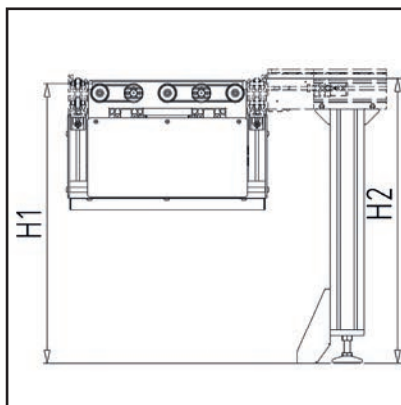
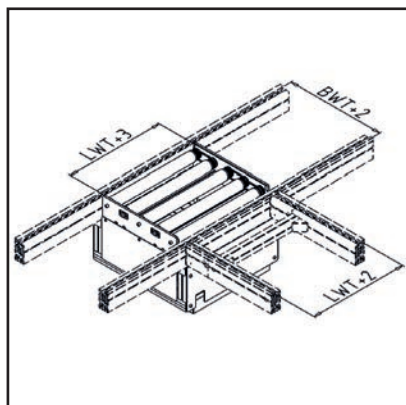
- Simple and economical solution.
- Limited weights and dimensions, on request.

OPTIONS

- Fixed angle of 90°

ROLLER TRANSFER - TRO

Part no. 54.5025/0

**TECHNICAL CHARACTERISTICS**

- Lifts and transfer the pallet at 90°.
- Pneumatic or electric lift.
- It does not maintain the pallet orientation in conveying direction.
- Horizontal movement through 24 VDC rollers.
- H1 = working height.
- H2 = top height.

APPLICATIONS

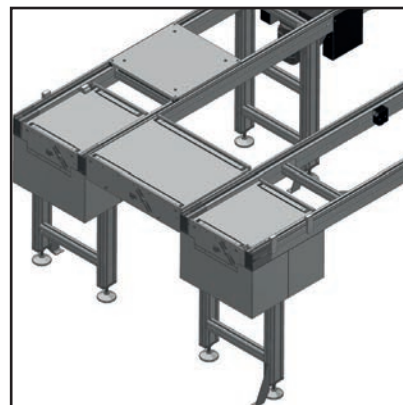
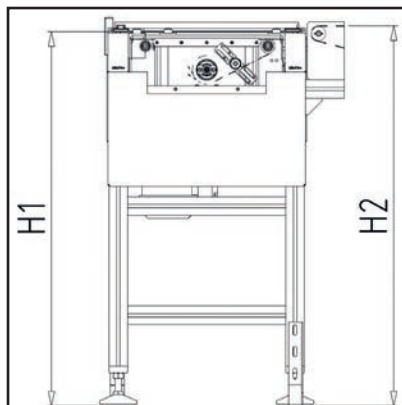
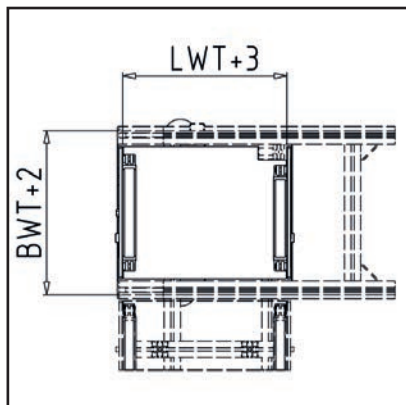
- Transfer of pallets to other conveyors or transfers.
- Simple solution with low maintenance.

OPTIONS

- Suitable for all FMS lines.
- Assembled to line or with independent structure.

BELT TRANSFER - TCO

Part no. 54.5026/0



TECHNICAL CHARACTERISTICS

- Lifts and transfer the pallet at 90°.
- Pneumatic or electric lift.
- It does not maintain the advance face of the pallet.
- Horizontal movement through three-phase motor or 24 VDC roller.
- H1 = working height.
- H2 = top height.

APPLICATIONS

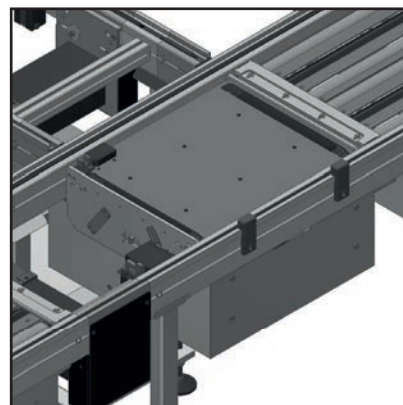
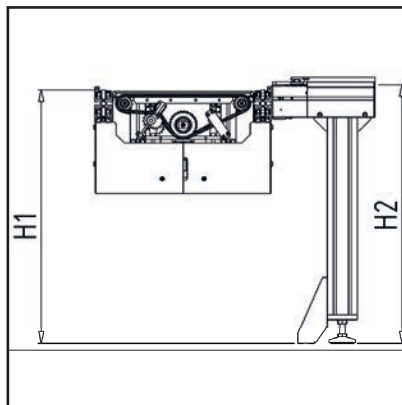
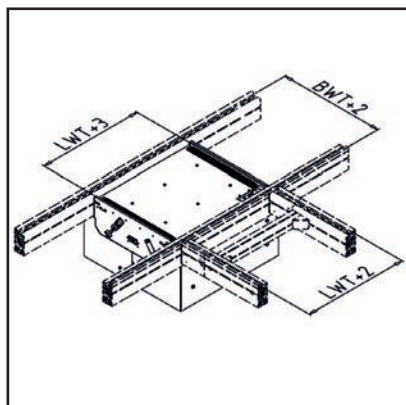
- Transfer of pallets to other conveyors or transfers.
- Silent solution.
- It is used for any installation.

OPTIONS

- Suitable for all FMS lines.
- Assembled to line or with independent structure.

CHAIN TRANSFER - TCA

Part no. 54.5027/0



TECHNICAL CHARACTERISTICS

- Raise and transfer the pallet at 90°.
- Pneumatic or electric lift.
- It does not maintain the advance face of the pallet.
- Horizontal movement through three-phase motor or 24 VDC roller.
- H1 = working height.
- H2 = top height.

APPLICATIONS

- Transfer of pallets to other conveyors or transfers.
- Presence of oil.
- Very robust solution.

OPTIONS

- Suitable for all FMS lines.
- Assembled to line or with independent structure.



PNEUMATIC LIFT | *ASN*

34

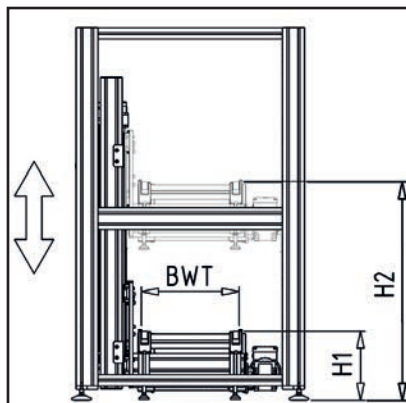


ELECTRIC LIFT | *ASE*

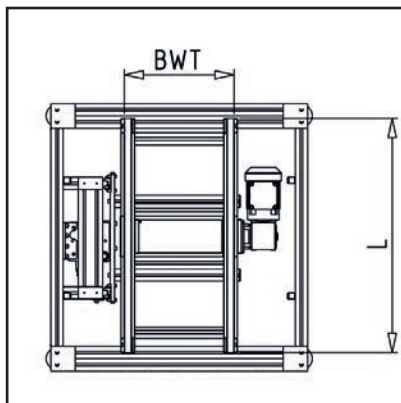
34

PNEUMATIC LIFT - ASN

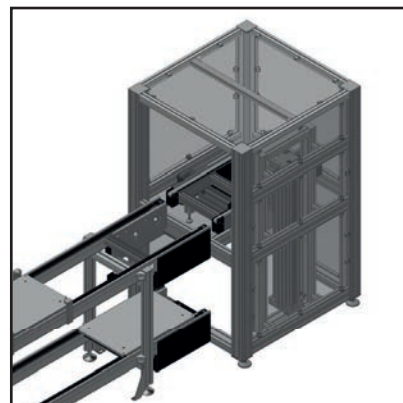
Part no. 54.5030/0

**TECHNICAL CHARACTERISTICS**

- Pneumatic lifting by rodless cylinder with guides or ISO cylinder with pulley and chain.
- Horizontal movement according to specification by three-phase motor, 24 VDC roller, belt, chain, etc.

**APPLICATIONS**

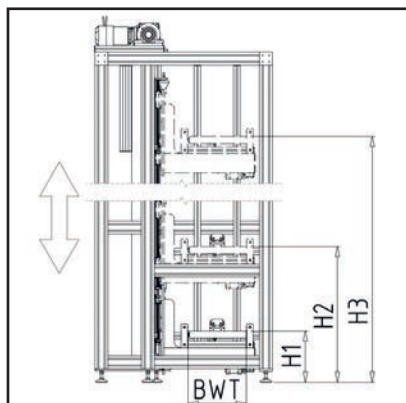
- Transfer pallets between lines of different levels.
- Low and medium speeds. Light and medium loads.
- Two stops, upper and lower.

**OPTIONS**

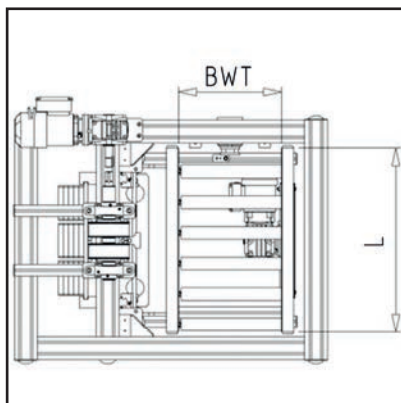
- Fully protected profile structure.
- Open structure with access to the pallet.
- Doors with security micro for easy maintenance.

ELECTRIC LIFT - ASE

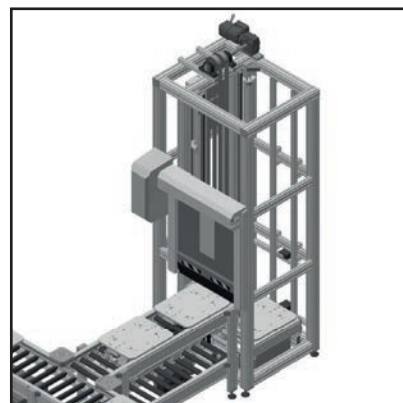
Part no. 54.5031/0

**TECHNICAL CHARACTERISTICS**

- Electric lifting by three-phase motor and toothed belt, spindle, chain, gear, etc.
- Horizontal movement according to specification by three-phase motor, 24 VDC roller, belt, chain, etc.

**APPLICATIONS**

- Transfer pallets between lines of different levels.
- Low, medium and high speeds. Light, medium and high loads.
- Multiple stops.

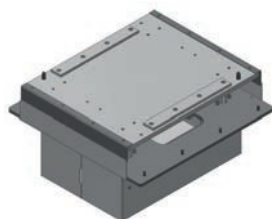
**OPTIONS**

- Fully protected profile structure.
- Open structure with access to the pallet.
- Doors with security micro for easy maintenance.



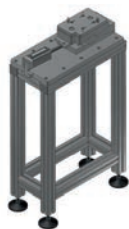
INDEPENDENT POSITIONER LIFT | *EPI*

36



LIFT-POSITIONING UNIT | *PCO*

36



LIFT-POSITIONING-UNIT WITH WEDGE | *PCU*

37

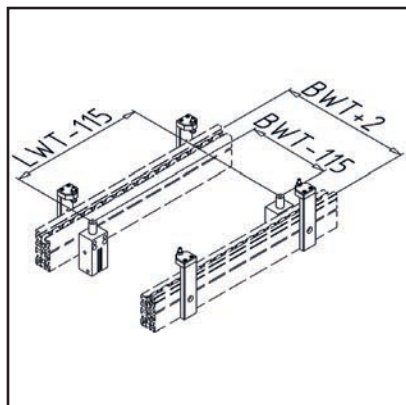


LIFT-TURNING UNIT | *PGR*

37

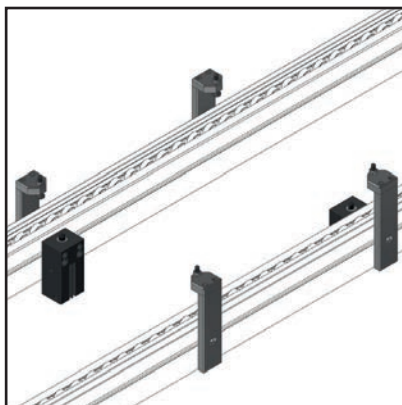
INDEPENDENT POSITIONER LIFT - EPI

Part no. 54.0379/0



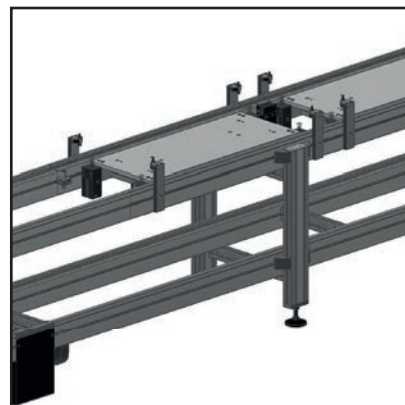
TECHNICAL CHARACTERISTICS

- Lifts and positions the pallet with a precision of $\pm 0,15$ mm.
- Lifts the pallet above the transport line 3mm.
- Easy to install standard cylinders.
- No additional guides.
- Brackets that limit the lift and prevent the pallet from being removed.



APPLICATIONS

- Simple solution with minimal maintenance.
- Precisely positioned for manual or automatic operations.
- Up to 100 kg/pallet.

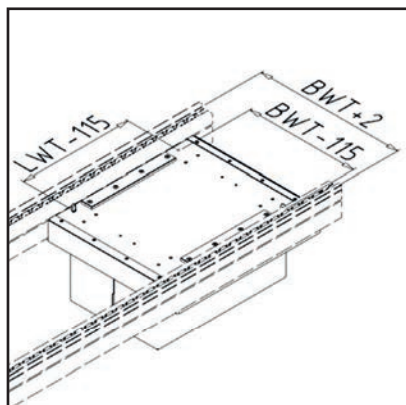


OPTIONS

- Suitable for all FMS lines.
- Modular, easy installation and changes of location.
- For plate and frame workpiece carriers.
- Possibility of mounting 4 cylinders.

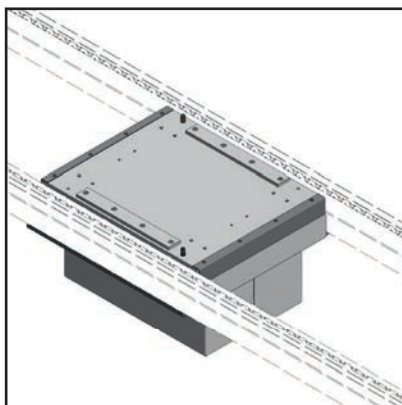
LIFT-POSITIONING UNIT - PCO

Part no. 54.5032/0



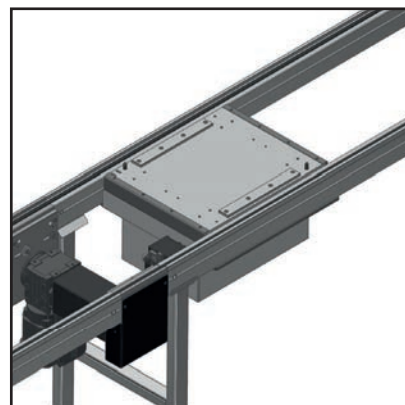
TECHNICAL CHARACTERISTICS

- Lifts and positions the pallet with a precision of $\pm 0,1$ mm.
- Lifts the pallet above the line 3 mm.
- Standard pneumatic cylinder.
- Guide columns with linear bearings.



APPLICATIONS

- Simple and robust solution.
- Up to 100 kg/pallet.
- Precisely positioned for automatic operations.

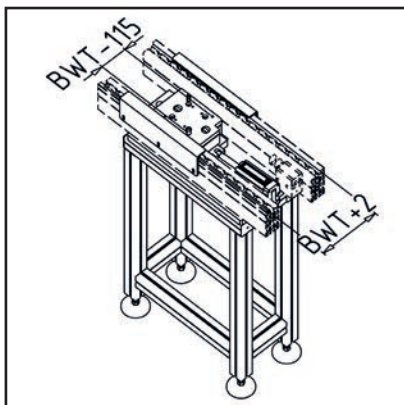


OPTIONS

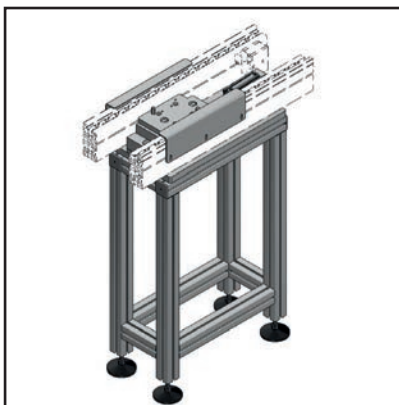
- Suitable for all FMS lines.
- Modular, easy installation and changes of location.
- For plate pallet and profile frame.
- Brackets that limit the lift and prevent the pallet from being removed.

LIFT-POSITIONING-UNIT WITH WEDGE - PCU

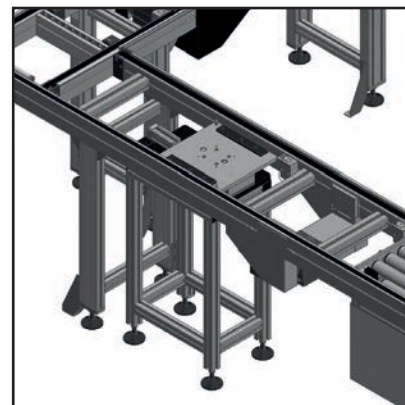
Part no. 54.5033/0

**TECHNICAL CHARACTERISTICS**

- Lifts and positions the pallet with a precision of ± 0.15 mm.
- Lifts the pallet above the transport line 3mm.
- For great efforts up to 10,000 kg.

**APPLICATIONS**

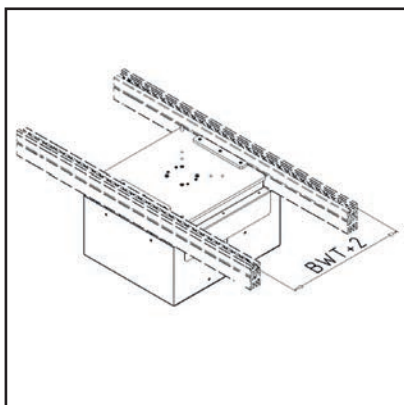
- Very robust solution.
- Operations with high loads on the pallet.
- Precisely positioned for manual or automatic operations.

**OPTIONS**

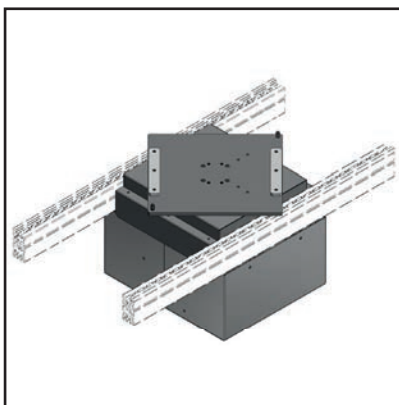
- Suitable for all FMS lines.
- On an aluminum or steel structure to the ground.
- For plate pallet and profile frame.
- Brackets that limit the lift and prevent the pallet from being removed.

LIFT-TURNING UNIT - PGR

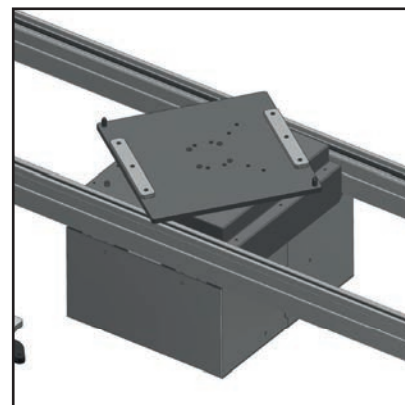
Part no. 54.5034/0

**TECHNICAL CHARACTERISTICS**

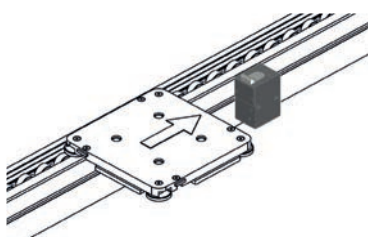
- Lifts and rotate the pallet to change the leading edge of the pallet.
- 90° and 180° turns.
- Maximum weight of the pallet 100 kg. Other weights on request.

**APPLICATIONS**

- Change of the leading edge of the pallet.

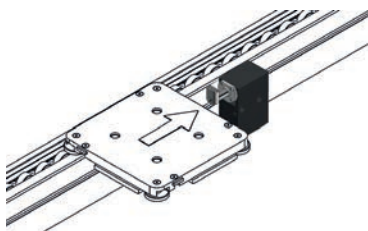
**OPTIONS**

- Suitable for all FMS lines.
- Pneumatic and electric turns according to weights and speeds.
- For plate pallet and profile frame.



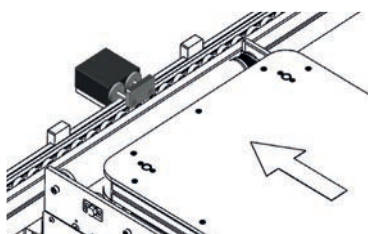
PNEUMATIC UNDAMPED STOPPERS | *TNAM*

39



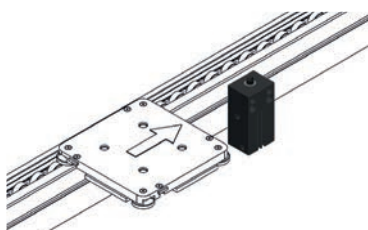
PNEUMATIC DAMPED STOPPERS | *TAM*

41



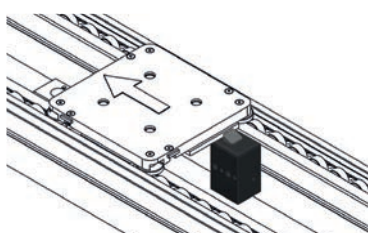
ANGLE DAMPERS | *TAMG*

43



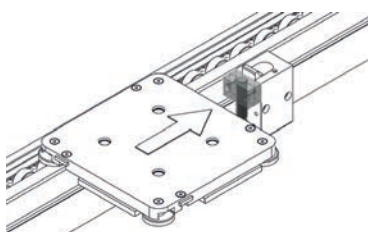
INDEX CYLINDERS | *CIX*

44



ANTI-BOUNCE STOPS | *AR*

45



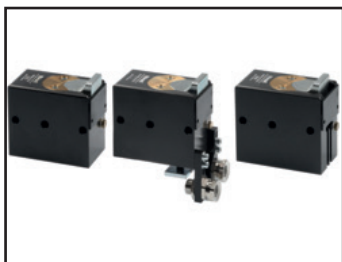
DETECTOR SUPPORTS | *SD*

46

PNEUMATIC UNDAMPED STOPPERS

D0-400

Lowering stroke	Damping stroke	Max propelling force *	Scope of application* at Weight		Variants
9 mm	n/a	275 N	06 m/min	400 kg	EW/DW
15 mm			09	300	H/K
25 mm			12	250	AND
40 mm			18	200	G/V
			24	110	Cust.-spec.
			30	65	solutions
			36	50	var. access.

D0-800

Lowering stroke	Damping stroke	Max propelling force *	Scope of application* at Weight		Variants
10 mm	n/a	549 N	06 m/min	800 kg	EW/DW
20 mm			09	800	H/K
			12	800	I/E
			18	800	G
			24	450	Cust.-spec.
			30	250	solutions
			36	250	var. access.

Note: The scope of application for undamped stoppers is highly dependent on the conditions of use, in particular on the coefficient of friction between the conveyor equipment and pallet and on the rigidity of the conveyor. We can provide you with detailed technical advice when making your choice - just ask us!

EW single-acting
DW double-acting
H heat resistant
K cold resistant

KU plastic stop
R with spring reset
I prepared for inductive position sensor

E prepared for electronic position sensor.
G stop plate with thread
V extended stop plate

* All specifications given for a coefficient of friction of $\mu = 0.07$

ELECTRIC UNDAMPED STOPPERS

DELO-65

Lowering stroke	Damping stroke	Max propelling force *	Scope of application* for	Weight	Variants
9 mm	n/a	65 N	06 m/min	65 kg	KU
			09	60	Cust.-spec.
			12	55	solutions
			18	50	var. access.

DELO-120

Lowering stroke	Damping stroke	Max propelling force *	Scope of application* for	Weight	Variants
14 mm	n/a	206 N	06 m/min	300 kg	2 x 5 pins
			09	140	M12 x1
			12	80	plug,
			18	35	R
			24	20	Cust.-spec.
			30	13	solutions
			36	9	var. access.

Note: The scope of application for undamped stoppers is highly dependent on the conditions of use, in particular on the coefficient of friction between the conveyor equipment and pallet and on the rigidity of the conveyor. We can provide you with detailed technical advice when making your choice - just ask us!

EW single-acting
 DW double-acting
 H heat resistant
 K cold resistant

KU plastic stop
 R with spring reset
 I prepared for inductive position sensor

E prepared for electronic position sensor.
 G stop plate with thread
 V extended stop plate

* All specifications given for a coefficient of friction of $\mu = 0.07$

PNEUMATIC DAMPED STOPPERS

DBS-20/60

Lowering stroke	Damping stroke	Max propelling force *	Scope of application* at	Weight	Variants
8 mm	21.5 mm	41 N	06 m/min	3.5 - 60 kg	EW/DW
13 mm			09	3.5 - 40	H/K
			12	3.5 - 35	AND
			18	3.5 - 30	KI/KU/KA/V
			24	3.5 - 24	S
			30	3.5 - 18	Cust.-spec.
			36	3.5 - 10	var. access.

DBS-170

Lowering stroke	Damping stroke	Max propelling force *	Scope of application* at	Weight	Variants
8 mm	27.5 mm	200 N	06 m/min	5 - 200 kg	EW/DW
			09	5 - 160	H/K
			12	5 - 145	AND
			18	5 - 90	KI/S19/S50
			24	5 - 55	Cust.-spec.
			30	5 - 40	solutions
			36	5 - 30	var. access.

DBS-240

Lowering stroke	Damping stroke	Max propelling force *	Scope of application* at	Weight	Variants
9 mm	24 mm	165 N	06 m/min	10 - 240 kg	EW/DW
			09	10 - 220	H/K
			12	10 - 200	KI/S20/S50 /
			18	10 - 180	S100
			24	10 - 110	Cust.-spec.
			30	10 - 70	solutions
			36	10 - 50	var. access.

DBS-1150

Lowering stroke	Damping stroke	Max propelling force *	Scope of application* at	Weight	Variants
15 mm	21 mm	700 N	09 m/min	700 kg **	EW/DW
			12	750 **	KI/KU
			18	850 **	S
			24	550 **	Cust.-spec.
			30	350 **	solutions
					var. access.

DBS-3000

Lowering stroke	Damping stroke	Max propelling force *	Scope of application* at	Weight	Variants
15 mm	46 mm	2060 N	09 m/min	110-3000 kg	EW/DW
			12	110-3000	S
			18	110-2350	Cust.-spec.
			24	110-1900	solutions
					var. access.

EW single-acting
DW double-acting
H heat resistant
K cold resistant

* All specifications given for a coefficient of friction of $\mu = 0.07$

E prepared for sensor electronic position
KI tilting stop
KU plastic stop

** Exceptionally, these values apply at a coefficient of friction of $\mu = 0.02$

KA plastic stop antistatic
V extended stop plate
S prepared for stop position sensing

S19 steel stop, 19 mm wide
S20 steel stop, 20 mm wide
S50 steel stop, 50 mm wide
S100 steel stop, 100 mm wide

ELECTRIC DAMPED STOPPERS

ELD-70



Lowering stroke	Damping stroke	Max propelling force *	Scope of application* for Weight		Variants
8 mm	13 mm	60 N	06 m/min	3.5 - 70 kg	2 x 5 pins
			09	3.5 - 45	M12 x1
			12	3.5 - 40	connector
			18	3.5 - 29	KU
			24	3.5 - 15	Cust.-spec.
			30	3.5 - 10	solutions
			36	3.5 - 7	var. access.

ELD-430



Lowering stroke	Damping stroke	Max propelling force *	Scope of application* for Weight		Variants
11 mm	25 mm	420 N	06 m/min	5 - 430 kg	2 x 5 pins
			09	5 - 340	M12 x1
			12	5 - 280	connector
			18	5 - 180	KU
			24	5 - 120	Cust.-spec.
			30	5 - 90	solutions
			36	5 - 50	var. access.

EW single-acting
DW double-acting
H heat resistant
K cold resistant

* All specifications given for a coefficient of friction of $\mu = 0.07$

E electronic position sensor
KI tilting stop
KU plastic stop

** Exceptionally, these values apply at a coefficient of friction of $\mu = 0.02$

KA plastic stop antistatic
V protracted suffers
S prepared for stop position sensing

S19 steel stop, 19 mm wide
S20 steel stop, 20 mm wide
S50 steel stop, 50 mm wide
S100 steel stop, 100 mm wide

ANGLE DAMPERS

DBSQ-20/60

Lowering stroke	Damping stroke	Max propelling force *	Scope of application* at Weight	Variants
n/a	21.5 mm	n/a	06 m/min 1 - 60 kg	H/K
			09 1 - 40	W/KU/KA
			12 1 - 35	Cust.-spec. solutions
			18 1 - 30	
			24 1 - 24	var. access.
			30 1 - 18	
			36 1 - 10	

DBSQ-170

Lowering stroke	Damping stroke	Max propelling force *	Scope of application* at Weight	Variants
n/a	29 mm	n/a	06 m/min 5 - 220 kg	Cust.-spec. solutions
			09 5 - 190	
			12 5 - 160	var. access.
			18 5 - 150	
			24 5 - 90	
			30 5 - 50	
			36 5 - 40	

H heat resistant
K cold resistant

KU plastic stop
KA plastic stop, antistatic
W angle bracket

* All specifications given for a coefficient of friction of $\mu = 0.07$

INDEX CYLINDERS

DI-490



Stroke		Force		Variants
31 mm		490 N		H
				I/E
				Cust.-spec.
				solutions
				var. access.

DI-1050



Stroke		Force		Variants
31.5 mm		1050 N		H
				Cust.-spec.
				solutions
				var. access.

H heat resistant
I prepared for inductive
position sensor

E prepared for
electronic position sensor

ANTI-BOUNCE STOPPER / ANTI-BOUNCE PNEUMATIC STOPPER

DR

Stroke				Variants
8 mm				Cust.-spec. solutions var. access.

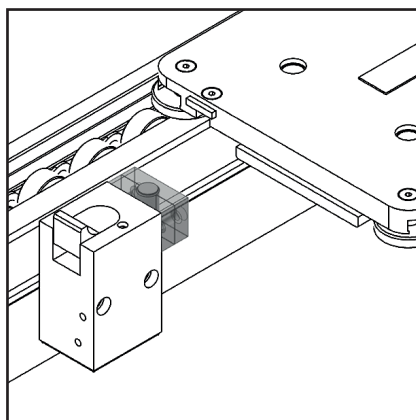
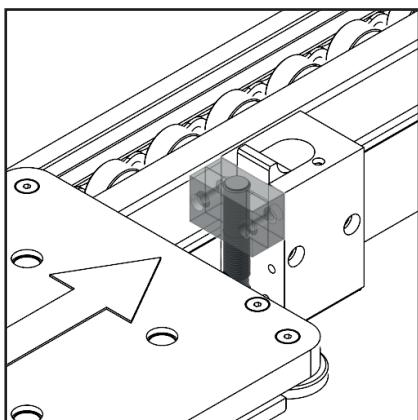
DRP

Stroke				Variants
8 mm				I/E Cust.-spec. solutions var. access.

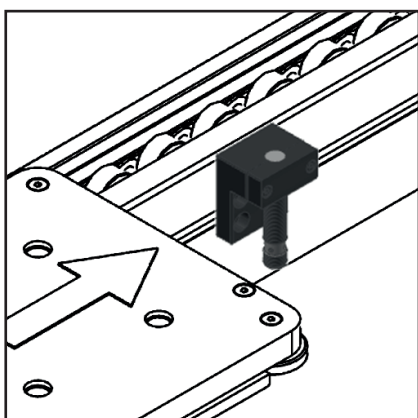
H heat resistant
I sensor ready
inductive position

And prepared for
electronic position sensor

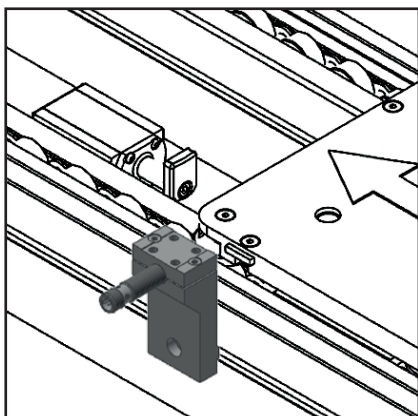
SWITCH HOLDERS

SWITCH HOLDER Ø12 mm*Part no. 53.9053/0*

- The function of the detector support is to determine the presence of the pallet.
- Detection position at stop and/or pallet exit.
- Retainer stop mounting (lower detection).
- Detector bracket with complete installation kit.
- Inductive detector Ø12 mm, (not included).

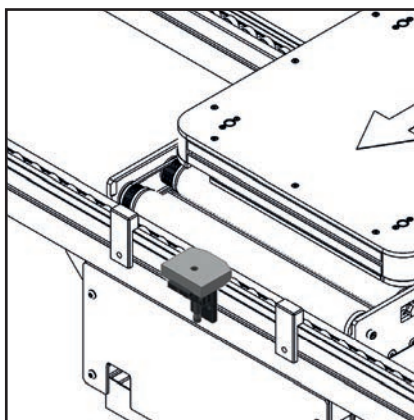
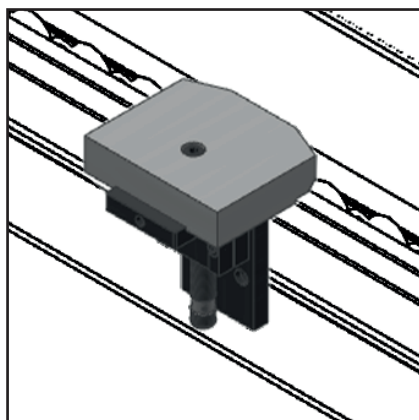
SWITCH HOLDER Ø12 mm*Part no. 53.9283/0*

- The function of the detector support is to determine the presence of the pallet.
- Mounting on the inner face of the profile (lower detection).
- Detector bracket with complete installation kit.
- Inductive detector Ø12 mm, (not included).

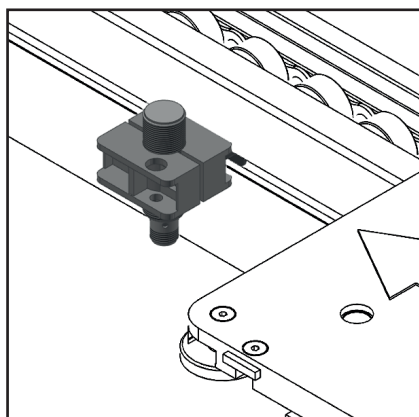
SWITCH HOLDER Ø12 mm*Part no. 53.9054/0*

- The function of the detector support is to determine the presence of the pallet.
- External face mounting (lateral detection).
- Detector bracket with complete installation kit.
- Inductive detector Ø12 mm, (not included).

SWITCH HOLDERS

SWINGING SWITCH HOLDER*Part no. 53.9050/0*

- The function of the detector support is to determine the presence of the pallet.
- Detection position at pallet entry, stop and/or exit.
- Mounting on the outer face of the profile (lateral detection of occupied area).
- Inductive detector Ø12 mm, (not included).
- Detector bracket with complete installation kit.

SWITCH HOLDER Ø18/Ø20 mm*Part no. 28.0121/0*

- The function of the detector support is to determine the presence of the pallet.
- Mounting on the inner face of the profile (lower detection).
- Inductive detector Ø18 mm, with reduction cap, (sensor not included).
- Inductive detector Ø20 mm, (not included).
- Detector bracket with complete installation kit.

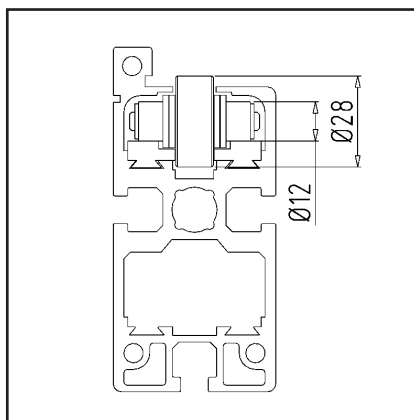
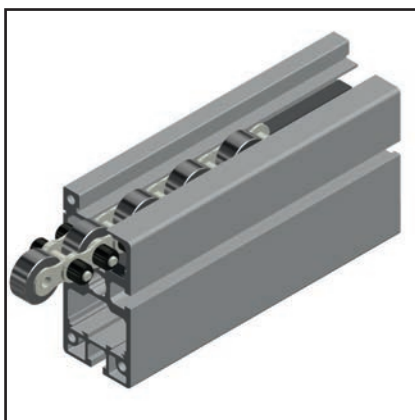
FMS ACCESSORIES



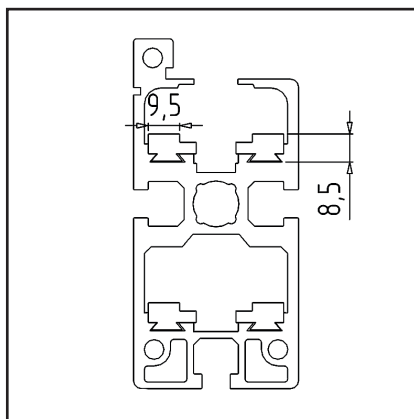
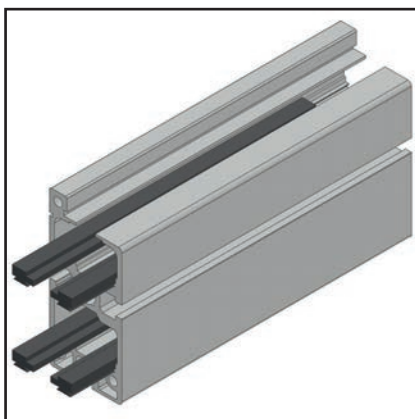
FMS ACCESSORIES | *ACCFMS*

49

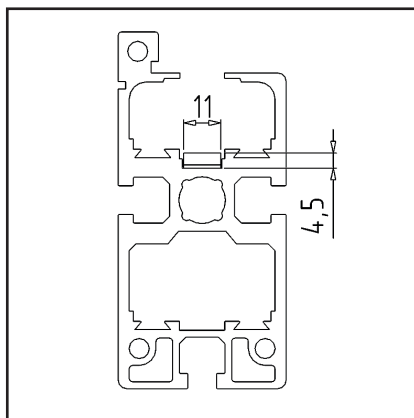
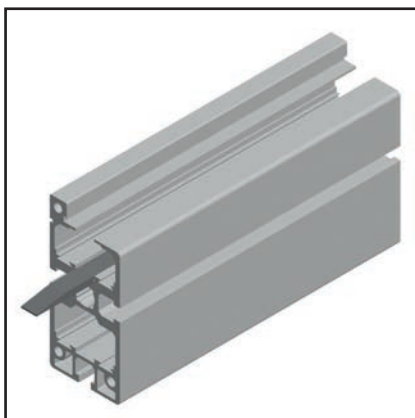
FMS ACCESSORIES

3/4 "ACCUMULATION ROLLER CHAIN*Part no. 54.0031/0*

- Steel.
- Suitable for transporting and accumulating parts.
- Alternative double roller chain
Part no. 54.0035/0
- Chain joint **Part no. 54.0036/0**
- Supply in multiples of 5 m.

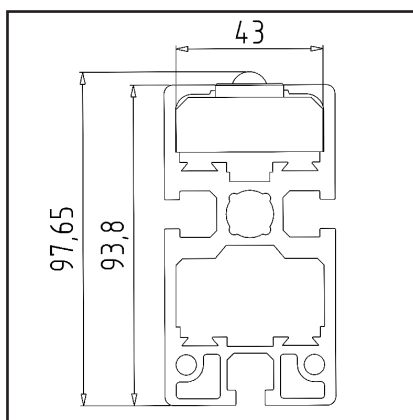
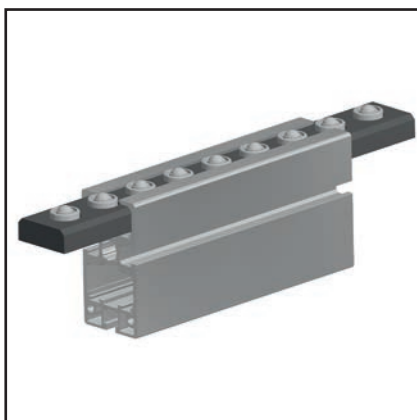
FMS CHAIN SUPPORT*Part no. 54.0405/0*

- Black PE.
- They help to support and guide the chain.
- They reduce the friction of sliding.
- Bar length = 2 m.
- Dovetail to ensure correct position.

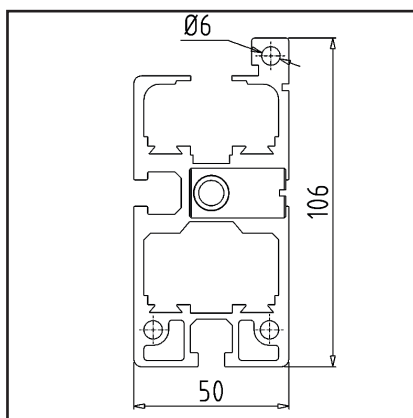
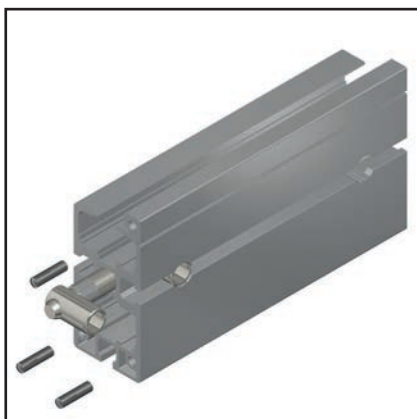
WORKPIECE CARRIER ACCELERATOR*Part no. - .----/-*

- Treated steel.
- Required for acceleration of the pallet at the exit of a stop or on a line section.
- Bar length = 500 mm.
- Inlet and outlet pallet accelerator
Part no. 54.0041/0.
- Pallet accelerator extension **Part no. 54.0042/0.**

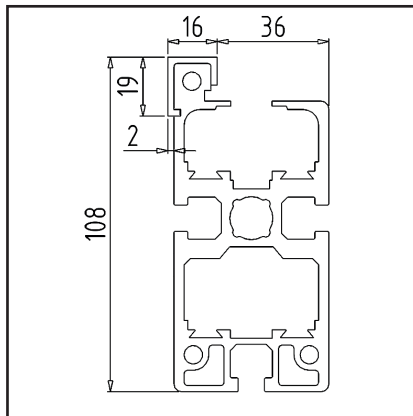
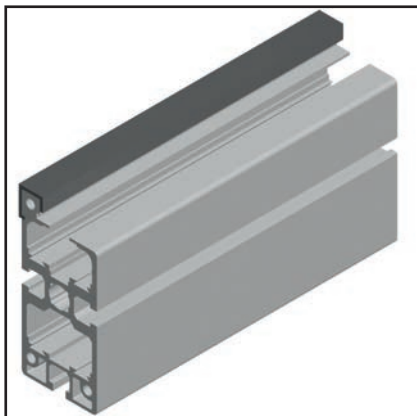
FMS ACCESSORIES

MULTIDIRECTIONAL BALL SECTION*Part no. 54.0045/0*

- Multidirectional steel balls with galvanized steel support.
- It makes it possible to transport the load in any direction.
- Transfers and diversions can easily be made.
- Multidirectional ball support in black PE.
- Bar length = 2 m.

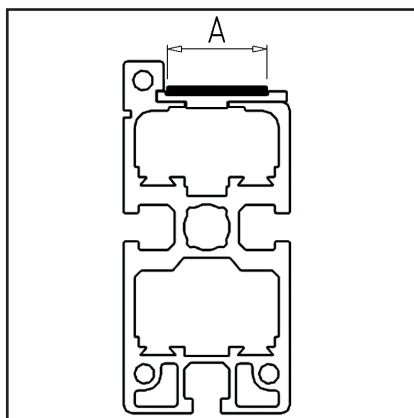
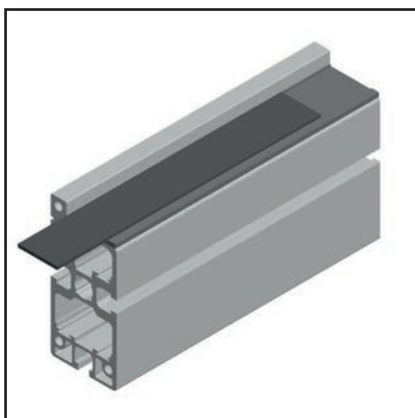
FMS EXTENSION KIT*Part no. 54.0417/0*

- Zinc-plated steel elements for straight connection between profiles.
- Precise adjustment of the joint by means of pins housed at one end of the profile to be joined.

PLASTIC GUIDE*Part no. 54.0039/0*

- Anti-static PE, black.
- Profile heel protection to guide steel elements, reduction of useful transport width 2 mm.
- Anodized aluminum alternative **Part no. 54.0038/0**
- Bar length = 2 m.

FMS ACCESSORIES

FMS BAND*Part no. - .----/-*

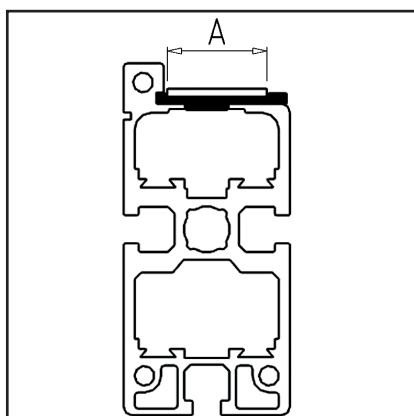
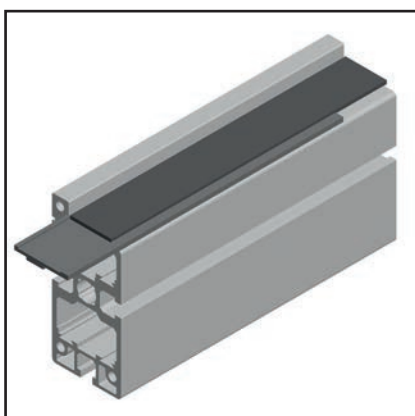
- Black PA, A = 24 E = 1.3 for TBCL and TBBL

Part no. 54.0029/0.

- Black PA, A = 30 E = 1.8 for TBCP and TBBP

Part no. 54.0026/0.

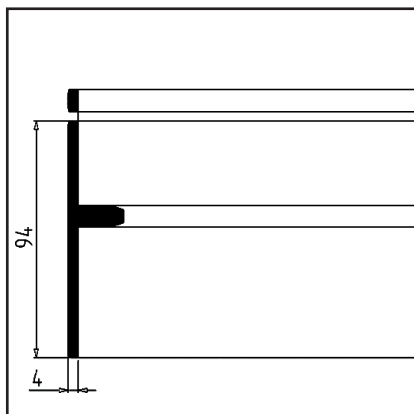
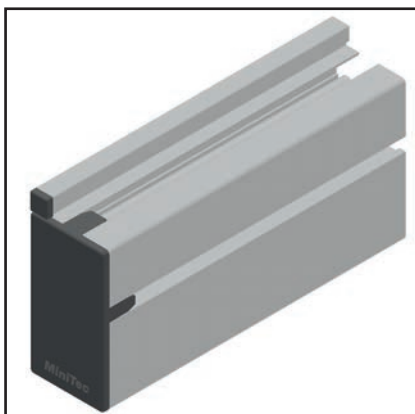
- Length on request.

FMS BAND SUPPORT*Part no. - .----/-*

- Black PE, antistatic A = 25 mm for TBCL and TBBL, **Part no. 54.0028/0.**

- Black PE, antistatic A = 31 mm for TBCP and TBBP, **Part no. 54.0025/0.**

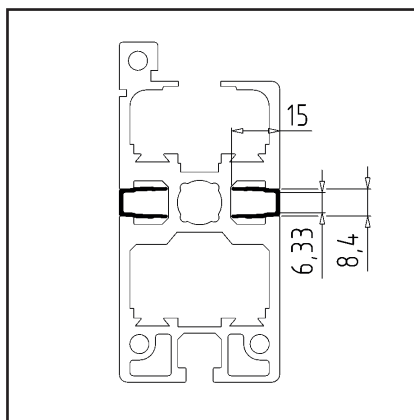
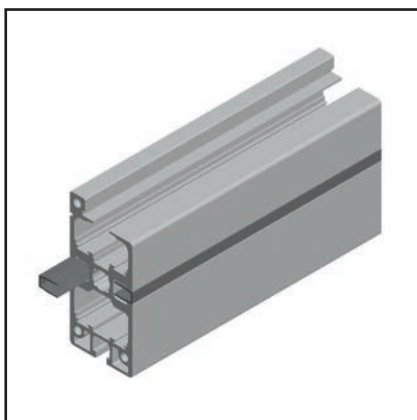
- Bar length = 2 m.

FMS PROFILE COVER*Part no. 53.2658/0*

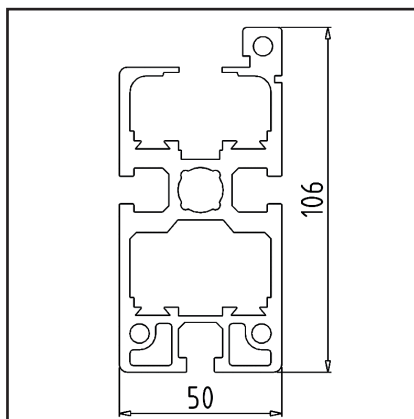
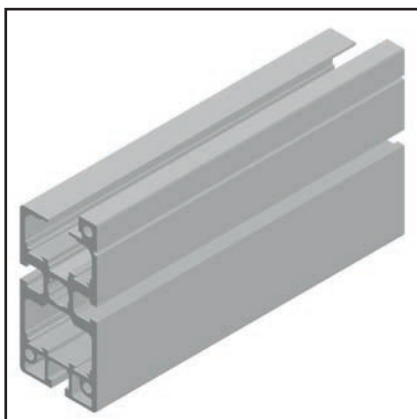
- End cap FMS profile.

- Gray plastic.

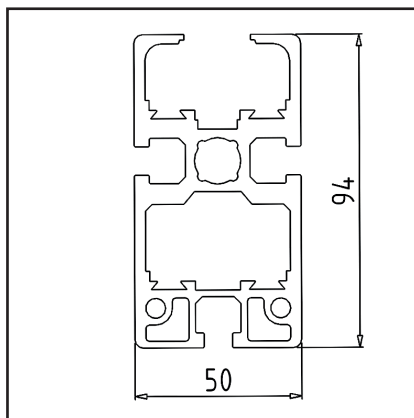
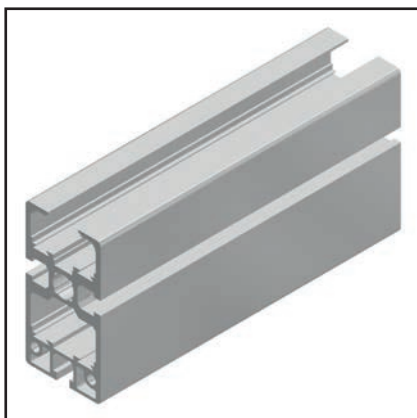
FMS ACCESSORIES

COVER PROFILE 45, GREY*Part no. 22.1070/1*

- Grey PVC.
- Mounted with groove inwards: For closing profile grooves.
- Snap or slip into profile groove.
- Bar length = 2 m.

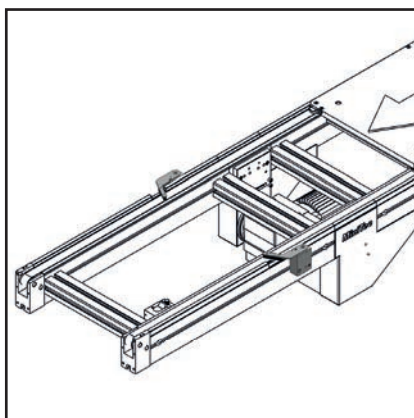
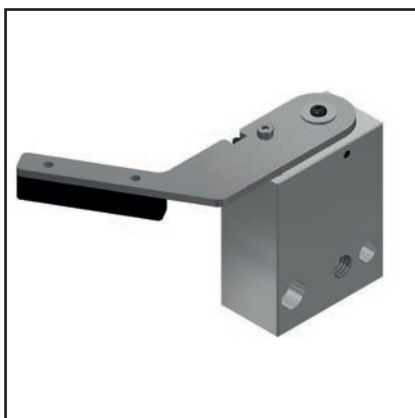
FMS PROFILE WITH HEEL*Part no. 53.1901/0*

- Extruded aluminum profile.
- For standard pallets.
- Longitudinal groove for better assembly of elements.
- Bars length = 6 m.

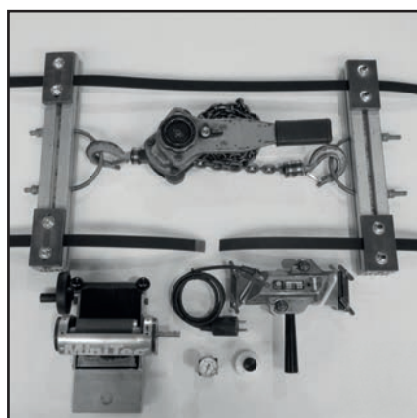
FMS PROFILE WITHOUT HEEL*Part no. 53.1850/0*

- Extruded aluminum profile.
- For non-standard pallets that need special guidance.
- Longitudinal groove for better assembly of elements.
- Bars length = 6 m.

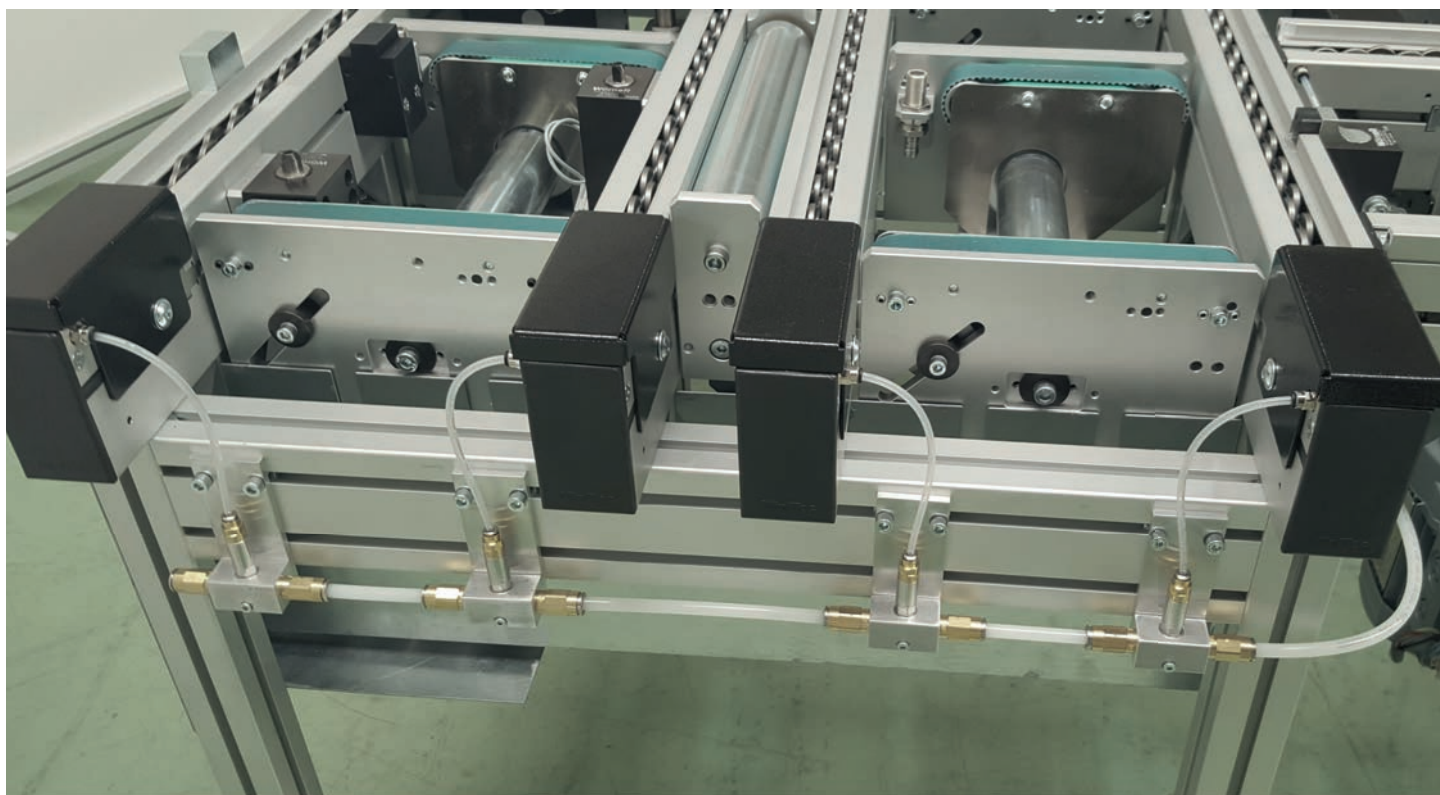
FMS ACCESSORIES

DEVIATOR SCREWS FMS BAND*Part no. - .----/-*

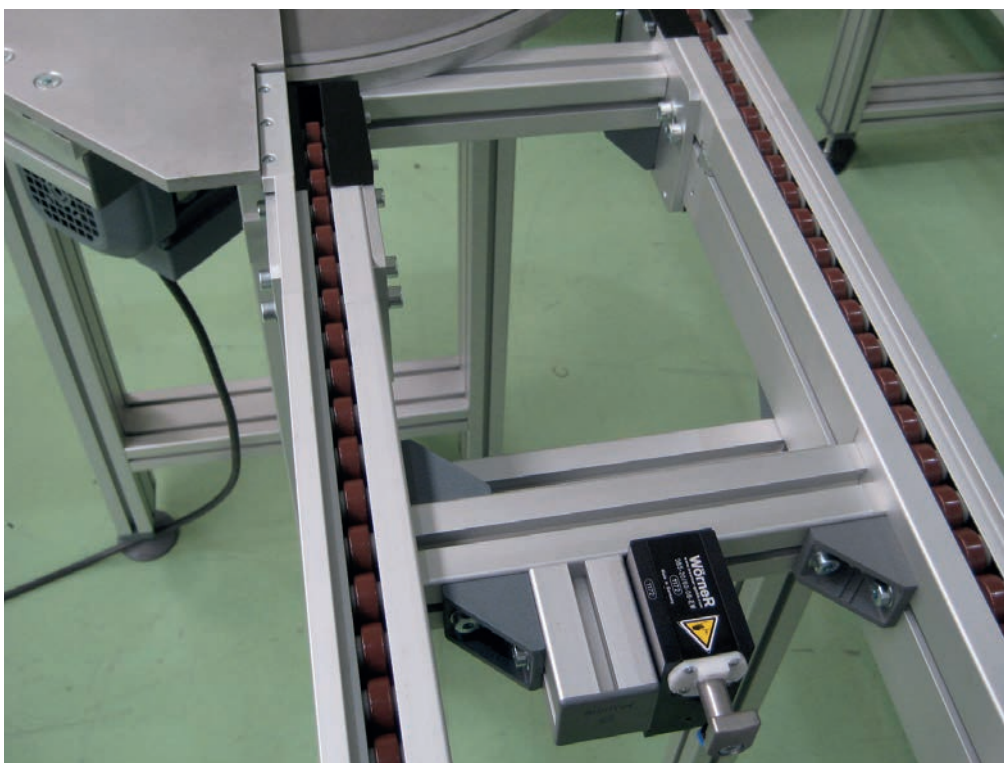
- Small parts extractor from the transport section.
- For right side mounting
Part no. 54.1247/0.
- For left side mounting
Part no. 54.1247/1.
- Supplied with clamping kit.
- Reversible operation not possible

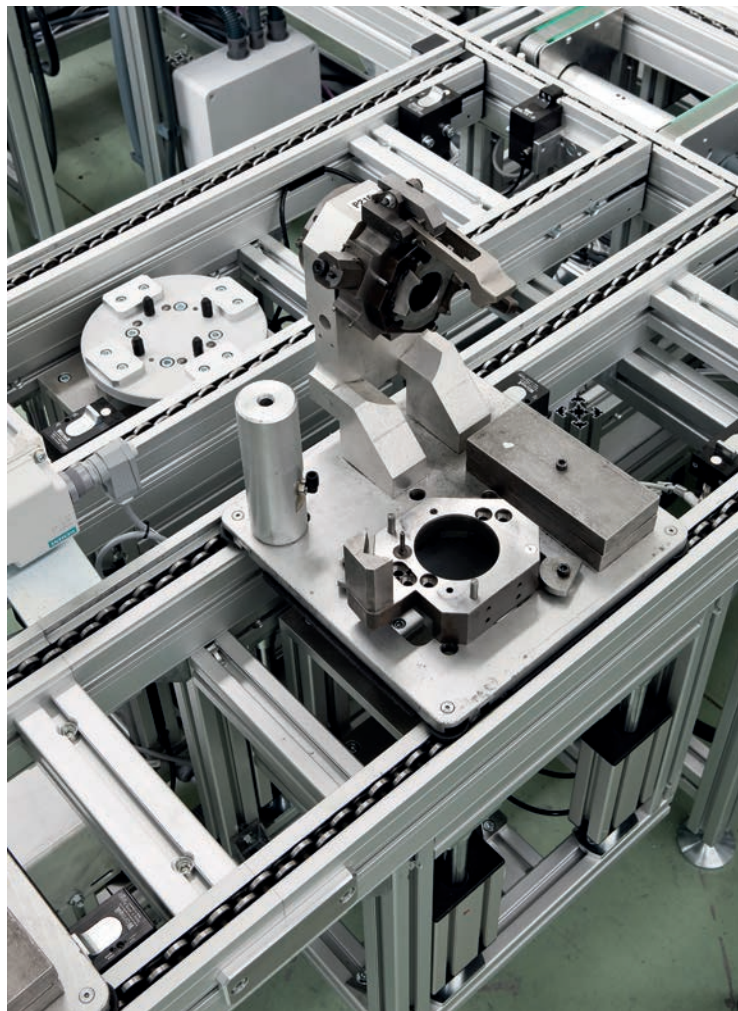
BAND GLUE EQUIPMENT*Part no. 55.8258/0*

AUTOMATIC LUBRICATION

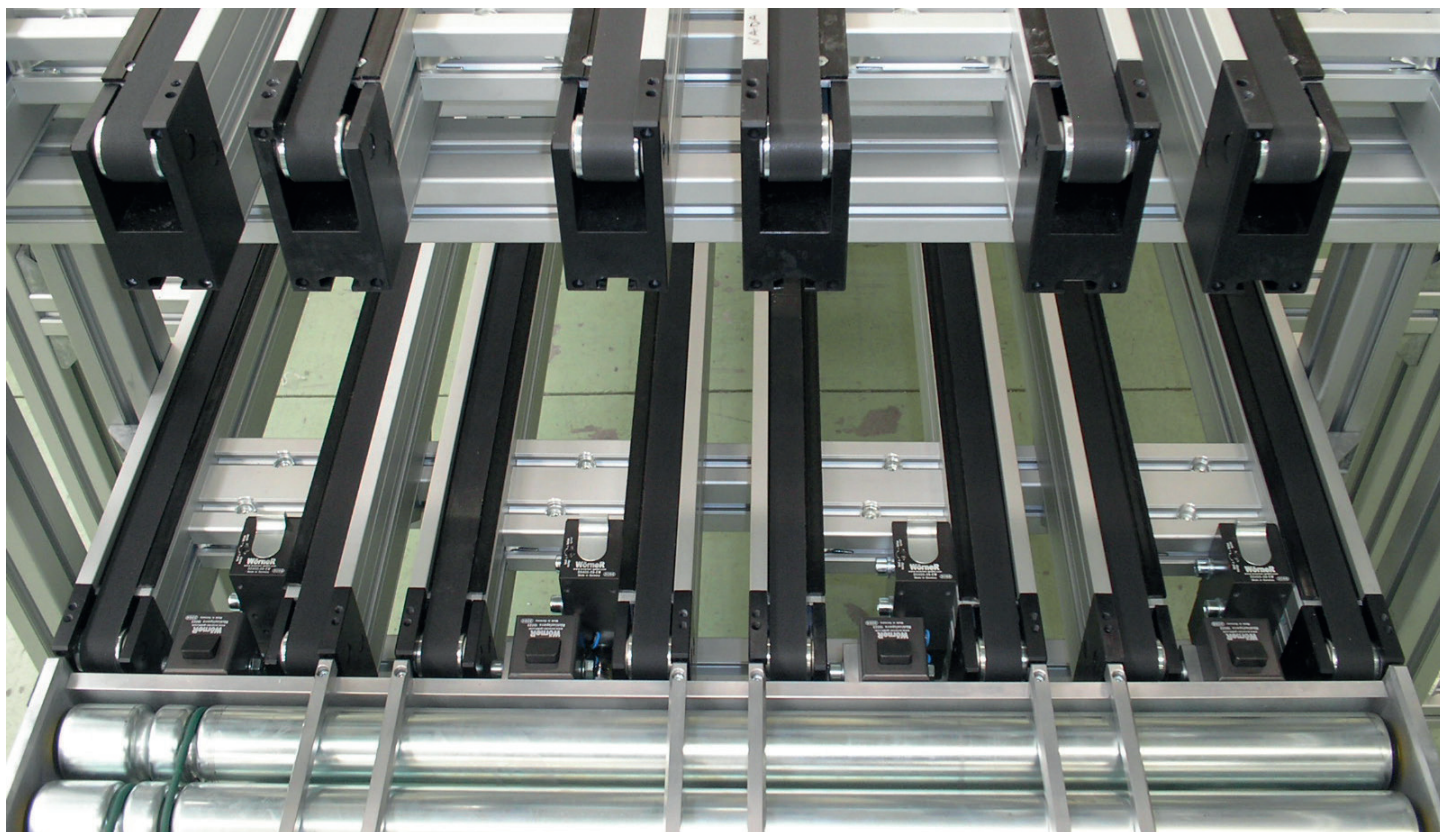


DOUBLE SPEED CHAIN













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