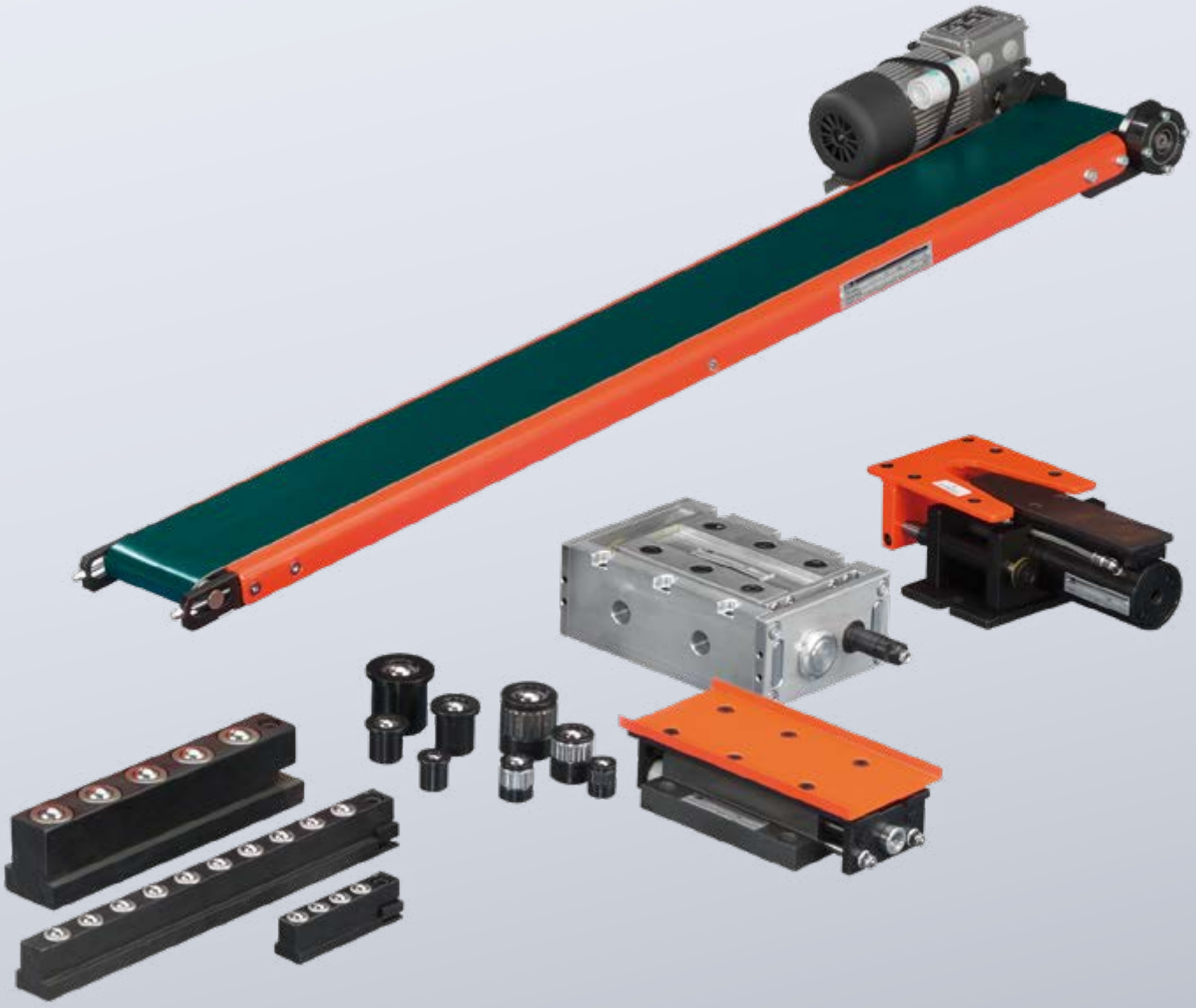
PERIPHERAL EQUIPMENT



PERIPHERAL EQUIPMENT

Press and tools products

Ball bearing inserts and rails

If you need fast and reliable tool changing, you will find that equipping or updating your press with ball bearing inserts and rails is the ideal solution.

With ball bearing inserts and rails you can move or change tools fast, and above all accurately - even if they weigh several tons. In the past this has often been an awkward, inconvenient and sometimes even critical process.
Equipping and retrofitting press tables with ball bearing rails is extremely straightforward as virtually every press table has fixing slots. The ball bearing rails are simply inserted and fixed in these slots.
Ball bearing inserts can be used for press tables which do not have fixing slots. These are fitted in the locating sockets.
The ball bearings of the inserts and rails will move in any direction and project only slightly above the surface of the press table. The result is that only slight force is required for movement on the table. When the tool is clamped in place it sits on the table and the clamping pressure causes the ball bearings to retract into their sockets.

Roller inserts and roller rails

Roller inserts and rails will carry twice the load of ball bearing inserts and rails and ensure precise linear movement of the tool. This linear technology requires precise positioning of the tool when it is transferred to the tool bench.
Roller rails are used especially on presses with stationary mounting devices. The special roller bearing technology operates reliably at high temperatures (200 °C).
Unlike ball bearing rails, roller rails can be used in tool base plates, i.e. installed upside down.

Conveyor belts

Our conveyor belts are designed for use in a wide variety of production applications.
JThere is a belt width and length to suit almost every application.
The conveyor belts are powered by an electric motor, which is electronically regulated to provide belt speeds from 0.02 to 30 metres per minute.
The motor can be mounted horizontally or vertically, on either side of the belt for either direction of movement. Various limitation guides are also available.

Pneumatic conveyor

This pneumatic conveyor is unique and is patented. It was designed to provide an effective and affordable solution to the problems of conveying parts and disposing of waste. This beltless system conveys stampings and waste from the tool area by vibration alone.

Electro-mechanical transporters

The FIBRO electro-mechanical transporters have been developed to effectively and inexpensively solve the problems of transporting parts and the removal of stamping and cutting residues from presses.
The principle behind the electro-mechanical transporter is referred to as the "tablecloth effect". The slow acceleration during the forward stroke pushes the parts or offcuts forwards. The fast return stroke of the guiding system results in a transport movement in only one direction.

Electric transporter

The electric drive transporter conveys the punched and waste parts out of the tooling area with a rhythmic movement in a straight line.

Low energy consumption, infinitely variable speed control, simple automation, low noise (60 dB) and the absence of compressed air ensure high economic efficiency whilst improving the working environment.
Its main areas of application are conveying and separating solid materials in metal processing and the automotive sector.
The additional "Clean Line" product range can also be used as a replacement in the food and pharmaceutical industries.

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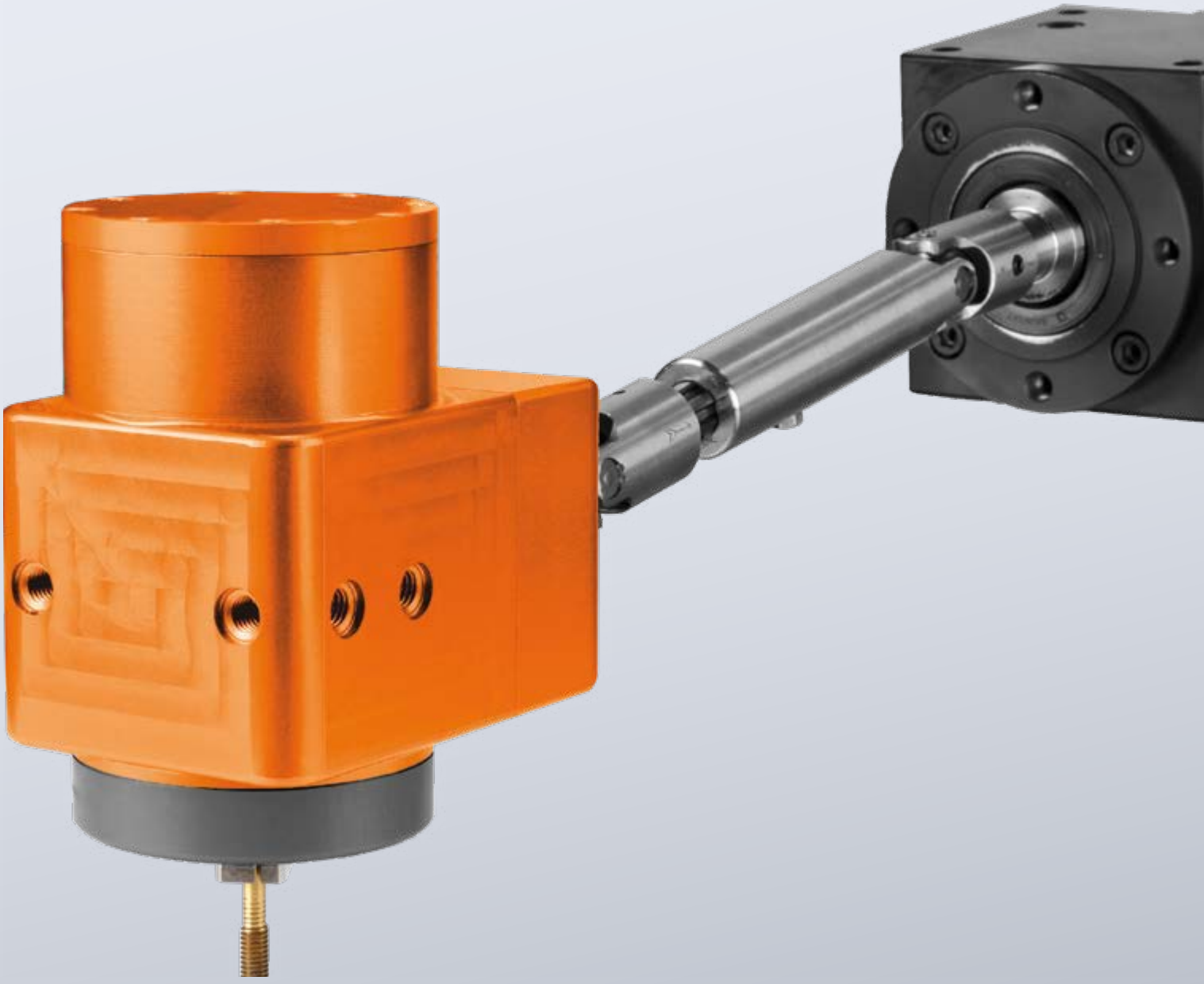
ELECTRONIC THREAD MOULDING

PATENTED

further information on request



ELECTRONIC THREAD MOULDING

The electronic thread tapping unit, specially designed for punching and forming processes, stands out thanks to its excellent process integration. Regardless of whether the electronic thread tapping unit is used in progressive dies, in presses or in automatic punching and bending machines, the desired threads are created in a reliable and controlled fashion. This improves thread quality, increases reliability and ensures quick, cost-effective manufacture.

Flexibility

The electronic thread moulding unit can be used in a wide variety of presses, progressive dies and automatic punching machines thanks to its independent drive and versatile control unit. If required, a thread cutter can also be operated instead of the non-cutting thread moulder. The compact design allows for the greatest possible flexibility.
Integration takes place through installation in existing equipment. The control unit of the electronic thread moulding unit is coupled with the equipment according to requirements. The simple programming facilitates quick calibration of all parameters.

Quality

The thread moulding unit produces high quality threads in sizes M0,8-M12. The threads stand out thanks to:

- great strength and stability
- high surface quality

The quality test includes an ongoing check of the thread moulding cycle. The condition of the thread tool, the tolerance of the core hole and the quality of the resulting thread are inferred from the monitored parameters. If limit values are fallen short of or are exceeded, a stop signal is sent to the press or equipment and a corresponding error message is produced. Furthermore, all data sets can be read out from the controls and summarised externally as a report, for instance within a quality assurance system.

Cost effectiveness

In addition to producing high quality threads, the thread creation is above all extremely cost effective. Cost savings can be achieved through:

- long service life of the tools
- faster processing times
- avoiding rejects
- eliminating the feeding of parts and additional production stages
- a high level of investment security

At a glance

- Versatile and flexible application
- Autonomous system
- Large spectrum of thread sizes: M0.8-M12 (other sizes on request)
- Simple programming and control
- High quality
- Stability and strength
- Surface quality
- Integrated quality control
- Cost effectiveness
- Cost savings
- Short production times
- A high level of investment security

Application examples

ELECTRONIC THREAD MOULDING

The controls and the servo regulator for the drives are located in the control box. The size of the control box varies according to the number of systems that must be controlled. The control unit can regulate up to 6 independent drives. 10 programmes per unit allow unrestricted programming of the parameters (rotation speed of the leader, limitation of the torque, number of rotations of the leader, cycle time, batch counter, process data monitoring). Data storage may also take place, which serves to record all the torque values.

The moulding head transforms horizontal rotation into vertical rotation. The feed motion is carried out by a leader. The thread pitch of the leader corresponds to the pitch of the thread to be moulded. The moulding tool is operated with maximum precision with the help of the head spindle sleeve. A clamping sleeve is used to clamp the thread moulder.

The bevel gear serves to limit the length of the installation space required by the drive. Using the bevel gear is optional.

A flexible and compact micro dosing unit with a volumetric dosing pump allows for precise and reliable lubrication. The nozzle technology was developed for punching and forming processes.

The drive shaft transfers the drive's torque to the moulding head. By evening out differences in height and length, the moulding head can be installed in every position within the tool. It is also manoeuvrable on holding-down plates. The maximum clearance between the drive and the moulding head is 500 mm.

The drive consists of one synchronous servomotor for each moulding head that must be powered. The servomotor is configured according to the thread size. This makes it possible to create different thread sizes in a tool using one control. Thanks to the constant cutting speed, significantly longer service lives are achieved than is the case with mechanical, forced piloted systems. The drive is independent from the press stroke and press motion. The maximum rotation speed is 6000 U/min.

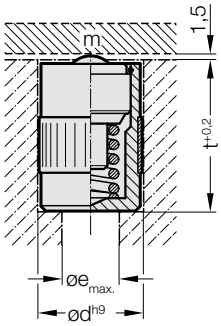
Process comparison

++ very good + good • satisfactory – adequate – – inadequate	electronic thread moulding	thread cutting*	threaded/ punched nut	weld nut
Possible uses				
Thread sizes	+	++	+	+
Tensile strength of the material	•	•	++	++
Flexibility	++	– –	– –	– –
Quality				
Surface	++	•	•	•
(Pull-out) resistance	++	–	–	–
Load capacity	++	+	+	+
Reliability	++	++	– –	– –
Time				
Number of process stages	++	+	– –	– –
Processing time	++	•	– –	– –
Cost				
Production costs	++	–	•	– –

* as a discrete, downstream process stage

BALL BEARING INSERT WITHOUT COLLAR
BALL BEARING INSERT WITH COLLAR

2198.32.

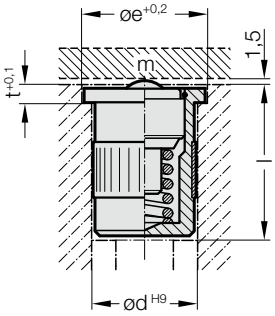


Note:
The supporting ball bearings raise the object to be moved (tool) away from the table surface and replace the surface friction with rolling friction. This significantly reduces the force required to move the tool.

2198.32. Ball bearing insert without collar

Order No	d	Load capacity m [daN]	Ball diameter	e	t
2198.32.020	20	25	10	10	30
2198.32.024	24	40	12	14	38
2198.32.030	30	63	15	20	44
2198.32.040	40	100	20	30	53

2198.33.



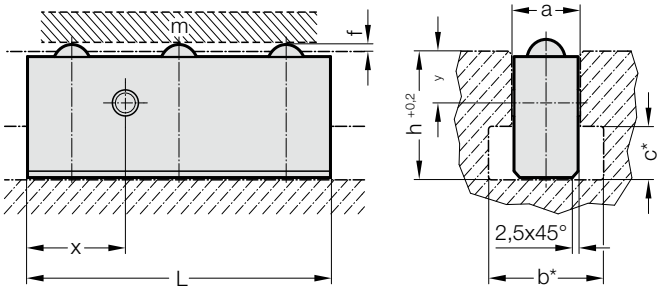
Note:
The supporting ball bearings raise the object to be moved (tool) away from the table surface and replace the surface friction with rolling friction. This significantly reduces the force required to move the tool.

2198.33. Ball bearing insert with collar

Order No	d	Load capacity m [daN]	Ball diameter	e	t	l
2198.33.020	20	25	10	25	3.5	31
2198.33.024	24	40	12	30	4	39
2198.33.030	30	63	15	35	5	45
2198.33.040	40	100	20	50	6	54

BALL BEARING RAIL

2198.42.



Note:
The ball bearing rails are pushed into the DIN 650 T-shaped grooves in the press table and are fixed in place by the clamping piece. The size and number of the ball bearing rails is determined by the size of the T-shaped groove and the load-bearing capacity required. Once the tool is clamped in place, it lies on the press table and the clamping pressure presses the ball bearings into the holes.

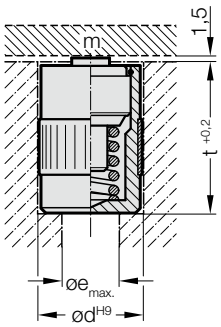
* T-shaped grooves are not absolutely necessary.

2198.42. Ball bearing rail

Order No	a	Load capacity m [daN]	L	Number of balls	Ball diameter	f	b*	c*	h	x	y
2198.42.18.105	18	75	105	3	10	1.5	30	12	30	35	14.5
2198.42.18.140	18	100	140	4	10	1.5	30	12	30	35	14.5
2198.42.18.175	18	125	175	5	10	1.5	30	12	30	35	14.5
2198.42.18.210	18	150	210	6	10	1.5	30	12	30	35	14.5
2198.42.18.280	18	200	280	8	10	1.5	30	12	30	35	14.5
2198.42.18.350	18	250	350	10	10	1.5	30	12	30	35	14.5
2198.42.22.120	22	120	120	3	12	1.5	37	16	38	40	14.5
2198.42.22.160	22	160	160	4	12	1.5	37	16	38	40	14.5
2198.42.22.200	22	200	200	5	12	1.5	37	16	38	40	14.5
2198.42.22.240	22	240	240	6	12	1.5	37	16	38	40	14.5
2198.42.22.320	22	320	320	8	12	1.5	37	16	38	40	14.5
2198.42.22.400	22	400	400	10	12	1.5	37	16	38	40	14.5
2198.42.28.135	28	190	135	3	15	1.5	46	20	48	45	19
2198.42.28.180	28	250	180	4	15	1.5	46	20	48	45	19
2198.42.28.225	28	320	225	5	15	1.5	46	20	48	45	19
2198.42.28.270	28	380	270	6	15	1.5	46	20	48	45	19
2198.42.28.360	28	500	360	8	15	1.5	46	20	48	45	19
2198.42.28.450	28	630	450	10	15	1.5	46	20	48	45	19
2198.42.36.150	36	300	150	3	20	1.5	56	25	61	50	24.5
2198.42.36.200	36	400	200	4	20	1.5	56	25	61	50	24.5
2198.42.36.250	36	500	250	5	20	1.5	56	25	61	50	24.5
2198.42.36.300	36	600	300	6	20	1.5	56	25	61	50	24.5
2198.42.36.400	36	800	400	8	20	1.5	56	25	61	50	24.5
2198.42.36.500	36	1000	500	10	20	1.5	56	25	61	50	24.5

ROLLER INSERT WITHOUT COLLAR
ROLLER INSERT WITH COLLAR

2198.34.



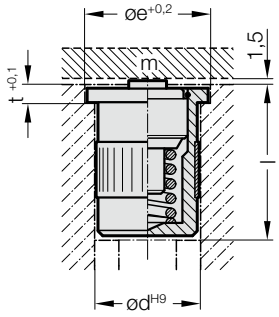
Note:
Roller inserts provide double the capacity of ball bearing inserts.

Torsion protection is provided by the customer.

2198.34. Roller insert without collar

Order No	d	Load capacity m [daN]	Roller diameter	e	t
2198.34.020	20	50	10	10	30
2198.34.024	24	80	13	14	38
2198.34.030	30	125	16	20	44
2198.34.040	40	200	19	30	53

2198.35.



Note:
Roller inserts provide double the capacity of ball bearing inserts.

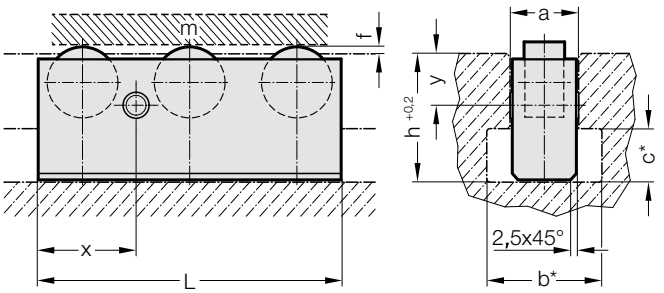
Torsion protection is provided by the customer.

2198.35. Roller insert with collar

Order No	d	Load capacity m [daN]	Roller diameter	e	t	l
2198.35.020	20	50	10	25	3.5	31
2198.35.024	24	80	13	30	4	39
2198.35.030	30	125	16	35	5	45
2198.35.040	40	200	19	50	6	54

ROLLER RAIL

2198.44.



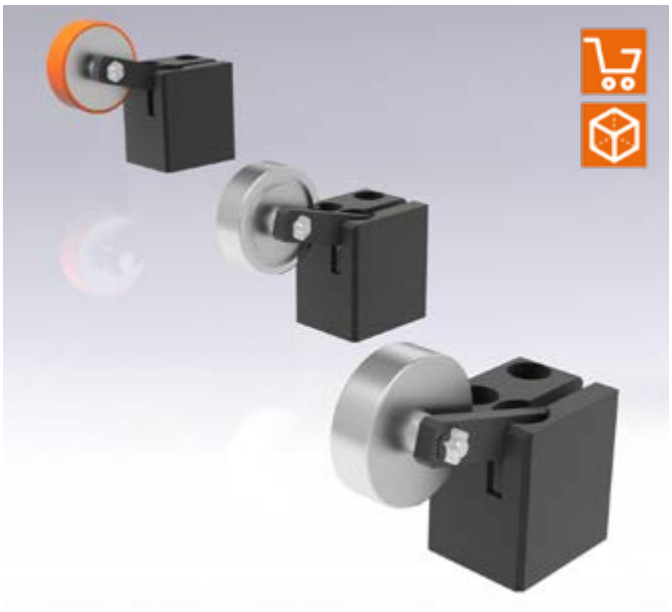
Note:
Roller rails provide double the capacity of ball bearing rails. They ensure precise linear movement of the tool.
Unlike ball bearing rails, roller rails can be used in tool base plates, i.e. installed upside down.

* T-shaped grooves are not absolutely necessary.

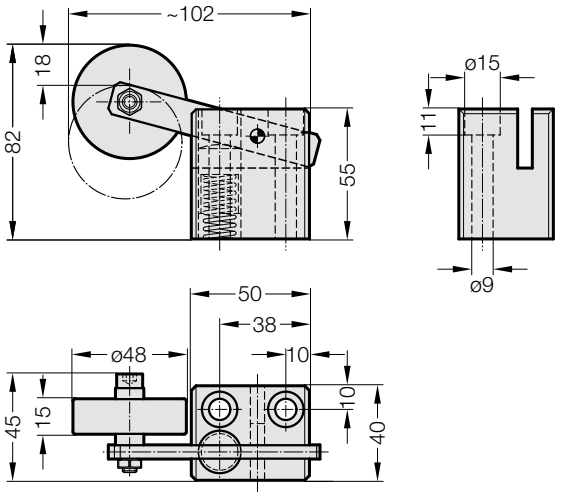
2198.44. Roller rail

Order No	a	Load capacity m [daN]	L	Number of rollers	Roller diameter	f	b*	c*	h	x	y
2198.44.18.105	18	150	105	3	10	1.5	30	12	30	35	14.5
2198.44.18.140	18	200	140	4	10	1.5	30	12	30	35	14.5
2198.44.18.175	18	250	175	5	10	1.5	30	12	30	35	14.5
2198.44.18.210	18	300	210	6	10	1.5	30	12	30	35	14.5
2198.44.18.280	18	400	280	8	10	1.5	30	12	30	35	14.5
2198.44.18.350	18	500	350	10	10	1.5	30	12	30	35	14.5
2198.44.22.120	22	240	120	3	13	1.5	37	16	38	40	14.5
2198.44.22.160	22	320	160	4	13	1.5	37	16	38	40	14.5
2198.44.22.200	22	400	200	5	13	1.5	37	16	38	40	14.5
2198.44.22.240	22	480	240	6	13	1.5	37	16	38	40	14.5
2198.44.22.320	22	640	320	8	13	1.5	37	16	38	40	14.5
2198.44.22.400	22	800	400	10	13	1.5	37	16	38	40	14.5
2198.44.28.135	28	380	135	3	16	1.5	46	20	48	45	19
2198.44.28.180	28	500	180	4	16	1.5	46	20	48	45	19
2198.44.28.225	28	630	225	5	16	1.5	46	20	48	45	19
2198.44.28.270	28	750	270	6	16	1.5	46	20	48	45	19
2198.44.28.360	28	1000	360	8	16	1.5	46	20	48	45	19
2198.44.28.450	28	1250	450	10	16	1.5	46	20	48	45	19
2198.44.36.150	36	600	150	3	19	1.5	56	25	61	50	24.5
2198.44.36.200	36	800	200	4	19	1.5	56	25	61	50	24.5
2198.44.36.250	36	1000	250	5	19	1.5	56	25	61	50	24.5
2198.44.36.300	36	1200	300	6	19	1.5	56	25	61	50	24.5
2198.44.36.400	36	1600	400	8	19	1.5	56	25	61	50	24.5
2198.44.36.500	36	2000	500	10	19	1.5	56	25	61	50	24.5

SPRING MOUNTED ROLLER TO VW STANDARD



2198.50.55.01/.10/.20



Material:

Base frame: Steel
Track roller, version 01: Steel
Track roller, version 10: Steel / radial deep-groove ball bearing
Track roller, version 20: Steel / coated with polyurethane rubber

Execution:

Track roller, version 01: Standard
Track roller, version 10: Standard, at high load of the track roller
Track roller, version 20: Standard, for aluminium plates for skin panels

Note:

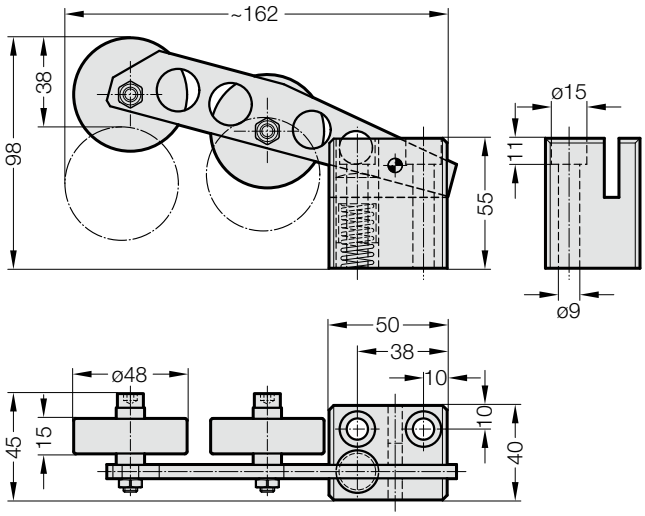
Delivery with cheese head screws DIN EN ISO 4762 M8x60 (2x). For order numbers for track roller spare part and compression springs, see table.

2198.50.55.01/.10/.20 Spring mounted roller to VW Standard

Order No	Execution	Track roller	Compression spring	Spring rate [N/mm]
2198.50.55.01	01	2198.50.55.01.07	2198.50.55.01.06	19.1
2198.50.55.10	10	2198.50.55.10.07	2198.50.55.01.06	19.1
2198.50.55.20	20	2198.50.55.20.07	2198.50.55.01.06	19.1

SPRING MOUNTED ROLLER TO VW STANDARD

2198.50.55.02/.11/.21



Material:

Base frame: Steel
Track roller, version 02: Steel
Track roller, version 11: Steel / radial deep-groove ball bearing
Track roller, version 21: Steel / coated with polyurethane rubber

Execution:

Track roller, version 02: In front and sideways of cut-outs
Track roller, version 11: In front and sideways of cut-outs, at high load of the track roller
Track roller, version 21: In front and sideways of cut-outs, for aluminium plates for skin panels

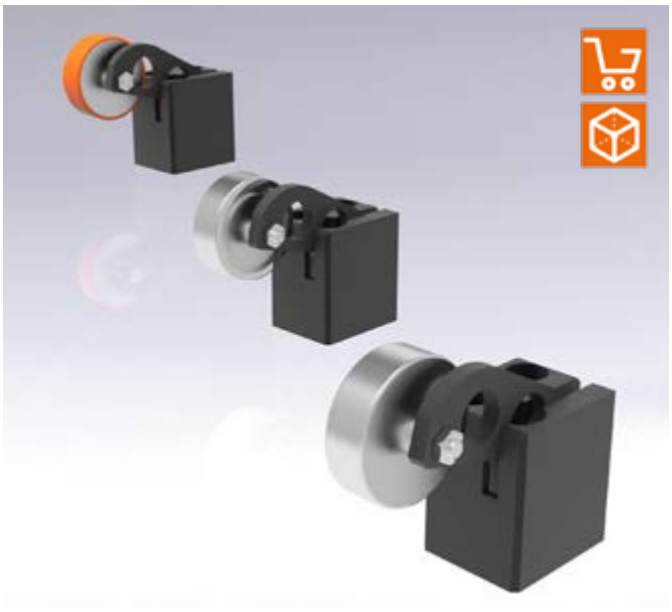
Note:

Delivery with cheese head screws DIN EN ISO 4762 M8x60 (2x). For order numbers for track roller spare part and compression springs, see table.

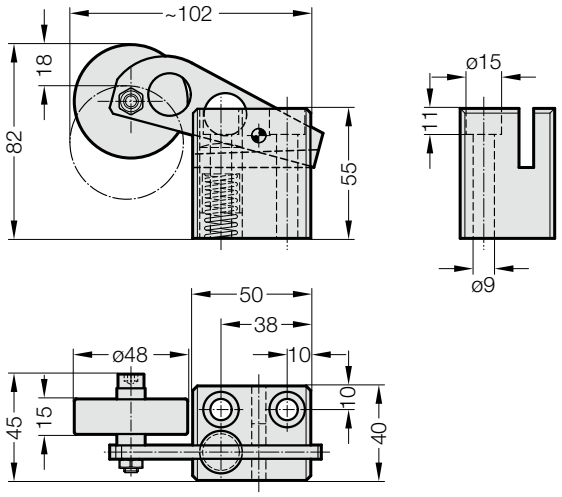
2198.50.55.02/.11/.21 Spring mounted roller to VW Standard

Order No	Execution	Track roller	Compression spring	Spring rate [N/mm]
2198.50.55.02	02	2198.50.55.01.07	2198.50.55.01.06	19.1
2198.50.55.11	11	2198.50.55.10.07	2198.50.55.01.06	19.1
2198.50.55.21	21	2198.50.55.20.07	2198.50.55.01.06	19.1

SPRING MOUNTED ROLLER TO VW STANDARD



2198.50.55.03/.12/.14/.22



Material:

Base frame: Steel
Track roller, version 03: Steel
Track roller, version 12/14: Steel / radial deep-groove ball bearing
Track roller, version 22: Steel / coated with polyurethane rubber

Execution:

Track roller, version 03: In front and sideways of cut-outs
Track roller, version 12/14: In front and sideways of cut-outs, at high load of the track roller
Track roller, version 22: In front and sideways of cut-outs, for aluminium plates for skin panels

Note:

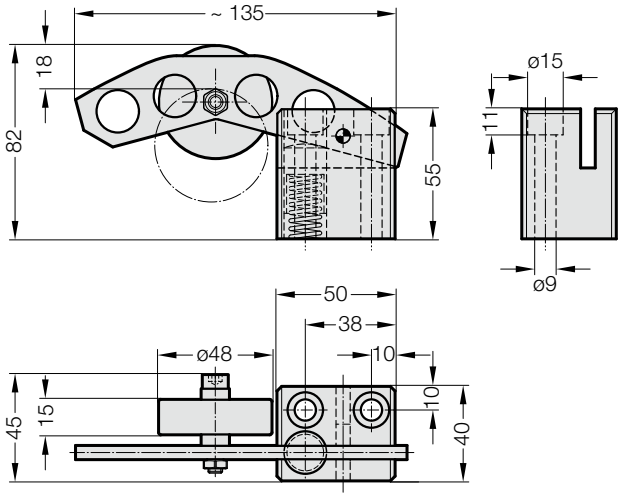
Delivery with cheese head screws DIN EN ISO 4762 M8x60 (2x). For order numbers for track roller spare part and compression springs, see table.

2198.50.55.03/.12/.14/.22 Spring mounted roller to VW Standard

Order No	Execution	Track roller	Compression spring	Spring rate [N/mm]
2198.50.55.03	03	2198.50.55.01.07	2198.50.55.01.06	19.1
2198.50.55.12	12	2198.50.55.10.07	2198.50.55.01.06	19.1
2198.50.55.14	14	2198.50.55.10.07	2198.50.55.14.06	7.1
2198.50.55.22	22	2198.50.55.20.07	2198.50.55.01.06	19.1

SPRING MOUNTED ROLLER TO VW STANDARD

2198.50.55.04/.13/.23



Material:
Base frame: Steel
Track roller, version 04: Steel
Track roller, version 13: Steel / radial deep-groove ball bearing
Track roller, version 23: Steel / coated with polyurethane rubber

Execution:
Track roller, version 04: In front and sideways of cut-outs
Track roller, version 13: In front and sideways of cut-outs, at high load of the track roller
Track roller, version 23: In front and sideways of cut-outs, for aluminium plates for skin panels

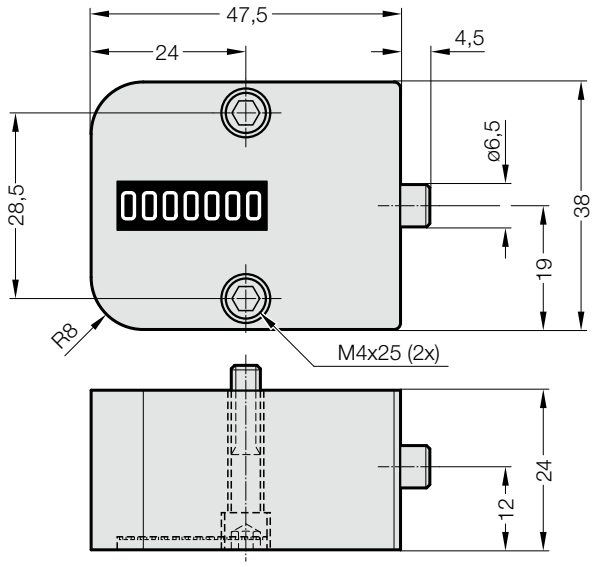
Note:
Delivery with cheese head screws DIN EN ISO 4762 M8x60 (2x). For order numbers for track roller spare part and compression springs, see table.

2198.50.55.04/.13/.23 Spring mounted roller to VW Standard

Order No	Execution	Track roller	Compression spring	Spring rate [N/mm]
2198.50.55.04	04	2198.50.55.01.07	2198.50.55.01.06	19.1
2198.50.55.13	13	2198.50.55.10.07	2198.50.55.01.06	19.1
2198.50.55.23	23	2198.50.55.20.07	2198.50.55.01.06	19.1

COUNTER VIEW, MECHANICAL

3710.12.01



Description:
- monitors the productivity of a moulding tool

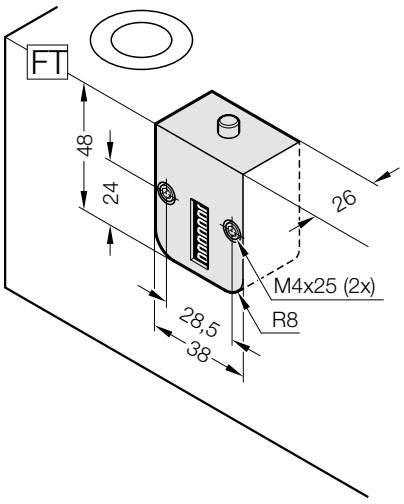
Note:
- max. operational temperature 120 °C
- seven digit display, non-resettable, allows recording up to 10 million cycles
- splash resistant, corrosion resistant
- incl. mounting screws M4x25

Installation into mould parting surface with 2 cylinder screws M4 x 25 DIN EN ISO 4762.
- An installation in the mould parting surface provides a good reading of the counted values.

Patent

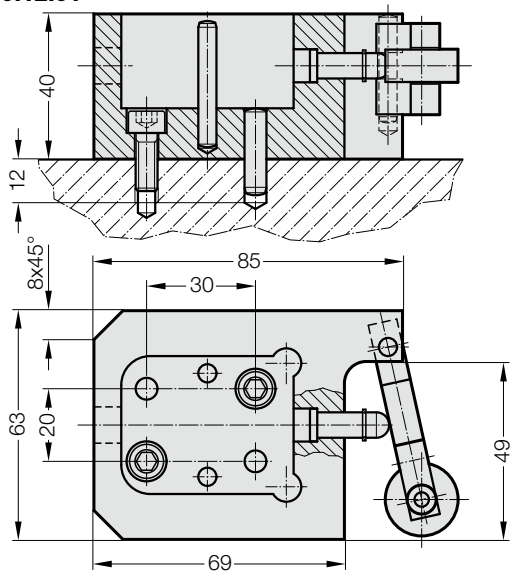
3710.12.01 **Counter view, mechanical**

Mounting example



INSTALLATION FRAME FOR COUNTER VIEW

3710.00.12.01

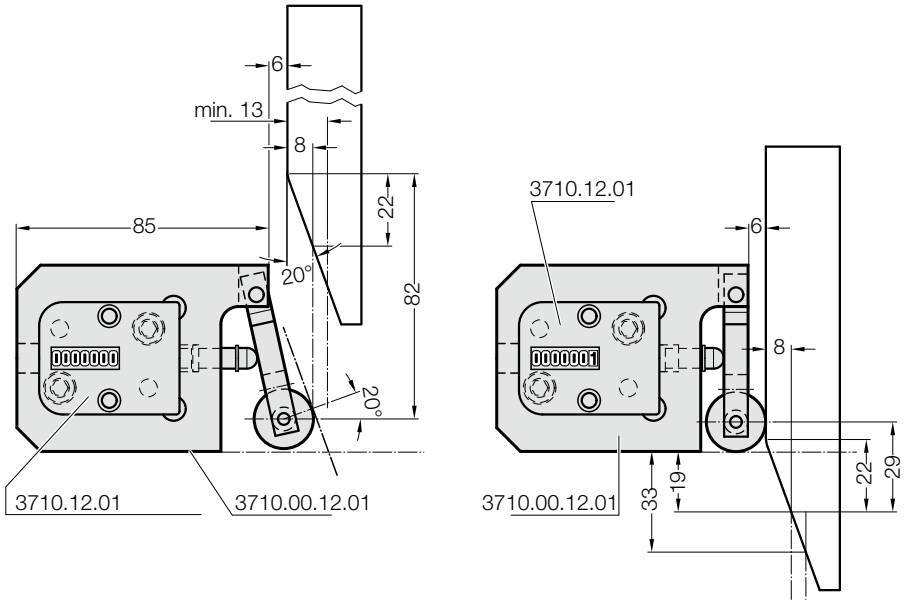


3710.00.12.01 **Installation frame for counter view**

Note:
Fasten the installation frame on the tool, then insert the counter view.
Delivery includes:
2 socket head cap screws M6x16 to DIN EN ISO 4762 and 2 dowel pins 2361.1.0600.024

Attention:
After installing the counter view into the installation frame, disassembly is no longer possible (manipulation proof).

Mounting example



CONVEYOR BELTS, ELECTRICALLY CONTOLLED

CONVEYOR BELTS, ELECTRICAL - DESCRIPTION AND ORDERING GUIDELINES

Conveyor speed:

Default is 5.5 m/min.
Speeds of 2.7–7.5–11–20 m/min are available on request.

5.5	m/min.	Code	1
2.7	m/min.	Code	2
7.5	m/min.	Code	3
11	m/min.	Code	4
20	m/min.	Code	5

An electrical controller enables the belt speed to be set to between

0.02	–10 m/min. (Only possible with types 302 and 402)	Code	6 1 3	6 3 4
10	–20 m/min.	Code	7 1 3	7 3 4
20	–30 m/min.	Code	8 1 3	8 3 4
0.02	–30 m/min. (Only possible with types 302 and 402)	Code	9 1 3	9 3 4

with limited control precision.

Motors: (supply voltage)

		230 V AC 1-ph.	400 V AC 3-ph.
Single-phase 230 V–50 HZ	Code	1	
Three-phase 230 V–50 HZ (star delta circuit)	Code	2	
Three-phase 400 V–50 HZ	Code	3	

Motor position with gearbox:

Motor axis horizontal relative to direction of belt travel, right	Code	1
Motor axis horizontal relative to direction of belt travel, left	Code	2
Motor axis vertical relative to direction of belt travel, right, above	Code	3
Motor axis vertical relative to direction of belt travel, right, below	Code	4
Motor axis vertical relative to direction of belt travel, left, above	Code	5
Motor axis vertical relative to direction of belt travel, left, below	Code	6

Control system:

without electrical installation	Code	0
with manual on/off and motor protection breaker switch	Code	1
with manual on/off and motor protection breaker switch in addition, emergency stop, 3 m cable with plug IEC 309	Code	2
Equipment as for 2 + motor protection breaker control for belt speed regulation, 230 V 1-ph → with IEC 309 plug	Code	3
Equipment as for 2 + motor protection breaker control for belt speed regulation, 400 V 3-ph → with IEC 309 plug	Code	4

Description:

The conveyor belts are used to move parts and waste out of the press. They are suitable for any other application involving the movement of parts or waste.

The belt consists of a woven glass fibre fabric with a polyurethane coating.

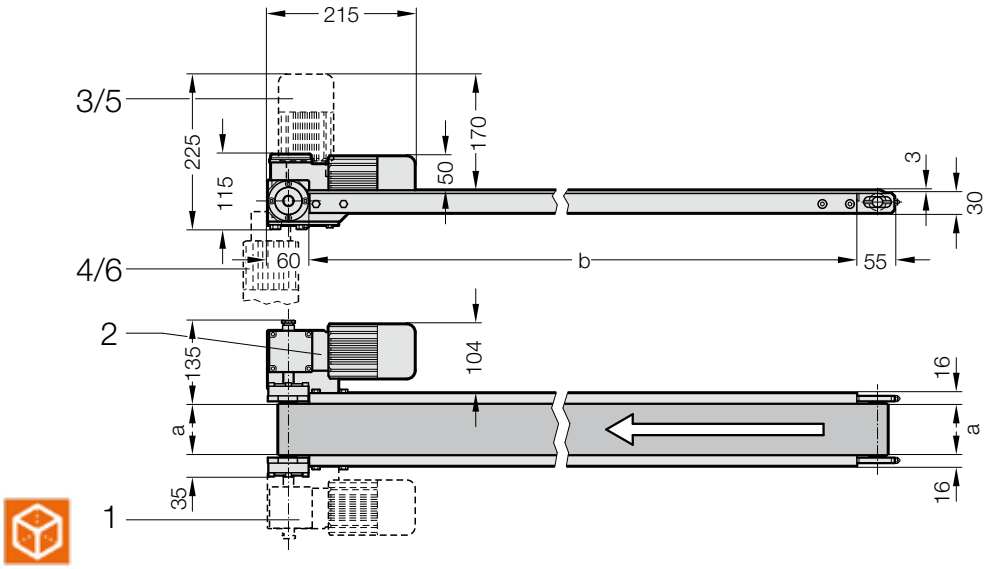
The drives are designed for both continuous and intermittent operation.

Accessories:

Delimiting guides, loss prevention and stands (see following pages) only in conjunction with a conveyor belt order.

CONVEYOR BELT, ELECTRICALLY CONTOLLED

2195.301.



2195.301. Conveyor belt, electrically contolled

b	500	750	1,000	1,250	1,500	1,750	2,000	2,250	2,500
a									
30	●	●	●	●	●	●	●	●	●
50	●	●	●	●	●	●	●	●	●
75	●	●	●	●	●	●	●		
100	●	●	●	●	●	●	●		
125	●	●	●	●	●				
150	●	●	●	●	●				
175	●	●	●	●					
200	●	●	●	●					
225	●	●	●						
250	●	●	●						
275	●	●							
300	●	●							

Belt load:

Belt width a	kg per meter conveyed
30– 50– 75	4
100–125–150	7
175–200–225	10
250–275–300	15

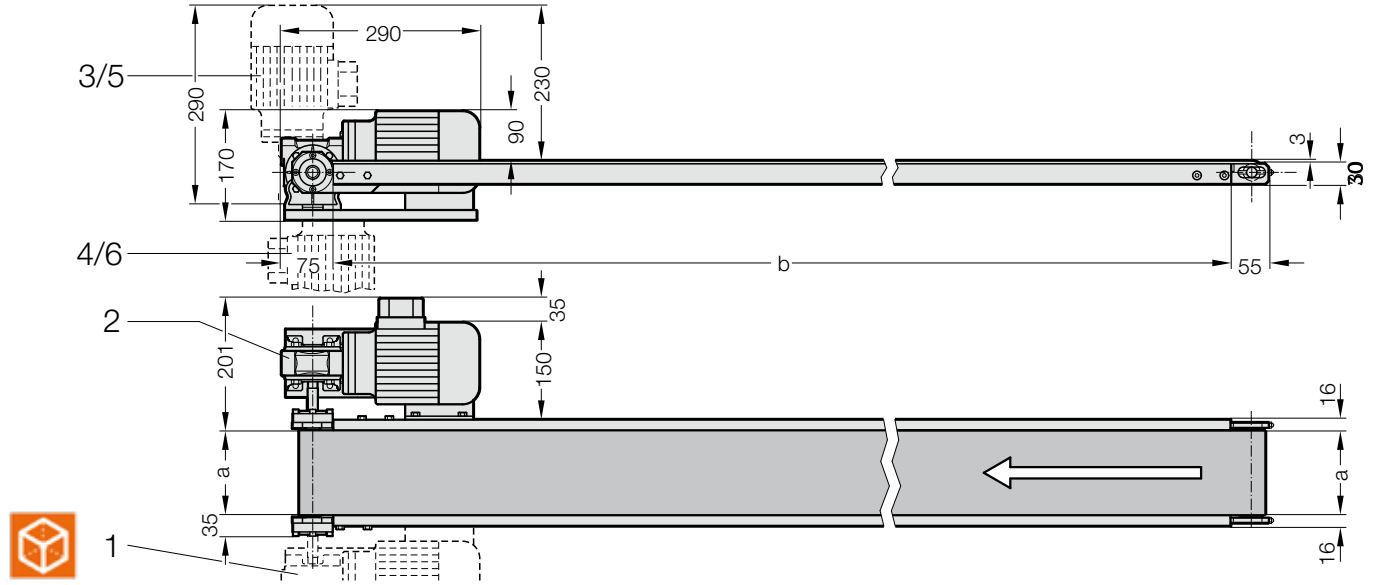
For more information refer to description and ordering guidelines.

Ordering Code (example):

Conveyor belt, electrically contolled		= 2195.
Typ 301		= 301.
Belt width	a = 100 mm	= 100.
Nominal belt length	b = 1750 mm	= 1750.
Belt speed		= 1
Motor voltage 400 V		= 3
Motor position		= 1
Motor controller		= 1
Order No.		= 2195. 301. 100. 1750. 1 3 1 1

CONVEYOR BELT, ELECTRICALLY CONTOLLED

2195.302.



2195.302. Conveyor belt, electrically contolled

b	1,000	1,250	1,500	1,750	2,000	2,250	2,500	2,750	3,000	3,250	3,500	3,750	4,000
a													
30								●	●	●	●	●	●
50								●	●	●	●	●	●
75						●	●	●	●	●	●	●	●
100						●	●	●	●	●	●	●	●
125				●	●	●	●	●	●	●	●	●	
150				●	●	●	●	●	●	●	●	●	
175			●	●	●	●	●	●	●				
200			●	●	●	●	●	●	●				
225		●	●	●	●	●	●	●					
250		●	●	●	●	●	●	●					
275	●	●	●	●	●	●	●						
300	●	●	●	●	●	●	●						

Belt load:

Belt width a	kg per meter conveyed
30– 50– 75	4
100–125–150	7
175–200–225	10
250–275–300	15

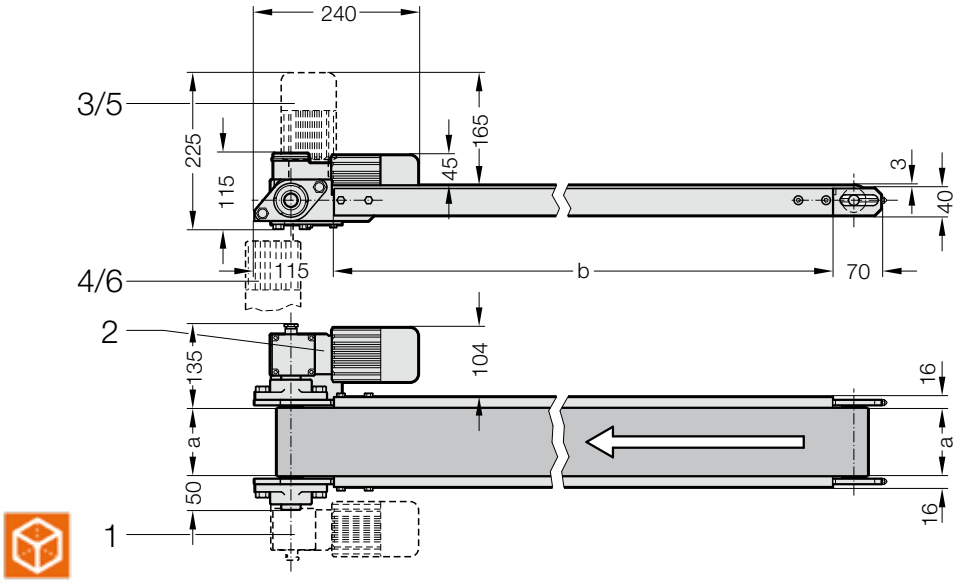
For more information refer to description and ordering guidelines.

Ordering Code (example):

Conveyor belt, electrically contolled		= 2195.
Typ 302		= 302.
Belt width	a = 100 mm	= 100.
Nominal belt length	b = 2500 mm	= 2500.
Belt speed		= 1
Motor voltage 400 V		= 3
Motor position		= 1
Motor controller		= 1
Order No.		= 2195.302. 100. 2500. 1 3 1 1

CONVEYOR BELT, ELECTRICALLY CONTOLLED

2195.401.



2195.401. Conveyor belt, electrically contolled

b	500	750	1,000	1,250	1,500	1,750	2,000	2,250	2,500
a									
30	●	●	●	●	●	●	●	●	●
50	●	●	●	●	●	●	●	●	●
75	●	●	●	●	●	●	●		
100	●	●	●	●	●	●	●		
125	●	●	●	●	●	●			
150	●	●	●	●	●	●			
175	●	●	●	●	●				
200	●	●	●	●	●				
225	●	●	●	●					
250	●	●	●	●					
275	●	●	●						
300	●	●	●						

Belt load:

Belt width a	kg per meter conveyed
30– 50– 75	5
100–125–150	10
175–200–225	14
250–275–300	17

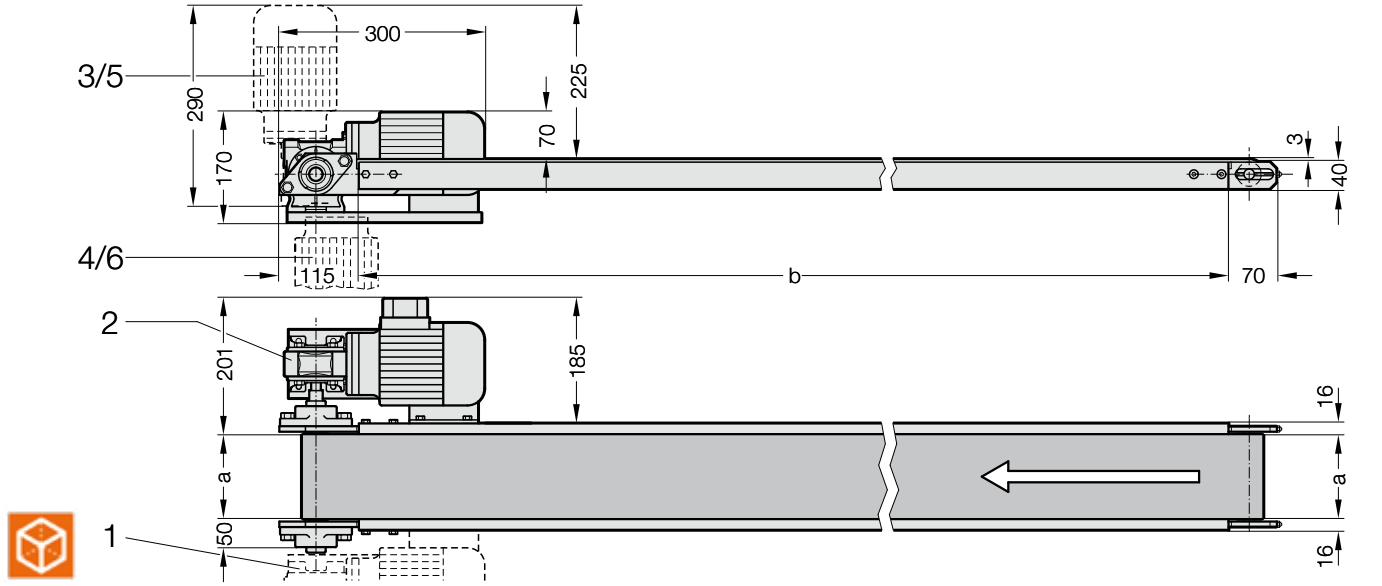
For more information refer to description and ordering guidelines.

Ordering Code (example):

Conveyor belt, electrically contolled		= 2195.
Typ 401		= 401.
Belt width	a = 100 mm	= 100.
Nominal belt length	b = 1750 mm	= 1750.
Belt speed		= 1
Motor voltage 400 V		= 3
Motor position		= 1
Motor controller		= 1
Order No.		= 2195. 401. 100. 1750. 1 3 1 1

CONVEYOR BELT, ELECTRICALLY CONTOLLED

2195.402.



2195.402. Conveyor belt, electrically contolled

b	500	750	1,000	1,250	1,500	1,750	2,000	2,250	2,500	2,750	3,000	3,250	3,500	3,750	4,000
a															
30										●	●	●	●	●	●
50										●	●	●	●	●	●
75								●	●	●	●	●	●	●	
100								●	●	●	●	●	●	●	
125							●	●	●	●	●	●	●		
150							●	●	●	●	●	●	●		
175						●	●	●	●	●	●				
200						●	●	●	●	●	●				
225					●	●	●	●	●	●	●				
250					●	●	●	●	●	●	●				
275				●	●	●	●	●	●	●					
300				●	●	●	●	●	●	●					
350	●	●	●	●	●	●	●	●	●						
400	●	●	●	●	●	●	●	●	●						
450	●	●	●	●	●	●	●	●							
500	●	●	●	●	●	●	●	●							

Belt load:

Belt width a	kg per meter conveyed
30– 50– 75	5
100–125–150	10
175–200–225	14
250–275–300	17
350–400–450	20
500	24

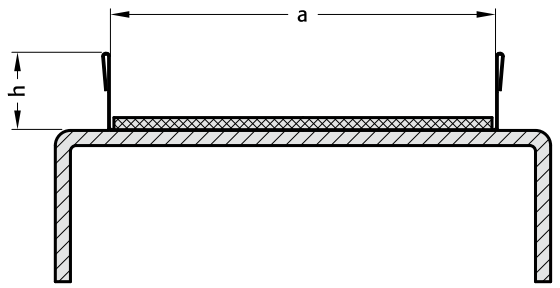
For more information refer to description and ordering guidelines.

Ordering Code (example):

Conveyor belt, electrically contolled		=	2195.
Typ 402		=	402.
Belt width	a = 100 mm	=	100.
Nominal belt length	b = 2500 mm	=	2500.
Belt speed		=	1
Motor voltage 400 V		=	3
Motor position		=	1
Motor controller		=	1
Order No.		=	2195. 402. 100. 2500. 1 3 1 1

DELIMITING GUIDE FOR CONVEYOR BELT

2195.114.



Delimiting guide for conveyor belt

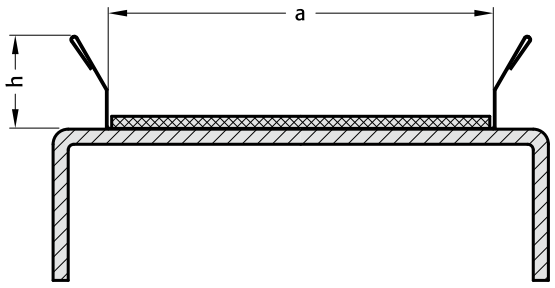
Description:
Delimiting guide made of stainless steel
h = 15 - 100 mm (in 5 mm increments)

Note:
Only in conjunction with a conveyor belt order

Ordering Code (example):

Conveyor belt, electrically controlled		=	2195.
Delimiting guide type		=	114.
Guide height	h = 15 mm	=	015.
Belt width	a = 100 mm	=	100.
Frame length	b = 1500 mm	=	1500
Order No.		=	2195.114.015.100. 1500

2195.115.



Delimiting guide for conveyor belt

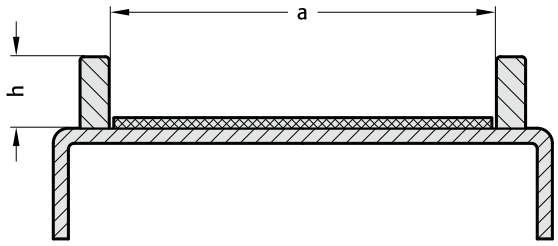
Description:
Delimiting guide made of stainless steel
h = 25 - 100 mm (in 5 mm increments)

Note:
Only in conjunction with a conveyor belt order

Ordering Code (example):

Conveyor belt, electrically controlled		=	2195.
Delimiting guide type		=	115.
Guide height	h = 25 mm	=	025.
Belt width	a = 150 mm	=	150.
Frame length	b = 1500 mm	=	1500
Order No.		=	2195.115.025. 150.1500

2195.116.



Delimiting guide for conveyor belt

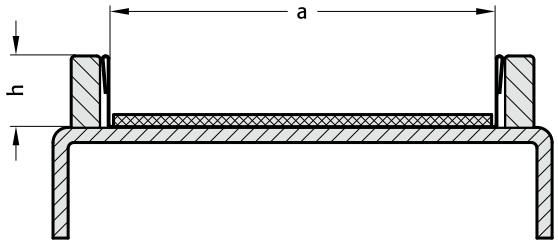
Description:
Conveyor edge rails of steel, brazed
h = 10 - 100 mm (in 5 mm increments)

Note:
Only in conjunction with a conveyor belt order

Ordering Code (example):

Conveyor belt, electrically controlled		=	2195.
Delimiting guide type		=	116.
Guide height	h = 10 mm	=	010.
Belt width	a = 100 mm	=	100.
Frame length	b = 1500 mm	=	1500
Order No.		=	2195.116.010.100. 1500

2195.117.



Delimiting guide for conveyor belt

Description:
Trough conveyor edge rails of stainless steel, with brazed on steel reinforcement walls
h = 15 - 100 mm (in 5 mm increments)

Note:
Only in conjunction with a conveyor belt order

Ordering Code (example):

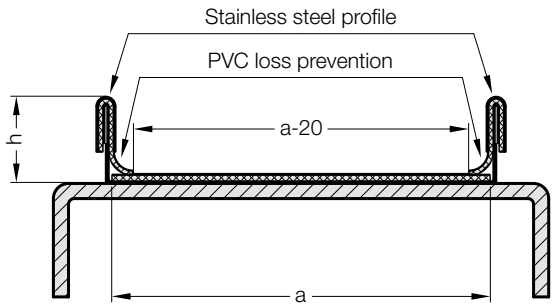
Conveyor belt, electrically controlled		=	2195.
Delimiting guide type		=	117.
Guide height	h = 15 mm	=	015.
Belt width	a = 100 mm	=	100.
Frame length	b = 1500 mm	=	
Order No.		=	2195.117. 015.100. 1500

DELIMITING GUIDE WITH LOSS PREVENTION FOR CONVEYOR BELT

Delimiting guide with loss prevention for conveyor belt

2195.218.

Description:
with profile on conveyor edge rail 2195.114. with loss prevention
h = 25 - 50 mm (in 5 mm increments)



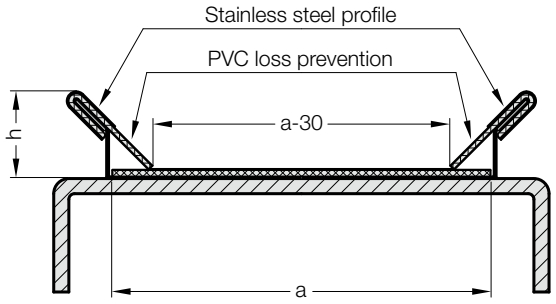
Ordering Code (example):

Conveyor belt, electrically controlled		=	2195.
Delimiting guide type 114 with loss prevention type 218		=	218.
Guide height	h = 25 mm	=	025.
Belt width	a = 150 mm	=	150.
Frame length	b = 1500 mm	=	1500
Order No.		=	2195. 218. 025. 150. 1500

Delimiting guide with loss prevention for conveyor belt

2195.219.

Description:
with profile on conveyor edge rail 2195.115. with loss prevention
h = 25 - 50 mm (in 5 mm increments)



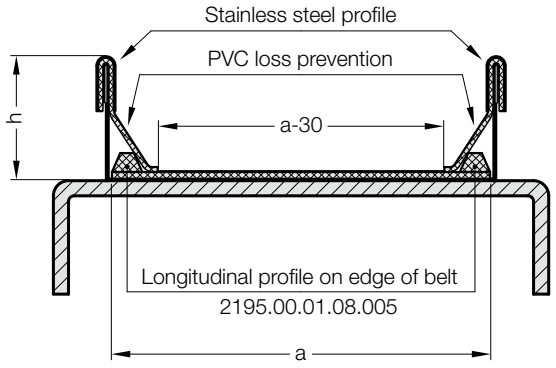
Ordering Code (example):

Conveyor belt, electrically controlled		=	2195.
Delimiting guide type 115 with loss prevention type 219		=	219.
Guide height	h = 25 mm	=	025.
Belt width	a = 150 mm	=	150.
Frame length	b = 1500 mm	=	1500
Order No.		=	2195. 219. 025. 150. 1500

Delimiting guide with loss prevention for conveyor belt

2195.220.

Description:
with profile on conveyor edge rail 2195.114. and longitudinal profile on edge of belt, with loss prevention
h = 35 - 50 mm (in 5 mm increments)



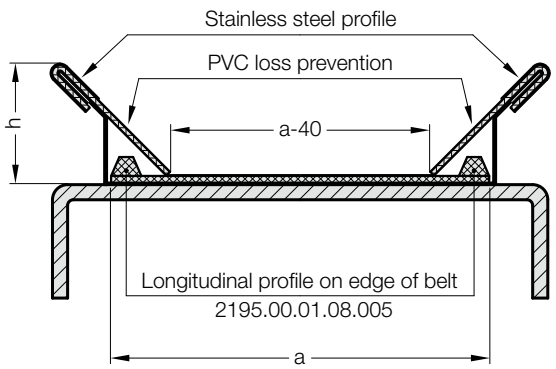
Ordering Code (example):

Conveyor belt, electrically controlled		=	2195.
Delimiting guide type 114 with loss prevention and longitudinal profile 2195.00.01.08.005		=	220.
Guide height	h = 35 mm	=	035.
Belt width	a = 150 mm	=	150.
Frame length	b = 1500 mm	=	1500
Order No.		=	2195. 220. 035. 150. 1500

Delimiting guide with loss prevention for conveyor belt

2195.221.

Description:
with profile on conveyor edge rail 2195.115. and longitudinal profile on edge of belt, with loss prevention
h = 35 - 50 mm (in 5 mm increments)



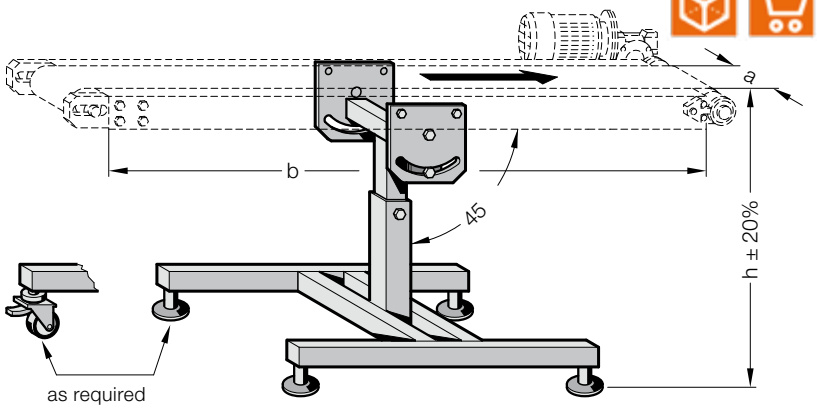
Ordering Code (example):

Conveyor belt, electrically controlled		=	2195.
Delimiting guide type 115 with loss prevention and longitudinal profile 2195.00.01.08.005		=	221.
Guide height	h = 35 mm	=	035.
Belt width	a = 150 mm	=	150.
Frame length	b = 1500 mm	=	1500
Order No.		=	2195. 221. 035. 150. 1500

STAND FOR CONVEYOR BELT

Stand for conveyor belt, with adjustable slope

2195.120./2195.121.



Description:

Stand, inclinable with adjustable feet .120.
Stand, inclinable with adjustable feet .121.

h = height to customer's requirements, min. 450 mm
±20% h = adjustable height range

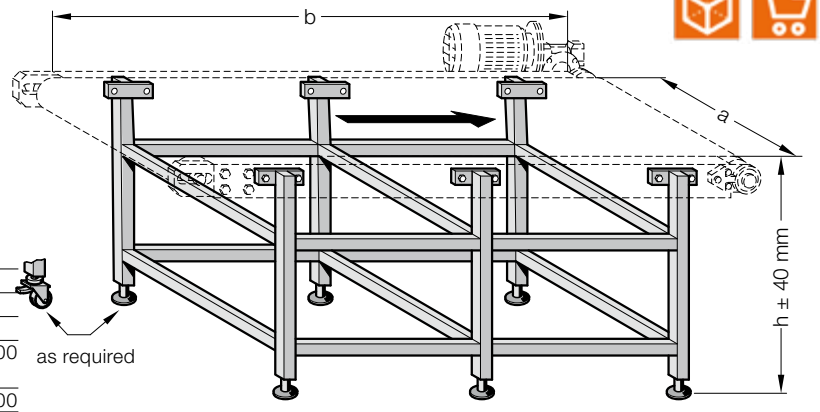
$a_{max.}$ = 350 mm
$b_{max.}$ = 2000 mm

Ordering Code (example):

Conveyor belt, electrically controlled		= 2195.	
Stand, with adjustable feet		=	120.
Height	h = 450 mm	=	0450.
Belt width	a = 350 mm	=	350
Order No.		= 2195.	120.0450.350

Stand for conveyor belt, table frame

2195.130./2195.131.



Description:

Table format with adjustable feet .130.
Table format with adjustable castors .131.

h = height to customer's requirements, min. 450 mm

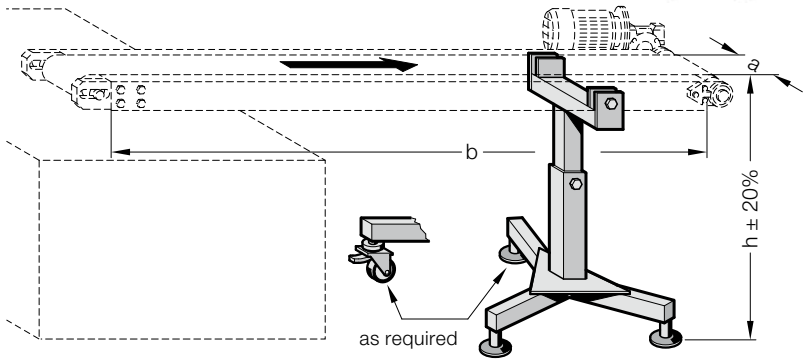
For use with belt width a
For use with frame length b

Ordering Code (example):

Conveyor belt, electrically controlled		= 2195.	
Stand with adjustable castors		=	131.
Height	h = 600 mm	=	0600.
Belt width	a = 350 mm	=	350.
Nominal belt length	b = 1000 mm	=	1000
Order No.		= 2195.	131.0600.350. 1000

Stand for conveyor belt, single

2195.140./2195.141.



Description:

Stand, with adjustable feet .140.
Stand, with adjustable feet .141.

h = height to customer's requirements, min. 450 mm
±20% h = adjustable height range

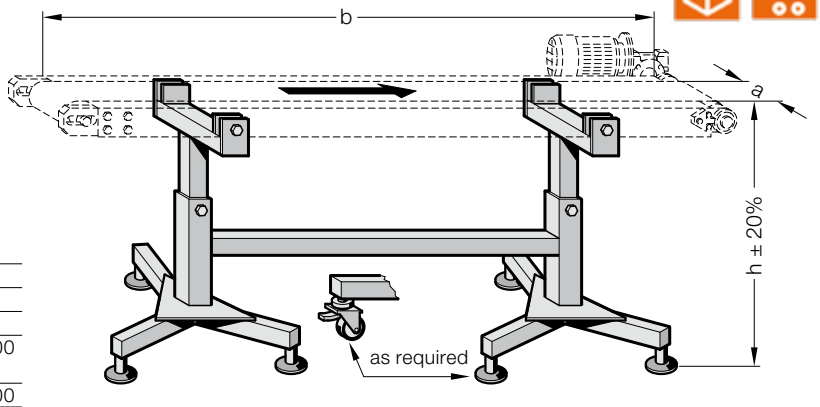
$a_{max.}$ = 350 mm

Ordering Code (example):

Conveyor belt, electrically controlled		= 2195.	
Stand with adjustable castors		=	141.
Height	h = 450 mm	=	0450.
Belt width	a = 350 mm	=	350
Order No.		= 2195.	141. 0450. 350

Stand for conveyor belt, double

2195.150./2195.151.



Description:

double adjustment with adjustable feet .150.
double adjustment with adjustable castors .151.

h = height to customer's requirements, min. 450 mm
±20% h = adjustable height range

$a_{max.}$ = 400 mm
$b_{max.}$ = 3000 mm

Ordering Code (example):

Conveyor belt, electrically controlled		= 2195.	
Stand with adjustable castors		=	151.
Height	h = 450 mm	=	0450.
Belt width	a = 400 mm	=	400.
Nominal belt length	b = 3000 mm	=	3000
Order No.		= 2195.	151.0450.400. 3000

PNEUMATIC CONVEYOR

PNEUMATIC CONVEYOR

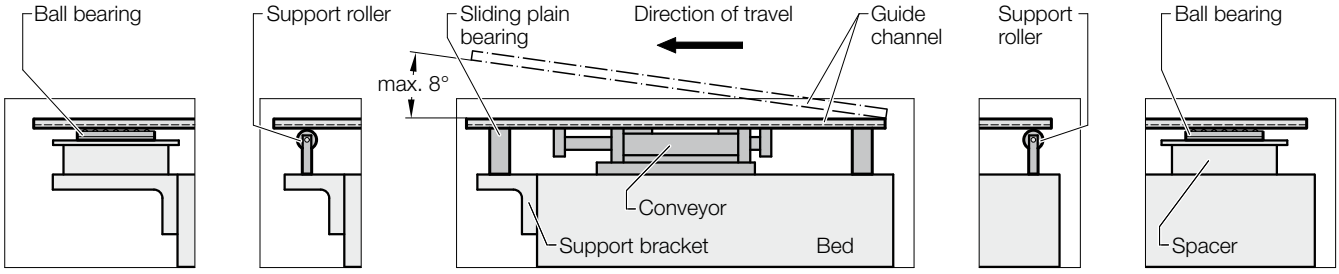
Description:

This pneumatic conveyor is unique and is patented. It was designed to provide an effective and affordable solution to the problems of conveying parts and disposing of waste. This beltless system conveys stampings and waste from the tool area by vibration alone.
A specially designed guide channel which is screwed to the body of the conveyor vibrates rhythmically slowly forwards and fast backwards. The mass inertia of the parts is used to move them forwards. In this way the parts in the guide channel progress gently towards the storage containers.
The conveyor is maintenance-free and has a very low air consumption so is extremely economical in operation.
The pneumatic conveyor is quiet running and very user friendly.

The conveyor was originally designed for press shop use but can be used as a conveyor with any tool. Blockages are a thing of the past whether the conveyor is feeding parts for assembly or removing and disposing of stampings and waste parts.

Guides

We recommend three options for supporting a long guide channel:
1) Ball bearings 2) Roller supports 3) Sliding plain bearings



Technical data:

Model	Max. load [kg]	air consumption [l/min.]	sound level [db-A]	Stroke length [mm]	Guide channel weight max. [kg]	Despatch weight [kg]
2199.03	3	0,55	68	20	1,4	1,4
2199.10	10	1,25	68	25	2,7	2,8
2199.40.1	40	5,42	70	27	5,4	7,2
2199.70	70	5,42	70	27	11,3	5,5

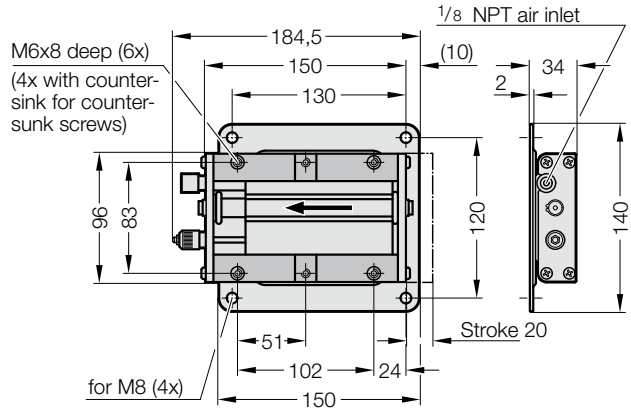
Recommended number of strokes: 120 /min.
Speed of travel: 8 - 10 m/min.
Operating pressure: 4 - 5.5 bar

Note:

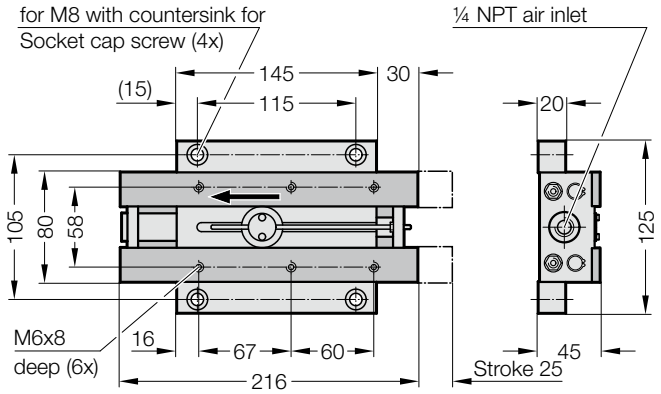
Do not exceed 5.5 bar as excess pressure will damage the transporter.
Additional protection for the transporter can be provided by including a service unit in the circuit. This consists of a filter, pressure control valve and lubricator.

PNEUMATIC CONVEYOR

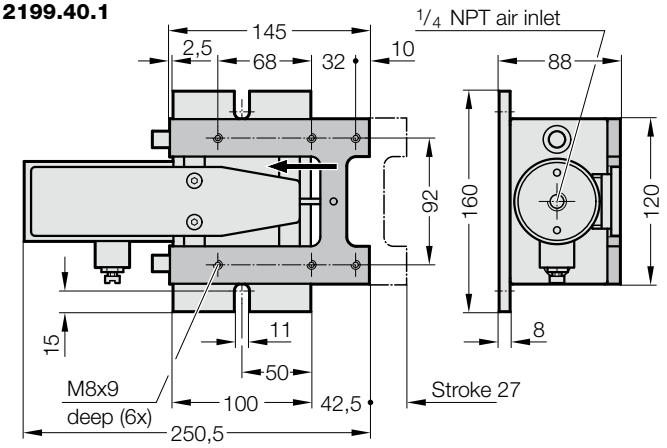
2199.03



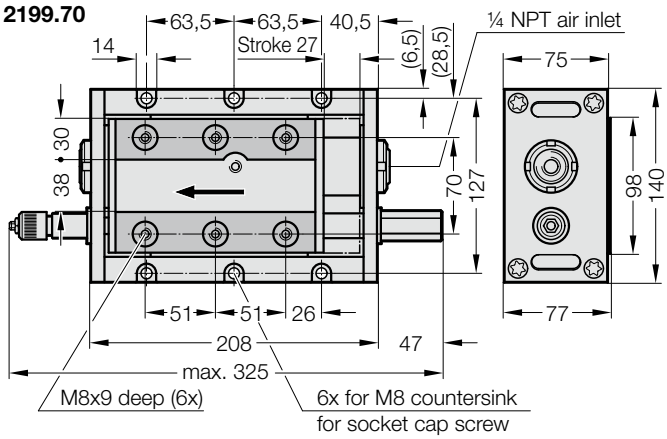
2199.10



2199.40.1



2199.70



PNEUMATIC CONVEYOR

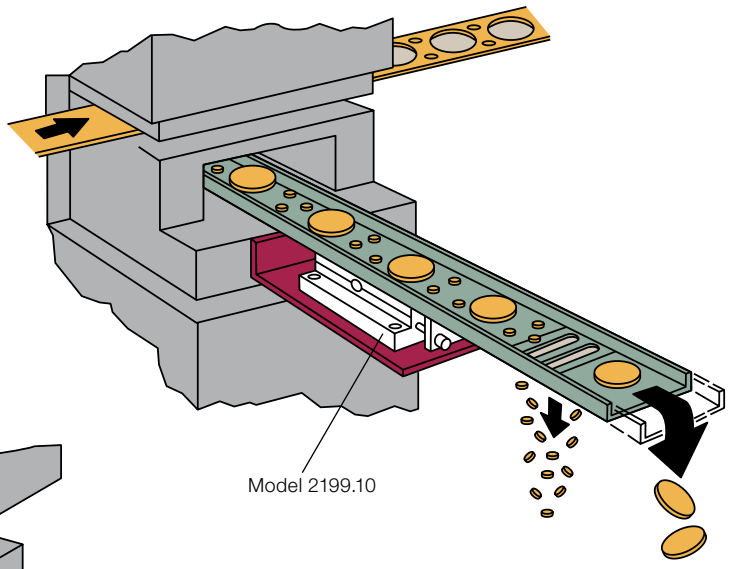
2199.03/.10/.40/.70

How does the pneumatic conveyor work?

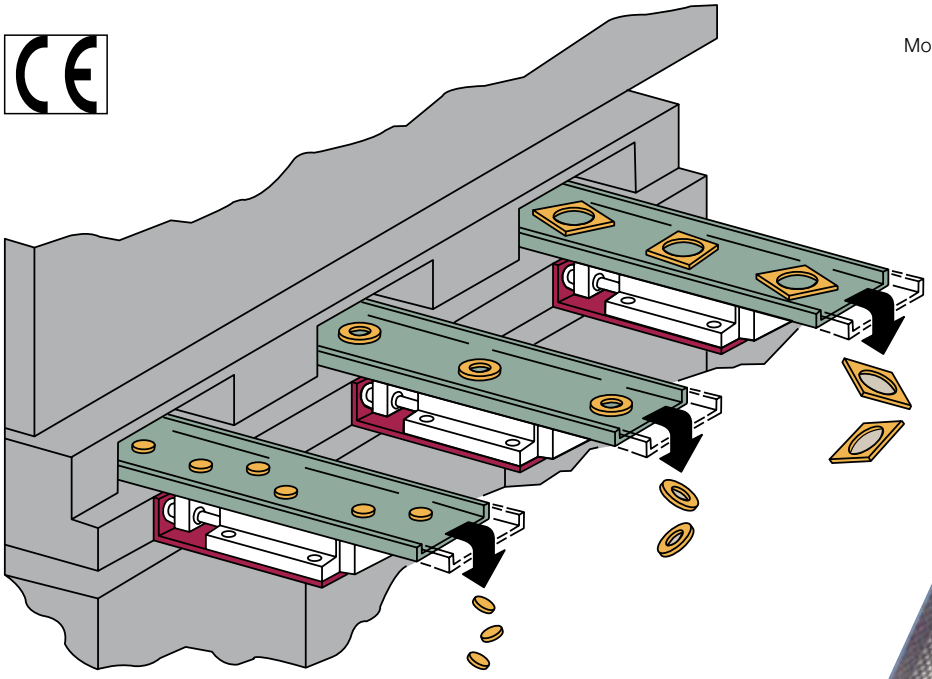
This compact pneumatic conveyor is driven by compressed air.

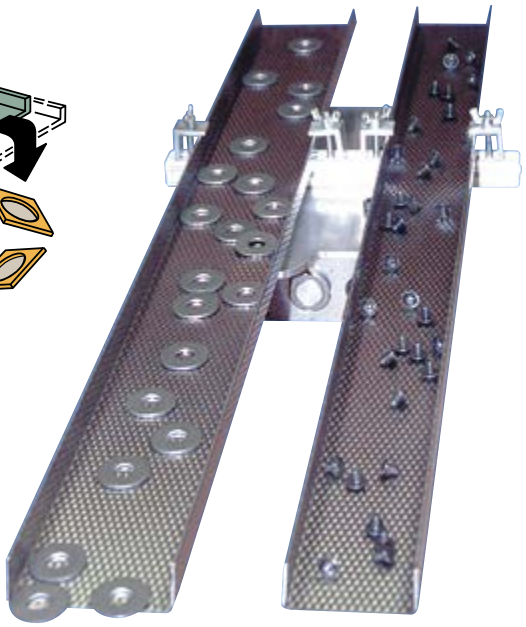
The vibrating rhythmic motion conveys stampings and stamping waste whilst reducing your costs.

Guide channels can be matched to any tool opening and used for sorting various types of waste.

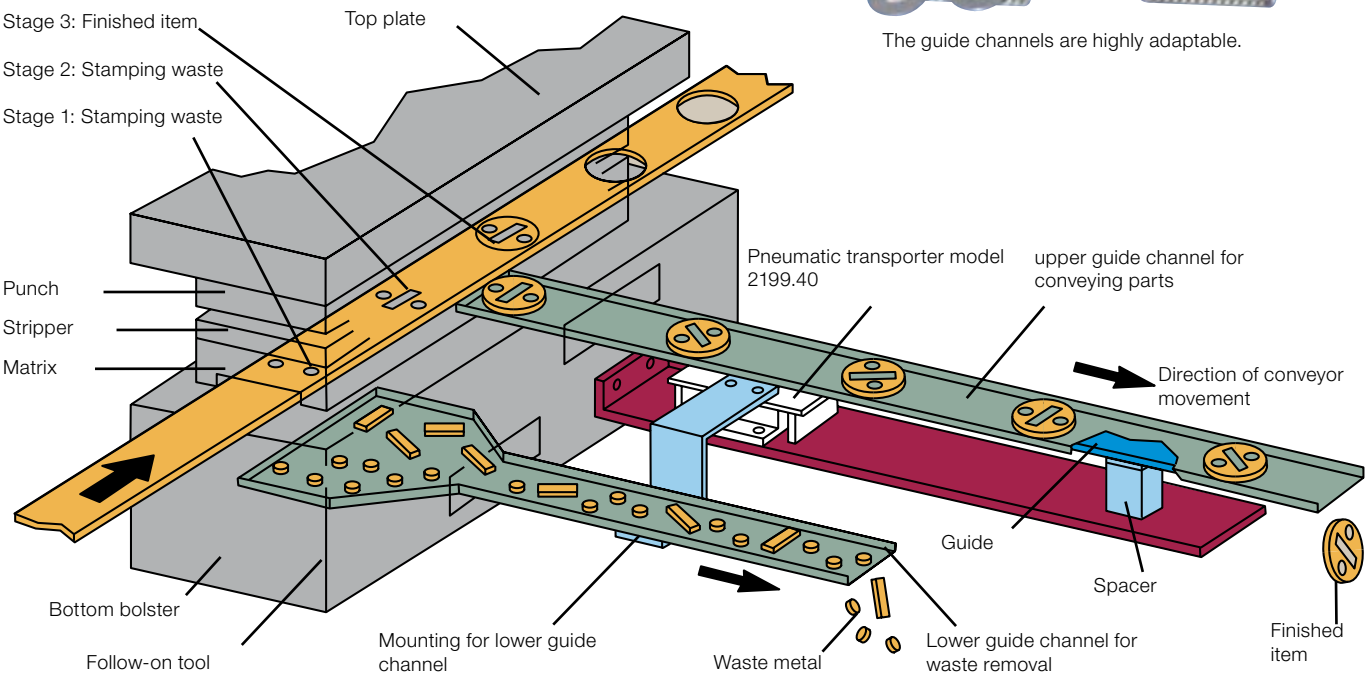


Model 2199.10





The guide channels are highly adaptable.



ELECTRO-MECHANICAL TRANSPORTER

ELECTRO-MECHANICAL TRANSPORTERS - GENERAL INFORMATION

The FIBRO electro-mechanical transporters have been developed to effectively and inexpensively solve the problems of transporting parts and the removal of stamping and cutting residues from presses.
The principle behind the electro-mechanical transporter is referred to as the "tablecloth effect". The slow acceleration during the forward stroke pushes the parts or offcuts forwards. The fast return stroke of the guiding system results in a transport movement in only one direction.
Due to its compact design, the FIBRO electro-mechanical transporter is also suitable for applications where only limited space is available. The simple, sturdy and flexible design provides a safe, reliable, efficient and a cost efficient solution.
Basic advantages:
- compact design
- low maintenance
- low noise level (< 70 dB)

Executions:

2299.001	vertical gear position
2299.002	horizontal gear position
2299.011	vertical gear position, with profile and support
2299.012	horizontal gear position, with profile and support
2299.121	vertical gear position, with two slides, profile and support
2299.122	horizontal gear position, with two slides, profile and support
2299.221	vertical centre gear position, two slides, with profile and support
2299.222	horizontal centre gear position, two slides, with profile and support

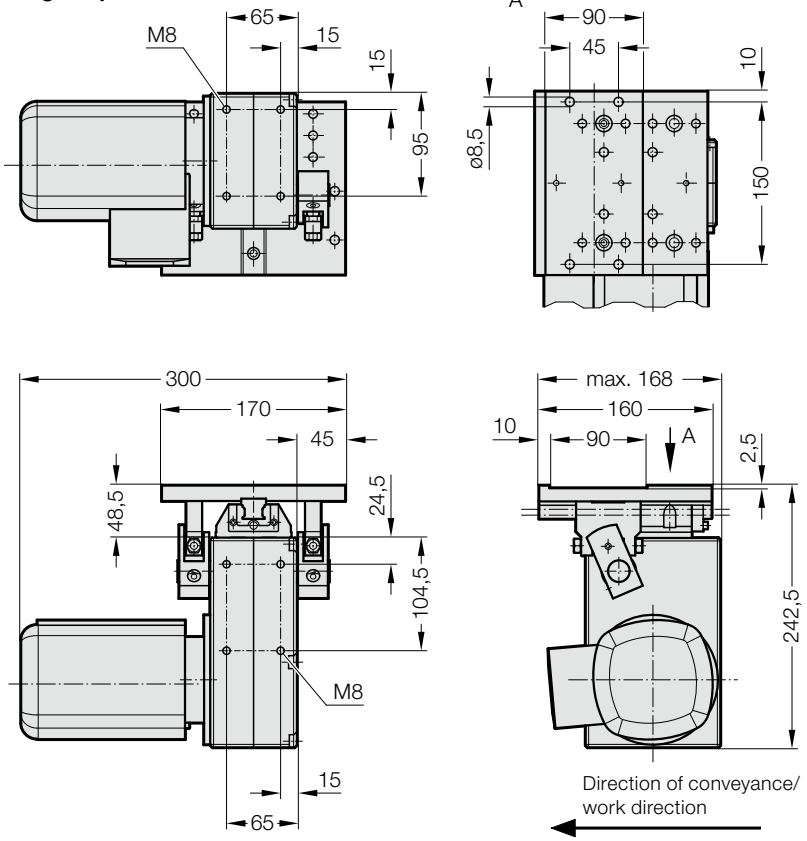
Supplied components:
The transporters are supplied without connection cable.
Design data (CAD):
2D + 3D CAD data for various CAD systems as well as system-neutral interfaces are available on the internet at:
http://fibro.partcommunity.com

Technical data:

Drive:	Alternating current (3 phases) 1375 min-1 0.09 kW rated capacity 0.51 A nominal current at 400 V Weight 4.4 kg Protection class IP55 (DIN EN 60529)
Delivery stroke:	20 mm
Conveying speed:	approx. 4.5 m/min
Stroke frequency:	4 strokes/second
max. guiding system weight (incl. profile):	35 kg
max. bulk weight (guiding system weight, profile, transport items):	100 kg
Temperature range (permissible ambient temperature):	-20 to +60 °C

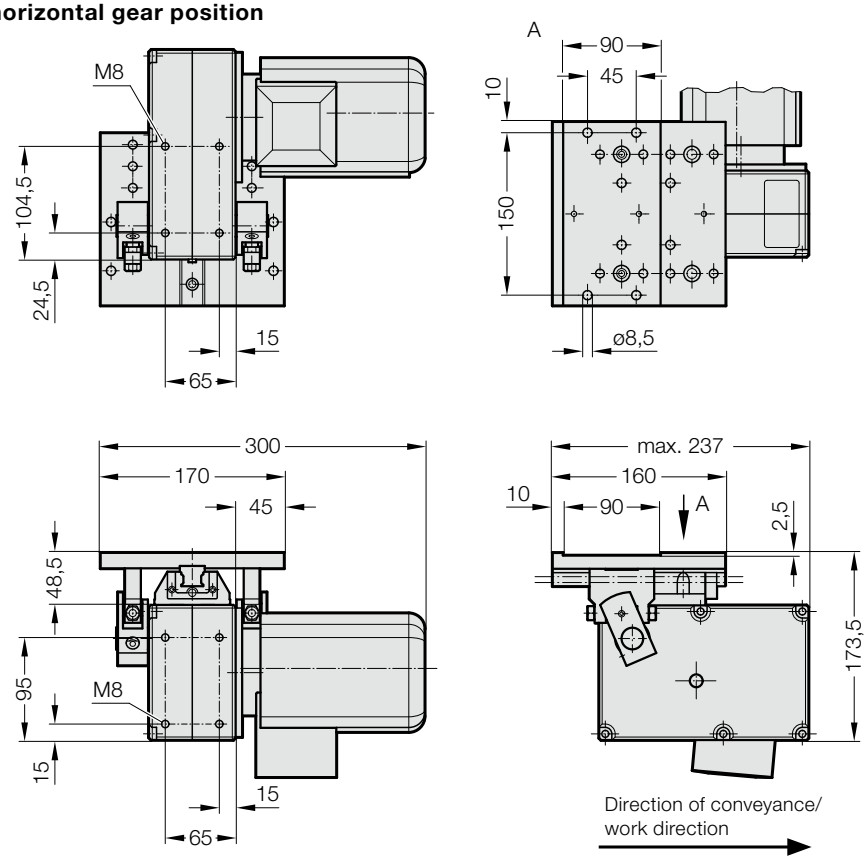
ELECTRO-MECHANICAL TRANSPORTER, VERTICAL GEAR POSITION
ELECTRO-MECHANICAL TRANSPORTER, HORIZONTAL GEAR POSITION

2299.001
vertical gear position



Note:
The transporter can be attached at two levels.

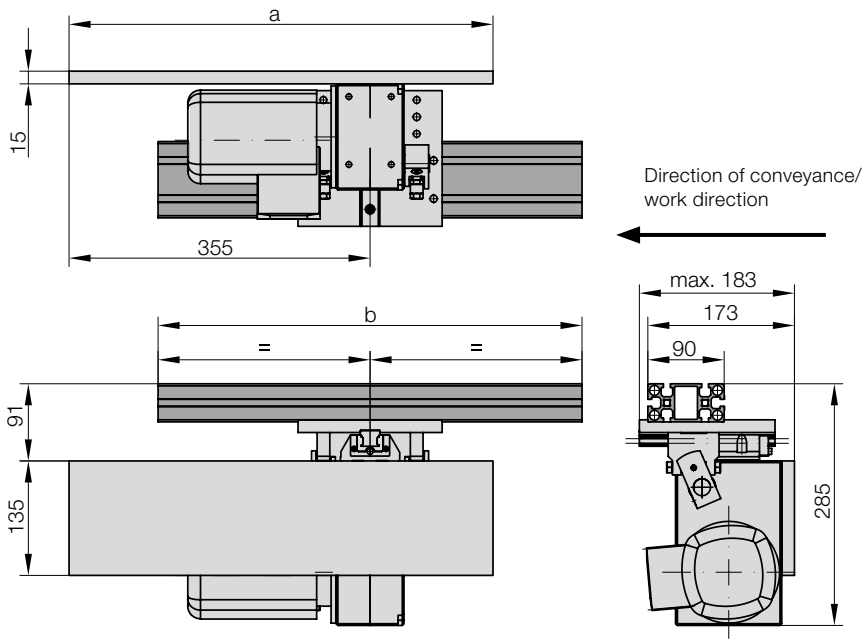
2299.002
horizontal gear position

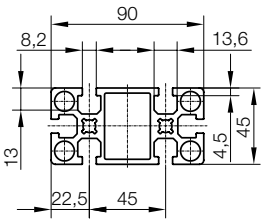


Note:
The transporter can be attached at two levels.

ELECTRO-MECHANICAL TRANSPORTER, VERTICAL GEAR POSITION, WITH PROFILE AND SUPPORT

2299.011.





2299.011. Electro-mechanical transporter, vertical gear position, with profile and support

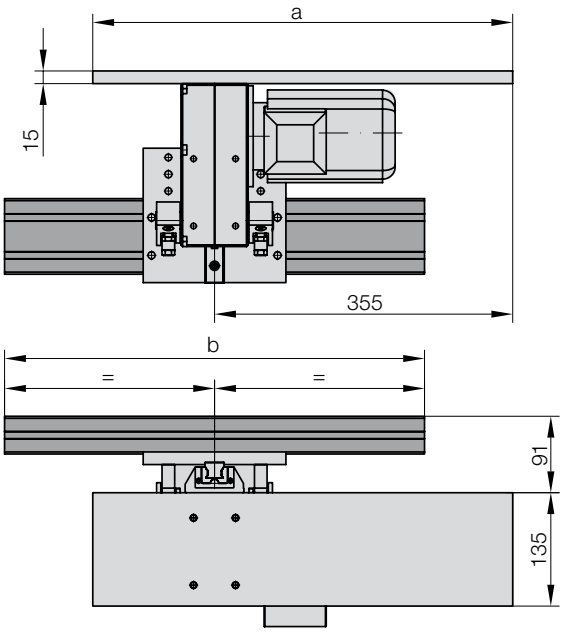
b	500	600	700	800	900	1,000	1,100	1,200
a								
500	●	●	●	●	●	●	●	●

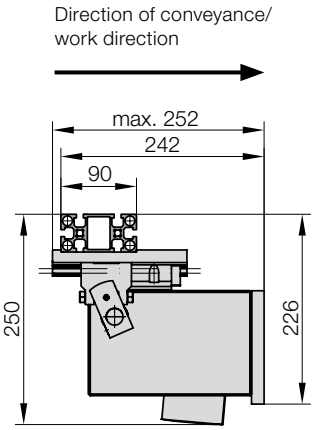
Ordering Code (example):

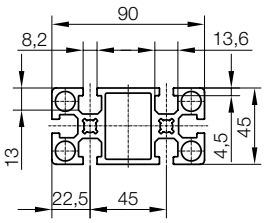
Electro-mechanical transporter, vertical gear position, with profile and support	= 2299.011
b = 500 mm	= 0500.
a = 500 mm	= 0500
Order No	= 2299.011. 0500. 0500

ELECTRO-MECHANICAL TRANSPORTER, HORIZONTAL GEAR POSITION, WITH PROFILE AND SUPPORT

2299.012.







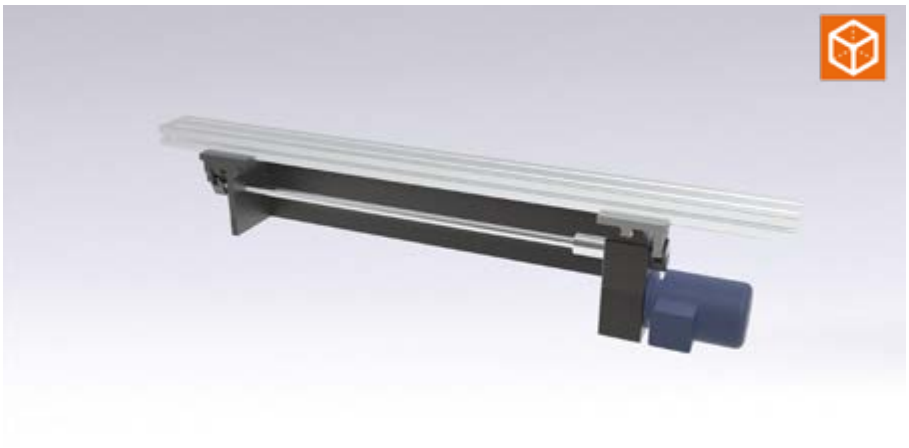
2299.012. Electro-mechanical transporter, horizontal gear position, with profile and support

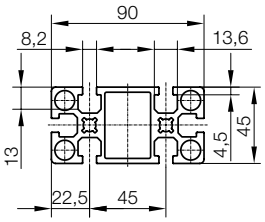
b	500	600	700	800	900	1,000	1,100	1,200
a								
500	●	●	●	●	●	●	●	●

Ordering Code (example):

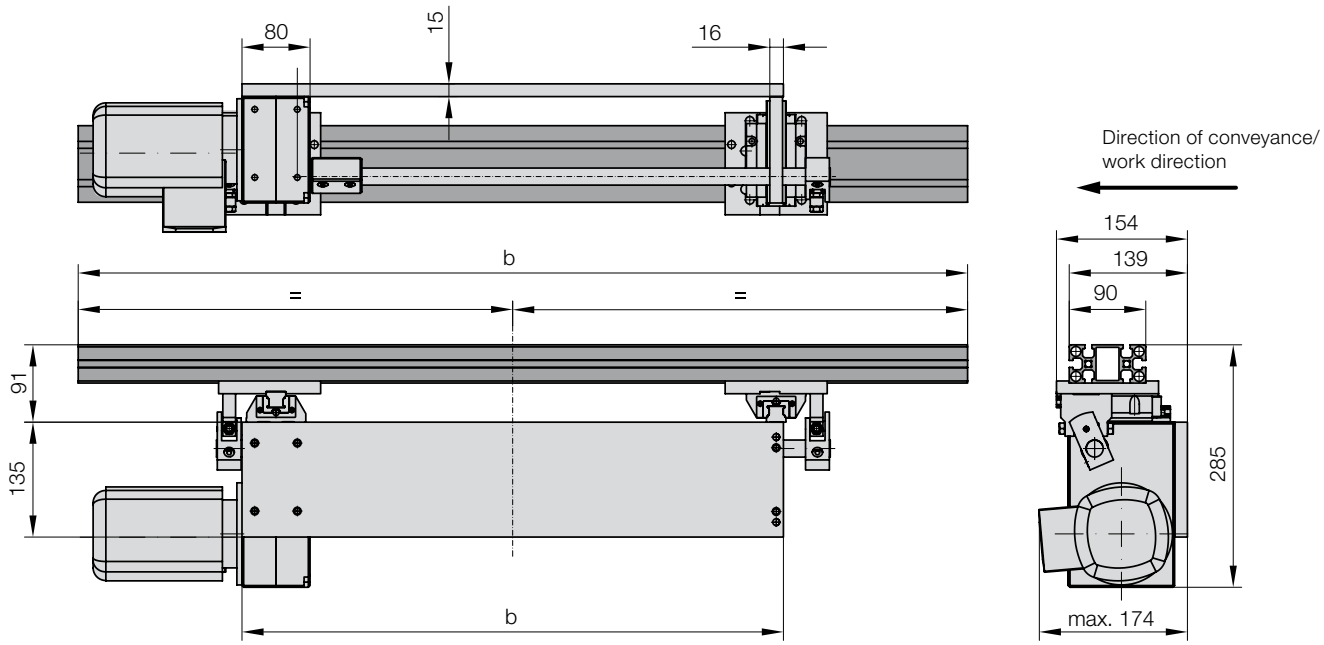
Electro-mechanical transporter, horizontal gear position, with profile and support	= 2299.012
b = 1100 mm	= 1100.
a = 500 mm	= 0500
Order No	= 2299.012. 1100. 0500

ELECTRO-MECHANICAL TRANSPORTER, VERTICAL GEAR POSITION, 2 CARRIAGES, WITH PROFILE AND SUPPORT





2299.121.



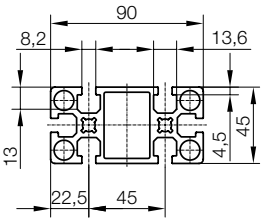
2299.121. Electro-mechanical transporter, vertical gear position, 2 carriages, with profile and support

b	1,300	1,400	1,500	1,600	1,700	1,800	1,900	2,000	2,100	2,200	2,300	2,400	2,500	2,600	2,700	2,800	2,900	3,000
a																		
900	●	●	●	●	●	●												
1200							●	●	●	●	●	●						
1500													●	●	●	●	●	●

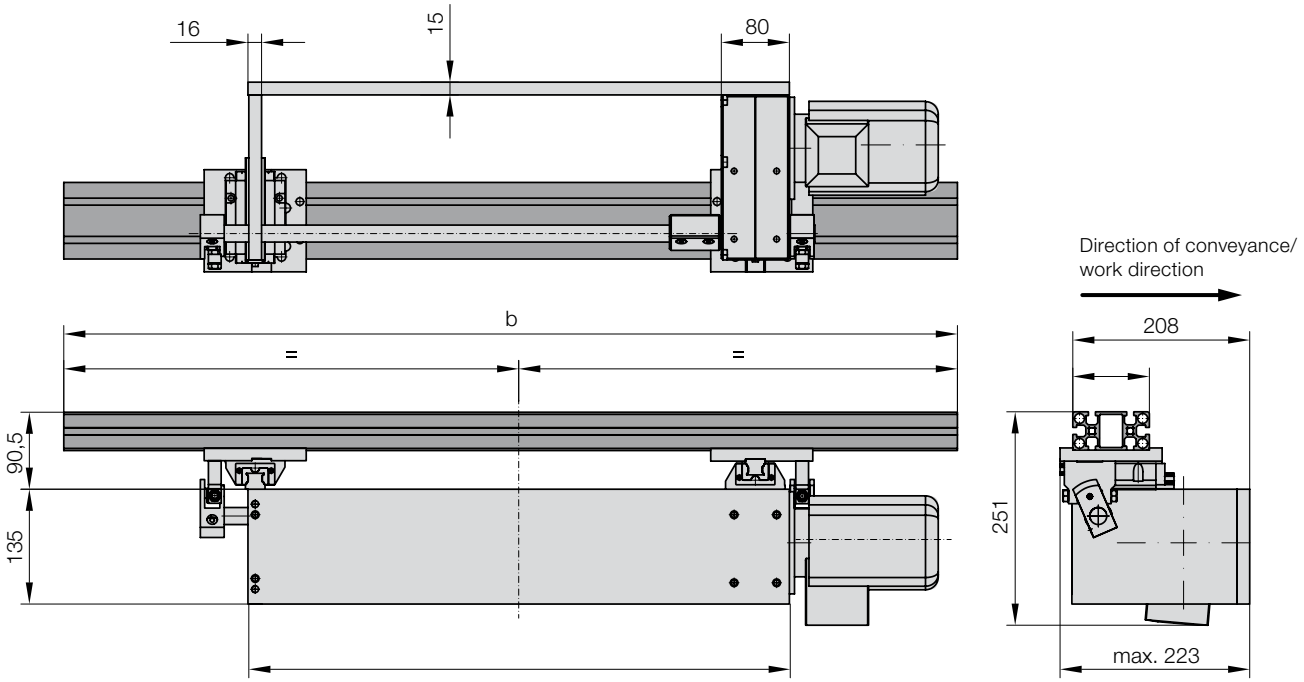
Ordering Code (example):

Electro-mechanical transporter, vertical gear position,	
2 carriages, with profile and support	= 2299.121.
b = 1400 mm	= 1400.
a = 900 mm	= 0900
Order No	= 2299.121. 1400. 0900

ELECTRO-MECHANICAL TRANSPORTER, HORIZONTAL GEAR POSITION, 2 CARRIAGES, WITH PROFILE AND SUPPORT



2299.122.



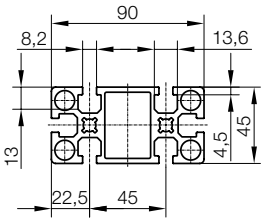
2299.122. Electro-mechanical transporter, horizontal gear position, 2 carriages, with profile and support

b	1,300	1,400	1,500	1,600	1,700	1,800	1,900	2,000	2,100	2,200	2,300	2,400	2,500	2,600	2,700	2,800	2,900	3,000
a																		
900	●	●	●	●	●	●												
1200							●	●	●	●	●	●						
1500													●	●	●	●	●	●

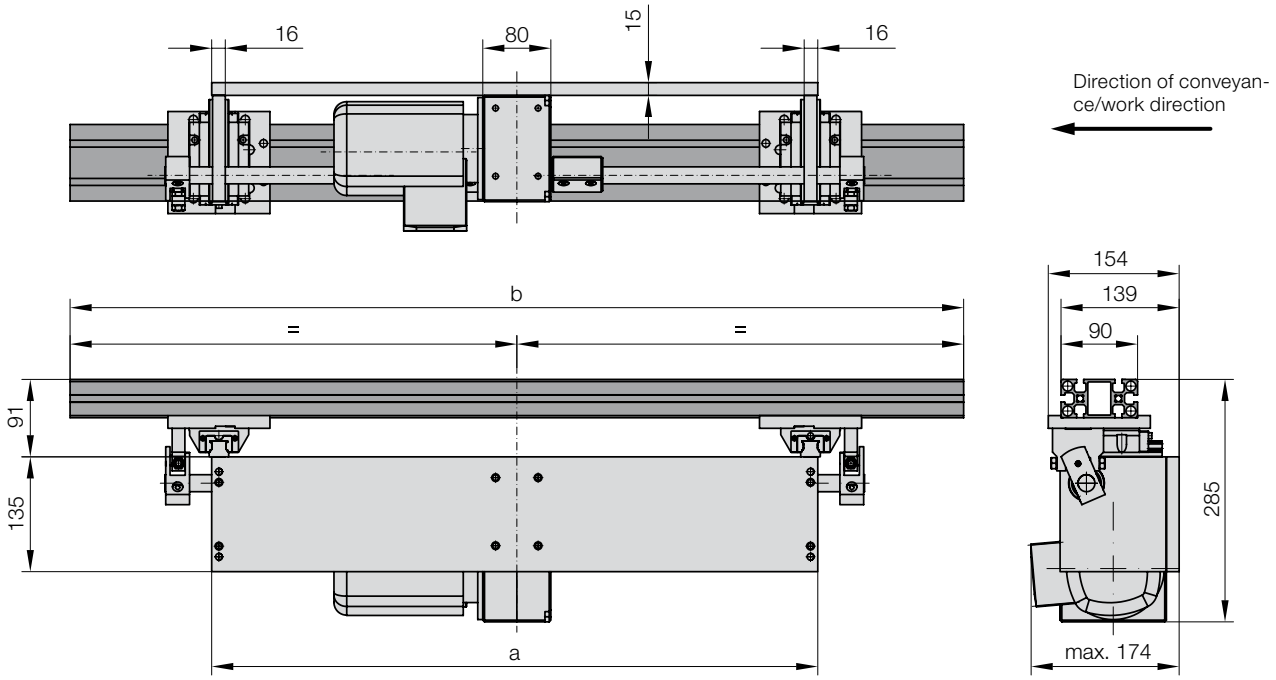
Ordering Code (example):

Electro-mechanical transporter, horizontal gear position, 2 carriages, with profile and support	=	2299.122.
b = 2200 mm	=	2200.
a = 1200 mm	=	1200
Order No	=	2299.122. 2200. 1200

ELECTRO-MECHANICAL TRANSPORTER, VERTICAL CENTRE GEAR POSITION, 2 CARRIAGES, WITH PROFILE AND SUPPORT



2299.221.



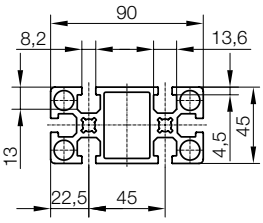
2299.221. Electro-mechanical transporter, vertical centre gear position, 2 carriages, with profile and support

b	3,100	3,200	3,300	3,400	3,500	3,600	3,700	3,800	3,900	4,000	4,100	4,200	4,300	4,400	4,500	4,600	4,700	4,800	4,900	5,000
a																				
1720	●	●	●	●	●	●														
2320							●	●	●	●	●	●	●							
2920														●	●	●	●	●	●	●

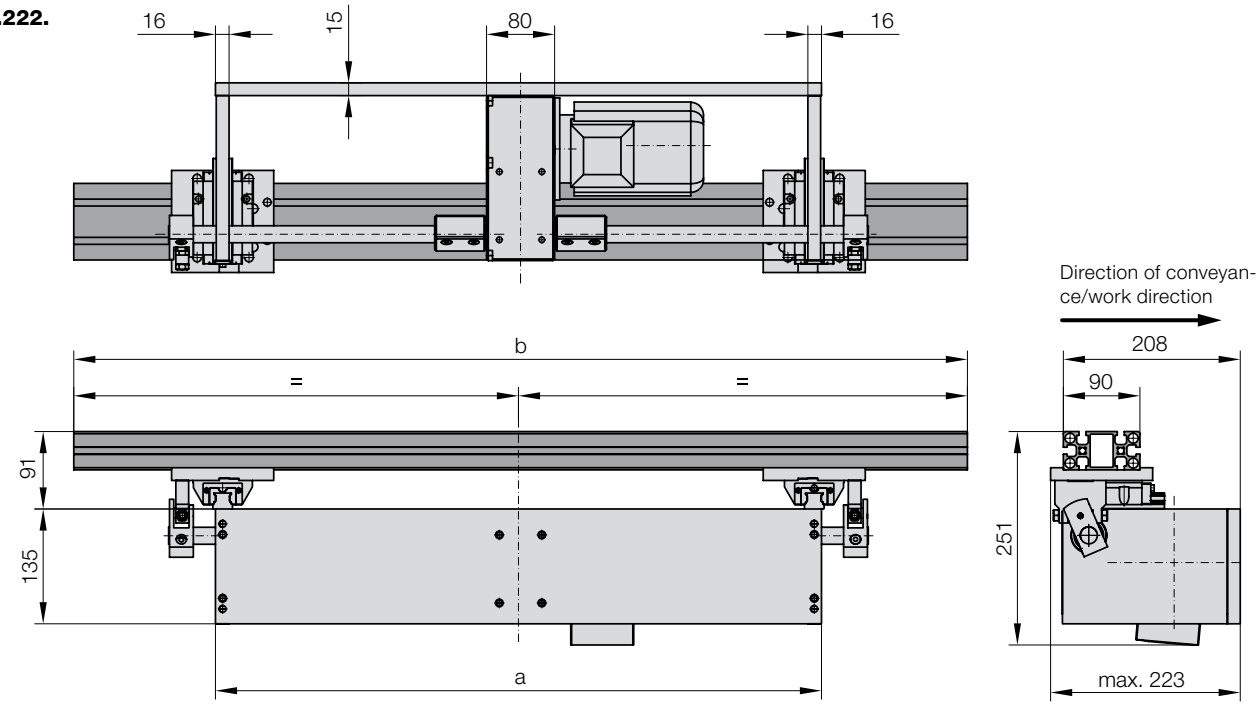
Ordering Code (example):

Electro-mechanical transporter, vertical centre gear position, 2 carriages, with profile and support	=	2299.221.
b = 3400 mm	=	3400.
a = 1720 mm	=	1720
Order No	=	2299.221. 3400. 1720

ELECTRO-MECHANICAL TRANSPORTER, HORIZONTAL CENTRE GEAR POSITION, TWO SLIDES, WITH PROFILE AND SUPPORT



2299.222.



2299.222. Electro-mechanical transporter, horizontal centre gear position, two slides, with profile and support

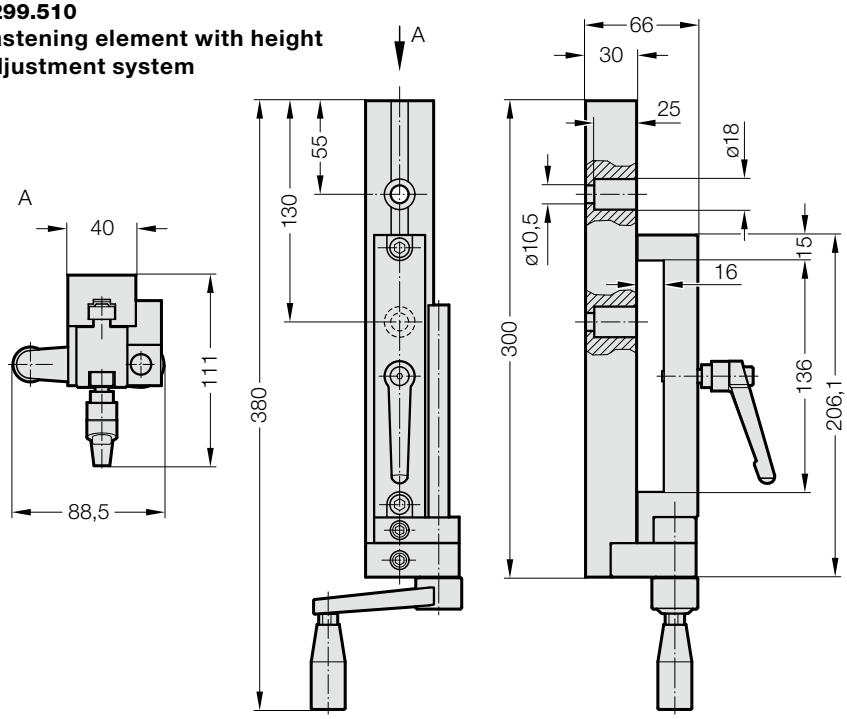
b	3,100	3,200	3,300	3,400	3,500	3,600	3,700	3,800	3,900	4,000	4,100	4,200	4,300	4,400	4,500	4,600	4,700	4,800	4,900	5,000
a																				
1720	●	●	●	●	●	●														
2320							●	●	●	●	●	●	●							
2920														●	●	●	●	●	●	●

Ordering Code (example):

Electro-mechanical transporter, horizontal centre gear position, two slides, with profile and support	= 2299.222.
b = 3800 mm	= 3800.
a = 2320 mm	= 2320
Order No	= 2299.222.3800.2320

FASTENING ELEMENT WITH HEIGHT ADJUSTMENT SYSTEM
FASTENING ELEMENT

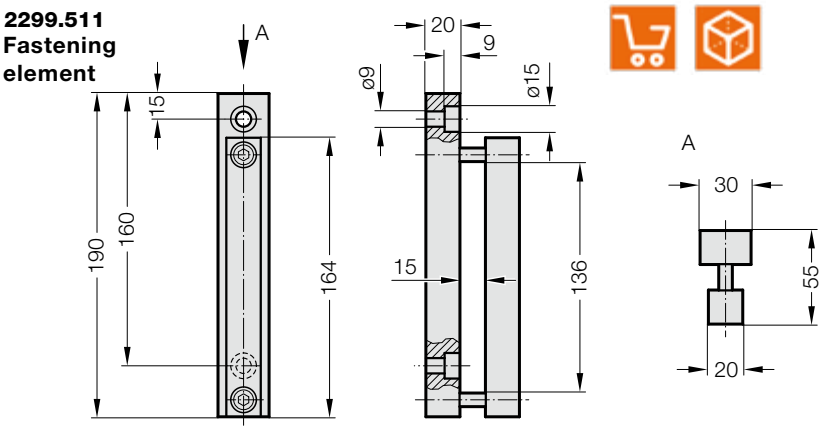
2299.510
Fastening element with height adjustment system



2299.510

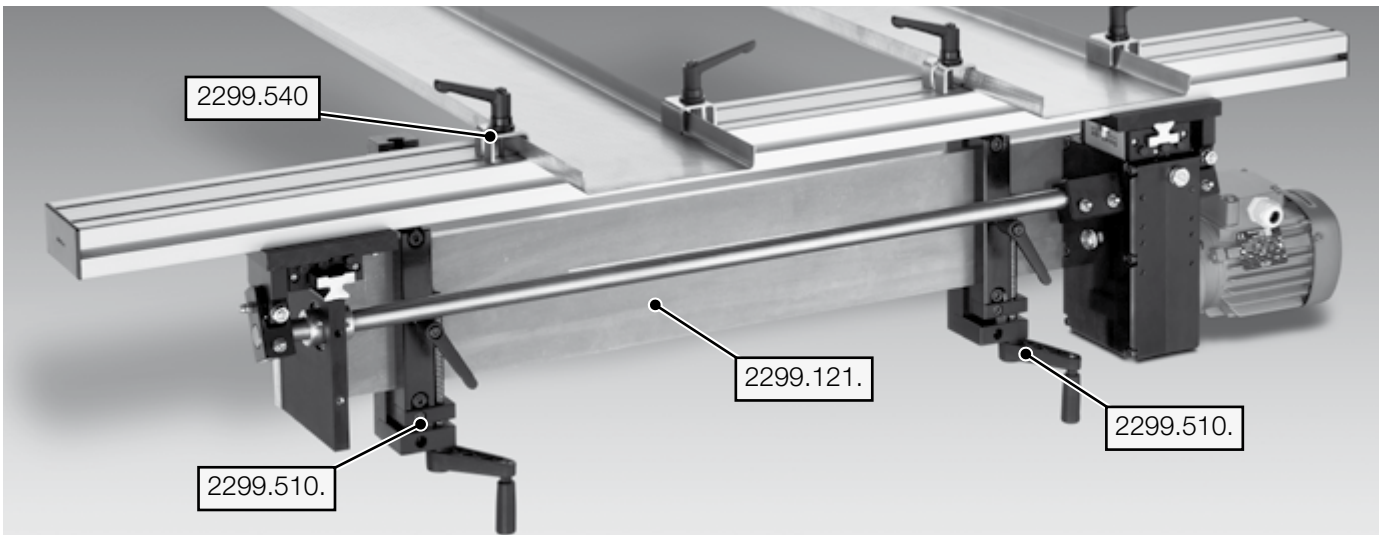
Note:
For fixing the the transporter 2299.011./012./121. /122./221./222. with height equalization.
Adjustment range: 100 mm
Fastening screws 2x M10 are not included in scope of delivery.

2299.511
Fastening element



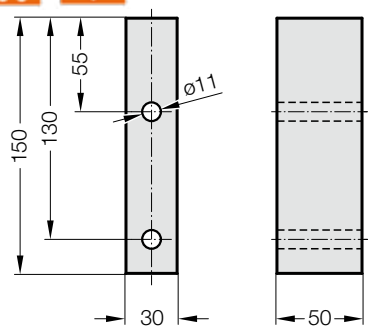
2299.511

Note:
For fixing the the transporter 2299.011./012./121. /122./221./222. without height equalization.
Fastening screws 2x M8 are not included in scope of delivery.

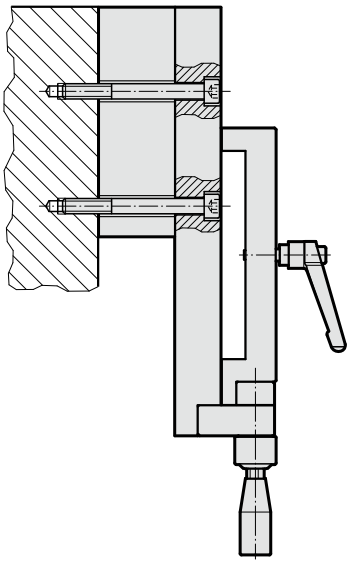


DISTANCE
GUIDE CHANNEL CLAMP

2299.520
Distance



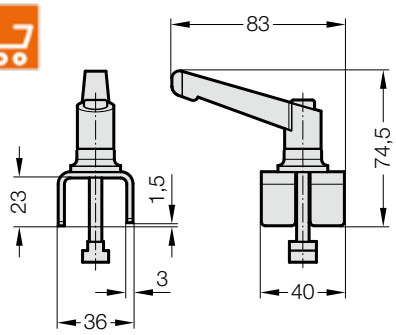
Application example



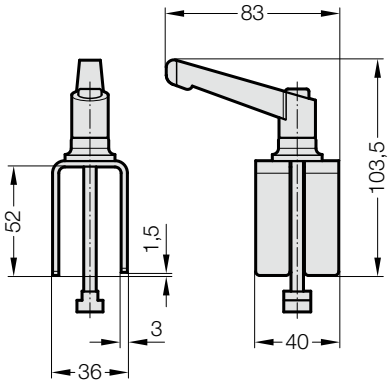
Note:
Distance for fastening element with height adjustment 2299.510

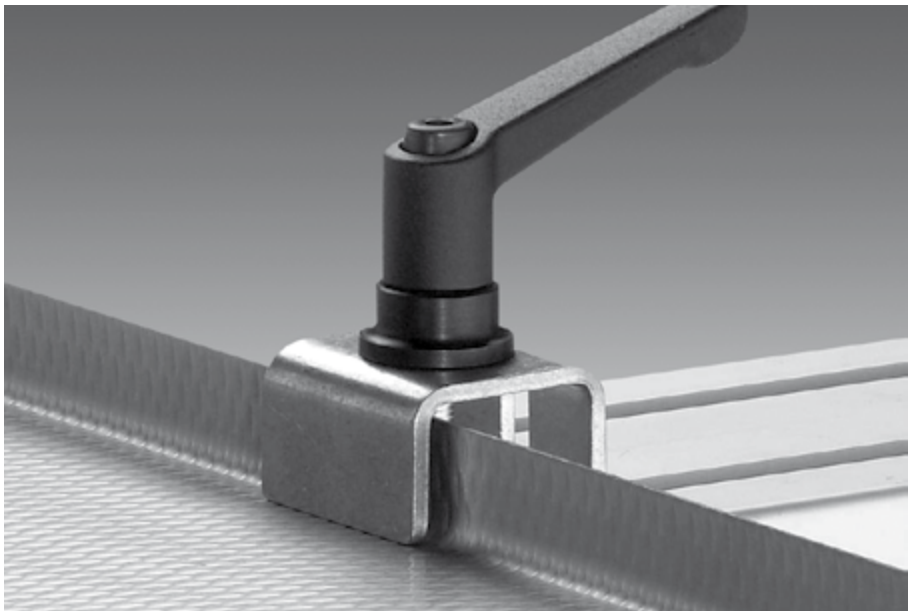
Fastening screws 2x M10 are not included in scope of delivery.

2299.540
Guide channel clamp, low version



2299.541
Guide channel clamp, high version



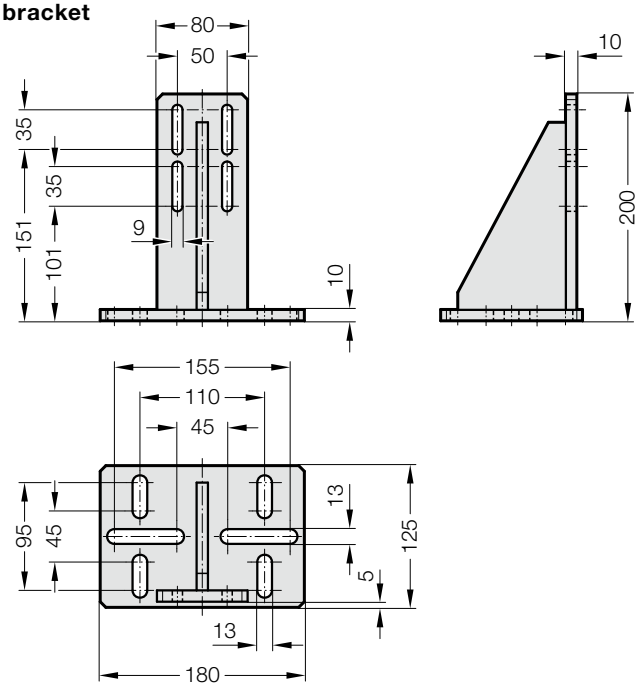


Note:
The guiding system tensioners fit the T-slots of the profile used for the transporters.

Max. side wall height of the guiding system (l1):
2299.540= 23 mm
2299.541= 52 mm

MOUNTING BRACKET WITH ADAPTER PLATE

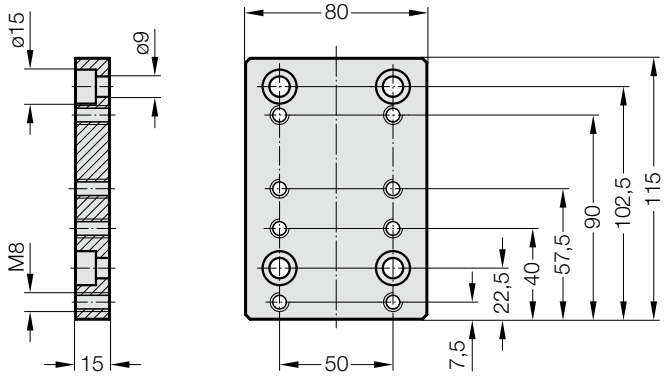
2299.530
Mounting bracket

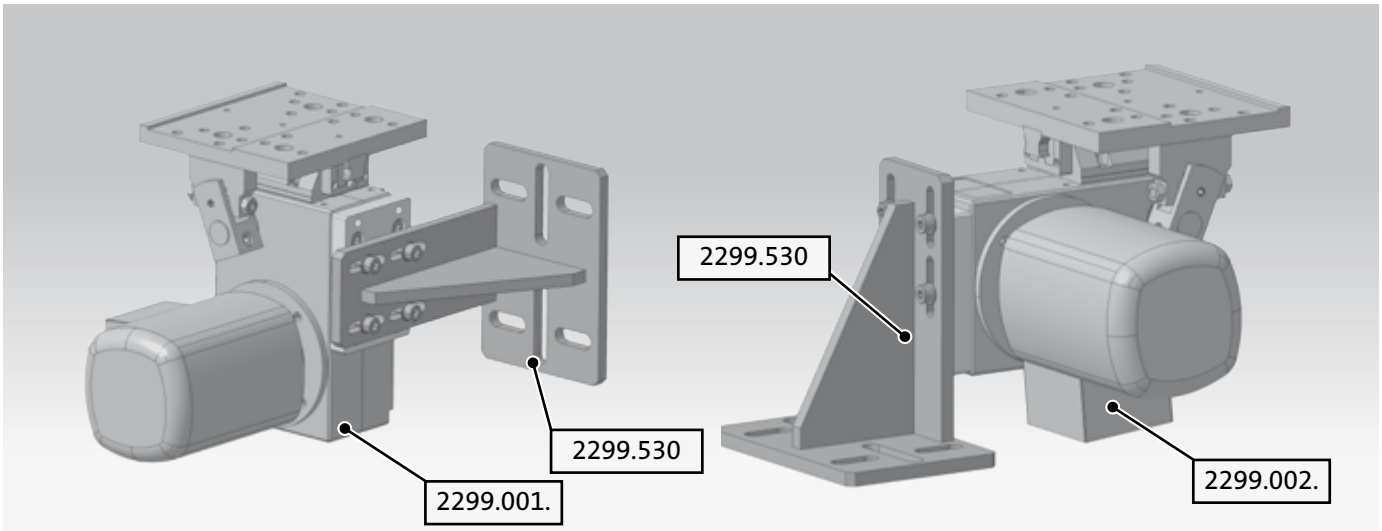


Note:
The mounting bracket and the adapter together allow individual mounting of the transporters 2299.001 and 2299.002.

Fastening screws are not included in scope of delivery.

Adapter plate





TRANSPORTER ELECTRICAL
BLACK LINE
CLEAN LINE

TRANSPORTER ELECTRICAL

2299.60. Transporter, BLACK LINE

2299.60. Control unit, BLACK LINE

2299.61. Transporter, CLEAN LINE

2299.61. Transporter, CLEAN LINE

Description:

The electrically driven and patented transporter has been constructed to provide effective and affordable solutions to problems in parts transport, waste disposal as well as parts sorting. This system conveys punched and waste parts out of the tooling area with a rhythmic movement in a straight line.
A specially designed guide channel which is screwed to the body of the conveyor vibrates rhythmically slowly forwards and fast backwards. The mass inertia of the parts is used to move them forwards. In this way the parts in the guide channel progress gently towards the storage containers.

Low energy consumption, infinitely variable speed control, simple automation, low noise (60 dB) and the absence of compressed air ensure high economic efficiency whilst improving the working environment.

Its main areas of application are conveying and separating solid materials in metal processing and the automotive sector. The additional "CLEAN LINE" product range can also be used in the food and pharmaceutical industries.

The electric transporter is always operated with the corresponding 2299.6X. control unit. Integration with the PLC on the power press or production machine allows the programming of the transport time or shutdown of the press in the event of faults.

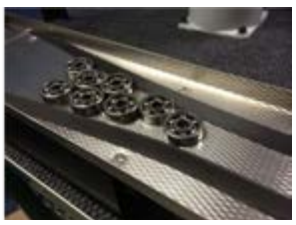
Removal waste

Simple automation

Infeed

Separation

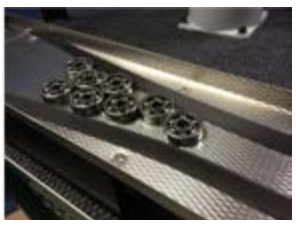
Organising



Positioning

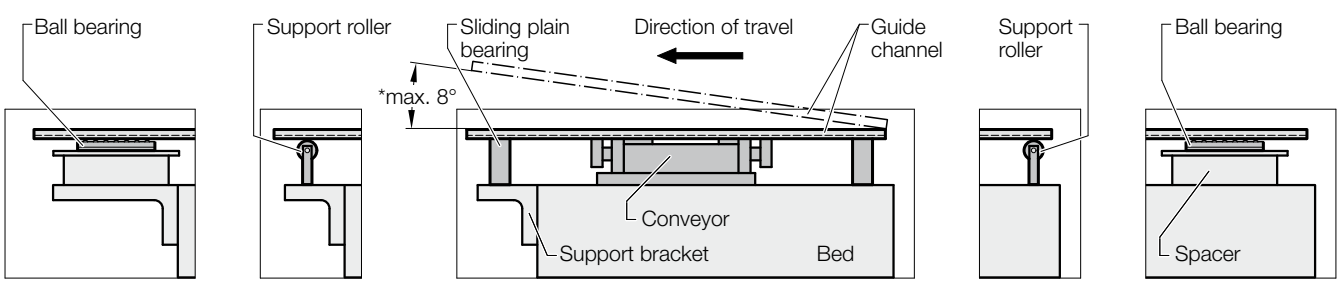
Storage

Picking



TRANSPORTER ELECTRICAL

Mounting examples:

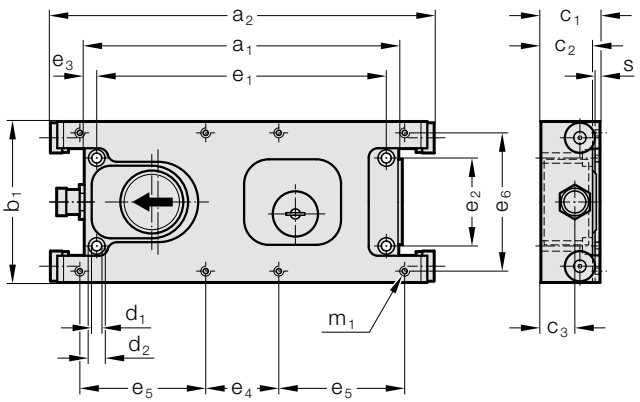


We recommend three options for supporting a long guide channel: 1) Ball bearings 2) Roller supports 3) Sliding plain bearings

*A chute incline can reduce the conveyor speed by up to 50%.

ELECTRIC TRANSPORTER, BLACK LINE

2299.60.1□100.



Description:

The electric transporter simplifies automation, increases energy efficiency and reduces noise pollution. The speed can be adjusted mechanically and, depending on the task type, the transporter conveys, sorts or separates electrically.
Used predominantly in metal processing and the automotive industry.

Material:

High-strength steel and anodised aluminium

Order example:

Order numbers for Transporter electric BLACK LINE
without connection cable (2299.60.82.0x.xx)

With control unit, 230 V:
2299.60.18100.**01** MINI
2299.60.14100.**01** COMPACT
2299.60.12100.**01** MAX
2299.60.10100.**02** ULTRA (potential-free output)

Replacement **without** control unit, 230 V:
2299.60.18100.**00** MINI
2299.60.14100.**00** COMPACT
2299.60.12100.**00** MAX
2299.60.10100.**00** ULTRA

Note:

The connection cable, control unit transporter and optionally the signal cable, control unit press are to be ordered separately.
For more information on the electrical connections, control unit and channel fastening, see Accessories.

Socket head screws DIN EN ISO 4762 for fastening the transporter are included in delivery.

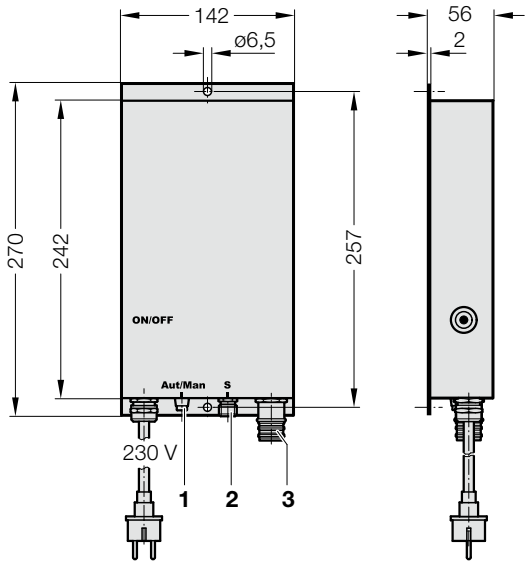
2299.60. Electric transporter, BLACK LINE

Order No	a_1	a_2	b_1	c_1	c_2	c_3	d_1	d_2	e_1	e_2	e_3	e_4	e_5	e_6	m_1	s
2299.60.18100.00	220	271	118	38.7	33.5	20.9	6.3	10	206	70	7	25	107	100	M5	3
2299.60.14100.00	250	305	128	47	41	27	8.2	13.5	230	70	10	58	100	110	M6	4
2299.60.12100.00	260	316	138	68	61	38	8.2	13.5	238	70	11	58	105	110	M6	5
2299.60.10100.00	260	320	146	78	69	51	8.2	13.5	238	70	29	58	105	110	M6	6

Execution	MINI	KOMPAKT	MAX	ULTRA
Transport weight max. (excl. channel) [kg]	10	20	40	100
Guide channel weight max. [kg]	4	8	16	50
Stroke	20	20	20	20
Conveying speed (mechanically adjustable) [m/min.]	4 - 8	4 - 8	4 - 8	4 - 8
Warning system (motion sensor)	integrated	integrated	integrated	integrated
Start/stop	Controllable via PLC	Controllable via PLC	Controllable via PLC	Controllable via PLC
Motor and overload protection	integrated	integrated	integrated	integrated
Noise emissions [dB-A]	60	60	60	60
Power consumption [kW]	0.05	0.07	0.15	0.25
Electrical connection, control unit	M23	M23	M23	M23
Protection type	IP62	IP62	IP62	IP62
Weight [kg]	2.65	3.7	6.3	9
Temperature range (permissible ambient temperature)	-20 to +100 °C	-20 to +100 °C	-20 to +100 °C	-20 to +100 °C

TRANSPORTER ELECTRICAL - ACCESSORIES
CONTROL UNIT BLACK LINE,
SIGNAL CABLE, CONNECTION CABLE

2299.60.1□100.12/13



Description:
The control unit is the electrical module for controlling the transporter.

Material:
Steel
IP54

Technical data:
Temperature operating range: -20 to +40 °Celsius (environment temperature)

Note:
The control unit must be mounted on a metal surface for heat dissipation.
Before connecting the electric transporter, check that the channel can move freely in the direction of travel.
Included in the delivery,
Mains connection incl. plugs for USA and GB
Fixing bolts ISO 7380-1 M6 x 8 (x2)

2299.60. Control unit BLACK LINE

Order No*	Connection [V]	Power requirement [A]
2299.60.10100.13	230	1,8 - 3,5
2299.60.12100.12	230	1,2 - 2,2
2299.60.14100.12	230	0,75 - 1,7
2299.60.18100.12	230	0,55 - 1,3

1-phase 110-230 V, 50-60 Hz, earthed connection
*.13 = potential free output

1 - Changeover between PLC and manual operation

PLC mode:
In this position, this start/stop function is controlled via the straight signal cable (M12 plug).

Manual mode:
In this position, the start/stop function is controlled by the control unit.

2 - 2299.60.81.01. Signal cable straight, to the press
order separately

Order No	l [m]
2299.60.81.01.03	3
2299.60.81.01.05	5
2299.60.81.01.10	10

For further information, see catalogue page for straight signal cable

3 - 2299.60.82.01. Connection cable straight/straight, control unit - transporter
order separately

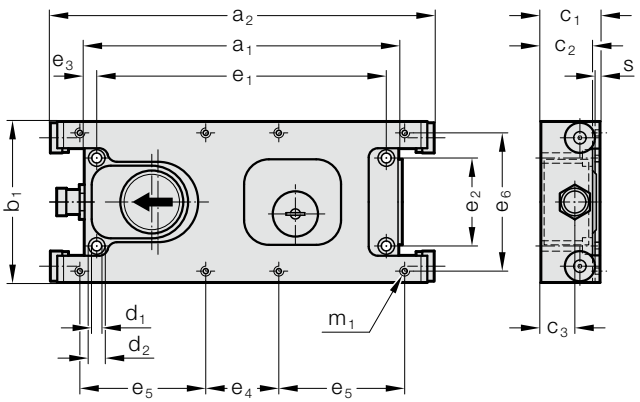
Order No	l [m]
2299.60.82.01.03	3
2299.60.82.01.05	5
2299.60.82.01.10	10
2299.60.82.01.15	15

2299.60.82.02. Connection cable straight/90°, control unit - transporter
order separately

Order No	l [m]
2299.60.82.02.03	3
2299.60.82.02.05	5
2299.60.82.02.10	10
2299.60.82.02.15	15

ELECTRIC TRANSPORTER, CLEAN LINE

2299.61.1□100.



Description:

The electric transporter simplifies automation, increases energy efficiency and reduces noise pollution. The speed can be adjusted mechanically and, depending on the task type, the transporter conveys, sorts or separates electrically.
Used predominantly in the food and pharmaceutical industries.

Material:

made from stainless steel and anodised aluminium

Order example:

Order numbers for CLEAN LINE electric transporter,
without connection cable (2299.60.82.0x.xx)

with control unit, 230 V
2299.61.18100.**01** MINI
2299.61.14100.**01** COMPACT
2299.61.12100.**01** MAX

Replacement **without** control unit 230 V:
2299.61.18100.**00** MINI
2299.61.14100.**00** COMPACT
2299.61.12100.**00** MAX

Note:

The connection cable, control unit transporter and optionally the signal cable, control unit press are to be ordered separately.
For more information on the electrical connection, control unit and guide channel, see Accessories.

Socket head screws DIN ISO 4762 stainless steel A2 for fastening the transporter are included in delivery.

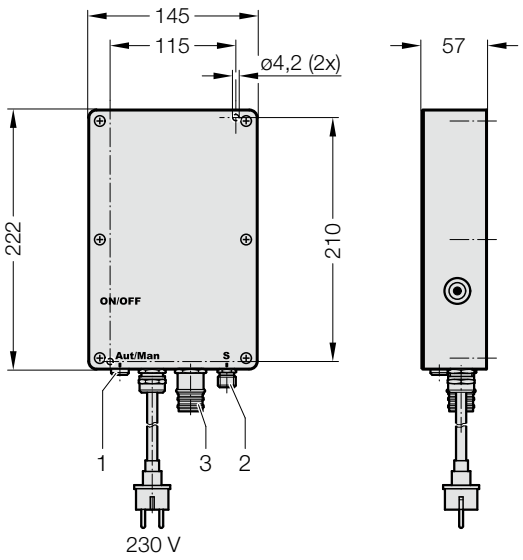
2299.61. Electric transporter, CLEAN LINE

Order No	a_1	a_2	b_1	c_1	c_2	c_3	d_1	d_2	e_1	e_2	e_3	e_4	e_5	e_6	m_1	s
2299.61.18100.00	220	271	118	38.7	33.5	20.9	6.3	10	206	70	7	25	107	100	M5	3
2299.61.14100.00	250	305	128	47	41	27	8.2	13.5	230	70	10	58	100	110	M6	4
2299.61.12100.00	260	316	138	68	61	38	8.2	13.5	238	70	11	58	105	110	M6	5

Execution	MINI	KOMPAKT	MAX
Transport weight max. (excl. channel) [kg]	10	20	40
Guide channel weight max. [kg]	4	8	16
Stroke	20	20	20
Conveying speed (mechanically adjustable) [m/min.]	4 - 8	4 - 8	4 - 8
Warning system (motion sensor)	integrated	integrated	integrated
Start/stop	Controllable via PLC	Controllable via PLC	Controllable via PLC
Motor and overload protection	integrated	integrated	integrated
Noise emissions [dB-A]	60	60	60
Power consumption [kW]	0.05	0.07	0.15
Electrical connection, control unit	M23	M23	M23
Protection type	IP66	IP66	IP66
Weight [kg]	2.65	3.7	6.3
Temperature range (permissible ambient temperature)	-20 to +100 °C	-20 to +100 °C	-20 to +100 °C

TRANSPORTER ELECTRICAL - ACCESSORIES
CONTROL UNIT CLEAN LINE,
SIGNAL CABLE, CONNECTION CABLE

2299.61.1□100.12



Description:
The control unit is the electrical module for controlling the transporter.

Material:
Aluminium die casting
IP67

Technical data:
Temperature operating range: -20 to +40 °Celsius (environment temperature)

Note:
The control unit must be mounted on a metal surface for heat dissipation.
Before connecting the electric transporter, check that the channel can move freely in the direction of travel.
Included in the delivery,
Mains connection incl. plugs for USA and GB,
Fixing bolts DIN EN ISO 4762 M4 x 20 (x 2) stainless steel A2

2299.61. Control unit CLEAN LINE

Order No	Connection [V]	Power requirement [A]
2299.61.12100.12	230	1,2 - 2,2
2299.61.14100.12	230	0,75 - 1,7
2299.61.18100.12	230	0,55 - 1,3

1-phase 110-230 V, 50-60 Hz, earthed connection

1 - Changeover between PLC and manual operation

PLC mode:
In this position, this start/stop function is controlled via the straight signal cable (M12 plug).

Manual mode:
In this position, the start/stop function is controlled by the control unit.

2 - 2299.60.81.01. Signal cable straight, to the press
order separately

Order No	l [m]
2299.60.81.01.03	3
2299.60.81.01.05	5
2299.60.81.01.10	10

For further information, see catalogue page for straight signal cable

3 - 2299.60.82.01. Connection cable straight/straight, control unit - transporter
order separately

Order No	l [m]
2299.60.82.01.03	3
2299.60.82.01.05	5
2299.60.82.01.10	10
2299.60.82.01.15	15

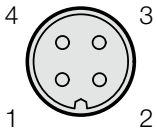
2299.60.82.02. Connection cable straight/90°, control unit - transporter
order separately

Order No	l [m]
2299.60.82.02.03	3
2299.60.82.02.05	5
2299.60.82.02.10	10
2299.60.82.02.15	15

TRANSPORTER ELECTRICAL - ACCESSORIES
SIGNAL CABLE STRAIGHT, TO THE PRESS

Assignment:

M12 - Plug
4-pin /
A-coded



1 (brown)	= Start/stop	Digital input 24 V DC	=	Start
2 (white)	= Fault	Digital output 24 V DC	=	Fault
3 (blue)	= 0 V DC	Together 0 V DC	=	0 V
4 (black)	= Control unit	Digital output 24 V DC	=	OK

	Output	
Conditions	Pin 2	Pin 4
Fault	24 V / (+) 24 V*	0 V
OK	0 V	24 V / (+) 24 V*

	Input	
Conditions	Pin 1	Pin 3
started	24 V / (+) 24 V*	-0 V
stopped	0 V	-0 V

*for control unit with potential-free output

Description:
The signal cable connects the control unit to the power press/production machine.

2299.60.81.01. Signal cable straight, to the press

Order No	l [m]
2299.60.81.01.03	3
2299.60.81.01.05	5
2299.60.81.01.10	10

TRANSPORTER ELECTRICAL - ACCESSORIES
SEALING CAP FOR ELECTRIC TRANSPORTER
SEALING CAP FOR CONNECTION CABLE

2299.60.82.04.1 **Sealing cap for electric transporter**

Description:
Sealing cap for electric transporter - control unit connection

Material:
Nickel-plated copper/zinc alloy

Note:
Sealing cap incl. M4x6 pan head bolt and connection chain
IP67 in mounted position

2299.60.82.04.2 **Sealing cap for connection cable**

Description:
Sealing cap for connection cable 2299.60.82.01./02.

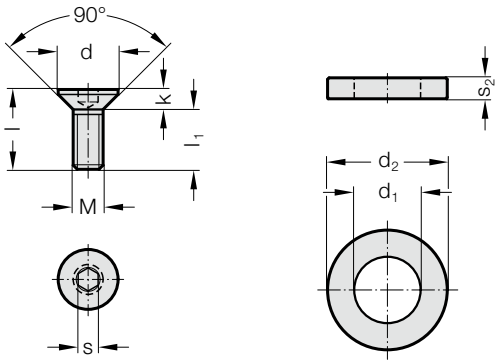
Material:
Nickel-plated copper/zinc alloy

Note:
Sealing cap incl. connection chain

IP67 in mounted position

TRANSPORTER ELECTRICAL - ACCESSORIES
CHANNEL FASTENING STANDARD
CHANNEL FASTENING STANDARD, INCLUDING SLOT STONE

2299.69.10.1□.



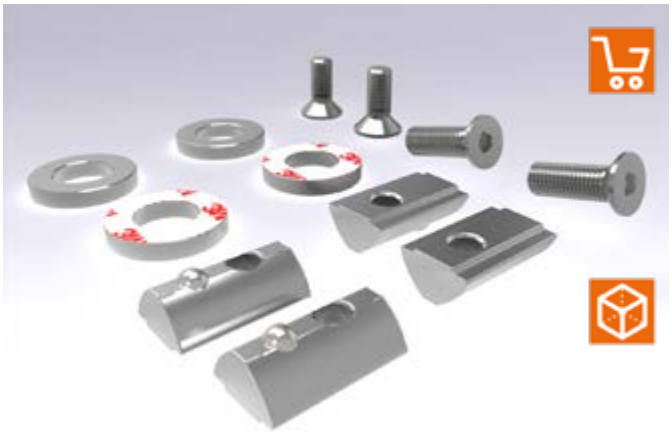
Description:
The standard channel fastening is a mounting kit for fastening the channel directly to the electric transporter. It consists of 4 flat head screws and 4 washers, self-adhesive.

Material:
2299.69.10.10. Steel, zinc-plated
2299.69.10.11. Stainless steel A2

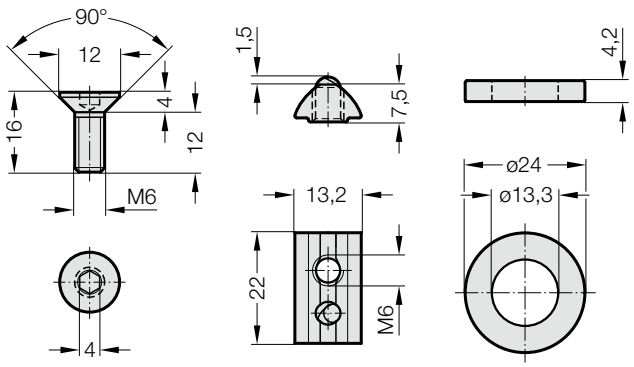
Note:
Gutter fastening can be used for gutters with sheet thickness < 1.5 mm.

2299.69.10.1x. Channel fastening standard

Order No	M	d	k	l	l_1	s	d_1	d_2	s_2	for electric transporter
2299.69.10.10.05	M5	10	2.8	8	5.2	3	13.3	24	4.2	2299.60.18100.
2299.69.10.10.06	M6	12	3.3	10	6.7	4	13.3	24	4.2	2299.60.12100./14100.
2299.69.10.10.06.012	M6	12	3.3	12	8.7	4	13.3	24	4.2	2299.60.10100.
2299.69.10.11.05	M5	10	2.8	8	5.2	3	13.3	24	4.2	2299.61.18100.
2299.69.10.11.06	M6	12	3.3	10	6.7	4	13.3	24	4.2	2299.61.12100./14100.



2299.69.10.20



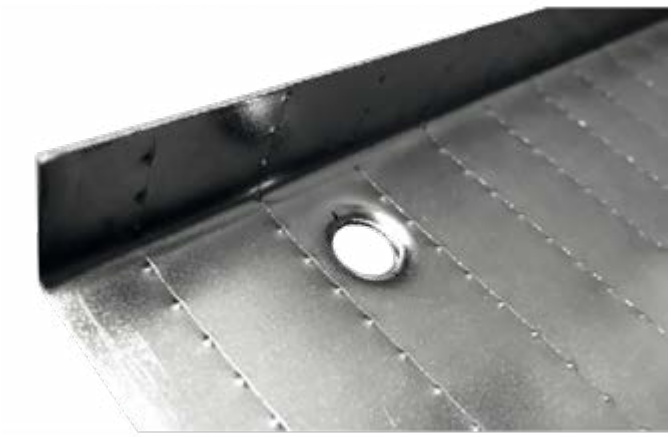
Description:
The channel fastening, incl. slot stone, is a mounting kit for fastening the channel on the profiled beam. It consists of four slot stones, four countersunk screws and four washers, self-adhesive, which allows continuous adjustment of the channel on the profiled beam after mounting.

Material:
Steel, zinc-plated

Note:
2299.69.10.20 use only for electric transporter, BLACK LINE
2299.60.10100., 2299.60.12100. and 2299.60.14100.

2299.69.10.20 Channel fastening standard, including slot stone

TRANSPORTER ELECTRICAL - ACCESSORIES
MOUNTING TOOL



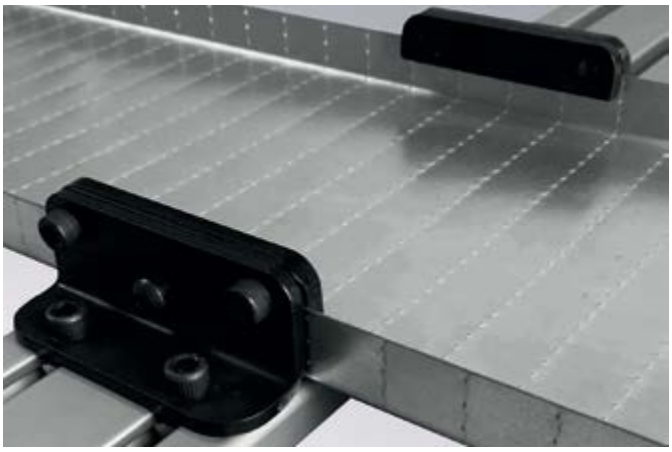
2299.69.10.00.01. **Mounting tool**

Description:
The mounting tool is used for chamfering the mounting holes in the channel.

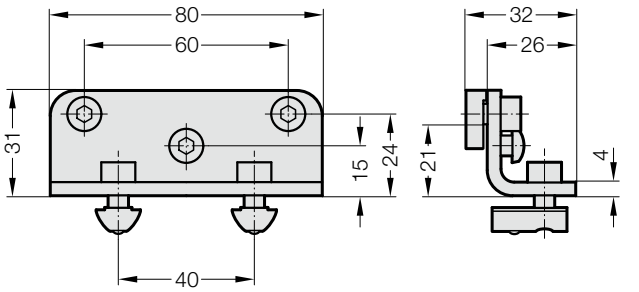
Note:
2299.69.10.00.01.05 use only for electric transporter
BLACK LINE 2299.60.18100.
CLEAN LINE 2299.61.18100.

2299.69.10.00.01.06 use only for electric transporter
BLACK LINE 2299.60.10100.
BLACK LINE 2299.60.12100.
CLEAN LINE 2299.61.12100.
BLACK LINE 2299.60.14100.
CLEAN LINE 2299.61.14100.

TRANSPORTER ELECTRICAL - ACCESSORIES
CHANNEL FASTENING TOPMOUNT
CHANNEL FASTENING UNDERMOUNT



2299.69.10.30

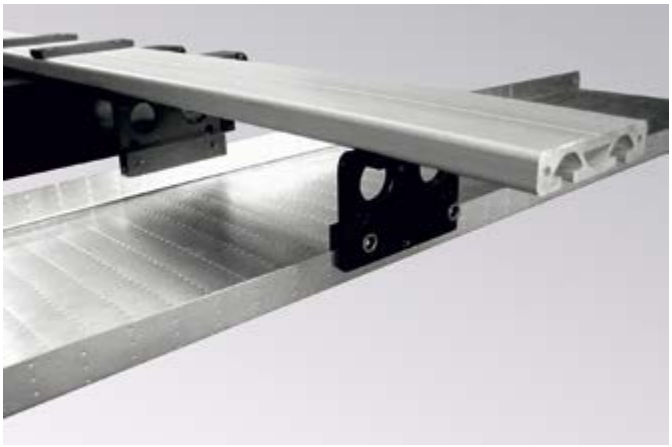


Description:
The topmount channel fastening, with its simple clamping principle, allows flexible mounting of the channel (without additional processing) on the top of the 2299.69.20.80 profiled beam.

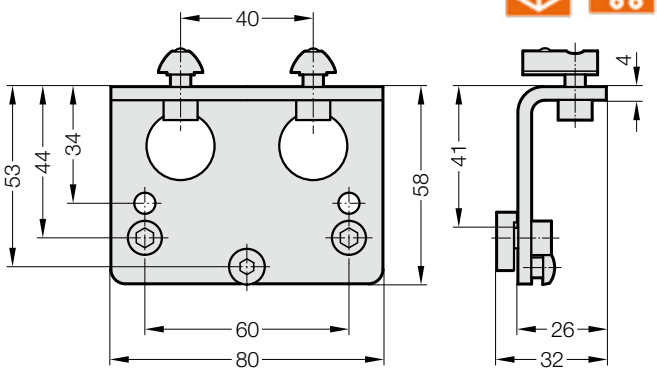
Material:
High-strength steel, black zinc-plated
Weight: 0.4 kg (per pair)

Note:
Included in the scope of delivery are the topmount channel fixings, in pairs, socket head screws and slot stones.
Construction height above beam: 30 mm

2299.69.10.30 Channel fastening topmount



2299.69.10.40



Description:
The undermount channel fastening, with its simple clamping principle, allows flexible mounting of the channel (without additional processing) underneath the 2299.69.20.80 profiled beam, as well as mounting of the electric transporter at the same construction height.

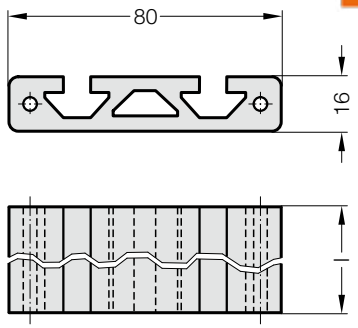
Material:
High-strength steel, black zinc-plated
Weight: 0.6 kg (per pair)

Note:
Included in the scope of delivery are the undermount channel fastenings, in pairs, socket head screws and slot stones.
Construction height below beam: 58.5 mm

2299.69.10.40 Channel fastening undermount

TRANSPORTER ELECTRICAL - ACCESSORIES
PROFILED BEAM
RETAINER BAR

2299.69.20.80.



2299.69.20.80. **Profiled beam**

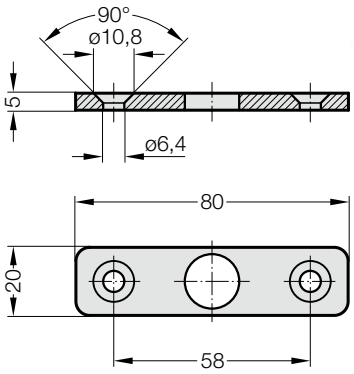
Order No	l [m]
2299.69.20.80.1000	1000
2299.69.20.80.2000	2000

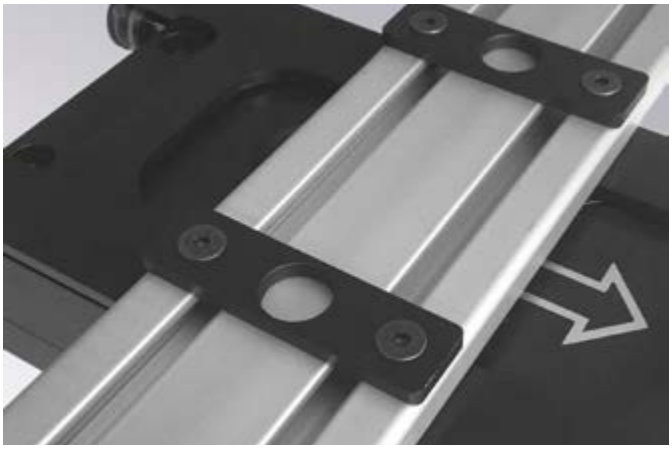
Description:
Flexible set-up of multiple channel sections is possible using the profiled beam.

Material:
Aluminium, anodised (corrosion-resistant)
Weight: 2.2 kg/m

Note:
Only use for transporter,
BLACK LINE 2299.60.10100./12100./14100.
Profiled shape SP3100N profile 8 16 x 80
For fastening the profiled bar onto the electric transporter, the 2299.69.20.02.06 flat head screw (M6x20) or the 2299.69.20.01.06 retainer strip must be ordered separately.

2299.69.20.01.06





2299.69.20.01.06 **Retainer bar**

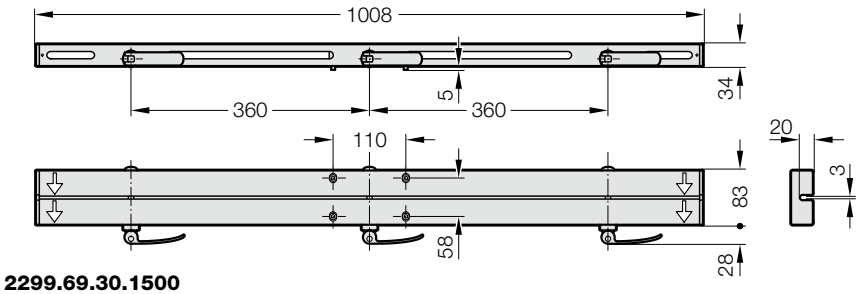
Description:
The retainer bar is used to fasten the 2299.69.20.80 profiled bar to the electric transporter.

Material:
High-strength steel, black zinc-plated
Weight: 0.16 kg/per pair

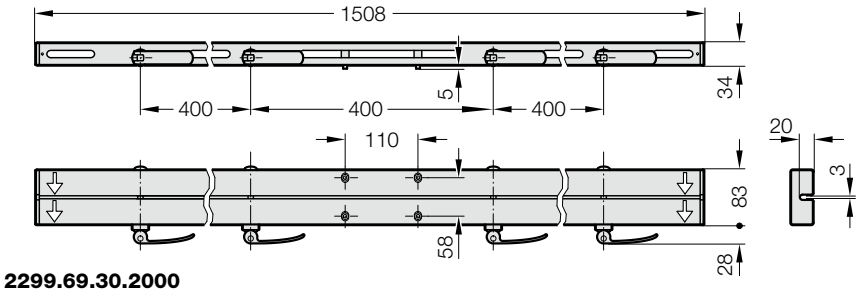
Note:
Included in the scope of delivery are two retainer bars with 4 x flat head screws ISO 10642 - 8.8 M6x20.
Only use for
transporter, electric BLACK LINE 2299.60.10100./12100./14100.

TRANSPORTER ELECTRICAL - ACCESSORIES
CLAMPING BAR

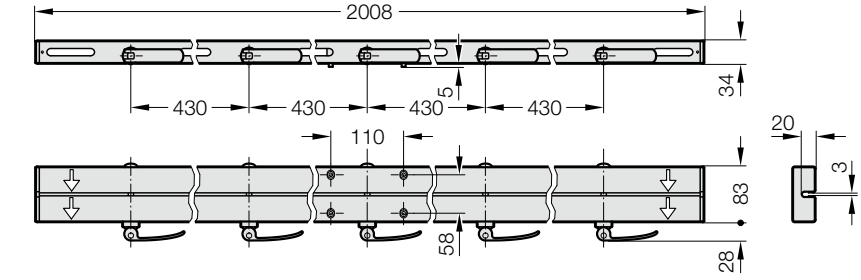
2299.69.30.1000



2299.69.30.1500



2299.69.30.2000



Description:
The clamping bar is used for rapid changeover between multiple transport channels.
The mechanical clamping lever securely clamps the channel to the 2299.69.30.00.01.1230 angled profile in the slot without tools.

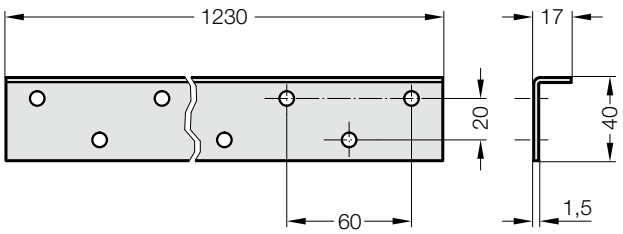
Material:
High-strength steel (laser-cut),
Black zinc-plated

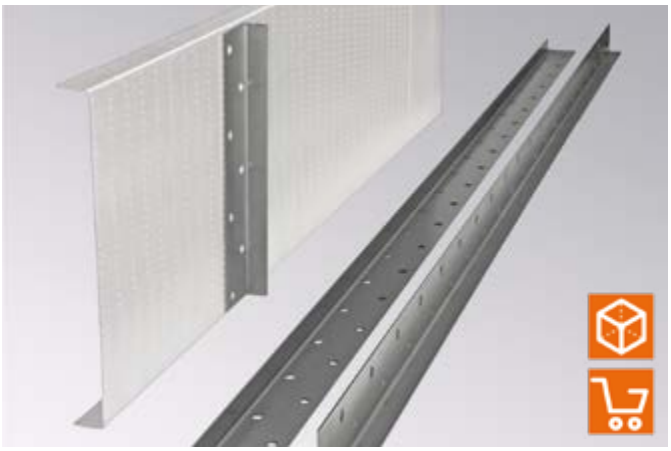
2299.69.30. Clamping bar

Order No	for electric transporter	Weight [kg]
2299.69.30.1000	22299.60.10100. / 299.60.12100.	2.5
2299.69.30.1500	22299.60.10100. / 299.60.12100.	4.5
2299.69.30.2000	22299.60.10100. / 299.60.12100.	6.5

TRANSPORTER ELECTRICAL - ACCESSORIES
ANGLED SECTION FOR CLAMPING BAR

2299.69.30.00.01.1230





2299.69.30.00.01. Angled section for clamping bar

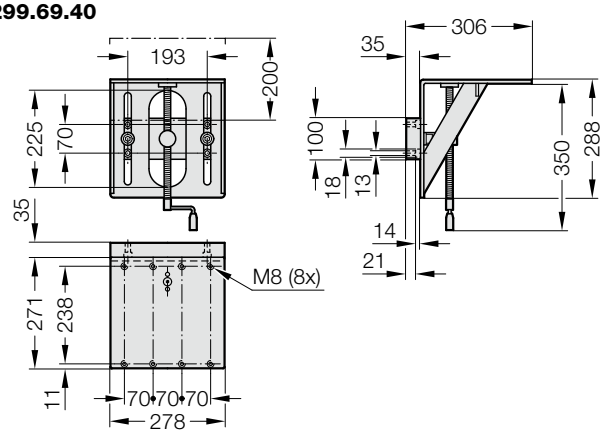
Description:
Angled section for welded connection underneath the channel when using the clamping bar.

Material:
High-strength steel

Note:
Dimensions: 1230 mm x 17 mm x 40 mm
Weight: 0.7 Kg
Only use for 2299.60.10100./2299.60.12100.
Electric transporter, BLACK LINE, ULTRA/MAX

TRANSPORTER ELECTRICAL - ACCESSORIES
HEIGHT-ADJUSTABLE MOUNTING BRACKET
HEIGHT-ADJUSTABLE MOUNTING BRACKET, FOR BEAM MOUNTING

2299.69.40



Description:
The height-adjustable mounting bracket is attached to the power press/ production machine using four bolts. The mounting bracket has three pre-defined mounting options on the top (left, centre and right) for the transporter.

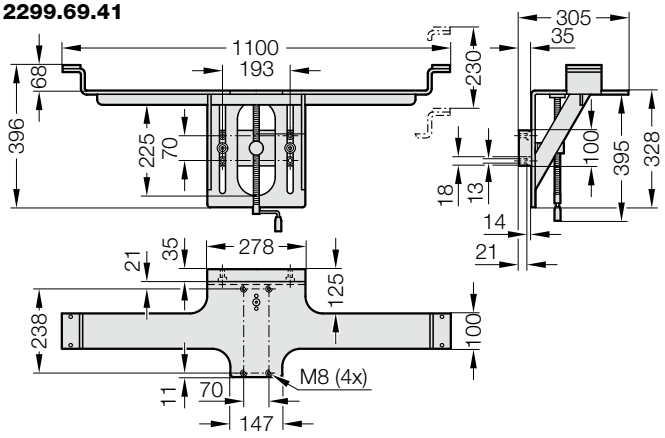
Material:
Steel, black zinc-plated

Note:
Only use for 2299.60.10100./2299.60.12100.
Electric transporter, BLACK LINE, ULTRA/MAX
Included in the delivery scope: socket head screws DIN EN ISO 4762 4x M12x50 -12.9.

2299.69.40 Height-adjustable mounting bracket

Max. load	100 kg
Height adjustment of the angled support (with ball bearing-mounted crank)	200 mm
Weight	18,2 kg

2299.69.41



Description:
The height-adjustable mounting bracket is attached to the power press/ production machine using four bolts. The lateral outriggers prevent the profiled beam from bending with a larger span.

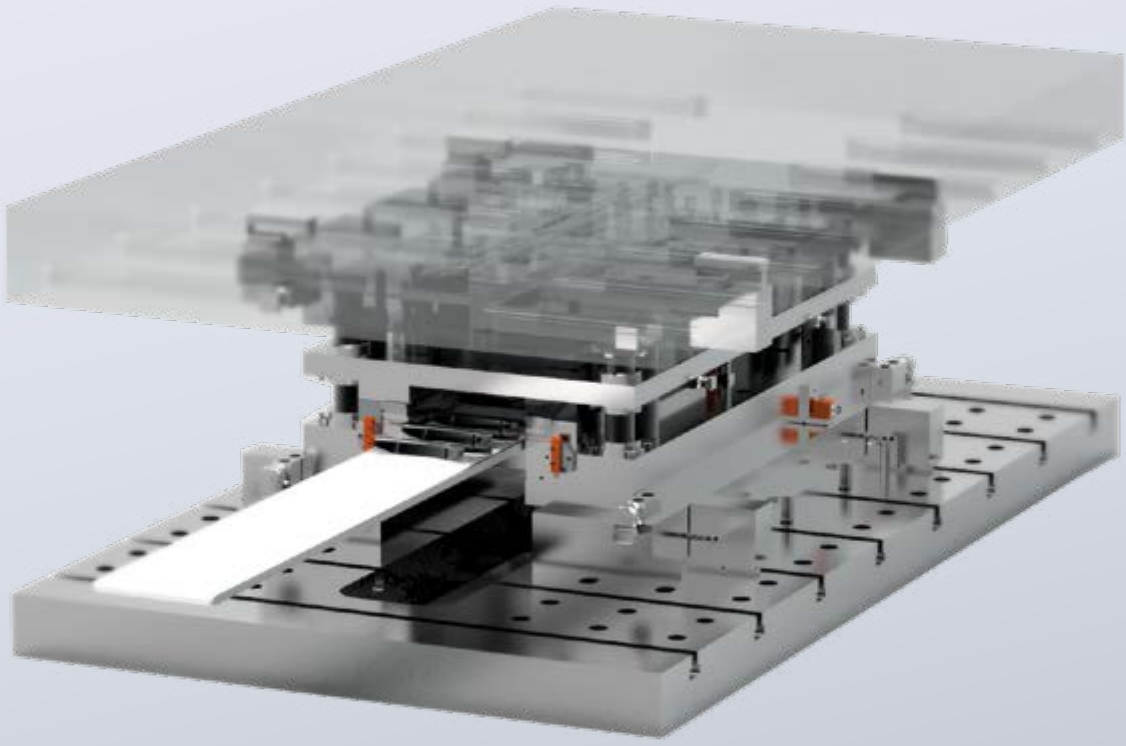
Material:
Steel, black zinc-plated

Note:
Only use for 2299.60.10100./12100.
Electric transporter, BLACK LINE, ULTRA/MAX
Replacement slide element: 2299.69.41.00.01
Included in the delivery scope: socket head screws DIN EN ISO 4762 4x M12x50 -12.9.

2299.69.41 Height-adjustable mounting bracket, for beam mounting

Max. load	100 kg
Max. length of aluminium bar	3000 mm
Max. length of clamping bar	2000 mm
Height adjustment of the angled support (with ball bearing-mounted crank)	230 mm
Weight	28,5 kg

SENSORS FOR STAMPING AND FORMING TECHNOLOGY



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