Flat Top Chain Conveyor Versaflex SBF A04 ... A29

» Flexible solutions from the construction kit. «

The versatile and flexible Versaflex flat top chain conveyor system, previously known as the plastic chain conveyor from E-M-M-A GmbH, is designed based on modular principles. The standardised modules and components make the system simple and cost effective to configure and quick to integrate into any production process, as well as to adapt and expand it. Versaflex is a conveyor system that grows alongside your tasks. It is also compatible with existing systems on the market.

The single-track design and curve radii starting at 150 mm allow complex routes to be mapped in three-dimensional space. The chain runs on wear strips to ensure low wear and can only be operated with one drive at speeds of up to 50 m/min and system lengths of up to 40 m as standard.

Either as a turnkey solution or part of an assembly kit for assembly on site, the A04 to A29 system is extremely flexible and efficient and comes with chain widths of 44 mm to 295 mm and a large selection of drives, elbows, cams, side rails and other accessories. It can also be used for gentle transport and precise positioning with pallets as standard.

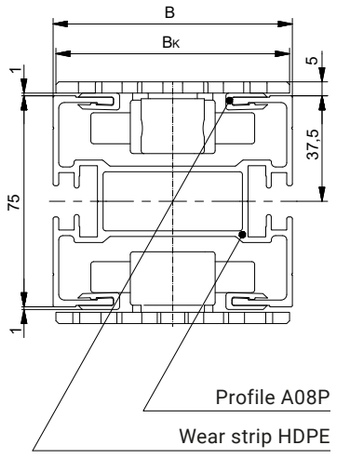
Versaflex has seen huge success in a wide variety of industry applications in recent years and transports a vast array of products to their destination with maximum reliability.

Benefits of Versaflex

- Economic solution for complex track layouts
- Quick and easy configuration and commissioning
- Suitable for all industries and compatible with existing systems
- Modular system of standardised components
- Turnkey system or assembly kit
- User friendly and low maintenance
- Can be quickly adapted to new production and environmental conditions
- Saves energy and space
- Large selection of system widths and chains

Cross Section

Example SBF A08



Flat Top Chain Conveyor Versaflex SBF A04 ... A29

Benefits

- Economical realisation of complex track designs
- Simple and fast configuration and commissioning
- Suitable for all industries and compatible with existing systems

Areas of application

Products with primary and secondary packaging in industries such as food production, pharmaceuticals, cosmetics, chemicals or consumer goods. Also ideal for transporting pallets in assembly lines (in the automotive industry, for instance) and for interlinking machines in the manufacturing industry.

Overview of Options

System	A04*	A06	A08	A10	A17	A29
						
Conveyor						
System width [mm]	45	65	85	105	182	300
System height incl. chain [mm]	72	73	85	86	95	95
Total load max. [kg]	150	150	200	200	200	200
Conveyor length max. [m]	30	40	30	30	30	30
Conveyor speed max. [m/min]**	50	50	50	50	50	50
Chain						
Chain width [mm]	44	63	83	103	175	295
Chain pitch [mm]	25.4	25.4	33.5	35.5	33.5	33.5
Chain traction force [N]	500	500	1250	1250	1250	1250
Product						
Product width [mm]	10-80	15-140	20-200	25-300	70-400	70-400
Product weight horizontal max. [kg]	2	10	15	20	15	15
Product weight rising max. [kg]	1	2	10	15	10	10

* also available as option A045 with a system height of 52 mm for compact applications
** higher conveying speeds on request

Request/Order

We require the following information to design your Versaflex:

Product Properties

- Product dimensions (LxWxH)
- Product weight
- Surface properties (smooth, sharp-edged, soft, hard, etc.)

Operating Properties

- Conveyor speed ([m/min]; [piece/min])
- Are the products accumulated?
- Cycle operation [start-stop/h]
- Process environment (hot, cold, dry, wet, dusty, dirty, etc.)

Conveyor System Data

- Track layout
- Upper edge of belt conveyor (floor supports, wall brackets, ceiling suspension)
- Transitions (product transfer or discharge)
- Control technology

Operating Temperature

Versaflex can be continuously operated in a temperature range between -20° C and +60° C. It can also be briefly operated in temperatures of up to 100° C, e.g. for cleaning and rinsing.

Chain tensile force

In the following cases, the chain tensile force and the performance of the drive units must generally be calculated and monitored:

- High load
- Accumulation
- Vertical conveyors
- High conveyor speed
- Very long conveyors
- Conveyors with sliding bends (horizontal or vertical)
- Frequent starts and stops (cycle operation)
- Very high or low ambient temperatures

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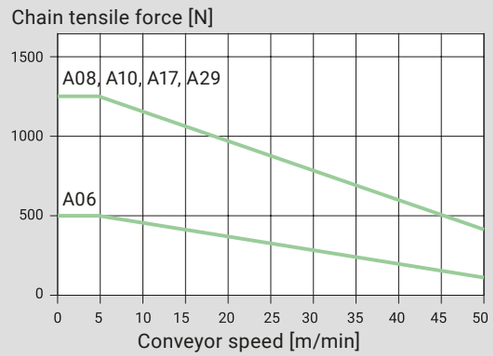
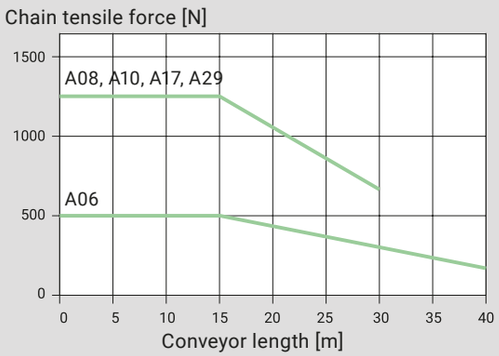
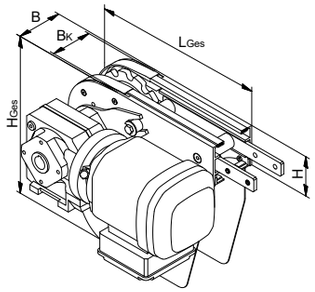
Chain Tensile Forces Based on Conveyor Speed and Conveyor Length





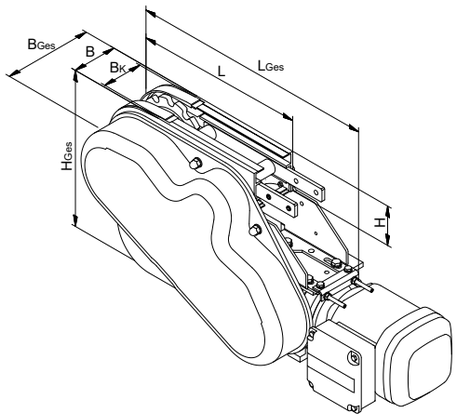


Direct End Drive DE1 and DE2

The direct end drive is available with chain slack or as a guided unit without chain slack. It is also available with (DE1) or without a friction clutch (DE2).

Conveyor speeds [m/min]: 5, 10, 15, 20, 25, 30, 40, 50 and 60. Others on request.

System	A04*	A06	A08	A10	A17	A29
max. tensile force [N]	500		1250			

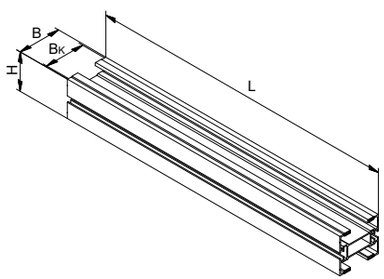


Indirect End Drive with Friction Clutch DE0

The indirect end drive is available with chain slack or as a guided unit without chain slack.

Conveyor speeds [m/min]: 5, 10, 15, 20, 25, 30, 40, 50 and 60. Others on request.

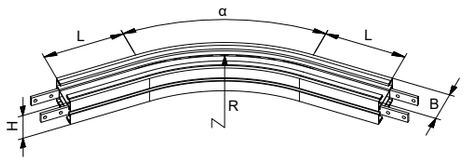
System	A04*	A06	A08	A10
max. tensile force [N]	500		1250	



Line including Wear Strips

Conveyor frame profile made from high-quality aluminium with wear strips for reducing friction between the profile and chain. The wear strip is easy to screw on or rivet.

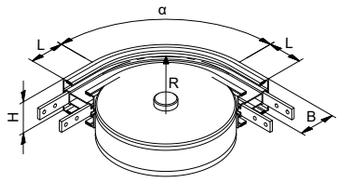
* The drawings show the most common modules in system A08. Other modules available on request



Sliding Curve

The sliding curve is available with angles of 30°, 45°, 60° and 90° as standard. Angles of up to 180° are available on request.

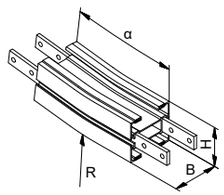
System	A04*	A06	A08	A10	A17	A29
R_{min} [mm]	500					700
R_{max} [mm]	1500					



90° and 180° Rolling Curve

The rolling curve and rotating plastic washers on the inside of the curve significantly reduce the amount of friction that occurs in the conveyor system. This feature enables higher speeds, longer conveying paths and higher loads to be achieved.

System	A04*	A06	A08	A10	A17	A29
Radius [mm]	150	150	160	170	-	-

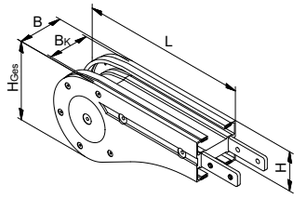


Vertical Curve

The curve can be used to overcome height differences at an angle of up to 90°. Depending on the product, we recommend using cleated chains to prevent the product from slipping back. Like in the curve segments, wear strips ensure that the chain runs safely and without much friction.

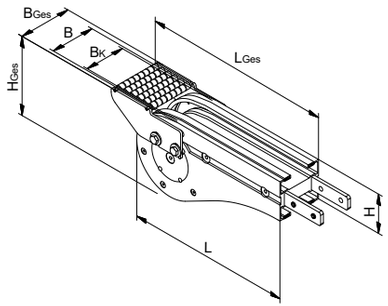
Radius R: 400 mm
Angle α: 5°, 7°, 15°, 30°, 45°, 60° and 90°.

For the systems A17 and A29, only 5° and 7° angles are available.



Tail

The plastic or aluminium tails safely and precisely guide the chain back into the upper run.

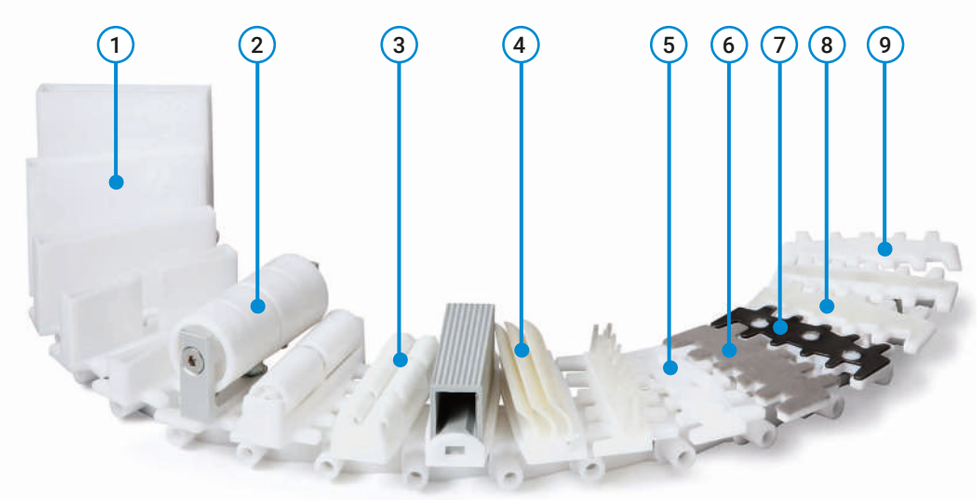


Transfer Segment

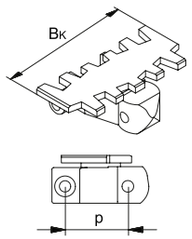
The roller bridge with an 11 mm roll diameter enables the frontal transfer of small products. The transfer segment can also have a driven design.

* The drawings show the most common modules in system A08. Other modules available on request

The conveyor chains are made from the material POM and are available in a wide variety of designs for virtually all applications – with an adhesive surface for inclines, with steel covering for sharp-edged parts or flocked for transporting very delicate items. In addition, a large number of different cams are available – rolls in a wide range of dimensions for accumulating products, or flexible cams for implementing clamping conveyors. Furthermore, chain links with embedded magnets can be used to transport magnetisable parts.



1. Cleated chain
2. Cleated roller chain
3. Accumulating roller chain
4. Chain with flexible cams or clamping elements
5. Universal chain for customer-specific workpiece carriers
6. Flocked chain
7. Chain with steel covering
8. Chain with hard surface
9. Smooth standard chain



System	A04 ...	A06 ...	A08 ...	A10 ...	A17 ...	A29 ...
Chain width BK [mm]	44	63	83	103	175	295
Chain pitch* p [mm]	25.4	25.4	33.5	35.5	33.5	33.5
Chain tensile force [N]	500	500	1250	1250	1250	1250

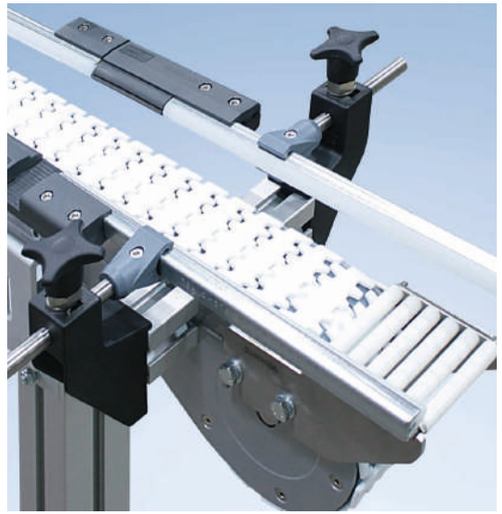
Chain Options

Chain option	Desig-nation	Cam height h [mm] A04	A06	A08	A10	A17	A29	Properties
	... CH	none	none	none	none	none	none	Flat, smooth chain: direct transport or indirect via pallet
	... CS	-	none	none	none	-	-	Chain with steel covering: parts with sharp edges, products with rough surfaces
	... CF/ ... CF-A	none	none	none	none	none	none	High-friction chain/flat, high-friction chain: upward or downward inclines
	... CB	none	none	none	none	-	-	Flocked chain: gentle transport
	... CM-A	-	4, 5,5, 9, 12, 15, 17, 30	5, 6, 15, 30	15, 20, 30, 40	-	-	Cleated chain type A: lines with upward or downward inclines, other heights on request
	... CM-D	3, 5,5, 9, 20, 27	55	40, 60, 80	-	-	-	Cleated chain type D: lines with upward or downward inclines, other heights on request
	... CR-19	-	12	19	19,3	-	-	Accumulating roller chain: gentle on surfaces, horizontal transport, accumulated operation
	... CR-27	-	-	23	-	-	-	Cleated roller chain: large volumes of products on lines with upward or downward inclines
	... CR-46	-	-	45.5	45.5	46.5	46.5	Cleated roller chain: large volumes of products on lines with upward or downward inclines
	... CW-B	12.7	12.7	12.5	-	-	-	Chain with flexible cams, type B: particularly light products
	... CW-C	-	28	27.54	-	-	-	Chain with flexible cams, type C (clamping conveyor chain): different height levels
	... CW-D	30	30	34	-	-	-	Chain with flexible cams, type D: irregular product geometry
	... CW-DA	30	-	30	-	-	-	Chain with flexible cams, type DA: irregular product geometry

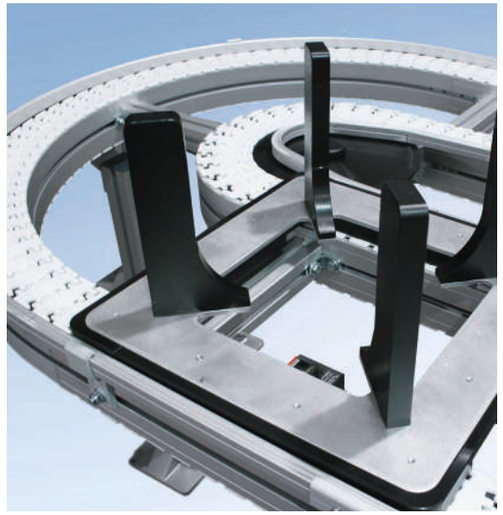
- = Chain option unavailable for this system

Flat top chain conveyor SBF A10 with direct head drive and side rail holder type 110

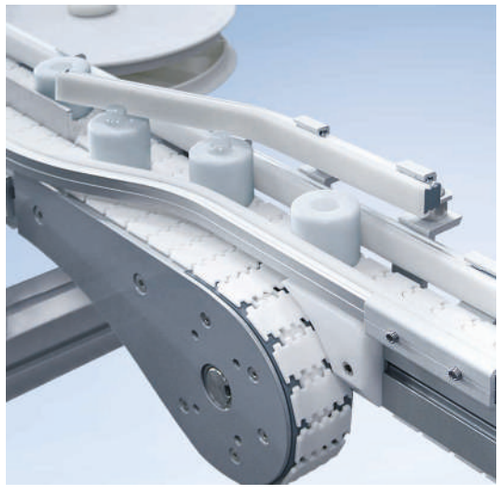
Flat top chain conveyor SBF A08 with 90° rolling curve



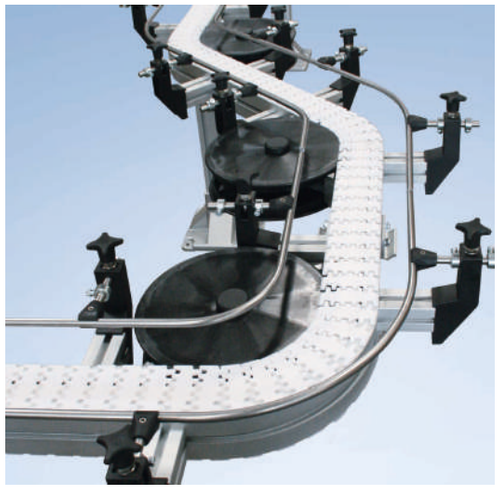
Flat top chain conveyor SBF A06 with adjustable side rail and roller bridge at the end of the tail



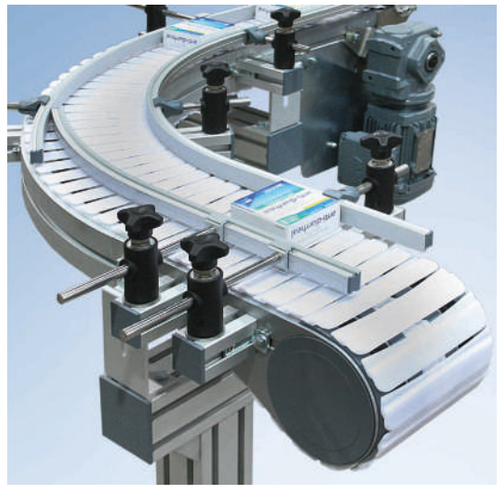
Flat top chain conveyor SBF P08 as double-line pallet circulation system with sliding 180° curve



Flat top chain conveyor SBF P04 with switch for separation



Flat top chain conveyor SBF A08 with rolling curves and side rails

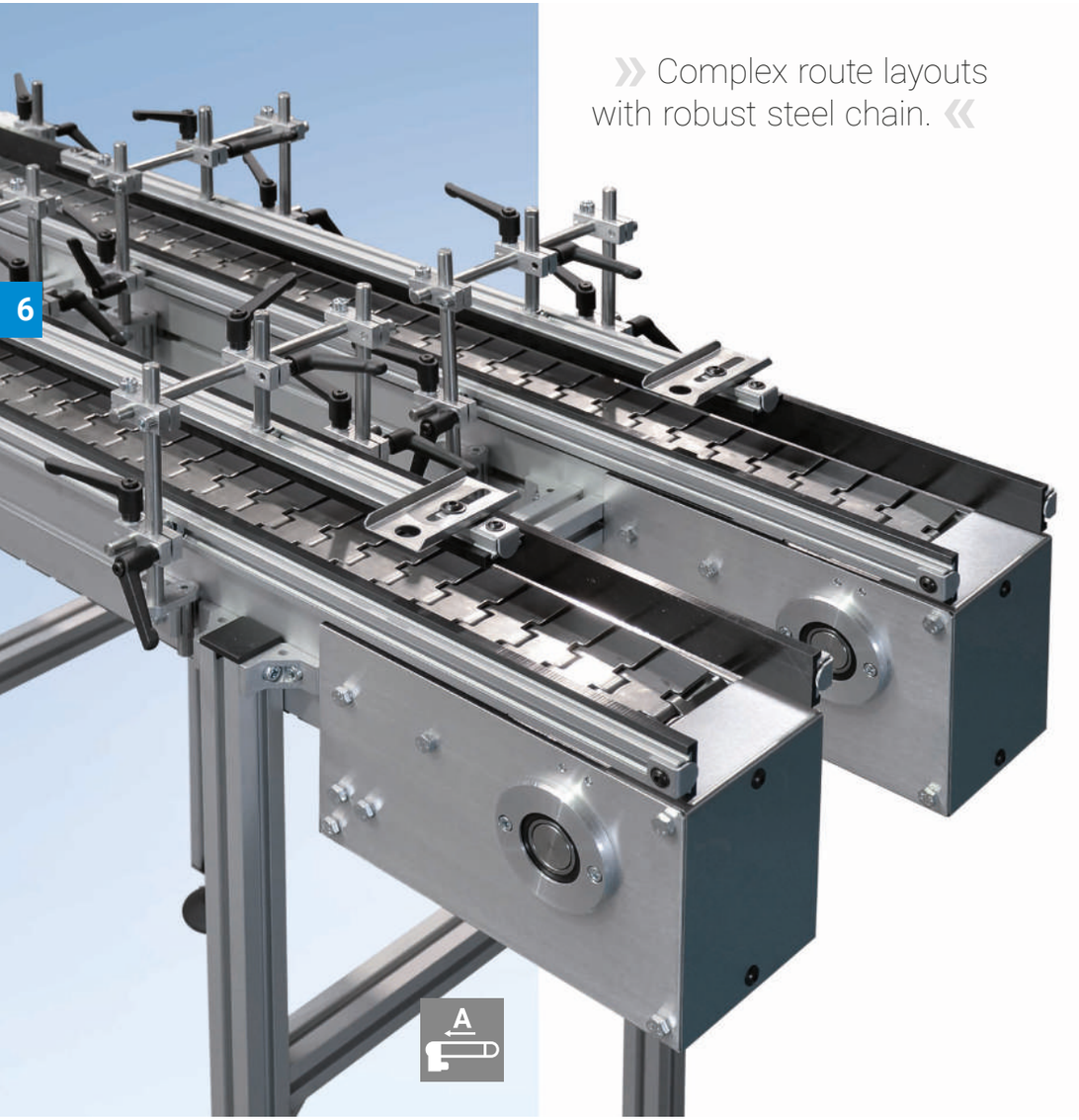


Flat top chain conveyor SBF A17 with width-adjustable side rail

Flat top chain conveyor SBF A08 with driven transfer tail and pressure rollers for vertical transport

Custom applications from page 404

Flat Top Chain Conveyor SBF-P 2254



» Complex route layouts with robust steel chain. «

The SBF-P 2254 with steel chain is ideal for the three-dimensional transport of hot, sharp or oily products, such as turned or welded parts.*

Its modular design lets you create complex conveyor systems quickly and economically, and it minimises the work required to make changes to suit production conditions. The connecting elements specially designed for this system allow you to easily assemble the individual modules into a complex conveyor system. In addition to straight tracks, you can select from both sliding and rolling curves of 90° and 180° as well as transfer segments and vertical curves for bridging height differences.

The slots on the sides of the mk 2254 conveyor frame profile allow you to connect side rails, stands, sensors and other accessories. The chain is guided entirely inside wear strips on both the upper and lower runs.

As a special design, a 205 mm version of the flat top chain conveyor is available in addition to the standard widths of 100 and 130 mm.

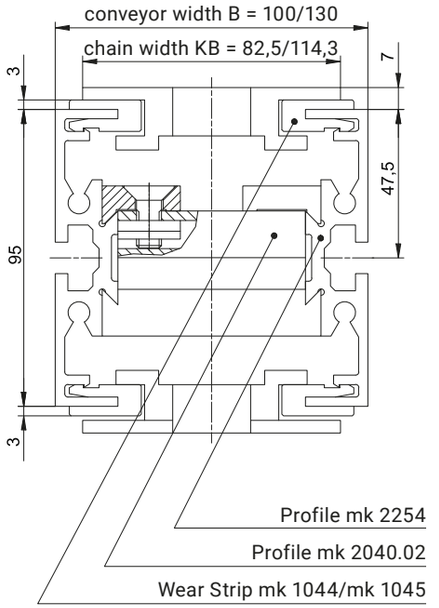
A stainless steel version is also available to meet the special requirements, such as for the food industry.

*Not suitable for metal chips

Benefits of the SBF-P 2254

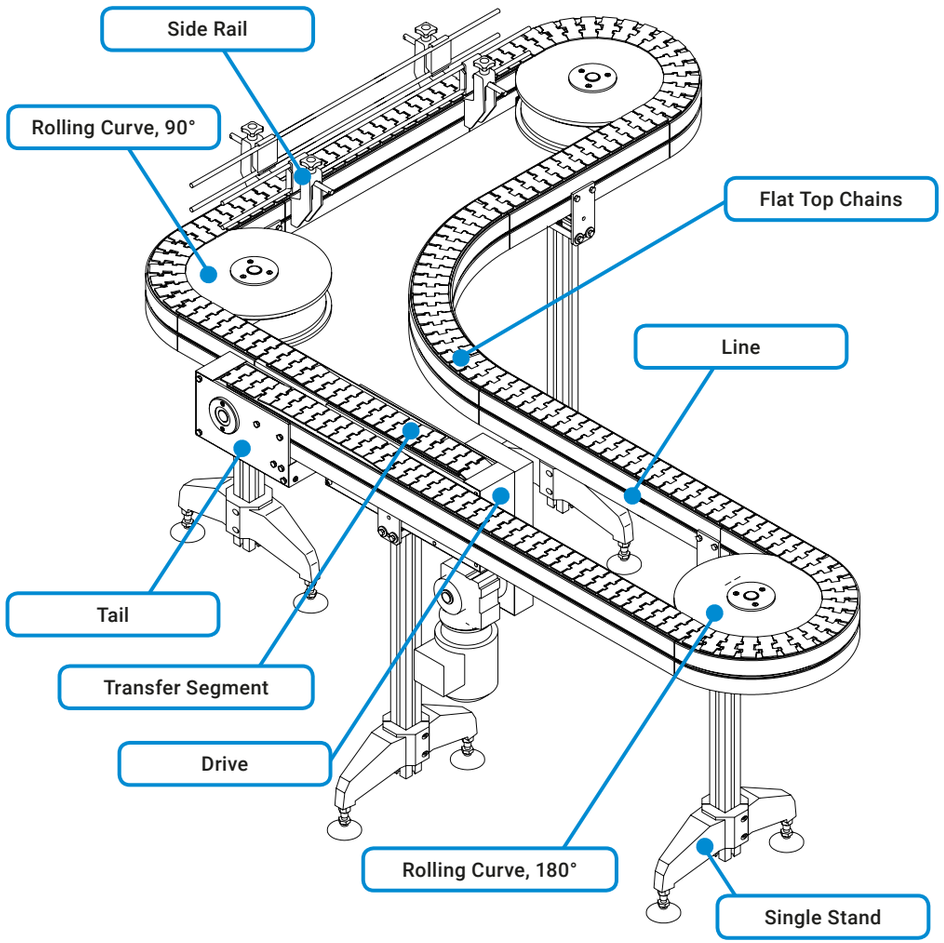
- Ideal for the metal industry and turned, milled or welded parts*
- Modular design for fast and affordable creation of complex conveying paths
- Track layout can be easily changed according to production conditions
- Side slots on the conveyor frame profile for attaching accessories such as side rails, stands, etc.

Cross Section

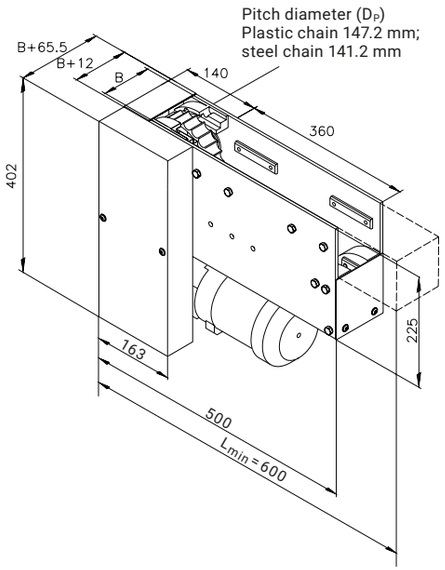


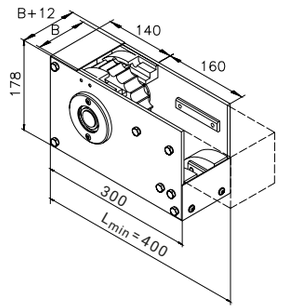
A variety of different influencing factors must be taken into account when configuring flat top chain conveyors. The total chain length, number of curves, workpiece characteristics and, above all, the weight and speed, etc. have a decisive influence on the motor power required.

mk determines the motor power based on the individual application. During configuration, note that the direction (left/right) for the drive, transfer segments and curves must always be specified in the running direction (that is, the direction towards the drive).



The modules can only be ordered as spare parts and are not suitable for building a complete solution yourself.





Drive

The motor can be positioned on the left (as shown) or on the right. The motor power ranges from 0.25 to 0.55 kW. The conveyor system can achieve speeds of approx. 8 to 40 m/min. Speeds below 8 m/min may cause the chain to run unevenly. Only straight line elements are permitted to be integrated in the range of L_{min} = 600 mm.

Width B	Chain width B1	Type	Item no.
100 mm	82,5 mm	curved	B01.00.409*
130 mm	114,3 mm	curved	B01.00.410*

*without profiles, without chain

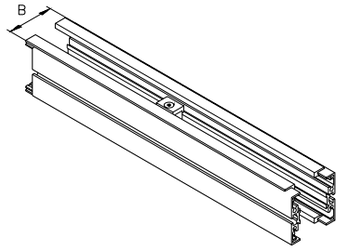
Tail

The tail consists of aluminium side plates with stainless steel covers and precisely guides the chain back into the upper run through high-quality curved sections. Only straight line elements are permitted to be integrated in the range of L_{min} = 400 mm.

Width B	Chain width B1	Type	Item no.
100 mm	82,5 mm	curved	B80.00.409*
130 mm	114,3 mm	curved	B80.00.410*

*without profiles, without chain

The modules can only be ordered as spare parts and are not suitable for building a complete solution yourself.

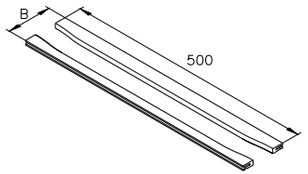


Line including Wear Strips

The conveyor frame is based on the profile mk 2254 and features a high level of torsion resistance. The chain is guided along the lower and upper run in polyethylene (PE-1000) wear strips. The wear strips reduce friction and ensure that the flat top chain runs smoothly.

Width B	Chain width B1	Item no. Line	Item no. Wear Strip
100 mm	82.5 mm	B08.00.409*	22.44.2000
130 mm	114.3 mm	B08.00.410*	22.45.2000

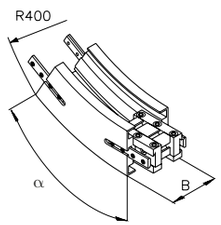
*Assemblies with connecting elements, without a chain and without wear strips



Transfer Segment

The transfer segment can be used to transfer products between conveying paths running in parallel. The high-quality guide and small chain spacing ensure that the workpiece remains in a stable position during the transfer.

Width B	Chain width B1	L	Item no.
100 mm	82.5 mm	500 mm	B37.00.002
130 mm	114.3 mm	500 mm	B37.00.003

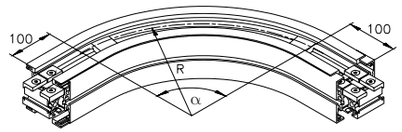


15°, 30° and 45° Vertical Curve

The vertical curve can be used to overcome height differences. Depending on the product, we recommend using cleated chains to prevent the product from slipping back. Like in the curve segments, wear strips ensure that the chain runs safely and without much friction.

Width B	Chain width B1	L	Item no.
100 mm	82.5 mm	15°	B36.00.434*
100 mm	82.5 mm	30°	B36.00.435*
100 mm	82.5 mm	45°	B36.00.436*
130 mm	114.3 mm	15°	B36.00.438*
130 mm	114.3 mm	30°	B36.00.439*
130 mm	114.3 mm	45°	B36.00.440*

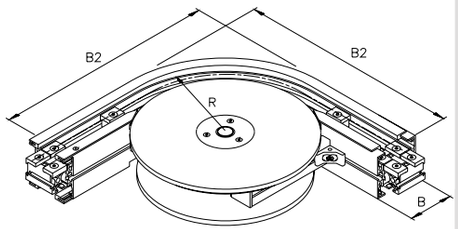
*Assemblies with connecting elements, without a chain



Sliding Curve

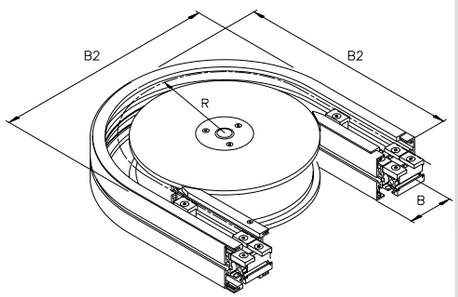
The chain is guided along the entire curve area in a high-quality PE 1000 wear strip. The dimensions of the wear strip ensure that the chain runs safely. This results in long conveyor service life. Sliding curves are primarily used in short conveyor systems with minimal loads and low speeds.

Width B	Chain width B1	R	Item no.
100 mm	82.5 mm	300 mm	B36.00.416*
100 mm	82.5 mm	500 mm	B36.00.414*
130 mm	114.3 mm	300 mm	B36.00.417*
130 mm	114.3 mm	610 mm	B36.00.415*



90° and 180° Rolling Curve

The rolling curved tail and rotating plastic washers on the inside of the curve significantly reduce the amount of friction that occurs in the conveyor system. This feature enables higher speeds, longer conveying paths and higher loads to be achieved.



90°

Width B	Chain width B1	B2	R	Item no.
100 mm	82.5 mm	500 mm	200 mm	B36.00.428*
130 mm	114.3 mm	530 mm	200 mm	B36.00.429*

180°

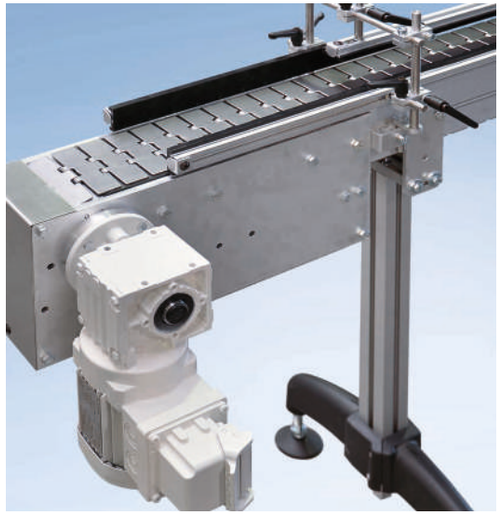
Width B	Chain width B1	B2	R	Item no.
100 mm	82.5 mm	500 mm	200 mm	B36.00.430*
130 mm	114.3 mm	530 mm	200 mm	B36.00.431*

*Assemblies with connecting elements, without a chain and without wear strips

The flat top chains presented in these tables are our proven standard. All the chains shown are FDA-compliant. Plastic chains are not suitable for sharp-edge products or for cleaning with phosphoric/nitric acid. Rather than selecting the right chain based on the permitted driving force, with mk you can use our chain calculation program, which takes into account conveyor length, chain speed, back pressure, lubrication, product type and weight to find the perfect chain for your specific application. Additional chains are available on request.

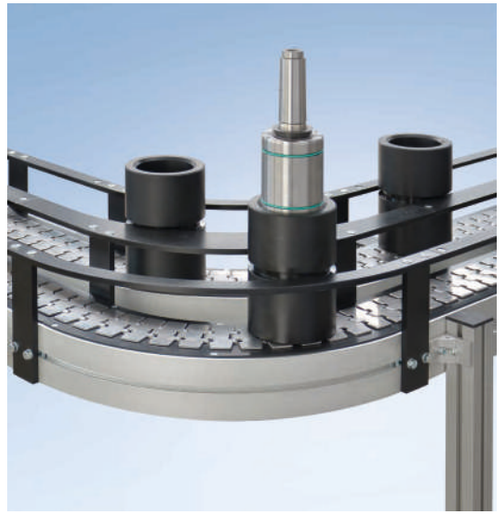
Steel chains	Designation	Item no.	Conveyor width [mm]	Chain width [mm]	R min [mm]	Perm. operating force [N]	Material
	S 881 TAB-K325	K114510047	100	82.5	500	8350	Carbon steel, hardened
	S 881 TAB-K450	K114510063	130	114.3	610	8350	Carbon steel, hardened
	SSR 8811 TAB-BO-K325	K114510022	100	82.5	200	4500	Stainless steel, non-corrosive
	SSC 8811 TAB-K450	K114510062	130	114.3	500	6000	Stainless steel, non-corrosive

Application Examples SBF-P 2254



Flat top chain conveyor SBF-P 2254 with head drive AF and side rail SF02

Double-line flat top chain conveyor SBF-P 2254 with one motor



Double-line flat top chain conveyor SBF-P 2254 with sliding 90° curve and individual side rail

Special flat top chain conveyor with a width of 205 mm with drip pan and side rail SF10.1

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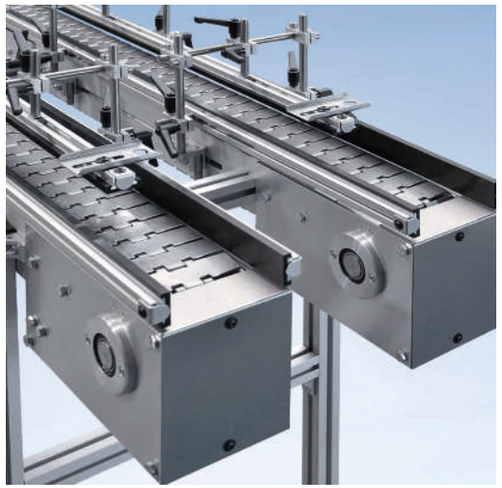
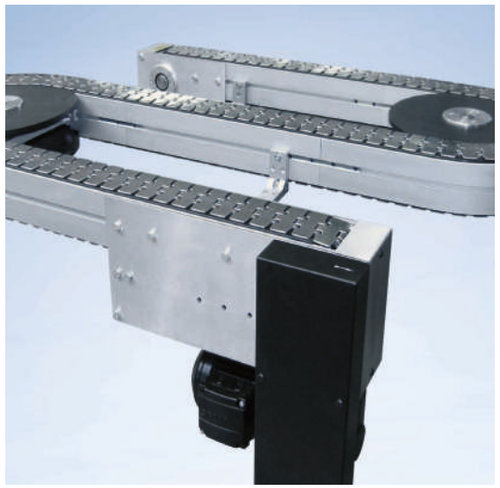
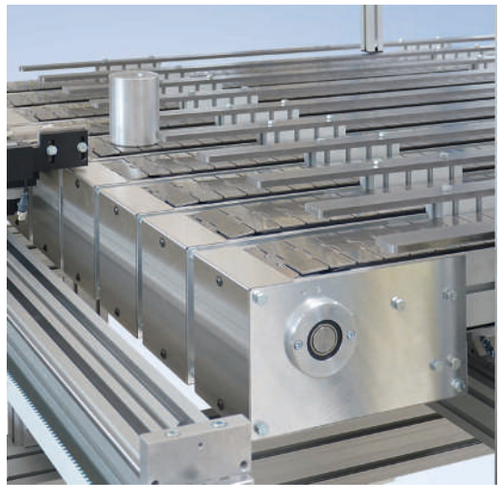


Dual-line flat top chain conveyor SBF-P 2254 with side rail SF02 with adjustable guide height and width



Flat top chain conveyor SBF-P 2254 with head drive AS and two rolling 90° curves as a cooling line

Special flat top chain conveyor with a width of 205 mm with side rail SF 2.1 and lubrication station



Multiple SBF-P 2254 flat top chain conveyors on a shared conveyor frame for transporting various classified goods

Custom applications
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