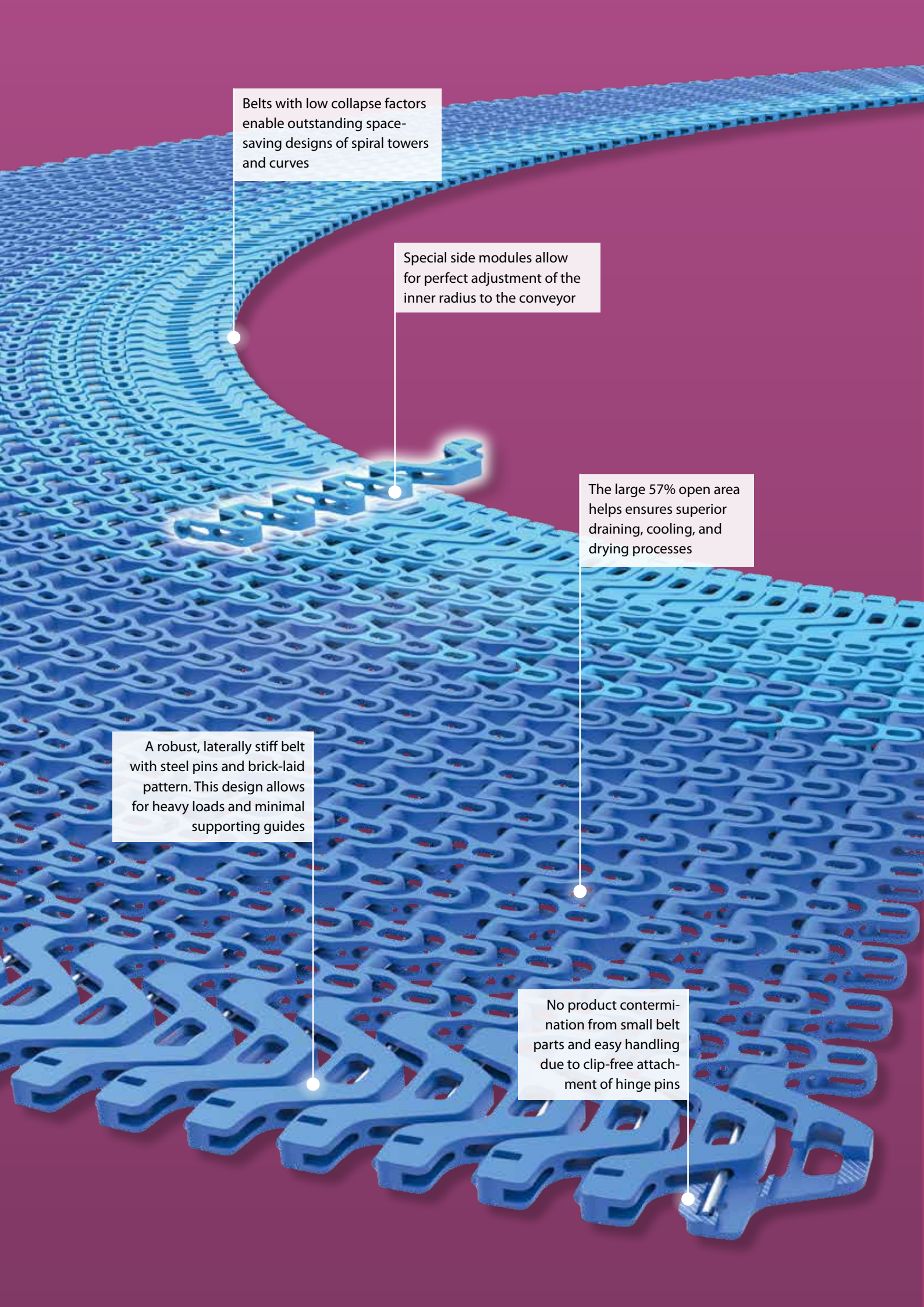
siegling prolink
modular belts



PROLINK SERIES 9.1
THE NEW CUSTOMIZED SPIRAL BELT

Siegling – total belting solutions

forbo
MOVEMENT SYSTEMS


Belts with low collapse factors enable outstanding space-saving designs of spiral towers and curves
Special side modules allow for perfect adjustment of the inner radius to the conveyor
The large 57% open area helps ensures superior draining, cooling, and drying processes
A robust, laterally stiff belt with steel pins and brick-laid pattern. This design allows for heavy loads and minimal supporting guides
No product contermi-nation from small belt parts and easy handling due to clip-free attach-ment of hinge pins

PROLINK SERIES 9.1
THE NEW CUSTOMIZED SPIRAL BELT

Spiral towers are the most challenging application for curve-compatible modular belts. Forbo Movement Systems' Prolink 9.1 series is a new generation of curved belts that's ideal for the special requirements of spiral towers with cage drives and excels in straight and curved conveyor sections.

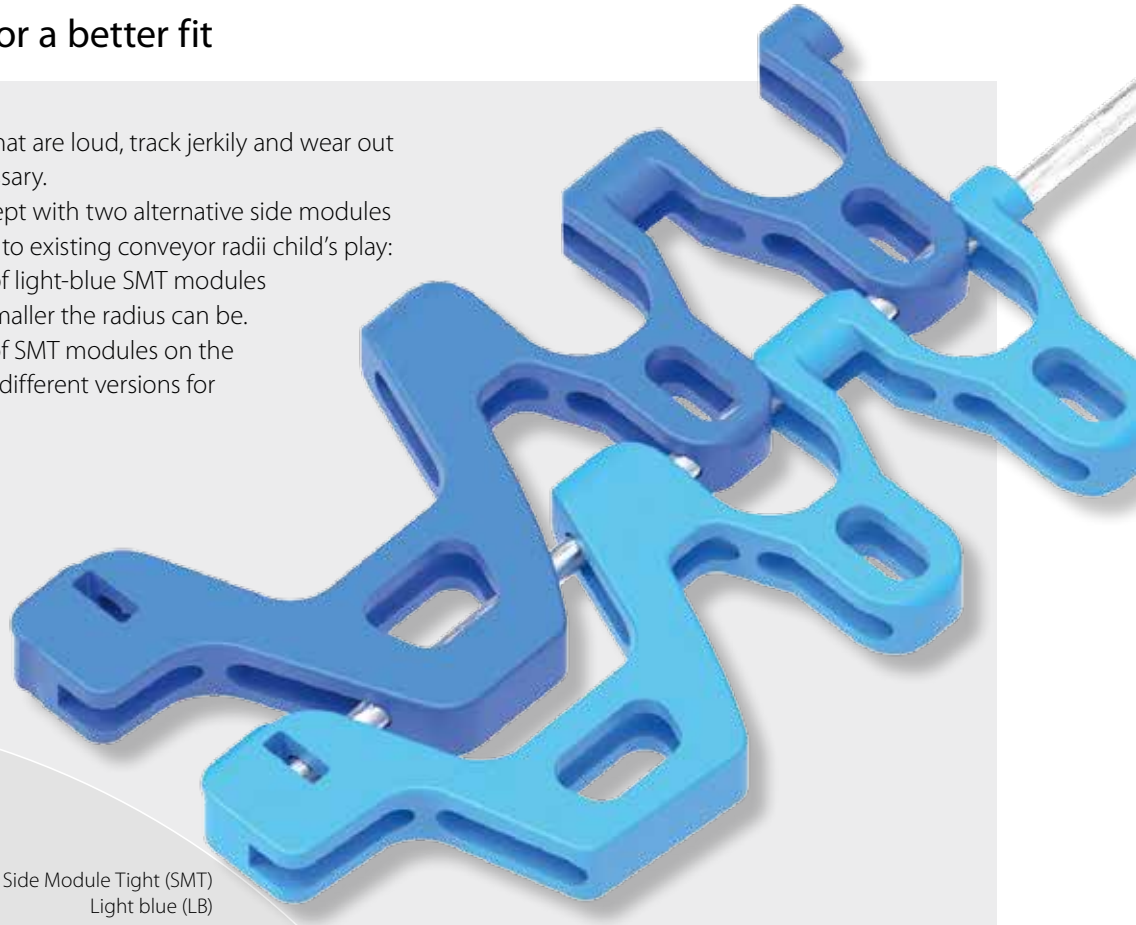


The advantages:

- Operates very quietly and with little wear and tear due to a customized inner radius (collapse factors of 1.3 – 2.9)
- Smaller footprint of spiral towers and curves possible
- Reliable continuous operation even under heavy load
- Greater reliability due to clip-free attachment of hinge pins
- Outstanding airflow and drainage
- Food safe thanks to superior surface quality, easy-to-clean design, as well as FDA-, EU and MHLW compliance regarding the raw materials used and migration thresholds

Customized belts for a better fit

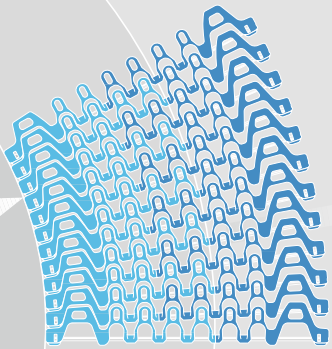
Compromising on belts that are loud, track jerkily and wear out quickly is no longer necessary.
This innovative belt concept with two alternative side modules makes adapting the belts to existing conveyor radii child's play:
The greater the number of light-blue SMT modules on the inner radius, the smaller the radius can be.
The varying distribution of SMT modules on the inner radius generates 13 different versions for each belt width.



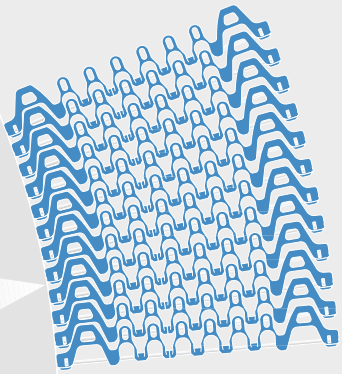
Side Module Universal (SMU)
Blue (BL)

Side Module Tight (SMT)
Light blue (LB)

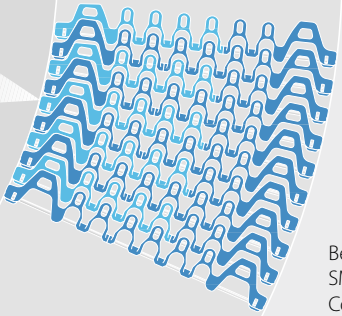
Examples for 500 [mm] belt widths



Belt with 100%
SMT modules:
Collapse factor 1.3
Inner radius 650 mm



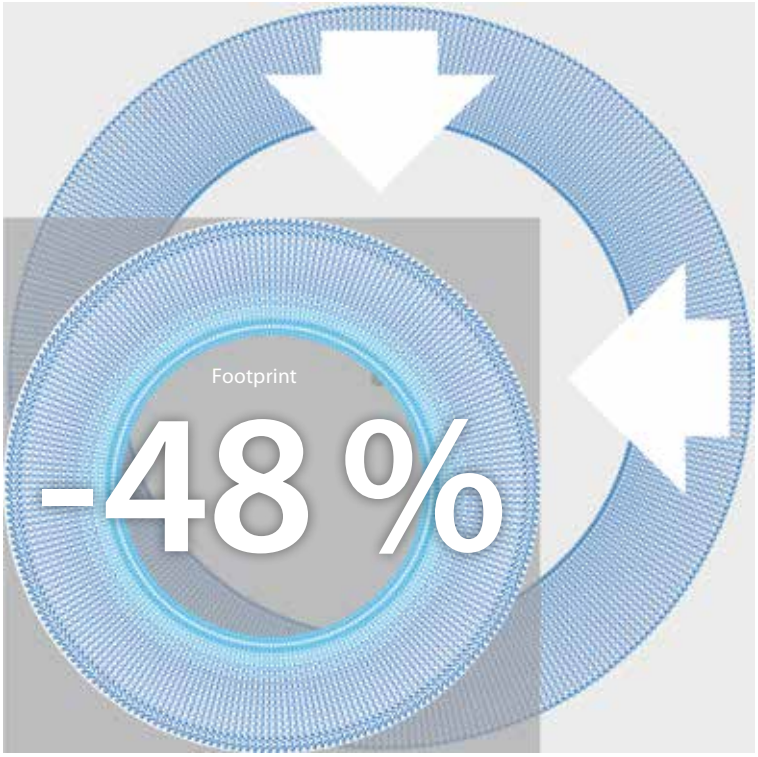
Belt with 0%
SMT modules:
Collapse factor 2.9
Inner radius 1450 mm



Belt with 50%
SMT modules:
Collapse factor 1.9
Inner radius 950 mm

Greater reliability

The new clip-free attachment of the hinge pins increases reliability and facilitates handling.
The ends of the hinge pins are fixed securely in the edge module and can't stick out from the sides of the belt.
Which means the resulting downtime is a thing of the past.
Products can't be contaminated by small parts that have detached themselves.



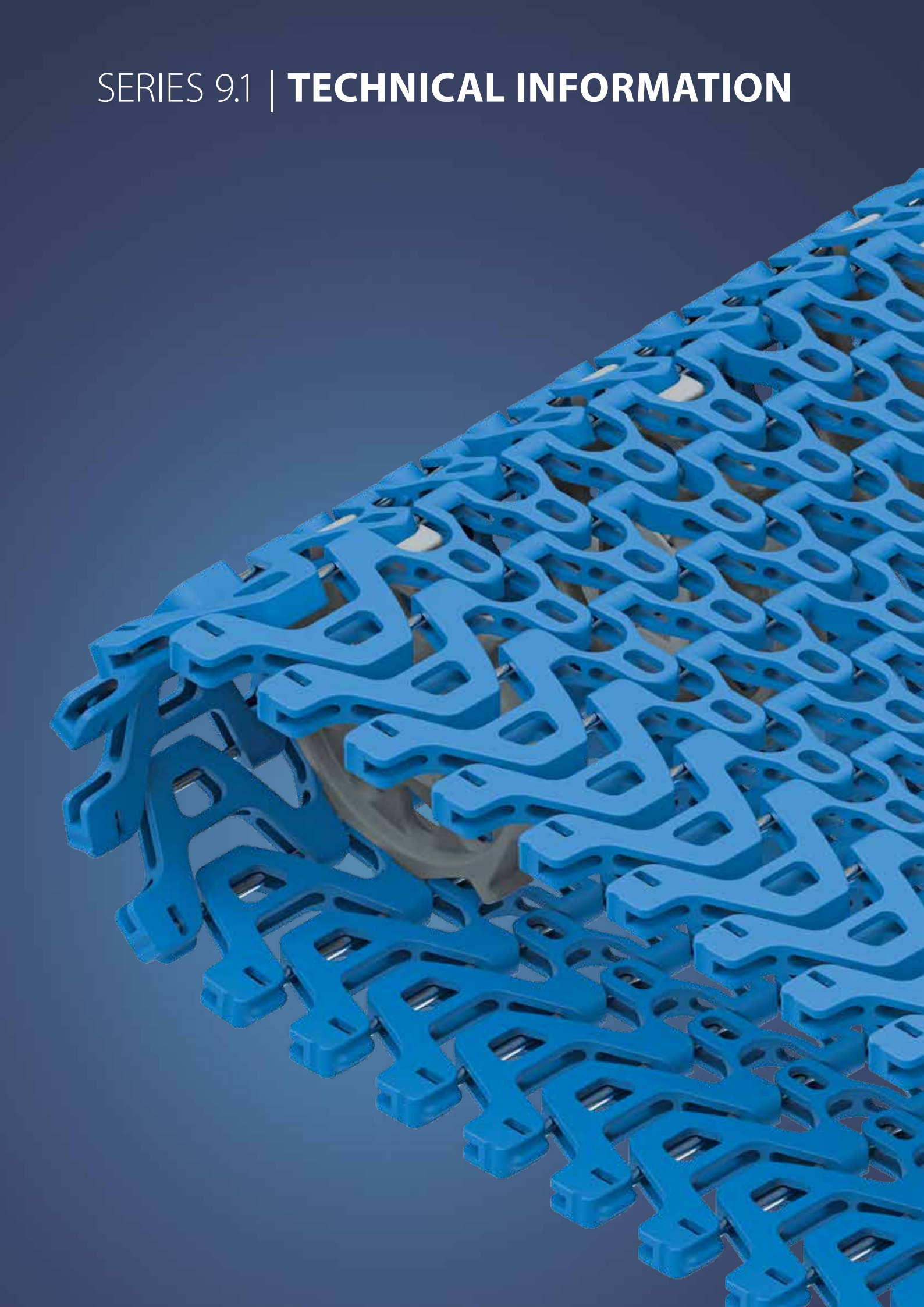
Smaller footprint

To minimize the footprint for your spiral tower, only use SMT modules on the inner radius. This configuration creates a belt with a collapse factor of 1.3, which reduces the required square net footprint by almost 50% compared to belts with the usual collapse factor of 2.2.

Large footprint:
Belt with a typical collapse factor of 2.2:
Belt width 800 mm

Small footprint:
Series 9.1 belt with 100% SMT modules and a collapse factor of 1.3:
Belt width 800 mm

SERIES 9.1 | **TECHNICAL INFORMATION**

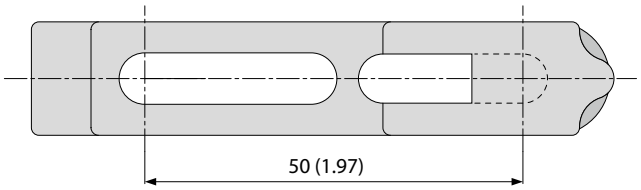


SERIES OVERVIEW

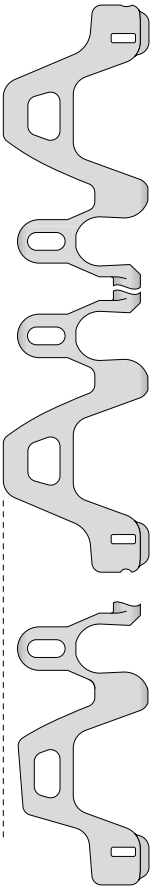
Side flexing and spiral belts | Pitch 50 mm (1.97 in)

Belts for medium to heavy-duty food and non-food applications

Side view scale 1:1



Available surface pattern and opening area



S9.1-57 GRT SMU
Open area (57%),
with grid top

S9.1-57 GRT SMT
Open area (57%), grid top
Can be used on the inner radius
to decrease the collapse factor

Design characteristics

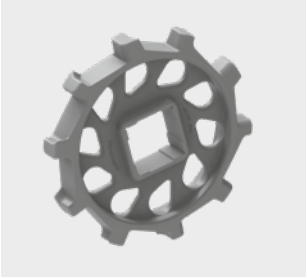
- Can be used in spiral towers with cage drives and for straight and radius conveying
- Strong side modules in a brick-laid pattern for exeptional tensile load
- Hinge pins with clip-free attachment
- Stainless steel hinge pins for high load capacity, lateral stiffness, less belt supports and minimum belt lifting in curves
- Adjustable collapse factor of 1.3 – 2.9

Basic data

Pitch	50 mm (1.97 in)
Belt width min.	350 mm (13.78 in)
Width increments	50 mm (1.97 in)
Hinge pins	6 mm (0.24 in) made of stainless steel

Attention:
Due to the very large surface openings, personnel must be instructed not to place their fingers in or on this belt.

Sprockets
Single row with round or square bore (for spiral towers with cage drives)

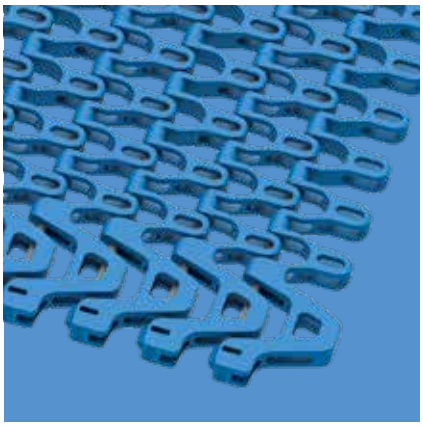


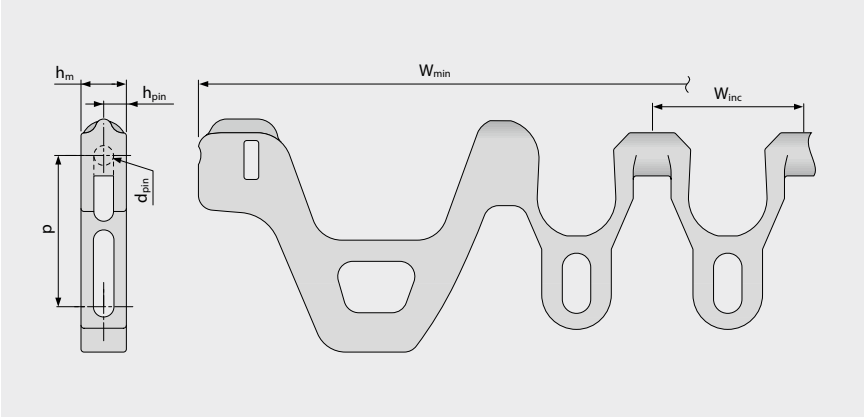
BELT TYPES

Side flexing and spiral belt | Pitch 50 mm (1.97 in) | $C_C = 1.3 – 2.9$

S9.1-57 GRT (CW/CCW) | 57 % Opening | Grid top

Spiral belt | Open area (57 %) for excellent air circulation and drainage | Contact area 31 % (Largest opening: Ø = 24 mm/ 0.95 in) | Lattice-shaped surface | Clip-free hinge pin fitting | Special edge modules (SMT) on the inner radius make the collapse factor adjustable (C_C = 1.3 – 2.9) and ensure smooth conveying





Belt dimensions

	p	d_{pin}	h_m	h_{pin}	h_s	W_{min}	W_{inc}	W_{tol}	Minimum flex radii[1]			
	Pitch	Pin Ø	Thickness	Pin position	Height	Width min.	Width Increment	Width tolerance [%]	r1 $C_C \times W_B$	r2	r3	r4	r5
mm	50.0	6.0	15.0	7.5	0.0	350.0	50.0	±0.3	$C_C \times W_B$	50.0	100.0	150.0	50.0
inch	1.97	0.24	0.59	0.3	0.0	13.78	1.97	±0.3	$C_C \times W_B$	1.97	3.94	5.91	1.97

W_B = Belt width. C_C see table on the following page

Available standard materials [3]

Belt		Pin	Nominal belt pull, straight		Nominal belt pull, curve		Weight		Width deviation	Temperature		Certificates[2]		
Material	Color	Material	[N/mm]	[lb/ft]	[N]	[lb]	[kg/m²]	[lb/ft²]	[%]	[°C]	[°F]	FDA	EU	MHLW
PA	BL	SS	24	1645	2000	450	11.3	2.31	0.27	-40/120	-40/248	●	●	●
POM-CR	BL	SS	30	2056	2800	629	11.5	2.36	0.0	-45/90	-49/194	●	●	●

More design information available in Prolink Engineering Manual (ref. no. 888), Chapter 3.3 and 5.2.

Attention! Due to the very large surface openings, personnel must be instructed not to place their fingers in or on this belt.

BL (Blue)

All measurements and tolerances apply at 21 °C; for temperature deviations please see Prolink manual chapter 4.4 "Temperature influence" (Prolink Engineering Manual (ref. no. 888). All imperial dimensions (inches) are rounded off.

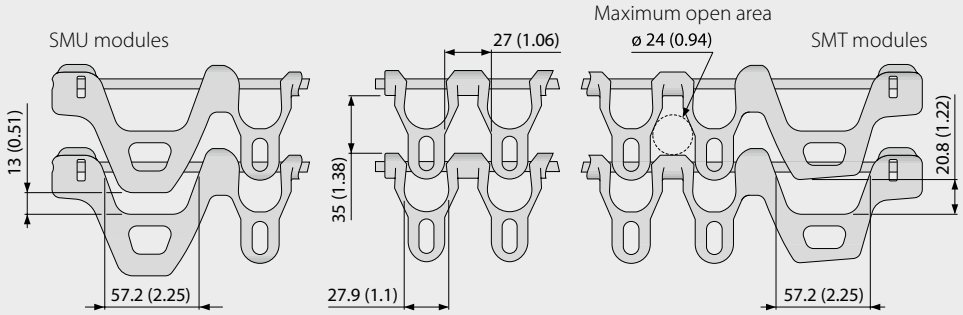
[1] Flex radii: r1 = side flex, r2 = front flex on roller, r3 = back flex on load bearing roller, r4 = back flex on Hold Down shoe, r5 = back flex on roller

[2] Complies with FDA 21 CFR | Complies with (EU) 10/2011 and (EC) 1935/2004 regulations regarding the raw materials used and the migration thresholds | Complies with Japanese MHLW Notification 370

● = available | – = not available | empty cells = not tested

[3] More materials and colors on request

Variant specific dimensions [mm (in)]



Module distribution on the inner radius for various collapse factors

S9.1 Collapse factor	Belt edge structure on the inner radius (row #)										% on the inner	
	1	2	3	4	5	6	7	8	9	10	% SMU	% SMT
1.3											0	100
1.4											10	90
1.5											20	80
1.6											25	75
1.7											33.33	66.67
1.8											40	60
1.9											50	50
2.1											60	40
2.2											66.66	33.34
2.4											75	25
2.5											80	20
2.7											90	10
2.9											100	0

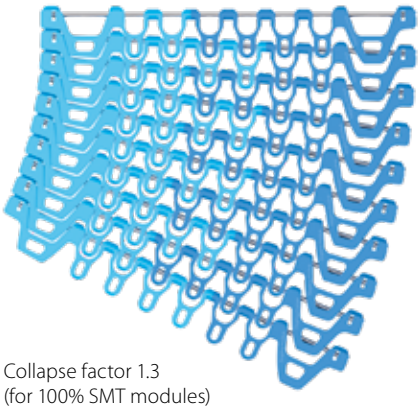
Color Code for POM-CR material:

- S9.1 SMT (Side Module Tight)
- S9.1 SMU (Side Module Universal)

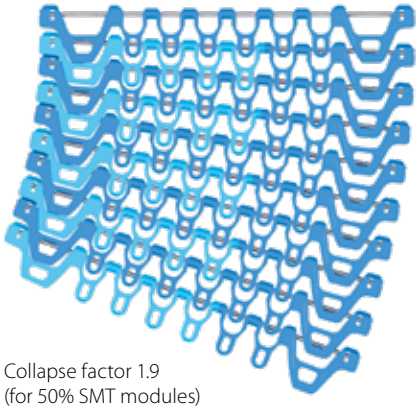
Color Code for PA material:

- S9.1 SMT (Side Module Tight)
- S9.1 SMU (Side Module Universal)

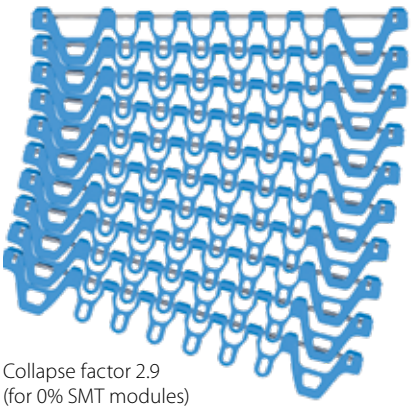
For further information on calculating the collapse factor, see Prolink Engineering Manual (Chapter 3.3)



Collapse factor 1.3
(for 100% SMT modules)



Collapse factor 1.9
(for 50% SMT modules)



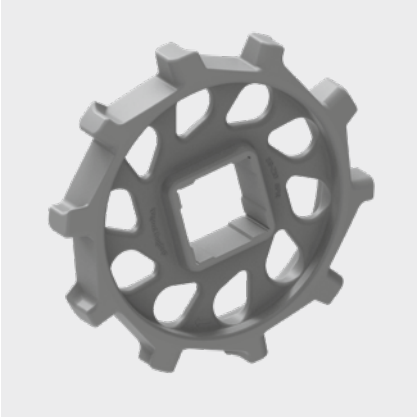
Collapse factor 2.9
(for 0% SMT modules)

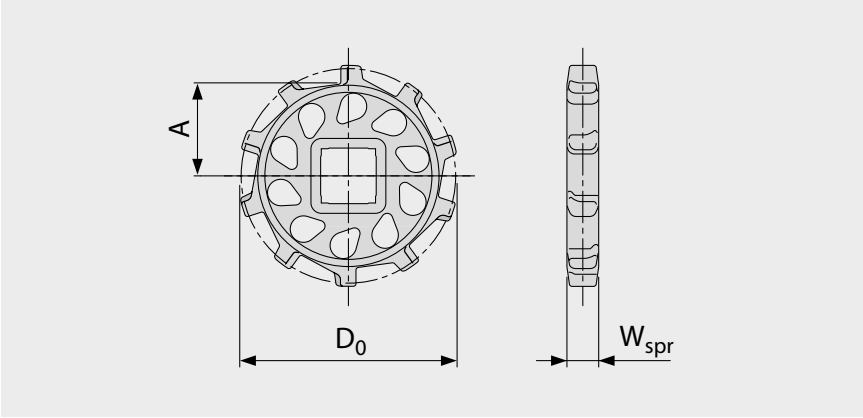
SPROCKETS

Side flexing and spiral belt | Pitch 50 mm (1.97 in)

S9 SPR | Sprockets

Single-row sprocket for series 9.1 and series 9 in spiral applications





Main dimensions

Sprocket size (Number of teeth)		Z10
W_{spr}	mm	24.0
	inch	0.94
D_0	mm	161.8
	inch	6.37
A_{max}	mm	73.4
	inch	2.89
A_{min}	mm	69.8
	inch	2.75

Shaft bores (● = Round, ■ = Square)

40	mm	●/■
1.5	inch	■
2.0	inch	●

Recommended usage

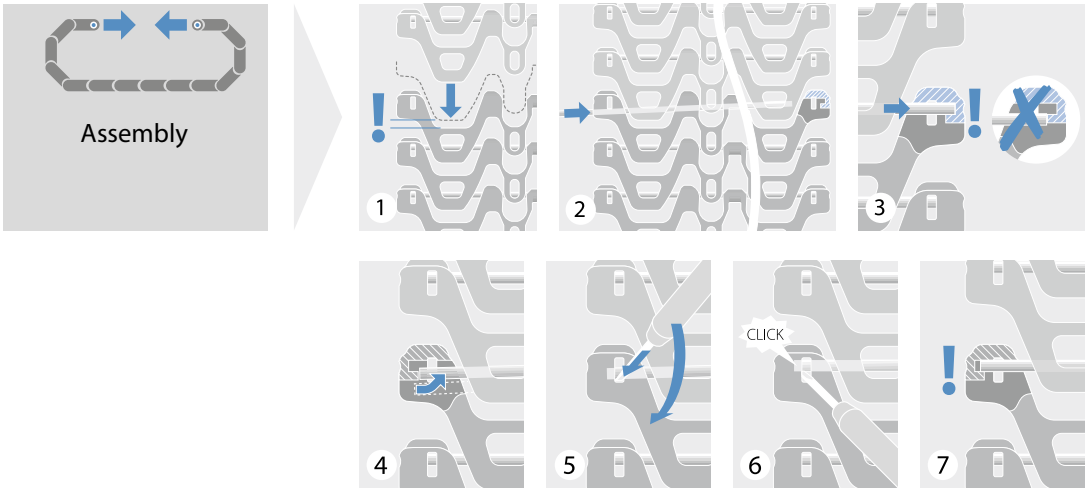
Belt	Application	Recommended usage
S9.1-57 GRT	Straight/curved	This sprocket is not recommended
S9.1-57 GRT	Spiral tower with cage drive	Use in main conveying direction, only for a short time in the opposite direction and not under load

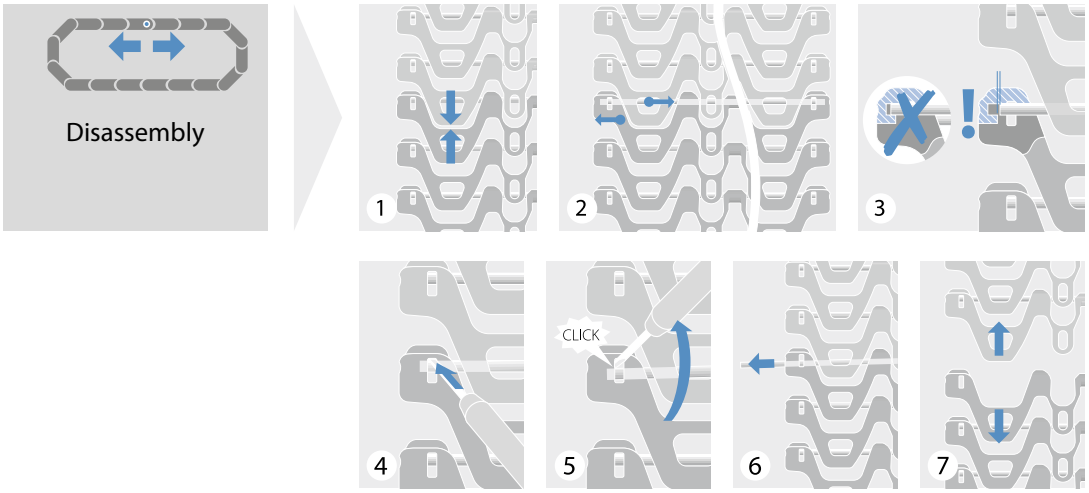
Material: PA, Color: LG

LG (Light gray)

All measurements and tolerances apply at 21 °C. All imperial dimensions (inches) are rounded off.
For detailed sprocket and shaft dimensions see appendix 6.3 (Prolink Technical Manual (ref. no. 888).
Number of sprockets (sprocket spacing distance) see chapter 3.2 (Prolink Technical Manual (ref. no. 888).

JOINING BELT SECTIONS





You can see how the ends of the belt are connected and separated here in the film.



Further info

Siegling – total belting solutions

Committed staff, quality oriented organization and production processes ensure the constantly high standards of our products and services.

Forbo Movement Systems complies with total quality management principles. Our quality management system has ISO 9001 certification at all production and fabrication sites. What's more, many sites have ISO 14001 environmental management certification.



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Our service – anytime, anywhere

Forbo Movement Systems employs around 2,300 people in its group of companies. Our products are manufactured in ten production facilities across the world.
You can find companies and agencies with warehouses and workshops in over 80 countries.
Service points are located in more than 300 places worldwide.

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