EXCERPT FROM PROLINK ENGINEERING MANUAL

04/25 (Ref. no. 888)

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Ref. no. 888-1_1.2_S9.1

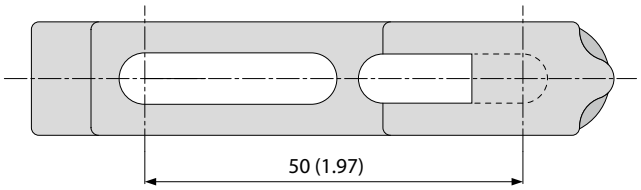
SERIES 9.1 | **OVERVIEW**

siegling prolink
modular belts

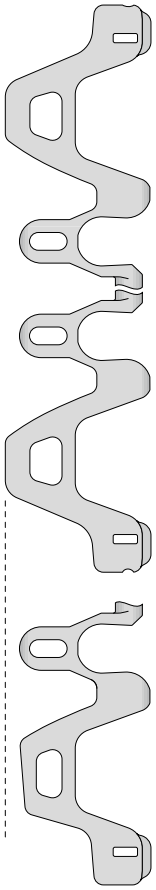
Side flexing and spiral belts | Pitch 50 mm (1.97 in)

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

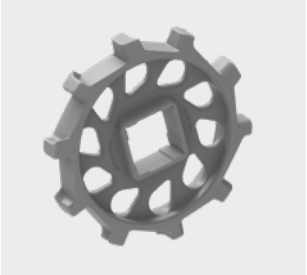
Basic data

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)



Double row with round or square bore

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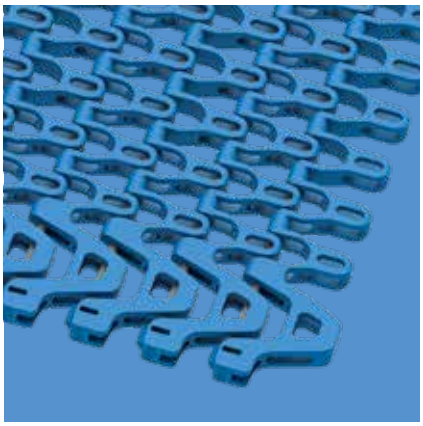
MOVEMENT SYSTEMS

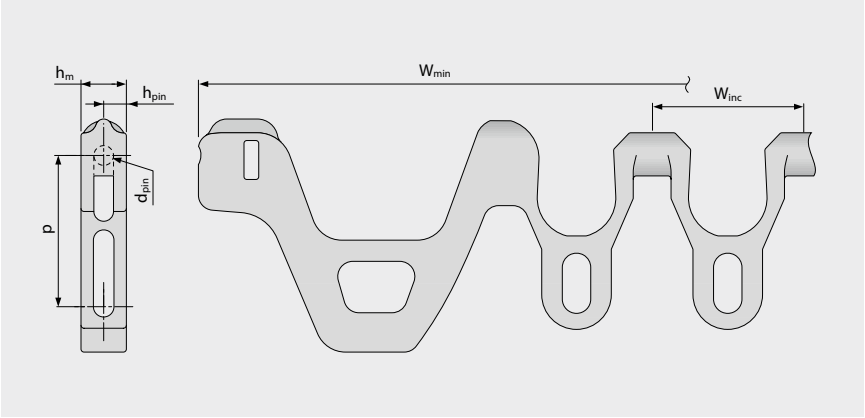
SERIES 9.1 | **BELT TYPES**

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/ 0.94 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 x 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 x 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 x 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
POM-CR	BL	SS	30	2056	2800	629	11.5	2.36	0.0	-45/90	-49/194	●	●	●

More design information available in 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".
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

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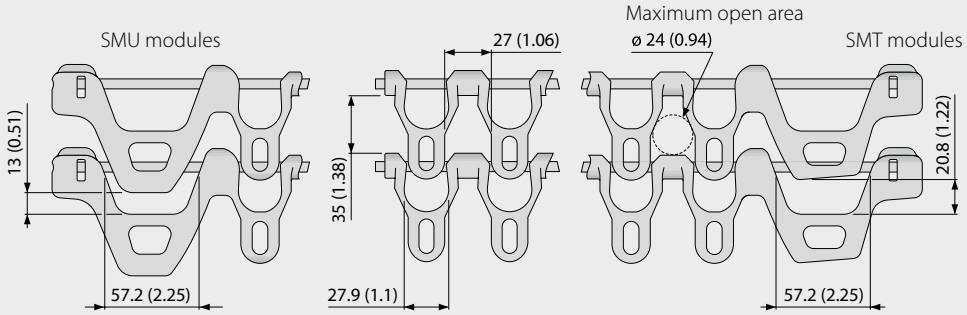
Variant specific dimensions [mm (in)]

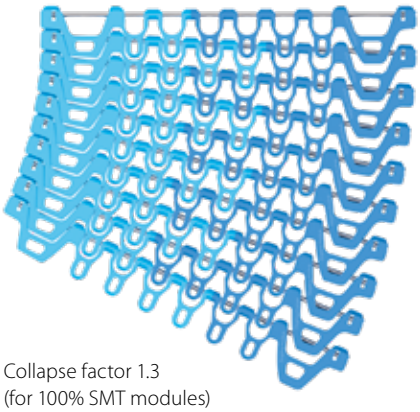


Module distribution on the inner radius for various collapse factors

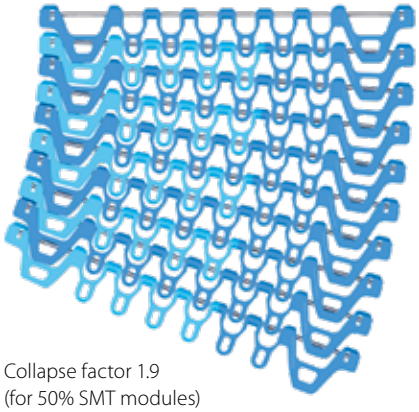
S9.1 Collapse factor	Belt edge structure on the inner radius (row #)										% on the inner	
	1	2	3	4	5	6	7	8	9	10	% SMU	% SMT
1.3											0	100
1.4											10	90
1.5											20	80
1.6											25	75
1.7											33.33	66.67
1.8											40	60
1.9											50	50
2.1											60	40
2.2			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

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

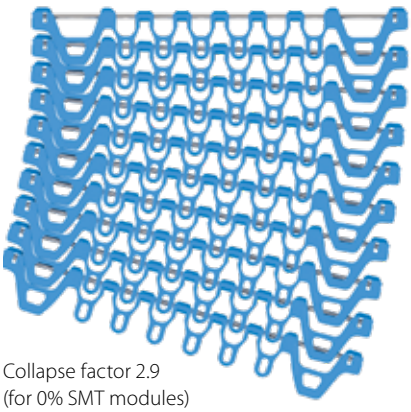
For further information on calculating the collapse factor, see page III-32.



Collapse factor 1.3
(for 100% SMT modules)



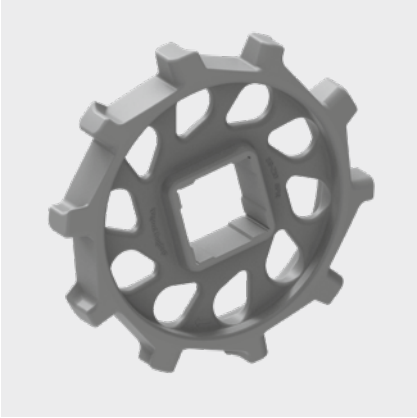
Collapse factor 1.9
(for 50% SMT modules)

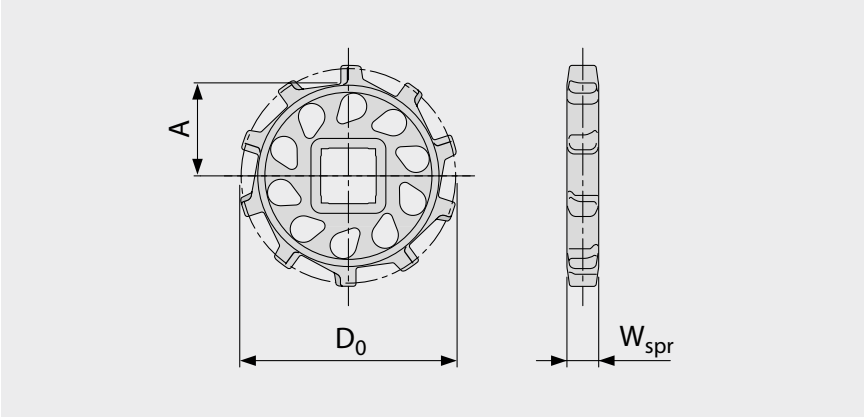


Collapse factor 2.9
(for 0% SMT modules)

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

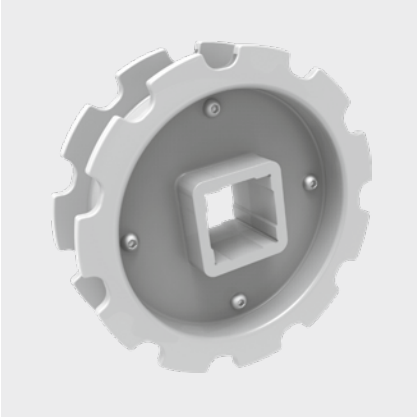
Material: PA, Color: LG

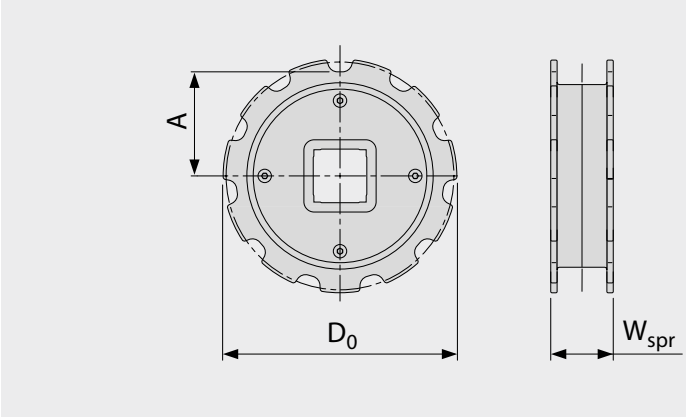
LG (Light gray)

All measurements and tolerances apply at 21 °C; for temperature deviations please see Prolink manual chapter 4.4 "Temperature influence".
All imperial dimensions (inches) are rounded off.
For detailed sprocket and shaft dimensions see appendix 6.3
Number of sprockets (sprocket spacing distance) see chapter 3.2

S9 SPR DR | Sprockets

Double-row sprocket for series 9 and restricted use in series 9.1





Main dimensions

Sprocket size (Number of teeth)		Z11
W_{spr}	mm	49.0
	inch	1.93
D_0	mm	178.8
	inch	7.04
A_{max}	mm	81.9
	inch	3.22
A_{min}	mm	77.4
	inch	3.05

Shaft bores (● = Round, ■ = Square; ❍ or ❑ = mold to order)

40	mm	● / ■
1.5	inch	❑

Recommended usage

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

Material: POM, Color: UC

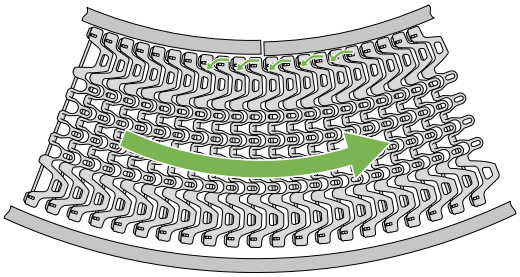
☐ UC (Uncolored)

All measurements and tolerances apply at 21 °C; for temperature deviations please see Prolink manual chapter 4.4 “Temperature influence“.
All imperial dimensions (inches) are rounded off.
For detailed sprocket and shaft dimensions see appendix 6.3
Number of sprockets (sprocket spacing distance) see chapter 3.2

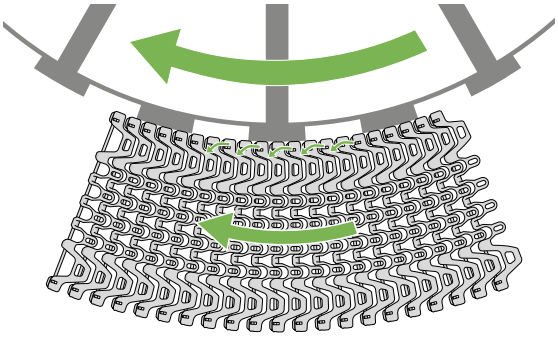
SERIES 9.1 | **INSTALLATION NOTES**

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

Preferred travel direction

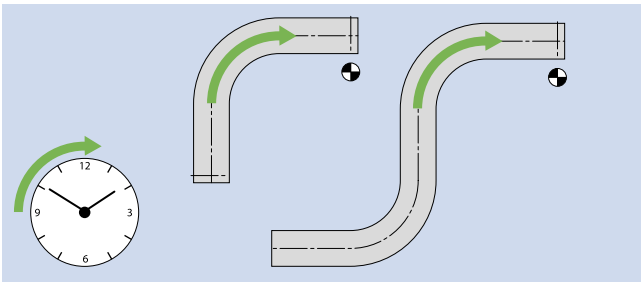


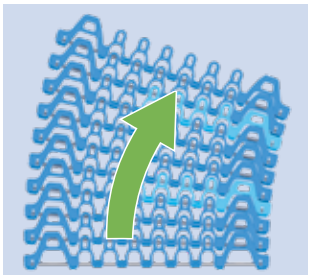
Curve conveyor

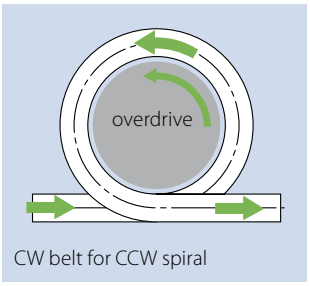


Cage driven spiral

Curve direction S9.1 -> Belt CW (ClockWise)

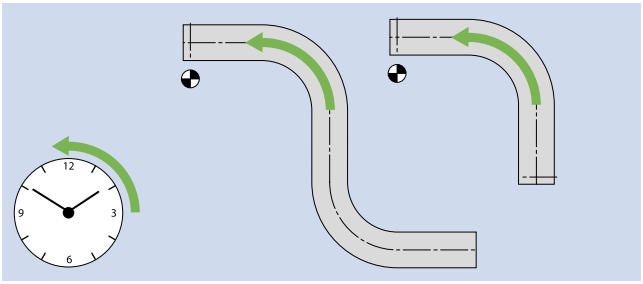


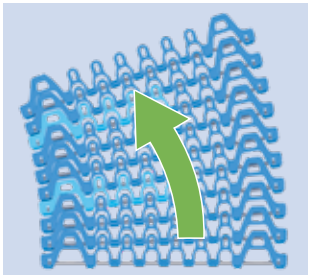


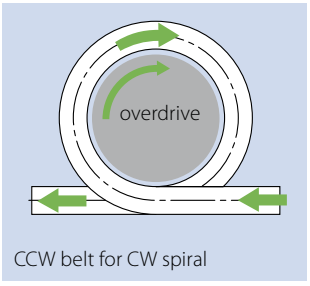


CW belt for CCW spiral

Curve direction S9.1 -> Belt CCW (Counter ClockWise)

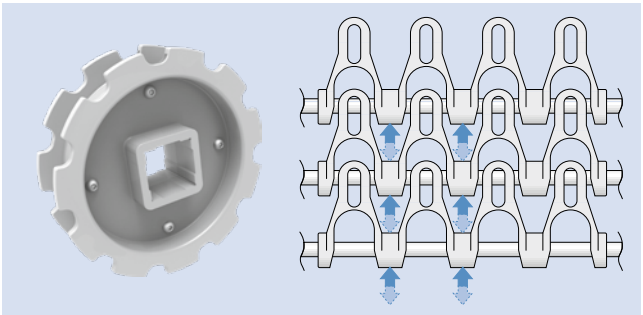


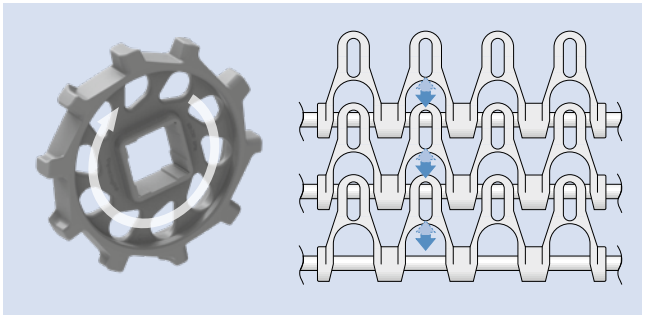




CCW belt for CW spiral

Sprocket installation





Further information in chapter 3 and 5

MOVEMENT SYSTEMS

LEGEND

① Series
S1 … S18

② Open area/Sprocket size
Percentage open area Format: xx E.g. 20 = 20 %
For sprockets: number of teeth Format: "Z"xx E.g. Z12 = 12 teeth

③ Surface pattern	
BSL	Base module for slider
CTP	Cone top
CUT	Curved top
FLT	Flat top (smooth)
FRT-OG	Friction top without High Grip insert
FRT(X)	Friction top (Design X)
GRT	Grid top
HDK	High Deck
LRB	Lateral rib
MOD	Modified module shape
NCL	No cling
NPY	Negative pyramid
NSK	Non skid
NSK2	Non skid, nonwoven variant
NTP	Nub top (round studs)
PRR	Pin Retained Rollers
RAT	Radius top
RRB	Raised rib
RSA	Reduced surface area
RTP	Roller top
SRS	Slip-resistant surface

④ Type	
BPU	Bucket profile
CAP	Pin lock & belt edge sealing
CCW	Counter clockwise
CLP	Clip
CM	Center module
CW	Clockwise
FPL	Finger plate
HDT	Hold Down Tab
IDL	Idler
PIN	Coupling rod
PMC	Profile module center
PMU	Profile module universal
PSP	ProSnap
PSU-0	Prof. scoop uni. closed
PSU-X	Prof. scoop uni. x% open
RI	High Grip insert
ROL	Rollers
RTR	Retaining ring
SG	Module with sideguard
SGL	Side guard, left
SGR	Side guard, right
SLI	Slider
SMA	Side module, A side
SMB	Side module, B side
SML	Side module, left
SMR	Side module, right
SMT	Side module, tight radius
SMU	Side module, universal/both sides
SPR	Sprocket
SPR-SP	Split sprocket, 2-part
SSL	Self stacker side module, left
SSR	Self stacker side module, right
TPL	Turning panel, left
TPR	Turning panel, right
UM	Universal module
WSC	Wheel Stopper Center
WSS	Wheel Stopper Side

⑤ Style	
1.6	1.6 collapse factor
1.7	1.7 collapse factor
2.2	2.2 collapse factor
2.2 G	2.2 collapse factor, guided
A90	Angle 90° to conveying direction
BT	Bearing tab
DR	Double row sprocket
F1, F2, F3 …	Collapse factor modules
G	Guided
GT	Guiding tabs
HD	Hold Down
HR	Hard removable pin
Ixx	xx = indent in mm
RG	Reversed guided
SG	Side guard
SP	Split sprocket
ST	Strong
V2	Version 2 indicatind a design update

⑥ Material	
PA	Polyamide
PA-HT	Polyamide high temperature
PBT	Polybutylentereph-thalate
PE	Polyethylene
PE-I	PE impact resistant
PE-MD	PE metal detectable
PLX	Wear & impact improved polymer
POM	Polyoxymethylene (Polyacetal)
POM-CR	POM cut resistant
POM-HC	POM highly conductive
POM-MD	POM metal detectable
POM-PE	POM side modules + PE center modules
POM-PP	POM side modules + PP center modules
PP	Polypropylene
PP-MD	PP metal detectable
PP-SW	PP steam and hot water resistant
PXX-HC	Self-extinguishing highly conductive material
R1	TPE 80 Shore A, PP
R2	EPDM 80 Shore A, vulcanized
R3	TPE 70 Shore A, POM
R4	TPE 86 Shore A, PP
R5	TPE 52 Shore A, PP
R6	TPE 63 Shore A, POM
R7	TPE 50 Shore A, PP
R8	TPE 55 Shore A, PE
SER	Self-extinguishing TPE
SS	Stainless steel
SSS	Stainless steel acid resistant
TPC1	Themoplastic Copolyester
-HA	Supports the HACCP concept
HW	High Wear resistant material

⑦ Color*	
AT	Anthracite
BG	Beige
BK	Black
BL	Blue
DB	Dark blue
GN	Green
LB	Light blue
LG	Light gray
OR	Orange
RE	Red
TQ	Turquoise
UC	Uncolored
WT	White
YL	Yellow

⑧ Height/Diameter/ Bore size and style
Height in mm (in) Format: Hxxx Pin diameter in mm (in) Format: Dxxx
Bore size: SQ (= square) or RD (= round) either in mm or inches Format: SQxxMM or RDxxIN

⑨ Length/Width
Pins Length in mm (in) Format: Lxxx Module width in mm (in) Format: Wxxx

* For each series' standard colors please refer to the table of materials for each belt (chapter 1.2). A number of other colors are available on request. Colors can vary from the original due to the print, production processes or material used.