



CURVED MODULAR BELTS



Curved modular belts

NREC254R

PITCH 25,4 mm / 1"

Belt type: open flat surface
Pin diameter: Ø 5 mm
Open area: 38%
Hole openings: 7,5x12
Minimum width: 83 mm
Thickness: 10,8 mm
Accessories: flights
Food Certification: FDA - EU
Collapse factor: 2,1 - 2,4



Standard executions

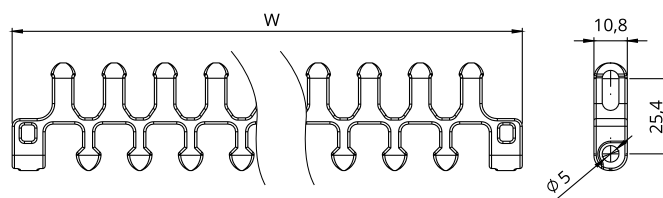
Belt material	Belt color	Pin
PP	Blue - white	POM
POM	Blue - white	POM

Other materials and colors are available upon request.



Belt material	Pin material	Belt performance [N/m]		Temperature range [°C]	Certification	Weight [kg/m²]
		Straight strand	Curved strand			
PP	PP	9000	1200	+5 ÷ +90	FDA - EU	5,1
POM	POM	16250	1600	-43 ÷ +70	FDA - EU	6,9
POM	PA	17600	1700	-40 ÷ +80	FDA - EU	6,6
POM	PP	14300	1400	+5 ÷ +70	FDA - EU	6,6

PP = Polypropylene - PE = Polyethylene - POM = Acetal Resin - PA = Polyamide



Part number

NREC 254 R -PO -W

Type

Pitch

Open flat surface

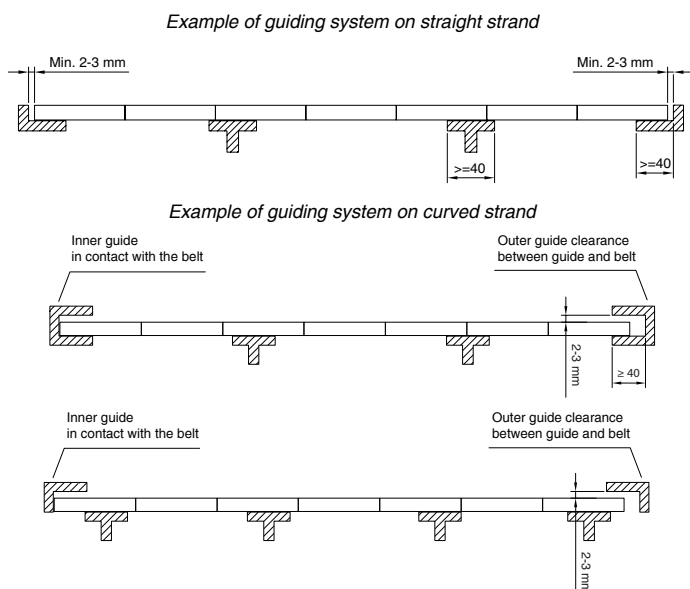
Belt color: W = white / B = blue

Belt material:
 PO = POM - Acetal Resin / PP = Polypropylene
 PA = Polyamide

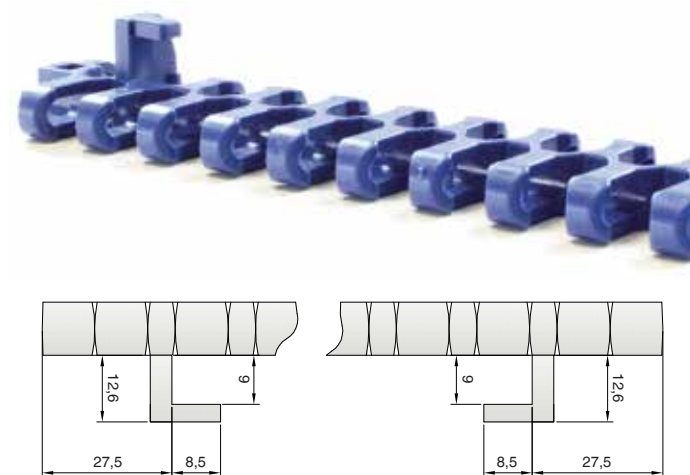
Hold Down and TAB for NREC254R

Layout of guides in different belt types:

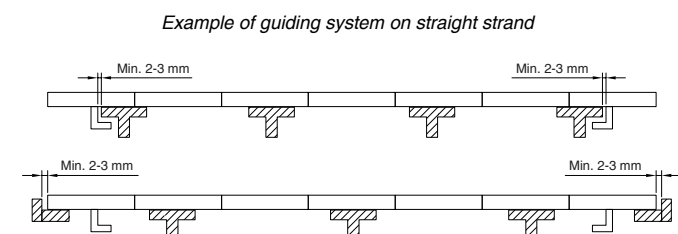
STANDARD TYPE



TAB RETENTION SYSTEM

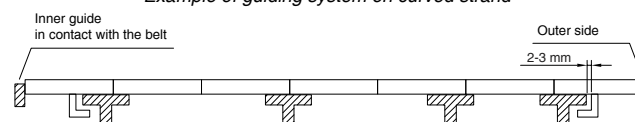


The TAB system is available on one or both sides of the belt depending on whether the belt curves in one or both directions. The system is designed primarily to avoid belt lifting in the curves and minimize belt width with respect to the size of the objects carried that may be wider than the belt itself. You can use the hook as contact surface and let them slide on the guides. It is important to evaluate the strength capacity of the TAB system combined with belt tension, speed, and belt radius.

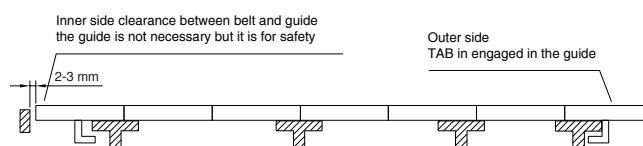


Configuration suitable for significant forces on the belt and sustained speeds:

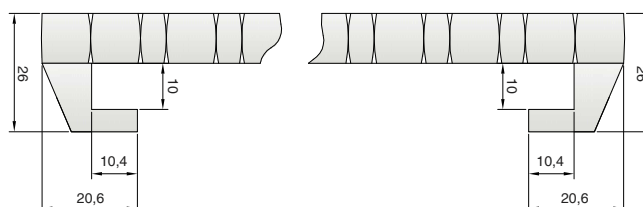
Example of guiding system on curved strand



Configuration suitable for limited forces on the belt and speed up to 20m / min. In this configuration you can also make larger curves without collapsing the belt.



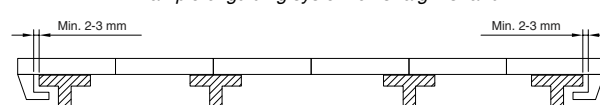
LATERAL TAB RETENTION SYSTEM



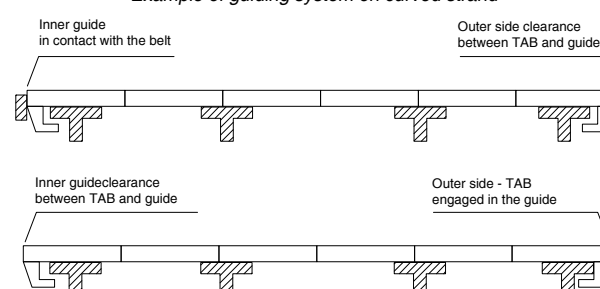
The Lateral TAB system is applicable on one or both sides of the belt depending on whether the belt curves in one or both directions.

The system is designed primarily to avoid belt lifting in the curves and at the same time allow the transported objects to be larger than the belt itself. The hook is designed to be used in contact with the sliding guides.

Example of guiding system on straight strand



Example of guiding system on curved strand



PITCH 25,4 mm / 1"

Belt type: rubber top open surface

Pin diameter: Ø 5 mm

Open area: 38%

Hole openings: 7,5x12

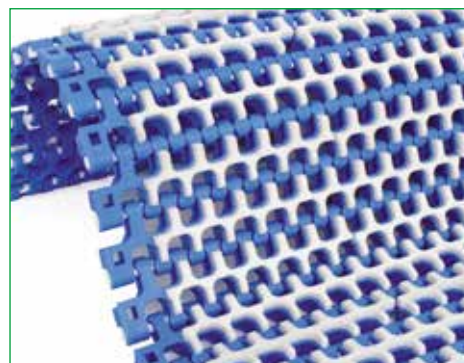
Minimum width: 83 mm

Thickness: 10,8 mm+5 mm

Accessories: flights

Food Certification: FDA - EU

Collapse factor: 2,1 - 2,4



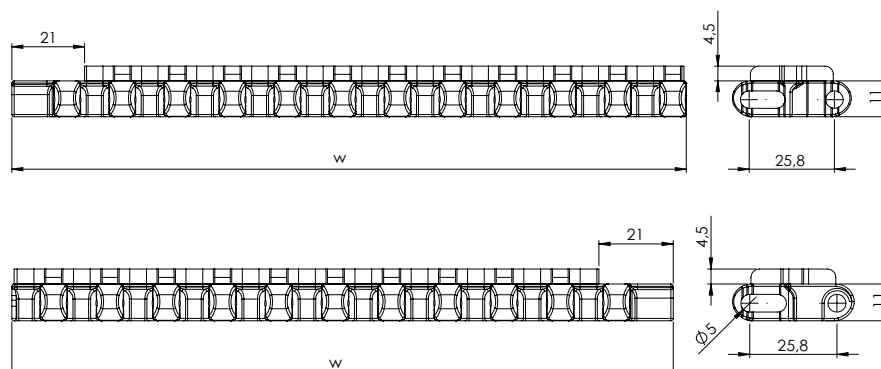
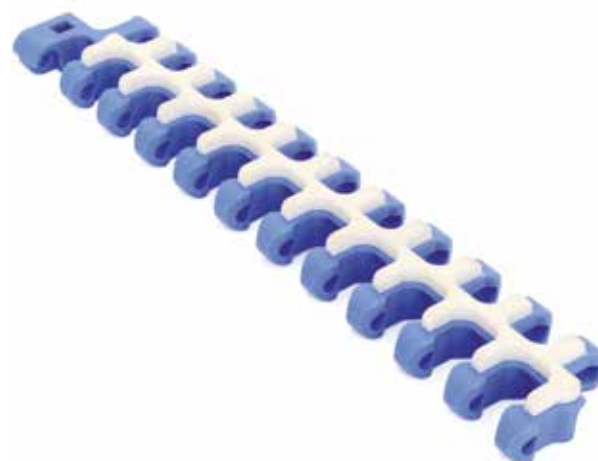
Standard executions

Belt material	Belt color	Pin
PP	Blue - white	POM

Other materials and colors are available upon request.

Belt material	Pin material	Belt performance [N/m]		Range di temperature [°C]	Certification	Weight [kg/m²]
		Straight strand	Curved strand			
PP	PP	9000	1200	+5 ÷ +90	FDA - EU	5,1
POM	POM	16250	1600	-43 ÷ +70	FDA - EU	6,9
POM	PA	17600	1700	-40 ÷ +80	FDA - EU	6,6
POM	PP	14300	1400	+5 ÷ +70	FDA - EU	6,6

PP = Polypropylene - PE = Polyethylene - POM = Acetal Resin - PA = Polyamide



Part number

NREC 254 RT -PO -W

Type

Pitch

Rubber top open surface

Belt color: W = white / B = blue

Belt material:
PO = POM - Acetal Resin / PP = Polypropylene
PA = Polyamide

Sprockets for NREC254



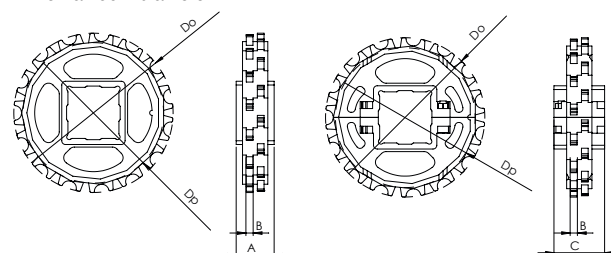
Teeth nr.	Dp [mm]	Do [mm]	A [mm] Solid	C [mm] Split	B [mm]	Available standard bore	
						Square [mm]	Ø round + set-screw UNI
8	68,4	67,7	30	40	7	25x25	25
10	82,8	85,7	30	40	7	40x40	25 - 30
12	98,9	102,0	30	40	7	40x40	25 - 30
15	123,1	126,0	30	40	7	40x40	25 - 30
16	134,1	131,0	30	40	7	40x40	25 - 30
18	147,4	152,3	30	40	7	40x40	25 - 30

Standard material: nylon PA6 fiberglass.

It is possible to supply sprocket with any number of teeth or any material by CNC machining

Dp = Pitch diameter

Do = External tooth diameter



Part number	NSEC254TR	-Q	40	-Z12
Type				
Bore type: R = round / Q = square				
Bore dimension (mm)				
Teeth nr.				

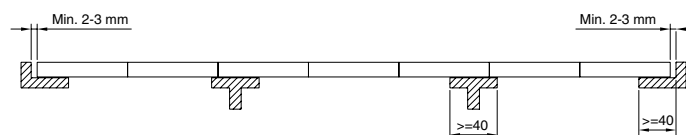
Belt width W [mm]			167	200	250	300	350	400	450	500	550	600	700	800	900	1000
Number of sprockes	Drive shaft	Belt tension $\leq$ 50% of the capacity	2	2	2	3	3	4	4	4	5	6	6	7	8	8
		Belt tension = 100% of the capacity	2	2	3	4	5	5	5	5	7	8	9	11	13	14
	Driven shaft		2	2	2	2	3	3	3	4	4	4	4	5	5	5
Sliding guides			2	2	2	3	3	4	4	4	4	5	6	7	7	8

Belt width increment: 16,7 mm

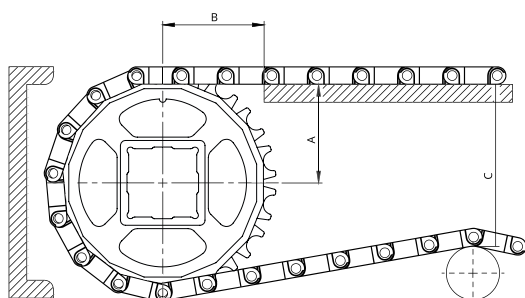
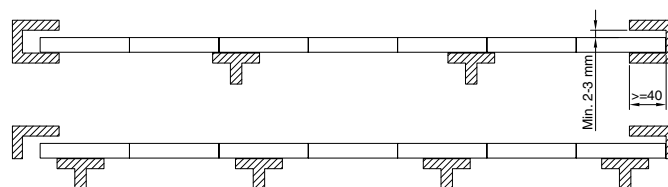
Mounting

When mounting the sprockets, make sure that you have mounted all sprockets oriented in the same phase.
Only axially lock the central sprocket and leave the other sprockets free to move axially.

Example of guiding system on straight strand



Example of guiding system on curved strand



Teeth nr.	A _{max} [mm]	A _{min} [mm]	B1 [mm]	B2 [mm]	C _{max} [mm]
8	28,7	26,1	38	28	54
10	37,7	36,3	40	28	75
12	45,2	43,6	44	28	91
15	56,5	54,5	50	28	116
16	60,6	59,6	52	28	120
18	67,8	65,4	57	28	140

Sprockets for NREC254R type

A_{max} = sliding surface position so that the height of the belt engaging the sprocket oscillates between the sliding surface height and a lower one. The height variation depends on the number of teeth and the pitch of the sprocket.

A_{min} = sliding surface position so that the height of the belt engaging the sprocket oscillates between the sliding surface height and a higher one. The height variation depends on the number of teeth and the pitch of the sprocket.

The choice of A dimensions depends on the items you have to carry.
it is always suggested to make a chamfer at the end of the sliding guides.

In order to avoid any subsidence of the belt in the area between the guiding strip and the sprockets, it is possible to locate the guides between the sprockets. Two minimum B1 and B2 dimensions are defined.

A = belt width

B = straight strand before the drive shaft.

Min. 2 x belt width

C = straight strand before return shaft. Min. 1,5 x belt width

D = straight strand between two curves. Min. 2 x belt width

E = curved belt length = $(R + A) \times \text{angle in radians}$

R = internal radius. R minimum = belt width x collapsing factor.

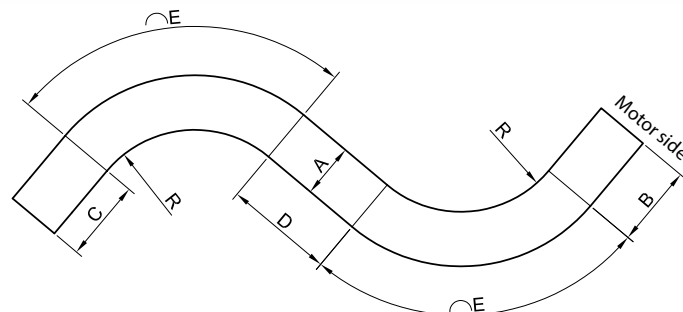
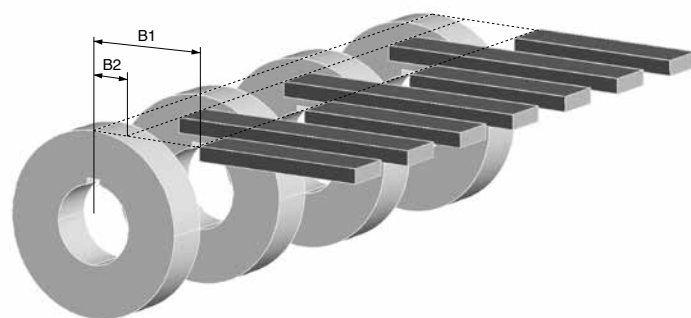
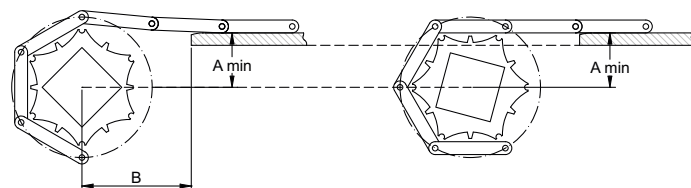
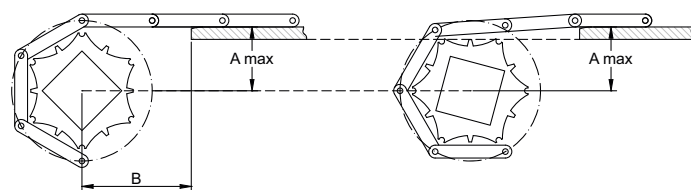
Collapsing factor variable from 2,1 to 2,4 depending on belt width.

Example:

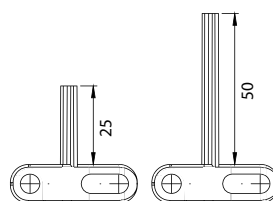
A = 200 mm

R = $200 \cdot 2,1 = 420$ mm

E = $(420 + 200) \cdot \frac{\pi}{2} = 973$ mm



Guides available for belt type NMEC254R

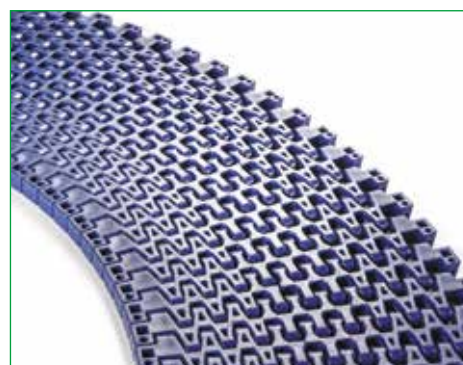


Caution: Consider that in the curves the guides get closer to each other. If possible, always specify the distance of the guides from the belt edge.

Belt width [mm]	200	250	300	350	400	450	500	550	600	650	700	750	800	850	900
Collapsing factor f_c	2,1	2,15	2,19	2,23	2,26	2,28	2,30	2,32	2,34	2,35	2,36	2,37	2,38	2,39	2,40
Minimum internal radius [mm]	420	538	657	781	904	1026	1150	1276	1404	1528	1652	1778	1904	2032	2160

NREC254TR**PITCH 25,4 mm / 1"**

Belt type: open flat surface
Pin diameter: Ø 5 mm
Open area: 38%
Hole openings: 6,5x12 mm
Minimum width: 167 mm
Thickness: 13 mm
Accessories: tab ext
Food Certification: FDA - EU
Collapse factor: 1,4 - 1,6

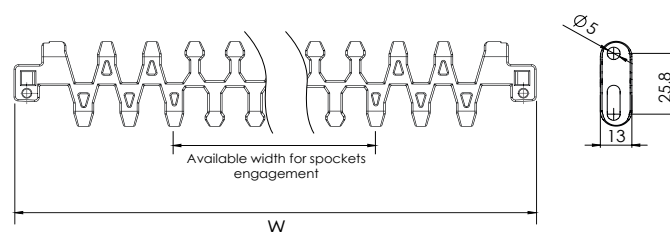
**Standard executions**

Belt material	Belt color	Pin
PP	Blue - white	POM
POM	Blue - white	POM

Other materials and colors are available upon request.

Belt material	Pin material	Belt performance [N/m]		Range di temperature [°C]	Certification	Weight [kg/m²]
		Straight strand	Curved strand			
PP	PP	9400	1250	+5 ÷ +90	FDA - EU	5,6
POM	POM	17050	1680	-43 ÷ +70	FDA - EU	7,2
POM	PA	18400	1800	-40 ÷ +80	FDA - EU	7,1
POM	PP	15000	1500	+5 ÷ +70	FDA - EU	7,1

PP = Polypropylene - PE = Polyethylene - POM = Acetal Resin - PA = Polyamide

**Part number****NREC 254 TR -PO -W**

Type

Pitch

Open flat surface

Belt color: W = white / B = blue

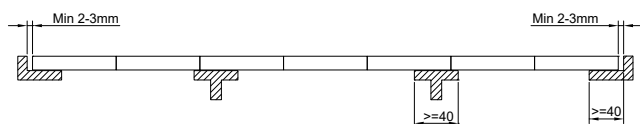
Belt material:
 PO = POM - Acetal Resin / PP = Polypropylene
 PA = Polyamide

TAB EXT for NREC254TR type

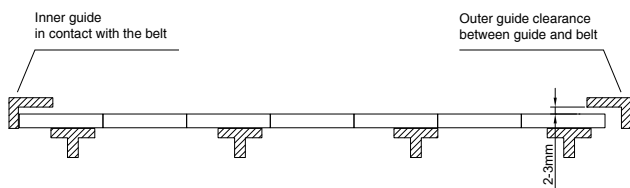
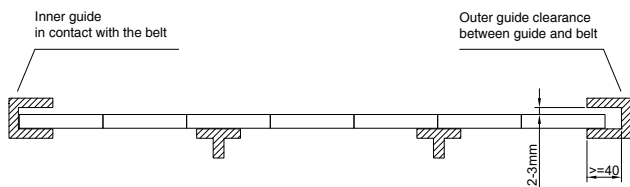
Layout of guides in different belt types:

STANDARD TYPE

Example of guiding system on straight strand



Example of guiding system on curved strand



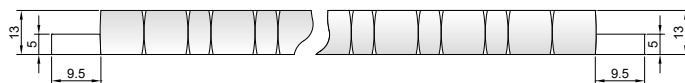
TAB EXT execution can be applied to one or both edge of the belt according to specific need.

This system is primarily used to minimize the belt width compared to the object to be conveyed, infact the object can protrude from the belt side since there is no need of lateral guide higher or hooking the belt side.

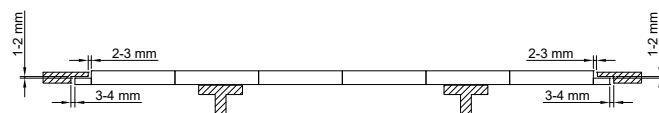
By reducing the width of the belt it is also possible to reduce its the inner radius. This is common in example for carton boxes.

The TAB EXT system can be applied also in case it is needed to let the conveyed goods leave the belt laterally.

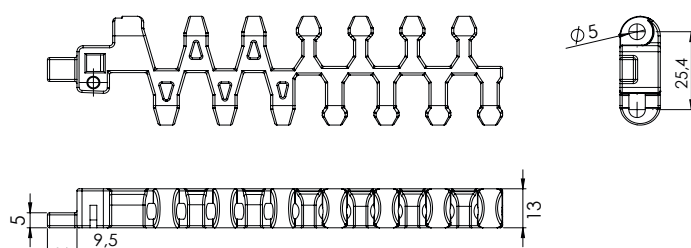
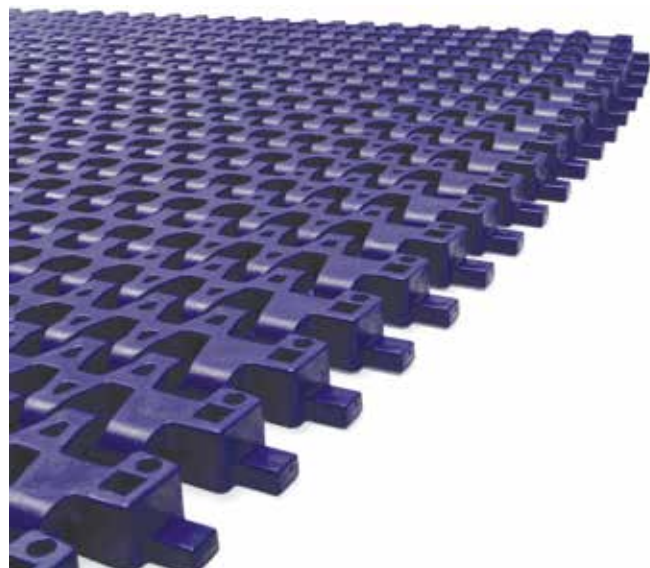
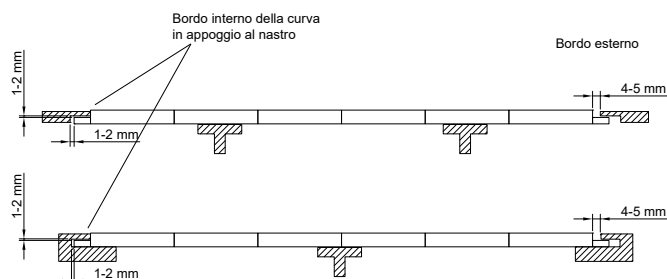
TAB EXT RETENTION SYSTEM



Example of guiding system on straight strand



Example of guiding system on curved strand



Sprockets for NREC254TR type



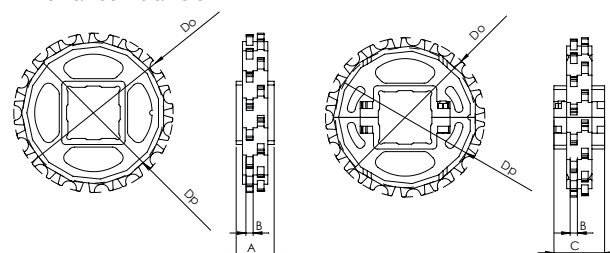
Teeth nr.	Dp [mm]	Do [mm]	A [mm] Solid	C [mm] Split	B [mm]	Available standard bore	
						Square [mm]	Ø round + set-screw UNI
8	68,4	67,7	30	40	7	25x25	25
10	82,8	85,7	30	40	7	40x40	25 - 30
12	98,9	102,0	30	40	7	40x40	25 - 30
15	123,1	126,0	30	40	7	40x40	25 - 30
16	134,1	131,0	30	40	7	40x40	25 - 30
18	147,4	152,3	30	40	7	40x40	25 - 30

Standard material: nylon PA6 fiberglass.

It is possible to supply sprocket with any number of teeth or any material by CNC machining

Dp = Pitch diameter

Do = External tooth diameter



Part number	NSEC254TR	-Q	40	-Z12
Type				
Bore type: R = round / Q = square				
Bore dimension (mm)				
Teeth nr.				

Belt width W [mm]			167	200	250	300	350	400	450	500	550	600	700	800	900	1000
Number of sprockes	Drive shaft	Belt tension ≤ 50% of the capacity	2	2	2	3	3	4	4	4	5	6	6	7	8	8
		Belt tension = 100% of the capacity	2	2	3	4	5	5	5	5	7	8	9	11	13	14
	Driven shaft		2	2	2	2	3	3	3	4	4	4	4	5	5	5
Sliding guides			2	2	2	3	3	4	4	4	4	5	6	7	7	8

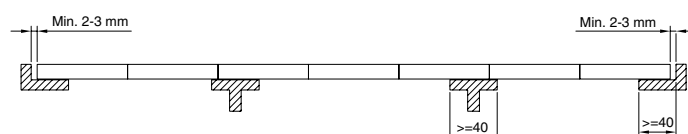
Belt width increment: 16,7 mm

Mounting

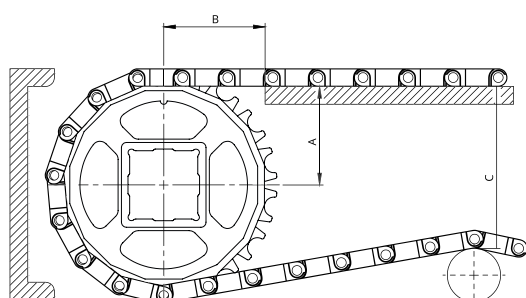
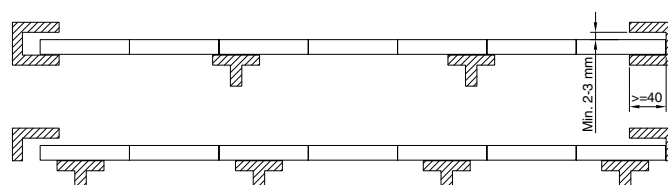
When mounting the sprockets, make sure that you have mounted all sprockets oriented in the same phase.

Only axially lock the central sprocket and leave the other sprockets free to move axially.

Example of guiding system on straight strand



Example of guiding system on curved strand



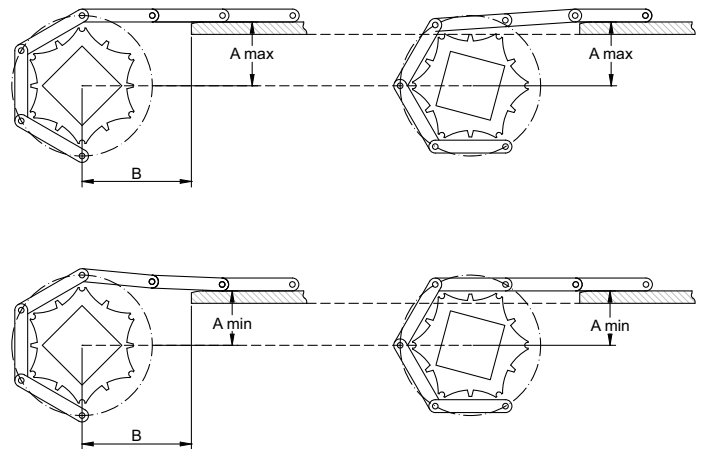
Teeth nr.	A _{max} [mm]	A _{min} [mm]	B1 [mm]	B2 [mm]	C _{max} [mm]
8	28,7	26,1	38	28	54
10	37,7	36,3	40	28	75
12	45,2	43,6	44	28	91
15	56,5	54,5	50	28	116
16	60,6	59,6	52	28	120
18	67,8	65,4	57	28	140

Sprockets for NREC254TR type

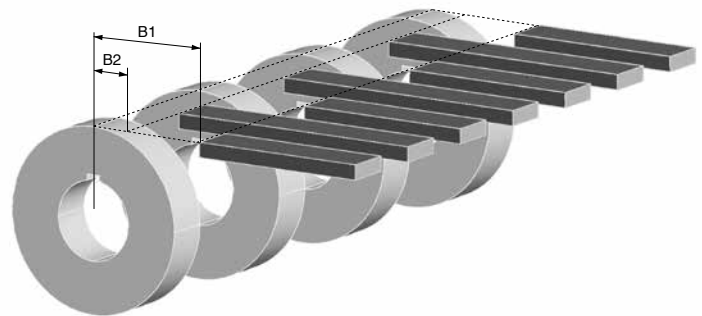
A_{max} = sliding surface position so that the height of the belt engaging the sprocket oscillates between the sliding surface height and a lower one. The height variation depends on the number of teeth and the pitch of the sprocket.

A_{min} = sliding surface position so that the height of the belt engaging the sprocket oscillates between the sliding surface height and a higher one. The height variation depends on the number of teeth and the pitch of the sprocket.

The choice of A dimensions depends on the items you have to carry.
it is always suggested to make a chamfer at the end of the sliding guides.



In order to avoid any subsidence of the belt in the area between the guiding strip and the sprockets, it is possible to locate the guides between the sprockets. Two minimum B1 and B2 dimensions are defined.



A = belt width

B = straight strand before the drive shaft.

Min. 2 x belt width

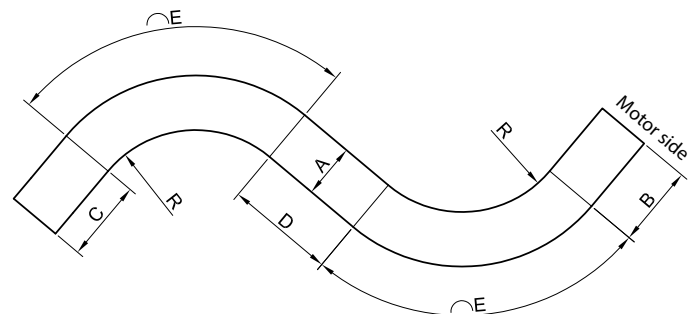
C = straight strand before return shaft. Min. 1,5 x belt width

D = straight strand between two curves. Min. 1 x belt width

E = curved belt length = $(R + A) \times \text{angle in radians}$

R = internal radius. R minimum = belt width x collapsing factor.

collapsing factor variable from 1,4 to 1,6 depending on belt width.



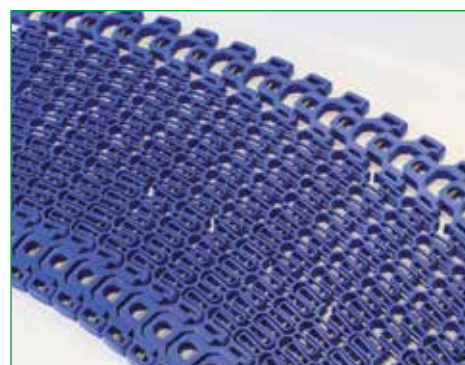
Example:

A = 200 mm

R = $200 \cdot 1,4 = 280$ mm

E = $(280 + 200) \cdot \frac{\pi}{2} = 753$ mm

Belt width [mm]	200	250	300	350	400	450	500	550	600	650	700	750	800	850	900
Collapsing factor f_c	1,40	1,44	1,47	1,50	1,52	1,54	1,55	1,56	1,57	1,58	1,59	1,60	1,61	1,62	1,63
Minimum internal radius [mm]	280	360	441	525	608	693	775	858	942	1027	1113	1200	1288	1377	1467

NREC508S**PITCH 50,8 mm / 2"****Execution:** open flat surface**Pin diameter:** Ø 6 mm - inox AISI 304**Open area:** 66% straight - 47% collapsed area hole**Size:** 14x18 mm**Minimum width:** 406 mm - 16"**Thickness:** 14,5 mm**Accessories:** sidewall - space liner**Food certification:** FDA - EU**Collapse factor:** 1,6 - 1,9 - 2,2**Standard executions**

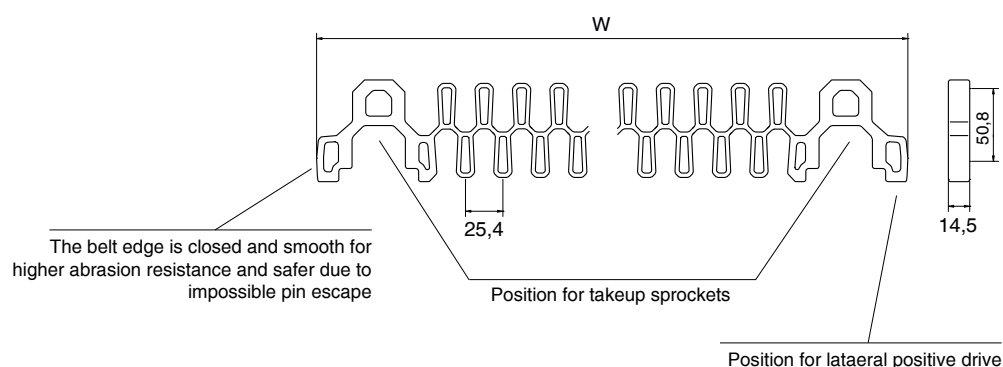
Belt material	Belt color	Pin
PPH	White	Inox AISI 304
PPF	White	Inox AISI 304
POM	Blue	Inox AISI 304

Other materials and colors are available upon request.

Belt material	Pin material	Belt strength [N/m]		Temperature range [°C]
		Straight	Cornering	
PPH	Inox AISI 304	4200	1900	+20 ÷ +70 humid condition
PPF	Inox AISI 304	6400	2900	+20 ÷ +105 humid condition
POM	Inox AISI 304	6000	2700	-40 ÷ +70

PPH = Polypropylene for high temperature - PPF = Polypropylene FG loaded

POM = Acetal

**Part number****NREC 508 S -PO -B**

Type

Pitch

Belt surface open flat surface

Belt color : W = white / B = blue

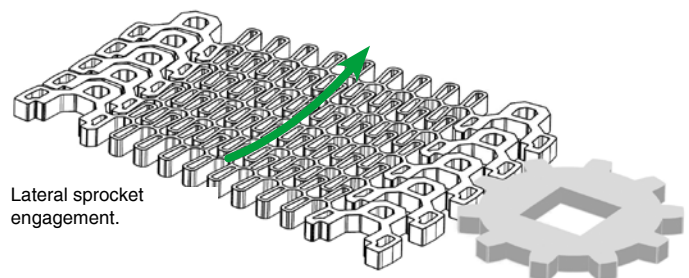
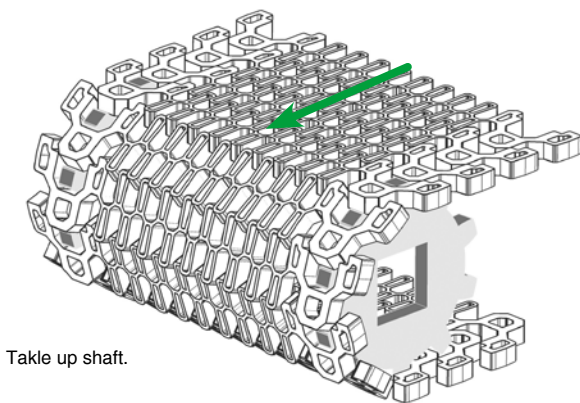
Belt material: PO = POM - acetal
 PPH = Polypropylene for high temperature
 PPF = Polypropylene FG loaded

Accessories and sprocket for series NREC508S

Part number	NSEC254TR	-Q	40	-Z12
Type				
Bore type: R = round / Q = square				
Bore size (mm)				
Teeth number				

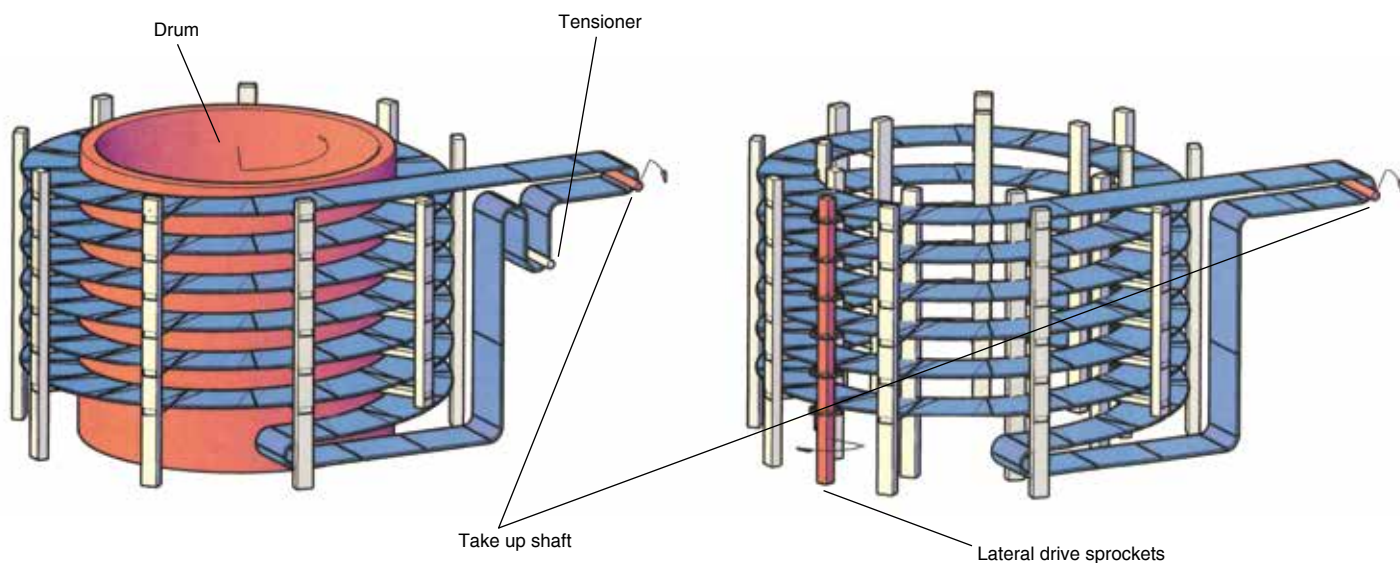
Belt width W [mm]		406	457	508	558	609	660	711	762	812	863	914	965	1016
Belt width W [inch]		16"	18"	20"	22"	24"	26"	28"	30"	32"	34"	36"	38"	40"
Sprockets nr.	Take up shaft	2	2	2	2	2	2	2	2	2	2	2	2	2
	Tensioner shaft	2	2	2	2	2	2	2	2	2	2	2	2	2
	Lateral sprocket on spiral turns	1 each turn												

Not standard width increments: 25.4mm / 1"



Standard width and collaps factor

Belt width		[mm]	406	457	508	558	609	60	711	762	812	863	914	965	1016
		[inch]	16	18	20	22	24	2	28	30	32	34	36	38	40
Inner radius	RC 1,6	[mm]	650	732	813	893	975	96	1138	1220	1300	1381	1463	1544	1626
		[inch]	25,6	28,8	32	35,2	38,4	3,8	44,8	48	51,2	54,4	57,6	60,8	64
	RC 1,9	[mm]	772	869	966	1061	1158	114	1351	1448	1543	1640	1737	1834	1931
		[inch]	30,4	34,2	38	41,8	45,6	4,5	53,2	57	60,7	64,6	68,4	72,2	76
	RC 2,2	[mm]	894	1006	1118	1228	1340	132	1565	1677	1787	1899	2011	2123	2236
		[inch]	35,2	39,6	44	48,3	52,8	5,2	61,6	66	70,4	74,8	79,2	83,6	88
Carry way		Conveyng side	2	2	2	2	2	2	2-3	2-3	2-3	2-3	3	3	3
		Return side	2	2	2	2	2	2	2	2	2	2	2	2	2



Thanks to the strength and rigidity of the stainless steel pins, the number of guides / supports can be drastically reduced compared to other belts with plastic pins.

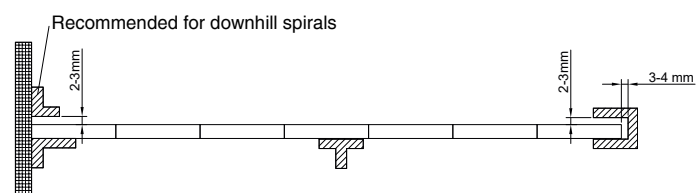
The distance between the guides is determined on the basis of the weight of the product and its distribution on the belt.

In most cases, this distance is between 450 and 800 mm.

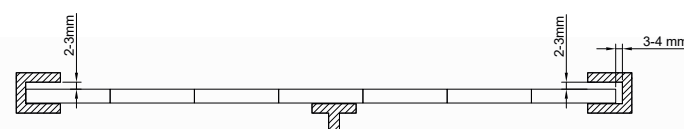
On the way back, the guides can be spaced 1 meter apart.

Thanks to the tight tolerance of the belt width, the lateral space between the belt and the guides can be a few millimeters, however it is important to take into account the thermal expansion of the belt which corresponds to the expansion of the stainless steel pin.

Drum drive



Lateral drive



Sidewall and line spacer

The belt is available with 25 or 50 mm sidewall integrally molded.

Also available are removable line spacer 25 mm high.

The line spacer can be positioned every 1/2" along the width of the belt.

