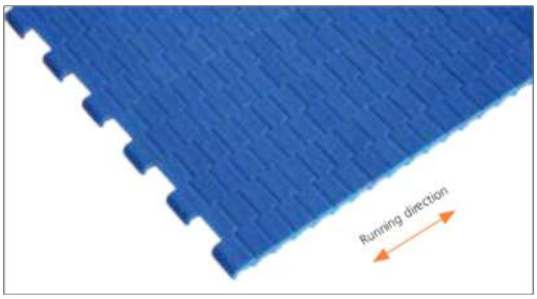
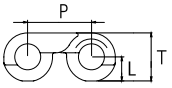
EN

Plastic Modular Belt

Serie **uni NTB** Type **C**





Straight Running Belt
Nominal pitch: 8.0 mm (0.32 in)
Surface type: Flat
Surface opening: Closed
Backflex radius: R6 mm (0.24 in)
Pin diameter: 3.0 mm (0.12 in)

Belt material & color	POM-D **B**
Pin material & color	PA6.6 **B**

	mm	in		mm	in
P (Nominal)	8.0	0.32	**T**	6.00	0.24
L	3.00	0.12	**-**	-	-

Non standard material and color: See uni Material and Color Overview.

Belt width		Permissible tensile force (Belt/pin material)		Belt weight (Belt/pin material)		*Min No drive sprocket per shaft	Number of wear strips (min no)	
		POM-D/PA6.6		POM-D/PA6.6			**Carry (pcs)	**Return (pcs)
mm	in	N	lbf	Kg/m	lb/ft			
153	6.0	337	76	0.7	0.49	2	2	2
229	9.0	504	113	1.1	0.73	3	3	2
305	12.0	671	151	1.5	0.98	4	4	2
381	15.0	838	188	1.8	1.22	4	4	2
458	18.0	1008	227	2.2	1.47	5	5	3
534	21.0	1175	264	2.5	1.71	6	6	3
610	24.0	1342	302	2.9	1.95	7	7	4
686	27.0	1509	339	3.3	2.19	7	7	4
762	30.0	1676	377	3.6	2.44	8	8	4
839	33.0	1846	415	4.0	2.68	9	9	5
915	36.0	2013	453	4.4	2.93	10	10	5
991	39.0	2180	490	4.7	3.17	10	10	5

Additional standard belt widths are available in steps of 76.2 mm (3.00 in). Additional non-standard belt widths are available in steps of 12.7 mm (0.50 in).

1448	57.0	3186	716	6.9	4.63	15	15	8

Additional standard belt widths are available in steps of 76.2 mm (3.00 in). Additional non-standard belt widths are available in steps of 12.7 mm (0.50 in).

1982	78.0	4360	980	9.4	6.34	20	20	10

General belt tolerance is +0/-0.4% at 23°C/73°F and 50% RH. For exact belt width contact Customer Service. Non standard belt width on request.
*Max. Load per Drive Sprocket. Belt material: POM-D 200N (44 lbf).
**Max. Spacing between wear strips, Carry: 102 mm (4 in); Return: 203 mm (8 in).
= Single Link

STANDARD

STRAIGHT RUNNING

PITCH 8.0 MM/0.32 IN

uni chains

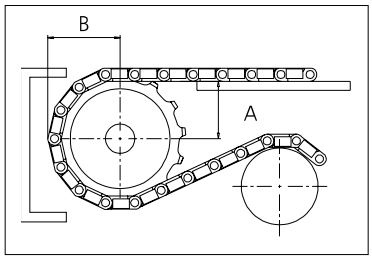
Sprocket

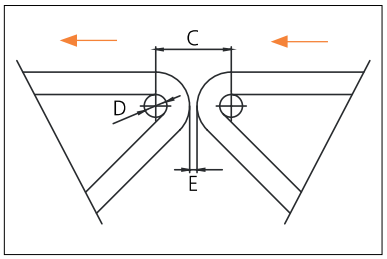
No. of teeth	Bore size										Overall diameter		Pitch diameter		Hub diameter		Dimension A		Dimension B		Single row/Two way	Double row/Two way	Molded LG PA6	Machined N PA6
	Pilot bore	in	0.75	0.78	0.98	1.00	1.18	1.25	1.50	1.57														
		mm	19.1	20.0	25.0	25.4	30.0	31.8	38.1	40.0	mm	in	mm	in	mm	in	mm	in	mm	in				
Z24	x		●		●						61.3	2.41	61.3	2.41	57.3	2.26	27.38	1.08	33.65	1.32		x		x
Z32	x		●							■	81.6	3.21	81.7	3.21	77.6	3.06	37.61	1-48	43.8	1.72		x		x
Z48	x		●							■	122.7	4.83	122.4	4.81	118.7	4.67	58.03	2.28	64.16	2.52		x		x
Z60	x		●							■	152.9	6.02	152,9	6.02	148.9	5.86	73.32	2.88	79.43	3.13		x		x

■ **Machined sprocket** ● **Machined sprocket**

Non standard material and color: See uni Material and Color Overview.

Nosebars Min. Dimensions





	mm	in
C	20.0	0.79
D	6.0	0.24
E	2.0	0.08

Other sprocket sizes are available upon request.
Round bores are always delivered with keyway.
Other bore sizes are available upon request.
uni Retainer Rings: See uni Retainer Ring data sheet.
Width of tooth = 9.0 mm (0.35 in)
Width of sprocket = 25.0 mm (0.98 in)

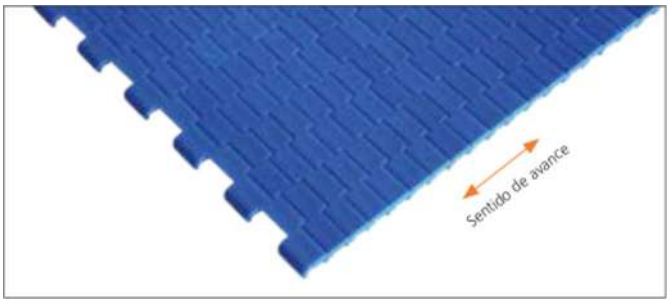
Max load per sprocket shown does not take bore size into account.
Please also ensure that sufficient size shaft is chosen for corresponding load.

For correct sprocket position: See uni Assembly Instructions for uni NTB.
For more detailed sprocket information, contact Customer Service.

ES

Información de producto

uni NTB – Nano Transfer Belt



Materiales y colores disponibles	POM-D B
Material de la varilla y color	PA6.6 B

Cuando transportamos productos de dimensiones reducidas o frágiles, disponer de transferencias ajustadas permite mantener la orientación del producto sobre la banda y evita daños al producto. Asimismo, a diferencia de otras soluciones existentes en el mercado, el montaje y desmontaje de la banda modular facilita su limpieza y mantenimiento.

Con estos requisitos en mente, Ammeraal Beltech ha desarrollado la uni Nano Transfer Banda, con un paso minimizado a 8 mm, que le permite girar sobre un diámetro de 6 mm.

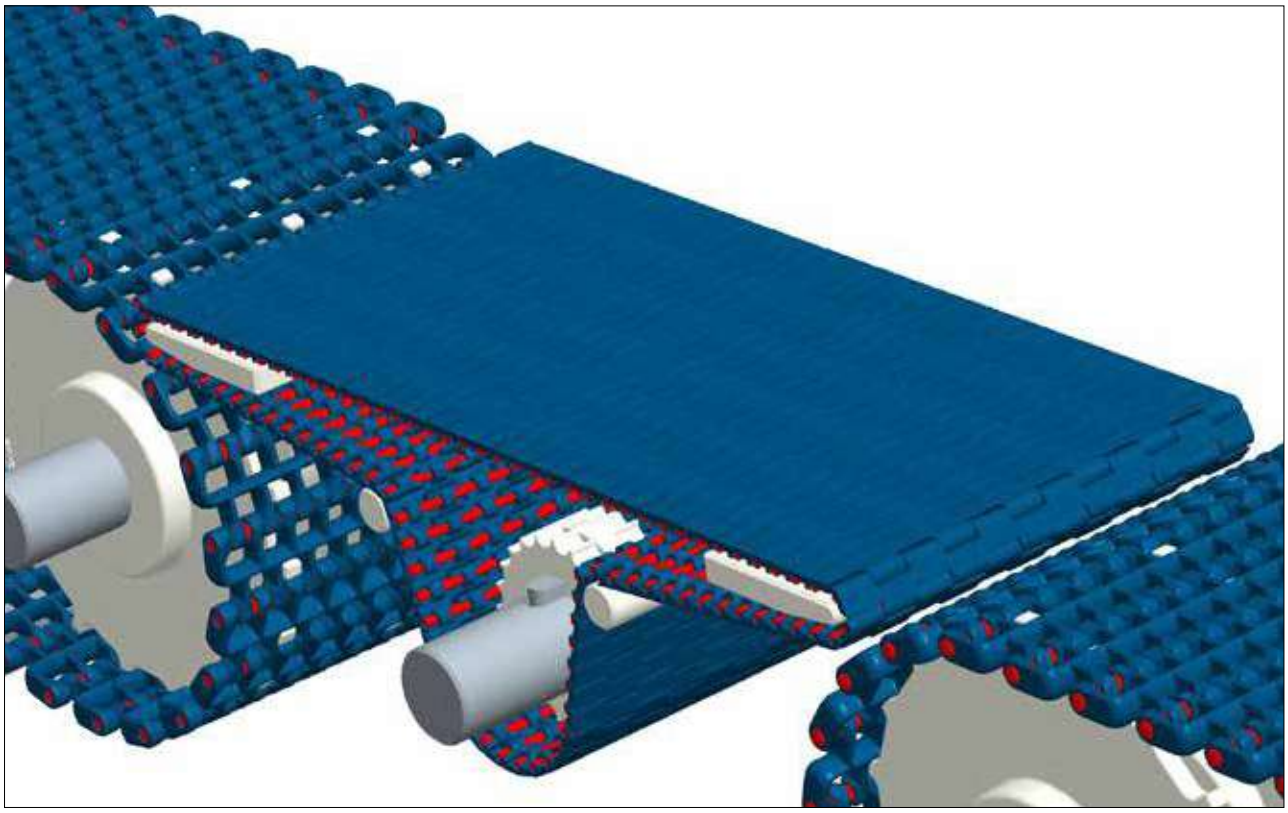
La uni NTB es ideal para transportadores cortos < 2m, donde existan dificultades de guiado o de montaje de bandas de tejido. El sencillo y eficaz diseño autocentrable de los piñones de transmisión facilitan su funcionamiento.

La uni NTB encaja a la perfección en el sector de la panificación y dulces, gracias a su superficie cerrada. Ello evita la retención de migas y restos de harina y azucares. El reverso de la banda uni NTB esta diseñado para facilitar su limpieza.

VENTAJAS COMPETITIVAS

- Paso reducido optimizado para transferencias ajustadas
- Apta para trabajo sobre canto de cuchilla r 3 mm
- Diseño autocentrable de los piñones de transmisión
- Superficie cerrada que evita la acumulación de suciedad
- Su diseño facilita su limpieza en profundidad
- Larga vida útil que evita incidencias indeseadas en su producción

Ammeraal Beltech 1503



uni NTB

Engineering Guideline

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Introduction

uni NTB Closed
The uni NTB Closed is a new belt series providing the smallest pitch for the modular product family. With a 8 mm pitch focus is on tight transfer applications, serving numerous segments, with bakery being primary focus. By introducing this new belt, we close a gab in our portfolio, emphasizing our One Stop Belt Shop strategy.

Design
The belt is designed with a closed, flat and non-stick mat top surface. The design is made with focus on cleanability, ensuring that the belt has a closed surface that does not open even when turning at the nosebar. By that crumbs, dirt and debris are prevented from engaging with the belt. Equally, the bottom surface is with a very open design, exposing both the pins and the belt bottom surface for efficient cleaning.

The belt comes with a range of sprockets, designed to give sideways support to the belt to avoid side tracking.

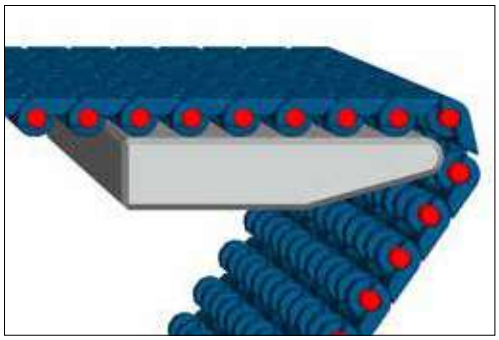
Application
Application focus is for transfer of light and delicate products. It is able to run over a nose bar with a nose radius of just 3 mm. The modular belt will reduce service and down time required to adjust and align flat belts, and further eliminating the problem of fraying.

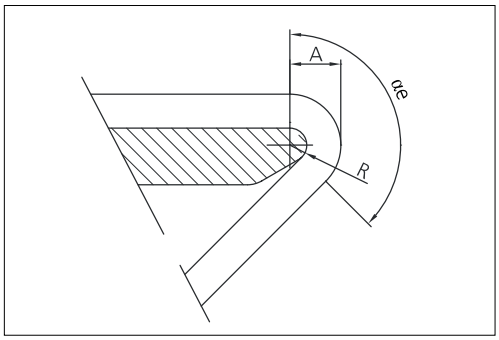
Transfer edges

Nose bar transfer

With a nose bar the front flex radius can be reduced as a function of the belt pitch. The preferential way is to build with a nose bar as explained here. As uni NTB is designed with just an 8mm pitch, it is specifically designed for use with nose bar. It has a profile on the bottom of the modules so they contour better to the nose bar.

uni NTB is designed to run over a nose bar with a radius of only 3 mm (see sketch).

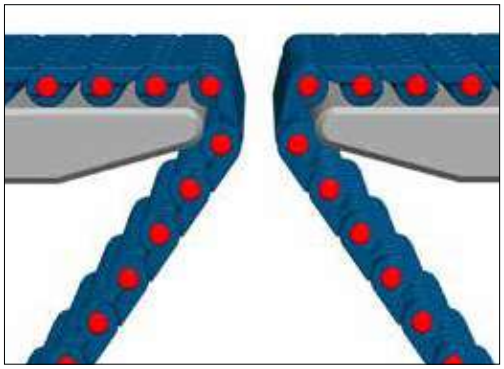




	mm	in
A min	9.0	0.35
R min	3.0	0.12
αe	100-120°	

The more wrap the belt needs to be with more tension. The less wrap the better, recommend in the range of 100-120° wrap.

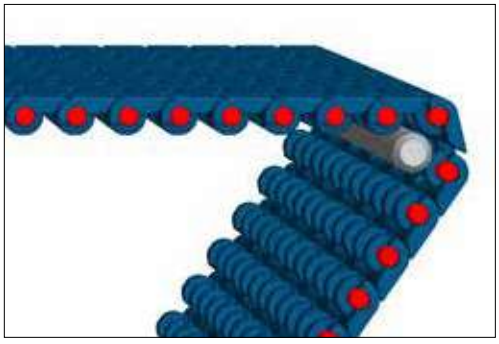
It is our recommendation to have nose bars made of nylatron.

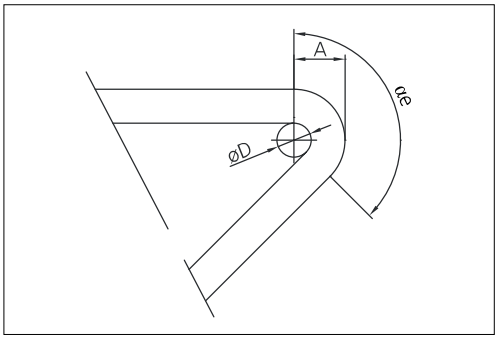


Roller transfer

On conveyors with center/omega drive it´s normal to use rollers in both ends of the conveyor to reduce the transfer zone. When using the uni NTB belt you can reduce the size of the rollers to ø6 mm (0.24 in). Due to the deflection of such a small roller this can only be used for narrow belts.

The advantage of using rotating roller is that the rollers will rotate with the belt which will reduce the tension in the belt, the wear on the belt and noise generated from the rollers. When using rotating rollers in both ends you will be able to run the belt at very high speed. Speed up to 120 m/min will in many cases be possible but it depends of the load on the conveyor. Please contact Ammeraal Beltech Modular A/S for technical advice regarding load and speed relations (PV-limit).



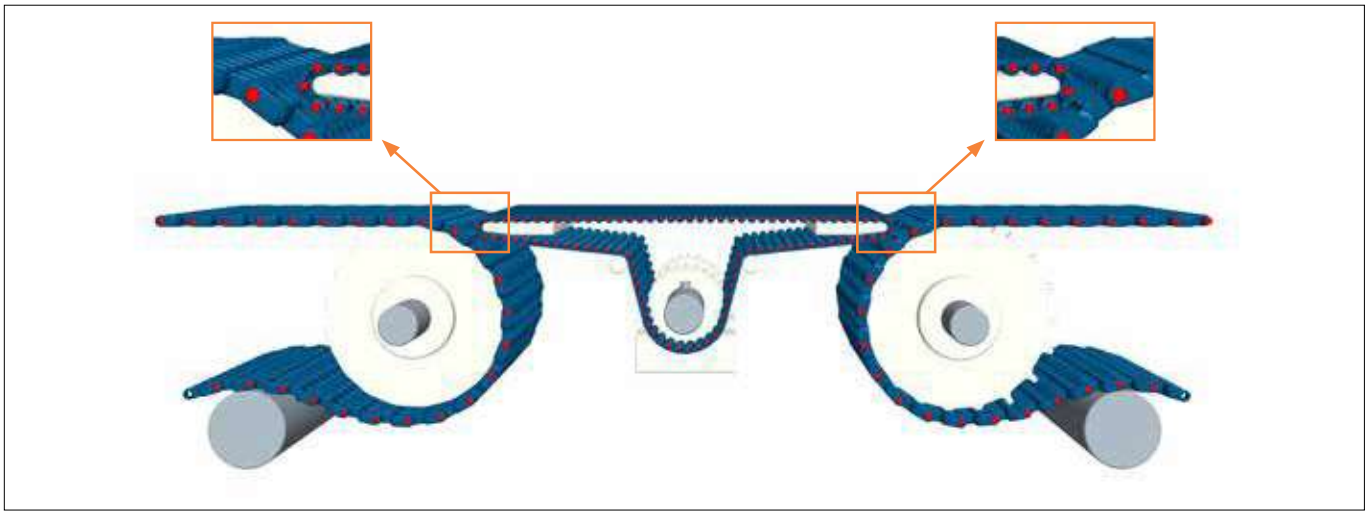


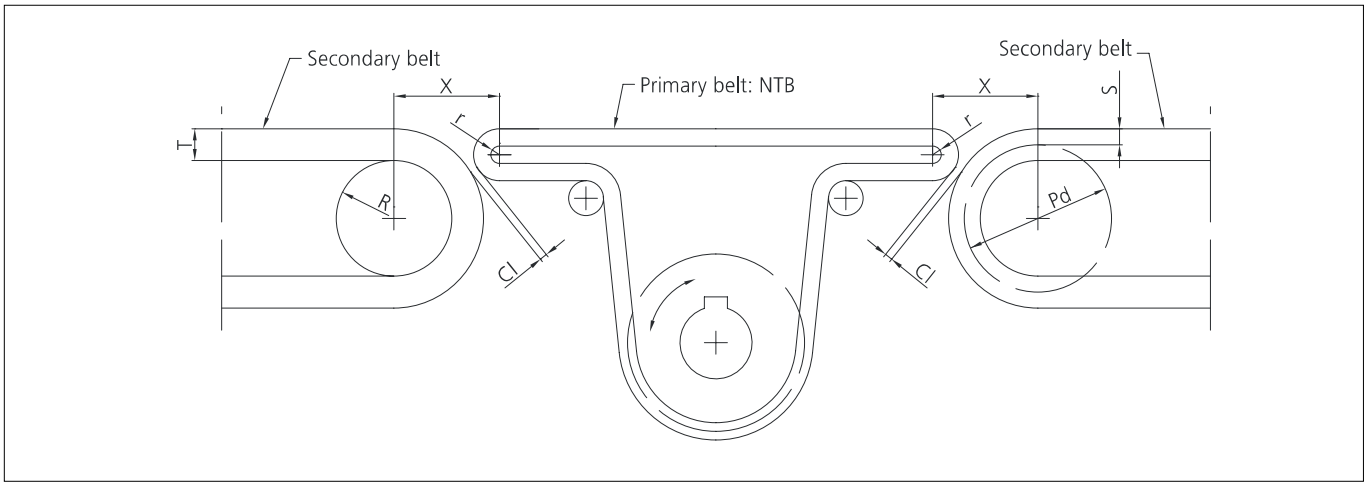
	mm	in
A min	9.0	0.35
R min	3.0	0.12
αe	100-120°	

Special attention needs to be paid to the potential deflection of the roller when small transfer is needed.

Knife edge transfer

Transfer of small products between traditional conveyors can be solved by mounting a small uni NTB conveyor with knife edge transfer between the two conveyors. Knife edge conveyor is a conveyor with center/omega drive where the belt is running over a very small radius and turns 180° so the total height of the conveyor in both ends is reduced to a minimum which allow the conveyor ends to run over the two traditional conveyors. See picture and sketch below.





Secondary Belt			
Pitch		Cl	
mm	in	mm	in
8.0	0.31	2.0	0.08
12.7	0.50	4.0	0.16
19.1	0.75	6.0	0.24
25.4	1.00	8.0	0.31
38.1	1.50	12.0	0.47
50.4	2.00	16.0	0.63
63.5	2.50	20.0	0.79

Depending of the type of ends on the traditional conveyor the minimum dimension (X) can be calculated by using these formulas:

$$X = \sqrt{(Pd/2+S+(r+6))^2 - (Pd/2+(S-(r+6)))^2 + Cl}$$

Conveyor end on traditional conveyor is with rollers or nose bars:

$$X = \sqrt{(R+T+(r+6))^2 - (R+(T-(r+6)))^2 + Cl}$$

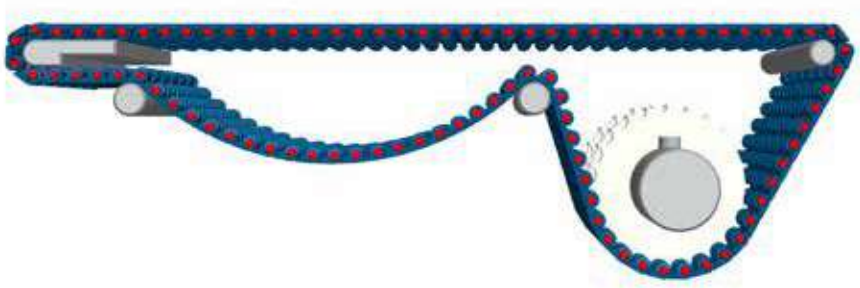
The recommended clearance (Cl) can be found in table to the left.

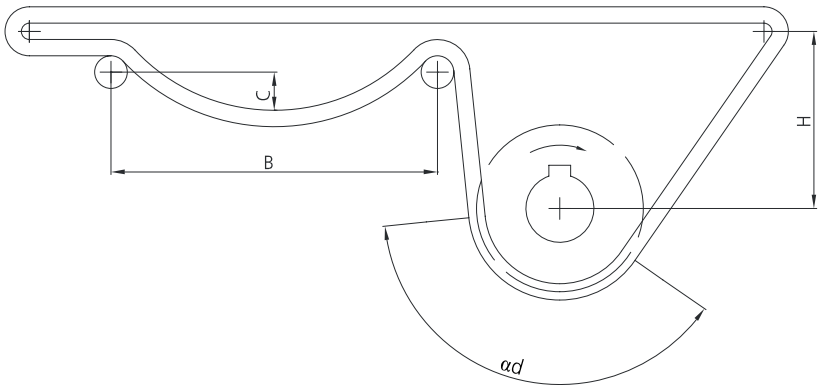
Driving the belt

One directional conveyor with small transfer zones both ends

This is the preferential way of driving the belt.

On one directional conveyor with uni NTB where small transfer zone is needed at both ends the drive motor can be placed as shown below. Note that due to the nature of the belt, the catenary sag is rather light. So option is to use a tension roller.

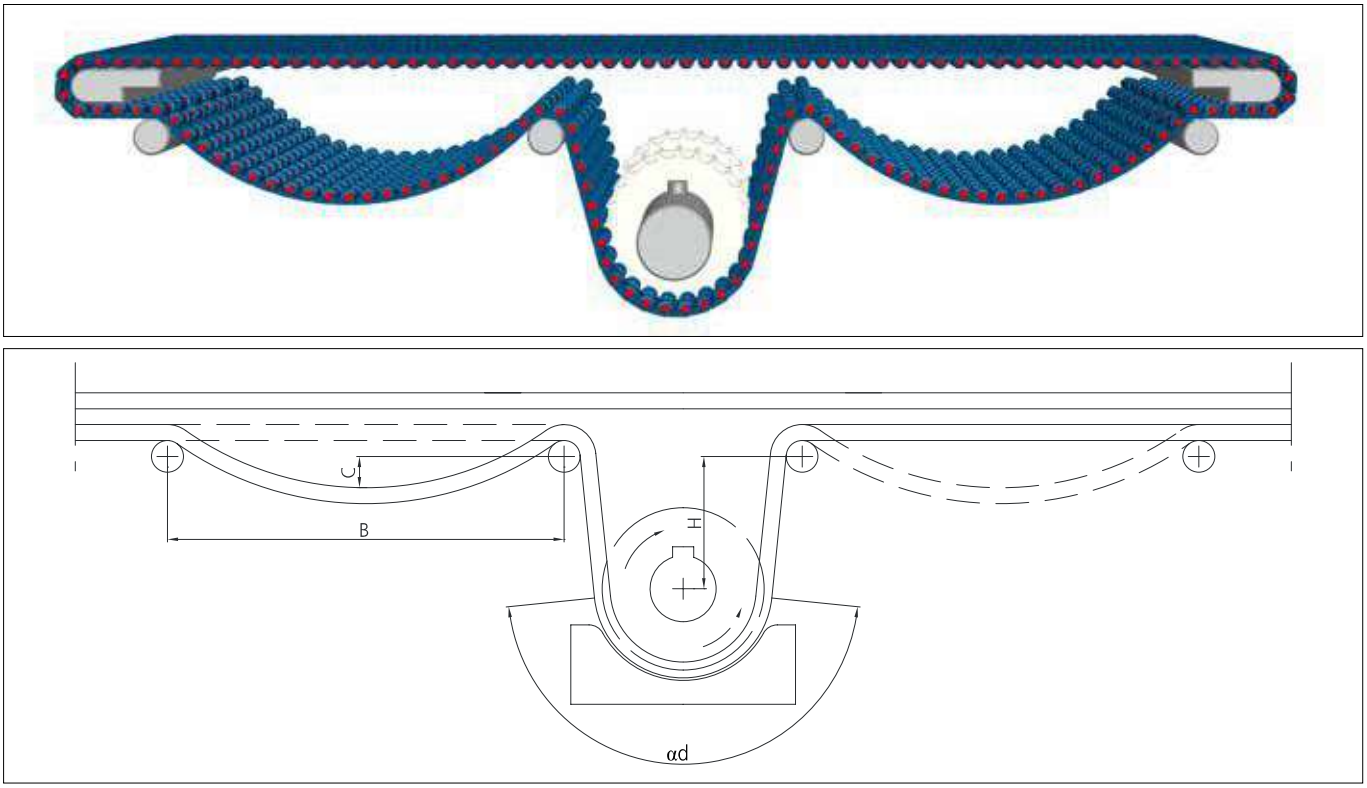




	mm	in
B	150-500	6-20
C	25-100	1-4
H	min 50	min 2
αd	120°-175°	120°-175°

Center/Omega drive

A very common way of making conveyors with small transfers is to use conveyors where the drive motor is mounted below the conveyor. One way of doing this is to make the conveyor with center/omega drive where the drive motor is placed between two supports as shown on below sketch.



The advantage of this type of conveyor is that you can run both directions with the same drive motor just by changing the running direction of the drive motor.

When using center/omega drive the gravity will try to pull the belt of the sprocket opposite normal conveyor with end drive where the gravity will pull the belt down to the sprocket.

Ammeraal Beltech Modular A/S recommend that the wrapping angle between the drive sprocket and the belt is between 120° and 175°. If the wrapping angle is below 120° the risk of disengagement is to high. If the wrapping angle is more than 175° there will be a risk that the belt will not come of the sprocket on the return side and the belt will start to vibrate.

Ammeraal Beltech Modular A/S recommends conveyors with center/omega drive designed according to recommendations in table to the right.

	mm	in
B	100-300	4-12
C	25-100	1-4
H	min 50	min 2
αd	120°-175°	120°-175°

Because gravity will try to pull the belt of the sprocket there will be a risk that the sprocket will lose engagement and the belt will start to jump.

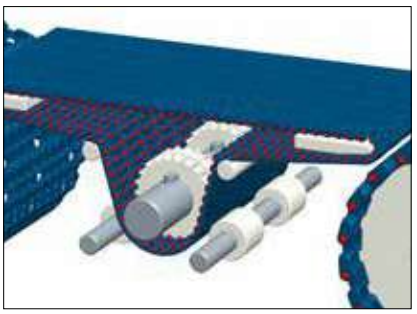
To avoid this Ammeraal Beltech Modular A/S recommends using some kind of support below each sprocket. See above sketch.

The belt can be held tight towards the sprocket by means of a shoe that will prevent the belt from jumping out of the sprocket.

For each application it should be considered whether this solution is applicable, as this can potentially leave marks on the upper surface of the belt as the shoe is static towards the belt.

A different option is to use rollers to keep the belt engaged with the sprocket.

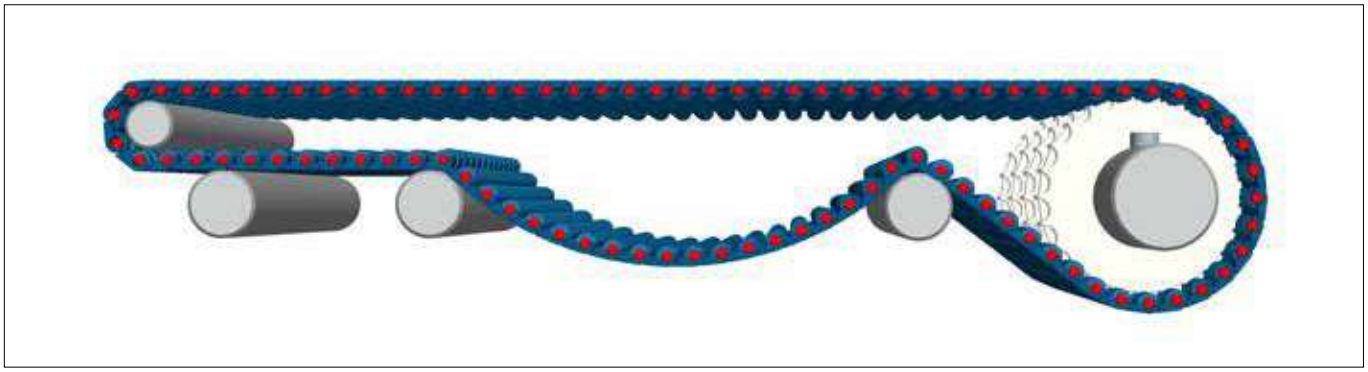
Again, for each application it should be considered whether this solution is applicable. With the rollers rotating, this option will allow less impact to the upper surface. Further, it is a more cleanable solution.

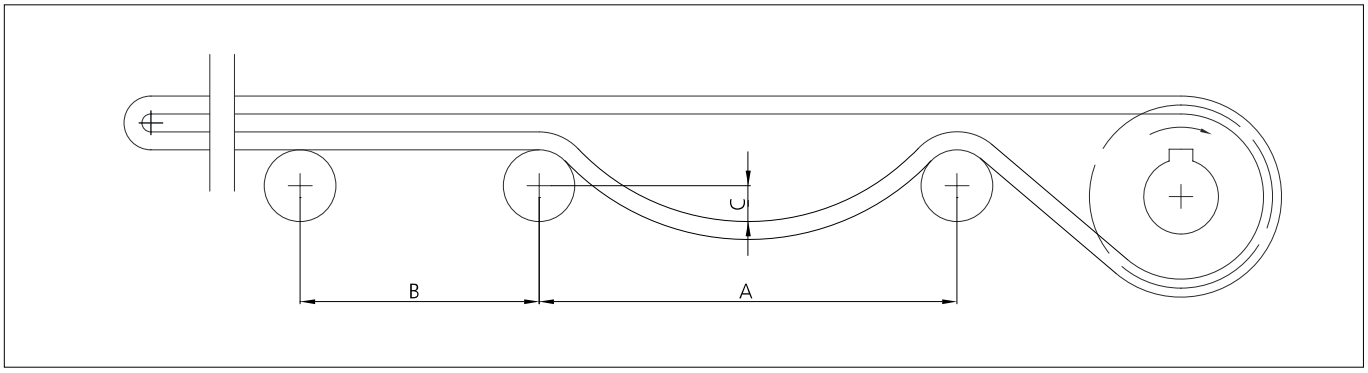


Traditional end drive

uni NTB conveyors can be made with traditional end drive as shown on below sketch.

	mm	in
A	100-500	6-20
B	100-300	4-12
C	25-100	1-4



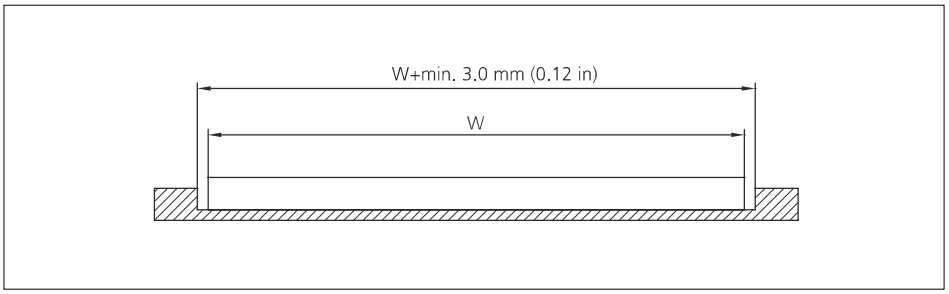


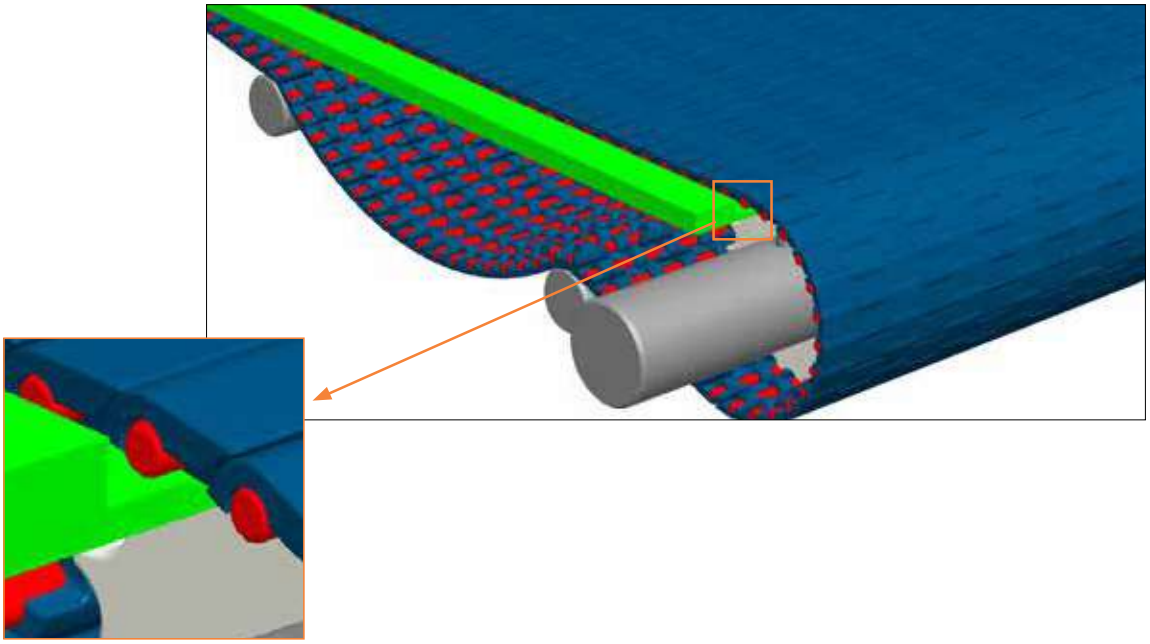
Guiding the belt

As this belt in its nature is small, its lateral stability is low. It is therefore essential that the belt is supported at the carry section. Further, the belt should be supported sideways. Various options for doing that is advised in the next sections.

Guiding by U-profile

The belt is supported at the carry way by a plate underneath the belt.

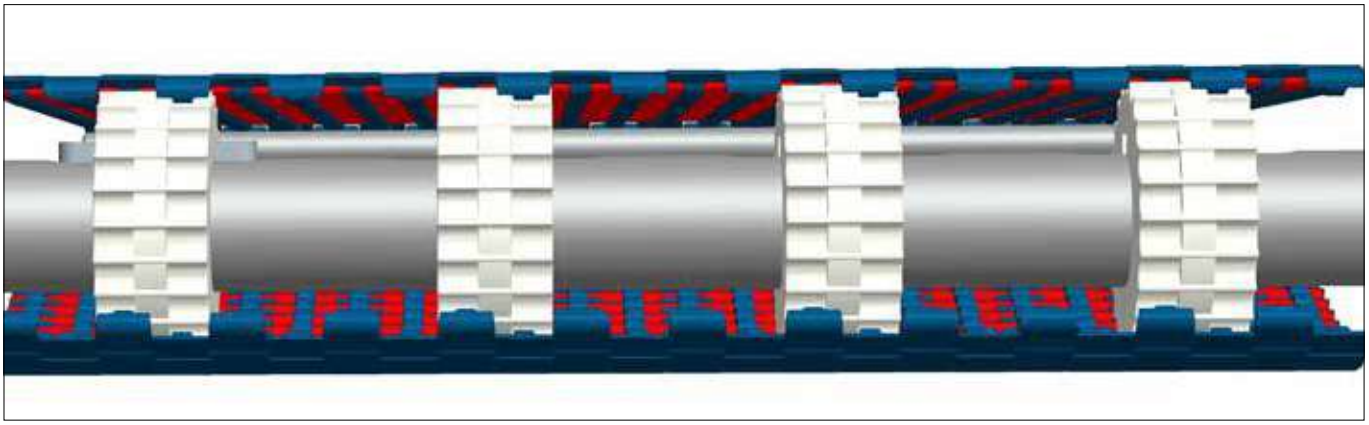




Guiding by sprockets

The sprockets for uni NTB are designed with a center bar. So essentially, the sprocket is a two row sprocket with a bar at the center. The center bar engages with the belt, ensuring that sideways tracking is not possible.

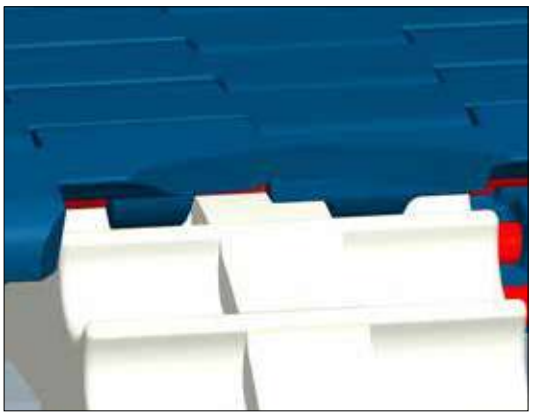
Please note that only having the sprocket to control sideways movement of the belt will only work for very short conveyors. For longer belts further means are needed to control the conveyors, e.g. guiding by side guards.

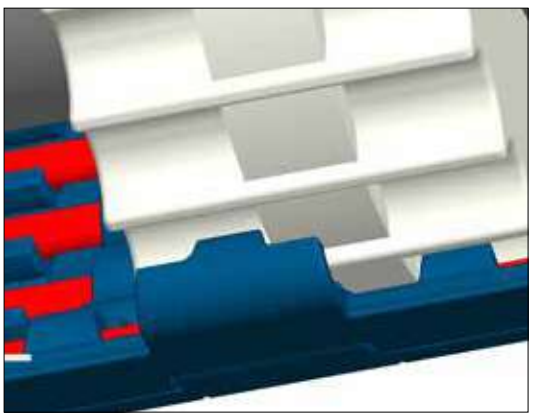


Positions of sprockets

Sprockets can be placed every 12.7 mm (0.50 in) on the entire belt width. Ammeraal Beltech Modular A/S recommend minimum one drive sprocket every 100 mm (4 in) in the belt width. In the return end one sprocket every minimum 150 mm (6 in) is recommended.

The number of sprockets and the distance between the drive- and idler sprockets depends on the types of load on the belt so above recommendations are only guidelines.





Sliding sheets

Most common construction is a flat polyethylene sliding sheet. Optional the nose bars are machined in the sheet itself.

Materials for uni NTB

The belt is available in POM with pins in PA66. Both the belt and the pins are standard in blue.

POM is a thermoplastic material with very good mechanical and thermal properties. The material can also be characterized by great strength, stiffness and dimensional stability. POM is resistant to a wide selection of chemicals. POM has low coefficient of friction and good resistance to wear.

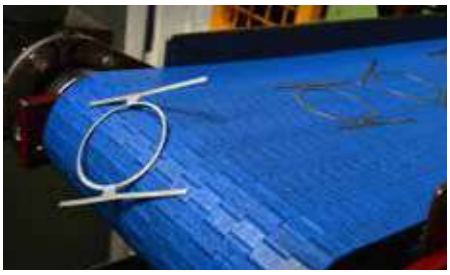
For uni NTB the POM-D version is used, which includes self-lubricating components.

Polyamide PA66 is a thermoplastic material. The combination of mechanical properties and chemical resistance make this material suitable for many applications. Polyamide has high resistance to wear and dynamic load.

Further support

For any further support, please consult our technical support staff at your local Ammeraal Beltech office. Please see details of contact on the rear side of this guide.

Also you can find more engineering guide lines in our general purpose Engineering Manual, which you will find at **www.unichains.com**



Menos interrupciones gracias a uni NTB

***Grundfos** es un líder global en soluciones de bombas y pioneros en la tecnología del agua.*

Testimonio

En Grundfos, siempre buscamos maneras de optimizar el tiempo de producción, por lo que cuando nuestras bandas de transporte de materiales metálicos se rompían de manera continua, debido al daño que los materiales causaban, fuimos a buscar una solución. Debido a que tratamos con metal afilado, sabíamos que necesitábamos algo que de verdad pudiera soportar cosas duras. Queríamos algo que fuera:

- Fuerte
- Duradero y fiable
- Fácil de trabajar

Una solución total

La respuesta que encontramos no fue precisamente lo que esperábamos. La nueva banda uni-NTB de Ammeraal Beltech Modular, se desarrolló principalmente para aplicaciones de la industria alimentaria, pero cuando la vimos en una reciente visita a su fábrica, nos impresionó por todo lo que nos podía ofrecer:

- Construcción en plástico duro
- Superficie cerrada para evitar los enganches con metales
- Pasador de liberación rápida para un mantenimiento y sustitución rápidos y fáciles

Rendimiento sin paradas

Decidimos poner la nueva banda a prueba y los resultados fueron excelentes. Después de tres meses de uso continuo, sin limpieza ni mantenimiento, ¡no hemos tenido ni una parada! **¡Olvídese del tiempo de inactividad!** En mi opinión, la uni-NTB es un producto más que excepcional.

Jørn Jensen

Jørn Vestergaard Jensen,
Técnico de mantenimiento de Grundfos