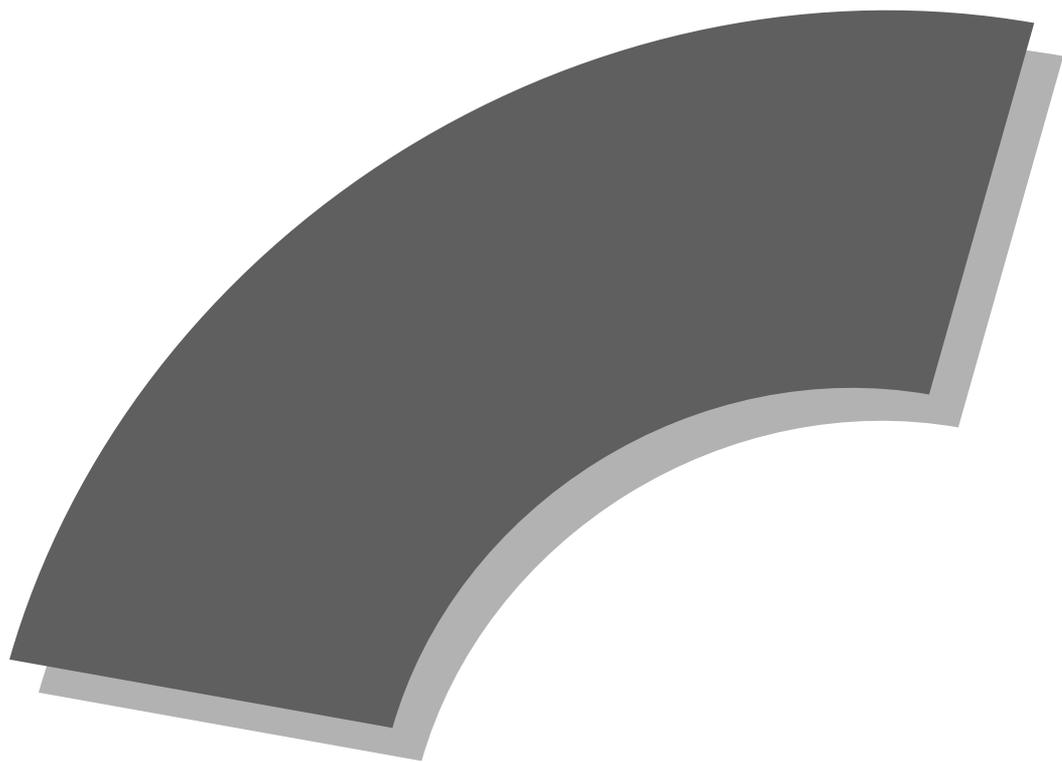


MCC  
Sideflexing  
Belts  
Engineering



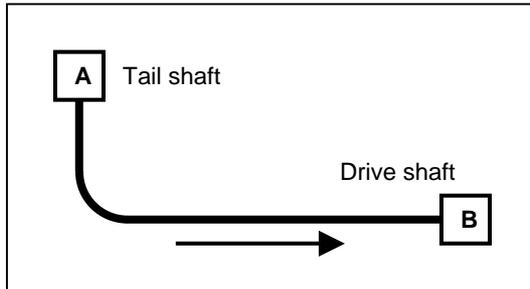


## Basic design considerations

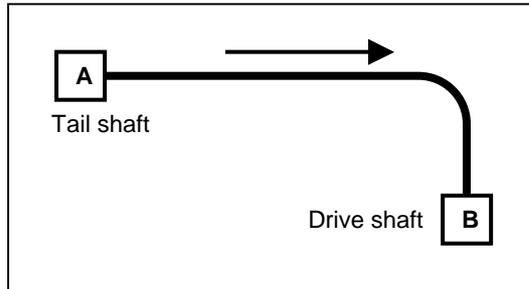
### Side flexing configuration

When planning the side-flexing conveyor layout, the designer must consider the following factors that affect chain life:

- Minimize the number of corners in each conveyor whenever possible
- When conveying from point A to point B, design the conveyors so that the last curve is positioned furthest from the last drive (see drawing), resulting in lower chain tension and maximizing chain life



Preferred

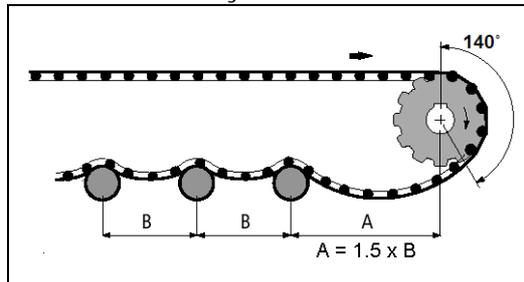


Avoid

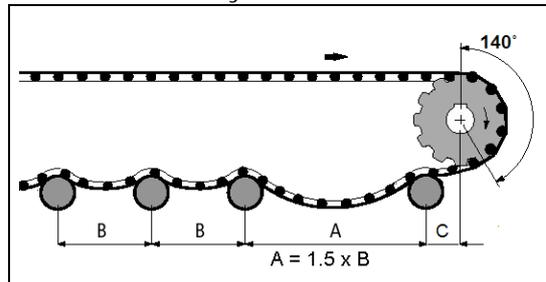
### End drive construction

These conveyors have the drivemotor and sprocket at the end of the conveyor.

#### End-drive conveyor

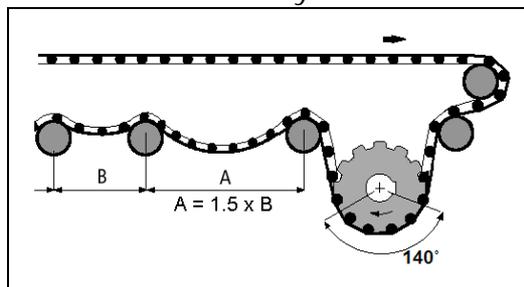


#### End-drive conveyor & snub roller



C should be 150-250mm

#### Centre-drive conveyor



### Wrap around angle

Recommended wrap angle on sprockets is:  $140^\circ \pm 10^\circ$ .

When the wrap angle is too small, the sprocket will not be able to transfer the load to the chain anymore causing the chain/belt to jump on the sprockets. When the wrap angle is too big, the chain/belt can stick to the sprocket.

Basic design considerations

Side flexing configuration

End drive construction

Centre drive conveyor

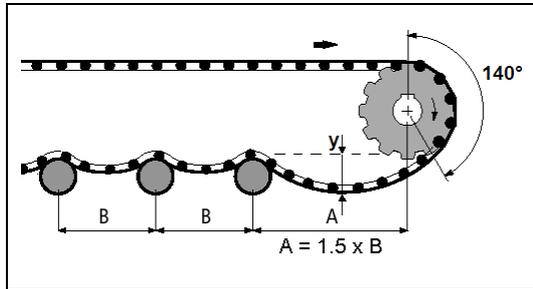
Wrap around angle



# Sideflexing Belts

## Catenary sag

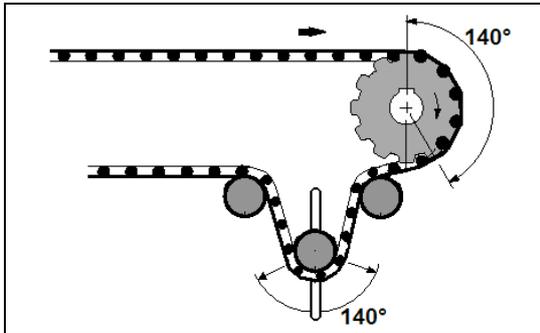
It is recommended to create a catenary sag which provides a complete discharge of the beltload.



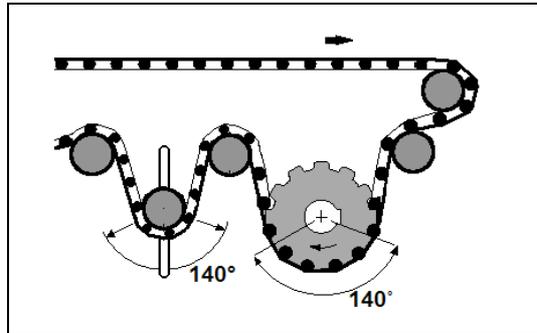
type	A (mm)	B (mm)	Vertical sag Y(mm)
505-series	700	500	50-125
1255-series	600	500	50-125
1265-series	600	500	50-125
1275-series	600	500	50-125
1285-series	600	500	50-125

The right vertical catenary sag can usually be obtained automatically by just pulling both ends of the belt together and connecting them. The catenary sag will increase due to elevated temperatures. Furthermore, the belt can elongate due to strain and wear of the pins and hinge eyes. Therefore it is important to check and adjust the catenary regularly.

## End drive with tensioner



## Centre drive with tensioner



A tensioner construction is only necessary if the conveyor design does not allow for a proper catenary sag due to lack of space. A tensioner can also be used with declined conveyors, but in all other cases it is not recommend to tension the chain/belt.

**NOTE:** The tensioner roller/sprocket can be fixed on an arm or move up and down in slots in the conveyor sideplates.

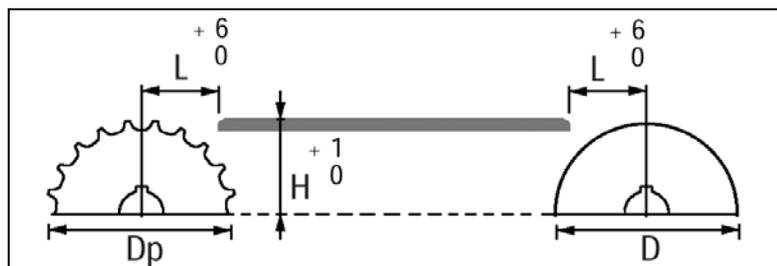
## Roller diameter for sideflexing belts

Beltype	505-series	1255-series	1265-series	1275-series	1285-series
	All dimensions in mm				
Idler rollers 	>30	>60	>70	>60	>70
Return rollers 	60-100	60-100	60-100	60-100	60-100
Backflex rollers 	> 30	> 80	> 80	> 80	> 80

The recommended roller diameters in the table are an indication. The width of the conveyor is not taken into account. The diameter of the shaft should be large enough to avoid excessive deflection of the roller. At the same time it is recommended not to exceed the maximum diameter, because the roller friction may be too heavy to be set in motion by the belt.

## Position sprocket - wearstrips

When the belts enter the sprocket, it tend to raise and fall slightly (chordal action). For this reason the sprockets should be mounted in such a way that their highest point is no higher than the top of the wearstrips. The front edges of the wearstrips should be bevelled to allow smooth and free running of the chain. The distance from the end of the wearstrip to the sprocket shaft centerline should equal dimension L, otherwise the wearstrip will interfere with the free articulation of the chain as it enters the sprockets.



Belt type	Drive sprocket H (mm)		L mm	Idler roller H (mm)		L mm
	$\frac{Dp}{2}$	-6.35		$\frac{Dp}{2}$	$\frac{Dp}{2}$	
505-series	$\frac{Dp}{2}$	-6.35	12.7	$\frac{Dp}{2}$	$\frac{Dp}{2}$	12.7
1255-series	$\frac{Dp}{2}$	-6.35	32.0	$\frac{Dp}{2}$	$\frac{Dp}{2}$	32.0
1265-series	$\frac{Dp}{2}$	-6.35	32.0	$\frac{Dp}{2}$	$\frac{Dp}{2}$	32.0
1275-series	$\frac{Dp}{2}$	-6.35	32.0	$\frac{Dp}{2}$	$\frac{Dp}{2}$	32.0
1285-series	$\frac{Dp}{2}$	-6.35	32.0	$\frac{Dp}{2}$	$\frac{Dp}{2}$	32.0

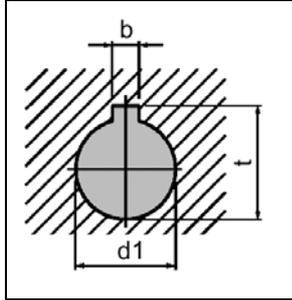
Keyway  
dimensionens of  
MCC sprockets

Wearstrip  
materials

Recommended  
wearstrip  
materials

Belt return

## Keyway dimensions of MCC sprockets



d1 (mm)	b (mm)	t (mm)
25mm	8	28.3
30mm	8	33.3
35mm	10	38.3
40mm	12	43.3
45mm	14	48.8
50mm	14	53.8
60mm	18	64.4

d1 (inch)	b (inch)	t (inch)
1"	1/4	1 1/8
1 1/4"	1/4	1 3/8
1 1/2"	3/8	1 9/16
1 3/4"	3/8	1 15/16
2"	1/2	2 1/4

## Wearstrip materials

### Stainless steel wearstrips

Can be used in most situations using plastic belts and are strongly recommended in abrasive environments.

- Recommended for abrasive conditions due to avoiding of dirt embedding in the wearstrips;
- Recommended for plastic chains/belts in dry environments with speeds > 60m/min;
- Cold rolled stainless steel with a hardness of at least 25 Rc and a surface finish of maximum 1.6 µm is recommended;
- Best results can be achieved by using stainless steel AISI 431 (Werkstoff-Nr. 1.4057 material; soft AISI 304 (Werkstoff-Nr. 1.4301) is not recommended as wearstrip material.

### UHMWPE wearstrips

Friction is low compared to steel wearstrips. Two types of plastic are suitable to be used as a wearstrip material.

- Most common used wearstrip material with extreme low friction;
- Excellent resistance against many chemicals;
- Virtually no moisture absorption, therefore very suitable for lubricated lines;
- Good dimension stability;
- Reduces some of the noise conveyors produce;
- Suitable for dry running conveyors with speeds up to 60 m/min;
- Extruded quality 1000 grade UHMWPE is recommended.

## Recommended wearstrip materials

Wearstrip material	Plastic modular belts	
	Dry	Lubr.
UHMWPE	+	+
Polyamide	+/-	-
Stainless steel	+	+

+ Recommended  
 +/- Satisfactory  
 - Not recommended  
 1) Up to 60 m/min in non abrasive conditions  
 2) Only in non abrasive conditions

## Belt return

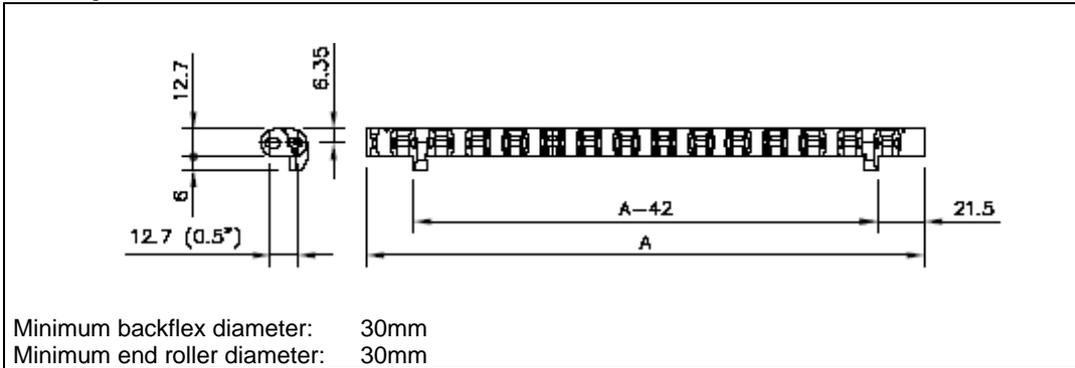
For sideflexing belts we recommend to use rotating rollers for the returnpart.Reduced wear.



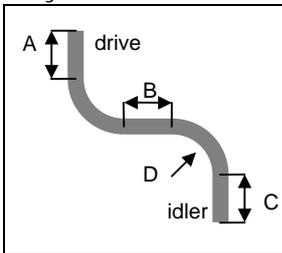
- Simple construction.
- Good accessibility
- Only point contact between chain/ belt and roller. –
- small rollers may cause a rattling sound.

**Rollers should rotate freely therefore, rollers with rubber cover are recommended.**

### Beltstyle RBP 505-series

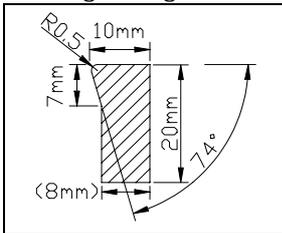


### Lay-out Guidelines



A	Minimum straight section drive side 750mm with normal drive, 500mm width gravity tensioner.
B	Minimum straight inbetween 2 curves (S-bend) 1.5 * beltwidth
C	Minimum straight section idler side 500mm
D	Minimum inside radius 2 * beltwidth

### MCC guiding Profile RBP 505-series

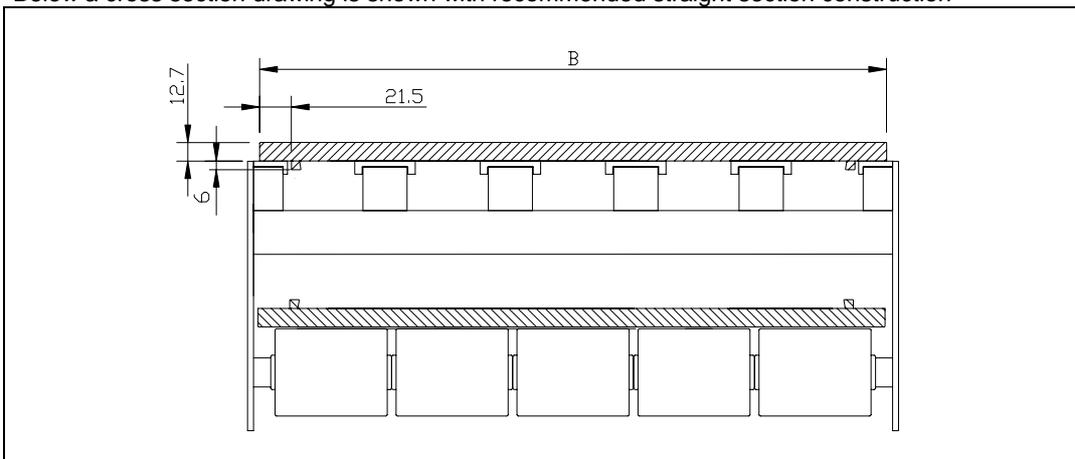


The MCC guiding profile should be used to guide the belt through the curve. Material of the guiding strip is MCC 3500 special polyamide, which offers low friction and high wear resistance.

Codenr. 800.00.01 in length is 2 mtr

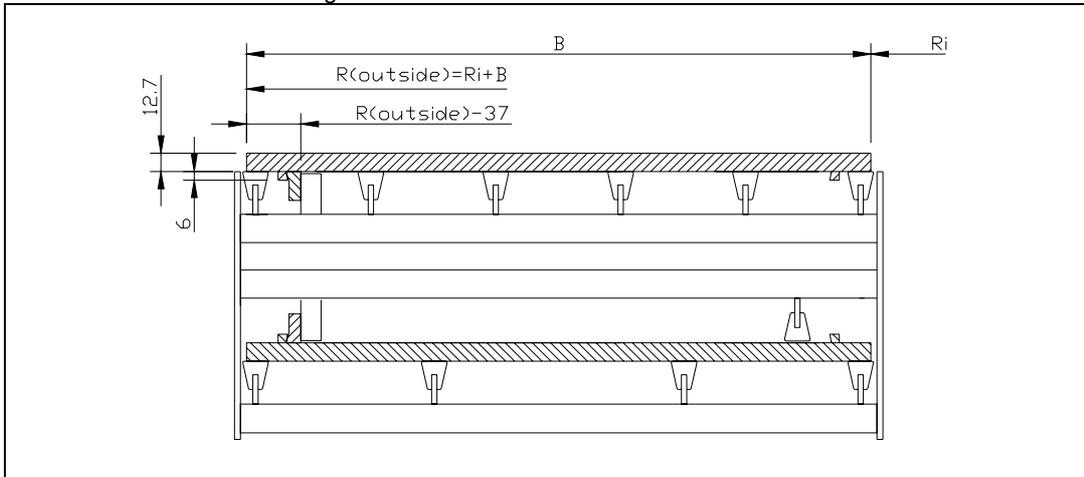
### Straight section RBP 505-series

Below a cross section drawing is shown with recommended straight section construction



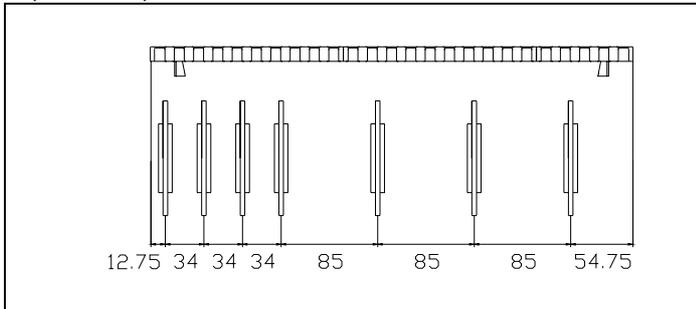
### Curve section RBP 505-series

Below a cross section drawing is shown with recommended curve construction



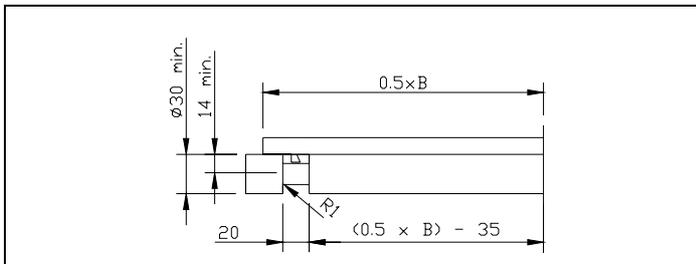
- Curve section RBP 505-series
- Sprocket position RBP 505-series
- Roller dimension RBP 505-series
- Additional notes

### Sprocket positions RBP 505-series



Beltwidth	Nr. of sprockets	
	Drive	Idler
170 mm	4	2
255 mm	5	3
340 mm	6	4
425 mm	7	5
510 mm	8	6
595 mm	9	7
680 mm	10	8

### Roller dimension RBP 505-series



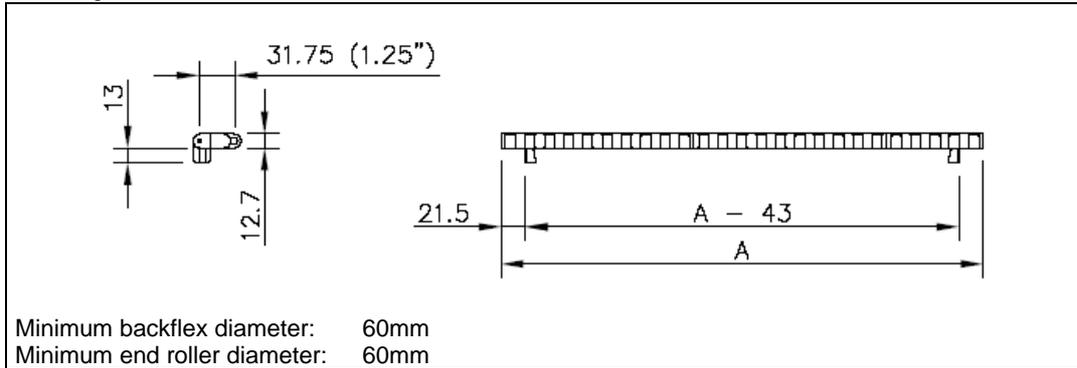
Rollers should rotate freely at all times, therefore we strongly recommend to equip the rollers with bearings.

\*) For high loads (>500 N) or wide belts (>510 mm) use bigger shaft diameter and/ or support the shaft in the centre

### Additional Notes

- Complete machined UHMPWE curves including curve profiles are available in any angle and for any belt width.
- Please note that the catenary sag can increase under load. Make sure the belt cannot catch against the sideframe in the return part taking increased catenary into account.

## Beltstyle RBP 1255-series



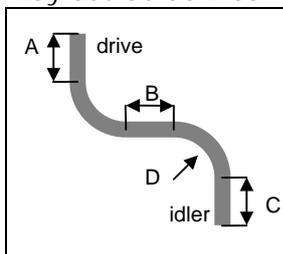
Beltstyle RBP 1255

Lay-out guidelines

Guiding Profile recommendations

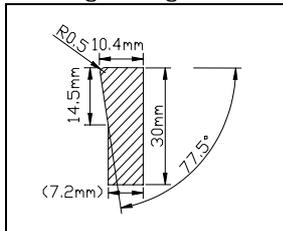
Straight section RBP 1255-series

## Lay-out Guidelines



A	Minimum straight section drive side 750mm with normal drive, 500mm width gravity tensioner.
B	Minimum straight inbetween 2 curves (S-bend) 1.5 * beltwidth
C	Minimum straight section idler side 500mm
D	Minimum inside radius 2 * beltwidth

## MCC guiding Profile RBP 1255-series

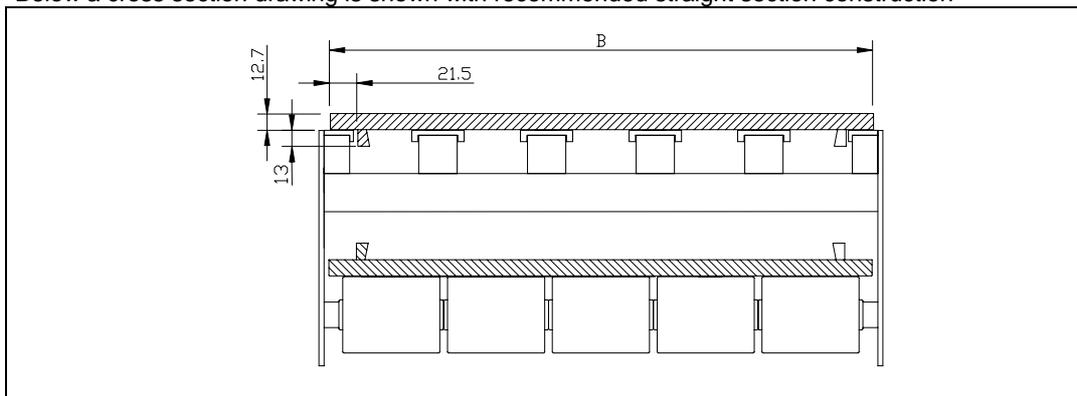


The MCC guiding profile should be used to guide the belt through the curve. Material of the guiding strip is MCC 3500 special polyamid, which offers low friction and high wear resistance.

Codenr. 800.00.10 in length is 1.8 mtr

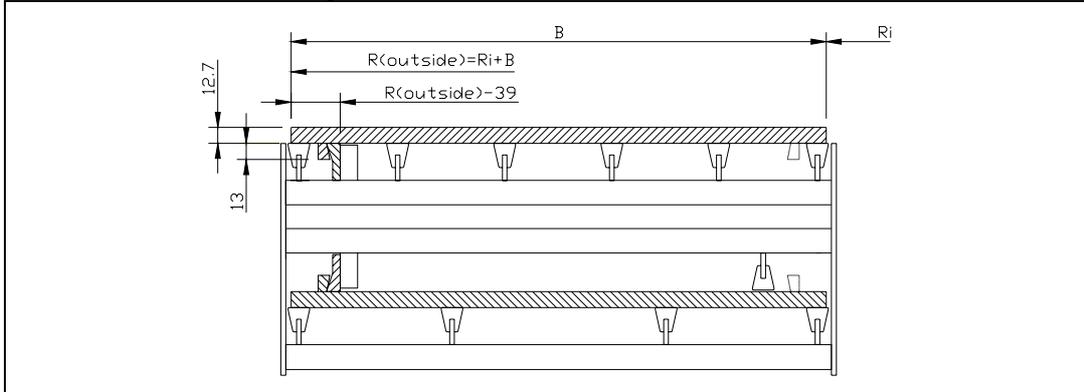
## Straight section RBP 1255-series

Below a cross section drawing is shown with recommended straight section construction



### Curve section RBP 1255-series

Below a cross section drawing is shown with recommended curve construction



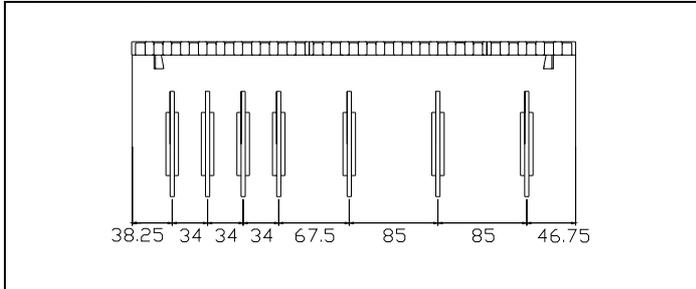
Curve section RBP 1255-series

Sprocket positions RBP 1255-series

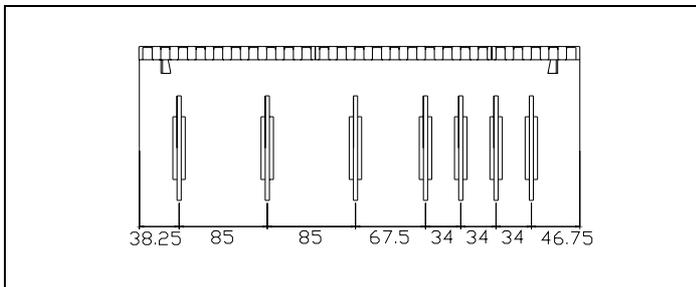
Roller dimension

Additional notes

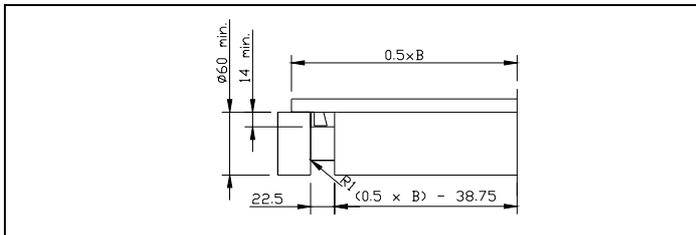
### Sprocket positions RBP 1255-series



Beltwidth	Nr. of sprockets	
	Drive	Idler
170 mm	3	2
255 mm	5	3
340 mm	6	4
425 mm	7	5
510 mm	8	6
595 mm	9	7
680 mm	10	8



### Roller dimension RBP 1255-series

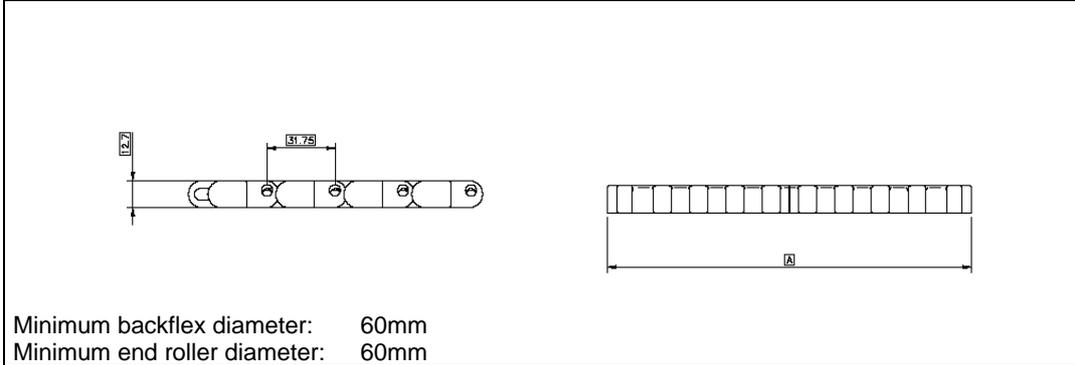


Rollers should rotate freely at all times, therefore we strongly recommend to equip the rollers with bearings.

### Additional Notes

- Complete machined UHMWPE curves including curve profiles are available in any angle and for any beltwidth

## Beltstyle RB 1255-series



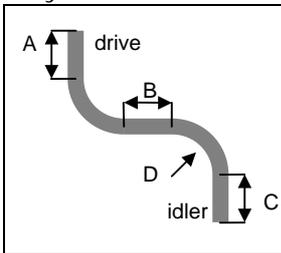
Beltstyle RB 1255

Lay-out guidelines

Guiding Profile recommendations

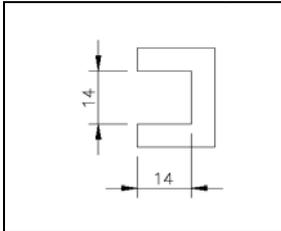
Straight section RB 1255-series

## Lay-out Guidelines



A	Minimum straight section drive side 750mm with normal drive, 500mm width gravity tensioner.
B	Minimum straight inbetween 2 curves (S-bend) 1.5*beltwidth
C	Minimum straight section idler side 500mm
D	Minimum inside radius 2 * beltwidth

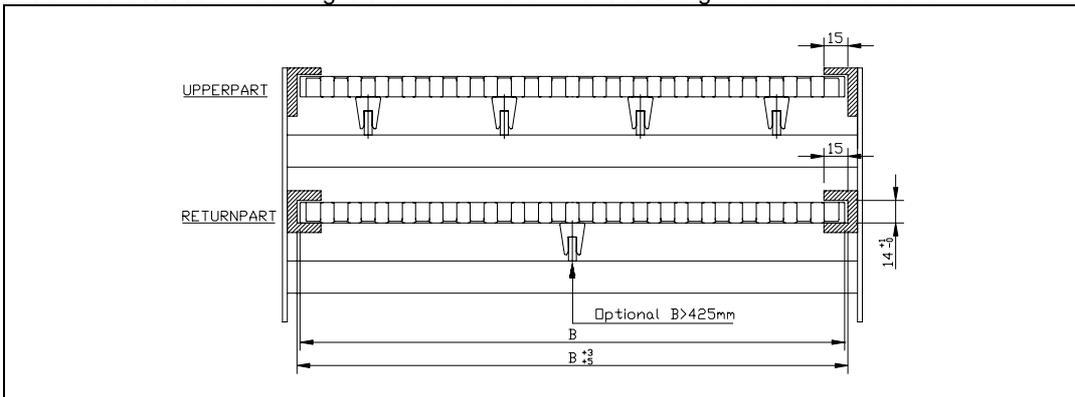
## Recommended guiding Profile dimensions for RB 1255-series



The guiding profile should be used to guide the belt through the curve. Recommended material of the guiding strip is MCC 3500 special polyamid, which offers low friction and high wear resistance. UHMWPE can also be used.

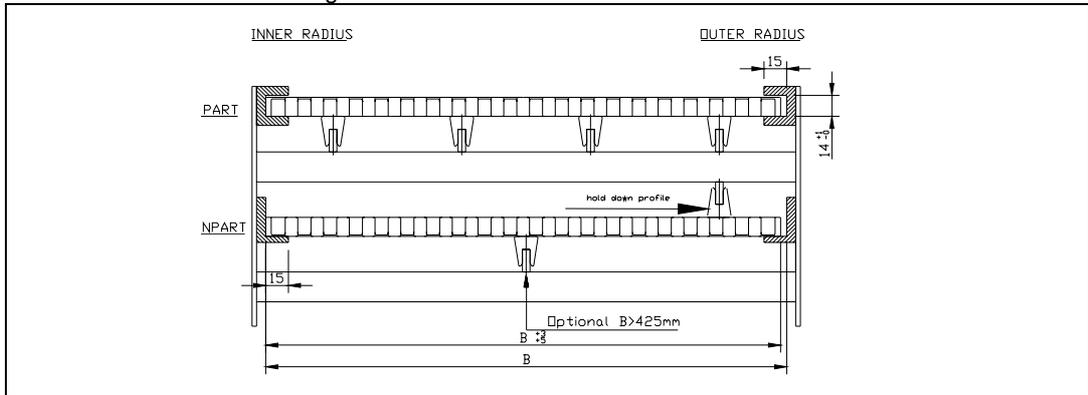
## Straight section RB 1255-series

Below a cross section drawing is shown with recommended straight section construction



### Curve section RB 1255-series

Below a cross section drawing is shown with recommended curve construction



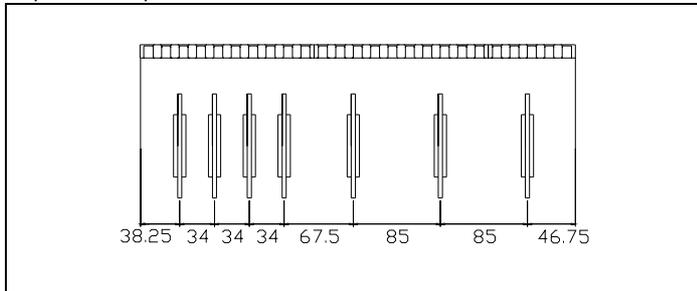
Curve section  
RB 1255-series

Sprocket  
positions RB  
1255-series

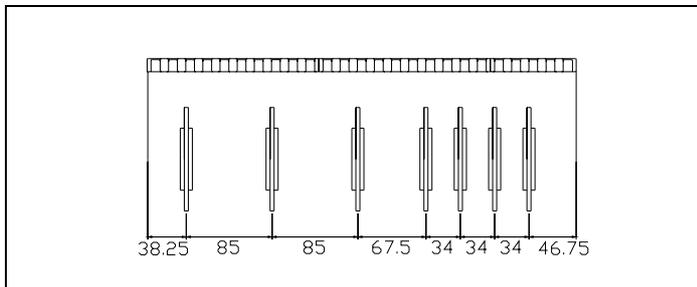
Roller dimension

Additional notes

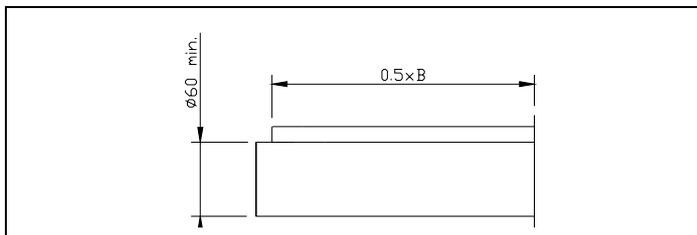
### Sprocket positions RB 1255-series



Beltwidth	Nr. of sprockets	
	Drive	Idler
170 mm	3	2
255 mm	5	3
340 mm	6	4
425 mm	7	5
510 mm	8	6
595 mm	9	7
680 mm	10	8

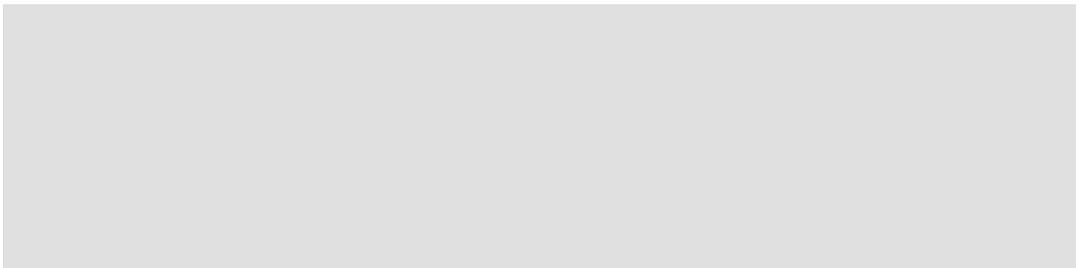


### Roller dimension RB 1255-series

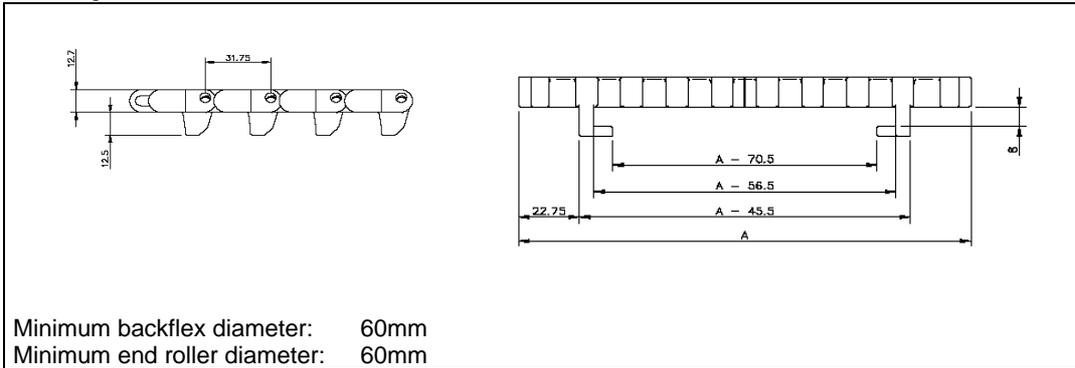


Rollers should rotate freely at all times, therefore we strongly recommend to equip the rollers with bearings.

### Additional Notes



## Beltstyle RBT 1255-series



Minimum backflex diameter: 60mm  
Minimum end roller diameter: 60mm

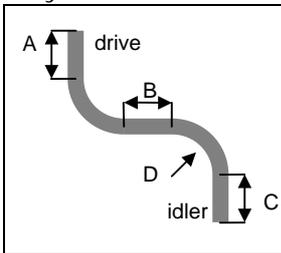
Beltstyle RBT  
1255

Lay-out guidelines

Guiding Profile  
recommendations

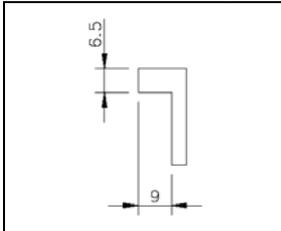
Straight section  
RBT 1255-series

## Lay-out Guidelines



A	Minimum straight section drive side 750mm with normal drive, 500mm width gravity tensioner.
B	Minimum straight inbetween 2 curves (S-bend) 1.5*beltwidth
C	Minimum straight section idler side 500mm
D	Minimum inside radius 2 * beltwidth

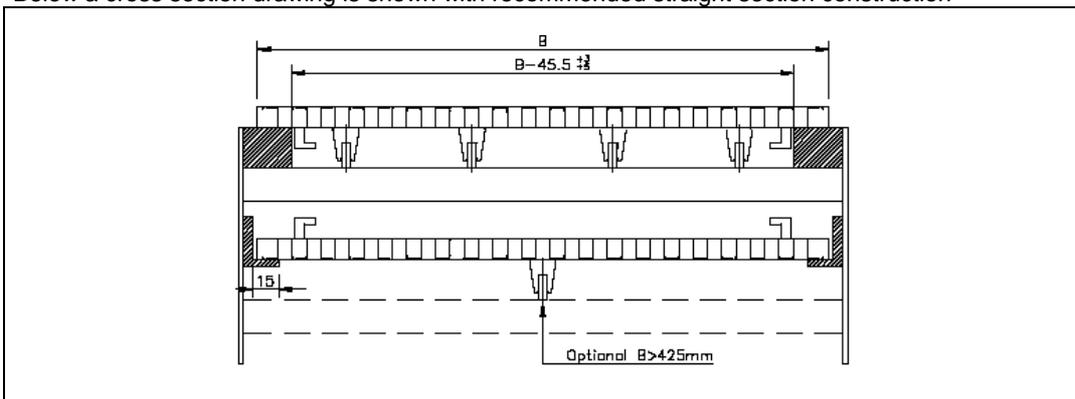
## Recommended guiding Profile dimensions for RBT 1255-series



The MCC guiding profile should be used to guide the belt through the curve. Material of the guiding strip is MCC 3500 special polyamid, which offers low friction and high wear resistance.

## Straight section RBT 1255-series

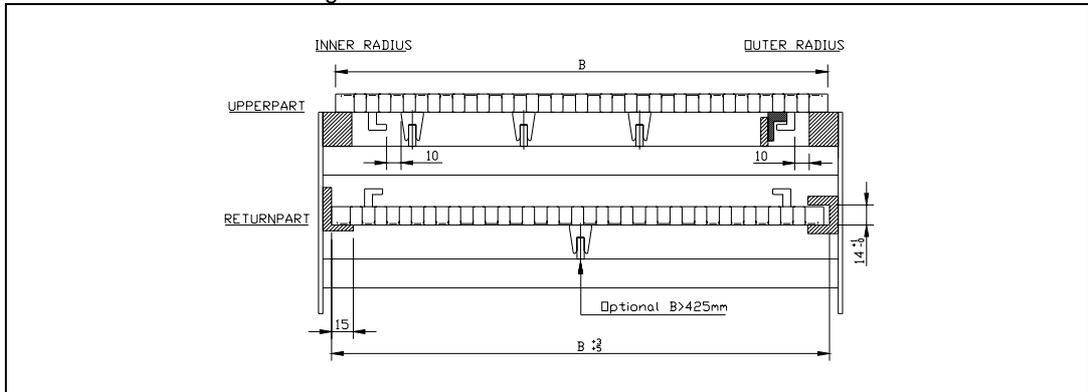
Below a cross section drawing is shown with recommended straight section construction



\*) For the returnpart, also rotating rollers can be used.

### Curve section RBT 1255-series

Below a cross section drawing is shown with recommended curve construction



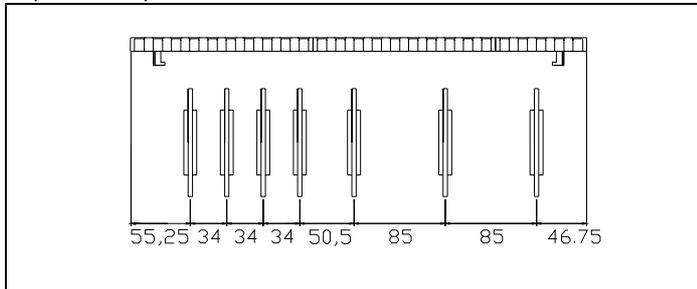
Curve section  
RBT 1255-series

Sprocket  
positions RBT  
1255-series

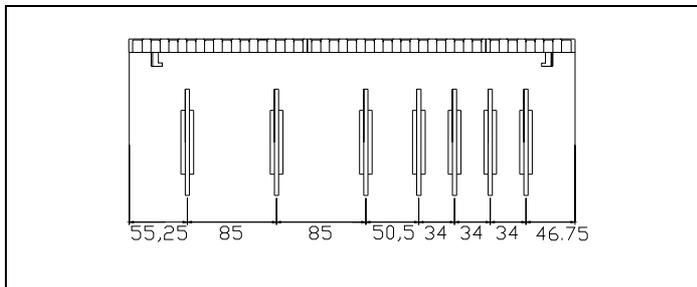
Roller dimension

Additional notes

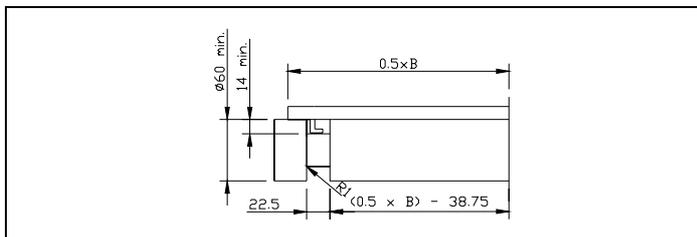
### Sprocket position RBT 1255-series



Beltwidth	Nr. of sprockets	
	Drive	Idler
170 mm	3	2
255 mm	5	3
340 mm	6	4
425 mm	7	5
510 mm	8	6
595 mm	9	7
680 mm	10	8



### Roller dimension RBT 1255-series

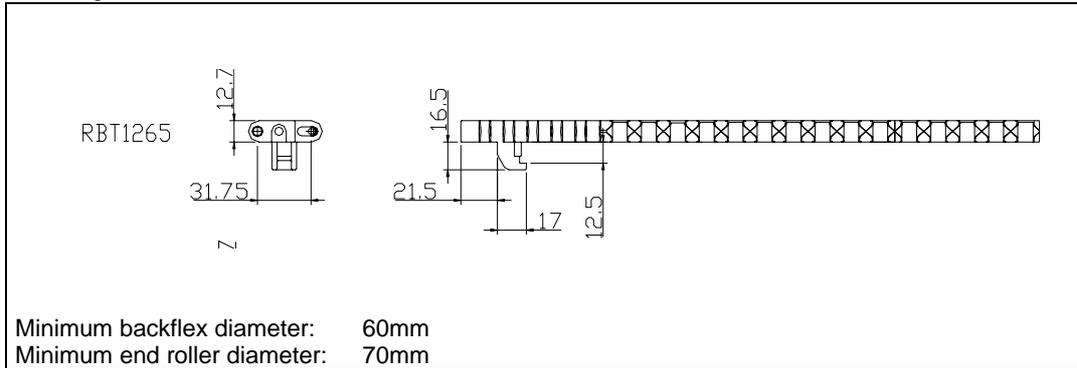


Rollers should rotate freely at all times, therefore we strongly recommend to equip the rollers with bearings.

### Additional Notes

- Complete machined UHMWPE curves including curve profiles are available in any angle and for any beltwidth

## Beltstyle 1265-series



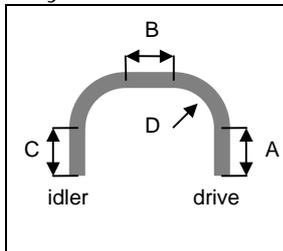
Beltstyle RBT  
1265

Lay-out guidelines

Guiding Profile  
recommendations

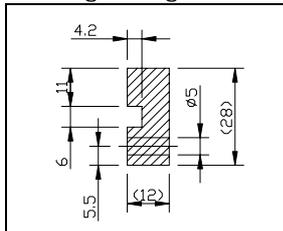
Straight section  
RBT 1265-series

## Lay-out Guidelines



A	Minimum straight section drive side 750mm with normal drive, 500mm width gravity tensioner.
B	Minimum straight inbetween 2 curves (No S-bend!) No minimum straight needed
C	Minimum straight section idler side 500mm
D	Minimum inside radius $2 * \text{beltwidth}$

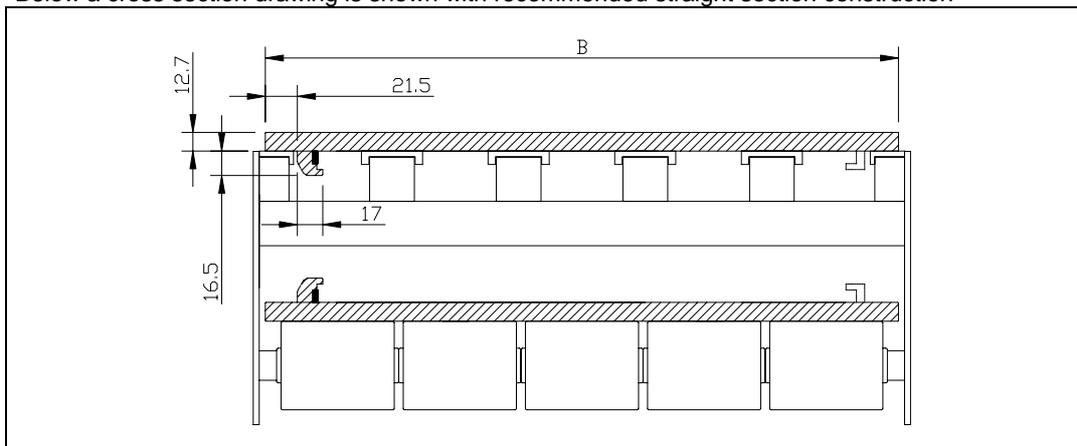
## MCC guiding Profile 1265-series



The MCC guiding profile should be used to guide the belt through the curve. Material of the guiding strip is MCC 3500 special polyamid, which offers low friction and high wear resistance.

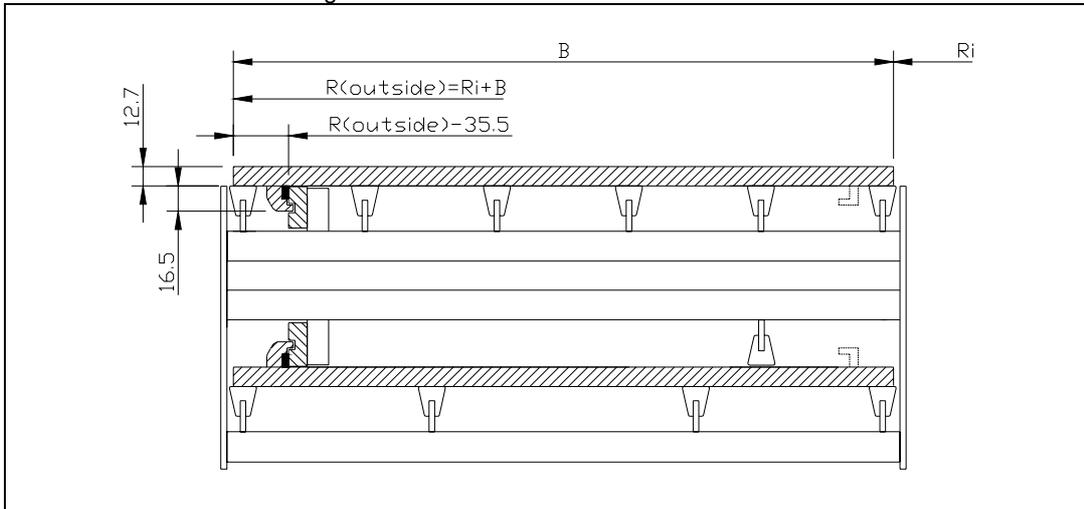
## Straight section 1265-series

Below a cross section drawing is shown with recommended straight section construction

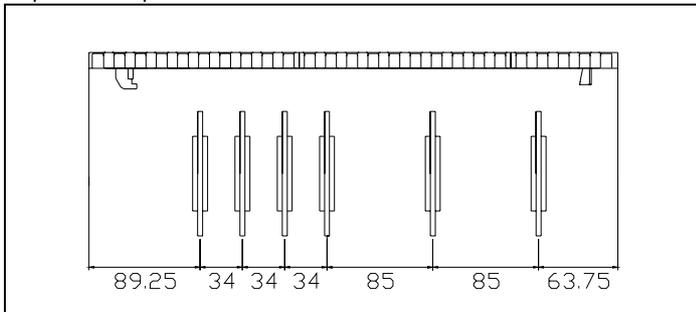


### Curve section 1265-series

Below a cross section drawing is shown with recommended curve construction

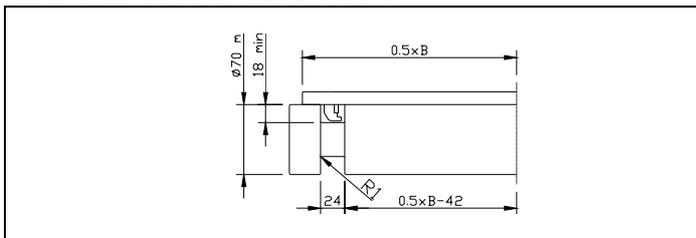


### Sprocket position RBT 1265-series



Beltwidth	Nr. of sprockets	
	Drive	Idler
170 mm	3	2
255 mm	4	3
340 mm	5	4
425 mm	6	5
510 mm	7	6
595 mm	8	7
680 mm	9	8

### Roller dimension 1265-series

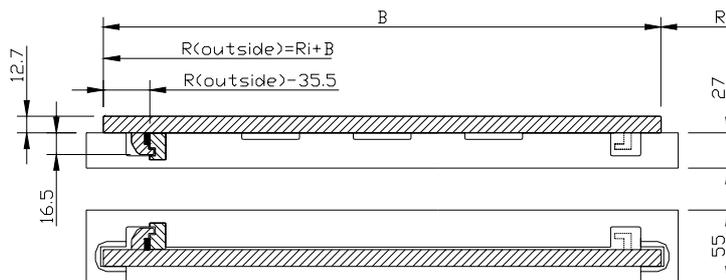


Rollers should rotate freely at all times, therefore we strongly recommend to equip the rollers with bearings.

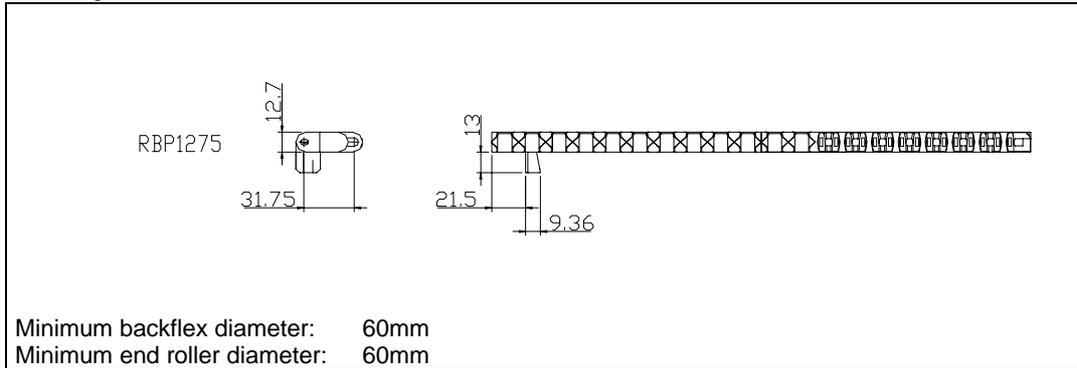
\*) For high loads (>500 N) or wide belts (>510 mm) use bigger shaft diameter and/ or support the shaft in the centre

### Additional Notes

- Complete machined UHMWPE craves including curve profiles are available in any angle and for any beltwidth



## Beltstyle RBP 1275-series



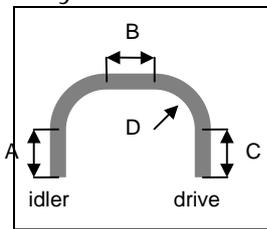
Beltstyle RBP 1275

Lay-out guidelines

Guiding Profile recommendations

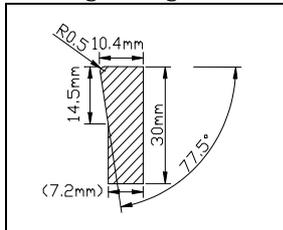
Straight section RBP 1275-series

## Lay-out Guidelines



A	Minimum straight section drive side 750mm with normal drive, 500mm width gravity tensioner.			
B	Minimum straight inbetween 2 curves (No S-bend!) No minimum straight needed			
C	Minimum straight section idler side 500mm			
D	Minimum inside radius (min R)			
	Beltwidth	Min. radius	Beltwidth	Min. radius
	255	300	680	860
	340	400	765	1020
	425	500	850	1200
	510	600	935	1350
	595	720	1020	1500

## MCC guiding Profile RBP 1275-series

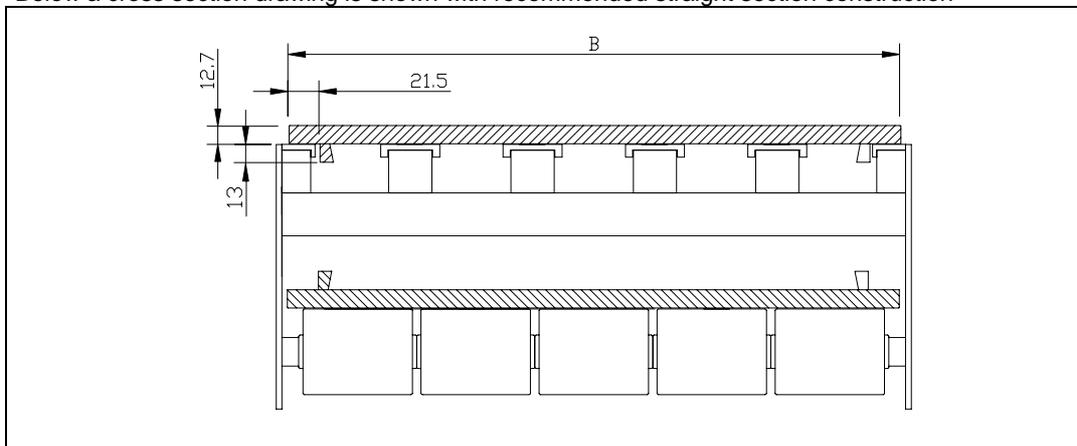


The MCC guiding profile should be used to guide the belt through the curve. Material of the guiding strip is MCC 3500 special polyamid, which offers low friction and high wear resistance.

Codenr. 800.00.10 in length is 1.8 mtr

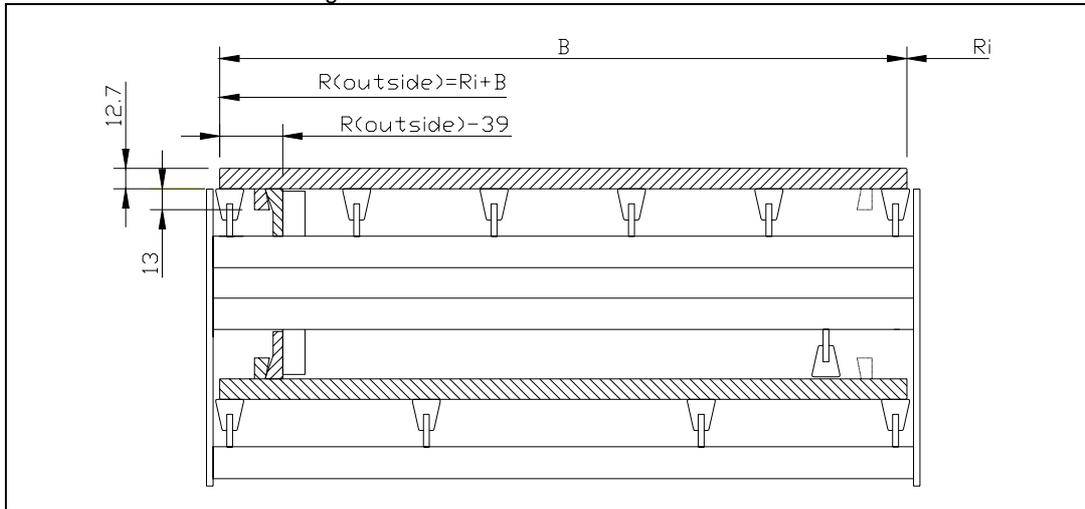
## Straight section RBP 1275-series

Below a cross section drawing is shown with recommended straight section construction

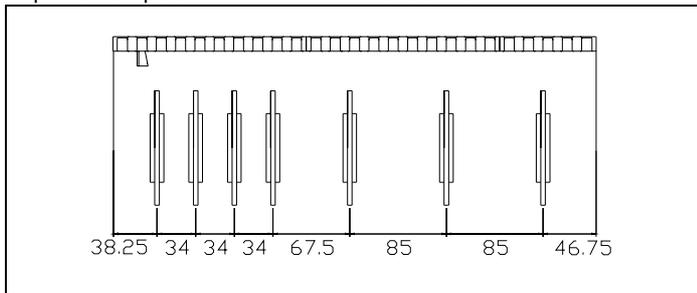


### Curve section RBP 1275-series

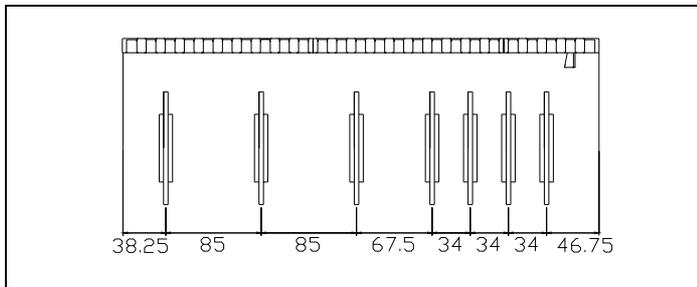
Below a cross section drawing is shown with recommended curve construction



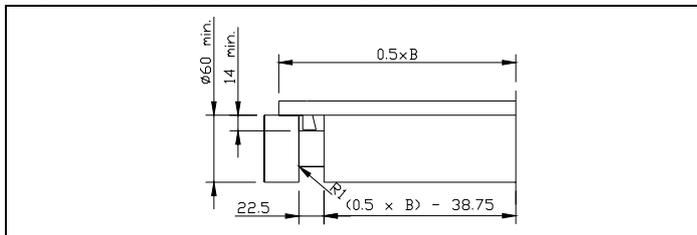
### Sprocket positions RBP 1275-series



Beltwidth	Nr. of sprockets	
	Drive	Idler
170 mm	3	2
255 mm	5	3
340 mm	6	4
425 mm	7	5
510 mm	8	6
595 mm	9	7
680 mm	10	8



### Roller dimension RBP 1275-series



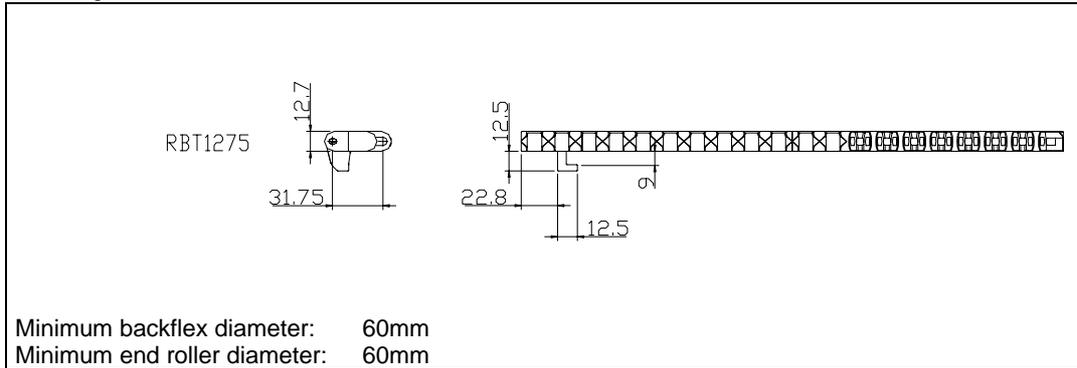
Rollers should rotate freely at all times, therefore we strongly recommend to equip the rollers with bearings.

\*) For high loads (>500 N) or wide belts (>510 mm) use bigger shaft diameter and/ or support the shaft in the centre

### Additional Notes

We recommend to use the MCC machined corner tracks, which allows a simple design and a trouble free operation.

## Beltstyle RBT 1275-series



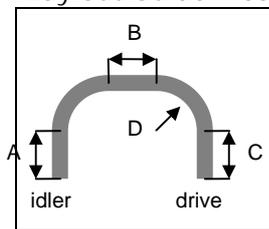
Beltstyle RBT 1275

Lay-out guidelines

Guiding Profile recommendations

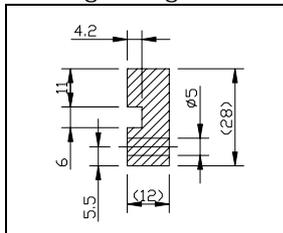
Straight section RBT 1275-series

## Lay-out Guidelines



A	Minimum straight section drive side 750mm with normal drive, 500mm width gravity tensioner.			
B	Minimum straight inbetween 2 curves (No S-bend!) No minimum straight needed			
C	Minimum straight section idler side 500mm			
D	Minimum inside radius (min R)			
	Beltwidth	Min. radius	Beltwidth	Min. radius
	255	300	680	860
	340	400	765	1020
	425	500	850	1200
	510	600	935	1350
	595	720	1020	1500

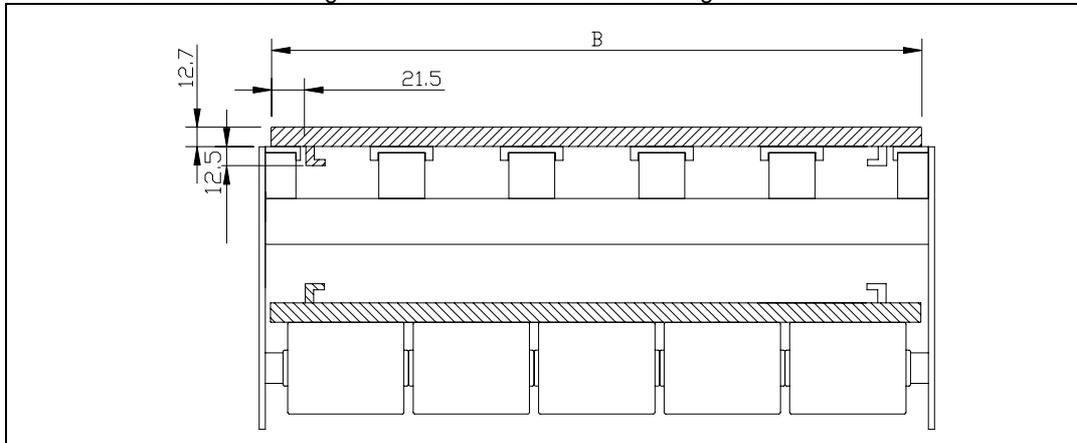
## MCC guiding Profile RBT 1275-series



The MCC guiding profile should be used to guide the belt through the curve. Material of the guiding strip is MCC 3500 special polyamid, which offers low friction and high wear resistance.

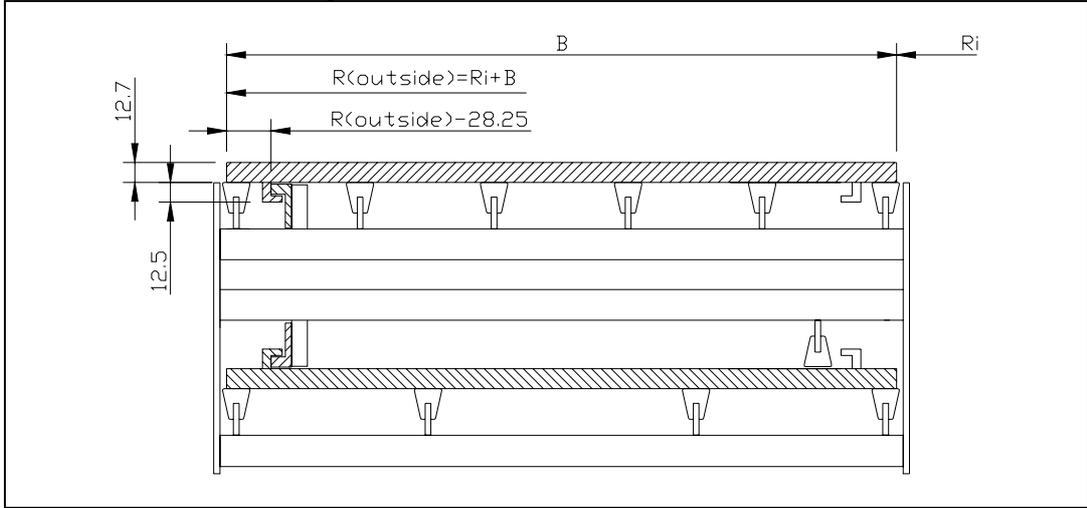
## Straight section RBT 1275-series

Below a cross section drawing is shown with recommended straight section construction

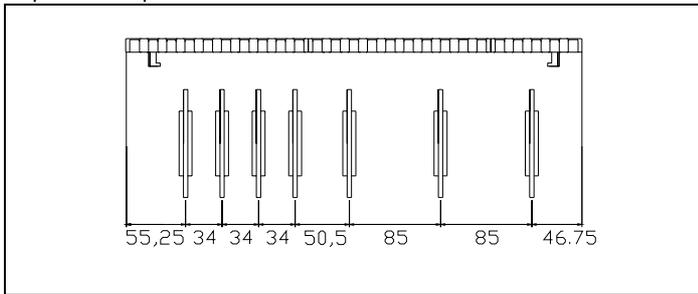


### Curve section RBT 1275-series

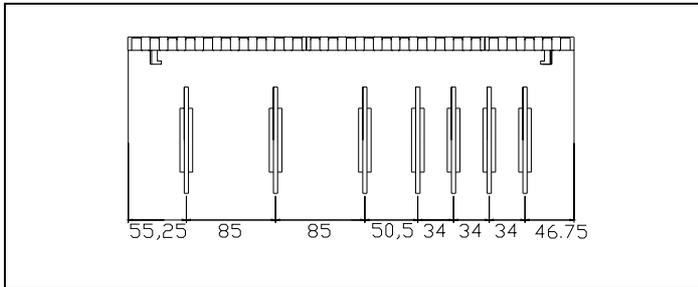
Below a cross section drawing is shown with recommended curve construction



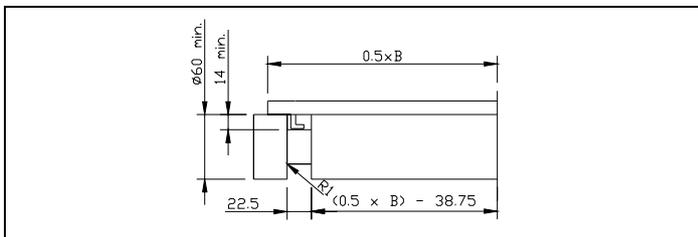
### Sprocket position RBT 1275-series



Beltwidth	Nr. of sprockets	
	Drive	Idler
170 mm	3	2
255 mm	5	3
340 mm	6	4
425 mm	7	5
510 mm	8	6
595 mm	9	7
680 mm	10	8



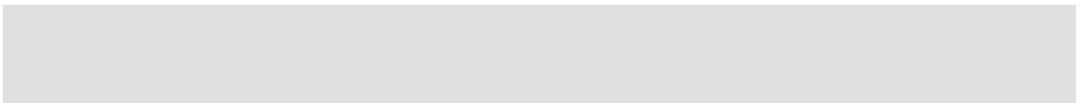
### Roller dimension 1275-series



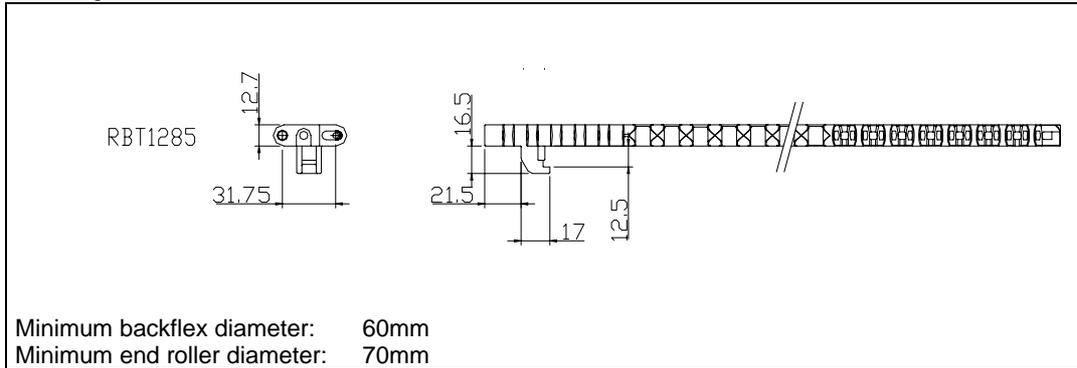
Rollers should rotate freely at all times, therefore we strongly recommend to equip the rollers with bearings.

\*) For high loads (>500 N) or wide belts (>510 mm) use bigger shaft diameter and/ or support the shaft in the centre

### Additional Notes



## Beltstyle RBT 1285-series



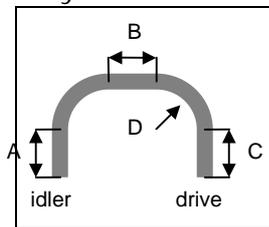
Beltstyle RBT 1285

Lay-out guidelines

Guiding Profile recommendations

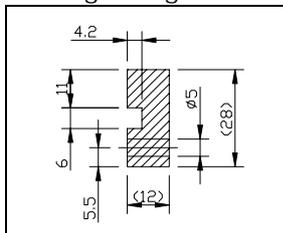
Straight section RBT 1285-series

## Lay-out Guidelines



A	Minimum straight section drive side 750mm with normal drive, 500mm width gravity tensioner.			
B	Minimum straight inbetween 2 curves (No S-bend!) No minimum straight needed			
C	Minimum straight section idler side 500mm			
D	Minimum inside radius (min R)			
	Beltwidth	Min. radius	Beltwidth	Min. radius
	425	500	765	1020
	510	600	850	1200
	595	720	935	1350
	680	860	1020	1500

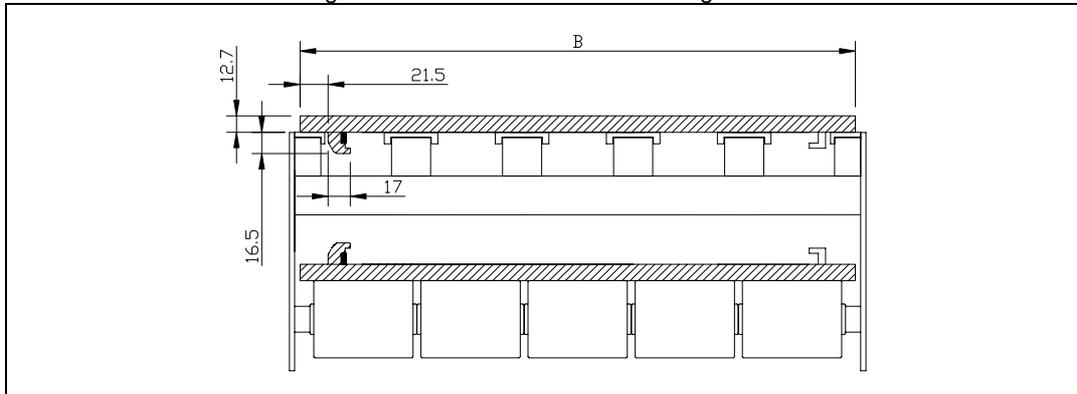
## MCC guiding Profile RBT 1285-series



The MCC guiding profile should be used to guide the belt through the curve. Material of the guiding strip is MCC 3500 special polyamid, which offers low friction and high wear resistance.

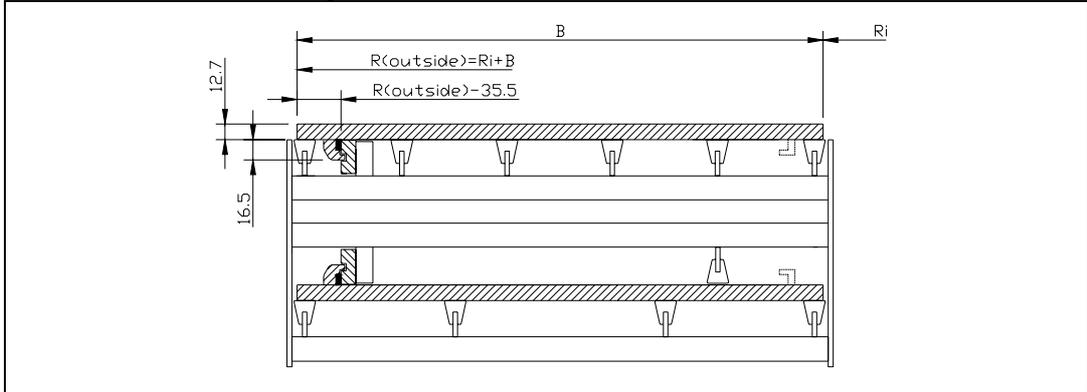
## Straight section RBT 1285-series

Below a cross section drawing is shown with recommended straight section construction

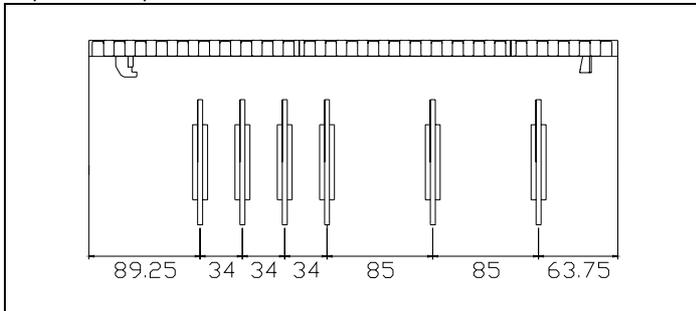


### Curve section RBT 1285-series

Below a cross section drawing is shown with recommended curve construction

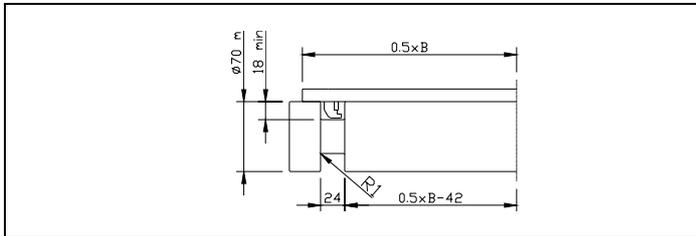


### Sprocket position RBT 1285-series



Beltwidth	Nr. of sprockets	
	Drive	Idler
170 mm	3	2
255 mm	4	3
340 mm	5	4
425 mm	6	5
510 mm	7	6
595 mm	8	7
680 mm	9	8

### Roller dimension RBT 1285-series



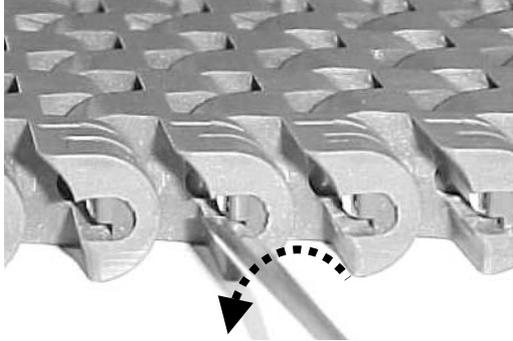
Rollers should rotate freely at all times, therefore we strongly recommend to equip the rollers with bearings.

### Additional Notes

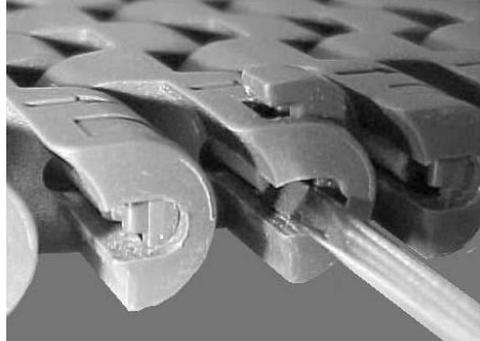
- Complete machined UHMWPE curves including curve profiles are available in any angle and for any beltwidth

## Installation instructions

### 505-series



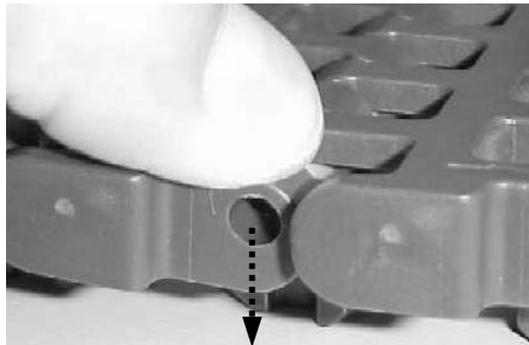
Turn screwdriver counter clockwise to remove clip.



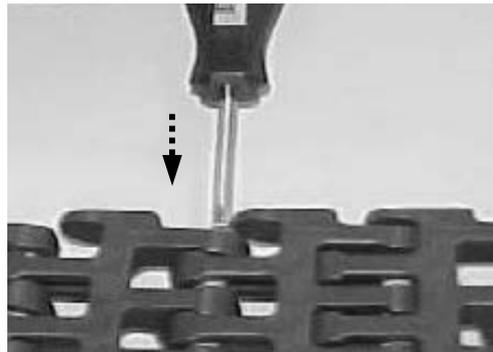
Place screwdriver between clip and belt end.

Please note that 505-series belts have a specific running direction, indicated by the arrow at the bottom.

### 1255-series belt

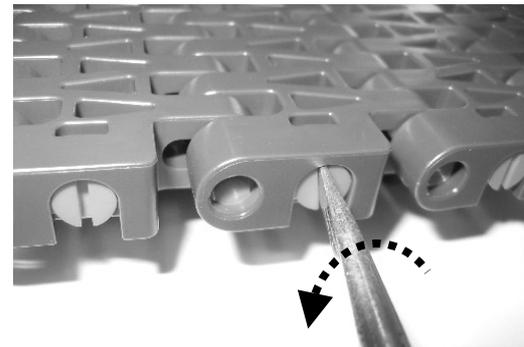


Lift belt out of tracks, and position belt on the lugs. Now, push one belt module downwards.

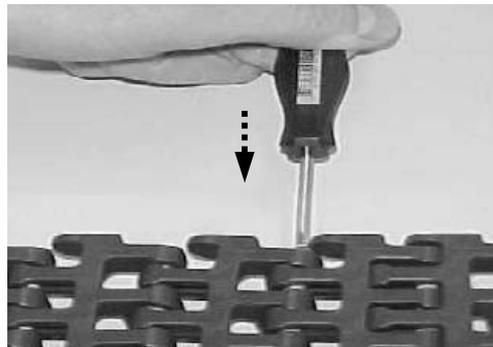


Place screwdriver in opposite end hole and push pin out.

### 1265-series belt



Turn screwdriver counter clockwise to open clip.



Place screwdriver in opposite end hole and push pin out.

Installation instructions

505-series

1255-series

1265-series



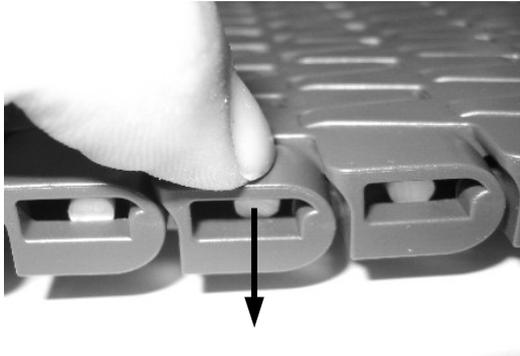
# Sideflexing Belts

Installation  
instructions

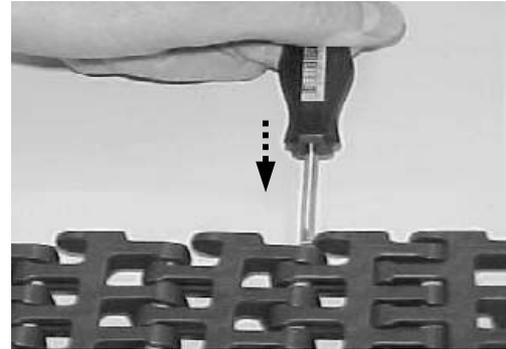
1275-series

1285-series

## 1275-series belt

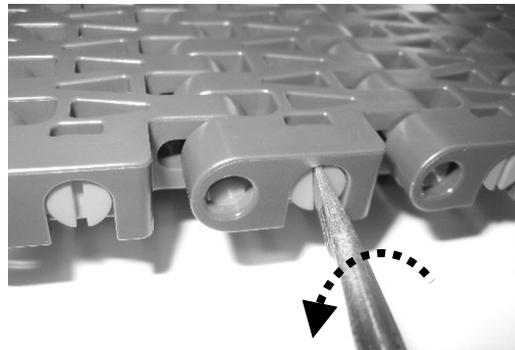


Lift belt out of tracks. Now, push one inner belt module downwards.

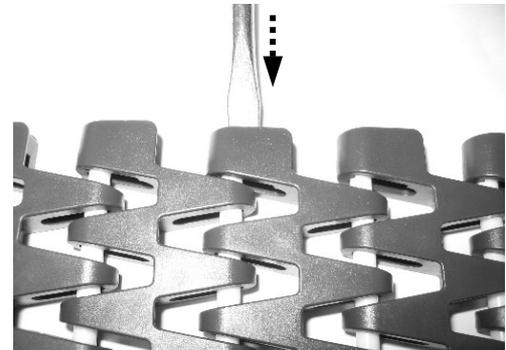


Place screwdriver in opposite end hole and push pin out.

## 1285-series belt



Turn screwdriver counter clockwise to open clip.



Place screwdriver in opposite end hole and push pin out.