





Series	2351	2451	2551	2651
Name	Standard	Heavy Duty HD	Small Radius SM	HD-SM
R/W ratio, minimum***	1.6	1.6	1.0	1.0
S-curves 	X			
L-curves 	X	X	X	X
Work load in curve [N]	2500	3500	2500	3500
Load example 6x1.5 litre shrink packs, dry, 30m/min, ~30000 bph, no accu., 425 width	2.8 packs/m drive 1m straight 180°/R765 0.5m straight	3.3 packs/m drive 1m straight 180°/R765 0.5m straight	2.8 packs/m drive 1m straight 180°/R425 0.5m straight	3.3 packs/m drive 1m straight 180°/R425 0.5m straight
LFG, XPG, NGG	X	X	X	X
TAB	1 pc moulded to module	clipped, std made of NGG	1 pc moulded to module	clipped, std made of NGG
Thickness [mm]	12,7	12,7	12,7	12,7
Pitch	1 ¼"	1 ¼"	1 ¼"	1 ¼"
Pin lock	both sides	both sides	one side	one side
Standard widths starting from	255 85 steps	340 85 steps	340 85 steps	425 85 steps
Sprockets** min/max number				
255	2/4			
340	3/5	3/5	2/3	(2/3)*
425	4/7	4/7	3/5	3/5

* 340 mm width is possible on request

** refer to sprocket position sketches on next pages

*** refer to graph on next pages

Special applications:

Contact Technical Support for special applications.

Calculation program:

Existing calculation routines are presently being double-checked.

In the next release of SysCalc these belts will be included.

In the meantime please contact Technical Support.

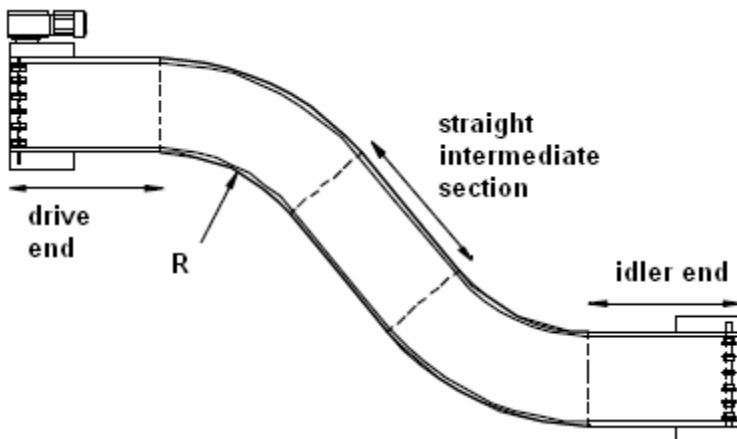
Curve retention systems:

Available: TAB.

Possible on request, for 2351 and 2551: without TAB

Note: Although the standard and standard-small radius versions can be supplied without TAB's, we recommend guiding the belt in the curve on the TAB's.

Layout:



Straight section towards drive:

1 x belt width with 500mm minimum.
At high loads preferably 1 mtr.

Straight section towards idler end:

>500mm

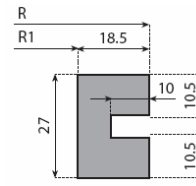
Straight intermediate section:

1.5 x belt width with 500 mm
minimum.

Curve tracks:

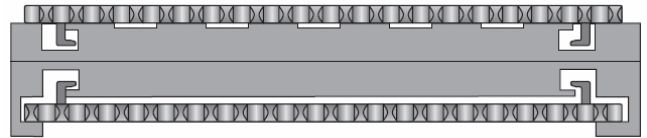
There are two options:

- 1) Guiding profile, as per picture in leaflet.
This is screwed to a mating metal construction.
This can be offered as standard component.



example:

- 2) Solid machined curve.
This can only be offered on request and according to customer's drawing.
Principle is similar to existing TAB curves for TAB chains.



example:

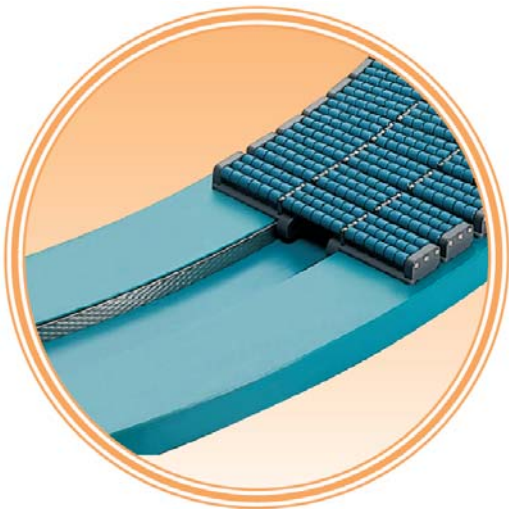
Material:

Recommended is Nolu-SR for it's highest wear resistance and at the same time excellent sliding properties.

Further options are:

Extra Curve:

For well known excellent performance in dry applications and dirty environment.

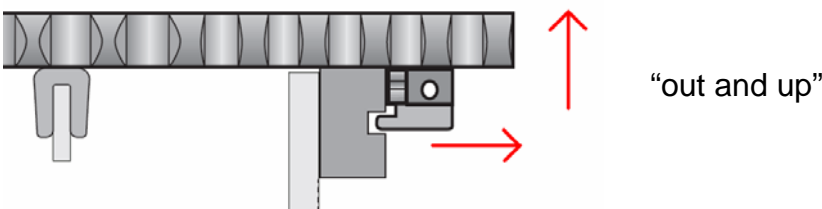


Standard UHMW-PE:

For standard applications.

Taking the belt out of the curve:

The conveyor construction must offer enough space to lift the TABs out of the track.
A clearance of >6mm is recommended to move the belt radial towards the outside direction.

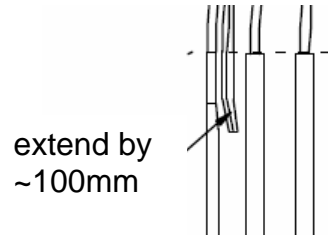


Curve infeed/outfeed:

It is strongly recommended to extend the curve tracks into the straight sections in order to run the belt smoothly into and out of the curve. Start guiding the TAB's about 100 mm before the curve. Make sure that in both horizontal and vertical direction the entry of the curve is chamfered.

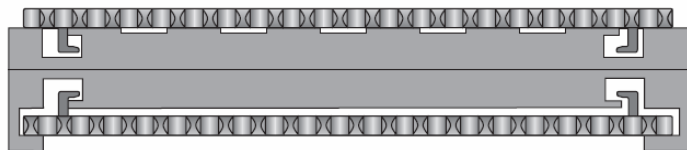
Infeed chamfer is recommended for smooth run

Cut like this



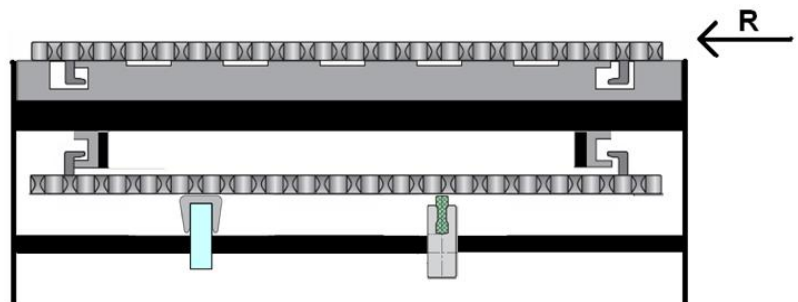
Curve return part:

2351 with two TABs:
For wider belts an intermediate support might be necessary.



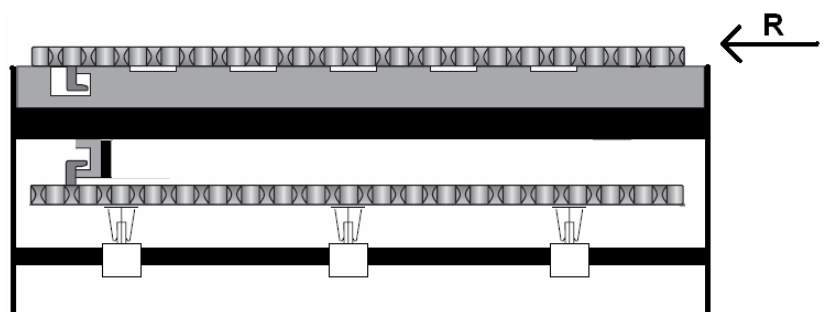
or

bar cap / serpentine system,
(different profiles possible)

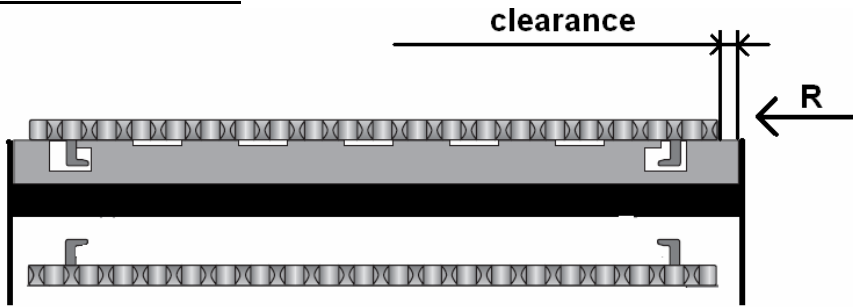


2351, 2451, 2551, 2651 with one TAB:

Supporting serpentine
are necessary



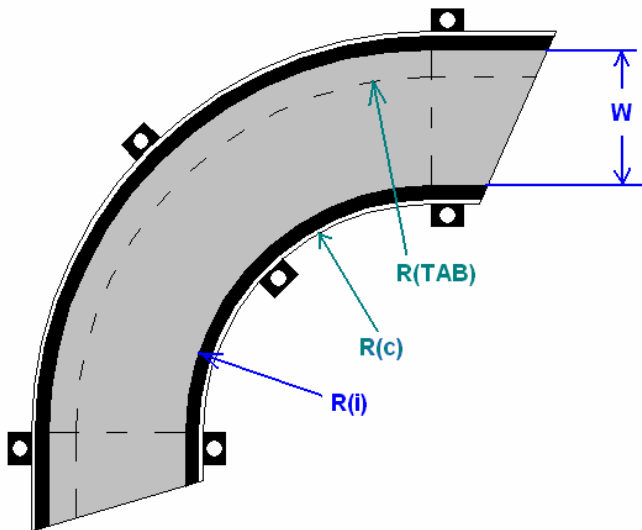
Inside clearance:



In any case, make sure that the belt does not touch with its inner edge the conveyor construction. A clearance of 10mm is recommended.

Since the belt is guided at the outside, any width expansion will walk towards the inside of the curve. For very wide belts it is recommended to calculate expected expansion first and then check, if the 10mm clearance is enough.

R(i)/W – relation between inside radius and width of the belt:

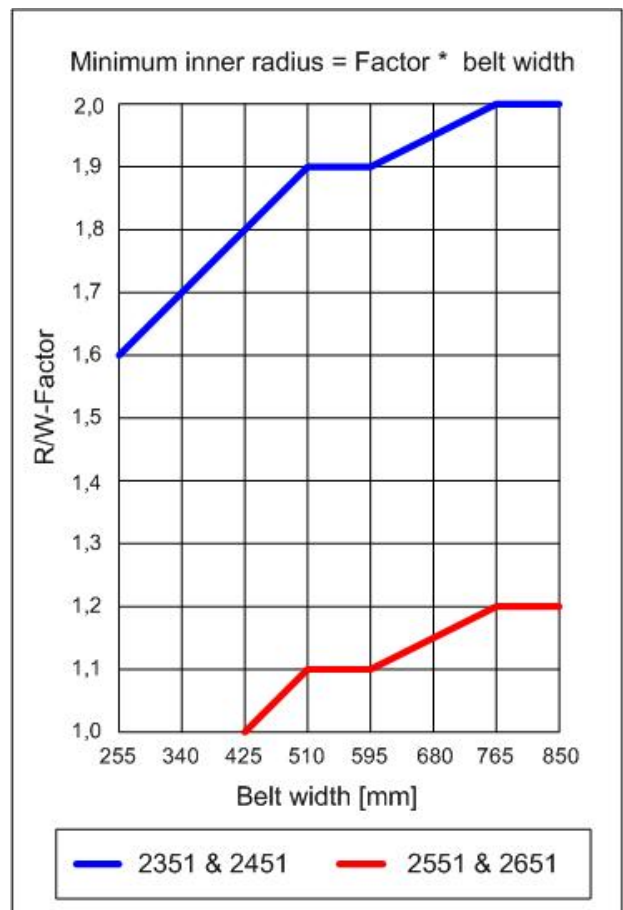


W = width of the belt
 R(i) = radius of the belt at inside edge
 [R(TAB) = position of TABs
 ref. to specification on next page]

$$R(i) = F * W$$

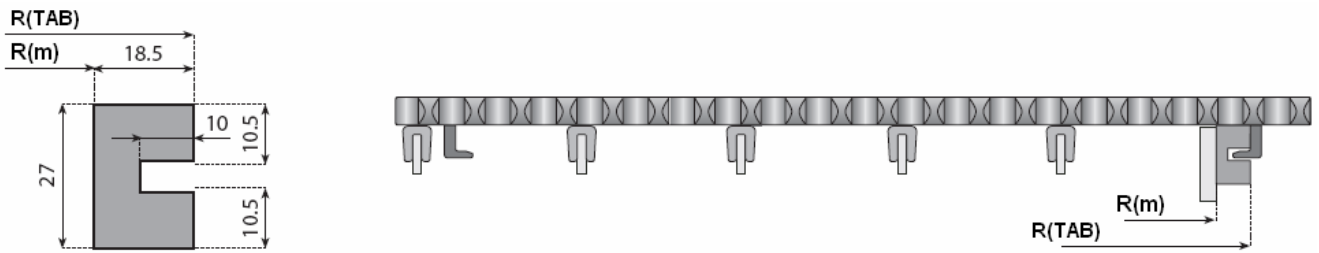
F = factor, see graph below

2351 & 2451 = standard radius
 2551 & 2651 = small radius



Guide profiles:

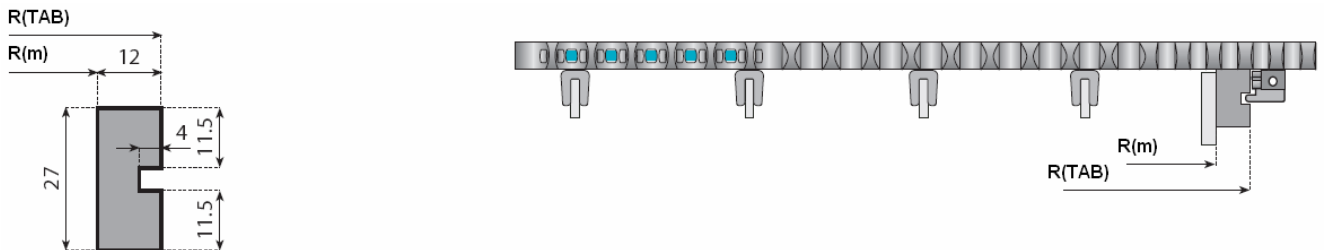
2351 and 2551



W mm	MIN RADIUS FOR 2351		MIN RADIUS FOR 2551	
	R(TAB)	R(m)	R(TAB)	R(m)
255	634.5	616	-	-
340	889.5	871	651.5	633
425	1161.5	1143	821.5	803
510	1450.5	1432	1042.5	1024
595	1697.5	1679	1221.5	1203
680	1977.5	1959	1433.5	1415
765	2266.5	2248	1654.5	1636
850	2521.5	2503	1841.5	1823

R(m) =
outside edge of
the mating part
to which the
guide profile is
mounted

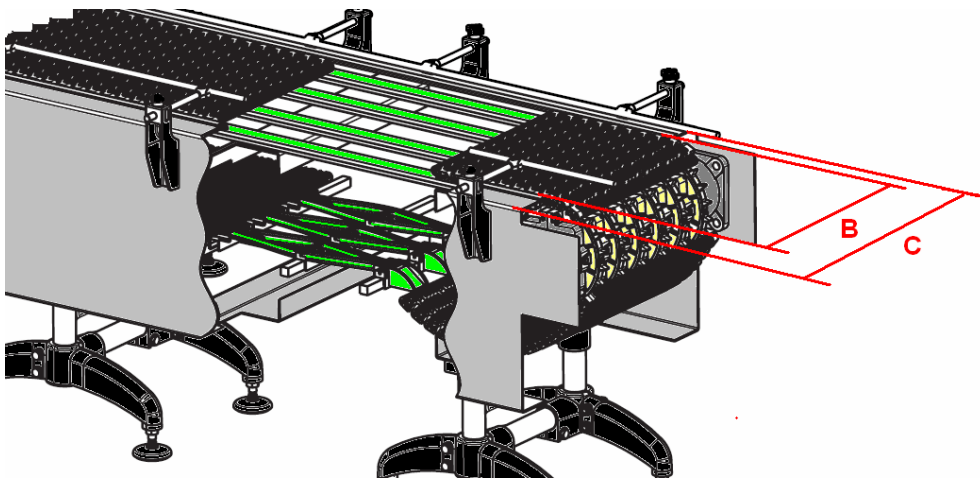
2451 and 2651



W mm	MIN RADIUS FOR 2451		MIN RADIUS FOR 2651	
	R(TAB)	R(m)	R(TAB)	R(m)
340	883	871	-	-
425	1155	1143	815	803
510	1444	1432	1036	1024
595	1691	1679	1215	1203
680	1971	1959	1427	1415
765	2260	2248	1648	1636
850	2515	2503	1835	1823

Straight tracks:

The design is similar to commonly applied standard wear strip constructions.



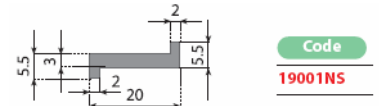
in this example:
head drive
serpentine return

B = belt width, example 425

C = conveyor width, example 425+10(inside)+10(outside) = 445 net (side frame thickness not considered)

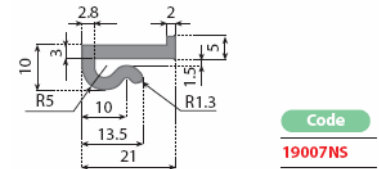
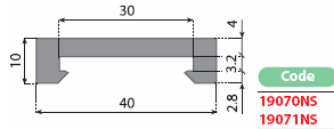
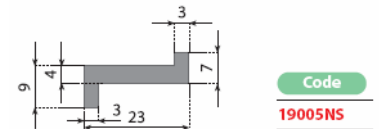
Outside wear strips:

Any existing wear strip with side guide nose on top can be used.



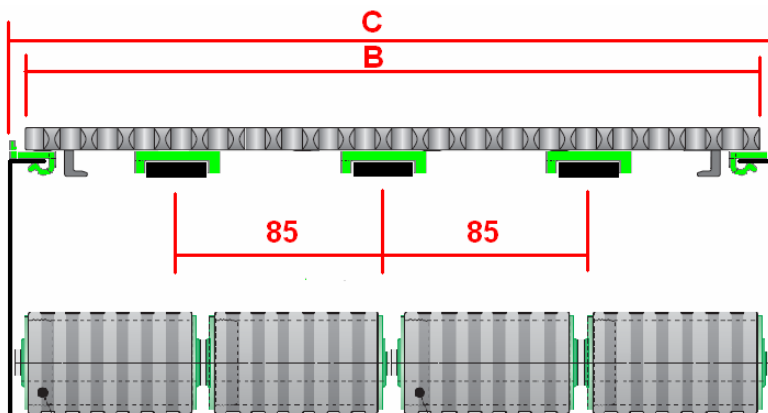
Middle wear strips:

Ditto.



For good sliding properties Nulo-S is recommended. This reduces the chain pull and extends the service life.

A possible cross section design of carry and return part of the straight section is:



For location of TABs and dimensions refer to catalogue.

Return rollers with rubber coating. For dry applications this is recommended. Any other belt return system is possible, as well.

Since the belts are made with a modular width pitch system of 85mm it is recommended to use this system for the wear strip arrangement, as well.

Sprockets:

Since these belts are not symmetrical to the middle axis, please note that the sprocket position changes when running the belt in reverse direction. The offset is given in the sketches below. For belt series 2451, 2551 and 2651 the offset must also be considered when the belt curve direction is changed (clock-wise / counter-clock-wise).

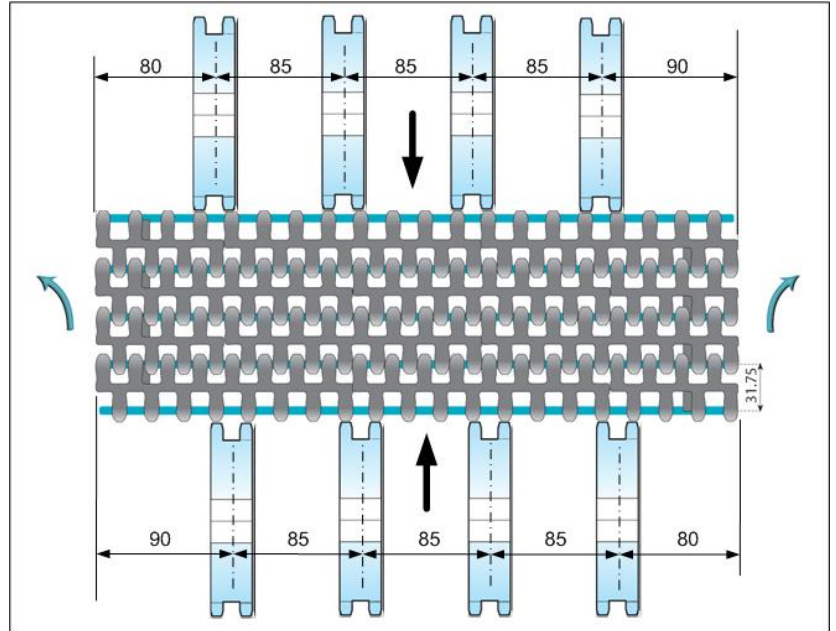
2351 Standard

Example 425 wide:

Centre distance 85

First sprocket located at 80/90 from the edge.

Sprockets can be located over the whole width of the belt between the TABs.



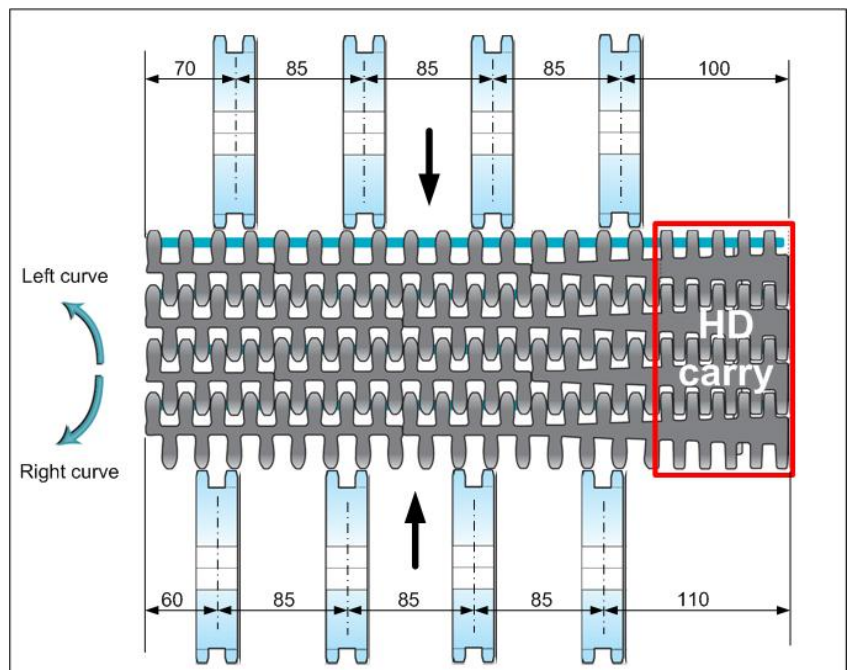
2451 Standard Heavy Duty

Example 425 wide:

Centre distance 85

First sprocket located at 100/110 from the TAB-end edge.

Sprockets can be located over the whole width of the belt except of the 85 wide carry modules track.

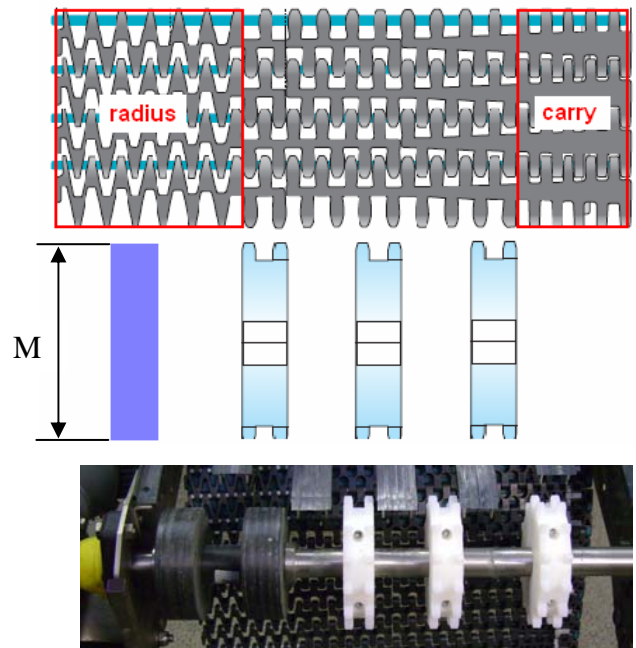


Supporting wheels:

In order to avoid the belt from bending on the inside where there's the small radius module and thus no sprocket, we recommend to install a supporting wheel.

- Z = no of teeth
- C = pitch diameter
- H = outside diameter
- M = bottom circle diameter

Z	C mm	H mm	M mm	S mm
13	127.7	137.7	113.7	57.5
15	147.0	157.0	133.3	67
16	162.7	172.7	148.1	75.0

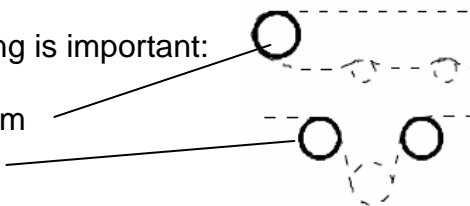


Drives:

Head drives as well as middle drives are possible. The same comments as per straight running belts are applicable. Please refer to our existing chapters in the engineering manual.

For sprocket and idler dimensions the following is important:

- Smallest positive wrap around diameter: 60mm
- Smallest diameter of deflection roller: 80mm



Fixed – floating sprockets:

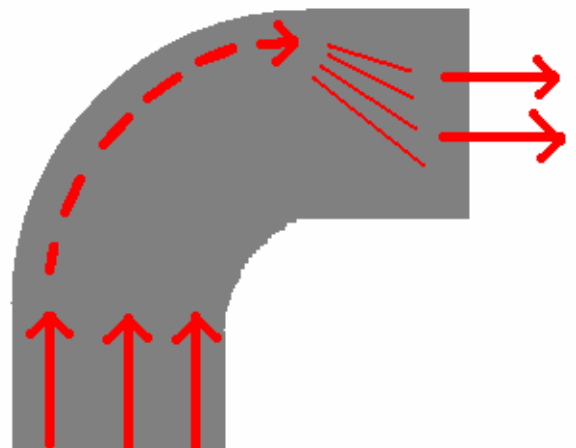
It is recommended to fix the sprocket which is located closest to the outside track of the curving belt.

Forces in a modular side-flexing belt:

In the straight section leading into the curve the tension in the belt is distributed more or less equally over the whole width. The modules and pins are in full contact.

As soon as the belt enters the curve the inside modules start fanning in. The whole load and tension is suddenly carried only by the outer modules “carry modules”.

The inside modules “radius modules” of small radius belts no longer contact the pins. Carry modules are re-inforced in order to carry the full load in the curve. So, they are not designed for sprocket interaction in order to get the maximum strength.



Radius modules are also not designed for sprocket interaction. They have the task to reduce the pitch towards the inside of the belt in the curve as much as possible.

So, each module has its dedicated function and is designed accordingly. Sprocket interaction takes place only in the middle range of the belt where standard modules are. These modules build up the width of the belt in 85mm steps.

When the belt is running from the curve into the straight section leading towards the drive the tension has to be moved from the outer carry modules back into the middle range of the belt where the standard modules are located and the drive sprockets interact.

In order to move the tension at the infeed as well as at the exit of the curve it is necessary to install straight sections offering enough length to move forces smoothly. Ref. to figures mentioned before.

It becomes obvious that the length of these straight sections depends on the width of the belt, as well as on other factors.

Due to the fact that the whole load is carried by the carry modules through the curve the load limit of the whole belt is limited by the strength of these modules. This is a major difference compared with straight running belts. This physical fact also leads to a limitation of reasonable belt widths.

Contact our Technical Support or our Engineering Department at any time for any further technical inquiries

