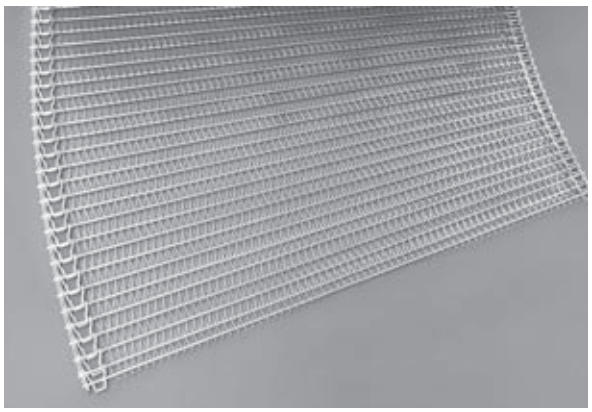
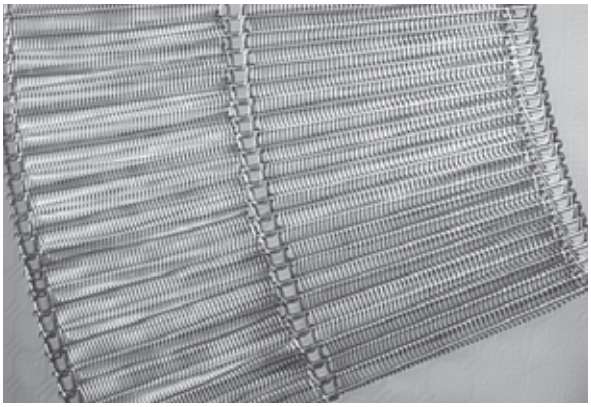
RA
Radius Belt



*Example of a standard **RA** radius belt with a link at both sides, and if needed equipped with reinforcing bars*



*Example of a **RA** radius belt with a extra link in the middle to fit a smaller turning radius*

The ***RA*** radius belt is a highly usable conveyor belt. The belt has been designed for a great many applications, constructions and process conditions. The belt is eminently suitable for cooling or freezing products such as snacks, bread, pastry, vegetables, potatoes, fish and meat, as well as for blanching vegetables or proofing dough. The belt is used in radius systems, spiral towers as well as in curved and straight conveyors.

The ***RA*** radius belt is constructed of cross rods with chain links on both sides and, in most cases, is provided with balanced weaved spiral mesh for product support. The thickness of the spiral wire and the spiral pitch can be chosen at will and allow the belt to give optimal product support. The belt can also be provided with reinforcing links, extra plate links for product conduction, or with flights

The belt can be made in every width between 350 and 1,500 millimetres. Belts with widths smaller than 350 mm, or greater than 1,500 millimetres and belts with unilateral spiral wire are made on demand.

The ***RA*** radius belt has many different versions to optimise your choice and is available in:

-
- 3 different pitches: 19,05 mm (3/4”), 27,4 mm (1”) and 38,1 mm (1.5”)
- with or without spirals
- 4 different strengths:
  - -normal (2 mm) chain link — type: **RA - NB**
  - -heavy duty (3 mm) chain link — type: **RA - VB**!
  - -heavy duty chain link with double reinforcing plate links — type: **RA - VP**
  - -**extra heavy duty (5mm)** chain link (pitch 38,1 mm) — type: **RA - XHD**

- different ratios between the belt width and the rotating radius:
  rotating radius = 1,7 x belt width or rotating radius = 2,2 x belt width

The ***Full Decreased RA*** radius belt is a belt with links at the outside and a link in the middle and is available in.

-
- 1 different pitches: 19,05 mm (3/4”)
- with or without spirals
- 1 strength: -combined (2 and 3 mm) chain links — type: **RA - FD**
- ratio between the belt width and the rotating radius:
  inner radius = 1,1 x belt

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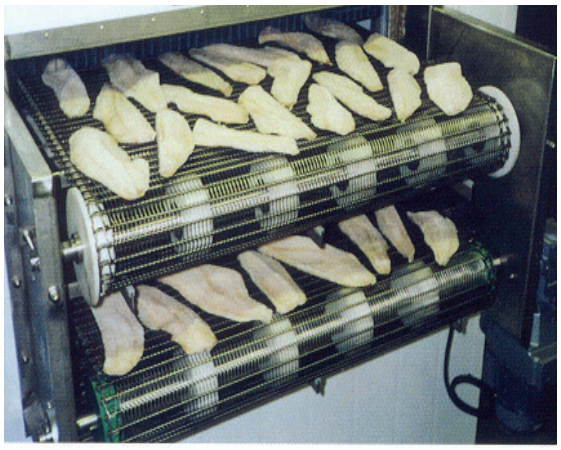


The exact dimensions of the chain links and cross rods of the ***RA*** radius belt combined with the computer-controlled welding robot and butting robot result in a belt with great dimensional stability and with stable straight and curved radius characteristics under nearly all circumstances.
Two cold butted heads are fitted at either end of each cross rod. The absence of too much heat during the fabrication ensures that the cross rod stays straight and that the structure of the outer parts of the cross rods does not change. In this way, the cold butted heads always have the same dimensions and are extremely smooth. The welds which connect the chain links to the cross rods are welded with a minimum of heat and are very tough, due to the chosen welding process. All this results in a durable belt of excellent quality.

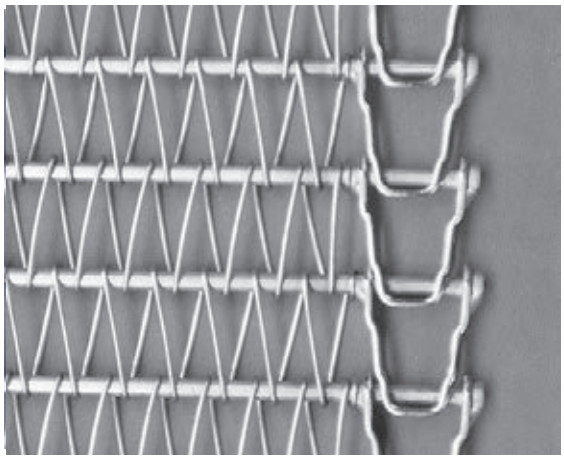
The ***RA*** radius belt can be used at transport speeds of less than 1 metre per minute to about 20 metres per minute, which are considered normal speeds. In case of radius belts, the speed is measured at the outside of the belt. Speeds above 20 metres per minute are considered to be high speeds and can affect the life of the belt. The construction of the conveyor system and the process conditions are also important considerations.

RA radius belts are used in production processes with temperatures of -196°C to +275°C.

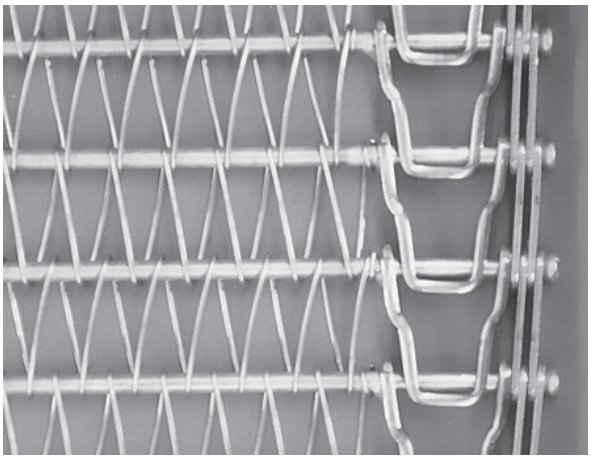
The ***RA*** radius belt needs minimal maintenance and can have a working life of many years, if used well. The belt is standard made of stainless steel AISI 304 but can also be made of AISI 316.

RA radius belts are used in, for example:

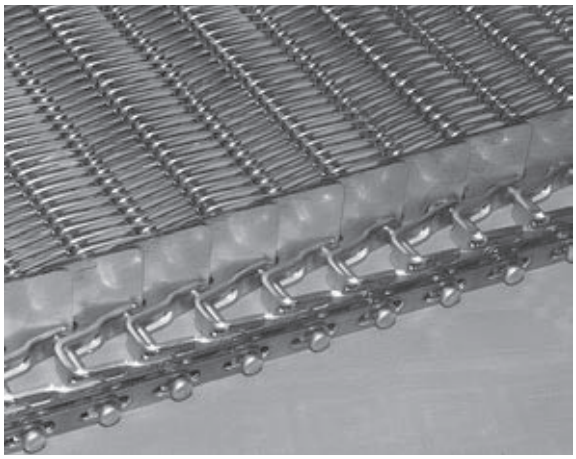
Spiral and straight cooling systems
Spiral proofing towers
Product lifting conveyors
Spiral and straight freezing systems
Special cryogenic freezing systems
Drying installations
Baking systems
Pasteurising systems



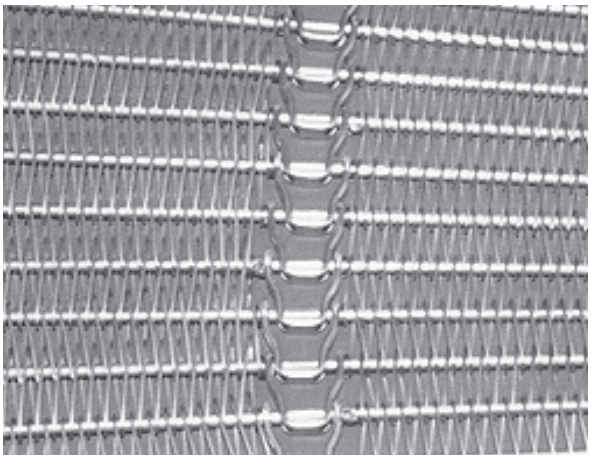
RA-NB *Belt with standard links (11 x 2 mm)*



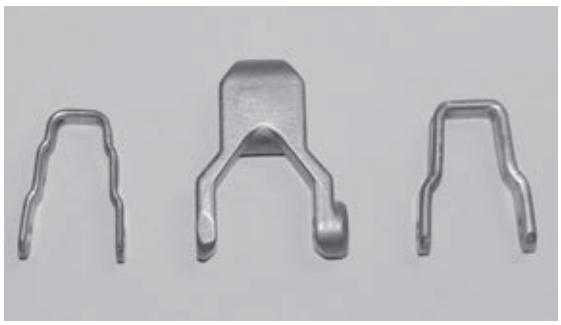
RA-VP *Belt with heavy duty links (11 x 3 mm) and reinforcing bars (11 x 2 mm)*



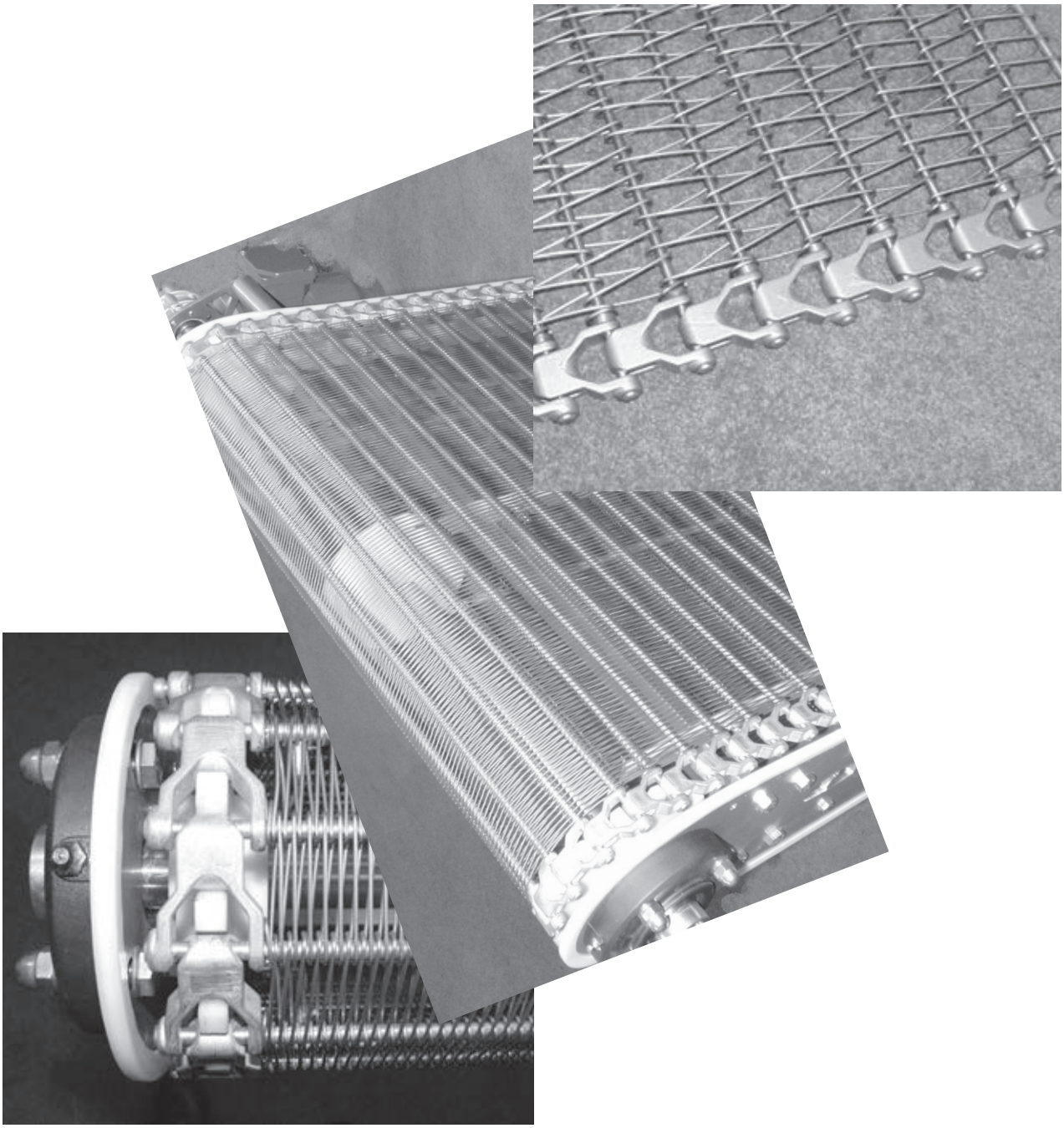
Separate side plates for **RA** *Radius Belt*



RA-FD *Belt with link in the middle*

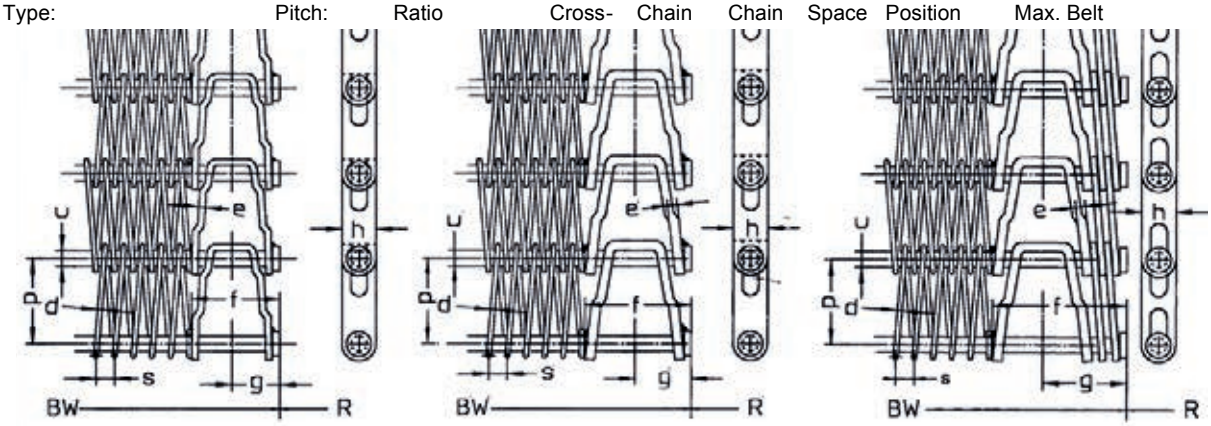


RA-NB *versus* **RA-XHD** *versus* **RA-VB**



RA-XL *Belt with extra heavy duty links (38,1 mm pitch)*

RA-NB **RA-VB** **RA-VP**



Type:	Pitch: (mm/inch) p:	Ratio Belt width q:	Cross-rod diam, (mm) c:	Chain Thickn. (mm) e:	Chain height (mm) h:	Space (mm) f:	Position centre line (mm) g:	Max. Belt Tensile Force (straight) (N)	Max. Belt Tensile Force (curved) (N)
normal chain link RA – NB	19.05 (¾")	2.2	5	2	11	28	15,5	1000	500
RA – NB	27.4 (1")	1.7 - 2.2	5	2	11	29	16	1000	500
heavy duty chain link RA – VB	27,4 (1")	2.2	5	3	11	36	19	1500	750
heavy duty chain links with reinf. links RA – VP	27,4 (1")	2.2	5	3	11	41	26	2300	1150

d : Preferred diameter spiral wire: 1 - 1,2 -1,4 - 1,5 or 1,6 mm
19 - 18 - 17 or 16 Gauge

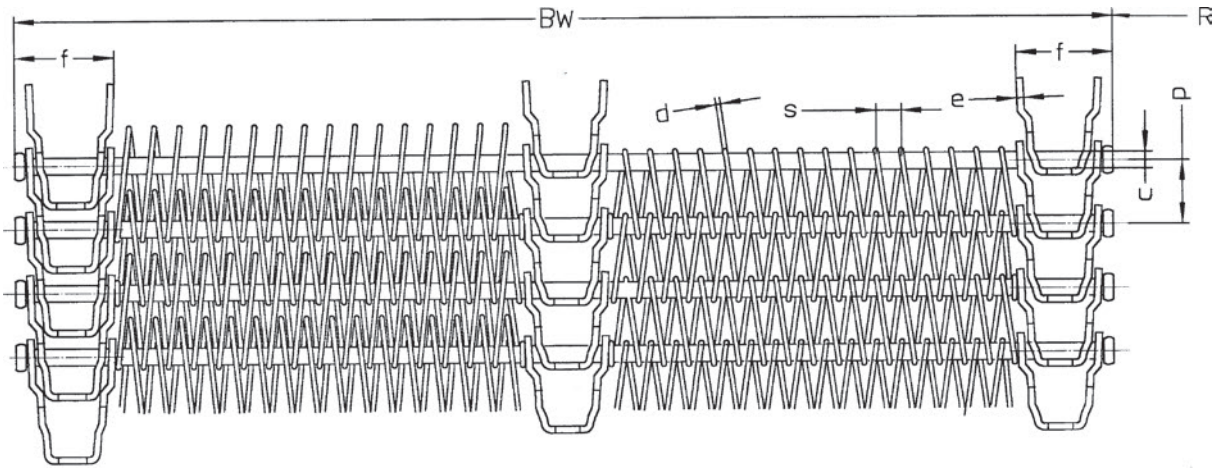
s : Each pitch of the spiral mesh between 3,2 and 12,7 can be selected.
Preferred spiral wire pitch: 3,2 – 4 – 5 – 6 – 6,35 – 7 – 8 or 12,7 mm
96 - 72 – 60 – 50 – 48 – 42 – 36 or 24 spirals windings / foot

BW : Belt width (maximum width of the belt)
Each width (metrical or inch) between 300 and 1500 mm (12 and 60 inch) can be selected standard. Belts with larger or smaller widths are available on demand

R : R = q x BW (Nominal radius around which the belt can be rotated

Examples of a type specification:

	Type of Belt	-	Type of chain link	-	Pitch spirals *s*	-	Pitch Cross rod *p*	/	Diam. Spir. Wire *d*	-	Diam. Cross rod *c*
example 1 :	**RA**	-	**NB**	-	**8**	-	**19,05**	/	**1,6**	–	**5**
example 2 :	**RA**	-	**VB**	-	**6,4**	-	**27,4**	/	**1,4**	–	**5**



RA-FD :

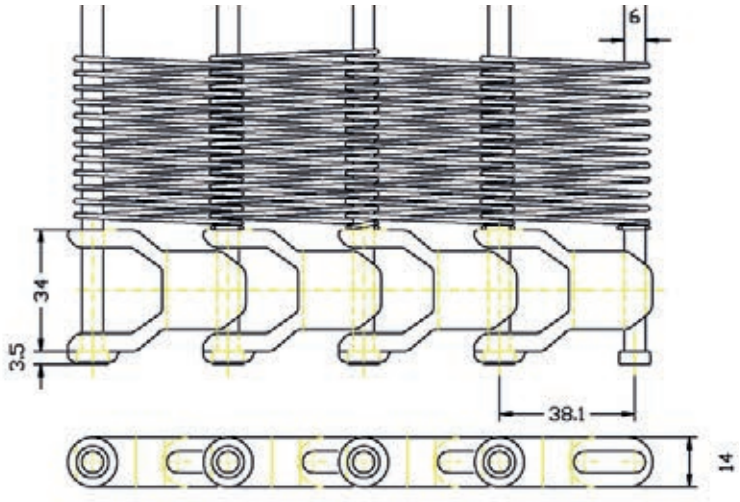
Type:	Pitch inside and middle (m/inch) p	Pitch: outside (mm/inch) p2	Ratio Rotation radius / Belt width q	Cross-rod diam, (mm) c:	Chain link Thickn. (mm) e:	Chain link height (mm) h:	Space (mm) w:	Max. Belt Tensile Force (straight) (N)	(curved) (N)
RA - FD	*19.05 (¾")*	*27,4 (1)"*	*1.1*	*5*	*2 / 3*	*11*	*29*	*1000*	*500*

d : Preferred diameter spiral wire: 1 - 1,2 -1,4 - 1,5 or 1,6 mm
19 – 18 - 17 - or 16 Gauge
s : Each pitch of the spiral mesh between 3,2 and 12,7 can be selected.
Preferred spiral wire pitch: 3,2 – 4 – 5 – 6 – 6,35 – 7 – 8 or 12,7 mm
96 - 72 – 60 – 50 – 48 – 42 – 36 or 24 spiral windings / foot
BW : Belt width (outside/overall)
Belts widths are available on demand
R : R = q x BW = 1.1 x BW (Nominal radius around which the belt can be rotated).
Nominal radius around which the belt can be rotated. The chain link in the middle is positioned exactly in the centre of the belt.

SPECIAL
Within certain limits, the rotating radius R can be adapted to specific requirements by positioning the chain link in the middle off-centre of the belt.

EXAMPLE

Type of Belt	-	Pitch spirals s	-	Pitch Cross rod p	/	Diam. Spir. Wire d	-	Diam. Cross rod c
RA	**- FD**	**- 8**	**-**	**19,05/27,4**	**/**	**1,6**	**–**	**5**



Type:		Pitch: (mm/inch) p:	Rotation radius / Belt width q:	Cross-rod diam, (mm) c:	Chain link Thickn. (mm) e:	Chain link height (mm) h:	Space (mm) f:	Position centre line (mm) g:	Max. Belt Tensile Force (straight) (N)	(curved) (N)
extra duty	*RA – XL*	*38,1 (1,5")*	*2.2/1.7*	*6*	*5*	*14*	*37,5*	*31*	*4000*	*2000*

d : Preferred diameter spiral wire: 1,5 - 2 mm

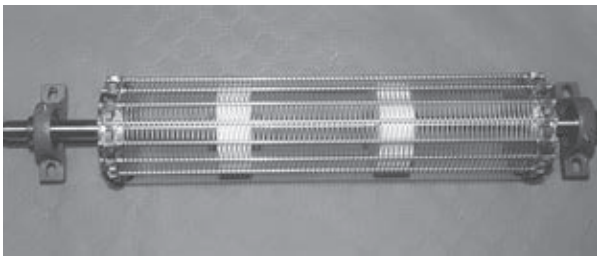
s : Each pitch of the spiral mesh between 5 and 12,7 can be selected.

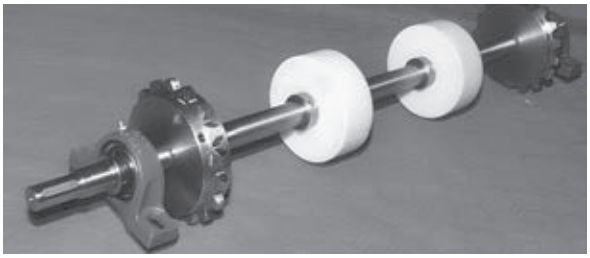
BW : Belt width (maximum width of the belt)
Each width (metrical or inch) between 300 and 1550 mm (12 and 62 inch) can be selected standard. Belts with larger or smaller widths are available on demand

R : R = q x BW (Nominal radius around which the belt can be rotated

Examples of a type specification:

	Type of Belt	-	Type of chain link	-	Pitch spirals *s*	-	Pitch Cross rod *p*	/	Diam. Spir. Wire / *d*	-	Diam. Cross rod *c*
example 1 :	**RA**	**-**	**XL**	**-**	**8**	**-**	**38,1**	**/**	**1,6**	**–**	**6**



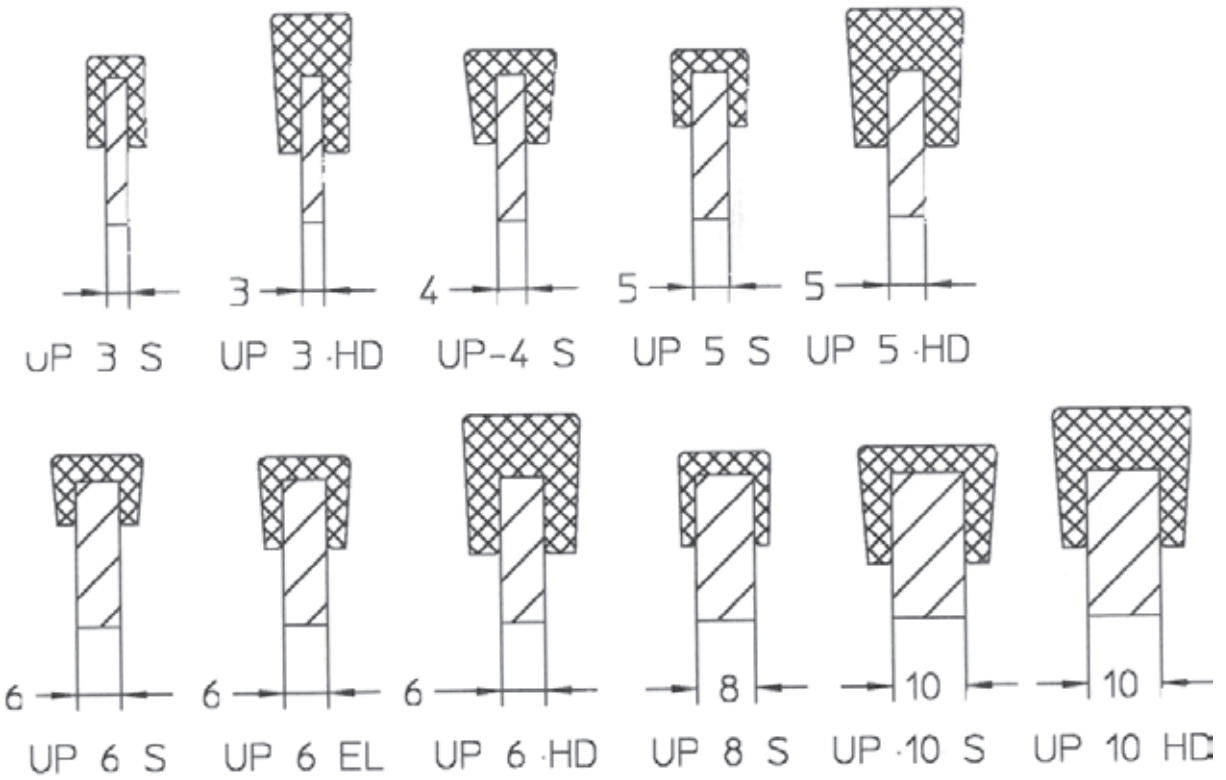


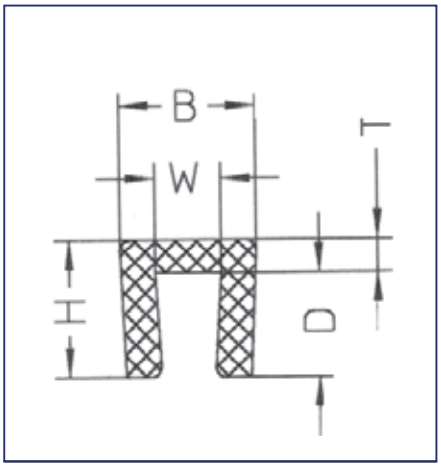
A **RA** radius belt in a *straight conveyor* system is positively driven. Toothed sprockets prevent the belt from slipping. Between the sprockets a plain roller every 150-200 mm is to be advised. Consequently, there is no need to have the belt set up with a certain tension. In normal use, a reverse shaft adjustable in the belt's running direction is enough to handle a possible elongation of the belt in the course of time. The driving gear must be positioned in such a way that the loaded part, usually the upper part, is pulled off the belt. A pushing driving gear must be avoided. Supporting the upper part usually is effected by wearing profiles attached lengthways underneath the belt. Subject to the production process, synthetic materials such as PA, PE, HMPE, is advisable to fit the supporting profiles underneath the belt. The support profiles are placed at distances of about 200 to 400 mm, depending on the belt's load, belt weight and production process.

A **RA** radius belt in a *curve conveyor system* has to be supported and driven the same as in *straight conveyors*, with this difference that the RA-FD belt with the link in the middle has the driving sprockets positioned in the inside link and the middle link. The turning radius of the RA radius belt can be 1.1, 1.7 or 2.2 x the belt width. The infeed and outfeed lenght of the curve conveyor has to be straight and ca. 1,5 x belt width. To give the belt some clearance , it is to be advised to give the belt at the outside a space of ca. 50 mm towards the frame work.

A **RA** radius belt in a *spiral conveyor* is the most common. A spiral conveyor is more or less a special *curve conveyor* with a take-up drive in the straight part and a driven inner drum driving the belt on friction. The take-up drive gives the belt a controlled (low) tension. Because he cylindrical drum drives the belt on friction it will run a little faster as the belt.

Because a spiral conveyor normally has a lot of running metres, a special section has to be installed to effect elongation of the belt (due to different temperatures and product load).





Material U-profile : UHMPE
Color U-profile : White

Dimensions U profile : (in mm)

	W	B	H	T	D
UP-3-S	3,2	8	12,5	3	9,5
UP-3-HD	3,2	11	19	8,5	10,5
UP-4-S	4,1	12,7	12,7	3,2	9,5
UP-5-S	5,1	10,5	10,5	3	7,5
UP-5-HD	5,1	16	19	8,5	10,5
UP-6-S	6,2	12,5	9,5	3,5	6
UP-6-EL	6,2	12,5	12,5	3	9,5
UP-6-HD	6,3	16	19	8,5	10,5
UP-8-S	8,1	12,7	12,7	3,1	9,6
UP-10-S	10,1	19	16	3,5	12,5
UP-10HD	10,1	19	19	8,5	10,5

The UP-S and UP-EL profiles are normally available on bars of 3 mtr or 6 mtr and on rolls
The UP-HD profiles are normally available on bars of 3 or 6 mtr