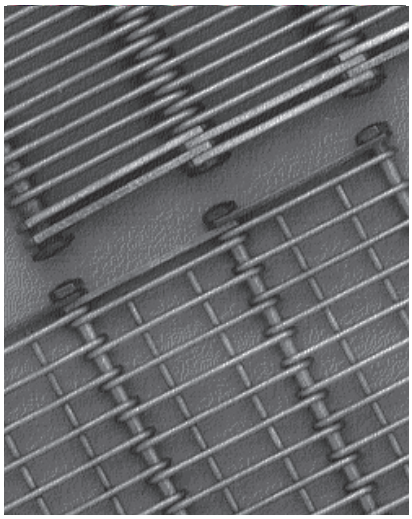
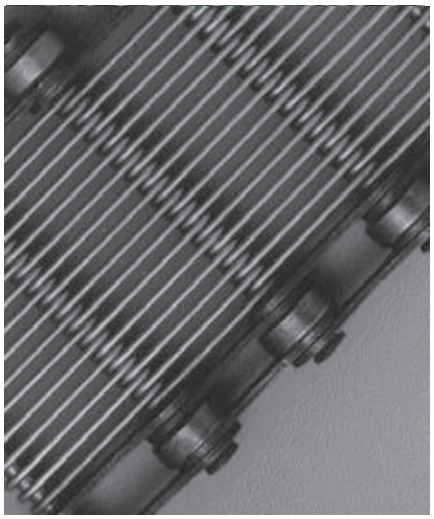
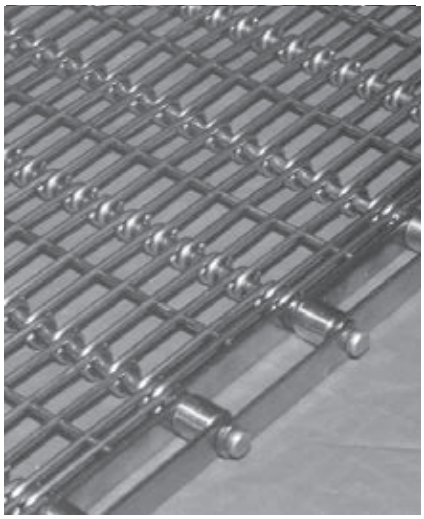


Wire link belt with welded edges
Type: ***OB–KK***



Wire link belt with chain edges
Type: ***OB-HK***



Wire link belt with roller edges
Type: ***OB-RK***

For many decades, ***OB*** wire link conveyor belts have been successfully used in the food industry, the steel industry and the chemical industry. The reliability and durability of the belt are the main reason for its success, combined with the various ranges of belt materials and the sophisticated design, which makes it relatively simple to make variant types of belts. For example, the belt can easily provided with carriers, flights, side plates or additional small rollers. Furthermore, the opening between the wire links can be tailor-made by de use of wire welded underneath (most common), springs, rings or bushes. In this way, the drain of the belt varies from 10 to 90 per cent. Minimal drain openings of about 0,7 millimetres can be realised by flattening the wire links. The space between the links is then smaller than the diameter of the link itself. The diameter of the wire links can vary from 1.5 millimetres for very light or fine meshed belts to 4 millimetres for heavy-duty applications.

OB wire link belts are available in widths of 50 to 7,000 millimetres and in nearly any desired length and have 3 basic versions.

The ***OB-KK*** is the version with lamellar or welded edges. The belt edges are generally formed by two ore more rows of plate links. The wire links and plate links are assembled on the cross rod which is fitted on both sides with a welded ring or a butted head.

The ***OB-HK*** is the version with chain edges. The belt edges are formed by a hollow pin chain. The links and chains are assembled on the cross rod which is fitted on both sides with a welded ring. The chain is mostly kept in place by welding a ring to the outside as well as to the inside of the chain. If the ends of the cross rods are narrowed, the inside of the chain is secured by this narrowing and the inner ring is cancelled.

The ***OB-RK*** is the version with roller edges. The belt edges are formed by two rows of plate links with a roller in between. The wire links, the plate links and the rollers are assembled on a cross rod fitted with a welded ring

OB wire link belts can be used at conveyor speeds varying between less than 1 metre per minute and 50 metres per minute, depending on the processing situation and the intended working time. The strength of the belt and, to some extent, its ability to resist wear, are determined by the number of plate links and, if present, the chain on the edges. In the belt full plate links are mounted every 250 to 400 millimetres. The belt support can be placed underneath these plate links. In some cases the belts can also be provided with plate links in an eccentric version, which provides additional wear resistance.

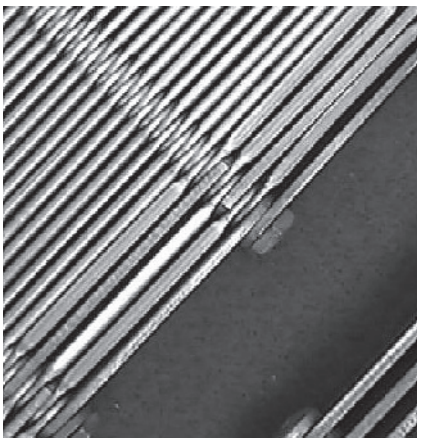
OB wire link belts are used in production processes having temperatures from -100ºC to +600ºC.

OB wire link belts are made of thin round wires with an eyelet on both sides, to which they are hinged by means of a pin. In this way, a thin one-layer belt is created with the following advantages:

-It is impossible for a product to form a deposit in ‘hollow spaces’ in the belt, which are difficult to reach.
-The weight of the belt can be kept relatively low.
-Process fluids and gasses can go easily through the belt
-The belt is easy to clean.
-The belt is positively driven by means of sprockets or driving drum. So there is no belt slip and it is possible to use relatively small diameters. This all adds to a perfect belt run without steering problems.
-The belt is easy to repair.

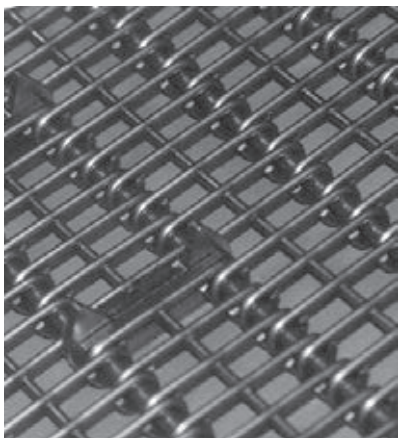
***OB* wire link processing belts are used in e.g.:**

-Freezing Units	*-Foundries*	*-Quench tanks*	*-Dehydration Units*
-Pasteurizers	*-Drying Units*	*-Steel blast units*	*-Sieving Units*
-Sterilizers	*-Washing Machines*	*-Packing Machines*	*-Others*
-Baking Ovens	*-Cooling Systems*	*-Blanching Units*	
-Storage units	*-Assembly Units*	*-Shrinkage Units*	



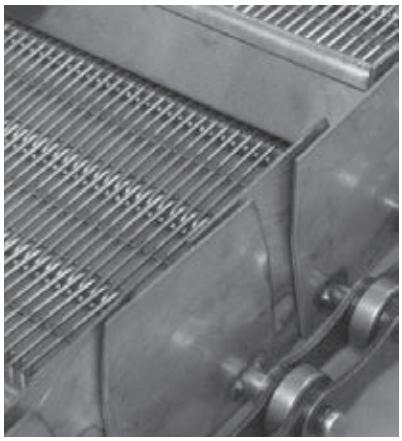
OB-KK *with flattened links (gap 0,7 mm)*

OB-KK *executed with cams*

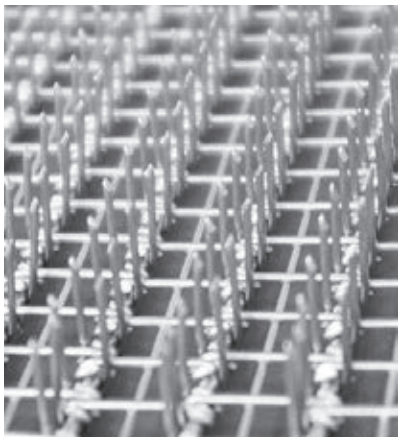


OB-KK *executed with special hardened cams*

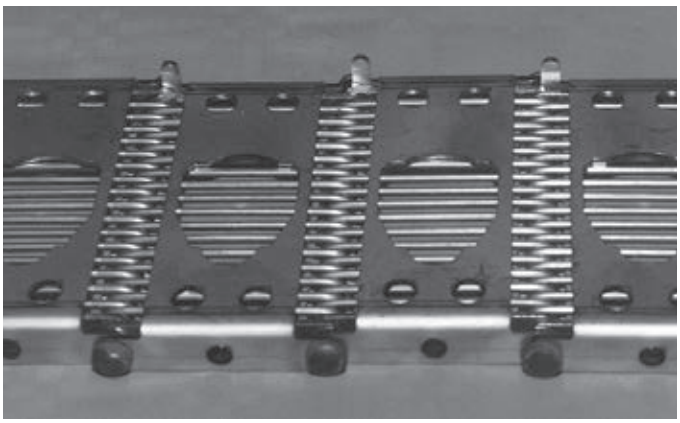
Chain belt with wire link flights



OB-HK *here with side plates and flights*



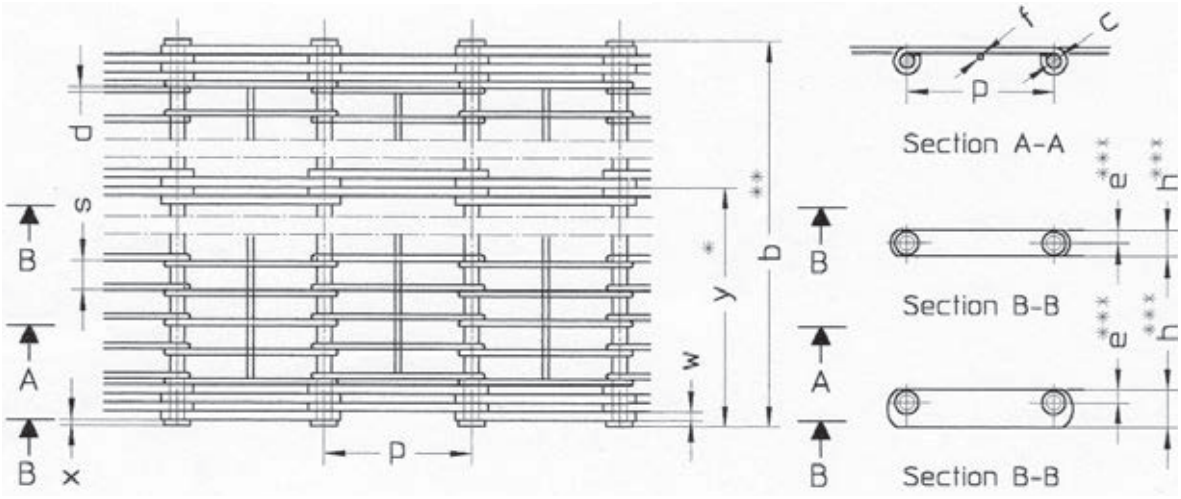
OB-KK *with pins*



OB *with special product carriers*

OB wire link belts can come in many varieties. For example they can be provided with:

-Carriers or flights in all kinds of forms, depending on the product to be transported.
They are incorporated in the belt and can be welded or fastened with screws.
-Side plates on the outside of the belt. The size and design of the plate links can be adapted to suit the product transported and/or to processing conditions.
-Chain edges with bushing or roller chain. With rollers of different materials and diameters.
-Flattened wire links for very small openings (0.7 mm).



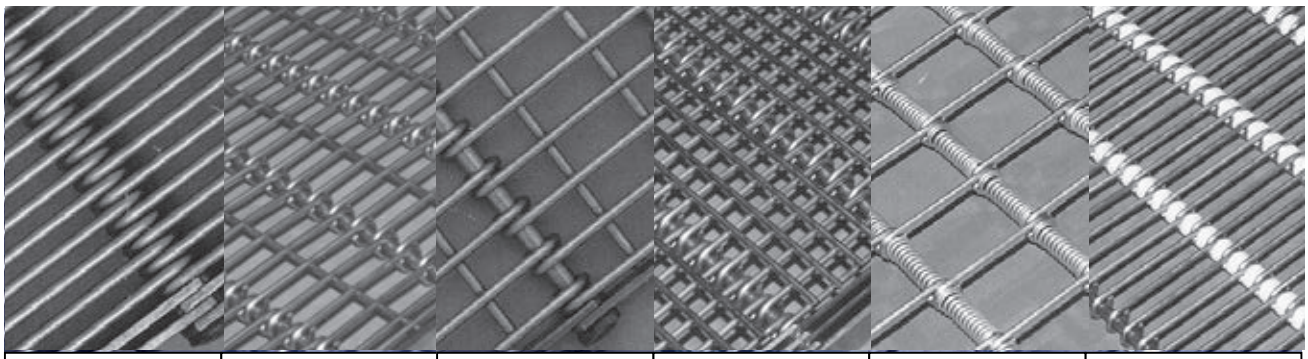
OB – KK *Wire link belt with welded or lamellar edges*

The above drawing shows the schematic construction of the ***OB*** wire link belt with welded or lamellar edges. The pitch of the wire links (p) shows the construction size of the belt. The preferred opening of the belt is obtained by fitting the links at a certain distance from each other (pitch s). This pitch can be chosen freely, depending on the design and the construction. There are in principal 6 possibilities to keep the wire links at a distance as shown below. You will find the pitches and other sizes on the basic list page 2.3.

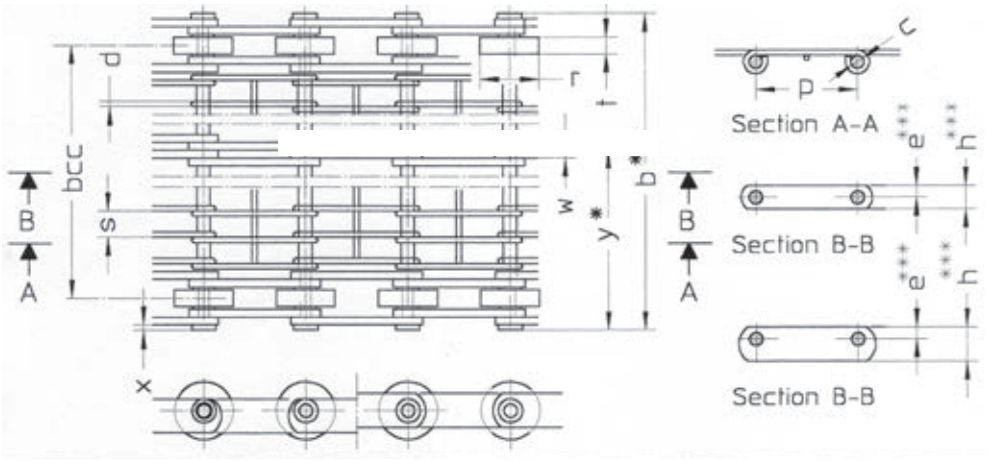
In connection with the tensile strength of the belt, one row or several rows of plate links are divided evenly along the width of the belt. Both edges are usually provided with a double row of links. It is customary to fit the belt support underneath these rows of links (size of the plate links: e,h,w , see page 2.3)

* The distance between the rows of plate links is about 200 to 450 millimetres (size y), depending on the load of the belt.
** The tolerance of the width of the belt is 0 – d (diameter wire link)
*** Sizes e to h are the sizes of the links which are centrically but could also eccentrically fitted to the cross rods for extra wear resistance underneath).

There are in principal 6 possibilities to keep the wire links (pitch s) at a distance:

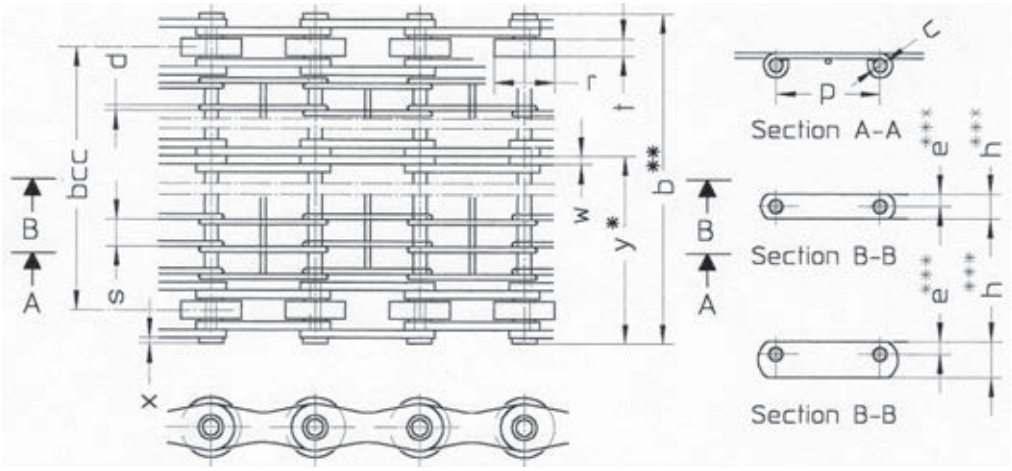


Without distance keepers: wire links close together, gap is always the same as the wire diameter d. **execution: GE**	**With single wire welded underneath**: wire links kept at a distance by welding 1 wire underneath the wire links, (1 x ∅f) **execution: EO**	**With double wire welded underneath:** wire links kept at a distance by welding 2 wires underneath the wire links, (2 x ∅f) **execution: DO**	**With wires welded on top:** wire links kept at a distance by wires welded on top of the wire links **execution: BB**	**By means of springs:** wire links kept at a distance by a spring between the wire links **execution: VE**	**By means of sleeves:** wire links kept at a distance by a sleeve between the wire links **execution: BU**



OB – RK: *Wire link belt with roller edges*

The drawing shows the construction of a wire link belt with roller edges.The construction of the ***OB-RK*** is similar to that of the ***OB-KK***. The belt has the same basic sizes and distance keepers to the same design. The distinction between these two is the roller between the two outer plate links. The roller sizes are basically free to choose.



OB – HK: *Wire Link belt with chain edges*

The above drawing shows the construction of a wire link belt with chain edges. The basic construction of the ***OB-HK*** is similar to that of the ***OB-KK***. The belt has the same design of the distance keepers. The distinction between the two is that the outer rows of the plate links are replaced by a hollow pin chain. In this way the pitch (p) of the belt is connected to the chain pitch.

Wire link belts with chain and roller edges are used in particular when:
- Reduction of friction is wanted
- Extra guarantee for moving evenly is asked for
- Constructions are used with negative bends

Hollow pin chains are available in roller chain design (as shown) and in bushing chain design, depending on the type of pitch and chain. A great many varieties are possible. Frequently used types of chains are the ASA and ANSI B.29.1 DIN and ISO conveyor chains. Possible pitches are ¾”, 1” , 1,5”, 2”, 50 mm, 3”, 75 mm en 100 mm

Chains are available for example in stainless steel or steel (galvanised or nickel-plated).

Basis data Wire Links				Corresp. Plate Links		
pitch wire link (mm) s:	Pitch: Cross Rods (mm) p:	Diam. Wire Link (mm) d:	Diam. Cross-rod (mm) c:	Width Plate Link (mm) w:	Height Plate Link (mm) h	Position hole (mm) e
OB: s 19,05	/ 1,6	- 5		PL: 2,0	9	4,5
OB: s 19,05	/ 2,0	- 5				
OB s 25,4	/ 1,5	- 4		PL: 2,0	8	4
OB: s 25,4	/ 1,6	- 4				
OB: s 25,4	/ 2,0	- 4				
OB: s 25,4	/ 1,6	- 5		PL: 2,0	11	5,5
OB: s 25,4	/ 2,0	- 5		PL: 2,0	11	4,5
Flattened Wire Links with pitch (opening 0,7 mm or 3,5 mm)						
OB: 2,7 25,4	/ 2,0	- 5		PL: 2,0	11	4,5
OB: 3,5 25,4	/ 2,0	- 5		PL: 2,0	11	4,5
OB: s 30	/ 1,5	- 4		PL: 2,0	8	4
OB: s 30	/ 1,6	- 4				
OB: s 30	/ 2,0	- 4				
OB: s 38,1	/ 2,5	- 8		PL: 2,5	17	7
OB : s 38,1	/ 3,0	- 8				
OB: s 50	/ 1,5	- 5		PL: 1,5	11	5,5
OB: s 50	/ 1,6	- 5		PL: 2,0	11	5,5
OB: s 50	/ 2,0	- 5		PL: 2,0	11	5,5
				PL: 2,5	11	5,5
OB: s 50	/ 2,5	- 5		PL: 2,5	11	5,5
				PL: 2,5	13	6,5
OB : s 50	/ 2,0	- 7		PL: 2,5	13	6,5
OB : s 50	/ 2,5	- 7				
Flattened Wire Links with pitch (opening 0,7 mm or 3,5 mm)						
OB: 2,7 50	/ 2,0	- 5		PL: 2,0	11	5,5
OB: 3,5 50	/ 2,0	- 5				
OB: s 50,8	/ 1,6	- 8		PL: 2,5	17	8,5
OB: s 50,8	/ 2,0	- 8		PL: 2,5	17	7
OB: s 50,8	/ 2,5	- 8				
OB: s 50,8	/ 3,0	- 8				
OB: s 50,8	/ 4,0	- 8				
OB: s 75	/ 2,5	- 5		PL 2,5	11	5,5
OB: s 76,2	/ 3,0	- 13				
OB: s 76,2	/ 4,0	- 13				
OB: s 100	/ 3,0	- 8		PL 2,5	17	7

The data mentioned above are a broad selection of the many possible varieties.

The left column gives the standard pitch dimensions of the Wire Links
Including the possibilities of wire diameters and cross rods diameters

The gap between the wire links are more a less free to choose.

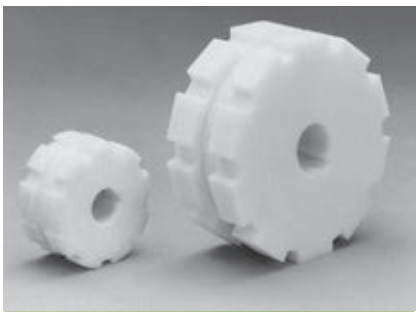
The right column gives the possible standard plate links.

Depending the pitch and cross rod diameter there is the possibility to choose different kinds of plate links.

The shaded sizes are preferable. Please contact our specialists for deviating sizes, designs and materials to enable us to make an appropriate design for you.

Utilisable belt materials:
Steel, galvanised steel, SS AISI 304, SS AISI 316, heat-resistant steel, otherwise

Utilisable roller materials:
Steel, SS AISI 304, SS AISI 316, heat-resistant steel, synthetic, otherwise

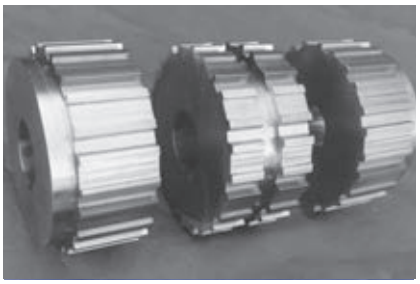


Solid plastic sprockets

Usually, the ***OB*** wire link belt driven by driving sprockets or by a driving drum. If the belt is properly set up and is well maintained over the years, the running qualities will not change. The conveyor frame, the belt support and correctly set up driving and reversing shafts will keep the belt in a straight line.
The dimensions of the driving sprockets depend on the preferred number of teeth, the belt pitch and the shaft/bore specifications. The ***OB*** wire link belt has three types of driving sprocket:

The side wheel with an opening in the teeth for the outer plate links of the belt, the middle wheel with an opening in the middle of the teeth for all the inner plate links, and a full wheel with teeth over the whole width of the sprocket for use beside the plate links.

The hollow pin chains of the ***OB-HK*** and the roller edges of the ***OB-RK*** are driven on both edges by a sprocket. These sprockets are tailor-made, depending on pitch, roller diameters, roller widths and number of teeth.



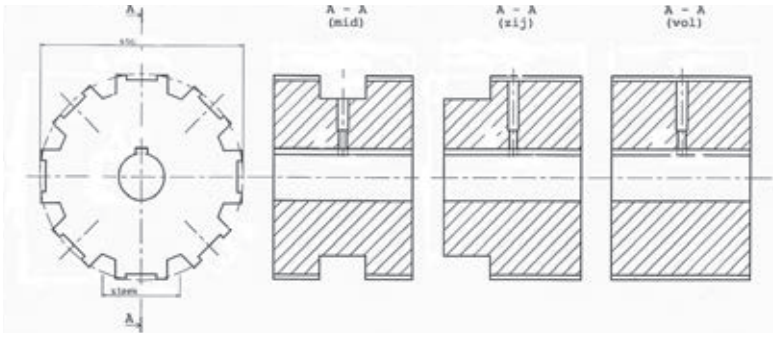
Stainless Steel sprockets

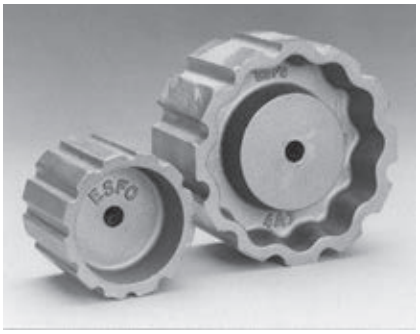
Materials for full material driving wheels:
Nylon and Stainless Steel AISI 304, Cast Iron, Steel , Stainless Steel AISI 316, several synthetic materials.

The sprockets are tailor-made, depending on pitch, roller diameters, roller widths and number of teeth. Pitch circle diameters as mentioned above. The sprockets can be provided with a bore, a key-way (DIN 6885-A) and a threaded hole for a screw, all made to size.

Please contact our specialists for deviating sizes, designs and materials to enable us to give you proper advice and to make an appropriate design.

Side sprockets for hollow pin chain or roller edge.

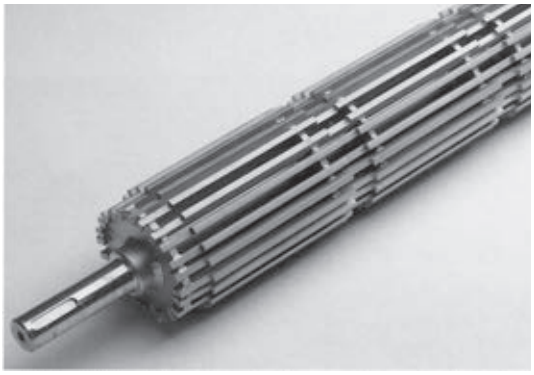




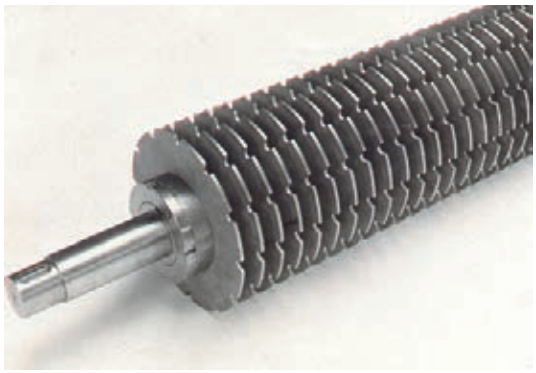
Cast Iron Sprockets

OB- driving sprockets, : middle wheel side wheel full wheel

Belt Pitch:	Pitch circle diameter (mm) 8 teeth.	9 teeth	10 teeth	11 teeth	12 teeth	Width (mm) Standard
19.05	*49,8*	*55,7*	*61,6*	*67,6*	*73,6*	*50*
25.4	*66,4*	*74,3*	*82,2*	*90,2*	*98,1*	*50*
30	*78,4*	*87,7*	*97,1*	*106,5*	*115,9*	*50*
38.1	*99,6*	*111,4*	*123,3*	*135,2*	*147,2*	*70*
50	*130,7*	*146,2*	*161,8*	*177,5*	*193,2*	*70*
50.8	*132,7*	*148,5*	*164,4*	*180,3*	*196,3*	*90*
75	*196*	*219,3*	*242,7*	*266,2*	*289,8*	*90*
76.2	*199,1*	*222,8*	*246,6*	*270,5*	*294,4*	*90*
100	*261,3*	*292,4*	*323,6*	*354,9*	*386,4*	*90*

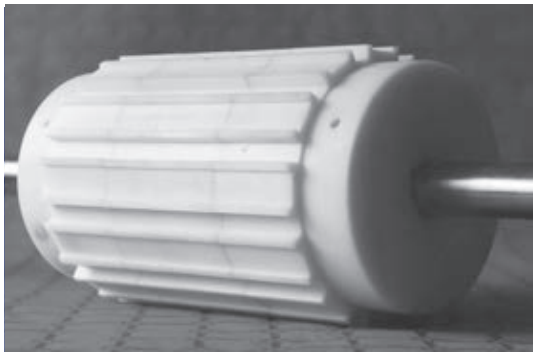


Cage drum



Drum with toothed discs

Tube drum



Plastic drum

The ***OB*** wire link belt can basically be driven by many kinds of driving drum: a cage drum (frequently used), a drum with toothed discs, tube drum, and a drum made of plastic sprockets

A metal driving drum is recommended for use with large belt widths, often combined with a larger diameter, as this construction is more solid. Sometimes the production process itself requires a certain type of drum instead of a shaft with driving wheels.

The cage drum consists of a shaft with a number of welded discs. Parallel to the shaft, the carrier strips are welded on to these discs. The belt is driven, by these strips, across the whole width of the belt. This makes the cage drum very suitable for driving belts with great distances between the links. The open construction of the roller makes it extremely suitable for use in freezers as it prevents ice forming. Furthermore, the cage drum can be found in places where cleaning is highly valued.

The drum with toothed discs is made of a great many discs whose teeth pierce the belt. This drum is mainly used in freezing tunnels. At the end of the belt, the teeth of the discs push the frozen product off the belt.

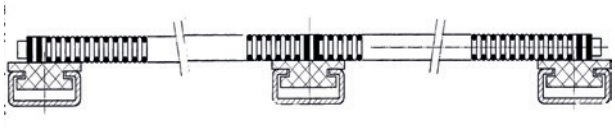
The tube drum is a closed drum, used there were hollow spaces are not allowed.

Wire link belts with a roller edge or a chain edge have a drum which is fitted on both sides with a sprocket wheel with the same number of teeth.

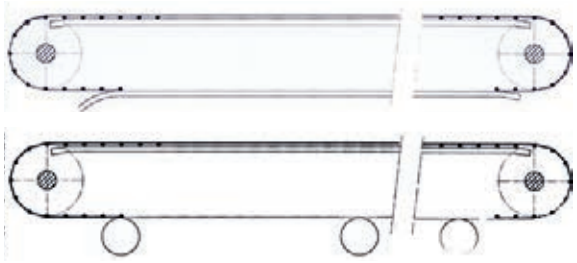
The drums are tailor-made, depending on load, preferred number of teeth (free to choose), belt pitch, belt width and other shaft specifications.

	Pitch circle diameter Number of teeth:					
Belt Pitch:	12t.	15t	17t	19t	21t	25t
30	*115.9*	*144.3*	*163.3*	*182.3*	*201.3*	*239.4*
38.1	*147.2*	*183.3*	*207.3*	*231.5*	*255.6*	*304.0*
50	*193.1*	*240.5*	*272.1*	*303.8*	*335.5*	*398.9*
50.8	*196.3*	*244.3*	*276.5*	*308.6*	*340.8*	*405.3*
75	*289.7*	*360.7*	*408.2*	*455.7*	*503.2*	*598.4*
76.2	*294.4*	*366.5*	*414.7*	*462.9*	*511.3*	*608.0*
100	*386.4*	*481.0*	*544.2*	*607.6*	*671.0*	*797.9*

Applicable drum materials:
Steel, Stainless Steel AISI 304, AISI 316, other.



Belt support underneath the plate links (cross section)



Belt support (longitudinal section)

OB wire link belts are positively driven. Toothed driving wheels/drums prevent the belt from slipping. 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. Extreme differences in temperature demand a little more attention. A permanent or temporary difference in temperature between the construction and the belt, when the installation is started up, for example, can cause a temporary over-stretching of the belt. The construction must be able to cope with a belt elongation or a belt shortening. This can be done by attaching the reverse shaft in a guided way and by putting a little pressure on the shaft by means of springs. Another possibility for coping with a possible belt elongation is to create some space in the construction by giving the return part of the belt enough space to subside.

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 plate links. The plate links are placed at distances of about 250 to 400 mm, depending on the belt's load. Depending on the length and width of the belt, a clearance of 10 mm between belt and frame is sufficient.

The return part can be supported by means of sliding profiles or bearing-mounted rollers. As only the belt is supported in this case, fewer sliding profiles are needed. Bearing-mounted rollers can be fitted at intervals of 1.5 to 2.5 metres. The belt may sag slightly between the rollers

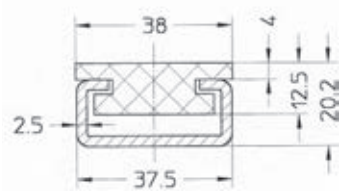
In the construction, the creation belt obstruction points must be prevented. This means that the supporting profiles of both the upper and the lower part must be bevelled off sufficiently at the inlet of the belt. In the horizontal direction the belt should not be allowed to catch on sharp pieces or supports. It is therefore advisable to make a guide rail or guiding shoes at several places, or to place the parts so far from the belt that the belt cannot catch on anything. Make the path of the belt as simple as possible. Negative curves are possible but, depending on the load and angle of curvature, will affect the life span of the belt.

In order to have the belt running well and to contribute substantially to the belt's life span, it is extremely important that the frame with the sliding profiles is level and width wise horizontal, and that the driving and reverse shafts are properly aligned in relation to the supporting frame. These shafts must be mounted at right angles to the running direction of the belt and should be in the same horizontal plane as the support. Both shafts must be assembled parallel to each other.

The grooves in the driving wheels and rollers have no function for guiding the belt. Force should not be used to drive the belt nor to keep it in place by means of the side guides. Should the belt not run true, the shafts must be adjusted again.It is important that the wheels on the driving and reverse shaft are assembled in one line so that the teeth contact the wire links properly. After the belt has been adjusted it should be checked regularly for fluctuations.

Important: a wire link belt must be handled with care. This type of belt is sensitive to deformation due to the sagging dead weight especial when putting the belt on its side. If this does occur, the belt must be aligned before installation.

The belt can best be pulled in by means of the driving motor The rolled-up belt is placed centrally in front of the reversing shaft. The initial point of the belt is fixed to a cross-slat by several links. A cable runs from the cross-slat to the driving shaft. The cable is twisted around this shaft a couple of times. The belt is pulled over the upper guide by running the motor and pulling the cable tight. The cable can be removed when the initial point of the belt has reached the driving shaft. The slat remains in place. The belt is put into the teeth so that the wheels pull the upper part and the lower part is pushed. To avoid the return part being pushed up, the end of the cable is re-fixed to the cross-slat while the other end is pulled by hand in such a way that that the belt remains flat. It is often quicker to draw belts of a smaller size into the construction entirely by hand.



Esfo standard belt support profile

Applicable for belts which are used in dry and wet process.
Different kind of plastics, conditions between –50°C and 170°C

Material sliding profile: *Polyethylene suitable up to ca. 70 °C*
Nylon suitable up to ca. 120 °C
Other special synthetics on demand
Material C-profile: *Stainless-steel AISI 304, In lengths of 6 m.*