

AmbaVeyor Engineering Manual

Version 060227





Preface

This engineering manual is written specifically for AmbaVeyor fabricated and sold from the year 2005. Please read the complete manual before starting your design and follow all applicable design, safety and integration rules. AmbaVeyor BV can not be hold responsible for faulty designed systems caused by not following this manual. Please contact AmbaVeyor BV for any questions you might have regarding this manual or AmbaVeyor in general.



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1. AmbaVeyor introduction

AmbaVeyor is the new modular chain conveyor system designed for the internal transport of unit loads in a very cost effective way and at remarkable performance figures. One of the excellent features of the AmbaVeyor is its problem-free adaptation to specific tasks. AmbaVeyor masters the most difficult system layouts where other conveying systems have to bypass.

Due to 24 h shipment from stock throughout the world, it makes AmbaVeyor easy adaptable to on site additions and changes, which usually requires a few components to be changed.



Figure 1 - 24 h shipment package

The main elements of the AmbaVeyor are the frame and the belt (also referred to as chain or slat chain). The belt's unique ability to flex sideways and to negotiate upward and downward bends allow the AmbaVeyor to incorporate straight, inclined and curved tracks in a one-drive conveyor system that can extend over distances of up to 50 meters [165']. The nearly closed chain belt surface enables even small components to be transported without complications.

The system's load capacity relies on the belt's centre chain. The chain is driven by the drive unit and it returns through the frame from the idler unit. This positive 210° sprocket-wrapped drive withstands high pull forces and ensures durability. The chain allows AmbaVeyor to achieve tensile forces up to 3500 N.

The slats are snapped onto the centre chain and can be replaced individually at the drive and idler unit without the need for special tools. The taps at the centre of the belt are enclosed along the frame's entire length including the return. Because the belt is so well enclosed, the AmbaVeyor is able to convey loads in all directions and pass through bends without any problem.

1.1 Applications

The AmbaVeyor flexibility combined with the high load and speed performance, make it suitable for almost all indoor unit handling applications. The AmbaVeyor can successfully be applied in markets such as logistics, warehousing, beverage handling, pharmaceuticals, parcel handling, the graphical industry and product handling in general.

The standard stock items can cost effectively be applied in many general applications. The variety of options on top of these standard items make the AmbaVeyor suited for a wider range of more demanding applications. Options such as a closed belt surface can be used for small products or added safety, while friction inserts make the AmbaVeyor suited for steep inclines using curves, straight and bends with a single drive.

The AmbaVeyor can be used for connections between machines, long length conveyor tracks or for conveyors in a working environment. Please contact AmbaVeyor BV with any question regarding your application.



1.2 Transportable products

First line packaging, second line packaging, logistics, print finishing are the markets in which AmbaVeyor is integrated.

Cartons, totes, parcels, flow packs, newspaper bundles, beverage crates, (shrink-wrapped) trays or bottles in film can all be transported over the AmbaVeyor at overhead or ground level.

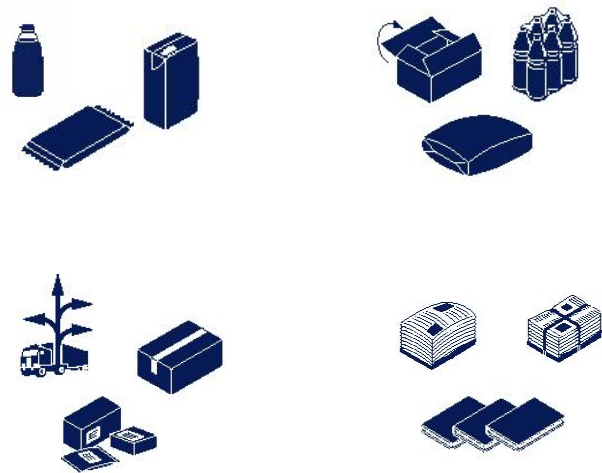


Figure 2 - Many markets, different products

1.3 Functionality

The AmbaVeyor runs snakelike through curves, inclines and straights with a continuous 3D-flexing belt. It is a unique style of belt based on slats fitted on a strong steel base chain. The reduced number of transfers avoids jams and increases versatility.



Figure 3 - 3D flexing

1.3.1 Height differences

Using vertical bends, the AmbaVeyor can be used to quickly achieve a difference in height. Angles up to 30 degrees are possible, depending on the stability of the product.

AmbaVeyor as a horizontal conveyor typically contains slats with low friction. For tracks under an angle, slats with high friction inserts are available which can be used in different ratios, depending on the angle and the contact surface of the product.

1.3.2 Continuous transport

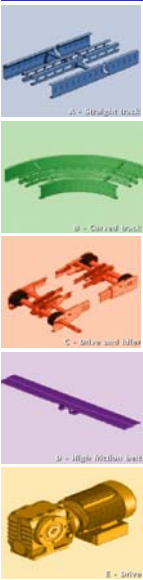
The AmbaVeyor track uses a strong side flexing metal chain with a high service factor, providing a solid base for continuous transport. The low friction wear parts and the possibility of combining straight tracks with curves and inclines, greatly reduce the number of drives. The resulting reduction in power requirements make the AmbaVeyor suited for long continuous operation using high loads.

1.3.3 Intermittent transport

The AmbaVeyor meets the requirement for applications that regularly start and stop. The strong side flexing metal chain can be used for this purpose, provided that the conveyor has a controlled start and stop. Drives used on the AmbaVeyor should have a minimum service factor of 1.2.

1.3.4 Lateral product movement

In most applications products on the AmbaVeyor are transferred in line over the drive and idler unit. The compact design of the frame and the smooth surface of the AmbaVeyor slat also allow lateral product movement (side transfers). Using fixed and movable guides or push rods, the product can easily be moved off the track. The slat belt is guided very tight through the complete track so there is minimum lateral belt movement. Please note that in combination with high friction slats the lateral movement is not possible.





2. AmbaVeyor parts information

Standard AmbaVeyor stock parts are readily available from several distribution centers around the world. This ensures a short delivery time and excellent availability. The standard parts can be quickly customized on site. With some extra delivery time AmbaFlex can customize the standard stock parts for you. This chapter will inform you off the delivery methods, standard parts and performance information.

2.1 Delivery methods

2.1.1 Standard parts delivery

Standard AmbaVeyor stock parts are readily available from several distribution centers around the world. This ensures a short delivery time and excellent availability. The ordered part list will directly be send from the local warehouse where the stock parts can be shipped the next day.

Next day shipment applies to standard stock parts which are ordered before noon where the order value is below EURO 1.500,00 and the volume size can be shipped by express carriers.

Standard stock parts can be ordered directly by fax or through the www.AmbaVeyor.com website without any engineering involved from AmbaVeyor BV.

2.1.2 Customized parts delivery

Parts with custom lengths, heights and colours can be shipped within 10 workings days. The customizing options are listed in the parts information chapter. Extra customizing charges apply and small Customised stock orders will be shipped from the Dutch warehouse only.

Customized stock parts can be ordered by fax or through email using the AmbaVeyor Customer Calculator without any engineering involved from AmbaVeyor BV.

2.1.3 Pre-engineered

The requirement of AmbaVeyor parts can be pre-engineered for you. AmbaVeyor BV will match your layout and within approximately 2 working days you will receive an offer including:

- Prices and shipment times for the four delivery methods
- A drawing matching your layout
- A listing of required stock parts
- A listing of required Customised stock parts
- A listing of non-stock or special options required (if needed)
- Supervision and installation costs specified per country

Pre engineered orders are can be delivered as standard parts, customized parts and ready run. The part lists can be ordered at www.AmbaVeyor.com

2.1.4 Ready to run (pre-assembled)

For conveyor projects that can be shipped assembled AmbaVeyor BV has the option to ship the conveyor completely assembled on a pallet. The conveyor then only has to be integrated into the overall system. Pre-engineering by AmbaVeyor BV is required and delivery time depends on the custom options.

2.1.5 Ready to run (on site installation)

For any size project, AmbaVeyor BV can offer on site supervision or complete installation using standard or Customised stock parts. Experienced personnel will supervise or actually install the pre-engineered parts on site. AmbaVeyor BV can offer a fixed price for supervision or installation when:

- On site conditions are known
- General terms & conditions are agreed upon

The exact level of assistance required can be determined per project. Project delivery time depends on the size of the order.

2.2 Standard parts

The AmbaVeyor layout can be built from the following conveyor modules: straight tracks, curved tracks and a drive & idler unit. The conveyor can be equipped with two belts types suited for different environments: TPS (open slats) and TPO (closed overlapping slats). Support frames, side guides and drives are optionally available.

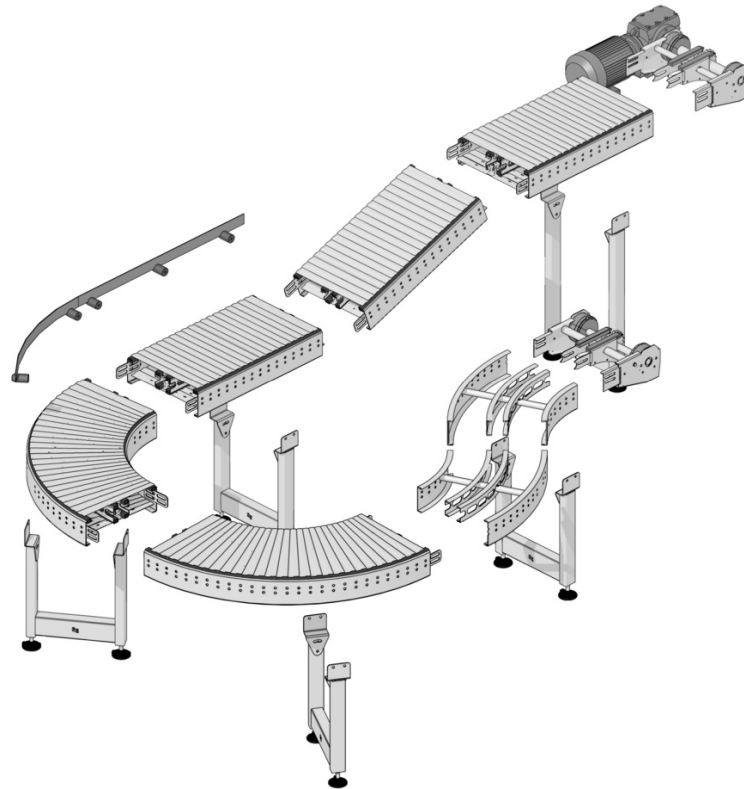
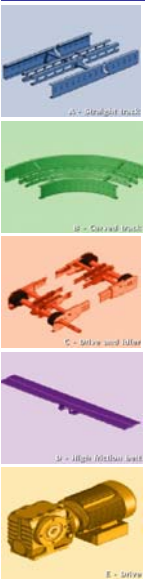


Fig 4 - AmbaVeyor parts (with TPO belt)

2.2.1 AF200

AF200 - Slat Belt Chain

Application

The transported good is conveyed on the AmbaVeyor slat belt chain. The standard slat belt chain is used in flat level system layouts and is 200 mm wide. High friction slat belt chains are used in system layouts with ascending and descending sections (up to 30 °). No buffer function is possible with high friction slat belt chains

Design

The slat belt chain consists of:

- The slat, type TPS
- The steel chain
- The master link

Features

- Easy assembly and disassembly of the chain at the straight track without use of special tools
- High tensile force $F_{max} = 3500 \text{ N}$

Material

1. Slat = POM
2. Chain
 - o high tension steel
 - o corrosion resistant
 - o stainless steel

Shipping unit

- TPS2 5 m, pre-assembled on the chain including master link
- TPS2 1 m, pre-assembled on the chain including master link

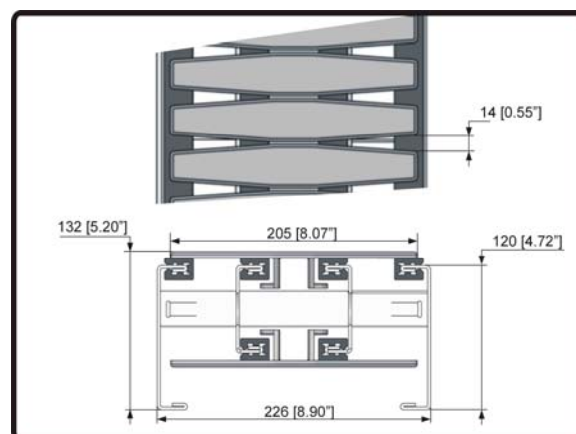
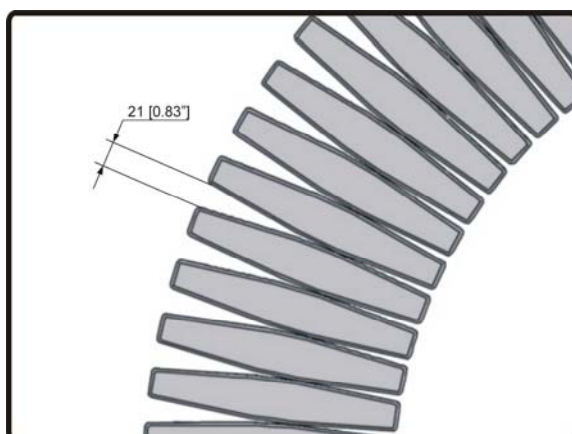
Optional accessories

- High friction slats: TPS2 HF
 - o Shipped as 1 m TPS2 HF on chain
 - o Add friction chain to the end of smooth TPS2 slat belt. Exchanged the TPS2 smooth slats with TPS2 HF slats in the desired ratio. Use smooth slats to fill the empty chain where the TPS2 HF came off.
 - o 4 m chain with a ratio of 1:4 friction slats is coded as TPS2 HF4 and should be put together using 3 x TPS2 1 m and 1 x TPS2 HF.

Customize options

- High friction belt pre-assembled
 - o 25 % TPS2 HF4
 - o 50 % TPS2 HF2
 - o 100 % TPS2 HF1

Picture



AF200 - Straight Track

Application

The straight track section profile is the supporting element for straight sections. The AmbaVeyor slat belt chain is guided and supported in the straight track section profile. The straight track is used between curves, vertical/horizontal bends and drive/idler units. The straight track is easily cut to required lengths.

Design

The section consists of:

- The straight track outer section profile
- The straight track inner section profile
- The connecting rod(s)

The slide strip reduces the frictional resistance and is clipped onto the straight track section profile. The strip is secured in place by rolling pins at both ends.

Material

- G bright galvanized mild steel
- C coated mild steel
- CR non moving parts in triple coated mild steel, pull chain in stainless steel
- RS stainless steel

Shipping unit

- AF2 ST3000, including:
 - o straight track section profile: length 3000 mm (118.11') completely assembled
 - o plastic slide strip: shipped on 12 m rolls (qty. depends on overall length)
 - o slat belt, type TPS: shipped in standard lengths (qty. depends on overall length)
 - o connection plate: 2 connection plates incl. fasteners

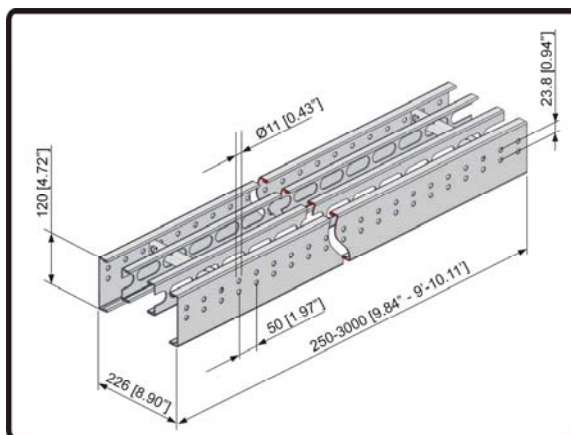
Optional accessories

- Connection set is used to connect the end faces of straight track section profiles at additional cuts and consists of 2 connection plates and a connection rod including fasteners
- High friction slat belt, TPS2 HF
 - o 25 %
 - o 50 %
 - o 100 %

Customize options

- Length: straight tracks lengths can be ordered from 250 mm to 3000 mm (9.84" - 118.11")
- Colour: have the straight painted in any RAL or EFT colour

Picture





AF200 - Curved Track

Application

A horizontal curve is used for a change of direction of the product flow. The standard 90° curve can easily be combined with a second curved track to create a larger angle or cut to size for a smaller angle. The AmbaVeyor slat belt chain is guided and supported in curved track section profile.

The curve track is used between straight sections or a drive & idler unit (low cost alternative to a belt curve).

Design

The section consists of:

- The curved track outer section profile
- The curved track inner section profile
- The connecting rod(s)

The slide strip reduces the frictional resistance and is clipped onto the straight track section profile. The strip is secured in place by rolling pins at both ends. The middle inner track has been pre-fitted with a hard plastic strip because of the larger forces applied to this track.

Material

- G bright galvanized mild steel
- C coated mild steel
- CR non moving parts in triple coated mild steel, pull chain in stainless steel
- RS stainless steel

Shipping unit

- AF2 CT90 R500
 - o curved track section profile: 90° curve with at central radius of 500 mm, completely assembled.
 - o plastic slide strip: shipped on 12 m rolls (qty. depends on overall length)
 - o slat belt, type TPS: shipped in standard lengths (qty. depends on overall length)
 - o connection plate: 2 connection plates incl. fasteners

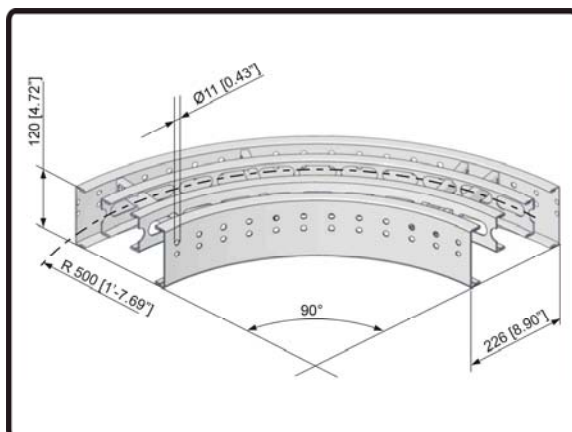
Optional accessories

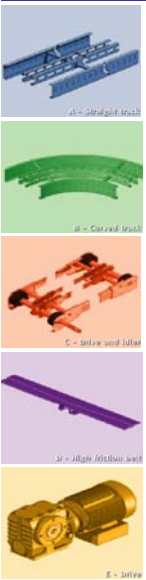
- Connection set is used to connect the end faces of curved track section profiles at additional cuts and consists of 2 connection plates and a connection rod including fasteners
- High friction slat belt, TPS2 HF
 - o 25 %
 - o 50 %
 - o 100 %

Customize options

- Degree: curved tracks lengths can be ordered from 30° to 270°
- Colour: have the straight painted in any RAL or EFT colour

Picture





AF200 - Drive & Idler Unit

Application

The drive and idler unit are sold as a pair and are used for every track as the beginning (idler unit) and end (drive unit) of the track. The shaft is mounted at the right side looking in the direction of travel (products moving away).

The shaft of the drive unit can be changed to the left, a gearmotor is not included.

Design

The drive & idler units consist of:

- Shaft/sprocket and bearings (30 mm drive shaft at right side)
- Pre-mounted wearstrips
- Pre-mounted connecting plates
- O ring for optional driven transfer roller

The length in top view length of a drive or idler unit is 250 mm (9.84"). For transitions between a drive and idler calculate 25 mm spacing between the forward quadrants of the pulleys. If transitions are required these can be driven by the O ring that is fixed around the shaft.

Material

- G bright galvanized mild steel
- C bright galvanized mild steel
- CR stainless steel
- RS stainless steel

Shipping unit

- AF2_DI_30_R
 - o drive & idler unit, with 30 mm shaft right and torque arm
 - o plastic slide strip integrated on units
 - o slat belt, type TPS: shipped in standard lengths (qty. depends on overall length)
 - o connection plate, integrated into design

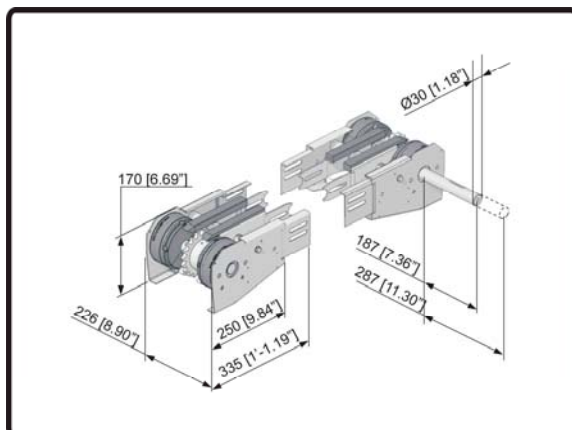
Optional accessories

- Shaft on the left side
- Special shaft diameter (by universal coupling)
- High friction slat belt, TPS2 HF
 - o 25 %
 - o 50 %
 - o 100 %

Customize options

- Shaft on the left side
- Special shaft diameter (by universal coupling)

Picture:





AF200 - Gearmotor

Application

Two standard SEW helical bevel drives are available for AmbaVeyor. The motors are based on two speeds of 18 and 36 m/min (57 and 118 FPM) with a maximum pulling force up to 3500 N. Suited for horizontal mounting on the left or the right side of the track.

Design

The gearmotor consists of:

- Gearmotor
- Correct torque arm
- Fastening materials

Material

- G painted grey
- C painted grey

Shipping unit

- S_18_3500
 - o 18 m /min at 50 Hz / 68 FPM at 60 Hz
 - o SA47 DT90S4 1,1 kW 177 Nm IP54 ISO B
 - o Multi range voltage 50 Hz : 220-240 Δ / 380 - 415 Y
 - o Multi range voltage 60 Hz : 240-266 Δ / 415 - 460 Y
 - o Torque arm & fastening materials
- S_36_3500
 - o 36 m/min at 50 Hz / 142 FPM at 60 Hz
 - o SA57 DV100M4 2.2 kW 190 Nm IP54 ISO B
 - o Multi range voltage 50 Hz : 220-240 Δ / 380 - 415 Y
 - o Multi range voltage 60 Hz : 240-266 Δ / 415 - 460 Y
 - o Torque arm & fastening materials

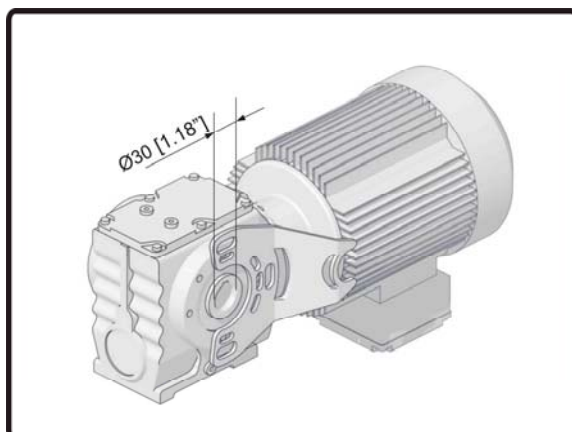
Optional accessories

- None

Customize options

- Alternate brand NORD
- Speed / Force / IP class / ISO / Mounting position

Picture:





AF200 - Vertical Bend Set

Application

A set of two plates are used to create a vertical bend up or down for an incline/decline conveyor. For each vertical bend in your layout one set is to be used.

The maximum bend is 15 degrees up or down, for angles higher/lower than 15 degrees two vertical bends should be used with a section of straight track between them.

Design

A frame connection set consists of:

- Two vertical bend plates
- Fastening materials

Material

- G bright galvanized mild steel
- C bright galvanized mild steel
- CR stainless steel
- RS stainless steel

Shipping unit

- AF2_VBS
 - o Two plates with fastening materials

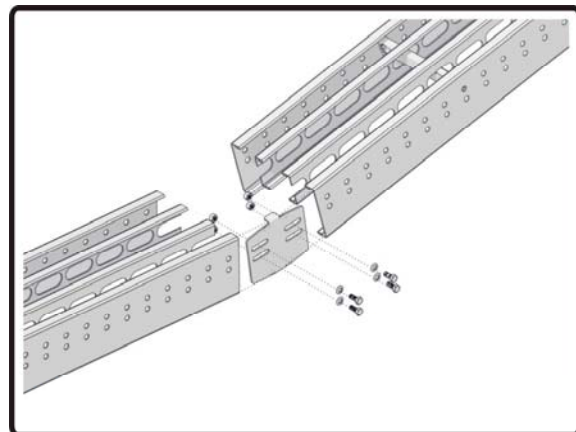
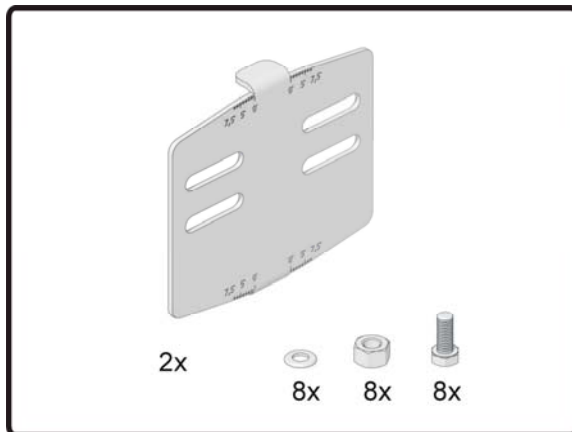
Optional accessories

- None

Customize options

- None

Picture:





AF200 - Frame Connection Set

Application

A set of two connection plates are used to connect two frame parts together. One set of connection plates is included in each standard straight or curved module. When these standard modules are cut to a different length and so divided in more than one module, the single set of connection plates is not enough anymore.

For each frame division an extra set of connection plates must be included. Because the frame is cut to size and loses some of its rigidity, additional connection sets include a spacer rod for the frame modules that is cut to size.

Design

A frame connection set consists of:

- Two connection plates
- Fastening materials
- One spacer rod for the frame part that is cut to size

Material

- G bright galvanized mild steel
- C bright galvanized mild steel
- CR stainless steel
- RS stainless steel

Shipping unit

- AF2_FCS
 - o Two plates with fastening materials
 - o One spacer rod

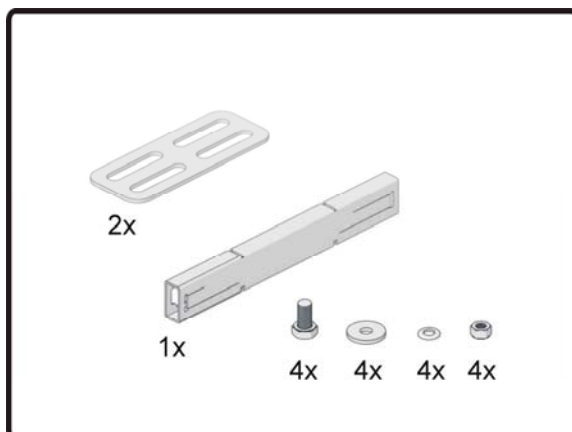
Optional accessories

- None

Customize options

- None

Picture:





AF200 - Transition roller

Application

Each drive and idler unit can be equipped with a transition roller. Typically only used for products of 300 mm [12"] and shorter. The transition roller can be driven for products under 3 kg [6 lbs.]. The o-ring required for a driven transfer is included in the drive & idler unit (pre-mounted around the shaft).

Two transition rollers should be ordered when both the drive & idler unit require a transition.

Design

The transition roller consists of:

- One roller with an outer diameter of 25 mm [1"]
- Two frame connection brackets
- Two height adjustment disc

Material

- G chromed mild steel
- C chromed mild steel
- CR stainless steel
- RS stainless steel

Shipping unit

- AF2_TR
 - o One roller
 - o Two frame connection brackets
 - o Two height adjustment disc

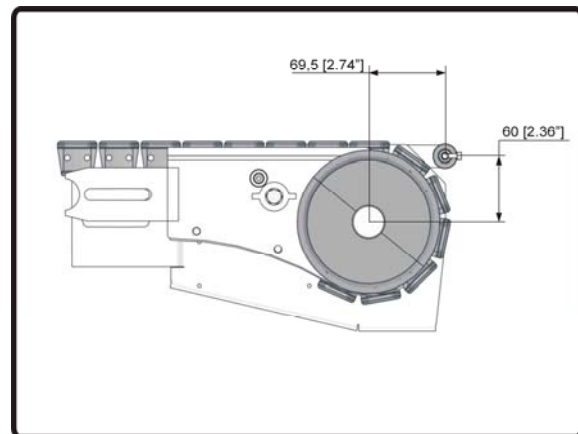
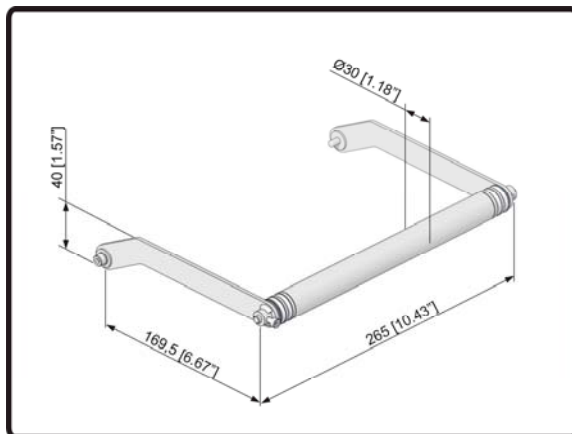
Optional accessories

- Driven transition roller. Not optional because an o-ring is always included on the shaft of drive or idler unit.

Customize options

- Pre-mounted on the drive or idler unit

Picture:





AF200 - Side Guide

Application

AmbaVeyor conveyor can be equipped with a plate type side guide of 50 mm high [2"] from Top Of Belt [TOB]. The guide plate must be connected to the frame each 500 mm [20"]; the outside frame profiles contain connection points every 50 mm [2"].

The guide is delivered with fastening materials to mount the plate flush against the frame. Additional offset sets are available.

Design

The side guide consists of:

- The plate material on a roll
- Steel or stainless steel fastening material (clamp system)

Material

- G bright galvanized mild steel
- C bright galvanized mild steel
- CR stainless steel
- RS stainless steel

Shipping unit

- B50_12
 - o 12 m [40'] of guide on a roll
 - o 24 fastening sets

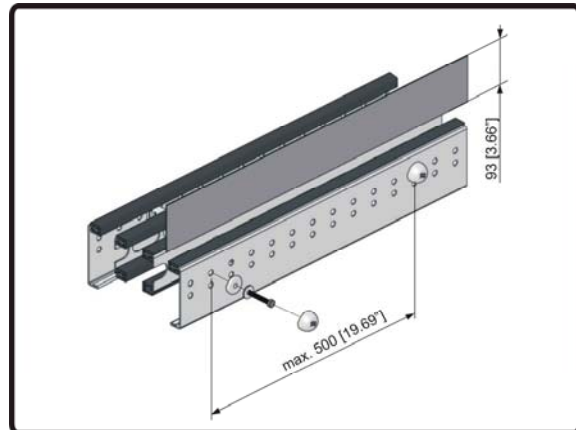
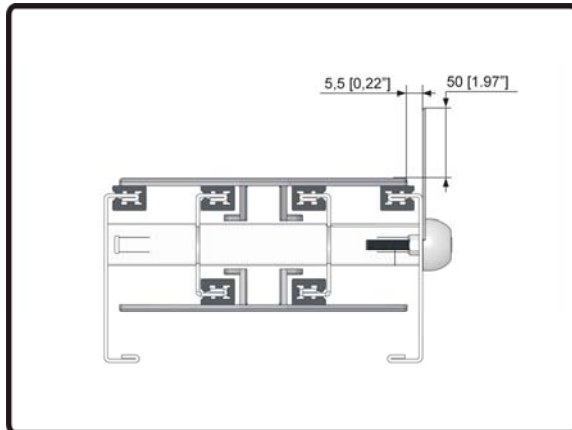
Optional accessories

- Offset spacers: additional spacers to widen the distance between guides and allow bigger products to be transported. Spacers are available in 25 mm [1"] widths in packs of 24.

Customize options

- None

Picture:





AF200 - Offset spacers

Application

The AmbaVeyor can be equipped with a plate type side guide of 50 mm high [2"]. The guide is delivered with a clamp system to mount the plate flush against the frame. This clamp system can be used again; the offset spacers can simply be added to create additional belt width. Longer bolts are included in the offset spacer package.

The spacers are 25 mm [1"] wide and can maximally be combined to 100 mm [4"] offset. Each package contains 24 spacers and sufficient bolts to create any required offset:

- 24 fixation points of 25 mm [1"] offset
- 12 fixation points of 50 mm [2"] offset
- 8 fixation points of 75 mm [3"] offset
- 6 fixation points of 100 mm [4"] offset

Design

The spacers are designed in plastic and the fastening materials depend on the environment. The longer bolts in the package can also be used for small offset.

Material

- G plastic / mild steel
- C plastic / mild steel
- CR plastic / stainless steel
- RS plastic / stainless steel

Shipping unit

- SP
 - o 24 spacers of 25 mm [1"]
 - o 8 bolts M8 x 120
 - o 12 bolts M8 x 70
 - o 4 bolts M8 x 50

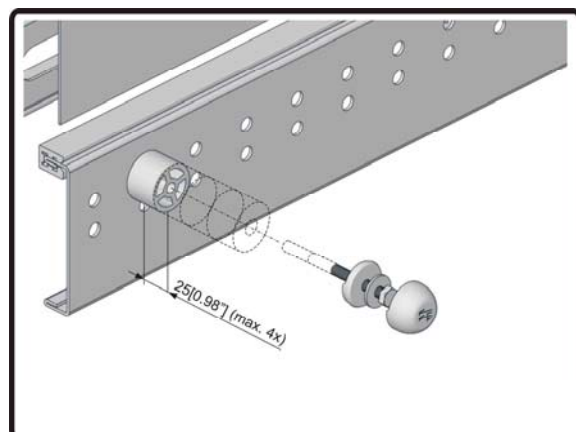
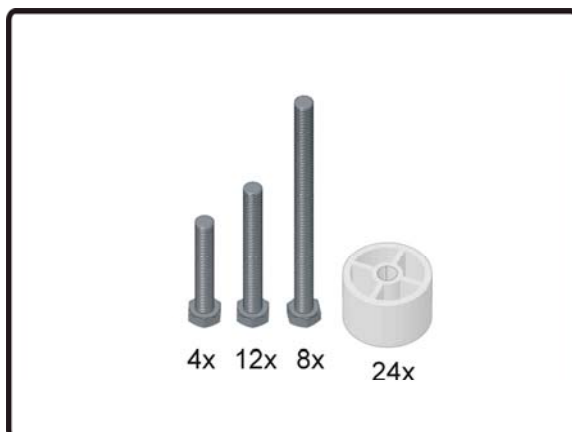
Optional accessories

- None

Customize options

- None

Picture:





AF200 - Support frames

Application

AmbaVeyor support frames are available at up till a maximum Top Of Belt (TOB) height of 3230 mm [10'-7"]; the minimum TOB height is 430 mm [1'-5"]. The supports are priced in four categories:

- Support frame 430 - 980 mm [1'-5" - 3'-3"]
- Support frame 980 - 1230 mm [3'-3" - 4'-0"]
- Support frame 1230 - 1730 mm [4'-0" - 5'-8"]
- Support frame 1730 - 3230 mm [5'-8" - 10'-7"]

The support frame is build up from a set of feet which are connected to the legs with threaded rod. One spacer bar for sideways stability and one set of S-shaped brackets for connection to the frame. The TOB height can be cut to size on site by shorting the support legs. With supports cut at proper length a final adjustment of +/- 50 mm [2"] is still possible. To improve stability of the support frame, it will be equipped with one or more braces depending on the height of the support frame. The braces are used for lateral and inline stability.

Design

The support frame design consists of:

- One set of feet, one set of S shaped brackets and one cross bar per support frame
- A quantity of 3 m [118.11"] support legs; the total quantity depends on the total number of support frames and their heights.
- Lateral bracing:
 - TOB below 1200 mm [47.24"] : 0 x lateral brace
 - TOB between 1200 - 1800 mm [47.24" - 70.87"] : 1 x lateral brace
 - TOB between 1800 - 2550 mm [70.87" - 100.39"] : 2 x lateral brace
 - TOB between 2550 - 1800 mm [100.39" - 125.98"] : 3 x lateral brace
- In line bracing; 1 x brace when TOB is above 1200 mm [47.24"]

Material

- G bright galvanized mild steel
- C painted mild steel
- CR triple coated mild steel

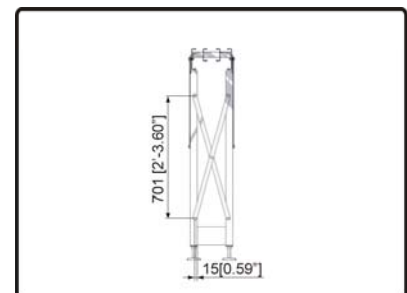
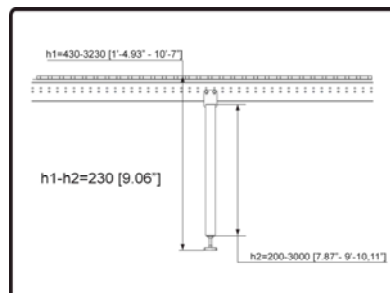
Shipping unit

- AF2_SF_980 / 1230 / 1730 / 3230
 - o One set of feet, one set of S shaped brackets and one cross bar per support frame
 - o A quantity of 3 m [118.11"] support legs; the total quantity depends on the total number of support frames and their heights
 - o A quantity of braces depending on the height of the support frame

Customize options

- A specific TOB height. The support legs will be cut to the requested size and pre-assembled before shipment.

Picture:





AF200 - Slide strips

Application

Slide strips are the surface area on which the slats slides. The strips can be clicked on the straight track, the curved track and the drive & idler units. The click type connection is strong and the strip only needs mechanical fixation at the start and the end of the slide strip.

Design

The slide strip clicks on the inner- and outer profiles at the top of the conveyor (4x) and only on the inner profiles at the bottom of the conveyor (2x). The middle track of the drive & idler unit already contain slide strips as well as the inner middle profile of the curved track.

Material

- G HMPE 1000 with stainless steel fixation pins
- C HMPE 1000 with stainless steel fixation pins
- CR HMPE 1000 with stainless steel fixation pins
- RS HMPE 1000 with stainless steel fixation pins

Shipping unit

- SS_12
 - o 12 m [40'] on a roll
- SS_50
 - o 50 m [164'] on a roll
- SS_1000
 - o 1000 m [3280'] rolled onto a movable coil

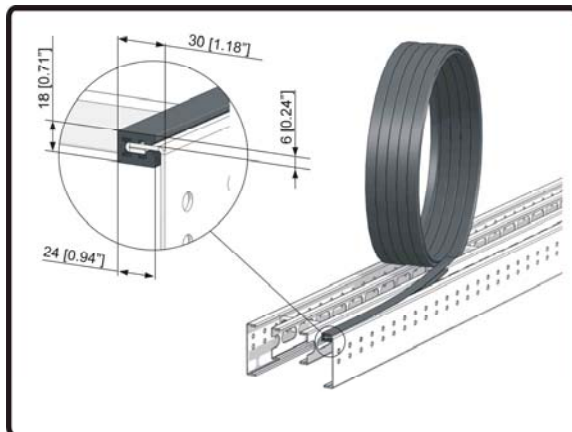
Optional accessories

- None

Customize options

- None

Picture:



2.2.2 AF400

AF400 - TPS Slat Belt Chain

Application

The transported good is conveyed on the AmbaVeyor slat belt chain. The standard slat belt chain is used in flat level system layouts and is 400 mm wide. High friction slat belt chains are used in system layouts with ascending and descending sections (up to 30 °). No buffer function is possible with high friction slat belt chains. AF400 conveyor can be equipped with two slat types; this chapter informs you about the TPS style. TPS without friction inserts is included in the price of the conveyor modules and can be used for non-working environments or overhead conveyors.

Design

The slat belt chain consists of:

- The TPS slat
- The chain
- Master link(s)

Features

- Easy assembly and disassembly of the chain at the straight track without use of special tools
- High tensile force $F_{max} = 3500 \text{ N}$

Material

1. Slat material is POM
2. Chain
 - o high tension steel
 - o corrosion resistant
 - o stainless steel

Shipping unit

- TPS4 5 m, pre-assembled on the chain including master link
- TPS4 1 m, pre-assembled on the chain including master link

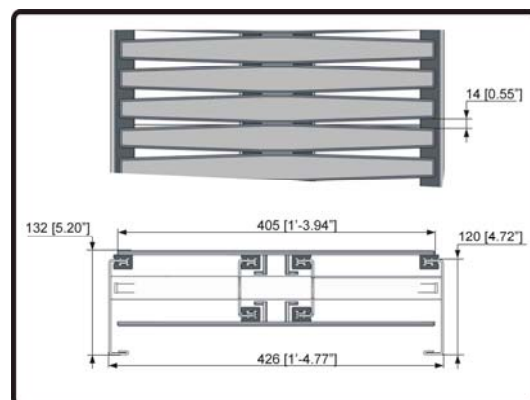
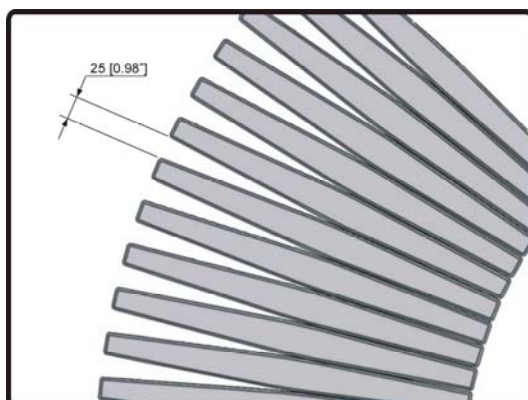
Optional accessories

- High friction slats
 - o Shipped as 1 m TPS4 HF on chain
 - o Add friction chain to the end of smooth TPS4 slat belt. Exchanged the TPS4 smooth slats with TPS4 HF slats in the desired ratio. Use smooth slats to fill the empty chain where the TPS4 HF came off.
 - o 4 m chain with a ratio of 1:4 friction slats is coded as TPS4 HF4 and should be put together using 3 x TPS4 1 m and 1 x TPS4 HF.

Customize options

- High friction belt pre-assembled
 - o 25 % TPS4 HF4
 - o 50 % TPS4 HF2
 - o 100 % TPS4 HF1

Picture:



AF400 - TPO Slat Belt Chain

Application

The transported good is conveyed on the AmbaVeyor slat belt chain. The standard slat belt chain is used in flat level system layouts and is 400 mm wide. High friction slat belt chains are used in system layouts with ascending and descending sections (up to 30 °). No buffer function is possible with high friction slat belt chains. AF400 conveyor can be equipped with two slat types; this chapter informs you about the TPO style.

TPO slats are overlapping and are suited for working environment because of the complete closed belt surface.

Design

The slat belt chain consists of:

- The TPO slat
- The chain
- Master link(s)
-

Features

- Easy assembly and disassembly of the chain at the straight track without use of special tools
- High tensile force $F_{max} = 3500 \text{ N}$

Material

3. Slat material is POM
4. Chain
 - o high tension steel
 - o corrosion resistant
 - o stainless steel

Shipping unit

- TPO4 5 m, pre-assembled on the chain including master link
- TPO4 1 m, pre-assembled on the chain including master link

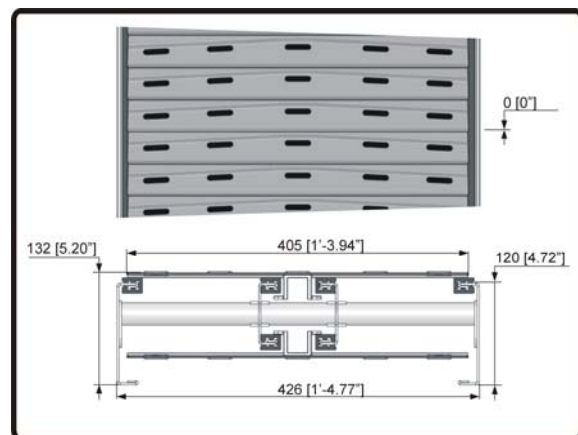
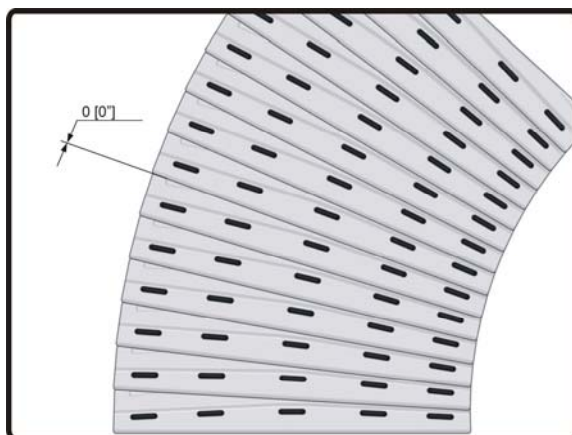
Optional accessories

- High friction inserts
 - o Shipped as loose friction tabs for 5 m TPO4 HF1
 - o To be clicked into a TPO4 smooth slat.

Customize options

- High friction belt pre-assembled
 - o 25 % TPO4 HF4
 - o 50 % TPO4 HF2
 - o 100 % TPO4 HF1

Picture





AF400 - Straight Track

Application

The straight track section profile is the supporting element for straight sections. The AmbaVeyor slat belt chain is guided and supported in the straight track section profile. The straight track is used between curves, vertical/horizontal bends and drive & idler units. The straight track is easily cut to required lengths.

Design

The section consists of:

- The straight track outer section profile
- The straight track inner section profile
- The connecting rod(s)

The slide strip reduces the frictional resistance and is clipped onto the straight track section profile. The strip is secured in place by rolling pins at both ends.

Material

- G bright galvanized mild steel
- C coated mild steel
- CR non moving parts in triple coated mild steel, pull chain in stainless steel
- RS stainless steel

Shipping unit

- AF4 ST3000, including:
 - o straight track section profile: length 3000 mm (118.11') completely assembled
 - o plastic slide strip: shipped on 12 m rolls (qty. depends on overall length)
 - o slat belt, type TPS: shipped in standard lengths (qty. depends on overall length)
 - o connection plate: 2 connection plates incl. fasteners

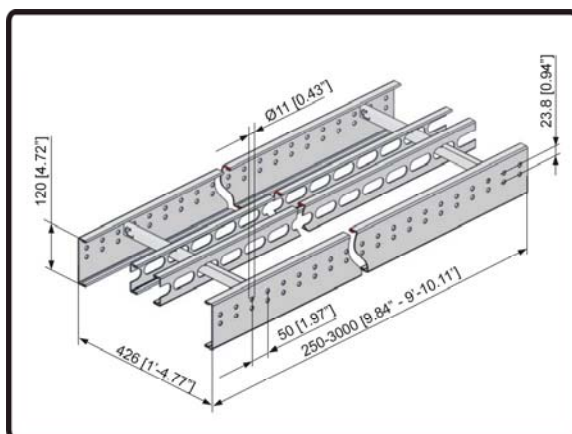
Optional accessories

- Connection set is used to connect the end faces of straight track section profiles at additional cuts and consists of 2 connection plates and a connection rod including fasteners
- High friction slat belt, TPS4 HF
 - o 25 %
 - o 50 %
 - o 100 %

Customize options

- Length: straight tracks lengths can be ordered from 250 mm to 3000 mm (9.84" - 118.11")
- Colour: have the straight painted in any RAL or EFT colour

Picture





AF400 - Curved Track

Application

A horizontal curve is used for a change of direction of the product flow. The standard 90° curve can easily be combined with a second curved track to create a larger angle or cut to size for a smaller angle. The AmbaVeyor slat belt chain is guided and supported in curved track section profile.

The curve track is used between straight sections or a drive & idler unit (low cost alternative to a belt curve).

Design

The section consists of:

- The curved track outer section profile
- The curved track inner section profile
- The connecting rod(s)

The slide strip reduces the frictional resistance and is clipped onto the straight track section profile. The strip is secured in place by rolling pins at both ends. The middle inner track has been pre-fitted with a hard plastic strip because of the larger forces applied to this track.

Material

- G bright galvanized mild steel
- C coated mild steel
- CR non moving parts in triple coated mild steel, pull chain in stainless steel
- RS stainless steel

Shipping unit

- AF4 CT90 R650
 - o curved track section profile: 90° curve with at central radius of 650 mm, completely assembled.
 - o plastic slide strip: shipped on 12 m rolls (qty. depends on overall length)
 - o slat belt, type TPS: shipped in standard lengths (qty. depends on overall length)
 - o connection plate: 2 connection plates incl. fasteners

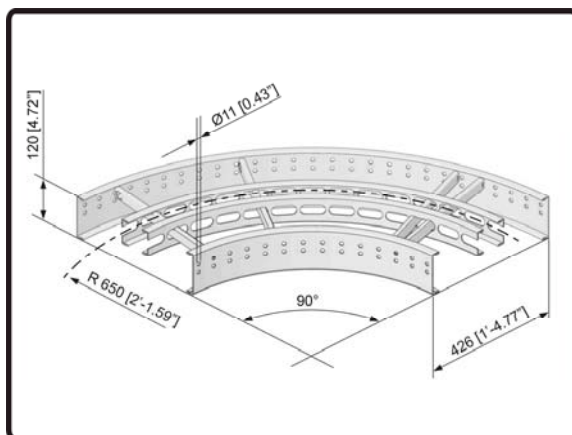
Optional accessories

- Connection set is used to connect the end faces of curved track section profiles at additional cuts and consists of 2 connection plates and a connection rod including fasteners
- High friction slat belt, TPS4 HF
 - o 25 %
 - o 50 %
 - o 100 %

Customize options

- Degree: curved tracks lengths can be ordered from 30° to 270°
- Colour: have the straight painted in any RAL or EFT colour

Picture





AF400 - Drive & Idler Unit

Application

The drive and idler unit are sold as a pair and are used for every track as the beginning (idler unit) and end (drive unit) of the track. The shaft is mounted at the right side looking in the direction of travel (products moving away).

The shaft of the drive unit can be changed to the left, a gearmotor is not included.

Design

The drive & idler units consist of:

- Shaft/sprocket and bearings (30 mm drive shaft at right side)
- Pre-mounted wearstrips
- Pre-mounted connecting plates
- O ring for optional driven transfer roller

The length in top view length of a drive or idler unit is 250 mm (9.84"). For transitions between a drive and idler calculate 25 mm spacing between the forward quadrants of the pulleys. If transitions are required these can be driven by the O ring that is fixed around the shaft.

Material

- G bright galvanized mild steel
- C bright galvanized mild steel
- CR stainless steel
- RS stainless steel

Shipping unit

- AF4_DI_30_R
 - o drive & idler unit, with 30 mm shaft right and torque arm
 - o plastic slide strip integrated on units
 - o slat belt, type TPS: shipped in standard lengths (qty. depends on overall length)
 - o connection plate, integrated into design

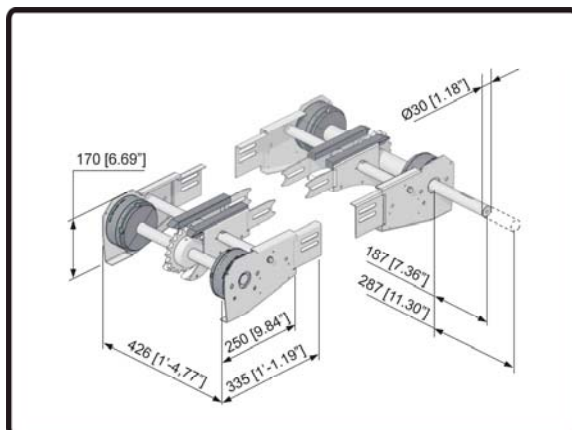
Optional accessories

- Shaft on the left side
- Special shaft diameter (by universal coupling)
- High friction slat belt, TPS4 HF
 - o 25 %
 - o 50 %
 - o 100 %

Customize options

- Shaft on the left side
- Special shaft diameter (by universal coupling)

Picture:





AF400 - Gearmotor

Application

Two standard SEW helical bevel drives are available for AmbaVeyor. The motors are based on two speeds of 18 and 36 m/min (57 and 118 FPM) with a maximum pulling force up to 3500 N. Suited for horizontal mounting on the left or the right side of the track.

Design

The gearmotor consists of:

- Gearmotor
- Correct torque arm
- Fastening materials

Material

- G painted grey
- C painted grey

Shipping unit

- S_18_3500
 - o 18 m /min at 50 Hz / 68 FPM at 60 Hz
 - o SA47 DT90S4 1,1 kW 177 Nm IP54 ISO B
 - o Multi range voltage 50 Hz : 220-240 Δ / 380 - 415 Y
 - o Multi range voltage 60 Hz : 240-266 Δ / 415 - 460 Y
 - o Torque arm & fastening materials
- S_36_3500
 - o 36 m/min at 50 Hz / 142 FPM at 60 Hz
 - o SA57 DV100M4 2.2 kW 190 Nm IP54 ISO B
 - o Multi range voltage 50 Hz : 220-240 Δ / 380 - 415 Y
 - o Multi range voltage 60 Hz : 240-266 Δ / 415 - 460 Y
 - o Torque arm & fastening materials

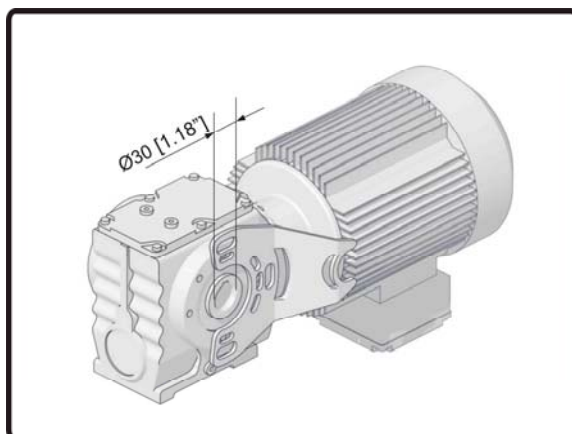
Optional accessories

- None

Customize options

- Alternate brand NORD
- Speed / Force / IP class / ISO / Mounting position

Picture:





AF400 - Vertical Bend Set

Application

A set of two plates are used to create a vertical bend up or down for an incline/decline conveyor. For each vertical bend in your layout one set is to be used.

The maximum bend is 15 degrees up or down, for angles higher/lower than 15 degrees two vertical bends should be used with a section of straight track between them.

Design

A frame connection set consists of:

- Two vertical bend plates
- Fastening materials

Material

- G bright galvanized mild steel
- C bright galvanized mild steel
- CR stainless steel
- RS stainless steel

Shipping unit

- AF4_VBS
 - o Two plates with fastening materials

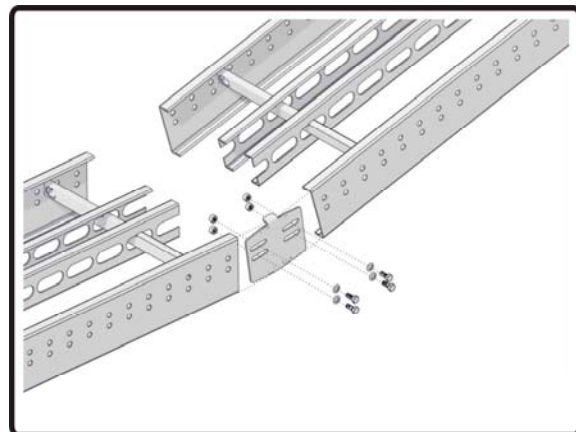
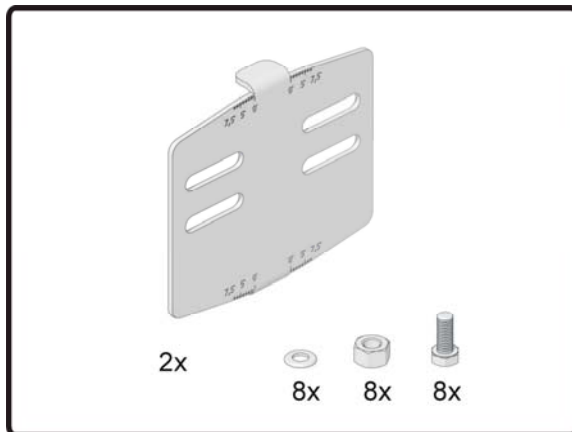
Optional accessories

- None

Customize options

- None

Picture:





AF400 - Frame Connection Set

Application

A set of two connection plates are used to connect two frame parts together. One set of connection plates is included in each standard straight or curved module. When these standard modules are cut to a different length and so divided in more than one module, the single set of connection plates is not enough anymore.

For each frame division an extra set of connection plates must be included. Because the frame is cut to size and loses some of its rigidity, additional connection sets include a spacer rod the frame modules that is cut to size.

Design

A frame connection set consists of:

- Two connection plates
- Fastening materials
- One spacer rod for the frame part that is cut to size

Material

- G bright galvanized mild steel
- C bright galvanized mild steel
- CR stainless steel
- RS stainless steel

Shipping unit

- AF4_FCS
 - o Two plates with fastening materials
 - o One spacer rod

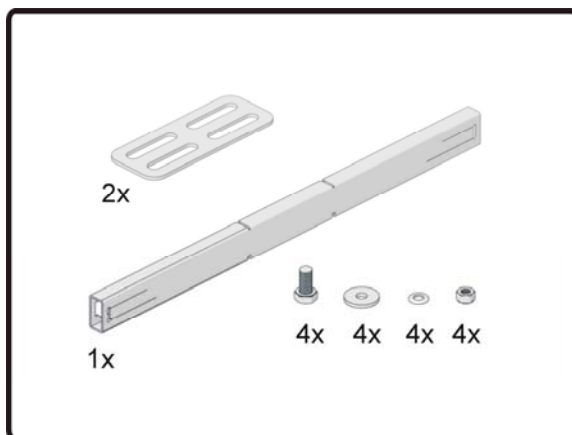
Optional accessories

- None

Customize options

- None

Picture:





AF400 - Transition roller

Application

Each drive and idler unit can be equipped with a transition roller. Typically only used for products of 300 mm [12"] and shorter. The transition roller can be driven for products under 3 kg [6 lbs.]. The o-ring required for a driven transfer is included in the drive & idler unit (pre-mounted around the shaft).

Two transition rollers should be ordered when both the drive & idler unit require a transition.

Design

The transition roller consists of:

- One roller with an outer diameter of 25 mm [1"]
- Two frame connection brackets
- Two height adjustment disc

Material

- G chromed mild steel
- C chromed mild steel
- CR stainless steel
- RS stainless steel

Shipping unit

- AF4_TR
 - o One roller
 - o Two frame connection brackets
 - o Two height adjustment disc

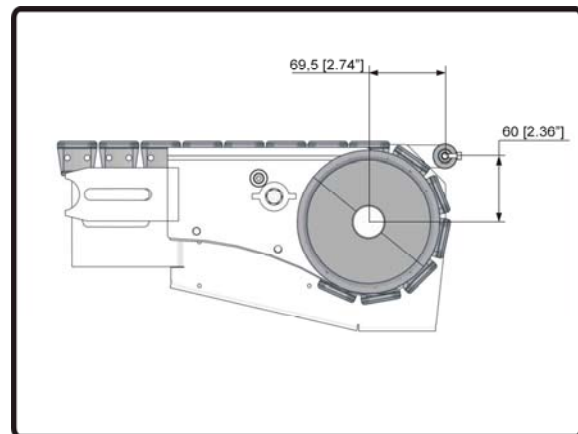
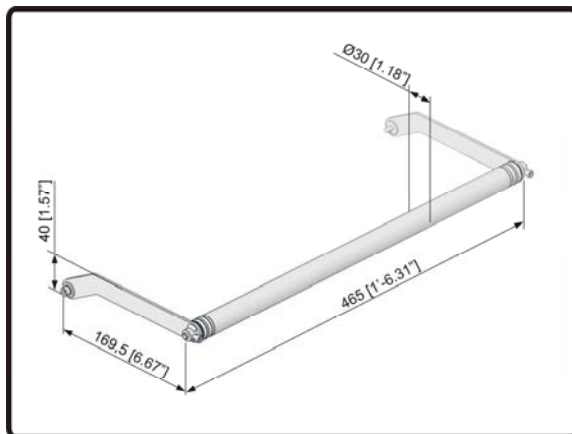
Optional accessories

- Driven transition roller. Not optional because an o-ring is always included on the shaft of drive or idler unit.

Customize options

- Pre-mounted on the drive or idler unit

Picture:





AF400 - Side Guide

Application

AmbaVeyor conveyor can be equipped with a plate type side guide of 50 mm high [2"] from Top Of Belt [TOB]. The guide plate must be connected to the frame each 500 mm [20"]; the outside frame profiles contain connection points every 50 mm [2"].

The guide is delivered with fastening materials to mount the plate flush against the frame. Additional offset sets are available.

Design

The side guide consists of:

- The plate material on a roll
- Steel or stainless steel fastening material (clamp system)

Material

- G bright galvanized mild steel
- C bright galvanized mild steel
- CR stainless steel
- RS stainless steel

Shipping unit

- B50_12
 - o 12 m [40'] of guide on a roll
 - o 24 fastening sets

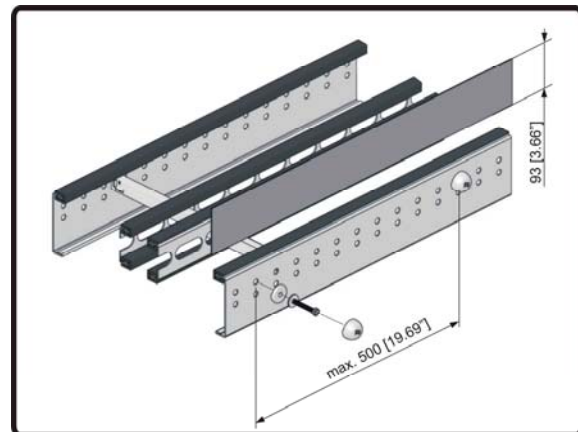
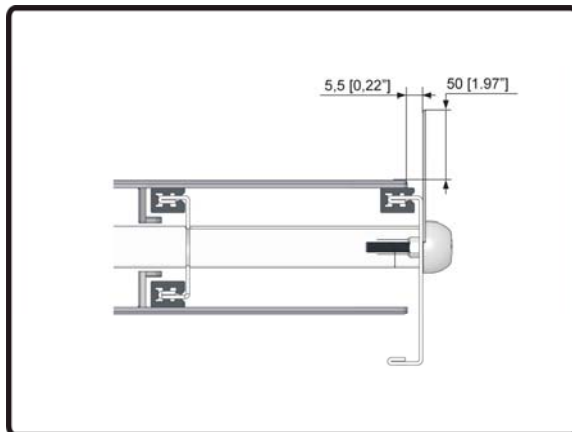
Optional accessories

- Offset spacers: additional spacers to widen the distance between guides and allow bigger products to be transported. Spacers are available in 25 mm [1"] widths in packs of 24.

Customize options

- None

Picture:





AF400 - Offset spacers

Application

AmbaVeyor conveyor can be equipped with a plate type side guide of 50 mm high [2"]. The guide is delivered with a clamp system to mount the plate flush against the frame. This clamp system can be used again; the offset spacers can simply be added to create additional belt width. Longer bolts are included in the offset spacer package.

The spacers are 25 mm [1"] wide and can maximally be combined to 100 mm [4"] offset. Each package contains 24 spacers and sufficient bolts to create any required offset:

- 24 fixation points of 25 mm [1"] offset
- 12 fixation points of 50 mm [2"] offset
- 8 fixation points of 75 mm [3"] offset
- 6 fixation points of 100 mm [4"] offset

Design

The spacers are designed in plastic and the fastening materials depend on the environment. The longer bolts in the package can also be used for small offset.

Material

- G plastic / mild steel
- C plastic / mild steel
- CR plastic / stainless steel
- RS plastic / stainless steel

Shipping unit

- SP
 - o 24 spacers of 25 mm [1"]
 - o 8 bolts M8 x 120
 - o 12 bolts M8 x 70
 - o 4 bolts M8 x 50

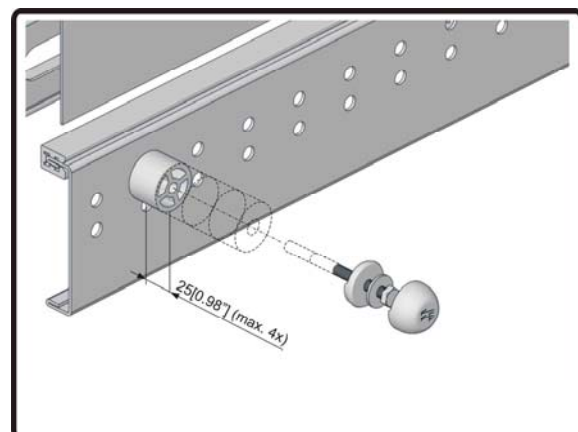
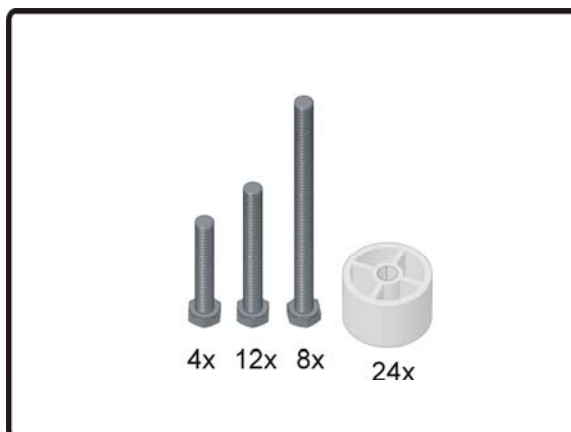
Optional accessories

- None

Customize options

- None

Picture:





AF400 - Support frames

Application

AmbaVeyor support frames are available up to a maximum Top Of Belt (TOB) height of 3230 mm [10'-7"]; the minimum TOB height is 430 mm [1'-5"]. The supports are priced in four categories:

- Support frame 430 - 980 mm [1'-5" - 3'-3"]
- Support frame 980 - 1230 mm [3'-3" - 4'-0"]
- Support frame 1230 - 1730 mm [4'-0" - 5'-8"]
- Support frame 1730 - 3230 mm [5'-8" - 10'-7"]

The support frame is built up from a set of feet which are connected to the legs with threaded rod. One spacer bar for sideways stability and one set of S-shaped brackets for connection to the frame. The TOB height can be cut to size on site by shorting the support legs. With supports cut at proper length a final adjustment of +/- 50 mm [2"] is still possible. To improve stability of the support frame, it will be equipped with one or more braces depending on the height of the support frame. The braces are used for lateral and inline stability.

Design

The support frame design consists of:

- One set of feet, one set of S shaped brackets and one cross bar per support frame
- A quantity of 3 m [118.11"] support legs; the total quantity depends on the total number of support frames and their heights.
- Lateral bracing:
 - TOB below 1200 mm [47.24"] : 0 x lateral brace
 - TOB between 1200 - 1800 mm [47.24" - 70.87"] : 1 x lateral brace
 - TOB between 1800 - 2550 mm [70.87" - 100.39"] : 2 x lateral brace
 - TOB between 2550 - 1800 mm [100.39" - 125.98"] : 3 x lateral brace
- In line bracing; 1 x brace when TOB is above 1200 mm [47.24"]

Material

- G bright galvanized mild steel
- C painted mild steel
- CR triple coated mild steel

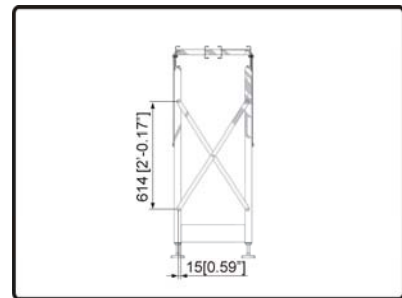
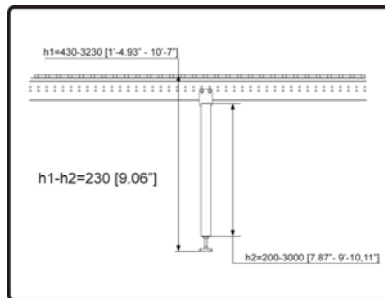
Shipping unit

- AF4_SF_980 / 1230 / 1730 / 3230
 - o One set of feet, one set of S shaped brackets and one cross bar per support frame
 - o A quantity of 3 m [118.11"] support legs; the total quantity depends on the total number of support frames and their heights
 - o A quantity of braces depending on the height of the support frame

Customize options

- A specific TOB height. The support legs will be cut to the requested size and pre-assembled before shipment.

Picture:





AF400 - Slide strips

Application

Slide strips are the surface area on which the slats slides. The strips can be clicked on the straight track, the curved track and the drive & idler units. The click type connection is strong and the strip only needs mechanical fixation at the start and the end of the slide strip.

Design

The slide strip clicks on the inner- and outer profiles at the top of the conveyor (4x) and only on the inner profiles at the bottom of the conveyor (2x). The middle track of the drive & idler unit already contain slide strips as well as the inner middle profile of the curved track.

Material

- G HMPE 1000 with stainless steel fixation pins
- C HMPE 1000 with stainless steel fixation pins
- CR HMPE 1000 with stainless steel fixation pins
- RS HMPE 1000 with stainless steel fixation pins

Shipping unit

- SS_12
 - o 12 m [40'] on a roll
- SS_50
 - o 50 m [164'] on a roll
- SS_1000
 - o 1000 m [3280'] rolled onto a movable coil

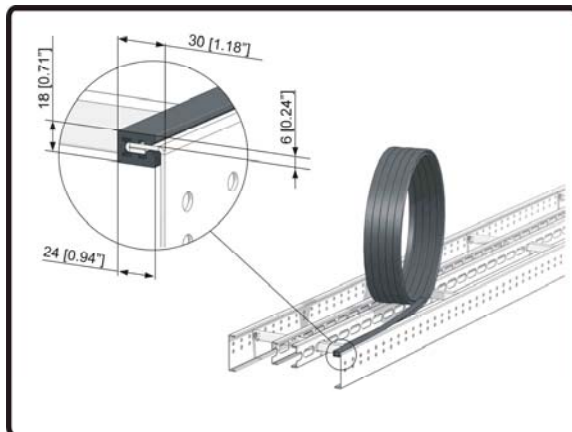
Optional accessories

- None

Customize options

- None

Picture:



2.2.3 AF600

AF600 - Slat Belt Chain

Application

The transported good is conveyed on the AmbaVeyor slat belt chain. The standard slat belt chain is used in flat level system layouts and is 200 mm wide. High friction slat belt chains are used in system layouts with ascending and descending sections (up to 30 °). No buffer function is possible with high friction slat belt chains

Design

The slat belt chain consists of:

- The slat, type TPS
- The steel chain
- The master link

Features

- Easy assembly and disassembly of the chain at the straight track without use of special tools
- High tensile force $F_{max} = 3500 \text{ N}$

Material

3. Slat = POM
4. Chain
 - o high tension steel
 - o corrosion resistant
 - o stainless steel

Shipping unit

- TPS6 5 m, pre-assembled on the chain including master link
- TPS6 1 m, pre-assembled on the chain including master link

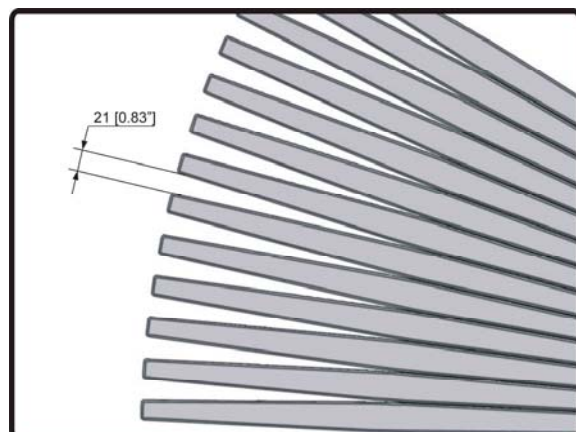
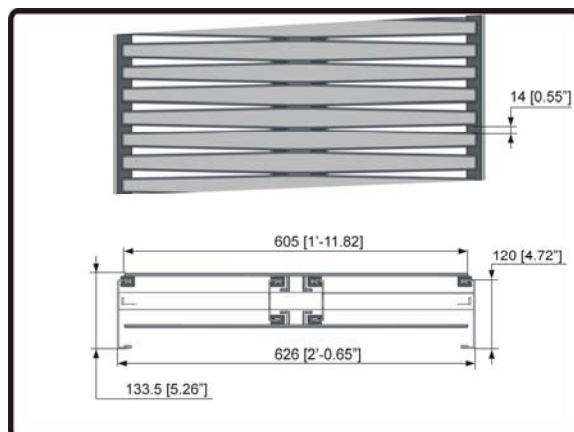
Optional accessories

- High friction slats: TPS6 HF
 - o Shipped as 1 m TPS6 HF on chain
 - o Add friction chain to the end of smooth TPS6 slat belt. Exchanged the TPS6 smooth slats with TPS6 HF slats in the desired ratio. Use smooth slats to fill the empty chain where the TPS6 HF came off.
 - o 4 m chain with a ratio of 1:4 friction slats is coded as TPS6 HF4 and should be put together using 3 x TPS6 1 m and 1 x TPS6 HF.

Customize options

- High friction belt pre-assembled
 - o 25 % TPS6 HF4
 - o 50 % TPS6 HF2
 - o 100 % TPS6 HF1

Picture





AF600 - Straight Track

Application

The straight track section profile is the supporting element for straight sections. The AmbaVeyor slat belt chain is guided and supported in the straight track section profile. The straight track is used between curves, vertical/horizontal bends and drive & idler units. The straight track is easily cut to required lengths.

Design

The section consists of:

- The straight track outer section profile
- The straight track inner section profile
- The connecting rod(s)

The slide strip reduces the frictional resistance and is clipped onto the straight track section profile. The strip is secured in place by rolling pins at both ends.

Material

- G bright galvanized mild steel
- C coated mild steel
- CR non moving parts in triple coated mild steel, pull chain in stainless steel
- RS stainless steel

Shipping unit

- AF6_ST3000, including:
 - o straight track section profile: length 3000 mm (118.11') completely assembled
 - o plastic slide strip: shipped on 12 m rolls (qty. depends on overall length)
 - o slat belt, type TPS: shipped in standard lengths (qty. depends on overall length)
 - o connection plate: 2 connection plates incl. fasteners

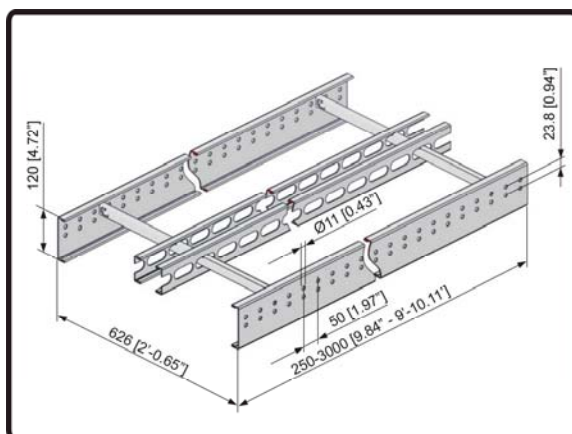
Optional accessories

- Connection set is used to connect the end faces of straight track section profiles at additional cuts and consists of 2 connection plates and a connection rod including fasteners
- High friction slat belt, TPS6 HF
 - o 25 %
 - o 50 %
 - o 100 %

Customize options

- Length: straight tracks lengths can be ordered from 250 mm to 3000 mm (9.84" - 118.11")
- Colour: have the straight painted in any RAL or EFT colour

Picture





AF600 - Curved Track

Application

A horizontal curve is used for a change of direction of the product flow. The standard 90° curve can easily be combined with a second curved track to create a larger angle or cut to size for a smaller angle. The AmbaVeyor slat belt chain is guided and supported in curved track section profile.

The curve track is used between straight sections or a drive & idler unit (low cost alternative to a belt curve).

Design

The section consists of:

- The curved track outer section profile
- The curved track inner section profile
- The connecting rod(s)

The slide strip reduces the frictional resistance and is clipped onto the straight track section profile. The strip is secured in place by rolling pins at both ends. The middle inner track has been pre-fitted with a hard plastic strip because of the larger forces applied to this track.

Material

- G bright galvanized mild steel
- C coated mild steel
- CR non moving parts in triple coated mild steel, pull chain in stainless steel
- RS stainless steel

Shipping unit

- AF6 CT90 R900
 - o curved track section profile: 90° curve with at central radius of 900 mm, completely assembled.
 - o plastic slide strip: shipped on 12 m rolls (qty. depends on overall length)
 - o slat belt, type TPS: shipped in standard lengths (qty. depends on overall length)
 - o connection plate: 2 connection plates incl. fasteners

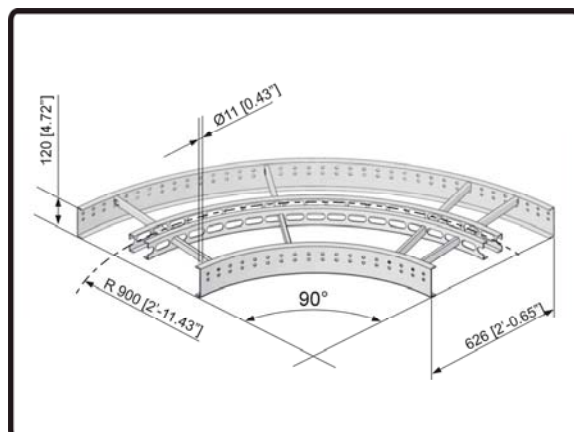
Optional accessories

- Connection set is used to connect the end faces of curved track section profiles at additional cuts and consists of 2 connection plates and a connection rod including fasteners
- High friction slat belt, TPS6 HF
 - o 25 %
 - o 50 %
 - o 100 %

Customize options

- Degree: curved tracks lengths can be ordered from 30° to 270°
- Colour: have the straight painted in any RAL or EFT colour

Picture





AF600 - Drive & Idler Unit

Application

The drive and idler unit are sold as a pair and are used for every track as the beginning (idler unit) and end (drive unit) of the track. The shaft is mounted at the right side looking in the direction of travel (products moving away).

The shaft of the drive unit can be changed to the left, a gearmotor is not included.

Design

The drive & idler units consist of:

- Shaft/sprocket and bearings (30 mm drive shaft at right side)
- Pre-mounted wearstrips
- Pre-mounted connecting plates
- O ring for optional driven transfer roller

The length in top view length of a drive or idler unit is 250 mm (9.84"). For transitions between a drive and idler calculate 25 mm spacing between the forward quadrants of the pulleys. If transitions are required these can be driven by the O ring that is fixed around the shaft.

Material

- G bright galvanized mild steel
- C bright galvanized mild steel
- CR stainless steel
- RS stainless steel

Shipping unit

- AF6_DI_30_R
 - o drive & idler unit, with 30 mm shaft right and torque arm
 - o plastic slide strip integrated on units
 - o slat belt, type TPS: shipped in standard lengths (qty. depends on overall length)
 - o connection plate, integrated into design

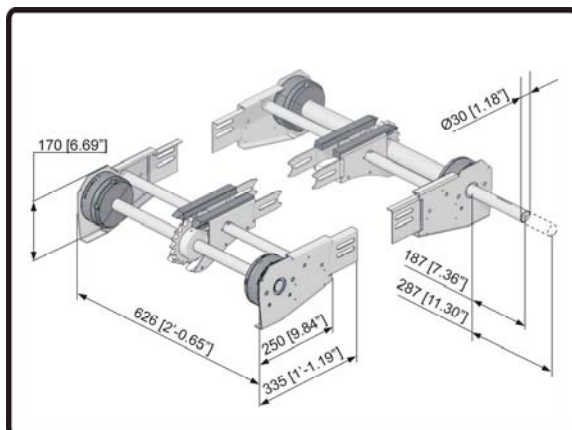
Optional accessories

- Shaft on the left side
- Special shaft diameter (by universal coupling)
- High friction slat belt, TPS6 HF
 - o 25 %
 - o 50 %
 - o 100 %

Customize options

- Shaft on the left side
- Special shaft diameter (by universal coupling)

Picture:





AF600 - Gearmotor

Application

Two standard SEW helical bevel drives are available for AmbaVeyor. The motors are based on two speeds of 18 and 36 m/min (57 and 118 FPM) with a maximum pulling force up to 3500 N. Suited for horizontal mounting on the left or the right side of the track.

Design

The gearmotor consists of:

- Gearmotor
- Correct torque arm
- Fastening materials

Material

- G painted grey
- C painted grey

Shipping unit

- S_18_3500
 - o 18 m /min at 50 Hz / 68 FPM at 60 Hz
 - o SA47 DT90S4 1,1 kW 177 Nm IP54 ISO B
 - o Multi range voltage 50 Hz : 220-240 Δ / 380 - 415 Y
 - o Multi range voltage 60 Hz : 240-266 Δ / 415 - 460 Y
 - o Torque arm & fastening materials
- S_36_3500
 - o 36 m/min at 50 Hz / 142 FPM at 60 Hz
 - o SA57 DV100M4 2.2 kW 190 Nm IP54 ISO B
 - o Multi range voltage 50 Hz : 220-240 Δ / 380 - 415 Y
 - o Multi range voltage 60 Hz : 240-266 Δ / 415 - 460 Y
 - o Torque arm & fastening materials

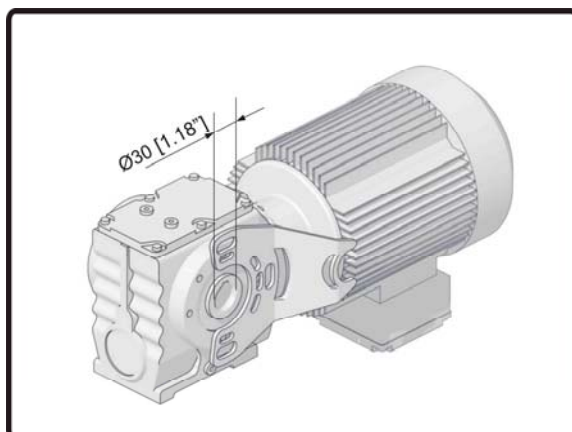
Optional accessories

- None

Customize options

- Alternate brand NORD
- Speed / Force / IP class / ISO / Mounting position

Picture:





AF600 - Vertical Bend Set

Application

A set of two plates are used to create a vertical bend up or down for an incline/decline conveyor. For each vertical bend in your layout one set is to be used.

The maximum bend is 15 degrees up or down, for angles higher/lower than 15 degrees two vertical bends should be used with a section of straight track between them.

Design

A frame connection set consists of:

- Two vertical bend plates
- Fastening materials

Material

- G bright galvanized mild steel
- C bright galvanized mild steel
- CR stainless steel
- RS stainless steel

Shipping unit

- AF6_VBS
 - o Two plates with fastening materials

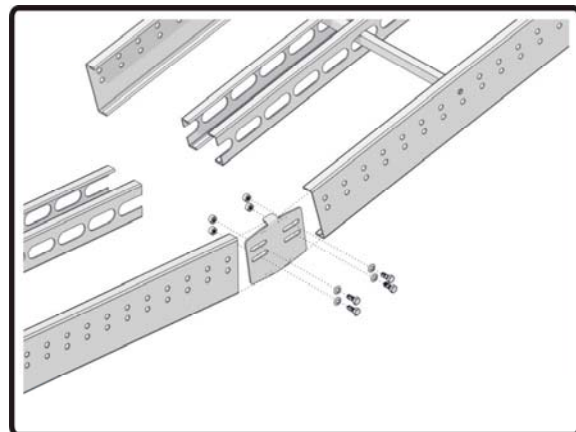
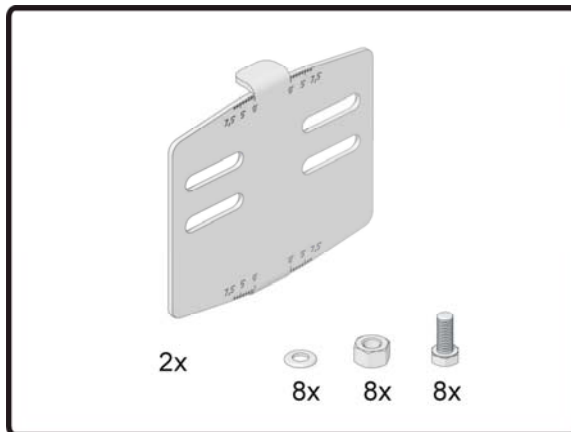
Optional accessories

- None

Customize options

- None

Picture:





AF600 - Frame Connection Set

Application

A set of two connection plates are used to connect two frame parts together. One set of connection plates is included in each standard straight or curved module. When these standard modules are cut to a different length and so divided in more than one module, the single set of connection plates is not enough anymore.

For each frame division an extra set of connection plates must be included. Because the frame is cut to size and loses some of its rigidity, additional connection sets include a spacer rod the frame modules that is cut to size.

Design

A frame connection set consists of:

- Two connection plates
- Fastening materials
- One spacer rod for the frame part that is cut to size

Material

- G bright galvanized mild steel
- C bright galvanized mild steel
- CR stainless steel
- RS stainless steel

Shipping unit

- AF6_FCS
 - o Two plates with fastening materials
 - o One spacer rod

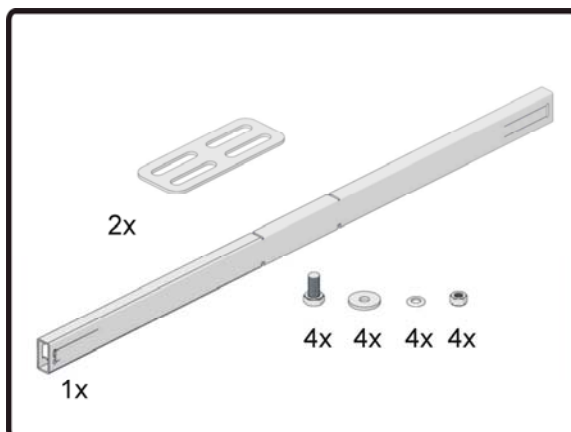
Optional accessories

- None

Customize options

- None

Picture:





AF600 - Transition roller

Application

Each drive and idler unit can be equipped with a transition roller. Typically only used for products of 300 mm [12"] and shorter. The transition roller can be driven for products under 3 kg [6 lbs.]. The o-ring required for a driven transfer is included in the drive & idler unit (pre-mounted around the shaft).

Two transition rollers should be ordered when both the drive & idler unit require a transition.

Design

The transition roller consists of:

- One roller with an outer diameter of 25 mm [1"]
- Two frame connection brackets
- Two height adjustment disc

Material

- G chromed mild steel
- C chromed mild steel
- CR stainless steel
- RS stainless steel

Shipping unit

- AF6_TR
 - o One roller
 - o Two frame connection brackets
 - o Two height adjustment disc

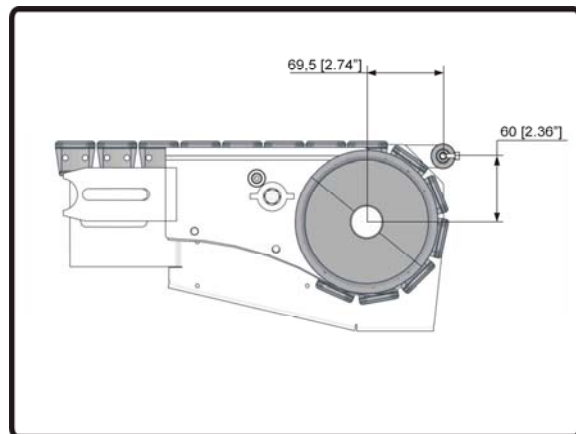
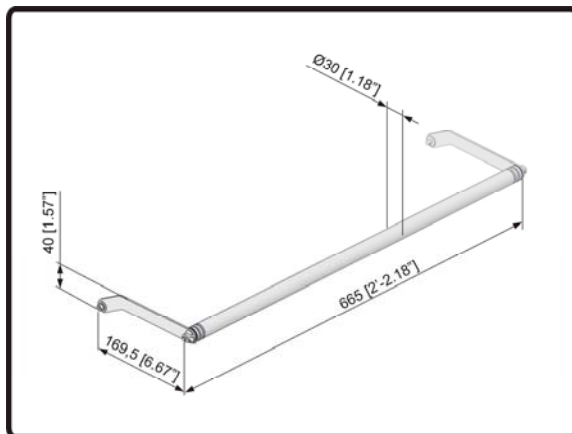
Optional accessories

- Driven transition roller. Not optional because an o-ring is always included on the shaft of drive or idler unit.

Customize options

- Pre-mounted on the drive or idler unit

Picture:





AF600 - Side Guide

Application

AmbaVeyor conveyor can be equipped with a plate type side guide of 50 mm high [2"] from Top Of Belt [TOB]. The guide plate must be connected to the frame each 500 mm [20"]; the outside frame profiles contain connection points every 50 mm [2"].

The guide is delivered with fastening materials to mount the plate flush against the frame. Additional offset sets are available.

Design

The side guide consists of:

- The plate material on a roll
- Steel or stainless steel fastening material (clamp system)

Material

- G bright galvanized mild steel
- C bright galvanized mild steel
- CR stainless steel
- RS stainless steel

Shipping unit

- B50_12
 - o 12 m [40'] of guide on a roll
 - o 24 fastening sets

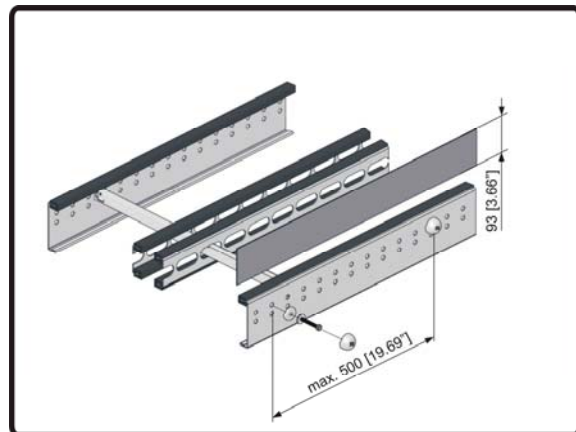
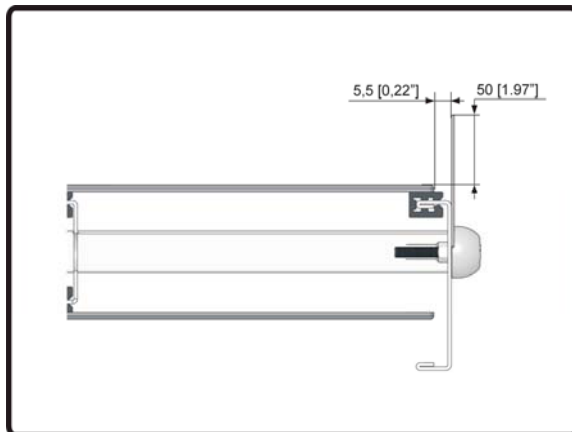
Optional accessories

- Offset spacers: additional spacers to widen the distance between guides and allow bigger products to be transported. Spacers are available in 25 mm [1"] widths in packs of 24.

Customize options

- None

Picture:





AF600 - Offset spacers

Application

AmbaVeyor conveyor can be equipped with a plate type side guide of 50 mm high [2"]. The guide is delivered with a clamp system to mount the plate flush against the frame. This clamp system can be used again; the offset spacers can simply be added to create additional belt width. Longer bolts are included in the offset spacer package.

The spacers are 25 mm [1"] wide and can maximally be combined to 100 mm [4"] offset. Each package contains 24 spacers and sufficient bolts to create any required offset:

- 24 fixation points of 25 mm [1"] offset
- 12 fixation points of 50 mm [2"] offset
- 8 fixation points of 75 mm [3"] offset
- 6 fixation points of 100 mm [4"] offset

Design

The spacers are designed in plastic and the fastening materials depend on the environment. The longer bolts in the package can also be used for small offset.

Material

- G plastic / mild steel
- C plastic / mild steel
- CR plastic / stainless steel
- RS plastic / stainless steel

Shipping unit

- SP
 - o 24 spacers of 25 mm [1"]
 - o 8 bolts M8 x 120
 - o 12 bolts M8 x 70
 - o 4 bolts M8 x 50

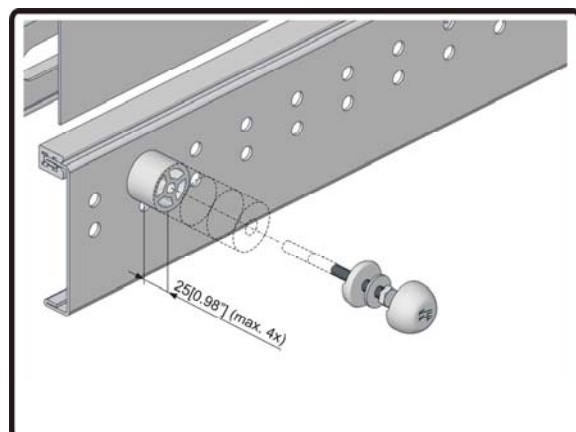
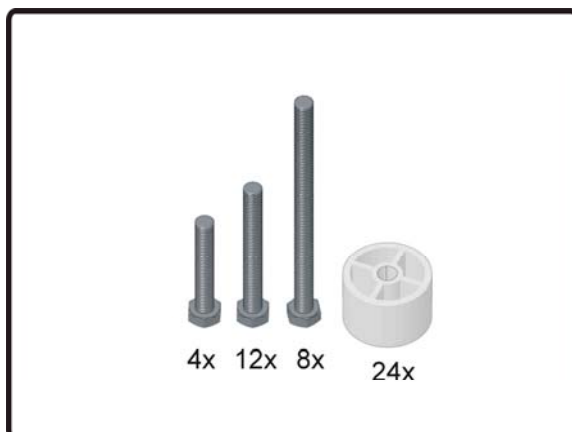
Optional accessories

- None

Customize options

- None

Picture:





AF600 - Support frames

Application

AmbaVeyor support frames are available up to a maximum Top Of Belt (TOB) height of 3230 mm [10'-7"]; the minimum TOB height is 430 mm [1'-5"]. The supports are priced in four categories:

- Support frame 430 - 980 mm [1'-5" - 3'-3"]
- Support frame 980 - 1230 mm [3'-3" - 4'-0"]
- Support frame 1230 - 1730 mm [4'-0" - 5'-8"]
- Support frame 1730 - 3230 mm [5'-8" - 10'-7"]

The support frame is built up from a set of feet which are connected to the legs with threaded rod. One spacer bar for sideways stability and one set of S-shaped brackets for connection to the frame. The TOB height can be cut to size on site by shorting the support legs. With supports cut at proper length a final adjustment of +/- 50 mm [2"] is still possible. To improve stability of the support frame, it will be equipped with one or more braces depending on the height of the support frame. The braces are used for lateral and inline stability.

Design

The support frame design consists of:

- One set of feet, one set of S shaped brackets and one cross bar per support frame
- A quantity of 3 m [118.11"] support legs; the total quantity depends on the total number of support frames and their heights.
- Lateral bracing:
 - TOB below 1200 mm [47.24"] : 0 x lateral brace
 - TOB between 1200 - 1800 mm [47.24" - 70.87"] : 1 x lateral brace
 - TOB between 1800 - 2550 mm [70.87" - 100.39"] : 2 x lateral brace
 - TOB between 2550 - 1800 mm [100.39" - 125.98"] : 3 x lateral brace
- In line bracing; 1 x brace when TOB is above 1200 mm [47.24"]

Material

- G bright galvanized mild steel
- C painted mild steel
- CR triple coated mild steel

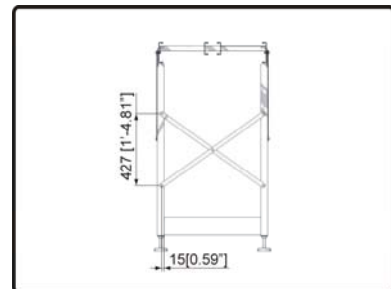
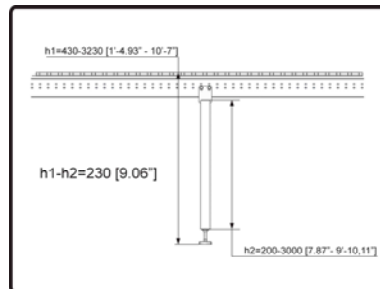
Shipping unit

- AF4_SF_980 / 1230 / 1730 / 3230
 - o One set of feet, one set of S shaped brackets and one cross bar per support frame
 - o A quantity of 3 m [118.11"] support legs; the total quantity depends on the total number of support frames and their heights
 - o A quantity of braces depending on the height of the support frame

Customize options

- A specific TOB height. The support legs will be cut to the requested size and pre-assembled before shipment.

Picture:





AF600 - Slide strips

Application

Slide strips are the surface area on which the slats slides. The strips can be clicked on the straight track, the curved track and the drive & idler units. The click type connection is strong and the strip only needs mechanical fixation at the start and the end of the slide strip.

Design

The slide strip clicks on the inner- and outer profiles at the top of the conveyor (4x) and only on the inner profiles at the bottom of the conveyor (2x). The middle track of the drive & idler unit already contain slide strips as well as the inner middle profile of the curved track.

Material

- G HMPE 1000 with stainless steel fixation pins
- C HMPE 1000 with stainless steel fixation pins
- CR HMPE 1000 with stainless steel fixation pins
- RS HMPE 1000 with stainless steel fixation pins

Shipping unit

- SS_12
 - o 12 m [40'] on a roll
- SS_50
 - o 50 m [164'] on a roll
- SS_1000
 - o 1000 m [3280'] rolled onto a movable coil

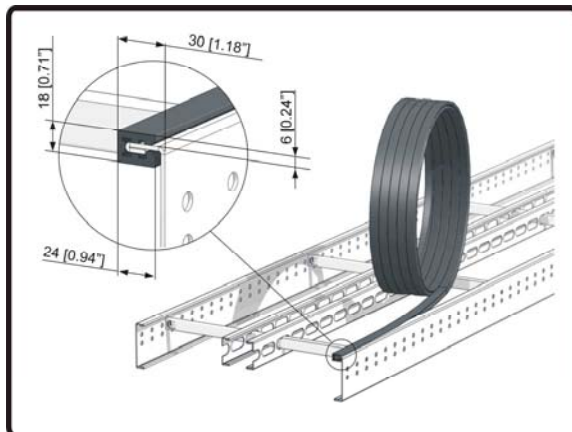
Optional accessories

- None

Customize options

- None

Picture:





2.3 Speed & Load

High loads are possible with the AmbaVeyor. The metal chain pulls all the weight through the system, without using interlocking slats, the slats only bear the product weight. Both types of plastic slats can handle a point weight of 50 kg [110 lbs.] before deformation. The slat gliding over the wear strip can handle 120 kg/m [80 lbs. / ft.] before the wear becomes unacceptable, the load must be uniformly spread over the track without any point loads.

Maximum point load : 50 kg [110 lbs.]
 Maximum average load : 120 kg /m [80 lbs. /ft.]

The AmbaVeyor can be used for speeds up till 60 m /min [200 fpm]. Standard speeds available from stock are 18 m /min [59 fpm] and 36 m /min [118 fpm], other speeds are available with longer delivery times. The minimum speed depends on the torque requirement and drive availability from the motor supplier. Typically speeds as low as 2 m /min [6 fpm] as possible at maximum loads.

2.4 Special program

Besides the stock program the AmbaVeyor can be specially made for specific needs.

2.4.1 Larger curve radius

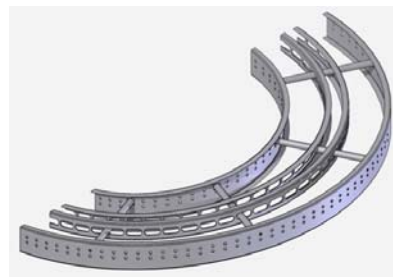
The curve radiuses of the stock parts are the minimum centerline radius for the belt widths. The AmbaVeyor curves can be made with a larger radius. Please see the minimum (standard) curve radius from which larger centerline radiuses are possible.

Track width	Minimum curve radius
200 mm [8"]	500 mm [19,69"]
400 mm [16"]	650 mm [25,59"]
600 mm [24"]	900 mm [35,43"]

2.4.2 Helical curves

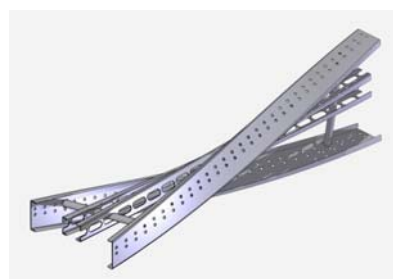
Helical curves are used to achieve a height difference in a curve. A helical curve is a standard curve under an angle with a twisted track.

When applying a helical curve use the same minimum curve radius for regular curves. Because the curve is twisted and under an angle, the conveyor before and after the helical curve must be a section of straight to transition to and from the twisted track.



2.4.3 Twisted track

A twisted track can be used for sliding of products or gently changing product orientation. Can be used as an end of the track or combined with another twist to bring the track back to plain level.



2.4.4 Other side guides

A selection of other guides can be fitted on the AmbaVeyor frame. The 50 mm plate is available on stock, other guides like single or double rails can be made on order.



3 Designing the layout

The most important thing when designing an AmbaVeyor layout is where a drive unit is to be placed. This requires a detailed friction calculation using load, speed and module sequence information.

For your convenience a handy tool, called the AmbaVeyor Customer Calculator is available at the download page on www.AmbaVeyor.com which automatically calculates this for you. The tool allows you to enter all your project parameters and place AmbaVeyor modules to form a layout. Background calculations display the pulling force, support frame placement and conveyor height. A set of warnings inform you when limits are exceeded or wrong modules are placed.

This chapter will inform you what parameters are needed from the application, how to combine AmbaVeyor modules and when to place a drive unit.

When the physical layout is complete, the last chapter will inform you about accessories like the belt, support frames and the side guides. For details about the AmbaVeyor modules please refer to chapter 2 for a complete overview.

3.1 Determine design start values

Before starting the design four start parameters are required to correctly determine the pulling force and finally a price for the conveyor.

Belt width

The belt width of the track determines the weight of the conveyor belt and the curve radii. Both are equally important in the friction calculation in the calculator.

Average load

An average load on the conveyor [kg /m or lbs. / ft.] is required to accurately calculate the pulling force at any part of the layout. The drive of the conveyor must have a minimum service factor of 1.2 so the conveyor can handle incidental peak loads. The average load can be entered in the downloadable AmbaVeyor Customer Calculator.

Starting height and angle of the conveyor

The starting height and angle of the conveyor (at the idler unit) is required for an accurate support height calculation (and price) and the TOB height at the end of the conveyor when using elevation changes. The starting height does not influence the friction calculation, the belt angle does.

Material configuration

The material configuration is required for the price calculation when the conveyor layout is completed. The material configuration does not influence the friction calculation.

3.2 Placing modules

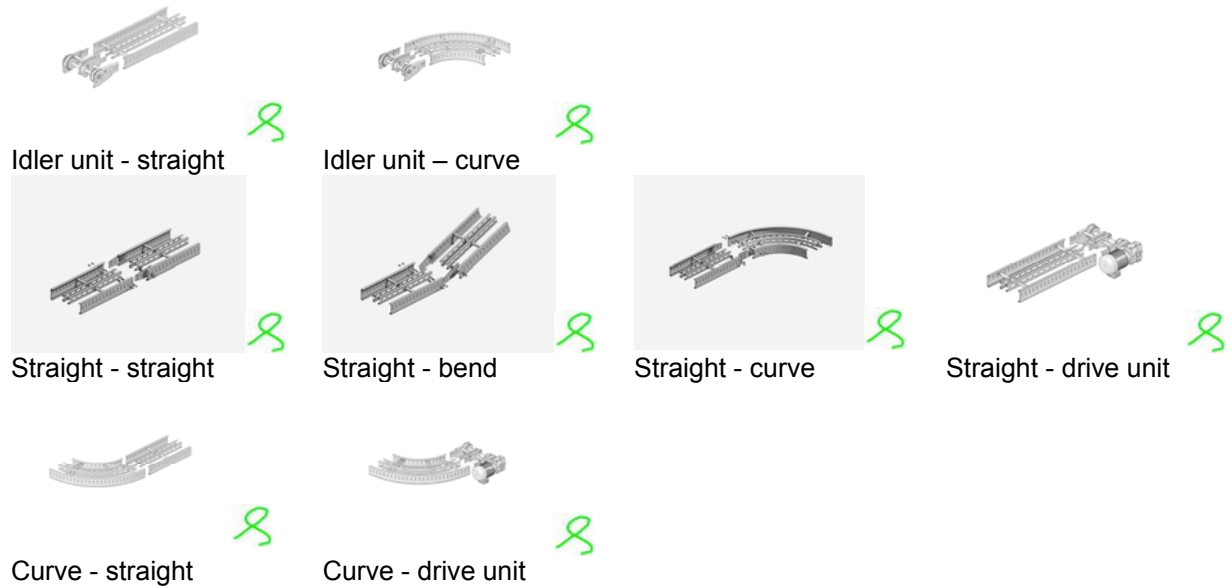
When the start values have been determined, the building of the layout can start. Please note a track must always begin with an idler unit and is build up in the direction of flow with a pulling drive unit.



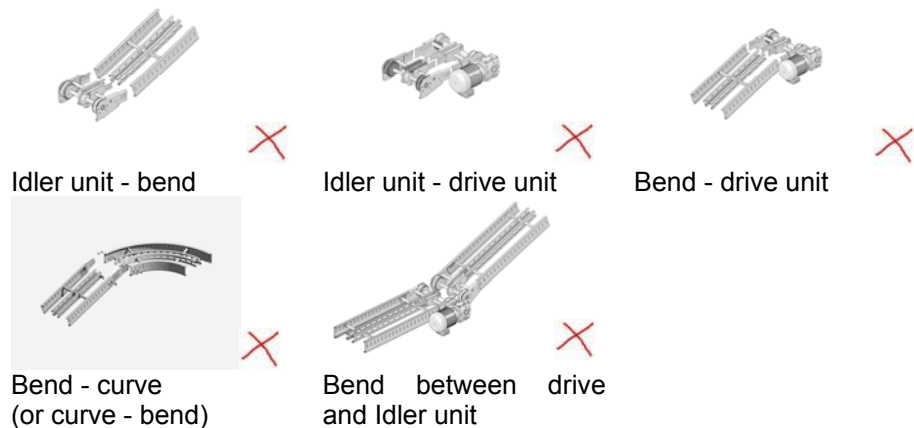
3.2.1 Part combinations

The AmbaVeyor modules can be flexibly combined without using multiple drives. Some restrictions do apply when using curves, vertical bends and other modules. Before starting your design please familiarize yourself with the combination possibilities of the modules according to the overview below.

Allowed part combinations



Combinations which are not possible



3.2.2 Drive placement

The position of the drive is related to the required pulling force. Each additional module of conveyor increases the required pull force; incline angles and curves require more force than a horizontal straight section.

A higher load increases the required force while a decline will lessen the amount of force required. At www.AmbaVeyor.com a downloadable tool will help calculating the pull force and drive placement. AmbaVeyor BV can also be contacted for a quick price calculation of your layout.

The pulling force is calculated using the friction between the belt and the slide strips, the product load per conveyor length, the angle of the track and a specific multiplier for curves. The pull force that can be applied on the AmbaVeyor chain depends on the conveyor layout and speed, for details please refer to the speed & load chapter.



3.3 Accessories

Optionally the AmbaVeyor can be equipped with additional accessories. Different belt types, support frames and side guides are available. The AmbaVeyor calculation tool will automatically calculate the number of supports, the required belt length and the length of guide required for you. The chapter below will inform you when to choose which option.

3.3.1 Belt type and friction

Belt type: AmbaVeyor tracks can be equipped with two belt types (not all widths available) depending on the location of the conveyor and the nearby environment.

Slat type : TPS
 Location : Overhead conveyor
 No direct work on the conveyor



The TPS slat has a slight opening on the outside of the wingtips and when placed in a working area clear markings have to be placed on the conveyor frame. Stickers will be included with the TPS belt packages.

Slat type : TPO
 Location : All environments
 Including direct work on the conveyor

The TPO slat is overlapping and has a complete closed belt surface. The belt can be applied in any environment.

Belt friction: AmbaVeyor tracks can be used for angles up till 30 degrees up or down. AmbaVeyor tracks under an angle must contain friction inserts, which can be applied in different ratios depending on the conveyor angle, product contact surface and material and the product size, weight and stability.

For most incline/decline and product combinations up to 10 degrees a high friction ratio of 1:4 is sufficient (every fourth slat contains friction). For inclines/declines higher than +/- 10 degrees higher friction ratios must be considered.

AmbaVeyor BV can test your products for incline angle advice.

3.3.2 Support frames

Support frames can be optionally chosen to support the conveyor layout. To calculate the number of supports required, please follow the basic rules as described below ^{*1}:

Module	Number of supports
Idler unit	Quantity = 1
Drive unit	Quantity = 1
Vertical bends	Quantity = 1 (unless other support frame is close by)
Curve track	Quantity = Round down (degrees / 90)
Straight length [Metric]	Quantity = Round down (straight length [m] / 3)
Straight length [Imperial]	Quantity = Round down (straight length [ft.] / 9.84')

^{*1} Please note that the above rules will always ensure enough support frames. Manually going over the track might result in less supports, like in the figure to the right.

The main criteria are the stability in the curve tracks and straight lengths which can maximally be unsupported over a length of 3 m [9.84']. When more than 90 degrees of curve in one direction is unsupported, the curve will start to twist under its own weight.

The support height is indicated at the Top Of Belt [TOB].



3.3.3 Side guides

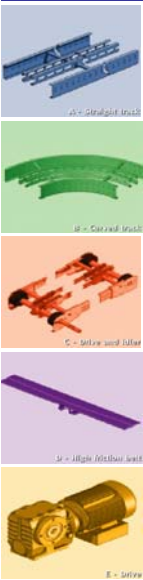
Guides are optionally available on the AmbaVeyor. The AmbaVeyor calculation tool only calculates full side guides or no guides.

For complete guiding on both sides, multiply the centerline distance by 2 and add 2 m [78.74"] guide per drive unit to allow for some overlength to work with.

When calculating the side guides per side please use the following dimensions:

	Frame width	Standard radius	Inside curve radius	Outside curve radius
200 mm [8"]	226 mm	500 mm [19.69"]	387 mm [15.24"]	613 mm [24.13"]
400 mm [16"]	426 mm	650 mm [25.59"]	437 mm [17.20"]	863 mm [33.98"]
600 mm [24"]	626 mm	900 mm [35.43"]	487 mm [19.17"]	1113 mm [43.82"]

When using offset, subtract the offset distance from the inside radius and add the distance to the outside radius.





4 Integration and controls

While designing the layout the integration advice in this chapter must be used.

4.1 Transitions

When placing a drive or idler unit, use a distance of 25 mm [1"] between the two modules. The transition between two AmbaVeyor tracks or other conveyors must be completely on the same plain, so during a transition between tracks there can not be a change of angle.

The slat surface radius of the drive and idler roller is 70 mm [2.76"] and it's recommended to use a transition when products are shorter than 300 mm [11.8"] in length.

4.2 Speed differences

During transitions an AmbaVeyor track fitted with high friction slats must remain at the same speed as the previous track in the line; a speed difference would prematurely wear the rubber.

For AmbaVeyor track fitted without friction inserts a speed difference is allowed, however always ensure that the product is accelerated on the next track. The ratio of advisable speed difference depends on the stability of the product.

4.3 Starting & stopping

The AmbaVeyor can be used for frequent starting and stopping. For all starts and stops a controlled acceleration and deceleration is required.

To determine the start and stop time apply the formula: $T = \text{Speed} / 20$

Speed in m/min [1 FPM = 0.3048 m /min]

T minimum is 1.5 s

T maximum is 3.0 s

The controlled start stops can be made using a frequency controller or other means of soft starting.