



The item Conveyor Belt System – Centre Drive
Installation guide

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Symbols, safety



Important information



Note! Failure to observe this safety instruction can result in material damage



Warning! Failure to observe this safety instruction is likely to result in material damage, serious injury or death



Attention! Failure to observe this safety instruction can result in material damage, serious injury or death



Caution! Failure to observe this safety instruction can result in material damage or injury



Maintenance



Observe directions for recycling



Observe directions for disposal

General safety information

The details and information in this guide are provided for the purposes of describing the product and its assembly only. This information does not discharge users from the obligation to conduct their own assessments and checks. It is also important to bear in mind that our products are subject to a natural process of wear and ageing.

This guide contains important information that will enable you to use the product safely and appropriately. When the product is sold, rented out or otherwise passed on to another party, this guide must be handed over with it.

During assembly, installation, operation and maintenance of the item Conveyor Belt System, it is important to ensure that all moving elements of the overall construction are secured to prevent unintentional movement. Parts that can make uncontrolled movements present a risk of injury.

You must therefore read and follow the safety instructions set out below.

- All work on and with the item Conveyor Belt System must be performed with “safety first” in mind.
- Take care when within the swivel range or working area of the moving overall construction if it is in motion or in use.
- Observe the regulations pertaining to accident prevention and environmental protection that apply in the country and workplace where the product is being used.
- Use only item products that are in perfect working order.
- Check the product for obvious defects.
- Use the belt conveyor technology only within the performance range described in the technical data.
- Ensure all the safety equipment associated with the product is present, properly installed and in full working order.
- Do not alter the position of safety equipment, circumvent it or render it ineffective.

The belt conveyor technology described here corresponds to the state of the art and takes into account the general principles of safety applicable at the time this installation guide was published. Nevertheless, failure to observe the safety instructions and warning notices in this guide may result in personal injury and damage to property. We will assume no liability for any resulting damage or injury.

We reserve the right to make changes that represent technical advances.

Keep this guide in a place where it can be accessed by all users at any time. Observe the directions contained in the overarching user guide for a system. The general safety information applies to the entire lifecycle of the belt conveyor technology.

1. During transportation

Observe the handling instructions on the packaging. Until it is installed, the product must be stored in its original packaging, protected from moisture and damage. Suspended loads can fall during transport if load-lifting attachments are inadequately dimensioned or incorrectly secured, thus potentially leading to serious injuries, including fatal injuries. Keep clear of suspended loads and use lifting gear with sufficient load-bearing capacity (see delivery paperwork for product weight). Carefully secure lifting gear and attach it only at sufficiently stable points. The packaging meets the requirements of all agreed methods of transportation. Avoid shocks and impacts. On receipt, immediately inspect all boxes and packaging for visible damage and check the delivery against the carrier's delivery note to ensure it is complete. Notify the supplier of any defects without delay. If deliveries are transported manually, ensure staff can reasonably be expected to lift and carry them. The belt conveyor system is to be stored in a dry place in its original packaging, and is to be protected against dirt and adverse weather conditions until it is installed. Avoid exposure to extreme heat or cold. Also avoid excessive storage periods (we recommend a maximum of one year under climate-controlled conditions) and check prior to installation that the motor bearings and gaskets are in working order.

2. During operation

Ensure that only persons who have been authorised by the user have access to the immediate swivel range and operating area of the system. This also applies when the system is not in active use. It must not be possible to actuate moving parts unintentionally. The item Conveyor Belt System is not suitable for transporting people.

3. During cleaning

Do not use aggressive cleaning substances. Do not use a high-pressure cleaner.

4. During maintenance and servicing work

Carry out the prescribed maintenance work at the intervals stipulated in the guide. Ensure that no fixings, connections or components are detached or loose. Secure moving parts during maintenance. Disconnect the equipment from the power supply when carrying out maintenance work.

5. During disposal

Dispose of the product in accordance with the national and international regulations that apply in your country.

Correct use

The Conveyor Belt System must be used in accordance with the technical data and safety requirements set out in this document. Such systems are used in a whole host of applications for transport purposes and to supply goods. Only indoor use is permitted. The system must not be operated outdoors.

The Conveyor Belt System is a partly completed machine as defined in Machinery Directive 2006/42/EC. It must not be operated until the partly completed machine is securely integrated into the overall system. Unsafe or inappropriate use runs a risk of serious injury caused by falling loads, crushing and cuts.

The basic safety provisions of the following rules and regulations have been taken into account:

- Machinery Directive 2006/42/EC – partly completed machine

The basic safety provisions of the following rules and regulations have been taken into account for electrical and electronic components:

- EMC Directive 2014/30/EU
- RoHS Directive 2011/65/EU, including the amendment to this Directive (EU 2015/863)

Internal company requirements and the regulations that apply in the country where the product is being used must be observed. No unauthorised design modifications or machining work should be carried out on the item Conveyor Belt System. We will assume no liability for any resulting damage or injury.

Improper use

Improper use is defined as any use of the product for purposes other than those authorised in the user guide and under the definition of correct use. We will assume no liability for any resulting damage or injury.

The Conveyor Belt System must not be used to:

- Transport loads for which it was not designed or carry people
- Transport loose materials (e.g. sand, rubble, etc.)
- Transport hot or sharp-edged objects
- Provide structural support
- Climb or stand on

If you have any questions, please contact an item branch or distribution partner.

Special safety instructions



ATTENTION! To ensure satisfactory system operation and optimum performance, it is essential to familiarise operators and maintenance staff with the documentation from a very early stage.

- During positioning and operation, make sure no crushing, entrapment, cutting, impact or tripping hazards can arise that affect handling and the surrounding area.
- Check the Conveyor Belt System for corrosion, wear, cracks, deformation, etc. on a regular basis and whenever starting it up. Only undamaged equipment can be taken into service.
- In the case of structural or electrical damage, immediately shut down the Conveyor Belt System and contact an appropriately qualified person, such as a mechanic or electrician.
- Do not use the Conveyor Belt System in rooms with a high dust content, humidity or temperature (if you have any questions, please contact an item branch or distribution partner).
- The immediate vicinity of the Conveyor Belt System is considered a safety zone. This safety zone must be kept clear during operation to prevent damage to material and buildings and avoid personal injury.
- During operation, ensure no objects, clothing or parts of the body are pulled into the item Conveyor Belt System.
- During operation, it is essential that no-one is located underneath the Conveyor Belt System or the safety zone designated by the operator.
- Never cover the motor's cooling zone, and ensure sufficient ventilation.
- Liquids must not be allowed to penetrate electrical components. If this occurs, disconnect the power supply.
- Disconnect the Conveyor Belt System from the mains when transporting or repositioning it.
- The Conveyor Belt System must be disconnected from the mains for cleaning, maintenance and servicing.
- All assembly, installation, commissioning and electrical installation work must be carried out by trained, qualified persons only.
- The Conveyor Belt System should be used as instructed by the manufacturer, and only for the tasks/media specified in the order and order confirmation.
- Planners, manufacturers, operators and users are responsible for proper and safe installation and for safe operation. Safety equipment must not be removed, circumvented or deactivated.
- To prevent crushing and cuts, nearby objects should be kept at a minimum distance of 50 mm.



- Inappropriate use of the Conveyor Belt System can pose hazards to people and equipment. The product warranty is valid only when the product is used as intended.
- A mobile Conveyor Belt System must be inspected for stability and made stable. Extreme gradients and high, uncontrollable speeds must be avoided.
- The Conveyor Belt System must not be used in environments where there is a risk of explosion.
- Watch out for the risk of crushing during operation. If it is impossible to prevent this hazard, take the necessary measures to make the danger zone inaccessible.
- Observe internal company requirements and the laws in the country where the system is being used.

Personnel qualifications

Assembly, installation, commissioning, operation, disassembly and maintenance work (including servicing and care) require an adequate knowledge of mechanical engineering and an understanding of the relevant technical terminology. To ensure operational safety, these activities must therefore be carried out only by a qualified or trained person.

Only authorised, qualified persons are permitted to commission the equipment and carry out work on its electrical components.

You may only use and carry out maintenance on the Conveyor Belt System if:

- The system has been integrated properly and safely into the working environment.
- You have carefully read and understood this guide.
- You are mentally and physically capable of doing so.
- You are authorised to do so by your organisation or employer.
- You are using only original equipment from the manufacturer.



ATTENTION! The operator is responsible for ensuring proper and safe operation.

Product description and use

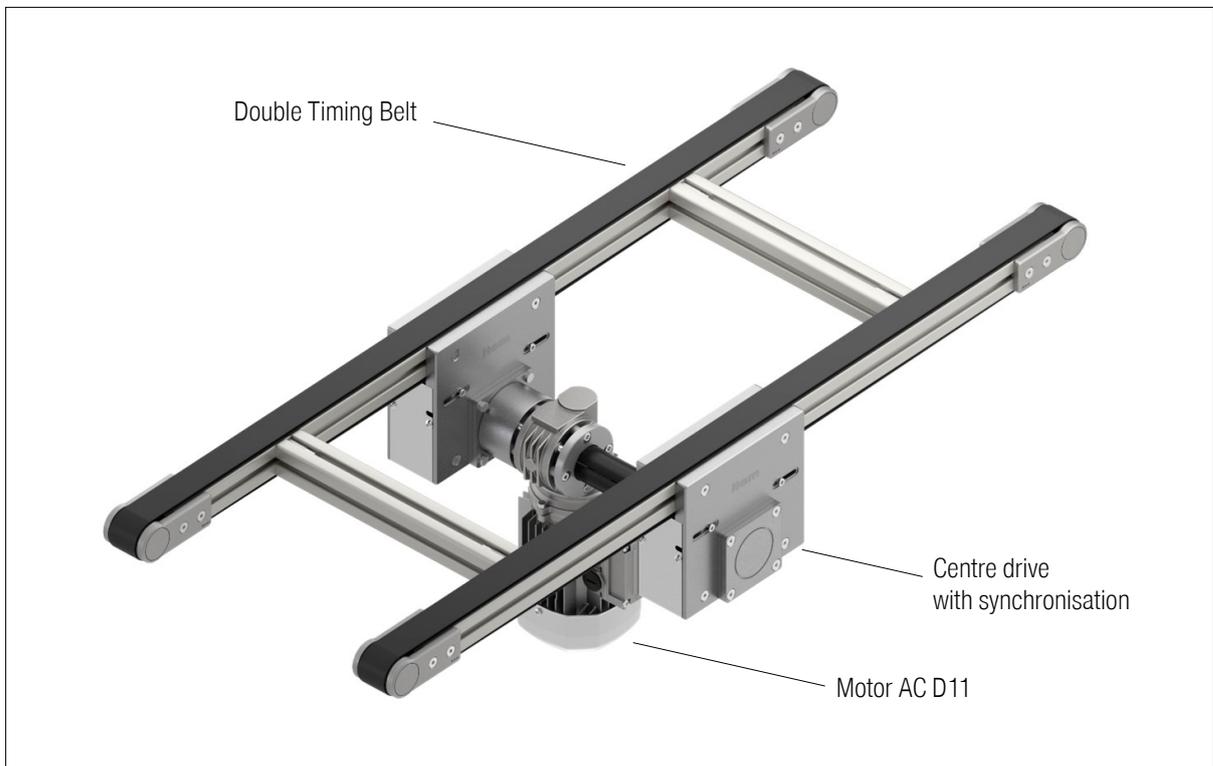
Conveyor belts ensure a continuous flow of materials without any manual intervention by staff. Depending on their design, they can transport products either in a random sequence or pre-sorted on workpiece carriers or in containers. Both lightweight individual parts and heavy assemblies can be conveyed in this way, with the transport speed being adapted to the requirements of the work process.

Specialised components and standard profiles in thousands of possible combinations provide you with exactly the right system, whatever goods you need to transport:

- Individual or parallel Flat Conveyor Belts and Timing Belts
- Double Flat Belt Conveyors and Timing Belt Conveyors up to 2400 mm wide and 6000 mm long

The item Conveyor Belt System is compatible with the components in the item Building Kit System and is easy to integrate into machinery, guards and enclosures.

The item Conveyor Belt System also benefits from low maintenance requirements and a long service life.



The item Conveyor Belt System



Flat Belt Conveyor 8 40 M

Continuous Flat Conveyor Belt

- In eight widths up to 400 mm
- For goods and containers, even ones with irregular bases
- Maximum line load 25 kg/m
- Accumulating and non-accumulating belts available
- Incline up to 20°
- Conveyor sections 500 to 6000 mm long
- Conveyor belt speed of 2.5 to 28.9 m/min



Double Flat Belt Conveyor 8 40 M

Parallel Flat Conveyor Belts

- Choice of 40 or 80 mm conveying width
- Total width up to 2400 mm
- For transporting goods that are inherently stable
- Maximum line load 25 kg/m
- Accumulating and non-accumulating belts available
- Incline up to 20°
- Conveyor sections 500 to 6000 mm long
- Conveyor belt speed of 2.5 to 28.9 m/min



Timing Belt Conveyor 8 40 M

Reinforced Timing Belt

- Choice of 40 or 80 mm conveying width
- For transporting heavy objects
- Maximum line load 25 kg/m
- Accumulating and non-accumulating belts available
- Incline up to 20°
- Conveyor sections 500 to 6000 mm long
- Conveyor belt speed of 2.8 to 31.4 m/min



Double Timing Belt Conveyor 8 40 M

Parallel, reinforced Timing Belts

- Choice of 40 or 80 mm conveying width
- Total width up to 2400 mm
- For transporting heavy loads
- Runs true even under lateral forces
- Maximum line load 25 kg/m
- Accumulating and non-accumulating belts available
- Incline up to 20°
- Conveyor sections 500 to 6000 mm long
- Conveyor belt speed of 2.8 to 31.4 m/min

Operating data

Flat Belt Conveyor 8 40 M:

Conveying system	Belt speed	Max. total load (non-accumulating)	Max. total load (accumulating)
Flat Belt Conveyor 8 40 M -40	2.5 - 28.9 m/min	15 kg	4 kg
Flat Belt Conveyor 8 40 M -80	2.5 - 28.9 m/min	27 kg	8 kg
Flat Belt Conveyor 8 40 M -120	2.5 - 28.9 m/min	38 kg	12 kg
Flat Belt Conveyor 8 40 M -160	2.5 - 28.9 m/min	51 kg	17 kg
Flat Belt Conveyor 8 40 M -200	2.5 - 28.9 m/min	63 kg	22 kg
Flat Belt Conveyor 8 40 M -240	2.5 - 28.9 m/min	75 kg	26 kg
Flat Belt Conveyor 8 40 M -320	2.5 - 28.9 m/min	100 kg	35 kg
Flat Belt Conveyor 8 40 M -400	2.5 - 28.9 m/min	100 kg	45 kg

- Axle spacing: 500 - 6000 mm
- Total conveyor width: 40, 80, 120, 160, 200, 240, 320 or 400 mm
- Max. line load: 25 kg/m
- Drive orientation: 0°, 90°, 180° or 270°

Double Flat Belt Conveyor 8 40 M:

Conveying system	Belt speed	Max. total load (non-accumulating)	Max. total load (accumulating)
Double Flat Belt Conveyor 8 40 M -40	2.5 - 28.9 m/min	30 kg	8 kg
Double Flat Belt Conveyor 8 40 M -80	2.5 - 28.9 m/min	55 kg	17 kg

- Axle spacing: 500 - 6000 mm
- Total conveyor width: 172 - 2400 mm
- Max. line load: 25 kg/m
- Drive orientation: 0°, 90°, 180° or 270°

Timing Belt Conveyor 8 40 M:

Conveying system	Belt speed	Max. total load (non-accumulating)	Max. total load (accumulating)
Timing Belt Conveyor 8 40 M -40	2.8 - 31.4 m/min	90 kg	45 kg
Timing Belt Conveyor 8 40 M -80	2.8 - 31.4 m/min	100 kg	50 kg

- Axle spacing: 500 - 6000 mm
- Total conveyor width: 40 or 80 mm
- Max. line load: 25 kg/m
- Drive orientation: 0°, 90°, 180° or 270°

Double Timing Belt Conveyor 8 40 M:

Conveying system	Belt speed	Max. total load (non-accumulating)	Max. total load (accumulating)
Double Timing Belt Conveyor 8 40 M -40	2.8 - 31.4 m/min	90 kg	45 kg
Double Timing Belt Conveyor 8 40 M -80	2.8 - 31.4 m/min	100 kg	50 kg

- Axle spacing: 500 - 6000 mm
- Total conveyor width: 172 - 2400 mm
- Max. line load: 25 kg/m
- Drive orientation: 0°, 90°, 180° or 270°

Installation and environmental conditions



CAUTION! Air pressure > 84 kPa, equivalent to an altitude of < 1400 m above sea level. At altitudes > 1400 m, load values are to be reduced by 15 percent.

Appropriate components can be selected and installed to ensure the Conveyor Belt System is suitable, under certain circumstances, for use in areas where electrostatic charges pose hazards. We recommend you consult your item representative or distribution partner.

The Conveyor Belt System is intended as a permanent fixture to be used in an area that is protected from the weather.

- The area should be free from mould and fungus and show no traces of rodents or other pests.
- Do not set up or use in close proximity to industrial plants that produce chemical emissions.
- Do not set up or use near sources of sand or dust.
- Do not set up or use in an area that is regularly exposed to high-energy surges such as those caused by presses or heavy machinery, for example.
- The system is resistant to many of the substances usually encountered in the production area, such as water, mineral oil, grease and detergents. If you are in any doubt regarding resistance to certain chemicals such as test oil, alloyed oils, aggressive cleaning substances, solvents or brake fluid, we advise that you consult your specialist representative.
- Avoid long periods of contact with highly acidic or alkaline substances.
- If using in very salty air, consult your item representative or distribution partner.

To operate properly, the Conveyor Belt System must be level. Incorrect set-up and/or commissioning causes malfunctions. There is a possibility of the Conveyor Belt System being damaged and its service life being shortened.

Other factors that can affect the service life:

- When setting up the Conveyor Belt System, ensure the frame is level, perpendicular and axially parallel.
- Avoid flexural and torsional loads.
- Do not use the conveyor belt in combination with other guiding elements (avoid forced guidance).
- Adjust the gap between the frame stanchions to suit the anticipated loads.

Flat Belt Conveyor 8 40 M

Flat Belt Conveyor 8 40 M is available in eight widths up to 400 mm and in lengths of up to 6000 mm. The continuous belt efficiently transports all kinds of goods and containers, even ones with irregular bases.

Return Unit Set 8 40 for Flat Belt Conveyor 8 40 M

The Return Unit Sets 8 40 for Flat Belt Conveyor 8 D40 are fastened to each end of the frame.



Press the Return Pulley firmly into place in the return units by hand.

The Return Pulleys for Flat Belt Conveyor 8 D40 are available in eight widths from 40 mm up to 400 mm.



NOTE! During assembly, the item logo should be at the bottom and the axial offset from the centre of the profile to the centre of the return assembly should be 1 mm. This is vital to minimise friction.



Following preliminary assembly, slot the return assembly into the groove on the side of the profiles (right up to the mechanical stop) and then tighten the fixings.

$$M_T = 10 \text{ Nm}$$

Glide plate for Flat Belt Conveyor 8 40 M

The length of the glide plate is determined in advance with the help of the online configurator. Glide plates are dimensioned based on the configurator's calculations and are supplied ready to install.

The glide plates are pre-drilled for the countersunk screws. The countersink positions are determined in the configurator and are aligned with the frame and the positions of the cross profiles. Start by laying the plate on the profiles and centring it in relation to the long sides. Mark the positions of the drilled holes on the profile for subsequent positioning of the T-Slot Nuts.



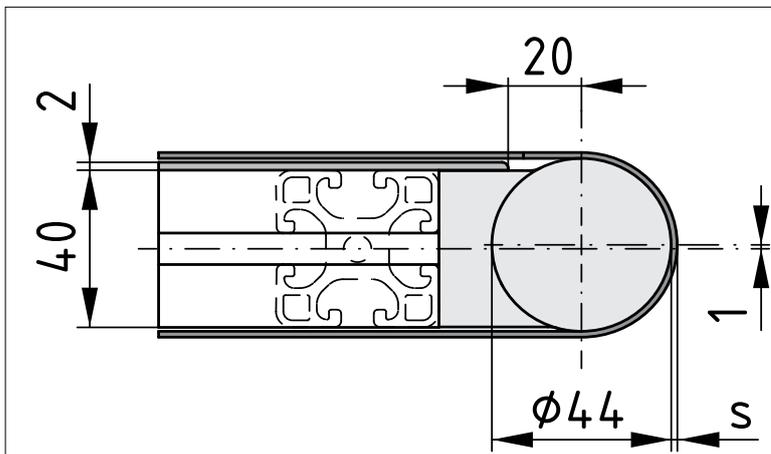
Next, remove the glide plate, position the T-Slot Nuts, replace the plate and tighten the screw fixings loosely so that the plate can still move.



After centring the plate in relation to the long sides, also align it with the return assembly. The distance between the axis of the Return Pulley and the edge of the plate should be 20 mm. To achieve this, slide the plate to the edge of the guard on each return unit so that only a small gap remains between the plate and the Return Pulley.

Then tighten the countersunk screws securely.

$$M_T = 5 \text{ Nm}$$



Flat Conveyor Belt for Flat Belt Conveyor 8 40 M

Place the pre-welded Flat Conveyor Belt around the pulleys and framework.



NOTE! If possible, lay the framework on its side and then slide the belt over it. Turn the framework back over. In order that the Flat Belt can be tensioned, the return run on the underside must be able to move freely, otherwise it may obstruct the tensioning process.

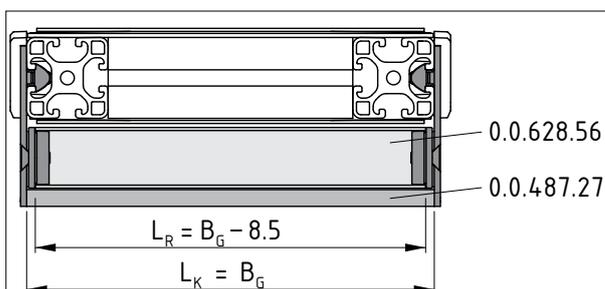


ATTENTION! Correct belt tensioning is vital to ensure the belt conveyor system works properly. The amount of tension that needs to be applied to the belt depends on the conveyor system's nominal width and the type of belt. The relevant values are set out in the section entitled "Tensioning a conveyor belt with centre drive".

Belt Support Set 8

Belt Support Set 8 prevents the Flat Conveyor Belt from sagging under its own weight. This improves safety for staff by eliminating drawing-in or entrapment points.

A belt support consists of two bearings for a Tube D30 (0.0.628.56) that acts as a supporting roller for the return run. The support also serves as a fixing for Conduit Profile U 40x40 SE (0.0.487.27), which is fitted as a guard to prevent entanglement.



Calculating the length of the tube (L_R) and Conduit Profile (L_K) in relation to the belt width (B_G)

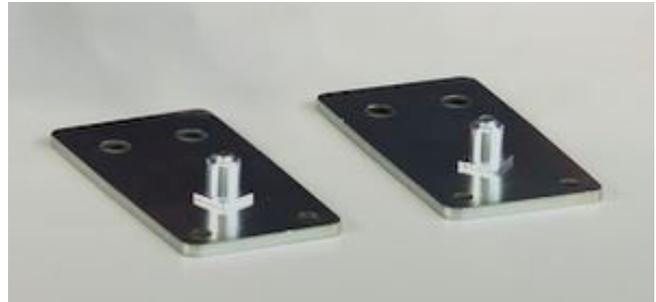


ATTENTION! Gaps exceeding 5 mm create danger zones where limbs or tools can be pulled into the system.

Belt Support Set 8 needs to be preassembled for this purpose. Its width depends on the width of the conveyor system and is determined accordingly by the configurator. Since the installation process is the same regardless of the width, it is shown here using a representative belt support for a width of 80 mm.



The first step is to fit the mounting for the deep groove ball bearing to each flat bracket. On these brackets, pre-fit a counter-sunk screw and a threaded bush with a square plate for countering the screw when tightening.



Next, use a mallet to carefully hammer the bearings into both ends of Tube D30. Then use self-tapping screws to fasten the flat bracket and Tube D30 assembly to the protective Conduit Profile 8 40x40 SE.

$M_T = 2 \text{ Nm}$

Fit the Belt Support Set to the side of the conveyor by screwing the prepared brackets to the conveyor belt's Line 8 profiles.

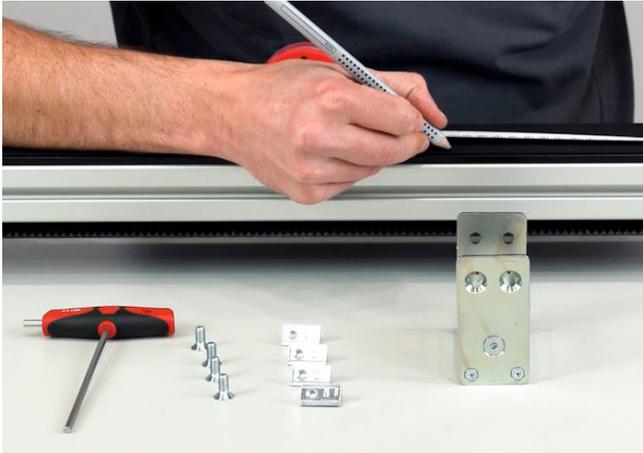
$M_T = 10 \text{ Nm}$





NOTE! The following rules apply when using the Belt Support Set:

- When fastening a set or sets to the Flat Belt Conveyor system, ensure as even a distribution as possible in relation to the position of the centre drive
- Any unsupported belt length under the conveyor must be less than 1500 mm
- Depending on the position of the centre drive, up to two Belt Support Sets will need to be fitted
- The T-Slot Nuts provided are used for fastening to the Line 8 profile



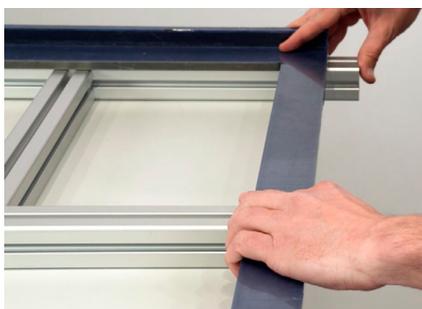
Double Flat Belt Conveyor 8 40 M

Double Flat Belt Conveyor 8 40 M is available in two belt widths – 40 mm and 80 mm – and in lengths of up to 6000 mm. The synchronised conveyors can have a maximum total width of up to 2400 mm. The synchronised conveyors help to move inherently stable products efficiently from A to B.

Frame for Double Flat Belt Conveyor 8 40 M



CAUTION! Before starting work on the Double Flat Belt Conveyor, the basic frame needs to be aligned. The two belts running parallel to one another must run in perfect alignment.



NOTE! The basic frame's perpendicularity and parallelism should be checked using a measuring square.

Return Unit Set 8 40 for Double Flat Belt Conveyor 8 40 M

The Return Unit Sets 8 40 for Double Flat Belt Conveyor 8 40 are fastened to each end of the frame.





Press the Return Pulley firmly into place in the return units by hand.

The Return Pulleys for Double Flat Belt Conveyor 8 D40 are available in two widths – 40 mm and 80 mm.



NOTE! During assembly, the item logo should be at the bottom and the axial offset from the centre of the profile to the centre of the return assembly should be 1 mm. This is vital to minimise friction.



Once preassembled, slot the Return Unit Sets 8 40 into the grooves on the side of Profile 8 40x40 or Profile 8 80x40 and then tighten the fixings.

$$M_T = 10 \text{ Nm}$$

Glide plate for Double Flat Belt Conveyor 8 40 M

The glide plates are pre-drilled for the countersunk screws. The countersink positions are determined in the configurator and are aligned with the frame and the positions of the cross profiles. Start by laying the plate on the profiles and centring it in relation to the long sides. Mark the positions of the drilled holes on the profile for subsequent positioning of the T-Slot Nuts.



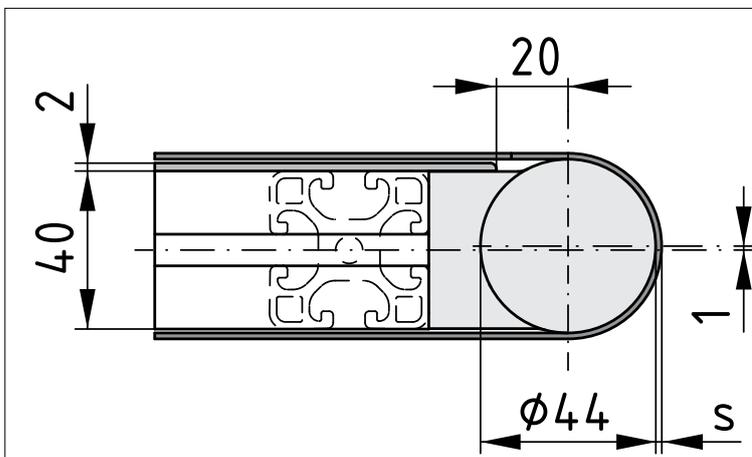
Next, remove the glide plate, position the T-Slot Nuts, replace the plate and tighten the screw fixings loosely so that the plate can still move.



After centring the plate in relation to the long sides, also align it with the return assembly. The distance between the axis of the Return Pulley and the edge of the plate should be 20 mm. To achieve this, slide the plate to the edge of the guard on each return unit so that only a small gap remains between the plate and the Return Pulley.

Then tighten the countersunk screws securely.

$$M_T = 5 \text{ Nm}$$



Flat Conveyor Belt for Double Flat Belt Conveyor 8 40 M

Place the pre-welded Flat Conveyor Belt around the pulleys and framework.





NOTE! If possible, lay the framework on its side and then slide the belt over it.

Turn the framework back over. In order that the Flat Belt can be tensioned, the return run on the underside must be able to move freely, otherwise it may obstruct the tensioning process

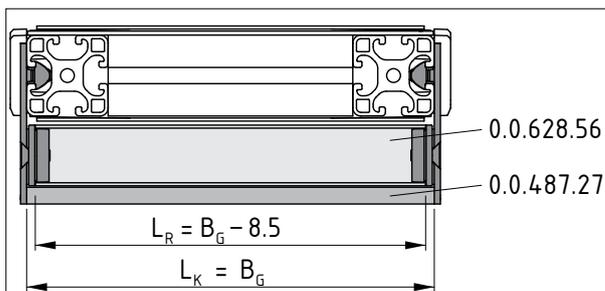


ATTENTION! Correct belt tensioning is vital to ensure the belt conveyor system works properly. The amount of tension that needs to be applied to the belt depends on the conveyor system's nominal width and the type of belt. The relevant values are set out in the section entitled "Tensioning a conveyor belt with centre drive".

Belt Support Set 8

Belt Support Set 8 prevents the Flat Conveyor Belt from sagging under its own weight. This improves safety for staff by eliminating drawing-in or entrapment points.

A belt support consists of two bearings for a Tube D30 (0.0.628.56) that acts as a supporting roller for the return run. The support also serves as a fixing for Conduit Profile U 40x40 SE (0.0.487.27), which is fitted as a guard to prevent entanglement.



Calculating the length of the tube (L_R) and Conduit Profile (L_K) in relation to the belt width (B_G)



ATTENTION! Gaps exceeding 5 mm create danger zones where limbs or tools can be pulled into the system.

Belt Support Set 8 needs to be preassembled for this purpose. Its width depends on the width of the conveyor system and is determined accordingly by the configurator. Since the installation process is the same regardless of the width, it is shown here using a representative belt support for a width of 80 mm.



The first step is to fit the mounting for the deep groove ball bearing to each flat bracket. On these brackets, pre-fit a counter-sunk screw and a threaded bush with a square plate for countering the screw when tightening.

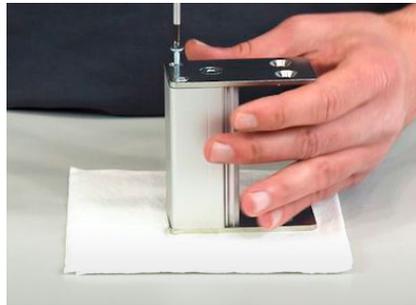


Next, use a mallet to carefully hammer the bearings into both ends of Tube D30. Then use self-tapping screws to fasten the flat bracket and Tube D30 assembly to the protective Conduit Profile 8 40x40 SE.

$M_t = 2 \text{ Nm}$

Fit the Belt Support Set to the side of the conveyor by screwing the prepared brackets to the conveyor belt's Line 8 profiles.

$M_t = 10 \text{ Nm}$



NOTE! The following rules apply when using the Belt Support Set:

- When fastening a set or sets to the Flat Belt Conveyor system, ensure as even a distribution as possible in relation to the position of the centre drive
- Any unsupported belt length under the conveyor must be less than 1500 mm
- Depending on the position of the centre drive, up to two Belt Support Sets will need to be fitted
- The T-Slot Nuts provided are used for fastening to the Line 8 profile



Timing Belt Conveyor 8 40 M

Timing Belt Conveyor 8 40 M is available in two belt widths – 40 mm and 80 mm – and in lengths of up to 6000 mm. The durable Timing Belt with integrated steel wires ensures non-slip transport of even heavy objects.

Return Unit Set 8 40 for Timing Belt Conveyor 8 40 M

The Return Unit Sets 8 40 for Timing Belt Conveyor 8 40 M are fastened to each end of the frame.



Press the Return Pulley firmly into place in the return units by hand.



Following preliminary assembly, slot Return Unit Set 8 40 into the grooves on the side of Profile 8 40x40 or Profile 8 80x40 and then tighten.

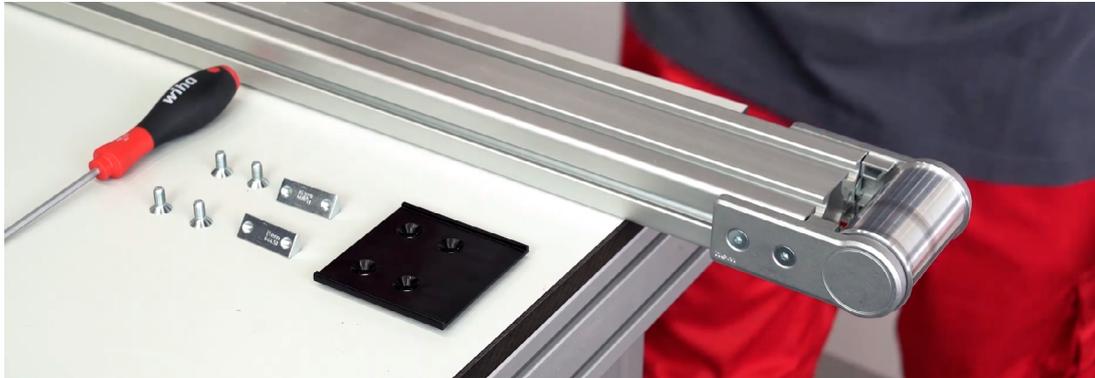
$$M_T = 10 \text{ Nm}$$



NOTE! During assembly, the item logo should be at the bottom and the axial offset from the centre of the profile to the centre of the return assembly should be 1 mm. This is vital to minimise friction.

Intake/outlet timing belt guide strip for Timing Belt Conveyor 8 40 M

Insert the two double T-Slot Nuts into the profile grooves.



Then screw on the plastic panel loosely, align it and slide it towards the Return Pulley, leaving a gap of approx. 2 mm (distance from edge of plastic to axis of rotation: 20 mm).

Carry out these installation steps at both ends.



NOTE! Take care not to damage the plastic when subsequently tightening to the required torque.

$M_T = 4 \text{ Nm}$

Timing Belt Guide Strip for Timing Belt Conveyor 8 40 M

The length of the Timing Belt Guide Strip is determined in advance with the help of the online configurator. However, this length can also be determined by measuring the distance between the intake and outlet guides. The guide strips have an uncut length of 2 m and can easily be fitted end to end.

Simply press the guide strip into the groove, where it will clip into place. The guide strips are 40 mm wide and are installed side by side in the case of a Profile 8 80x40.



NOTE! The 80 mm variant has a right and left side! The raised edge of the strip must face outwards. The 40 mm variant has a raised edge on both sides.



NOTE! Cut to size using a saw with a fence, because the cut edge must be square. The cut achieved when using Multi-Purpose Pliers is not sufficiently precise.

Timing Belt for Timing Belt Conveyor 8 40 M

Place the pre-welded Timing Belt over the pulleys and the framework.



NOTE! If possible, lay the framework on its side and then slide the Timing Belt over it.

Turn the framework back over. In order that the Timing Belt can be tensioned, the return run on the underside must be able to move freely, otherwise it may obstruct the tensioning process

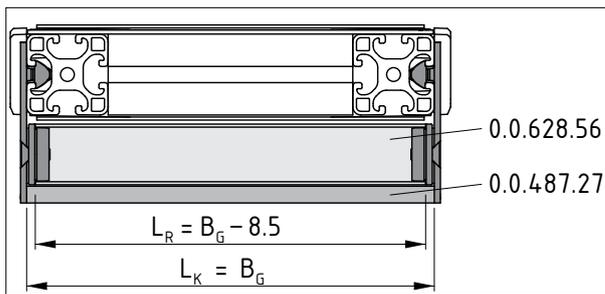


ATTENTION! Correct belt tensioning is vital to ensure the belt conveyor system works properly. The amount of tension that needs to be applied to the belt depends on the conveyor system's nominal width and the type of belt. The relevant values are set out in the section entitled "Tensioning a conveyor belt with centre drive".

Belt Support Set 8

Belt Support Set 8 prevents the Timing Belt from sagging under its own weight. This improves safety for staff by eliminating drawing-in or entrapment points.

A belt support consists of two bearings for a Tube D30 (0.0.628.56) that acts as a supporting roller for the return run. The support also serves as a fixing for Conduit Profile U 40x40 SE (0.0.487.27), which is fitted as a guard to prevent entanglement.



Calculating the length of the tube (L_R) and Conduit Profile (L_K) in relation to the belt width (B_G)



ATTENTION! Gaps exceeding 5 mm create danger zones where limbs or tools can be pulled into the system.

Belt Support Set 8 needs to be preassembled for this purpose. Its width depends on the width of the conveyor system and is determined accordingly by the configurator. Since the installation process is the same regardless of the width, it is shown here using a representative belt support for a width of 80 mm.



The first step is to fit the mounting for the deep groove ball bearing to each flat bracket. On these brackets, pre-fit a counter-sunk screw and a threaded bush with a square plate for countering the screw when tightening.



Next, use a mallet to carefully hammer the bearings into both ends of Tube D30. Then use self-tapping screws to fasten the flat bracket and Tube D30 assembly to the protective Conduit Profile 8 40x40 SE.

$M_T = 2 \text{ Nm}$

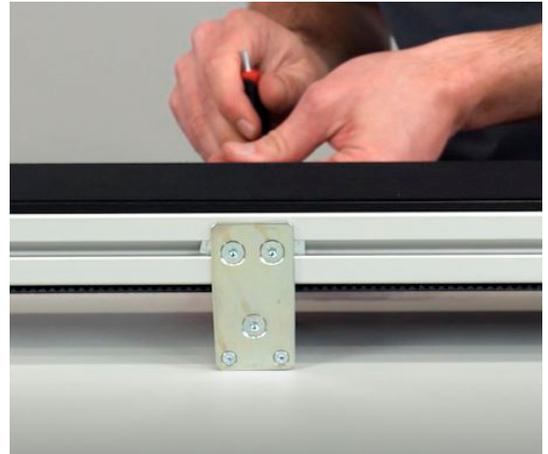
Fit the Belt Support Set to the side of the conveyor by screwing the prepared brackets to the conveyor belt's Line 8 profiles.

$M_T = 10 \text{ Nm}$



NOTE! The following rules apply when using the Belt Support Set:

- When fastening a set or sets to the Timing Belt conveyor system, ensure as even a distribution as possible in relation to the position of the centre drive
- Any unsupported Timing Belt length under the conveyor must be less than 1500 mm
- Depending on the position of the centre drive, up to two Belt Support Sets will need to be fitted
- The T-Slot Nuts provided are used for fastening to the Line 8 profile



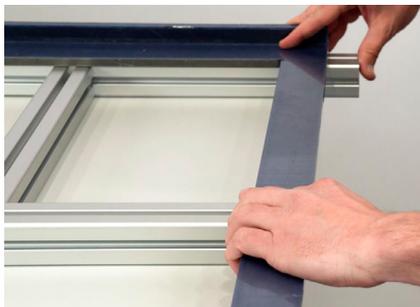
Double Timing Belt Conveyor 8 40 M

Double Timing Belt Conveyor 8 40 M is available in two widths – 40 mm and 80 mm – and in lengths of up to 6000 mm. The total width of the synchronised belts can be anything up to 2400 mm. This ensures heavy, inherently stable products can be efficiently transported.

Frame for Double Timing Belt Conveyor 8 40 M



CAUTION! Before starting work on the belt conveyor, the basic frame needs to be aligned. The two profiles running parallel to one another must be perfectly aligned.

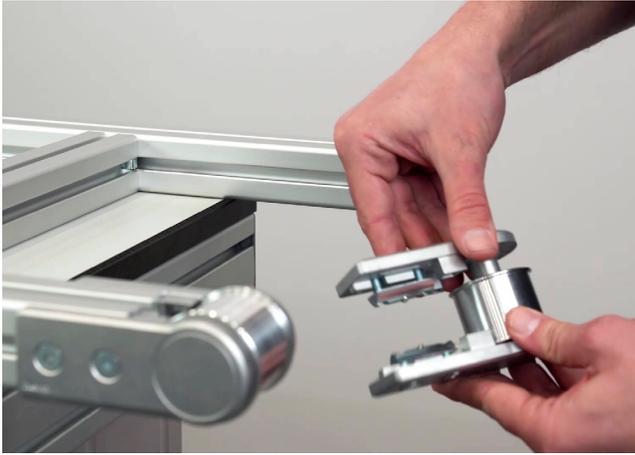


NOTE! The basic frame's perpendicularity and parallelism should be checked using a measuring square.

Return Unit Set 8 40 for Double Timing Belt Conveyor 8 40 M

The Return Unit Sets 8 40 for Double Timing Belt Conveyor 8 40 M are fastened to each end of the frame.





Press the Return Pulley firmly into place in the return units by hand.

Once preassembled, slot the Return Unit Sets 8 40 into the grooves on the side of Profile 8 40x40 or Profile 8 80x40 and then tighten the fixings.

$M_T = 10 \text{ Nm}$



NOTE! During assembly, the item logo should be at the bottom and the axial offset from the centre of the profile to the centre of the return assembly should be 1 mm. This is vital to minimise friction.

Intake/outlet timing belt guide strip for Double Timing Belt Conveyor 8 40 M

Insert the two double T-Slot Nuts into the profile grooves.



Then screw on the plastic panel loosely, align it and slide it towards the Return Pulley, leaving a gap of approx. 2 mm (distance from edge of plastic to axis of rotation: 20 mm).

Carry out these installation steps at both ends.



NOTE! Take care not to damage the plastic when subsequently tightening to the required torque.

$M_T = 4 \text{ Nm}$

Timing Belt Guide Strip for Double Timing Belt Conveyor 8 40 M

The length of the Timing Belt Guide Strip is determined in advance with the help of the configurator. However, this length can also be determined by measuring the distance between the intake and outlet guides. The guide strips have an uncut length of 2 m and can easily be fitted end to end.

When inserting, start at the intakes and outlets of the return side. Simply press the guide strip into the groove, where it will clip into place. The guide strips are 40 mm wide and are installed side by side in the case of a Profile 8 80x40.



NOTE! There is a right-hand and a left-hand side! The raised edge of the strip must face outwards.



NOTE! Cut to size using a saw with a fence, because the cut edge must be square. The cut achieved when using Multi-Purpose Pliers is not sufficiently precise.

Timing Belt for Double Timing Belt Conveyor 8 40 M

Place the pre-welded Timing Belt over the pulleys and the framework.



NOTE! If possible, lay the framework on its side and then slide the Timing Belt over it.

Turn the profile back over. In order that the Timing Belt can be tensioned, the return run on the underside must be able to move freely, otherwise it may obstruct the tensioning process

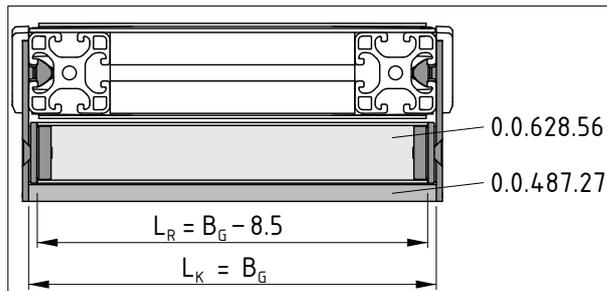


ATTENTION! Correct belt tensioning is vital to ensure the belt conveyor system works properly. The amount of tension that needs to be applied to the belt depends on the conveyor system's nominal width and the type of belt. The relevant values are set out in the section entitled "Tensioning a conveyor belt with centre drive".

Belt Support Set 8

Belt Support Set 8 prevents the Timing Belt from sagging under its own weight. This improves safety for staff by eliminating drawing-in or entrapment points.

A belt support consists of two bearings for a Tube D30 (0.0.628.56) that acts as a supporting roller for the return run. The support also serves as a fixing for Conduit Profile U 40x40 SE (0.0.487.27), which is fitted as a guard to prevent entanglement.



Calculating the length of the tube (L_R) and Conduit Profile (L_K) in relation to the belt width (B_G)



ATTENTION! Gaps exceeding 5 mm create danger zones where limbs or tools can be pulled into the system.

Belt Support Set 8 needs to be preassembled for this purpose. Its width depends on the width of the conveyor system and is determined accordingly by the configurator. Since the installation process is the same regardless of the width, it is shown here using a representative belt support for a width of 80 mm.



The first step is to fit the mounting for the deep groove ball bearing to each flat bracket. On these brackets, pre-fit a counter-sunk screw and a threaded bush with a square plate for countering the screw when tightening.



Next, use a mallet to carefully hammer the bearings into both ends of Tube D30. Then use self-tapping screws to fasten the flat bracket and Tube D30 assembly to the protective Conduit Profile 8 40x40 SE.

$M_T = 2 \text{ Nm}$

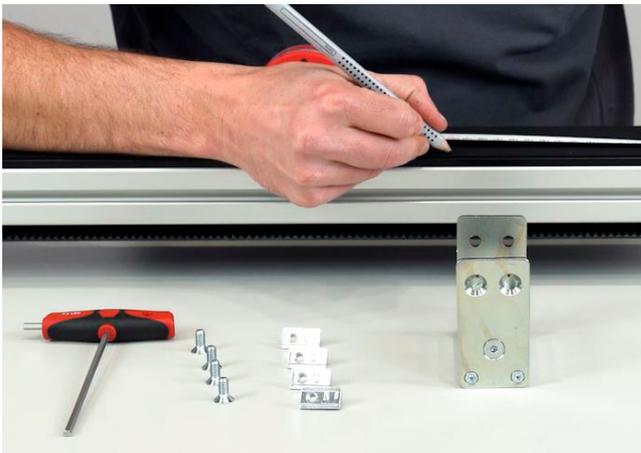
Fit the Belt Support Set to the side of the conveyor by screwing the prepared brackets to the conveyor belt's Line 8 profiles.

$M_T = 10 \text{ Nm}$



NOTE! The following rules apply when using the Belt Support Set:

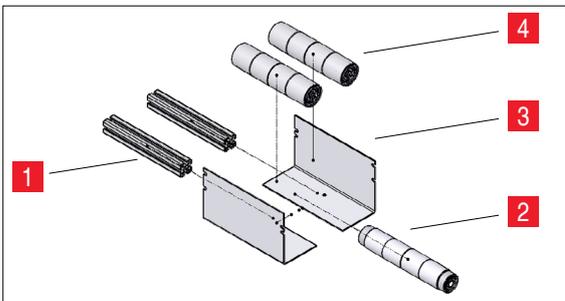
- When fastening a set or sets to the Timing Belt conveyor system, ensure as even a distribution as possible in relation to the position of the centre drive
- Any unsupported Timing Belt length under the conveyor must be less than 1500 mm
- Depending on the position of the centre drive, up to two Belt Support Sets will need to be fitted
- The T-Slot Nuts provided are used for fastening to the Line 8 profile



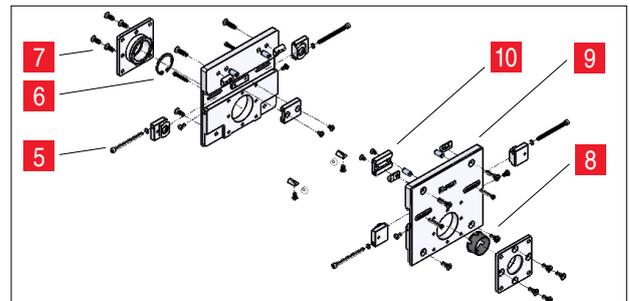
Centre drive



The option to fasten the drive in place anywhere on the conveyor belt simplifies the job of positioning the drive and ensures the conveyor belt can be adapted better to on-site circumstances.



Drive Pulley Set 8 40 M



Drive Unit Set 8 40 M

No.	Product description
1	Profile 6 30x30 light for stabilisation
2	Drive Pulley 8 40
3	Cover 8 40 M
4	Return Pulley 8 40 D50
5	Insert for Return Pulley D50 D15 with Hexagon Socket Head Cap Screw DIN 912 M5x70 for tensioning the Return Pulley
6	Circlip for securing the axial position of Drive Pulley 8 40

No.	Product description
7	Insert for Drive Pulley 8 40 D40 M for fixing the Drive Pulley in place
8	Positioning ring for centring a motor/gearbox
9	Base plate 8 40 M
10	Insert for clamping screw 8 40 M

A Flat Belt Conveyor is used here as an example to demonstrate the installation of a centre drive.

The centre drive comprises various articles that are fitted along with Profiles 6 30x30 sized to suit the width of the conveyor. There is a preconfigured Drive Pulley Set 8 40 M for every available conveyor belt width.



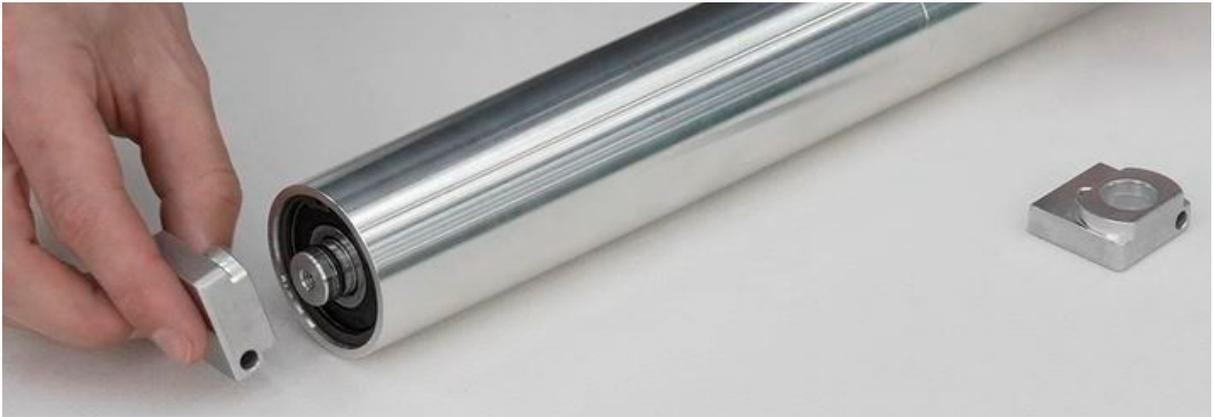
Using a manual press, push the four dowel pins ISO 8735-8x16 into the base plate, up to the mechanical stop. With the aid of the profiles, these pins secure the centre drive housing against torsion and ensure the two base plates are parallel.

Install the two inserts for clamping screws 8 40 M **10** in base plate 8 40 M, using two Countersunk Screws DIN 7991 M5x8 for each. These inserts will be used later to help tension the Return Pulleys.

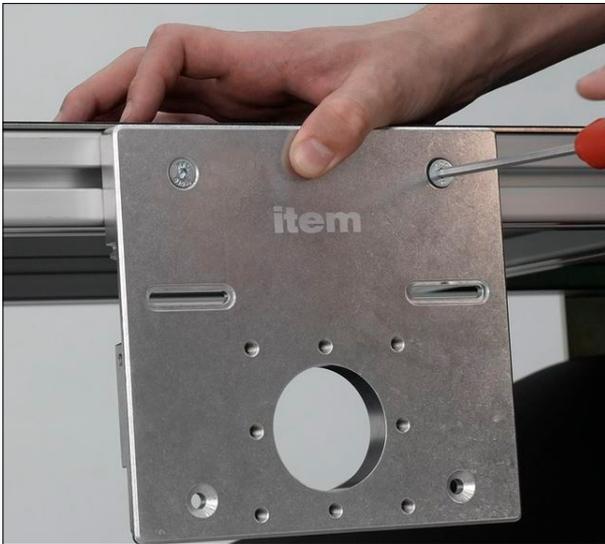
Tightening torque $M_T = 5 \text{ Nm}$



Prepare the Drive Pulley. Insert the circlip DIN 472-38x1.5 into one of the inserts for the Drive Pulley. This insert will be fitted at the opposite side to the motor.



Also prepare the two Return Pulleys by pushing the inserts for Return Pulleys D50 D15 onto the axles of the Return Pulleys until they clip into place and are held captive on the shaft by an O-ring.



Fit the base plates in place at the desired position. They will ultimately become the side panels of the drive housing. Fasten one plate securely.

$M_T = 10 \text{ Nm}$

To make subsequent installation work easier, only fasten the second plate loosely in place.



Use the Profiles 6 30x30 light for additional stabilisation between the base plates.

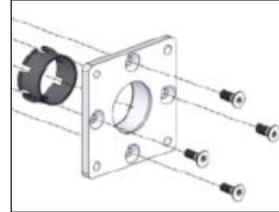
Fit the profiles to the securely fitted base plate first then bring the second base plate into a parallel alignment.

Now tighten the second base plate.

$M_T = 10 \text{ Nm}$



Push the positioning ring into the other insert for Drive Pulley 8 40. This insert will be fitted at the motor side and the positioning ring will centre the motor. Next, position the Drive Pulley in this insert for Drive Pulley 8 40, too.



Now slide the Drive Pulley (fitted with the positioning ring and the insert for Drive Pulley 8 40) through the base plate. The conveyor belt must be located below the Drive Pulley. The Drive Pulley sits in the bore provided on the opposite side.

Next, screw the inserts for Drive Pulley 8 40 firmly into place on both sides.

$M_T = 10 \text{ Nm}$

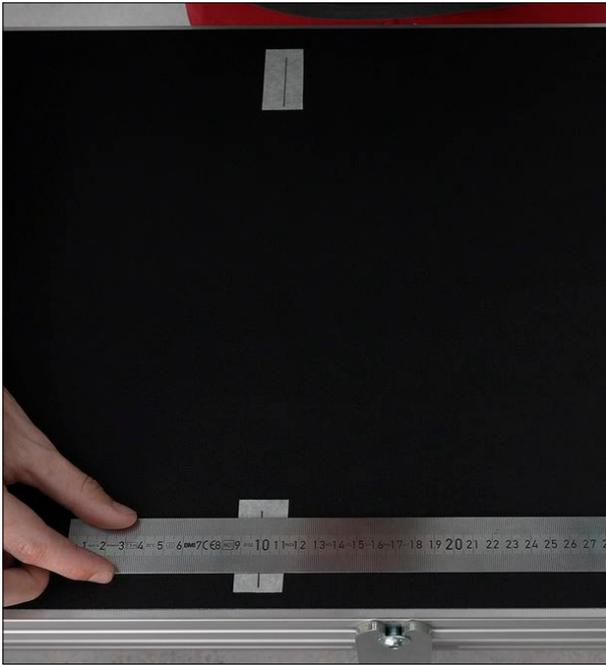


Fit a cover for Drive Pulley 8 40 M, Al at the opposite side to the motor to protect against rotating parts.

$M_T = 10 \text{ Nm}$



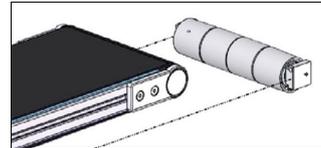
NOTE! Before inserting the pre-prepared Return Pulleys into position, mark a distance of precisely 1000 mm on the conveyor belt, positioning your marks in parallel on either side of the belt.



At this stage, the belt is not yet under tension. During the subsequent tensioning process, you will apply tension to the conveyor belt in a controlled manner by taking measurements against the markings.



Working from the outside in, install the Return Pulleys fitted with the inserts for Return Pulleys D50 D15 into the partially assembled housing. At both sides, slot the inserts into the base plates of the centre drive with their chamfered edge first. While slotting in the inserts, ensure the conveyor belt is lying on top of the Return Pulleys and is drawn into the centre drive. Only tighten the outer screws loosely at first.



Screw the four Hexagon Socket Head Cap Screws DIN912 M5x70 with washers into the base plates on both sides.

The stop screws on the sides need to be loosened in order to tension the Return Pulleys.

Fine-tuning adjustments to ensure the belt is running straight are carried out only after belt tensioning has been performed.

Tensioning a conveyor belt with centre drive

Correct belt tensioning is vital to ensure the belt conveyor system works properly.

The tension on the conveyor belt is adjusted by turning the clamping screws. The correct belt tension has been achieved when the conveyor belt has been stretched by the value shown in the table below.

For example, on a belt that requires pre-tensioning of 0.5 percent, this means that the markings originally placed 1000 mm apart on the belt will end up being 1005 mm apart.

The recommended pre-tensioning value differs for the various conveyor belts.

Flat Belt:

Nominal width [mm]	Flat Conveyor Belt PUR ESD, accumulating Pre-tensioning [%]	Flat Conveyor Belt PVC, non-accumulating Pre-tensioning [%]
40	0.5	0.5
80	0.5	0.5
120	0.5	0.5
160	0.5	0.5
200	0.5	0.5
240	0.5	0.5
320	0.5	0.4
400	0.4	0.3

Double Flat Belt:

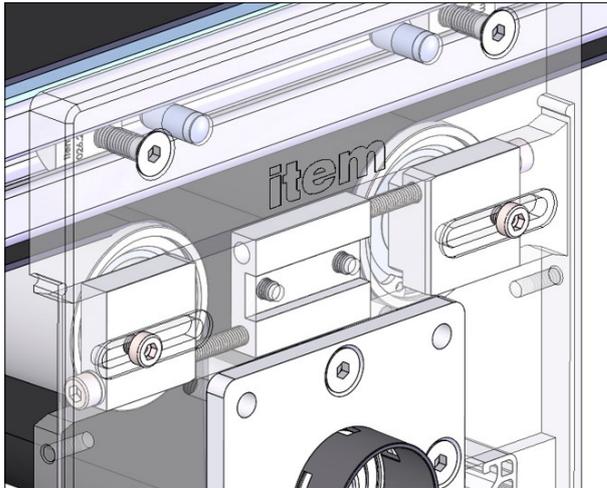
A pre-tension/elongation of 0.5 percent must generally be applied to the Flat Conveyor Belts of a Double Flat Belt Conveyor.

Timing Belt:

Timing Belts are always tensioned to achieve an elongation of 0.1 percent. When using a measuring distance of 0.5 m (spacing of the cylindrical pins supplied with the frequency analyser underneath the Timing Belt), an elongation of 0.1 percent equates to a frequency of 50 Hz.

Double Timing Belt:

Timing Belts are always tensioned to achieve an elongation of 0.1 percent. When using a measuring distance of 0.5 m (spacing of the cylindrical pins supplied with the frequency analyser underneath the Timing Belt), an elongation of 0.1 percent equates to a frequency of 50 Hz.



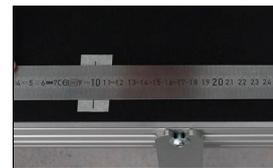
The outer fastening screws of the inserts for Return Pulley D50 D15 must be loose.

The parallelism between the Return (tensioning) Pulleys and their perpendicularity to the conveyor belt can be optimised by using a calliper to measure the spacings of the four Return Pulley inserts.

To ensure optimum straight running, the Return Pulleys should be at a right angle to the conveyor belt and be spaced evenly.



Continue the tensioning process, adjusting the clamping screws alternately and evenly, until the markings on the conveyor belt reach the desired spacing.



The process of adjusting the run of the belt is described in the section entitled "Test run and fine adjustment". Only secure the outer stop screws on the base plates when the belt has been tensioned and is running both smoothly and without any friction.

On a Timing Belt and Double Timing Belt Conveyor, the timing belt tension can be checked with a frequency analyser as well as with a steel ruler.



The frequency analyser identifies the pre-tensioning that has been set based on the vibration frequency of a defined section of the Timing Belt when it is struck. At a measuring distance of 0.5 m (spacing of the cylindrical pins supplied with the frequency analyser underneath the Timing Belt), a frequency of 50 Hz indicates the necessary pre-tensioning of 0.1 percent.



NOTE! Only install the covers 8 40 M of the Drive Pulley Set after the motor has been installed.

Drive elements

A choice of two motor and gearbox combinations is available:

Motor AC D16 with integrated bevel gearbox (six gear ratios)

Motor AC D11 with separate gearbox (six gear ratios)

- Using the relevant Motor Fastening Set, both can be used with all item conveyor belts.
- The drive can be connected on the right or left of the conveyor belt.
- The position of the motor can be switched quickly without disassembling the conveyor belt.
- You can choose between four different motor orientations in 90° increments.
- The Fastening Set's expanding hub coupling compensates for slight misalignments of the Drive Pulley.
- Synchronising two or more belts is easy, even after installation.
- A secure cover for the synchroniser tube protects staff.
- The three-phase AC motor can be fine-tuned using a frequency converter.

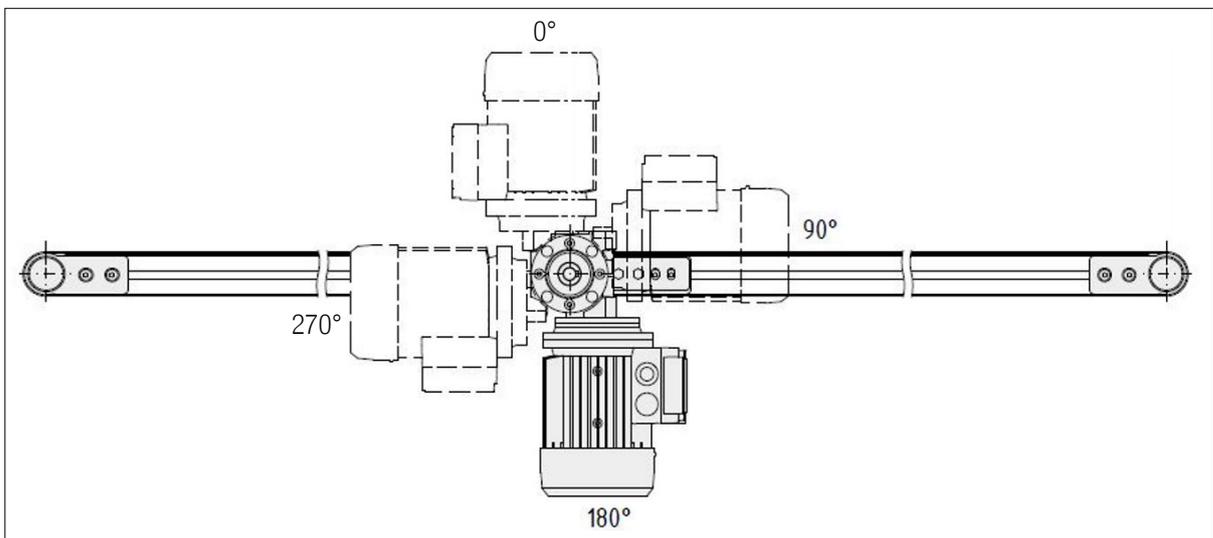
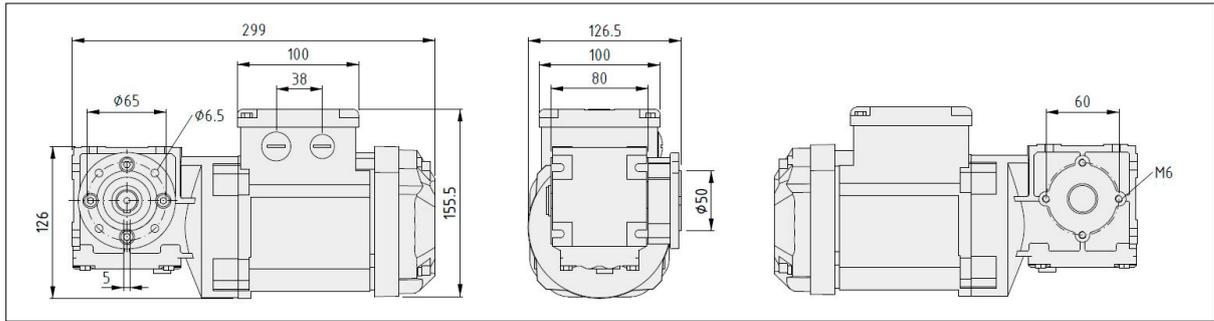


Diagram illustrating motor position

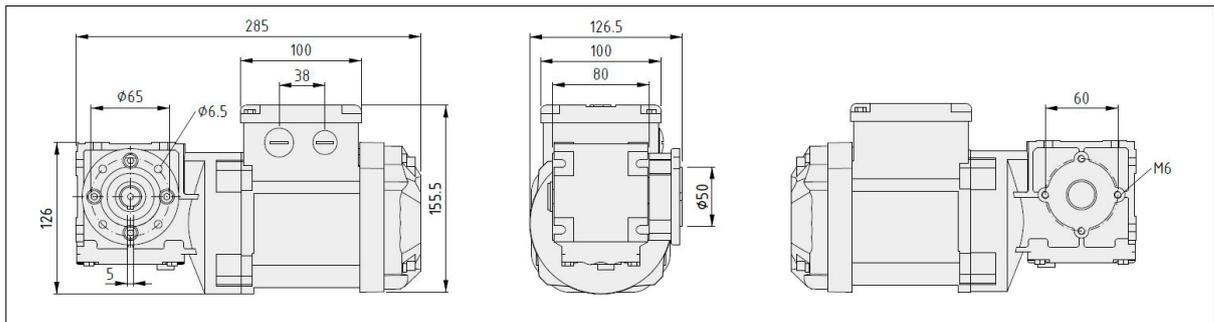
Motor AC D16 is a high-quality electric motor with integrated Spiroplan® gearbox. The bevel gearbox is available in six fixed gear ratios for different belt speeds. Adding a frequency converter enables precise adjustment of the conveyor belt's speed. The unit comprising an asynchronous motor and integral bevel gearbox makes installation easier. The motor is quiet and durable. Motor AC D16 has a high efficiency rating of IE3 to DIN EN 60034-30:2009.

Features	Motor AC D16-180W-i6	Motor AC D16-180W-i10	Motor AC D16-180W-i14	Motor AC D16-180W-i19	Motor AC D16-120W-i32	Motor AC D16-120W-i75
Nominal power [W]	180	180	180	180	120	120
Gear ratio	6.57	10.25	14.33	19.50	32.50	75.00
Nominal speed at 50 Hz [rpm]	209.3	134.1	96.0	70.5	42.5	18.4
Nominal torque [Nm]	7	11	14	18	17	25
Nominal frequency [Hz]	50/60	50/60	50/60	50/60	50/60	50/60
Nominal voltage [V]	230/400	230/400	230/400	230/400	230/400	230/400
Nominal current [A]	0.99/0.56	0.99/0.56	0.99/0.56	0.99/0.56	0.71/0.41	0.71/0.41
Efficiency class	IE3	IE3	IE3	IE3	IE3	IE3

Features	Motor AC D16-180W-i6	Motor AC D16-180W-i10	Motor AC D16-180W-i14	Motor AC D16-180W-i19	Motor AC D16-120W-i32	Motor AC D16-120W-i75
Protection class	IP 54	IP 54	IP 54	IP 54	IP 54	IP 54
Thermal class [C°]	130	130	130	130	130	130
Mass [kg]	6.9	6.9	6.9	6.9	6.1	6.1

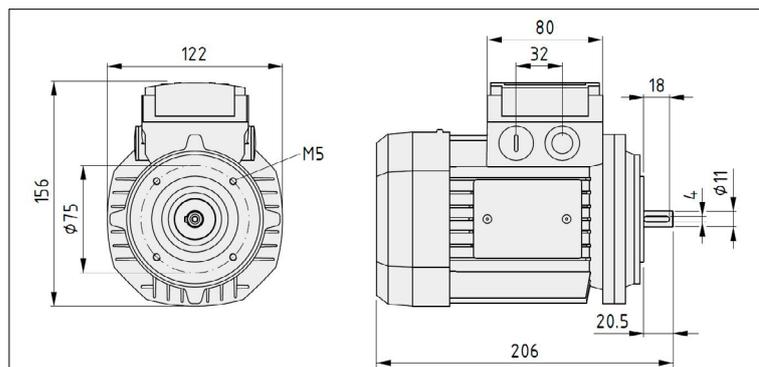


Connection dimensions for Motors AC D16-180W



Connection dimensions for Motors AC D16-120W

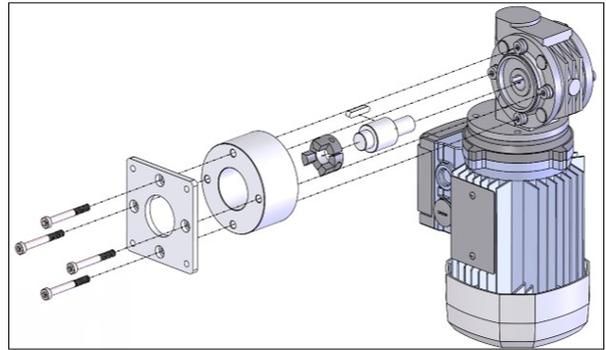
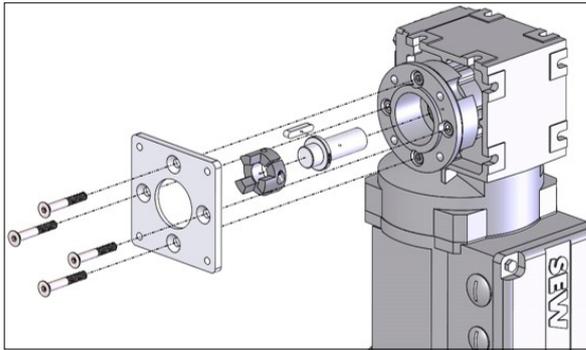
Motor AC D11 is a reliable three-phase AC motor for conveyor belts. You can specify a system's speed very precisely by combining it with a Bevel Gearbox H D14/D11 with the appropriate gear ratio and a frequency converter. The asynchronous motor and the bevel gearbox are separate units, so Motor AC D11 can be combined with various gearboxes. This modular design makes it easier to convert a conveyor line for different speeds.



Connection dimensions for Motors AC D11

Features	Motor AC D11-180W
Nominal power [W]	180
Gear ratio	Without gearbox
Nominal speed at 50 Hz [rpm]	1370
Nominal torque [Nm]	1.25
Nominal frequency [Hz]	50/60
Nominal voltage [V]	230/400
Nominal current [A]	0.64/1.1
Efficiency class	IE2
Protection class	IP 55
Thermal class [C°]	155
Mass [kg]	3.9

Installing the motor



item GmbH offers two prepared and coordinated Motor Fastening Sets for centre drives.



NOTE! An assembly paste must be applied to the motor shaft in order to minimise frictional corrosion and make subsequent dismantling possible.



WARNING! When installing motors, ensure they are wired properly, including earthing. An electrician must either carry out or supervise and inspect the wiring and the safe integration of the item Conveyor Belt System.

Installing Motor AC D16 using Motor Fastening Set 8 40 D16 M

Motor Fastening Set 8 40 D16 M has been developed for connecting item Motors AC D16 to a centre drive. The fastening set is fitted on the right or left of the conveyor belt, to the centre drive housing. The motor with integrated gearbox is screw-fastened in place using the adapter plate. The drive's orientation can be adjusted in 90° increments. The drive shaft is pressed into the motor's hollow shaft without the need for any additional machining. The fixed expanding hub sits securely in the Drive Pulley. The elastomer insert compensates for potential angular errors between the two coupling halves.

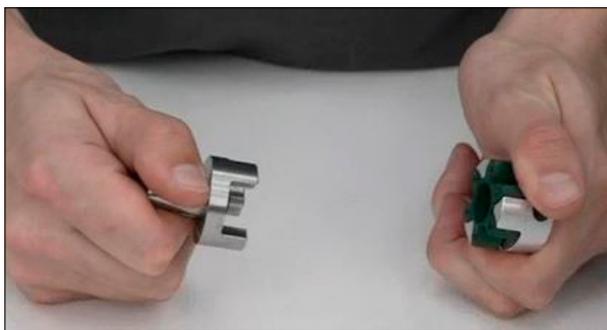


The process of fitting in place the centre drive is described using Motor Fastening Set 8 40 D14 M and Motor AC D16 as examples.



Remove the four countersunk screws from the motor, put the motor adapter plate in position and use the longer countersunk screws of the Motor Fastening Set to screw it into place.

$M_T = 10 \text{ Nm}$



Separate the coupling halves.



Fix the drive shaft in the clamp coupling half.

$M_T = 4 \text{ Nm}$

Next, apply an assembly paste to the drive shaft and key to prevent it from jamming and make dismantling easier.



Fit the drive shaft and key securely in the motor.



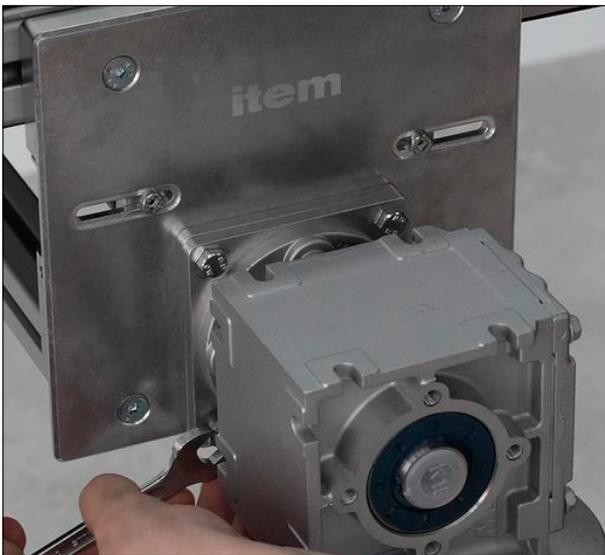
ATTENTION! Ensure that the key is seated correctly in the drive shaft and that the drive shaft is correctly positioned in the hollow shaft of the gearbox.

ATTENTION! Use the protective cap supplied to seal the rotating hollow shaft of the bevel gearbox. The rotating drive shaft at the opposite side to the motor is covered by the cover for Drive Pulley 8 40 M supplied in the Motor Fastening Set.



Screw the other half of the coupling to the positioning ring in the centre drive housing.

$M_T = 9 \text{ Nm}$



Use the Motor Fastening Set to fasten the Motor to the Drive Unit Set 8 40 M of the conveyor system. The positioning ring of the Drive Unit Set 8 40 M will help you centre the Motor. Use an 10 A/F spanner to tighten the hexagon screws.

$M_T = 10 \text{ Nm}$

Installing Motor AC D11 using Motor Fastening Set 8 40 D14 M

Motor Fastening Set 8 40 D14 M has been developed for connecting item Bevel Gearboxes D14/D11 for Motor AC D11 to a conveyor belt. The fastening set is fitted on the right or left of the conveyor belt, to the housing of Drive Unit Set 8 40 M. The motor and gearbox are screw-fastened in place using the adapter plate. The drive's orientation can be adjusted in 90° increments. The drive shaft is pressed into the motor's hollow shaft without the need for any additional machining. The fixed expanding hub coupling sits securely in the Drive Pulley. The elastomer insert compensates for potential angular errors between the two coupling halves.

The process of installing Motor AC D11 and a gearbox in the centre drive is fundamentally similar to the installation process for Motor AC D16.

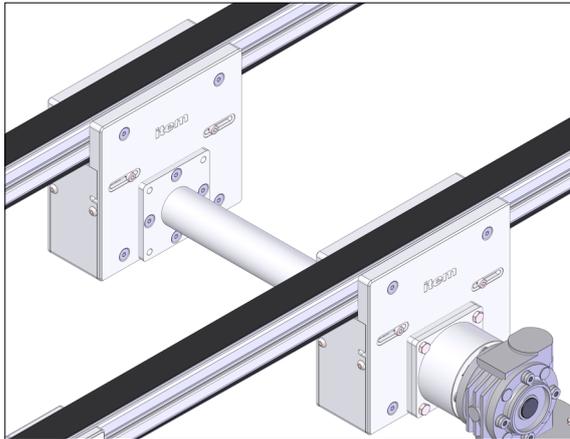


ATTENTION! Ensure that the key is seated correctly in the drive shaft and that the drive shaft is correctly positioned in the hollow shaft of the gearbox.

ATTENTION! Use the protective cap supplied to seal the rotating hollow shaft of the bevel gearbox. The rotating drive shaft at the opposite side to the motor is covered by the cover for Drive Pulley 8 40 M supplied in the Motor Fastening Set.

Synchronisation

When synchronising Double Flat Belt Conveyors and Double Timing Belt Conveyors, the motor can be installed in one of two positions. It can either be located on the outside of one of the conveyors, with the synchronisation mechanism located on the inside, or the motor can be integrated into the internal synchronisation mechanism. The Synchronising Set can also be retrofitted.



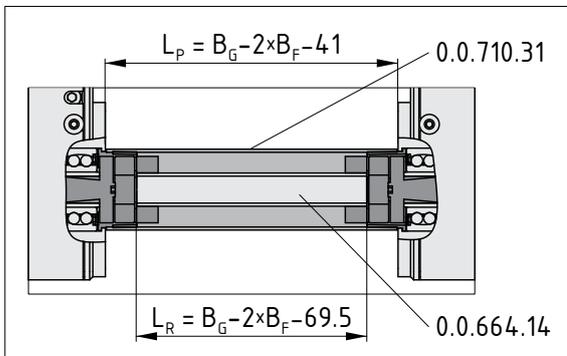
Motor on the outside, synchronisation on the inside



Motor on the inside, integrated into synchronisation

If the motor is located on the outside, the motor type does not really affect calculations for the length of the synchroniser tube or its cover.

Calculating the length of the synchroniser tube and cover when using Motor AC D16 or AC D11 located on the outside:



Key:

L_P : Length of Synchroniser Shaft Cover Profile

L_R : Length of synchroniser tube

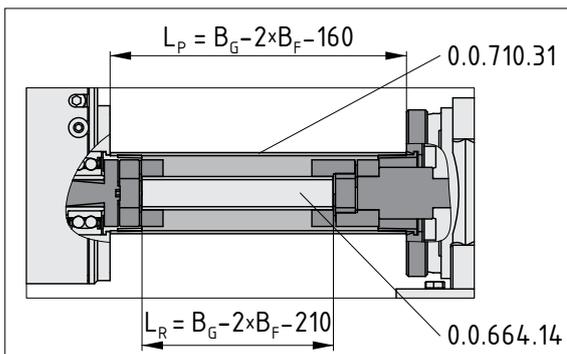
B_G : Overall width of conveyor

B_F : Width of individual conveyor

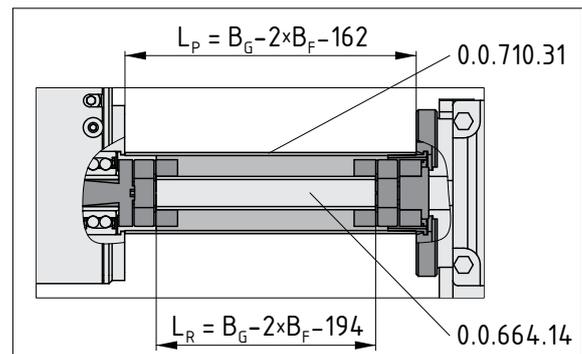
Synchroniser tube: Tube D16x1.5 St, stainless
0.0.664.14

Cover: Synchroniser Shaft Cover Profile 8 40 K,
0.0.710.31

There is also the option to locate the motor on the inside, integrated into the synchronisation mechanism. In this scenario, the process for calculating the length of the synchroniser tube and its cover varies depending on the motor type being used.

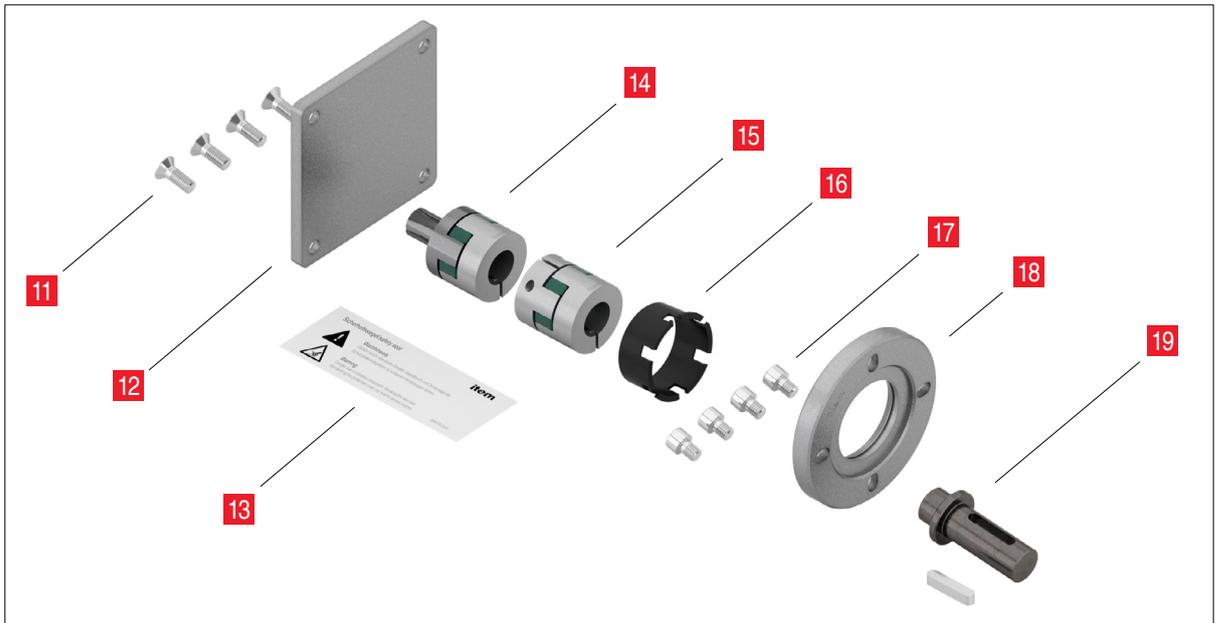


Motor AC D11 with bevel gearbox D14/D11 located on the inside. Length calculation for synchroniser tube and cover

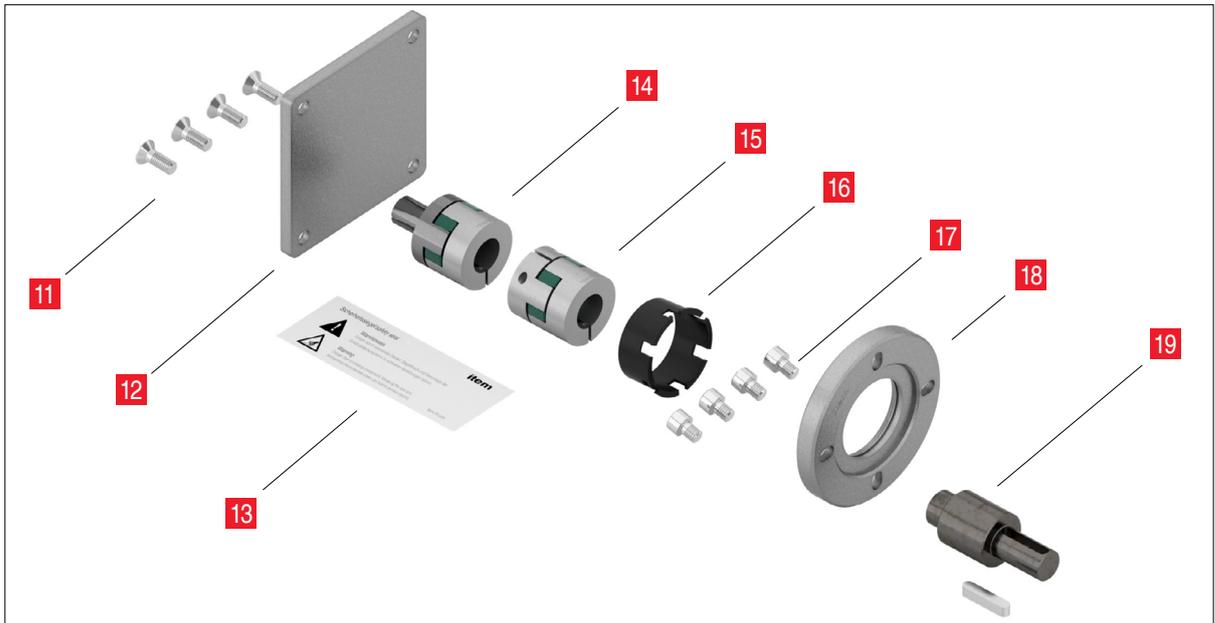


Motor AC D16 located on the inside. Length calculation for synchroniser tube and cover

Synchronisation – motor located between the conveyors



Synchronising Set 8 40 M D13/D16



Synchronising Set 8 40 M D13/D14



NOTE! In the case of Double Flat Belt Conveyors and Double Timing Belt Conveyors, the relevant Synchronising Set is included in the scope of supply.

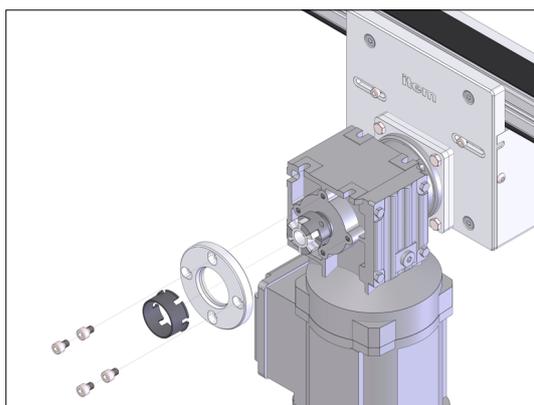
No.	Product description
11	Countersunk Screws DIN 7991 M6x16, St, bright zinc-plated
12	Cover for Drive Pulley 8 40 M, Al

No.	Product description
13	Safety Seal, Warning Notice for Rotating Components
14	Expanding hub coupling D16/d13, Al/St/TPU
15	Clamping hub coupling D16/D16, Al/TPU
16	Positioning ring for conveyor belt 8 40, PA, ESD, black
18	Hexagon Socket Head Cap Screws DIN 912-M6x8, St, bright zinc-plated
18	Flange for Synchronising Set 8 40 M, Al
19	Drive shaft D16, St, black or drive shaft D14, St, black and parallel key DIN 6885-A-5x5x25, St

Fundamentally, there are two Synchronising Sets for the two different motor types AC D16 and AC D11. The synchroniser tube and cover must be cut to length to match the spacing between the individual conveyors.

Installation example for synchronisation – Motor AC D16 located between the conveyors

For illustration purposes, the process of installing Motor AC D16 on the inside, between two individual conveyors is described here. The installation sequence is identical for both motor types.

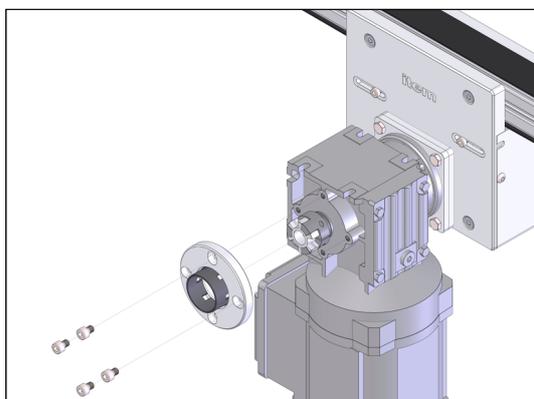


First, fasten the motor to the inside of the centre drive housing on one of the conveyors (as described in the section entitled "Installing the motor").

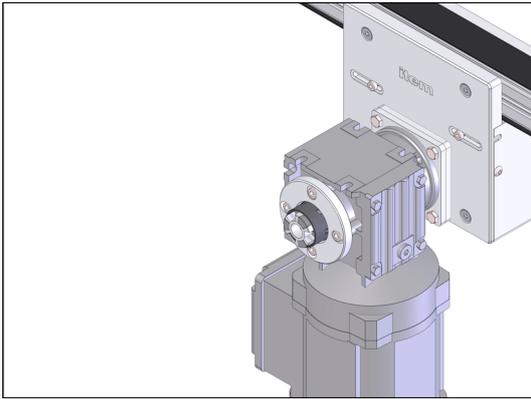
Fix the drive shaft **19** of the Synchronising Set in the motor-side half of the clamping hub coupling **15**.

$M_T = 4 \text{ Nm}$

Next, apply an assembly paste to the drive shaft D16 **19** and key to prevent it from jamming and make dismantling easier. Insert the drive shaft and key into the motor.



Fit the positioning ring for conveyor belt 8 40 **16** into the flange for Synchronising Set 8 40 M **18** before fitting the flange in place.

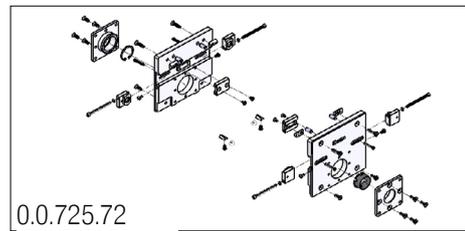


Now screw the flange for Synchronising Set 8 40 M securely to Motor AC D16 using the Hexagon Socket Head Cap Screws DIN 912 M6x8 **17**.

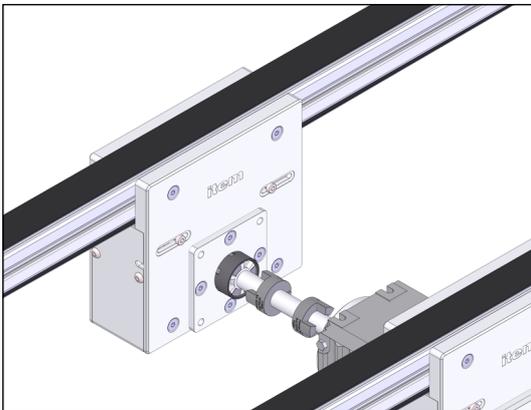
$M_T = 4 \text{ Nm}$



The second positioning ring, which is part of Drive Unit Set 8 40 M, is already fitted to the conveyor opposite the motor.



0.0.725.72



Fasten and clamp the d13 half of the expanding hub coupling **14** (the half at the opposite side to the motor) in the Drive Unit Set 8 40 M that is not connected directly to a motor.

$M_T = 9 \text{ Nm}$

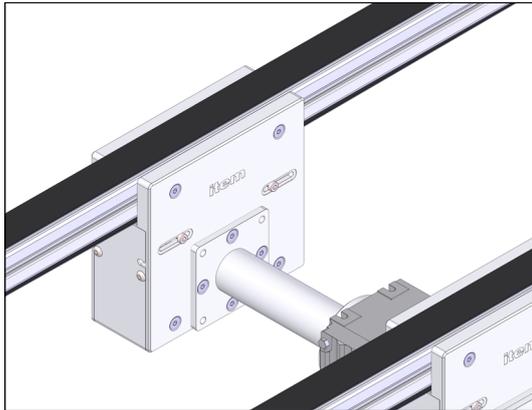
Fit the remaining D16 coupling halves **14** and **15** onto the synchroniser tube that has been cut to length, and place the tube between the centre drives.

Synchroniser tube: Tube D16x1.5 St, stainless
0.0.664.14



Next, slide the D16 coupling halves into their relevant counterparts and fix them in place with the clamping screw.

$M_T = 4 \text{ Nm}$



Fit the Synchroniser Shaft Cover Profile around the rotating shaft for safety reasons.

Apply the Safety Seal **13** over the join in the cover. This will prevent the cover from coming off and warn users about the rotating synchroniser tube underneath.

Sicherheitsiegel/safety seal		item
	Warnhinweis Gefahr durch rotierendes Bauteil. Siegelbruch und Demontage der Schutzabdeckung kann zu schweren Verletzungen führen.	
	Warning Danger due to rotating component. Breaking the seal and dismantling the protective cover can lead to serious injuries.	item24.com

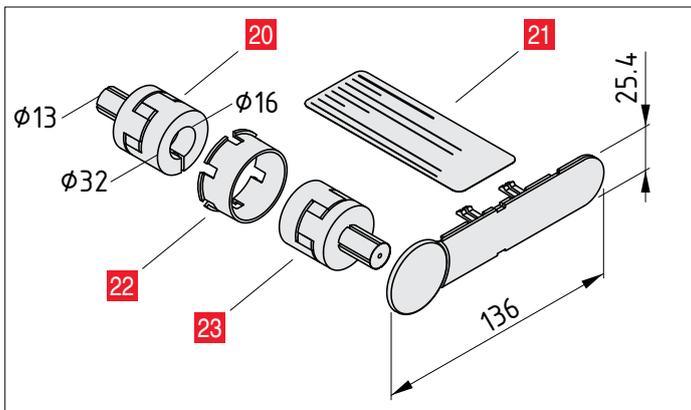


NOTE! To prevent improper opening of the Synchroniser Shaft Cover Profile, the Safety Seal for Rotating Components (0.0.710.81) must be applied to it. Removing the cover breaks the seal.

Synchronisation – motor located on the outside of the conveyors

Installation example for synchronisation – Motor AC D11 located on the outside

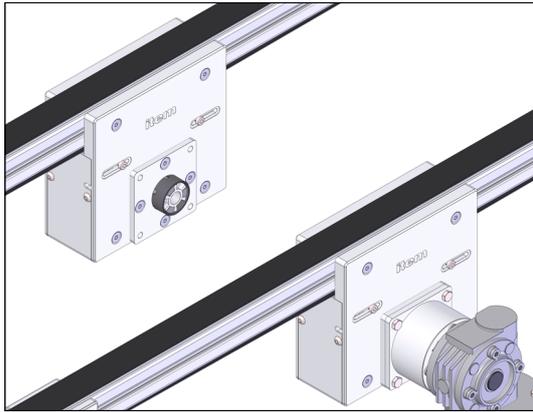
When the motor is fitted on the outside of the conveyors, synchronisation is the same for all motor types. Synchronising Set 8 40 (0.0.703.07) must be used when the motor is fitted to the outside of the conveyors.



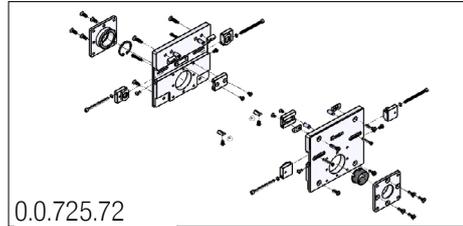
No.	Product description
20	Expanding hub couplings D16/d13, Al/St/TPU (on the motor side or opposite side)
21	Safety Seal, Warning Notice for Rotating Components
22	Positioning ring, conveyor belt 8 40, PA6, ESD
23	Expanding hub couplings D16/d13, Al/St/TPU (on the motor side or opposite side)



NOTE! In the case of Double Flat Belt Conveyors and Double Timing Belt Conveyors Synchronising Shaft Cover Profile is included in the scope of supply.

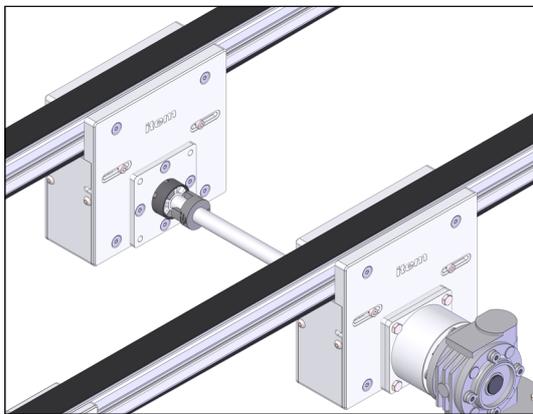


The positioning ring already fitted to the conveyor opposite the motor is part of Drive Unit Set 8 40 M.



0.0.725.72

The other positioning ring **22** is part of Synchronising Set 8 40. Fit this positioning ring to the inside of the conveyor on the motor side.

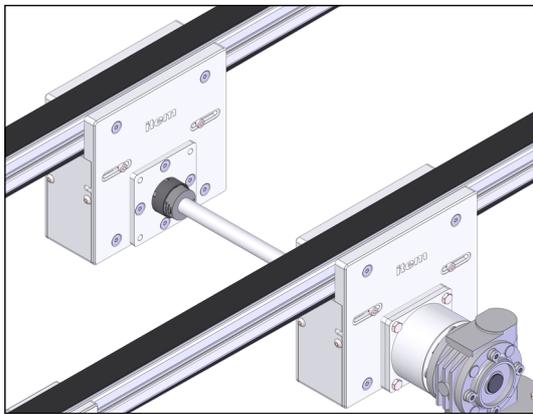


Fit and clamp the first d13 half of the expanding hub coupling **20** to Drive Pulley 8 40 in the Drive Unit Set 8 40 M opposite the motor. Do the same with the second d13 half of the expanding hub coupling **23** on the opposite side (i.e. fit it to the inside of the conveyor that is on the motor side).

$M_T = 4 \text{ Nm}$

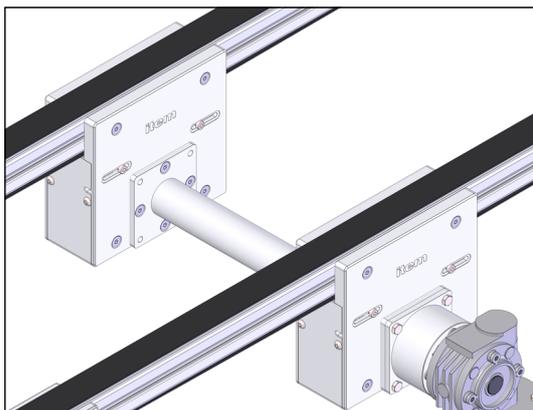
Fit the remaining D16 coupling halves (**20** and **23**) onto the synchroniser tube that has been cut to length, and place the tube between the centre drives.

Synchroniser tube: Tube D16x1.5 St, stainless
0.0.664.14



Next, slide the D16 coupling halves into their relevant counterparts and fix them in place with the clamping screw.

$M_T = 4 \text{ Nm}$



Fit the Synchroniser Shaft Cover Profile around the rotating shaft for safety reasons.

Apply the Safety Seal **21** over the join in the cover. This will prevent the cover from coming off and warn users about the rotating synchroniser tube underneath.

Sicherheitsiegel/safety seal		item
	Warnhinweis Gefahr durch rotierendes Bauteil. Siegelbruch und Demontage der Schutzabdeckung kann zu schweren Verletzungen führen.	
	Warning Danger due to rotating component. Breaking the seal and dismantling the protective cover can lead to serious injuries.	item24.com



NOTE! To prevent improper opening of the Synchroniser Shaft Cover Profile, the Safety Seal for Rotating Components (0.0.710.81) must be applied to it. Removing the cover breaks the seal.

Test run and fine adjustment

Once the motor has been installed, the conveyor belt has been tensioned, and any synchronisation mechanism fitted, it is time to carry out a test run. It is advisable that the test run should last around three hours. During this time, ensure the conveyor is running straight and listen out for any unusual noises.



Before starting the test run, use a vernier caliper to check the spacings of the inserts used to apply tension to the conveyor belt via the Return Pulleys.

Identical spacings are the starting point for setting the centre drive and optimising straight running and tension.



Carry out fine adjustment while the conveyor belt is running. Turn the four clamping screws in small increments – as appropriate to the direction of travel and deviation on the conveyor – until optimum straight running is achieved.

The effect of each minor adjustment can be monitored at the Return Unit Sets at the ends of the belt until straight running has been optimised.

Only tighten the stop screws of the Return Pulleys on the outside of the base plates once straight running has been optimised.

$M_T = 5 \text{ Nm}$



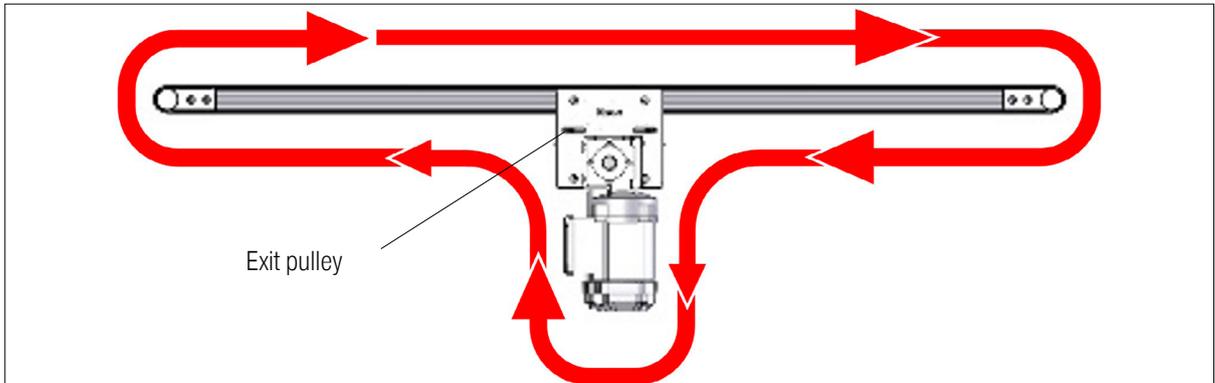
ATTENTION! Only screw in place the covers of the Drive Pulley Set and seal the housing when the conveyor belt has been optimally adjusted. Straight running can also be adjusted when the housing is sealed, and this would be the safer option. However, it is not possible to monitor how the belt is running around the Drive Pulley, particularly when working with a timing belt.



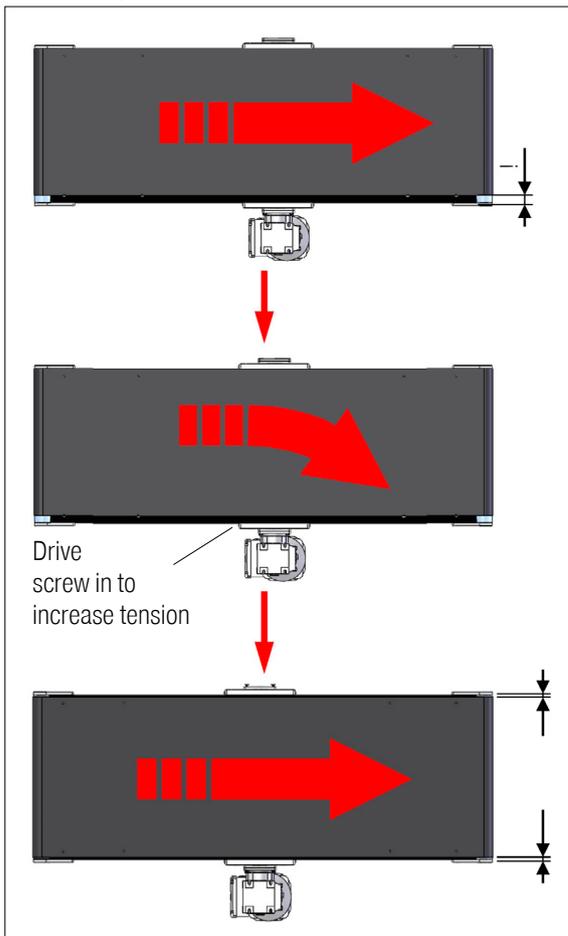
The following diagrams should help when adjusting the belt and make the whole system clearer:

Adjust the straight running of the conveyor belt at the pulley where the belt exits the centre drive. Increase tension on the side of the pulley where the belt runs furthest behind the edge of the conveyor.

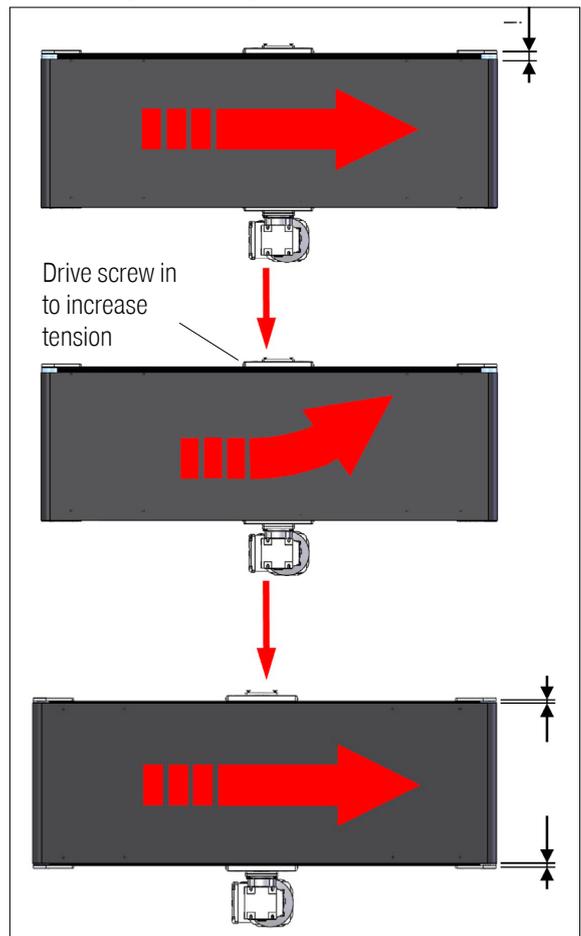
Adjusting the straight running of a Flat Belt Conveyor – direction of travel from left to right



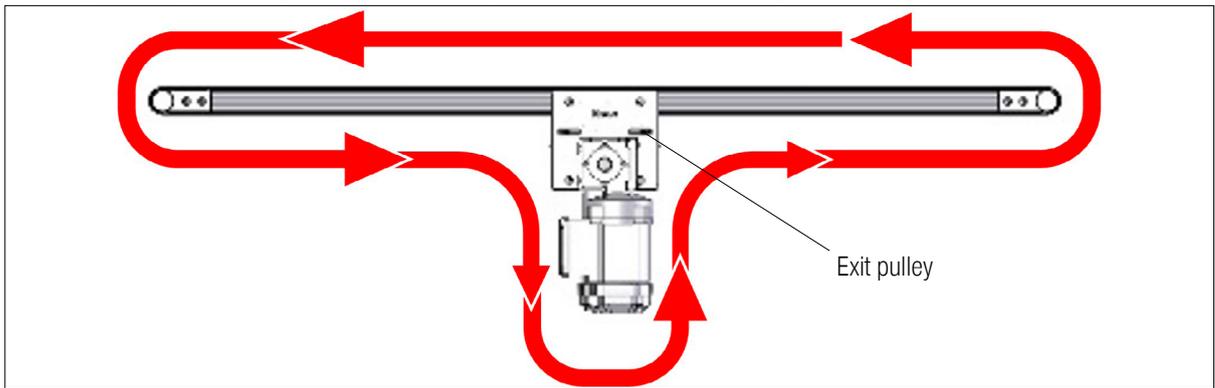
Belt running off to the left:



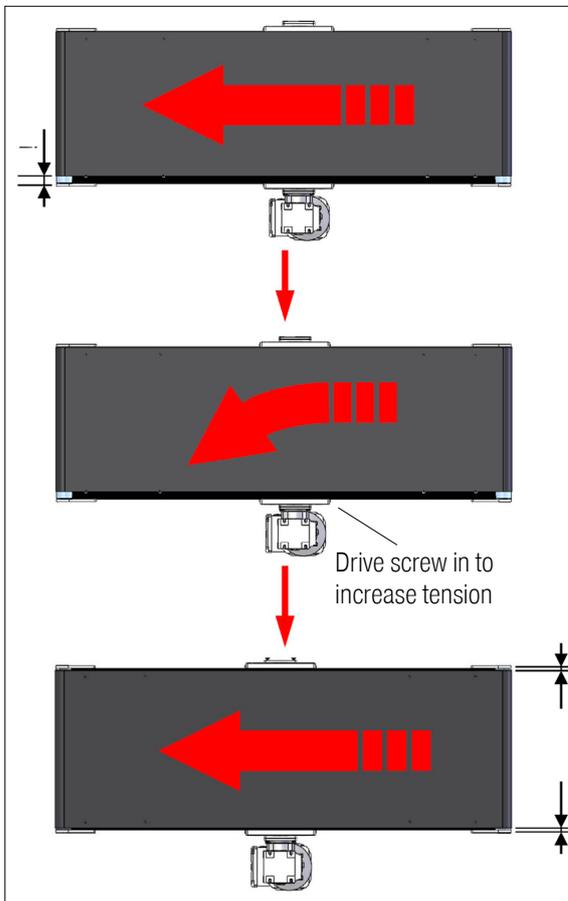
Belt running off to the right:



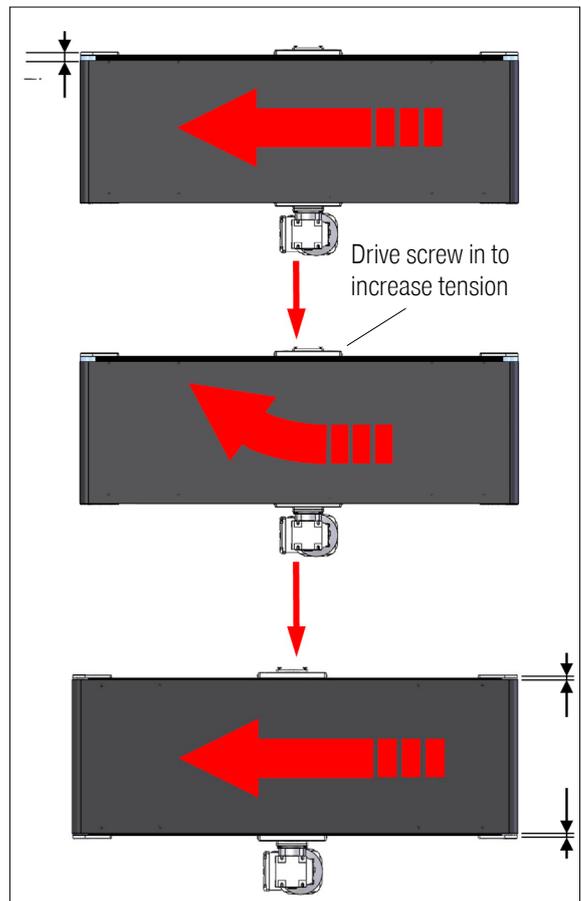
Adjusting the straight running of a Flat Belt Conveyor – direction of travel from right to left



Belt running off to the right:



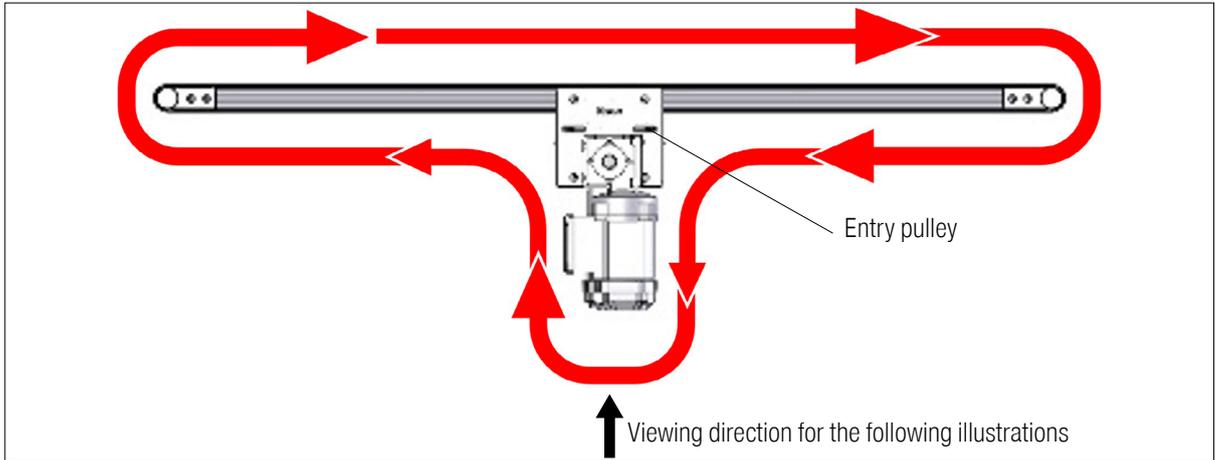
Belt running off to the left:



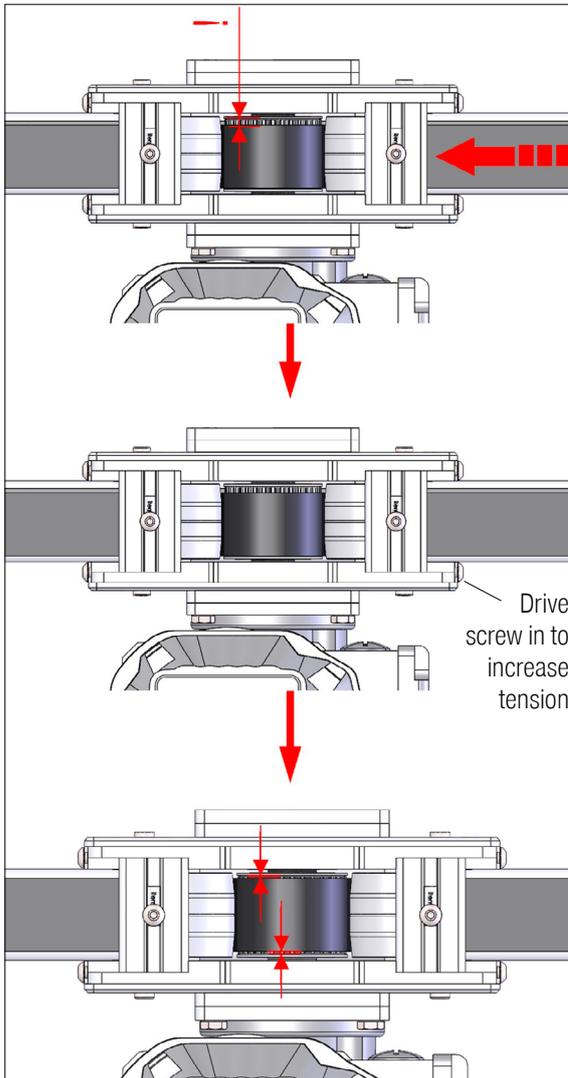
When working with Timing Belt Conveyors, it is particularly important to ensure the belt is running true and is centred on the Drive Pulley. To do this, make adjustments to the pulley where the belt enters the centre drive. Increase tension on the side of the pulley where the belt runs into the flange.

Before starting up the conveyor, ensure the belt is running true. To do this, move the belt by hand, as even a slight misalignment of the Drive Pulley can have major consequences.

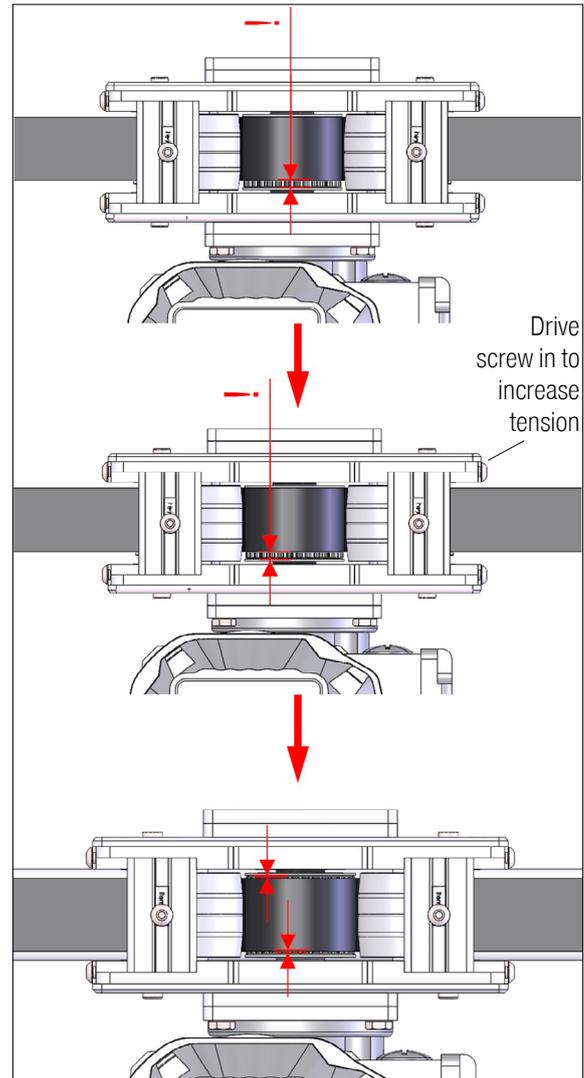
Adjusting the straight running of a Timing Belt Conveyor – direction of travel from left to right



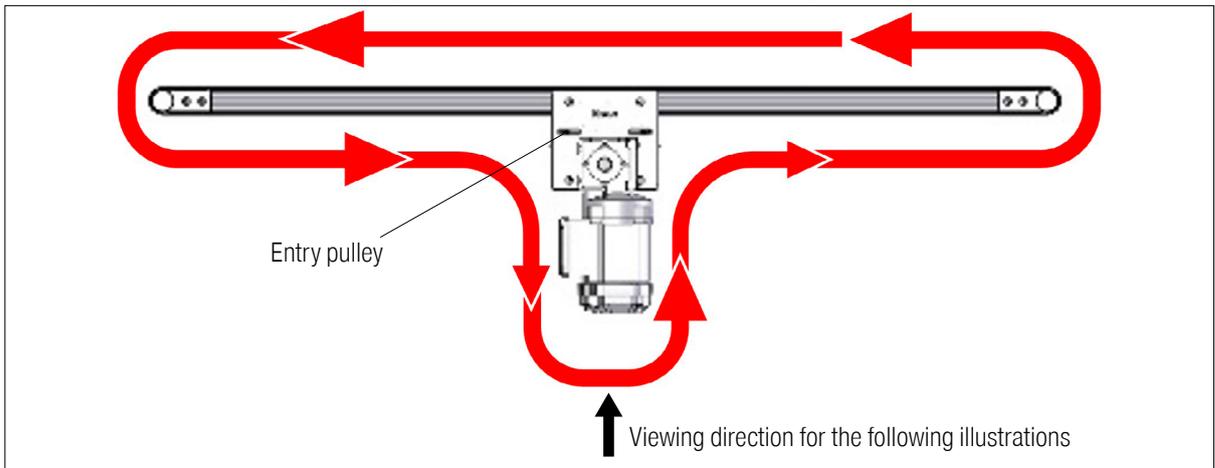
Timing Belt running off to the left:



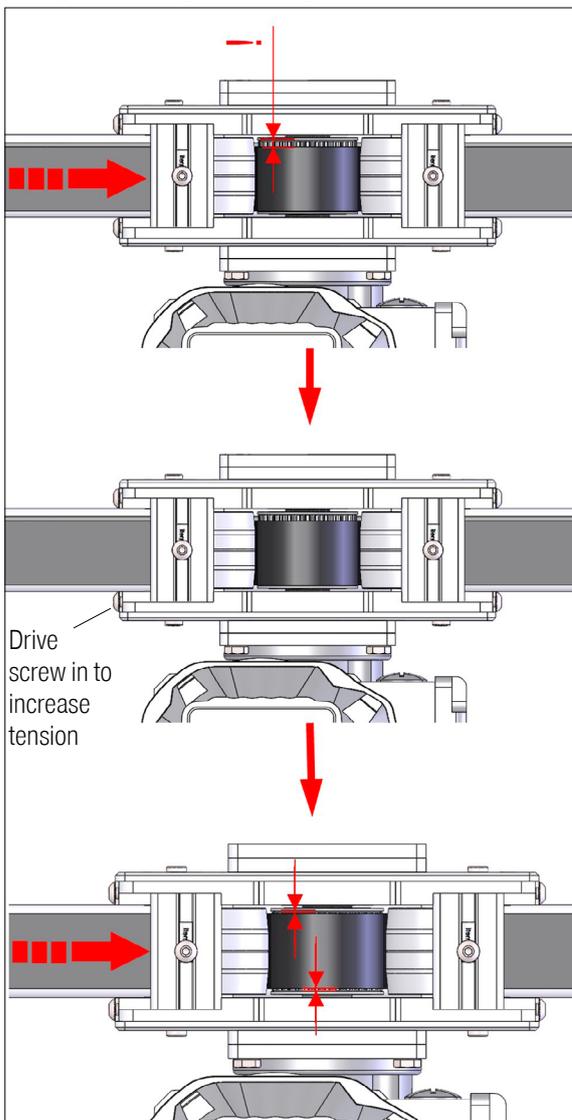
Timing Belt running off to the right:



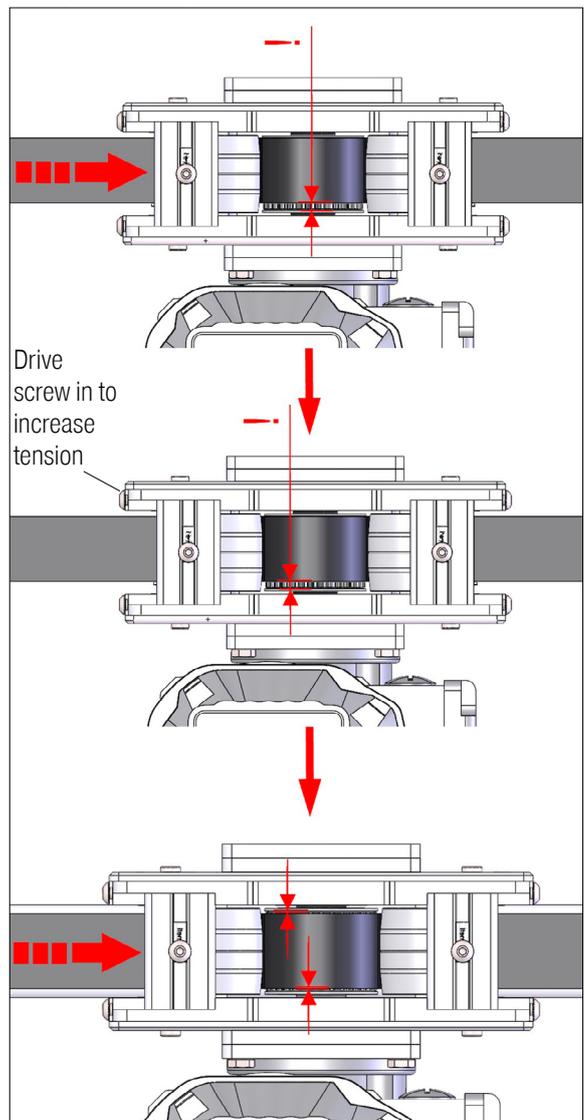
Adjusting the straight running of a Timing Belt Conveyor – direction of travel from right to left



Timing Belt running off to the right:



Timing Belt running off to the left:



Maintenance and inspection



WARNING!

Before working on the item Conveyor Belt System, disconnect it from the mains. Do not reach into the system while it is operating.



ATTENTION!

- The belt continues running after the system is switched off.
- Structural safety is the operator's own responsibility.
- Minor burrs may be present on bare metal surfaces! Staff must be given appropriate training to avoid accidents and damage to the item Conveyor Belt System.
- Only qualified persons should carry out repairs and modifications.



MAINTENANCE

All products are subject to a natural process of wear and tear that varies according to the relevant conditions of use.

The construction's connection points consist of different materials with different material properties. Due to the operating conditions, we recommend they are regularly checked and visually inspected for damage and wear.

Functionality should be checked after the first 24 hours in operation. After that, it is advisable to carry out maintenance on a quarterly basis. As the manufacturer is unaware of the environmental conditions and conditions of use, users are required to use their own judgement.

The following aspects should be checked during every service and before/during every use:

Maintenance plan for a conveyor

Component/construction	Maintenance interval	Maintenance/inspection criterion
Overall system	During every service	Conduct visual inspection for damage
Flat conveyor belt / timing belt	Every 3 months	1. Conduct visual inspection for damage and wear 2. Check perfect functionality and straight running
Motor and gearbox	Every 6 months	1. Conduct visual inspection for damage and wear 2. Check for running noise and potential bearing damage
Elastomer insert	Every 6 months	Conduct visual inspection for damage and wear
Timing Belt Guide Strip (on Timing Belt Conveyors)	Every 6 months	Conduct visual inspection for damage and wear
Drive and Return Pulleys	Once per year	Check for running noise and potential bearing damage
Connecting cable	Once per year	Inspect cable for damage
Belt support (if present)	Once per year	Check for running noise and potential bearing damage
Screw connections	Once per year	Check tightness



NOTE! The time intervals are for guidance when compiling the maintenance plan. Intervals may vary depending on external influences and the actual load carried by the conveyor.

Spare parts list

Component	Article number
Expanding Hub Coupling D16/d13	0.0.702.81
Return Unit Set 8 40	0.0.702.96
Timing Belt Guide Strip 8 40-40	0.0.702.98 (cut-off: 0.0.702.99)
Timing Belt Guide Strip 8 40-80	0.0.705.82 (cut-off: 0.0.705.93)
Drive Pulley, Flat Belt Conveyor 8 40-40	0.0.702.88
Drive Pulley, Flat Belt Conveyor 8 40-80	0.0.705.06
Drive Pulley, Flat Belt Conveyor 8 40-120	0.0.705.07
Drive Pulley, Flat Belt Conveyor 8 40-160	0.0.705.08
Drive Pulley, Flat Belt Conveyor 8 40-200	0.0.705.09
Drive Pulley, Flat Belt Conveyor 8 40-240	0.0.705.10
Drive Pulley, Flat Belt Conveyor 8 40-320	0.0.705.11
Drive Pulley, Flat Belt Conveyor 8 40-400	0.0.705.12
Return Pulley, Flat Belt Conveyor 8 40-40	0.0.702.92
Return Pulley, Flat Belt Conveyor 8 40-80	0.0.705.16
Return Pulley, Flat Belt Conveyor 8 40-120	0.0.705.17
Return Pulley, Flat Belt Conveyor 8 40-160	0.0.705.18
Return Pulley, Flat Belt Conveyor 8 40-200	0.0.705.19
Return Pulley, Flat Belt Conveyor 8 40-240	0.0.705.20
Return Pulley, Flat Belt Conveyor 8 40-320	0.0.705.21
Return Pulley, Flat Belt Conveyor 8 40-400	0.0.705.22
Fine Adjuster Set 8	0.0.715.05
Drive Pulley, Timing Belt Conveyor 8 40-40	0.0.709.27
Drive Pulley, Timing Belt Conveyor 8 40-80	0.0.709.28
Return Pulley, Timing Belt Conveyor 8 40-40	0.0.709.29
Return Pulley, Timing Belt Conveyor 8 40-80	0.0.709.30

Component	Article number
Flat Conveyor Belt PVC, non-accumulating -40	0.0.706.10
Flat Conveyor Belt PVC, non-accumulating -80	0.0.706.12
Flat Conveyor Belt PVC, non-accumulating -120	0.0.706.14
Flat Conveyor Belt PVC, non-accumulating -160	0.0.706.16
Flat Conveyor Belt PVC, non-accumulating -200	0.0.706.18
Flat Conveyor Belt PVC, non-accumulating -240	0.0.706.20
Flat Conveyor Belt PVC, non-accumulating -320	0.0.706.22

Component	Article number
Flat Conveyor Belt PVC, non-accumulating -400	0.0.706.24
Flat Conveyor Belt PUR ESD, accumulating -40	0.0.718.04
Flat Conveyor Belt PUR ESD, accumulating -80	0.0.718.05
Flat Conveyor Belt PUR ESD, accumulating -120	0.0.718.06
Flat Conveyor Belt PUR ESD, accumulating -160	0.0.718.07
Flat Conveyor Belt PUR ESD, accumulating -200	0.0.718.08
Flat Conveyor Belt PUR ESD, accumulating -240	0.0.718.09
Flat Conveyor Belt PUR ESD, accumulating -320	0.0.718.10
Flat Conveyor Belt PUR ESD, accumulating -400	0.0.718.11
Timing Belt T5 TPU, non-accumulating -40	0.0.706.56
Timing Belt T5 TPU, non-accumulating -80	0.0.706.58
Timing Belt T5 PA, accumulating -40	0.0.706.60
Timing Belt T5 PA, accumulating -80	0.0.706.63
Belt Support Set 8	0.0.709.55

Component	Article number
Motor AC D16-180W-i6	0.0.705.44
Motor AC D16-180W-i10	0.0.705.45
Motor AC D16-180W-i14	0.0.705.46
Motor AC D16-180W-i19	0.0.705.47
Motor AC D16-120W-i32	0.0.705.48
Motor AC D16-120W-i75	0.0.705.49
Motor AC D11-180W	0.0.705.69
Bevel Gearbox D14/D11-i7	0.0.710.75
Bevel Gearbox D14/D11-i10	0.0.710.76
Bevel Gearbox D14/D11-i15	0.0.710.77
Bevel Gearbox D14/D11-i20	0.0.710.78
Bevel Gearbox D14/D11-i30	0.0.710.79
Bevel Gearbox D14/D11-i60	0.0.710.80
Motor Fastening Set 8 40 M16	0.0.703.11
Motor Fastening Set 8 40 M14	0.0.705.73
Synchronising Set 8 40	0.0.703.07
Synchroniser Shaft Cover Profile 8 40 K, black	0.0.710.31 (cut-off)
Synchroniser Shaft Cover Profile 8 40 K, black	0.0.707.72

Disposal



The materials used are environmentally friendly.

The product can be recycled or re-used (after any necessary refurbishment and replacement of components). The use of appropriate materials and easy dismantling ensure the product can be recycled.



Improper disposal of the Conveyor Belt System can pollute the environment.

Dispose of the Conveyor Belt System in accordance with the national regulations that apply in your country.

The Conveyor Belt System must not be disposed of as ordinary domestic waste at the end of its service life. The separate disposal of used electrical and electronic equipment protects the environment against hazardous substances and materials.

Warranty

Warranty: 12 months. The warranty covers free delivery of parts or complete units ex-works. However, this is conditional on receipt of a written notice from the customer that includes a description of the fault. The replaced parts must be returned to item Industrietechnik GmbH within six weeks for inspection. Otherwise, the cost of the replacements and their shipping will be charged.

The warranty is null and void if the units are stored even briefly (less than three months) in an environment that lies outside a temperature range of -20°C to +60°C and has a relative humidity (without condensation) exceeding 60 percent.

Start of warranty:

Day of delivery, but no later than three months after delivery!

Development and documentation

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