

# FOOD FOCUS

All you need for FDA-compliant timing belt drives

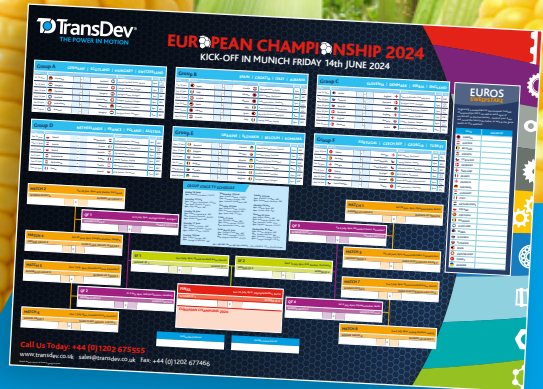
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Discover BRECOprotect food belts inside



## ALL YOU NEED FOR FDA-COMPLIANT TIMING BELT DRIVES

These days, it's virtually impossible to imagine automated production systems in the food and pharma industries without timing belts. They perform key roles in processing and packing.

The wide range of possible coatings and the scope offered in designing profiles, not to mention lubricant-free running, make them a popular option for sensitive areas. Nevertheless, they have to be specifically adapted to the needs of these industries. For instance, particularly stringent standards apply to direct and indirect contact with foodstuffs, such as when making and packing confectionery, filling containers with liquids and powders, or storing, transporting and packing cheese. Packing medical products, such as tablets, is just as demanding.

### FDA-compliant materials are a must

The scope for using timing belt drives in the food and pharma industries is defined by a series of mandatory legal requirements issued by the US FDA (Food and Drug Administration) and the European Union.

In order to be allowed in these sensitive areas, the polyurethane used in the timing belt as well as the coating material and, if

relevant, the tension member material all need to be compliant or approved. The table below provides an overview of the various polyurethanes available. In the food industry, timing belts need to be particularly resistant to cleaning fluids and water. Timing belts made from conventional polyurethane often have a very limited service life under these conditions, particularly due to hydrolysis.

### BRECO timing belt materials for the food and pharma industries

Any tension member material can be used for the food industry, as long as it is fully encapsulated in polyurethane. However, this is not usually the case. To be able to place the tension members in a specific position between the base of the tooth and the back of the belt, a narrow raised section known as the coiling nose is included on the mandrel. This is used to tension the tension members before they are encapsulated in the polyurethane.

MANUFACTURED TO



Packing medical products such as tablets is just as demanding.



### Using PU timing belts in foodstuffs packing plants The Basic Principles



BRECO timing belts with coiling noses require a steel tension member. The same goes for timing belts whose tension members are exposed as a result of subsequent reworking such as milling or piercing.



Food-safe materials must also be used for profiles, screw connections and, in particular, coatings.

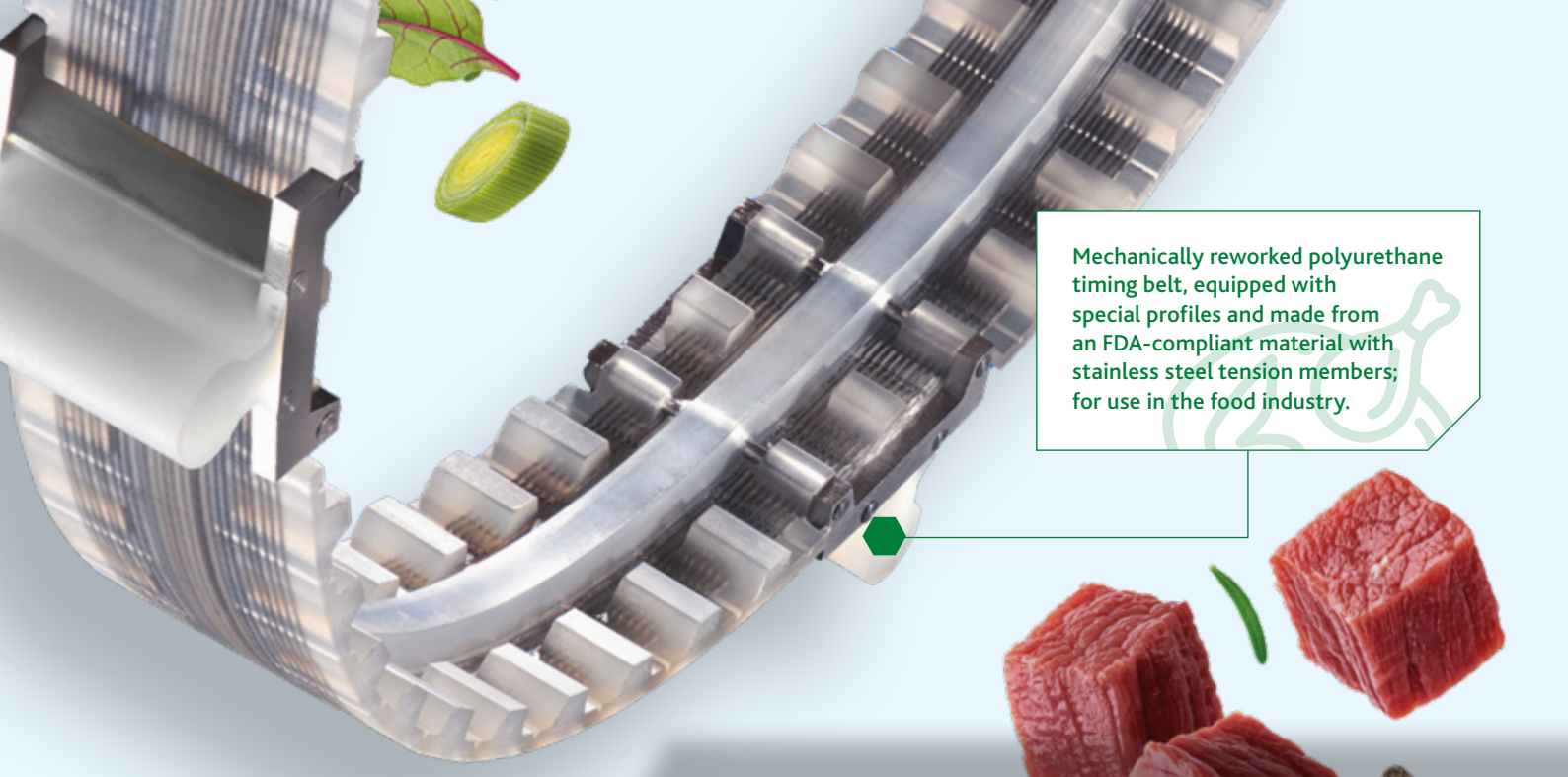


The following food-safe materials are available for coatings: Linaplus FG FDA, PVC fishbone FDA, HV film FDA, PVC film white FDA, PVC nubs white FDA and Supergrip FDA.



The ink used to mark the back of timing belts is not FDA-compliant and will be left exposed on uncoated belts. On request, therefore, timing belts can also be supplied unmarked.

Declarations of conformity for BRECO timing belts that come into contact with food are available on request. These declarations of conformity confirm compliance with Regulations (EU) 1935/2004, (EU) 2024/2006 and (EU) 10/2011. The associated material safety data sheets also confirm that the polyurethanes used comply with FDA regulations.

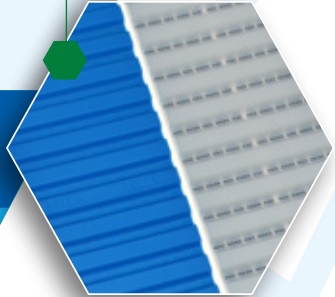


Mechanically reworked polyurethane timing belt, equipped with special profiles and made from an FDA-compliant material with stainless steel tension members; for use in the food industry.

The tension members are then left exposed at this spot on the finished timing belt.

Timing belts with coiling noses are equipped with high-tensile galvanised steel tension members as standard. Fitted with FDA-compliant polyurethane, the belts are granted limited FDA compliance. Unlimited FDA compliance is only available to timing belts with coiling noses if their tension members are made of stainless steel.

On the left is a BRECOprotect timing belt without a coiling nose. The tension members are fully encapsulated in polyurethane. On the right is a standard BRECO timing belt with coiling noses at the base of the teeth.



## BRECOprotect polyurethane timing belts

As a general principle, it would be better if timing belts did not have a coiling nose. But there is a solution: BRECOprotect.

This timing belt does away with the coiling nose so that the tension member is fully encapsulated by the polyurethane at the base of the tooth.

This prevents corrosion and hidden or hard-to-remove contamination and makes cleaning easier. It also obviates the need for stainless steel, meaning that high-tensile steel tension members can now also be used – a real win-win situation!

TPUAU1, the polyurethane used as standard on BRECOprotect timing belts, is food-safe and extremely resistant to cleaning processes in the food and pharma industries. The material also resists oils and lubricants. The blue colouration on the polyurethane is also ideally suited to visual inspection systems. Any dirt sticking to the

surface is also easy to detect.

Across the board, declarations of conformity are also being required more and more frequently for timing belts that come into direct contact with food. This means that it is no longer sufficient simply to state that the materials used comply with the regulations in the table. Instead, all of the materials that go into the product need to be tested to verify their suitability for direct contact with food.

These "migration tests" were successfully completed for the BRECOprotect product range and confirmed in a corresponding certificate. BRECOprotect timing belts are food-safe.

Compliance with the GMP Regulation (EC) 2023/2006 (Good Manufacturing Practice) is also necessary to receive this certificate. Only this guarantees the cleanliness or purity of the product following the manufacturing process.



Region	Regulation
EUROPE European Commission Regulations	(EC) No. 1935/2004
	(EC) No. 10/2011
USA FDA (Food and Drug Administration)	FDA CFR Sections 175.105 and 177.2600
	FDA CFR Section 177.1680

		Polyurethanes			Timing belt		
		For wet foodstuffs	For dry foodstuffs				
		TPUFD1 92 Shore A 0 to 80 °C	TPUFD2 85 Shore A 5 to 50 °C	TPUAU1 92 Shore	TPUAU2 95 Shore	TPUAU3	BRECOprotect
		✓	✓	✓	✓	✓	✓
		✓	✓	✓	✓	✓	✓
		✓	✓	Cleaning agent suitable			✓
		✓	✓	✓	✓	✓	✓
		Stainless steel tension members					Steel tension members

Talk to our Technical team for more information on food compliant PU belting and associated hardware.

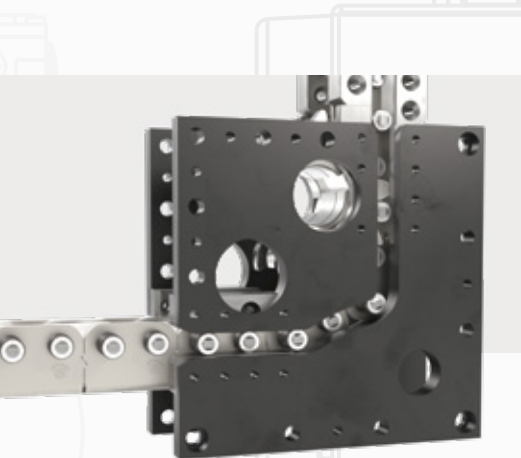
## MARATHON LIFT

### The ingenious hoisting and conveyor chain solution

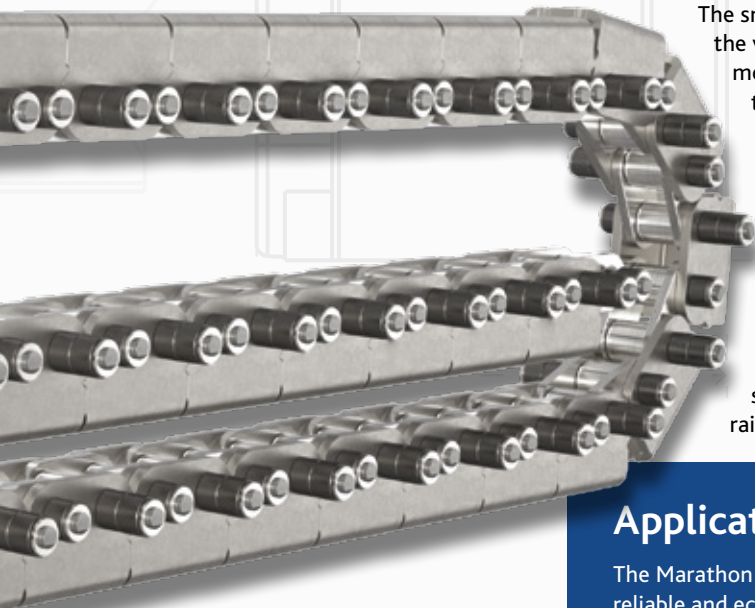
Whether deployed in industrial manufacturing processes, car lift systems, scissor lifts, dynamic stages or goods lifts – this new, maintenance-free lifting system is a powerful and economical alternative to conventional hoisting solutions.



WIPPERMANN



Specially shaped guide rails



Marathon chain with special U-profile plates

Work processes without cost-intensive downtimes are of major importance for highly efficient industrial manufacturing. Therefore, Wippermann's rigid chain which was specifically developed for the Marathon Lift is based on their proven Marathon technology for maintenance-free chains.

**Two patented components of this compact lifting system ensure maximum efficiency and economy.**

The innovative U-profile of the outer plates turns the flexible chain into a highly stable outer column during the chain pull phase (without load) or push phase (under heavy load). The chain feeds from the space saving chain box and is smoothly and evenly deflected (load-free) on specially shaped guide rails and is decoupled from the lifting movement. This ensures that wear in the joint and between the U-bolts is kept to a minimum.

#### Space-Saving

The small dimensions of the various Marathon Lift models enable the system to be easily integrated in confined spaces.

The chain box can accommodate long chain lengths for large lifting heights.

If a low lifting height is required and there is sufficient space, the chain box can also be substituted with a straight rail linear chain feed.

#### Performance

Marathon Lift offers fast and repeatable lifting and lowering movements. Despite its small construction size, the rigid chain system can move loads of up to 2.0 tonnes and offers maximum stability even in large lifting heights.

**Marathon Lift provides more than 1 million moving cycles and can be operated without additional lubrication.**

The lifting system can be moved to any position with millimetre precision – without rebounding or lowering during longer idle times, as is the case with hydraulically operated systems. Thanks to the smart cross-linked control of several units, even dynamic processes can be flexibly controlled on different levels.

#### Economical

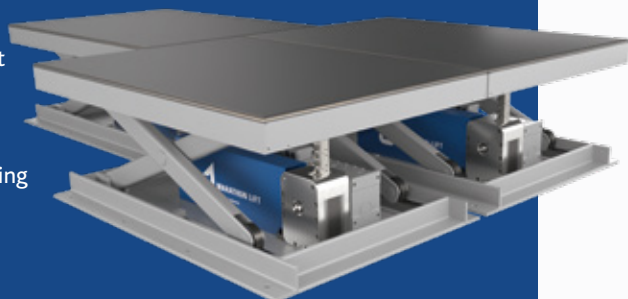
**The efficient rigid chain drive is significantly less energy-consuming than hydraulic systems, thereby saving money and reducing carbon footprints.**

Together with the specifically adapted gearing of the special sprockets, the compact lifting system allows precise and jerk-free movements and is as gentle as possible on the drive components of the push-pull chain under load. This minimises wear and increases the service life, avoiding downtimes caused by cost-intensive maintenance intervals.

**CALL US FOR FURTHER INFORMATION.**

## Applications

The Marathon Lift ensures the reliable and economical transport of all goods, such as building components, containers, cars or machines. Perfectly matched to weight, height and speed depending on the desired application, in the vertical or horizontal direction.



# Poly Vee Belts

## Poly-Vflex Roller Conveyor Belts

# THE EFFICIENT ALTERNATIVE

TransDev, a leader in conveyor technology, introduces Poly-Vflex Roller Conveyor Belts.

These innovative belts offer significant advantages over traditional conveyor systems that rely on round, flat, or timing belts, as well as chains.

### Energy Efficiency and Cost Savings

Poly-Vflex Roller Conveyor Belts are designed to minimise energy consumption. By utilising an elasticated nylon cord, these belts also eliminate the need for frequent (re)tensioning. Say goodbye to costly maintenance and hello to long-term savings!

### Versatility and Simplified Systems

Why juggle multiple conveyor systems when you can have one versatile solution? The Poly-Vflex belt seamlessly replaces various systems, streamlining your operations. Whether you're handling delicate items or heavy loads, this belt adapts effortlessly. Its user-friendly design ensures quick and hassle-free setup.

### Noise Reduction and Stability

Minimise workplace noise with Poly-Vflex. The unique design prevents belt jumping,

ensuring smooth and quiet operation. Your team can focus on their tasks without unnecessary distractions.

### Durability and Reliability

Operating 24/7? No problem. Poly-Vflex belts are built to withstand continuous use. Their durability ensures uninterrupted performance, even in demanding environments.

### Quick Availability

Running low on time? Poly-Vflex belts are available from stock, ensuring next-day delivery. Keep your operations moving seamlessly. Choose from 2-rib or 3-rib variants to match your specific roller setup.

In summary, TransDev's Poly-Vflex Roller Conveyor Belts combine innovation, efficiency, and reliability. Upgrade your conveyor system today and experience peak perfection in material handling.



LEARN MORE ABOUT OUR AUTOMATED WAREHOUSING SOLUTIONS.



## TransDev Unlocks Potential

Over the last 12+ months TransDev has undergone some of the biggest changes it has seen in its 59-year history.

We have implemented a number of new IT systems and processes that represent a significant investment in the 'customer experience' and the business as a whole. Before embarking on this major IT upgrade a set of objectives were established, covering everything from security to customer benefits and future scalability.

### Epicor ERP

Epicor are a software company who play a crucial role in empowering businesses with robust software tools to enhance productivity, customer satisfaction, and overall success. Many years ago TransDev was Epicor's first UK based

customer and so moving to Kinetic, its latest ERP software (Enterprise Resource Planning), was a natural choice.

Kinetic provides a full 360-degree view of customer accounts, inventory management and the processing of orders from quotation, via manufacturing to despatch of goods. Coupled with Microsoft 365, it also enables deep collaboration across TransDev teams in the office, remote at customer's premises or from home. Reporting and live insights also provide excellent resource planning and operational data for decision making and analysis.

For customers, the improved access to live information accelerates progress chasing and enables proactive reporting on the status of orders. This also ensures we can

EPICOR



respond even quicker to new requests and with the inbuilt CRM, build and maintain even stronger customer relationships

Like all IT implementations we inevitably encountered challenges, but the journey has certainly been worth it. The Directors of TransDev are grateful to all of our customers and suppliers for their patience during this transition. We will share further news in the future, as we continue to exploit the Epicor platform and realise the benefits that make a difference to you.





## BELT-PILOT RELAUNCH

The new Belt-pilot can be used on numerous end devices.

The online tool for design engineers consists of an extensive product catalogue for BRECO®, BRECOFLEX® and CONTI® SYNCHROFLEX timing belts, combined with a calculation software for drives. All products are also available as CAD downloads.

The Belt-pilot application now comes in a new design and on a new domain whilst continuing to be accessible free of charge.

### New products added

Linear drive and lifting drive calculations can now also be created for the timing belts BRECOprotect, BRECOMove and BRECOFLEXmove, including the latest profile AT15.

Belt-pilot will run on any device including desktop PCs, tablets and smartphones.

[www.belt-pilot.com](http://www.belt-pilot.com)



## New Crops need New Belts

**Agriculture is a dynamic field, constantly evolving to meet the demands of a growing population and changing environmental conditions. While human ingenuity drives much of this progress, sometimes inspiration comes from unexpected sources.**

The multifaceted corn plant, also known as maize, has been cultivated by humans for nearly 7,000 years. From its modest beginnings as 2.5-centimetre-long cobs on short bushes, today's corn plants reach impressive heights of up to three metres, bearing 40-centimetre-long cobs. This evolution reflects not only human intervention but also the plant's inherent adaptability.

Corn plays a crucial role in global food production. However, more than 60 percent of the corn harvest doesn't end up on our dinner tables. Instead, it's directly chopped in the field to create corn silage—a vital feed for livestock, especially during winter.

Harvesting corn efficiently poses unique challenges. The sheer volume of corn, coupled with short harvest periods, demands technical support. Enter the drum forage harvester, a high-performance agricultural machine. Its components must withstand intense demands, ensuring smooth harvesting operations.

**One critical component is the guide and intake belt.**

Positioned at a height of around 1.5 meters above the ground, this belt grips individual corn plants and guides them neatly into the



chopping unit. By adjusting to the new plant length, it prevents long stalks from blocking the cutting unit while minimising crop loss. This innovation ensures that valuable corn doesn't remain stranded in the field.

Another example is sweet corn cobs which were traditionally harvested using heavy steel chains. This posed maintenance challenges and could damage the cobs. However, a new approach involves using a belt with gentle nubs to collect and transport the cobs into the collection container. This innovation not only improves efficiency but also benefits the environment by eliminating the need for oil in maintenance.

Other belts play essential roles in agricultural machinery. Robust, wide and compound V-belts, for instance, transmit extremely high loads. These belts drive larger units, such as those used in corn harvesting, handling the uneven power transmission of chopping drums.

Sometimes, innovation arises not from technology or human desires but from external conditions e.g. the plant's needs, soil conditions, and crop volume.

So, the next time you pass those towering cornfields, remember that beneath their green canopy lies a world of innovation—where new crops need new belts to thrive.

**Robust belts remain crucial. They enhance efficiency, reduce waste, and contribute to sustainability.**

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### AGRIDUR® Power Transmission Belts: Efficiency and Durability

AGRIDUR® belts provide reliable power transmission for agricultural machinery, even in challenging conditions like dirt, dust, and moisture. These belts maintain high efficiency, enduring extreme weather—from scorching heat to freezing cold, droughts, and rain. Unlike chain drives, AGRIDUR® belts require no lubrication, leading to lower maintenance costs. With four product ranges, AGRIDUR® covers a wide spectrum of agricultural applications.



# Perfect in the Wind: How Drive Belts Revolutionise Wind Power Plants

Wind power, with its clean energy generation, stands as an ideal complement to other energy sources. As the world shifts toward sustainable solutions, wind power's share in the energy market is steadily increasing.

## The Crucial Role of Wind Power Plants

The reliability of wind power plants is paramount for economically viable electricity generation. These structures must withstand the rigors of operation, weather, and the corrosive effects of salty sea air in offshore environments. Additionally, ease of maintenance during breakdowns is essential. But how do we optimise wind utilisation while avoiding overloading during high wind speeds?

## The Ingenious Solution: Drive Belts

Enter drive belts, the unsung heroes of wind power. Goldwind, a pioneering provider in the wind energy industry, has embraced an ingenious approach: timing belts for wing adjustment. Here's how, together with Continental, they revolutionise the industry:

**Adjustable Rotor Blades:** Modern wind turbines rely on rotor blades that can be adjusted to varying angles. This adjustment,

known as the pitch, allows optimal utilisation of wind energy. Thanks to drive belts, Goldwind's turbines achieve this without complex transmission systems or hydraulics.

**Reducing Wind Resistance:** Drive belts not only transmit power efficiently but also contribute to reducing wind resistance. By minimising drag, they enhance overall turbine performance.

**Low-Wear and Durable:** Goldwind's, Continental timing belts require minimal maintenance and exhibit impressive durability. Unlike traditional metal constructions, these belts operate without the need for oil lubrication. Their resistance to corrosion is a significant edge in harsh environments.

**Cost-Effective and Efficient:** The streamlined structure of drive belts proves more cost-effective and efficient in the long run. When a failure occurs, swift replacement becomes feasible—only the belt needs replacing, not an entire transmission system.



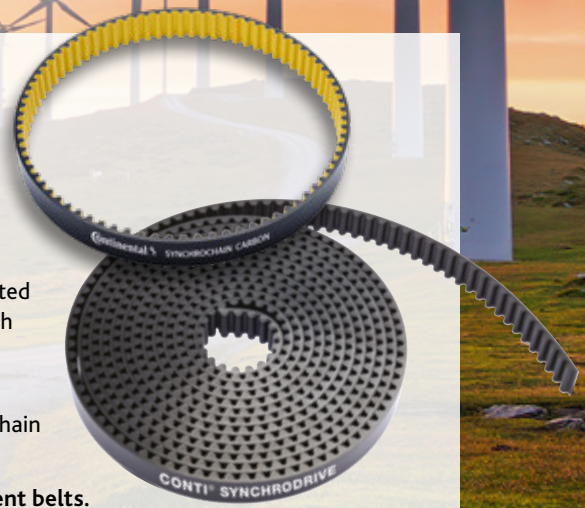
## Synergy of Two Technologies

During the development phase, Goldwind's engineers harnessed the best of two Continental belting product groups:

**SYNCHRODRIVE TECHNOLOGY:** This technology employs zinc-coated steel cords, coated with abrasion-resistant polyurethane for the teeth and belt backing. The result? A robust timing belt that withstands around twelve million reverse bending stresses over its lifetime.

**SYNCHROCHAIN TECHNOLOGY:** The special weave from Synchrochain minimises wear and noise, enhancing the belt's stability.

The marriage of these technologies produces exceptionally resilient belts.



In conclusion, next time you see a wind turbine gracefully harnessing the breeze, remember the unsung hero—the drive belt—making it all possible. It's perfect in the wind!

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- Colour Anodise
- Hard Anodise
- Anodise Sealant

### Carbon Steel Plating

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- Clear Passivation
- Colour Passivation
- Chemi Blacking

View our full product catalogue at [transdev.co.uk](http://transdev.co.uk) or contact your sales representative to request a copy



## Metric Splined Shafts and Bushes: Precision and Reliability

Splined Shafts play a crucial role in various industries, meshing with grooves in mating pieces to transfer torque. Their ridged structure allows efficient torque delivery, making them ideal for high rotation speeds.

They are particularly used in industrial facilities, automobiles, aviation, and earth-moving machinery.

The TransDev range of Metric Splined Shafts and Splined Bushes sets a new standard for quality and performance, all while maintaining competitive prices. Crafted from quality Steels EN8 and Stainless Steel EN 1.4301, our Splined Shafts ensure durability,

wear resistance and reliable, smooth motion. TransDev's Splined Shafts feature maximum linear straightness tolerances of 0.8 mm per 1000 mm length and torsional straightness of 0.5 mm per 1000 mm. For added strength and corrosion resistance, also consider stainless steel Spline Shafts. Matching nuts, available in both steel and stainless steel, are also supplied from stock.

In addition to our standard range, we offer fully machined components tailored to customer specifications and drawings.



## First choice for Food

As well as BRECOprotect belts, TransDev offers a wide range of motion components suitable for food production areas.



Acetal Gears



Thermoplastic Bearing Housings



Marathon Chain



Solid Lube Bearings



Weighing Belt

Machined Plastic Parts



Sausage Belts



Machine Mountings



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### Hardware



#### Metric One and Two-Piece Rigid Couplings (with and without keyway)

- Bore tolerance +0.012/+0.050 mm
- Materials – Steel C45 (EN8) (Black Oxide) Stainless Steel 303 (SS), Aluminium (AL)
- Precision machined bore = Ra 0.8
- Patchlock Anti-Vibration Screws
- Recommended shaft tolerance + 0 / - .013 mm

### Gears



#### Helical gears with hardened and ground teeth

- 1.5-6 MOD
- Helix angle left hand
- Tooth quality 6h25
- Material Steel C45 E
- Gear teeth hardened to 55-58 HRC (Bore Soft)

#### Helical Racks

- 1.5-6 MOD
- Helix angle right hand
- Material – Steel C45
- Teeth – Hardened and ground HRC 50-55 all faces ground
- Quality Grade-6h 23 DIN3962/63/67

#### Helical Rack mounting pieces to assist assembly

- Left hand Helix x 200 mm long (1.5 MOD 110mm long)
- Supplied without holes



### PLASTICS PROJECT FOCUS

## TRANSMOULD

In-House Injection Moulding



Injection moulded personal alarm fob