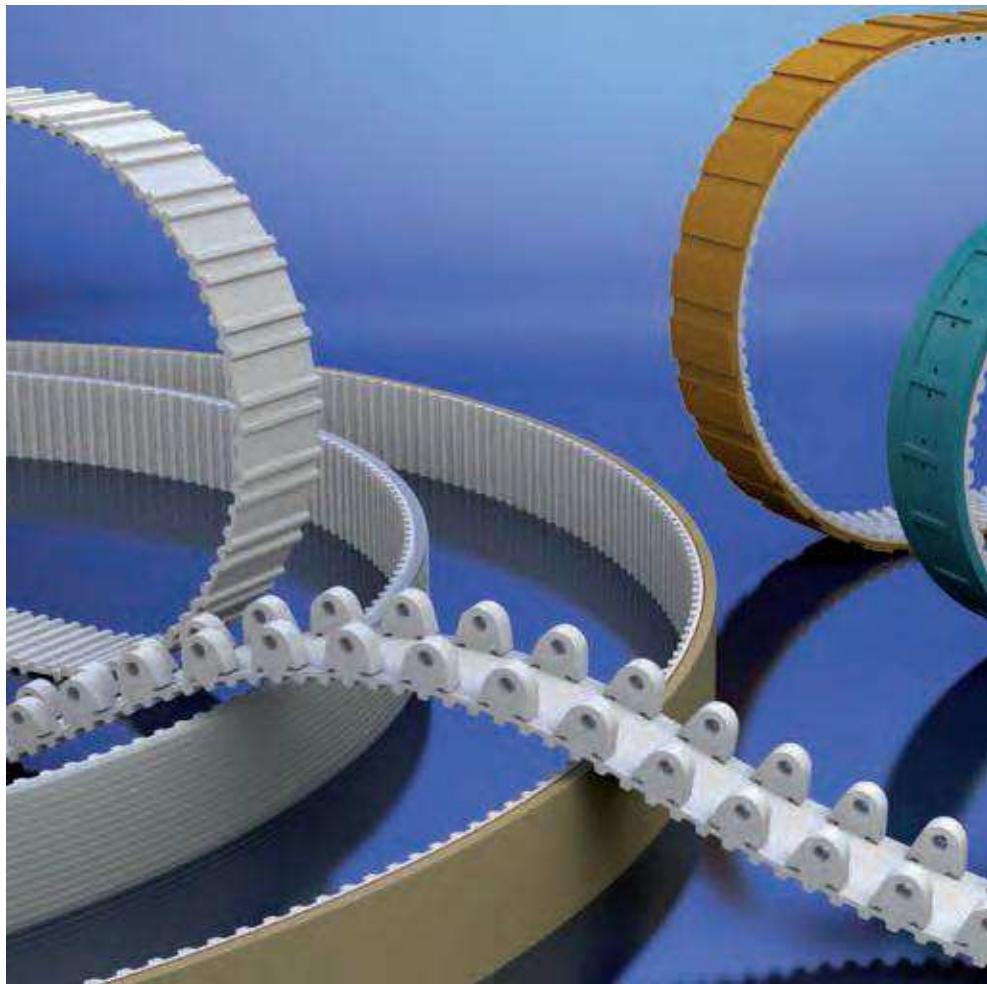
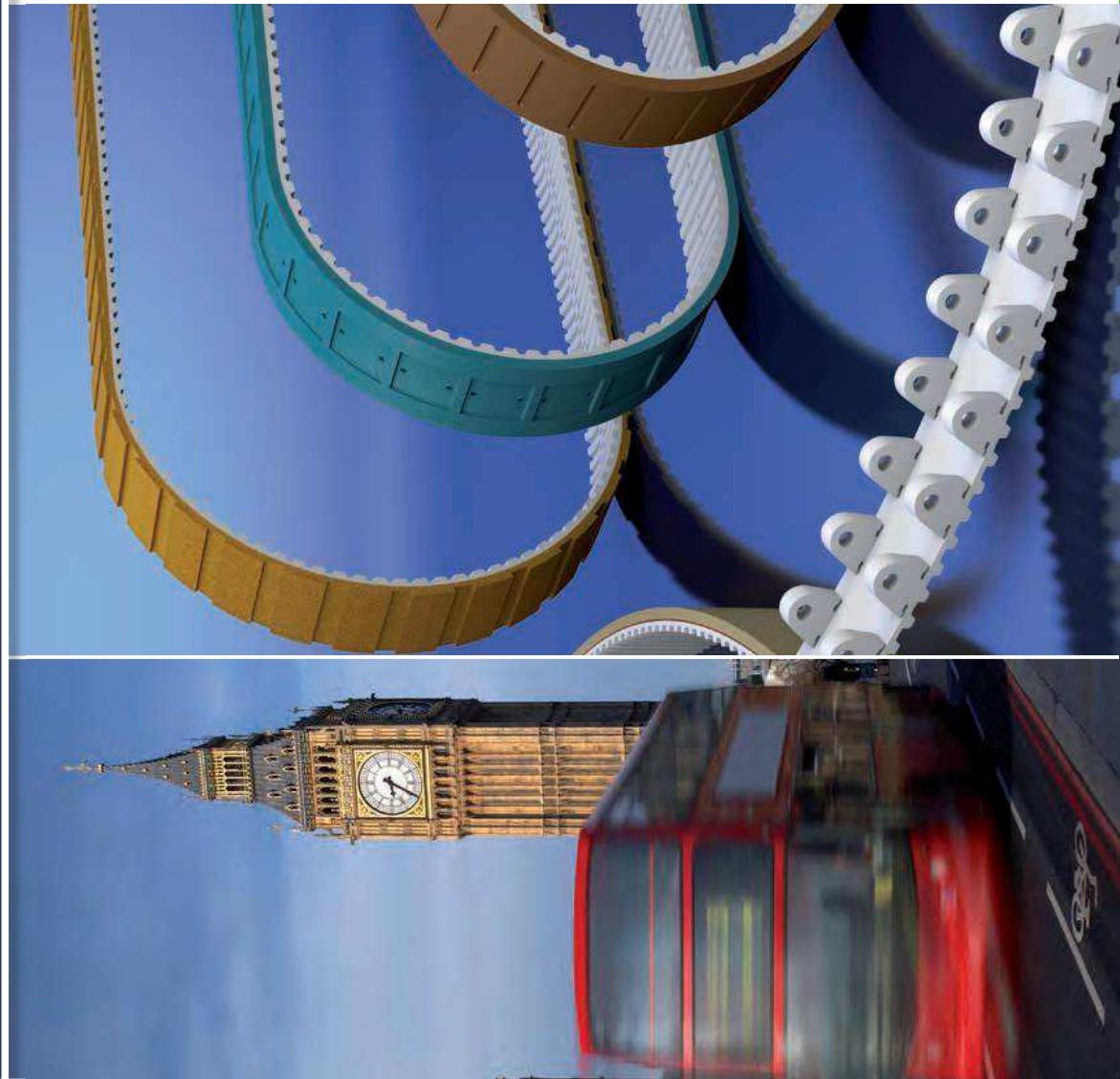


Processing of BRECO®- and BRECOFLEX® timing belts

Coating materials. Mechanical rework.
Welded on profiles.





Keeping things moving!

Innovation is what drives us. As the manufacturer of BRECO® and BRECOFLEX® timing belts, BRECO Antriebstechnik Breher GmbH & Co. KG is the world's most innovative producer in the field of polyurethane timing belt technology. Abrasion-resistant polyurethane for belt bodies and high-strength steel cord tension carriers form the basis of a reliable, first-class product.

As a result of years of experience in working with thermoplastic polyurethane, the development of the BRECO® and BRECOFLEX® production processes and their use, the BRECO name has become synonymous with polyurethane timing belts. The results of the decades of experience gained by countless users of the products are reflected in the BRECO® and BRECOFLEX® timing belts, as well as the toothed pulleys optimised for use with the belts and various other components made by BRECO. The consistent use of nothing but high grade raw materials and our intensive coordination with our suppliers to meet the needs of our customers guarantee extremely high quality.

One focal point is the development and production of special belts for a wide range of applications. The large number of belt coatings and diverse flight shapes allow an extremely broad range of uses for BRECO® and BRECOFLEX® timing belts. We offer several belt and tension carrier materials to cater for applications in very cold or very hot environments, for example.

But even for simple applications, BRECO timing belts offer all the advantages and quality expected of a high-end branded product. Safety, durability, accuracy and availability are some of the benefits that ultimately have a positive impact on costs too.

All of our products conform to the European RoHS Directive, which restricts the use of hazardous substances.

Staying safely on the move.

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Coated polyurethane timing belts

Resistance

Depending on the application the resistance of each material part of the coated timing belt is to be viewed separately. The material resistance depends, among others, on the pH value, the concentration, the temperature and the influencing time of the medium. Simple oils generally have no damaging effect on the belt. Additives in the oil and temperatures over approx. 40°C can reduce the longevity.

Friction

The friction of the belt on a support produces heat. This increases the more the belt is loaded by the items to be transported. The bed support must be selected such that the friction value of the transport belt in contact with the material of the bed plate results in a minimum value. The bed plate should guarantee good heat dissipation under high pressure forces.

The friction value changes temperature dependent. It increases as the temperature rises and reduces at temperatures below zero (frost).

Information

You should ask for advice for coatings over 75 mm wide and approx. 2 mm thick because of the different processing properties.

Drives with counter-bending

Coated timing belts are generally suitable for drives with counter-bending. For this, very soft coatings (e.g. Sylomer) should be set up with reduced pretensioning. Coatings that are manufactured based on natural rubber, such as Linatex, can be used for counter-bending (back pulleys) only to a limited extent. Please consult our technical advice service for this.

Temperature effect / synchronising pulley diameter

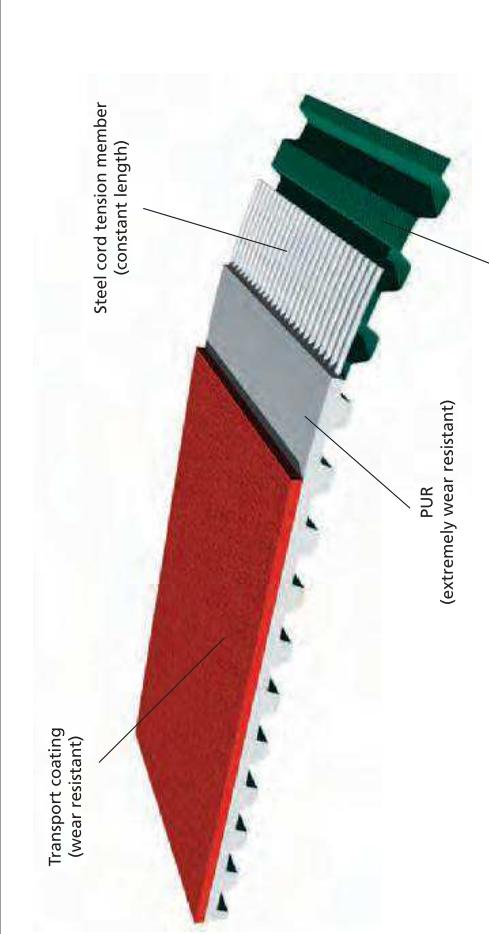
When transporting hot goods (above approx. 80°C) it must be ensured that the duration of contact is as short as possible, to avoid heating the belt's substrate to over 80°C. Over a short distance, or for a short time, a coated belt can withstand higher thermal stress, as long as sufficient cooling is provided in the remaining revolution period.

In the temperature range from approx. 60°C the tooth shear strength reduces slightly. An additional safety measure is only needed if the teeth are subjected to major stress.

Nylon coating (low frictional)

PUR (extremely wear resistant)

Construction of the timing belt



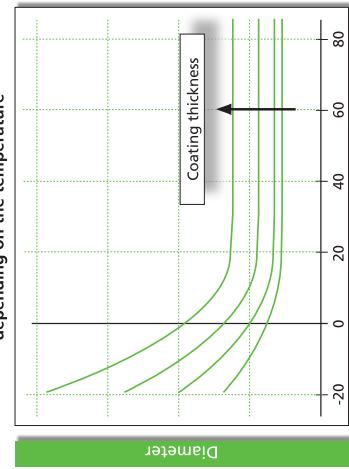
Coated polyurethane timing belts

BRECO® and BRECOFLEX® timing belts consist of wear resistant polyurethane (PUR) and high tensile steel cord tension members. The coating of the timing belts with various materials provides a variety of application possibilities in the transport technology.

The selection of the correct coating depends on the transport item properties and the required grip. High friction for a good carrying effect, low friction to reduce the power transmission performance, soft for sensitive items or hard for sharp-edged items are the determining factors.

Every material involved assumes its task according to its specific property.

To meet specific transport applications, the tooth side and/or the transport side can be mechanically reworked. In this manner, the flexibility of the entire belt can be restored by making incisions in thick coatings.



Temperature (°C)

Coatings for general transport tasks

Coatings for general transport tasks

(glass, wood, metal, paper, textiles,
cardboard packaging, wet area)

Properties					
Colour	transparent				
Standard thickness [mm]	1,5 (5 mm pitch)	2 (Pitch 10, 15, 20, inch pitch)			
Min. pulley diameter [mm]	80	80			
Material / Hardness	polyurethane/approx. 85 Shore A				
Tolerances	tolerance for total thickness (timing belt + coating) $\pm 0,4$ mm (grinded $\pm 0,1$ mm possible)				
Temperature resistance	-20°C to $+80^{\circ}\text{C}$				
Chemical resistance	resistant to simple oils and grease, petrol, ozone				
Processing	contours can be grinded and milled and surface grinded				

PU 385

Properties					
Colour	transparent				
Standard thickness [mm]	3	4	5	6	
Min. pulley diameter [mm]	120	150	180		
Material / Hardness	polyurethane/approx. 85 Shore A				
Tolerances	tolerance for total thickness (timing belt + coating) $\pm 0,4$ mm (grinded $\pm 0,1$ mm possible)				
Temperature resistance	-20°C to $+80^{\circ}\text{C}$				
Chemical resistance	resistant to simple oils and grease, petrol, ozone				
Processing	contours can be grinded and milled and surface grinded				

PU film

Properties					
Colour	transparent glossy				
Standard thickness [mm]	1	2			
Min. pulley diameter [mm]	60	80			
Material / Hardness	polyurethane/approx. 85 Shore A				
Tolerances	tolerance for total thickness (timing belt + coating) $\pm 0,4$ mm (grinded $\pm 0,1$ mm possible)				
Temperature resistance	-20°C to $+80^{\circ}\text{C}$				
Chemical resistance	resistant to simple oils and grease				
Processing	contours can be grinded and milled				

NP 385

Properties					
Colour	transparent				
Standard thickness [mm]			4		
Min. pulley diameter [mm]			120		
Material / Hardness	polyurethane/approx. 85 Shore A				
Tolerances	tolerance for total thickness (timing belt + coating) $\pm 0,4$ mm (grinded $\pm 0,1$ mm possible)				
Temperature resistance	-20°C to $+80^{\circ}\text{C}$				
Chemical resistance	resistant to simple oils and grease, petrol, ozone				
Processing					

WM 385



(glass, wood, metal, paper, textiles,
cardboard packaging, wet area)

Properties					
Colour	transparent				
Standard thickness [mm]	2,4	Groove depth: 0,5	TR1: 2,5	TR2: 2,5	Groove depth: 1,4
Min. pulley diameter [mm]	80				
Material / Hardness	polyurethane/approx. 85 Shore A				
Tolerances	tolerance for total thickness (timing belt + coating) $\pm 0,5$ mm				
Temperature resistance	-20°C to $+80^{\circ}\text{C}$				
Chemical resistance	resistant to simple oils and grease, petrol, ozone				
Processing					

T-groove (TR1 and TR2)



Coatings for general transport tasks

Coatings for general transport tasks

(glass, wood, metal, paper, textiles,
cardboard packaging, wet area)

Properties						
Colour	transparent					
Standard thickness [mm]	4					
Min. pulley diameter [mm]	120					
Material / Hardness	polyurethane/approx. 85 Shore A					
Tolerances	tolerance for total thickness (timing belt + coating) ± 0.4 mm					
Temperature resistance	-20°C to $+80^{\circ}\text{C}$					
Chemical resistance	resistant to simple oils and grease, petro, ozone					
Processing	-					
Note	the symmetrical position of the coating profile on the belt is not ensured. If this is required, please specify when ordering					

FG 385

Properties						
Colour	transparent					
Standard thickness [mm]	2					
Min. pulley diameter [mm]	80					
Material / Hardness	polyurethane/approx. 60 Shore A					
Tolerances	tolerance for total thickness (timing belt + coating) ± 0.4 mm (grinded ± 0.1 mm possible)					
Temperature resistance	-20°C to $+80^{\circ}\text{C}$					
Chemical resistance	resistant to simple oils and grease, petro, ozone					
Processing	contours can be grinded and milled and surface grinded					
Special feature	high wear resistance					

PU 60

Properties						
Colour	yellowish-transparent, other colours upon request					
Standard thickness [mm]	2					
Min. pulley diameter [mm]	60					
Material / Hardness	polyurethane/approx. 70 Shore A					
Tolerances	tolerance for total thickness (timing belt + coating) ± 0.6 mm (grinded ± 0.1 mm possible)					
Temperature resistance	-20°C to $+80^{\circ}\text{C}$					
Chemical resistance	resistant to simple oils and greases, good resistance to ozone, UV radiation					
Processing	contours can be grinded and milled and surface grinded					

Polythane D15



PU yellow



PU grey



Celloflex

(glass, wood, metal, paper, textiles,
cardboard packaging, wet area)

Properties						
Colour	yellow					
Standard thickness [mm]	2					
Min. pulley diameter [mm]	70					
Material / Hardness	polyurethane/approx. 55 Shore A					
Tolerances	tolerance for total thickness (timing belt + coating) ± 0.4 mm (grinded ± 0.1 mm possible)					
Temperature resistance	-10°C to $+70^{\circ}\text{C}$					
Chemical resistance	resistant to simple oils and grease, petrol, ozone					
Processing	contours can be grinded and milled and surface grinded					
Other areas of use	solar industry					

Properties						
Colour	grey					
Standard thickness [mm]	2					
Min. pulley diameter [mm]	70					
Material / Hardness	polyurethane/approx. 55 Shore A					
Tolerances	tolerance for total thickness (timing belt + coating) ± 0.4 mm (grinded ± 0.1 mm possible)					
Temperature resistance	-10°C to $+70^{\circ}\text{C}$					
Chemical resistance	resistant to simple oils and grease, not water-resistant					
Processing	contours can be grinded and milled and surface grinded					

PU grey

(glass, wood, metal, paper, textiles,
cardboard packaging, wet area)

Properties						
Colour	yellowish-brown					
Standard thickness [mm]	2					
Min. pulley diameter [mm]	40					
Material / Hardness	microcellular elastomer polyurethane / approx. 350 kg/m ³					
Tolerances	tolerance for total thickness (timing belt + coating) ± 0.7 mm					
Temperature resistance	-30°C to $+80^{\circ}\text{C}$					
Chemical resistance	resistant to simple oils and grease, ozone					
Processing	contours can be grinded and milled and surface grinded					

Polythane D15



PU 60

Coatings for general transport tasks

Coatings for general transport tasks

(glass, wood, metal, paper, textiles,
cardboard packaging, wet area)

Properties						
Colour	top layer green, bottom layer black					
Standard thickness [mm]	1,4					
Min. pulley diameter [mm]	20					
Material / Hardness	transport side NBR rubber green, middle layer Hamid, bottom layer NBR rubber black					
Tolerances	tolerance for total thickness (timing belt + coating) ±0,5 mm					
Temperature resistance	-30°C to +60°C					
Chemical resistance	resistant to simple oils and grease, water					
Processing	-					



Hamid

Properties						
Colour	red					
Standard thickness [mm]	2	3	4	5	6	8
Min. pulley diameter [mm]	60	80	80	80	100	100
Material / Hardness	95% natural rubber / approx. 38 Shore A					
Tolerances	tolerance for total thickness (timing belt + coating) -1/+1,8 mm (grinded ±0,2 mm possible)					
Temperature resistance	-40°C to +70°C					
Chemical resistance	oil-proof to a limited extent, resistant to wet abrasion, water resistant, avoid exposure to direct sunlight					
Processing	contours can be grinded and milled to some extent					
Note	from 3 mm coating thickness please ask for advice					



Linatex HM

Properties						
Colour	yellow					
Standard thickness [mm]	2	3	4	5	6	
Min. pulley diameter [mm]	40	50	50	70	70	
Material / Hardness	natural rubber, approx. 39 Shore A					
Tolerances	tolerance for total thickness (timing belt + coating) ±0,7 mm (grinded ±0,2 mm possible)					
Temperature resistance	-35°C to +80°C					
Chemical resistance	resistant to simple oils and grease					
Processing	contours can be grinded and milled to some extent and surface grinded					



RP 430

Properties						
Colour	yellow					
Standard thickness [mm]	6	12	(Other thicknesses upon request)			
Min. pulley diameter [mm]	60	80				
Material / Hardness	mixed cell polyurethane, 400 kg/m³					
Tolerances	tolerance for total thickness (timing belt + coating) ±0,7 mm (grinded ±0,3 mm possible)					
Temperature resistance	-30°C to +70°C					
Chemical resistance	resistant to simple oils and grease					
Processing	contours can be grinded and milled to some extent and surface grinded					



Sylomer yellow

Coatings for general transport tasks

Coatings for general transport tasks

(glass, wood, metal, paper, textiles,
cardboard packaging, wet area)

Properties			
Colour			blue
Standard thickness [mm]	6	12	(Other thicknesses upon request)
Min. pulley diameter [mm]	60	80	
Material / Hardness	mixed cell polyurethane, 220 kg/m ³		
Tolerances	tolerance for total thickness (timing belt + coating) ±0,7 mm (grinded ±0,3 mm possible)		
Temperature resistance	-30°C to +70°C		
Chemical resistance	resistant to simple oils and grease		
Processing	contours can be grinded and milled to some extent and surface grinded		



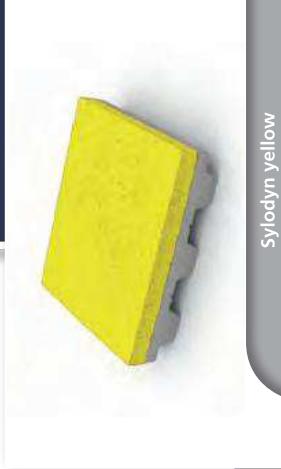
Sylomer blue

Properties			
Colour			green
Standard thickness [mm]	6	12	(Other thicknesses upon request)
Min. pulley diameter [mm]	60	80	
Material / Hardness	mixed cell polyurethane, 300 kg/m ³		
Tolerances	tolerance for total thickness (timing belt + coating) ±0,7 mm (grinded ±0,3 mm possible)		
Temperature resistance	-30°C to +70°C		
Chemical resistance	resistant to simple oils and grease		
Processing	contours can be grinded and milled to some extent and surface grinded		



Sylomer green

Properties			
Colour			red
Standard thickness [mm]	6	12	(Other thicknesses upon request)
Min. pulley diameter [mm]	80	100	
Material / Hardness	mixed cell polyurethane, 510 kg/m ³		
Tolerances	tolerance for total thickness (timing belt + coating) ±0,7 mm (grinded ±0,3 mm possible)		
Temperature resistance	-30°C to +70°C		
Chemical resistance	resistant to simple oils and grease		
Processing	contours can be grinded and milled to some extent and surface grinded		



Sylomer red

(glass, wood, metal, paper, textiles,
cardboard packaging, wet area)

Properties			
Colour			grey
Standard thickness [mm]	6	12	(Other thicknesses upon request)
Min. pulley diameter [mm]	80	100	
Material / Hardness	mixed cell polyurethane, 680 kg/m ³		
Tolerances	tolerance for total thickness (timing belt + coating) ±0,7 mm (grinded ±0,3 mm possible)		
Temperature resistance	-30°C to +70°C		
Chemical resistance	resistant to simple oils and grease		
Processing	contours can be grinded and milled to some extent and surface grinded		



Sylomer grey

Sylodyn yellow

Properties			
Colour			yellow
Standard thickness [mm]	6	12	(Other thicknesses upon request)
Min. pulley diameter [mm]	80	100	
Material / Hardness	closed-cell polyurethane, 600 kg/m ³		
Tolerances	tolerance for total thickness (timing belt + coating) ±0,7 mm (grinded ±0,3 mm possible)		
Temperature resistance	-30°C to +70°C		
Chemical resistance	resistant to simple oils and grease		
Processing	contours can be grinded and milled to some extent and surface grinded		

Properties			
Colour			green
Standard thickness [mm]	6	12	(Other thicknesses upon request)
Min. pulley diameter [mm]	80	100	
Material / Hardness	closed-cell polyurethane, 600 kg/m ³		
Tolerances	tolerance for total thickness (timing belt + coating) ±0,7 mm (grinded ±0,3 mm possible)		
Temperature resistance	-30°C to +70°C		
Chemical resistance	resistant to simple oils and grease		
Processing	contours can be grinded and milled to some extent and surface grinded		

Properties			
Colour			green
Standard thickness [mm]	6	12	(Other thicknesses upon request)
Min. pulley diameter [mm]	80	100	
Material / Hardness	closed-cell polyurethane, 600 kg/m ³		
Tolerances	tolerance for total thickness (timing belt + coating) ±0,7 mm (grinded ±0,3 mm possible)		
Temperature resistance	-30°C to +70°C		
Chemical resistance	resistant to simple oils and grease		
Processing	contours can be grinded and milled to some extent and surface grinded		

Properties			
Colour			green
Standard thickness [mm]	6	12	(Other thicknesses upon request)
Min. pulley diameter [mm]	80	100	
Material / Hardness	closed-cell polyurethane, 600 kg/m ³		
Tolerances	tolerance for total thickness (timing belt + coating) ±0,7 mm (grinded ±0,3 mm possible)		
Temperature resistance	-30°C to +70°C		
Chemical resistance	resistant to simple oils and grease		
Processing	contours can be grinded and milled to some extent and surface grinded		

Coatings for general transport tasks

Coatings for general transport tasks

(glass, wood, metal, paper, textiles,
cardboard packaging, wet area)

Properties	
Colour	green
Standard thickness [mm]	4
Min. pulley diameter [mm]	60
Material / Hardness	PVC, approx. 40 Shore A
Tolerances	tolerance for total thickness (timing belt + coating) ±0.5 mm
Temperature resistance	-15°C to +90°C
Chemical resistance	limited resistance to solvents, oils and greases; resistant to acids and alkalis
Processing	-

Supergrip green



Properties	
Colour	bluish-green
Standard thickness [mm]	4
Min. pulley diameter [mm]	60
Material / Hardness	PVC, approx. 40 Shore A
Tolerances	tolerance for total thickness (timing belt + coating) ±0.5 mm
Temperature resistance	-15°C to +90°C
Chemical resistance	limited resistance to solvents, oils and greases; resistant to acids and alkalis
Processing	-
Other areas of use	pharmaceutical industry

Supergrip blue



(glass, wood, metal, paper, textiles,
cardboard packaging, wet area)

Properties	
Colour	bluish-green
Standard thickness [mm]	1
Min. pulley diameter [mm]	30
Material / Hardness	PVC, approx. 50 Shore A
Tolerances	tolerance for total thickness (timing belt + coating) ±0.5 mm
Temperature resistance	-15°C to +90°C
Chemical resistance	resistant to solvents, oils and greases; resistant to acids and alkalis
Processing	-
Other areas of use	pharmaceutical industry

Minigrip blue



Minigrip blue

Properties	
Colour	black
Standard thickness [mm]	3
Min. pulley diameter [mm]	40
Material / Hardness	closed-cell cellular rubber, 160-200 kg/m³
Tolerances	tolerance for total thickness (timing belt + coating) ±0.5 mm
Temperature resistance	-40°C to +75°C
Chemical resistance	resistant to water, seawater, methanol, acetone, detergent, acids and alkalis
Processing	-

Minigrip green



Minigrip green

Coatings for general transport tasks

(glass, wood, metal, paper, textiles,
cardboard packaging, wet area)

Properties	
Colour	black
Standard thickness [mm]	1,5
Min. pulley diameter [mm]	60
Material / Hardness	nitrile rubber, approx. 60-70 Shore A tolerance for total thickness (timing belt + coating) $\pm 0,6$ mm (grinded $\pm 0,2$ mm possible)
Temperature resistance	-35°C to +70°C
Chemical resistance	resistant to oils, and to some extent acids and alkalis
Processing	contours can be grinded and milled to some extent and surface grinded

NBR 65

Properties	
Colour	black
Standard thickness [mm]	3
Min. pulley diameter [mm]	80
Material / Hardness	nitrile rubber, approx. 60-70 Shore A tolerance for total thickness (timing belt + coating) $\pm 1,8$ mm (grinded $\pm 0,2$ mm possible)
Tolerances	-40°C to +70°C
Temperature resistance	resistant to chemicals; material does not leave pressure marks
Chemical resistance	contours can be grinded and milled and surface grinded
Processing	FDA approval in conformity with the criteria of the FDA Code of Federal Regulations, section 177.1680, the European Regulation (EC) 1935/2004, Regulation (EU) no. 10/2011 and European Commission Directives 90/128/EEC and 96/11/EC
Note	

Properties	
Colour	white
Standard thickness [mm]	3
Min. pulley diameter [mm]	60
Material / Hardness	PVC, approx. 65 Shore A tolerance for total thickness (timing belt + coating) $\pm 0,5$ mm
Tolerances	-10°C to +110°C
Temperature resistance	resistant to oils, greases, acids and alkalis
Chemical resistance	resistant to oils, greases, acids and alkalis
Processing	-
Note	FDA approval in conformity with the criteria of the FDA Code of Federal Regulations, section 177.1680, the European Regulation (EC) 1935/2004, Regulation (EU) no. 10/2011 and European Commission Directives 90/128/EEC and 96/11/EC

Properties	
Colour	transparent glossy
Standard thickness [mm]	1
Min. pulley diameter [mm]	60
Material / Hardness	polyurethane/approx. 85 Shore A tolerance for total thickness (timing belt + coating) $\pm 0,4$ mm (grinded $\pm 0,1$ mm possible)
Tolerances	-20°C to +80°C
Temperature resistance	resistant to simple oils and grease
Chemical resistance	contours can be grinded and milled
Processing	

HV film FDA

Coatings for transporting food



Linaplus FG FDA



PVC herringbone FDA



HV film FDA

Coatings for transporting food

Coatings with friction-reducing properties

Properties	
Colour	white
Standard thickness [mm]	2 (1 / 3 / 4 / 5 / 6 mm upon request)
Min. pulley diameter [mm]	60
Material / Hardness	PVC, approx. 48 Shore A
Tolerances	tolerance for total thickness (timing belt + coating) ±0,5 mm
Temperature resistance	-10°C to +110°C
Chemical resistance	resistant to oils, greases, acids and alkalis
Processing	-
Note	FDA approval in conformity with the criteria of the FDA Code of Federal Regulations, section 177.1680, the European Regulations (EC) 1935-2004, (EC) 2023/2006 and (EU) no. 10/2011 and European Commission Directives 90/128/EEC and 96/11/EC

Properties	
Colour	green
Standard thickness [mm]	0,5
Min. pulley diameter [mm]	15
Material / Hardness	polyamid
Tolerances	± 0,2 mm
Temperature resistance	-20°C to +50°C
Chemical resistance	resistant to simple oils and grease
Processing	-
Note	FDA approval in conformity with the criteria of the FDA Code of Federal Regulations, section 177.1680, the European Regulations (EC) 1935-2004, (EC) 2023/2006 and (EU) no. 10/2011 and European Commission Directives 90/128/EEC and 96/11/EC

Properties	
Colour	white
Standard thickness [mm]	1,5
Min. pulley diameter [mm]	60
Material / Hardness	PVC, approx. 50 Shore A
Tolerances	tolerance for total thickness (timing belt + coating) ±0,5 mm
Temperature resistance	-10°C to +110°C
Chemical resistance	resistant to oils, greases, acids and alkalis
Processing	-
Note	FDA approval in conformity with the criteria of the FDA Code of Federal Regulations, section 177.1680, the European Regulations (EC) 1935-2004, (EC) 2023/2006 and (EU) no. 10/2011 and European Commission Directives 90/128/EEC and 96/11/EC

Properties	
Colour	green
Standard thickness [mm]	0,5
Min. pulley diameter [mm]	15
Material / Hardness	polyamid
Tolerances	± 0,2 mm
Temperature resistance	-20°C to +50°C
Chemical resistance	resistant to simple oils and grease
Processing	-
Note	FDA approval in conformity with the criteria of the FDA Code of Federal Regulations, section 177.1680, the European Regulations (EC) 1935-2004, (EC) 2023/2006 and (EU) no. 10/2011 and European Commission Directives 90/128/EEC and 96/11/EC

Properties	
Colour	white
Standard thickness [mm]	4
Min. pulley diameter [mm]	60
Material / Hardness	PVC, approx. 55 Shore A
Tolerances	tolerance for total thickness (timing belt + coating) ±0,5 mm
Temperature resistance	-10°C to +110°C
Chemical resistance	resistant to oils, greases, acids and alkalis
Processing	-
Note	FDA approval in conformity with the criteria of the FDA Code of Federal Regulations, section 177.1680, the European Regulations (EC) 1935-2004, (EC) 2023/2006 and (EU) no. 10/2011 and European Commission Directives 90/128/EEC and 96/11/EC

Properties	
Colour	green
Standard thickness [mm]	0,5
Min. pulley diameter [mm]	15
Material / Hardness	polyamid
Tolerances	± 0,2 mm
Temperature resistance	-20°C to +50°C
Chemical resistance	resistant to simple oils and grease
Processing	-
Note	FDA approval in conformity with the criteria of the FDA Code of Federal Regulations, section 177.1680, the European Regulations (EC) 1935-2004, (EC) 2023/2006 and (EU) no. 10/2011 and European Commission Directives 90/128/EEC and 96/11/EC

Coatings for use at higher contact temperatures

Coatings for use at higher contact temperatures

Properties			
	orange		
Colour	black	grey	orange
Standard thickness [mm]	3	5	6
Min. pulley diameter [mm]	60	60	60
Material / Hardness	Nitrile-based vulcanised material, approx. 55 Shore A		
Tolerances	tolerance for total thickness (timing belt + coating) -1/+1.8 mm (grinded ±0.2 mm possible)		
Temperature resistance	-20°C to +110°C		
Chemical resistance	resistant to oils, greases and other chemicals; water resistant		
Processing	contours can be grinded and milled and surface grinded		

Properties			
	grey		
Colour	black	grey	orange
Standard thickness [mm]	2	2	3
Min. pulley diameter [mm]	100	100	120
Material / Hardness	leather tanned with chromium salts		
Tolerances	tolerance for total thickness (timing belt + coating) ±0.7 mm		
Temperature resistance	-10°C to +120°C		
Chemical resistance	resistant to oils and greases; weather resistant		
Potential applications	transportation of oil and grease soaked parts, transportation of sheet metal and pipes		

Properties			
	black		
Colour	black	grey	orange
Standard thickness [mm]	2	4	4
Min. pulley diameter [mm]	120		
Material / Hardness	polyester fleece		
Tolerances	tolerance for total thickness (timing belt + coating) ±0.5 mm		
Temperature resistance	-10°C to +120°C		
Chemical resistance	against simple oils and greases; electrostatic properties		
Processing	-		
Areas of use	glass industry as a conveyor belt in the warm area		

Properties			
	red		
Colour	black	grey	orange
Standard thickness [mm]	3	5	6
Min. pulley diameter [mm]	60	60	60
Material / Hardness	silica-reinforced natural rubber, approx. 60 Shore A		
Tolerances	tolerance for total thickness (timing belt + coating) -1/+1.8 mm (grinded ±0.2 mm possible)		
Temperature resistance	-20°C to +110°C		
Chemical resistance	resistant to simple oils and greases; very high rebound elasticity		
Processing	contours can be grinded and milled and surface grinded		

Properties			
	black		
Colour	black	grey	orange
Standard thickness [mm]	2	4	4
Min. pulley diameter [mm]	80	100	100
Material / Hardness	synthetic fluororubber, approx. 70-80 Shore A		
Tolerances	tolerance for total thickness (timing belt + coating) ±0.6 mm (grinded ±0.2 mm possible)		
Temperature resistance	-10°C to +190°C (up to 275°C for short periods)		
Chemical resistance	very good resistance to oils, greases, hydrocarbons, acids; impermeable to gas and water vapour		
Processing	contours can be grinded and milled to some extent and surface grinded.		
Potential applications	transportation of sensitive parts, card-board packaging, transportation of glass and metal parts		

Properties			
	black		
Colour	black	grey	orange
Standard thickness [mm]	0.6	0.6	0.6
Min. pulley diameter [mm]	20	20	20
Material / Hardness	approx. 0.5 mm PU 385, top layer 0.1 mm antistatic fabric		
Tolerances	tolerance for total thickness (timing belt + coating) ±0.4 mm		
Conductance	10 ⁶ ohm when new		
Potential applications	accumulation conveyors for electrical components		

Mechanical processing

Coated BRECO® and BRECOFLEX® timing belts can be mechanically processed for special functional characteristics, depending on the properties of the coating.

Transport belts with thick coatings are less flexible. Their use therefore requires a larger diameter of toothed pulley. Transverse slits or grooves can increase the flexibility of the coating. Where technically possible from a production perspective, milled grooves are used for secure handling and better positioning of products.

Perforated BRECO® timing belts are used in vacuum transport systems. BRECOFLEX® timing belts are also available for this purpose. The preferred version of BRECO® timing belts is manufactured with tension carrier-free zones. The teeth are milled lengthways according to the hole size.

In mechanical processing, the larger dimensional tolerances that occur due to material elasticities should be noted. Increased tension can occur in the fibres on the edge of the coatings as a result of mechanical processing when revolving around the toothed pulleys, which may require the use of larger toothed pulley diameters. Please consult our technical advice service for this.

Milling, drilling, stamping, grinding



Linatec (Cross milled)



PU - yellow (Square milled with bore holes)



Sylomer - blue (Groove milled)



Milling, drilling, stamping, grinding

BRECO® and BRECOFLEX® timing belts can be mechanically processed for special functional characteristics. Timing belts with thick backs that offer a broad range of possibilities for design engineers are available especially for mechanical processing. Please note that timing belts with thicker backs are less flexible and require toothed pulleys with larger diameters. Better flexibility is achieved through transverse grooves or slits.

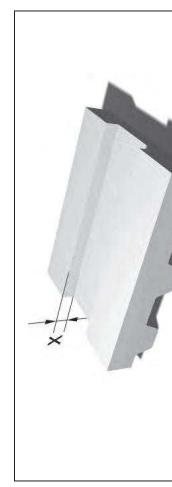
Back cross milling

Cross grooves on the belt back enhance the flexibility of the belt. Milled grooves are, in as much as they are possible from the technical feasibility point of view, used to improve safe loading and secure positioning of the products on the belts.



Back longitudinal milling

Independent on the belt pitch, the belt back shaping offers a wide range of design variants for customised solutions. In this manner, belt guiding can be achieved by a trapezoidal back profile, or a round section supported and moved by means of a prism shaped cross section. Dimensions are to be indicated as depth measure x in relation to the belt back.



Grinding belt edges

Narrower tolerances in the belt width can be achieved by grinding the belt edges. The edges may need to be grinded especially for BRECO® timing belts guided by rails. The narrower standard tolerance is ± 0.3 mm. Further narrowing is possible. Please ask for technical advice in this regard.



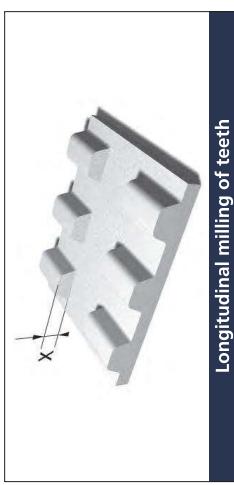
Removing individual teeth

The removal of individual teeth or entire groups of teeth is possible and should be done for accurate interlinking purposes, for example if the remaining teeth are used to accept the transported goods in a specific position.



Milling teeth lengthwise

BRECO® timing belts with tooth profiles milled lengthwise are often used in combination with tension carrier-free zones in vacuum transport systems. BRECO® timing belts offer a wide range of products for use in this area. The processing depth x is measured starting from the tip of the tooth and generally ending at the bottom of the space.



Perforated timing belts

The use of perforated BRECO® and BRECOFLEX® timing belts is preferred for areas without tension members (to a limited degree also with teeth removed in the longitudinal belts) and areas with teeth removed in the longitudinal direction, if they are to be employed as suction belts in the vacuum transport technology. The multitude of design possibilities of BRECO® timing belts as vacuum timing belts as well as our extensive experience especially in this field includes the transport of delicate films up to sheet bars of several square meters in size.



Back grinding

The backs of all BRECOFLEX® timing belts are ground as standard. For reasons of precision or in order to obtain a roughened surface, all other timing belts of the BRECO delivery range can be ground.



Back grinding

Water jet cutting

Water jet cutting

- Precise
- Fast
- Clean
- Variety of uses
- Environmentally friendly

In addition to milling, drilling, stamping and grinding, BRECO® and BRECOFLEX® timing belts can also be processed with a water jet cutting machine. Water jet cutting offers a wide range of possibilities. A variety of cut-out contours can be realised with high precision for special purposes. The process is also suitable for cutting flight shapes from pre-assembled polyurethane plates of different thicknesses.

Benefits

- Precise cutting edges
- High cutting accuracy
- Very low heat generation and no warping
- No burrs
- Hardly any post-processing required

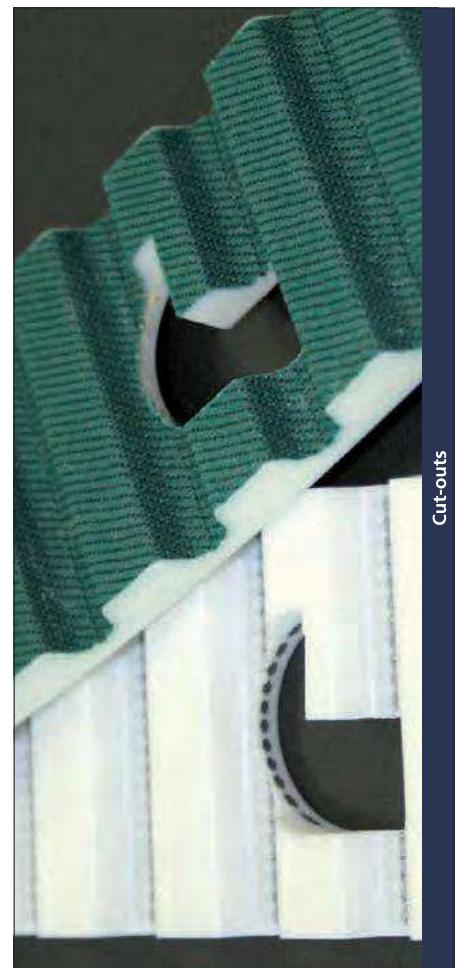


Water jet cutting machine

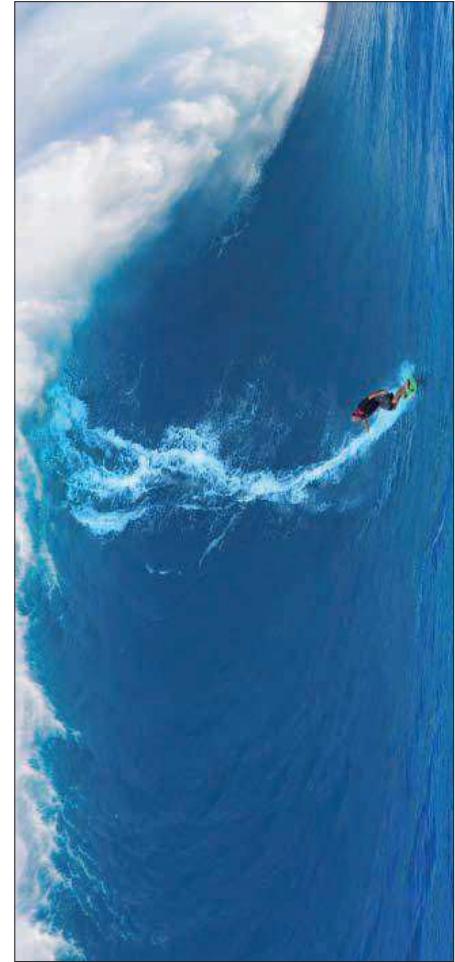


Examples of possible uses

- Cut-outs (round, oval, triangular, rectangular, etc.)
- Cut-outs with rounded parts and straight edges
- Special cuts for splicing
- Contour cutting of flight shapes



Cut-outs



BRECO®- and BRECOFLEX® timing belts with welded on profiles

BRECO®- and BRECOFLEX® timing belts with welded on profiles

Variety of uses

Whichever transport purpose BRECO® and BRECOFLEX® timing belts are used for, the back of the belt can be fitted with any number and sequence of welded-on profiles.

The profiles consist of polyurethane, the same high-quality material as the timing belts themselves. A selection of profile shapes with standard dimensions is shown in this catalogue.

Other customer-specific profile shapes are also available. Within our production capabilities, the profile shape for transported goods and transportation purposes can be freely determined according to the customer's requirements. The injection moulds are manufactured in our own tool building facilities. This ensures fast availability.

Please observe the design guidelines on the following pages.



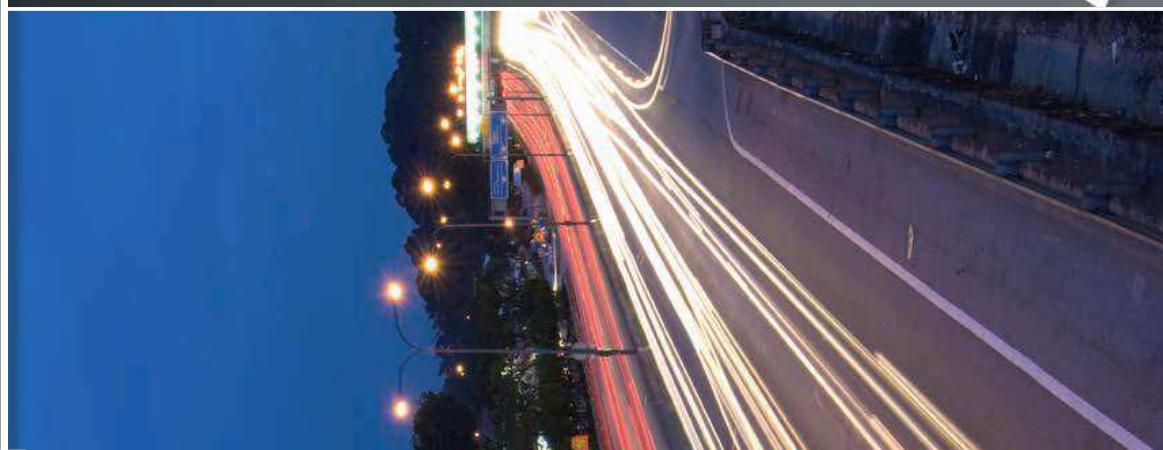
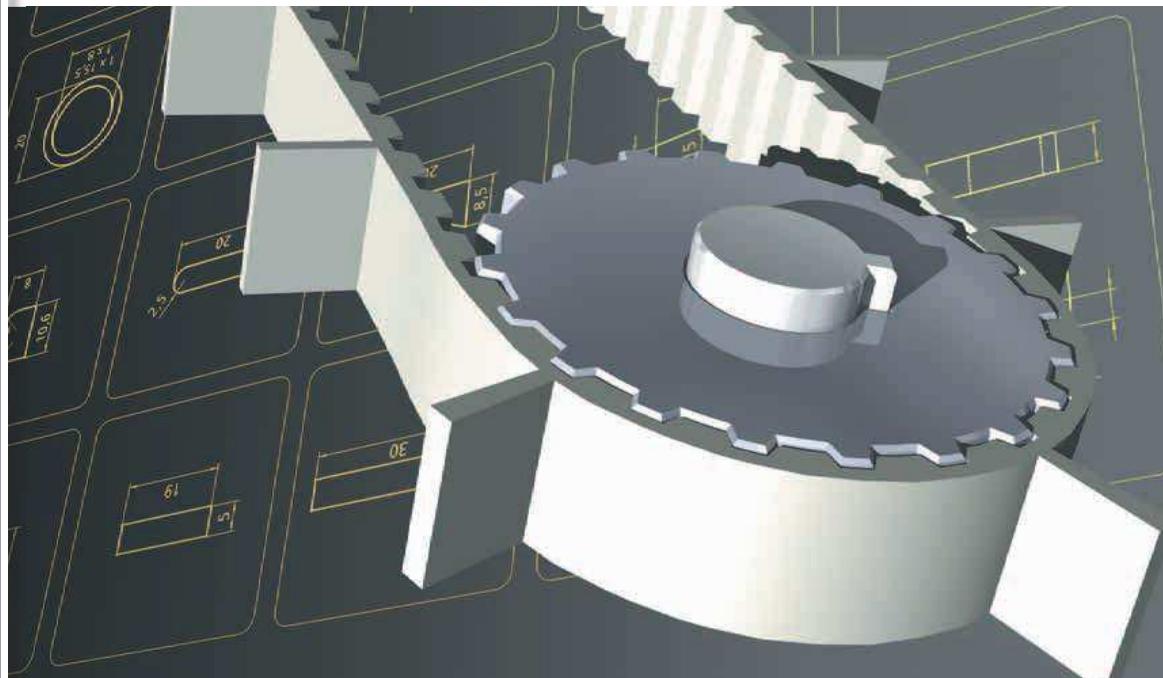
Rotary indexing magazine



Supply belt



Synchronous conveyor



Construction features

At first, the basis for the selection of belt type, belt length and the depending pulleys is the surrounding construction. All belt types of our manufacturing range can be equipped with flights/profiles. Timing belts with bed plates enable a reduced friction transportation. BRECO® and BRECOFLEX® timing belts in version PAZ are alternatively available.

Profile selection

- The material to be transported and the transport purpose influence the selection of the flight. Following possibilities of flight versions are available:
 - Profiles of existing standard tools
 - Profiles are manufactured as polyurethane moulded part
Over 2500 standard profiles are available. Depending on their dimensions, standard profiles can be reworked by mechanical processes (drilling, milling). If necessary, explain design requirements by means of a drawing.
 - Profiles of sheet material
Depending on the quantity, flights will possibly be cut from pre-fabricated PUR sheets. The following board thicknesses are available:
1,5; 2; 3; 4; 5; 6; 7; 8; 10; 11; 15; 20 mm

Within the framework of our production possibilities, there are practically no limitations for new design requirements. The production of new products can be organized by the existing equipment and facilities. The cost of new products will not exceed the cost of existing products.

as far as the shape or injection moulded rings are concerned. Costs for tools and moulds might apply.

Profile position opposite tooth

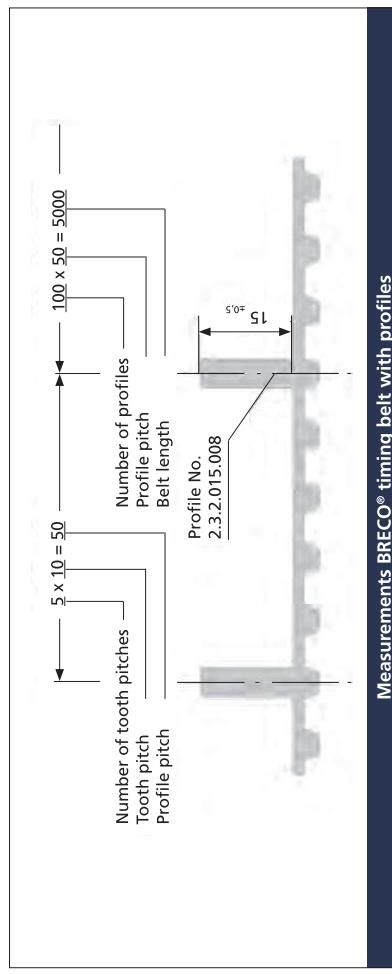
The belt flexibility of timing belts is located mainly in the tooth gap area. To retain the timing belt flexibility around the pulley, the profile position opposite the tooth "is to be preferred".



Profile position - opposite tooth

Ordering example:

Construction features



Measurements BRECO® timing belt with profiles

The equipping of the timing belt with profiles is always made as a multiple of the tooth pitch, i.e. the welded on flight position follows exactly the belt tooth pitch. For this reason, a cumulative error from profile pitch to tooth pitch will not occur.

For the required timing belt with profiles the order should preferably be accompanied by a dimensional drawing.

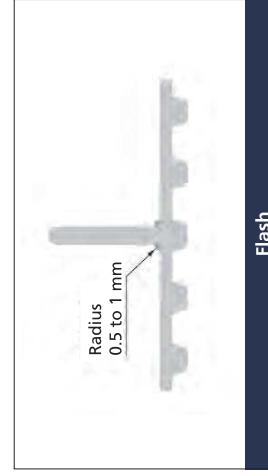
Example:
 BRECO® timing belt 50 T 10/5000 V-PAZ with welded-on profiles
 Profile no. 2.32.015.008,
 Number of profiles 100,
 Profile pitch 50,
 Profile pitch concave the +0/+000

Joined version

business in woods [but] we can't find a situation or conference on the books' of the local

Einsch

A flash builds up between flight and back of the belt. A polyurethane overhang with a 0.5 to 1 mm radius could form.



The diagram consists of four grayscale images arranged horizontally, representing a sequence of frames from a video. The first three frames show a dark gray rectangular object with a bright white rectangular flash attached to its left side. In the fourth frame, the flash has been removed, leaving a dark rectangular shape where the flash was previously located. Two arrows point from the label 'Flash removed' to the dark shape in the fourth frame.

Flash removed

Flash removed

Profile pitch Tooth pitch

We recommend to select a profile pitch which is an integral multiple of that of the tooth. Profile pitches other than the integral multiple of the tooth pitch can be supplied, it has, however, to be noted, that a uniform offset of the profile position in relation to the tooth position will accumulate.

Tolerances

The reached profile position of each individual profile is ± 0.5 mm of the intended set point position. A tolerance of ± 0.5 mm is to be taken into account for the profile height.

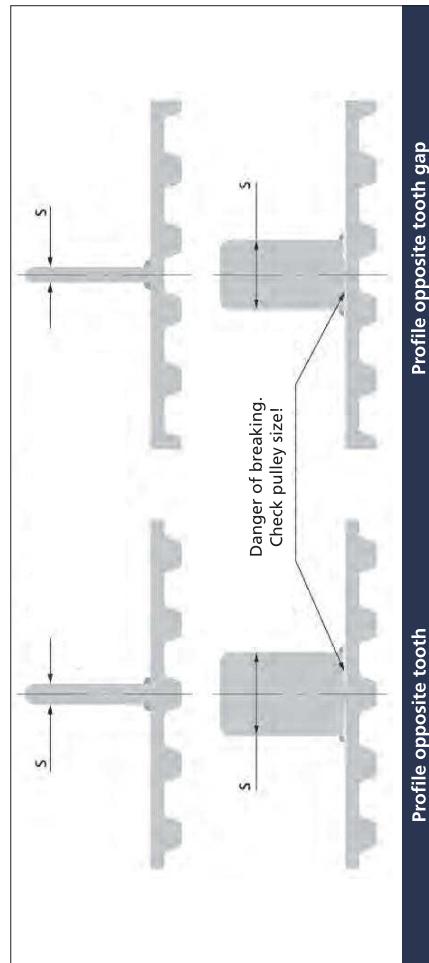
BRECO®- and BRECOFLEX®- timing belts with welded on profiles

BRECO®- and BRECOFLEX®- timing belts with welded on profiles

Construction features

Profile thickness s

The timing belt flexibility can be influenced by the welded-on flange. Note as a rule that the flange thickness s is to be selected as thin as possible. The table below shows the individually recommended maximum profile thickness s in mm in relation to the selected number of pulley teeth.



Max. thickness s [mm]

Type / pitch	Max. profile thickness in mm when welded on position is opposite tooth						Max. profile thickness in mm when welded on position is opposite tooth gap	
	20	25	30	40	50	60	100	
T2.5	2,5	1,5	3	2	4	4,5	6	6
T5	5	2	6	2	3	9	10	10
T10	8	3	9	4	10	14	15	12
T20	12	5	13	5	15	18	20	20
AT3	3	1,5	4	2	5	3	6	5
AT5	5	2	6	3	8	4	9	10
AT10	8	3	9	4	10	6	14	12
AT20	12	5	13	5	15	6	18	20
MXL	2	1	2,5	1	2,5	1,5	3,5	3
XL	5	2	6	2	6	3	8	10
L	6	3	7	3	8	4	10	16
H	8	4	9	5	10	6	12	20
XH	13	5	14	5	15	6	18	20

Example for the calculation of the profile thickness s for a BRECO® timing belt with pitch T10, which is running around a pulley with 20 teeth:

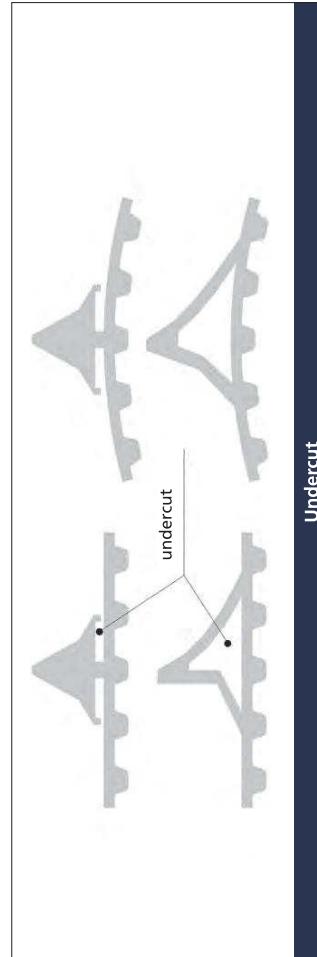
- When the profile position is „opposite the tooth“, profile thickness $s \leq 3$ mm,
- When the profile position is „opposite the tooth gap“, profile thickness $s \leq 3$ mm.

Remark:
We recommend to select the next smaller size as profile thickness when there are intermediate sizes (e.g. 22 teeth).

Construction features

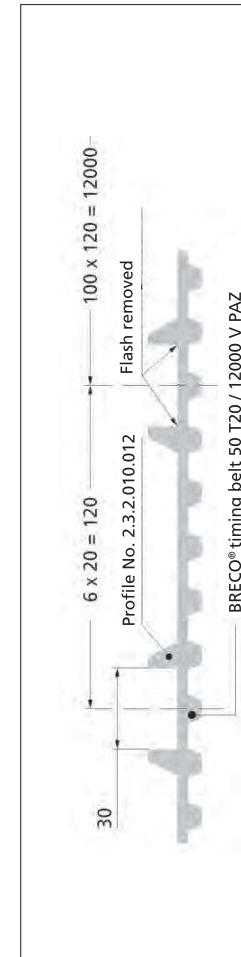
Profiles with undercut

The timing belt flexibility is assured, when there are planned corresponding undercuts.



Undercut

Profile pairs (profile chambers, profile pockets) are preferred in the transport technology for parts positioning and for so-called inset procedures. For the clearance between the profiles, the production tolerance amounts to ± 0.5 mm. Indicate a tolerance reduced to ± 0.2 mm separately while taking make-ready and/or tool costs into consideration.



Profile pair

Selection of standard profiles

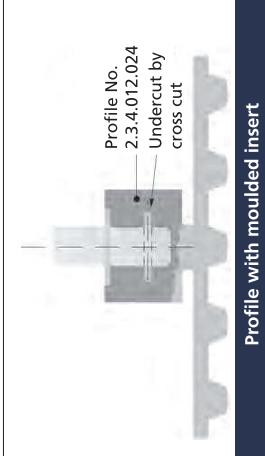
These profiles for welding on only represent a small selection from our entire range. Over 2700 existing profile shapes are available. These profile shapes can be adapted to special requirements by mechanical processing in smaller series.

Our sales partners will gladly help you find solutions for certain transport tasks.

Construction features

Profiles with moulded inserts

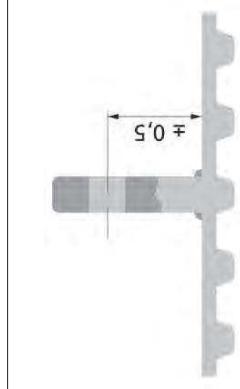
Profiles with moulded inserts can be manufactured for special functional characteristics. To shape moulded inserts (steel, aluminium or similar) please ensure the existence of appropriate undercutts.
Remark: The orderer has to make available a sufficient number of moulded-in inserts with an approx. 5 % surplus for the manufacture of samples.



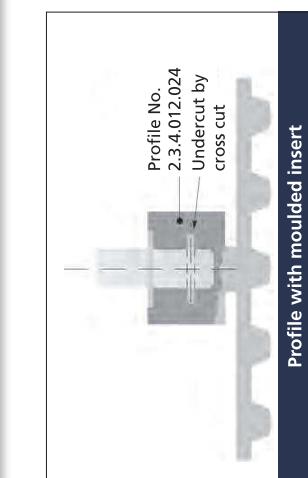
Profile with moulded insert

Profiles with bore holes

It is possible to ask for boreholes for special profile attachments. Tolerances are to be considered.



Profile with bore holes



Profile no. 2.3.5.663



Profile no. 2.3.6.936



Profile no. 2.3.5.708



Profile no. 2.3.5.708



Profile no. 2.3.5.708



Profile no. 2.3.5.708

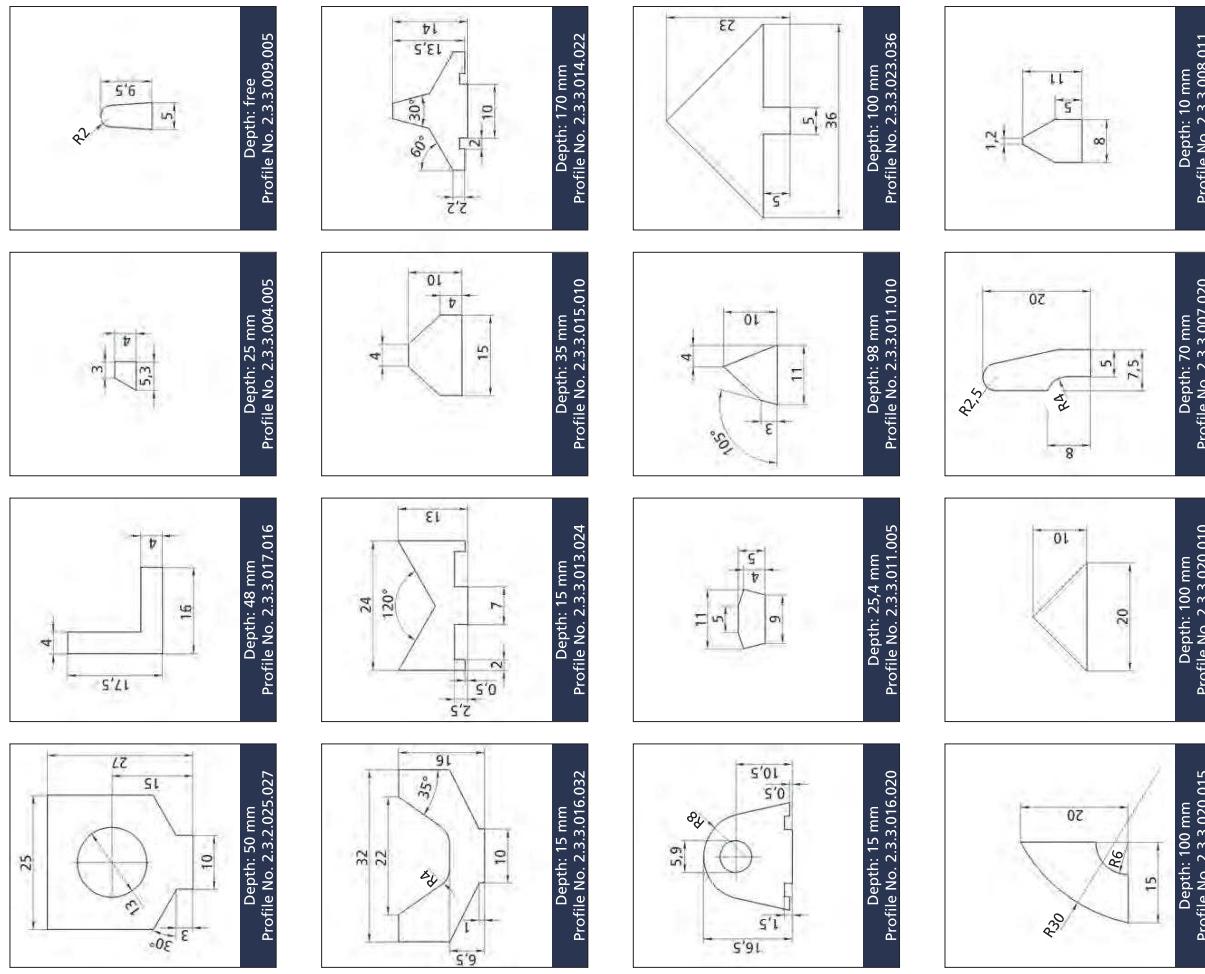
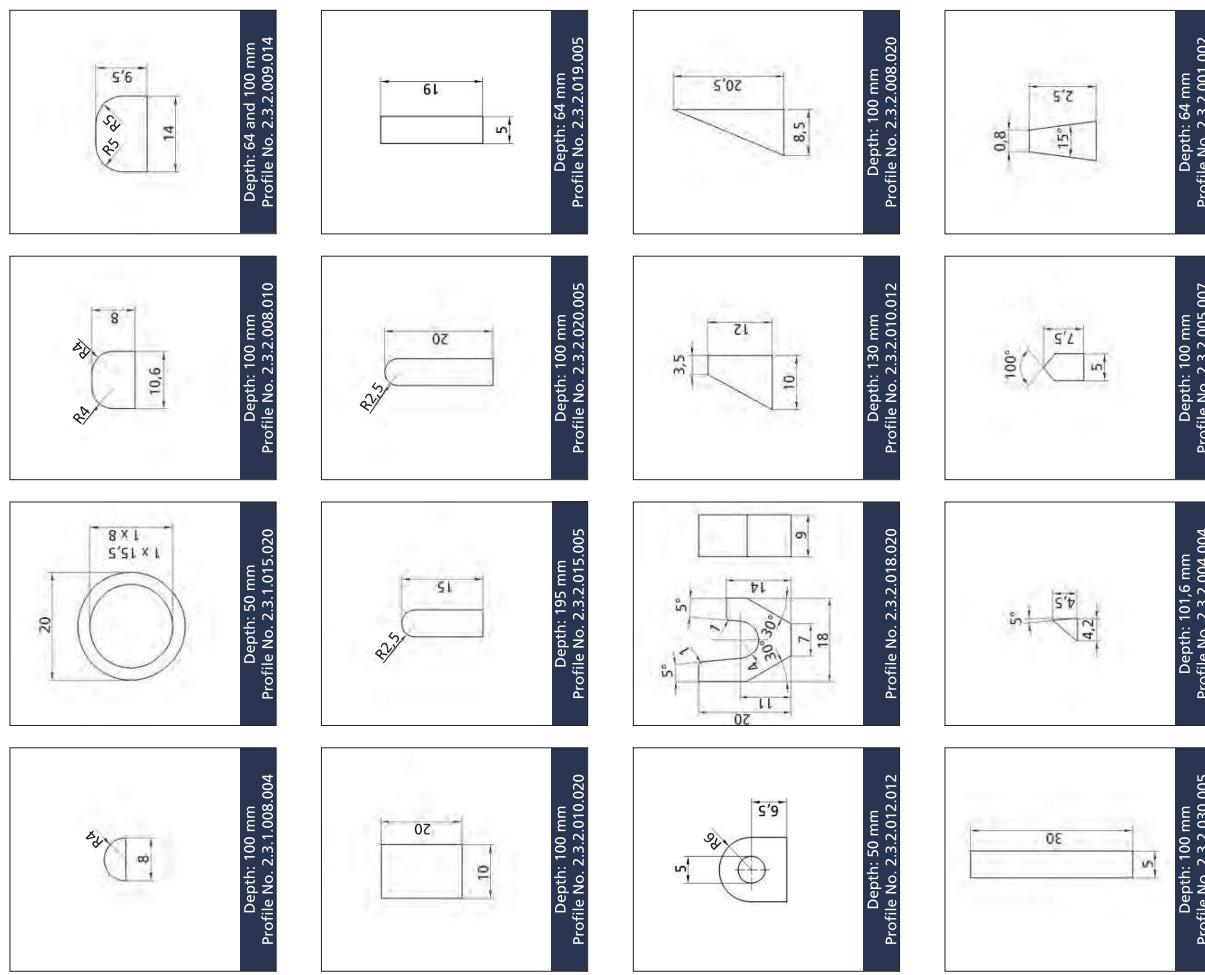
BRECO®- and BRECOFLEX®- timing belts with welded on profiles

Selection of standard profiles

BRECO®- and BRECOFLEX®-

timing belts with welded on profiles

Selection of standard profiles



High-strength and removable profile connection

High-strength and removable profile connection

Suitable screw types for brass insert troughs

Allen screws according to DIN 7984 (galvanised) with hexagonal socket and low head (batch size 500 units)



Allen screws according to
DIN 7984 (galvanised)

Belt type	Screw type	Screw length	D	H
ATN10 / AT10	M4x8 M4x12 M4x16	8 mm 12 mm 16 mm	7,0 7,0 7,0	2,8 2,8 2,8
	M5x12 M5x16 M5x20	12 mm 16 mm 20 mm	8,5 8,5 8,5	3,5 3,5 3,5
ATN20 / AT20	M5x12 M5x16 M5x20	12 mm 16 mm 20 mm	8,5 8,5 8,5	3,5 3,5 3,5

Suitable screw types for VA insert troughs

Allen screws according to DIN 7984 (VA, material number 1.4301) with hexagonal socket and low head (batch size 500 units)



Allen screws according to
DIN 7984 (VA)

Belt type	Screw type	Screw length	D	H
ATN10 / AT10	M4x8 M4x12 M4x16	8 mm 12 mm 16 mm	7,0 7,0 7,0	2,8 2,8 2,8
	M5x12 M5x16 M5x20	12 mm 16 mm 20 mm	8,5 8,5 8,5	3,5 3,5 3,5
ATN20 / AT20	M5x12 M5x16 M5x20	12 mm 16 mm 20 mm	8,5 8,5 8,5	3,5 3,5 3,5

Ordering information

The current order designation for the belt types is to be used when ordering. The pitch distances of the belt teeth to be processed must be specified. The insert troughs are available in brass (M5) and stainless steel (VA). Please also use the order designation given here. The screws to be used correspond to the types offered for the ATN system.

Examples:

BRECO® TIMING BELT 75 ATN20 / 5600 V

Transverse milling insert trough ATN/AT20,

Pitch distance 80 mm

Insert trough 75 ATN/AT20 M5, number of units 70

Specification of screw type according to table (optional)

BRECOFLEX® TIMING BELT 50 AT10 / 6800 TPUD1

Transverse milling insert trough ATN/AT10,

Pitch distance 200 mm

Insert trough 50 ATN/AT10 VA, number of units 34

Specification of screw type according to table (optional)



Tooth processing at ATN20



Profile connection at ATN20 / AT20



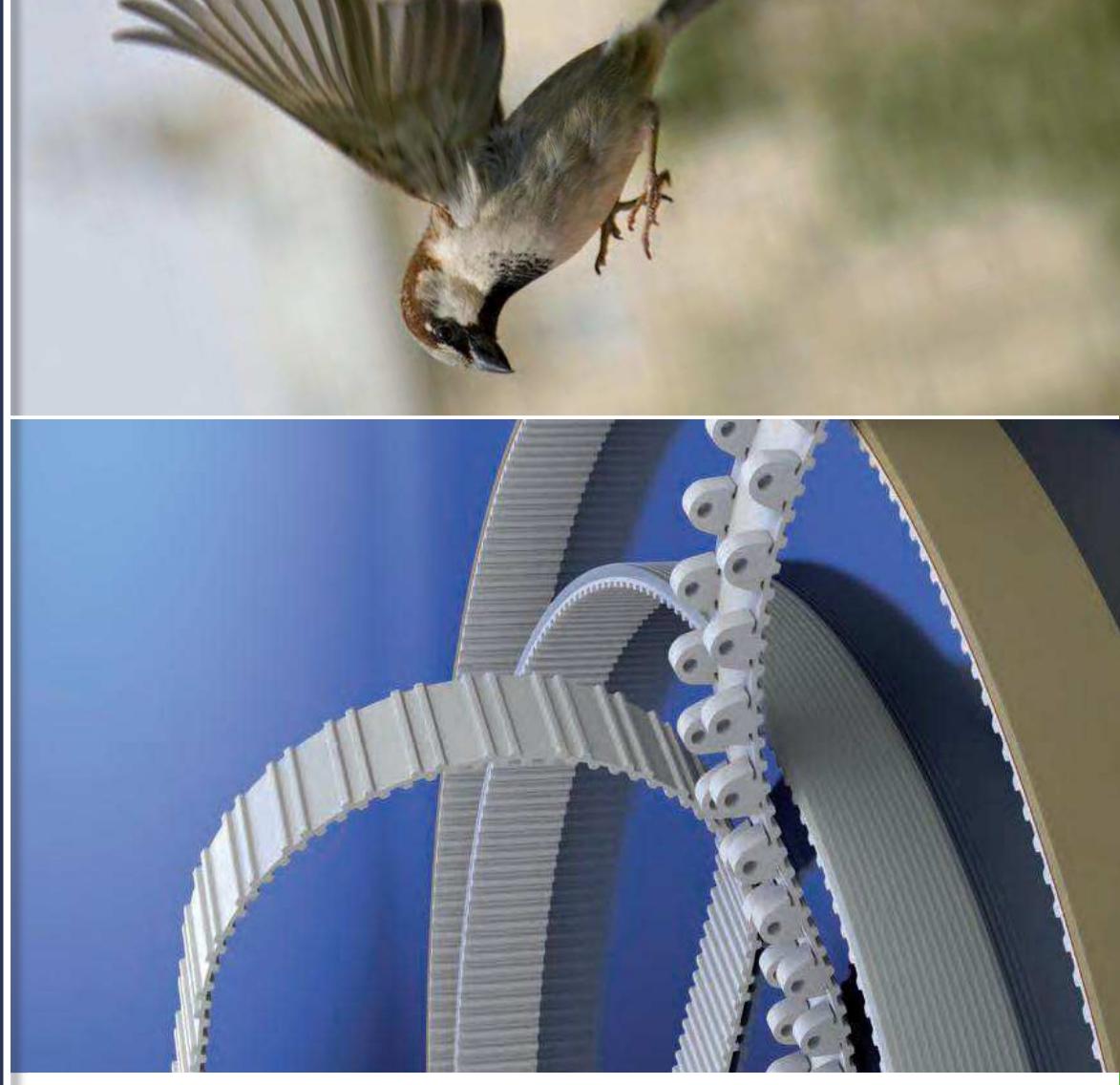
Insert trough ATN/AT10 VA / insert trough ATN/AT20 VA
(The insert troughs are (in some cases) also available in brass).

A system with many possibilities

The high-strength and removable profile attachment is based on the ATN system. The profiles are attached using screws in insert troughs, which can be used in the tooth by means of subsequent milling of individual belt teeth. The load on the connection is therefore not distributed to the individual inserts like in the ATN system, but rather across the entire width of the tooth. With this type of connection, the range of uses for ATN timing belts extends to areas that previously could not be realised due to an increased burden on the profile.

Another advantage of this connection is the ability to apply the ATN principle to other types of timing belts. Type AT10 and AT20 BRECOFLEX® and BRECO® timing belts can therefore be fitted with screwed-on profiles after appropriate processing, so even these "traditional" conveyor belts can virtually achieve the flexibility of the ATN system.

Available insert trough widths	Number of threads
32 (only available in VA)	2
50	2
75	3



Timing belt guided by support rails

BRECO® and BRECOFLEX® timing belts have excelled in their use for transportation in many different areas. The belt material polyurethane has beneficial properties with regard to wear and abrasion. This is particularly beneficial when support rails are used (maximum belt speed 1 m/s). Support rails prevent the timing belt run from shifting from the burden of the transported goods.

Support rails can be used with or without lateral guides. Support rails without lateral guides are preferable when no great lateral forces act on the conveyor belt. If lateral forces occur, support rails with lateral guides should be used.

To prevent abrasion, the timing belt must run through the middle of these lateral guides. It is therefore essential that the support rails are set up accordingly with infed chamfers.

The following applies to the widths B' and b :

B' : There must be a minimum clearance of 0.5 mm between the maximum dimension b and the minimum dimension B' .

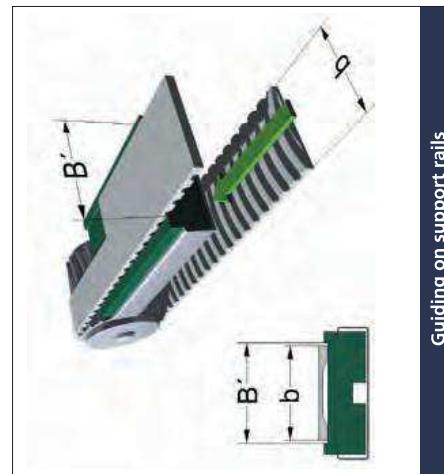
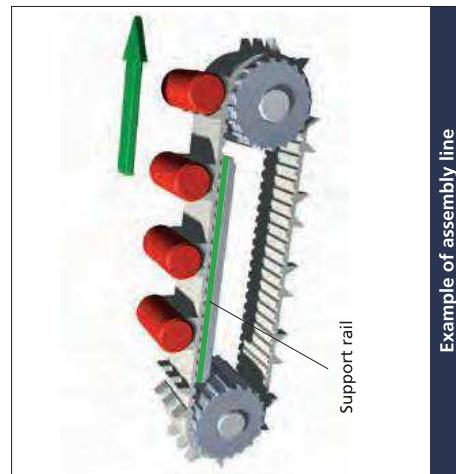
b: Depending on the required accuracy, the tolerance of the belt width can be reduced.

Material

We recommend using a low-friction and abrasion-resistant material such as low-pressure polyethylene. The sliding friction value between standard polyurethane and low-pressure polyethylene is between $\mu=0.3$ and $\mu=0.8$, depending on the material specification of the polyethylene used. We recommend always checking that the material is suitable for the intended use with the supplier of the low-pressure polyethylene.

Other possible combinations:

- Steel with bright surface, sanded if necessary, and polyurethane timing belt with polyamide coating (PAZ/PAR) $\mu=0.2$
- Surface-hardened bright aluminium and polyurethane timing belt with polyamide coating (PAZ/PAR): $\mu=0.2 \dots 0.3$



Guiding on support rails