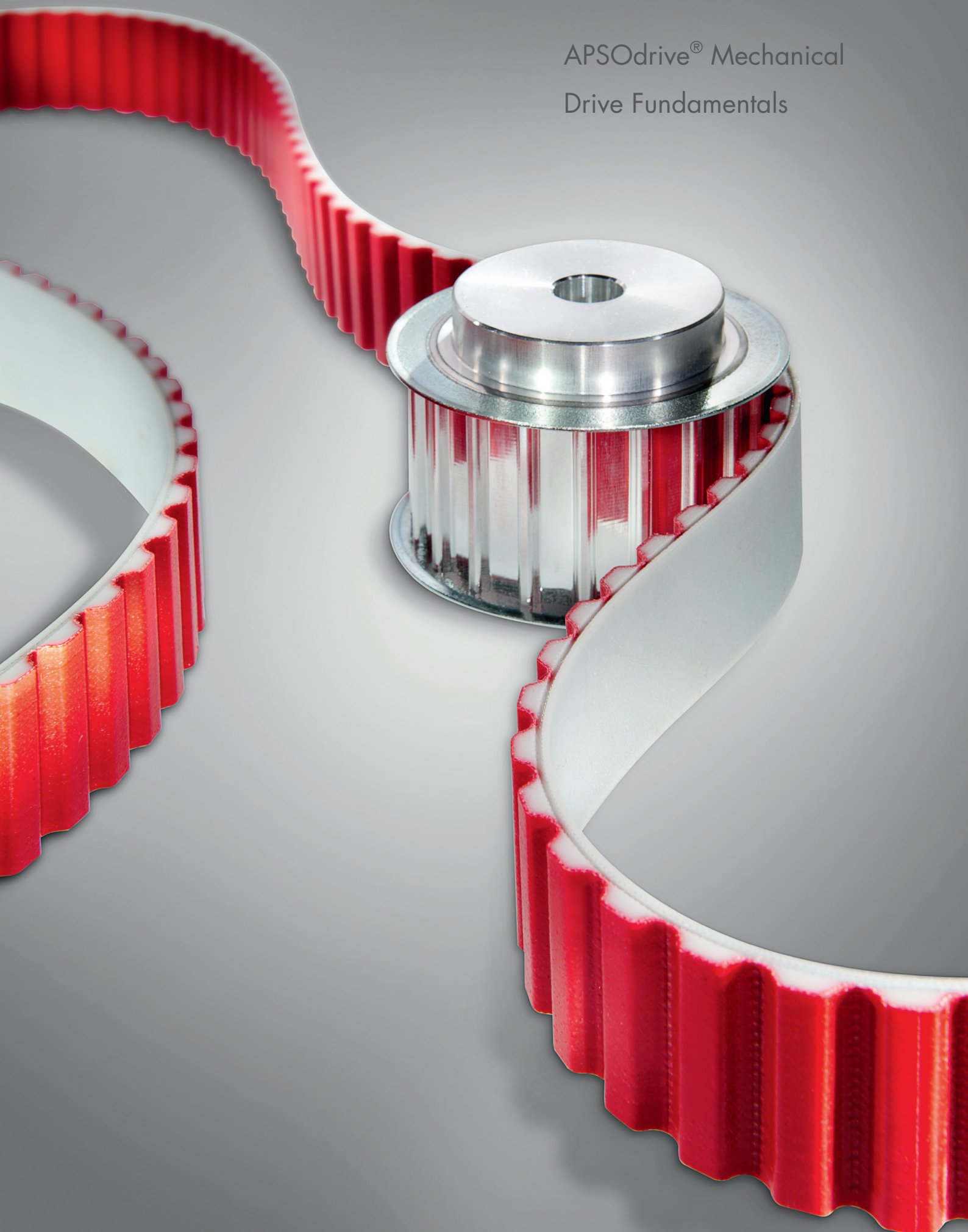
Angst+Pfister

APSOdrive® Mechanical Drive Fundamentals



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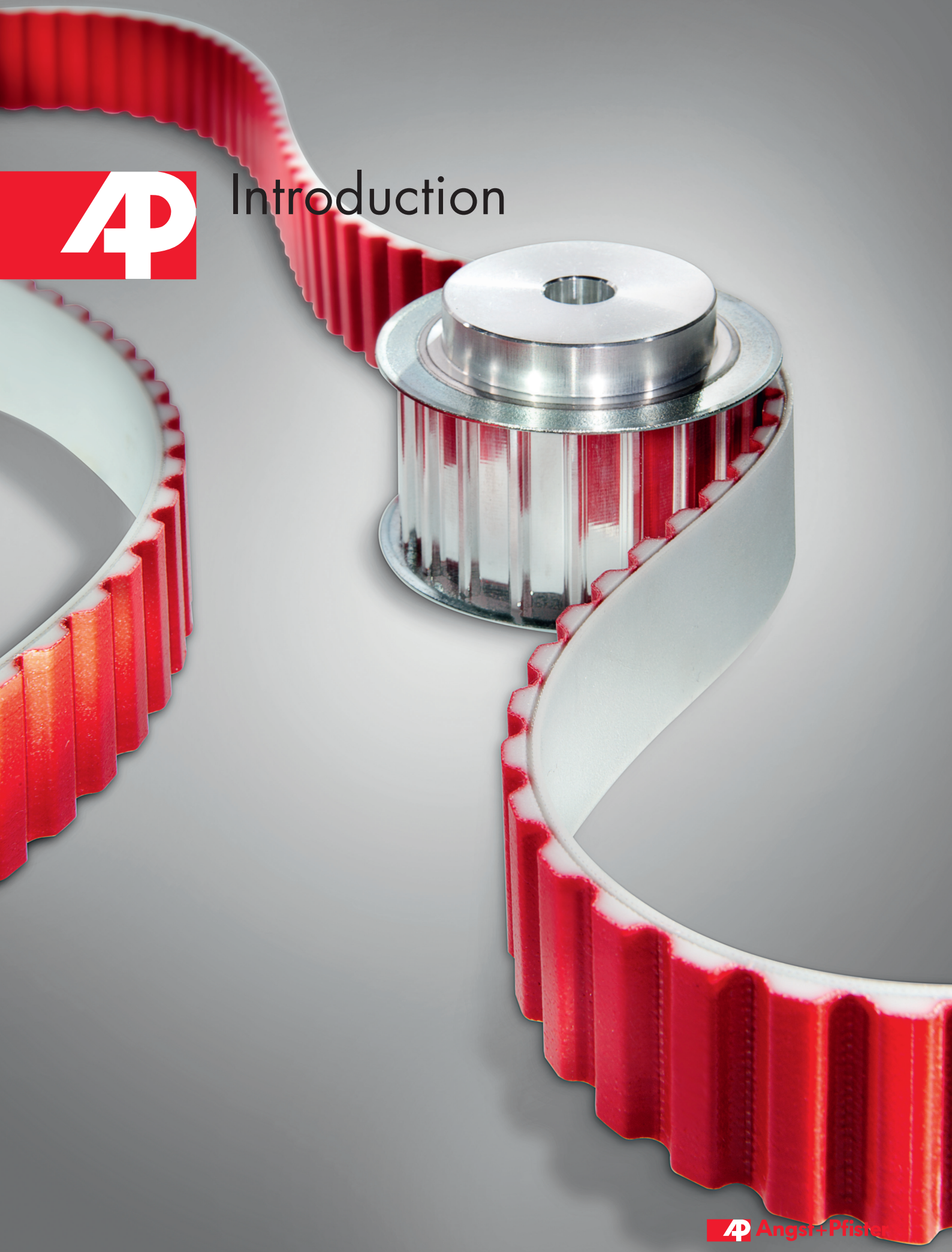
Introduction



Foreword

This Angst+Pfister drive technology manual contains an introduction to an extensive range of timing belts which are part of our extensive stock. Nonstandard items and customized solutions can also be produced or provided swiftly. Fundamentals of calculation for belt drives, description of product properties and accessories, such as pulleys, idlers and bushings, are also included in this manual.

Traction drives

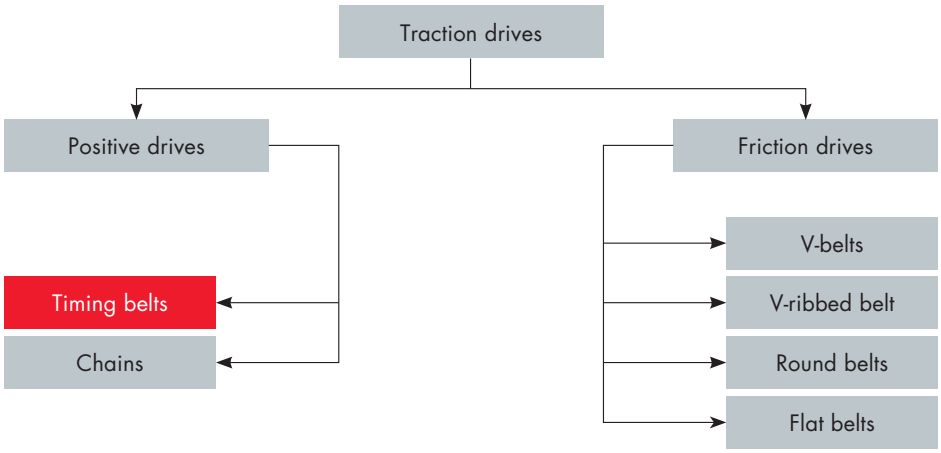
Traction drives (or commonly known as belt and chain drives) are generally used to transmit power or motion. A traction drive can also be used to move or position items, which is commonly known as transport or linear technology. Subject to the task an application has to achieve, there are several possibilities to complete the challenge. Traction drives are divided into two categories; the positive traction drives for timing belts and chains and friction traction drives for V-shaped belts as well as round and flat belts.

Positive traction drives

A positive traction drive guarantees a synchronous transmission between the pulleys, therefore it is also called synchronous drive. This kind of power transmission is gaining further importance due to its very high power ratings and striking life cycles.

Friction traction drives

Compared with positive traction drives, friction traction drives have the significant advantage of tolerating a temporary slippage due to excessive overload. It is the nature of this kind of drive that higher pre-tension forces have to be applied to ensure a flawless operation. Therefore higher bearing loads have to be accepted. Also, the belt is subject to a certain amount of constant slippage, as a result of which a perfect synchronous transmission cannot be achieved.



This manual lists many of the belts available from the Angst+Pfister Drive Technology product range.
Further information on additional components is available through your nearest Angst+Pfister sales representative.

Elastomer or polyurethane?

Timing belts are available in different materials, but the most common ones are elastomer and polyurethane. Elastomer is used as a general term for polychloroprene as well as any related elastomer compounds. The same applies to polyurethane, as different compounds from polyether or polyester are available, which are suitable for casting or extruding manufacturing processes. The commonly used abbreviation TPU stands for thermoplastic polyurethane.

Before selecting from the two materials, elastomer or polyurethane, parameters like purpose, requirements and the environment will need to be defined. All these parameters have also an impact on the reinforced tension member, which can be made of steel, glass, aramid or carbon. Any added layer on the back or tooth side of the belt needs to be considered. A solution with an elastomer belt for a power transmission is usually more economical. On the other hand, a polyurethane belt is the better solution for positioning devices.

Material properties are listed on the next two pages as well as in the belt properties.

Material properties of timing belts

Polyurethane

Basic properties

- length stability and low stretch due to steel cords
- resistant against deformation and high shear strength
- customized pulley teeth tolerances on request
- self-guiding drive belts available
- high positioning accuracy
- customized solutions available

Special properties

- various tension members available
  - high flexibility
  - high power
  - available in stainless steel
  - available in aramid
- high pitch accuracy
- customized reworkings feasible
  - coatings
  - profiles (welded or screwed-on)
  - machining
- special polyurethane compounds available

Elastomer

Basic properties

- good damping capabilities
- low lateral forces
- low noise emission
- low tendency for tooth skipping
- antistatic version available
- excellent price-performance ratio

Special properties

- high performance compounds
  - superior level of oil resistance
  - high temperature resistance
- PTFE refinement of the tooth fabric
- coatings

Polyurethane

Overview of standard properties

Properties	Details/additional benefits
Operating temperature	• –10°C to +80°C
Steel tension members	• precise transmission of motion • high length stability • low stretch
Shore hardness 88 to 92 ShA	• resistant to deformation and high shear strength • high resistance to abrasion
Profiles: T, AT, ATP, CTD, BAT, SFAT, V-guides, imperial profiles, HTD, RPP, STD	• narrowed gap width for reduced backlash feasible • self-guiding drive belts available
Casting, injection molding or extruding manufacturing processes	• short and long endless belts available (up to approx. 30 m) • open-end belts for open linear drives or welded transport drive belts available
Resistances	• resistant to tropical conditions • resistant to oil and gasoline • ozone resistant
Weldable with thermoplastics	• weldable up to any length • feasible to weld on cam profiles
High pitch accuracy	• for accurate positioning systems

Overview of special properties

Properties	Details/additional benefits
Operating temperature	• –30°C to +110°C
Flexible tension members	• high flexibility • pliant
Tension members in special twists	• higher rigidity • higher resistance to (reverse) bending • S/Z twist (GEN III, Brecoflex) • high pitch accuracy (Brecoflex) • low lateral running tendency
Polyamide coated teeth PAZ	• low friction • low noise emission
Polyamide coated belt back PAR	• low friction • especially for accumulating conveyors
Aramid tension members	• not magnetic • higher stretch than steel (vibration absorbing)
Stainless steel tension members	• minimized corrosion • low magnetic permeability
Various rework potential	• coatings • weld on profiles • high versatility due to screwed-on profiles (ATN): – combination of different materials – easy replacement of profiles – belt lock • machining: – milling – drilling/punching – water jet cutting
Coloring	• standard: white, various colors feasible
FDA conformity	• specially certified polyurethane compounds available

Elastomer

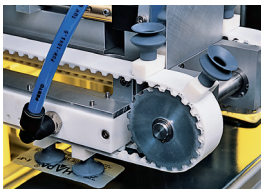
Overview of standard properties

Properties	Details/additional benefits
Operating temperature	• –10°C to +100°C
Glas or aramid tension members	• excellent damping of impacts • low lateral running tendency
Shore hardness 75 to 82 ShA	• smooth running
Profiles: HTD, RPP, STD, CTD, imperial profiles	• prime meshing performance even during high-dynamic performance • smooth running • low tendency for tooth skipping
Manufactured in wide sleeves	• economically priced production
Resistances	• resistant to tropical conditions • oil resistant under certain conditions
High-strength nylon coating on teeth	• high resistance to abrasion
Antistatic	• high performance designs in accordance with ISO 9563 available
Pulleys	• wide range of standard pulleys with Taper-Lock® bushing available

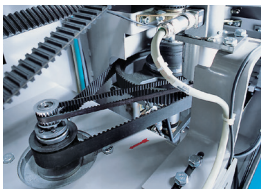
Overview of special properties

Properties	Details/additional benefits
Operating temperature	• possible up to max. +130°C
HNBR	• superior level of oil resistance
PTFE refined coating on teeth	• increased resistance to abrasion for high performance drives
Reduced noise emissions	• optimized meshing of teeth • shock absorbing material: rubber and tension members
Coatings	• vulcanized or bonded designs feasible • machined coatings available

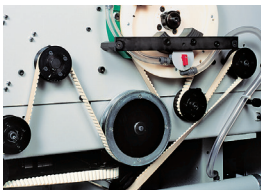
Application examples



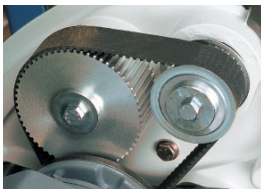
Application	Vacuum
Material	Polyurethane
Reasons for decision	Processing possibilities • milling • welding • weldable belt to required length



Application	Power drive
Material	Elastomer
Reasons for decision	• low noise emission • economical

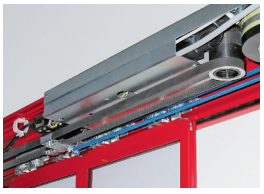


Application	Positioning drive (several synchronous shafts)
Material	Polyurethane
Reasons for decision	• long belts available • high pitch accuracy • reduced or zero backlash pulley available

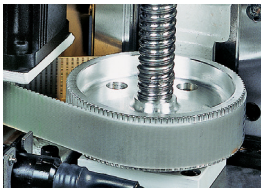


Application	Antistatic drive
Material	Elastomer
Reasons for decision	• antistatic material according ISO 9563 available

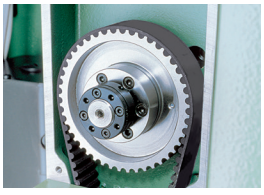
Application	Conveyor with FDA approval
Material	Polyurethane
Reasons for decision	• weldable belt to required length • versatility due to screwed-on profiles (ATN)



Application	Door/gate drive
Material	Elastomer
Reasons for decision	• low noise emission • economical



Application	Intermediate gear for servodrive
Material	Polyurethane
Reasons for decision	• very high pitch accuracy • reduced or zero backlash pulley available • good resistance to most cutting fluids



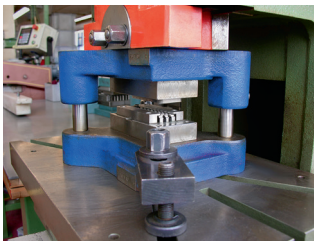
Application	Power drive with strong shock impact
Material	Elastomer
Reasons for decision	• low noise emission • shock absorbing capabilities of HNBR and the glass tension members

Belt production at Angst+Pfister

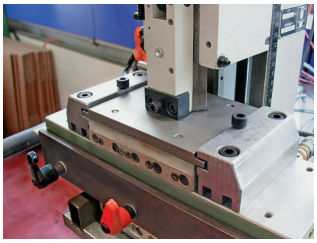
Punching and welding

The available equipment at the Global Logistics Center in Embrach (Switzerland) allows Angst+Pfister to perform specific production processes on drive belts. A wide range of existing die punching and welding tools guarantee a fast and efficient manufacturing process for welded belts of any length. Our tool assortment covers the production of a wide variety of belt widths and pitches.

It is possible (under certain conditions) to apply additional printed information on the belt, such as company names and logos, or for convenience, article numbers, power ratings or any kind of customized information. The necessary equipment to label belts according to your specification is available at Angst+Pfister.



Preparing for die punching



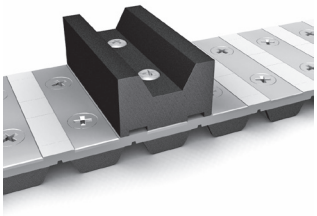
Example of a welding tool

Belt printing machine

Cut to length and assembly

Open-end belts are cut with a device equipped with an automatic and precise length measuring system. Depending on the type of belt, we are also able to equip the belts with profiles and assemble them with clamping plates and locks if requested. Creativity has almost no boundaries when it comes to linear belt drives and we are ready to support you in finding the most suitable solution for your application.

Electronic measurement while cutting

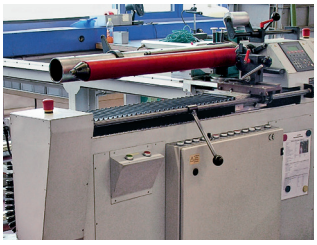


Mechanical cam application

Cutting from sleeves or reel

In addition to cutting belts to the requested length, we also cut them efficiently in-house to the requested width. We keep an extensive range of belts in stock, typically as sleeves, and then cut to the requested width. The same applies to open-end belts from reels.

Length cutting machine for R-types



Sleeve cutting machine

Pulley production at Angst+Pfister

Our own production facilities for pulleys allow us to respond quickly to any customer request for tailor-made prototypes or a one-off solution. For larger quantities, we use our well established and approved global production platform, which is dedicated to manufacture and deliver pulleys with the highest quality and in the most economical way possible.

Our facilities provide the following processes and services:

Turning, milling and drilling
Whenever feasible, we use a standard pulley or shaft which will then be reworked according to the requested specifications
Diameter range: 10 – 400 mm
Length: max. 1200 mm

Adapter design, bores and threads
– Bores with tolerances up to IT6 feasible (standard H7)
– Any adapter design according to a customer drawing can be realized on our CNC production center up to a diameter of 400 mm

Surface finish
– Aluminum max. N6
– Plastic max. N7

Keyways
– Broaching keyways according to DIN 6885 (up to a max. diameter of 110 mm)
– Fittings: standard P9 (tight fit), JS9 if requested (loose fit), other tolerances available upon request

Flanges
Flanges up to a diameter of 400 mm can be mounted within a short period of time due to our extensive range of flanges in stock.

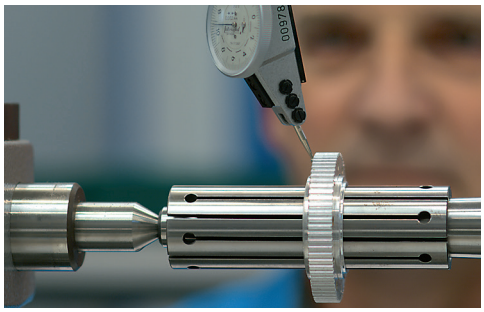
Assembly
We offer "ready to use" assembled pulleys equipped with
– Taper-Locks®
– Bushing elements

Materials
Materials: aluminum, steel, stainless steel, cast iron, plastic (other options on request)

Please provide us a technical pulley drawing, to evaluate your request.

APSOdrive® – from a standard product to a customized solution

Selecting the correct materials, components and configurations is a complex and time consuming process, but crucial for the success of a drive system. At Angst+Pfister we have more than 30 years of experience in the field of drive technology. As a customer you can benefit from this experience: APSOdrive® offers support for each individual customer to succeed with a tailor-made solution.



Engineering services: expertise all along the line

Our engineers have substantial international experience in optimizing demanding belt drives and can therefore support you with:

- technical advice for new and existing systems
- evaluating the most suitable solution
- calculating and designing mechanical drive systems
- additional use of belt drive calculation software
- commercially optimized price-performance ratio
- fast engineering and supply of customized solutions and prototypes

We trust that using standard components in combination with engineered customized parts will lead to the ultimate drive solution.

The perfect global production platform: high-quality components for the highest requirements

Angst+Pfister has production facilities in 15 countries worldwide. This global orientation provides our customers with the most cost-effective production environment – even before considering our competitive ability to meet quantity, logistic and quality requirements. Being a company that is certified according to ISO-9001:2015, we make every effort to completely meet the quality requirements of our customers.

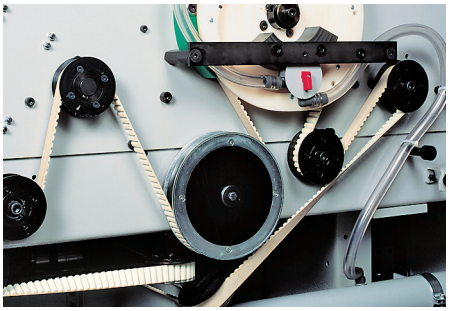
Reliable logistics and customer focus worldwide

A comprehensive logistics infrastructure ensures that the right products are getting to their destination when and where they are required. Highly efficient processes, supported by an electronic order processing system, characterize the Angst+Pfister Logistics Center. Thanks to our extraordinary international network, a "just in time" delivery is supplied to all our customers, no matter at which location.

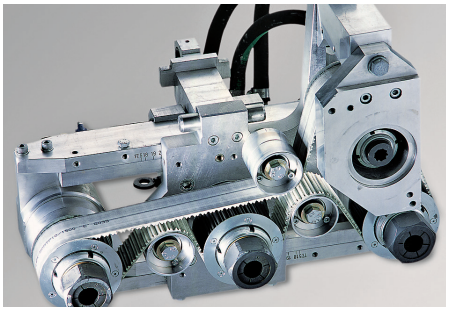
Various solutions for different applications

Whether it is a linear, transport or power transmission: we make every effort to find the most suitable and efficient solution to comply with your specific demands.

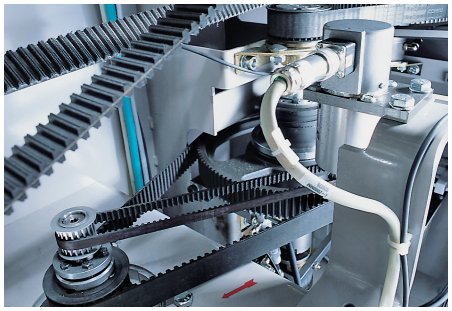
Power transmission



Saddle stitching systems

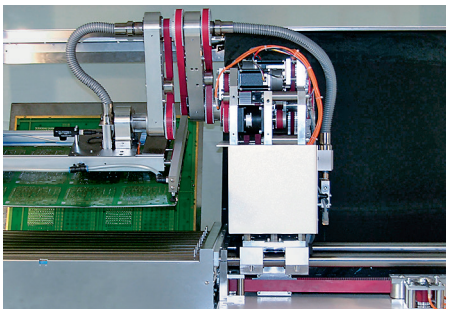


Triple spindle drilling system



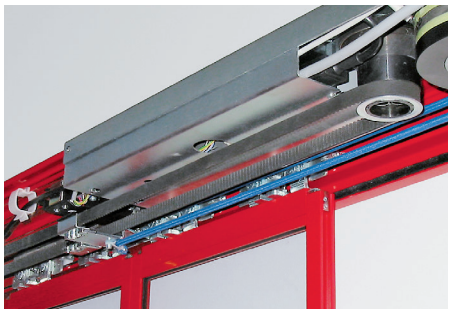
Pocket spring machine

Linear drives



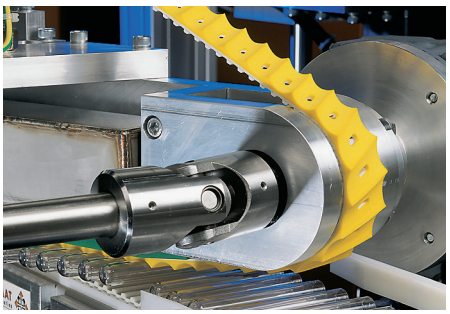
Printed circuit board transporter

High bay rack logistics system

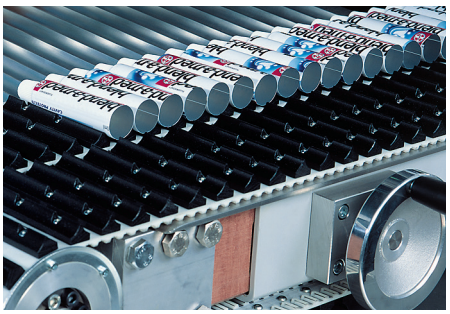


Automatic door system

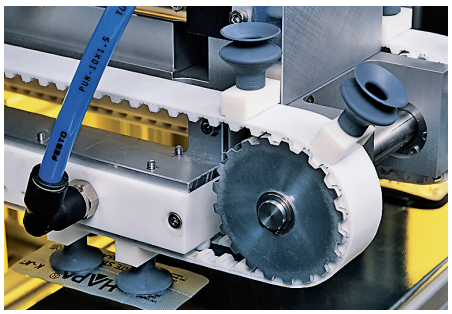
Transport solutions



Conveying device for test tubes



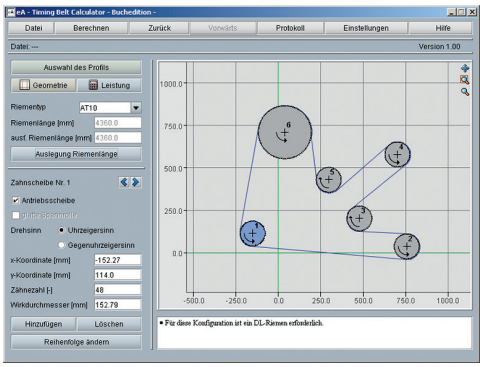
Tube packaging machine

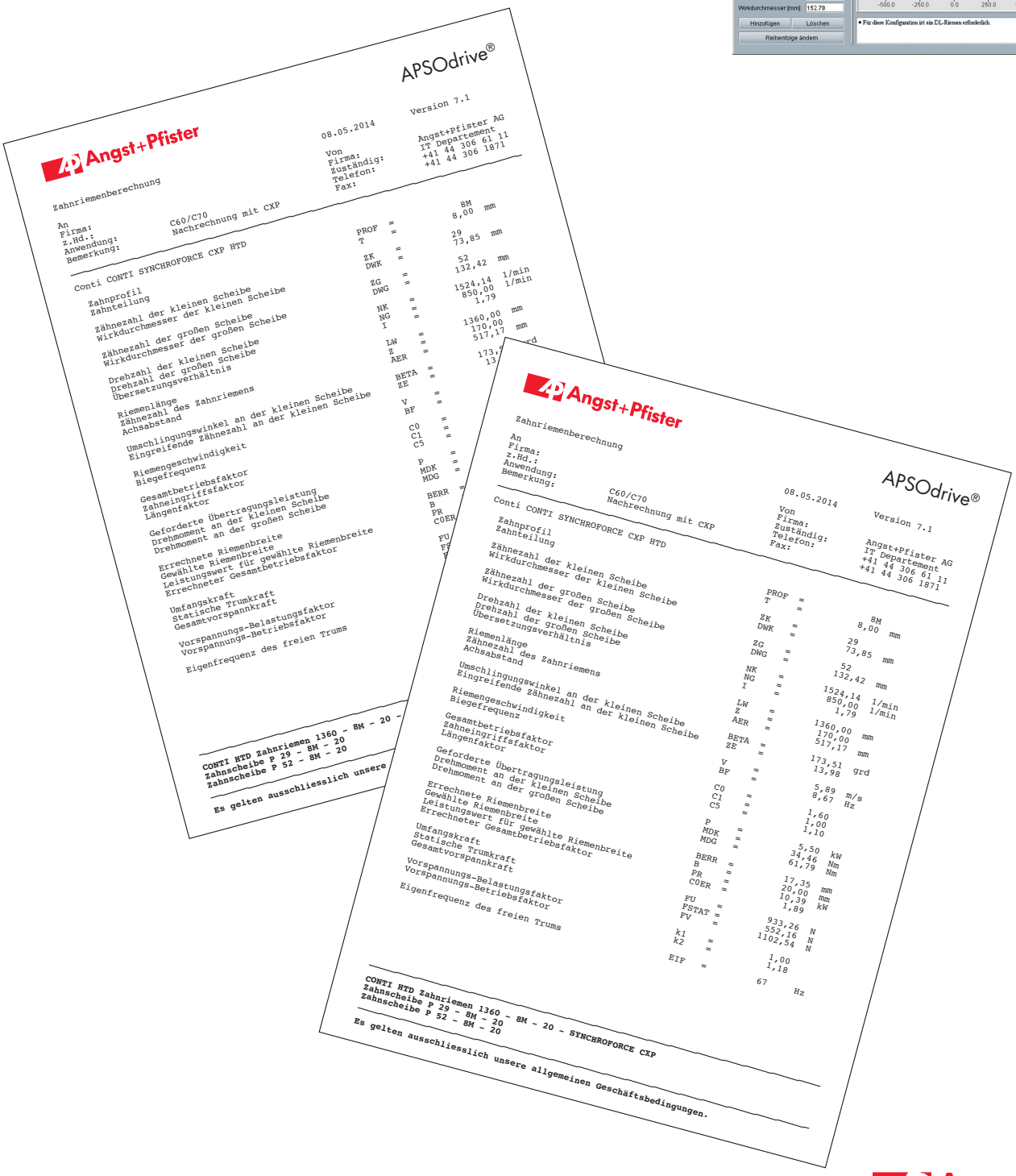


Conveying device for blister packaging

For a detailed and cost-effective calculation for your timing belt drive, we have various calculation tools available. Our technical support team will be pleased to advise you and provide you with a recommendation for the configuration and the type of belt which will suit your requirements.

Please do not hesitate to make use of our engineers' know-how and also benefit from further application related services. Upon request, we can also organize workshops and seminars for your engineering and design team.





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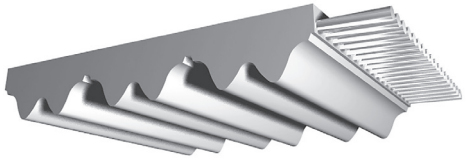
Tooth profiles

ATP high performance profile

The industry's request for timing belts with increased performance, reduced noise and increased life span has led to the development of the ATP timing belt. The concept of the ATP profile is basically the division of the trapezoidal tooth design into two individual teeth which can carry more load than a single tooth within the same pitch.

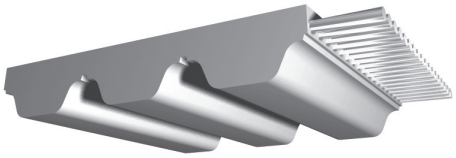
The highest level of performance can be achieved by using tension members with low stretch and a high resistance to reverse bending as well as a special polyurethane compound.



Performance increased up to 60%, running noise reduced by up to 10 db(A) and an life span has been increased due to
- tooth surface area increased by 70%
- even load-tension distribution
- improved force transmission
- reduced polygon effect
- narrower design width
- optimized meshing

AT performance profile

Further development of the T profile resulted in the AT profile. This type of belt is characterized by its larger tooth shear strength due to the larger tooth design and the stronger tension members.



Benefits
- optimized meshing
- enhanced tension members for constant pitch
- improved performance up to 50% as compared to the T profile
- precise transmission of motion in combination with pulleys with reduced or zero backlash
- reduction of meshing impacts or shocks
- compact designs feasible

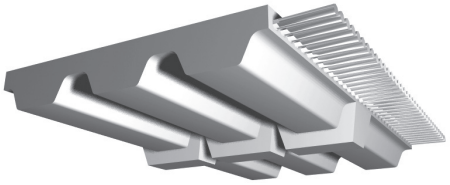
SFAT offset teeth

AT performance profile with two toothed tracks is called SFAT. These toothed tracks are offset by half a pitch. The SFAT is self-guiding if used with the related pulley. No flanges are required.

Preferred field of application
- application on pulleys without flanges
- low noise applications (reduced polygon effect)

ATK and TK profile with guiding track

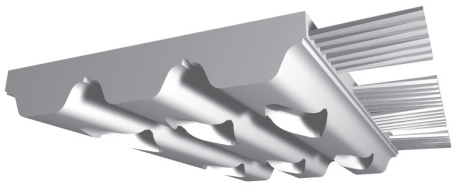
Self-tracking belts are a combination of timing and V-belts with straight running characteristics. The performance range is that of a standard T or AT profile, but the width of the V-belt has to be deducted from the total width for the calculation.



Preferred field of application
- where high lateral forces apply
- application on pulleys without flanges

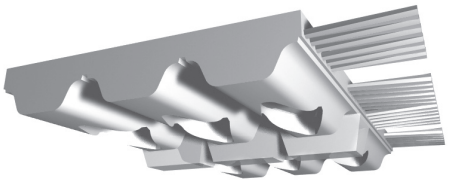
ATN profile

The ATN timing belts are dedicated to transport technology. The integrated cam fastening system in the belt tooth allows fast fitting and cams can be exchanged individually to fit the different requirements of the goods to be transported.



ATNK profile with guiding track

The ATNK timing belt is basically an ATN belt combined with a V-belt for self-guiding purposes. This is an advantage in case no flanges on the pulleys or any other guiding components that can be applied. The position of the V-guide depends on the belt width.



BAT curved profile

With the intention to reduce noise and the polygon effect, the curved teeth belt BAT was introduced to the industry. Further benefits are a smooth performance as well a self-guiding solution if used only in the preferred direction. Compared with the related AT profile, the BAT has an increase tooth flank.

Preferred field of application
- smooth and high accuracy drives
- compact layouts
- transport and transmission drives
- application on pulleys without flanges

BATK curved profile with guiding track

The BATK is a further development of the BAT but with an integrated guiding track. This has the advantage that the belt is self-guiding in both running directions.

Preferred field of application
- smooth and high accuracy drives
- compact layouts
- linear and transmission drives
- application on pulleys without flanges

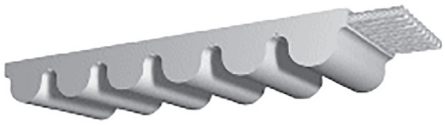
T standard profile

The timing belt with a trapezoidal profile according to DIN 7721 is regarded as the classical standard timing belt.

Preferred field of application
- standard drives
- drives with double sided belts
- high bending stress
- with back bending (alternating tension)

HTD profile

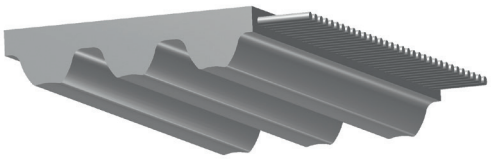
The high performance profile HTD (high torque drive) has a round tooth profile which results in a good meshing and optimized force and tension distribution (profile according to ISO/F DIS 13050). Due to the high HTD tooth it has a very low tooth skipping behaviour.



Preferred field of application
- linear drives
- hoisting devices
- positioning drives
- power transmissions with elastomer compounds

STD profile

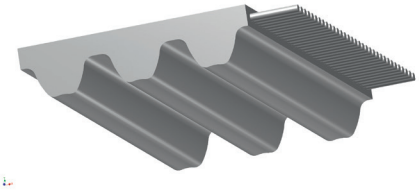
The high performance profile STD (super torque drive) has an involute shaped tooth for a prime meshing and an optimized force and tension distribution (profile according to ISO/F DIS 13050). A reduction of the noise emission was achieved due to the optimized meshing.



Preferred field of application
- linear drives
- positioning systems
- low noise applications
- power transmissions with elastomer compounds

CTD profile

The latest member of the timing belt profiles is the CTD profile. It offers a smooth meshing even at high speed and therefore a prime running performance and it is safe against tooth skipping, even under high torque.
The CTD profile is compatible with other profiles on existing systems. Available pitches are CTD C8M and CTD C14M.



Preferred field of application
- high performance drives with high torques and high rotational speed

N10 profile

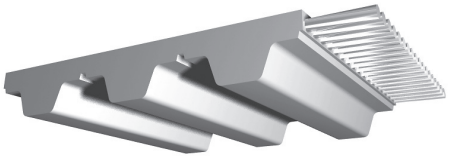
The N10 profile (nubbed; pitch 10 mm) has round nubs in the shape of an involute for a prime meshing and good force and tension distribution. The optimized meshing of the nubs leads to a noise reduction and the drive is polygon-free as well as self-tracking in both directions.

Preferred field of application
- transport systems
- application on pulleys without flanges
- low noise applications

Imperial profile

Imperial pitches according to DIN/ISO 5296 are available in the following pitches

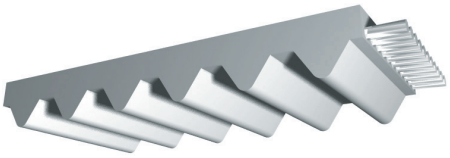
MXL	=	2.032 mm
XL	=	5.080 mm
L	=	9.525 mm
H	=	12.700 mm
XH	=	22.225 mm



Preferred field of application
- applications with imperial units

K profile

Notched profile with metric pitch.



Preferred field of application
- precision mechanics in small dimensions

F flat belt

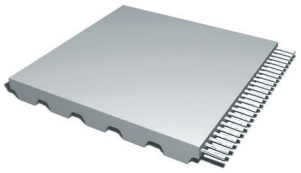
Flat belt with thickness of 1 to 6 mm with steel tension cords.

Preferred field of application
- high rotational speed drives
- drives without synchronous transmission
- straps (endless and open-end)

Various belt designs

Standard version, single-sided

The standard version of the BRECO® and BRECOFLEX® timing belt is a combined construction of the two materials: wear resisting polyurethane and high tensile steel cord tension members. The standard version is universally applicable for all tasks in the drive and conveying technology.
The new CONTI® SYNCHROFLEX GEN III PUR drive belts are now available in a new polyurethane compound and bifilar "S & Z twisted" tension member.
Ordering code: without any code, or GEN III

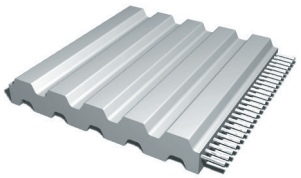


Standard version
- available in all pitches

Standard version, double-sided

The standard version of the double-sided BRECO® and BRECOFLEX® timing belt is a combined design out of two materials: wear resisting polyurethane and high tensile steel cord tension members. Both tooth sides can carry the full load. The standard version of the DL timing belts is universally applicable for all tasks in the drive and conveying technology.

Ordering code: DL

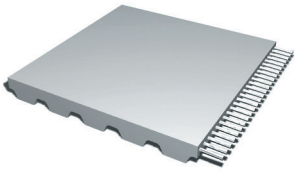


DL version
available for
- AT5-DL only BRECOFLEX®
- AT10-DL only BRECOFLEX®
- T5-DL, T10-DL, T20-DL, H-DL only BRECOFLEX®
- ATK10K6-DL only BRECOFLEX®

Standard version with reinforced belt back

The DR timing belt has a thicker belt back compared to the standard version.

Ordering code: DR

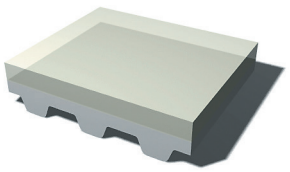


DR version
- available belt types see product range

Standard version with transport coating

Timing belts with the extension "T" have an additional transport coating on the back, compared to the standard version. Thickness of 1.5 mm (T5, AT5) and 2 mm (T10, T20, AT10 AT20 and Imperial) are available. The coating is extruded on the back of the belt. The timing belt with the extension "T" is universally applicable for all tasks in the conveying technology.

Ordering code: version T



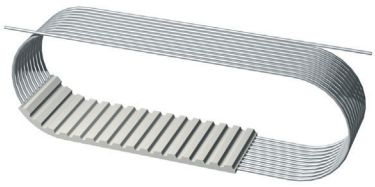
T version
- available belt types see product range

Different production processes and calculation procedures

This manual includes an introduction to different manufacturing processes for belts, performed by different methods. Furthermore, an introduction of how to select and calculate a belt drive is provided. There are basically three different calculation procedures: the Teeth & Cord (TC-Calc) procedure and the Power-Ratings (PR-Calc) procedure, which are used for power transmission drives. For linear and transport drives the Linear Technology (LT-Calc) procedure applies.

Endless extrusion

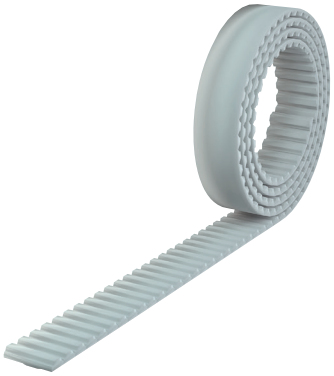
This type of belt is extruded without any interruption of the tension members up to a length of around 30 m. The tension member is helically wound to a maximal width of 100 mm or 150 mm, depending on the tooth profile and pitch. We are able to supply our customers with any length and width within this range. It is recommended to use endless belts for power transmissions. Our range of endless belts is completed by using the casting manufacturing process.



Brand designation	Base material	Calculation procedure
BRECOFLEX®	PUR	TC-Calc

Linear extrusion – On reels

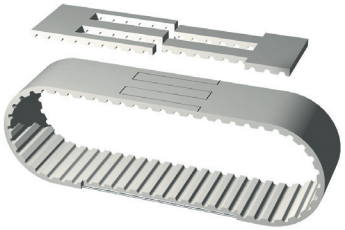
Linear extrusion produces open-end belts. All tension members are arranged parallel up to a length of 100 m, and a maximal width of 100 mm or 150 mm is feasible, depending on the tooth profile and pitch. Open-end belts are often used in linear drives where a rotation is converted into a linear motion. All tension members are engaged in the transmission.



Brand designation	Base material	Calculation procedure
BRECO M®	PUR	LT-Calc
CONTI® SYNCHRODRIVE	PUR (black)	LT-Calc

Linear extrusion – Welded open-end

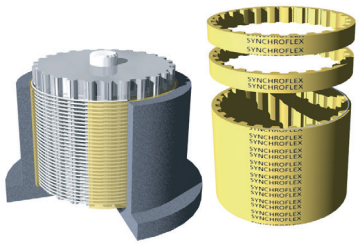
By welding both ends of an open-end belt together, it converts it to an endless belt. As the tension members are interrupted at the overlapping welded sector, it will lose 50% of its tensile strength. Welded open-end belts are mainly used in the conveying industry with any requested center distance. Customized solutions with coatings or added profiles are also available.



Brand designation	Base material	Calculation procedure
BRECO V®	PUR	LT-Calc

Casting

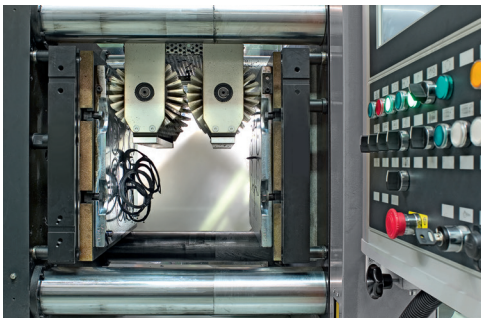
Cast belts are produced in a mold. The tension member is helically wound to the core of the mold before the base material is added. Belt widths of maximal 300 mm and a length up to over 4 m are feasible. For non-standard belt lengths in large quantities we are able to provide any cast belt length by manufacturing a new mold. Carrier profiles as well as customized features on the back of the belt can be added, too. Our range of endless belts is completed by using the endless extrusion manufacturing process.



Brand designation	Base material	Calculation procedure
CONTI® SYNCHROCHAIN	PUR	PR-Calc
CONTI® SYNCHROFLEX	PUR	TC-Calc
BRECOFLEX®	PUR	TC-Calc

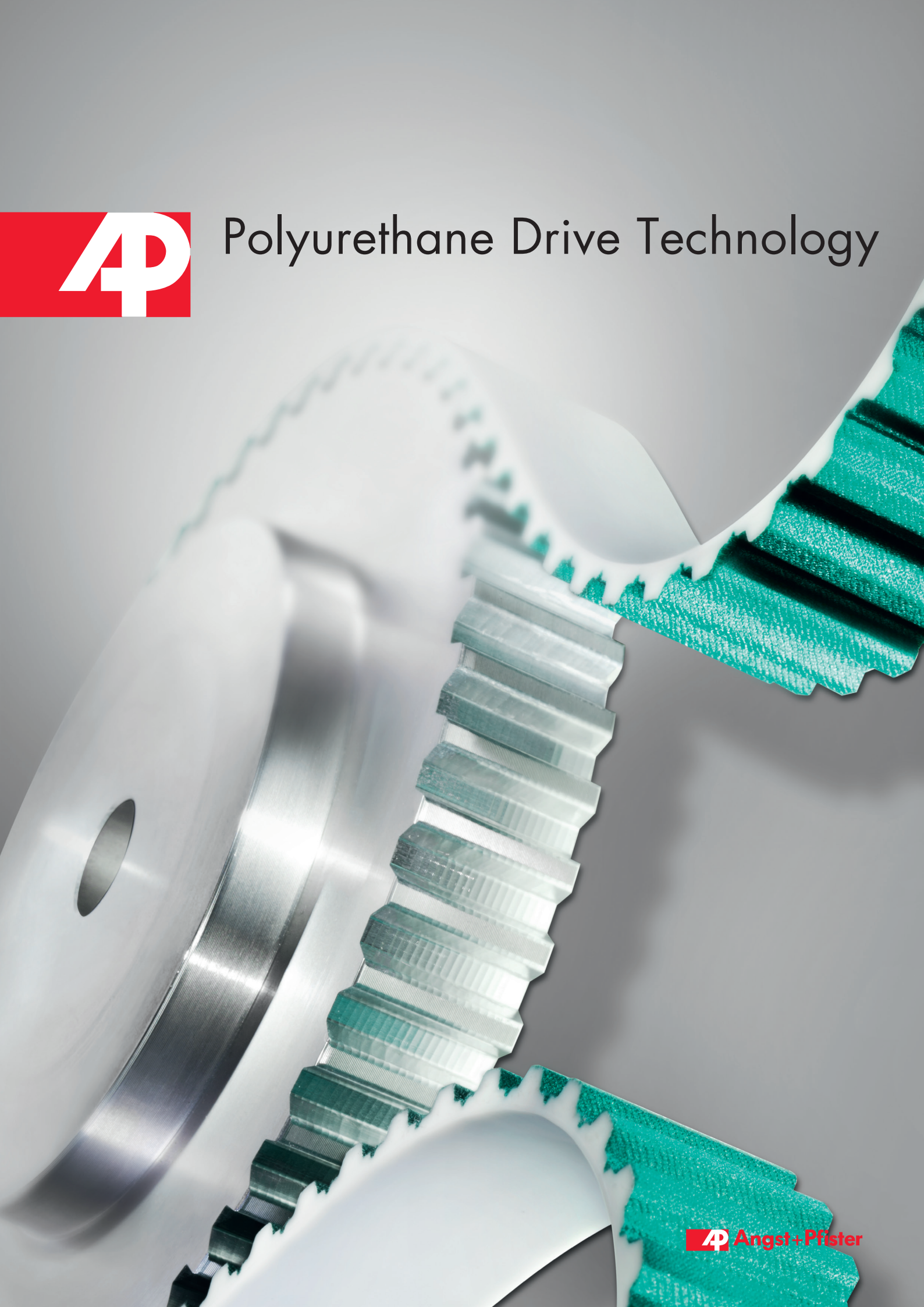
Mold vulcanization

The vulcanization process is applied for elastomer compounds. The tension member is helically wound to the core of the mold before the base material is added. By applying pressure and heat, the vulcanization starts and encloses the tension members. Sleeves of maximally 480 mm width and up to more than 4500 mm are available and can be cut to the requested width.
This kind of belt is mainly used for power transmissions.



Brand designation	Base material	Calculation procedure
CONTI® SYNCHROBELT	CR	PR-Calc
CONTI® SYNCHROFORCE	HNBR/CR/N-Duro	PR-Calc

Polyurethane Drive Technology



Angst+Pfister

Timing belt selection procedure

The "Teeth & Cord" (TC) calculation procedure is based on the fact that only a limited/defined number of teeth between the pulley and the belt can be in mesh at the same time. Therefore, the transmissible force/power is limited and can be calculated (calculation of tooth strength).
In order to transfer this force to a driven pulley, the timing belt needs to have adequate strength characteristics and is reinforced with cords of defined tensile strength (calculation of tensile strength of tension members).
A further component to be considered in this procedure is the flexibility of the belt. This provides an important indication of the smallest pulley diameter (or belt tensioner) to be used in the belt drive.

Tooth shear strength

The shape and the material of a tooth are the two elements which define the highest force that can be transferred between the pulley and the belt. A specific tooth shear strength as a function of speed or rpm is the maximum power a tooth can bear in permanent operation. A timing belt drive is correctly designed if the transmissible power does not exceed the specific shear strength of all the teeth in mesh. An additional safety factor is usually not needed but often considered.

During the continuous and ongoing development of tooth shapes and materials the tooth shear strength has been improved ever since. For example, an AT-Profile is larger than a T-Profile and has therefore a better distribution of the occurring forces. Furthermore, an ATP profile transmits more power than an AT profile. This is due to its optimized distribution of the transmission forces on two surfaces which results in a higher load capacity.

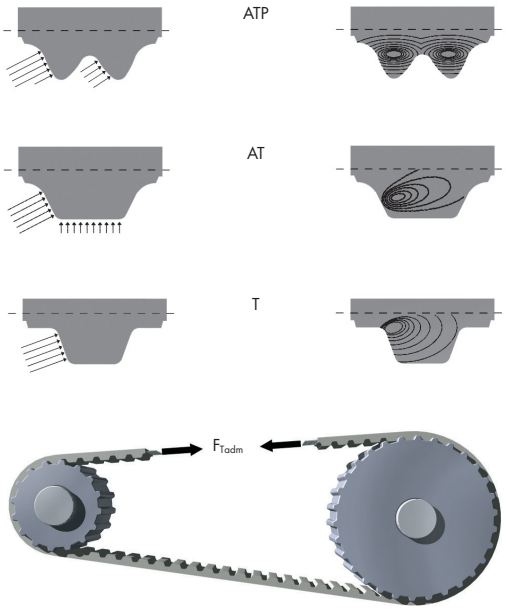
Tensile strength of tension members

The circumferential force acts in proportion to the elongation of the load span; excessive slackening of the slack span is counteracted with appropriate pre-tension values. The tensile strength of the cords is the maximum allowable tensile stress of the belt, given adequate safety factors.

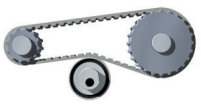
Allowances for maximum tensile fatigue strength F_{Tadm} are listed in tables for different belts.

Flexibility

Depending on the belt model, the minimum number of teeth or diameter of the pulley must comply with the belt specification to guarantee a flawless operation. Special attention is needed for layouts with reverse bending, meaning the belt will be bent in both directions due to pulleys or idlers running on the back side of the belt. The tension members will then experience different load conditions (from pulsating to alternating). Such layouts require pulleys or rollers with a larger minimum diameter or a higher number of teeth than a layout without reverse bending.



Drive layout with inside idler (pulsating tension)



Drive layout with backside idler (alternating tension)

Drive calculation

Step 1 – Evaluation of belt type

In choosing the correct belt for a drive, the field of application as well as power, rotational speed and velocity have to be considered. The smallest pulley in the whole drive needs special attention. The minimum diameter or minimum number of teeth z_{1min} will have a significant impact on the type of belt, especially for narrow drives.

P [kW]	v_{max} [m/s]	n [min^{-1}]	Field of application	Z_{1min}*	Profile
≤5	80	≤10000	Office machinery, DIY power tools, control technology	10	**T5 – XL**
≤5	80	≤20000	Small power drives, handling technology	15	**AT3**
≤15	80	≤10000	Machine tools, pumps, textile machines	15	**AT5**
≤30	60	≤10000	Main and auxiliary drives, machine tools, textile and printing machinery	12	**T10 – L – H**
≤70	60	≤10000	Pumps, compressors, roller table drives, construction, paper and textile machinery	15	**AT10 – SFAT10 – BAT10 – BATK10**
≤100	60	≤10000	Grinding machines, power drives, machine tools	15	**ATP10**
≤100	40	≤6500	Heavy duty construction machinery, pumps, paper and textile machinery	15	**T20 – XH**
≤135	48	≤8000	Construction machinery, pumps, compressors, paper machinery	20	**SFAT15**
≤140	48	≤8000	Power drives, printing and grinding machinery	20	**BAT15 – BATK15**
≤160	48	≤8000	Power drives, paper machinery, high-bay storage, hoist devices	25	**ATS15**
≤200	50	≤10000	Power drives, machine tools	20	**ATP15**
>200	40	≤6500	Heavy duty drives, textile and printing machinery, machine tools	18	**AT20 – SFAT20**

Table 1

Special timing belt designs allow the rotational speed and peripheral velocity parameters to be increased.

* Applies only to standard windings without "reverse bending" and without coating.

Step 2 – Torque

The torque is calculated from the available power. For drives which start and stop frequently, it is recommended to use the starting torque for the calculation. Starting torques for motors are usually 2.5 times (or sometimes more) higher than the rated torque.

$$M_{[Nm]} = \frac{9550 \cdot P_{[kW]}}{n_{1[min^{-1}]}}$$

Step 3 – Circumferential force

With the known torque M and the pitch circle diameter of the driving pulley d_{01}, the circumferential force F_u can be calculated. This force must be counteracted with a correct pre-tension force to avoid a slack belt strand.

$$F_{u[N]} = \frac{2000 \cdot M_{[Nm]}}{d_{01[mm]}}$$

Step 4 – Determination of belt width

The width of the belt depends on the specific tooth shear strength F_{Tspec} which is also associated to the rotational speed. The values are listed individually by belt in the technical section. The number of teeth in mesh z_e depends on the design of the drive, but for calculation purposes only a maximum of 12 teeth can be considered to be in mesh. Excluded from this rule are some high-performance belts, which can accommodate 16 teeth in mesh (z_e is also listed in the technical section). The calculated width is usually rounded up to the upper standard belt width value.

$$b_{[mm]} = \frac{10 \cdot F_{u[N]}}{z_e \cdot F_{Tspec\,[N/cm]}}$$

Step 5 – Determination of belt length

The length of a belt can only be a multiple of the chosen pitch. The pitch circle diameters d_{01} and d_{02} of both pulleys as well as the center distance s_a have to be taken into account. The calculated length L_B is rounded up to the next longer standard belt length available.

$$L_{B[mm]} \cong \frac{\pi}{2} \cdot (d_{02} - d_{01}) + 2 \cdot s_a + \frac{(d_{02} - d_{01})^2}{4 \cdot s_a}$$

By following these steps, the belt is selected for its tooth shear strength.

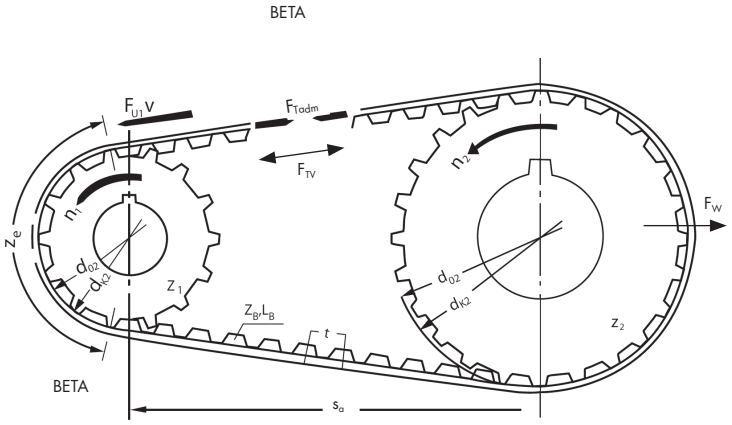
A further verification is now necessary for

– tensile strength of tension members
– flexibility
– safety factors

Refer to the following chapters.

Angst+Pfister

List of formulae



Definition of terms

Circumferential force	F_U	[N]
Specific tooth force	F_{Tspec}	[N/cm]
Admissible tensile load	F_{Tadm}	[N]
Pre-tension force per span	F_{TV}	[N]
Static bearing load	F_W	[N]
Torque	M	[Nm]
Acceleration torque	M_B	[Nm]
Power	P	[kW]
Moment of inertia	J	[kgm²]
Density	ρ	[kg/dm³]
Velocity	v	[m/s]
Rotational speed	n	[min⁻¹]
Angular speed	ω	[s⁻¹]
Centre distance	s_a	[mm]
Belt length	L_B	[mm]
Belt width	b	[mm]
Pulley width	B	[mm]
Pulley bore diameter	d	[mm]
Pitch circle diameter	d_0	[mm]
Crown diameter	d_K	[mm]
Span length	L_T	[mm]
Pitch	t	[mm]
Arc of contact	β	[°]
Acceleration time	t_B	[s]
Number of teeth on belt	z_B	
Number of teeth if i = 1	z	
Number of teeth in mesh	z_e	
Number of teeth on small pulley	z_1	
Number of teeth on big pulley	z_2	
Ratio	i	

Determination of pre-tension force
Depending on the layout, number of teeth in mesh as well as the circumference force, the required pre-tension force in each span can now be calculated. Use the factors shown in the table to select the appropriate values for the static span force.

Configuration	Number of teeth	Pre-tension force per span
Two shaft drive	$z_B < 60$	$F_{TV} = 1/3\ F_U$
	$60 \leq z_B \leq 150$	$F_{TV} = 1/2\ F_U$
	$z_B > 150$	$F_{TV} = 2/3\ F_U$
Multi shaft drive	$l_{Tight\ span} \leq l_{Slack\ span}$	$F_{TV} = F_U$
	$l_{Tight\ span} \leq l_{Slack\ span}$	$F_{TV} > F_U$
Linear drive	all	$F_{TV} \geq F_U$

Table 2

Basic formulae for belt configuration

Width	$b = \frac{10 \cdot F_U}{z_e \cdot F_{Tspec}}$	**Tooth shear strength** The belt width is calculated using the specific tooth shear strength.
Tensile strength of tension members	$F_{Tadm} \geq \frac{F_U}{2} + F_{TV}$	**Tensile strength of tension members** In case of too high a span force, the width of the belt needs to be increased.

Basic formulae for belt configuration

Circumferential force	$F_U = \frac{2 \cdot 10^3 \cdot M}{d_0}$	$F_U = \frac{19.1 \cdot 10^6 \cdot P}{n \cdot d_0}$	$F_U = \frac{10^3 \cdot P}{v}$
Torque	$M = \frac{d_0 \cdot F_U}{2 \cdot 10^3}$	$M = \frac{9.55 \cdot 10^3 \cdot P}{n}$	$M = \frac{d_0 \cdot P}{2 \cdot v}$
Power	$P = \frac{M \cdot n}{9.55 \cdot 10^3}$	$P = \frac{F_U \cdot d_0 \cdot n}{19.1 \cdot 10^6}$	$P = \frac{F_U \cdot v}{10^3}$
Belt length	$L_B = 2 \cdot s_a + \pi \cdot d_0$	$L_{B[mm]} \cong \frac{\pi}{2} \cdot (d_{02} \cdot + d_{01}) + 2 \cdot s_a + \frac{(d_{02} - d_{01})^2}{4 \cdot s_a}$	
Pitch circle diameter	$d_0 = \frac{z \cdot t}{\pi}$	**Angular speed**	$\omega = \frac{\pi \cdot n}{30}$
Rotational speed	$n = \frac{19.1 \cdot 10^3 \cdot v}{d_0}$	**Circumferential speed**	$v = \frac{d_0 \cdot n}{19.1 \cdot 10^3}$
Acceleration torque	$M_B = \frac{J \cdot \Delta n}{9.55 \cdot t_B}$	**Moment of inertia**	$J = 98.2 \cdot 10^{-15} \cdot B \cdot \rho \cdot (d_k^4 - d^4)$
Static bearing load	$F_W = 2 \cdot F_{TV} \cdot \sin \frac{\beta}{2}$	**Ratio**	$i = \frac{n_1}{n_2} = \frac{z_2}{z_1}$

Calculation example

Scope
Define a timing belt for a roller table which is used for heavy duty transportation tasks. Starting torque of the motor is 2.5 times higher than the rated operational torque.

Operating conditions are:

Given values	Power	P	=	10 kW
	Rotational speed	n	=	800 rpm
	Starting torque	M	=	2.5 times rated torque
	Ratio	i	=	1
	Number of teeth	z_1	=	z_2 = 25
	Pitch circle diameter	d_{01}	=	d_{02} = 79.58 mm
	Center distance	s_a	=	625 mm
Wanted	A suitable belt, its pitch and width.			

Solution
Step 1 - Evaluation of belt type
Based on the given values and operating conditions, an AT10 is selected from table 1 page 2.2.

Step 2 – Torque

$$M_{Nom} = \frac{9550 \cdot P}{n_1} = \frac{9550 \cdot 10\,kW}{800\,rpm} = 119\,Nm$$

Due to the start and stop function, the starting torque factor of 2.5 needs to be included in the calculation.

$$M = 2.5 \cdot M_{Nom} = 298\,Nm$$

Step 3 – Circumferential force

$$F_U = \frac{2000 \cdot M}{d_{01}} = \frac{2000 \cdot 298\,Nm}{79.58\,mm} = 7489\,N$$

Step 4 – Determination of belt width with starting torque and zero rpm (F_{Tspec} from AT10 data table)

$$b = \frac{10 \cdot F_U}{z_e \cdot F_{Tspec}} = \frac{10 \cdot 7489\,N}{12 \cdot 73.5} = 85\,mm$$

The next wider standard belt is selected b = 100 mm

Step 5 – Determination of belt length

$$L_B = 2 \cdot s_a + \pi \cdot d_{01} = 2 \times 625 + \pi \cdot 79.58 = 1500\,mm$$

Step 6 – Determination of pre-tension force

$$F_{TV} = \frac{F_U}{2} = \frac{7489\,N}{2} = 3745\,N$$

According to table 2 on page 2.3 for a two-shaft drive and 150 teeth.

Step 7 – Check tensile strength of tension members (cords); F_{Tadm} from relevant AT data sheet

$$F_{Tadm} \geq \frac{F_U}{2} + F_{TV} \qquad F_{Tadm} \geq \frac{7489\,N}{2} + 3745\,N \Rightarrow 16000 \geq 7489\,N$$

$\Rightarrow$ correct with enough cord safety factor

Step 8 – Check flexibility
The drive layout does not use any idler or pulley on its back side. Only alternating tension is applied to the tension members. Also the minimum number of teeth complies with the value in the AT10 data table on page 3.7.

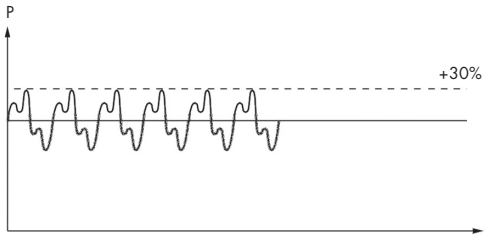
Result
The drive is correctly dimensioned with a 100 mm wide belt. The drive should run maintenance free.

Order designation:
PU timing belt 100 AT10 / 1500

Reliability and safety

While choosing it is important to envisage the worst case scenario which can happen. That is why the values for these conditions need to be used. If the values such as teeth shear strength, tensile strength of tension members and flexibility are not exceeded, the drive will run without any maintenance.

Remarks to be considered



– Do not just use the values and ratings during operation. Attention should be given to the starting conditions. For example, a three-phase squirrel cage induction motor may produce a 2 to 2.5 times higher torque than at its operational speed – even at n = 0 rpm.
– Eventually breakaway torques as well as friction in slides have to be considered on the drive side, even at n = 0 rpm.
– Stopping or braking may cause even higher peak torques on the drive than the starting torque. Bear in mind that the torque in this case is acting in the opposite direction than during the starting phase.
– Acceleration or deceleration of inertial masses such as flywheels may have a considerable impact on the drive.
– The drive might also be subject to additional vibration and shock which have not been considered during the calculation. The sample graph on the right shows a condition where an overlaid frequency toggles +/–30 % around the nominal power of the drive. Therefore the width of the belt needs to be increased by a factor of 1.3.

Speed increase transmission

Apply the following safety factors for a speed increase ratio:

i = 0.66 to 1.00	S = 1.1
i = 0.40 to 0.66	S = 1.2
i < 0.46	S = 1.3

Consider in the event of a braking condition that a reverse torque occurs as well as the transmission ratio, which is changing to a speed decrease transmission.

Review of product and performance

AT3

Power transmission	≤ 5 kW
Rotational speed	approx. 20 000 rpm
Peripheral speed	approx. 80 rps
Synchronous pulley	from z = 15
Applications (example)	small power drives, handling technology

AT5

Power transmission	≤ 15 kW
Rotational speed	approx. 10 000 rpm
Peripheral speed	approx. 80 rps
Synchronous pulley	from z = 15
Applications (example)	machine tools, pumps, textile machinery

AT10, BAT10, BATK10, SFAT10, ATK10K6

Power transmission	≤ 70 kW
Rotational speed	approx. 10 000 rpm
Peripheral speed	approx. 60 rps
Synchronous pulley	from z = 15
Applications (example)	construction machines, pumps, paper-making machines, compressors, textile machines, roller- table drives

SFAT15

Power transmission	≤ 135 kW
Rotational speed	approx. 8 000 rpm
Peripheral speed	approx. 48 rps
Synchronous pulley	from z = 20
Applications (example)	construction machines, pumps, paper-making machines, compressors

AT20, SFAT20

Power transmission	possible beyond 200 kW
Rotational speed	approx. 6 500 rpm
Peripheral speed	approx. 40 rps
Synchronous pulley	from z = 18
Applications (example)	heavy-duty drives, textile machinery, printing machinery, machine tools

T5, XL

Power transmission	≤ 5 kW
Rotational speed	approx. 10 000 rpm
Peripheral speed	approx. 80 rps
Synchronous pulley	from z = 10
Applications (example)	office machinery, DIY units, positioning and regulating drives

Remark: Special timing belt designs allow the rpm and peripheral speed parameters to be increased.

ATS15

Power transmission	≤ 160 kW
Rotational speed	approx. 8 000 rpm
Peripheral speed	approx. 48 rps
Synchronous pulley	from z = 25
Applications (example)	power drives, paper-making machines, high-bay storage, lifting equipment

BAT15, BATK15

Power transmission	≤ 140 kW
Rotational speed	approx. 8 000 rpm
Peripheral speed	approx. 48 rps
Synchronous pulley	from z = 25
Applications (example)	power drives, pumps, sanding machinery

ATP10

Power transmission	≤ 100 kW
Rotational speed	approx. 10 000 rpm
Peripheral speed	approx. 60 rps
Synchronous pulley	from z = 15
Applications (example)	sanding machinery, power drives, machine tools

ATP15

Power transmission	possible beyond 200 kW
Rotational speed	approx. 10 000 rpm
Peripheral speed	approx. 50 rps
Synchronous pulley	from z = 15
Applications (example)	power drives, Machine tools

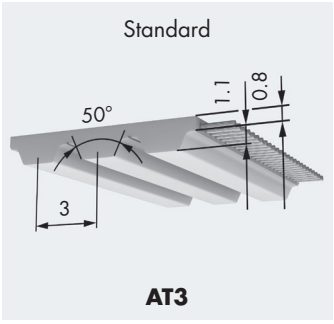
T10, L, H

Power transmission	≤ 30 kW
Rotational speed	approx. 10 000 rpm
Peripheral speed	approx. 60 rps
Synchronous pulley	from z = 12
Applications (example)	machine tools, main and subsidiary drives, textile machines, printing machinery

T20, XH

Power transmission	up to approx. 100 kW
Rotational speed	approx. 6500 rpm
Peripheral speed	approx. 40 rps
Synchronous pulley	from z = 15
Applications (example)	heavy construction machinery, paper machinery, pumps, compressors, textile machinery

High performance PU timing belts
BRECOFLEX® AT3



Belt widths b [mm] / in-between belt widths on request

6	10	16	25	32

BFX AT3	**Available lengths and versions**
Standard lengths	–
Any number of teeth available from	720 mm up to 1701 mm
StandardPlus version	720 mm up to 1701 mm
Minimum purchase amount	1 sleeve
Standard material	TPUST1[1)]
Steel tension member	–
E / Steel tension member (Standard)	×
Stainless steel tension member	○
PAZ	×
DL / DL-PAZ	–
DR / DR-PAZ	–
T / T-PAZ	–

× available, minimum purchase amount 1 sleeve
○ minimum purchase amount on request
– not available
[1)] further materials on request

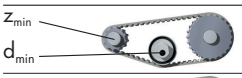
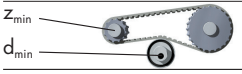
Tooth shear strength (specific belt tooth load bearing)

rpm n	F_{Tspec}	M_{spec}	P_{spec}	rpm n	F_{Tspec}	M_{spec}	P_{spec}
[min⁻¹]	[N/cm]	[Ncm/cm]	[W/cm]	[min⁻¹]	[N/cm]	[Ncm/cm]	[W/cm]
0	38.500	1.839	0.000	2000	24.764	1.183	2.477
20	38.099	1.820	0.038	2200	24.174	1.155	2.660
40	37.719	1.802	0.075	2400	23.630	1.129	2.837
60	37.359	1.785	0.112	2600	23.123	1.105	3.007
80	37.015	1.768	0.148	2800	22.650	1.082	3.172
100	36.687	1.753	0.184	3000	22.206	1.061	3.332
200	35.240	1.683	0.353	3200	21.788	1.041	3.488
300	34.034	1.626	0.511	3400	21.392	1.022	3.638
400	33.002	1.577	0.660	3600	21.017	1.004	3.785
500	32.099	1.533	0.803	3800	20.661	0.987	3.927
600	31.297	1.495	0.939	4000	20.322	0.971	4.066
700	30.575	1.461	1.071	4500	19.537	0.933	4.398
800	29.919	1.429	1.197	5000	18.829	0.899	4.709
900	29.317	1.401	1.320	5500	18.185	0.869	5.003
1000	28.762	1.374	1.439	6000	17.593	0.840	5.280
1100	28.247	1.349	1.554	6500	17.046	0.814	5.542
1200	27.766	1.326	1.667	7000	16.538	0.790	5.791
1300	27.315	1.305	1.776	7500	16.063	0.767	6.026
1400	26.890	1.285	1.883	8000	15.618	0.746	6.250
1500	26.489	1.265	1.988	8500	15.198	0.726	6.462
1600	26.109	1.247	2.090	9000	14.802	0.707	6.664
1700	25.749	1.230	2.190	9500	14.426	0.689	6.855
1800	25.405	1.214	2.287	10000	14.069	0.672	7.037
1900	25.077	1.198	2.383				

Admissible tensile load of the belt F_{Tadm} / belt weight

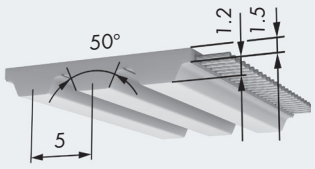
Belt width		b [mm]	6	10	16	25	32
E / Steel tension member		F_{Tadm} [N]	190	380	645	1100	1400
Stainless steel tension member		F_{Tadm} [N]	165	335	565	970	1230
Belt weight	Standard	[kg/m]	0.014	0.023	0.037	0.058	0.074
	DL	[kg/m]	–	–	–	–	–
	DR	[kg/m]	–	–	–	–	–
	T	[kg/m]	–	–	–	–	–

Flexibility (minimum number of teeth / minimum diameter)

		Steel tension member				E / Steel tension member				Stainless steel tension member			
		Standard	DL	DR	T	Standard	DL	DR	T	Standard	DL	DR	T
 without contraflexure	z_{min}	–	–	–	–	15	–	–	–	20	–	–	–
	d_{min} [mm]	–	–	–	–	20	–	–	–	30	–	–	–
 with contraflexure	z_{min}	–	–	–	–	20	–	–	–	30	–	–	–
	d_{min} [mm]	–	–	–	–	20	–	–	–	40	–	–	–

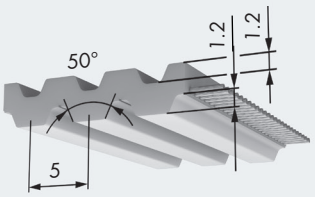
High performance PU timing belts
BRECOFLEX® AT5

Standard



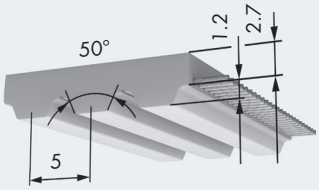
AT5

Double-sided



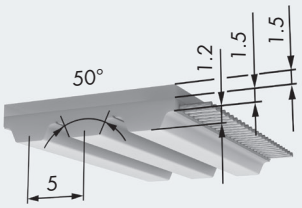
AT5–DL

Reinforced back of the belt



AT5–DR

Version T



AT5–T

Belt widths b [mm] / in-between belt widths on request

10	16	25	32	50	75	100

BFX AT5	**Available lengths and versions**	
Standard lengths	see table on the right	
Minimum purchase amount	up to 660 mm	1 sleeve (b = 100 mm)
Any number of teeth available from	720 mm up to 15000 mm	
Intermediate lengths	from 720 mm	○
StandardPlus version	720 mm up to 15000 mm	
Over 15000 mm	on request	
Standard material	up to 660 mm	TPUST3
	from 720 mm	TPUST1[1]
Steel tension member	×	
E / Steel tension member (Standard)	○	
Stainless steel tension member	○	
PAZ	×	
DL / DL-PAZ	from 900 mm	○[2]
DR / DR-PAZ	from 900 mm	○
T / T-PAZ	○	

Standard lengths [mm] / number of teeth

Length	Number of teeth	Length	Number of teeth	Length	Number of teeth
225	45	1005	201	3000	600
255	51	1020	204	3150	630
280	56	1075	215	3350	670
305	61	1100	220	3550	710
340	68	1215	243	3750	750
390	78	1380	276	4000	800
420	84	1400	280	4250	850
455	91	1500	300	4500	900
500	100	1600	320	4750	950
545	109	1700	340	5000	1000
610	122	1800	360	5300	1060
660	132	1900	380	5600	1120
720	144	2000	400	6000	1200
780	156	2120	424	6300	1260
840	168	2240	448	6700	1340
855	171	2360	472	7100	1420
875	175	2500	500	7500	1500
960	192	2650	530		
990	198	2800	560		

× available, standard lengths from 720 mm (see table) without minimum purchase amount
○ minimum purchase amount on request
– not available
[1] further materials on request
[2] only inner side can be coated

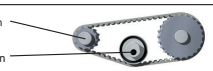
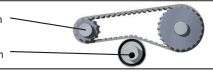
Tooth shear strength (specific belt tooth load bearing)

rpm n	F_{Tspec}	M_{spec}	P_{spec}	rpm n	F_{Tspec}	M_{spec}	P_{spec}
[min⁻¹]	[N/cm]	[Ncm/cm]	[W/cm]	[min⁻¹]	[N/cm]	[Ncm/cm]	[W/cm]
0	42.000	3.344	0.000	2000	26.050	2.074	4.344
20	41.521	3.306	0.069	2200	25.377	2.020	4.654
40	41.069	3.270	0.137	2400	24.755	1.971	4.953
60	40.641	3.236	0.203	2600	24.177	1.925	5.241
80	40.234	3.203	0.268	2800	23.637	1.882	5.518
100	39.846	3.172	0.332	3000	23.130	1.842	5.785
200	38.142	3.037	0.636	3200	22.654	1.804	6.044
300	36.733	2.925	0.919	3400	22.203	1.768	6.294
400	35.531	2.829	1.185	3600	21.776	1.734	6.536
500	34.483	2.745	1.437	3800	21.370	1.701	6.770
600	33.554	2.672	1.678	4000	20.983	1.671	6.997
700	32.721	2.605	1.910	4500	20.089	1.599	7.537
800	31.964	2.545	2.132	5000	19.284	1.535	8.038
900	31.271	2.490	2.346	5500	18.550	1.477	8.506
1000	30.633	2.439	2.554	6000	17.877	1.423	8.942
1100	30.040	2.392	2.755	6500	17.255	1.374	9.351
1200	29.488	2.348	2.950	7000	16.677	1.328	9.733
1300	28.971	2.307	3.140	7500	16.138	1.285	10.090
1400	28.484	2.268	3.325	8000	15.631	1.245	10.425
1500	28.025	2.231	3.505	8500	15.154	1.207	10.739
1600	27.590	2.197	3.680	9000	14.704	1.171	11.033
1700	27.177	2.164	3.852	9500	14.277	1.137	11.307
1800	26.784	2.132	4.019	10000	13.871	1.104	11.564
1900	26.409	2.103	4.183				

Admissible tensile force of the belt F_{Tadm} / belt weight

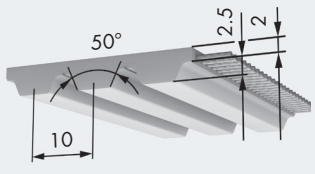
Belt width		b [mm]	10	16	25	32	50	75	100
E / Steel tension member		F_{Tadm} [N]	700	1260	2030	2660	4200	6370	8610
Stainless steel tension member		F_{Tadm} [N]	455	820	1320	1730	2730	4140	5597
Belt weight	Standard	[kg/m]	0.031	0.052	0.085	0.105	0.164	0.241	0.328
	DL	[kg/m]	0.040	0.064	0.101	0.130	0.204	0.307	0.410
	DR	[kg/m]	0.045	0.073	0.115	0.148	0.231	0.348	0.464
	T	[kg/m]	0.053	0.084	0.123	0.169	0.264	0.346	0.528

Flexibility (minimum number of teeth / minimum diameter)

		Steel tension member				E / Steel tension member				Stainless steel tension member			
		Standard	DL	DR	T	Standard	DL	DR	T	Standard	DL	DR	T
z_{min} / d_{min}  without contraflexure	z_{min}	15	25	25	25	12	20	25	25	22	–	–	25
	d_{min} [mm]	25	60	60	60	18	20	60	60	35	–	–	60
z_{min} / d_{min}  with contraflexure	z_{min}	25	25	25	25	20	20	25	25	30	–	–	30
	d_{min} [mm]	60	60	60	60	50	50	60	60	60	–	–	60

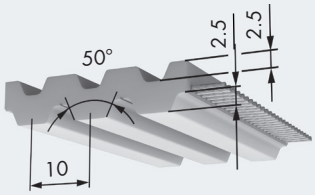
High performance PU timing belts
BRECOFLEX® AT10

Standard



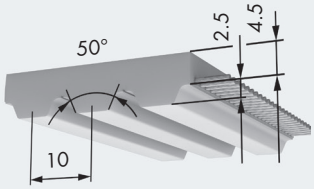
AT10

Double-sided



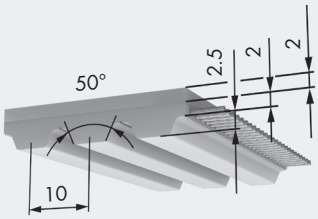
AT10-DL

Reinforced back of the belt



AT10-DR

Version T



AT10-T

Belt widths b [mm] / in-between belt widths on request

25	32	50	75	100	150[1]

BFX AT10

Available lengths and versions		
Standard lengths	see table on the right	
Minimum purchase amount	up to 700 mm	1 sleeve (b = 100 mm)
Any number of teeth available from	720 mm up to 22000 mm	
Under 1500 mm	b_{max} = 100 mm	
Intermediate lengths	from 720 mm	○
StandardPlus version	720 mm up to 22000 mm	
Over 22000 mm	on request	
Standard material	up to 700 mm	TPUST3
	from 720 mm	TPUST1[2]
Steel tension member (Standard)	×	
E / Steel tension member	○	
Stainless steel tension member	○	
PAZ	×	
DL / DL-PAZ	b_{max} = 100	from 900 mm ○[3]
DR / DR-PAZ	b_{max} = 100	from 900 mm ○
T / T-PAZ	b_{max} = 100	from 1080 mm ○

Standard lengths [mm] / number of teeth

Length	Number of teeth	Length	Number of teeth	Length	Number of teeth
400	40	1010	101	3000	300
500	50	1080	108	3150	315
530	53	1150	115	3350	335
560	56	1210	121	3550	355
610	61	1240	124	3750	375
630	63	1250	125	4000	400
660	66	1320	132	4250	425
700	70	1400	140	4500	450
720	72	1500	150	4750	475
780	78	1600	160	5000	500
800	80	1700	170	5300	530
810	81	1800	180	5600	560
840	84	1900	190	6000	600
850	85	2000	200	6300	630
880	88	2120	212	6700	670
890	89	2240	224	7100	710
920	92	2360	236	7500	750
960	96	2500	250	8000	800
970	97	2650	265	9000	900
980	98	2800	280		

× available, standard lengths from 720 mm (see table) without minimum purchase amount
○ minimum purchase amount on request (1 sleeve 100 mm width)
– not available
[1] 150 mm belt width available from 1500 mm up to 15000 mm
[2] further materials on request
[3] only inner side can be coated

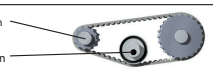
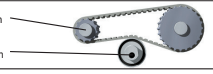
Tooth shear strength (specific belt tooth load bearing)

rpm n [min⁻¹]	F_{Tspec} [N/cm]	M_{spec} [Ncm/cm]	P_{spec} [W/cm]	rpm n [min⁻¹]	F_{Tspec} [N/cm]	M_{spec} [Ncm/cm]	P_{spec} [W/cm]
0	87.500	13.933	0.000	2000	48.006	7.644	16.009
20	86.216	13.729	0.288	2200	46.413	7.391	17.025
40	85.013	13.537	0.567	2400	44.943	7.156	17.985
60	83.881	13.357	0.839	2600	43.578	6.939	18.892
80	82.814	13.187	1.105	2800	42.305	6.736	19.751
100	81.803	13.026	1.364	3000	41.112	6.546	20.565
200	77.426	12.329	2.582	3200	39.989	6.368	21.337
300	73.870	11.763	3.695	3400	38.929	6.199	22.069
400	70.877	11.286	4.727	3600	37.925	6.039	22.765
500	68.291	10.874	5.693	3800	36.972	5.887	23.426
600	66.016	10.512	6.604	4000	36.064	5.743	24.053
700	63.984	10.189	7.468	4500	33.967	5.409	25.486
800	62.148	9.896	8.290	5000	32.079	5.108	26.744
900	60.475	9.630	9.075	5500	30.362	4.835	27.844
1000	58.937	9.385	9.827	6000	28.787	4.584	28.800
1100	57.514	9.158	10.549	6500	27.333	4.352	29.623
1200	56.190	8.947	11.243	7000	25.982	4.137	30.326
1300	54.953	8.750	11.912	7500	24.721	3.936	30.915
1400	53.791	8.565	12.557	8000	23.538	3.748	31.398
1500	52.696	8.391	13.180	8500	22.425	3.571	31.783
1600	51.661	8.226	13.782	9000	21.374	3.403	32.074
1700	50.679	8.070	14.365	9500	20.377	3.245	32.278
1800	49.746	7.921	14.930	10000	19.430	3.094	32.398
1900	48.856	7.780	15.478				

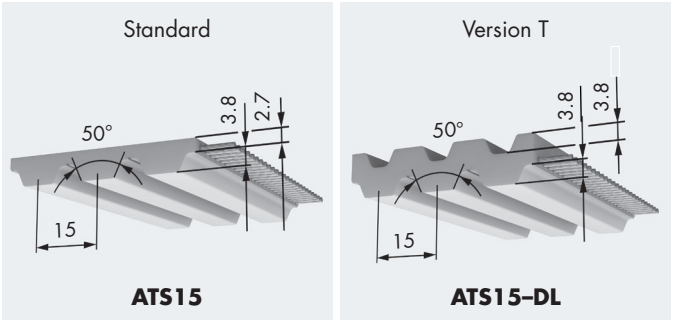
Admissible tensile force of the belt F_{Tadm} / belt weight

Belt width		b [mm]	25	32	50	75	100	150
E / Steel tension member		F_{Tadm} [N]	3500	4750	7750	12000	16000	24500
Stainless steel tension member		F_{Tadm} [N]	2520	3420	5580	8640	11520	17640
Belt weight	Standard	[kg/m]	0.138	0.180	0.290	0.436	0.581	0.839
	DL	[kg/m]	0.184	0.233	0.375	0.566	0.755	–
	DR	[kg/m]	0.213	0.275	0.433	0.653	0.871	–
	T	[kg/m]	0.198	0.256	0.404	0.609	0.812	–

Flexibility (minimum number of teeth / minimum diameter)

		Steel tension member				E / Steel tension member				Stainless steel tension member			
		Standard	DL	DR	T	Standard	DL	DR	T	Standard	DL	DR	T
 without contraflexure	z_{min}	15	25	25	25	12	20	–	–	25	40	–	–
	d_{min} [mm]	50	80	80	80	50	80	–	–	80	120	–	–
 with contraflexure	z_{min}	25	25	25	25	20	20	–	–	40	40	–	–
	d_{min} [mm]	120	120	120	120	80	80	–	–	120	120	–	–

High performance PU timing belts
BRECOFLEX® ATS15



Belt widths b [mm] / in-between belt widths on request

25	32	50	75	100

ATS15	**Available lengths and versions**
Standard lengths	–
Any number of teeth available from	1500 mm up to 22000 mm
StandardPlus version	1500 mm up to 22000 mm
Over 22000 mm	on request
Minimum purchase amount	1 sleeve (b = 100 mm)
Standard material	TPUST1 [1]
Steel tension member (Standard)	×
E / Steel tension member	–
Stainless steel tension member	○
PAZ	×
DL / DL-PAZ	○ [2]
DR / DR-PAZ	–
T / T-PAZ	–

× available, minimum purchase amount 1 sleeve
○ minimum purchase amount on request
– not available
[1] further materials on request
[2] only inner side can be coated

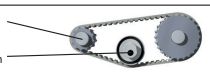
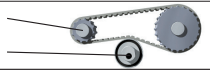
Tooth shear strength (specific belt tooth load bearing)

rpm n [min⁻¹]	F_{Tspec} [N/cm]	M_{spec} [Ncm/cm]	P_{spec} [W/cm]	rpm n [min⁻¹]	F_{Tspec} [N/cm]	M_{spec} [Ncm/cm]	P_{spec} [W/cm]
0	168.000	40.127	0.000	2000	85.382	20.394	42.709
20	165.244	39.469	0.827	2200	82.094	19.608	45.171
40	162.670	38.854	1.627	2400	79.063	18.884	47.458
60	160.255	38.278	2.405	2600	76.250	18.213	49.584
80	157.982	37.734	3.161	2800	73.626	17.586	51.561
100	155.833	37.221	3.898	3000	71.168	16.999	53.399
200	146.574	35.010	7.332	3200	68.856	16.447	55.109
300	139.098	33.224	10.437	3400	66.674	15.925	56.697
400	132.827	31.726	13.288	3600	64.607	15.432	58.171
500	127.427	30.436	15.935	3800	62.644	14.963	59.538
600	122.685	29.304	18.411	4000	60.775	14.516	60.802
700	118.457	28.294	20.739	4500	56.462	13.486	63.547
800	114.643	27.383	22.939	5000	52.578	12.558	65.751
900	111.170	26.553	25.024	5500	49.047	11.715	67.468
1000	107.981	25.792	27.007	6000	45.809	10.942	68.743
1100	105.033	25.087	28.897	6500	42.819	10.227	69.611
1200	102.292	24.433	30.701				
1300	99.732	23.821	32.427				
1400	97.329	23.247	34.080				
1500	95.066	22.707	35.665				
1600	92.927	22.196	37.187				
1700	90.899	21.712	38.649				
1800	88.972	21.251	40.055				
1900	87.135	20.813	41.407				

Admissible tensile force of the belt F_{Tadm} / belt weight

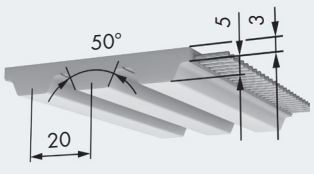
Belt width		b [mm]	25	32	50	75	100
E / Steel tension member		F_{Tadm} [N]	6150	7995	12915	19680	26445
Stainless steel tension member		F_{Tadm} [N]	4900	6370	10290	15680	21070
Belt weight	Standard	[kg/m]	0.219	0.280	0.438	0.656	0.875
	DL	[kg/m]	0.294	0.377	0.589	0.883	1.178
	DR	[kg/m]	–	–	–	–	–
	T	[kg/m]	–	–	–	–	–

Flexibility (minimum number of teeth / minimum diameter)

		Steel tension member				E / Steel tension member				Stainless steel tension member			
		Standard	DL	DR	T	Standard	DL	DR	T	Standard	DL	DR	T
 without contraflexure	z_{min}	25	40	–	–	–	–	–	–	30	60	–	–
	d_{min} [mm]	120	250	–	–	–	–	–	–	180	300	–	–
 with contraflexure	z_{min}	40	40	–	–	–	–	–	–	60	60	–	–
	d_{min} [mm]	250	250	–	–	–	–	–	–	300	300	–	–

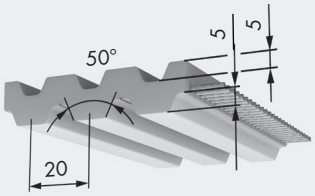
High performance PU timing belts
BRECOFLEX® AT20

Standard



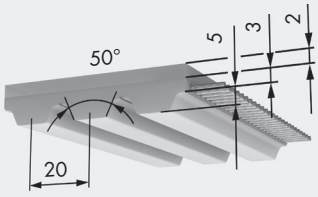
AT20

Double-sided



AT20–DL

Version T



AT20–T

Belt widths b [mm] / in-between belt widths on request

32	50	75	100	150[1]

BFX AT20 — Available lengths and versions

Standard lengths		see table on the right
Any number of teeth available from		1100 mm up to 22000 mm
Under 1100 mm		–
Intermediate lengths		from 1100 mm ○
StandardPlus version		1500 mm up to 22000 mm
Over 22000 mm		on request
Standard material		TPUST1[2]
Steel tension member (Standard)		×
E / Steel tension member		○
Stainless steel tension member		○
PAZ		×
DL / DL-PAZ	b_{max} = 100	○[3]
DR / DR-PAZ	b_{max} = 100	–
T / T-PAZ	b_{max} = 100	○

Standard lengths [mm] / number of teeth

Length	Number of teeth	Length	Number of teeth	Length	Number of teeth
1500	75	2800	140	5300	265
1600	80	3000	150	5600	280
1700	85	3160	158	6000	300
1800	90	3360	168	6300	315
1900	95	3560	178	6700	335
2000	100	3760	188	7100	355
2120	106	4000	200	7500	375
2240	112	4260	213	8000	400
2360	118	4500	225	8500	425
2500	125	4760	238	9000	450
2660	133	5000	250		

× available, standard lengths (see table) without minimum purchase
○ minimum purchase amount on request
– not available
[1] 150 mm belt width available from 1500 mm up to 15000 mm
[2] further materials on request
[3] only inner side can be coated

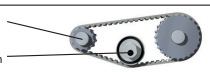
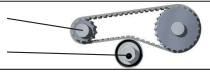
Tooth shear strength (specific belt tooth load bearing)

rpm n [min⁻¹]	F_{Tspec} [N/cm]	M_{spec} [Ncm/cm]	P_{spec} [W/cm]	rpm n [min⁻¹]	F_{Tspec} [N/cm]	M_{spec} [Ncm/cm]	P_{spec} [W/cm]
0	175.000	55.732	0.000	2000	79.678	25.375	53.142
20	171.733	54.692	1.145	2200	75.940	24.185	55.713
40	168.692	53.724	2.250	2400	72.494	23.087	58.021
60	165.847	52.818	3.318	2600	69.299	22.070	60.085
80	163.175	51.966	4.353	2800	66.319	21.121	61.925
100	160.655	51.164	5.357	3000	63.528	20.232	63.556
200	149.850	47.723	9.994	3200	60.904	19.396	64.992
300	141.179	44.961	14.124	3400	58.426	18.607	66.245
400	133.936	42.655	17.866	3600	56.081	17.860	67.327
500	127.717	40.674	21.295	3800	53.854	17.151	68.245
600	122.268	38.939	24.464	4000	51.735	16.476	69.010
700	117.419	37.395	27.410	4500	46.843	14.918	70.294
800	113.051	36.004	30.160	5000	42.440	13.516	70.764
900	109.077	34.738	32.737	5500	38.437	12.241	70.498
1000	105.432	33.577	35.159	6000	34.767	11.072	69.565
1100	102.066	32.505	37.440	6500	31.380	9.994	68.020
1200	98.938	31.509	39.592				
1300	96.018	30.579	41.626				
1400	93.279	29.707	43.549				
1500	90.700	28.885	45.370				
1600	88.264	28.110	47.095				
1700	85.956	27.374	48.729				
1800	83.762	26.676	50.279				
1900	81.673	26.010	51.748				

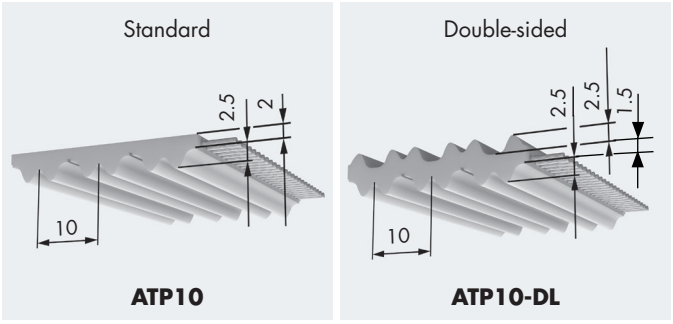
Admissible tensile force of the belt F_{Tadm} / belt weight

Belt width		b [mm]	32	50	75	100	150
E / Steel tension member		F_{Tadm} [N]	6000	10000	15600	21200	32400
Stainless steel tension member		F_{Tadm} [N]	4800	8000	12480	16960	25920
Belt weight	Standard	[kg/m]	0.307	0.480	0.720	0.960	1.423
	DL	[kg/m]	0.365	0.570	0.855	1.14	–
	DR	[kg/m]	–	–	–	–	–
	T	[kg/m]	0.372	0.588	0.888	1.187	–

Flexibility (minimum number of teeth / minimum diameter)

		Steel tension member				E / Steel tension member				Stainless steel tension member			
		Standard	DL	DR	T	Standard	DL	DR	T	Standard	DL	DR	T
 without contraflexure	z_{min}	18	25	–	25	15	–	–	–	32	60	–	32
	d_{min} [mm]	120	180	–	120	100	–	–	–	200	380	–	200
 with contraflexure	z_{min}	25	25	–	25	22	–	–	–	60	40	–	60
	d_{min} [mm]	180	180	–	180	150	–	–	–	380	300	–	380

High performance PU timing belts
BRECOFLEX® ATP10



Belt widths b [mm] / in-between belt widths on request

16	25	32	50	75	100

BFX ATP10	**Available lengths and versions**
Standard lengths	see table on the right
Any number of teeth available from	1100 mm up to 12000 mm
Intermediate lengths	from 1100 mm ○
StandardPlus version	1100 mm up to 12000 mm
Over 12000 mm	on request
Standard material	TPUSM1[1)]
Steel tension member (Standard)	×
E / Steel tension member	○
Stainless steel tension member	–
DL	○
DR / DR-PAZ	–
T / T-PAZ	–

Standard lengths [mm] / number of teeth

Length	Number of teeth	Length	Number of teeth	Length	Number of teeth
1500	150	2650	265	4500	450
1600	160	2800	280	4750	475
1700	170	3000	300	5000	500
1900	190	3150	315	5300	530
2000	200	3350	335	5600	560
2120	212	3550	355	6000	600
2240	224	3750	375	6300	630
2360	236	4000	400		
2500	250	4250	425		

× available, standard lengths (see table) without minimum purchase
○ minimum purchase amount on request
– not available
1) further materials on request

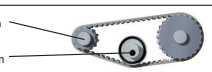
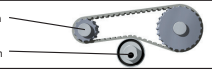
Tooth shear strength (specific belt tooth load bearing)

rpm n	F_{Tspec}	M_{spec}	P_{spec}	rpm n	F_{Tspec}	M_{spec}	P_{spec}
[min⁻¹]	[N/cm]	[Ncm/cm]	[W/cm]	[min⁻¹]	[N/cm]	[Ncm/cm]	[W/cm]
0	95.500	15.199	0.000	1900	53.323	8.487	16.884
20	94.098	14.976	0.314	2000	52.396	8.339	17.464
40	92.785	14.767	0.619	2200	50.656	8.062	18.572
60	91.551	14.571	0.915	2400	49.052	7.807	19.619
80	90.385	14.385	1.205	2600	47.562	7.570	20.609
100	89.282	14.210	1.488	2800	46.173	7.349	21.546
150	86.756	13.808	2.169	2880	45.642	7.264	21.907
200	84.505	13.449	2.817	3000	44.871	7.141	22.434
300	80.642	12.835	4.032	3200	43.645	6.946	23.276
400	77.357	12.312	5.157	3400	42.488	6.762	24.075
500	74.535	11.863	6.211	3600	41.393	6.588	24.834
600	72.052	11.467	7.205	3800	40.352	6.422	25.554
700	69.834	11.114	8.147	4000	39.361	6.264	26.239
730	69.212	11.015	8.420	4500	37.073	5.900	27.803
800	67.831	10.796	9.043	5000	35.012	5.572	29.175
900	66.004	10.505	9.900	5500	33.138	5.274	30.374
1000	64.325	10.238	10.720	6000	31.419	5.000	31.417
1100	62.772	9.990	11.507	6500	29.832	4.748	32.316
1200	61.328	9.761	12.265	7000	28.358	4.513	33.082
1300	59.977	9.546	12.994	7500	26.981	4.294	33.724
1400	58.709	9.344	13.698	8000	25.691	4.089	34.252
1460	57.984	9.228	14.108	8500	24.475	3.895	34.670
1500	57.514	9.154	14.377	9000	23.328	3.713	34.989
1600	56.348	8.968	15.025	9500	22.240	3.540	35.211
1700	55.313	8.803	15.671	10000	21.207	3.375	35.342
1800	54.294	8.641	16.287				

Admissible tensile force of the belt F_{Tadm} / belt weight

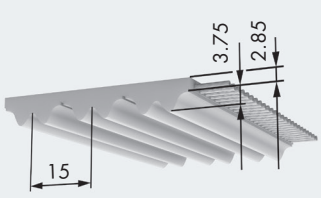
Belt width		b [mm]	16	25	32	50	75	100
E / Steel tension member		F_{Tadm} [N]	2000	3500	4750	7750	12000	16000
Stainless steel tension member		F_{Tadm} [N]	–	–	–	–	–	–
Belt weight	Standard	[kg/m]	0.096	0.150	0.192	0.300	0.450	0.600
	DL	[kg/m]	0.097	0.154	0.200	0.316	0.477	0.636

Flexibility (minimum number of teeth / minimum diameter)

		Steel tension member				E / Steel tension member				Stainless steel tension member			
		Standard	DL	DR	T	Standard	DL	DR	T	Standard	DL	DR	T
 without contraflexure	z_{min}	15	25	–	–	12	20	–	–	–	–	–	–
	d_{min} [mm]	50	80	–	–	50	60	–	–	–	–	–	–
 with contraflexure	z_{min}	25	25	–	–	20	20	–	–	–	–	–	–
	d_{min} [mm]	120	120	–	–	80	100	–	–	–	–	–	–

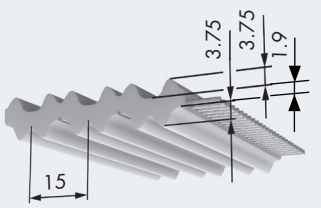
High performance PU timing belts
BRECOFLEX® ATP15

Standard



ATP15

Double-sided



ATP15–DL

Belt widths b [mm] / in-between belt widths on request

25	32	50	75	100	150

BFX ATP15	**Available lengths and versions**
Standard lengths	see table on the right
Any number of teeth available from	1500 mm up to 12000 mm
Intermediate lengths	from 1500 mm ○
StandardPlus version	1500 mm up to 12000 mm
Over 12000 mm	on request
Standard material	TPUST1[1)]
Steel tension member (Standard)	×
E / Steel tension member	○
Stainless steel tension member	–
DL b_{max} = 100	○
DR / DR-PAZ	–
T / T-PAZ	–

Standard lengths [mm] / number of teeth

Length	Number of teeth	Length	Number of teeth	Length	Number of teeth
1740	116	2805	187	4500	300
1965	131	3000	200	4875	325
2100	140	3225	215	5250	350
2250	150	3450	230	5625	375
2385	159	3675	245	6000	400
2520	168	3900	260		
2670	178	4125	275		

× available, standard lengths (see table) without minimum purchase
○ minimum purchase amount on request
– not available
1) further materials on request

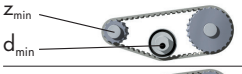
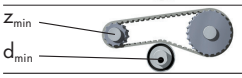
Tooth shear strength (specific belt tooth load bearing)

rpm n	F_{Tspec}	M_{spec}	P_{spec}	rpm n	F_{Tspec}	M_{spec}	P_{spec}
[min⁻¹]	[N/cm]	[Ncm/cm]	[W/cm]	[min⁻¹]	[N/cm]	[Ncm/cm]	[W/cm]
0	143.325	34.216	0.000	1900	73.494	17.545	34.910
20	140.945	33.648	0.705	2000	71.980	17.184	35.990
40	138.722	33.117	1.387	2200	69.141	16.506	38.027
60	136.637	32.620	2.050	2400	66.523	15.881	39.914
80	134.674	32.151	2.693	2600	64.094	15.301	41.661
100	132.818	31.708	3.320	2800	61.828	14.760	43.280
150	128.584	30.697	4.822	3000	59.706	14.254	44.779
200	124.832	29.799	6.241	3200	57.709	13.777	46.167
300	118.367	28.258	8.877	3400	55.824	13.327	47.451
400	112.952	26.965	11.295	3600	54.040	12.901	48.636
500	108.288	25.852	13.536	3800	52.345	12.496	49.727
600	104.193	24.874	15.629	4000	50.731	12.111	50.731
700	100.542	24.003	17.595	4500	47.006	11.222	52.881
800	97.249	23.216	19.450	5000	43.652	10.421	54.565
900	94.249	22.500	21.206	5500	40.602	9.693	55.828
1000	91.495	21.843	22.874	6000	37.806	9.026	56.709
1100	88.949	21.235	24.461	6500	35.225	8.409	57.240
1200	86.583	20.670	25.975	7000	32.827	7.837	57.447
1300	84.372	20.142	27.421	7500	30.589	7.303	57.354
1400	82.297	19.647	28.804	8000	28.490	6.802	56.980
1500	80.343	19.180	30.128	8500	26.515	6.330	56.344
1600	78.495	18.739	31.398	9000	24.649	5.884	55.460
1700	76.745	18.321	32.616	9500	22.881	5.462	54.342
1800	75.080	17.924	33.786	10000	21.201	5.061	53.003

Admissible tensile force of the belt F_{Tadm} / belt weight

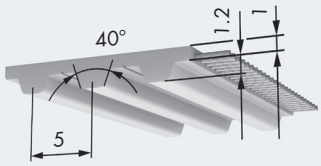
Belt width		b [mm]	25	32	50	75	100	150
E / Steel tension member		F_{Tadm} [N]	4950	6750	11250	17550	23850	36450
Stainless steel tension member		F_{Tadm} [N]	–	–	–	–	–	–
Belt weight	Standard	[kg/m]	0.200	0.256	0.400	0.600	0.800	1.200
	DL	[kg/m]	0.210	0.272	0.432	0.654	0.876	–

Flexibility (minimum number of teeth / minimum diameter)

		Steel tension member				E / Steel tension member				Stainless steel tension member			
		Standard	DL	DR	T	Standard	DL	DR	T	Standard	DL	DR	T
 without contraflexure	z_{min}	20	25	–	–	18	20	–	–	–	–	–	–
	d_{min} [mm]	100	120	–	–	80	100	–	–	–	–	–	–
 with contraflexure	z_{min}	30	30	–	–	25	25	–	–	–	–	–	–
	d_{min} [mm]	160	160	–	–	120	140	–	–	–	–	–	–

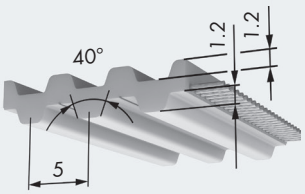
Standard PU timing belts
BRECOFLEX® T5

Standard



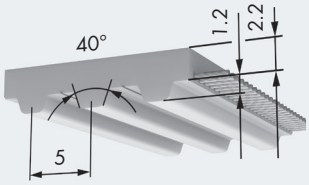
T5

Double-sided



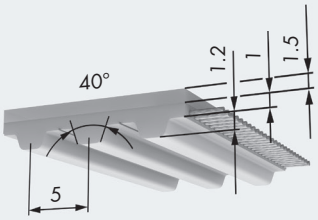
T5–DL

Reinforced back of the belt



T5–DR

Version T



T5–T

Belt widths b [mm] / in-between belt widths on request

10	16	25	32	50	75	100

BFX T5	**Available lengths and versions**	
Standard lengths	see table on the right	
Minimum purchase amount	up to 690 mm	1 sleeve (b = 100 mm)
Any number of teeth available from	720 mm up to 15000 mm	
Intermediate lengths	from 720 mm	○
StandardPlus version	720 mm up to 15000 mm	
Over 15000 mm	on request	
Standard material	up to 690 mm	TPUST3
	from 720 mm	TPUST1[1)]
Steel tension member (Standard)	×	
E / Steel tension member	○	
Stainless steel tension member	○	
PAZ	×	
DL / DL-PAZ	from 900 mm	○
DR / DR-PAZ	from 900 mm	○
T / T-PAZ	–	

Standard lengths [mm] / number of teeth

Length	Number of teeth	Length	Number of teeth	Length	Number of teeth
200	40	560	112	1800	360
215	43	575	115	1900	380
220	44	610	122	2000	400
225	45	620	124	2120	424
240	48	630	126	2240	448
245	49	660	132	2360	472
255	51	690	138	2500	500
260	52	720	144	2650	530
270	54	750	150	2800	560
280	56	755	151	3000	600
295	59	780	156	3150	630
305	61	800	160	3350	670
330	66	815	163	3550	710
340	68	840	168	3750	750
355	71	850	170	4000	800
365	73	860	172	4250	850
370	74	900	180	4500	900
390	78	945	189	4750	950
400	80	990	198	5000	1000
410	82	1040	208	5300	1060
420	84	1075	215	5600	1120
435	87	1100	220	6000	1200
455	91	1215	243	6300	1260
480	96	1380	276	6700	1340
500	100	1400	280	7100	1420
510	102	1500	300	7500	1500
525	105	1600	320		
545	109	1700	340		

× available, standard lengths (see table) without minimum purchase
○ minimum purchase amount on request
– not available
1) further materials on request

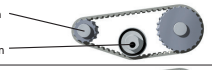
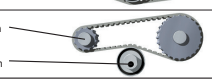
Tooth shear strength (specific belt tooth load bearing)

rpm n	F_{Tspec}	M_{spec}	P_{spec}	rpm n	F_{Tspec}	M_{spec}	P_{spec}
[min⁻¹]	[N/cm]	[Ncm/cm]	[W/cm]	[min⁻¹]	[N/cm]	[Ncm/cm]	[W/cm]
0	24.00	1.910	0.000	2000	13.69	1.089	2.280
20	23.40	1.861	0.039	2200	13.38	1.065	2.450
40	22.90	1.819	0.076	2400	13.10	1.042	2.620
60	22.40	1.783	0.112	2600	12.84	1.021	2.780
80	22.00	1.751	0.147	2800	12.59	1.002	2.940
100	21.70	1.723	0.180	3000	12.37	0.984	3.090
200	20.30	1.614	0.338	3200	12.16	0.967	3.240
300	19.30	1.536	0.483	3400	11.96	0.951	3.390
400	18.55	1.476	0.618	3600	11.77	0.936	3.530
500	17.93	1.427	0.747	3800	11.59	0.922	3.670
600	17.41	1.385	0.870	4000	11.42	0.909	3.810
700	16.96	1.349	0.989	4500	11.03	0.878	4.140
800	16.56	1.318	1.104	5000	10.68	0.850	4.450
900	16.20	1.289	1.215	5500	10.36	0.825	4.750
1000	15.88	1.263	1.323	6000	10.07	0.802	5.040
1100	15.58	1.240	1.428	6500	9.81	0.780	5.310
1200	15.31	1.218	1.531	7000	9.56	0.761	5.580
1300	15.06	1.198	1.632	7500	9.33	0.742	5.830
1400	14.83	1.180	1.730	8000	9.11	0.725	6.080
1500	14.61	1.162	1.826	8500	8.91	0.709	6.310
1600	14.40	1.146	1.920	9000	8.72	0.694	6.540
1700	14.21	1.131	2.010	9500	8.54	0.679	6.760
1800	14.03	1.116	2.100	10000	8.37	0.666	6.970
1900	13.85	1.102	2.190				

Admissible tensile force of the belt F_{Tadm} / belt weight

Belt width		b [mm]	10	16	25	32	50	75	100
E / Steel tension member		F_{Tadm} [N]	330	570	930	1200	1920	2940	3930
Stainless steel tension member		F_{Tadm} [N]	250	435	710	910	1460	2235	2990
Belt weight	Standard	[kg/m]	0.022	0.034	0.052	0.067	0.105	0.163	0.210
	DL	[kg/m]	0.028	0.045	0.072	0.099	0.141	0.212	0.283
	DR	[kg/m]	0.036	0.057	0.090	0.115	0.180	0.271	0.362
	T	[kg/m]	0.041	0.065	0.101	0.130	0.203	0.304	0.405

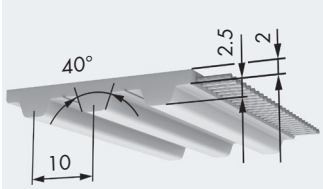
Flexibility (minimum number of teeth / minimum diameter)

		Steel tension member				E / Steel tension member				Stainless steel tension member			
		Standard	DL	DR	T	Standard	DL	DR	T	Standard	DL	DR	T
 without contraflexure	z_{min}	10	15	20*	20	10	12	–	–	18	36	20	20
	d_{min} [mm]	30	30	30	30	18	30	–	–	30	60	30	30
 with contraflexure	z_{min}	15	15	20*	20	12	12	–	–	36	36	36	36
	d_{min} [mm]	30	30	60	60	18	30	–	–	60	60	60	60

* Speed limitation

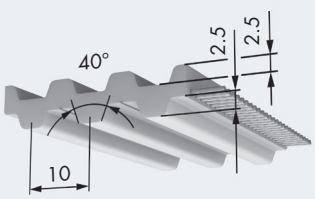
Standard PU timing belts
BRECOFLEX® T10

Standard



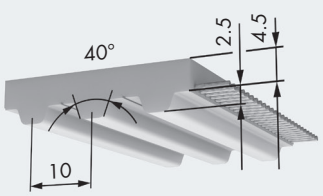
T10

Double-sided



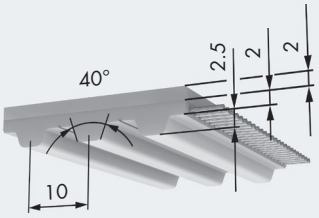
T10-DL

Reinforced back of the belt



T10-DR

Version T



T10-T

Belt widths b [mm] / in-between belt widths on request

16	25	32	50	75	100

BFX T10	**Available lengths and versions**	
Standard lengths	see table on the right	
Minimum purchase amount	up to 700 mm	1 sleeve (b = 100 mm)
Any number of teeth available from	720 mm up to 22000 mm	
Intermediate lengths	from 720 mm	○
StandardPlus version	720 mm up to 22000 mm	
Over 22000 mm	on request	
Standard material	up to 700 mm	TPUST3
	from 720 mm	TPUST1 [1)]
Steel tension member (Standard)	×	
E / Steel tension member	○	
Stainless steel tension member	○	
PAZ	×	
DL / DL-PAZ	from 900 mm	○
DR / DR-PAZ	from 900 mm	○
T / T-PAZ	○	

Standard lengths [mm] / number of teeth

Length	Number of teeth	Length	Number of teeth	Length	Number of teeth
500	50	1080	108	2650	265
530	53	1150	115	2800	280
560	56	1210	121	3000	300
600	60	1240	124	3100	310
610	61	1250	125	3150	315
630	63	1320	132	3350	335
660	66	1350	135	3750	375
690	69	1390	139	4000	400
700	70	1400	140	4250	425
720	72	1420	142	4500	450
780	78	1460	146	4750	475
810	81	1500	150	5000	500
840	84	1560	156	5300	530
880	88	1610	161	5600	560
890	89	1750	175	6000	600
920	92	1780	178	6300	630
960	96	1880	188	6700	670
970	97	1960	196	7100	710
980	98	2250	225	7500	750
990	99	2360	236	8000	800
1010	101	2500	250	9000	900

× available, standard lengths (see table) without minimum purchase
○ minimum purchase amount on request
– not available
[1)] further materials on request

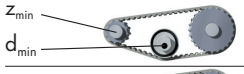
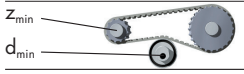
Tooth shear strength (specific belt tooth load bearing)

rpm n [min⁻¹]	F_{Tspec} [N/cm]	M_{spec} [Ncm/cm]	P_{spec} [W/cm]	rpm n [min⁻¹]	F_{Tspec} [N/cm]	M_{spec} [Ncm/cm]	P_{spec} [W/cm]
0	50.50	8.040	0.000	2000	25.40	4.040	8.460
20	49.00	7.800	0.163	2200	24.60	3.920	9.030
40	47.70	7.600	0.318	2400	23.90	3.810	9.580
60	46.60	7.420	0.466	2600	23.30	3.710	10.100
80	45.70	7.270	0.609	2800	22.70	3.620	10.600
100	44.80	7.130	0.746	3000	22.20	3.530	11.080
200	41.40	6.600	1.381	3200	21.70	3.450	11.550
300	39.10	6.220	1.953	3400	21.20	3.360	11.990
400	37.20	5.920	2.480	3600	20.70	3.300	12.420
500	35.70	5.680	2.980	3800	20.30	3.230	12.840
600	34.40	5.480	3.440	4000	19.86	3.160	13.240
700	33.30	5.310	3.890	4500	18.91	3.010	14.180
800	32.40	5.150	4.320	5000	18.06	2.870	15.050
900	31.50	5.010	4.730	5500	17.28	2.750	15.840
1000	30.70	4.890	5.120	6000	16.58	2.640	16.580
1100	30.00	4.770	5.500	6500	15.93	2.540	17.260
1200	29.30	4.670	5.870	7000	15.33	2.440	17.880
1300	28.70	4.570	6.220	7500	14.76	2.350	18.460
1400	28.20	4.480	6.570	8000	14.24	2.270	18.990
1500	27.60	4.400	6.910	8500	13.74	2.180	19.470
1600	27.10	4.320	7.230	9000	13.28	2.110	19.920
1700	26.70	4.240	7.550	9500	12.84	2.040	20.300
1800	26.20	4.170	7.860	10000	12.42	1.976	20.700
1900	25.80	4.100	8.160				

Admissible tensile force of the belt F_{Tadm} / belt weight

Belt width		b [mm]	16	25	32	50	75	100
E / Steel tension member		F_{Tadm} [N]	1000	1800	2300	3800	5800	7800
Stainless steel tension member		F_{Tadm} [N]	800	1440	1840	3040	4640	6240
Belt weight	Standard	[kg/m]	0.068	0.14	0.145	0.227	0.341	0.454
	DL	[kg/m]	0.090	0.143	0.183	0.228	0.432	0.577
	DR	[kg/m]	0.119	0.185	0.237	0.372	0.558	0.795
	T	[kg/m]	0.107	0.170	0.217	0.342	0.513	0.685

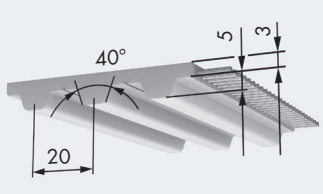
Flexibility (minimum number of teeth / minimum diameter)

		Steel tension member				E / Steel tension member				Stainless steel tension member			
		Standard	DL	DR	T	Standard	DL	DR	T	Standard	DL	DR	T
 without contraflexure	z_{min}	12	20	20	20*	10	15	20	20	25	48	25	25
	d_{min} [mm]	60	60	60	60	50	50	60	60	80	130	80	80
 with contraflexure	z_{min}	20	20	20	20	15	15	20	20	40	40	40	40
	d_{min} [mm]	60	60	80	80	50	50	80	80	130	130	130	130

* speed limitation

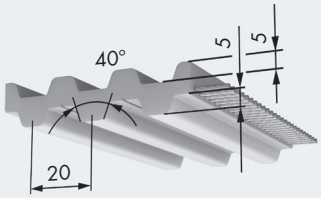
Standard PU timing belts
BRECOFLEX® T20

Standard



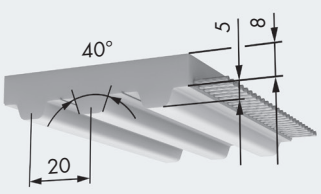
T20

Double-sided



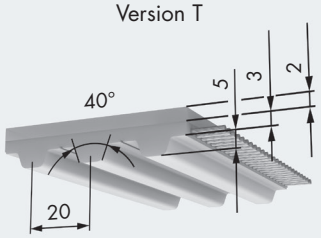
T20–DL

Reinforced back of the belt



T20–DR

Version T



T20–T

Belt widths b [mm] / in-between belt widths on request

32	50	75	100	150

BFX T20		**Available lengths and versions**
Standard lengths		see table on the right
Any number of teeth available from		1100 mm up to 22000 mm
Width b = 150 mm		1500 mm up to 15000 mm
Intermediate lengths		from 1100 mm ○
StandardPlus version		1500 mm up to 15000 mm
Over 22000 mm		on request
Standard material		TPUST1[1)]
Steel tension member (Standard)		×
E / Steel tension member		○
Stainless steel tension member		○
PAZ		×
DL / DL-PAZ	b_{max} = 100 mm	from 1100 mm ○
T / T-PAZ	b_{max} = 100 mm	from 1100 mm ○
T / T-PAZ	b_{max} = 100 mm	○

Standard lengths [mm] / number of teeth

Length	Number of teeth	Length	Number of teeth	Length	Number of teeth
1500	75	2800	140	5300	265
1600	80	3000	150	5600	280
1700	85	3160	158	6000	300
1800	90	3360	168	6300	315
1900	95	3560	178	6700	335
2000	100	3760	188	7100	355
2120	106	4000	200	7500	375
2240	12	4260	213	8000	400
2360	118	4500	225	8500	425
2500	125	4760	238	9000	450
2660	133	5000	250		

× available, standard lengths (see table) without minimum purchase
○ minimum purchase amount on request
– not available
1) further materials on request

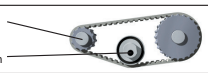
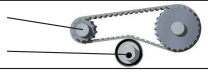
Tooth shear strength (specific belt tooth load bearing)

rpm n [min⁻¹]	F_{Tspec} [N/cm]	M_{spec} [Ncm/cm]	P_{spec} [W/cm]	rpm n [min⁻¹]	F_{Tspec} [N/cm]	M_{spec} [Ncm/cm]	P_{spec} [W/cm]
0	101.50	32.30	0.000	2000	45.30	14.42	30.200
20	98.10	31.20	0.654	2200	43.60	13.89	32.000
40	95.30	30.30	1.271	2400	42.10	13.40	33.700
60	92.80	29.50	1.856	2600	40.70	12.95	35.200
80	90.70	28.90	2.420	2800	39.40	12.53	36.700
100	88.70	28.20	2.960	3000	38.10	12.13	38.100
200	81.20	25.90	5.420	3200	37.00	11.77	39.400
300	75.90	24.20	7.590	3400	35.90	11.42	40.700
400	71.80	22.90	9.570	3600	34.90	11.09	41.800
500	68.40	21.80	11.410	3800	33.90	10.78	42.900
600	65.60	20.90	13.110	4000	33.00	10.49	43.900
700	63.10	20.10	14.730	4500	30.80	9.81	46.200
800	60.90	19.40	16.250	5000	28.90	9.21	48.200
900	59.00	18.78	17.700	5500	27.20	8.66	49.900
1000	57.20	18.22	19.080	6000	25.60	8.16	51.200
1100	55.60	17.71	20.400	6500	24.20	7.69	52.400
1200	54.20	17.24	21.700				
1300	52.80	16.80	22.900				
1400	51.50	16.40	24.000				
1500	50.30	16.02	25.200				
1600	49.20	15.66	26.200				
1700	48.20	15.33	27.300				
1800	47.20	15.01	28.300				
1900	46.20	14.71	29.300				

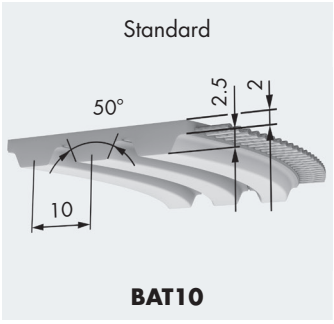
Admissible tensile force of the belt F_{Tadm} / belt weight

Belt width		b [mm]	32	50	75	100	150
E / Steel tension member		F_{Tadm} [N]	4750	7750	12000	16000	24500
Stainless steel tension member		F_{Tadm} [N]	3420	5580	8640	11520	17640
Belt weight	Standard	[kg/m]	0.236	0.368	0.552	0.736	1.095
	DL	[kg/m]	0.319	0.499	0.753	1.004	–
	DR	[kg/m]	0.430	0.675	1.016	1.354	–
	T	[kg/m]	0.315	0.495	0.746	0.994	–

Flexibility (minimum number of teeth / minimum diameter)

		Steel tension member				E / Steel tension member				Stainless steel tension member			
		Standard	DL	DR	T	Standard	DL	DR	T	Standard	DL	DR	T
 without contraflexure	z_{min}	15	25	25	25	12	25	25	25	20	30	25	25
	d_{min} [mm]	120	120	150	120	100	120	150	120	130	180	150	130
 with contraflexure	z_{min}	25	25	25	25	22	25	25	25	30	30	30	30
	d_{min} [mm]	120	120	180	120	120	120	180	120	180	180	180	180

Self-guiding PU timing belts
BRECOFLEX® BAT10



Belt widths b [mm]

32	50	75	100

BFX BAT10	**Available lengths and versions**
Standard lengths	see table on the right
Any number of teeth available from	b = 50 mm: from 720 mm
	1100 mm up to 22000 mm
Intermediate lengths	from 1100 mm[1] ○
StandardPlus version	1100 mm up to 22000 mm[1]
Over 22000 mm	on request
Standard material	TPUST1[1]
Steel tension member (Standard)	×
E / Steel tension member	○
Stainless steel tension member	○
PAZ	× (white)
DL / DL-PAZ	–
DR / DR-PAZ	–
T / T-PAZ	–

Standard lengths [mm] / number of teeth

Length	Number of teeth	Length	Number of teeth	Length	Number of teeth
1100	110	1700	170	4000	400
1150	115	1800	180	4500	450
1210	121	1900	190	5000	500
1240	124	2000	200	5600	560
1250	125	2240	224	6000	600
1320	132	2500	250	6700	670
1400	140	2800	280	7100	710
1500	150	3000	300	7500	750
1600	160	3550	355		

× available, standard lengths (see table) without minimum purchase
○ minimum purchase amount on request
– not available
[1] b = 50 mm: from 720 mm
[2] further materials on request

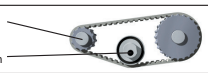
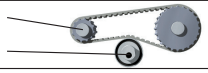
Tooth shear strength (specific belt tooth load bearing)

rpm n [min⁻¹]	F_{Tspec} [N/cm]	M_{spec} [Ncm/cm]	P_{spec} [W/cm]	rpm n [min⁻¹]	F_{Tspec} [N/cm]	M_{spec} [Ncm/cm]	P_{spec} [W/cm]
0	92.750	14.769	0.000	2000	50.887	8.103	16.970
20	91.389	14.552	0.305	2200	49.198	7.834	18.047
40	90.114	14.349	0.601	2400	47.639	7.586	19.064
60	88.914	14.158	0.890	2600	46.193	7.356	20.026
80	87.783	13.978	1.171	2800	44.843	7.141	20.936
100	86.711	13.807	1.446	3000	43.579	6.939	21.799
200	82.071	13.069	2.737	3200	42.389	6.750	22.617
300	78.303	12.469	3.917	3400	41.265	6.571	23.394
400	75.129	11.963	5.011	3600	40.201	6.401	24.131
500	72.389	11.527	6.035	3800	39.190	6.240	24.831
600	69.977	11.143	7.001	4000	38.228	6.087	25.496
700	67.823	10.800	7.916	4500	36.005	5.733	27.016
800	65.877	10.490	8.787	5000	34.004	5.415	28.349
900	64.103	10.208	9.620	5500	32.184	5.125	29.514
1000	62.473	9.948	10.417	6000	30.514	4.859	30.528
1100	60.965	9.708	11.182	6500	28.973	4.614	31.401
1200	59.562	9.484	11.917	7000	27.541	4.386	32.145
1300	58.250	9.275	12.626	7500	26.204	4.173	32.770
1400	57.018	9.079	13.310	8000	24.951	3.973	33.282
1500	55.858	8.895	13.971	8500	23.771	3.785	33.690
1600	54.761	8.720	14.609	9000	22.656	3.608	33.999
1700	53.720	8.554	15.227	9500	21.600	3.439	34.214
1800	52.731	8.397	15.826	10000	20.596	3.280	34.342
1900	51.788	8.246	16.407				

Admissible tensile force of the belt F_{Tadm} / belt weight

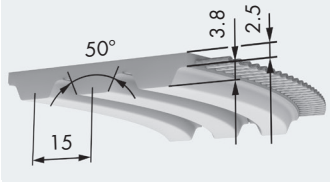
Belt width		b [mm]	32	50	75	100
E / Steel tension member		F_{Tadm} [N]	4750	7750	12000	16000
Stainless steel tension member		F_{Tadm} [N]	3420	5580	8640	11520
Belt weight	Standard	[kg/m]	0.180	0.290	0.436	0.581
	DL	[kg/m]	–	–	–	–
	DR	[kg/m]	–	–	–	–
	T	[kg/m]	–	–	–	–

Flexibility (minimum number of teeth / minimum diameter)

		Steel tension member				E / Steel tension member				Stainless steel tension member			
		Standard	DL	DR	T	Standard	DL	DR	T	Standard	DL	DR	T
 without contraflexure	z_{min}	20	–	–	–	18	–	–	–	25	–	–	–
	d_{min} [mm]	60	–	–	–	50	–	–	–	80	–	–	–
 with contraflexure	z_{min}	25	–	–	–	20	–	–	–	40	–	–	–
	d_{min} [mm]	120	–	–	–	80	–	–	–	130	–	–	–

Self-guiding PU timing belts
BRECOFLEX® BAT15

Standard



BAT15

Belt widths b [mm]

50	75	100

BFX BAT15	**Available lengths and versions**
Standard lengths	see table on the right
Any number of teeth available from	1500 mm up to 21990 mm
Intermediate lengths	from 1500 mm ○
StandardPlus version	1500 mm up to 21990 mm
Over 21990 mm	on request
Standard material	TPUST1[1)]
Steel tension member (Standard)	×
E / Steel tension member	○
Stainless steel tension member	○
PAZ	× (white)
DL / DL-PAZ	–
DR / DR-PAZ	–
T / T-PAZ	–

Standard lengths [mm] / number of teeth

Length	Number of teeth	Length	Number of teeth	Length	Number of teeth
1500	100	2790	186	5595	373
1590	106	3000	200	6000	400
1710	114	3495	233	6300	420
1800	120	3750	250	6705	447
1905	127	4005	267	7095	473
1995	133	4500	300	7500	500
2250	150	4995	333		
2505	167	5295	353		

× available, standard lengths (see table) without minimum purchase
○ minimum purchase amount on request
– not available
1) further materials on request

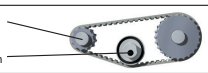
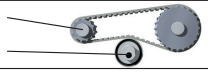
Tooth shear strength (specific belt tooth load bearing)

rpm n [min⁻¹]	F_{Tspec} [N/cm]	M_{spec} [Ncm/cm]	P_{spec} [W/cm]	rpm n [min⁻¹]	F_{Tspec} [N/cm]	M_{spec} [Ncm/cm]	P_{spec} [W/cm]
0	140.000	33.439	0.000	2000	71.151	16.995	35.591
20	137.703	32.891	0.689	2200	68.412	16.340	37.643
40	135.558	32.379	1.356	2400	65.885	15.737	39.548
60	133.546	31.898	2.004	2600	63.541	15.177	41.320
80	131.651	31.445	2.634	2800	61.355	14.655	42.967
100	129.861	31.018	3.248	3000	59.307	14.166	44.500
200	122.145	29.175	6.110	3200	57.380	13.705	45.924
300	115.915	27.687	8.697	3400	55.561	13.271	47.248
400	110.689	26.439	11.074	3600	53.839	12.860	48.476
500	106.189	25.364	13.279	3800	52.203	12.469	49.615
600	102.237	24.420	15.342	4000	50.646	12.097	50.668
700	98.714	23.578	17.282	4500	47.051	11.238	52.956
800	95.536	22.819	19.116	5000	43.815	10.465	54.793
900	92.641	22.128	20.853	5500	40.872	9.762	56.224
1000	89.984	21.493	22.506	6000	38.174	9.118	57.286
1100	87.527	20.906	24.080	6500	35.683	8.523	58.009
1200	85.243	20.361	25.584				
1300	83.110	19.851	27.022				
1400	81.107	19.373	28.400				
1500	79.222	18.922	29.721				
1600	77.439	18.497	30.989				
1700	75.749	18.093	32.207				
1800	74.143	17.709	33.379				
1900	72.613	17.344	34.506				

Admissible tensile force of the belt F_{Tadm} / belt weight

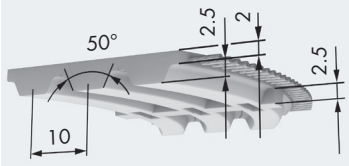
Belt width		b [mm]	50	75	100
E / Steel tension member		F_{Tadm} [N]	10400	16000	21600
Stainless steel tension member		F_{Tadm} [N]	8300	12800	17300
Belt weight	Standard	[kg/m]	0.420	0.629	0.836
	DL	[kg/m]	–	–	–
	DR	[kg/m]	–	–	–
	T	[kg/m]	–	–	–

Flexibility (minimum number of teeth / minimum diameter)

		Steel tension member				E / Steel tension member				Stainless steel tension member			
		Standard	DL	DR	T	Standard	DL	DR	T	Standard	DL	DR	T
 without contraflexure	z_{min}	20	–	–	–	15	–	–	–	25	–	–	–
	d_{min} [mm]	100	–	–	–	70	–	–	–	120	–	–	–
 with contraflexure	z_{min}	30	–	–	–	25	–	–	–	35	–	–	–
	d_{min} [mm]	150	–	–	–	120	–	–	–	180	–	–	–

Self-guiding PU timing belts
BRECOFLEX® BATK10

Standard



BATK10

Belt widths b [mm]

32	50	75	100

BFX BATK10	**Available lengths and versions**
Standard lengths	see table on the right
Any number of teeth available from	1100 mm up to 22000 mm
Intermediate lengths	from 1100 mm ○
StandardPlus version	1100 mm up to 22000 mm
Over 22000 mm	on request
Standard material	TPUST1[1)]
Steel tension member (Standard)	×
E / Steel tension member	○
Stainless steel tension member	○
PAZ	× (white)
DL / DL-PAZ	–
DR / DR-PAZ	–
T / T-PAZ	–

Standard lengths [mm] / number of teeth

Length	Number of teeth	Length	Number of teeth	Length	Number of teeth
1100	110	1700	170	4000	400
1150	115	1800	180	4500	450
1210	121	1900	190	5000	500
1240	124	2000	200	5600	560
1250	125	2240	224	6000	600
1320	132	2500	250	6700	670
1400	140	2800	280	7100	710
1500	150	3000	300	7500	750
1600	160	3550	355		

× available, standard lengths (see table) without minimum purchase
○ minimum purchase amount on request
– not available
1) further materials on request

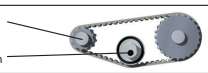
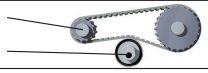
Tooth shear strength (specific belt tooth load bearing)

rpm n [min⁻¹]	F_{Tspec} [N/cm]	M_{spec} [Ncm/cm]	P_{spec} [W/cm]	rpm n [min⁻¹]	F_{Tspec} [N/cm]	M_{spec} [Ncm/cm]	P_{spec} [W/cm]
0	92.750	14.769	0.000	2000	50.887	8.103	16.970
20	91.389	14.552	0.305	2200	49.198	7.834	18.047
40	90.114	14.349	0.601	2400	47.639	7.586	19.064
60	88.914	14.158	0.890	2600	46.193	7.356	20.026
80	87.783	13.978	1.171	2800	44.843	7.141	20.936
100	86.711	13.807	1.446	3000	43.579	6.939	21.799
200	82.071	13.069	2.737	3200	42.389	6.750	22.617
300	78.303	12.469	3.917	3400	41.265	6.571	23.394
400	75.129	11.963	5.011	3600	40.201	6.401	24.131
500	72.389	11.527	6.035	3800	39.190	6.240	24.831
600	69.977	11.143	7.001	4000	38.228	6.087	25.496
700	67.823	10.800	7.916	4500	36.005	5.733	27.016
800	65.877	10.490	8.787	5000	34.004	5.415	28.349
900	64.103	10.208	9.620	5500	32.184	5.125	29.514
1000	62.473	9.948	10.417	6000	30.514	4.859	30.528
1100	60.965	9.708	11.182	6500	28.973	4.614	31.401
1200	59.562	9.484	11.917	7000	27.541	4.386	32.145
1300	58.250	9.275	12.626	7500	26.204	4.173	32.770
1400	57.018	9.079	13.310	8000	24.951	3.973	33.282
1500	55.858	8.895	13.971	8500	23.771	3.785	33.690
1600	54.761	8.720	14.609	9000	22.656	3.608	33.999
1700	53.720	8.554	15.227	9500	21.600	3.439	34.214
1800	52.731	8.397	15.826	10000	20.596	3.280	34.342
1900	51.788	8.246	16.407				

Admissible tensile force of the belt F_{Tadm} / belt weight

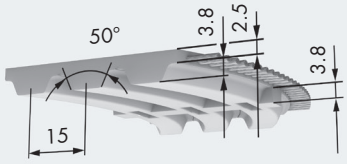
Belt width		b [mm]	32	50	75	100
E / Steel tension member		F_{Tadm} [N]	4750	7750	12000	16000
Stainless steel tension member		F_{Tadm} [N]	3420	5580	8640	11520
Belt weight	Standard	[kg/m]	0.192	0.300	0.450	0.600
	DL	[kg/m]	–	–	–	–
	DR	[kg/m]	–	–	–	–
	T	[kg/m]	–	–	–	–

Flexibility (minimum number of teeth / minimum diameter)

		Steel tension member				E / Steel tension member				Stainless steel tension member			
		Standard	DL	DR	T	Standard	DL	DR	T	Standard	DL	DR	T
 without contraflexure	z_{min}	20	–	–	–	18	–	–	–	25	–	–	–
	d_{min} [mm]	60	–	–	–	50	–	–	–	80	–	–	–
 with contraflexure	z_{min}	25	–	–	–	20	–	–	–	40	–	–	–
	d_{min} [mm]	120	–	–	–	80	–	–	–	130	–	–	–

Self-guiding PU timing belts
BRECOFLEX® BATK15

Standard



BATK15

Belt widths b [mm]

50	75	100

BFX BATK15	**Available lengths and versions**
Standard lengths	see table on the right
Any number of teeth available from	1500 up to 21990 mm
Intermediate lengths	from 1500 mm ○
StandardPlus version	1500 mm up to 21990 mm
Over 21990 mm	on request
Standard material	TPUST1[1)]
E / Steel tension member	×
E / Steel tension member	○
Stainless steel tension member	○
PAZ	× (white)
DL / DL-PAZ	–
DR / DR-PAZ	–
T / T-PAZ	–

Standard lengths [mm] / number of teeth

Length	Number of teeth	Length	Number of teeth	Length	Number of teeth
1500	100	2790	186	5595	373
1590	106	3000	200	6000	400
1710	114	3495	233	6300	420
1800	120	3750	250	6705	447
1905	127	4005	267	7095	473
1995	133	4500	300	7500	500
2250	150	4995	333		
2505	167	5295	353		

× available, standard lengths (see table) without minimum purchase
○ minimum purchase amount on request
– not available
1) further materials on request

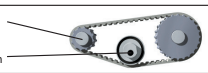
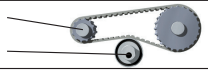
Tooth shear strength (specific belt tooth load bearing)

rpm n [min⁻¹]	F_{Tspec} [N/cm]	M_{spec} [Ncm/cm]	P_{spec} [W/cm]	rpm n [min⁻¹]	F_{Tspec} [N/cm]	M_{spec} [Ncm/cm]	P_{spec} [W/cm]
0	140.000	33.439	0.000	2000	71.151	16.995	35.591
20	137.703	32.891	0.689	2200	68.412	16.340	37.643
40	135.558	32.379	1.356	2400	65.885	15.737	39.548
60	133.546	31.898	2.004	2600	63.541	15.177	41.320
80	131.651	31.445	2.634	2800	61.355	14.655	42.967
100	129.861	31.018	3.248	3000	59.307	14.166	44.500
200	122.145	29.175	6.110	3200	57.380	13.705	45.924
300	115.915	27.687	8.697	3400	55.561	13.271	47.248
400	110.689	26.439	11.074	3600	53.839	12.860	48.476
500	106.189	25.364	13.279	3800	52.203	12.469	49.615
600	102.237	24.420	15.342	4000	50.646	12.097	50.668
700	98.714	23.578	17.282	4500	47.051	11.238	52.956
800	95.536	22.819	19.116	5000	43.815	10.465	54.793
900	92.641	22.128	20.853	5500	40.872	9.762	56.224
1000	89.984	21.493	22.506	6000	38.174	9.118	57.286
1100	87.527	20.906	24.080	6500	35.683	8.523	58.009
1200	85.243	20.361	25.584				
1300	83.110	19.851	27.022				
1400	81.107	19.373	28.400				
1500	79.222	18.922	29.721				
1600	77.439	18.497	30.989				
1700	75.749	18.093	32.207				
1800	74.143	17.709	33.379				
1900	72.613	17.344	34.506				

Admissible tensile force of the belt F_{Tadm} / belt weight

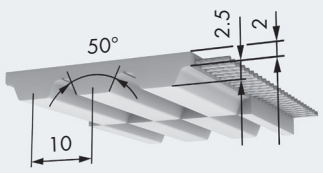
Belt width		b [mm]	50	75	100
E / Steel tension member		F_{Tadm} [N]	10400	16000	21600
Stainless steel tension member		F_{Tadm} [N]	8300	12800	17300
Belt weight	Standard	[kg/m]	0.420	0.629	0.836
	DL	[kg/m]	–	–	–
	DR	[kg/m]	–	–	–
	T	[kg/m]	–	–	–

Flexibility (minimum number of teeth / minimum diameter)

		Steel tension member				E / Steel tension member				Stainless steel tension member			
		Standard	DL	DR	T	Standard	DL	DR	T	Standard	DL	DR	T
 without contraflexure	z_{min}	20	–	–	–	15	–	–	–	25	–	–	–
	d_{min} [mm]	100	–	–	–	70	–	–	–	120	–	–	–
 with contraflexure	z_{min}	30	–	–	–	25	–	–	–	35	–	–	–
	d_{min} [mm]	150	–	–	–	120	–	–	–	180	–	–	–

Self-guiding PU timing belts
BRECOFLEX® SFAT10

Standard



SFAT10

Belt widths b [mm] / in-between belt widths on request

50	75	100

BFX SFAT10	**Available lengths and versions**
Standard lengths	see table on the right
Any number of teeth available from	1100 mm up to 22000 mm
Intermediate lengths	from 1100 mm ○
StandardPlus version	1100 mm up to 22000 mm
Over 22000 mm	on request
Standard material	TPUST1[1)]
Steel tension member (Standard)	×
E / Steel tension member	○
Stainless steel tension member	○
PAZ	×
DL / DL-PAZ	–
DR / DR-PAZ	–
T / T-PAZ	–

Standard lengths [mm] / number of teeth

Length	Number of teeth	Length	Number of teeth	Length	Number of teeth
1100	110	1900	190	4500	450
1200	120	2000	200	5000	500
1300	130	2240	224	5600	560
1400	140	2500	250	6000	600
1500	150	2800	280	6700	670
1600	160	3000	300	7100	710
1700	170	3550	355	7500	750
1800	180	4000	400		

× available, standard lengths (see table) without minimum purchase
○ minimum purchase amount on request
– not available
1) further materials on request

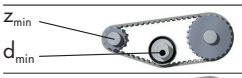
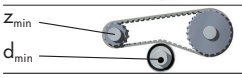
Tooth shear strength (specific belt tooth load bearing)

rpm n [min⁻¹]	F_{Tspec} [N/cm]	M_{spec} [Ncm/cm]	P_{spec} [W/cm]	rpm n [min⁻¹]	F_{Tspec} [N/cm]	M_{spec} [Ncm/cm]	P_{spec} [W/cm]
0	87.500	13.933	0.000	2000	48.006	7.644	16.009
20	86.216	13.729	0.288	2200	46.413	7.391	17.025
40	85.013	13.537	0.567	2400	44.943	7.156	17.985
60	83.881	13.357	0.839	2600	43.578	6.939	18.892
80	82.814	13.187	1.105	2800	42.305	6.736	19.751
100	81.803	13.026	1.364	3000	41.112	6.546	20.565
200	77.426	12.329	2.582	3200	39.989	6.368	21.337
300	73.870	11.763	3.695	3400	38.929	6.199	22.069
400	70.877	11.286	4.727	3600	37.925	6.039	22.765
500	68.291	10.874	5.693	3800	36.972	5.887	23.426
600	66.016	10.512	6.604	4000	36.064	5.743	24.053
700	63.984	10.189	7.468	4500	33.967	5.409	25.486
800	62.148	9.896	8.290	5000	32.079	5.108	26.744
900	60.475	9.630	9.075	5500	30.362	4.835	27.844
1000	58.937	9.385	9.827	6000	28.787	4.584	28.800
1100	57.514	9.158	10.549	6500	27.333	4.352	29.623
1200	56.190	8.947	11.243	7000	25.982	4.137	30.326
1300	54.953	8.750	11.912	7500	24.721	3.936	30.915
1400	53.791	8.565	12.557	8000	23.538	3.748	31.398
1500	52.696	8.391	13.180	8500	22.425	3.571	31.783
1600	51.661	8.226	13.782	9000	21.374	3.403	32.074
1700	50.679	8.070	14.365	9500	20.377	3.245	32.278
1800	49.746	7.921	14.930	10000	19.430	3.094	32.398
1900	48.856	7.780	15.478				

Admissible tensile force of the belt F_{Tadm} / belt weight

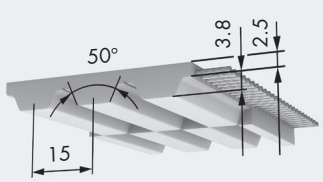
Belt width		b [mm]	50	75	100
E / Steel tension member		F_{Tadm} [N]	7750	12000	16000
Stainless steel tension member		F_{Tadm} [N]	5580	8640	11520
Belt weight	Standard	[kg/m]	0.290	0.436	0.581
	DL	[kg/m]	–	–	–
	DR	[kg/m]	–	–	–
	T	[kg/m]	–	–	–

Flexibility (minimum number of teeth / minimum diameter)

		Steel tension member				E / Steel tension member				Stainless steel tension member			
		Standard	DL	DR	T	Standard	DL	DR	T	Standard	DL	DR	T
 without contraflexure	z_{min}	15	–	–	–	12	–	–	–	25	–	–	–
	d_{min} [mm]	50	–	–	–	50	–	–	–	80	–	–	–
 with contraflexure	z_{min}	25	–	–	–	20	–	–	–	40	–	–	–
	d_{min} [mm]	120	–	–	–	80	–	–	–	130	–	–	–

Self-guiding PU timing belts
BRECOFLEX® SFAT15

Standard



SFAT15

Belt widths b [mm] / in-between belt widths on request

50	75	100

BFX SFAT15	**Available lengths and versions**
Standard lengths	see table on the right
Any number of teeth available from	1500 mm up to 21990 mm
Intermediate lengths	from 1500 mm ○
StandardPlus version	1500 mm up to 21990 mm
Over 21990 mm	on request
Standard material	TPUST1 [1]
Steel tension member (Standard)	×
E / Steel tension member	○
Stainless steel tension member	○
PAZ	×
DL / DL-PAZ	–
DR / DR-PAZ	–
T / T-PAZ	–

Standard lengths [mm] / number of teeth

Length	Number of teeth	Length	Number of teeth	Length	Number of teeth
1500	100	2790	186	5595	373
1590	106	3000	200	6000	400
1710	114	3495	233	6300	420
1800	120	3750	250	6705	447
1905	127	4005	267	7095	473
1995	133	4500	300	7500	500
2250	150	4995	333		
2505	167	5295	353		

× available, standard lengths (see table) without minimum purchase
○ minimum purchase amount on request
– not available
[1] further materials on request

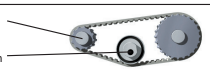
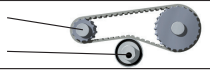
Tooth shear strength (specific belt tooth load bearing)

rpm n [min⁻¹]	F_{Tspec} [N/cm]	M_{spec} [Ncm/cm]	P_{spec} [W/cm]	rpm n [min⁻¹]	F_{Tspec} [N/cm]	M_{spec} [Ncm/cm]	P_{spec} [W/cm]
0	133.000	31.768	0.000	1600	73.567	17.572	29.440
20	130.818	31.246	0.654	1700	71.962	17.188	30.597
40	128.780	30.760	1.288	1800	70.436	16.824	31.710
60	126.869	30.303	1.904	1900	68.982	16.477	32.781
80	125.069	29.873	2.502	2000	67.594	16.145	33.812
100	123.368	29.467	3.086	2200	64.991	15.523	35.761
150	116.038	27.716	5.804	2400	62.591	14.950	37.571
200	110.119	26.302	8.263	2500	60.364	14.418	39.254
300	105.155	25.117	10.520	2600	58.288	13.922	40.819
400	100.880	24.095	12.615	2800	56.342	13.457	42.275
500	97.125	23.199	14.575	2880	54.511	13.020	43.628
600	93.778	22.399	16.418	3000	52.783	12.607	44.885
700	90.759	21.678	18.160	3200	51.147	12.217	46.052
730	88.009	21.021	19.811	3400	49.593	11.846	47.134
800	85.485	20.418	21.380	3600	48.114	11.492	48.135
900	83.151	19.861	22.876	3800	44.699	10.676	50.308
1000	80.981	19.343	24.305	4000	41.624	9.942	52.053
1100	78.954	18.858	25.671	4500	38.829	9.274	53.412
1200	77.052	18.404	26.980	5000	36.265	8.662	54.421
1300	75.260	17.976	28.235	5500	33.898	8.097	55.109
1400	73.567	17.572	29.440	6000	24.203	5.781	54.480
1500	70.436	16.824	31.710	6500	22.582	5.394	53.656
1800	49.746	7.921	14.930	10000	19.430	3.094	32.398
1900	48.856	7.780	15.478	10000	19.430	3.094	32.398

Admissible tensile force of the belt F_{Tadm} / belt weight

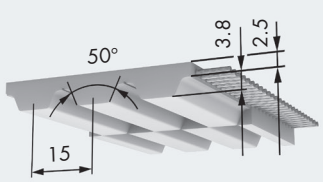
Belt width		b [mm]	50	75	100
E / Steel tension member		F_{Tadm} [N]	10000	15600	21200
Stainless steel tension member		F_{Tadm} [N]	8000	12480	16960
Belt weight	Standard	[kg/m]	0.440	0.660	0.875
	DL	[kg/m]	–	–	–
	DR	[kg/m]	–	–	–
	T	[kg/m]	–	–	–

Flexibility (minimum number of teeth / minimum diameter)

		Steel tension member				E / Steel tension member				Stainless steel tension member			
		Standard	DL	DR	T	Standard	DL	DR	T	Standard	DL	DR	T
 without contraflexure	z_{min}	20	–	–	–	15	–	–	–	25	–	–	–
	d_{min} [mm]	100	–	–	–	70	–	–	–	120	–	–	–
 with contraflexure	z_{min}	25	–	–	–	25	–	–	–	35	–	–	–
	d_{min} [mm]	150	–	–	–	120	–	–	–	180	–	–	–

Self-guiding PU timing belts
BRECOFLEX® SFAT20

Standard



SFAT20

Belt widths b [mm] / in-between belt widths on request

50	75	100

BFX SFAT20	**Available lengths and versions**
Standard lengths	see table on the right
Any number of teeth available from	1500 mm up to 22000 mm
Intermediate lengths	from 1500 mm ○
StandardPlus version	1500 mm up to 22000 mm
Over 22000 mm	on request
Standard material	TPUST1 [1]
Steel tension member (Standard)	×
E / Steel tension member	○
Stainless steel tension member	○
PAZ	×
DL / DL-PAZ	–
DR / DR-PAZ	–
T / T-PAZ	–

Standard lengths [mm] / number of teeth

Length	Number of teeth	Length	Number of teeth	Length	Number of teeth
1500	75	2500	125	5000	250
1600	80	2800	140	5600	280
1700	85	3000	150	6000	300
1800	90	3560	178	6700	335
1900	95	3760	188	7100	355
2000	100	4000	200	7500	375
2240	112	4500	225		

× available, standard lengths (see table) without minimum purchase
○ minimum purchase amount on request
– not available
[1] further materials on request

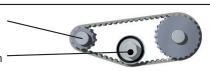
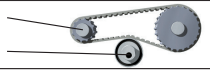
Tooth shear strength (specific belt tooth load bearing)

rpm n	F_{Tspec}	M_{spec}	P_{spec}	rpm n	F_{Tspec}	M_{spec}	P_{spec}
[min⁻¹]	[N/cm]	[Ncm/cm]	[W/cm]	[min⁻¹]	[N/cm]	[Ncm/cm]	[W/cm]
0	175.000	55.732	0.000	2000	79.678	25.375	53.142
20	171.733	54.692	1.145	2200	75.940	24.185	55.713
40	168.692	53.724	2.250	2400	72.494	23.087	58.021
60	165.847	52.818	3.318	2600	69.299	22.070	60.085
80	163.175	51.966	4.353	2800	66.319	21.121	61.925
100	160.655	51.164	5.357	3000	63.528	20.232	63.556
200	149.850	47.723	9.994	3200	60.904	19.396	64.992
300	141.179	44.961	14.124	3400	58.426	18.607	66.245
400	133.936	42.655	17.866	3600	56.081	17.860	67.327
500	127.717	40.674	21.295	3800	53.854	17.151	68.245
600	122.268	38.939	24.464	4000	51.735	16.476	69.010
700	117.419	37.395	27.410	4500	46.843	14.918	70.294
800	113.051	36.004	30.160	5000	42.440	13.516	70.764
900	109.077	34.738	32.737	5500	38.437	12.241	70.498
1000	105.432	33.577	35.159	6000	34.767	11.072	69.565
1100	102.066	32.505	37.440	6500	31.380	9.994	68.020
1200	98.938	31.509	39.592				
1300	96.018	30.579	41.626				
1400	93.279	29.707	43.549				
1500	90.700	28.885	45.370				
1600	88.264	28.110	47.095				
1700	85.956	27.374	48.729				
1800	83.762	26.676	50.279				
1900	81.673	26.010	51.748				

Admissible tensile force of the belt F_{Tadm} / belt weight

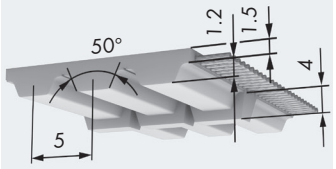
Belt width		b [mm]	50	75	100
E / Steel tension member		F_{Tadm} [N]	10000	15600	21200
Stainless steel tension member		F_{Tadm} [N]	8000	12480	16960
Belt weight	Standard	[kg/m]	0.480	0.720	0.960
	DL	[kg/m]	–	–	–
	DR	[kg/m]	–	–	–
	T	[kg/m]	–	–	–

Flexibility (minimum number of teeth / minimum diameter)

		Steel tension member				E / Steel tension member				Stainless steel tension member			
		Standard	DL	DR	T	Standard	DL	DR	T	Standard	DL	DR	T
 without contraflexure	z_{min}	18	–	–	–	15	–	–	–	32	–	–	–
	d_{min} [mm]	120	–	–	–	100	–	–	–	200	–	–	–
 with contraflexure	z_{min}	25	–	–	–	22	–	–	–	40	–	–	–
	d_{min} [mm]	180	–	–	–	150	–	–	–	300	–	–	–

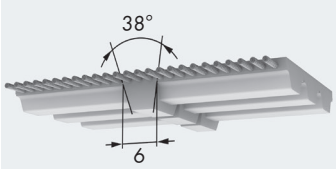
Self-guiding PU timing belts with track BRECOFLEX® ATK5K6

Standard



ATK5K6

Standard



ATK5K6

Belt widths b [mm] / in-between belt widths on request

50	100

BFX ATK5K6	**Available lengths and versions**
Standard lengths	see table on the right
Any number of teeth available from	1075 mm up to 15000 mm
Intermediate lengths	from 1075 mm ○
StandardPlus version	1075 mm up to 15000 mm
Over 15000 mm	on request
Standard material	TPUST1 [1]
Steel tension member	×
E / Steel tension member (Standard)	○
Stainless steel tension member	○
PAZ	×
DL / DL-PAZ	–
DR / DR-PAZ	–
T / T-PAZ	–

Standard lengths [mm] / number of teeth

Length	Number of teeth	Length	Number of teeth	Length	Number of teeth
1075	215	2240	448	4500	900
1100	220	2360	472	4750	950
1215	243	2500	500	5000	1000
1380	276	2650	530	5300	1060
1400	280	2800	560	5600	1120
1500	300	3000	600	6000	1200
1600	320	3150	630	6300	1260
1700	340	3350	670	6700	1340
1800	360	3550	710	7100	1420
1900	380	3750	750	7500	1500
2000	400	4000	800		
2120	424	4250	850		

× available, standard lengths (see table) without minimum purchase
○ minimum purchase amount on request
– not available
[1] further materials on request

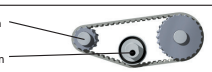
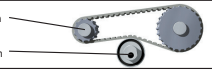
Tooth shear strength (specific belt tooth load bearing)

rpm n [min⁻¹]	F_{Tspec} [N/cm]	M_{spec} [Ncm/cm]	P_{spec} [W/cm]	rpm n [min⁻¹]	F_{Tspec} [N/cm]	M_{spec} [Ncm/cm]	P_{spec} [W/cm]
0	42.000	3.344	0.000	2000	26.050	2.074	4.344
20	41.521	3.306	0.069	2200	25.377	2.020	4.654
40	41.069	3.270	0.137	2400	24.755	1.971	4.953
60	40.641	3.236	0.203	2600	24.177	1.925	5.241
80	40.234	3.203	0.268	2800	23.637	1.882	5.518
100	39.846	3.172	0.332	3000	23.130	1.842	5.785
200	38.142	3.037	0.636	3200	22.654	1.804	6.044
300	36.733	2.925	0.919	3400	22.203	1.768	6.294
400	35.531	2.829	1.185	3600	21.776	1.734	6.536
500	34.483	2.745	1.437	3800	21.370	1.701	6.770
600	33.554	2.672	1.678	4000	20.983	1.671	6.997
700	32.721	2.605	1.910	4500	20.089	1.599	7.537
800	31.964	2.545	2.132	5000	19.284	1.535	8.038
900	31.271	2.490	2.346	5500	18.550	1.477	8.506
1000	30.633	2.439	2.554	6000	17.877	1.423	8.942
1100	30.040	2.392	2.755	6500	17.255	1.374	9.351
1200	29.488	2.348	2.950	7000	16.677	1.328	9.733
1300	28.971	2.307	3.140	7500	16.138	1.285	10.090
1400	28.484	2.268	3.325	8000	15.631	1.245	10.425
1500	28.025	2.231	3.505	8500	15.154	1.207	10.739
1600	27.590	2.197	3.680	9000	14.704	1.171	11.033
1700	27.177	2.164	3.852	9500	14.277	1.137	11.307
1800	26.784	2.132	4.019	10000	13.871	1.104	11.564
1900	26.409	2.103	4.183				

Admissible tensile force of the belt F_{Tadm} / belt weight

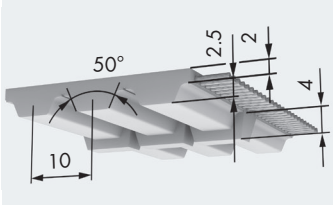
Belt width		b [mm]	50	100
E / Steel tension member		F_{Tadm} [N]	4200	8610
Stainless steel tension member		F_{Tadm} [N]	2730	5597
Belt weight	Standard	[kg/m]	0.167	0.334
	DL	[kg/m]	–	–
	DR	[kg/m]	–	–
	T	[kg/m]	–	–

Flexibility (minimum number of teeth / minimum diameter)

		Steel tension member				E / Steel tension member				Stainless steel tension member			
		Standard	DL	DR	T	Standard	DL	DR	T	Standard	DL	DR	T
 without contraflexure	z_{min}	25	–	–	–	25	–	–	–	25	–	–	–
	d_{min} [mm]	40	–	–	–	40	–	–	–	40	–	–	–
 with contraflexure	z_{min}	25	–	–	–	25	–	–	–	30	–	–	–
	d_{min} [mm]	80	–	–	–	80	–	–	–	80	–	–	–

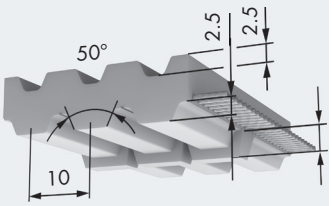
Self-guiding PU timing belts with track BRECOFLEX® ATK10K6

Standard



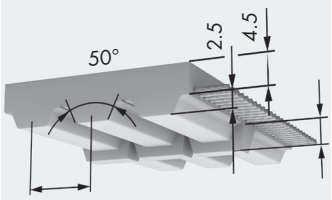
ATK10K6

Double-sided



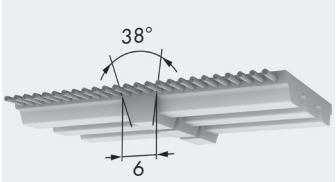
ATK10K6–DL

Reinforced back of the belt



ATK10K6–DR

Standard



ATK10K6

Belt widths b [mm] / in-between belt widths on request

50	100

BFX ATK10K6	**Available lengths and versions**		
Standard lengths	see table on the right		
Any number of teeth available from	b = 50 mm	from 720 mm	
	1080 mm	up to 22000 mm	
Intermediate lengths	b = 50 mm	from 720 mm	○
	b = 100 mm	from 1080 mm	
StandardPlus-Version	b = 50 mm: from 720 mm		
	1080 mm up to 22000 mm		
Over 22000 mm	on request		
Standard material	TPUST1 [1]		
Steel tension member (Standard)	×		
E / Steel tension member	○		
Stainless steel tension member	○		
PAZ	from 1500 mm		×
DL / DL-PAZ	○		
DR / DR-PAZ	○		
T / T-PAZ	–		

Standard lengths [mm] / number of teeth

Length	Number of teeth	Length	Number of teeth	Length	Number of teeth
1500	150	2650	265	4750	475
1600	160	2800	280	5000	500
1700	170	3000	300	5300	530
1800	180	3150	315	5600	560
1900	190	3350	335	6000	600
2000	200	3550	355	6300	630
2120	212	3750	375	6700	670
2240	224	4000	400	7100	710
2360	236	4250	425	7500	750
2500	250	4500	450	8000	800

× available, standard lengths (see table) without minimum purchase
○ minimum purchase amount on request
– not available
[1] further materials on request

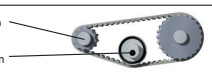
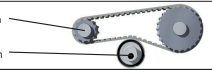
Tooth shear strength (specific belt tooth load bearing)

rpm n [min⁻¹]	F_{Tspec} [N/cm]	M_{spec} [Ncm/cm]	P_{spec} [W/cm]	rpm n [min⁻¹]	F_{Tspec} [N/cm]	M_{spec} [Ncm/cm]	P_{spec} [W/cm]
0	87.500	13.933	0.000	2000	48.006	7.644	16.009
20	86.216	13.729	0.288	2200	46.413	7.391	17.025
40	85.013	13.537	0.567	2400	44.943	7.156	17.985
60	83.881	13.357	0.839	2600	43.578	6.939	18.892
80	82.814	13.187	1.105	2800	42.305	6.736	19.751
100	81.803	13.026	1.364	3000	41.112	6.546	20.565
200	77.426	12.329	2.582	3200	39.989	6.368	21.337
300	73.870	11.763	3.695	3400	38.929	6.199	22.069
400	70.877	11.286	4.727	3600	37.925	6.039	22.765
500	68.291	10.874	5.693	3800	36.972	5.887	23.426
600	66.016	10.512	6.604	4000	36.064	5.743	24.053
700	63.984	10.189	7.468	4500	33.967	5.409	25.486
800	62.148	9.896	8.290	5000	32.079	5.108	26.744
900	60.475	9.630	9.075	5500	30.362	4.835	27.844
1000	58.937	9.385	9.827	6000	28.787	4.584	28.800
1100	57.514	9.158	10.549	6500	27.333	4.352	29.623
1200	56.190	8.947	11.243	7000	25.982	4.137	30.326
1300	54.953	8.750	11.912	7500	24.721	3.936	30.915
1400	53.791	8.565	12.557	8000	23.538	3.748	31.398
1500	52.696	8.391	13.180	8500	22.425	3.571	31.783
1600	51.661	8.226	13.782	9000	21.374	3.403	32.074
1700	50.679	8.070	14.365	9500	20.377	3.245	32.278
1800	49.746	7.921	14.930	10000	19.430	3.094	32.398
1900	48.856	7.780	15.478				

Admissible tensile force of the belt F_{Tadm} / belt weight

Belt width		b [mm]	50	100
E / Steel tension member		F_{Tadm} [N]	7750	16000
Stainless steel tension member		F_{Tadm} [N]	5600	11200
Belt weight	Standard	[kg/m]	0.290	0.581
	DL	[kg/m]	0.386	0.766
	DR	[kg/m]	0.445	0.886
	T	[kg/m]	–	–

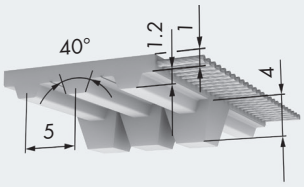
Flexibility (minimum number of teeth / minimum diameter)

		Steel tension member				E / Steel tension member				Stainless steel tension member			
		Standard	DL	DR	T	Standard	DL	DR	T	Standard	DL	DR	T
 without contraflexure	z_{min}	20	25	25*	–	18	20	–	–	25	40	25	–
	d_{min} [mm]	80	80	80	–	60	80	–	–	80	120	80	–
 with contraflexure	z_{min}	25	25	25	–	20	22	–	–	40	40	40	–
	d_{min} [mm]	120	120	120	–	80	100	–	–	120	120	120	–

* speed limitation

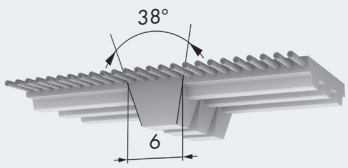
Self-guiding PU timing belts with track BRECOFLEX® TK5K6

Standard



TK5K6

Standard



TK5K6

Belt widths b [mm] / in-between belt widths on request

50	100

BFX TK5K6	**Available lengths and versions**		
Standard lengths	see table on the right		
Any number of teeth available from	b = 50 mm	from 720 mm	
	1075 mm up to 15000 mm		
Intermediate lengths	b = 50 mm	from 720 mm	○
	b = 100 mm	from 1075 mm	
StandardPlus version	b = 50 mm: from 720 mm		
	1075 mm up to 15000 mm		
Over 15000 mm	on request		
Standard material	TPUST1[1)]		
Steel tension member (Standard)	×		
E / Steel tension member	○		
Stainless steel tension member	○		
PAZ	from 1075 mm	×	
DL / DL-PAZ	–		
DR / DR-PAZ	–		
T / T-PAZ	–		

Standard lengths [mm] / number of teeth

Length	Number of teeth	Length	Number of teeth	Length	Number of teeth
1075	215	2240	448	4500	900
1100	220	2360	472	4750	950
1215	243	2500	500	5000	1000
1380	276	2650	530	5300	1060
1400	280	2800	560	5600	1120
1500	300	3000	600	6000	1200
1600	320	3150	630	6300	1260
1700	340	3350	670	6700	1340
1800	360	3550	710	7100	1420
1900	380	3750	750	7500	1500
2000	400	4000	800		
2120	424	4250	850		

× available, standard lengths (see table) without minimum purchase
○ minimum purchase amount on request
– not available
[1)] further materials on request

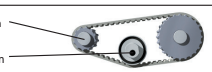
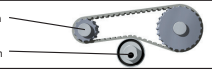
Tooth shear strength (specific belt tooth load bearing)

rpm n [min⁻¹]	F_{Tspec} [N/cm]	M_{spec} [Ncm/cm]	P_{spec} [W/cm]	rpm n [min⁻¹]	F_{Tspec} [N/cm]	M_{spec} [Ncm/cm]	P_{spec} [W/cm]
0	24.00	1.910	0.000	2000	13.69	1.089	2.280
20	23.40	1.861	0.039	2200	13.38	1.065	2.450
40	22.90	1.819	0.076	2400	13.10	1.042	2.620
60	22.40	1.783	0.112	2600	12.84	1.021	2.780
80	22.00	1.751	0.147	2800	12.59	1.002	2.940
100	21.70	1.723	0.180	3000	12.37	0.984	3.090
200	20.30	1.614	0.338	3200	12.16	0.967	3.240
300	19.30	1.536	0.483	3400	11.96	0.951	3.390
400	18.55	1.476	0.618	3600	11.77	0.936	3.530
500	17.93	1.427	0.747	3800	11.59	0.922	3.670
600	17.41	1.385	0.870	4000	11.42	0.909	3.810
700	16.96	1.349	0.989	4500	11.03	0.878	4.140
800	16.56	1.318	1.104	5000	10.68	0.850	4.450
900	16.20	1.289	1.215	5500	10.36	0.825	4.750
1000	15.88	1.263	1.323	6000	10.07	0.802	5.040
1100	15.58	1.240	1.428	6500	9.81	0.780	5.310
1200	15.31	1.218	1.531	7000	9.56	0.761	5.580
1300	15.06	1.198	1.632	7500	9.33	0.742	5.830
1400	14.83	1.180	1.730	8000	9.11	0.725	6.080
1500	14.61	1.162	1.826	8500	8.91	0.709	6.310
1600	14.40	1.146	1.920	9000	8.72	0.694	6.540
1700	14.21	1.131	2.010	9500	8.54	0.679	6.760
1800	14.03	1.116	2.100	10000	8.37	0.666	6.970
1900	13.85	1.102	2.190				

Admissible tensile force of the belt F_{Tadm} / belt weight

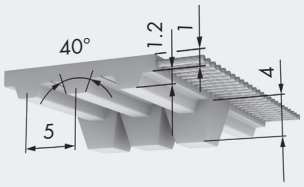
Belt width		b [mm]	50	100
E / Steel tension member		F_{Tadm} [N]	1920	3930
Stainless steel tension member		F_{Tadm} [N]	1460	2990
Belt weight	Standard	[kg/m]	0.123	0.232
	DL	[kg/m]	–	–
	DR	[kg/m]	–	–
	T	[kg/m]	–	–

Flexibility (minimum number of teeth / minimum diameter)

		Steel tension member				E / Steel tension member				Stainless steel tension member			
		Standard	DL	DR	T	Standard	DL	DR	T	Standard	DL	DR	T
 without contraflexure	z_{min}	25	–	–	–	25	–	–	–	25	–	–	–
	d_{min} [mm]	40	–	–	–	40	–	–	–	40	–	–	–
 with contraflexure	z_{min}	25	–	–	–	25	–	–	–	36	–	–	–
	d_{min} [mm]	60	–	–	–	60	–	–	–	60	–	–	–

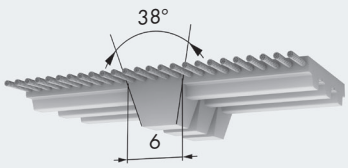
Self-guiding PU timing belts with track BRECOFLEX® TK10K6

Standard



TK10K6

Standard



TK10K6

Belt widths b [mm] / in-between belt widths on request

50	100

BFX TK10K6	**Available lengths and versions**	
Standard lengths	see table on the right	
Any number of teeth available from	720 mm up to 22000 mm	
Intermediate lengths	from 720 mm	○
StandardPlus version	720 mm up to 22000 mm	
Over 22000 mm	on request	
Standard material	TPUST1[1)]	
Steel tension member (Standard)	×	
E / Steel tension member	○	
Stainless steel tension member	○	
PAZ	from 1080 mm	×
DL / DL-PAZ	–	
DR / DR-PAZ	–	
T / T-PAZ	–	

Standard lengths [mm] / number of teeth

Length	Number of teeth	Length	Number of teeth	Length	Number of teeth
1080	108	1750	175	4000	400
1150	115	1780	178	4250	425
1210	121	1880	188	4500	450
1240	124	1960	196	4750	475
1250	125	2250	225	5000	500
1320	132	2360	236	5300	530
1350	135	2500	250	5600	560
1390	139	2650	265	6000	600
1400	140	2800	280	6300	630
1420	142	3000	300	6700	670
1460	146	3100	310	7100	710
1500	150	3150	315	7500	750
1560	156	3350	335	8000	800
1610	161	3750	375	9000	900

× available, standard lengths (see table) without minimum purchase
○ minimum purchase amount on request
– not available
1) further materials on request

Tooth shear strength (specific belt tooth load bearing)

rpm n [min⁻¹]	F_{Tspec} [N/cm]	M_{spec} [Ncm/cm]	P_{spec} [W/cm]	rpm n [min⁻¹]	F_{Tspec} [N/cm]	M_{spec} [Ncm/cm]	P_{spec} [W/cm]
0	50.50	8.040	0.000	2000	25.40	4.040	8.460
20	49.00	7.800	0.163	2200	24.60	3.920	9.030
40	47.70	7.600	0.318	2400	23.90	3.810	9.580
60	46.60	7.420	0.466	2600	23.30	3.710	10.100
80	45.70	7.270	0.609	2800	22.70	3.620	10.600
100	44.80	7.130	0.746	3000	22.20	3.530	11.080
200	41.40	6.600	1.381	3200	21.70	3.450	11.550
300	39.10	6.220	1.953	3400	21.20	3.360	11.990
400	37.20	5.920	2.480	3600	20.70	3.300	12.420
500	35.70	5.680	2.980	3800	20.30	3.230	12.840
600	34.40	5.480	3.440	4000	19.86	3.160	13.240
700	33.30	5.310	3.890	4500	18.91	3.010	14.180
800	32.40	5.150	4.320	5000	18.06	2.870	15.050
900	31.50	5.010	4.730	5500	17.28	2.750	15.840
1000	30.70	4.890	5.120	6000	16.58	2.640	16.580
1100	30.00	4.770	5.500	6500	15.93	2.540	17.260
1200	29.30	4.670	5.870	7000	15.33	2.440	17.880
1300	28.70	4.570	6.220	7500	14.76	2.350	18.460
1400	28.20	4.480	6.570	8000	14.24	2.270	18.990
1500	27.60	4.400	6.910	8500	13.74	2.180	19.470
1600	27.10	4.320	7.230	9000	13.28	2.110	19.920
1700	26.70	4.240	7.550	9500	12.84	2.040	20.300
1800	26.20	4.170	7.860	10000	12.42	1.976	20.700
1900	25.80	4.100	8.160				

Admissible tensile force of the belt F_{Tadm} / belt weight

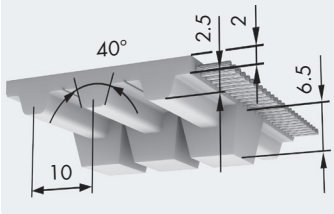
Belt width		b [mm]	50	100
BFX TK10K6 [E / Steel tension member]		F_{Tadm} [N]	3800	7800
BFX TK10K6 [Stainless steel tension member]		F_{Tadm} [N]	3040	6240
Belt weight	Standard	[kg/m]	0.235	0.458
	DL	[kg/m]	–	–
	DR	[kg/m]	–	–
	T	[kg/m]	–	–

Flexibility (minimum number of teeth / minimum diameter)

			Steel tension member				E / Steel tension member				Stainless steel tension member			
			Standard	DL	DR	T	Standard	DL	DR	T	Standard	DL	DR	T
z_{min} d_{min}	without contraflexure	z_{min}	20	–	–	–	20	–	–	–	25	–	–	–
		d_{min} [mm]	60	–	–	–	60	–	–	–	80	–	–	–
z_{min} d_{min}	with contraflexure	z_{min}	25	–	–	–	25	–	–	–	40	–	–	–
		d_{min} [mm]	80	–	–	–	80	–	–	–	130	–	–	–

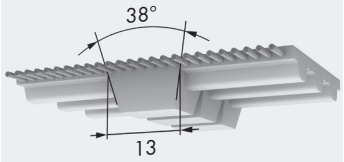
Self-guiding PU timing belts with track BRECOFLEX® TK10K13

Standard



TK10K13

Standard



TK10K13

Belt widths b [mm] / in-between belt widths on request

50

BFX TK10K13	**Available lengths and versions**
Standard lengths	see table on the right
Any number of teeth available from	1200 mm up to 22000 mm
Intermediate lengths	from 1200 mm ○
StandardPlus version	1200 mm up to 22000 mm
Over 22000 mm	on request
Standard material	TPUST1[1)]
Steel tension member (Standard)	×
E / Steel tension member	○
Stainless steel tension member	○
PAZ	×
DL / DL-PAZ	–
DR / DR-PAZ	–
T / T-PAZ	–

Standard lengths [mm] / number of teeth

Length	Number of teeth	Length	Number of teeth	Length	Number of teeth
1500	150	2650	265	5300	530
1560	156	3000	300	5600	560
1610	161	3100	310	6000	600
1750	175	3150	315	6300	630
1780	178	3350	335	6700	670
1880	188	3750	375	7100	710
1960	196	4000	400	7500	750
2250	225	4250	425	8000	800
2360	236	4500	450	9000	900
2500	250	4750	475		
2800	280	5000	500		

× available, standard lengths (see table) without minimum purchase
○ minimum purchase amount on request
– not available
1) further materials on request

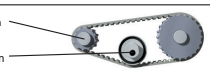
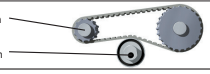
Tooth shear strength (specific belt tooth load bearing)

rpm n	F_{Tspec}	M_{spec}	P_{spec}	rpm n	F_{Tspec}	M_{spec}	P_{spec}
[min⁻¹]	[N/cm]	[Ncm/cm]	[W/cm]	[min⁻¹]	[N/cm]	[Ncm/cm]	[W/cm]
0	50.50	8.04	0.000	2000	25.40	4.040	8.460
20	49.00	7.80	0.163	2200	24.60	3.920	9.030
40	47.70	7.60	0.318	2400	23.90	3.810	9.580
60	46.60	7.42	0.466	2600	23.30	3.710	10.100
80	45.70	7.27	0.609	2800	22.70	3.620	10.600
100	44.80	7.13	0.746	3000	22.20	3.530	11.080
200	41.40	6.60	1.381	3200	21.70	3.450	11.550
300	39.10	6.22	1.953	3400	21.20	3.360	11.990
400	37.20	5.92	2.480	3600	20.70	3.300	12.420
500	35.70	5.68	2.980	3800	20.30	3.230	12.840
600	34.40	5.48	3.440	4000	19.86	3.160	13.240
700	33.30	5.31	3.890	4500	18.91	3.010	14.180
800	32.40	5.15	4.320	5000	18.06	2.870	15.050
900	31.50	5.01	4.730	5500	17.28	2.750	15.840
1000	30.70	4.89	5.120	6000	16.58	2.640	16.580
1100	30.00	4.77	5.500	6500	15.93	2.540	17.260
1200	29.30	4.67	5.870	7000	15.33	2.440	17.880
1300	28.70	4.57	6.220	7500	14.76	2.350	18.460
1400	28.20	4.48	6.570	8000	14.24	2.270	18.990
1500	27.60	4.40	6.910	8500	13.74	2.180	19.470
1600	27.10	4.32	7.230	9000	13.28	2.110	19.920
1700	26.70	4.24	7.550	9500	12.84	2.040	20.300
1800	26.20	4.17	7.860	10000	12.42	1.976	20.700
1900	25.80	4.10	8.160				

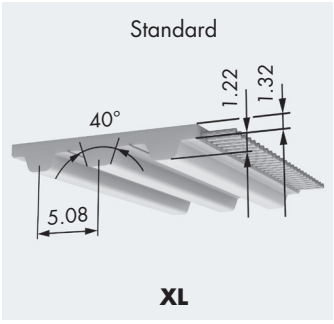
Admissible tensile force of the belt F_{Tadm} / belt weight

Belt width		b [mm]	50
E / Steel tension member		F_{Tadm} [N]	3800
Stainless steel tension member		F_{Tadm} [N]	3040
Belt weight	Standard	[kg/m]	0.283
	DL	[kg/m]	–
	DR	[kg/m]	–
	T	[kg/m]	–

Flexibility (minimum number of teeth / minimum diameter)

		Steel tension member				E / Steel tension member				Stainless steel tension member			
		Standard	DL	DR	T	Standard	DL	DR	T	Standard	DL	DR	T
 without contraflexure	z_{min}	25	–	–	–	25	–	–	–	25	–	–	–
	d_{min} [mm]	80	–	–	–	80	–	–	–	80	–	–	–
 with contraflexure	z_{min}	25	–	–	–	25	–	–	–	40	–	–	–
	d_{min} [mm]	120	–	–	–	120	–	–	–	130	–	–	–

PU timing belts with imperial pitch
BRECOFLEX® XL – T1/5"



Belt widths b [mm] / in-between belt widths on request

6.35	7.94	9.53	12.7	19.1	25.4

Imperial code

025	031	037	050	075	100

1/5"= 5.08 mm

BFX XL	**Available lengths and versions**
Standard lengths	see table on the right
Minimum purchase amount	1 sleeve (b = 101.6 mm)
Further lengths	on request
Standard material	TPUST3
Steel tension member (Standard)	×
E / Steel tension member	–
Stainless steel tension member	–
PAZ	×
DL / DL-PAZ	–
DR / DR-PAZ	–
T / T-PAZ	–

Standard lengths [mm] / number of teeth

Length code	Length [mm]	Number of teeth	Length code	Length [mm]	Number of teeth
60	152.40	30	170	431.80	85
70	177.80	35	180	457.20	90
80	203.20	40	190	482.60	95
90	228.60	45	200	508.00	100
100	254.00	50	210	533.40	105
110	279.40	55	220	558.80	110
120	304.80	60	230	584.20	115
130	330.20	65	240	609.60	120
140	355.60	70	250	635.00	125
150	381.00	75	260	660.40	130
160	406.40	80			

× available, standard lengths (see table) without minimum purchase
○ minimum purchase amount on request
– not available
1) further materials on request

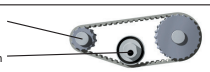
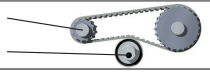
Tooth shear strength (specific belt tooth load bearing)

rpm n	F_{Tspec}	M_{spec}	P_{spec}	rpm n	F_{Tspec}	M_{spec}	P_{spec}
[min⁻¹]	[N/cm]	[Ncm/cm]	[W/cm]	[min⁻¹]	[N/cm]	[Ncm/cm]	[W/cm]
0	24.40	1.973	0.000	2000	13.91	1.125	2.360
20	23.80	1.922	0.040	2200	13.60	1.100	2.530
40	23.20	1.879	0.079	2400	13.31	1.076	2.710
60	22.80	1.842	0.116	2600	13.05	1.055	2.870
80	22.40	1.809	0.152	2800	12.80	1.035	3.060
100	22.00	1.780	0.186	3000	12.57	1.017	3.190
200	20.60	1.667	0.349	3200	12.36	0.999	3.350
300	19.63	1.587	0.498	3400	12.16	0.983	3.500
400	18.86	1.525	0.639	3600	11.96	0.967	3.650
500	18.23	1.474	0.772	3800	11.78	0.953	3.790
600	17.70	1.431	0.899	4000	11.61	0.939	3.930
700	17.24	1.394	1.022	4500	11.21	0.907	4.270
800	16.83	1.361	1.140	5000	10.86	0.878	4.600
900	16.47	1.332	1.255	5500	10.54	0.852	4.910
1000	16.14	1.305	1.367	6000	10.24	0.828	5.200
1100	15.84	1.281	1.475	6500	9.97	0.806	5.490
1200	15.57	1.259	1.582	7000	9.72	0.786	5.760
1300	15.31	1.238	1.685	7500	9.49	0.767	6.020
1400	15.07	1.219	1.787	8000	9.27	0.749	6.280
1500	14.85	1.201	1.886	8500	9.06	0.732	6.520
1600	14.64	1.184	1.984	9000	8.86	0.717	6.760
1700	14.45	1.168	2.080	9500	8.68	0.702	6.980
1800	14.26	1.153	2.170	10000	8.51	0.688	7.200
1900	14.08	1.139	2.270				

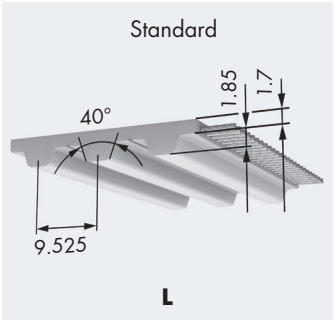
Admissible tensile force of the belt F_{Tadm} / belt weight

Belt width		b [mm]	6.35	7.94	9.53	12.7	19.1	25.4
E / Steel tension member		F_{Tadm} [N]	180	240	300	420	690	930
Stainless steel tension member		F_{Tadm} [N]	–	–	–	–	–	–
Belt weight	Standard	[kg/m]	0.016	0.020	0.024	0.030	0.038	0.061
	DL	[kg/m]	–	–	–	–	–	–
	DR	[kg/m]	–	–	–	–	–	–
	T	[kg/m]	–	–	–	–	–	–

Flexibility (minimum number of teeth / minimum diameter)

		Steel tension member				E / Steel tension member				Stainless steel tension member			
		Standard	DL	DR	T	Standard	DL	DR	T	Standard	DL	DR	T
 without contraflexure	z_{min}	10	–	–	–	–	–	–	–	–	–	–	–
	d_{min} [mm]	30	–	–	–	–	–	–	–	–	–	–	–
 with contraflexure	z_{min}	15	–	–	–	–	–	–	–	–	–	–	–
	d_{min} [mm]	30	–	–	–	–	–	–	–	–	–	–	–

PU timing belts with imperial pitch
BRECOFLEX® L – T3/8"



Belt widths b [mm] / in-between belt widths on request

9.53	12.7	19.1	25.4	50.8	101.6

Imperial code

037	050	075	100	200	400

3/8" = 9.525 mm

BFX L	**Available lengths and versions**	
Standard lengths	see table on the right	
Minimum purchase amount	up to 685.8 mm	1 sleeve (b = 101.6 mm)
Any number of teeth available from	723.9 mm up to 14992.35 mm	
Intermediate lengths	from 723.9 mm	○
StandardPlus version	723.9 mm up to 14992.35 mm	
Over 14992.35	on request	
Standard material	up to 685.8 mm	TPUST3
	from 723.9 mm	TPUST1[1)]
Steel tension member (Standard)	×	
E / Steel tension member	–	
Stainless steel tension member	–	
PAZ	×	
DL / DL-PAZ	–	
DR / DR-PAZ	–	
T / T-PAZ	–	

Standard lengths [mm] / number of teeth

Length code	Length [mm]	Number of teeth	Length code	Length [mm]	Number of teeth
124	314.33	33	367	933.45	98
150	381.00	40	390	990.60	104
187	476.25	50	420	1066.80	112
202	514.35	54	450	1143.00	120
210	533.40	56	480	1219.20	128
225	571.50	60	540	1371.60	144
240	609.60	64	570	1447.80	152
255	647.70	68	600	1524.00	160
270	685.80	72	630	1600.20	168
285	723.90	76	660	1676.40	176
300	762.00	80	705	1790.70	188
322	819.15	86	750	1905.00	200
345	876.30	92			

× available, standard lengths (see table) without minimum purchase
○ minimum purchase amount on request
– not available
1) further materials on request

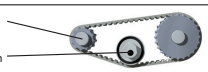
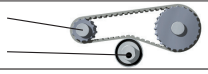
Tooth shear strength (specific belt tooth load bearing)

rpm n [min⁻¹]	F_{Tspec} [N/cm]	M_{spec} [Ncm/cm]	P_{spec} [W/cm]	rpm n [min⁻¹]	F_{Tspec} [N/cm]	M_{spec} [Ncm/cm]	P_{spec} [W/cm]
0	37.40	5.670	0.000	2000	18.78	2.850	5.960
20	36.30	5.500	0.115	2200	18.22	2.760	6.370
40	35.30	5.350	0.224	2400	17.71	2.690	6.750
60	34.50	5.230	0.329	2600	17.25	2.610	7.120
80	33.80	5.120	0.429	2800	16.81	2.550	7.470
100	33.10	5.020	0.526	3000	16.40	2.490	7.810
200	30.70	4.650	0.974	3200	16.02	2.430	8.140
300	28.90	4.380	1.377	3400	15.66	2.370	8.450
400	27.50	4.180	1.749	3600	15.32	2.320	8.760
500	26.40	4.010	2.100	3800	15.00	2.270	9.050
600	25.50	3.860	2.430	4000	14.69	2.230	9.330
700	24.70	3.740	2.740	4500	13.99	2.120	9.990
800	24.00	3.630	3.040	5000	13.36	2.030	10.610
900	23.30	3.530	3.330	5500	12.79	1.939	11.170
1000	22.70	3.450	3.610	6000	12.27	1.860	11.690
1100	22.20	3.370	3.880	6500	11.79	1.787	12.160
1200	21.70	3.290	4.140	7000	11.34	1.719	12.600
1300	21.30	3.220	4.390	7500	10.93	1.656	13.010
1400	20.80	3.160	4.630	8000	10.54	1.597	13.380
1500	20.40	3.100	4.870	8500	10.17	1.542	13.720
1600	20.10	3.040	5.100	9000	9.83	1.490	14.040
1700	19.72	2.990	5.320	9500	9.50	1.440	14.330
1800	19.39	2.940	5.540	10000	9.19	1.393	14.590
1900	19.08	2.890	5.750				

Admissible tensile force of the belt F_{Tadm} / belt weight

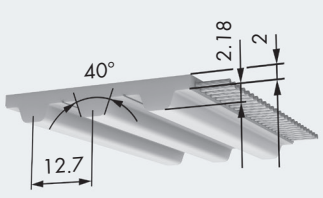
Belt width		b [mm]	9.53	12.7	19.1	25.4	50.8	101.6
E / Steel tension member		F_{Tadm} [N]	630	910	1470	2030	4270	8750
Stainless steel tension member		F_{Tadm} [N]	–	–	–	–	–	–
Belt weight	Standard	[kg/m]	0.038	0.044	0.066	0.088	0.178	0.356
	DL	[kg/m]	–	–	–	–	–	–
	DR	[kg/m]	–	–	–	–	–	–
	T	[kg/m]	–	–	–	–	–	–

Flexibility (minimum number of teeth / minimum diameter)

		Steel tension member				E / Steel tension member				Stainless steel tension member			
		Standard	DL	DR	T	Standard	DL	DR	T	Standard	DL	DR	T
 without contraflexure	z_{min}	15	–	–	–	–	–	–	–	–	–	–	–
	d_{min} [mm]	60	–	–	–	–	–	–	–	–	–	–	–
 with contraflexure	z_{min}	20	–	–	–	–	–	–	–	–	–	–	–
	d_{min} [mm]	60	–	–	–	–	–	–	–	–	–	–	–

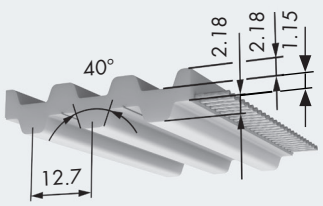
PU timing belts with imperial pitch
BRECOFLEX® H – T1/2"

Standard



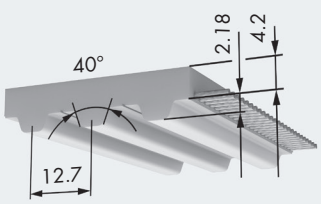
H

Double-sided



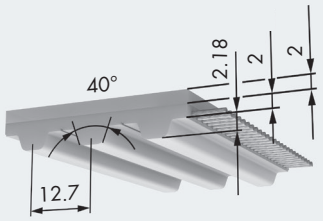
H-DL

Reinforced back of the belt



H-DR

Version T



H-T

Belt widths b [mm] / in-between belt widths on request

12.7	19.1	25.4	38.1	50.8	76.2	101.6

Imperial code

050	075	100	150	200	300	400

1/2" = 12.7 mm

BFX H	**Available lengths and versions**
Standard lengths	see table on the right
Any number of teeth available from	723.9 mm up to 16002 mm
Intermediate lengths	from 723.9 mm ○
StandardPlus version	723.9 mm up to 16002 mm
Over 16002 mm	on request
Standard material	from 723.9 mm TPUST1[1)]
Steel tension member (Standard)	×
E / Steel tension member	–
Stainless steel tension member	–
PAZ	×
DL / DL-PAZ	from 901.7 mm ○
DR / DR-PAZ	from 901.7 mm ○
T / T-PAZ	○

Standard lengths [mm] / number of teeth

Length code	Length [mm]	Number of teeth	Length code	Length [mm]	Number of teeth
420	1066.80	84	850	2159.00	170
450	1143.00	90	900	2286.00	180
480	1219.20	96	1000	2540.00	200
510	1295.40	102	1100	2794.00	220
540	1371.60	108	1250	3175.00	250
570	1447.80	114	1400	3556.00	280
600	1524.00	120	1700	4318.00	340
630	1600.20	126	2000	5080.00	400
660	1676.40	132	2300	5842.00	460
700	1778.00	140	2600	6604.00	520
750	1905.00	150	3000	7620.00	600
800	2032.00	160			

× available, standard lengths (see table) without minimum purchase
○ minimum purchase amount on request
– not available
1) further materials on request

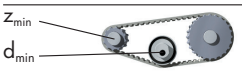
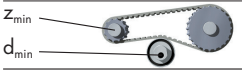
Tooth shear strength (specific belt tooth load bearing)

rpm n	F_{Tspec}	M_{spec}	P_{spec}	rpm n	F_{Tspec}	M_{spec}	P_{spec}
[min⁻¹]	[N/cm]	[Ncm/cm]	[W/cm]	[min⁻¹]	[N/cm]	[Ncm/cm]	[W/cm]
0	44.00	8.90	0.000	2000	22.10	4.47	9.370
20	42.70	8.64	0.181	2200	21.50	4.34	10.000
40	41.60	8.41	0.352	2400	20.90	4.22	10.600
60	40.70	8.22	0.516	2600	20.30	4.11	11.180
80	39.80	8.05	0.674	2800	19.81	4.00	11.740
100	39.10	7.89	0.827	3000	19.33	3.91	12.270
200	36.10	7.30	1.530	3200	18.88	3.82	12.790
300	34.10	6.89	2.160	3400	18.45	3.73	13.280
400	32.50	6.56	2.750	3600	18.05	3.65	13.760
500	31.10	6.30	3.300	3800	17.68	3.57	14.220
600	30.00	6.07	3.810	4000	17.32	3.50	14.660
700	29.10	5.88	4.310	4500	16.49	3.33	15.700
800	28.20	5.71	4.780	5000	15.74	3.18	16.660
900	27.50	5.55	5.230	5500	15.07	3.05	17.550
1000	26.80	5.41	5.670	6000	14.46	2.92	18.360
1100	26.20	5.29	6.090	6500	13.89	2.81	19.110
1200	25.60	5.17	6.500	7000	13.36	2.70	19.800
1300	25.10	5.06	6.890	7500	12.87	2.60	20.400
1400	24.60	4.96	7.280	8000	12.42	2.51	21.000
1500	24.10	4.87	7.650	8500	11.99	2.42	21.600
1600	23.70	4.78	8.010	9000	11.58	2.34	22.100
1700	23.20	4.70	8.360	9500	11.19	2.26	22.500
1800	22.90	4.62	8.710	10000	10.83	2.19	22.900
1900	22.50	4.54	9.040				

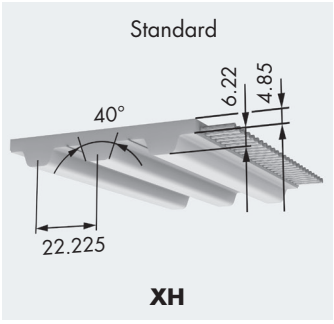
Admissible tensile force of the belt F_{Tadm} / belt weight

Belt width		b [mm]	12.7	19.1	25.4	38.1	50.8	76.2	101.6
E / Steel tension member		F_{Tadm} [N]	800	1300	1800	2800	3800	5800	7900
Stainless steel tension member		F_{Tadm} [N]	–	–	–	–	–	–	–
Belt weight	Standard	[kg/m]	0.053	0.079	0.108	0.161	0.216	0.324	0.432
	DL	[kg/m]	0.064	0.097	0.130	0.196	0.262	0.394	0.527
	DR	[kg/m]	0.085	0.128	0.171	0.258	0.345	0.518	0.692
	T	[kg/m]	0.082	0.124	0.165	0.249	0.333	0.499	0.668

Flexibility (minimum number of teeth / minimum diameter)

		Steel tension member				E / Steel tension member				Stainless steel tension member			
		Standard	DL	DR	T	Standard	DL	DR	T	Standard	DL	DR	T
 without contraflexure	z_{min}	14	20	20	20	–	–	–	–	–	–	–	–
	d_{min} [mm]	60	60	80	80	–	–	–	–	–	–	–	–
 with contraflexure	z_{min}	20	20	20	20	–	–	–	–	–	–	–	–
	d_{min} [mm]	80	80	80	80	–	–	–	–	–	–	–	–

PU timing belts with imperial pitch
BRECOFLEX® XH – T7/8"



Belt widths b [mm] / in-between belt widths on request

50.8	76.2	101.6

Imperial code

200	300	400

7/8" = 22.225 mm

BFX XH	**Available lengths and versions**
Standard lengths	see table on the right
Any number of teeth available from	1422.4 mm up to 16002 mm
Intermediate lengths	from 1422.4 mm ○
StandardPlus version	1422.4 mm up to 16002 mm
Over 16002 mm	on request
Standard material	TPUST1[1)]
Steel tension member (Standard)	×
E / Steel tension member	–
Stainless steel tension member	–
PAZ	×
DL / DL-PAZ	–
DR / DR-PAZ	–
T / T-PAZ	–

Standard lengths [mm] / number of teeth

Length code	Length [mm]	Number of teeth	Length code	Length [mm]	Number of teeth
560	1422.40	64	1400	3556.00	160
630	1600.20	72	1540	3911.60	176
700	1778.00	80	1750	4445.00	200
770	1955.80	88	1960	4978.40	224
840	2133.60	96	2275	5778.50	260
980	2489.20	112	2450	6223.00	280
1120	2844.80	128	3500	8890.00	400
1260	3200.40	144			

× available, standard lengths (see table) without minimum purchase
○ minimum purchase amount on request
– not available
1) further materials on request

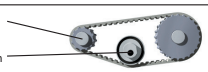
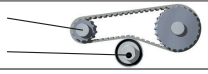
Tooth shear strength (specific belt tooth load bearing)

rpm n	F_{Tspec}	M_{spec}	P_{spec}	rpm n	F_{Tspec}	M_{spec}	P_{spec}
[min⁻¹]	[N/cm]	[Ncm/cm]	[W/cm]	[min⁻¹]	[N/cm]	[Ncm/cm]	[W/cm]
0	91.35	29.070	0.000	2000	40.77	12.978	27.180
20	88.29	28.080	0.589	2200	39.24	12.501	28.800
40	85.77	27.270	1.144	2400	37.89	12.060	30.330
60	83.52	26.550	1.670	2600	36.63	11.665	31.680
80	81.63	26.010	2.178	2800	35.46	11.277	33.030
100	79.83	25.380	2.664	3000	34.29	10.917	34.290
200	73.08	23.310	4.878	3200	33.30	10.593	35.460
300	68.31	21.780	6.831	3400	32.31	10.278	36.630
400	64.62	20.610	8.613	3600	31.41	9.981	37.620
500	61.56	19.620	10.269	3800	30.51	9.702	38.610
600	59.04	18.810	11.799	4000	29.70	9.441	39.510
700	56.79	18.090	13.257	4500	27.72	8.829	41.580
800	54.81	17.460	14.625				
900	53.10	16.902	15.930				
1000	51.48	16.398	17.172				
1100	50.04	15.939	18.360				
1200	48.78	15.516	19.530				
1300	47.52	15.120	20.610				
1400	46.35	14.760	21.600				
1500	45.27	14.418	22.680				
1600	44.28	14.094	23.580				
1700	43.38	13.797	24.570				
1800	42.48	13.509	25.470				
1900	41.58	13.239	26.370				

Admissible tensile force of the belt F_{Tadm} / belt weight

Belt width		b [mm]	50.8	76.2	101.6
E / Steel tension member		F_{Tadm} [N]	7750	12000	16250
Stainless steel tension member		F_{Tadm} [N]	–	–	–
Belt weight	Standard	[kg/m]	0.530	0.795	1.059
	DL	[kg/m]	–	–	–
	DR	[kg/m]	–	–	–
	T	[kg/m]	–	–	–

Flexibility (minimum number of teeth / minimum diameter)

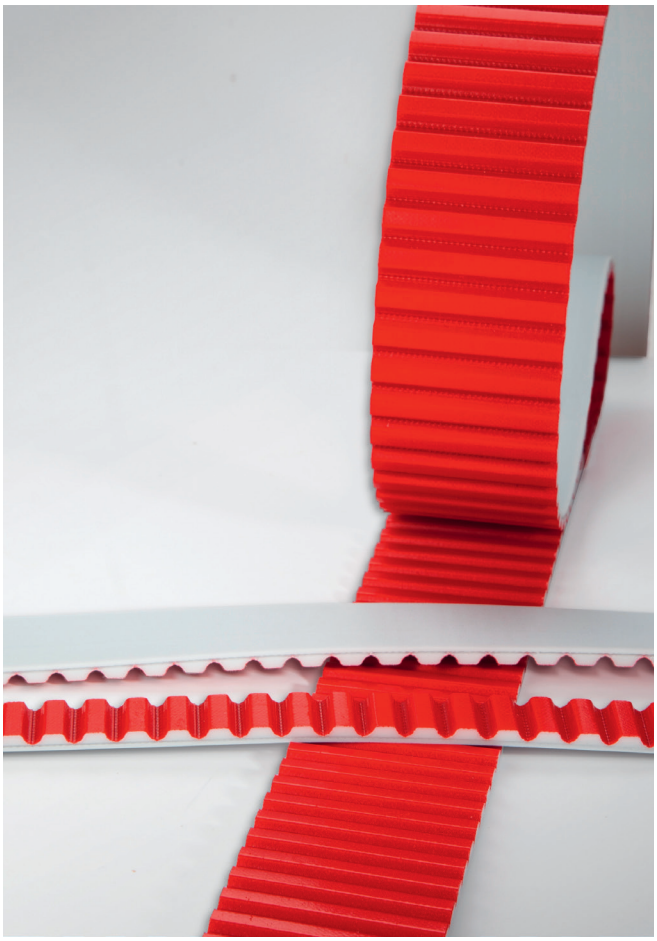
		Steel tension member				E / Steel tension member				Stainless steel tension member			
		Standard	DL	DR	T	Standard	DL	DR	T	Standard	DL	DR	T
 without contraflexure	z_{min}	18	–	–	–	–	–	–	–	–	–	–	–
	d_{min} [mm]	150	–	–	–	–	–	–	–	–	–	–	–
 with contraflexure	z_{min}	25	–	–	–	–	–	–	–	–	–	–	–
	d_{min} [mm]	180	–	–	–	–	–	–	–	–	–	–	–

BRECOFLEXmove

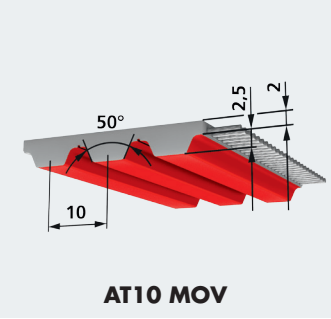
The BRECOFLEXmove is a timing belt specifically designed for high-performance drives and traction drives with a particularly high stiffness requirement. A newly developed steel cord tension member increases belt stiffness and tear-resistance, making transmission of stronger forces possible. The tooth flank geometry has been optimised through the Finite Element Method (FEM). This leads to an optimisation of the contact pressure distribution and reduces the work of friction between the timing belts and tooth washer, thus minimising wear. In addition, a friction-optimised laminate coating is applied to the tooth side.

Selecting a narrower BRECOFLEXmove timing belt as an alternative to an endless standard timing belt makes a more compact drive design possible.

- a newly developed tension member for transmission of stronger forces
- a FEM-optimised tooth flank geometry
- minimised wear due to alaminate coating
- a space saver due to the option of choosing a narrower belt width



BRECOFLEXmove



AT10 MOV

Belt widths b [mm] / in-between belt widths on request

25	32	50	75	100

BRECOFLEXmove AT10 MOV	**Available lengths and versions**
Standard delivery lengths	see table on the right
Any number of teeth available from	1400 mm up to 30500 mm
Intermediate lengths	Minimum order number on request
Standard material	TPUST1
move tension member (Standard)	Steel
E tension member	not available
VA tension member	not available
Laminate coating on the tooth side (Standard)	red
Belt color	white / red

Standard lengths [mm] / number of teeth

Length	Number of teeth	Length	Number of teeth
720	72	3000	300
780	78	3150	315
840	84	3350	335
980	98	3550	355
1080	108	3750	375
1150	115	4000	400
1240*	124	4250	425
1400	140	4500	450
1500	150	4750	475
1600	160	5000	500
1700	170	5300	530
1800	180	5600	560
1900	190	6000	600
2000	200	6300	630
2120	212	6700	670
2240	224	7100	710
2360	236	7500	750
2500	250	8000	800
2650	265	9000	900
2800	280		

Order example

BRECOFLEXmove 75 AT10 MOV / 2650

Width b

Type/pitch

Length in mm

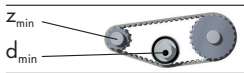
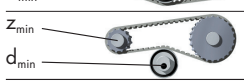
Tooth shear strength (specific belt tooth load bearing)

rpm n [min⁻¹]	F_{Tspec} [N/cm]	M_{spec} [Ncm/cm]	P_{spec} [W/cm]	rpm n [min⁻¹]	F_{Tspec} [N/cm]	M_{spec} [Ncm/cm]	P_{spec} [W/cm]
0	113.2	18.02	0.000	2000	62.1	9.89	20.698
20	111.5	17.76	0.371	2200	60.1	9.55	22.022
40	110.0	17.51	0.733	2400	58.2	9.26	23.254
60	108.6	17.26	1.086	2600	56.4	8.98	24.424
80	107.2	17.05	1.429	2800	54.7	8.72	25.533
100	105.8	16.85	1.763	3000	53.1	8.47	26.596
200	100.1	15.94	3.342	3200	51.7	8.24	27.597
300	95.6	15.22	4.774	3400	50.4	8.01	28.536
400	91.6	14.60	6.114	3600	49.1	7.81	29.429
500	88.4	14.06	7.361	3800	47.9	7.61	30.292
600	85.5	13.60	8.547	4000	46.7	7.42	31.108
700	82.7	13.17	9.656	4500	43.9	6.99	32.956
800	80.4	12.80	10.718	5000	41.4	6.61	34.650
900	78.2	12.44	11.735	5500	39.3	6.25	36.036
1000	76.2	12.14	12.705	6000	37.3	5.93	37.268
1100	74.4	11.84	13.644	6500	35.4	5.62	38.346
1200	72.7	11.57	14.538	7000	33.6	5.34	39.270
1300	71.1	11.32	15.400	7500	32.0	5.08	40.040
1400	69.6	11.07	16.232	8000	30.4	4.85	40.656
1500	68.2	10.84	17.048	8500	29.0	4.62	41.118
1600	66.8	10.64	17.818	9000	27.6	4.40	41.426
1700	65.6	10.44	18.572	9500	26.4	4.19	41.734
1800	64.4	10.24	19.312	10000	25.1	4.00	41.888
1900	63.1	10.06	20.020				

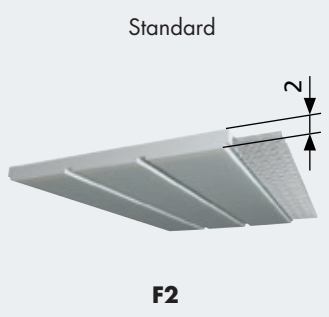
Admissible tensile force of the belt F_{Tadm} / belt weight

Belt width	b [mm]	25	32	50	75	100
move-tension member	F_{Tadm} [N]	6750	8625	13470	20200	26940
Belt weight	[kg/m]	0.173	0.222	0.347	0.520	0.693

Flexibility (minimum number of teeth / minimum diameter)

		move tension member
		Standard
 z_{min} d_{min} without contraflexure	z_{min}	18
	d_{min} [mm]	60
 z_{min} d_{min} with contraflexure	z_{min}	25
	d_{min} [mm]	120

BRECOFLEX® F2



Belt widths b [mm] / in-between belt widths on request

16	25	32	50	75	100

Standard lengths [mm]

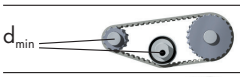
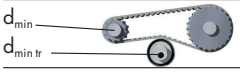
1500
1550
1600
1650
1700
1750
1800
1850
1900
1950
2000
2100
2500
3000
4000
5000

BFX F2	**Available lengths and versions**
Standard lengths	see table on the right
Length graduation from groove to groove (in 10 mm stages)	1500 mm up to 20000 mm
Under 1500 mm	on request
Intermediate lengths	○
Over 20000 mm	on request
Standard material	TPUST1 [1]
Steel tension member (standard)	×
E tension member	○
VA tension member	○
PAZ (groove side)	×

Admissible tensile force of the belt F_{Tadm} / belt weight

Belt width	b [mm]	16	25	32	50	75	100
E / Steel tension member	F_{Tadm}	1000	1800	2300	3800	5800	7800
VA tension member	F_{Tadm}	800	1440	1840	3040	4640	6240
Belt weight	[kg/m]	0.050	0.078	0.100	0.157	0.235	0.313

Flexibility (minimum diameter)

		Steel tension member	E / Steel tension member	Stainless steel tension member
		Standard	Standard	Standard
 without contraflexure	d_{min} [mm]	30	25	60
 with contraflexure	d_{min} [mm]	60	50	130
	$d_{min\ tr}$ [mm]	60	50	130

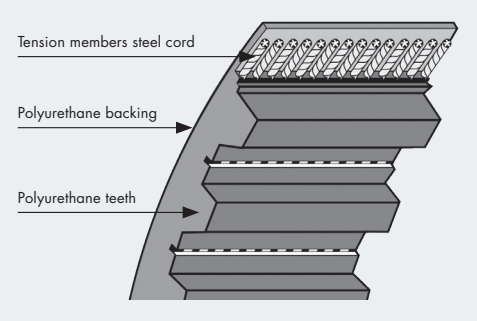
× available
○ minimum purchase amount on request
– not available
[1] further materials on request

High performance PU timing belts
CONTI® SYNCHROFLEX Standard

CONTI® SYNCHROFLEX Polyurethane timing belts deliver best-in-class power transmission performance thanks to the uncompromising selection of high-grade components and the superior bonding strength between the hard-wearing polyurethane shell and the constant length galvanized steel tension members. The highly flexible production process is particularly suitable for manufacturing double-sided belts and high accuracy profiles on the belt back. A range of specialist compounds and materials are available to enable operation at low temperatures, in clean rooms and in the food industry.

Areas of application

CONTI® SYNCHROFLEX timing belts can be used in every sector of industry. From miniature drives handling the high-precision positioning of components for PCB assembly to high performance drives in construction and woodworking machinery – CONTI® SYNCHROFLEX is equally at home.



Properties

- Resistant to oils and greases
- Resistant to benzene and benzole
- Hydrolysis-resistant
- Resistant to UV radiation and ozone
- Suitable for temperatures ranging from –30°C to +80°C.

Please contact our engineers if the application involves temperatures below –10°C or above +50°C.

Versions

CONTI SYNCHROFLEX® timing belts are available in trapezoidal and special profiles.

Tooth profile	Pitch lengths L_B* [mm]
MXL	111.76 – 1178.56
T2	90 – 710
T2.5	55 – 1475
T5	100 – 1500
T10	260 – 4780
AT3	150 – 1011
AT5	225 – 3350
AT10	500 – 1940
AT20	1000 – 1960
ATP10	630 – 1800
ATP15	1185 – 1560
K1 K1.5	57 – 1671

*L_B = pitch length

High performance PU timing belts CONTI® SYNCHROFLEX AT GEN III

A powerful basis

The combination of high-tensile steel cord tension members and wear-resistant polyurethane forms the basis for dimensionally stable and extremely durable high performance timing belts. A convincing technology with excellent product features that include:

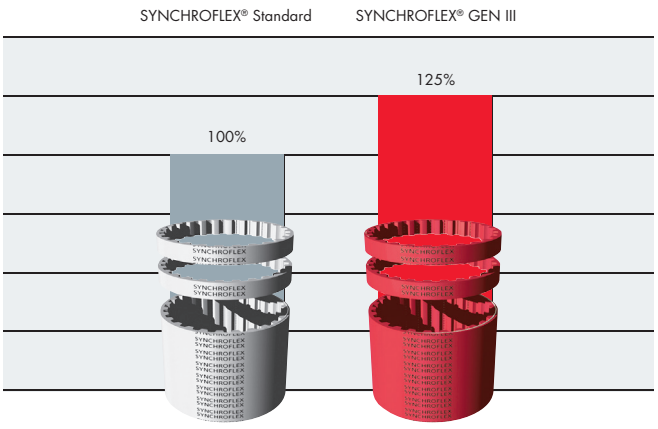
- constant length, no post-elongation
- high dimensional stability
- high-torque transmission
- quiet running
- maintenance-free
- lubrication-free
- highly chemical-resistant and mechanically durable

Each generation is different, GEN III is better!

Further developing the power drives of the AT and ATP range CONTI® SYNCHROFLEX polyurethane timing belts resulted in the new GEN III generation which nets a 25% increase in power transmission compared with the AT/ ATP standard. Another economic bonus: all CONTI® SYNCHROFLEX GEN III polyurethane timing belts support the use of standard AT/ATP pulleys.

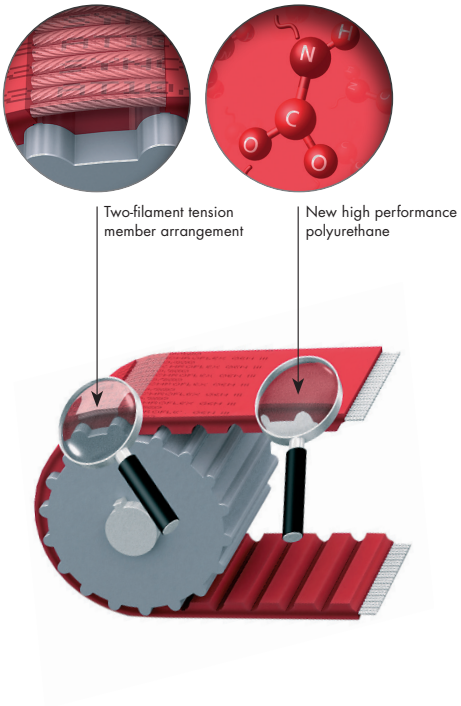
Technical development is synonymous to providing solutions for every product at a level of sophistication down to the smallest detail. A bifilar tension member arrangement and a higher packing density translates this into the CONTI® SYNCHROFLEX GEN III polyurethane timing belt for the AT and ATP ranges.

The high performance polyurethane designed for dedicated use with the CONTI® SYNCHROFLEX GEN III polyurethane timing belts yields greatly improved benchmark results compared with the standard. One of the benefits is that its increased hardness allows line engineers to count on a larger number of load-carrying teeth.



CONTI® SYNCHROFLEX GEN III – with up to 25% greater power transmission compared with the AT standard

- increased tensile force F_{Tadm} to max. +45% due to closer wound cords
- redesigned bifilar steel (S and Z) cord balance for better tracking
- reduced flange friction
- lower running noise with narrower belt width for equal performance
- F_{Tspec} +25%
- longer life
- load-bearing teeth force distribution – increased by up to 30%
- temperature range up to +100°C (for performance values close to the range limit, please ask for technical support.)



High performance PU timing belts CONTI® SYNCHROFLEX Antistatic

The antistatic properties of CONTI® SYNCHROFLEX polyurethane timing belts are achieved by:

1. A post-process application of an electrically conductive coating on all sides of the belts with or without textile facing

2. A special conductive polyurethane mixture (max. belt length up to 700 mm, other lengths on request)

The color of antistatic timing belts is black.
Surface resistance $R \leq 10^6\ \Omega$

Application/Use

Antistatic CONTI® SYNCHROFLEX polyurethane timing belts are used where electrostatic discharge (ESD) is not desired or is prohibited, e.g. for the transport of electronic components, for drives and/or conveying equipment in an inflammable or explosive environment.

Electrostatic charges

The build up of static electricity due to the continual separation of two contact surfaces can be expected where timing belts are involved, e.g. between pulley and timing belt. This static electric charge can be considerable and may increase the danger of ignition at the moment of discharge. The value of the static electric charge is dependent on the materials used for the timing belt, synchronous pulleys, tension rollers and/or support rollers. The risk of ESD rises as the belt speed, belt tension and the contact surface width increase.

Antistatic properties

Antistatic CONTI® SYNCHROFLEX polyurethane timing belts consistently avoid the formation of static electric charges. According to DIN 22104 "Antistatic Conveyor Belts" the surface resistance has to be lower than $3 \cdot 10^8\ \Omega$. Antistatic Synchroflex timing belts have a surface resistance of $R \leq 10^6\ \Omega$.

Quality assurance

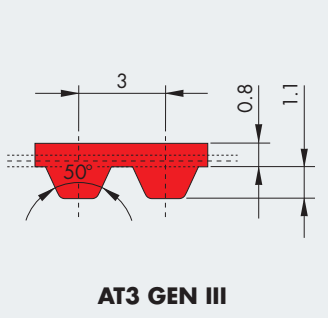
The measurement of the conductivity is made using flexible tongue electrodes according to DIN 53482 or DIN 53596. Upon request the wear resistance of the antistatic layer is checked on a test belt for timing belts with antistatic facing. If the wear resistance test reveals a surface resistance of $R \leq 10^6\ \Omega$, a sufficiently high wear resistance and/or conductivity are guaranteed. Due to the fact that during extended operation and possible wear the conductivity of the antistatic timing belts can deteriorate, regular checks of the resistance values are indispensable. For application in hazardous areas (explosion hazard) please contact our technical department for advice.

Mechanical properties

1. Coated timing belts:
   As coated belts are basically standard PUR belts with an added layer, the same properties and values apply. Tooth shear strength and admissible tensile force can therefore be found in the technical specification tables of the standard belts.

2. Conductive PUR-compounds:
   This polyurethane compound contains electric conductive substances, therefore the strength is accordingly reduced. This means that the properties regarding strength have to be reduced by 30%.

High performance PU timing belts
CONTI® SYNCHROFLEX AT3 GEN III



AT3 GEN III

High performance AT profile with metric pitches and trapezoidal teeth.

Standard version
- single-sided
- high performance polyurethane in red color
- steel cord tension members with high density
- steel cord tension members in two-filament construction
- steel cord tension members in highly flexible construction

FA: with bigger back thickness
FN: with profiles on the back of the belt

Type GEN III	/	Length*	Number of teeth
AT3	/	150	50
AT3	/	201	67
AT3	/	201 FN68	67
AT3	/	252	84
AT3	/	267	89
AT3	/	270	90
AT3	/	300	100
AT3	/	351	117
AT3	/	399	133
AT3	/	417	139
AT3	/	450	150
AT3	/	486 FA	162
AT3	/	486 FN18	162
AT3	/	501	167
AT3	/	549	183
AT3	/	600	200
AT3	/	639	213
AT3	/	648	216
AT3	/	648 FN24	216
AT3	/	714	238
AT3	/	816	272
AT3	/	816 FA	272
AT3	/	900	300
AT3	/	1011	337

preferred belt width* [mm]:
6, 10, 16, 25, 32

* other dimensions upon request

Order example

CONTI® SYNCHROFLEX Timing belt 10 AT3/450 GEN III

Belt width [mm]
Profile/pitch
Belt length [mm]
Specification Generation III

Angst+Pfister

Tooth shear strength (specific belt tooth load bearing)

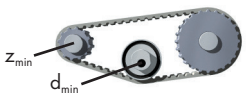
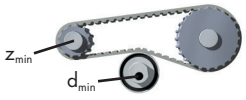
rpm n	F_{Tspec}	M_{spec}	P_{spec}	rpm n	F_{Tspec}	M_{spec}	P_{spec}
[min^{-1}]	[N/cm]	[Ncm/cm]	[W/cm]	[min^{-1}]	[N/cm]	[Ncm/cm]	[W/cm]
0	44.44	2.122	0.000	2400	27.14	1.296	3.256
20	44.00	2.101	0.044	2500	26.83	1.281	3.354
40	43.56	2.080	0.087	2600	26.54	1.267	3.451
60	43.14	2.060	0.129	2800	25.99	1.241	3.639
80	42.74	2.041	0.171	3000	25.48	1.216	3.821
100	42.35	2.022	0.212	3200	24.99	1.193	3.998
150	41.47	1.980	0.311	3400	24.53	1.171	4.169
200	40.67	1.942	0.407	3600	24.09	1.150	4.336
300	39.26	1.875	0.589	3800	23.68	1.130	4.498
400	38.06	1.817	0.761	4000	23.28	1.112	4.656
500	37.01	1.767	0.925	4500	22.36	1.068	5.032
600	36.07	1.722	1.082	5000	21.54	1.028	5.385
700	35.23	1.682	1.233	5500	20.79	0.993	5.716
800	34.47	1.646	1.379	6000	20.10	0.960	6.029
900	33.76	1.612	1.519	6500	19.46	0.929	6.325
1000	33.12	1.581	1.656	7000	18.87	0.901	6.604
1100	32.52	1.553	1.788	7500	18.32	0.875	6.868
1200	31.96	1.526	1.917	8000	17.80	0.850	7.118
1300	31.43	1.501	2.043	8500	17.31	0.826	7.355
1400	30.94	1.477	2.165	9000	16.85	0.804	7.580
1500	30.47	1.455	2.285	9500	16.41	0.783	7.793
1600	30.03	1.434	2.402	10000	15.99	0.764	7.995
1700	29.61	1.414	2.516	12000	14.51	0.693	8.703
1800	29.20	1.394	2.628	15000	12.68	0.605	9.508
1900	28.82	1.376	2.738	18000	11.18	0.534	10.058
2000	28.46	1.359	2.845	20000	10.31	0.492	10.306
2200	27.77	1.326	3.054				

Rotational speeds over 20000 rpm and/or belt speeds over 80 m/s need special drive designs.
Please ask our technical staff for advice.

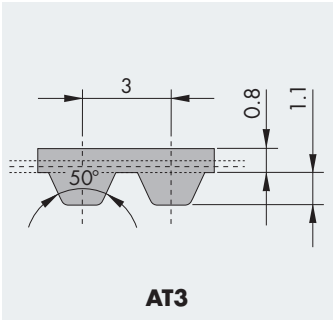
Admissible tensile load of the belt F_{Tadm} / belt weight

Belt width	b	[mm]	6	10	16	25	32
Admissible tensile load	F_{Tadm}	[N]	330	599	1002	1608	2079
Belt weight	AT3 GEN III	[kg/m]	0.016	0.026	0.042	0.065	0.083

Flexibility (minimum number of teeth / minimum diameter)

without contraflexure		Timing pulley	z_{min}	15
		Tension roller (smooth), running on teeth	d_{min} [mm]	20
with contraflexure		Timing pulley	z_{min}	20
		Tension roller (smooth), running on the back of the belt	d_{min} [mm]	20

High performance PU timing belts
CONTI® SYNCHROFLEX AT3



AT3

High performance AT profile with metric pitches and trapezoidal teeth.

Available versions

- single-sided
- with reinforced design
- with aramid tension member
- polyurethane special materials upon request
- antistatic, colored, mechanically reworked

FA: with bigger back thickness
FN: with profiles on the back of the belt

Type	/	Length*	Number of teeth
AT3	/	150	50
AT3	/	201	67
AT3	/	201 FN68	67
AT3	/	252	84
AT3	/	267	89
AT3	/	270	90
AT3	/	300	100
AT3	/	351	117
AT3	/	399	133
AT3	/	417	139
AT3	/	450	150
AT3	/	486 FN18	162
AT3	/	501	167
AT3	/	549	183
AT3	/	600	200
AT3	/	639	213
AT3	/	648	216
AT3	/	648 FN24	216
AT3	/	714	238
AT3	/	816	272
AT3	/	816 FA	272
AT3	/	900	300
AT3	/	1011	337

preferred belt width* [mm]:
6, 10, 16, 25, 32

* other dimensions upon request

Order example

CONTI® SYNCHROFLEX timing belt 10 AT3 / 450

Belt width [mm]

Profile/pitch

Belt length [mm]

Tooth shear strength (specific belt tooth load bearing)

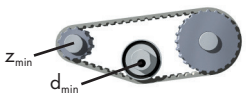
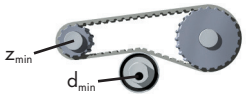
rpm n	F_{Tspec}	M_{spec}	P_{spec}	rpm n	F_{Tspec}	M_{spec}	P_{spec}
[min^{-1}]	[N/cm]	[Ncm/cm]	[W/cm]	[min^{-1}]	[N/cm]	[Ncm/cm]	[W/cm]
0	35.55	1.698	0.000	2400	21.71	1.036	2.605
20	35.20	1.681	0.035	2500	21.47	1.025	2.683
40	34.85	1.664	0.070	2600	21.24	1.014	2.760
60	34.51	1.648	0.104	2800	20.79	0.993	2.911
80	34.19	1.632	0.137	3000	20.38	0.973	3.057
100	33.88	1.618	0.169	3200	19.99	0.954	3.198
150	33.17	1.584	0.249	3400	19.62	0.937	3.335
200	32.53	1.553	0.325	3600	19.27	0.920	3.469
300	31.41	1.500	0.471	3800	18.94	0.904	3.598
400	30.45	1.454	0.609	4000	18.62	0.889	3.724
500	29.61	1.414	0.740	4500	17.89	0.854	4.025
600	28.86	1.378	0.866	5000	17.23	0.823	4.308
700	28.18	1.346	0.986	5500	16.63	0.794	4.573
800	27.57	1.316	1.103	6000	16.08	0.768	4.823
900	27.01	1.290	1.215	6500	15.57	0.743	5.060
1000	26.49	1.265	1.325	7000	15.10	0.721	5.283
1100	26.01	1.242	1.431	7500	14.65	0.700	5.494
1200	25.56	1.221	1.534	8000	14.24	0.680	5.695
1300	25.14	1.201	1.634	8500	13.85	0.661	5.884
1400	24.75	1.182	1.732	9000	13.48	0.643	6.064
1500	24.37	1.164	1.828	9500	13.13	0.627	6.234
1600	24.02	1.147	1.921	10000	12.79	0.611	6.396
1700	23.68	1.131	2.013	12000	11.60	0.554	6.962
1800	23.36	1.116	2.103	15000	10.14	0.484	7.606
1900	23.06	1.101	2.190	18000	8.94	0.427	8.047
2000	22.77	1.087	2.276	20000	8.25	0.394	8.245
2200	22.22	1.061	2.444				

Rotational speeds over 20000 rpm and/or belt speeds over 80 m/s need special drive designs.
Please ask our technical staff for advice.

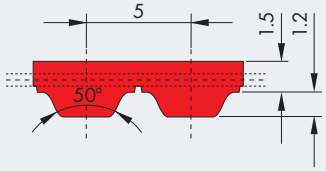
Admissible tensile load of the belt F_{Tadm} / belt weight

Belt width	b	[mm]	6	10	16	25	32
Admissible tensile load	F_{Tadm}	[N]	190	380	646	1102	1406
Belt weight	AT3	[kg/m]	0.014	0.023	0.037	0.058	0.074

Flexibility (minimum number of teeth / minimum diameter)

without contraflexure		Timing pulley	z_{min}	15
		Tension roller (smooth), running on teeth	d_{min} [mm]	20
with contraflexure		Timing pulley	z_{min}	20
		Tension roller (smooth), running on the back of the belt	d_{min} [mm]	20

High performance PU timing belts
CONTI® SYNCHROFLEX AT5 GEN III



AT5 Gen III

High performance AT profile with metric pitches and trapezoidal teeth.

Standard version
- single-sided
- high performance polyurethane in red color
- steel cord tension members with high density
- steel cord tension members in two-filament construction
- steel cord tension members in highly flexible construction

FA: with bigger back thickness

Type GEN III	/	Length*	Number of teeth
AT5	/	225	45
AT5	/	255	51
AT5	/	260	52
AT5	/	280	56
AT5	/	300	60
AT5	/	330	66
AT5	/	340	68
AT5	/	375	75
AT5	/	390	78
AT5	/	420	84
AT5	/	450	90
AT5	/	455	91
AT5	/	480	96
AT5	/	490	98
AT5	/	500	100
AT5	/	525	105
AT5	/	545	109
AT5	/	600	120
AT5	/	610	122
AT5	/	620	124
AT5	/	630	126
AT5	/	660	132
AT5	/	670	134
AT5	/	690	138
AT5	/	710	142
AT5	/	720	144
AT5	/	750	150
AT5	/	780	156
AT5	/	825	165
AT5	/	860	172
AT5	/	875	175
AT5	/	900	180
AT5	/	920	184
AT5	/	975	195
AT5	/	1050	210
AT5	/	1125	225
AT5	/	1230	246
AT5	/	1500	300
AT5	/	1750	350
AT5	/	2000	400
AT5	/	3350 FA	670
AT5	/	3800 FA	760

preferred belt width* [mm]:
6, 10, 16, 25, 32, 50, 75, 100

* other dimensions upon request

Order example

CONTI® SYNCHROFLEX timing belt 50 AT5/450 GEN III

Belt width [mm]

Profile/pitch

Belt length [mm]

Specification Generation III

Tooth shear strength (specific belt tooth load bearing)

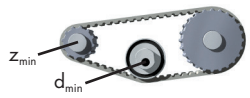
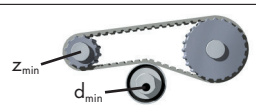
rpm n	F_{Tspec}	M_{spec}	P_{spec}	rpm n	F_{Tspec}	M_{spec}	P_{spec}
[min^{-1}]	[N/cm]	[Ncm/cm]	[W/cm]	[min^{-1}]	[N/cm]	[Ncm/cm]	[W/cm]
0	48.48	3.858	0.000	2000	30.07	2.393	5.012
20	47.96	3.816	0.080	2200	29.29	2.331	5.370
40	47.43	3.775	0.158	2400	28.57	2.274	5.714
60	46.94	3.735	0.235	2600	27.91	2.221	6.046
80	46.47	3.698	0.310	2800	27.28	2.171	6.365
100	46.02	3.662	0.383	3000	26.70	2.124	6.673
200	44.05	3.505	0.734	3200	26.14	2.081	6.971
300	42.42	3.376	1.060	3400	25.62	2.039	7.259
400	41.03	3.265	1.368	3600	25.13	2.000	7.538
500	39.82	3.169	1.659	3800	24.66	1.962	7.809
600	38.75	3.083	1.937	4000	24.21	1.927	8.071
700	37.78	3.007	2.204	4500	23.18	1.845	8.692
800	36.91	2.937	2.460	5000	22.25	1.770	9.270
900	36.11	2.873	2.708	5500	21.40	1.703	9.808
1000	35.37	2.815	2.947	6000	20.62	1.641	10.311
1100	34.68	2.760	3.179	6500	19.90	1.584	10.781
1200	34.05	2.709	3.404	7000	19.24	1.531	11.220
1300	33.45	2.662	3.623	7500	18.61	1.481	11.632
1400	32.88	2.617	3.836	8000	18.03	1.435	12.017
1500	32.35	2.575	4.044	8500	17.48	1.391	12.377
1600	31.85	2.535	4.247	9000	16.95	1.349	12.715
1700	31.37	2.497	4.444	9500	16.46	1.310	13.030
1800	30.92	2.460	4.638	10000	15.99	1.273	13.325
1900	30.49	2.426	4.827				

Rotational speeds over 10000 rpm and/or belt speeds over 80 m/s need special drive designs.
Please ask our technical staff for advice.

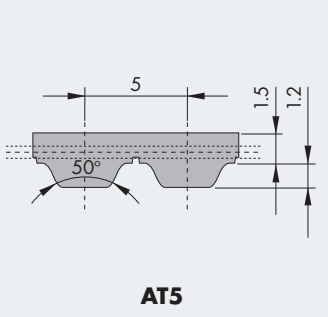
Admissible tensile load of the belt F_{Tadm} / belt weight

Belt width	b	[mm]	6	10	16	25	32	50	75	100
Admissible tensile load	F_{Tadm}	[N]	417	787	1342	2175	2823	4489	6803	9117
Belt weight	AT5 GEN III	[kg/m]	0.022	0.036	0.058	0.090	0.115	0.180	0.270	0.360

Flexibility (minimum number of teeth / minimum diameter)

without contraflexure		Timing pulley	z_{min}	14
		Tension roller (smooth), running on teeth	d_{min} [mm]	20
with contraflexure		Timing pulley	z_{min}	20
		Tension roller (smooth), running on the back of the belt	d_{min} [mm]	50

High performance PU timing belts
CONTI® SYNCHROFLEX AT5



AT5

High performance AT profile with metric pitches and trapezoidal teeth.

The technical data refers to standard polyurethane and standard steel cord tension members.

Available versions
- single-sided
- with E steel tension member for better flexibility
- with reinforced design
- with aramid tension member
- polyurethane special materials upon request
- antistatic, colored, mechanically reworked

FA: with bigger back thickness

Type GEN III	/	Length*	Number of teeth
AT5	/	225	45
AT5	/	255	51
AT5	/	260	52
AT5	/	280	56
AT5	/	300	60
AT5	/	330	66
AT5	/	340	68
AT5	/	375	75
AT5	/	390	78
AT5	/	420	84
AT5	/	450	90
AT5	/	455	91
AT5	/	480	96
AT5	/	490	98
AT5	/	500	100
AT5	/	525	105
AT5	/	545	109
AT5	/	600	120
AT5	/	610	122
AT5	/	620	124
AT5	/	630	126
AT5	/	660	132
AT5	/	670	134
AT5	/	690	138
AT5	/	710	142
AT5	/	720	144
AT5	/	750	150
AT5	/	780	156
AT5	/	825	165
AT5	/	860	172
AT5	/	875	175
AT5	/	900	180
AT5	/	920	184
AT5	/	975	195
AT5	/	1050	210
AT5	/	1125	225
AT5	/	1230	246
AT5	/	1500	300
AT5	/	1750	350
AT5	/	2000	400
AT5	/	3350 FA**	670
AT5	/	3800 FA**	760

preferred belt width* [mm]:
6, 10, 16, 25, 32, 50

* other dimensions upon request
** Please request technical support from Angst+Pfister.

Order example

CONTI® SYNCHROFLEX timing belt 10 AT5/450

Belt width [mm]

Profile/pitch

Belt length [mm]

Angst+Pfister

Tooth shear strength (specific belt tooth load bearing)

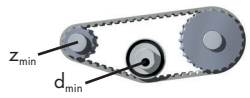
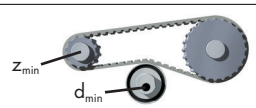
rpm n	F_{Tspec}	M_{spec}	P_{spec}	rpm n	F_{Tspec}	M_{spec}	P_{spec}
[min^{-1}]	[N/cm]	[Ncm/cm]	[W/cm]	[min^{-1}]	[N/cm]	[Ncm/cm]	[W/cm]
0	38.79	3.086	0.000	2000	24.06	1.914	4.009
20	38.37	3.053	0.064	2200	23.43	1.865	4.296
40	37.95	3.020	0.126	2400	22.86	1.819	4.571
60	37.55	2.988	0.188	2600	22.32	1.777	4.837
80	37.17	2.958	0.248	2800	21.83	1.737	5.092
100	36.82	2.930	0.307	3000	21.36	1.700	5.339
200	35.24	2.804	0.587	3200	20.92	1.664	5.577
300	33.94	2.701	0.848	3400	20.50	1.631	5.808
400	32.83	2.612	1.094	3600	20.10	1.600	6.031
500	31.86	2.535	1.327	3800	19.73	1.570	6.247
600	31.00	2.467	1.550	4000	19.37	1.541	6.456
700	30.23	2.405	1.763	4500	18.54	1.476	6.954
800	29.53	2.350	1.968	5000	17.80	1.416	7.416
900	28.89	2.299	2.166	5500	17.12	1.362	7.846
1000	28.29	2.252	2.358	6000	16.50	1.313	8.249
1100	27.75	2.208	2.543	6500	15.92	1.267	8.624
1200	27.24	2.167	2.723	7000	15.39	1.225	8.976
1300	26.76	2.129	2.899	7500	14.89	1.185	9.305
1400	26.31	2.094	3.069	8000	14.42	1.148	9.613
1500	25.88	2.060	3.235	8500	13.98	1.113	9.902
1600	25.48	2.028	3.397	9000	13.56	1.079	10.172
1700	25.10	1.997	3.555	9500	13.17	1.048	10.424
1800	24.74	1.968	3.710	10000	12.79	1.018	10.660
1900	24.39	1.941	3.861				

Rotational speeds over 10000 rpm and/or belt speeds over 80 m/s need special drive designs.
Please ask our technical staff for advice.

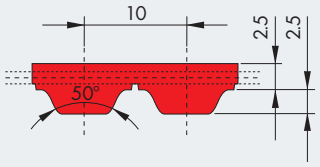
Admissible tensile load of the belt F_{Tadm} / belt weight

Belt width	b	[mm]	6	10	16	25	32	50	75	100
Admissible tensile load	F_{Tadm}	[N]	350	700	1260	2030	2660	4200	6370	8610
Belt weight	AT5	[kg/m]	0.020	0.034	0.054	0.085	0.109	0.170	0.255	0.340

Flexibility (minimum number of teeth / minimum diameter)

without contraflexure		Timing pulley	z_{min}	15
		Tension roller (smooth), running on teeth	d_{min} [mm]	25
with contraflexure		Timing pulley	z_{min}	20
		Tension roller (smooth), running on the back of the belt	d_{min} [mm]	60

High performance PU timing belts
CONTI® SYNCHROFLEX AT10 GEN III



AT10 Gen III

High performance AT profile with metric pitches and trapezoidal teeth.

Standard version
- single-sided
- high performance polyurethane in red color
- steel cord tension members with high density
- steel cord tension members in two-filament construction

FA: with profiles on the back of the belt

Order example

CONTI® SYNCHROFLEX timing belt 32 AT10/800 GEN III

Belt width [mm]

Profile/pitch

Belt length [mm]

Specification Generation III

Type GEN III	/	Length*	Number of teeth
AT10	/	440	44
AT10	/	460	46
AT10	/	500	50
AT10	/	560	56
AT10	/	570	57
AT10	/	580	58
AT10	/	600	60
AT10	/	610	61
AT10	/	660	66
AT10	/	700	70
AT10	/	730	73
AT10	/	780	78
AT10	/	800	80
AT10	/	840	84
AT10	/	840 FN2	84
AT10	/	880	88
AT10	/	890	89
AT10	/	920	92
AT10	/	960	96
AT10	/	980	98
AT10	/	1000	100
AT10	/	1010	101
AT10	/	1050	105
AT10	/	1080	108
AT10	/	1100	110
AT10	/	1150	115
AT10	/	1200	120
AT10	/	1210	121
AT10	/	1250	125
AT10	/	1280	128
AT10	/	1300	130
AT10	/	1320	132
AT10	/	1350	135
AT10	/	1360	136
AT10	/	1360 FN2	136
AT10	/	1400	140
AT10	/	1480	148
AT10	/	1500	150
AT10	/	1600	160
AT10	/	1700	170
AT10	/	1720	172
AT10	/	1800	180
AT10	/	1860	186
AT10	/	1940	194

preferred belt width* [mm]:
16, 25, 32, 50, 75, 100, 150

* other dimensions upon request

Tooth shear strength (specific belt tooth load bearing)

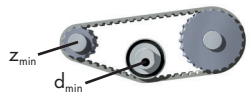
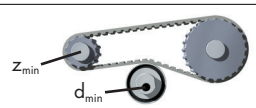
rpm n	F_{Tspec}	M_{spec}	P_{spec}	rpm n	F_{Tspec}	M_{spec}	P_{spec}
[min^{-1}]	[N/cm]	[Ncm/cm]	[W/cm]	[min^{-1}]	[N/cm]	[Ncm/cm]	[W/cm]
0	100.99	16.072	0.000	2000	55.45	8.825	18.481
20	99.58	15.849	0.332	2200	53.61	8.532	19.654
40	98.19	15.627	0.655	2400	51.91	8.262	20.762
60	96.88	15.419	0.969	2600	50.33	8.011	21.809
80	95.65	15.223	1.275	2800	48.86	7.777	22.801
100	94.48	15.037	1.575	3000	47.48	7.557	23.740
200	89.43	14.233	2.981	3200	46.19	7.351	24.632
300	85.32	13.579	4.266	3400	44.96	7.156	25.477
400	81.86	13.029	5.457	3600	43.80	6.972	26.280
500	78.88	12.554	6.573	3800	42.70	6.796	27.043
600	76.25	12.135	7.624	4000	41.65	6.629	27.767
700	73.90	11.762	8.621	4500	39.23	6.244	29.422
800	71.78	11.424	9.570	5000	37.05	5.897	30.874
900	69.85	11.117	10.476	5500	35.07	5.581	32.143
1000	68.07	10.834	11.344	6000	33.25	5.292	33.247
1100	66.43	10.572	12.178	6500	31.57	5.024	34.198
1200	64.90	10.329	12.979	7000	30.01	4.776	35.008
1300	63.47	10.102	13.751	7500	28.55	4.544	35.688
1400	62.13	9.888	14.496	8000	27.19	4.327	36.247
1500	60.86	9.687	15.215	8500	25.90	4.122	36.690
1600	59.67	9.497	15.910	9000	24.69	3.929	37.027
1700	58.53	9.316	16.584	9500	23.54	3.746	37.262
1800	57.46	9.145	17.236	10000	22.44	3.572	37.400
1900	56.43	8.981	17.868				

Rotational speeds over 10000 rpm and/or belt speeds over 60 m/s need special drive designs.
Please ask our technical staff for advice.

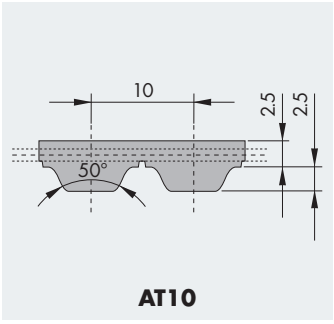
Admissible tensile load of the belt F_{Tadm} / belt weight

Belt width	b	[mm]	16	25	32	50	75	100	150
Admissible tensile load	F_{Tadm}	[N]	3000	5000	6750	10750	16500	22000	33500
Belt weight	AT10 GEN III	[kg/m]	0.117	0.183	0.234	0.365	0.548	0.730	1.095

Flexibility (minimum number of teeth / minimum diameter)

without contraflexure		Timing pulley	z_{min}	15
		Tension roller (smooth), running on teeth	d_{min} [mm]	50
with contraflexure		Timing pulley	z_{min}	25
		Tension roller (smooth), running on the back of the belt	d_{min} [mm]	100

High performance PU timing belts
CONTI® SYNCHROFLEX AT10



AT10

High performance AT profile with metric pitches and trapezoidal teeth.

The technical data refers to standard polyurethane and standard steel cord tension members.

Available versions
- single-sided
- with E steel tension member for better flexibility
- with reinforced tension member design
- with aramid tension member
- polyurethane special materials upon request
- antistatic, colored, mechanically reworked

FN: with profiles on the back of the belt

Order example

CONTI® SYNCHROFLEX timing belt 32 AT10/800

Belt width [mm]

Profile/pitch

Belt length [mm]

Type	/	Length*	Number of teeth
AT10	/	440	44
AT10	/	460	46
AT10	/	500	50
AT10	/	560	56
AT10	/	570	57
AT10	/	580	58
AT10	/	600	60
AT10	/	610	61
AT10	/	660	66
AT10	/	700	70
AT10	/	730	73
AT10	/	780	78
AT10	/	800	80
AT10	/	840	84
AT10	/	840 FN2	84
AT10	/	880	88
AT10	/	890	89
AT10	/	920	92
AT10	/	960	96
AT10	/	980	98
AT10	/	1000	100
AT10	/	1010	101
AT10	/	1050	105
AT10	/	1080	108
AT10	/	1100	110
AT10	/	1150	115
AT10	/	1200	120
AT10	/	1210	121
AT10	/	1250	125
AT10	/	1280	128
AT10	/	1300	130
AT10	/	1320	132
AT10	/	1350	135
AT10	/	1360	136
AT10	/	1360 FN2	136
AT10	/	1400	140
AT10	/	1480	148
AT10	/	1500	150
AT10	/	1600	160
AT10	/	1700	170
AT10	/	1720	172
AT10	/	1800	180
AT10	/	1860	186
AT10	/	1940	194

preferred belt width* [mm]:
16, 25, 32, 50, 75, 100

* other dimensions upon request

Tooth shear strength (specific belt tooth load bearing)

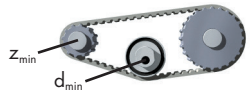
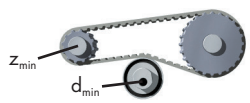
rpm n	F_{Tspec}	M_{spec}	P_{spec}	rpm n	F_{Tspec}	M_{spec}	P_{spec}
[min^{-1}]	[N/cm]	[Ncm/cm]	[W/cm]	[min^{-1}]	[N/cm]	[Ncm/cm]	[W/cm]
0	80.79	12.858	0.000	2000	44.36	7.060	14.785
20	79.66	12.679	0.266	2200	42.89	6.825	15.724
40	78.55	12.502	0.524	2400	41.53	6.609	16.610
60	77.51	12.336	0.775	2600	40.27	6.409	17.447
80	76.52	12.179	1.020	2800	39.09	6.221	18.241
100	75.59	12.030	1.260	3000	37.99	6.046	18.992
200	71.54	11.386	2.385	3200	36.95	5.881	19.705
300	68.26	10.863	3.413	3400	35.97	5.725	20.382
400	65.49	10.423	4.366	3600	35.04	5.577	21.024
500	63.10	10.043	5.258	3800	34.16	5.437	21.634
600	61.00	9.708	6.099	4000	33.32	5.304	22.214
700	59.12	9.409	6.897	4500	31.39	4.995	23.538
800	57.43	9.140	7.656	5000	29.64	4.718	24.699
900	55.88	8.893	8.381	5500	28.05	4.465	25.715
1000	54.46	8.667	9.076	6000	26.60	4.233	26.597
1100	53.14	8.458	9.742	6500	25.26	4.020	27.358
1200	51.92	8.263	10.383	7000	24.01	3.821	28.007
1300	50.78	8.081	11.001	7500	22.84	3.635	28.551
1400	49.70	7.910	11.596	8000	21.75	3.462	28.997
1500	48.69	7.749	12.172	8500	20.72	3.298	29.352
1600	47.73	7.597	12.728	9000	19.75	3.143	29.622
1700	46.83	7.453	13.267	9500	18.83	2.997	29.809
1800	45.97	7.316	13.789	10000	17.95	2.857	29.920
1900	45.14	7.185	14.294				

Rotational speeds over 10000 rpm and/or belt speeds over 60 m/s need special drive designs.
Please ask our technical staff for advice.

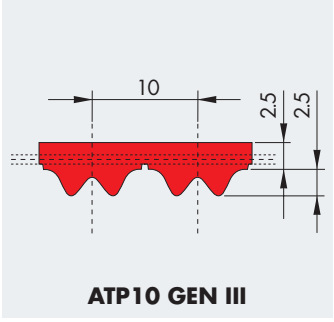
Admissible tensile load of the belt F_{Tadm} / belt weight

Belt width	b	[mm]	16	25	32	50	75	100	150
Admissible tensile load	F_{Tadm}	[N]	2000	3500	4750	7750	12000	16000	24500
Belt weight	AT10	[kg/m]	0.101	0.158	0.202	0.315	0.473	0.630	0.945

Flexibility (minimum number of teeth / minimum diameter)

without contraflexure		Timing pulley	z_{min}	15
		Tension roller (smooth), running on teeth	d_{min} [mm]	50
with contraflexure		Timing pulley	z_{min}	25
		Tension roller (smooth), running on the back of the belt	d_{min} [mm]	120

High performance PU timing belts
CONTI® SYNCHROFLEX ATP10 GEN III



ATP10 GEN III

High performance ATP profile with metric pitch and optimized meshing of the double engagement tooth form.

Standard version
- single-sided
- high performance polyurethane in red color
- steel cord tension members with high density
- steel cord tension members in two-filament construction

Type GEN III	/	Length*	Number of teeth
ATP10	/	630	63
ATP10	/	660	66
ATP10	/	700	70
ATP10	/	780	78
ATP10	/	840	84
ATP10	/	890	89
ATP10	/	920	92
ATP10	/	1010	101
ATP10	/	1080	108
ATP10	/	1150	115
ATP10	/	1280	128
ATP10	/	1400	140
ATP10	/	1650	165
ATP10	/	1800	180

preferred belt width* [mm]:
16, 25, 32, 50, 75, 100, 150

* other dimensions upon request

Order example

CONTI® SYNCHROFLEX timing belt 32 ATP10/780 GEN III

- Belt width [mm]
- Profile/pitch
- Belt length [mm]
- Specification Generation III

Tooth shear strength (specific belt tooth load bearing)

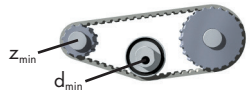
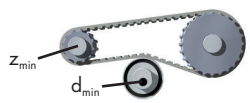
rpm n	F_{Tspec}	M_{spec}	P_{spec}	rpm n	F_{Tspec}	M_{spec}	P_{spec}
[min^{-1}]	[N/cm]	[Ncm/cm]	[W/cm]	[min^{-1}]	[N/cm]	[Ncm/cm]	[W/cm]
0	105.050	16.713	0.000	1900	58.655	9.332	18.568
20	103.508	16.468	0.345	2000	57.636	9.170	19.205
40	102.064	16.238	0.680	2200	55.722	8.865	20.425
60	100.706	16.023	1.007	2400	53.957	8.584	21.575
80	99.424	15.818	1.326	2600	52.318	8.324	22.663
100	98.210	15.626	1.637	2800	50.790	8.081	23.694
150	95.432	15.183	2.385	3000	49.358	7.853	24.671
200	92.956	14.790	3.098	3200	48.010	7.638	25.597
300	88.706	14.110	4.433	3400	46.737	7.436	26.476
400	85.093	13.538	5.671	3600	45.532	7.245	27.310
500	81.989	13.045	6.830	3800	44.387	7.062	28.102
600	79.257	12.609	7.923	4000	43.297	6.888	28.855
700	76.817	12.222	8.985	4500	40.780	6.488	30.575
800	74.614	11.871	9.945	5000	38.513	6.127	32.084
900	72.604	11.551	10.887	5500	36.452	5.799	33.403
1000	70.758	11.257	11.789	6000	34.561	5.499	34.549
1100	69.049	10.986	12.654	6500	32.815	5.221	35.538
1200	67.461	10.733	13.487	7000	31.194	4.963	36.380
1300	65.975	10.496	14.290	7500	29.679	4.722	37.087
1400	64.580	10.275	15.063	8000	28.260	4.496	37.666
1500	63.265	10.065	15.811	8500	26.923	4.283	38.128
1600	62.022	9.868	16.534	9000	25.661	4.082	38.477
1700	60.844	9.680	17.234	9500	24.464	3.892	38.721
1800	59.723	9.502	17.911	10000	23.328	3.711	38.865

Rotational speeds over 10000 rpm and/or belt speeds over 60 m/s need special drive designs.
Please ask our technical staff for advice.

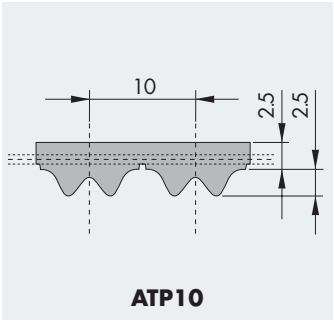
Admissible tensile load of the belt F_{Tadm} / belt weight

Belt width	b	[mm]	16	25	32	50	75	100	150
Admissible tensile load	F_{Tadm}	[N]	3000	5000	6750	10750	16500	22000	33500
Belt weight	ATP10 GEN III	[kg/m]	0.109	0.170	0.218	0.340	0.510	0.680	1.020

Flexibility (minimum number of teeth / minimum diameter)

without contraflexure		Timing pulley	z_{min}	20
		Tension roller (smooth), running on teeth	d_{min} [mm]	60
with contraflexure		Timing pulley	z_{min}	25
		Tension roller (smooth), running on the back of the belt	d_{min} [mm]	120

High performance PU timing belts
CONTI® SYNCHROFLEX ATP10



ATP10

High performance ATP profile with metric pitch and optimized meshing of the double engagement tooth form.

The technical data refers to standard polyurethane and standard steel cord tension members.

Available versions
- single-sided
- with E steel tension member for better flexibility
- with reinforced tension member design
- polyurethane special materials upon request (standard: 93ShA, colour: red)
- antistatic, colored, mechanically reworked

Type	/	Length*	Number of teeth
ATP10	/	630	63
ATP10	/	660	66
ATP10	/	700	70
ATP10	/	780	78
ATP10	/	840	84
ATP10	/	890	89
ATP10	/	920	92
ATP10	/	1010	101
ATP10	/	1080	108
ATP10	/	1150	115
ATP10	/	1280	128
ATP10	/	1400	140
ATP10	/	1650	165
ATP10	/	1800	180

preferred belt width* [mm]:
16, 25, 32, 50, 75, 100

* other dimensions upon request

Order example

CONTI® SYNCHROFLEX timing belt 32 ATP10/780

Belt width [mm]

Profile/pitch

Belt length [mm]

Tooth shear strength (specific belt tooth load bearing)

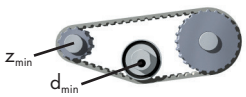
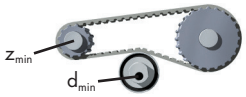
rpm n	F_{Tspec}	M_{spec}	P_{spec}	rpm n	F_{Tspec}	M_{spec}	P_{spec}
[min^{-1}]	[N/cm]	[Ncm/cm]	[W/cm]	[min^{-1}]	[N/cm]	[Ncm/cm]	[W/cm]
0	95.500	15.199	0.000	1900	53.323	8.487	16.884
20	94.098	14.976	0.314	2000	52.396	8.339	17.464
40	92.785	14.767	0.619	2200	50.656	8.062	18.572
60	91.551	14.571	0.915	2400	49.052	7.807	19.619
80	90.385	14.385	1.205	2600	47.562	7.570	20.609
100	89.282	14.210	1.488	2800	46.173	7.349	21.546
150	86.756	13.808	2.169	2880	45.642	7.264	21.907
200	84.505	13.449	2.817	3000	44.871	7.141	22.434
300	80.642	12.835	4.032	3200	43.645	6.946	23.276
400	77.357	12.312	5.157	3400	42.488	6.762	24.075
500	74.535	11.863	6.211	3600	41.393	6.588	24.834
600	72.052	11.467	7.205	3800	40.352	6.422	25.554
700	69.834	11.114	8.147	4000	39.361	6.264	26.239
730	69.212	11.015	8.420	4500	37.073	5.900	27.803
800	67.831	10.796	9.043	5000	35.012	5.572	29.175
900	66.004	10.505	9.900	5500	33.138	5.274	30.374
1000	64.325	10.238	10.720	6000	31.419	5.000	31.417
1100	62.772	9.990	11.507	6500	29.832	4.748	32.316
1200	61.328	9.761	12.265	7000	28.358	4.513	33.082
1300	59.977	9.546	12.994	7500	26.981	4.294	33.724
1400	58.709	9.344	13.698	8000	25.691	4.089	34.252
1460	57.984	9.228	14.108	8500	24.475	3.895	34.670
1500	57.514	9.154	14.377	9000	23.328	3.713	34.989
1600	56.348	8.968	15.025	9500	22.240	3.540	35.211
1700	55.313	8.803	15.671	10000	21.207	3.375	35.342
1800	54.294	8.641	16.287				

Rotational speeds over 10000 rpm and/or belt speeds over 60 m/s need special drive designs.
Please ask our technical staff for advice.

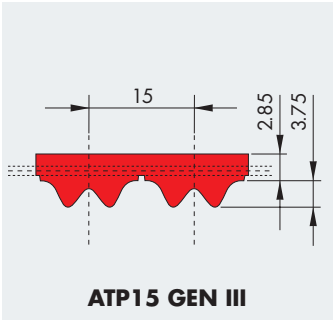
Admissible tensile load of the belt F_{Tadm} / belt weight

Belt width	b	[mm]	16	25	32	50	75	100	150
Admissible tensile load	F_{Tadm}	[N]	2000	3500	4750	7750	12000	16000	24500
Belt weight	ATP10	[kg/m]	0.096	0.150	0.192	0.300	0.450	0.600	0.900

Flexibility (minimum number of teeth / minimum diameter)

without contraflexure		Timing pulley	z_{min}	15
		Tension roller (smooth), running on teeth	d_{min} [mm]	50
with contraflexure		Timing pulley	z_{min}	25
		Tension roller (smooth), running on the back of the belt	d_{min} [mm]	120

High performance PU timing belts
CONTI® SYNCHROFLEX ATP15 GEN III



ATP15 GEN III

Type GEN III	/	Length*	Number of teeth
ATP15	/	1125	75
ATP15	/	1185	79
ATP15	/	1260	84
ATP15	/	1560	104

preferred belt width* [mm]:
25, 32, 50, 75, 100, 150

* other dimensions upon request

High performance ATP profile with metric pitch and optimized meshing of the double engagement tooth form.

Standard version
- single-sided
- high performance polyurethane in red color
- steel cord tension members with high density
- steel cord tension members in two-filament construction

Order example

CONTI® SYNCHROFLEX timing belt 32 ATP15/1260 GEN III

Belt width [mm] — 32
Profile/pitch — ATP15
Belt length [mm] — 1260
Specification Generation III — GEN III

Tooth shear strength (specific belt tooth load bearing)

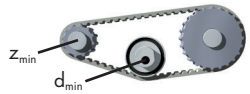
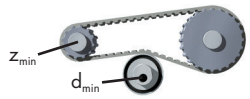
rpm n	F_{Tspec}	M_{spec}	P_{spec}	rpm n	F_{Tspec}	M_{spec}	P_{spec}
[min^{-1}]	[N/cm]	[Ncm/cm]	[W/cm]	[min^{-1}]	[N/cm]	[Ncm/cm]	[W/cm]
0	157.672	37.641	0.000	1900	80.851	19.302	38.404
20	155.054	37.016	0.775	2000	79.185	18.904	39.592
40	152.609	36.433	1.526	2200	76.062	18.158	41.834
60	150.315	35.885	2.255	2400	73.182	17.471	43.909
80	148.155	35.369	2.963	2600	70.510	16.833	45.831
100	146.114	34.882	3.653	2800	68.018	16.238	47.612
150	141.455	33.770	5.305	3000	65.683	15.681	49.262
200	137.318	32.782	6.866	3200	63.486	15.156	50.789
300	130.215	31.087	9.766	3400	61.413	14.661	52.201
400	124.258	29.664	12.426	3600	59.449	14.192	53.504
500	119.128	28.440	14.891	3800	57.584	13.747	54.705
600	114.623	27.364	17.193	4000	55.809	13.323	55.809
700	110.606	26.405	19.356	4500	51.711	12.345	58.175
800	106.984	25.540	21.397	5000	48.022	11.464	60.027
900	103.684	24.753	23.329	5500	44.667	10.663	61.417
1000	100.564	24.029	25.163	6000	41.591	9.929	62.386
1100	97.853	23.361	26.910	6500	38.751	9.251	62.970
1200	95.250	22.739	28.575	7000	36.113	8.621	63.198
1300	92.817	22.159	30.166	7500	33.651	8.034	63.095
1400	90.535	21.614	31.687	8000	31.342	7.482	62.684
1500	88.385	21.100	33.144	8500	29.169	6.964	61.984
1600	86.353	20.615	34.541	9000	27.116	6.474	61.012
1700	84.427	20.155	35.881	9500	25.171	6.009	59.782
1800	82.596	19.718	37.168	10000	23.324	5.568	58.309

Rotational speeds over 10000 rpm and/or belt speeds over 50 m/s need special drive designs.
Please ask our technical staff for advice.

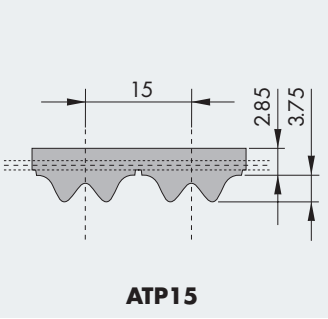
Admissible tensile load of the belt F_{Tadm} / belt weight

Belt width	b	[mm]	25	32	50	75	100	150
Admissible tensile load	F_{Tadm}	[N]	6300	8550	13950	21600	28800	44100
Belt weight	ATP15 GEN III	[kg/m]	0.218	0.279	0.436	0.654	0.872	1.308

Flexibility (minimum number of teeth / minimum diameter)

without contraflexure		Timing pulley	z_{min}	20
		Tension roller (smooth), running on teeth	d_{min} [mm]	100
with contraflexure		Timing pulley	z_{min}	30
		Tension roller (smooth), running on the back of the belt	d_{min} [mm]	160

High performance PU timing belts
CONTI® SYNCHROFLEX ATP15



ATP15

Type GEN III	/	Length*	Number of teeth
ATP15	/	1125	75
ATP15	/	1185	79
ATP15	/	1260	84
ATP15	/	1560	104

preferred belt width* [mm]:
25, 32, 50, 75, 100, 150

* other dimensions upon request

High performance ATP profile with metric pitch and optimized meshing of the double engagement tooth form.

Available versions
- single-sided
- with «E» tension member for better flexibility
- with reinforced tension member design
- polyurethane special materials upon request (standard: 93ShA, color: red)
- antistatic, colored, mechanically reworked

Order example

CONTI® SYNCHROFLEX timing belt 32 ATP15/1260

Belt width [mm]

Profile/pitch

Belt length [mm]

Tooth shear strength (specific belt tooth load bearing)

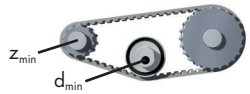
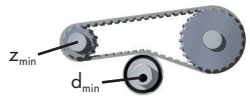
rpm n	F_{Tspec}	M_{spec}	P_{spec}	rpm n	F_{Tspec}	M_{spec}	P_{spec}
[min^{-1}]	[N/cm]	[Ncm/cm]	[W/cm]	[min^{-1}]	[N/cm]	[Ncm/cm]	[W/cm]
0	143.325	34.216	0.000	1900	73.494	17.545	34.910
20	140.945	33.648	0.705	2000	71.980	17.184	35.990
40	138.722	33.117	1.387	2200	69.141	16.506	38.027
60	136.637	32.620	2.050	2400	66.523	15.881	39.914
80	134.674	32.151	2.693	2600	64.094	15.301	41.661
100	132.818	31.708	3.320	2800	61.828	14.760	43.280
150	128.584	30.697	4.822	3000	59.706	14.254	44.779
200	124.832	29.799	6.241	3200	57.709	13.777	46.167
300	118.367	28.258	8.877	3400	55.824	13.327	47.451
400	112.952	26.965	11.295	3600	54.040	12.901	48.636
500	108.288	25.852	13.536	3800	52.345	12.496	49.727
600	104.193	24.874	15.629	4000	50.731	12.111	50.731
700	100.542	24.003	17.595	4500	47.006	11.222	52.881
800	97.249	23.216	19.450	5000	43.652	10.421	54.565
900	94.249	22.500	21.206	5500	40.602	9.693	55.828
1000	91.495	21.843	22.874	6000	37.806	9.026	56.709
1100	88.949	21.235	24.461	6500	35.225	8.409	57.240
1200	86.583	20.670	25.975	7000	32.827	7.837	57.447
1300	84.372	20.142	27.421	7500	30.589	7.303	57.354
1400	82.297	19.647	28.804	8000	28.490	6.802	56.980
1500	80.343	19.180	30.128	8500	26.515	6.330	56.344
1600	78.495	18.739	31.398	9000	24.649	5.884	55.460
1700	76.745	18.321	32.616	9500	22.881	5.462	54.342
1800	75.080	17.924	33.786	10000	21.201	5.061	53.003

Rotational speeds over 10000 rpm and/or belt speeds over 50 m/s need special drive designs.
Please ask our technical staff for advice.

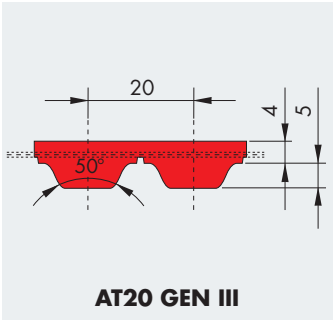
Admissible tensile load of the belt F_{Tadm} / belt weight

Belt width	b	[mm]	25	32	50	75	100	150
Admissible tensile load	F_{Tadm}	[N]	4950	6750	11250	17550	23850	36450
Belt weight	ATP15	[kg/m]	0.200	0.256	0.400	0.600	0.800	1.200

Flexibility (minimum number of teeth / minimum diameter)

without contraflexure		Timing pulley	z_{min}	20
		Tension roller (smooth), running on teeth	d_{min} [mm]	100
with contraflexure		Timing pulley	z_{min}	30
		Tension roller (smooth), running on the back of the belt	d_{min} [mm]	160

High performance PU timing belts
CONTI® SYNCHROFLEX AT20 GEN III



AT20 GEN III

High performance AT profile with metric pitches and trapezoidal teeth.

Standard version
- single-sided
- high performance polyurethane in red color
- steel cord tension members with high density
- steel cord tension members in two-filament construction

FN: with profiles on the back of the belt

Type GEN III	/	Length*	Number of teeth
AT20	/	1000**	50
AT20	/	1100	55
AT20	/	1200**	60
AT20	/	1260	63
AT20	/	1500**	75
AT20	/	1600**	80
AT20	/	1700	85
AT20	/	1760**	88
AT20	/	1800	90
AT20	/	1900**	95
AT20	/	1960**	98

preferred belt width* [mm]:
32, 50, 75, 100

* other dimensions upon request
** in combination with reduced pulley gap please ask for technical support from Angst+Pfister.

Order example

CONTI® SYNCHROFLEX timing belt 32 AT20/1000 GEN III

Belt width [mm]
Profile/pitch
Belt length [mm]
Specification Generation III

Tooth shear strength (specific belt tooth load bearing)

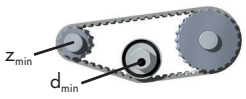
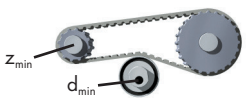
rpm n	F_{Tspec}	M_{spec}	P_{spec}	rpm n	F_{Tspec}	M_{spec}	P_{spec}
[min^{-1}]	[N/cm]	[Ncm/cm]	[W/cm]	[min^{-1}]	[N/cm]	[Ncm/cm]	[W/cm]
0	201.93	64.276	0.000	1600	101.66	32.360	54.216
20	198.34	63.134	1.322	1700	98.99	31.509	56.090
40	194.82	62.013	2.597	1800	96.45	30.701	57.865
60	191.52	60.964	3.830	1900	94.03	29.930	59.547
80	188.43	59.979	5.024	2000	91.72	29.195	61.141
100	185.51	59.050	6.183	2200	87.39	27.817	64.080
150	178.87	56.936	8.943	2400	83.40	26.546	66.713
200	172.99	55.066	11.532	2600	79.70	25.368	69.065
300	162.95	51.869	16.294	2800	76.25	24.270	71.157
400	154.56	49.199	20.607	3000	73.01	23.241	73.007
500	147.36	46.906	24.558	3200	69.97	22.273	74.632
600	141.05	44.897	28.208	3400	67.10	21.360	76.045
700	135.43	43.109	31.599	3600	64.39	20.495	77.259
800	130.37	41.499	34.764	3800	61.81	19.674	78.284
900	125.77	40.034	37.728	4000	59.35	18.893	79.131
1000	121.55	38.690	40.513	4500	53.69	17.089	80.524
1100	117.65	37.449	43.135	5000	48.59	15.466	80.972
1200	114.03	36.296	45.607	5500	43.95	13.990	80.570
1300	110.64	35.219	47.942	6000	39.70	12.637	79.395
1400	107.47	34.209	50.150	6500	35.78	11.388	77.512
1500	104.48	33.259	52.239				

Rotational speeds over 6500 rpm and/or belt speeds over 40 m/s need special drive designs.
Please ask our technical staff for advice.

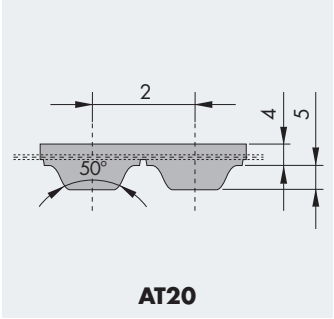
Admissible tensile load of the belt F_{Tadm} / belt weight

Belt width	b	[mm]	25	32	50	75	100	150
Admissible tensile load	F_{Tadm}	[N]	6300	8550	13950	21600	28800	44100
Belt weight	AT20 GEN III	[kg/m]	0.290	0.371	0.583	0.87	1.16	1.74

Flexibility (minimum number of teeth / minimum diameter)

without contraflexure		Timing pulley	z_{min}	18
		Tension roller (smooth), running on teeth	d_{min} [mm]	120
with contraflexure		Timing pulley	z_{min}	25
		Tension roller (smooth), running on the back of the belt	d_{min} [mm]	180

High performance PU timing belts
CONTI® SYNCHROFLEX AT20



AT20

High performance AT profile with metric pitches and trapezoidal teeth.

The technical data refers to standard polyurethane and standard steel cord tension members.

Available versions
- single-sided
- polyurethane special materials upon request
- antistatic, colored, mechanically reworked

Type GEN III	/	Length*	Number of teeth
AT20	/	1000**	50
AT20	/	1100	55
AT20	/	1200**	60
AT20	/	1260	63
AT20	/	1500**	75
AT20	/	1600**	80
AT20	/	1700	85
AT20	/	1760**	88
AT20	/	1800	90
AT20	/	1900**	95
AT20	/	1960**	98

preferred belt width* [mm]:
32, 50, 75, 100

* other dimensions upon request
** in combination with reduced pulley gap please ask for technical support from Angst+Pfister.

Order example

CONTI® SYNCHROFLEX timing belt 50 AT20/1500

Belt width [mm]

Profile/pitch

Belt length [mm]

Tooth shear strength (specific belt tooth load bearing)

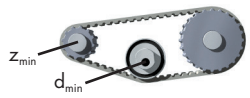
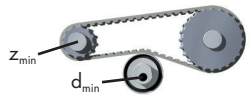
rpm n	F_{Tspec}	M_{spec}	P_{spec}	rpm n	F_{Tspec}	M_{spec}	P_{spec}
[min^{-1}]	[N/cm]	[Ncm/cm]	[W/cm]	[min^{-1}]	[N/cm]	[Ncm/cm]	[W/cm]
0	161.54	51.421	0.000	1600	81.33	25.888	43.373
20	158.67	50.507	1.058	1700	79.19	25.207	44.872
40	155.85	49.610	2.078	1800	77.16	24.561	46.292
60	153.22	48.771	3.064	1900	75.22	23.944	47.638
80	150.74	47.983	4.020	2000	73.37	23.356	48.913
100	148.41	47.240	4.947	2200	69.91	22.253	51.264
200	138.40	44.053	9.226	2400	66.72	21.237	53.371
300	130.36	41.495	13.035	2600	63.76	20.295	55.252
400	123.65	39.359	16.485	2800	61.00	19.416	56.926
500	117.89	37.525	19.647	3000	58.41	18.593	58.406
600	112.84	35.918	22.566	3200	55.98	17.818	59.706
700	108.35	34.488	25.279	3400	53.68	17.088	60.836
800	104.30	33.199	27.811	3600	51.51	16.396	61.807
900	100.62	32.027	30.183	3800	49.45	15.739	62.628
1000	97.24	30.952	32.410	4000	47.48	15.114	63.305
1100	94.12	29.959	34.508	4500	42.95	13.671	64.419
1200	91.22	29.037	36.486	5000	38.87	12.373	64.778
1300	88.51	28.175	38.354	5500	35.16	11.192	64.456
1400	85.98	27.367	40.120	6000	31.76	10.110	63.516
1500	83.59	26.607	41.791	6500	28.62	9.111	62.009

Rotational speeds over 6500 rpm and/or belt speeds over 40 m/s need special drive designs.
Please ask our technical staff for advice.

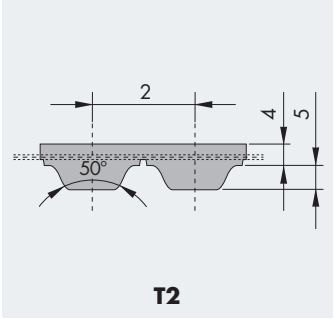
Admissible tensile load of the belt F_{Tadm} / belt weight

Belt width	b	[mm]	32	50	75	100	150
Admissible tensile load	F_{Tadm}	[N]	6750	11250	17550	23850	36450
Belt weight	AT20	[kg/m]	0.339	0.530	0.795	1.060	1.590

Flexibility (minimum number of teeth / minimum diameter)

without contraflexure		Timing pulley	z_{min}	18
		Tension roller (smooth), running on teeth	d_{min} [mm]	120
with contraflexure		Timing pulley	z_{min}	25
		Tension roller (smooth), running on the back of the belt	d_{min} [mm]	180

Standard PU timing belts
CONTI® SYNCHROFLEX T2



T2

Standard T profile with metric pitch and trapezoidal teeth.

The technical data refers to standard polyurethane and standard steel cord tension members.

Available versions
- single-sided
- with aramid tension member
- polyurethane special materials upon request
- antistatic, colored, mechanically reworked

FA: with bigger back thickness
FN: with profiles on the back of the belt

Type	/	Length*	Number of teeth
T2	/	68	34
T2	/	90	45
T2	/	108	54
T2	/	118	59
T2	/	120	60
T2	/	120 FA	60
T2	/	138	69
T2	/	140	70
T2	/	144	72
T2	/	150	75
T2	/	160	80
T2	/	180	90
T2	/	200	100
T2	/	220	110
T2	/	220 FA	110
T2		220 FN2	110
T2	/	240	120
T2	/	256	128
T2	/	262	131
T2	/	280	140
T2	/	292	146
T2	/	320	160
T2	/	360	180
T2	/	600	300
T2	/	710	355
T2	/	710 FA	355
T2	/	1296 FA	648

preferred belt width* [mm]:
4, 6, 10

* other dimensions upon request

Order example

CONTI® SYNCHROFLEX timing belt 6 T2/240

Belt width [mm]

Profile/pitch

Belt length [mm]

Tooth shear strength (specific belt tooth load bearing)

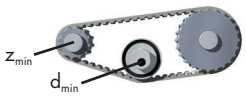
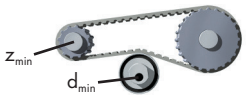
rpm n [min⁻¹]	F_{Tspec} [N/cm]	M_{spec} [Ncm/cm]	P_{spec} [W/cm]	rpm n [min⁻¹]	F_{Tspec} [N/cm]	M_{spec} [Ncm/cm]	P_{spec} [W/cm]
0	6.58	0.209	0.000	2200	3.50	0.111	0.257
20	6.36	0.202	0.004	2400	3.42	0.109	0.274
40	6.18	0.197	0.008	2500	3.39	0.108	0.282
60	6.03	0.192	0.012	2600	3.35	0.107	0.290
80	5.90	0.188	0.016	2800	3.29	0.105	0.307
100	5.79	0.184	0.019	2880	3.26	0.104	0.313
150	5.56	0.177	0.028	3000	3.23	0.103	0.323
200	5.38	0.171	0.036	3200	3.17	0.101	0.338
300	5.10	0.162	0.051	3400	3.12	0.099	0.354
400	4.89	0.156	0.065	3600	3.07	0.098	0.368
500	4.72	0.150	0.079	3800	3.02	0.096	0.383
600	4.58	0.146	0.092	4000	2.98	0.095	0.397
700	4.45	0.142	0.104	4500	2.88	0.092	0.432
730	4.42	0.141	0.108	5000	2.78	0.088	0.463
800	4.35	0.138	0.116	5500	2.70	0.086	0.495
900	4.25	0.135	0.127	6000	2.63	0.084	0.526
1000	4.16	0.132	0.139	6500	2.56	0.081	0.555
1100	4.08	0.130	0.150	7000	2.49	0.079	0.581
1200	4.01	0.128	0.160	7500	2.43	0.077	0.607
1300	3.94	0.125	0.171	8000	2.37	0.075	0.632
1400	3.88	0.124	0.181	8500	2.32	0.074	0.657
1460	3.85	0.123	0.187	9000	2.27	0.072	0.681
1500	3.82	0.122	0.191	9500	2.22	0.071	0.703
1600	3.77	0.120	0.201	10000	2.18	0.069	0.727
1700	3.72	0.118	0.211	12000	2.02	0.064	0.808
1800	3.67	0.117	0.220	15000	1.82	0.058	0.910
1900	3.62	0.115	0.229	18000	1.66	0.053	0.996
2000	3.58	0.114	0.239	20000	1.57	0.050	1.047

Rotational speeds over 20000 rpm and/or belt speeds over 80 m/s need special drive designs.
Please ask our technical staff for advice.

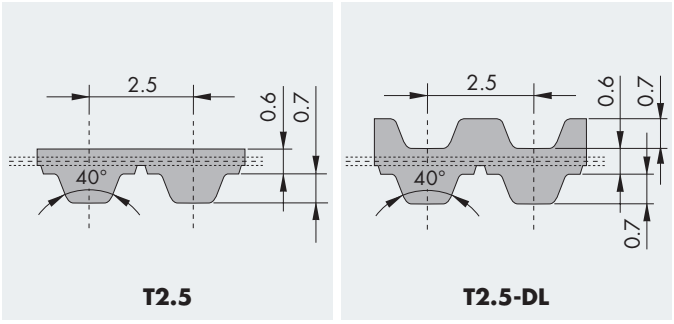
Admissible tensile load of the belt F_{Tadm} / belt weight

Belt width	b	[mm]	4	6	10	16	25	32
Admissible tensile load	F_{Tadm}	[N]	39	65	117	195	312	403
Belt weight	T2	[kg/m]	0.004	0.007	0.011	0.018	0.028	0.035

Flexibility (minimum number of teeth / minimum diameter)

without contraflexure		Timing pulley	z_{min}	10
		Tension roller (smooth), running on teeth	d_{min} [mm]	15
with contraflexure		Timing pulley	z_{min}	18
		Tension roller (smooth), running on the back of the belt	d_{min} [mm]	15

Standard PU timing belts
CONTI® SYNCHROFLEX T2.5 / T2.5-DL



Standard T profile according to DIN 7721 with metric pitch and trapezoidal teeth.

The technical data refers to standard polyurethane and standard steel cord tension members.

Available versions
- single-sided (as standard)
- with aramid tension member
- polyurethane special materials upon request
- antistatic, colored, mechanically reworked

DL: double-sided
FA: with bigger back thickness
FN: with profiles on the back of the belt

Order example

CONTI® SYNCHROFLEX timing belt 10 T2.5 / 380

Belt width [mm]
Profile/pitch
Belt length [mm]

prefered belt width* [mm]: 4, 6, 10

* other dimensions upon request

Type	/	Length*		Number of teeth
T2.5	/	55	FA	22
T2.5	/	75	FN2	30
T2.5	/	120		48
T2.5	/	145		58
T2.5	/	160		64
T2.5	/	160	FA	64
T2.5	/	177.5		71
T2.5	/	180		72
T2.5	/	182.5		73
T2.5	/	200		80
T2.5	/	210	FA	84
T2.5	/	210	FN 28	84
T2.5	/	220	FN 3	88
T2.5	/	225		90
T2.5	/	230		92
T2.5	/	230	FA	92
T2.5	/	245		98
T2.5	/	250		100
T2.5	/	265		106
T2.5	/	285		114
T2.5	/	285	FA	114
T2.5	/	290		116
T2.5	/	305		122
T2.5	/	305	FA	122
T2.5	/	305	FN1	122
T2.5	/	317.5		127
T2.5		317.5	DL	127
T2.5	/	330		132
T2.5	/	380		152
T2.5	/	395		158
T2.5	/	400	FA	160
T2.5	/	415	DL	166
T2.5	/	420		168
T2.5	/	420	FN 168	168
T2.5	/	457.5	DL	183
T2.5	/	480		192
T2.5	/	480	FA	192
T2.5	/	480	FN	192
T2.5	/	500		200
T2.5	/	500	FA	200
T2.5	/	540		216
T2.5	/	540	FA	216
T2.5	/	600		240
T2.5	/	600	FA	240
T2.5	/	620		248
T2.5	/	650		260
T2.5	/	650	FN2	260
T2.5	/	780		312
T2.5	/	780	FA	312
T2.5	/	950		380
T2.5	/	1300		520
T2.5	/	1300	FA	520
T2.5	/	1350	FA	540
T2.5	/	1475	FA	590

Tooth shear strength (specific belt tooth load bearing)

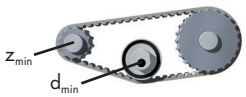
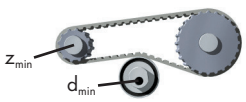
rpm n [min⁻¹]	F_{Tspec} [N/cm]	M_{spec} [Ncm/cm]	P_{spec} [W/cm]	rpm n [min⁻¹]	F_{Tspec} [N/cm]	M_{spec} [Ncm/cm]	P_{spec} [W/cm]
0	9.03	0.359	0.000	2400	4.70	0.187	0.470
20	8.72	0.347	0.007	2500	4.65	0.185	0.484
40	8.48	0.337	0.014	2600	4.60	0.183	0.499
60	8.28	0.329	0.021	2800	4.51	0.180	0.527
80	8.10	0.322	0.027	2880	4.48	0.178	0.538
100	7.95	0.316	0.033	3000	4.43	0.176	0.554
150	7.64	0.304	0.048	3200	4.36	0.173	0.581
200	7.39	0.294	0.062	3400	4.28	0.170	0.607
300	7.01	0.279	0.088	3600	4.22	0.168	0.632
400	6.71	0.267	0.112	3800	4.15	0.165	0.657
500	6.48	0.258	0.135	4000	4.09	0.163	0.682
600	6.28	0.250	0.157	4500	3.95	0.157	0.740
700	6.11	0.243	0.178	5000	3.82	0.152	0.796
730	6.07	0.241	0.185	5500	3.71	0.148	0.850
800	5.97	0.237	0.199	6000	3.60	0.143	0.901
900	5.83	0.232	0.219	6500	3.51	0.140	0.950
1000	5.71	0.227	0.238	7000	3.42	0.136	0.997
1100	5.61	0.223	0.257	7500	3.33	0.133	1.042
1200	5.51	0.219	0.275	8000	3.26	0.130	1.086
1300	5.41	0.215	0.293	8500	3.18	0.127	1.128
1400	5.33	0.212	0.311	9000	3.11	0.124	1.168
1500	5.25	0.209	0.328	9500	3.05	0.121	1.207
1600	5.17	0.206	0.345	10000	2.99	0.119	1.245
1700	5.10	0.203	0.361	12000	2.77	0.110	1.384
1800	5.04	0.200	0.378	15000	2.50	0.099	1.561
1900	4.97	0.198	0.394	18000	2.28	0.091	1.708
2000	4.91	0.195	0.409	20000	2.15	0.086	1.791
2200	4.80	0.191	0.440				

Rotational speeds over 20000 rpm and/or belt speeds over 80 m/s need special drive designs.
Please ask our technical staff for advice.

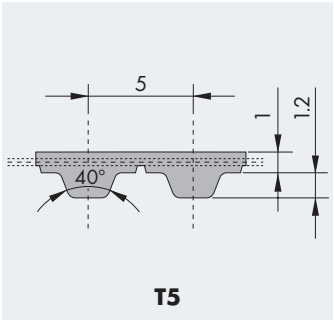
Admissible tensile load of the belt F_{Tadm} / belt weight

Belt width	b	[mm]	4	6	10	16	25	32
Admissible tensile load	F_{Tadm}	[N]	39	65	117	195	312	403
Belt weight	T2	[kg/m]	0.006	0.009	0.015	0.024	0.038	0.048
	T2.5-DL	[kg/m]	0.006	0.009	0.016	0.025	0.040	0.051

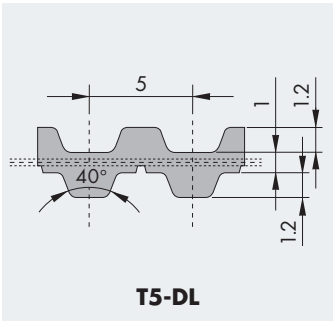
Flexibility (minimum number of teeth / minimum diameter)

without contraflexure		Timing pulley	z_{min}	10
		Tension roller (smooth), running on teeth	d_{min} [mm]	15
with contraflexure		Timing pulley	z_{min}	18
		Tension roller (smooth), running on the back of the belt	d_{min} [mm]	15

Standard PU timing belts
CONTI® SYNCHROFLEX T5 / T5-DL



T5



T5-DL

Standard T profile according to DIN 7721 with metric pitch and trapezoidal teeth.

Available versions

- single-sided (as standard)
- with aramid tension member
- polyurethane special materials upon request
- antistatic, colored, mechanically reworked

DL: double-sided
FA: with bigger back thickness
FN: with profiles on the back of the belt

Type	/	Length*		Number of teeth
T5	/	100		20
T5	/	150		30
T5	/	150	DL	30
T5	/	165		33
T5	/	165	FN33	33
T5	/	180		36
T5	/	185		37
T5	/	200		40
T5	/	210		42
T5	/	215		43
T5	/	220		44
T5	/	225		45
T5	/	225	FN90	45
T5	/	245		49
T5	/	250		50
T5	/	255		51
T5	/	260		52
T5	/	260	DL	52
T5	/	260	FN1	52
T5	/	270		54
T5	/	280		56
T5	/	295		59
T5	/	300	DL	60
T5	/	305		61
T5	/	330		66
T5	/	330	DL	66
T5	/	340		68
T5	/	340	FN6	68
T5	/	355		71
T5	/	365		73
T5	/	390		78
T5	/	390	FN1	78
T5	/	400		80
T5	/	410		82
T5	/	410	DL	82
T5	/	420		84
T5	/	455		91
T5	/	460		92
T5	/	460	FN4	92
T5	/	460	DL	92
T5	/	480		96
T5	/	500		100
T5	/	500	FN10	100
T5	/	505		101
T5	/	510		102
T5	/	510	FN1	102
T5	/	510	FN84	102
T5	/	515	DL	103
T5	/	525		105
T5	/	525	FA	105
T5	/	525	DL	105
T5	/	545		109
T5	/	550		110
T5	/	560		112
T5	/	575		115
T5	/	590		118
T5	/	590	DL	118
T5	/	600	FN24	120
T5	/	600	FN25	120
T5	/	600	FN30	120

Type	/	Length*		Number of teeth
T5	/	610		122
T5	/	615	FN	123
T5	/	620		124
T5	/	620	DL	124
T5	/	625	DL	125
T5	/	630		126
T5	/	630	FA	126
T5	/	650		130
T5	/	650	FA	130
T5	/	660		132
T5	/	660	FN30	132
T5	/	690		138
T5	/	690	FA	138
T5	/	690	FN3	138
T5	/	700		140
T5	/	720		144
T5	/	725		145
T5	/	750		150
T5	/	750	DL	150
T5	/	750	FN2	150
T5	/	750	FN4	150
T5	/	765		153
T5	/	780		156
T5	/	800		160
T5	/	800	FN2	160
T5	/	815		163
T5	/	815	DL	163
T5	/	840		168
T5	/	840	FN138	168
T5	/	840	FN84	168
T5	/	860	FN1	172
T5	/	860	DL	172
T5	/	900		180
T5	/	920		184
T5	/	925	FN1	185
T5	/	940		188
T5	/	940	DL	188
T5	/	990		198
T5	/	990	FN4	198
T5	/	1075		215
T5	/	1075	FA	215
T5	/	1100		220
T5	/	1100	DL	220
T5	/	1100	FN22	220
T5	/	1140	FN1	228
T5	/	1160		232
T5	/	1215		243
T5	/	1215	FN1	243
T5	/	1215	FN54	243
T5	/	1315		263
T5	/	1325	DL	265
T5	/	1350	FN1	270
T5	/	1380		276
T5	/	1380	FN1	276
T5	/	1500		300

prefered belt width*
[mm]: 6, 10, 16, 25, 50

* other dimensions upon request

Order example

CONTI® SYNCHROFLEX timing belt 10 T5/455

Belt width [mm]

Profile/pitch

Belt length [mm]

Tooth shear strength (specific belt tooth load bearing)

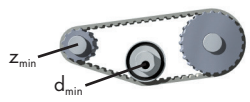
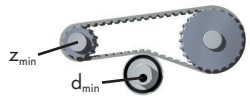
rpm n	F_{Tspec}	M_{spec}	P_{spec}	rpm n	F_{Tspec}	M_{spec}	P_{spec}
[min^{-1}]	[N/cm]	[Ncm/cm]	[W/cm]	[min^{-1}]	[N/cm]	[Ncm/cm]	[W/cm]
0	24.00	1.910	0.000	2000	13.69	1.089	2.280
20	23.40	1.861	0.039	2200	13.38	1.065	2.450
40	22.90	1.819	0.076	2400	13.10	1.042	2.620
60	22.40	1.783	0.112	2600	12.84	1.021	2.780
80	22.00	1.751	0.147	2800	12.59	1.002	2.940
100	21.70	1.723	0.180	3000	12.37	0.984	3.090
200	20.30	1.614	0.338	3200	12.16	0.967	3.24
300	19.30	1.536	0.483	3400	11.96	0.951	3.39
400	18.55	1.476	0.618	3600	11.77	0.936	3.53
500	17.93	1.427	0.747	3800	11.59	0.922	3.67
600	17.41	1.385	0.870	4000	11.42	0.909	3.81
700	16.96	1.349	0.989	4500	11.03	0.878	4.14
800	16.56	1.318	1.104	5000	10.68	0.850	4.45
900	16.20	1.289	1.215	5500	10.36	0.825	4.75
1000	15.88	1.263	1.323	6000	10.07	0.802	5.04
1100	15.58	1.240	1.428	6500	9.81	0.780	5.31
1200	15.31	1.218	1.531	7000	9.56	0.761	5.58
1300	15.06	1.198	1.632	7500	9.33	0.742	5.83
1400	14.83	1.180	1.730	8000	9.11	0.725	6.08
1500	14.61	1.162	1.826	8500	8.91	0.709	6.31
1600	14.40	1.146	1.920	9000	8.72	0.694	6.54
1700	14.21	1.131	2.010	9500	8.54	0.679	6.76
1800	14.03	1.116	2.100	10000	8.37	0.666	6.97
1900	13.85	1.102	2.190				

Rotational speeds over 10000 rpm and/or belt speeds over 80 m/s need special drive designs.
Please ask our technical staff for advice.

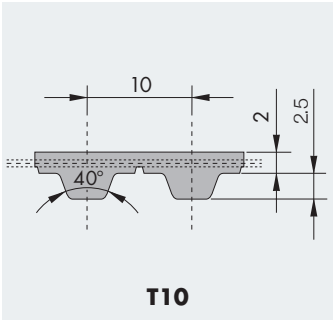
Admissible tensile load of the belt F_{Tadm} / belt weight

Belt width	b	[mm]	6	10	16	25	32	50	75	100
Admissible tensile load	F_{Tadm}	[N]	180	330	570	930	1200	1920	2940	3930
Belt weight	T5	[kg/m]	0.014	0.024	0.038	0.060	0.077	0.120	0.180	0.240
	T5-DL	[kg/m]	0.016	0.027	0.043	0.067	0.086	0.135	0.203	0.270

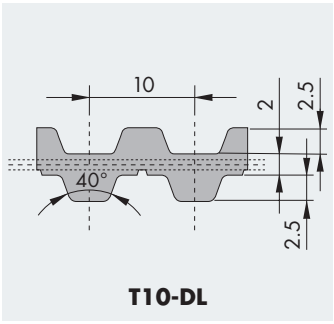
Flexibility (minimum number of teeth / minimum diameter)

without contraflexure		Timing pulley	z_{min}	12
		Tension roller (smooth), running on teeth	d_{min} [mm]	30
with contraflexure		Timing pulley	z_{min}	15
		Tension roller (smooth), running on the back of the belt	d_{min} [mm]	30

Standard PU timing belts
CONTI® SYNCHROFLEX T10 / T10-DL



T10



T10-DL

Standard T profile according to DIN 7721
with metric pitch and trapezoidal teeth.

Standard version

- single-sided (as standard)
- with E steel tension member for better flexibility
- with aramid tension member
- polyurethane special materials upon request
- antistatic, colored, mechanically reworked

DL: double-sided
FA: with bigger back thickness
FN: with profiles on the back of the belt

Type	/	Length*		Number of teeth
T10	/	260		26
T10	/	260	DL	26
T10	/	370		37
T10	/	400		40
T10	/	410		41
T10	/	410	FA	41
T10	/	420	FN21	42
T10	/	440		44
T10	/	450		45
T10	/	480		48
T10	/	500		50
T10	/	530		53
T10	/	530	DL	53
T10	/	530	FN	53
T10	/	560		56
T10	/	600		60
T10	/	610		61
T10	/	630		63
T10	/	630	DL	63
T10	/	660		66
T10	/	660	DL	66
T10	/	680		68
T10	/	690		69
T10	/	700		70
T10	/	720		72
T10	/	720	DL	72
T10	/	730		73
T10	/	750		75
T10	/	760		76
T10	/	780		78
T10	/	780	FN78	78
T10	/	800	FN80	80
T10	/	810		81
T10	/	840		84
T10	/	840	DL	84
T10	/	840	FN84	84
T10	/	850		85
T10	/	880		88
T10	/	890		89
T10	/	920		92
T10	/	960		96
T10	/	970		97
T10	/	970	FN97	97
T10	/	980		98
T10	/	980	DL	98

Type	/	Length*		Number of teeth
T10	/	1010		101
T10	/	1080		108
T10	/	1110		111
T10	/	1140		114
T10	/	1150		115
T10	/	1210		121
T10	/	1210	DL	121
T10	/	1240		124
T10	/	1240	DL	124
T10	/	1250		125
T10	/	1250	DL	125
T10	/	1300		130
T10	/	1320		132
T10	/	1320	DL	132
T10	/	1350		135
T10	/	1350	DL	135
T10	/	1390		139
T10	/	1400		140
T10	/	1420		142
T10	/	1420	DL	142
T10	/	1450		145
T10	/	1460		146
T10	/	1460	FN146	146
T10	/	1500		150
T10	/	1500	FN75	150
T10	/	1560		156
T10	/	1610		161
T10	/	1610	DL	161
T10	/	1750		175
T10	/	1780		178
T10	/	1800	FN12	180
T10	/	1880		188
T10	/	1880	DL	188
T10	/	1880	FN94	188
T10	/	1960		196
T10	/	2250		225
T10	/	3100		310
T10	/	4780		478
T10	/	4780	DL**	478

preferred belt width* [mm]:
16, 25, 32, 50

* other dimensions upon request
** please request technical support from Angst+Pfister.

Order example

CONTI® SYNCHROFLEX timing belt 16 T10/260

Belt width [mm]

Profile/pitch

Belt length [mm]

Tooth shear strength (specific belt tooth load bearing)

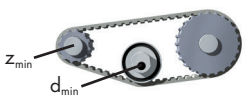
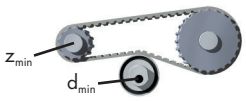
rpm n	F_{Tspec}	M_{spec}	P_{spec}	rpm n	F_{Tspec}	M_{spec}	P_{spec}
[min^{-1}]	[N/cm]	[Ncm/cm]	[W/cm]	[min^{-1}]	[N/cm]	[Ncm/cm]	[W/cm]
0	50.5	8.04	0.000	2000	25.4	4.04	8.460
20	49.0	7.80	0.163	2200	24.6	3.92	9.030
40	47.7	7.60	0.318	2400	23.9	3.81	9.580
60	46.6	7.42	0.466	2600	23.3	3.71	10.10
80	45.7	7.27	0.609	2800	22.7	3.62	10.60
100	44.8	7.13	0.746	3000	22.2	3.53	11.08
200	41.4	6.60	1.381	3200	21.70	3.45	11.55
300	39.1	6.22	1.953	3400	21.20	3.36	11.99
400	37.2	5.92	2.480	3600	20.70	3.30	12.42
500	35.7	5.68	2.980	3800	20.30	3.23	12.84
600	34.4	5.48	3.440	4000	19.86	3.16	13.24
700	33.3	5.31	3.890	4500	18.91	3.01	14.18
800	32.4	5.15	4.320	5000	18.06	2.87	15.05
900	31.5	5.01	4.730	5500	17.28	2.75	15.84
1000	30.7	4.89	5.120	6000	16.58	2.64	16.58
1100	30.0	4.77	5.500	6500	15.93	2.54	17.26
1200	29.3	4.67	5.870	7000	15.33	2.44	17.88
1300	28.7	4.57	6.220	7500	14.76	2.35	18.46
1400	28.2	4.48	6.570	8000	14.24	2.27	18.99
1500	27.6	4.40	6.910	8500	13.74	2.18	19.47
1600	27.1	4.32	7.230	9000	13.28	2.11	19.92
1700	26.7	4.24	7.550	9500	12.84	2.04	20.30
1800	26.2	4.17	7.860	10000	12.42	1.97	20.70
1900	25.8	4.10	8.160				

Rotational speeds over 10000 rpm and/or belt speeds over 60 m/s need special drive designs.
Please ask our technical staff for advice.

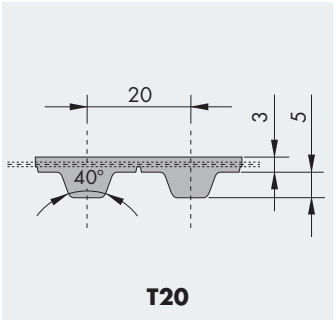
Admissible tensile load of the belt F_{Tadm} / belt weight

Belt width	b	[mm]	16	25	32	50	75	100	150
Admissible tensile load	F_{Tadm}	[N]	1200	2000	2700	4300	6600	8800	13400
Belt weight	T10	[kg/m]	0.077	0.120	0.154	0.240	0.360	0.480	0.720
	T10-DL	[kg/m]	0.091	0.143	0.182	0.285	0.428	0.570	0.855

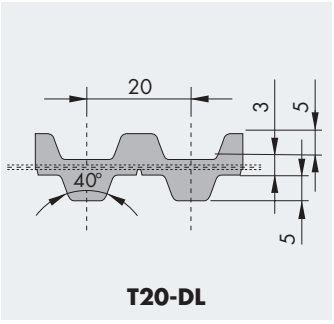
Flexibility (minimum number of teeth / minimum diameter)

without contraflexure		Timing pulley	z_{min}	12
		Tension roller (smooth), running on teeth	d_{min} [mm]	60
with contraflexure		Timing pulley	z_{min}	20
		Tension roller (smooth), running on the back of the belt	d_{min} [mm]	60

Standard PU timing belts
CONTI® SYNCHROFLEX T20 / T20-DL



T20



T20-DL

Standard T profile according to DIN 7721 with metric pitch and trapezoidal teeth.

The technical data refers to standard polyurethane and standard steel cord tension members.

Available versions
- single-sided (as standard)
- with E steel tension member for better flexibility
- with aramid tension member (except DL)
- polyurethane special materials upon request
- antistatic, colored, mechanically reworked

DL: double-sided

Type	/	Length*	Number of teeth
T20	/	1260	63
T20	/	1460	73
T20	/	1780	89
T20	/	1880	94
T20	/	2600	130
T20	/	2600 DL**	130
T20	/	2600 FN52	130
T20	/	3100	155
T20	/	3620	181
T20	/	3620 DL**	181

preferred belt width* [mm]:
32, 50, 75, 100

* other dimensions upon request
** in combination with reduced pulley gap please ask for technical support from Angst+Pfister.

Order example

CONTI® SYNCHROFLEX timing belt 50 T20/2600

Belt width [mm] — 50
Profile/pitch — T20
Belt length [mm] — 2600

Tooth shear strength (specific belt tooth load bearing)

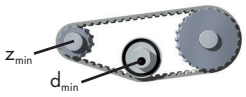
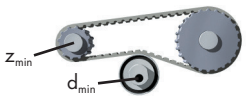
rpm n	F_{Tspec}	M_{spec}	P_{spec}	rpm n	F_{Tspec}	M_{spec}	P_{spec}
[min^{-1}]	[N/cm]	[Ncm/cm]	[W/cm]	[min^{-1}]	[N/cm]	[Ncm/cm]	[W/cm]
0	101.5	32.30	0.000	1600	49.2	15.66	26.200
20	98.1	31.20	0.654	1700	48.2	15.33	27.300
40	95.3	30.30	1.271	1800	47.2	15.01	28.300
60	92.8	29.50	1.856	1900	46.2	14.71	29.300
80	90.7	28.90	2.420	2000	45.3	14.42	30.200
100	88.7	28.20	2.960	2200	43.6	13.89	32.000
200	81.2	25.90	5.420	2400	42.1	13.40	33.700
300	75.9	24.20	7.590	2600	40.7	12.95	35.200
400	71.8	22.90	9.570	2800	39.4	12.53	36.700
500	68.4	21.80	11.410	3000	38.1	12.13	38.100
600	65.6	20.90	13.110	3200	37.0	11.77	39.4
700	63.1	20.10	14.730	3400	35.9	11.42	40.7
800	60.9	19.40	16.250	3600	34.9	11.09	41.8
900	59.0	18.78	17.700	3800	33.9	10.78	42.9
1000	57.2	18.22	19.080	4000	33.0	10.49	43.9
1100	55.6	17.71	20.400	4500	30.8	9.81	46.2
1200	54.2	17.24	21.700	5000	28.9	9.21	48.2
1300	52.8	16.80	22.900	5500	27.2	8.66	49.9
1400	51.5	16.40	24.000	6000	25.6	8.16	51.2
1500	50.3	16.02	25.200	6500	24.2	7.69	52.4

Rotational speeds over 6500 rpm and/or belt speeds over 40 m/s need special drive designs.
Please ask our technical staff for advice.

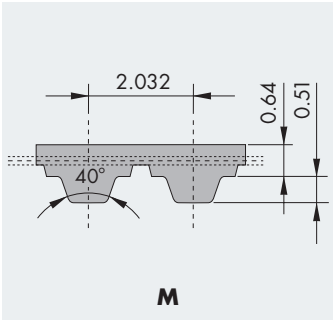
Admissible tensile load of the belt F_{Tadm} / belt weight

Belt width	b	[mm]	32	50	75	100	150
Admissible tensile load	F_{Tadm}	[N]	4750	7750	12000	16000	24500
Belt weight	T20	[kg/m]	0.269	0.420	0.630	0.840	1.260
	T20-DL	[kg/m]	0.355	0.555	0.833	1.110	1.665

Flexibility (minimum number of teeth / minimum diameter)

without contraflexure		Timing pulley	z_{min}	15
		Tension roller (smooth), running on teeth	d_{min} [mm]	120
with contraflexure		Timing pulley	z_{min}	25
		Tension roller (smooth), running on the back of the belt	d_{min} [mm]	120

PU timing belts with imperial pitch
CONTI® SYNCHROFLEX M (MXL)



M

Standard trapezoidal teeth according to DIN/ISO 5296
with Minipitch (2.032 mm = 0.08 inch)

The technical data refers to standard polyurethane and standard steel cord tension members.

Available versions

- single-sided
- with aramid tension member
- polyurethane special materials upon request
- antistatic, colored, mechanically reworked

FA: with bigger back thickness
FN: with profiles on the back of the belt

Type	/	Length*	Number of teeth
M 111	/	111.76	55
M 113	/	113.79	56
M 121	/	121.92	60
M 121	/	121.92 FA	60
M 132	/	132.08	65
M 142	/	142.24	70
M 144	/	144.27	71
M 162	/	162.56	80
M 182	/	182.88	90
M 197	/	197.10	97
M 203	/	203.20	100
M 209	/	209.30	103
M 213	/	213.36	105
M 243	/	243.84	120
M 256	/	256.03	126
M 264	/	264.16	130
M 284	/	284.48	140
M 304	/	304.80	150
M 355	/	355.60	175
M 373	/	373.89	184
M 449	/	449.07	221
M 503	/	503.94	248
M 508	/	508.00 FN 50	250
M 508	/	508.00 FN80	250
M 520	/	520.19	256
M 599	/	599.44	295
M 731	/	731.52	360
M 1178	/	1178.56	580

preferred belt width* [mm]:
4, 6, 10

* other dimensions upon request

Order example

CONTI® SYNCHROFLEX timing belt 6 M/182

Belt width [mm]

Profile/pitch

Belt length [mm]

Tooth shear strength (specific belt tooth load bearing)

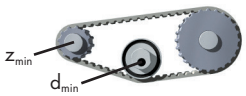
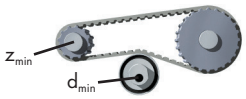
rpm n [min⁻¹]	F_{Tspec} [N/cm]	M_{spec} [Ncm/cm]	P_{spec} [W/cm]	rpm n [min⁻¹]	F_{Tspec} [N/cm]	M_{spec} [Ncm/cm]	P_{spec} [W/cm]
0	6.58	0.209	0.000	2200	3.50	0.111	0.257
20	6.36	0.202	0.004	2400	3.42	0.109	0.274
40	6.18	0.197	0.008	2500	3.39	0.108	0.282
60	6.03	0.192	0.012	2600	3.35	0.107	0.290
80	5.90	0.188	0.016	2800	3.29	0.105	0.307
100	5.79	0.184	0.019	2880	3.26	0.104	0.313
150	5.56	0.177	0.028	3000	3.23	0.103	0.323
200	5.38	0.171	0.036	3200	3.17	0.101	0.338
300	5.10	0.162	0.051	3400	3.12	0.099	0.354
400	4.89	0.156	0.065	3600	3.07	0.098	0.368
500	4.72	0.150	0.079	3800	3.02	0.096	0.383
600	4.58	0.146	0.092	4000	2.98	0.095	0.397
700	4.45	0.142	0.104	4500	2.88	0.092	0.432
730	4.42	0.141	0.108	5000	2.78	0.088	0.463
800	4.35	0.138	0.116	5500	2.70	0.086	0.495
900	4.25	0.135	0.127	6000	2.63	0.084	0.526
1000	4.16	0.132	0.139	6500	2.56	0.081	0.555
1100	4.08	0.130	0.150	7000	2.49	0.079	0.581
1200	4.01	0.128	0.160	7500	2.43	0.077	0.607
1300	3.94	0.125	0.171	8000	2.37	0.075	0.632
1400	3.88	0.124	0.181	8500	2.32	0.074	0.657
1460	3.85	0.123	0.187	9000	2.27	0.072	0.681
1500	3.82	0.122	0.191	9500	2.22	0.071	0.703
1600	3.77	0.120	0.201	10000	2.18	0.069	0.727
1700	3.72	0.118	0.211	12000	2.02	0.064	0.808
1800	3.67	0.117	0.220	15000	1.82	0.058	0.910
1900	3.62	0.115	0.229	18000	1.66	0.053	0.996
2000	3.58	0.114	0.239	20000	1.57	0.050	1.047

Rotational speeds over 20000 rpm and/or belt speeds over 80 m/s need special drive designs.
Please ask our technical staff for advice.

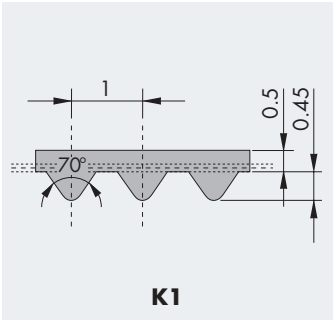
Admissible tensile load of the belt F_{Tadm} / belt weight

Belt width	b	[mm]	4	6	10	16	25	32
Admissible tensile load	F_{Tadm}	[N]	39	65	117	195	312	403
Belt weight	M	[kg/m]	0.005	0.007	0.012	0.019	0.030	0.038

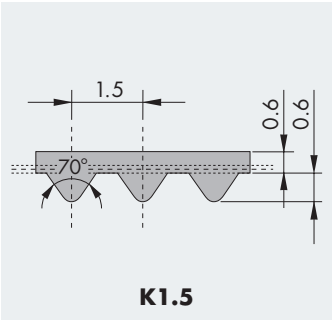
Flexibility (minimum number of teeth / minimum diameter)

without contraflexure		Timing pulley	z_{min}	10
		Tension roller (smooth), running on teeth	d_{min} [mm]	15
with contraflexure		Timing pulley	z_{min}	18
		Tension roller (smooth), running on the back of the belt	d_{min} [mm]	15

PU timing belts with serrated profile
CONTI® SYNCHROFLEX K1 / K1.5



K1



K1.5

Notched profile with metric pitch.

The technical data refers to standard polyurethane and standard steel cord tension members.

Available versions
- single-sided
- with aramid tension member
- polyurethane special materials upon request
- antistatic, colored, mechanically reworked

Type	/	Length*	Number of teeth
K 1	/	279.0	279
K 1	/	348.0	348
K 1.5	/	57.0 **	38
K 1.5	/	64.5 **	43
K 1.5	/	100.5	67
K 1.5	/	141.0	94
K 1.5	/	165.0	110
K 1.5	/	201.0	134
K 1.5	/	228.0	152
K 1.5	/	286.0	191
K 1.5	/	300.0	200
K 1.5	/	400.5	267
K 1.5	/	501.0	334
K 1.5	/	600.0	400
K 1.5	/	1242.5	828
K 1.5	/	1671.5	1114

preferred belt width* [mm]:
4, 6, 10

* other dimensions upon request
** in casting polyurethane 93ShA, red color

Order example

CONTI® SYNCHROFLEX timing belt 6 K1.5/100.5

Belt width [mm]

Profile/pitch

Belt length [mm]

Tooth shear strength (specific belt tooth load bearing)

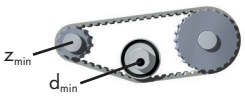
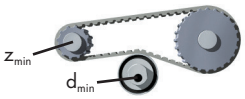
rpm n [min⁻¹]	F_{Tspec} [N/cm]	M_{spec} [Ncm/cm]	P_{spec} [W/cm]	rpm n [min⁻¹]	F_{Tspec} [N/cm]	M_{spec} [Ncm/cm]	P_{spec} [W/cm]
0	6.45	0.154	0.000	2200	3.43	0.082	0.189
20	6.23	0.149	0.003	2400	3.35	0.080	0.201
40	6.06	0.145	0.006	2500	3.32	0.079	0.207
60	5.91	0.141	0.009	2600	3.29	0.079	0.214
80	5.79	0.138	0.012	2800	3.22	0.077	0.225
100	5.68	0.136	0.014	2880	3.20	0.076	0.230
150	5.46	0.130	0.020	3000	3.17	0.076	0.238
200	5.28	0.126	0.026	3200	3.11	0.074	0.249
300	5.00	0.119	0.037	3400	3.06	0.073	0.260
400	4.80	0.115	0.048	3600	3.01	0.072	0.271
500	4.63	0.111	0.058	3800	2.96	0.071	0.281
600	4.49	0.107	0.067	4000	2.92	0.070	0.292
700	4.37	0.104	0.076	4500	2.82	0.067	0.317
730	4.33	0.103	0.079	5000	2.73	0.065	0.341
800	4.26	0.102	0.085	5500	2.65	0.063	0.364
900	4.17	0.100	0.094	6000	2.57	0.061	0.385
1000	4.08	0.097	0.102	6500	2.51	0.060	0.408
1100	4.00	0.095	0.110	7000	2.44	0.058	0.427
1200	3.93	0.094	0.118	7500	2.38	0.057	0.446
1300	3.87	0.092	0.126	8000	2.33	0.056	0.466
1400	3.81	0.091	0.133	8500	2.27	0.054	0.482
1460	3.77	0.090	0.138	9000	2.22	0.053	0.499
1500	3.75	0.090	0.141	9500	2.18	0.052	0.518
1600	3.69	0.088	0.148	10000	2.13	0.051	0.532
1700	3.64	0.087	0.155	12000	1.98	0.047	0.594
1800	3.60	0.086	0.162	15000	1.78	0.042	0.667
1900	3.55	0.085	0.169	18000	1.63	0.039	0.733
2000	3.51	0.084	0.175	20000	1.54	0.037	0.770

Rotational speeds over 20000 rpm and/or belt speeds over 80 m/s need special drive designs.
Please ask our technical staff for advice.

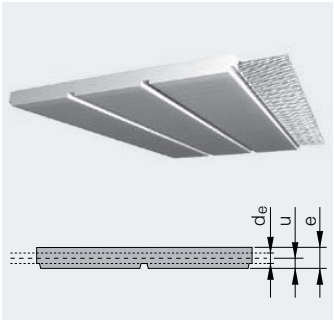
Admissible tensile load of the belt F_{Tadm} / belt weight

Belt width	b	[mm]	4	6	10	16	25	32
Admissible tensile load	F_{Tadm}	[N]	39	65	117	195	312	403
Belt weight	K1	[kg/m]	0.0044	0.007	0.011	0.018	0.028	0.035
	K1.5	[kg/m]	0.004	0.006	0.010	0.016	0.025	0.032

Flexibility (minimum number of teeth / minimum diameter)

without contraflexure		Timing pulley	z_{min}	16
		Tension roller (smooth), running on teeth	d_{min} [mm]	15
with contraflexure		Timing pulley	z_{min}	20
		Tension roller (smooth), running on the back of the belt	d_{min} [mm]	15

PU flat belts
CONTI® SYNCHROFLEX F/AF/BF/CF/DF



The technical data refers to standard polyurethane and standard steel cord tension members.

Type	Molded Nr.	Length [mm]	e [mm]	u [mm]	d_e [W/cm]
F 213/7	K3969-Z	212.95	1.60	0.800	0.15
F 254/4	K5111-Z	253.74	0.80	0.400	0.15
F 314/5	K5558-Z	314.16	5.50	2.000	0.60
F 315/4	K5428-Z	315.73	1.20	0.600	0.15
F 330/2	K5651-Z	330.00	1.00	0.400	0.15
F 435/2	K5691-Z	435.04	0.80	0.400	0.15
F 502/7	K5430-Z	501.84	1.00	0.500	0.30
F 697/4	52648-Z	695.57	0.55	0.275	0.15
F 738/4	K5112-Z	738.64	0.80	0.400	0.15
F 762/7	K3708-Z	762.00	2.60	1.300	0.30
F 959/2	K5578-Z	959.40	1.00	0.500	0.30
F 1240/10	K5178-Z	1240.00	1.20	0.800	0.60
F 1458/9	K4377-Z	1458.50	2.60	0.450	0.30
F 1780/10	K4667-Z	1780.00	1.40	0.600	0.60
AF 24	51669-Z	113.08	0.80	0.275	0.15
AF 56	71772-Z	263.16	0.80	0.400	0.15
AF 67	51601-Z	315.70	0.70	0.275	0.15
AF 76	39669-Z	357.30	0.80	0.400	0.15
AF 87	38919-Z	409.57	0.85	0.575	0.15
AF 108	39796-Z	508.39	0.70	0.275	0.15
AF 138	39847-Z	649.60	0.80	0.275	0.15
AF 140	40121-Z	659.03	0.60	0.275	0.15
AF 148	39631-Z	695.57	0.80	0.275	0.15
BF 44	38852-Z	345.57	0.90	0.450	0.30
BF 64	38805-Z	501.85	0.90	0.450	0.30
BF 67	38902-Z	525.70	0.90	0.450	0.30
BF 70	39980-Z	548.90	0.90	0.450	0.30
CF 66	38917-Z	828.55	1.40	0.700	0.60
DF 45	39839-Z	828.74	0.90	0.450	0.30
DF 130	51636-Z	815.34	0.90	0.450	0.30
DF 153	39979-Z	859.40	0.90	0.450	0.30

Order example

CONTI® SYNCHROFLEX timing belt 10 AF/108

Belt width [mm]

Type / no. of grooves

CONTI® SYNCHROCHAIN (calculation according to PR-Calc)

Introduction

The CONTI® SYNCHROCHAIN combines high tear resistance with exceptional tensile strength, making it one of the world's best performers amongst today's timing belts. This high performance timing belt, with its newly developed CTD profile, makes extreme applications possible.

Because of its original design and selected materials – it ensures reliable power transmission for high torques and high dynamic stress. A high performance class belt, permitting reverse flexing in multi-pulley drives and is therefore the ideal alternative to chain drives.

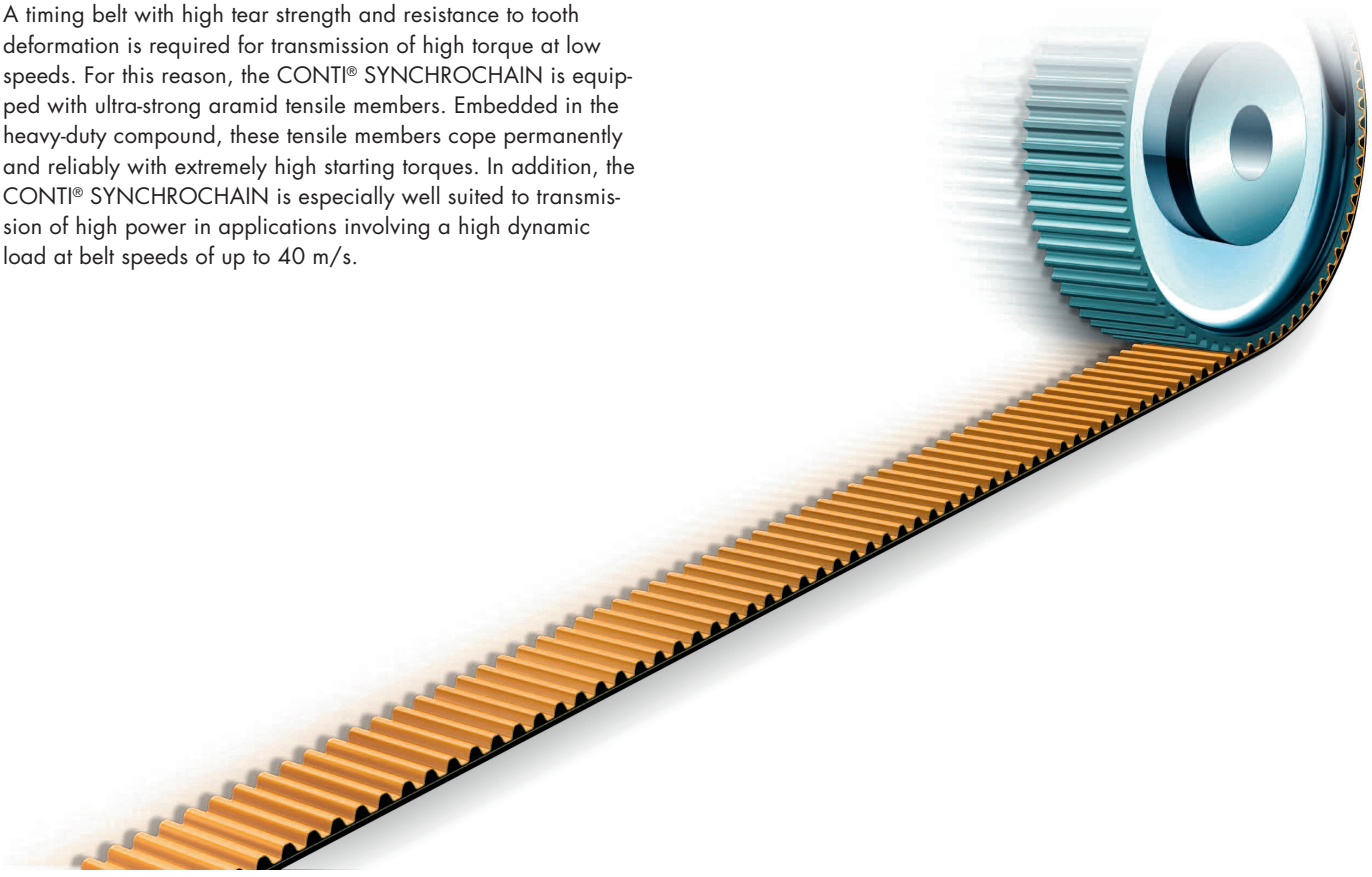
CONTI® SYNCHROCHAIN – designed for high dynamic stressing up to 40 m/s

CONTI® SYNCHROCHAIN timing belts were designed for applications in drives with extremely high acceleration forces as well as for the reliable transmission of high torque at low speeds. To deal with the impact loads occurring in the case of abrupt acceleration and deceleration, the CONTI® SYNCHROCHAIN employs a compound highly resistant to elongation and tearing. This compound reliably absorbs even maximum surges and guarantees the maintenance-free functioning of pulsating drives in continuous service.

A timing belt with high tear strength and resistance to tooth deformation is required for transmission of high torque at low speeds. For this reason, the CONTI® SYNCHROCHAIN is equipped with ultra-strong aramid tensile members. Embedded in the heavy-duty compound, these tensile members cope permanently and reliably with extremely high starting torques. In addition, the CONTI® SYNCHROCHAIN is especially well suited to transmission of high power in applications involving a high dynamic load at belt speeds of up to 40 m/s.

Calculation procedure

Following strictly the guidelines, the CONTI® SYNCHROCHAIN belt does not really belong to the group of elastomer belts. However, since it is being calculated using the PR-Calc procedure, this allocation does make sense due to clarity and convenience.



Properties

Synchronous transmission

CONTI® SYNCHROCHAIN high performance timing belts transmit rotary motions at exact angles and at a constant belt speed. The precise tooth match between belt and drive pulley ensures a high degree of synchronicity and reliably prevents belt ratcheting.

Compact and economical belt configurations

The high tear resistance and high dynamic load carrying capacity of CONTI® SYNCHROCHAIN high performance belts allow for synchronous drives even where space is at a premium. This establishes ideal conditions for the design of economically compact, lightweight drives.

No lubrication and maintenance needed

CONTI® SYNCHROCHAIN high performance belts are maintenance-free. No lubricating or retightening is required. Their construction and the materials used ensure a constant belt tension.

Low-noise operation

The optimized sectional match between timing belt and pulley and a belt construction with a multiply-treated polyamide fabric, plus a dramatic reduction in the required timing belt width in using CONTI® SYNCHROCHAIN high performance timing belts, all make for considerably less noise, even at high belt speeds.

Resistance to external influences

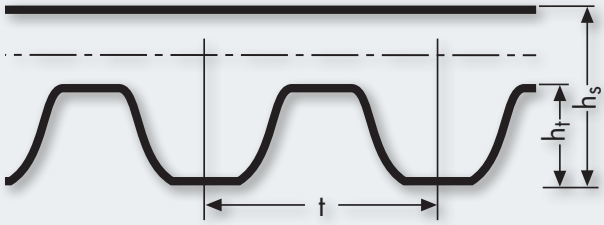
- highly resistant to various chemicals and oils
- resistant to UV and ozone
- tropicalized
- temperature resistant from –40°C to +80°C

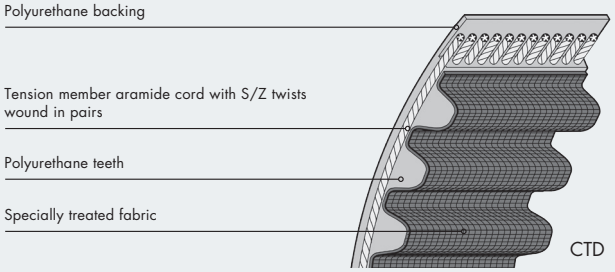
Labelling

- pitch length
- tooth shape
- tooth pitch
- timing belt width
- type

Profile

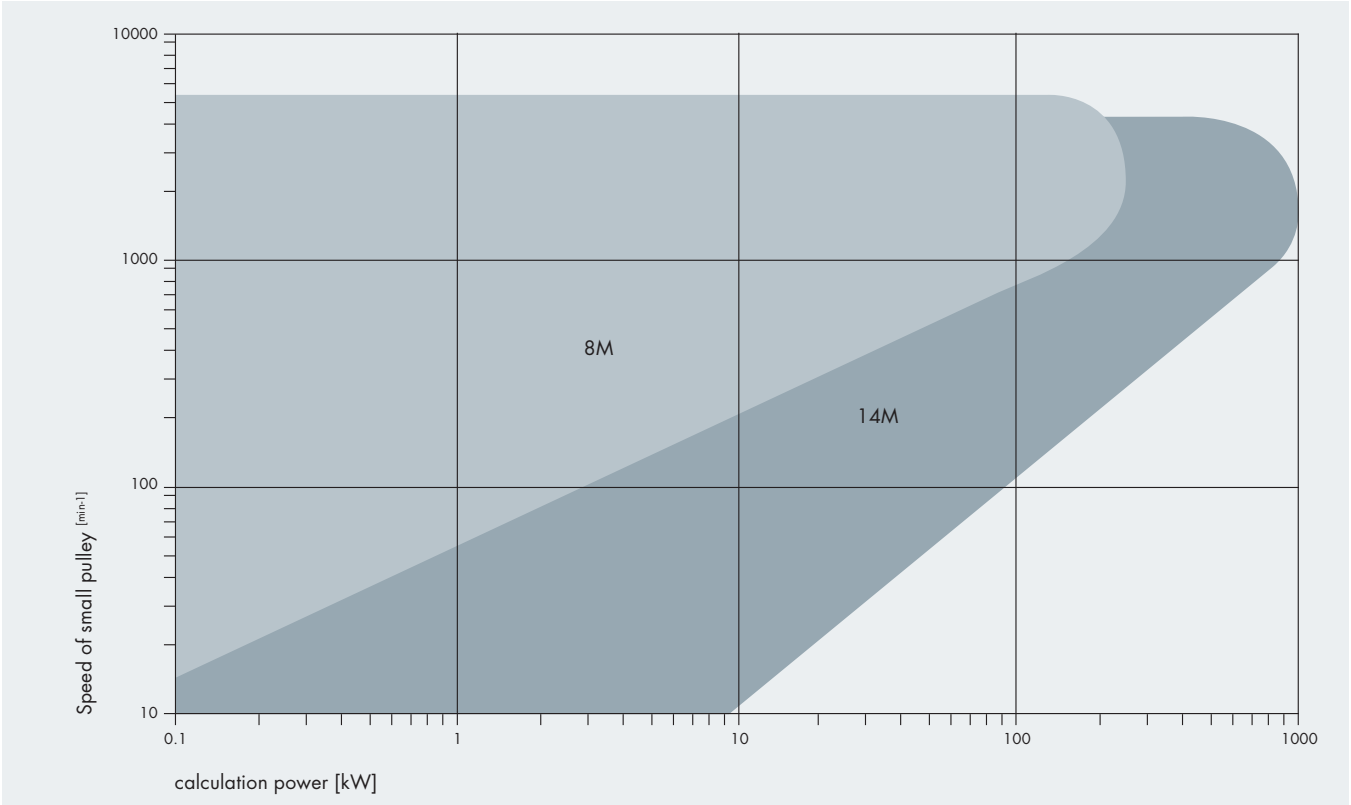
The newly developed CTD profile is the symbiosis of the HTD and the STD profiles and combines the advantages of both in a single profile. The arch-shaped pulley entry geometry on the one hand and the higher tooth on the other provide harmonized tooth meshing and therefore ultra smooth running. At the same time, it provides excellent protection against belt slip at high torque.





Pitches

The available metric pitches are 8M and 14M.



CONTI® SYNCHROCHAIN CTD C8M
Power rating

The power ratings P_N for CONTI® SYNCHROCHAIN heavy-duty timing belts with CTD profiles are shown in the following tables. The transmittable power depends on the rotational speed and the diameter or the number of teeth of the small pulley.

The power ratings are valid for a standard width. The belt power for other widths can be calculated by multiplying with the width factor c_6.

Toothed profile CTD C8M 10 mm – Power rating P_N [kW]

Speed of small pulley n_1 [min^{-1}]	Number of teeth of the small toothed pulley z_1															
	22	24	26	28	30	32	34	36	38	40	44	48	52	56	64	72
	Pitch diameter of toothed pulley d_0 [mm]															
	56.02	61.12	66.12	71.30	76.39	81.49	86.58	91.77	96.77	101.86	112.05	122.23	132.42	142.6	162.97	183.35
10	0.05	0.06	0.06	0.07	0.08	0.08	0.09	0.10	0.10	0.11	0.12	0.14	0.15	0.17	0.20	0.23
20	0.10	0.11	0.12	0.13	0.14	0.15	0.17	0.18	0.19	0.20	0.23	0.26	0.28	0.31	0.37	0.43
40	0.18	0.20	0.22	0.24	0.26	0.29	0.31	0.33	0.36	0.38	0.43	0.48	0.53	0.58	0.69	0.80
100	0.41	0.46	0.51	0.56	0.61	0.66	0.71	0.76	0.82	0.87	0.98	1.10	1.22	1.34	1.58	1.84
200	0.77	0.85	0.95	1.04	1.13	1.23	1.33	1.43	1.53	1.63	1.84	2.06	2.28	2.50	2.96	3.44
300	1.10	1.23	1.36	1.50	1.64	1.77	1.92	2.06	2.21	2.35	2.66	2.97	3.28	3.61	4.27	4.96
400	1.43	1.60	1.77	1.94	2.12	2.30	2.49	2.67	2.86	3.05	3.44	3.85	4.26	4.68	5.54	6.43
500	1.75	1.96	2.16	2.38	2.59	2.82	3.04	3.27	3.50	3.74	4.21	4.71	5.21	5.72	6.78	7.87
600	2.07	2.31	2.55	2.80	3.06	3.32	3.59	3.85	4.13	4.40	4.97	5.55	6.14	6.75	7.99	9.28
700	2.37	2.65	2.93	3.22	3.52	3.82	4.12	4.43	4.74	5.06	5.71	6.38	7.06	7.75	9.18	10.66
800	2.68	2.99	3.31	3.64	3.97	4.31	4.65	5.00	5.35	5.71	6.45	7.20	7.97	8.75	10.36	12.03
1000	3.28	3.66	4.05	4.45	4.85	5.27	5.69	6.12	6.55	6.99	7.89	8.81	9.75	10.70	12.68	14.72
1200	3.86	4.31	4.78	5.25	5.72	6.21	6.71	7.21	7.72	8.24	9.30	10.38	11.49	12.62	14.95	17.35
1450	4.59	5.12	5.67	6.22	6.79	7.37	7.96	8.56	9.16	9.78	11.03	12.32	13.64	14.98	17.74	20.59
1600	5.01	5.60	6.19	6.80	7.42	8.06	8.70	9.35	10.02	10.69	12.06	13.47	14.90	16.37	19.39	22.51
1800	5.58	6.22	6.89	7.57	8.26	8.96	9.68	10.40	11.14	11.89	13.42	14.98	16.58	18.21	21.57	25.04
2000	6.13	6.85	7.58	8.32	9.08	9.86	10.64	11.44	12.26	13.08	14.76	16.48	18.23	20.03	23.72	27.54
2400	7.23	8.07	8.94	9.81	10.71	11.62	12.55	13.49	14.45	15.42	17.40	19.43	21.50	23.62	27.97	32.47
3000	8.85	9.88	10.93	12.01	13.10	14.22	15.36	16.51	17.68	18.87	21.29	23.77	26.31	28.90	34.22	39.73
3500	10.17	11.35	12.57	13.80	15.06	16.35	17.65	18.98	20.32	21.69	24.47	27.32	30.24	33.22	39.34	
4000	11.47	12.81	14.18	15.57	17.00	18.44	19.92	21.41	22.93	24.47	27.61	30.83	34.12	37.48		
4500	12.76	14.25	15.77	17.32	18.91	20.52	22.15	23.82	25.51	27.22	30.71	34.29	37.95			
5000	14.04	15.67	17.35	19.05	20.80	22.57	24.37	26.20	28.06	29.94	33.78	37.72				
5500	15.30	17.08	18.91	20.77	22.67	24.60	26.56	28.56	30.58	32.63	36.82	41.11				

Width factor c_6

Belt width	12	21	36	62
Width factor c_6	1.2	2.1	3.6	6.2

Note: The width factors are calculated by dividing the required width by the reference width.

CONTI® SYNCHROCHAIN CTD C14M
Power rating

The power ratings are valid for a standard width. The belt power for other widths can be calculated by multiplying with the width factor c_6.

Toothed profile CTD C14M 10 mm – Power rating P_N [kW]

Speed of small pulley n_1 [min^{-1}]	Number of teeth of the small toothed pulley z_1														
	28	30	32	34	36	38	40	42	44	46	48	52	56	64	72
	Pitch diameter of toothed pulley d_0 [mm]														
	124.78	133.69	142.6	151.52	160.43	169.34	178.25	187.17	196.08	204.99	213.90	231.73	249.55	285.21	320.86
10	0.31	0.33	0.36	0.38	0.41	0.43	0.46	0.48	0.51	0.53	0.56	0.61	0.66	0.76	0.87
20	0.55	0.60	0.64	0.68	0.73	0.77	0.82	0.86	0.91	0.95	1.00	1.09	1.18	1.37	1.55
40	0.99	1.07	1.14	1.22	1.30	1.38	1.46	1.54	1.62	1.70	1.78	1.94	2.11	2.44	2.77
100	2.13	2.30	2.46	2.63	2.80	2.97	3.14	3.31	3.49	3.66	3.84	4.19	4.54	5.25	5.97
200	3.80	4.10	4.40	4.70	5.00	5.31	5.61	5.92	6.23	6.54	6.85	7.48	8.11	9.38	10.67
300	5.34	5.76	6.18	6.60	7.03	7.45	7.88	8.32	8.75	9.18	9.62	10.50	11.39	13.17	14.98
400	6.79	7.33	7.86	8.40	8.94	9.48	10.03	10.58	11.13	11.69	12.24	13.36	14.49	16.76	19.06
500	8.19	8.83	9.48	10.12	10.78	11.43	12.09	12.75	13.42	14.09	14.76	16.10	17.46	20.20	22.98
600	9.54	10.29	11.04	11.79	12.55	13.32	14.08	14.86	15.63	16.41	17.19	18.76	20.34	23.54	26.77
700	10.85	11.70	12.56	13.42	14.28	15.15	16.02	16.90	17.78	18.67	19.56	21.34	23.14	26.78	30.45
800	12.14	13.09	14.04	15.00	15.97	16.94	17.92	18.90	19.89	20.88	21.87	23.87	25.88	29.94	34.06
1000	14.63	15.77	16.93	18.09	19.25	20.42	21.60	22.78	23.97	25.16	26.36	28.77	31.20	36.10	41.05
1200	17.04	18.38	19.72	21.07	22.43	23.79	25.16	26.54	27.92	29.31	30.71	33.51	36.34	42.05	47.82
1450	19.97	21.53	23.10	24.69	26.28	27.87	29.48	31.10	32.72	34.34	35.98	39.27	42.58	49.27	56.03
1600	21.68	23.38	25.09	26.81	28.53	30.27	32.01	33.77	35.53	37.29	39.07	42.64	46.24	53.50	60.84
1800	23.93	25.80	27.69	29.58	31.49	33.41	35.33	37.27	39.21	41.16	43.12	47.06	51.03	59.04	67.15
2000	26.14	28.18	30.24	32.31	34.39	36.49	38.59	40.70	42.82	44.96	47.09	51.40	55.73	64.49	73.34
2400	30.45	32.83	35.23	37.64	40.07	42.50	44.95	47.41	49.89	52.37	54.86	59.87	64.92	75.12	
3000	36.70	39.57	42.46	45.37	48.29	51.23	54.19	57.15	60.13	63.12	66.13	72.17	78.26		
3500	41.75	45.02	48.31	51.62	54.95	58.29	61.65	65.02	68.41	71.82	75.24				
4000	46.69	50.35	54.03	57.73	61.45	65.18	68.94	72.72	76.51	80.31					

Width factor c_6

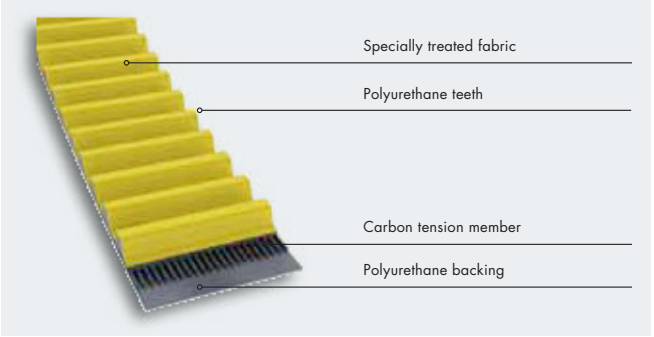
Belt width	20	37	68	90	125
Width factor c_6	2	3.7	6.8	9	12.5

Note: The width factors are calculated by dividing the required width by the reference width.

CONTI® SYNCHROCHAIN CARBON

Description

Light but durable polyurethane for teeth and backing, high-tensile and at the same time longitudinally stable carbon for the tension member, plus a specially coated, wear-resistant fabric: the intelligent design in combination with especially high-quality materials is a defining feature of the CONTI® SYNCHROCHAIN CARBON. It thus ensures clean, smooth and particularly reliable power transmission both at high torques and also with high dynamic loads.



Properties

- temperature range, depending on application, from –40°C to +80°C
- suitable for tropical climates
- resistant to aging and ozone
- withstands reverse flexing
- resistant to oils, grease and fuel
- conditionally resistant to acid and lye
- raw materials and production are silicone-free
- maintenance-free
- belt speeds up to 40 m/s
- increased power output
- longitudinally stable throughout its lifetime

Permissible peripheral force for dynamic applications

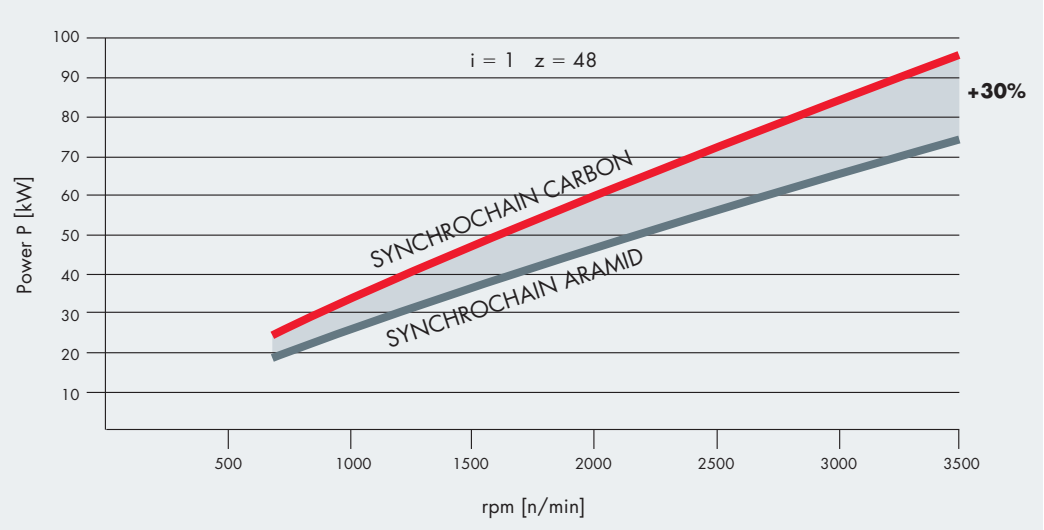
CONTI® SYNCHROCHAIN				CONTI® SYNCHROCHAIN CARBON			
CTD 8M		CTD 14M		CTD 8M		CTD 14M	
Width [mm]	$F_{U\ adm}$ [N]	**Width** [mm]	$F_{U\ adm}$ [N]	**Width** [mm]	$F_{U\ adm}$ [N]	**Width** [mm]	$F_{U\ adm}$ [N]
12	1150	37	6600	12	2350	37	9750
21	2140	68	12090	21	4150	68	18100
36	3790	90	15980	36	7150	90	24500
62	6650	125	22180	62	12350	125	33600

Permissible peripheral force for quasi-static* applications where n < 100 rpm

CONTI® SYNCHROCHAIN				CONTI® SYNCHROCHAIN CARBON			
CTD 8M		CTD 14M		CTD 8M		CTD 14M	
Width [mm]	$F_{U\ adm}$ [N]	**Width** [mm]	$F_{U\ adm}$ [N]	**Width** [mm]	$F_{U\ adm}$ [N]	**Width** [mm]	$F_{U\ adm}$ [N]
12	1500	37	8800	12	3100	37	13200
21	2700	68	16300	21	5450	68	21950
36	4650	90	21600	36	9350	90	31750
62	8000	125	30000	62	16100	125	44000

*A quasi-static application is defined as one where the drive speed is less than 100 rpm.
In such cases the belt load can be up to 30% higher. In such cases, please contact our technical staff.

Power comparison
CONTI® SYNCHROCHAIN vs. CONTI® SYNCHROCHAIN CARBON CTD 14M – 10 mm



CONTI® SYNCHROCHAIN CARBON CTD C8M
Power rating

The power ratings are valid for a standard width. The belt power for other widths can be calculated by multiplying with the width factor c_6.

Toothed profile CTD C8M 10 mm – Power rating P_N [kW]

Speed of small pulley n_1 [min^{-1}]	Number of teeth of the small toothed pulley z_1															
	22	24	26	28	30	32	34	36	38	40	44	48	52	56	64	72
	Pitch diameter of toothed pulley d_0 [mm]															
	56.02	61.12	66.12	71.30	76.39	81.49	86.58	91.77	96.77	101.86	112.05	122.23	132.42	142.6	162.97	183.35
10	0.06	0.07	0.08	0.09	0.10	0.10	0.11	0.12	0.13	0.14	0.16	0.17	0.19	0.21	0.25	0.29
20	0.12	0.14	0.15	0.16	0.18	0.19	0.21	0.23	0.24	0.26	0.29	0.33	0.36	0.40	0.47	0.54
40	0.23	0.25	0.28	0.31	0.34	0.36	0.39	0.42	0.45	0.48	0.55	0.61	0.67	0.74	0.88	1.02
100	0.52	0.58	0.64	0.71	0.77	0.84	0.90	0.97	1.04	1.11	1.25	1.40	1.54	1.70	2.01	2.33
200	0.97	1.09	1.20	1.32	1.44	1.56	1.69	1.81	1.94	2.07	2.34	2.61	2.89	3.18	3.76	4.37
300	1.40	1.57	1.73	1.90	2.08	2.25	2.43	2.62	2.80	2.99	3.37	3.77	4.17	4.58	5.43	6.30
400	1.82	2.03	2.25	2.47	2.69	2.92	3.16	3.39	3.64	3.88	4.38	4.89	5.41	5.94	7.04	8.17
500	2.23	2.48	2.75	3.02	3.30	3.58	3.86	4.15	4.45	4.75	5.36	5.98	6.62	7.27	8.61	9.99
600	2.62	2.93	3.24	3.56	3.89	4.22	4.56	4.90	5.24	5.60	6.31	7.05	7.80	8.57	10.15	11.78
700	3.02	3.37	3.73	4.09	4.47	4.85	5.24	5.63	6.03	6.43	7.26	8.10	8.97	9.85	11.67	13.55
800	3.40	3.80	4.21	4.62	5.04	5.47	5.91	6.35	6.80	7.26	8.19	9.14	10.12	11.12	13.17	15.28
1000	4.16	4.65	5.15	5.65	6.17	6.69	7.23	7.77	8.32	8.88	10.02	11.19	12.38	13.60	16.11	18.70
1200	4.91	5.48	6.07	6.66	7.27	7.89	8.52	9.16	9.81	10.47	11.82	13.19	14.60	16.04	18.99	22.05
1450	5.83	6.51	7.20	7.91	8.63	9.37	10.11	10.87	11.64	12.43	14.02	15.65	17.32	19.03	22.54	26.16
1600	6.37	7.11	7.87	8.64	9.43	10.24	11.05	11.88	12.73	13.58	15.32	17.11	18.94	20.80	24.64	28.60
1800	7.08	7.91	8.75	9.62	10.49	11.39	12.30	13.22	14.16	15.11	17.05	19.03	21.06	23.14	27.40	31.81
2000	7.79	8.70	9.63	10.58	11.54	12.53	13.52	14.54	15.57	16.62	18.75	20.93	23.17	25.45	30.14	34.99
2400	9.19	10.26	11.35	12.47	13.61	14.77	15.95	17.15	18.36	19.59	22.11	24.69	27.32	30.01	35.54	41.26
3000	11.24	12.55	13.89	15.26	16.65	18.07	19.51	20.98	22.46	23.97	27.05	30.20	33.43	36.72	43.48	50.48
3500	12.92	14.43	15.97	17.54	19.14	20.77	22.43	24.11	25.82	27.56	31.09	34.72	38.42	42.21	49.98	
4000	14.58	16.28	18.02	19.79	21.60	23.44	25.31	27.21	29.14	31.09	35.08	39.17	43.35	47.62		
4500	16.22	18.11	20.04	22.01	24.02	26.07	28.15	30.26	32.41	34.59	39.02	43.57	48.22			
5000	17.84	19.92	22.04	24.21	26.42	28.67	30.96	33.29	35.65	38.04	42.92	47.93				
5500	19.44	21.71	24.02	26.39	28.80	31.25	33.75	36.28	38.86	41.46	46.79	52.24				

Width factor c_6

Belt width	12	21	36	62
Width factor c_6	1.2	2.1	3.6	6.2

Note: The width factors are calculated by dividing the required width by the reference width.

CONTI® SYNCHROCHAIN CARBON CTD C14M
Power rating

The power ratings are valid for a standard width. The belt power for other widths can be calculated by multiplying with the width factor c6.

Toothed profile CTD C14M 10 mm – Power rating P_N [kW]

Speed of small pulley n_1 [min^{-1}]	Number of teeth of the small toothed pulley z_k														
	28	30	32	34	36	38	40	42	44	46	48	52	56	64	72
	Pitch diameter of toothed pulley d_w [mm]														
	124.78	133.69	142.6	151.52	160.43	169.34	178.25	187.17	196.08	204.99	213.90	231.73	249.55	285.21	320.86
10	0.40	0.43	0.46	0.49	0.52	0.55	0.58	0.62	0.65	0.68	0.71	0.78	0.84	0.98	1.11
20	0.71	0.76	0.82	0.87	0.93	0.99	1.04	1.10	1.16	1.22	1.28	1.39	1.51	1.75	1.99
40	1.26	1.36	1.46	1.56	1.66	1.76	1.87	1.97	2.07	2.17	2.28	2.49	2.70	3.12	3.55
100	2.72	2.94	3.15	3.37	3.58	3.80	4.02	4.24	4.46	4.68	4.91	5.35	5.81	6.72	7.64
200	4.86	5.24	5.63	6.01	6.40	6.79	7.18	7.57	7.97	8.37	8.76	9.57	10.37	12.00	13.65
300	6.83	7.36	7.90	8.44	8.99	9.53	10.08	10.64	11.19	11.75	12.31	13.43	14.56	16.85	19.16
400	8.69	9.37	10.05	10.74	11.43	12.13	12.83	13.53	14.24	14.95	15.66	17.09	18.53	21.44	24.38
500	10.47	11.29	12.12	12.95	13.78	14.62	15.46	16.31	17.16	18.02	18.87	20.60	22.33	25.84	29.39
600	12.20	13.16	14.12	15.08	16.06	17.03	18.01	19.00	19.99	20.99	21.99	23.99	26.02	30.10	34.24
700	13.88	14.97	16.06	17.16	18.27	19.38	20.50	21.62	22.75	23.88	25.01	27.30	29.60	34.25	38.95
800	15.52	16.74	17.96	19.19	20.43	21.67	22.92	24.18	25.44	26.70	27.97	30.53	33.10	38.30	43.56
1000	18.71	20.18	21.65	23.13	24.62	26.12	27.63	29.14	30.66	32.19	33.72	36.80	39.90	46.17	52.51
1200	21.80	23.50	25.22	26.95	28.68	30.43	32.18	33.95	35.72	37.49	39.28	42.87	46.48	53.78	61.17
1450	25.54	27.54	29.55	31.57	33.61	35.65	37.71	39.77	41.85	43.93	46.02	50.23	54.46	63.01	71.67
1600	27.73	29.90	32.09	34.29	36.50	38.72	40.95	43.19	45.44	47.70	49.97	54.54	59.14	68.43	77.82
1800	30.61	33.00	35.41	37.84	40.28	42.73	45.19	47.67	50.15	52.65	55.15	60.19	65.27	75.52	85.89
2000	33.43	36.05	38.68	41.33	43.99	46.67	49.36	52.06	54.78	57.50	60.24	65.74	71.29	82.48	93.81
2400	38.94	41.99	45.06	48.14	51.25	54.36	57.50	60.65	63.81	66.98	70.17	76.58	83.04	96.08	
3000	46.94	50.62	54.31	58.03	61.77	65.53	69.31	73.10	76.91	80.74	84.58	92.31	100.10		
3500	53.41	57.59	61.79	66.03	70.28	74.56	78.85	83.17	87.51	91.86	96.23				
4000	59.72	64.40	69.10	73.84	78.59	83.37	88.18	93.01	97.86	102.73					

Width factor c_6

Belt width	20	37	68	90	125
Width factor c_6	2	3.7	6.8	9	12.5

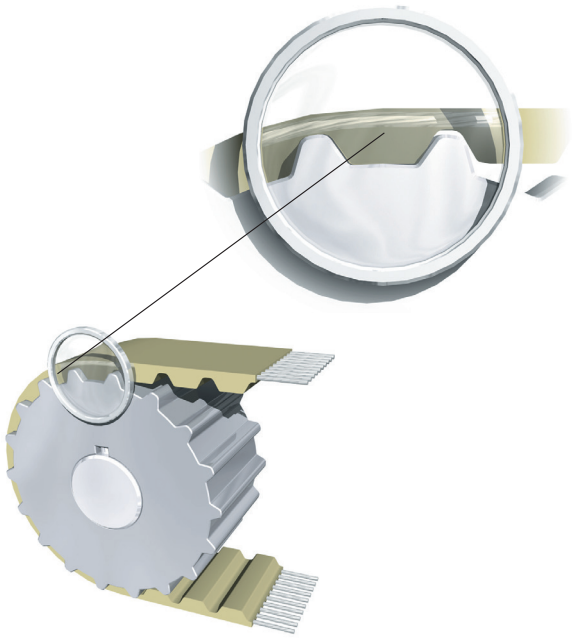
Note: The width factors are calculated by dividing the required width by the reference width.

Characteristics of polyurethane timing belts

PUR timing belts, endless or open-end, are manufactured from wear resistant polyurethane and high tensile steel cord tension members. The combination of these high quality materials forms the basis for dimensionally stable and high resistance polyurethane timing belts. Polyurethane timing belts have a very high span rigidity. No post-elongation of the tension members is to be expected in continuous operation. Only under extreme load and after a short run-in time, the pre-tension of the belts might be slightly reduced by the settling of the tension members, making a single re-tensioning of the timing belt possibly necessary.

The timing belts are temperature resistant with an ambient temperature range from –30°C to +80°C. Applications close to the temperature limits (<–10°C and >+50°C), however, might require suitable dimensioning. For specific temperature ranges, various belt materials are available. Please contact the Angst+Pfister technical staff for this type of application.

The production methods for timing belts are kept within tight tolerances which guarantee a uniform load distribution during power transmission. These polyurethane timing belts are suitable for the transmission of high torques as well as the precise positioning and transport of various goods.



Properties

Mechanical

- positive fit, synchronous operation
- constant length, no post fit elongation
- low noise emission
- wear resistant
- low-maintenance
- highly flexible
- positional and angular accuracy
- can be crossed (see chapter “Angular drives” on page 5.10)
- fatigue resistant, low extension steel cord tension members
- belt speed up to 80 m/s
- compact design
- excellent power-to-weight ratio
- low pre-tension
- low bearing load
- large center distances feasible
- large transmission ratios feasible
- high degree of efficiency, up to 98%

Chemical

- hydrolysis resistant
- resistant to aging
- temperature resistant from –30°C to +80°C
- resistant to tropical climate
- resistant against basic oils, greases and gasoline
- resistant to some acids and lye

For special purposes, we can produce all timing belts in materials which are appropriate for specific fields of applications and can fulfill requirements such as:

- food sector (polyurethane FDA compliant)
- low temperature range from –30°C to +5°C
- high temperature range from +20°C to +110°C
- use in a slightly aggressive environment

In addition to the standard steel cord tension members, we also offer stainless steel and aramid solutions. Should extra strong bending stress or tension load be needed, timing belts reinforced with our highly flexible E steel cord tension members can be produced.

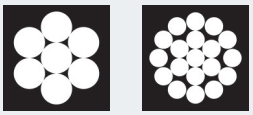
The E steel cord tension member

The thinner the single wire, the more flexible the entire tension member: this relation led to the development of PUR timing belts with E steel tension members.

Within the E cord, the tension is distributed more uniformly and to thinner wires, as a result the bending stress is clearly reduced in each single wire. The benefit of the E steel tension members is higher flexibility. This is an advantage for compact designs with small pulleys and idlers, where the minimum diameter or number of teeth can decrease up to 30% compared to the standard tension members.

Timing belts with E steel tension members are recommended for multi- shaft drives with alternating bending stress.

Steel tension member embedded in PUR:



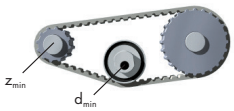
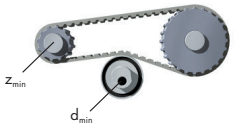
The thinner the single wire, the more flexible the entire timing belt.

Summary

- thinner single wires in the steel cord
- higher dynamic capabilities
- extremely high pulsing and alternating tensional force capabilities
- smaller pulley and idler diameters
- no correction of pulleys necessary

Remark for correct application: for applications which run on the limit of the belt's capability, please contact your nearest Angst+Pfister representative for support.

Timing belts with E steel tension members / minimum number of teeth:

Type of drive			**AT3 (Standard)**	**AT5**	**AT10 ATP10**	**T5**	**T10**	**T20**
Pulsing tension	Pulley	z_{min}	15	12	12	10	10	12
	Idler (without teeth) Running on teeth	d_{min} [mm]	20	18	50	18	50	100
Alternating tension	Pulley	z_{min}	20	20	20	12	15	22
	Idler (without teeth) Running back of the belt	d_{min} [mm]	20	50	80	18	50	120

Pre-tension

Pre-tension is intended to guarantee a minimum tensioning force at the slack span side to ensure smooth tooth meshing into the driven pulley. There are many ways of applying pre-tension to a belt, for example by adjusting the center distance between pulleys or with additional idlers.

During operation, the tension in the tight span increases while transferring the force to the driven pulley. At the same time, the tension in the slack span drops. A correct pre-tension is applied if during the maximal rated transmission of power, the belt on the slack span has just enough tension to ensure correct tooth meshing with the driven pulley.

Pre-tension should only be set as high as necessary to minimize wear on the teeth, excessive cord strain and bearing load.

Calculation of pre-tension forces

Different types of belts require different calculation procedures. The essential calculation formulae and tables are available in the calculation section.

Influence variables

Stiffness of belt

Friction forces caused by the interaction on the teeth during meshing (especially at the slack span) intensify the span forces, which increase the elongation. This may cause the teeth of the belt to climb up the teeth of the driven pulley and finally skip. Elongation is directly related to the belt stiffness; high stiffness of the steel tension members allows lower pre-tension.

Circumferential force

The circumferential force acts in proportion to the elongation of the load span, which implies excessive slackening and can be eliminated by applying a pre-tension force matching the circumferential force.

Belt length

Belt elongation due to circumferential forces and friction forces is roughly in proportion to the belt length. Therefore, the tendency of running up on teeth or skipping is basically related to the overall belt length. A short belt will only slightly stretch even under extreme circumferential and friction forces with low pre-tension force applied. Therefore, the belt barely runs up on teeth or skips. On the other hand, short timing belts can barely compensate circumferential deviations of the pulleys. This can cause heavy pre-tension variations resulting in extreme peak values.

Proportion of the span length

With multiple-shaft drives, the load span is often longer than the slack span side. In this case, a slight elongation of the load span results in a very unfavorable slack on the slack span side. Therefore, the pre-tension force of such drives should be set higher than the circumferential force.

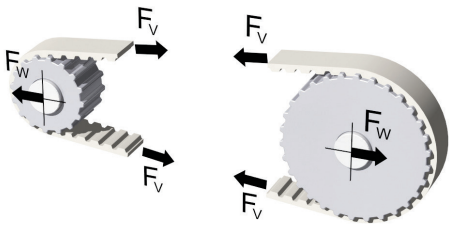
Precise transmission of motion

If the span pre-tension forces are set equal or similar to the circumferential force, high transmission accuracy is possible in the reverse operation with PUR timing belts.

Consequences of incorrect pre-tension

Pre-tension too low

- the teeth of the slack span side run up or skip the teeth of the driven pulley
- wear on the flanks caused by the friction force during meshing
- forced breakage by excessive elongation due to full teeth override



Excessive pre-tension

- high bearing load
- reduction of the transferable power
- wear and tear of the belt teeth

Measuring with frequency gauge

The characteristic frequency of a belt span can be measured by using a frequency meter, such as the Angst+Pfister tension meter. The pre-tension force of the span can then be calculated by using the measured characteristic frequency in the equation.

$$F_V = 4 \cdot m \cdot l_T^2 \cdot f^2 \qquad f = \sqrt{\frac{F_V}{4 \cdot m \cdot l_T^2}}$$

f:	[Hz]	Frequency
m:	[kg/m]	Mass of belt per meter
l_T:	[m]	Span length subject to vibration
F_V:	[N]	Span force

General information

Stretching

By applying pre-tension and the forces during operation, the belt will be stretched according to Hooke's law. The elongation of the belt is relative to the applied force up to the admissible tensile load F_{Tadm}. The span elongation of F_{Tadm} (see technical data) is 4 mm/m for PUR belts. For welded PUR belts it is 2 mm/m.

Design

- at least one adjustable axis is needed or, if not possible, one adjustable tension roller (not spring-loaded)
- bearings must be absolutely steady
- precise alignment of pulleys in all directions is a prerequisite

Transport/storing

- upon receipt, unpack the timing belt immediately and store in coil configuration without crimping, in a dry place at room temperature and away from direct sunlight
- do not bend or crimp during handling

Mounting

- fit timing belts loose on the pulleys without applying any force
- for fixed- center distance, mount together with pulleys
- apply pre-tensioning force according to the chapter „Pre-tension"
- secure adjustable axis and tensioners against shifting or loosening
- do not clamp the timing belt between flanges on the pulley

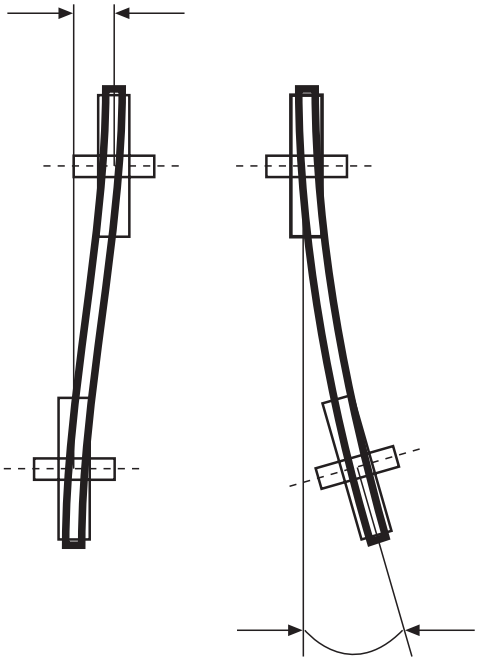
Operation

- protect the drives against dust, dirt, hot environment media as well as acids and lye
- always observe environmental temperatures
- avoid any falling object on the drive during operation

Mounting guidelines

Alignment

An immaculate alignment of the pulleys is a fundamental prerequisite for a parallel operation and a long lifespan of the belt. Extensive deviation of the parallelism between the pulleys will cause uneven distribution of tension within the belt and lateral forces will propel the belt towards the flanges on the pulley. This can cause unpleasant noise and will create heavy wear on the belt. Keeping the deviation below 0.5% of the center distance is recommended.



Parallel deviation max. 0.5% of center distance

Angular deviation max. 0.25°/m of center distance

Special attention is needed for drives with extended center distances as the belt might run sideways across the pulley and run at the edge if no flanges are in place. Keeping the angular deviation between shafts below 0.25° per meter of the center distance is recommended. All shafts, pulleys and idlers must be steadily in place during operation to maintain the applied tension in the system. This is to avoid any skipping of the teeth.

Flanges and idlers

Flanges

Flanges secure the belt from running laterally off the drive. Usually only the smaller pulley is equipped with flanges. Using just one flange on each pulley on opposite sides will also be suitable. Using two flanges is also possible and is often used for horizontally oriented drives. Our technical staff is at your disposal for any support needed.

Flanges on each side of both pulleys

Flanges on both sides on small pulley only

One flange per pulley on opposite sides

Idlers

Idlers are not meant to transmit any power, but to apply the required pre-tension on the drive. As tensioners are additional parts within a drive, they will also create further bending stress on the belt which reduces the lifespan. They should be made redundant whenever feasible. Idlers can be used on both sides of the belt.

Inside idler (tooth side)

Inside idlers are more favorable to the outside idlers because they create only additional pulsing tension on the tension members. As they run on the teeth of the belt, the use of a pulley is recommended instead of a flat roller. Flat rollers can be used too, but the outside diameter should be 2.5 to 3 times larger than the belt's specific minimum diameter for pulleys. These idlers should be placed relatively close to the larger pulley to minimize the reduction of the arc of contact on the smaller pulley.

Outside idler (back side)

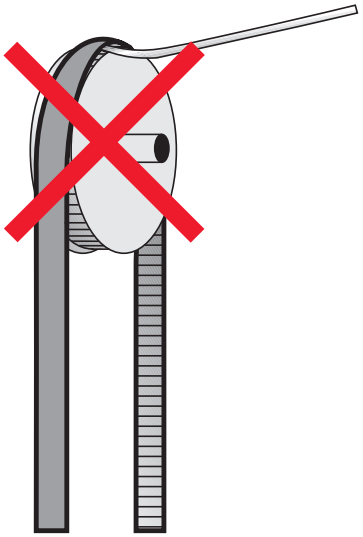
Outside idlers create an additional and alternating bending on the tension members as they run on the back of the belt. Idlers which run on the back of the belt use flat rollers only and the diameter should be at least 1.5 times larger than the belt's specific minimum diameter for pulleys. Outside idlers should be placed closely to the smaller pulley which will then also increase the arc of contact on the smaller pulley.

Deflection pulleys and rollers

The same rules apply to deflection rollers as they do for idlers.

Mounting

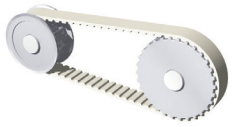
Do not use tools like tire levers and never apply high forces while mounting a belt. Shift the idler or movable pulley in such a way that it is easy to place the belt on the drive. ISO 155 provides approximate values for minimum distance required for adjustable pulleys so that a belt can be fitted on. Using force or tools while mounting a belt can initiate damages which are usually not visible but will reduce its lifespan.

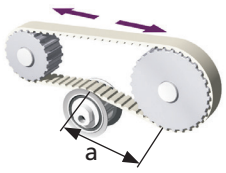


Timing belt guidance

Timing belts must be guided against the tendency to travel laterally (sideways) off the pulley. This is usually prevented by adding flanges to the pulleys. By fitting suitable guiding features, lateral forces and friction can be reduced. This can be achieved by:

- adding a guide at the end of a large free span (the length (a) of the guide should be at least 5 times the belt width);
- guidance on the driving pulley (preferably for two shaft drives with short center distance);
- guidance on pulleys with low power transmission (preferably for multi shaft drives);
- guidance on the idlers
  – located on the slack span side
  – if located on the back of the belt:
    consider minimum diameter due to high bending
  – located on the teeth side:
    at least 3 teeth in mesh
  – drives with changing rotational direction preferable in the center of the span
  – span length (a) between tension roller and pulley should be at least 5 times the belt width
- to achieve the best guiding performance all flanges and guides need to be aligned within tight tolerances. All shafts have to be precisely installed with accurate parallelism.
- it is possible to add flanges on the smaller pulley in order to optimize costs as long as the functional reliability is not impaired.





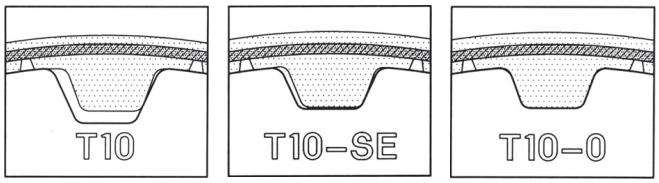
Tooth gap shapes

Timing belts are form-fitting drive elements. They work without any slippage with the corresponding synchronous pulleys. PUR timing belt drives can be improved for applications when a reduced backlash performance is required.

The standard play between the tooth on the belt and the gap on the pulley between the teeth can be reduced (SE gap) or even eliminated (Zero gap). This is usually required for precise applications. Please contact your nearest Angst+Pfister representative for technical advice.

- prerequisites for the application:
  matching pitch between timing belt and pulley
- influencing factors for pitch matching:
  – pre-tension force
  – meshing distance (z_e)
  – load rate (rotational speed, dynamic behavior...)
  – manufacturing tolerances

Tooth gap shapes on a T10 profile



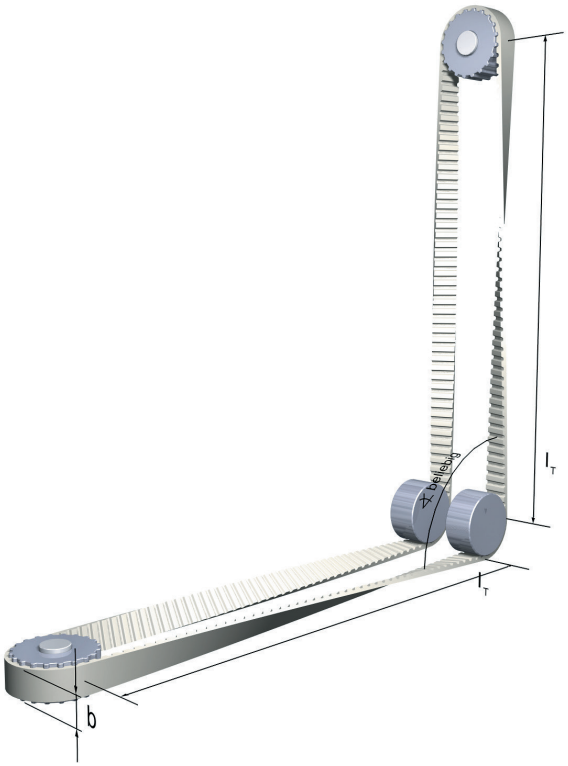
Standard gap | SE gap (low backlash) | Zero gap (zero backlash)

Angular drives

With PUR timing belts angular drives can be designed, but they can only be twisted around the span axis, which creates additional tension in the belt. Tension members are therefore also subject to different force values.

By using a belt width/span length ratio $l_T/b \geq 20$, the drive does not require any special precaution to be taken during design and no limitation in performance is to be expected.

$l_T/b \geq 20$
b = belt width
l_T = span length



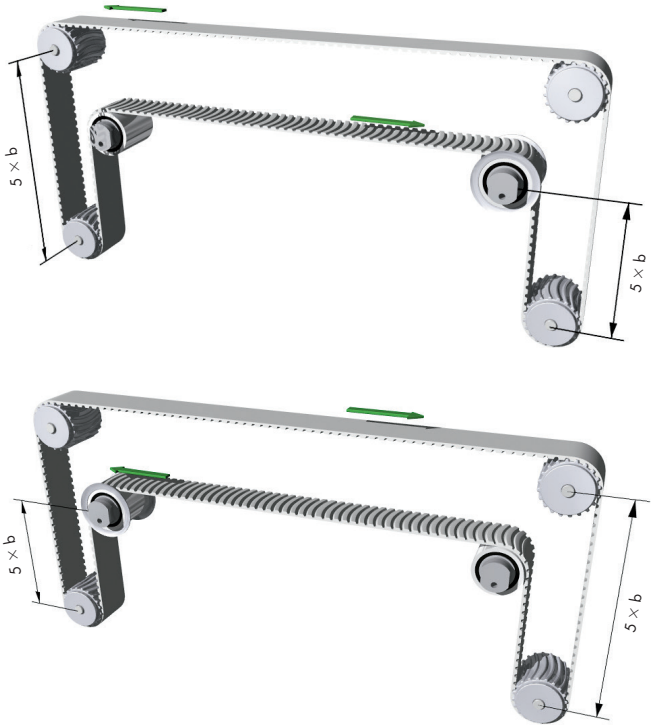
BAT timing belt guide

PUR timing belts with curved teeth have a preferred running direction. It is the direction which the convex side of the tooth points at. Using the belt in this direction does not require any additional guiding elements such as flanges even for long span length.

Even if the pulleys, idlers and deflection rollers axes are perfectly aligned, a minimum span length of 5 times the belt width is advised. This will keep lateral forces and friction to a minimum.

If using idlers or deflection rollers on the tooth side of the belt for a span length larger than 5 times the width of the belt, toothed pulleys are advised. For idlers and deflection rollers on the back of the belt flat rollers with flanges are recommended.

Both actions lead to a better belt guidance and result in a positive running performance.



BATK timing belts

BATK timing belts do not require any flanges on the pulleys. The additional guiding track makes it impossible for the belt to laterally run off the pulley.

Field of application

The PUR timing belts type BAT are suitable for all areas of power transmission and transport technology, where high accuracy, low variation, smooth running and only one running direction are required. The BAT timing belt is self-guiding in its preferred running direction, thus no guiding elements are required.

The BATK timing belt is mainly designed for application in the linear and power transmission technology.

Table of tolerances for BRECOFLEX® timing belts

Length tolerances for BRECOFLEX® timing belts

Stated dimensions in mm, referred to the belt length

Belt length [mm] up to	Length tolerance [mm]
300	± 0.41
500	± 0.53
700	± 0.64
900	± 0.75
1100	± 0.85
1300	± 0.95
1500	± 1.04
1900	± 1.13
2120	± 1.22
2240	± 1.31
2360	± 1.36
2500	± 1.44
2650	± 1.49
2800	± 1.57
3000	± 1.61
3150	± 1.74
3350	± 1.82
3550	± 1.91
3750	± 2.03
4000	± 2.11
4250	± 2.24
4500	± 2.32
4750	± 2.40
5000	± 2.52
5300	± 2.64
5600	± 2.72
6000	± 2.92
6300	± 3.04
6700	± 3.19
7100	± 3.35
7500	± 3.51
8000	± 3.70
9000	± 4.09

Length tolerance for BRECO® timing belts M/V (except for ATL timing belts)	± 0.8 mm/m

Width tolerances for BRECOFLEX® and BRECO® timing belts M/V

Belt type pitch	Tolerance
T2.5	± 0.5
T5 / TK5	± 0.5
T10 / TK10	± 0.5
T20	± 1.0
AT3	± 0.5
AT5 / ATK5 / ATL5	± 0.5
AT10 / ATK10 / ATL10 / ATN10 / SFAT10 / BAT10 / BATK10	± 0.5
ATN12.7	± 0.5
ATS15 / SFAT15 / BAT15 / BATK15	± 1.0
AT20 / ATK20 / ATL20 / ATN20 / SFAT20	± 1.0
ATP10	± 0.5
ATP15	± 1.0
XL	± 0.5
L	± 0.5
H	± 0.5
XH	± 1.0

Table of tolerances for CONTI® SYNCHROFLEX timing belts

Nominal height and height tolerances for CONTI® SYNCHROFLEX timing belts

Type	Nominal height [mm]	Height tolerances [mm]
T2	1.1	± 0.15
T2.5	1.3	± 0.15
T2.5-DL	2.0	± 0.20
T5	2.2	± 0.15
T5-DL	3.4	± 0.20
T10	4.5	± 0.30
T10-DL	7.0	± 0.40
T20	8.0	± 0.45
T20-DL	13.0	± 0.60
AT3	1.9	± 0.15
AT5	2.7	± 0.15
AT10	5.0	± 0.30
ATP10	5.0	± 0.30
AT20	9.0	± 0.45

Length tolerances for standard CONTI® SYNCHROFLEX timing belts

Belt length measurement is carried out according to DIN 7721, in relation to the center distance.

Belt length [mm] over	up to	Length tolerance in relation to center distance [mm]
	320	± 0.15
320	630	± 0.18
630	1000	± 0.25
1000	1960	± 0.40
1960	3500	± 0.50
3500	4500	± 0.80
4500	6000	± 1.20

Width tolerances for standard CONTI® SYNCHROFLEX polyurethane timing belts

Type / Group	Width tolerance		
	up to 50 mm [mm]	50 to 100 mm [mm]	Over 100 mm [in % of belt width]
K1	± 0.3	± 0.5	± 0.5
K1.5	± 0.3	± 0.5	± 0.5
T2	± 0.3	± 0.5	± 0.5
M (MXL)	± 0.3	± 0.5	± 0.5
T2.5	± 0.3	± 0.5	± 0.5
T5	± 0.3	± 0.5	± 0.5
T5-DL	± 0.3	± 0.5	± 0.5
T10	± 0.5	± 0.5	± 0.5
T10-DL	± 0.5	± 0.5	± 0.5
T20	± 1.0	± 1.0	± 1.0
T20-DL	± 1.0	± 1.0	± 1.0
AT3	± 0.3	± 0.5	± 0.5
AT5	± 0.5	± 0.5	± 0.5
AT10	± 1.0	± 1.0	± 1.0
ATP10 / ATP15	± 1.0	± 1.0	± 1.0
AT20	± 1.0	± 1.0	± 1.0

Remarks: Tighter tolerances according to special data are possible.
Tolerance for special tension members upon request.

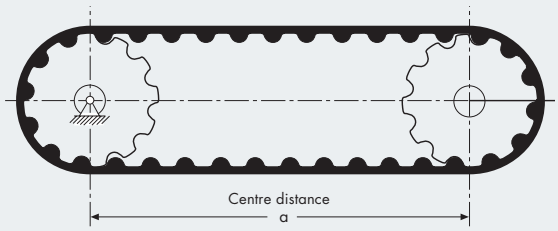
Table of tolerances for CONTI® SYNCHROCHAIN timing belts

Length tolerances for Synchrochain timing belts

Belt length [mm]	Length tolerance in relation to centre distance [mm]
640 – 1000	± 0.25
1000 – 1960	± 0.40
1960 – 3500	± 0.50
3500 – 4480	± 0.80

Special type tolerances upon request.

Test setup



Height tolerances for Synchrochain timing belts

Tooth pitch	8M	14M
Tooth pitch in mm	8	14
Heigth tolerances standard type in mm	± 0.30	± 0.45

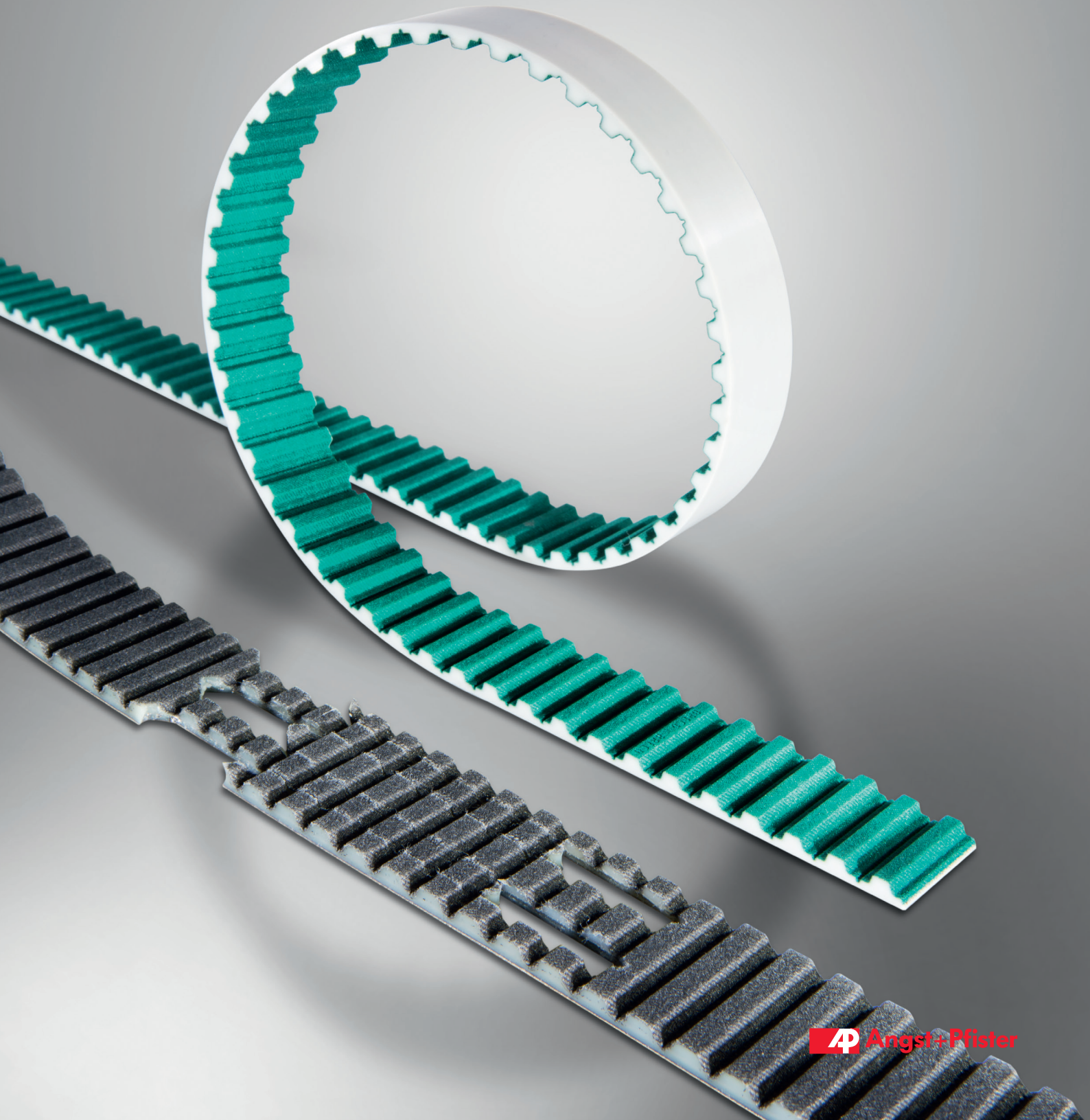
Special type tolerances upon request.

Width tolerances for Synchrochain timing belts

Belt width [b in mm]	8M	14M
up to 50	± 0.65 mm	± 1 mm
up to 100	± 1.3 mm	± 2 mm
>100	± 1.5 %	± 2 %

Special type tolerances upon request.

Linear and Transport Technology



Angst+Pfister

Timing belt selection procedure

The calculation procedure LT-Calc is fundamentally focusing on the mass to be moved and the involved acceleration. As in the TC-Calc procedure, the tooth shear strength, the tensile strength of tension members and the flexibility of the belt need to be considered as well. The load in the drive is not only caused by the driving or driven pulley, but also by the forces which occur during the transport of the masses involved.

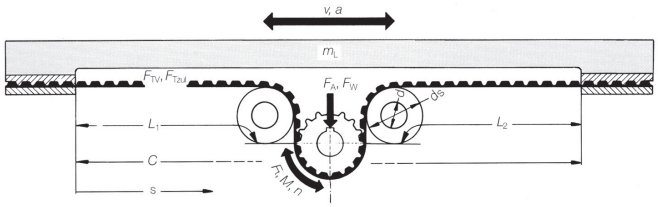
Also additional analyses need to be done which are different to the ones of a simple power drive. Properties such as positioning accuracy and eventual vibrations need to be evaluated.

The total load of a linear or transport drive involves three substantial components which need to be taken into account when calculating the maximal force on the belt:

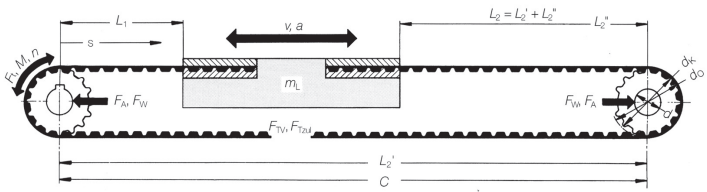
- **Acceleration force F_B**
  This is the force which is required to get all the involved masses in motion (mainly the mass to be moved, but also idler pulleys, belt etc, if their mass is significant).

- **Hoist force F_H**
  This is the required force when the motion is done against gravity. For horizontal motions $F_H = 0$.

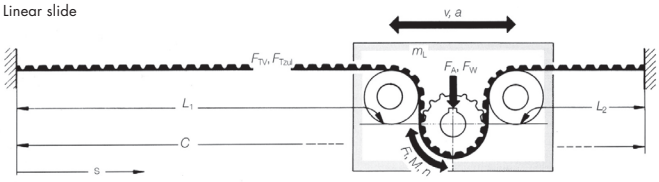
- **Friction force F_R**
  High friction forces may occur especially for transport drives where the belt runs on a support rail.



Linear table



Linear slide



Linear trolley

Design execution

All engaged assembly groups within the drive should be designed as light as possible and friction should be kept at a minimum. The surrounding structure has to be rigid. Often open-end AT and ATL timing belts are used and fixed on the linear slides by means of clamping plates. AT and ATL timing belts allow a rotational to linear translation of motion with permanent accuracy. The high pitch accuracy between timing belt and pulley results in an even load distribution on the driving pulley tooth flanks. Therefore high performance and accuracy can be achieved. The material combination between belt and pulley is exceptionally suitable for bi-directional drives. The travel distance per revolution of the driving pulley depends on the pitch and the number of teeth on the pulley. There are three common design executions for linear drives.

Calculation procedure

Step 1 – Selecting the type of belt

Based on the mass to be moved and its acceleration, a suitable belt needs to be selected as a base for further evaluation. Find the user-friendly table on page 6.5 to select an initial type of belt.

Step 2 – Summarizing all masses to be accelerated m_{tot}

m_{tot} Summarizes all masses which will be accelerated during operation:
m_L Mass of the linear table, slide or trolley to be moved
m_B Mass of timing belt (see specific properties for belt mass)
m_{Zred} Reduced mass of pulleys. See list of formulae for further details
m_{Sred} Reduced mass of idlers. See list of formulae for further details

$$m_{tot} = m_L + m_B + m_{Zred} + m_{Sred}$$

Step 3 – Searching for the maximal tangential force F_t

The tangential force F_t is equal to all the forces occurring on the belt.
Caution: If breaking scores a higher deceleration than acceleration, use force caused by the deceleration.
F_B Acceleration force
F_H Hoisting force (only applies to the masses which are actually lifted)
F_R Friction force (only applies to the masses which actually create forces on the belt)

$$F_t = F_B + F_H + F_R$$

$$F_t = m_{tot} \cdot a + m \cdot g + m \cdot g \cdot \mu$$

Step 4 – Definition of pre-tension force F_{TV}

The pre-tension force of a linear drive is correctly applied if the maximal tangential force F_t (during acceleration and deceleration) is not causing any slack on the slack span side. Hence the minimum pre-tension force has to be at least equal to or higher than the tangential force.

$$F_{TV} \geq F_t$$

Step 5 – Searching for the highest span force F_{Tmax}

The highest span force is expected in the load span while the pre-tension force F_{TV} is performing together with the highest (dynamic) tangential force F_t.

$$F_{Tmax} = F_{TV} + F_t$$

Step 6 – Definition of belt width

Find the specific tooth shear strength F_{Tspec} of the belt, which is in relation with the rotational speed, in the technical chapter. The number of teeth in mesh z_e depends on the design of the drive. However, for calculation purposes, only a maximal number of 12 teeth can be taken into account (see properties in the technical chapter for z_e).Based on the result for b, the next wider standard belt is usually selected.

$$b = \frac{10 \cdot F_{Tmax}}{z_e \cdot F_{Tspec}}$$

Step 7 – Review maximal permitted load on tension members F_{Tadm}

The maximal permitted load on the tension members F_{Tadm} must always be higher than the maximal tangential force F_{Tmax} in the belt. A suitable safety factor must also be considered.

$$F_{Tadm} \geq F_{Tmax}$$

By following these steps, the belt is defined based on the tooth shear strength.

Further reviews have to be done:

– elongation
– positioning accuracy
– required power

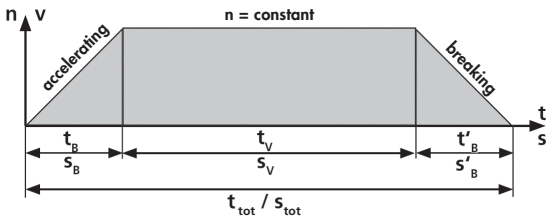
List of formulae

Used symbols		
Center distance	s_a	[mm]
Belt length	L_B	[mm]
Belt width	b	[mm]
Span length	L_1,L_2	[mm]
Pitch circle diameter	d_o	[mm]
Crown diameter	d_K	[mm]
Tension roller diameter	d_s	[mm]
Bore	d	[mm]
Useful linear distance	s_L	[mm]
Total distance of travel	s_{tot}	[mm]
Elongation	Δl	[mm]
Specific elasticity	c_{spec}	[N]
Elasticity	c	[N/mm]
Positioning deviation	Δs	[mm]
Positioning range	P_s	[mm]
Acceleration distance	s_B	[mm]
Braking distance	s'_B	[mm]
Travel distance with v = constant	s_V	[mm]
Travel time with v = constant	t_V	[s]
Overall time	t_{tot}	[s]
Acceleration time	t_B	[s]
Deceleration time	t'_B	[s]
Total distance	s_{tot}	[mm]
Number of pulley teeth	z	
Number of belt teeth	z_B	
Number of meshing teeth	z_e	
Friction force	F_R	[N]
Pitch	T	[mm]

Used symbols		
Tangential force	F_t	[N]
Acceleration force	F_B	[N]
Friction force	F_R	[N]
Hoisting force	F_H	[N]
Specific tooth force	F_{Tspec}	[N/cm]
Admissible tensile load	F_{Tadm}	[N]
Pre-tension force per span	F_{TV}	[N]
Maximum span force	F_{Tmax}	[N]
Static bearing load	F_{Sstat}	[N]
Torque	M	[Nm]
Power	P	[kW]
Mass	m	[kg]
Mass to be moved	m_{tot}	[kg]
Mass of linear slide	m_L	[kg]
Mass of timing belt	m_B	[kg]
Mass of pulley	m_Z	[kg]
Mass of idler	m_S	[kg]
Reduced pulley mass	m_{Zred}	[kg]
Reduced idler mass	m_{Sred}	[kg]
Specific belt mass	m_{Rspec}	[kg/m]
Specific weight	ρ	[kg/dm³]
Acceleration	a	[m/s²]
Gravity	g	[m/s²]
Speed	v	[m/s]
Rotational speed	n	[min⁻¹]
Angular speed	ω	[s⁻¹]
Characteristic frequency	f_e	[s⁻¹]
Excitation frequency	f_0	[s⁻¹]

Basic equations for belt definition

Tangential force	$F_t = \frac{2 \cdot 10^3 \cdot M}{d_0}$	$F_t = \frac{19.1 \cdot 10^6 \cdot P}{n \cdot d_0}$	$F_t = \frac{10^3 \cdot P}{v}$
Torque	$M = \frac{d_0 \cdot F_t}{2 \cdot 10^3}$	$M = \frac{9.55 \cdot 10^3 \cdot P}{n}$	$M = \frac{d_0 \cdot P}{2 \cdot v}$
Power	$P = \frac{M \cdot n}{9.55 \cdot 10^3}$	$P = \frac{F_t \cdot d_0 \cdot n}{19.1 \cdot 10^6}$	$P = \frac{F_t \cdot v}{10^3}$
Angular speed	$\omega = \frac{\pi \cdot n}{30}$	**Rotational speed**	$n = \frac{19.1 \cdot 10^3 \cdot v}{d_0}$
Travel time with v = constant	$t_V = \frac{s_v}{v \cdot 10^3}$	**Travel distance with v = constant**	$s_v = v \cdot t_v \cdot 10^3$
Total time with v = constant	$t_{tot} = t_B + t_V + t'_B$	**Total distance with v = constant**	$s_{tot} = s_B + s_v + s'_B$
Velocity / Circumferential speed	$v = \frac{d_0 \cdot n}{19.1 \cdot 10^3} = \sqrt{v = \frac{2 \cdot s_B \cdot a}{1000}}$		
Acceleration time / Breaking time	$t_B = \frac{v}{a} = \sqrt{v = \frac{2 \cdot s_B}{a \cdot 1000}}$		
Acceleration distance / Breaking distance	$s_B = \frac{a \cdot t_B^2 \cdot 10^3}{2} = \frac{v^2 \cdot 10^3}{2 \cdot a}$		



To define the acting forces on a timing belt, all the moving and displaced masses must be considered. Therefore a reduced mass m_{Zred} of a pulley and/or tension roller is used, which is a substitute mass with equal inertia. This inertia is performing in the belt's line of action and the inertia of the rotating pulley or idler is performing on the rotational axis.

Mass of pulley	$m_z = \frac{(d_K^2 - d^2) \cdot \pi \cdot B \cdot \rho}{4 \cdot 10^6}$	**Mass of idler**	$m_s = \frac{(d_S^2 - d^2) \cdot \pi \cdot B \cdot \rho}{4 \cdot 10^6}$
Reduced mass of pulley	$m_{Zred} = \frac{m_z}{2} \cdot \left(1 + \frac{d^2}{d_K^2}\right)$	**Reduced mass of idler**	$m_{Sred} = \frac{m_s}{2} \cdot \left(1 + \frac{d^2}{d_S^2}\right)$

The static bearing load F_{Sstat} applies only in a standstill or under no load.
F_{Sstat} depends on the effective circumferential force.

Static bearing load	$F_{Stat} = 2 \cdot F_{TV}$
Pitch circle diameter	$d_0 = \frac{z \cdot T}{\pi}$

Belt elongation Δl is a result of the pre-tension force F_{TV} and is spread across the whole belt length L_B.
The section of the belt which is in mesh will not be stretched (see technical specification for values for c_{spec}).
The pre-tension distance for linear slide executions is only half of the belt length.

Elongation of belt	$\Delta l = \frac{F_{TV} \cdot L_B}{c_{spec}}$	**Free belt length**	$L_B = L_1 + L_2$

Linear systems have shifting spring rates which are related to the position of the slide, table or trolley. Spring rates depend on the ratio of the two lengths L_1 and L_2. The spring rate is at a minimum if L_1 and L_2 are equal.

Spring rate	$c = \frac{L_B}{L_1 \cdot L_2} \cdot c_{spec}$	**Spring rate at L_1 5 L_2**	$c_{min} = \frac{4 \cdot c_{spec}}{L_B}$

In case an external force is applied to the slide, a position deviation appears:

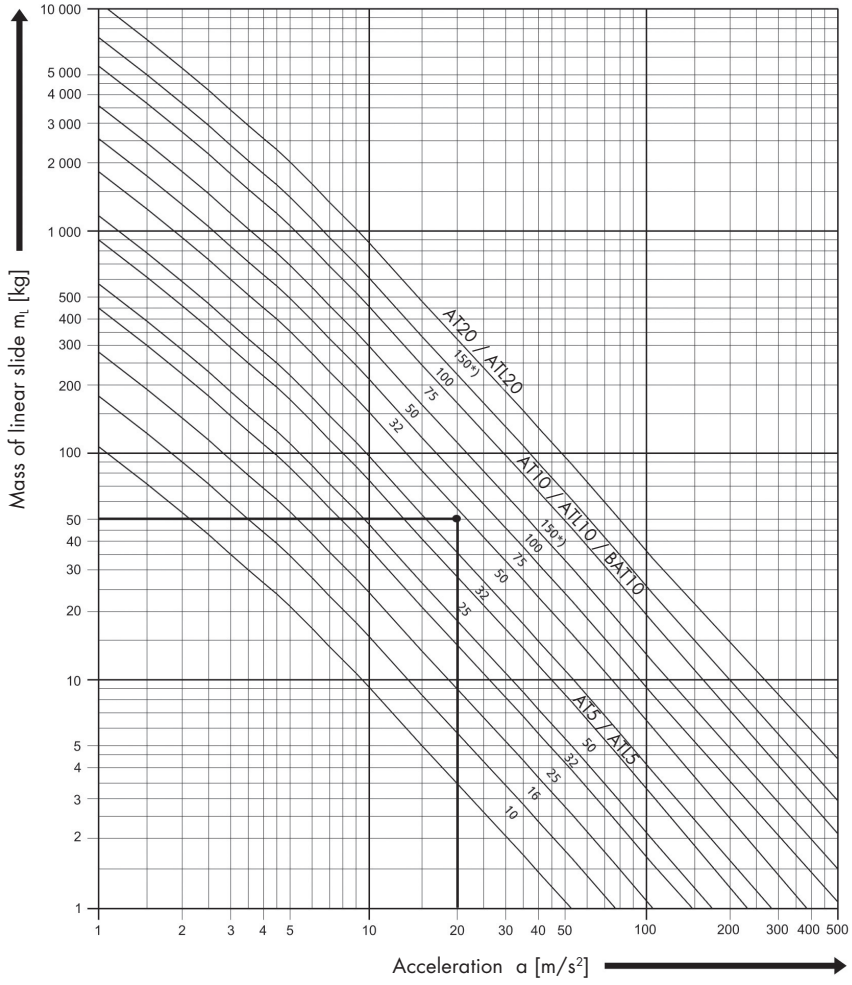
Positioning deviation	$\Delta s = \frac{F}{c}$

As a belt has a spring rate and the belt is connected to a mass, it is basically known as a spring-mass system and it is in its nature, that an impact on the system will trigger its natural oscillation. It is recommended to review the linear drive for any occurring excitation frequencies f_0 which might be in the range of the natural oscillation f_e. In case $f_e = f_0$, a design review should be considered.
Note: The natural frequency f_e of linear drives is in general much higher than any potential excitation frequency f_0 of the system, which means no resonance of the drive is to be expected. Special attention should be given when using a stepper motor as these can perform on a frequency which may cause a resonance on the belt. The countermeasure in such an event would be the use of a wider belt to alter the rigidity.

Natural oscillation	$f_e = \frac{1}{2 \cdot \pi} \cdot \sqrt{\frac{c \cdot 1000}{m_L}}$

Preliminary belt selection

Using this diagram is a fast way to find a suitable belt for a linear drive. It is only a preliminary selection and can be used as a basis for further calculations and comprehensive reviews.



Example for preliminary belt selection

Mass of linear slide m_L = 50 kg
Maximum acceleration (without deceleration) a = 20 m/s²
Value found at the intercept point in the diagram:
Timing belt AT10 / ATL10: 50 mm wide
Optional: AT20 / ATL20: 32 mm wide

Recommendation

The matching driving pulley should have at least 20 teeth (for ATL10, at least 25 teeth). Should the pulley have less than 20 teeth (AT), the next wider standard belt is recommended.

Friction values

Friction values

This table indicates most commonly used friction values

	Coating on teeth	Friction values μ
PUR on alumnium	–	**0.6 – 0.9**
PUR on steel	–	**0.8 – 1.3**
PUR on PTFE	–	**0.2 – 0.4**
PUR on PE-UHMW	–	**0.3 – 0.5**
PUR-PAZ on alumnium	polyamide	**0.3 – 0.4**
PUR-PAZ on steel (Rz 5 28)	polyamide	**0.3 – 0.6**
PUR-PAZ on PTFE	polyamide	**0.2 – 0.3**
PUR-PAZ on PE-UHMW	polyamide	**0.2 – 0.3**

Friction coefficients have a large tolerance; we recommend use of higher value. The numbers are purely indicative.

Safety factors

PUR timing belts do not need additional safety factors. However, should there be any additional forces which have not been taken into account during the calculation and which would add up to the tangential force F_{tmax}, safety factor can be easily added by increasing the belt width. This could be due to asymmetric components, impacts or oscillations within the system.

Accuracy in the rotational to linear translation of motion

A PUR timing belt transmits the rotational motion of a pulley into a linear motion to a slide. This technique can be performed continuously with PUR timing belts. Deviations may occur on the slide as variations of forces and tolerances have a direct impact on the accuracy. Reasons and countermeasures are listed below.

Repeatability

Repeatability means the capability of continuously reaching the exact same position under the same conditions.
A repeatability well below +/– 0.1 mm per meter travel distance is feasible with PU timing belts, provided a steady minimum pre-tension force is applied.

Positioning accuracy

Positioning accuracy means the capability of a linear drive to convert a rotational motion of a pulley through a timing belt into an exact anticipated linear motion of a slide. The feasible accuracy depends on all involved forces as well as the tolerances of all engaged assembly groups in the motion sequence.
Depending on the main physical values within the drive, the following measures have to be considered.

Rigidity / Stress-strain behaviour

Changing forces on a linear drive produce changing stain. See belt properties for the specific spring rates of steel tension members.
Measures: Select a wider timing belt to keep the strain small. Calculate deviation according to the provided equations and design a rigid structure.

Backlash deviation

If a precise position within a linear system needs to be approached from both directions, an additional deviation may appear. In other words: If the forces acting inversely on the linear unit, an inverse fault could occur.
Measures: Reduce friction to a minimum. Use a driving pulley with a reduced tooth gap or even with a zero-gap. Applications which require an average positioning accuracy use pulleys with a standard tooth gap. Contact our technical support for special tooth gaps.

Length tolerance / Pitch deviation

The length tolerance and the pitch deviation are in direct relation to each other. The length tolerance is basically the sum of all pitch deviations, and the deviation is equal on all pitches. The length tolerance/pitch deviation depends on the applied pre-tension force – the higher the force, the higher the strain. See tolerance tables for standard ranges.
Measures: PUR-timing belts can be manufactured upon request with defined minus tolerances. Once installed, use the pre-tension force to strain the timing belt to reach the targeted length. Contact our technical support for more details.

Pitch variations

Pitch variations are irregularities between neighboring pitches but have no cumulative effect within the belt section.
Measures: Design the driven pulley as large as possible. The higher the number of teeth in mesh, the better the variations are suppressed.

Eccentricity fault / Center offset

The eccentricity fault and/or center offset of at least one pulley or idler involved can lead to an irregular motion in the linear system. This type of fault can be identified when sinusoidal movements occur on the linear motion sequence. Measures: Check the concentric accuracy and the center offset of all involved pulleys and idlers. Reduce the tolerance range, if necessary.

Ambient temperature / Strain under heat

The thermal expansion of a PUR-timing belt with steel cord tension members is identical to that of a surrounding structure made of steel. Therefore no change of pre-tension force is to be expected. Surrounding structures made of aluminum cause a minor increase of the pre-tension force if the temperature is rising, therefore the travel distance will slightly change, too.
Measures: The impact of thermal expansions in a belt and also in a surrounding structure is minor. Temperature influences only need to be taken into account in exceptional cases.

User information

Some of the equations are based on simplified assumptions. For example the positioning accuracy/deviation: The strain in the tension members of the whole length of the belt is calculated, even though the behavior around pulleys and idlers is different in the wrapped area. The elasticity of the belt itself (PUR) is totally ignored. For example the review of the oscillation behavior: Only the oscillating mass of the linear slide mL is taken into account. The oscillating mass of the timing belt, pulleys as well as the retroaction of the elasticity to the surrounding structure have not been taken into consideration.
For this reason, we point out that certain deviations have to be expected, depending on the drive geometry selected.

Calculation example

Task

Moving a linear slide with a mass of 50 kg. The maximal acceleration or deceleration is 20 m/s². To avoid any slackening, the belt is guided/supported by a 3 m long rail on the teeth side. Pre-tension is applied by using a movable pulley, so no idler is needed.
The pulley material is AlCuMgPb (r = 2.85 kg/dm²)

Use the previously selected belt from the "Preliminary belt selection diagram"

Provided	**Value**
Mass linear slide	m_L = 50 kg
Acceleration	a = 20 m/s²
Rotational speed	n = 1500 rpm
Number of teeth	z_1 = z_2 = 30
Pitch circle diameter	d_{01} = d_{02} = 95.49 mm
Crown diameter	d_{K01} = d_{K02} = 93.67 mm
Center distance	s_a = 3500 mm
Friction	ρ = 0.5 (polyamide coated teeth on a PE guide)
Wanted	Re-calculation of the AT10, 50 mm wide belt

Solution

Step 1 – Search for all masses m_{tot} to be accelerated

Masses: m_L $m_L = \underline{50\ kg}$

m_L $L_B = 2 \cdot s_a + \pi \cdot d_{01} = 2 \times 3500 + \pi \times 95.49 = \underline{7300\ mm}$

$$m_B = \frac{L_B}{1000} \cdot m_{Rspec} = \frac{7300\ mm}{1000} \cdot 0.29 = \underline{2.12\ kg}$$

m_{Zred} $$m_Z = \frac{(d_K^2 - d^2) \cdot \pi \cdot B \cdot \rho}{4 \cdot 10^6} = \frac{(93.67^2 - 35^2) \cdot \pi \cdot 60 \cdot 2.85}{4 \cdot 10^6} = \underline{1.0\ kg}$$

$$m_{Zred} = \frac{m_Z}{2} \cdot \left(1 + \frac{d^2}{d_K^2}\right) = \frac{1}{2} \cdot \left(1 + \frac{35^2}{93.67^2}\right) = \underline{0.57\ kg}$$

m_{tot} $m_{tot} = m_L + m_B + m_{Zred} + m_{Sred} = 50 + 2.12 + 0.57 + 0 = \underline{\underline{52.69\ kg}}$

Step 2 - Searching for the maximal tangential force F_t

Forces: F_B $F_B = m_{tot} \cdot a = 52.69 \cdot 20 = \underline{10\,538\ N}$

F_R Assuming that all sliding masses are supported equally. (The mass of the belt is being ignored)

F_t $F_R = m \cdot g \cdot \mu = 50 \cdot 9.81 \cdot 0.5 = \underline{24\,525\ N}$

$F_t = F_B + F_H = 10538 + 24525 = \underline{\underline{1300\ N}}$

Step 3 - Definition of pre-tension force F_{TV}

$F_{TV} = \underline{\underline{1500\ N}}$

Step 4 – Searching for the highest span force F_{Tmax}

$F_{max} = F_{TV} + F_t = 1500 + 1300 = \underline{\underline{2800\ N}}$

Step 5 – Definition of belt width

$$b = \frac{10 \cdot F_{Tmax}}{z_e \cdot F_{Tspec}} = \frac{10 \cdot 2800}{15 \cdot 44.3} = 42.14\ mm$$

b = $\underline{\underline{50\ mm}}$ (chosen belt width)

Step 6 – Review maximal permitted load on tension members F_{Tadm}

$F_{Tadm} \geq F_{Tmax}$

$\Rightarrow$ 8500 N $\geq$ 2800 N $\Rightarrow$ fulfilled

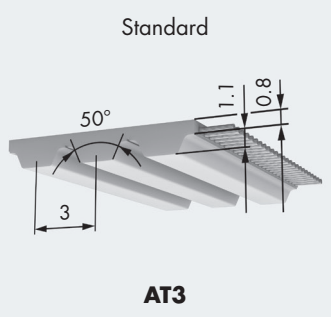
Result

The drive is correctly dimensioned with a belt of 50 mm width.
The necessary power is:

$$P = \frac{F_T \cdot d_0 \cdot n}{19.1 \cdot 10^6} = \frac{130\,095.49 \cdot 1500}{19.1 \cdot 10^6} = 9.75\ kW$$

Order designation:
Open-end PU-timing belt 50 AT10/7300-PAZ-M

High performance PU timing belts
BRECO® AT3



Belt widths b [mm] / in-between belt widths on request

8	10	20	25

AT3 (M/V)	**Available lengths and versions**
Standard lengths (M)	rolls of 50 or 100 m
Cut to lengths / lengths > 100 m	on request
Minimum length joined (V)	880 mm
Standard material	TPUST1[1)]
Steel tension member	–
E / Steel tension member (Standard)	×
Stainless steel tension member	○
PAZ	×
DL / DL-PAZ	–
DR / DR-PAZ	–
T / T-PAZ	–

M open length
V joined
× available
○ minimum purchase amount on request
– not available
[1)] further materials on request

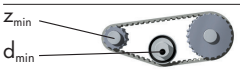
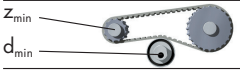
Specific tooth force

rpm n [min⁻¹]	F_{Tspec} [N/cm]	rpm n [min⁻¹]	F_{Tspec} [N/cm]	rpm n [min⁻¹]	F_{Tspec} [N/cm]
0	38.500	1200	27.766	3600	21.017
20	38.099	1300	27.315	3800	20.661
40	37.719	1400	26.890	4000	20.322
60	37.359	1500	26.489	4500	19.537
80	37.015	1600	26.109	5000	18.829
100	36.687	1700	25.749	5500	18.185
200	35.240	1800	25.405	6000	17.593
300	34.034	1900	25.077	6500	17.046
400	33.002	2000	24.764	7000	16.538
500	32.099	2200	24.174	7500	16.063
600	31.297	2400	23.630	8000	15.618
700	30.575	2600	23.123	8500	15.198
800	29.919	2800	22.650	9000	14.802
900	29.317	3000	22.206	9500	14.426
1000	28.762	3200	21.788	10000	14.069
1100	28.247	3400	21.392		

Admissible tensile load of the belt F_{Tadm} / belt weight

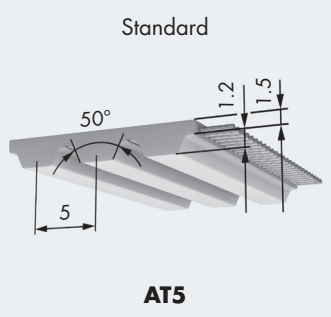
Belt width		b [mm]	8	10	20	25
M	E / Steel tension member	F_{Tadm} [N]	320	400	800	1000
	Specific elasticity (E / Steel tension member)	c_{spec} [N]	$8.0 \cdot 10^4$	$10.0 \cdot 10^4$	$20.0 \cdot 10^4$	$25.0 \cdot 10^4$
	Stainless steel tension member	F_{Tadm} [N]	240	300	600	750
	Specific elasticity (stainless steel tension member)	c_{spec} [N]	$8.0 \cdot 10^4$	$10.0 \cdot 10^4$	$20.0 \cdot 10^4$	$25.0 \cdot 10^4$
V	E / Steel tension member	F_{Tadm} [N]	160	200	400	500
	Stainless steel tension member	F_{Tadm} [N]	120	150	300	375
Belt weight	Standard	[kg/m]	0.018	0.022	0.044	0.054
	DL	[kg/m]	–	–	–	–
	DR	[kg/m]	–	–	–	–
	T	[kg/m]	–	–	–	–

Flexibility (minimum number of teeth / minimum diameter)

		Steel tension member				E / Steel tension member				Stainless steel tension member			
		Standard	DL	DR	T	Standard	DL	DR	T	Standard	DL	DR	T
 without contraflexure	z_{min}	–	–	–	–	15	–	–	–	20	–	–	–
	d_{min} [mm]	–	–	–	–	30 (20)	–	–	–	30	–	–	–
 with contraflexure	z_{min}	–	–	–	–	25 (20)	–	–	–	30	–	–	–
	d_{min} [mm]	–	–	–	–	30 (20)	–	–	–	40	–	–	–

(Deviate values in brackets apply to joined timing belts)

High performance PU timing belts
BRECO® AT5



Belt widths b [mm] / in-between belt widths on request

10	16	25	32	50	75	100

AT5 (M/V)	**Available lengths and versions**
Standard delivery lengths (M)	rolls of 50 or 100 m
Cut to lengths / lengths > 100 m	on request
Minimum length joined (V)	880 mm
Standard material	TPUST1[1)]
Steel tension member	×
E / Steel tension member (Standard)	○
Stainless steel tension member	○
PAZ	×
PAR	×
PAZ-PAR	×
DL / DL-PAZ	–
DR / DR-PAZ	–
T / T-PAZ	–

M open length
V joined
× available
○ minimum purchase amount on request
– not available
[1)] further materials on request

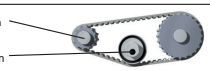
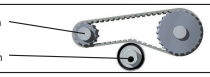
Specific tooth force

rpm n [min⁻¹]	F_{Tspec} [N/cm]	rpm n [min⁻¹]	F_{Tspec} [N/cm]	rpm n [min⁻¹]	F_{Tspec} [N/cm]
0	42.000	1200	29.488	3600	21.776
20	41.521	1300	28.971	3800	21.370
40	41.069	1400	28.484	4000	20.983
60	40.641	1500	28.025	4500	20.089
80	40.234	1600	27.590	5000	19.284
100	39.846	1700	27.177	5500	18.550
200	38.142	1800	26.784	6000	17.877
300	36.733	1900	26.409	6500	17.255
400	35.531	2000	26.050	7000	16.677
500	34.483	2200	25.377	7500	16.138
600	33.554	2400	24.755	8000	15.631
700	32.721	2600	24.177	8500	15.154
800	31.964	2800	23.637	9000	14.704
900	31.271	3000	23.130	9500	14.277
1000	30.633	3200	22.654	10000	13.871
1100	30.040	3400	22.203		

Admissible tensile load of the belt F_{Tadm} / belt weight

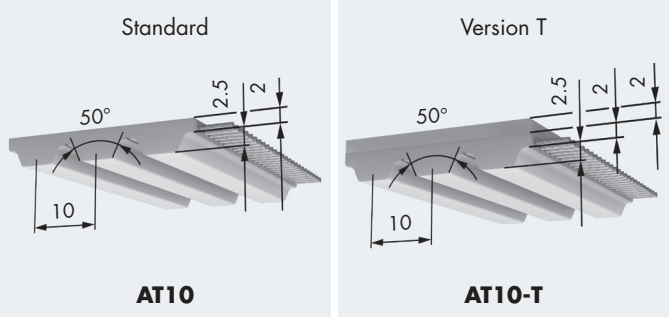
Belt width		b [mm]	10	16	25	32	50	75	100
M	E / Steel tension member	F_{Tadm} [N]	700	1120	1750	2240	3500	5250	7000
	Specific elasticity (E / Steel tension member)	c_{spec} [N]	$0.175 \cdot 10^6$	$0.280 \cdot 10^6$	$0.440 \cdot 10^6$	$0.560 \cdot 10^6$	$0.875 \cdot 10^6$	$1.310 \cdot 10^6$	$1.750 \cdot 10^6$
	Stainless steel tension member	F_{Tadm} [N]	455	730	1140	1460	2280	3420	4500
	Specific elasticity (stainless steel tension member)	c_{spec} [N]	$0.175 \cdot 10^6$	$0.280 \cdot 10^6$	$0.440 \cdot 10^6$	$0.560 \cdot 10^6$	$0.875 \cdot 10^6$	$1.310 \cdot 10^6$	$1.750 \cdot 10^6$
V	E / Steel tension member	F_{Tadm} [N]	350	560	910	1120	1750	2380	3500
	Stainless steel tension member	F_{Tadm} [N]	230	365	570	730	1140	1710	2250
Belt weight	Standard	[kg/m]	0.033	0.052	0.082	0.105	0.164	0.245	0.327
	DL	[kg/m]	–	–	–	–	–	–	–
	DR	[kg/m]	–	–	–	–	–	–	–
	T	[kg/m]	–	–	–	–	–	–	–

Flexibility (minimum number of teeth / minimum diameter)

		Steel tension member				E / Steel tension member				Stainless steel tension member			
		Standard	DL	DR	T	Standard	DL	DR	T	Standard	DL	DR	T
z_{min} / d_{min}  without contraflexure	z_{min}	18 (15)	–	–	–	15 (12)	–	–	–	22 (18)	–	–	–
	d_{min} [mm]	30 (25)	–	–	–	25 (18)	–	–	–	35 (30)	–	–	–
z_{min} / d_{min}  with contraflexure	z_{min}	25	–	–	–	20	–	–	–	30 (25)	–	–	–
	d_{min} [mm]	60	–	–	–	50	–	–	–	60 (50)	–	–	–

(Deviate values in brackets apply to joined timing belts)

High performance PU timing belts
BRECO® AT10



Belt widths b [mm] / in-between belt widths on request

25	32	50	75	100	150

AT10 (M/V)		**Available lengths and versions**	
Standard delivery lengths (M)		rolls of 50 or 100 m	
Cut to lengths / lengths > 100 m		on request	
Minimum length joined (V)		b ≤ 100	880 mm
		b > 100	1000 mm
Standard material		TPUST1	
Steel tension member (Standard)		×	
E / Steel tension member		○	
Stainless steel tension member		○	
PAZ		×	
PAR		×	
PAZ-PAR		×	
DL / DL-PAZ		–	
DR / DR-PAZ		–	
T / T-PAZ	b_{max} = 100	○	

M open length
V joined
× available
○ minimum purchase amount on request
– not available
1) further materials on request

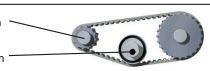
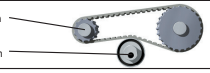
Specific tooth force

rpm n [min⁻¹]	F_{Tspec} [N/cm]	rpm n [min⁻¹]	F_{Tspec} [N/cm]	rpm n [min⁻¹]	F_{Tspec} [N/cm]
0	87.500	1200	56.190	3600	37.925
20	86.216	1300	54.953	3800	36.972
40	85.013	1400	53.791	4000	36.064
60	83.881	1500	52.696	4500	33.967
80	82.814	1600	51.661	5000	32.079
100	81.803	1700	50.679	5500	30.362
200	77.426	1800	49.746	6000	28.787
300	73.870	1900	48.856	6500	27.333
400	70.877	2000	48.006	7000	25.982
500	68.291	2200	46.413	7500	24.721
600	66.016	2400	44.943	8000	23.538
700	63.984	2600	43.578	8500	22.425
800	62.148	2800	42.305	9000	21.374
900	60.475	3000	41.112	9500	20.377
1000	58.937	3200	39.989	10000	19.430
1100	57.514	3400	38.929		

Admissible tensile load of the belt F_{Tadm} / belt weight

Belt width		b [mm]	25	32	50	75	100	150
M	E / Steel tension member	F_{Tadm} [N]	4250	5500	8500	12750	17000	22000
	Specific elasticity (E / Steel tension member)	c_{spec} [N]	$1.06 \cdot 10^6$	$1.37 \cdot 10^6$	$2.12 \cdot 10^6$	$3.18 \cdot 10^6$	$4.25 \cdot 10^6$	$5.5 \cdot 10^6$
	Stainless steel tension member	F_{Tadm} [N]	3190	4125	6375	9560	12750	19125
	Specific elasticity (stainless steel tension member)	c_{spec} [N]	$1.06 \cdot 10^6$	$1.37 \cdot 10^6$	$2.12 \cdot 10^6$	$3.18 \cdot 10^6$	$4.25 \cdot 10^6$	$5.5 \cdot 10^6$
V	E / Steel tension member	F_{Tadm} [N]	2125	2750	4250	6375	8500	11000
	Stainless steel tension member	F_{Tadm} [N]	1595	2065	3190	4780	6375	9565
Belt weight	Standard	[kg/m]	0.158	0.186	0.290	0.436	0.581	0.839
	DL	[kg/m]	–	–	–	–	–	–
	DR	[kg/m]	–	–	–	–	–	–
	T	[kg/m]	0.205	0.263	0.410	0.616	0.821	–

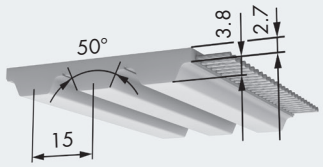
Flexibility (minimum number of teeth / minimum diameter)

		Steel tension member				E / Steel tension member				Stainless steel tension member			
		Standard	DL	DR	T	Standard	DL	DR	T	Standard	DL	DR	T
z_{min} / d_{min}  without contraflexure	z_{min}	15	–	–	25	12	–	–	25	25 (20)	–	–	75
	d_{min} [mm]	50	–	–	80	50	–	–	80	80 (70)	–	–	80
z_{min} / d_{min}  with contraflexure	z_{min}	25	–	–	25	20	–	–	25	40 (30)	–	–	40
	d_{min} [mm]	120	–	–	120	80	–	–	120	130 (100)	–	–	130

(Deviate values in brackets apply to joined timing belts)

High performance PU timing belts
BRECO® ATS15

Standard



ATS15

Belt widths b [mm] / in-between belt widths on request

25	50	75	100	150

ATS15 (M)	**Available lengths and versions**
Standard delivery lengths (M)	rolls of 50 or 100 m
Cut to lengths / lengths > 100 m	on request
Minimum length joined (V)	–
Standard material	TPUST1[1)]
Steel tension member (Standard)	×
E / Steel tension member	–
Stainless steel tension member	○
PAZ	×
PAR	–
PAZ-PAR	–
DL / DL-PAZ	–
DR / DR-PAZ	–
T / T-PAZ	–

M open length
V joined
× available
○ minimum purchase amount on request
– not available
[1)] further materials on request

Specific tooth force

rpm n [min⁻¹]	F_{Tspec} [N/cm]	rpm n [min⁻¹]	F_{Tspec} [N/cm]	rpm n [min⁻¹]	F_{Tspec} [N/cm]
0	168.000	1200	102.292	3600	64.607
20	165.244	1300	99.732	3800	62.644
40	162.670	1400	97.329	4000	60.775
60	160.255	1500	95.066	4500	56.462
80	157.982	1600	92.927	5000	52.578
100	155.833	1700	90.899	5500	49.047
200	146.574	1800	88.972	6000	45.809
300	139.098	1900	87.135	6500	42.819
400	132.827	2000	85.382		
500	127.427	2200	82.094		
600	122.685	2400	79.063		
700	118.457	2600	76.250		
800	114.643	2800	73.626		
900	111.170	3000	71.168		
1000	107.981	3200	68.856		
1100	105.033	3400	66.674		

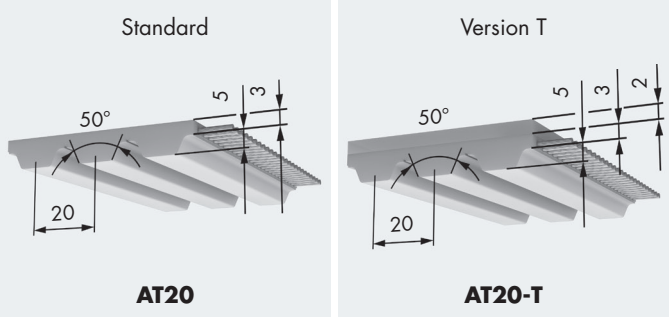
Admissible tensile load of the belt F_{Tadm} / belt weight

Belt width		b [mm]	25	50	75	100	150
M	E / Steel tension member	F_{Tadm} [N]	6765	13530	20295	27080	40590
	Specific elasticity (E / Steel tension member)	c_{spec} [N]	$1.72 \cdot 10^6$	$3.43 \cdot 10^6$	$5.15 \cdot 10^6$	$6.86 \cdot 10^6$	$1.03 \cdot 10^7$
	Stainless steel tension member	F_{Tadm} [N]	5390	10780	16170	21560	32340
	Specific elasticity (stainless steel tension member)	c_{spec} [N]	$1.72 \cdot 10^6$	$3.43 \cdot 10^6$	$5.15 \cdot 10^6$	$6.86 \cdot 10^6$	$1.03 \cdot 10^7$
V	E / Steel tension member	F_{Tadm} [N]	–	–	–	–	–
	Stainless steel tension member	F_{Tadm} [N]	–	–	–	–	–
Belt weight	Standard	[kg/m]	0.250	0.500	0.750	1.000	1.500
	DL	[kg/m]	–	–	–	–	–
	DR	[kg/m]	–	–	–	–	–
	T	[kg/m]	–	–	–	–	–

Flexibility (minimum number of teeth / minimum diameter)

			Steel tension member				E / Steel tension member				Stainless steel tension member			
			Standard	DL	DR	T	Standard	DL	DR	T	Standard	DL	DR	T
z_{min} d_{min}	without contraflexure	z_{min}	25	–	–	–	–	–	–	–	30	–	–	–
		d_{min} [mm]	120	–	–	–	–	–	–	–	180	–	–	–
z_{min} d_{min}	with contraflexure	z_{min}	40	–	–	–	–	–	–	–	60	–	–	–
		d_{min} [mm]	250	–	–	–	–	–	–	–	300	–	–	–

High performance PU timing belts
BRECO® AT20



Belt widths b [mm] / in-between belt widths on request

32	50	75	100	150

AT20 (M/V)		**Available lengths and versions**
Standard delivery lengths (M)		rolls of 50 m
Cut to lengths / lengths > 50 m		on request
Minimum length joined (V)		1000 mm
Standard material		TPUST1[1)]
Steel tension member (Standard)		×
E / Steel tension member		–
Stainless steel tension member		○
PAZ		×
PAR		×
PAZ-PAR		×
DL / DL-PAZ		–
DR / DR-PAZ		–
T / T-PAZ	b_{max} = 100	○

M open length
V joined
× available
○ minimum purchase amount on request
– not available
[1)] further materials on request

Specific tooth force

rpm n [min⁻¹]	F_{Tspec} [N/cm]	rpm n [min⁻¹]	F_{Tspec} [N/cm]	rpm n [min⁻¹]	F_{Tspec} [N/cm]
0	175.000	1200	98.938	3600	56.081
20	171.733	1300	96.018	3800	53.854
40	168.692	1400	93.279	4000	51.735
60	165.847	1500	90.700	4500	46.843
80	163.175	1600	88.264	5000	42.440
100	160.655	1700	85.956	5500	38.437
200	149.850	1800	83.762	6000	34.767
300	141.179	1900	81.673	6500	31.380
400	133.936	2000	79.678		
500	127.717	2200	75.940		
600	122.268	2400	72.494		
700	117.419	2600	69.299		
800	113.051	2800	66.319		
900	109.077	3000	63.528		
1000	105.432	3200	60.904		
1100	102.066	3400	58.426		

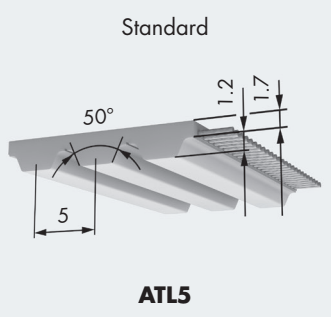
Admissible tensile load of the belt F_{Tadm} / belt weight

Belt width		b [mm]	32	50	75	100	150
M	E / Steel tension member	F_{Tadm} [N]	7200	11200	16800	22400	32000
	Specific elasticity (E / Steel tension member)	c_{spec} [N]	$1.80 \cdot 10^6$	$2.80 \cdot 10^6$	$4.20 \cdot 10^6$	$5.60 \cdot 10^6$	$8.00 \cdot 10^7$
	Stainless steel tension member	F_{Tadm} [N]	5760	8960	13440	17920	25600
	Specific elasticity (stainless steel tension member)	c_{spec} [N]	$1.80 \cdot 10^6$	$2.80 \cdot 10^6$	$4.20 \cdot 10^6$	$5.60 \cdot 10^6$	$8.00 \cdot 10^7$
V	E / Steel tension member	F_{Tadm} [N]	3600	5600	8400	11200	16000
	Stainless steel tension member	F_{Tadm} [N]	2880	4480	6720	8960	12800
Belt weight	Standard	[kg/m]	0.307	0.480	0.720	0.960	1.423
	DL	[kg/m]	–	–	–	–	–
	DR	[kg/m]	–	–	–	–	–
	T	[kg/m]	0.384	0.600	0.900	1.200	–

Flexibility (minimum number of teeth / minimum diameter)

			Steel tension member				E / Steel tension member				Stainless steel tension member			
			Standard	DL	DR	T	Standard	DL	DR	T	Standard	DL	DR	T
z_{min} d_{min}	without contraflexure	z_{min}	18	–	–	25	–	–	–	–	25	–	–	–
		d_{min} [mm]	120	–	–	120	–	–	–	–	200	–	–	–
z_{min} d_{min}	with contraflexure	z_{min}	25	–	–	25	–	–	–	–	40	–	–	–
		d_{min} [mm]	180	–	–	180	–	–	–	–	380	–	–	–

High performance PU timing belts
BRECO® ATL5



Belt widths b [mm] / in-between belt widths on request

16	25	32	50

ATL5 (M)	**Available lengths and versions**
Standard delivery lengths (M)	rolls of 50 or 100 m
Cut to lengths / lengths > 100 m	on request
Minimum length joined (V)	–
Standard material	TPUST1[1)]
Steel tension member	–
E / Steel tension member (Standard)	×
Stainless steel tension member	–
PAZ	×
PAR	–
PAZ-PAR	–
DL / DL-PAZ	–
DR / DR-PAZ	–
T / T-PAZ	–

M open length
V joined
× available
○ minimum purchase amount on request
– not available
1) further materials on request

Specific tooth force

rpm n [min⁻¹]	F_{Tspec} [N/cm]	rpm n [min⁻¹]	F_{Tspec} [N/cm]	rpm n [min⁻¹]	F_{Tspec} [N/cm]
0	42.000	1200	29.488	3600	21.776
20	41.521	1300	28.971	3800	21.370
40	41.069	1400	28.484	4000	20.983
60	40.641	1500	28.025	4500	20.089
80	40.234	1600	27.590	5000	19.284
100	39.846	1700	27.177	5500	18.550
200	38.142	1800	26.784	6000	17.877
300	36.733	1900	26.409	6500	17.255
400	35.531	2000	26.050	7000	16.677
500	34.483	2200	25.377	7500	16.138
600	33.554	2400	24.755	8000	15.631
700	32.721	2600	24.177	8500	15.154
800	31.964	2800	23.637	9000	14.704
900	31.271	3000	23.130	9500	14.277
1000	30.633	3200	22.654	10000	13.871
1100	30.040	3400	22.203		

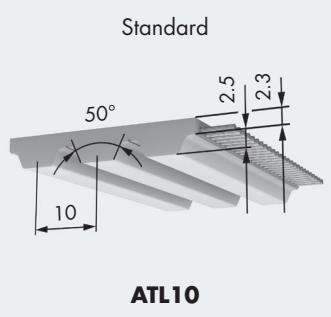
Admissible tensile load of the belt F_{Tadm} / belt weight

Belt width		b [mm]	16	25	32	50
M	E / Steel tension member	F_{Tadm} [N]	1300	2000	2800	4200
	Specific elasticity (E / Steel tension member)	c_{spec} [N]	$0.33 \cdot 10^6$	$0.50 \cdot 10^6$	$0.65 \cdot 10^6$	$1.05 \cdot 10^6$
	Stainless steel tension member	F_{Tadm} [N]	–	–	–	–
	Specific elasticity (stainless steel tension member)	c_{spec} [N]	–	–	–	–
V	E / Steel tension member	F_{Tadm} [N]	–	–	–	–
	Stainless steel tension member	F_{Tadm} [N]	–	–	–	–
Belt weight	Standard	[kg/m]	0.059	0.090	0.119	0.187
	DL	[kg/m]	–	–	–	–
	DR	[kg/m]	–	–	–	–
	T	[kg/m]	–	–	–	–

Flexibility (minimum number of teeth / minimum diameter)

			Steel tension member				E / Steel tension member				Stainless steel tension member			
			Standard	DL	DR	T	Standard	DL	DR	T	Standard	DL	DR	T
z_{min} d_{min}	without contraflexure	z_{min}	–	–	–	–	25	–	–	–	–	–	–	–
		d_{min} [mm]	–	–	–	–	40	–	–	–	–	–	–	–
z_{min} d_{min}	with contraflexure	z_{min}	–	–	–	–	25	–	–	–	–	–	–	–
		d_{min} [mm]	–	–	–	–	60	–	–	–	–	–	–	–

High performance PU timing belts
BRECO® ATL10



ATL10

Belt widths b [mm] / in-between belt widths on request

32	50	75	100	150

ATL10 (M)	**Available lengths and versions**
Standard delivery lengths (M)	rolls of 50 or 100 m
Cut to lengths / lengths > 100 m	on request
Minimum length joined (V)	–
Standard material	TPUST1[1)]
Steel tension member (Standard)	×
E / Steel tension member	–
Stainless steel tension member	○
PAZ	×
PAR	–
PAZ-PAR	–
DL / DL-PAZ	–
DR / DR-PAZ	–
T / T-PAZ	–

M open length
V joined
× available
○ minimum purchase amount on request
– not available
[1)] further materials on request

Specific tooth force

rpm n [min⁻¹]	F_{Tspec} [N/cm]	rpm n [min⁻¹]	F_{Tspec} [N/cm]	rpm n [min⁻¹]	F_{Tspec} [N/cm]
0	87.500	1200	56.190	3600	37.925
20	86.216	1300	54.953	3800	36.972
40	85.013	1400	53.791	4000	36.064
60	83.881	1500	52.696	4500	33.967
80	82.814	1600	51.661	5000	32.079
100	81.803	1700	50.679	5500	30.362
200	77.426	1800	49.746	6000	28.787
300	73.870	1900	48.856	6500	27.333
400	70.877	2000	48.006	7000	25.982
500	68.291	2200	46.413	7500	24.721
600	66.016	2400	44.943	8000	23.538
700	63.984	2600	43.578	8500	22.425
800	62.148	2800	42.305	9000	21.374
900	60.475	3000	41.112	9500	20.377
1000	58.937	3200	39.989	10000	19.430
1100	57.514	3400	38.929		

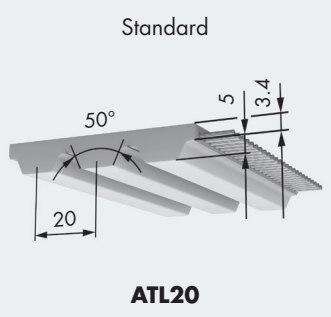
Admissible tensile load of the belt F_{Tadm} / belt weight

Belt width		b [mm]	32	50	75	100	150
M	E / Steel tension member	F_{Tadm} [N]	7200	11200	16800	22400	36000
	Specific elasticity (E / Steel tension member)	c_{spec} [N]	$1.8 \cdot 10^6$	$2.8 \cdot 10^6$	$4.2 \cdot 10^6$	$5.6 \cdot 10^6$	$9.0 \cdot 10^6$
	Stainless steel tension member	F_{Tadm} [N]	5760	8960	13440	17920	28800
	Specific elasticity (stainless steel tension member)	c_{spec} [N]	$1.8 \cdot 10^6$	$2.8 \cdot 10^6$	$4.2 \cdot 10^6$	$5.6 \cdot 10^6$	$9.0 \cdot 10^6$
V	E / Steel tension member	F_{Tadm} [N]	–	–	–	–	–
	Stainless steel tension member	F_{Tadm} [N]	–	–	–	–	–
Belt weight	Standard	[kg/m]	0.220	0.340	0.510	0.680	1.020
	DL	[kg/m]	–	–	–	–	–
	DR	[kg/m]	–	–	–	–	–
	T	[kg/m]	–	–	–	–	–

Flexibility (minimum number of teeth / minimum diameter)

			Steel tension member				E / Steel tension member				Stainless steel tension member			
			Standard	DL	DR	T	Standard	DL	DR	T	Standard	DL	DR	T
z_{min} d_{min}	without contraflexure	z_{min}	25	–	–	–	–	–	–	–	40	–	–	–
		d_{min} [mm]	80	–	–	–	–	–	–	–	120	–	–	–
z_{min} d_{min}	with contraflexure	z_{min}	25	–	–	–	–	–	–	–	50	–	–	–
		d_{min} [mm]	150	–	–	–	–	–	–	–	180	–	–	–

High performance PU timing belts
BRECO® ATL20



Belt widths b [mm] / in-between belt widths on request

32	50	75	100

ATL20 (M)	**Available lengths and versions**
Standard delivery lengths (M)	rolls of 50 m
Cut to lengths / lengths > 100 m	on request
Minimum length joined (V)	–
Standard material	TPUST1[1)]
Steel tension member (Standard)	×
E / Steel tension member	–
Stainless steel tension member	○
PAZ	×
PAR	–
PAZ-PAR	–
DL / DL-PAZ	–
DR / DR-PAZ	–
T / T-PAZ	–

M open length
V joined
× available
○ minimum purchase amount on request
– not available
[1)] further materials on request

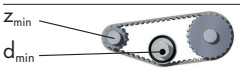
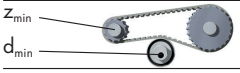
Specific tooth force

rpm n [min⁻¹]	F_{Tspec} [N/cm]	rpm n [min⁻¹]	F_{Tspec} [N/cm]	rpm n [min⁻¹]	F_{Tspec} [N/cm]
0	175.000	1200	98.938	3600	56.081
20	171.733	1300	96.018	3800	53.854
40	168.692	1400	93.279	4000	51.735
60	165.847	1500	90.700	4500	46.843
80	163.175	1600	88.264	5000	42.440
100	160.655	1700	85.956	5500	38.437
200	149.850	1800	83.762	6000	34.767
300	141.179	1900	81.673	6500	31.380
400	133.936	2000	79.678		
500	127.717	2200	75.940		
600	122.268	2400	72.494		
700	117.419	2600	69.299		
800	113.051	2800	66.319		
900	109.077	3000	63.528		
1000	105.432	3200	60.904		
1100	102.066	3400	58.426		

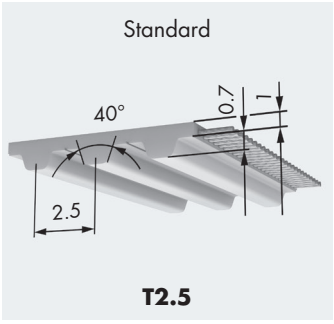
Admissible tensile load of the belt F_{Tadm} / belt weight

Belt width		b [mm]	32	50	75	100
M	E / Steel tension member	F_{Tadm} [N]	9800	15400	23800	31500
	Specific elasticity (E / Steel tension member)	c_{spec} [N]	$2.45 \cdot 10^6$	$3.85 \cdot 10^6$	$5.95 \cdot 10^6$	$7.88 \cdot 10^6$
	Stainless steel tension member	F_{Tadm} [N]	7840	12320	19040	25200
	Specific elasticity (stainless steel tension member)	c_{spec} [N]	$2.45 \cdot 10^6$	$3.85 \cdot 10^6$	$5.95 \cdot 10^6$	$7.88 \cdot 10^6$
V	E / Steel tension member	F_{Tadm} [N]	–	–	–	–
	Stainless steel tension member	F_{Tadm} [N]	–	–	–	–
Belt weight	Standard	[kg/m]	0.350	0.550	0.840	1.110
	DL	[kg/m]	–	–	–	–
	DR	[kg/m]	–	–	–	–
	T	[kg/m]	–	–	–	–

Flexibility (minimum number of teeth / minimum diameter)

		Steel tension member				E / Steel tension member				Stainless steel tension member			
		Standard	DL	DR	T	Standard	DL	DR	T	Standard	DL	DR	T
 without contraflexure	z_{min}	25	–	–	–	–	–	–	–	25	–	–	–
	d_{min} [mm]	160	–	–	–	–	–	–	–	180	–	–	–
 with contraflexure	z_{min}	25	–	–	–	–	–	–	–	30	–	–	–
	d_{min} [mm]	250	–	–	–	–	–	–	–	300	–	–	–

Standard PU timing belts
BRECO® T2.5



T2.5

Belt widths b [mm] / in-between belt widths on request

8	10	20

T2.5 (M/V)	**Available lengths and versions**
Standard delivery lengths (M)	rolls of 100 m
Cut to lengths / lengths > 100 m	on request
Minimum length joined (V)	350 mm
Standard material	TPUST1[1)]
Steel tension member (Standard)	×
E / Steel tension member	–
Stainless steel tension member	–
PAZ	–
PAR	–
PAZ-PAR	–
DL / DL-PAZ	–
DR / DR-PAZ	–
T / T-PAZ	–

M open length
V joined
× available
○ minimum purchase amount on request
– not available
[1)] further materials on request

Specific tooth force

rpm n [min⁻¹]	F_{Tspec} [N/cm]	rpm n [min⁻¹]	F_{Tspec} [N/cm]	rpm n [min⁻¹]	F_{Tspec} [N/cm]
0	9.03	1200	5.51	3600	4.36
20	8.72	1300	5.41	3800	4.28
40	8.48	1400	5.33	4000	4.22
60	8.28	1500	5.25	4500	4.15
80	8.10	1600	5.17	5000	4.09
100	7.95	1700	5.10	5500	3.95
200	7.39	1800	5.04	6000	3.82
300	7.01	1900	4.97	6500	3.71
400	6.71	2000	4.91	7000	3.60
500	6.48	2200	4.80	7500	3.51
600	6.28	2400	4.70	8000	3.42
700	6.11	2600	4.65	8500	3.33
800	5.97	2800	4.60	9000	3.26
900	5.83	3000	4.51	9500	3.18
1000	5.71	3200	4.48	10000	3.05
1100	5.61	3400	4.43		

Admissible tensile load of the belt F_{Tadm} / belt weight

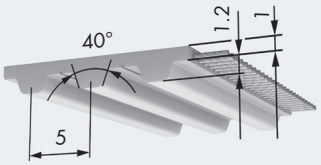
Belt width		b [mm]	8	10	20
M	E / Steel tension member	F_{Tadm} [N]	77	98	196
	Specific elasticity (E / Steel tension member)	c_{spec} [N]	$1.93 \cdot 10^4$	$2.45 \cdot 10^4$	$4.90 \cdot 10^4$
	Stainless steel tension member	F_{Tadm} [N]	–	–	–
	Specific elasticity (stainless steel tension member)	c_{spec} [N]	–	–	–
V	E / Steel tension member	F_{Tadm} [N]	38	49	98
	Stainless steel tension member	F_{Tadm} [N]	–	–	–
Belt weight	Standard	[kg/m]	0.010	0.015	0.030
	DL	[kg/m]	–	–	–
	DR	[kg/m]	–	–	–
	T	[kg/m]	–	–	–

Flexibility (minimum number of teeth / minimum diameter)

			Steel tension member				E / Steel tension member				Stainless steel tension member			
			Standard	DL	DR	T	Standard	DL	DR	T	Standard	DL	DR	T
z_{min} d_{min}	without contraflexure	z_{min}	15	–	–	–	–	–	–	–	–	–	–	–
		d_{min} [mm]	15	–	–	–	–	–	–	–	–	–	–	–
z_{min} d_{min}	with contraflexure	z_{min}	18	–	–	–	–	–	–	–	–	–	–	–
		d_{min} [mm]	18	–	–	–	–	–	–	–	–	–	–	–

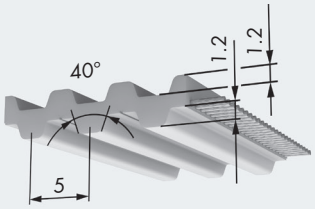
Standard PU timing belts
BRECO® T5

Standard



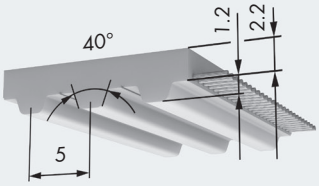
T5-DR

Double-sided



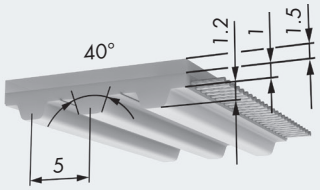
T5-DL

Reinforced back of the belt



T5-DR

Version T



T5-T

Belt widths b [mm] / in-between belt widths on request

6*	10	16	25	32	50	75	100

*only M

T5 (M/V)		**Available lengths and versions**
Standard delivery lengths (M)		rolls of 50 or 100 m
Cut to lengths / lengths > 100 m		on request
Minimum length joined (V)	b_{min} = 10	880 mm
	DL	1000 mm
Standard material		TPUST1 [1]
Steel tension member (Standard)		×
E / Steel tension member		○
Stainless steel tension member		○
PAZ		×
PAR		×
PAZ-PAR		×
DL / DL-PAZ		○
DR / DR-PAZ		○
T / T-PAZ		○

M open length
V joined
× available
○ minimum purchase amount on request
– not available
[1] further materials on request

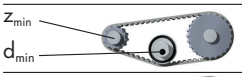
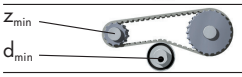
Specific tooth force

rpm n [min⁻¹]	F_{Tspec} [N/cm]	rpm n [min⁻¹]	F_{Tspec} [N/cm]	rpm n [min⁻¹]	F_{Tspec} [N/cm]
0	24.00	1200	15.31	3600	11.77
20	23.40	1300	15.06	3800	11.59
40	22.90	1400	14.83	4000	11.42
60	22.40	1500	14.61	4500	11.03
80	22.00	1600	14.40	5000	10.68
100	21.70	1700	14.21	5500	10.36
200	20.30	1800	14.03	6000	10.07
300	19.30	1900	13.85	6500	9.81
400	18.55	2000	13.69	7000	9.56
500	17.93	2200	13.38	7500	9.33
600	17.41	2400	13.10	8000	9.11
700	16.96	2600	12.84	8500	8.91
800	16.56	2800	12.59	9000	8.72
900	16.20	3000	12.37	9500	8.54
1000	15.88	3200	12.16	10000	8.37
1100	15.58	3400	11.96		

Admissible tensile load of the belt F_{Tadm} / belt weight

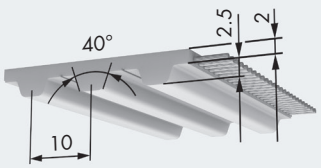
Belt width		b [mm]	6	10	16	25	32	50	75	100
M	E / Steel tension member	F_{Tadm} [N]	180	300	540	840	1080	1680	2520	3360
	Specific elasticity (E / Steel tension member)	c_{spec} [N]	$4.5 \cdot 10^4$	$7.5 \cdot 10^4$	$13.5 \cdot 10^4$	$21.0 \cdot 10^4$	$27.0 \cdot 10^4$	$42.0 \cdot 10^4$	$63.0 \cdot 10^4$	$84.0 \cdot 10^4$
	Stainless steel tension member	F_{Tadm} [N]	135	230	410	640	820	1280	1915	2580
	Specific elasticity (stainless steel tension member)	c_{spec} [N]	$4.5 \cdot 10^4$	$7.5 \cdot 10^4$	$13.5 \cdot 10^4$	$21.0 \cdot 10^4$	$27.0 \cdot 10^4$	$42.0 \cdot 10^4$	$63.0 \cdot 10^4$	$84.0 \cdot 10^4$
V	E / Steel tension member	F_{Tadm} [N]	–	150	270	420	540	840	1260	1680
	Stainless steel tension member	F_{Tadm} [N]	–	115	205	320	420	640	980	1290
Belt width	Standard	[kg/m]	0.013	0.021	0.034	0.053	0.068	0.106	0.160	0.233
	DL	[kg/m]	–	0.030	0.044	0.070	0.090	0.139	0.208	0.280
	DR	[kg/m]	–	0.039	0.063	0.098	0.126	0.196	0.294	0.378
	T	[kg/m]	–	0.039	0.063	0.098	0.126	0.196	0.294	0.392

Flexibility (minimum number of teeth / minimum diameter)

		Steel tension member				E / Steel tension member				Stainless steel tension member			
		Standard	DL	DR	T	Standard	DL	DR	T	Standard	DL	DR	T
 without contraflexure	z_{min}	10	15	20	20	10	10	–	–	18	18	20	20
	d_{min} [mm]	30	30	30	30	18	18	–	–	30	30	30	30
 with contraflexure	z_{min}	15	15	20	20	12	12	–	–	36	36	36	36
	d_{min} [mm]	30	30	60	60	18	18	–	–	60	60	60	60

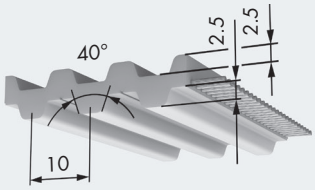
Standard PU timing belts
BRECO® T10

Standard



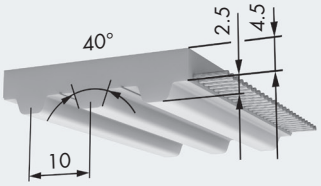
T10

Double-sided



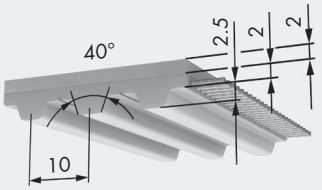
T10-DL

Reinforced back of the belt



T10-DR

Version T



T10-T

Belt widths b [mm] / in-between belt widths on request

16	25	32	50	75	100	150

T10 (M/V)		**Available lengths and versions**
Standard delivery lengths (M)		rolls of 50 or 100 m
Cut to lengths / lengths > 100 m		on request
Minimum length joined (V)	Standard	880 mm
	DL, DR, T, b = 150	1000 mm
Standard material		TPUST1 [1)]
Steel tension member (Standard)		×
E / Steel tension member		○
Stainless steel tension member		○
PAZ		×
PAR		×
PAZ-PAR		×
DL / DL-PAZ	b_{max} = 100	○
DR / DR-PAZ	b_{max} = 100	○
T / T-PAZ	b_{max} = 100	○

M open length
V joined
× available
○ minimum purchase amount on request
– not available
[1)] further materials on request

Specific tooth force

rpm n [min⁻¹]	F_{Tspec} [N/cm]	rpm n [min⁻¹]	F_{Tspec} [N/cm]	rpm n [min⁻¹]	F_{Tspec} [N/cm]
0	50.50	1200	29.30	3600	20.70
20	49.00	1300	28.70	3800	20.30
40	47.70	1400	28.20	4000	19.86
60	46.60	1500	27.60	4500	18.91
80	45.70	1600	27.10	5000	18.06
100	44.80	1700	26.70	5500	17.28
200	41.40	1800	26.20	6000	16.58
300	39.10	1900	25.80	6500	15.93
400	37.20	2000	25.40	7000	15.33
500	35.70	2200	24.60	7500	14.76
600	34.40	2400	23.90	8000	14.24
700	33.30	2600	23.30	8500	13.74
800	32.40	2800	22.70	9000	13.28
900	31.50	3000	22.20	9500	12.84
1000	30.70	3200	21.70	10000	12.42
1100	30.00	3400	21.20		

Admissible tensile load of the belt F_{Tadm} / belt weight

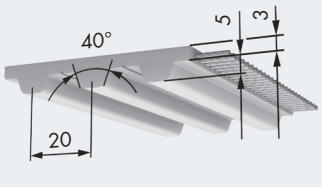
Belt width		b [mm]	16	25	32	50	75	100	150
M	E / Steel tension member	F_{Tadm} [N]	1400	2200	2800	4400	6600	8800	13200
	Specific elasticity (E / Steel tension member)	c_{spec} [N]	$3.5 \cdot 10^5$	$5.5 \cdot 10^5$	$7.0 \cdot 10^5$	$11.0 \cdot 10^5$	$16.5 \cdot 10^5$	$22.0 \cdot 10^5$	$33.0 \cdot 10^5$
	Stainless steel tension member	F_{Tadm} [N]	1120	1760	2240	3520	5280	7040	10560
	Specific elasticity (stainless steel tension member)	c_{spec} [N]	$3.5 \cdot 10^5$	$5.5 \cdot 10^5$	$7.0 \cdot 105^5$	$11.0 \cdot 10^5$	$16.5 \cdot 10^5$	$22.0 \cdot 10^5$	$33.0 \cdot 10^5$
V	E / Steel tension member	F_{Tadm} [N]	700	1100	1400	2200	3300	4400	6600
	Stainless steel tension member	F_{Tadm} [N]	560	880	1120	1760	2640	3520	5280
Belt weight	Standard	[kg/m]	0.073	0.114	0.145	0.227	0.341	0.454	0.681
	DL	[kg/m]	0.094	0.147	0.188	0.293	0.440	0.586	–
	DR	[kg/m]	0.109	0.171	0.218	0.341	0.512	0.682	–
	T	[kg/m]	0.109	0.171	0.218	0.341	0.512	0.682	–

Flexibility (minimum number of teeth / minimum diameter)

			Steel tension member				E / Steel tension member				Stainless steel tension member			
			Standard	DL	DR	T	Standard	DL	DR	T	Standard	DL	DR	T
z_{min} d_{min}	without contraflexure	z_{min}	12	20	20	20	10	10	20	20	25	25	25	25
		d_{min} [mm]	60	60	60	60	50	50	60	60	80	80	80	80
z_{min} d_{min}	with contraflexure	z_{min}	20	20	20	20	15	15	20	20	40	40	40	40
		d_{min} [mm]	60	60	80	80	50	50	80	80	130	130	130	130

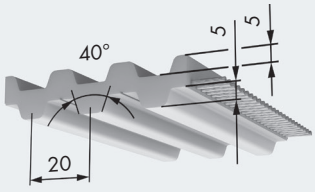
Standard PU timing belts
BRECO® T20

Standard



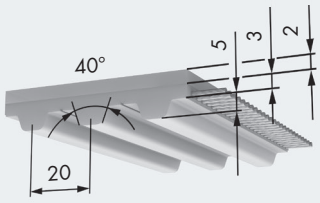
T20

Double-sided



T20-DL

Version T



T20-T

Belt widths b [mm] / in-between belt widths on request

25	32	50	75	100	150

T20 (M/V)		**Available lengths and versions**
Standard delivery lengths (M)		rolls of 50 m
Cut to lengths / lengths > 50 m		on request
Minimum length joined (V)	Standard	1000 mm
	DL. T. b = 150	1200 mm
Standard material		TPUST1 [1)]
Steel tension member (Standard)		×
E / Steel tension member		○
Stainless steel tension member		○
PAZ		×
PAR		×
PAZ-PAR		×
DL / DL-PAZ	b_{max} = 100	○
DR / DR-PAZ		–
T / T-PAZ	b_{max} = 100	○

M open length
V joined
× available
○ minimum purchase amount on request
– not available
[1)] further materials on request

Specific tooth force

rpm n [min⁻¹]	F_{Tspec} [N/cm]	rpm n [min⁻¹]	F_{Tspec} [N/cm]	rpm n [min⁻¹]	F_{Tspec} [N/cm]
0	101.50	1200	54.20	3600	34.90
20	98.10	1300	52.80	3800	33.90
40	95.30	1400	51.50	4000	33.00
60	92.80	1500	50.30	4500	30.80
80	90.70	1600	49.20	5000	28.90
100	88.70	1700	48.20	5500	27.20
200	81.20	1800	47.20	6000	25.60
300	75.90	1900	46.20	6500	24.20
400	71.80	2000	45.30		
500	68.40	2200	43.60		
600	65.60	2400	42.10		
700	63.10	2600	40.70		
800	60.90	2800	39.40		
900	59.00	3000	38.10		
1000	57.20	3200	37.00		
1100	55.60	3400	35.90		

Admissible tensile load of the belt F_{Tadm} / belt weight

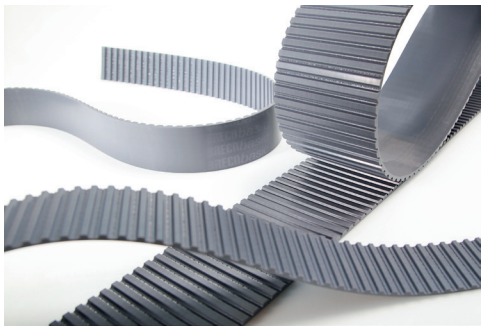
Belt width		b [mm]	25	32	50	75	100	150
M	E / Steel tension member	F_{Tadm} [N]	3500	4500	7000	10500	14000	20000
	Specific elasticity (E / Steel tension member)	c_{spec} [N]	$0.87 \cdot 10^6$	$1.13 \cdot 10^6$	$1.75 \cdot 10^6$	$2.63 \cdot 10^6$	$3.5 \cdot 10^6$	$5.0 \cdot 10^6$
	Stainless steel tension member	F_{Tadm} [N]	2520	3240	5040	7560	10080	14400
	Specific elasticity (stainless steel tension member)	c_{spec} [N]	$0.87 \cdot 10^6$	$1.13 \cdot 10^6$	$1.75 \cdot 10^6$	$2.63 \cdot 10^6$	$3.5 \cdot 10^6$	$5.0 \cdot 10^6$
V	E / Steel tension member	F_{Tadm} [N]	1750	2250	3500	5250	7000	10000
	Stainless steel tension member	F_{Tadm} [N]	1260	1620	2520	3780	5040	7200
Belt weight	Standard	[kg/m]	0.184	0.236	0.368	0.552	0.736	1.095
	DL	[kg/m]	0.247	0.316	0.493	0.793	0.986	-
	DR	[kg/m]	-	-	-	-	-	-
	T	[kg/m]	0.244	0.313	0.488	0.732	0.976	-

Flexibility (minimum number of teeth / minimum diameter)

			Steel tension member				E / Steel tension member				Stainless steel tension member			
			Standard	DL	DR	T	Standard	DL	DR	T	Standard	DL	DR	T
z_{min} d_{min}	without contraflexure	z_{min}	15	25	–	25	12	25	–	25	20	30	–	30
		d_{min} [mm]	120	150	–	120	100	150	–	120	130	150	–	150
z_{min} d_{min}	with contraflexure	z_{min}	25	25	–	25	22	25	–	25	30	30	–	30
		d_{min} [mm]	120	180	–	180	120	180	–	180	180	180	–	180

BRECObasic®

BRECObasic® AT10 BAS/T10 BAS



The range of products offered by BRECO under the banner of the "BRECObasic®" brand is an inexpensive alternative for simple applications that require less than the full potential strength of standard-type BRECO® timing belts. The range is designed for applications that do not come with special demands relating e.g. to restricted tolerances, particular durability/resilience requirements or further processing options for the timing belts.

BRECObasic® timing belts are produced exclusively as a by-the-meter product and can be welded to form endless belts if required.

Overview

BRECObasic® timing belt	Minimum length joined	Standard delivery lengths
AT10 BAS	880 mm	50 m / 100 m
T10 BAS	880 mm	50 m / 100 m

Supply options (compared to BRECO® AT10, T10 (M/V))	
Special materials (polyurethane)	no
Special materials (tension member)	no
Special widths	no
Reduced longitudinal/lateral tolerance	no
Mechanical belt processing	no
Coating materials	restrictions on the choice of coatings
Standard color	anthracite
Coloring options	no
Individual labelling	no

M open length
V joined

BRECOprotect®

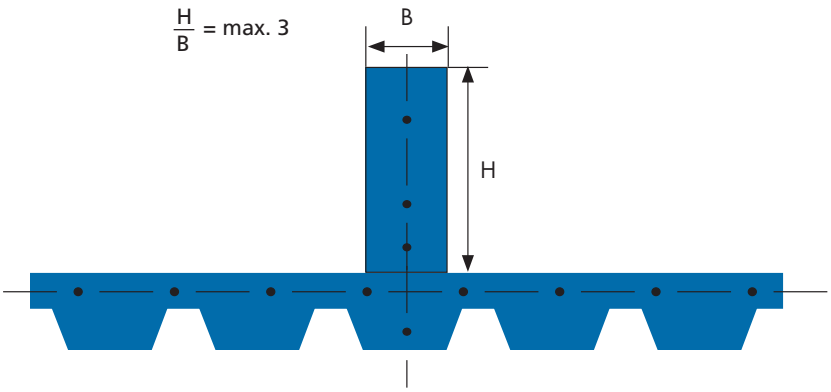
BRECOprotect® application fields – food and beverage compliant

BRECOprotect® timing belts are designed especially to meet the strict requirements associated with contact with food and the cleaning processes necessary in these areas. These timing belts do not feature a groove which prevents hidden and difficult to remove contamination and thus makes the cleaning process easier. The blue color of the BRECOprotect® product range follows a general market trend towards a special food industry color scheme. In addition, BRECOprotect® timing belts are suitable for use in moist environments where there are limitations on the use of conventional timing belts due to hydrolysis.

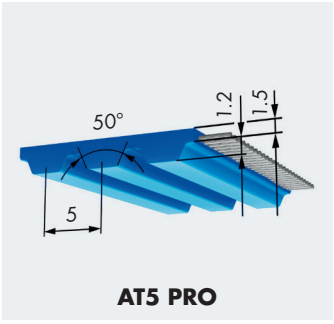
BRECOprotect® timing belts are offered as open-end and endless welded format. Additional mechanical processing is possible, with due care to avoid exposure of the tension cords. Please refer to the following pages for further indications. Welding of profiles is possible, but these must also be made of the mandatory Blue TPUAU1 polyurethane.

The smallest number of teeth on the timing pulley is z_{min} = 20 and the ratio between height and thickness of the profile must not exceed 3.

For further assistance, please contact the Angst+Pfister technical staff.



BRECOprotect®



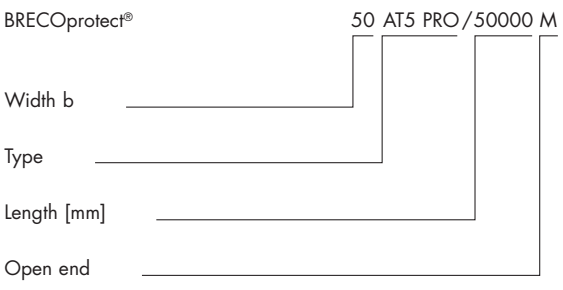
AT5 PRO

Belt widths b [mm]

25	50	75	100

AT5 PRO (M/V)	**Available lengths and versions**
Standard delivery lengths (M)	rolls of 50 or 100 m
Cut to lengths / lengths > 100 m	on request
Minimum length joined (V)	1100 mm
Standard material	TPUAU1
Belt color	blue
Belt widths	Available belt widths only according to table

Order example



Specific tooth force

rpm n [min⁻¹]	F_{Tspec} [N/cm]	rpm n [min⁻¹]	F_{Tspec} [N/cm]	rpm n [min⁻¹]	F_{Tspec} [N/cm]
0	42.000	1200	29.488	3600	21.776
20	41.521	1300	28.971	3800	21.370
40	41.069	1400	28.484	4000	20.983
60	40.641	1500	28.025	4500	20.089
80	40.234	1600	27.590	5000	19.284
100	39.846	1700	27.177	5500	18.550
200	38.142	1800	26.784	6000	17.877
300	36.733	1900	26.409	6500	17.255
400	35.531	2000	26.050	7000	16.677
500	34.483	2200	25.377	7500	16.138
600	33.554	2400	24.755	8000	15.631
700	32.721	2600	24.177	8500	15.154
800	31.964	2800	23.637	9000	14.704
900	31.271	3000	23.130	9500	14.277
1000	30.633	3200	22.654	10000	13.871
1100	30.040	3400	22.203		

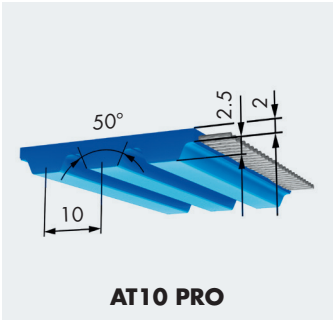
Admissible tensile load of the belt F_{Tadm} / belt weight

Belt width		b [mm]	25	50	75	100
M	Steel tension member	F_{Tadm} [N]	1750	3500	5250	7000
	Specific elasticity	c_{spec} [N]	$0.440 \cdot 10^6$	$0.875 \cdot 10^6$	$1.310 \cdot 10^6$	$1.750 \cdot 10^6$
V	Steel tension member	F_{Tadm} [N]	910	1750	2380	3500
Belt weight	Standard	[kg/m]	0.082	0.164	0.245	0.327

Flexibility (minimum number of teeth / minimum diameter)

			Steel tension member	
			M	V
z_{min} d_{min}	without contraflexure	z_{min}	18	15
		d_{min} [mm]	30	25
z_{min} d_{min}	with contraflexure	z_{min}	25	25
		d_{min} [mm]	60	60

BRECOprotect®



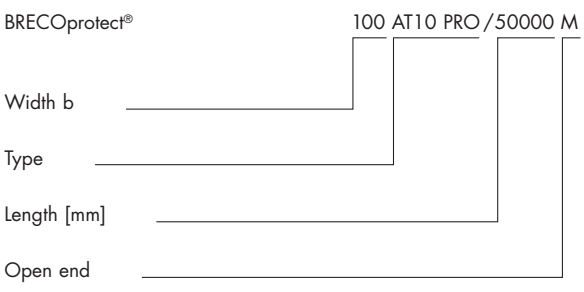
AT10 PRO

Belt widths b [mm]

25	32	50	75	100

AT10 PRO (M/V)	**Available lengths and versions**
Standard delivery lengths (M)	rolls of 50 or 100 m
Cut to lengths / lengths > 100 m	on request
Minimum length joined (V)	1100 mm
Standard material	TPUAU1
Belt color	blue
Belt widths	Available belt widths only according to table

Order example



Specific tooth force

rpm n [min⁻¹]	F_{Tspec} [N/cm]	rpm n [min⁻¹]	F_{Tspec} [N/cm]	rpm n [min⁻¹]	F_{Tspec} [N/cm]
0	87.500	1200	56.190	3600	37.925
20	86.216	1300	54.953	3800	36.972
40	85.013	1400	53.791	4000	36.064
60	83.881	1500	52.696	4500	33.967
80	82.814	1600	51.661	5000	32.079
100	81.803	1700	50.679	5500	30.362
200	77.426	1800	49.746	6000	28.787
300	73.870	1900	48.856	6500	27.333
400	70.877	2000	48.006	7000	25.982
500	68.291	2200	46.413	7500	24.721
600	66.016	2400	44.943	8000	23.538
700	63.984	2600	43.578	8500	22.425
800	62.148	2800	42.305	9000	21.374
900	60.475	3000	41.112	9500	20.377
1000	58.937	3200	39.989	10000	19.430
1100	57.514	3400	38.929		

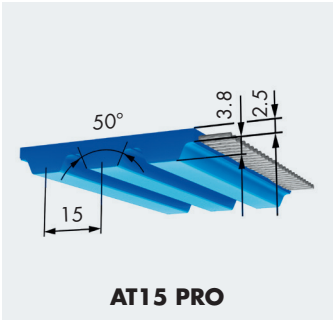
Admissible tensile load of the belt F_{Tadm} / belt weight

Belt width		b [mm]	25	32	50	75	100
M	Steel tension member	F_{Tadm} [N]	4250	5500	8500	12750	17000
	Specific elasticity	c_{spec} [N]	$1.06 \cdot 10^6$	$1.37 \cdot 10^6$	$2.12 \cdot 10^6$	$3.18 \cdot 10^6$	$4.25 \cdot 10^6$
V	Steel tension member	F_{Tadm} [N]	2125	2750	4250	6375	8500
Belt weight	Standard	[kg/m]	0.158	0.186	0.290	0.436	0.581

Flexibility (minimum number of teeth / minimum diameter)

			Steel tension member	
			M	V
z_{min} d_{min}	without contraflexure	z_{min}	18	18
		d_{min} [mm]	60	60
z_{min} d_{min}	with contraflexure	z_{min}	25	25
		d_{min} [mm]	120	120

BRECOprotect®



AT15 PRO

Belt widths b [mm]

25	32	50	75	100

AT15 PRO (M/V)	**Available lengths and versions**
Standard delivery lengths (M)	rolls of 50 or 100 m
Cut to lengths / lengths > 100 m	on request
Minimum length joined (V)	1260 mm
Standard material	TPUAU1
Belt color	blue
Belt widths	Available belt widths only according to table

Order example

BRECOprotect® 75 AT15 PRO/9000 V

- Width b
- Type
- Length [mm]
- Welded

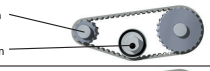
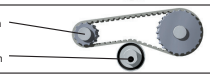
Specific tooth force

rpm n [min⁻¹]	F_{Tspec} [N/cm]	rpm n [min⁻¹]	F_{Tspec} [N/cm]	rpm n [min⁻¹]	F_{Tspec} [N/cm]
0	133.000	1200	80.981	3600	51.147
20	130.818	1300	78.954	3800	49.593
40	128.780	1400	77.052	4000	48.114
60	126.869	1500	75.260	4500	44.699
80	125.069	1600	73.567	5000	41.624
100	123.368	1700	71.962	5500	38.829
200	116.038	1800	70.436	6000	36.265
300	110.119	1900	68.982	6500	33.898
400	105.155	2000	67.594		
500	100.880	2200	64.991		
600	97.125	2400	62.591		
700	93.778	2600	60.364		
800	90.759	2800	58.288		
900	88.009	3000	56.342		
1000	85.485	3200	54.511		
1100	83.151	3400	52.783		

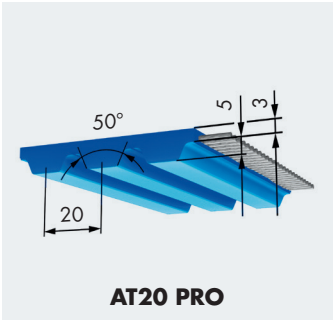
Admissible tensile load of the belt F_{Tadm} / belt weight

Belt width		b [mm]	25	32	50	75	100
M	Steel tension member	F_{Tadm} [N]	4800	5600	9600	14400	19200
	Specific elasticity	c_{spec} [N]	$1.2 \cdot 10^6$	$1.4 \cdot 10^6$	$2.4 \cdot 10^6$	$3.6 \cdot 10^6$	$4.8 \cdot 10^6$
V	Steel tension member	F_{Tadm} [N]	2400	2800	4800	7200	9600
Belt weight	Standard	[kg/m]	0.194	0.248	0.388	0.581	0.775

Flexibility (minimum number of teeth / minimum diameter)

		Steel tension member		
			M	V
z_{min} d_{min} 	without contraflexure	z_{min}	25	25
		d_{min} [mm]	120	120
z_{min} d_{min} 	with contraflexure	z_{min}	40	40
		d_{min} [mm]	250	250

BRECOprotect®



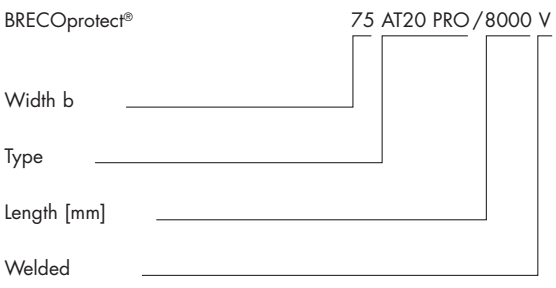
AT20 PRO

Belt widths b [mm]

25	50	75	100

AT20 PRO (M/V)	**Available lengths and versions**
Standard delivery lengths (M)	rolls of 50 or 100 m
Cut to lengths / lengths > 100 m	on request
Minimum length joined (V)	1260 mm
Standard material	TPUAU1
Belt color	blue
Belt widths	Available belt widths only according to table

Order example



Specific tooth force

rpm n [min⁻¹]	F_{Tspec} [N/cm]	rpm n [min⁻¹]	F_{Tspec} [N/cm]	rpm n [min⁻¹]	F_{Tspec} [N/cm]
0	175.000	1200	98.938	3600	56.081
20	171.733	1300	96.018	3800	53.854
40	168.692	1400	93.279	4000	51.735
60	165.847	1500	90.700	4500	46.843
80	163.175	1600	88.264	5000	42.440
100	160.655	1700	85.956	5500	38.437
200	149.850	1800	83.762	6000	34.767
300	141.179	1900	81.673	6500	31.380
400	133.936	2000	79.678		
500	127.717	2200	75.940		
600	122.268	2400	72.494		
700	117.419	2600	69.299		
800	113.051	2800	66.319		
900	109.077	3000	63.528		
1000	105.432	3200	60.904		
1100	102.066	3400	58.426		

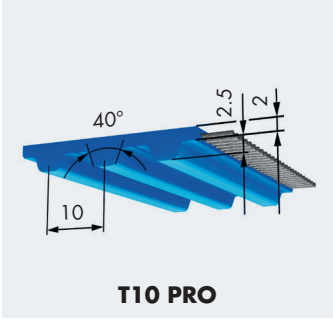
Admissible tensile load of the belt F_{Tadm} / belt weight

Belt width		b [mm]	25	50	75	100
M	Steel tension member	F_{Tadm} [N]	5600	11200	16800	22400
	Specific elasticity	c_{spec} [N]	$1.4 \cdot 10^6$	$2.8 \cdot 10^6$	$4.2 \cdot 10^6$	$5.6 \cdot 10^6$
V	Steel tension member	F_{Tadm} [N]	2800	5600	8400	11200
Belt weight	Standard	[kg/m]	0.240	0.480	0.720	0.960

Flexibility (minimum number of teeth / minimum diameter)

			Steel tension member	
			M	V
z_{min} d_{min}	without contraflexure	z_{min}	18	18
		d_{min} [mm]	120	120
z_{min} d_{min}	with contraflexure	z_{min}	25	25
		d_{min} [mm]	180	180

BRECOprotect®



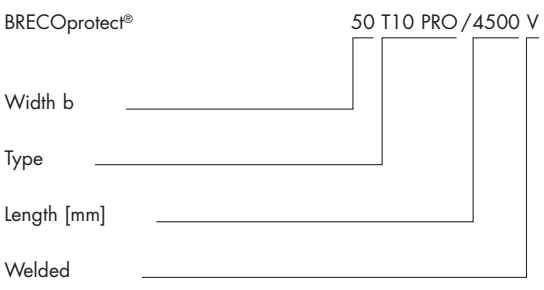
T10 PRO

Belt widths b [mm]

16	25	32	50	75	100

T10 PRO (M/V)	**Available lengths and versions**
Standard delivery lengths (M)	rolls of 50 or 100 m
Cut to lengths / lengths > 100 m	on request
Minimum length joined (V)	1100 mm
Standard material	TPUAU1
Belt color	blue
Belt widths	Available belt widths only according to table

Order example



Specific tooth force

rpm n [min^{-1}]	F_{Tspec} [N/cm]	rpm n [min^{-1}]	F_{Tspec} [N/cm]	rpm n [min^{-1}]	F_{Tspec} [N/cm]
0	50.50	1200	29.30	3600	20.70
20	49.00	1300	28.70	3800	20.30
40	47.70	1400	28.20	4000	19.86
60	46.60	1500	27.60	4500	18.91
80	45.70	1600	27.10	5000	18.06
100	44.80	1700	26.70	5500	17.28
200	41.40	1800	26.20	6000	16.58
300	39.10	1900	25.80	6500	15.93
400	37.20	2000	25.40	7000	15.33
500	35.70	2200	24.60	7500	14.76
600	34.40	2400	23.90	8000	14.24
700	33.30	2600	23.30	8500	13.74
800	32.40	2800	22.70	9000	13.28
900	31.50	3000	22.20	9500	12.84
1000	30.70	3200	21.70	10000	12.42
1100	30.00	3400	21.20		

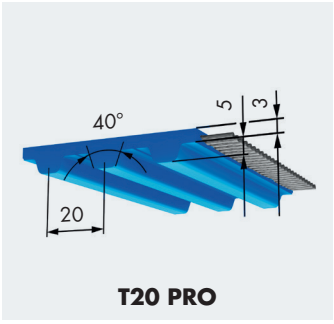
Admissible tensile load of the belt F_{Tadm} / belt weight

Belt width		b [mm]	16	25	32	50	75	100
M	Steel tension member	F_{Tadm} [N]	1400	2200	2800	4400	6600	8800
	Specific elasticity	c_{spec} [N]	$3.5 \cdot 10^5$	$5.5 \cdot 10^5$	$7.0 \cdot 10^5$	$11.0 \cdot 10^5$	$16.5 \cdot 10^5$	$22.0 \cdot 10^5$
V	Steel tension member	F_{Tadm} [N]	700	1100	1400	2200	3300	4400
Belt weight	Standard	[kg/m]	0.073	0.114	0.145	0.227	0.341	0.454

Flexibility (minimum number of teeth / minimum diameter)

			Steel tension member	
			M	V
z_{min} d_{min}	without contraflexure	z_{min}	15	15
		d_{min} [mm]	60	60
z_{min} d_{min}	with contraflexure	z_{min}	20	20
		d_{min} [mm]	60	60

BRECOprotect®



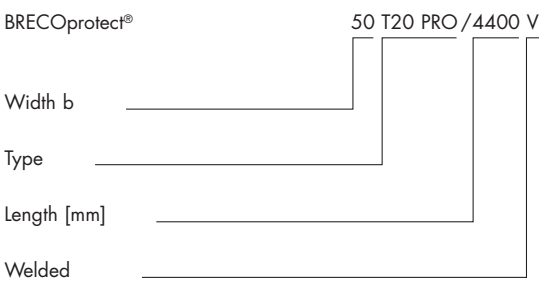
T20 PRO

Belt widths b [mm]

25	50

T20 PRO (M/V)	**Available lengths and versions**
Standard delivery lengths (M)	rolls of 50 or 100 m
Cut to lengths / lengths > 100 m	on request
Minimum length joined (V)	1260 mm
Standard material	TPUAU1
Belt color	blue
Belt widths	Available belt widths only according to table

Order example



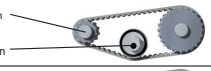
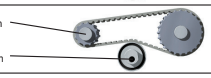
Specific tooth force

rpm n [min⁻¹]	F_{Tspec} [N/cm]	rpm n [min⁻¹]	F_{Tspec} [N/cm]	rpm n [min⁻¹]	F_{Tspec} [N/cm]
0	101.50	1200	54.20	3600	34.90
20	98.10	1300	52.80	3800	33.90
40	95.30	1400	51.50	4000	33.00
60	92.80	1500	50.30	4500	30.80
80	90.70	1600	49.20	5000	28.90
100	88.70	1700	48.20	5500	27.20
200	81.20	1800	47.20	6000	25.60
300	75.90	1900	46.20	6500	24.20
400	71.80	2000	45.30		
500	68.40	2200	43.60		
600	65.60	2400	42.10		
700	63.10	2600	40.70		
800	60.90	2800	39.40		
900	59.00	3000	38.10		
1000	57.20	3200	37.00		
1100	55.60	3400	35.90		

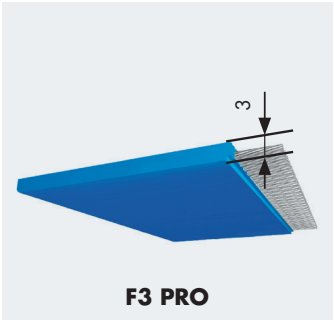
Admissible tensile load of the belt F_{Tadm} / belt weight

Belt width		b [mm]	25	50
M	Steel tension member	F_{Tadm} [N]	3500	7000
	Specific elasticity	c_{spec} [N]	$0.87 \cdot 10^6$	$1.75 \cdot 10^6$
V	Steel tension member	F_{Tadm} [N]	1750	3500
Belt weight	Standard	[kg/m]	0.184	0.368

Flexibility (minimum number of teeth / minimum diameter)

			Steel tension member	
			M	V
z_{min} d_{min} 	without contraflexure	z_{min}	15	15
		d_{min} [mm]	120	120
z_{min} d_{min} 	with contraflexure	z_{min}	25	25
		d_{min} [mm]	120	120

BRECOprotect®



F3 PRO

Belt widths b [mm]

25	50

F3 PRO (M) — Available lengths and versions

Standard delivery lengths (M)	rolls of 50 or 100 m
Cut to lengths / lengths > 100 m	on request
Minimum length joined (V)	–
Standard material	TPUAU1
Belt color	blue
Belt widths	Available belt widths only according to table

Admissible tensile load of the belt F_{Tadm} / belt weight

Belt width		b [mm]	25	50
M	Steel tension member	F_{Tadm} [N]	7350	14700
	Tensile strength	F_{break} [N]	29400	58800
V	Specific elasticity	c_{spec} [N]	$1.84 \cdot 10^6$	$3.68 \cdot 10^6$
Belt weight	Standard	[kg/m]	0.172	0.343

Flexibility (minimum number of teeth / minimum diameter)

			Steel tension member
			M
z_{min} d_{min}	without contraflexure	d_{min} [mm]	120
z_{min} d_{min}	with contraflexure	z_{min}	150
		d_{min} [mm]	150

Order example

BRECOprotect® 50 F3 PRO / 50000 M

- Width b
- Type
- Length [mm]
- Open end

Mechanical reworking

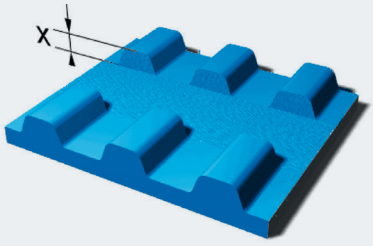
Mechanical reworkings are possible in principle; however, this process can affect the corrosion protection and the cleaning process.

If belt machining is performed, care must always be taken to avoid exposure of the steel tension cords. Exposed or damaged tension cords, are no longer protected against corrosion, and hence use in high purity and clean environments, is no longer possible.

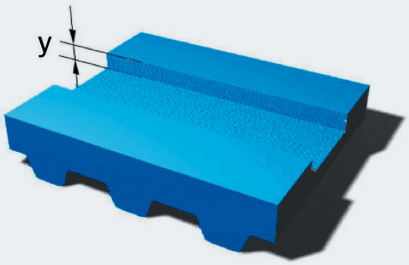
Furthermore, edges and corners produced from machining, will make the belt more difficult to keep clean.

The following table provides an overview of possible types of reworkings.

Reworkings				**AT5 PRO**	**AT10 PRO**	**T10 PRO**	**AT15 PRO**	**AT20 PRO**	**T20 PRO**	**F3 PRO**
Tooth longitudinal groove (X_{max})				0.6 mm	2.2 mm	2.2 mm	3.3 mm	4.5 mm	4.5 mm	–
Longitudinal or transverse back milling (y_{max})				–	0.3 mm	0.3 mm	0.3 mm	0.7 mm	0.6 mm	–
Welded guide	K6	without contraflexure	z_{min}	38	30	30	25	–	–	–
			d_{min} [mm]	60	95	95	120	–	–	–
		with contraflexure	z_{min}	38	30	30	40	–	–	–
			d_{min} [mm]	60	120	95	250	–	–	–
	K13	without contraflexure	z_{min}	–	48	48	34	25	25	–
			d_{min} [mm]	–	150	150	160	160	160	–
		with contraflexure	z_{min}	–	48	48	40	25	25	–
			d_{min} [mm]	–	150	150	250	180	180	–
Removal of individual teeth				possible						–
Chamfer of belt edges				only to tooth height						–
Back grinding				possible						
Longitudinal milling of belt edges				up to maximum 0.2 mm below nominal width						
Boring of belt				only possible on belt with cord free zone						



Tooth longitudinal groove



Longitudinal back milling

BRECOprotect®-end seal

The BRECOprotect® was designed to be used in contact with food environments and cleaning agents. To maximize its potential in open end version, an end seal is offered to maintain its conformity and anti rust properties.

The task of these end seals is to protect the exposed tension cords from environmental elements, such as cleaning fluids and water.

The end seal cannot transmit forces, as it is only a protective device.

Order information

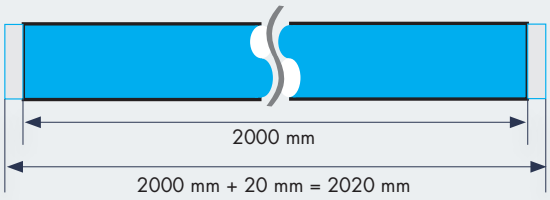
BRECOprotect® open end belts are used for converting rotational motion into a linear one, in order to convey goods over the required distance.

The travel distance determines the length of the belt; since the end seals do not contribute to this functional length, their dimensions will not be part of the functional belt length.

For example, if ordering a BRECOprotect® 25AT10 / 2000 M, the supplied belt will be produced in a total length of 2000 mm + (2 x 10 mm) = 2020 mm.

The extra 10 mm at each end of the belt, account for the end seals.

Please take this into consideration when considering the actual space for the belt to be installed on the machine.



Example: BRECOprotect® 25 AT10 / 2000 M with end seals

Food environment conformity

Compliance criteria

All BRECOprotect® products are manufactured to the requirements of the food and pharmaceutical industries.

These timing belts are produced with a polyurethane which meets the conformity criteria of the FDA regulations CFR § 177.1680, the European directives (EC) 1935-2004, (EU) Nr. 10/2011 and EC Directives 90/128/CEE and 96/11/CEE.

The blue color follows a general trend in the food industry; furthermore, an increasingly important declaration of conformity for the direct contact of food with the product is required.

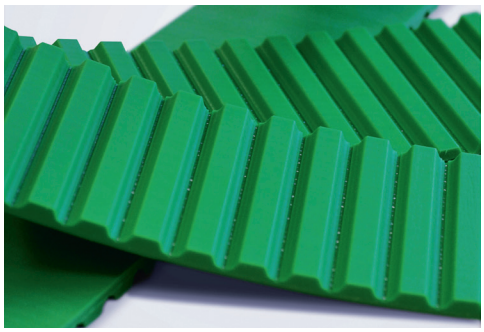
This means that it is no more sufficient to declare the conformity of the materials used, but the overall product conformity for food contact is necessary.

The tests to obtain this certification have been successfully carried out by the BRECOprotect® range and resulted in a corresponding certificate.

To obtain this certificate, a compliance with the GMP (Goods Manufacturing Practice) Directive (EC) 2023/2006, must be obtained; this ensures cleanliness and purity of the product even after the manufacturing process.

The declaration of conformity can be requested from Angst+Pfister.

BRECOgreen® / BRECOFLEXgreen®



All profiles standard assortment

This name stands for a range of timing belts that will not only benefit the customers who use them but also do their bit to help preserve the planet in general. The BRECOgreen® and BRECOFLEXgreen® ranges of timing belts are the first to take a step beyond merely creating another ordinary product. The word "green" in the name of these products highlights the optimised use of materials, with renewable materials making up 37% of the total.

It is particularly important that these materials are not taken from the human food chain. Since the load-bearing capacity and service life of BRECOgreen® / BRECOFLEXgreen® belts match those of belts manufactured from oil-based thermoplastic polyurethane, we can absolutely guarantee their full operational reliability.

Long-term market studies have shown that even small steps in the right direction are important. They encourage others to follow suit and help to develop new materials and techniques that can be transferred to other areas. We continue to invest all our energy in innovative technology so that we can help to preserve and improve the environment, climate and living conditions.

Overview

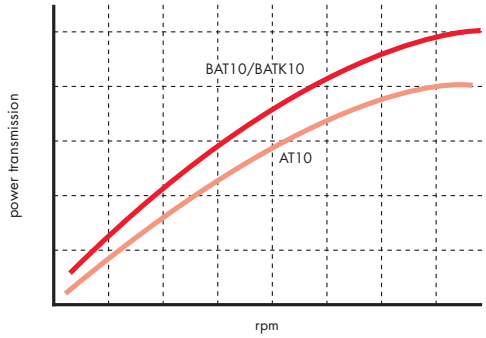
	Deliverable lengths
All product types from our green range can be delivered (except BRECOprotect® / BRECObasic®)	depends on type

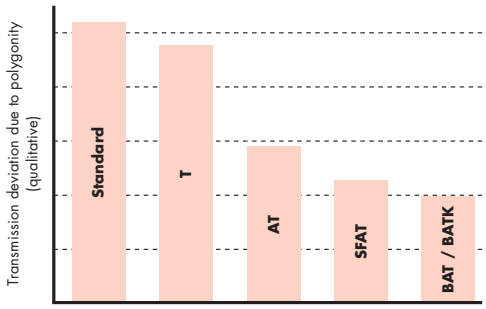
Self-guiding PU timing belts
BAT / BATK

Introduction

"New profile shapes result in improved performance features", this comment often describes the development possibilities of polyurethane timing belts. The curved tooth based on the proven AT profile forms the basis for the new BRECO® and BRECOFLEX® timing belts with curved teeth. The unique curved teeth guarantee notably improved transmission and running properties. On the one hand the BAT tooth has an increased load bearing capacity, on the other hand it does not abruptly run into the pulley gap but does so in a perfectly timed manner.
Both features combined lead to increased performance, clearly reduced running noise, as well as a higher transmission precision and a lower vibration tendency. The belt centers itself on the pulleys in the stated preferred running direction due to the curved shape of the tooth which produces the self-guiding effect.

The BATK timing belt has ensued from the BAT timing belt. Compared to the BAT, the BATK is provided with a guiding track resulting in a self-guiding timing belt in both running directions.

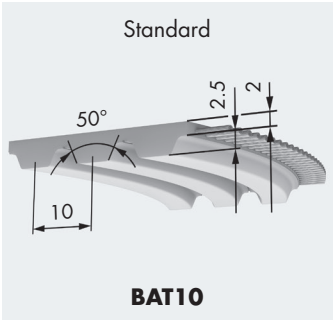




Special features

- increased tooth load resulting from the tooth curve
- clearly reduced running noise due to a time elongated tooth mesh
- higher power transmission precision and lower vibration tendency due to a reduced polygon effect
- the BAT is self-guiding in the preferred running direction, no flanges are required
- the BATK is self-guiding in both running directions due to the integrated guiding track making flanges obsolete
- length constant belts due to the application of high tensile steel cord tension members

Self-guiding PU timing belts
BRECO® BAT10



Belt widths b [mm]

25	32	50	75	100

BAT10 (M/V)	**Available lengths and versions**
Standard delivery lengths (M)	rolls of 50 or 100 m
Cut to lengths / lengths > 100 m	on request
Minimum length joined (V)	880 mm
Standard material	TPUST1[1)]
Steel tension member (Standard)	×
E / Steel tension member	–
Stainless steel tension member	○
PAZ	×
PAR	×
PAZ-PAR	×
DL / DL-PAZ	–
DR / DR-PAZ	–
T / T-PAZ	–

M open length
V joined
× available
○ minimum purchase amount on request
– not available
1) further materials on request

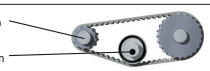
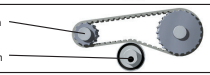
Specific tooth force

rpm n [min⁻¹]	F_{Tspec} [N/cm]	rpm n [min⁻¹]	F_{Tspec} [N/cm]	rpm n [min⁻¹]	F_{Tspec} [N/cm]
0	92.750	1200	59.562	3600	40.201
20	91.389	1300	58.250	3800	39.190
40	90.114	1400	57.018	4000	38.228
60	88.914	1500	55.858	4500	36.005
80	87.783	1600	54.761	5000	34.004
100	86.711	1700	53.720	5500	32.184
200	82.071	1800	52.731	6000	30.514
300	78.303	1900	51.788	6500	28.973
400	75.129	2000	50.887	7000	27.541
500	72.389	2200	49.198	7500	26.204
600	69.977	2400	47.639	8000	24.951
700	67.823	2600	46.193	8500	23.771
800	65.877	2800	44.843	9000	22.656
900	64.103	3000	43.579	9500	21.600
1000	62.473	3200	42.389	10000	20.596
1100	60.965	3400	41.265		

Admissible tensile load of the belt F_{Tadm} / belt weight

Belt width		b [mm]	25	32	50	75	100
M	E / Steel tension member	F_{Tadm} [N]	3750	5000	7500	12000	17000
	Specific elasticity (E / Steel tension member)	c_{spec} [N]	$1.06 \cdot 10^6$	$1.37 \cdot 10^6$	$2.12 \cdot 10^6$	$3.18 \cdot 10^6$	$4.25 \cdot 10^6$
	Stainless steel tension member	F_{Tadm} [N]	3000	4000	6000	9000	12000
	Specific elasticity (stainless steel tension member)	c_{spec} [N]	$1.06 \cdot 10^6$	$1.37 \cdot 10^6$	$2.12 \cdot 10^6$	$3.18 \cdot 10^6$	$4.25 \cdot 10^6$
V	E / Steel tension member	F_{Tadm} [N]	1875	2500	3750	6000	8500
	Stainless steel tension member	F_{Tadm} [N]	1500	2000	3000	4500	6000
Belt weight	Standard	[kg/m]	0.158	0.180	0.290	0.436	0.581
	DL	[kg/m]	–	–	–	–	–
	DR	[kg/m]	–	–	–	–	–
	T	[kg/m]	–	–	–	–	–

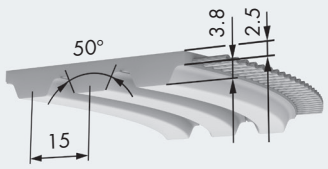
Flexibility (minimum number of teeth / minimum diameter)

			Steel tension member				E / Steel tension member				Stainless steel tension member			
			Standard	DL	DR	T	Standard	DL	DR	T	Standard	DL	DR	T
z_{min} / d_{min} 	without contraflexure	z_{min}	20 (25)	–	–	–	–	–	–	–	25	–	–	–
		d_{min} [mm]	60 (80)	–	–	–	–	–	–	–	80	–	–	–
z_{min} / d_{min} 	with contraflexure	z_{min}	25	–	–	–	–	–	–	–	40	–	–	–
		d_{min} [mm]	120	–	–	–	–	–	–	–	130	–	–	–

(Deviate values in brackets apply to joined timing belts)

Self-guiding PU timing belts
BRECO® BAT15

Standard



BAT15

Belt widths b [mm]

50	75	100

BAT15 (M/V)	**Available lengths and versions**
Standard delivery lengths (M)	rolls of 50 or 100 m
Cut to lengths / lengths > 100 m	on request
Minimum length joined (V)	960 mm
Standard material	TPUST1 [1]
Steel tension member (Standard)	×
E / Steel tension member	–
Stainless steel tension member	○
PAZ	×
PAR	×
PAZ-PAR	×
DL / DL-PAZ	–
DR / DR-PAZ	–
T / T-PAZ	–

M open length
V joined
× available
○ minimum purchase amount on request
– not available
[1] further materials on request

Specific tooth force

rpm n [min⁻¹]	F_{Tspec} [N/cm]	rpm n [min⁻¹]	F_{Tspec} [N/cm]	rpm n [min⁻¹]	F_{Tspec} [N/cm]
0	140.000	1200	85.243	3600	53.839
20	137.703	1300	83.110	3800	52.203
40	135.558	1400	81.107	4000	50.646
60	133.546	1500	79.222	4500	47.051
80	131.651	1600	77.439	5000	43.815
100	129.861	1700	75.749	5500	40.872
200	122.145	1800	74.143	6000	38.174
300	115.915	1900	72.613	6500	35.683
400	110.689	2000	71.151		
500	106.189	2200	68.412		
600	102.237	2400	65.885		
700	98.714	2600	63.541		
800	95.536	2800	61.355		
900	92.641	3000	59.307		
1000	89.984	3200	57.380		
1100	87.527	3400	55.561		

Admissible tensile load of the belt F_{Tadm} / belt weight

Belt width		b [mm]	50	75	100
M	E / Steel tension member	F_{Tadm} [N]	11200	16800	22400
	Specific elasticity (E / Steel tension member)	c_{spec} [N]	$2.80 \cdot 10^6$	$4.20 \cdot 10^6$	$5.60 \cdot 10^6$
	Stainless steel tension member	F_{Tadm} [N]	9000	13500	18000
	Specific elasticity (stainless steel tension member)	c_{spec} [N]	$2.80 \cdot 10^6$	$4.20 \cdot 10^6$	$5.60 \cdot 10^6$
V	E / Steel tension member	F_{Tadm} [N]	5600	8400	11200
	Stainless steel tension member	F_{Tadm} [N]	4500	6750	9000
Belt weight	Standard	[kg/m]	0.428	0.642	0.856
	DL	[kg/m]	–	–	–
	DR	[kg/m]	–	–	–
	T	[kg/m]	–	–	–

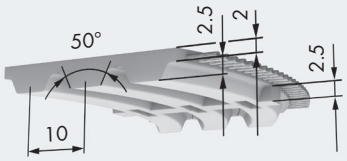
Flexibility (minimum number of teeth / minimum diameter)

			Steel tension member				E / Steel tension member				Stainless steel tension member			
			Standard	DL	DR	T	Standard	DL	DR	T	Standard	DL	DR	T
z_{min} / d_{min}	without contraflexure	z_{min}	20 (25)	–	–	–	–	–	–	–	25	–	–	–
		d_{min} [mm]	100 (120)	–	–	–	–	–	–	–	120	–	–	–
z_{min} / d_{min}	with contraflexure	z_{min}	30 (35)	–	–	–	–	–	–	–	35 (40)	–	–	–
		d_{min} [mm]	150 (180)	–	–	–	–	–	–	–	180 (190)	–	–	–

(Deviate values in brackets apply to joined timing belts)

Self-guiding PU timing belts
BRECO® BATK10

Standard



BATK10

Belt widths b [mm]

32	50	75	100

BATK10 (M/V)		**Available lengths and versions**
Standard delivery lengths (M)		rolls of 50 or 100 m
Cut to lengths / lengths > 100 m		on request
Minimum length joined (V)		880 mm
Standard material		TPUST1[1)]
Steel tension member (Standard)		×
E / Steel tension member		–
Stainless steel tension member		○
PAZ	Color: white	×
PAR	Color: green	×
PAZ-PAR	Color: white-green	×
DL / DL-PAZ		–
DR / DR-PAZ		–
T / T-PAZ		–

M open length
V joined
× available
○ minimum purchase amount on request
– not available
1) further materials on request

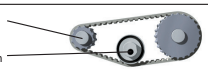
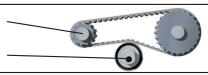
Specific tooth force

rpm n [min⁻¹]	F_{Tspec} [N/cm]	rpm n [min⁻¹]	F_{Tspec} [N/cm]	rpm n [min⁻¹]	F_{Tspec} [N/cm]
0	92.750	1200	59.562	3600	40.201
20	91.389	1300	58.250	3800	39.190
40	90.114	1400	57.018	4000	38.228
60	88.914	1500	55.858	4500	36.005
80	87.783	1600	54.761	5000	34.004
100	86.711	1700	53.720	5500	32.184
200	82.071	1800	52.731	6000	30.514
300	78.303	1900	51.788	6500	28.973
400	75.129	2000	50.887	7000	27.541
500	72.389	2200	49.198	7500	26.204
600	69.977	2400	47.639	8000	24.951
700	67.823	2600	46.193	8500	23.771
800	65.877	2800	44.843	9000	22.656
900	64.103	3000	43.579	9500	21.600
1000	62.473	3200	42.389	10000	20.596
1100	60.965	3400	41.265		

Admissible tensile load of the belt F_{Tadm} / belt weight

Belt width		b [mm]	32	50	75	100
M	E / Steel tension member	F_{Tadm} [N]	5000	7500	12000	17000
	Specific elasticity (E / Steel tension member)	c_{spec} [N]	$1.37 \cdot 10^6$	$2.12 \cdot 10^6$	$3.18 \cdot 10^6$	$4.25 \cdot 10^6$
	Stainless steel tension member	F_{Tadm} [N]	4000	6000	9000	12000
	Specific elasticity (stainless steel tension member)	c_{spec} [N]	$1.37 \cdot 10^6$	$2.12 \cdot 10^6$	$3.18 \cdot 10^6$	$4.25 \cdot 10^6$
V	E / Steel tension member	F_{Tadm} [N]	2500	3750	6000	8500
	Stainless steel tension member	F_{Tadm} [N]	2000	3000	4500	6000
Belt weight	Standard	[kg/m]	0.192	0.300	0.450	0.600
	DL	[kg/m]	–	–	–	–
	DR	[kg/m]	–	–	–	–
	T	[kg/m]	–	–	–	–

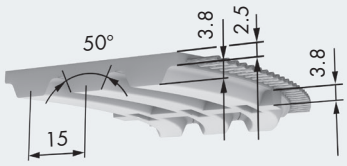
Flexibility (minimum number of teeth / minimum diameter)

			Steel tension member				E / Steel tension member				Stainless steel tension member			
			Standard	DL	DR	T	Standard	DL	DR	T	Standard	DL	DR	T
z_{min} / d_{min} 	without contraflexure	z_{min}	20 (25)	–	–	–	–	–	–	–	25	–	–	–
		d_{min} [mm]	60 (80)	–	–	–	–	–	–	–	80	–	–	–
z_{min} / d_{min} 	with contraflexure	z_{min}	25	–	–	–	–	–	–	–	40	–	–	–
		d_{min} [mm]	120	–	–	–	–	–	–	–	130	–	–	–

(Deviate values in brackets apply to joined timing belts)

Self-guiding PU timing belts
BRECO® BATK15

Standard



BATK15

Belt widths b [mm]

50	75	100

BATK15 (M/V)		**Available lengths and versions**
Standard delivery lengths (M)		rolls of 50 or 100 m
Cut to lengths / lengths > 100 m		on request
Minimum length joined (V)		960 mm
Standard material		TPUST1 [1]
Steel tension member (Standard)		×
E / Steel tension member		–
Stainless steel tension member		○
PAZ	Color: white	×
PAR	Color: green	×
PAZ-PAR	Color: white-green	×
DL / DL-PAZ		–
DR / DR-PAZ		–
T / T-PAZ		–

M open length
V joined
× available
○ minimum purchase amount on request
– not available
[1] further materials on request

Specific tooth force

rpm n [min⁻¹]	F_{Tspec} [N/cm]	rpm n [min⁻¹]	F_{Tspec} [N/cm]	rpm n [min⁻¹]	F_{Tspec} [N/cm]
0	140.000	1200	85.243	3600	53.839
20	137.703	1300	83.110	3800	52.203
40	135.558	1400	81.107	4000	50.646
60	133.546	1500	79.222	4500	47.051
80	131.651	1600	77.439	5000	43.815
100	129.861	1700	75.749	5500	40.872
200	122.145	1800	74.143	6000	38.174
300	115.915	1900	72.613	6500	35.683
400	110.689	2000	71.151		
500	106.189	2200	68.412		
600	102.237	2400	65.885		
700	98.714	2600	63.541		
800	95.536	2800	61.355		
900	92.641	3000	59.307		
1000	89.984	3200	57.380		
1100	87.527	3400	55.561		

Admissible tensile load of the belt F_{Tadm} / belt weight

Belt width		b [mm]	50	75	100
M	E / Steel tension member	F_{Tadm} [N]	11200	16800	22400
	Specific elasticity (E / Steel tension member)	c_{spec} [N]	$2.80 \cdot 10^6$	$4.20 \cdot 10^6$	$5.60 \cdot 10^6$
	Stainless steel tension member	F_{Tadm} [N]	9000	13500	18000
	Specific elasticity (stainless steel tension member)	c_{spec} [N]	$2.80 \cdot 10^6$	$4.20 \cdot 10^6$	$5.60 \cdot 10^6$
V	E / Steel tension member	F_{Tadm} [N]	5600	8400	11200
	Stainless steel tension member	F_{Tadm} [N]	4500	6750	9000
Belt weight	Standard	[kg/m]	0.428	0.642	0.856
	DL	[kg/m]	–	–	–
	DR	[kg/m]	–	–	–
	T	[kg/m]	–	–	–

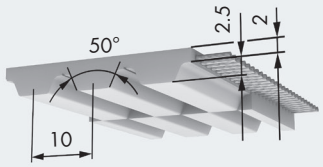
Flexibility (minimum number of teeth / minimum diameter)

			Steel tension member				E / Steel tension member				Stainless steel tension member			
			Standard	DL	DR	T	Standard	DL	DR	T	Standard	DL	DR	T
z_{min} / d_{min}	without contraflexure	z_{min}	20 (25)	–	–	–	–	–	–	–	25	–	–	–
		d_{min} [mm]	100 (120)	–	–	–	–	–	–	–	120	–	–	–
z_{min} / d_{min}	with contraflexure	z_{min}	30 (35)	–	–	–	–	–	–	–	35 (40)	–	–	–
		d_{min} [mm]	150 (180)	–	–	–	–	–	–	–	180 (190)	–	–	–

(Deviate values in brackets apply to joined timing belts)

Self-guiding PU timing belts
BRECO® SFAT10

Standard



SFAT10

Belt widths b [mm] / in-between belt widths on request

50	75	100

SFAT10 (M/V)	**Available lengths and versions**
Standard delivery lengths (M)	rolls of 50 or 100 m
Cut to lengths / lengths > 100 m	on request
Minimum length joined (V)	880 mm
Standard material	TPUST1 [1]
Steel tension member (Standard)	×
E / Steel tension member	○
Stainless steel tension member	○
PAZ	×
PAR	×
PAZ-PAR	×
DL / DL-PAZ	–
DR / DR-PAZ	–
T / T-PAZ	–

M open length
V joined
× available
○ minimum purchase amount on request
– not available
[1] further materials on request

Specific tooth force

rpm n [min⁻¹]	F_{Tspec} [N/cm]	rpm n [min⁻¹]	F_{Tspec} [N/cm]	rpm n [min⁻¹]	F_{Tspec} [N/cm]
0	87.500	1200	56.190	3600	37.925
20	86.216	1300	54.953	3800	36.972
40	85.013	1400	53.791	4000	36.064
60	83.881	1500	52.696	4500	33.967
80	82.814	1600	51.661	5000	32.079
100	81.803	1700	50.679	5500	30.362
200	77.426	1800	49.746	6000	28.787
300	73.870	1900	48.856	6500	27.333
400	70.877	2000	48.006	7000	25.982
500	68.291	2200	46.413	7500	24.721
600	66.016	2400	44.943	8000	23.538
700	63.984	2600	43.578	8500	22.425
800	62.148	2800	42.305	9000	21.374
900	60.475	3000	41.112	9500	20.377
1000	58.937	3200	39.989	10000	19.430
1100	57.514	3400	38.929		

Admissible tensile load of the belt F_{Tadm} / belt weight

Belt width		b [mm]	50	75	100
M	E / Steel tension member	F_{Tadm} [N]	7500	10500	16000
	Specific elasticity (E / Steel tension member)	c_{spec} [N]	$1.87 \cdot 10^6$	$2.62 \cdot 10^6$	$4.00 \cdot 10^6$
	Stainless steel tension member	F_{Tadm} [N]	5625	7875	12000
	Specific elasticity (stainless steel tension member)	c_{spec} [N]	$1.87 \cdot 10^6$	$2.62 \cdot 10^6$	$4.00 \cdot 10^6$
V	E / Steel tension member	F_{Tadm} [N]	3750	5250	8000
	Stainless steel tension member	F_{Tadm} [N]	2810	3940	6000
Belt weight	Standard	[kg/m]	0.290	0.436	0.581
	DL	[kg/m]	–	–	–
	DR	[kg/m]	–	–	–
	T	[kg/m]	–	–	–

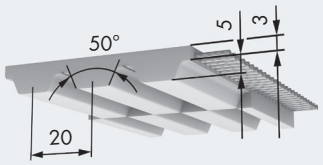
Flexibility (minimum number of teeth / minimum diameter)

			Steel tension member				E / Steel tension member				Stainless steel tension member			
			Standard	DL	DR	T	Standard	DL	DR	T	Standard	DL	DR	T
z_{min} / d_{min}	without contraflexure	z_{min}	15 (25)	–	–	–	12	–	–	–	25	–	–	–
		d_{min} [mm]	50 (80)	–	–	–	50	–	–	–	80	–	–	–
z_{min} / d_{min}	with contraflexure	z_{min}	25	–	–	–	20	–	–	–	40	–	–	–
		d_{min} [mm]	120	–	–	–	80	–	–	–	130	–	–	–

(Deviate values in brackets apply to joined timing belts)

Self-guiding PU timing belts
BRECO® SFAT20

Standard



SFAT20

Belt widths b [mm] / in-between belt widths on request

50	75	100

SFAT20 (M/V)	**Available lengths and versions**
Standard delivery lengths (M)	rolls of 50 m
Cut to lengths / lengths > 100 m	on request
Minimum length joined (V)	1500 mm
Standard material	TPUST1 [1]
Steel tension member (Standard)	×
E / Steel tension member	–
Stainless steel tension member	○
PAZ	×
PAR	×
PAZ-PAR	×
DL / DL-PAZ	–
DR / DR-PAZ	–
T / T-PAZ	–

M open length
V joined
× available
○ minimum purchase amount on request
– not available
[1] further materials on request

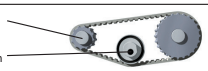
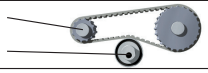
Specific tooth force

rpm n [min⁻¹]	F_{Tspec} [N/cm]	rpm n [min⁻¹]	F_{Tspec} [N/cm]	rpm n [min⁻¹]	F_{Tspec} [N/cm]
0	175.000	1200	98.938	3600	56.081
20	171.733	1300	96.018	3800	53.854
40	168.692	1400	93.279	4000	51.735
60	165.847	1500	90.700	4500	46.843
80	163.175	1600	88.264	5000	42.440
100	160.655	1700	85.956	5500	38.437
200	149.850	1800	83.762	6000	34.767
300	141.179	1900	81.673	6500	31.380
400	133.936	2000	79.678		
500	127.717	2200	75.940		
600	122.268	2400	72.494		
700	117.419	2600	69.299		
800	113.051	2800	66.319		
900	109.077	3000	63.528		
1000	105.432	3200	60.904		
1100	102.066	3400	58.426		

Admissible tensile load of the belt F_{Tadm} / belt weight

Belt width		b [mm]	50	75	100
M	E / Steel tension member	F_{Tadm} [N]	11200	16800	22400
	Specific elasticity (E / Steel tension member)	c_{spec} [N]	$2.80 \cdot 10^6$	$4.20 \cdot 10^6$	$5.60 \cdot 10^6$
	Stainless steel tension member	F_{Tadm} [N]	8960	13440	17920
	Specific elasticity (stainless steel tension member)	c_{spec} [N]	$2.80 \cdot 10^6$	$4.20 \cdot 10^6$	$5.60 \cdot 10^6$
V	E / Steel tension member	F_{Tadm} [N]	5600	8400	11200
	Stainless steel tension member	F_{Tadm} [N]	4480	6720	8960
Belt weight	Standard	[kg/m]	0.480	0.720	0.960
	DL	[kg/m]	–	–	–
	DR	[kg/m]	–	–	–
	T	[kg/m]	–	–	–

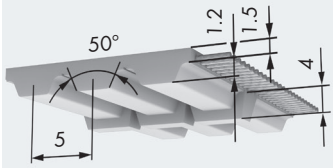
Flexibility (minimum number of teeth / minimum diameter)

			Steel tension member				E / Steel tension member				Stainless steel tension member			
			Standard	DL	DR	T	Standard	DL	DR	T	Standard	DL	DR	T
z_{min} / d_{min} 	without contraflexure	z_{min}	18 (20)	–	–	–	–	–	–	–	32	–	–	–
		d_{min} [mm]	120	–	–	–	–	–	–	–	200	–	–	–
z_{min} / d_{min} 	with contraflexure	z_{min}	25	–	–	–	–	–	–	–	60	–	–	–
		d_{min} [mm]	180	–	–	–	–	–	–	–	380	–	–	–

(Deviate values in brackets apply to joined timing belts)

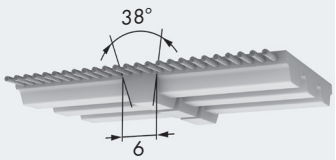
Self-guiding PU timing belts with track BRECO® ATK5K6

Standard



ATK5K6

Standard



ATK5K6

Belt widths b [mm] / in-between belt widths on request

32	50

ATK5K6 (M/V)	**Available lengths and versions**
Standard delivery lengths (M)	rolls of 50 or 100 m
Cut to lengths / lengths > 50 m	on request
Minimum length joined (V)	1000 mm
Standard material	TPUST1 [1]
Steel tension member (Standard)	×
E / Steel tension member	○
Stainless steel tension member	○
PAZ	×
PAR	×
PAZ-PAR	×
DL / DL-PAZ	–
DR / DR-PAZ	–
T / T-PAZ	–

M open length
V joined
× available
○ minimum purchase amount on request
– not available
[1] further materials on request

Specific tooth force

rpm n [min⁻¹]	F_{Tspec} [N/cm]	rpm n [min⁻¹]	F_{Tspec} [N/cm]	rpm n [min⁻¹]	F_{Tspec} [N/cm]
0	42.000	1200	29.488	3600	21.776
20	41.521	1300	28.971	3800	21.370
40	41.069	1400	28.484	4000	20.983
60	40.641	1500	28.025	4500	20.089
80	40.234	1600	27.590	5000	19.284
100	39.846	1700	27.177	5500	18.550
200	38.142	1800	26.784	6000	17.877
300	36.733	1900	26.409	6500	17.255
400	35.531	2000	26.050	7000	16.677
500	34.483	2200	25.377	7500	16.138
600	33.554	2400	24.755	8000	15.631
700	32.721	2600	24.177	8500	15.154
800	31.964	2800	23.637	9000	14.704
900	31.271	3000	23.130	9500	14.277
1000	30.633	3200	22.654	10000	13.871
1100	30.040	3400	22.203		

Admissible tensile load of the belt F_{Tadm} / belt weight

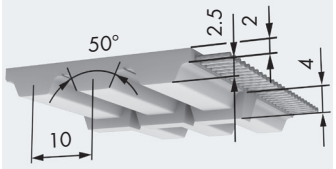
Belt width		b [mm]	32	50
M	E / Steel tension member	F_{Tadm} [N]	2240	3500
	Specific elasticity (E / Steel tension member)	c_{spec} [N]	$0.560 \cdot 10^6$	$0.875 \cdot 10^6$
	Stainless steel tension member	F_{Tadm} [N]	1460	2280
	Specific elasticity (stainless steel tension member)	c_{spec} [N]	$0.560 \cdot 10^6$	$0.875 \cdot 10^6$
V	E / Steel tension member	F_{Tadm} [N]	1120	1750
	Stainless steel tension member	F_{Tadm} [N]	730	1140
Belt weight	Standard	[kg/m]	0.118	0.117
	DL	[kg/m]	–	–
	DR	[kg/m]	–	–
	T	[kg/m]	–	–

Flexibility (minimum number of teeth / minimum diameter)

			Steel tension member				E / Steel tension member				Stainless steel tension member			
			Standard	DL	DR	T	Standard	DL	DR	T	Standard	DL	DR	T
z_{min} d_{min}	without contraflexure	z_{min}	25	–	–	–	25	–	–	–	25	–	–	–
		d_{min} [mm]	60	–	–	–	60	–	–	–	60	–	–	–
z_{min} d_{min}	with contraflexure	z_{min}	25	–	–	–	25	–	–	–	30	–	–	–
		d_{min} [mm]	60	–	–	–	60	–	–	–	60	–	–	–

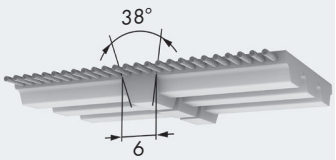
Self-guiding PU timing belts with track BRECO® ATK10K6

Standard



ATK10K6

Standard



ATK10K6

Belt widths b [mm] / Further belt widths on request

50

ATK10K6 (M/V)	**Available lengths and versions**
Standard delivery lengths (M)	rolls of 50 or 100 m
Cut to lengths / lengths > 50 m	on request
Minimum length joined (V)	1000 mm
Standard material	TPUST1 [1]
Steel tension member (Standard)	×
E / Steel tension member	–
Stainless steel tension member	○
PAZ	×
PAR	×
PAZ-PAR	×
DL / DL-PAZ	–
DR / DR-PAZ	–
T / T-PAZ	–

M open length
V joined
× available
○ minimum purchase amount on request
– not available
[1] further materials on request

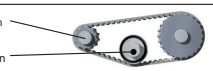
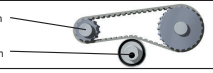
Specific tooth force

rpm n [min⁻¹]	F_{Tspec} [N/cm]	rpm n [min⁻¹]	F_{Tspec} [N/cm]	rpm n [min⁻¹]	F_{Tspec} [N/cm]
0	87.500	1200	56.190	3600	37.925
20	86.216	1300	54.953	3800	36.972
40	85.013	1400	53.791	4000	36.064
60	83.881	1500	52.696	4500	33.967
80	82.814	1600	51.661	5000	32.079
100	81.803	1700	50.679	5500	30.362
200	77.426	1800	49.746	6000	28.787
300	73.870	1900	48.856	6500	27.333
400	70.877	2000	48.006	7000	25.982
500	68.291	2200	46.413	7500	24.721
600	66.016	2400	44.943	8000	23.538
700	63.984	2600	43.578	8500	22.425
800	62.148	2800	42.305	9000	21.374
900	60.475	3000	41.112	9500	20.377
1000	58.937	3200	39.989	10000	19.430
1100	57.514	3400	38.929		

Admissible tensile load of the belt F_{Tadm} / belt weight

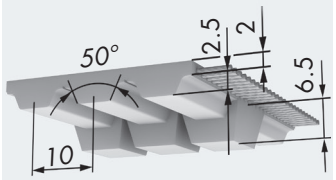
Belt width		b [mm]	50
M	E / Steel tension member	F_{Tadm} [N]	7500
	Specific elasticity (E / Steel tension member)	c_{spec} [N]	$1.87 \cdot 10^6$
	Stainless steel tension member	F_{Tadm} [N]	5625
	Specific elasticity (stainless steel tension member)	c_{spec} [N]	$1.87 \cdot 10^6$
V	E / Steel tension member	F_{Tadm} [N]	3750
	Stainless steel tension member	F_{Tadm} [N]	2815
Belt weight	Standard	[kg/m]	0.302
	DL	[kg/m]	–
	DR	[kg/m]	–
	T	[kg/m]	–

Flexibility (minimum number of teeth / minimum diameter)

		Steel tension member				E / Steel tension member				Stainless steel tension member			
		Standard	DL	DR	T	Standard	DL	DR	T	Standard	DL	DR	T
 without contraflexure	z_{min}	20	–	–	–	–	–	–	–	25	–	–	–
	d_{min} [mm]	60	–	–	–	–	–	–	–	80	–	–	–
 with contraflexure	z_{min}	25	–	–	–	–	–	–	–	40	–	–	–
	d_{min} [mm]	120	–	–	–	–	–	–	–	130	–	–	–

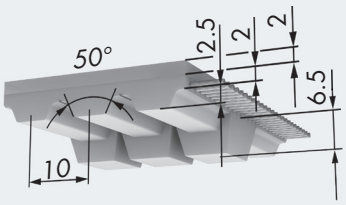
Self-guiding PU timing belts with track BRECO® ATK10K13

Standard



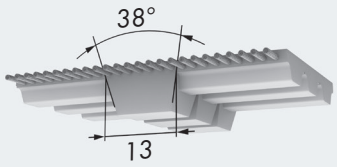
ATK10K13

Version T



ATK10K13

Standard



ATK10K13

Belt widths b [mm] / in-between belt widths on request

32	50	75	100	150

ATK10K13 (M/V)		**Available lengths and versions**
Standard delivery lengths (M)		rolls of 50 m
Cut to lengths / lengths > 50 m		on request
Minimum length joined (V)		1000 mm
Standard material		TPUST1 [1]
Steel tension member (Standard)		×
E / Steel tension member		–
Stainless steel tension member		○
PAZ		×
PAR		×
PAZ-PAR		×
DL / DL-PAZ		–
DR / DR-PAZ		–
T / T-PAZ	b_{max} = 100	○

M open length
V joined
× available
○ minimum purchase amount on request
– not available
[1] further materials on request

Specific tooth force

rpm n [min⁻¹]	F_{Tspec} [N/cm]	rpm n [min⁻¹]	F_{Tspec} [N/cm]	rpm n [min⁻¹]	F_{Tspec} [N/cm]
0	87.500	1200	56.190	3600	37.925
20	86.216	1300	54.953	3800	36.972
40	85.013	1400	53.791	4000	36.064
60	83.881	1500	52.696	4500	33.967
80	82.814	1600	51.661	5000	32.079
100	81.803	1700	50.679	5500	30.362
200	77.426	1800	49.746	6000	28.787
300	73.870	1900	48.856	6500	27.333
400	70.877	2000	48.006	7000	25.982
500	68.291	2200	46.413	7500	24.721
600	66.016	2400	44.943	8000	23.538
700	63.984	2600	43.578	8500	22.425
800	62.148	2800	42.305	9000	21.374
900	60.475	3000	41.112	9500	20.377
1000	58.937	3200	39.989	10000	19.430
1100	57.514	3400	38.929		

Admissible tensile load of the belt F_{Tadm} / belt weight

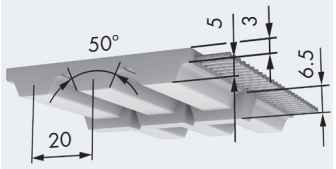
Belt width		b [mm]	32	50	75	100	150
M	E / Steel tension member	F_{Tadm} [N]	4500	7500	10500	16000	22000
	Specific elasticity (E / Steel tension member)	c_{spec} [N]	$1.20 \cdot 10^6$	$1.87 \cdot 10^6$	$2.80 \cdot 10^6$	$3.74 \cdot 10^6$	$5.61 \cdot 10^6$
	Stainless steel tension member	F_{Tadm} [N]	3375	5625	7875	12000	16500
	Specific elasticity (Stainless steel tension member)	c_{spec} [N]	$1.20 \cdot 10^6$	$1.87 \cdot 10^6$	$2.80 \cdot 10^6$	$3.74 \cdot 10^6$	$5.61 \cdot 10^6$
V	E / Steel tension member	F_{Tadm} [N]	2250	3750	5250	8000	11000
	Stainless steel tension member	F_{Tadm} [N]	1690	2815	3940	6000	8250
Belt weight	Standard	[kg/m]	0.227	0.331	0.465	0.621	0.889
	DL	[kg/m]	–	–	–	–	–
	DR	[kg/m]	–	–	–	–	–
	T	[kg/m]	0.303	0.451	0.645	0.861	–

Flexibility (minimum number of teeth / minimum diameter)

			Steel tension member				E / Steel tension member				Stainless steel tension member			
			Standard	DL	DR	T	Standard	DL	DR	T	Standard	DL	DR	T
z_{min} d_{min}	without contraflexure	z_{min}	20	–	–	25	–	–	–	–	25	–	–	25
		d_{min} [mm]	60	–	–	80	–	–	–	–	80	–	–	80
z_{min} d_{min}	with contraflexure	z_{min}	25	–	–	25	–	–	–	–	40	–	–	40
		d_{min} [mm]	120	–	–	120	–	–	–	–	130	–	–	130

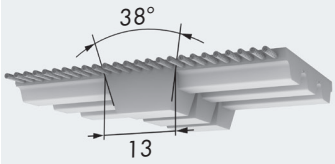
Self-guiding PU timing belts with track BRECO® ATK20K13

Standard



ATK20K13

Standard



ATK20K13

Belt widths b [mm] / in-between belt widths on request

75	100

ATK20K13 (M/V)	**Available lengths and versions**
Standard delivery lengths (M)	rolls of 50 m
Cut to lengths / lengths > 50 m	on request
Minimum length joined (V)	1000 mm
Standard material	TPUST1 [1]
Steel tension member (Standard)	×
E / Steel tension member	–
Stainless steel tension member	○
PAZ	×
PAR	–
PAZ-PAR	–
DL / DL-PAZ	–
DR / DR-PAZ	–
T / T-PAZ	–

M open length
V joined
× available
○ minimum purchase amount on request
– not available
[1] further materials on request

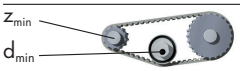
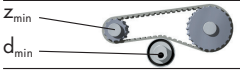
Specific tooth force

rpm n [min⁻¹]	F_{Tspec} [N/cm]	rpm n [min⁻¹]	F_{Tspec} [N/cm]	rpm n [min⁻¹]	F_{Tspec} [N/cm]
0	175.000	1200	98.938	3600	56.081
20	171.733	1300	96.018	3800	53.854
40	168.692	1400	93.279	4000	51.735
60	165.847	1500	90.700	4500	46.843
80	163.175	1600	88.264	5000	42.440
100	160.655	1700	85.956	5500	38.437
200	149.850	1800	83.762	6000	34.767
300	141.179	1900	81.673	6500	31.380
400	133.936	2000	79.678		
500	127.717	2200	75.940		
600	122.268	2400	72.494		
700	117.419	2600	69.299		
800	113.051	2800	66.319		
900	109.077	3000	63.528		
1000	105.432	3200	60.904		
1100	102.066	3400	58.426		

Admissible tensile load of the belt F_{Tadm} / belt weight

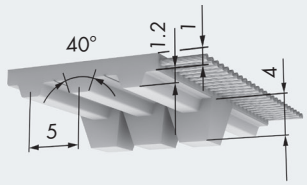
Belt width		b [mm]	75	100
M	E / Steel tension member	F_{Tadm} [N]	16800	22400
	Specific elasticity (E / Steel tension member)	c_{spec} [N]	$4.20 \cdot 10^6$	$5.60 \cdot 10^6$
	Stainless steel tension member	F_{Tadm} [N]	13440	17920
	Specific elasticity (stainless steel tension member)	c_{spec} [N]	$4.20 \cdot 10^6$	$5.60 \cdot 10^6$
V	E / Steel tension member	F_{Tadm} [N]	8400	11200
	Stainless steel tension member	F_{Tadm} [N]	6720	8960
Belt weight	Standard	[kg/m]	0.730	0.995
	DL	[kg/m]	–	–
	DR	[kg/m]	–	–
	T	[kg/m]	–	–

Flexibility (minimum number of teeth / minimum diameter)

		Steel tension member				E / Steel tension member				Stainless steel tension member			
		Standard	DL	DR	T	Standard	DL	DR	T	Standard	DL	DR	T
 without contraflexure	z_{min}	20	–	–	–	–	–	–	–	32	–	–	–
	d_{min} [mm]	120	–	–	–	–	–	–	–	200	–	–	–
 with contraflexure	z_{min}	25	–	–	–	–	–	–	–	60	–	–	–
	d_{min} [mm]	180	–	–	–	–	–	–	–	380	–	–	–

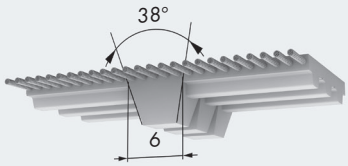
Self-guiding PU timing belts with track BRECO® TK5K6

Standard



TK5K6

Standard



TK5K6

Belt widths b [mm] / in-between belt widths on request

25	32	50

TK5K6 (M/V)	**Available lengths and versions**
Standard delivery lengths (M)	rolls of 50 or 100 m
Cut to lengths / lengths > 50 m	on request
Minimum length joined (V)	1000 mm
Standard material	TPUST1 [1]
Steel tension member (Standard)	×
E / Steel tension member	–
Stainless steel tension member	○
PAZ	×
PAR	×
PAZ-PAR	×
DL / DL-PAZ	–
DR / DR-PAZ	–
T / T-PAZ	–

M open length
V joined
× available
○ minimum purchase amount on request
– not available
[1] further materials on request

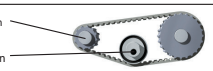
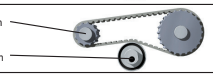
Specific tooth force

rpm n [min⁻¹]	F_{Tspec} [N/cm]	rpm n [min⁻¹]	F_{Tspec} [N/cm]	rpm n [min⁻¹]	F_{Tspec} [N/cm]
0	24.00	1200	15.31	3600	11.77
20	23.40	1300	15.06	3800	11.59
40	22.90	1400	14.83	4000	11.42
60	22.40	1500	14.61	4500	11.03
80	22.00	1600	14.40	5000	10.68
100	21.70	1700	14.21	5500	10.36
200	20.30	1800	14.03	6000	10.07
300	19.30	1900	13.85	6500	9.81
400	18.55	2000	13.69	7000	9.56
500	17.93	2200	13.38	7500	9.33
600	17.41	2400	13.10	8000	9.11
700	16.96	2600	12.84	8500	8.91
800	16.56	2800	12.59	9000	8.72
900	16.20	3000	12.37	9500	8.54
1000	15.88	3200	12.16	10000	8.37
1100	15.58	3400	11.96		

Admissible tensile load of the belt F_{Tadm} / belt weight

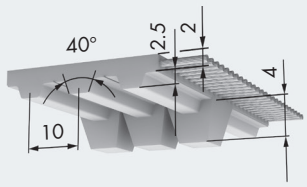
Belt width		b [mm]	25	32	50
M	E / Steel tension member	F_{Tadm} [N]	840	1080	1680
	Specific elasticity (E / Steel tension member)	c_{spec} [N]	$21.0 \cdot 10^4$	$27.0 \cdot 10^4$	$42.0 \cdot 10^4$
	Stainless steel tension member	F_{Tadm} [N]	640	820	1280
	Specific elasticity (stainless steel tension member)	c_{spec} [N]	$21.0 \cdot 10^4$	$27.0 \cdot 10^4$	$42.0 \cdot 10^4$
V	E / Steel tension member	F_{Tadm} [N]	420	540	840
	Stainless steel tension member	F_{Tadm} [N]	320	410	640
Belt weight	Standard	[kg/m]	0.067	0.082	0.119
	DL	[kg/m]	–	–	–
	DR	[kg/m]	–	–	–
	T	[kg/m]	–	–	–

Flexibility (minimum number of teeth / minimum diameter)

			Steel tension member				E / Steel tension member				Stainless steel tension member			
			Standard	DL	DR	T	Standard	DL	DR	T	Standard	DL	DR	T
z_{min} d_{min} 	without contraflexure	z_{min}	25	–	–	–	–	–	–	–	25	–	–	–
		d_{min} [mm]	60	–	–	–	–	–	–	–	60	–	–	–
z_{min} d_{min} 	with contraflexure	z_{min}	25	–	–	–	–	–	–	–	36	–	–	–
		d_{min} [mm]	80	–	–	–	–	–	–	–	80	–	–	–

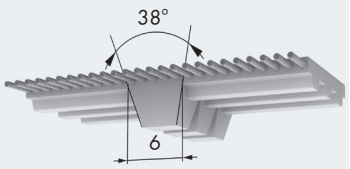
Self-guiding PU timing belts with track BRECO® TK10K6

Standard



TK10K6

Standard



TK10K6

Belt widths b [mm] / in-between belt widths on request

25	50

TK10K6 (M/V)	**Available lengths and versions**
Standard delivery lengths (M)	rolls of 50 or 100 m
Cut to lengths / lengths > 50 m	on request
Minimum length joined (V)	1000 mm
Standard material	TPUST1 [1]
Steel tension member (Standard)	×
E / Steel tension member	–
Stainless steel tension member	○
PAZ	×
PAR	×
PAZ-PAR	×
DL / DL-PAZ	–
DR / DR-PAZ	–
T / T-PAZ	–

M open length
V joined
× available
○ minimum purchase amount on request
– not available
[1] further materials on request

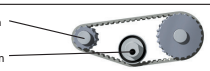
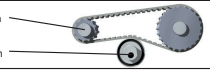
Specific tooth force

rpm n [min⁻¹]	F_{Tspec} [N/cm]	rpm n [min⁻¹]	F_{Tspec} [N/cm]	rpm n [min⁻¹]	F_{Tspec} [N/cm]
0	50.50	1200	29.30	3600	20.70
20	49.00	1300	28.70	3800	20.30
40	47.70	1400	28.20	4000	19.86
60	46.60	1500	27.60	4500	18.91
80	45.70	1600	27.10	5000	18.06
100	44.80	1700	26.70	5500	17.28
200	41.40	1800	26.20	6000	16.58
300	39.10	1900	25.80	6500	15.93
400	37.20	2000	25.40	7000	15.33
500	35.70	2200	24.60	7500	14.76
600	34.40	2400	23.90	8000	14.24
700	33.30	2600	23.30	8500	13.74
800	32.40	2800	22.70	9000	13.28
900	31.50	3000	22.20	9500	12.84
1000	30.70	3200	21.70	10000	12.42
1100	30.00	3400	21.20		

Admissible tensile load of the belt F_{Tadm} / belt weight

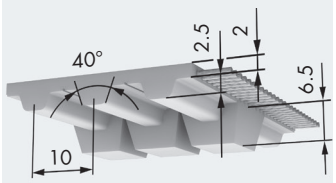
Belt width		b [mm]	25	50
M	E / Steel tension member	F_{Tadm} [N]	2400	4200
	Specific elasticity (E / Steel tension member)	c_{spec} [N]	$5.5 \cdot 10^5$	$11.0 \cdot 10^5$
	Stainless steel tension member	F_{Tadm} [N]	1920	3360
	Specific elasticity (stainless steel tension member)	c_{spec} [N]	$5.5 \cdot 10^5$	$11.0 \cdot 10^5$
V	E / Steel tension member	F_{Tadm} [N]	1200	2100
	Stainless steel tension member	F_{Tadm} [N]	960	1680
Belt weight	Standard	[kg/m]	0.129	0.239
	DL	[kg/m]	–	–
	DR	[kg/m]	–	–
	T	[kg/m]	–	–

Flexibility (minimum number of teeth / minimum diameter)

		Steel tension member				E / Steel tension member				Stainless steel tension member			
		Standard	DL	DR	T	Standard	DL	DR	T	Standard	DL	DR	T
 without contraflexure	z_{min}	20	–	–	–	–	–	–	–	25	–	–	–
	d_{min} [mm]	60	–	–	–	–	–	–	–	80	–	–	–
 with contraflexure	z_{min}	25	–	–	–	–	–	–	–	40	–	–	–
	d_{min} [mm]	80	–	–	–	–	–	–	–	130	–	–	–

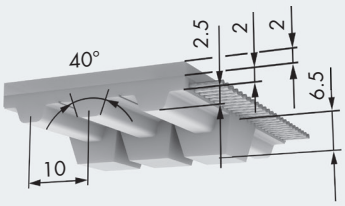
Self-guiding PU timing belts with track BRECO® TK10K13

Standard



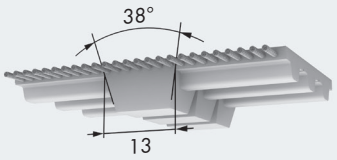
TK10K13

Version T



TK10K13

Standard



TK10K13

Belt widths b [mm] / in-between belt widths on request

32	50	75	100

TK10K13 (M/V)	**Available lengths and versions**
Standard delivery lengths (M)	rolls of 50 or 100 m
Cut to lengths / lengths > 50 m	on request
Minimum length joined (V)	1000 mm
Standard material	TPUST1 [1]
Steel tension member (Standard)	×
E / Steel tension member	–
Stainless steel tension member	○
PAZ	×
PAR	×
PAZ-PAR	×
DL / DL-PAZ	–
DR / DR-PAZ	–
T / T-PAZ	○

M open length
V joined
× available
○ minimum purchase amount on request
– not available
[1] further materials on request

Specific tooth force

rpm n [min⁻¹]	F_{Tspec} [N/cm]	rpm n [min⁻¹]	F_{Tspec} [N/cm]	rpm n [min⁻¹]	F_{Tspec} [N/cm]
0	50.50	1200	29.30	3600	20.70
20	49.00	1300	28.70	3800	20.30
40	47.70	1400	28.20	4000	19.86
60	46.60	1500	27.60	4500	18.91
80	45.70	1600	27.10	5000	18.06
100	44.80	1700	26.70	5500	17.28
200	41.40	1800	26.20	6000	16.58
300	39.10	1900	25.80	6500	15.93
400	37.20	2000	25.40	7000	15.33
500	35.70	2200	24.60	7500	14.76
600	34.40	2400	23.90	8000	14.24
700	33.30	2600	23.30	8500	13.74
800	32.40	2800	22.70	9000	13.28
900	31.50	3000	22.20	9500	12.84
1000	30.70	3200	21.70	10000	12.42
1100	30.00	3400	21.20		

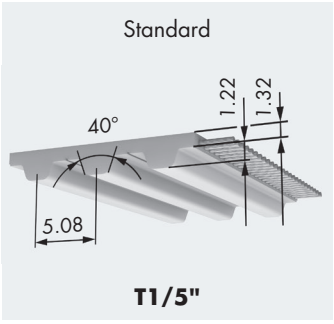
Admissible tensile load of the belt F_{Tadm} / belt weight

Belt width		b [mm]	32	50	75	100
M	E / Steel tension member	F_{Tadm} [N]	2600	4200	5200	8400
	Specific elasticity (E / Steel tension member)	c_{spec} [N]	7.0·105	11.0·105	16.5·105	22.0·105
	Stainless steel tension member	F_{Tadm} [N]	2080	3360	4160	6720
	Specific elasticity (stainless steel tension member)	c_{spec} [N]	$7.0 \cdot 10^5$	$11.0 \cdot 10^5$	$16.5 \cdot 10^5$	$22.0 \cdot 10^5$
V	E / Steel tension member	F_{Tadm} [N]	1300	2100	2600	3300
	Stainless steel tension member	F_{Tadm} [N]	1040	1680	2080	3360
Belt weight	Standard	[kg/m]	0.282	0.407	0.569	0.735
	DL	[kg/m]	–	–	–	–
	DR	[kg/m]	–	–	–	–
	T	[kg/m]	–	–	–	–

Flexibility (minimum number of teeth / minimum diameter)

			Steel tension member				E / Steel tension member				Stainless steel tension member			
			Standard	DL	DR	T	Standard	DL	DR	T	Standard	DL	DR	T
z_{min} d_{min}	without contraflexure	z_{min}	25	–	–	25	–	–	–	–	25	–	–	25
		d_{min} [mm]	80	–	–	80	–	–	–	–	80	–	–	80
z_{min} d_{min}	with contraflexure	z_{min}	25	–	–	25	–	–	–	–	40	–	–	40
		d_{min} [mm]	80	–	–	80	–	–	–	–	130	–	–	130

PU timing belts with imperial pitch
BRECO® T1/5" - XL



Belt widths b [mm] / in-between belt widths on request

6.35*	7.94	9.53	12.7	19.1	25.4

*only M

T1/5" (M/V)		**Available lengths and versions**
Standard delivery lengths (M)		rolls of 50 or 100 m
Cut to lengths / lengths > 100 m		on request
Minimum length joined (V)	b_{min} = 7.94	880 mm
Standard material		TPUST1 [1)]
Steel tension member (Standard)		×
E / Steel tension member		–
Stainless steel tension member		–
PAZ		×
PAR		×
PAZ-PAR		×
DL / DL-PAZ		–
DR / DR-PAZ		–
T / T-PAZ		–

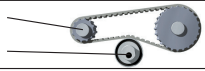
M open length
V joined
× available
○ minimum purchase amount on request
– not available
1) further materials on request

Specific tooth force

rpm n [min⁻¹]	F_{Tspec} [N/cm]	rpm n [min⁻¹]	F_{Tspec} [N/cm]	rpm n [min⁻¹]	F_{Tspec} [N/cm]
0	24.40	1200	15.57	3600	11.96
20	23.80	1300	15.31	3800	11.78
40	23.20	1400	15.07	4000	11.61
60	22.80	1500	14.85	4500	11.21
80	22.40	1600	14.64	5000	10.86
100	22.00	1700	14.45	5500	10.54
200	20.60	1800	14.26	6000	10.24
300	19.63	1900	14.08	6500	9.97
400	18.86	2000	13.91	7000	9.72
500	18.23	2200	13.60	7500	9.49
600	17.70	2400	13.31	8000	9.27
700	17.24	2600	13.05	8500	9.06
800	16.83	2800	12.80	9000	8.86
900	16.47	3000	12.57	9500	8.68
1000	16.14	3200	12.36	10000	8.51
1100	15.84	3400	12.16		

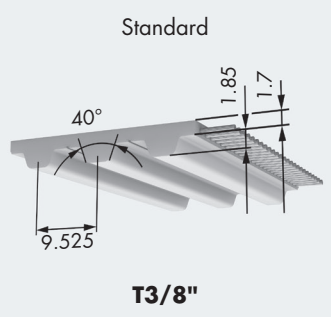
Admissible tensile load of the belt F_{Tadm} / belt weight

Belt width		b [mm]	6.35	7.94	9.53	12.7	19.1	25.4
M	E / Steel tension member	F_{Tadm} [N]	210	240	330	390	660	840
	Specific elasticity (E / Steel tension member)	c_{spec} [N]	$5.25 \cdot 10^4$	$6.0 \cdot 10^4$	$8.25 \cdot 10^4$	$9.75 \cdot 10^4$	$16.5 \cdot 10^4$	$21.0 \cdot 10^4$
	Stainless steel tension member	F_{Tadm} [N]	–	–	–	–	–	–
	Specific elasticity (stainless steel tension member)	c_{spec} [N]	–	–	–	–	–	–
V	E / Steel tension member	F_{Tadm} [N]	–	120	165	195	330	420
	Stainless steel tension member	F_{Tadm} [N]	–	–	–	–	–	–
Belt weight	Standard	[kg/m]	0.015	0.019	0.023	0.03	0.046	0.061
	DL	[kg/m]	–	–	–	–	–	–
	DR	[kg/m]	–	–	–	–	–	–
	T	[kg/m]	–	–	–	–	–	–

		Steel tension member				E / Steel tension member				Stainless steel tension member			
		Standard	DL	DR	T	Standard	DL	DR	T	Standard	DL	DR	T
z_{min}  d_{min} without contraflexure	z_{min}	10 (25)	–	–	–	–	–	–	–	–	–	–	–
	d_{min} [mm]	30 (60)	–	–	–	–	–	–	–	–	–	–	–
z_{min}  d_{min} with contraflexure	z_{min}	15 (25)	–	–	–	–	–	–	–	–	–	–	–
	d_{min} [mm]	30 (60)	–	–	–	–	–	–	–	–	–	–	–

(Deviate values in brackets apply to joined timing belts)

PU timing belts with imperial pitch
BRECO® T3/8" - L



Belt widths b [mm] / in-between belt widths on request

9.53	12.7	19.1	25.4	38.1	50.8	76.2

T3/8" (M/V)	**Available lengths and versions**
Standard delivery lengths (M)	rolls of 50 or 100 m
Cut to lengths / lengths > 100 m	on request
Minimum length joined (V)	880 mm
Standard material	TPUST1[1)]
Steel tension member (Standard)	×
E / Steel tension member	–
Stainless steel tension member	–
PAZ	×
PAR	×
PAZ-PAR	×
DL / DL-PAZ	–
DR / DR-PAZ	–
T / T-PAZ	–

M open length
V joined
× available
○ minimum purchase amount on request
– not available
1) further materials on request

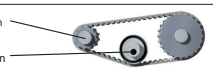
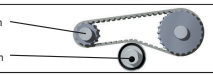
Specific tooth force

rpm n [min⁻¹]	F_{Tspec} [N/cm]	rpm n [min⁻¹]	F_{Tspec} [N/cm]	rpm n [min⁻¹]	F_{Tspec} [N/cm]
0	37.40	1200	21.70	3600	15.32
20	36.30	1300	21.30	3800	15.00
40	35.50	1400	20.80	4000	14.69
60	34.50	1500	20.40	4500	13.99
80	33.80	1600	20.10	5000	13.36
100	33.10	1700	19.72	5500	12.79
200	30.70	1800	19.39	6000	12.27
300	28.90	1900	19.08	6500	11.79
400	27.50	2000	18.78	7000	11.34
500	26.40	2200	18.22	7500	10.93
600	25.50	2400	17.71	8000	10.54
700	24.70	2600	17.25	8500	10.17
800	24.00	2800	16.81	9000	9.83
900	23.30	3000	16.40	9500	9.50
1000	22.70	3200	16.02	10000	9.19
1100	22.20	3400	15.66		

Admissible tensile load of the belt F_{Tadm} / belt weight

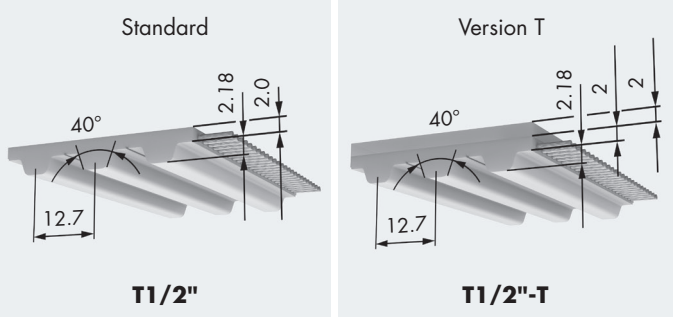
Belt width		b [mm]	9.53	12.7	19.1	25.4	38.1	50.8	76.2
M	E / Steel tension member	F_{Tadm} [N]	630	840	1260	1680	2520	3500	5040
	Specific elasticity (E / Steel tension member)	c_{spec} [N]	$15.8 \cdot 10^4$	$21.0 \cdot 10^4$	$31.5 \cdot 10^4$	$42.0 \cdot 10^4$	$63.0 \cdot 10^4$	$87.0 \cdot 10^4$	$1.26 \cdot 10^5$
	Stainless steel tension member	F_{Tadm} [N]	–	–	–	–	–	–	–
	Specific elasticity (stainless steel tension member)	c_{spec} [N]	-	-	-	-	-	-	-
V	E / Steel tension member	F_{Tadm} [N]	315	420	630	840	1260	1750	2520
	Stainless steel tension member	F_{Tadm} [N]	–	–	–	–	–	–	–
Belt weight	Standard	[kg/m]	0.033	0.044	0.066	0.08	0.133	0.178	0.266
	DL	[kg/m]	–	–	–	–	–	–	–
	DR	[kg/m]	–	–	–	–	–	–	–
	T	[kg/m]	–	–	–	–	–	–	–

Flexibility (minimum number of teeth / minimum diameter)

			Steel tension member				E / Steel tension member				Stainless steel tension member			
			Standard	DL	DR	T	Standard	DL	DR	T	Standard	DL	DR	T
z_{min} / d_{min} 	without contraflexure	z_{min}	15 (20)	–	–	–	–	–	–	–	–	–	–	–
		d_{min} [mm]	60	–	–	–	–	–	–	–	–	–	–	–
z_{min} / d_{min} 	with contraflexure	z_{min}	20 (25)	–	–	–	–	–	–	–	–	–	–	–
		d_{min} [mm]	60 (80)	–	–	–	–	–	–	–	–	–	–	–

(Deviate values in brackets apply to joined timing belts)

PU timing belts with imperial pitch
BRECO® T1/2" - H



Belt widths b [mm] / in-between belt widths on request

12.7	19.1	25.4	38.1	50.8	76.2	101.6	152.4

T1/2" (M/V)		**Available lengths and versions**
Standard delivery lengths (M)		rolls of 50 or 100 m
Cut to lengths / lengths > 100 m		on request
Minimum length joined (V)	Standard	880 mm
	b = 152.4	1000 mm
Standard material		TPUST1[1)]
Steel tension member (Standard)		×
E / Steel tension member		–
Stainless steel tension member		○
PAZ		×
PAR		×
PAZ-PAR		×
DL / DL-PAZ		–
DR / DR-PAZ		–
T / T-PAZ	b_{max} = 101.6	○

M open length
V joined
× available
○ minimum purchase amount on request
– not available
[1)] further materials on request

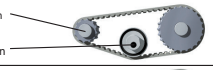
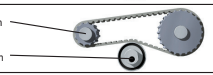
Specific tooth force

rpm n [min⁻¹]	F_{Tspec} [N/cm]	rpm n [min⁻¹]	F_{Tspec} [N/cm]	rpm n [min⁻¹]	F_{Tspec} [N/cm]
0	44.00	1200	25.60	3600	18.05
20	42.70	1300	25.10	3800	17.68
40	41.60	1400	24.60	4000	17.32
60	40.70	1500	24.10	4500	16.49
80	39.80	1600	23.70	5000	15.74
100	39.10	1700	23.20	5500	15.07
200	36.10	1800	22.90	6000	14.46
300	34.10	1900	22.50	6500	13.89
400	32.50	2000	22.10	7000	13.36
500	31.10	2200	21.50	7500	12.87
600	30.00	2400	20.90	8000	12.42
700	29.10	2600	20.30	8500	11.99
800	28.20	2800	19.81	9000	11.58
900	27.50	3000	19.33	9500	11.19
1000	26.80	3200	18.88	10000	10.83
1100	26.20	3400	18.45		

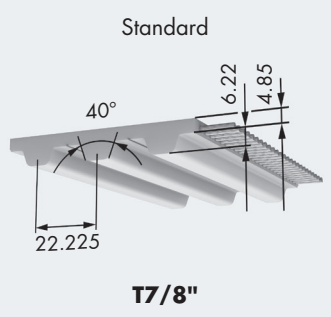
Admissible tensile load of the belt F_{Tadm} / belt weight

Belt width		b [mm]	12.7	19.1	25.4	38.1	50.8	76.2	101.6	152.4
M	E / Steel tension member	F_{Tadm} [N]	1000	1600	2200	3200	4400	6600	8800	13200
	Specific elasticity (E-/Steel tension member)	c_{spec} [N]	$0.25 \cdot 10^6$	$0.4 \cdot 10^6$	$0.55 \cdot 10^6$	$0.80 \cdot 10^6$	$1.1 \cdot 10^6$	$1.65 \cdot 10^6$	$2.2 \cdot 10^6$	$3.3 \cdot 10^6$
	Stainless steel tension member	F_{Tadm} [N]	800	1280	1760	2560	3520	5280	7040	10560
	Specific elasticity (stainless steel tension member)	c_{spec} [N]	$0.25 \cdot 10^6$	$0.4 \cdot 10^6$	$0.55 \cdot 10^6$	$0.80 \cdot 10^6$	$1.1 \cdot 10^6$	$1.65 \cdot 10^6$	$2.2 \cdot 10^6$	$3.3 \cdot 10^6$
V	E / Steel tension member	F_{Tadm} [N]	500	800	1100	1600	2200	3300	4400	6600
	Stainless steel tension member	F_{Tadm} [N]	400	640	880	1280	1760	2640	3520	5280
Belt weight	Standard	[kg/m]	0.053	0.081	0.108	0.161	0.216	0.324	0.432	0.648
	DL	[kg/m]	–	–	–	–	–	–	–	–
	DR	[kg/m]	–	–	–	–	–	–	–	–
	T	[kg/m]	0.084	0.127	0.169	0.253	0.338	0.507	0.676	–

Flexibility (minimum number of teeth / minimum diameter)

			Steel tension member				E / Steel tension member				Stainless steel tension member			
			Standard	DL	DR	T	Standard	DL	DR	T	Standard	DL	DR	T
z_{min} / d_{min}	 without contraflexure	z_{min}	14	–	–	20	–	–	–	–	25	–	–	25
		d_{min} [mm]	60	–	–	80	–	–	–	–	100	–	–	100
z_{min} / d_{min}	 with contraflexure	z_{min}	20	–	–	20	–	–	–	–	40	–	–	40
		d_{min} [mm]	80	–	–	80	–	–	–	–	160	–	–	160

PU timing belts with imperial pitch
BRECO® T7/8" - XH



Belt widths b [mm] / in-between belt widths on request

50.8	76.2	101.6

T7/8" (M/V)	**Available lengths and versions**
Standard delivery lengths (M)	rolls of 50 m
Cut to lengths / lengths > 50 m	on request
Minimum length joined (V)	880 mm
Standard material	TPUST1[1)]
Steel tension member (Standard)	×
E / Steel tension member	–
Stainless steel tension member	–
PAZ	×
PAR	×
PAZ-PAR	×
DL / DL-PAZ	–
DR / DR-PAZ	–
T / T-PAZ	–

M open length
V joined
× available
○ minimum purchase amount on request
– not available
[1)] further materials on request

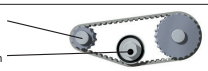
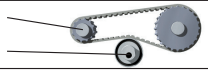
Specific tooth force

rpm n [min⁻¹]	F_{Tspec} [N/cm]	rpm n [min⁻¹]	F_{Tspec} [N/cm]	rpm n [min⁻¹]	F_{Tspec} [N/cm]
0	91.35	1200	48.78	3600	31.41
20	88.29	1300	47.52	3800	30.51
40	85.77	1400	46.35	4000	29.70
60	83.52	1500	45.27	4500	27.72
80	81.63	1600	44.28	5000	26.01
100	79.83	1700	43.38	5500	24.48
200	73.08	1800	42.48	6000	23.04
300	68.31	1900	41.58	6500	21.78
400	64.62	2000	40.77		
500	61.56	2200	39.24		
600	59.04	2400	37.89		
700	56.79	2600	36.63		
800	54.81	2800	35.46		
900	53.10	3000	34.29		
1000	51.48	3200	33.30		
1100	50.04	3400	32.31		

Admissible tensile load of the belt F_{Tadm} / belt weight

Belt width		b [mm]	50.8	76.2	101.6
M	E / Steel tension member	F_{Tadm} [N]	7000	10500	14000
	Specific elasticity (E / Steel tension member)	c_{spec} [N]	$1.75 \cdot 10^6$	$2.63 \cdot 10^6$	$3.5 \cdot 10^6$
	Stainless steel tension member	F_{Tadm} [N]	–	–	–
	Specific elasticity (stainless steel tension member)	c_{spec} [N]	–	–	–
V	E / Steel tension member	F_{Tadm} [N]	3500	5250	7000
	Stainless steel tension member	F_{Tadm} [N]	–	–	–
Belt weight	Standard	[kg/m]	0.530	0.795	1.059
	DL	[kg/m]	–	–	–
	DR	[kg/m]	–	–	–
	T	[kg/m]	–	–	–

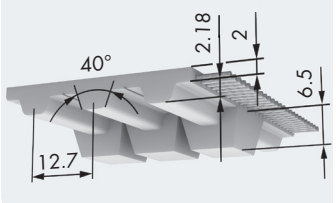
Flexibility (minimum number of teeth / minimum diameter)

			Steel tension member				E / Steel tension member				Stainless steel tension member			
			Standard	DL	DR	T	Standard	DL	DR	T	Standard	DL	DR	T
z_{min} / d_{min} 	without contraflexure	z_{min}	18	–	–	–	–	–	–	–	–	–	–	–
		d_{min} [mm]	150	–	–	–	–	–	–	–	–	–	–	–
z_{min} / d_{min} 	with contraflexure	z_{min}	20 (25)	–	–	–	–	–	–	–	–	–	–	–
		d_{min} [mm]	180	–	–	–	–	–	–	–	–	–	–	–

(Deviate values in brackets apply to joined timing belts)

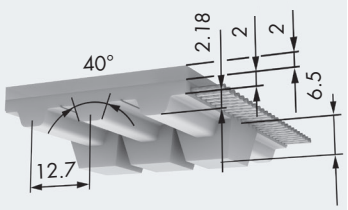
Self-guiding PU timing belts with imperial pitch
BRECO® TK1/2"K13 - HK13

Standard



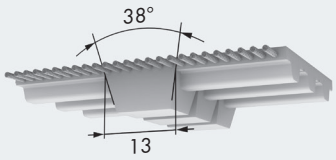
TK1/2"K13

Version T



TK1/2"K13-T

Standard



TK1/2"K13

Belt widths b [mm] / in-between belt widths on request

38.1	50.8	76.2	101.6

TK1/2"K13 (M/V)	**Available lengths and versions**
Standard delivery lengths (M)	rolls of 50 or 100 m
Cut to lengths / lengths > 100 m	on request
Minimum length joined (V)	1000 mm
Standard material	TPUST1 [1]
Steel tension member (Standard)	×
E / Steel tension member	–
Stainless steel tension member	○
PAZ	×
PAR	×
PAZ-PAR	×
DL / DL-PAZ	–
DR / DR-PAZ	–
T / T-PAZ	○

M open length
V joined
× available
○ minimum purchase amount on request
– not available
[1] further materials on request

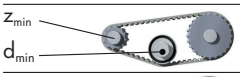
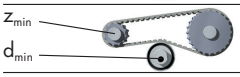
Specific tooth force

rpm n [min⁻¹]	F_{Tspec} [N/cm]	rpm n [min⁻¹]	F_{Tspec} [N/cm]	rpm n [min⁻¹]	F_{Tspec} [N/cm]
0	44.00	1200	25.60	3600	18.05
20	42.70	1300	25.10	3800	17.68
40	41.60	1400	24.60	4000	17.32
60	40.70	1500	24.10	4500	16.49
80	39.80	1600	23.70	5000	15.74
100	39.10	1700	23.20	5500	15.07
200	36.10	1800	22.90	6000	14.46
300	34.10	1900	22.50	6500	13.89
400	32.50	2000	22.10	7000	13.36
500	31.10	2200	21.50	7500	12.87
600	30.00	2400	20.90	8000	12.42
700	29.10	2600	20.30	8500	11.99
800	28.20	2800	19.81	9000	11.58
900	27.50	3000	19.33	9500	11.19
1000	26.80	3200	18.88	10000	10.83
1100	26.20	3400	18.45		

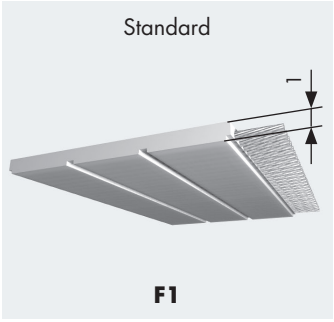
Admissible tensile load of the belt F_{Tadm} / belt weight

Belt width		b [mm]	38.1	50.8	76.2	101.6
M	E / Steel tension member	F_{Tadm} [N]	3200	4200	4800	6200
	Specific elasticity (E / Steel tension member)	c_{spec} [N]	$0.80 \cdot 10^6$	$1.10 \cdot 10^6$	$1.65 \cdot 10^6$	$2.20 \cdot 10^6$
	Stainless steel tension member	F_{Tadm} [N]	2560	3360	3840	4960
	Specific elasticity (stainless steel tension member)	c_{spec} [N]	$0.80 \cdot 10^6$	$1.10 \cdot 10^6$	$1.65 \cdot 10^6$	$2.20 \cdot 10^6$
V	E / Steel tension member	F_{Tadm} [N]	1600	2100	2400	3100
	Stainless steel tension member	F_{Tadm} [N]	1280	1680	1920	2480
Belt weight	Standard	[kg/m]	0.222	0.275	0.368	0.469
	DL	[kg/m]	–	–	–	–
	DR	[kg/m]	–	–	–	–
	T	[kg/m]	0.253	0.338	0.507	0.676

Flexibility (minimum number of teeth / minimum diameter)

		Steel tension member				E / Steel tension member				Stainless steel tension member			
		Standard	DL	DR	T	Standard	DL	DR	T	Standard	DL	DR	T
 without contraflexure	z_{min}	18	–	–	20	–	–	–	–	22	–	–	22
	d_{min} [mm]	80	–	–	80	–	–	–	–	80	–	–	80
 with contraflexure	z_{min}	20	–	–	20	–	–	–	–	32	–	–	32
	d_{min} [mm]	120	–	–	120	–	–	–	–	130	–	–	130

PU flat belts
BRECO® F1



F1 (M)	Available lengths and versions
Standard delivery lengths (M)	rolls of 100 m
Cuts / lengths > 100 m Length graduation from groove to groove (in 10 mm steps)	on request
Minimum length joined (V)	–
Standard material	TPUST1 [1]
Steel tension member (Standard)	×
E / Steel tension member	○
Stainless steel tension member	○
PAZ (groove side)	–

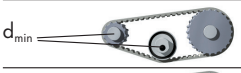
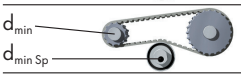
Belt widths b [mm]
In-between belt widths on request

8	10	15	20

Admissible tensile load of the belt F_{Tadm} / belt weight

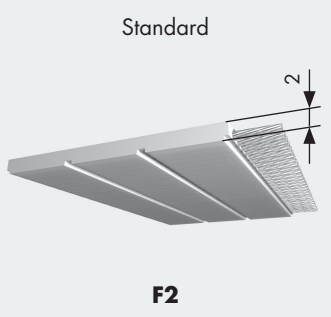
Belt width		b [mm]	8	10	15	20
M	E / Steel tension member	F_{Tadm} [N]	300	360	510	720
	Tensile strength (E / Steel tension member)	F_{break} [N]	1200	1440	2040	2880
	Specific elasticity (E / Steel tension member)	c_{spec} [N]	$7.5 \cdot 10^4$	$9.0 \cdot 10^4$	$12.8 \cdot 10^4$	$18.0 \cdot 10^4$
	Stainless steel tension member	F_{Tadm} [N]	230	275	390	550
	Tensile strength (Stainless steel tension member)	F_{break} [N]	920	1100	1560	2200
	Specific elasticity (Stainless steel tension member)	c_{spec} [N]	$7.5 \cdot 10^4$	$9.0 \cdot 10^4$	$12.8 \cdot 10^4$	$18.0 \cdot 10^4$
V	E / Steel tension member	F_{Tadm} [N]	–	–	–	–
	Stainless steel tension member	F_{Tadm} [N]	–	–	–	–
Belt weight	Standard	[kg/m]	0.012	0.015	0.023	0.030

Flexibility (minimum diameter)

			Steel tension member	E / Steel tension member	Stainless steel tension member
			Standard	Standard	Standard
	without contraflexure	d_{min} [mm]	16	12	30
	with contraflexure	d_{min} [mm]	30	18	60
		$d_{min\ Sp}$ [mm]	30	18	60

M open length
V joined
× available, standard lengths (see table) without minimum purchase
○ minimum purchase amount on request
– not available
[1] further materials on request

PU flat belts
BRECO® F2



F2 (M/V)	Available lengths and versions
Standard delivery lengths (M)	rolls of 50 or 100 m
Cuts / lengths > 100 m Length graduation from groove to groove (in 10 mm steps)	on request
Minimum length joined (V)	880
Standard material	TPUST1 [1]
Steel tension member (Standard)	×
E / Steel tension member	○
Stainless steel tension member	○
PAZ (groove side)	×

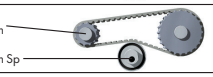
Belt widths b [mm]
In-between belt widths on request

25	32	50	75	100

Admissible tensile load of the belt F_{Tadm} / belt weight

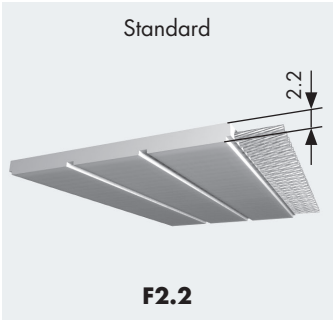
Belt width		b [mm]	25	32	50	75	100
M	E / Steel tension member	F_{Tadm} [N]	2200	2600	4400	6600	8800
	Tensile strength (E / Steel tension member)	F_{break} [N]	8800	10400	17600	26400	35200
	Specific elasticity (E / Steel tension member)	c_{spec} [N]	$5.5 \cdot 10$	$6.5 \cdot 10^5$	$1.1 \cdot 10^6$	$1.65 \cdot 10^6$	$2.20 \cdot 10^6$
	Stainless steel tension member	F_{Tadm} [N]	1760	2080	3520	5280	7040
	Tensile strength (Stainless steel tension member)	F_{break} [N]	7040	8320	14080	21120	28160
	Specific elasticity (Stainless steel tension member)	c_{spec} [N]	$5.5 \cdot 10^5$	$6.5 \cdot 10^5$	$1.1 \cdot 10^6$	$1.65 \cdot 10^6$	$2.20 \cdot 10^6$
V	E / Steel tension member	F_{Tadm} [N]	1100	1300	2200	3300	4400
	Stainless steel tension member	F_{Tadm} [N]	880	1040	1760	2640	3520
Belt weight	Standard	[kg/m]	0.081	0.101	0.161	0.241	0.322

Flexibility (minimum diameter)

			Steel tension member	E / Steel tension member	Stainless steel tension member
			Standard	Standard	Standard
d_{min} 	without contraflexure	d_{min} [mm]	30	25	60
d_{min} $d_{min\ Sp}$ 	with contraflexure	d_{min} [mm]	60	50	130
		$d_{min\ Sp}$ [mm]	60	50	130

M open length
V joined
× available, standard lengths (see table) without minimum purchase
○ minimum purchase amount on request
– not available
[1] further materials on request

PU flat belts
BRECO® F2.2



F2.2 (M/V)	Available lengths and versions
Standard delivery lengths (M)	rolls of 50 or 100 m
Cuts / lengths > 100 m Length graduation from groove to groove (in 10 mm steps)	on request
Minimum length joined (V)	880
Standard material	TPUST1 [1]
Steel tension member (Standard)	×
E / Steel tension member	○
Stainless steel tension member	○
PAZ (groove side)	×

Belt widths b [mm]
In-between belt widths on request

20	25	30	32	40	50	75	100

Admissible tensile load of the belt F_{Tadm} / belt weight

Belt width		b [mm]	20	25	30	32	40	50	75	100
M	E / Steel tension member	F_{Tadm} [N]	2500	3500	4500	5000	5500	7000	10000	14000
	Tensile strength (E / Steel tension member)	F_{break} [N]	10000	14000	18000	20000	22000	28000	40000	56000
	Specific elasticity (E / Steel tension member)	c_{spec} [N]	$6.25 \cdot 10^5$	$8.75 \cdot 10^5$	$1.13 \cdot 10^6$	$1.25 \cdot 10^6$	$1.38 \cdot 10^6$	$1.75 \cdot 10^6$	$2.50 \cdot 10^6$	$3.50 \cdot 10^6$
	Stainless steel tension member	F_{Tadm} [N]	1875	2625	3375	3750	4125	5250	7500	10500
	Tensile strength (Stainless steel tension member)	F_{break} [N]	7500	10500	13500	15000	16500	21000	30000	42000
	Specific elasticity (Stainless steel tension member)	c_{spec} [N]	$6.25 \cdot 10^5$	$8.75 \cdot 10^5$	$1.13 \cdot 10^6$	$1.25 \cdot 10^6$	$1.38 \cdot 10^6$	$1.75 \cdot 10^6$	$2.50 \cdot 10^6$	$3.50 \cdot 10^6$
V	E / Steel tension member	F_{Tadm} [N]	1250	1750	2250	2500	2750	3500	5000	7000
	Stainless steel tension member	F_{Tadm} [N]	940	1315	1685	1875	2060	2625	3750	5250
Belt weight	Standard	[kg/m]	0.071	0.092	0.120	0.130	0.146	0.213	0.309	0.366

Flexibility (minimum diameter)

			Steel tension member	E / Steel tension member	Stainless steel tension member
			Standard	Standard	Standard
d_{min}	without contraflexure	d_{min} [mm]	60	40	80
d_{min}	with contraflexure	d_{min} [mm]	120	70	130
$d_{min\ Sp}$		$d_{min\ Sp}$ [mm]	120	70	130

M open length
V joined
× available, standard lengths (see table) without minimum purchase
○ minimum purchase amount on request
– not available
[1] further materials on request

PU flat belts
BRECO® F2.5

F2.5 (M/V)	Available lengths and versions
Standard delivery lengths (M)	rolls of 50 or 100 m
Cuts / lengths > 100 m Length graduation from groove to groove (in 10 mm steps)	on request
Minimum length joined (V)	880
Standard material	TPUST1 [1]
Steel tension member (Standard)	×
E / Steel tension member	○
Stainless steel tension member	○
PAZ (groove side)	×

Belt widths b [mm] In-between belt widths on request	
50	100

Admissible tensile load of the belt F_{Tadm} / belt weight

Belt width		b [mm]	50	100
M	E / Steel tension member	F_{Tadm} [N]	11200	22400
	Tensile strength (E / Steel tension member)	F_{break} [N]	44800	89600
	Specific elasticity (E / Steel tension member)	c_{spec} [N]	$2.8 \cdot 10^6$	$5.6 \cdot 10^5$
	Stainless steel tension member	F_{Tadm} [N]	8960	17920
	Tensile strength (Stainless steel tension member)	F_{break} [N]	35840	71680
	Specific elasticity (Stainless steel tension member)	c_{spec} [N]	$2.8 \cdot 10^6$	$5.6 \cdot 10^6$
V	E / Steel tension member	F_{Tadm} [N]	5600	11200
	Stainless steel tension member	F_{Tadm} [N]	4480	8960
Belt weight	Standard	[kg/m]	0.263	0.526

Flexibility (minimum diameter)

			Steel tension member	E / Steel tension member	Stainless steel tension member
			Standard	Standard	Standard
d_{min}	without contraflexure	d_{min} [mm]	80	60	100
d_{min}	with contraflexure	d_{min} [mm]	120	80	160
$d_{min\ Sp}$		$d_{min\ Sp}$ [mm]	120	80	160

M open length
V joined
× available, standard lengths (see table) without minimum purchase
○ minimum purchase amount on request
– not available
[1] further materials on request

PU flat belts
BRECO® F3

Standard

F3

F3 (M/V)	**Available lengths and versions**
Standard delivery lengths (M)	rolls of 50 or 100 m
Cuts / lengths > 100 m Length graduation from groove to groove (in 10 mm steps)	on request
Minimum length joined (V)	880
Standard material	TPUST1 [1]
Steel tension member (Standard)	×
E / Steel tension member	–
Stainless steel tension member	○
PAZ (groove side)	×

Belt widths b [mm] **In-between belt widths on request**			
30	50	75	100

Admissible tensile load of the belt F_{Tadm} / belt weight

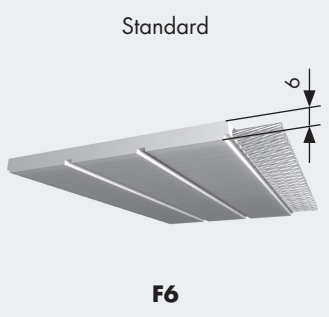
Belt width		b [mm]	30	50	75	100
M	E / Steel tension member	F_{Tadm} [N]	8400	14700	23800	30800
	Tensile strength (E / Steel tension member)	F_{break} [N]	33600	58800	95200	123200
	Specific elasticity (E / Steel tension member)	c_{spec} [N]	$2.10 \cdot 10^6$	$3.68 \cdot 10^6$	$5.96 \cdot 10^6$	$7.70 \cdot 10^6$
	Stainless steel tension member	F_{Tadm} [N]	6720	11760	19400	24640
	Tensile strength (Stainless steel tension member)	F_{break} [N]	26880	47040	76160	98560
	Specific elasticity (Stainless steel tension member)	c_{spec} [N]	$2.10 \cdot 10^6$	$3.68 \cdot 10^6$	$5.96 \cdot 10^6$	$7.7 \cdot 10^6$
V	E / Steel tension member	F_{Tadm} [N]	4200	7350	11900	15400
	Stainless steel tension member	F_{Tadm} [N]	3360	5880	9520	12320
Belt weight	Standard	[kg/m]	0.197	0.343	0.518	0.686

Flexibility (minimum diameter)

			Steel tension member	E / Steel tension member	Stainless steel tension member
			Standard	Standard	Standard
d_{min}	without contraflexure	d_{min} [mm]	120	–	180
d_{min}	with contraflexure	d_{min} [mm]	150	–	300
$d_{min\ Sp}$		$d_{min\ Sp}$ [mm]	150	–	300

M open length
V joined
× available, standard lengths (see table) without minimum purchase
○ minimum purchase amount on request
– not available
[1] further materials on request

PU flat belts
BRECO® F6



F6 (M/V)	Available lengths and versions
Standard delivery lengths (M)	rolls of 50 or 100 m
Cuts / lengths > 100 m Length graduation from groove to groove (in 10 mm steps)	on request
Minimum length joined (V)	880
Standard material	TPUST1 [1]
Steel tension member (Standard)	×
E / Steel tension member	–
VA tension member	○
PAZ (groove side)	×

Belt widths b [mm] Further belt widths on request
30

Admissible tensile load of the belt F_{Tadm} / belt weight

Belt width		b [mm]	30
M	E / Steel tension member	F_{Tadm} [N]	1800
	Tensile strength (E / Steel tension member)	F_{break} [N]	7200
	Specific elasticity (E / Steel tension member)	c_{spec} [N]	$4.0 \cdot 10^5$
	Stainless steel tension member	F_{Tadm} [N]	1440
	Tensile strength (Stainless steel tension member)	F_{break} [N]	5760
	Specific elasticity (Stainless steel tension member)	c_{spec} [N]	$4.0 \cdot 10^5$
V	E / Steel tension member	F_{Tadm} [N]	900
	Stainless steel tension member	F_{Tadm} [N]	720
Belt weight	Standard	[kg/m]	0.232

Flexibility (minimum diameter)

			Steel tension member	E / Steel tension member	Stainless steel tension member
			Standard	Standard	Standard
d_{min}	without contraflexure	d_{min} [mm]	90	–	90
d_{min}	with contraflexure	d_{min} [mm]	90	–	130
$d_{min\ Sp}$		$d_{min\ Sp}$ [mm]	90	–	130

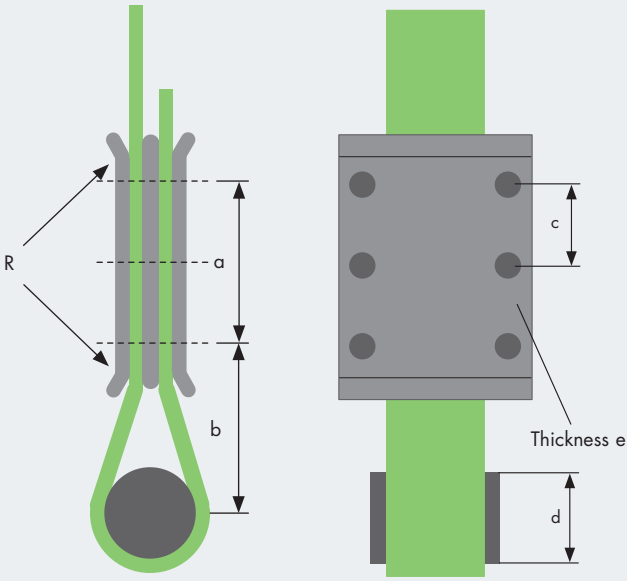
M open length
V joined
× available, Standard lengths (see table) without minimum purchase
○ minimum purchase amount on request
– not available
[1] further materials on request

Flat belts fastening elements

Technical

Type 1	F1	F2	F2.2	F2.5	F3
a_{min} [mm]	40	50	60	80	125
b_{min} [mm]	25	30	45	50	75
c [mm] approx.	20	25	20	20	25
∅ d_{min} [mm]	16	25	30	30	50
e_{min} [mm]	3	3	4	5	5
Radius R_{min}	10	12	15	15	25
Thread (min)	M5	M6	M6	M6	M8

Fastening element Type 1 (pictorial representation)

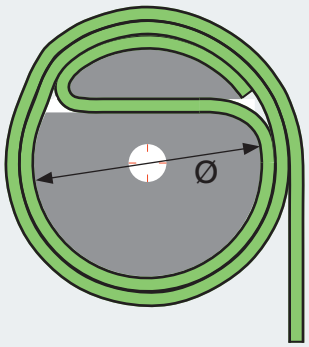


Technical

Type 2	F1	F2	F2.2	F2.5	F3
∅ [mm]	40	50	60	80	100

For the purposes of safety, at least two complete windings must remain on the end attachment in the unwound state.

Fastening element Type 2 (pictorial representation)



Information relating to the storage and use of BRECO® and BRECOFLEX® flat belts (original instructions for use)

The flat belts must be stored in a dry, cool and dark environment (max. 60% relative humidity, temperature range +5°C to +35°C). By observing the geometries, loadings and ambient conditions indicated in the accompanying catalogue and in the data sheets, the flat belts can be operated without maintenance. All the elements involved must be arranged so that sideways running of the belts, more particularly running off the pulleys, is avoided. The end attachments must be rigid enough (recommendation for flat belt end attachments on pages 7.88 and 7.89) that practically uniform pressure (= uniform conveying) is guaranteed over the entire width of the belt.

Twice as many inspections should take place per year as the number of stress cycles per minute. For example: two stress cycles per minute result in four inspections per year. As a rule, a simple visual inspection is sufficient. The following should be checked:

- firm seating of the end attachments and any displacement of the belt therein (marks on the flat belt and end attachments may be helpful).

- cleanliness of the running surfaces of flat belts and pulleys. Dust, oil and grease residues reduce the friction. Dirt can result in diagonal tension and uneven carrying. Cleaning can be carried out using normal household washing and soap solutions, or cleaning solvents, followed by immediate drying of the flat belt.

Damage to the belt running surface. Small areas of damage are generally not critical. In the case of damage to the lateral edge extending to the tension carriers, the belt must always be replaced. It is imperative to ensure that the flat belt drives are only started up when the entire assembly, i.e. the finished machine with all protective systems, is in operation and meets the machine guidelines. An assessment of all possible remaining risks has been carried out in line with the Machinery Directive. If you are in need of further information, please request the assistance of your Angst+Pfister technical expert.

The indicated values are only guidelines and can in individual cases also be adapted to special circumstances. The utilizer is responsible for the chosen fastening method.

Available materials

Materials for standard application area

Name of material	Selectable tension member	Color	Hardness	Temperature range
TPUST1	steel cord / stainless steel cord	white	92 Shore A	0°C up to +80°C
TPUST2	steel cord / stainless steel cord	transparent	85 Shore A	+5°C up to +50°C

Approved materials by contact with food

Name of material	Selectable tension member	Color	Hardness	Temperature range
TPUFD1	stainless steel cord	transparent	92 Shore A	0°C up to +80°C

Materials for use in areas with low aggressive environment

Name of material	Selectable tension member	Color	Hardness	Temperature range
TPUAU1	stainless steel cord	transparent	92 Shore A	0°C up to +50°C

Materials for use in areas with high ambient temperature

Name of material	Selectable tension member	Color	Hardness	Temperature range
TPUWB1	steel cord / stainless steel cord	white	94 Shore A	+20°C up to +110°C

Materials for use in areas with low ambient temperature

Name of material	Selectable tension member	Color	Hardness	Temperature range
TPUKF1	steel cord / stainless steel cord	transparent	85 Shore A	–25°C up to +5°C

Materials with electrically discharge properties

Name of material	Selectable tension member	Color	Hardness	Temperature range
TPUAS1	steel cord / stainless steel cord	grey-transparent	92 Shore A	0°C up to +80°C

For further information about the resistance of polyurethane timing belts and available belt materials as well as alternativly tension member materials please contact our technical department.

Assembly instructions for BRECO® and BRECOFLEX® flat belts

The flat belts must be fastened at both belt ends in a suitable manner. The recommended flat belt end attachments can be used for fastening. The specified values and instructions must be observed. The flat belts must be guided in a suitable manner on the drive and deflecting drums. Cylindrical drums, flanged drums or, as the case may be, convex drums can be used for guiding. In the case of convex drums please observe DIN 111. Depending on the selected convexity, any necessary oblique setting of the drum and/or shaft must be checked. Due to the high tensile strength of BRECO® and BRECOFLEX® flat belts and the uneven force distribution due to convex drums, deductions are necessary for the permissible tensile force of the flat belts. In individual cases, these deductions may have to be determined by experiment.

To guarantee full operational function, the belts must be free of grease and residues after assembly.

When setting up several flat belts running in parallel to each other and jointly driven, they should be taken from one manufacturing batch with minimal thickness tolerances between them.

Replacement stage / duration of use

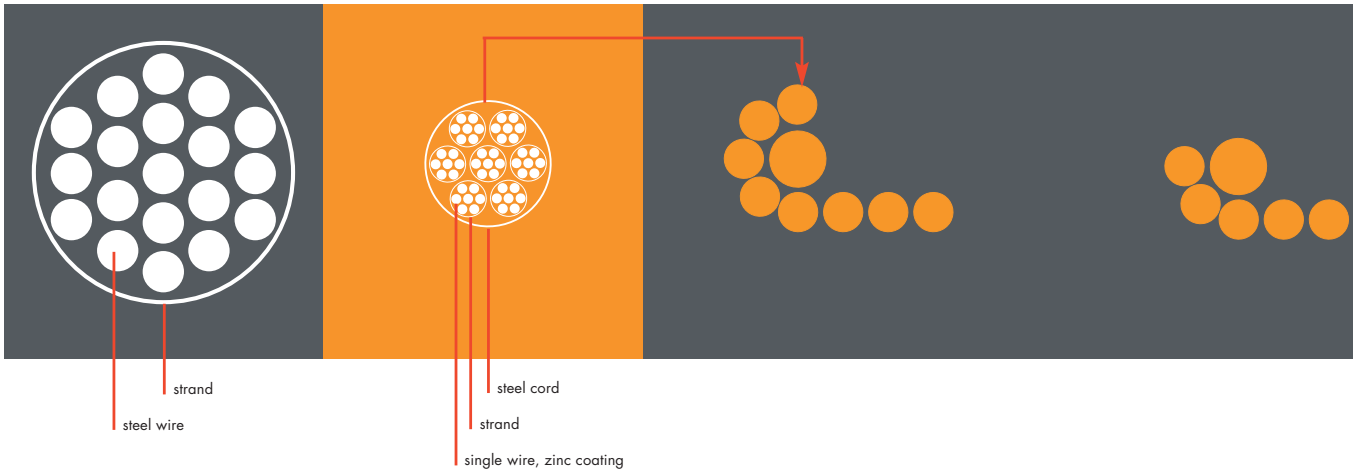
The use of the BRECO® and BRECOFLEX® flat belts covers a very broad spectrum of applications. In doing so, belts are only one part of the entire system of many different individual components. Because of this, the loads actually acting on the flat belts are often only partially known, which makes it impossible to make definitive statements about the anticipated service life. As a rule, if all the specifications in the product catalogue are observed, a life span of up to approximately three million reverse bending cycles distributed over 10 years can be expected. In order to achieve this, the following points must be taken into account and observed:

Observation of the details described in the flat belts chapter (including permitted loads, observation of the minimum pulley diameters, information relating to end attachments and their assembly, ambient conditions such as temperature and media influences), torsion resistant and dimensionally accurate overall assembly (parallel axles and shafts, “rigid” axle distances, flush pulleys), low-friction and wear-resistant belt guiding, force-free assembly of the belts and drums in accordance with the assembly instructions for flat belts, as well as observation of the instructions for storing and operating the flat belts.

PU flat belts
CONTI® POLYFLAT

Innovative in material and design

Thanks to its greater flexibility and traction, the CONTI® POLYFLAT PU flat belt enables compact drives with much smaller pulley diameters in comparison to conventional drives with steel cords. Smaller drive pulleys allow the use of space-saving drive motors and secondary engineering. Compact drive configurations with low inertia reduce not only the manufacturing costs but also the power consumption. The steel-reinforced belts made of modified polyurethane are extremely flexible, hardwearing, and durable. They are virtually corrosion-resistant due to their galvanised steel, and their polyurethane coating ensures anti-slip traction and efficient power transmission. Used in combination with crowned pulleys they ensure excellent power transmission and very smooth running.



Conventional steel cord
8 strands per cord
19 steel wires per strand
altogether 152 steel wires

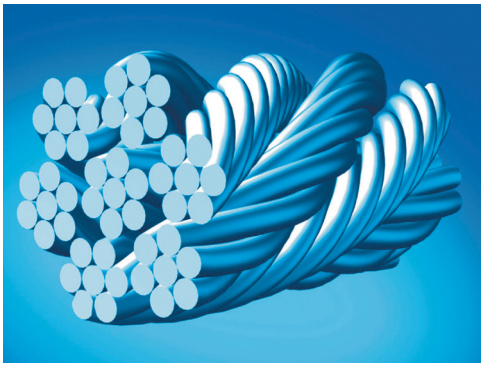
PU belt reinforced with steel cord, type F 30 XHP
12 steel cords per belt
7 strands per steel cord
7 single wires per strand
altogether 588 single wires

Each PU belt contains more steel wires than a conventional steel cable. They have the same tensile strength although they weigh less.

Benefits of the design

- greater flexibility and traction
- pulley can be driven more easily
- smaller pulley diameter
- less belt stretching under load
- good running properties regarding noise and vibrations
- maintenance-free and space-saving drive element
- high resistance to external influences (e.g. weathering, wear and tear, UV radiation)
- silicone-free design

PU flat belt XHP



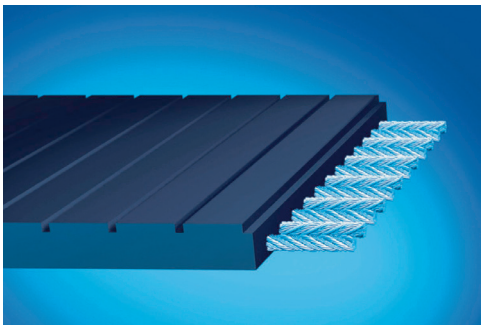
The reliability of the CONTI® POLYFLAT flat belt type XHP is attained thanks to the use of numerous high-strength wires. The steel cords (diameter 1.6 mm) and their parallel-to-edge alignment increase the flexibility in comparison to the steel cable. In this way the bearing face of the flat belt is made wider and the pulley can be driven more easily. Thus the diameter of the pulley can be reduced to 100 mm. The design of wire/strand/cord in combination with the ultra-modern manufacturing process enables an optimum spreading of the polyurethane which hence completely surrounds the cords. This aspect in turn keeps the wires in place within a strand and bonds the individual strands together.

The result:
- small bending radius
- high strength
- low corrosion

Test results:
The service life of the steel cord-reinforced CONTI® POLYFLAT PU flat belt, type XHP is three times as long as that of belts with conventional steel cables under the same operating conditions. Endurance testing verified there is only a slight reduction in the strength values after several million load cycles. The traction testing on the cycle duration similarly demonstrated the wear resistance of the system.

The properties of the CONTI POLYFLAT® PU flat belt open up many new areas of application, e.g. in lifting systems, car wash installations, forklifts, handling devices and scissors-type lifting tables.

Belt design

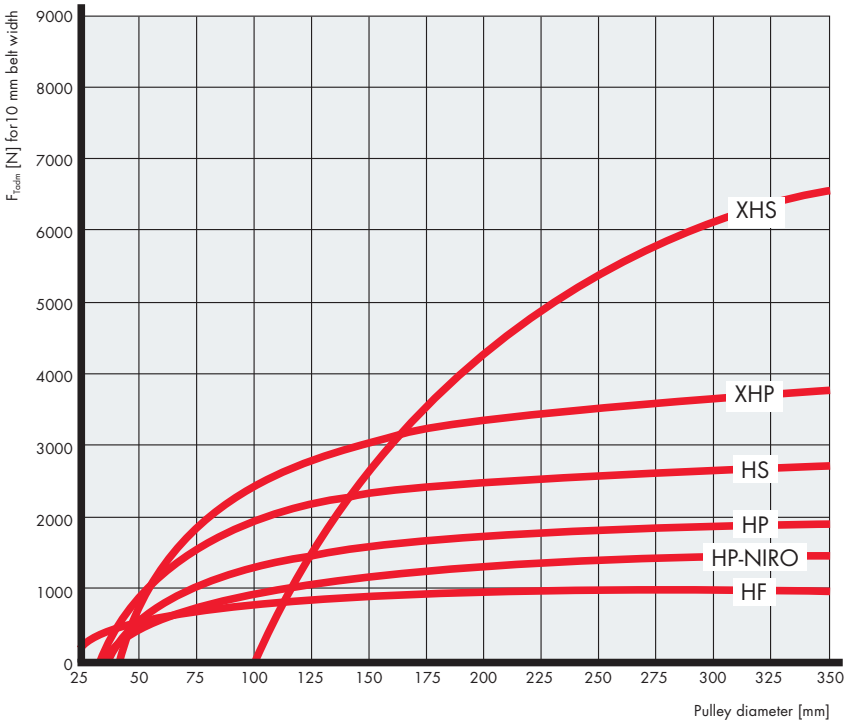


Outside material:
- polyurethane with 92 Shore A
- hard-wearing and durable
- unaffected by environmental influences

Tension member:
- compact steel cable strand design
- aramide on request

Types	XHS	–	extremely high strength
	XHP	–	extra high strength
	HS	–	very high strength
	HP	–	reinforced
	HP-Niro	–	stainless steel
	HF	–	flexible

Selection of belts and pulleys



F_{Tadm} as a function of the pulley diameter (normalized for 10 mm belt width)

Detailed figures available on request.

Designation when ordering

CONTI® POLYFLAT PU flat belts M30-F20 HP

M30_length l=30 m
F_flat belt
20_belt width b=20 mm
HP_reinforced type

	Cord ∅	h	Width b* [mm]	Weight m_{spec}**	c_{spec} [N/mm]
XHS	2.8	4.5	85/100/120	$10.5 \cdot 10^{-3}$	$91 \cdot 10^{3}$
XHP	1.6	3	30[1]/60[1]/100/120	$7.0 \cdot 10^{-3}$	$63 \cdot 10^{3}$
HS	1.2	2.5	20/25/30/40/50/55/85/100/120	$5.3 \cdot 10^{-3}$	$53 \cdot 10^{3}$
HP	0.9	2.3	10/15/20/25/30/40/50/55/85/100	$4.0 \cdot 10^{-3}$	$35 \cdot 10^{3}$
HP-NIRO	0.9	2.3	10/15/20/25/30/40/50/55/85/100	$4.0 \cdot 10^{-3}$	$35 \cdot 10^{3}$
HF	0.6	2.1	10/15/20/25/30/40/50/55/85/100	$3.2 \cdot 10^{-3}$	$20 \cdot 10^{3}$

The belt is selected on the basis of the circumferential force to be transmitted for the pulley size concerned.

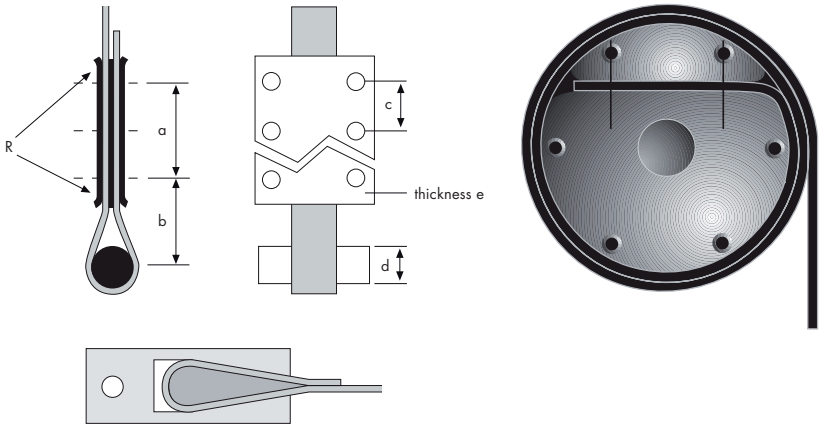
- breaking strength of the belt approx. $3 \cdot F_{Tadm}$ (max)
- elongation of the belt approx. 0.6% at F_{Tadm} (max)
- thickness tolerance ±0.3 mm (special tolerances on request)
- thickness tolerance ±0.5 mm (special tolerances on request)

Pulley geometry

To promote the alignment of belts the drive/deflection pulleys may be designed as follows:

- cylindrical with side flanges
- convex with side flanges
  It must be checked that the inclination of the shaft is suitable for the size of the crowning.
- distance of the side flanges = belt width × 1.2
- more info on the barrelling is given in DIN 111

End connector

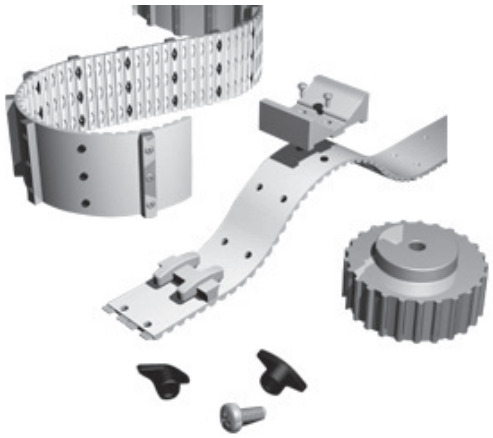


Detailed sizes upon request

* further dimensions on request
** per mm belt width [kg/m]
[1] special tolerance for h, for winding application

Description

The ATN timing belt is especially designed for applications in transport technology. The exchangeable profile fastening system in the belt tooth permits fast fitting and replacement of the flights individually manufactured for the specific conveying application. This flexibility provides a great variety of application possibilities, not to be realised up to now, compared to other profile fastening systems, as e.g. welding. If required, it is possible to convey different types of goods in one transport system using the same timing belt, but equipped with different profiles.

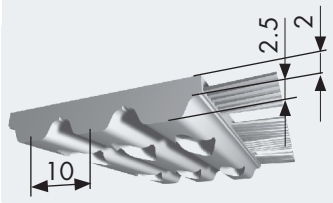


Advantages

- the belt is part of a modular design consisting of the ATN timing belt, fastening elements, the ATN timing belt lock and flights/profiles
- variable profile pitches with high accuracy
- application of various profile materials is possible (plastics, metal, ceramics...)
- high shearing forces
- fast and easy profile change when the products to be transported are changed or the profiles are worn
- no belt deinstallation for profile changes
- alternative to a chain with all advantages of a timing belt
- self-alignment of the profiles during installation
- application of standard pulleys
- high visual quality
- various fastening possibilities
- cost effective for the user:
  – standard belt with a high availability and variability
  – short machine shut-down times for profile changes
  – low test costs because of interchangeability of profiles (prototypes)

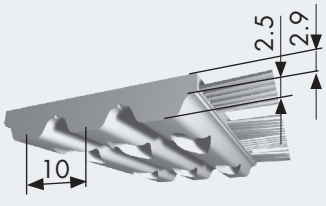
Product selection
BRECO® ATN10 / ATN10 DC

Standard

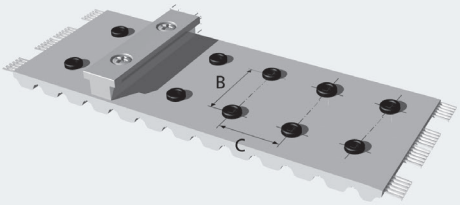


ATN10

Standard



ATN10 DC



	B	C_{min}	Belt widths b [mm]			
ATN10	25	10	25	50	75	100
ATN10 DC	25	10	–	50	75	100
Number of shapes for inset parts per tooth[1)]			1	2	3	4

ATN10 / ATN10 DC (M/V)	Available lengths and versions
Standard delivery lengths (M)	Rolls of 50 or 100 m
Cuts / lengths > 100 m	on request
Endless joined, minimum length (V)	880 mm
Standard material	TPUST1
Steel cord tension member (Standard)	×
Stainless steel tension member	○
PAZ (white)	×
PAR (green)	×
PAZ-PAR (white / green)	×

Available materials

- TPUST1: Standard material, steel cord tension members
- TPUFD1: Material is suitable for contact with food, FDA conform, with stainless steel tension members
- TPUKF1: Material flexible at low temperatures, application area from –25°C to +5°C, with steel cord tension members

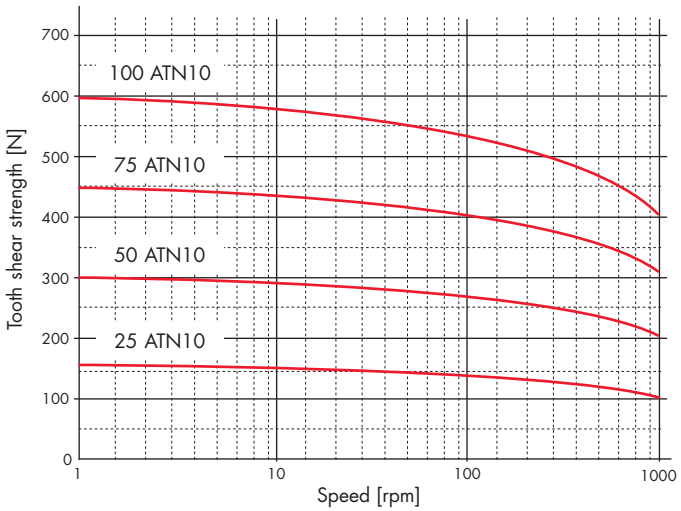
Further materials on request.
Depending on the material and/or version, a minimum purchase is required, please request.

M open length
V endless joined
× available
○ request minimum purchase amount
– not available

1) The shapes for the inset parts are factory sealed with an approx. 0.2 mm thick TPU skin. Open these shapes to insert the profile fastenings. If you want the timing belt pierced, please inform Angst+Pfister about the required spacing C when ordering. The shortest longitudinal spacing of the shapes in the belt tooth corresponds with pitch.

Technical data for the belt type / belt width based on the circumferential force load

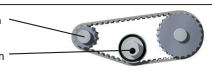
ATN10, ATN10 DC – tooth shear strength F_{Uspec} per belt tooth in mesh [N]



Tension cord strengths F_{Tadm} / specific elasticities / belt weights

Belt width		b [mm]	25	50	75	100
M	Steel cord tension member	F_{Tadm} [N]	3000	6000	9000	12000
	Specific elasticity (steel cord)	C_{spec} [N]	$0.75 \cdot 10^6$	$1.5 \cdot 10^6$	$2.25 \cdot 10^6$	$3.0 \cdot 10^6$
	Stainless steel tension member	F_{Tadm} [N]	2150	4300	6450	8600
	Specific elasticity (stainless steel)	C_{spec} [N]	$0.54 \cdot 10^6$	$1.08 \cdot 10^6$	$1.61 \cdot 10^6$	$2.15 \cdot 10^6$
V	Steel cord tension member	F_{Tadm} [N]	1000	2000	3000	4000
	Stainless steel tension member	F_{Tadm} [N]	1000	2000	3000	4000
Belt weight[1)]	ATN10	[kg/m]	0.120	0.240	0.360	0.480
	ATN10 DC	[kg/m]	–	0.300	0.450	0.600

Flexibility (Minimum numbers of teeth / minimum diameter)

			Steel cord	Stainless steel cord
z_{min} / d_{min} 	without contraflexure	z_{min}	25	25
		d_{min} [mm]	80	80

Circumferencial force F_U

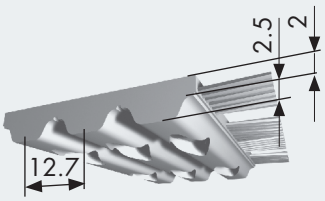
The transmissible circumferential force F_U depends on the shear strength F_{Uspec} and the number of teeth in mesh z_e on the drive pulley, which should be at least $z_{emin} = 6$.
Max. $z_{emax} = 6$ (welded belts) and $z_{emax} = 12$ (open length) are used for the calculation.

$F_U = F_{Uspec} \cdot z_e$

[1)] The stated masses only refer to the extruded belt and are for this reason without insert parts, screws and profiles.

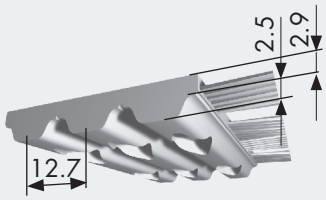
Product selection
BRECO® ATN12.7 / ATN12.7 DC

Standard

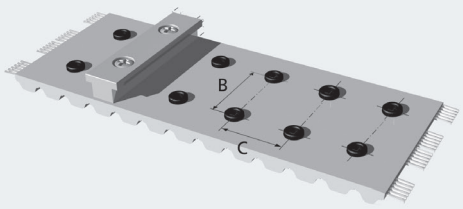


ATN12.7

Standard



ATN12.7 DC



	B	C_{min}	Belt widths b [mm]			
ATN12.7	25	12.7	25	50	75	100
ATN12.7 DC	25	12.7	–	50	75	100
Number of shapes for inset parts per tooth[1)]			1	2	3	4

ATN12.7 / ATN12.7 DC (M/V)	Available lengths and versions
Standard delivery lengths (M)	Rolls of 50 or 100 m
Cuts / lengths > 100 m	on request
Endless joined, minimum length (V)	880 mm
Standard material	TPUST1
Steel cord tension member (Standard)	×
Stainless steel tension member	○
PAZ (white)	×
PAR (green)	×
PAZ-PAR (white / green)	×

Available materials

- TPUST1: Standard material, steel cord tension members
- TPUFD1: Material is suitable for contact with food, FDA conform, with stainless steel tension members
- TPUKF1: Material flexible at low temperatures, application area from –25°C to +5°C, with steel cord tension members

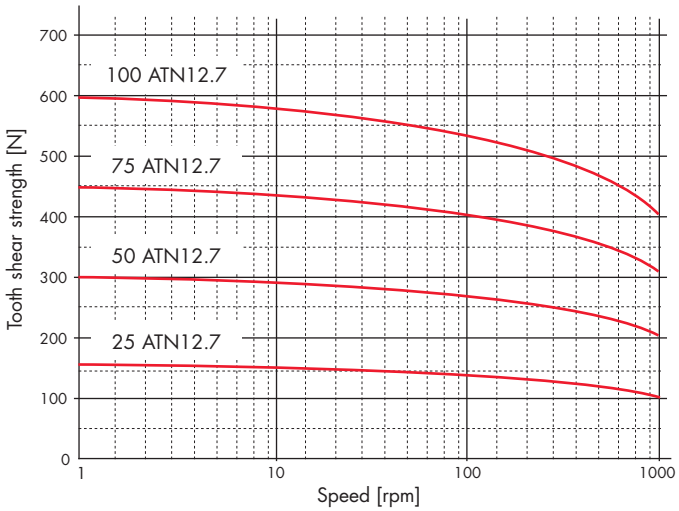
Further materials on request.
Depending on the material and/or version, a minimum purchase is required, please request.

M open length
V endless joined
× available
○ request minimum purchase amount
– not available

1) The shapes for the inset parts are factory sealed with an approx. 0.2 mm thick TPU skin. Open these shapes to insert the profile fastenings. If you want the timing belt pierced, please inform Angst+Pfister about the required spacing C when ordering. The shortest longitudinal spacing of the shapes in the belt tooth corresponds with pitch.

Technical data for the belt type / belt width based on the circumferential force load

ATN12.7, ATN12.7 DC – tooth shear strength F_{Uspec} per belt tooth in mesh [N]



Tension cord strengths F_{Tadm} / specific elasticities / belt weights

Belt width		b [mm]	25	50	75	100
M	Steel cord tension member	F_{Tadm} [N]	3000	6000	9000	12000
	Specific elasticity (steel cord)	C_{spec} [N]	0.75·106	$1.5 \cdot 10^6$	$2.25 \cdot 10^6$	$3.0 \cdot 10^6$
	Stainless steel tension member	F_{Tadm} [N]	2150	4300	6450	8600
	Specific elasticity (stainless steel)	C_{spec} [N]	0.54·106	$1.08 \cdot 10^6$	$1.61 \cdot 10^6$	$2.15 \cdot 10^6$
V	Steel cord tension member	F_{Tadm} [N]	1000	2000	3000	4000
	Stainless steel tension member	F_{Tadm} [N]	1000	2000	3000	4000
Belt weight[1)]	ATN12.7	[kg/m]	0.111	0.222	0.333	0.444
	ATN12.7 DC	[kg/m]	-	0.282	0.423	0.564

Flexibility (Minimum numbers of teeth / minimum diameter)

			Steel cord	Stainless steel cord
z_{min} / d_{min}	without contraflexure	z_{min}	20	20
		d_{min} [mm]	80	80

Circumferencial force F_U

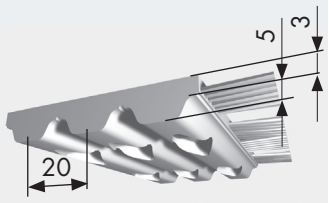
The transmissible circumferential force F_U depends on the shear strength F_{Uspec} and the number of teeth in mesh z_e on the drive pulley, which should be at least $z_{emin} = 6$.
Max. $z_{emax} = 6$ (welded belts) and $z_{emax} = 12$ (open length) are used for the calculation.

$F_U = F_{Uspec} \cdot z_e$

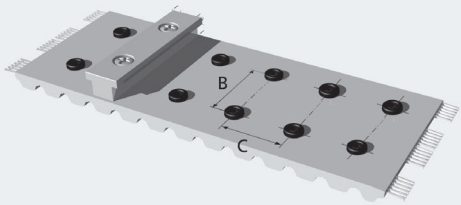
[1)] The stated masses only refer to the extruded belt and are for this reason without insert parts, screws and profiles.

Product selection
BRECO® ATN20 / ATNS20

Standard



ATN20 / ATNS20



	B	C_{min}	Belt widths b [mm]		
ATN20	25	20	50	75	100
ATNS20	25	20	50	75	–
Number of shapes for inset parts per tooth[1)]		ATN20	2	3	4
		ATNS20	2	2	–

ATN20 / ATNS20 (M/V)	Available lengths and versions
Standard delivery lengths (M)	rolls of 50 m
Cuts / lengths > 50 m	on request
Endless joined, minimum length (V)	1000 mm
Standard material	TPUST1
Steel cord tension member (Standard)	×
Stainless steel tension member	○
PAZ (white)	×
PAR (green)	×
PAZ-PAR (white / green)	×

Available materials

- TPUST1: Standard material, steel cord tension members
- TPUFD1: Material is suitable for contact with food, FDA conform, with stainless steel tension members
- TPUKF1: Material flexible at low temperatures, application area from –25°C to +5°C, with steel cord tension members

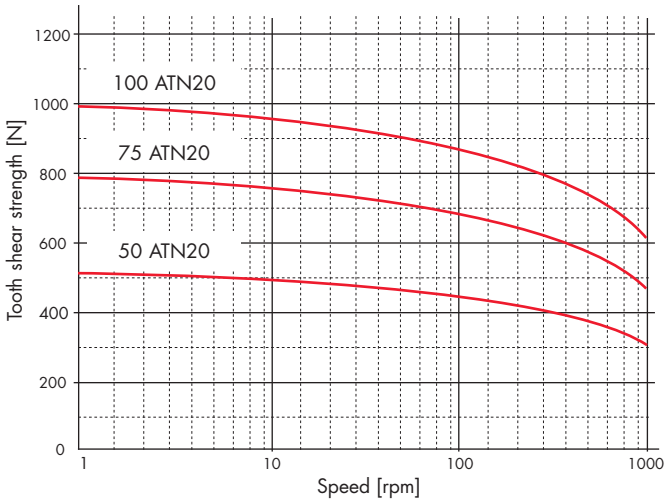
Further materials on request.
Depending on the material and/or version, a minimum purchase is required, please request.

M open length
V endless joined
× available
○ request minimum purchase amount
– not available

1) The shapes for the inset parts are factory sealed with an approx. 0.2 mm thick TPU skin. Open these shapes to insert the profile fastenings. If you want the timing belt pierced, please inform Angst+Pfister about the required spacing C when ordering. The shortest longitudinal spacing of the shapes in the belt tooth corresponds with pitch.

Technical data for the belt type / belt width based on the circumferential force load

ATN20, ATNS20 – tooth shear strength F_{Uspec} per belt tooth in mesh in [N]



Tension cord strengths F_{Tadm} / specific elasticities / belt weights

Belt width			b [mm]	50	75	100
M	Steel cord tension member	ATN20	F_{Tadm} [N]	8000	12000	16000
	Specific elasticity (steel cord)	ATN20	C_{spec} [N]	$2.0 \cdot 10^6$	$3.0 \cdot 10^6$	$4.0 \cdot 10^6$
	Stainless steel tension member	ATN20	F_{Tadm} [N]	7300	10950	14600
	Specific elasticity (stainless steel)	ATN20	C_{spec} [N]	$1.83 \cdot 10^6$	$2.73 \cdot 10^6$	$3.65 \cdot 10^6$
	Steel cord tension member	ATNS20	F_{Tadm} [N]	11200	19600	–
	Specific elasticity (steel cord)	ATNS20	C_{spec} [N]	$2.8 \cdot 10^6$	$4.2 \cdot 10^6$	–
V	Steel cord tension member	ATN20	F_{Tadm} [N]	2700	4000	5400
	Stainless steel tension member	ATN20	F_{Tadm} [N]	2700	4000	5400
	Steel cord tension member	ATNS20	F_{Tadm} [N]	2700	4000	–
Belt weight[1]		ATN20	[kg/m]	0.403	0.604	0.806
		ATNS20	[kg/m]	0.433	0.717	–

Flexibility (Minimum numbers of teeth / minimum diameter)

without contraflexure

		Steel cord tension member	Stainless steel tension member
ATN20	z_{min}	20	20
	d_{min} [mm]	125	120
ATNS20	z_{min}	25	–
	d_{min} [mm]	160	–

Circumferencial force F_U

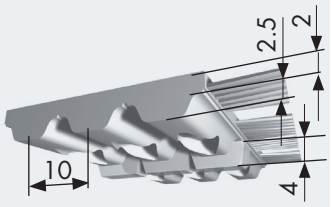
The transmissible circumferential force F_U depends on the shear strength F_{Uspec} and the number of teeth in mesh z_e on the drive pulley, which should be at least $z_{emin} = 6$.
Max. $z_{emax} = 6$ (welded belts) and $z_{emax} = 12$ (open length) are used for the calculation.

$F_U = F_{Uspec} \cdot z_e$

[1] The stated masses only refer to the extruded belt and are for this reason without insert parts, screws and profiles.

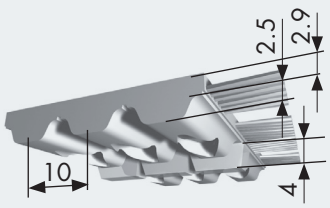
Product selection
BRECO® ATN10K6 / ATN10K6 DC

Standard

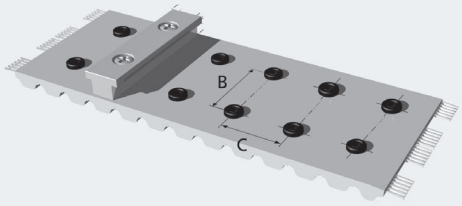


ATN10K6

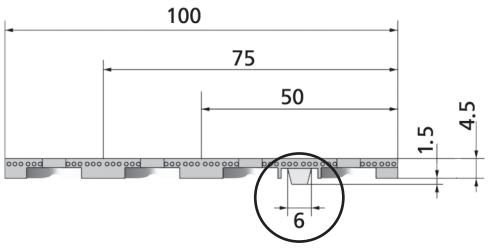
Standard



ATN10K6 DC



	B	C_{min}	Belt widths b [mm]		
ATN10K6	25	10	50	75	100
ATN10K6 DC	25	10	50	75	100
Number of shapes for inset parts per tooth[1)]			2	3	4



ATN10K6 / ATN10K6 DC (M/V)	Available lengths and versions
Standard delivery lengths (M)	Rolls of 50 or 100 m
Cuts / lengths > 50 m	on request
Endless joined, minimum length (V)	880 mm
Standard material	TPUST1
Steel cord tension member (Standard)	×
Stainless steel tension member	○
PAZ (white)	×
PAR (green)	×
PAZ-PAR (white / green)	×

	Belt width [mm]		
	50	75	100
V-groove location	symmetrical	asymmetrical	asymmetrical

The location of the V-groove is only symmetrical in the 50 mm wide belt for technical production reasons. In the 75 and 100 mm wide belts it is located between the 1st and 2nd shape for the inset parts (see figure). Therefore, the location of the V-groove is to be considered when mounting the pulley and the flights.

Available materials

- TPUST1: Standard material, steel cord tension members
- TPUFD1: Material is suitable for contact with food, FDA conform, with stainless steel tension members
- TPUKF1: Material flexible at low temperatures, application area from –25°C to +5°C, with steel cord tension members

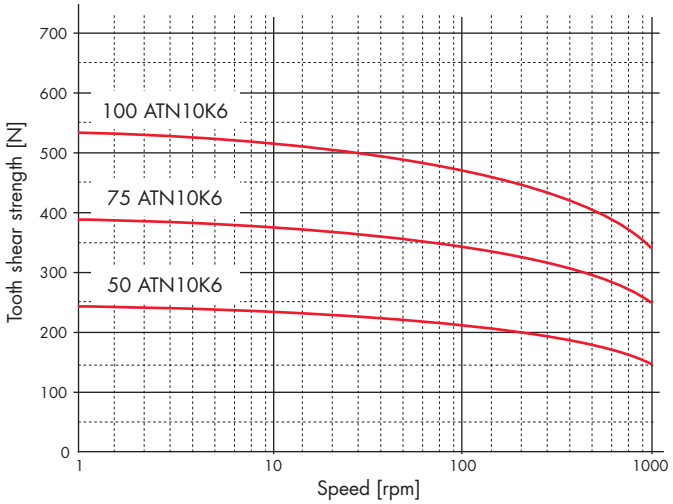
Further materials on request.
Depending on the material and/or version, a minimum purchase is required, please request.

M open length
V endless joined
× available
○ request minimum purchase amount
– not available

1) The shapes for the inset parts are factory sealed with an approx. 0.2 mm thick TPU skin. Open these shapes to insert the profile fastenings. If you want the timing belt pierced, please inform Angst+Pfister about the required spacing C when ordering. The shortest longitudinal spacing of the shapes in the belt tooth corresponds with pitch.

Technical data for the belt type / belt width based on the circumferential force load

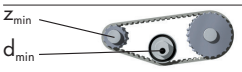
ATN10K6, ATN10K6 DC – tooth shear strength F_{Uspec} per belt tooth in mesh [N]



Tension cord strengths F_{Tadm} / specific elasticities / belt weights

Belt width		b [mm]	50	75	100
M	Steel cord tension member	F_{Tadm} [N]	6000	9000	12000
	Specific elasticity (steel cord)	C_{spec} [N]	$1.5 \cdot 10^6$	$2.25 \cdot 10^6$	$3.0 \cdot 10^6$
	Stainless steel tension member	F_{Tadm} [N]	4300	6450	8600
	Specific elasticity (stainless steel)	C_{spec} [N]	$1.08 \cdot 10^6$	$1.61 \cdot 10^6$	$2.15 \cdot 10^6$
V	Steel cord tension member	F_{Tadm} [N]	2000	3000	4000
	Steinless steel tension member	F_{Tadm} [N]	2000	3000	4000
Belt weight[1)]	ATN10K6	[kg/m]	0.245	0.367	0.490
	ATN10K6 DC	[kg/m]	0.305	0.457	0.610

Flexibility (Minimum numbers of teeth / minimum diameter)

		Steel cord	Stainless steel cord
 without contraflexure	z_{min}	25	25
	d_{min} [mm]	80	80

Circumferencial force F_U

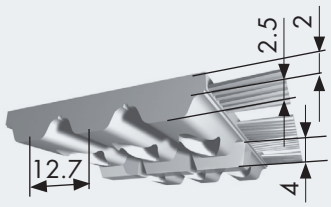
The transmissible circumferential force F_U depends on the shear strength F_{Uspec} and the number of teeth in mesh z_e on the drive pulley, which should be at least $z_{emin} = 6$.
Max. $z_{emax} = 6$ (welded belts) and $z_{emax} = 12$ (open length) are used for the calculation.

$F_U = F_{Uspec} \cdot z_e$

[1)] The stated masses only refer to the extruded belt and are for this reason without insert parts, screws and profiles.

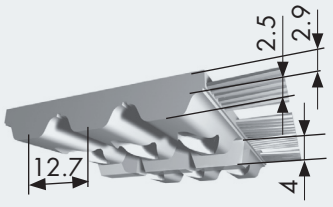
Product selection
BRECO® ATN12.7K6 / ATN12.7K6 DC

Standard

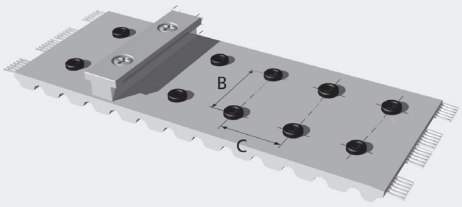


ATN12.7K6

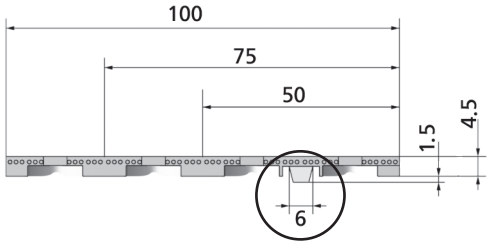
Standard



ATN12.7K6 DC



	B	C_{min}	Belt widths b [mm]		
ATN12.7K6	25	12.7	50	75	100
ATN12.7K6 DC	25	12.7	50	75	100
Number of shapes for inset parts per tooth[1]			2	3	4



ATN 12.7K6 / ATN 12.7K6 DC (M/V)	Available lengths and versions
Standard delivery lengths (M)	Rolls of 50 or 100 m
Cuts / lengths > 50 m	on request
Endless joined, minimum length (V)	880 mm
Standard material	TPUST1
Steel cord tension member (Standard)	×
Stainless steel tension member	○
PAZ (white)	×
PAR (green)	×
PAZ-PAR (white / green)	×

	Belt width [mm]		
	50	75	100
V-groove location	symmetrical	asymmetrical	asymmetrical

The location of the V-groove is only symmetrical in the 50 mm wide belt for technical production reasons. In the 75 and 100 mm wide belts it is located between the 1st and 2nd shape for the inset parts (see figure). Therefore, the location of the V-groove is to be considered when mounting the pulley and the flights.

Available materials

- TPUST1: Standard material, steel cord tension members
- TPUFD1: Material is suitable for contact with food, FDA conform, with stainless steel tension members
- TPUKF1: Material flexible at low temperatures, application area from –25°C to +5°C, with steel cord tension members

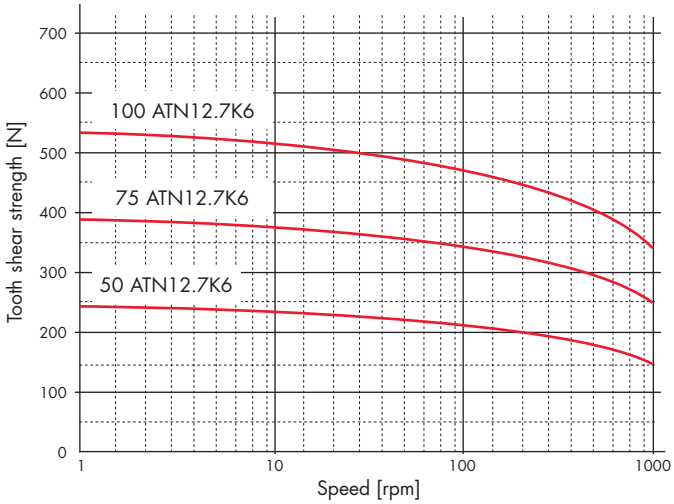
Further materials on request.
Depending on the material and/or version, a minimum purchase is required, please request.

M open length
V endless joined
× available
○ request minimum purchase amount
– not available

1) The shapes for the inset parts are factory sealed with an approx. 0.2 mm thick TPU skin. Open these shapes to insert the profile fastenings. If you want the timing belt pierced, please inform Angst+Pfister about the required spacing C when ordering. The shortest longitudinal spacing of the shapes in the belt tooth corresponds with pitch.

Technical data for the belt type / belt width based on the circumferential force load

ATN12.7K6, ATN12.7K6 DC – tooth shear strength F_{Uspec} per belt tooth in mesh [N]



Tension cord strengths F_{Tadm} / specific elasticities / belt weights

Belt width		b [mm]	50	75	100
M	Steel cord tension member	F_{Tadm} [N]	6000	9000	12000
	Specific elasticity (steel cord)	C_{spec} [N]	$1.5 \cdot 10^6$	$2.25 \cdot 10^6$	$3.0 \cdot 10^6$
	Stainless steel tension member	F_{Tadm} [N]	4300	6450	8600
	Specific elasticity (stainless steel)	C_{spec} [N]	$1.08 \cdot 10^6$	$1.61 \cdot 10^6$	$2.15 \cdot 10^6$
V	Steel cord tension member	F_{Tadm} [N]	2000	3000	4000
	Stainless steel tension member	F_{Tadm} [N]	2000	3000	4000
Belt weight[1)]	ATN12.7K6	[kg/m]	0.226	0.340	0.453
	ATN12.7K6 DC	[kg/m]	0.286	0.430	0.573

Flexibility (Minimum numbers of teeth / minimum diameter)

			Steel cord	Stainless steel cord
z_{min} / d_{min}	without contraflexure	z_{min}	20	20
		d_{min} [mm]	80	80

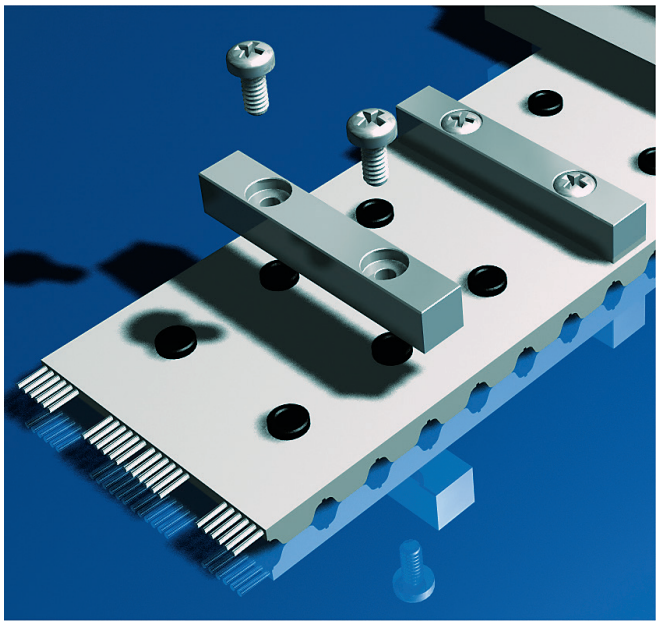
Circumferencial force F_U

The transmissible circumferential force F_U depends on the shear strength F_{Uspec} and the number of teeth in mesh z_e on the drive pulley, which should be at least $z_{emin} = 6$.
Max. $z_{emax} = 6$ (welded belts) and $z_{emax} = 12$ (open length) are used for the calculation.

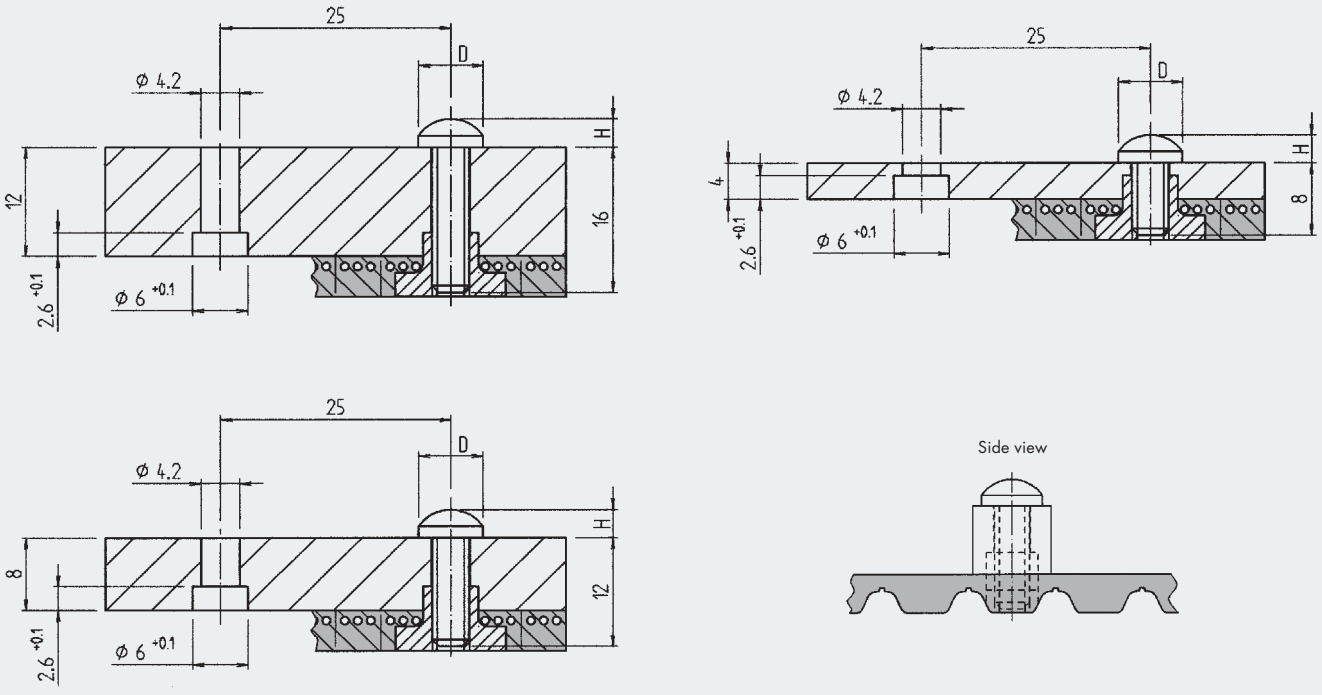
$F_U = F_{Uspec} \cdot z_e$

[1)] The stated masses only refer to the extruded belt and are for this reason without insert parts, screws and profiles.

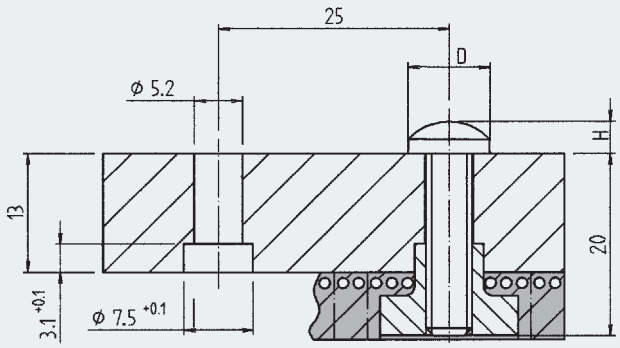
Connection geometries

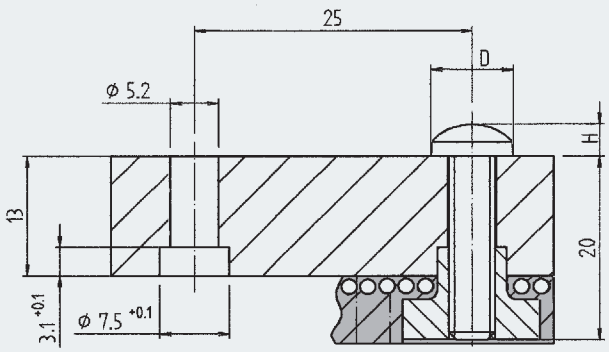


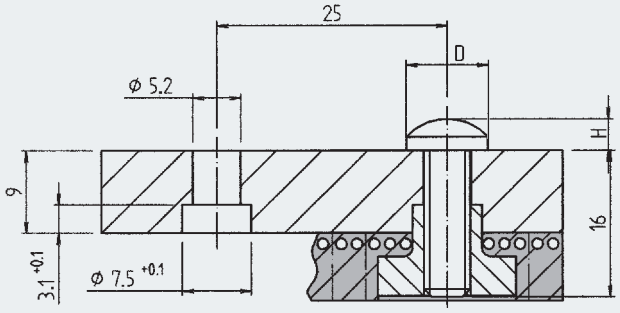
Please take the different screw lengths allocated to the stated connection dimensions into account for the profile and/or flight installation in your structure.

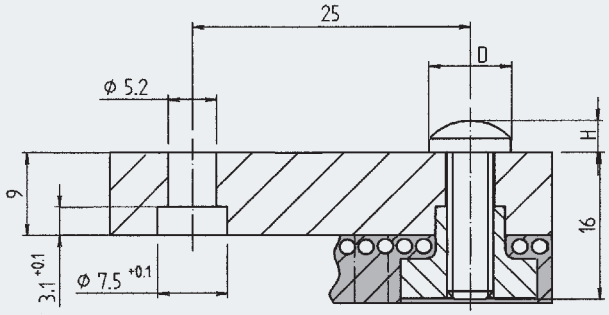


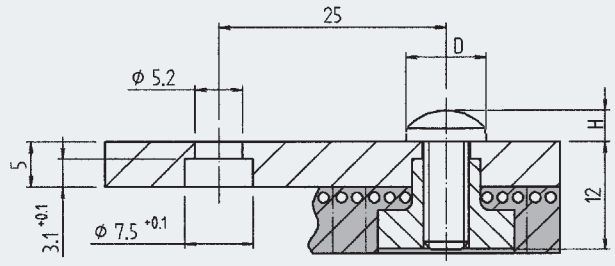
Connection geometry ATN10 / ATN10K6 / ATN 12.7 / ATN12.7K6 (Section through belt tooth)

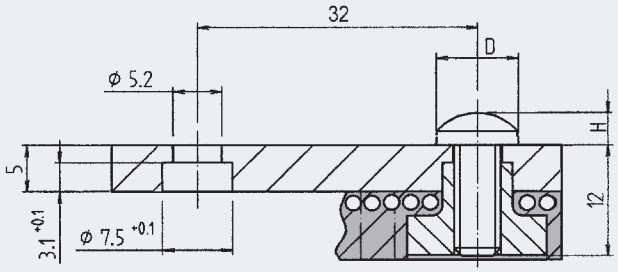


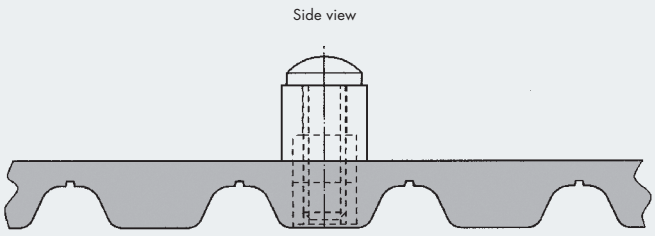




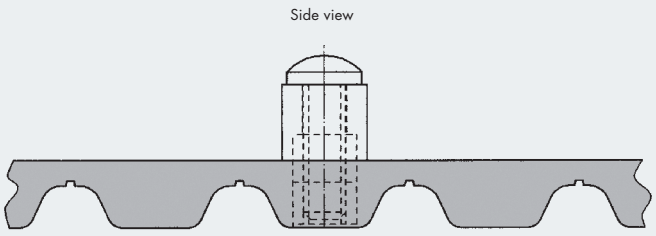








Connection geometry ATN20 (Section through belt tooth)



Connection geometry ATNS20 (Section through belt tooth)

Extrudable shape distances

Shapes to accommodate profile fastenings (inset parts) are designed in each tooth as standard for all ATN timing belts. For this reason, the extruded longitudinal spacing of the shapes corresponds with the timing belt pitch.

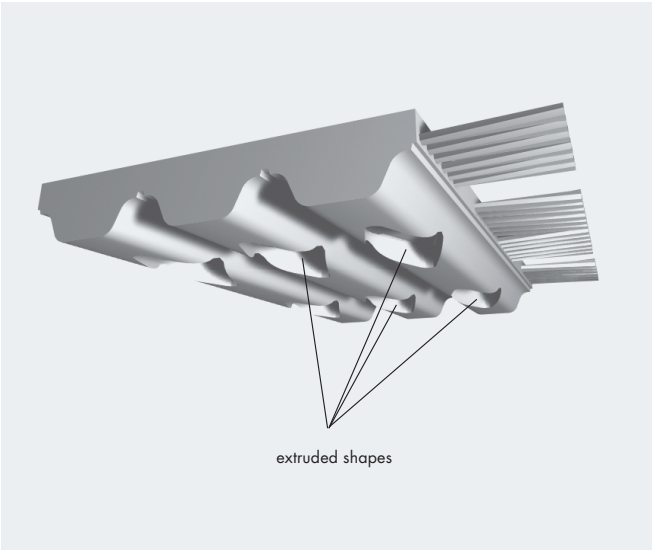
ATN10 / ATN10K6:	10 mm
ATN12.7 / ATN12.7K6:	12.7 mm
ATN20 / ATNS20:	20 mm

When adhering to particular conditions, larger longitudinal spaces can be extruded, i.e. only in each n teeth, a shape is present. Check the following rules, if a shape is only required in each n tooth:

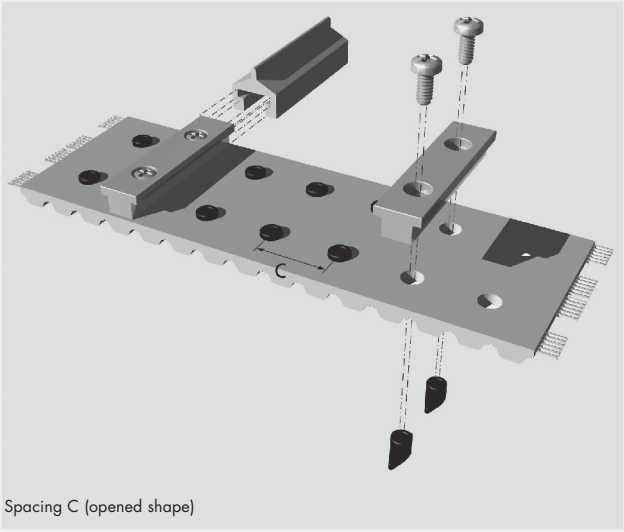
ATN10 / ATN10K6:	120 / n	→	integer
ATN12.7 / ATN12.7K6:	96 / n	→	integer
ATN20 / ATNS20:	60 / n	→	integer

Example: ATN10
Shape only in each third tooth:
120 / 3 = 40 integer

Please ask for the minimum purchase quantity for these special versions.

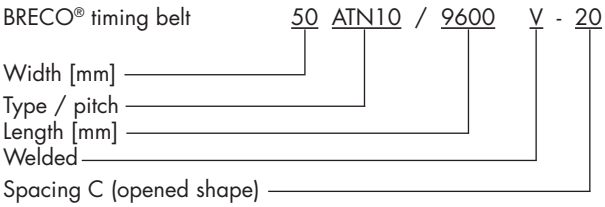


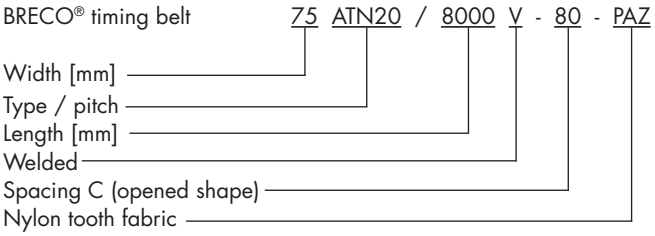
extruded shapes

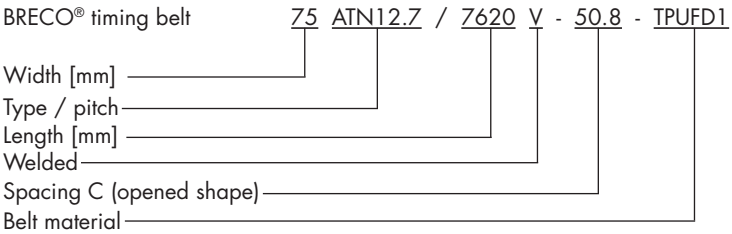


Spacing C (opened shape)

Ordering examples







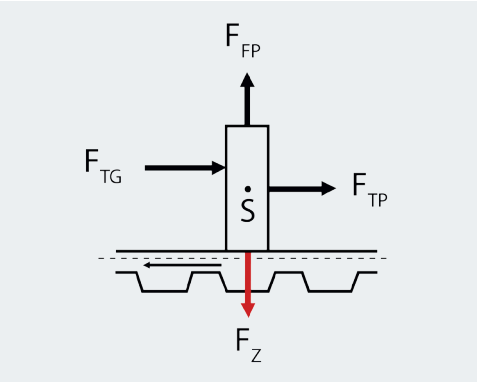
Basis of calculation

Load at the ATN profile joint

In addition to the belt type and/or width selection according to the circumferential force load, as described on the pages of timing belt types, the selection can also be based on the profile joint load.

Pushing force in the linear movement of the product to be transported

If the product to be transported (TG) is pushed by the profiles and it slides on an anti-friction rail or similar, the pushing force is mainly the friction force. In cycle operation the inertial force of the product to be transported is also to be taken into account.



- pushing force FTG of the product to be transported
- inertial forces FTP (product to be transported and profile)
- centrifugal force FFP of the profile (incl. attachment parts)
- pre-tension and tensile strength (FZ) of the screw connection

Centrifugal force

Here, the occurring centrifugal forces are considered. The portion of the product to be transported must only be considered when the TG is actually circling. The centrifugal force is generally low compared to the inertial force.

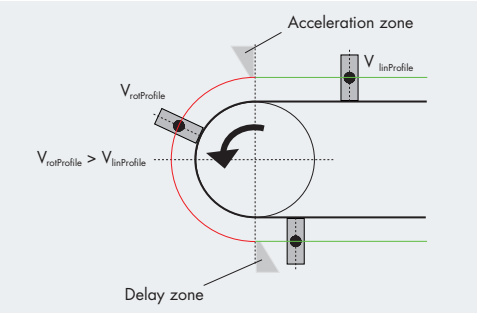
Additional inertial force when changing into and out of the circular movement

Each profile fastened to the belt is subject to a very high acceleration when changing from the linear movement into or out of the circular movement. This is due to the different rotational speeds v_{rot} of timing belt and profiles in the angle of wrap. While the speed v in the neutral belt fibre does not change, even during rotation, $v_{rot} = v_{lin}$, the profile itself in this area is subject to a notably higher speed than in the linear movement, $v_{rotProfile} > v_{linProfile}$. The distance of the centre of gravity of the profile h_{SP} from the neutrale fibre and the mass of the profile m_P are of decisive importance. With these and further parameters the admissible height of the centre of gravity of the profile can be determined using the diagrams on page 8.18.

If the product to be transported additionally runs around the pulley and the guide rollers, the product, too, is subject to the high acceleration. In this case, please consult the Angst+Pfister technical department.

Pre-tension force of the screw connection

The pre-tension force of the screw connection is a direct part of the tensile load on the insert parts. For this reason, it is taken into account for the admissible tensile strengths of the inset parts.



Profile joint resistance

Two ways are available to calculate the profile joint resistance. The admissible height of the centre of gravity of the flight can be roughly determined depending on the profile mass and other parameters (page 8.18). Then, this value serves as a guide value for the profile design. For more in depth drive analysis, please consult Angst+Pfister.

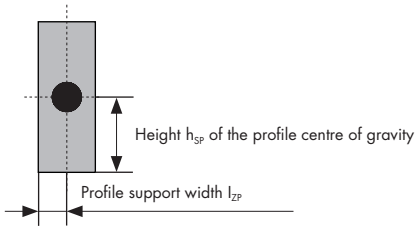
Admissible profile center of gravity height

How to determine the admissible height of the centre of gravity of the profile

Starting point for the determination are the preselected values for belt pitch and width, pulley and/or roller diameter, transport speed and profile geometry as well as its mass. The diagrams contain the admissible heights for the profile centre of gravity depending on the determined pulley diameter, transport speed and profile masses. The conversion to other parameters is made based on the interrelation stated on page 8.18. For pulley diameters not contained in the diagrams, a respective approximation or interpolation is required.

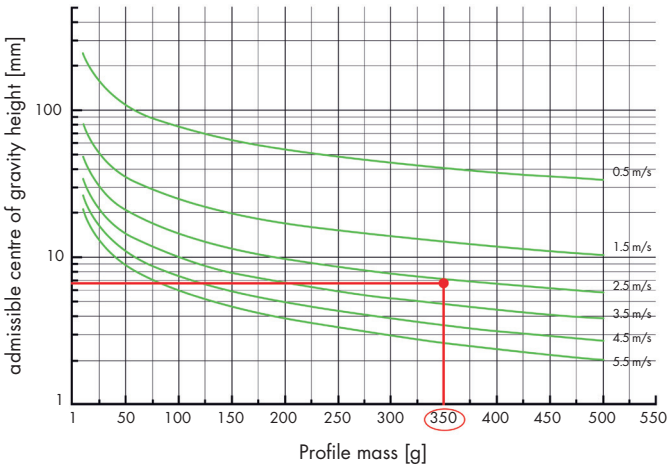
Example:

Belt type:	50 ATN10
Pulley diameter:	d_0 = 127.32 mm
Displacement speed:	v = 2.5 m/s
Profile mass:	m_P = 350 g
Profile support width:	l_{ZP} = 10 mm
Plastic inset part with metal profile	



Take the value for h_{SPadm} approx. 7 mm for the admissible centre of gravity height from the adjacent graphics.

Pulley diameter d_0 = 127.32 mm



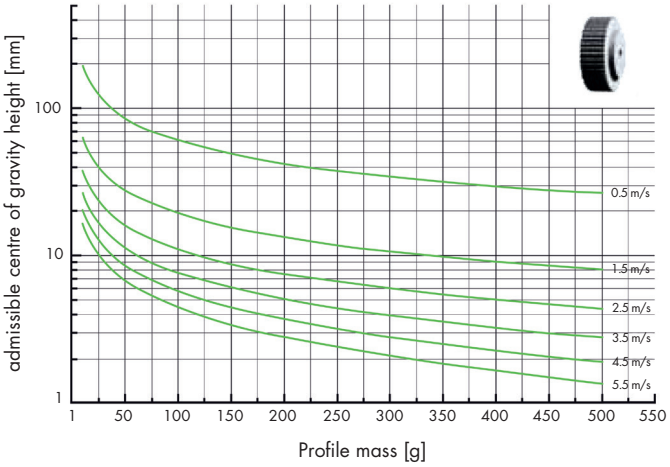
Admissible profile center of gravity height

The displayed curves are only valid for the stated parameters. The product to be transported running around is not considered. The conversion to other parameters is made based on the interrelation stated on this page.

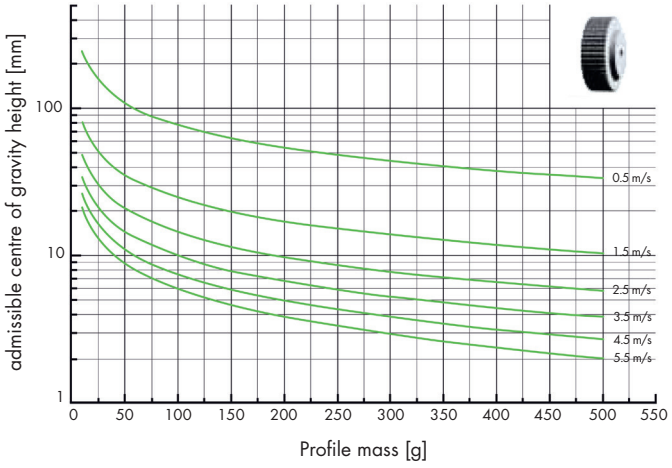
Parameter

- belt type 50 ATN10 / 12.7
- profile support width l_{ZN} (symmetrical) = 10 mm
- plastic inset parts and polyamide or metal profile

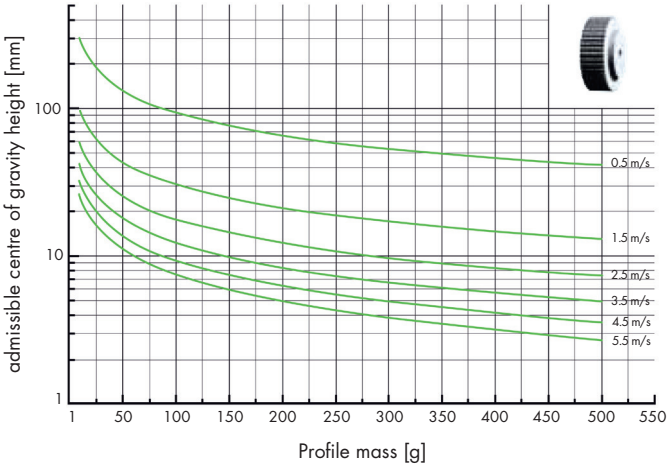
Pulley diameter d_0 = 79.58 mm



Pulley diameter d_0 = 127.32 mm



Pulley diameter d_0 = 199.99 mm



Admissible profile center of gravity height

Belt width

- for 25 mm: = Curve value · 0.7
- for 75 mm: = Curve value · 1.2
- for 100 mm: = Curve value · 1.4

For variable profile support width

$$= \text{Curve value} \cdot \sqrt{\frac{0.1 \cdot l_{ZP}}{\text{mm}}}$$

ATN10 / 12.7 with various inset parts

- for plastic inset parts with TPU profile
  = Curve value · 0.6
- for brass inset parts with polyamide profile
  = Curve value · 1.3
- for brass inset part with metal profile
  = Curve value · 1.8

ATN20 with various inset parts

- for plastic inset part with polyamide or metal profile
  = Curve value · 1.3
- for brass inset parts with polyamide profile
  = Curve value · 1.5
- for brass inset part with metal profile
  = Curve value · 2.2

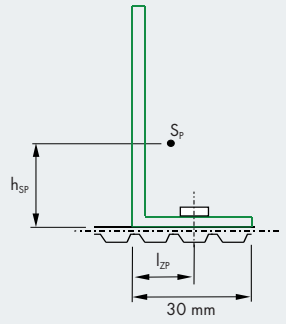
Calculation example

Metal brackets are to be fastened on a 50 ATN10 timing belt to push the products to be transported (see sketch).

Given:

- brass inset part with metal profile
- belt type: 50 ATN10
- pulley diameter: d_0 = 133.69 mm
- speed: v = 2 m/s
- profile mass (angle mass): m_P = 325 g
- profile support width: l_{ZP} = 15 mm

Required: Admissible centre of gravity height for the metal bracket



Drawing

Solution:

1. The admissible centre of gravity height is determined using the diagram on page 8.18. Refer to page 8.17 for the procedure. For the pulley diameter d_0 = 133.69 (z = 42) mm select the diagram with the closest diameter (d_0 = 127.32 mm). For v = 2 m/s and m_P = 325 g this results in: h_{SP} = 10 mm.
2. Adapting the parameters of page 8.18 to the example calculation (calculation equation, see above).

- profile support width from 10 mm to 15 mm:

$$h_{SP} = 10\ \text{mm} \cdot \sqrt{\frac{0.1 \cdot 15\ \text{mm}}{\text{mm}}} = 12.2\ \text{mm}$$

- from plastic inset part with polyamide or metal profile to brass inset part with metal profile:

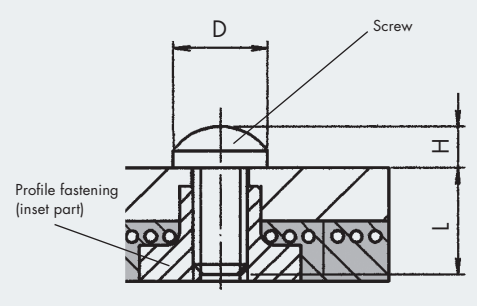
$$h_{SPadm} = 12.2\ \text{mm} \cdot 1.8 = 22\ \text{mm}$$

Attention: The current value in the calculation order is always valid as curve value to be used. Here, 12.2 mm from the calculation of the profile support width.

Result: The admissible centre of gravity height for the parameters stated in the example is: h_{SPadm} = 22 mm. With this the profile joint resistance is guaranteed.

Inset parts and screw types

Availability of plastic, brass and stainless steel inset parts and the corresponding screw types to fasten the profiles on the timing belts.



Screw connection with black polyamide inset part

Belt type	Screw type	Screw length L	D	H
ATN10 ATN12.7 ATN10K6 ATN12.7K6	Z40 × 8	8 mm	7.0	3.1
	Z40 × 12	12 mm	7.0	3.1
	Z40 × 16	16 mm	7.0	3.1
ATN20 ATNS20	Z50 × 12	12 mm	8.8	3.5
	Z50 × 16	16 mm	8.8	3.5
	Z50 × 20	20 mm	8.8	3.5

Screw types

EJOT Delta PT® screws are made of tempered steel according to EJOT® WN 5461 part 2, with mushroom head and cross recess Z according to EJOT® WN 5411.

Note: For a high reliability of the screwed connection, it is recommended to use the original EJOT Delta PT® screws according to the above mentioned specification. These screw types were especially designed for thermoplastic components and provide the required safety and reliability during mounting and use both under static and dynamic load. All screws have a head with Z cross recess in size 2.

Attention: The Delta PT® screws have no metrical ISO coarse-pitch thread according to DIN 13, thus, they are only suitable for plastic inset parts.

Polyamide inset parts

EJOT Delta PT® screw

Recommended maximum screw-in torques for the connection

	Flight material			
Inset part	Belt	Polyamide	Metal	TPUST1
Plastic	ATN10/12.7	70 Ncm	70 Ncm	50 Ncm
	ATN20	100 Ncm	100 Ncm	80 Ncm

Ordering example

Inset parts made of polyamide: ET-PA-ATN10/12.7 or ET-PA-ATN20

Inset parts made of polyamide for ATN timing belts with the pitch 10 and 12.7 in design "DC": ET-PA-ATN10/12.7 DC

Ordering example

EJOT Delta PT® screw: ATN10/12.7 screws Z40 3 8

Screw connection with brass inset part
Screw types:

Cheese head screws according to DIN 7984 (zinc-plated) with hexagon socket and pressed head

Belt type	Screw type	Screw length L	D	H
ATN10 ATN12.7 ATN10K6 ATN12.7K6	M4 × 8	8 mm	7.0	2.8
	M4 × 12	12 mm	7.0	2.8
	M4 × 16	16 mm	7.0	2.8
ATN20 ATNS20	M5 × 12	12 mm	8.5	3.5
	M5 × 16	16 mm	8.5	3.5
	M5 × 20	20 mm	8.5	3.5

Brass inset parts

Cheese head screws

Screw connection with stainless steel inset part
Screw types:

Cheese head screws according to DIN 7984 (stainless steel material number 1.4301) with hexagon socket and pressed head

Belt type	Screw type	Screw length L	D	H
ATN10 ATN12.7 ATN10K6 ATN12.7K6	VA M4 × 8	8 mm	7.0	2.8
	VA M4 × 12	12 mm	7.0	2.8
	VA M4 × 16	16 mm	7.0	2.8
ATN20 ATNS20	VA M5 × 12	12 mm	8.5	3.5
	VA M5 × 16	16 mm	8.5	3.5
	VA M5 × 20	20 mm	8.5	3.5

Stainless steel inset parts

Stainless steel cheese head screws

Attention
These screws are exclusively designed for the application in brass and stainless steel inset parts. They are not selfthreading and insufficient for plastic inset parts.

Recommended maximum screw-in torques for the connection

		Flight material	
Inset part	Belt type	Polyamide	Metal
Brass / VA	ATN10/12.7	100 Ncm	100 Ncm
	ATN20	150 Ncm	150 Ncm

Ordering example
Inset parts made of brass or stainless steel: ET-MS-ATN10/12.7 or ET-VA-ATN10/12.7

Inset parts made of brass for ATN timing belts with the pitch 10 and 12.7 in design "DC": ET-MS-ATN10/12.7 DC

Ordering example
Cheese head screw: ATN10 screws M5 3 16

Cheese head screw (VA): ATN10/12.7 VA screws M4 3 12

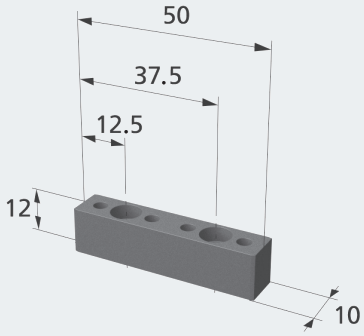
ATN adapter profiles

R profile, material PAN1, black

Two possibilities to fasten the ATN profiles are offered. The profile can be directly screwed to the back of the belt or pushed on an adapter. Pushing can be required when the profile shape does not allow the profile to be screwed on.

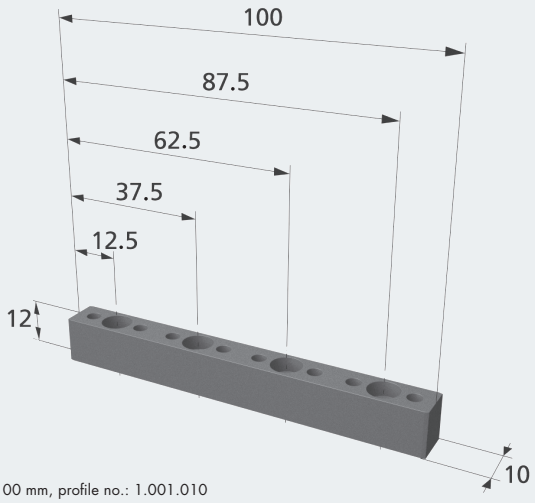
The adapters guarantee a reliable fastening with the corresponding profiles. This system allows the profiles to be easily and quickly changed.

Inset parts do not need to be replaced because the adapters are not loosened during profile changes. Furthermore, longer screws are not required for fastening different profile heights.

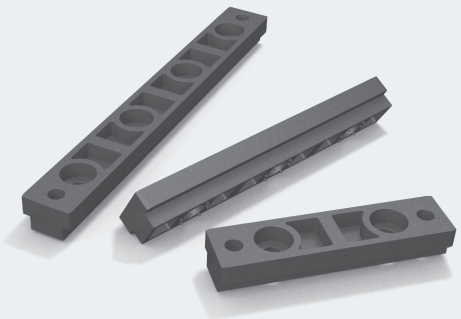


Width 50 mm, profile no.: 1.001.008

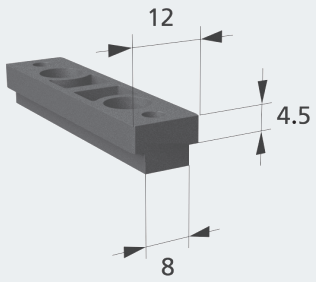
Width 75 mm, profile no.: 1.001.009



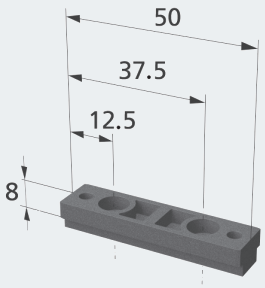
Width 100 mm, profile no.: 1.001.010



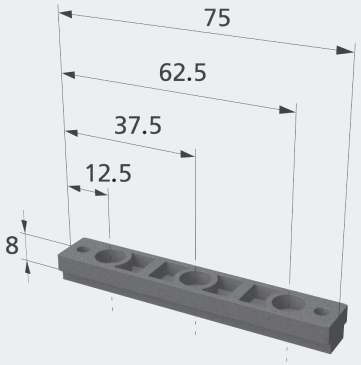
Y profile



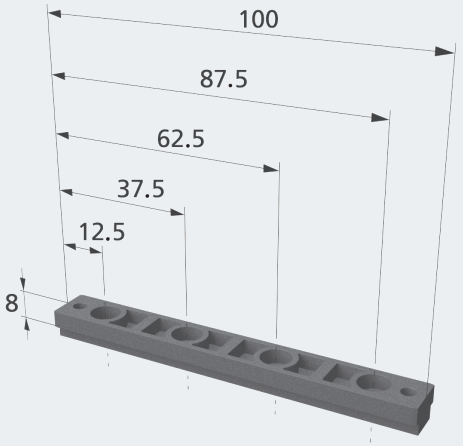
T profile, material PAN1, black



Width 50 mm, profile no.: 1.001.002



Width 75 mm, profile no.: 1.001.003



Width 100 mm, profile no.: 1.001.004

Introduction

The timing belt lock especially developed for the ATN belt is a detachable connection and is used when the ATN timing belt needs to be installed on site (due to particular mounting conditions).

Connection elements made of high tensile polyamide and plates made of harmonic steel guarantee a reliable connection of the belt ends. The user can select between three or two different versions depending on the belt type.

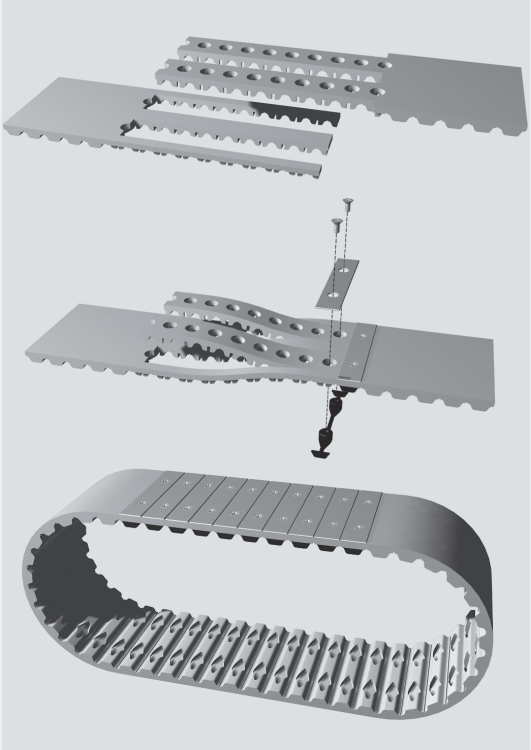
For lock version "C" (Connection) used in timing belts ATN10, ATN12.7, ATN10K6, ATN12.7K6, the plates are screwed on the belt backs. The belt is 0.9 mm thicker than standard versions in the lock area, due to the connection plates.

With lock design "DC" (Deep Connection) the thickness of the timing belt in pitches 10 mm and 12.7 mm is such that the plates are flush with the back of the belt.

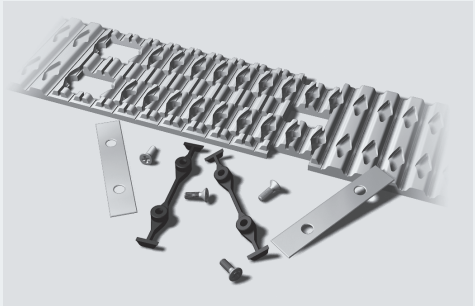
Configuration "DC-PRO" provides the possibility to fasten profiles in the lock area without the need to change the profile geometries.

An adaptation of the back thickness is not necessary with the ATN20 and ATNS20. For these belts, only DC and DC PRO versions are available.

The inset parts, screws, back plates and the connection elements for the profile assembly are supplied as standard according to the lock design.



ATN timing belt lock



Lock elements

Available versions

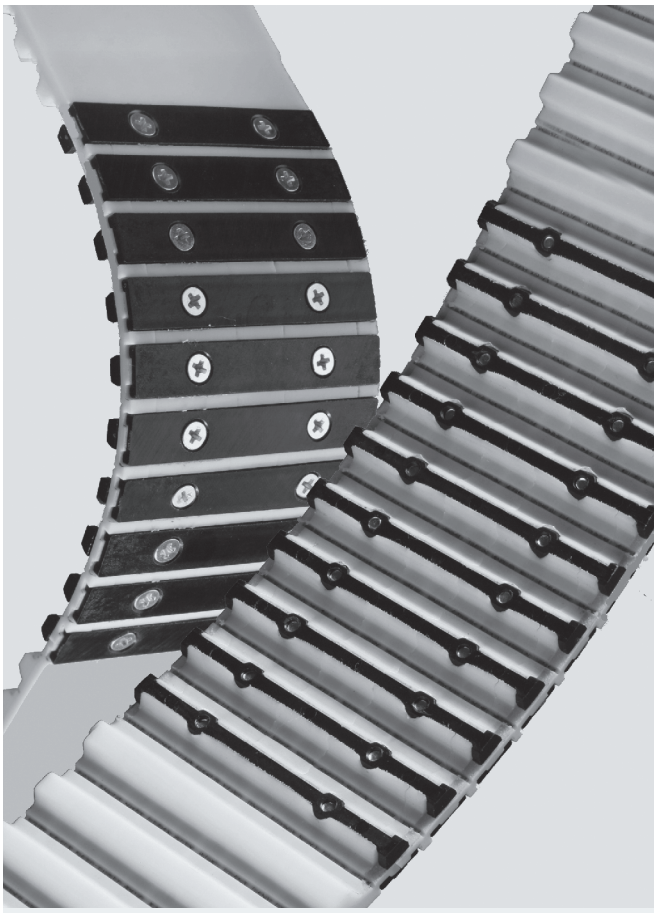
Belt type	Design C	Design DC / DC-PRO
ATN10	×	×
ATN12.7	×	×
ATN20	–	×
ATNS20	–	×
ATN10K6	×	×
ATN12.7K6	×	×

× available
– not available

BRECO® AT10 / T10 timing belt lock

Timing belt lock for BRECO® timing belts

The BRECO® timing belt lock for the timing belt types AT10 DC and T10 DC is mainly used for low load drives but extensive assembly work. The lock offers substantial savings in work and costs where, for design purposes, the timing belt can only be joint to an endless belt after being inserted in the machine. It can also be used as an "Emergency belt" to bridge downtimes as a result of malfunctions and belt failures. When using the lock for timing belts with flighted profiles, take a minimum profile spacing of 100 mm into account.

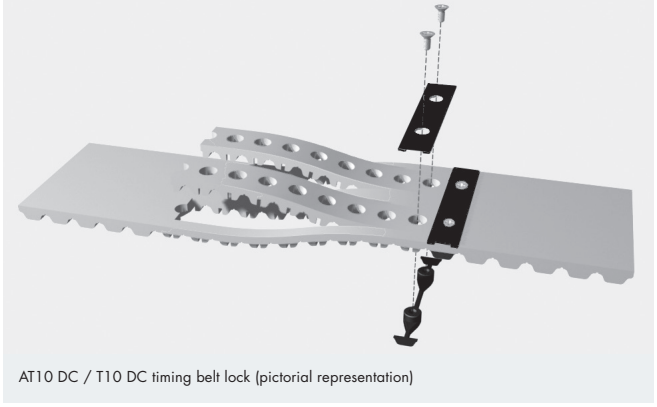


AT10 DC / T10 DC timing belt lock

Technical data

Material of lock elements	**Carbon fiber reinforced polyamide**
Length of the lock (tooth center to tooth center)	90 mm
Number of connecting elements	10
Width of connecting plates	8 mm
Thickness of the timing belt (version DC)	5.5 mm
Minimum number of teeth of the pulley (use only normal gap)	25

Available belt width [mm]	32	50	75	100
Admissible tensile force [N]	550	750	1000	1500



AT10 DC / T10 DC timing belt lock (pictorial representation)

Ordering information

The lock elements on the belt rear are countersunk so that the elements are flush with the belt top edge. For this reason, the timing belt used must be thicker than the standard BRECO® AT10 or T10 timing belt. Ensure that you specify the version as “DC” when ordering an “AT10” or “T10” belt.

Ordering examples

Ordering example for timing belts prepared for belt lock (belt lock is not assembled)

75 AT10 / 8400 DC or 100 T10 / 6000 DC

Ordering example for timing belt lock

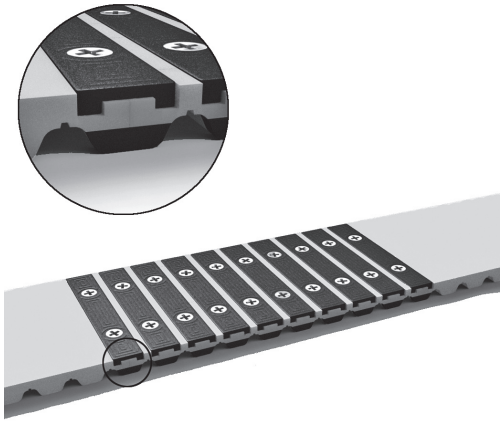
75 AT10 DC or 100 T10 DC

Ordering example for timing belt with lock (belt lock is preassembled)

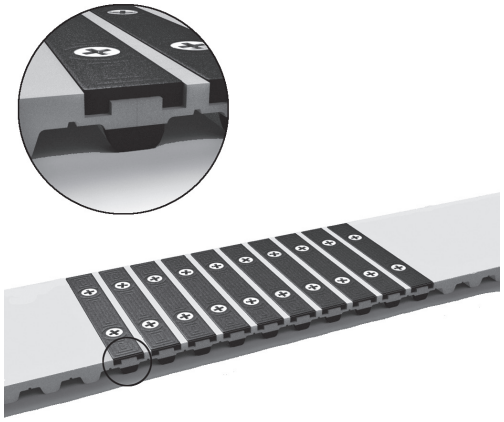
50 AT10 / 5400 DC assembled
50 AT10 DC assembled

Annotation

Specify the two respective designations when ordering the timing belt and the lock. If only the timing belt designation is specified, only the timing belt will be supplied with the respective preparation for the lock.



AT10 DC timing belt lock



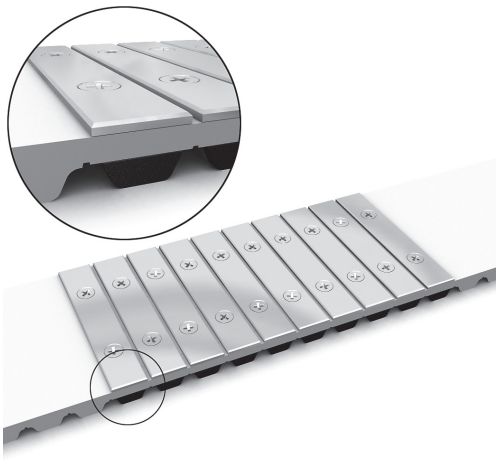
T10 DC timing belt lock

Lock description
ATN10; ATN10K6; ATN12.7; ATN12.7K6

Design “C”

Timing belt and lock description

- total thickness of the ATN timing belts (without guide): 4.5 mm (standard)
- belt teeth prepared for connecting elements
- lock length = 10 teeth
- back plates to screw on back of belt
- profile installation in the lock area not possible

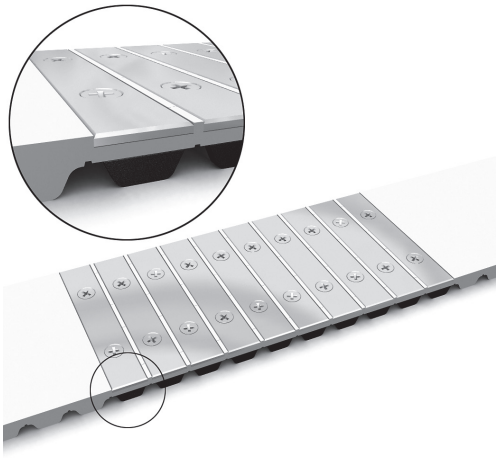


Example: lock design: 50 ATN10/12.7 C
Timing belt: 50 ATN12.7 C

Design “DC”

Timing belt and lock description

- total thickness of the ATN timing belts (without guide): 5.4 mm
- belt teeth and back of belt prepared for connecting elements and back plates
- lock length = 10 teeth
- back plates embeded in back of belt
- profile installation in the lock area not possible
- note: inset parts with higher dome or shank required even outside the lock area

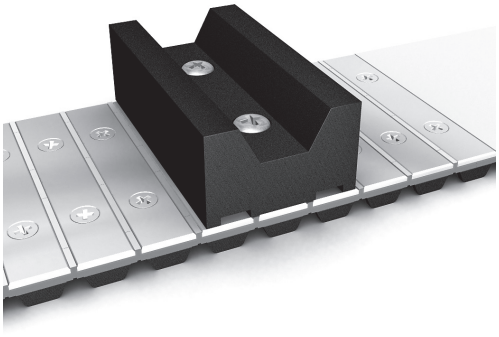


Example: lock design: 50 ATN10/12.7 DC
Timing belt: 50 ATN10 DC

Design “DC-PRO”

Timing belt and lock description

- total thickness of the ATN timing belts (without guide): 5.4 mm
- belt teeth and back of belt machined for connecting elements and back plates
- lock length = 10 teeth
- back plates embeded in back of belt
- profile installation is possible in the lock area
- note: inset parts with higher dome or shank required even outside the lock area
- only ATN Type



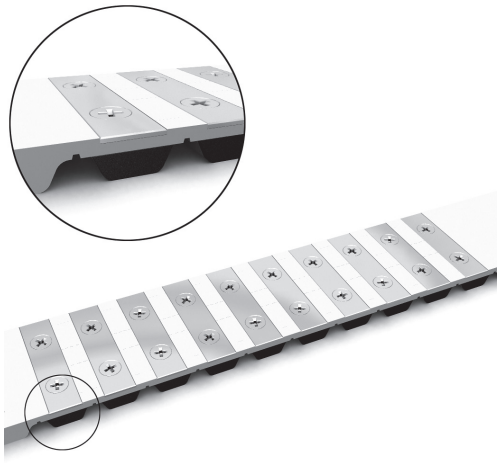
Example: lock design: 50 ATN10 DC-PRO
Timing belt: 50 ATN10 DC

Lock description
ATN20; ATNS20

Design “DC” (ATN20)

Timing belt and lock description

- total thickness of the ATN timing belts: 8 mm
- belt teeth and back of belt prepared for connecting elements and back plates
- lock length = 9 teeth
- back plates embedded in back of belt
- profile installation in the lock area not possible

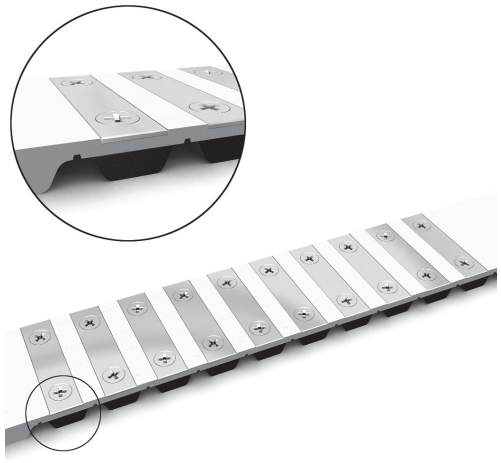


Example: lock design: 50 ATN20 DC
Timing belt: 50 ATN20 DC

Design “DC” (ATNS20)

Timing belt and lock description

- as ATN20
- shape spacing in crosswise direction to the belt: 32 mm

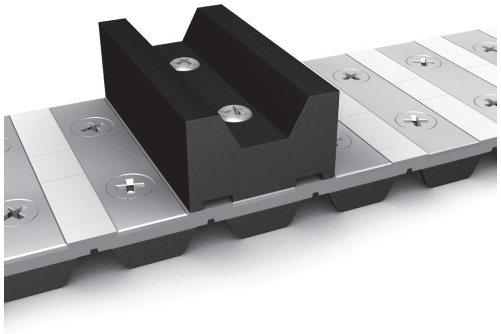


Example: lock design: 50 ATNS20 DC
Timing belt: 50 ATNS20 DC

Design “DC-PRO”

Timing belt and lock description

- total thickness of the ATN timing belts: 8 mm
- belt teeth and back of belt prepared for connecting elements and back plates
- lock length = 9 teeth
- back plates embedded in back of belt
- profile installation is possible in the lock area



Example: lock design: 50 ATN20 DC-PRO
Timing belt: 50 ATN20 DC

Minimum number of teeth / Admissible tensile loads

Timing belt lock for ATN10, ATN12.7, ATN20, ATNS20 and ATN10K6, ATN12.7K6

Material of connecting elements: High tensile black polyamide

Material of the connecting plates: Harmonic steel, hardened and polished

Plate height: 0.9 mm

Connecting screws:
ATN10, ATN12.7: countersunk head screws M 2.5 DIN 965
ATN20, ATNS20: countersunk head screws M 3 DIN 965

Minimum number of pulley teeth for:

ATN10: $z_{min} = 25$
ATN10K6: $z_{min} = 25$
ATN12.7: $z_{min} = 20$
ATN12.7K6: $z_{min} = 20$
ATN20: $z_{min} = 20$
ATNS20: $z_{min} = 25$

Admissible tensile forces [N] in the lock connection

The admissible tensile forces are lower than the equivalent welded belts. The values for belts with mechanical lock, can be found in the table on the right:

	Admissible tensile forces [N]		
Belt width b	50 mm	75 mm	100 mm
ATN10 ATN12.7 ATN10K6 ATN12.7K6	750	1150	1500
ATN20 ATNS20	1000	1500	2000

Selection procedure

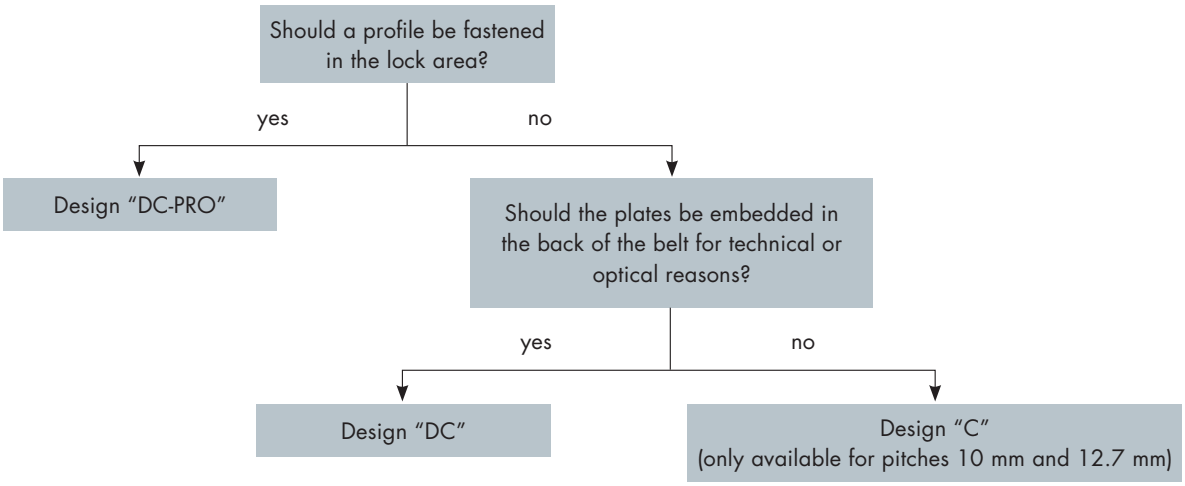
Step 1

Selection of the belt types and the width

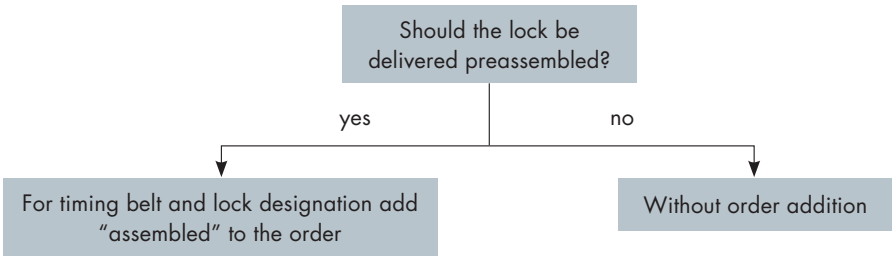
	Available lock widths		
	50	75	100
ATN10, TN10K6	×	×	×
ATN12.7, ATN12.7K6	×	×	×
ATN20[1)]	×	×	×
ATNS20[1)]	×	×	–

× available
– not available
[1)] not available in design "C"

Step 2



Step 3



Ordering information and examples

Ordering information

When ordering an ATN timing belt with lock connection, the lock is not automatically included. The lock must be ordered with the corresponding ordering code in addition to the ATN timing belt order.

The lock is added to the timing belt and not preassembled as standard. If a preassembly is required, this must also be stated with the order. The order addition "assembled" must be added to the belt designation and to the lock designation.

For design "DC-PRO" the addition "PRO" must only be added to the lock designation. Special elements are required for the profile installation on the DC-PRO design. We deliver these elements and the respective screws in various lengths to fasten 5 profiles as standard.

Attention: for lock design "DC and DC-PRO" inset parts adapted to the timing belts ATN10 and ATN12.7 to fasten profiles are also required outside the lock area.

Examples

Design "C"

Ordering code for timing belt: 50 ATN10 / 5400 C
Ordering code for lock: 50 ATN10 / 12.7 C

Lock, preassembled:

Ordering code for timing belt: 50 ATN10 / 5400 C assembled
Ordering code for lock: 50 ATN10 / 12.7 C assembled

Design "DC"

Ordering code for timing belt: 75 ATN12,7 / 12700 DC
Ordering code for lock: 75 ATN10 / 12.7 DC

Lock, preassembled:

Ordering code for timing belt: 75 ATN12.7 / 12700 DC assembled
Ordering code for lock: 75 ATN10 / 12.7 DC assembled

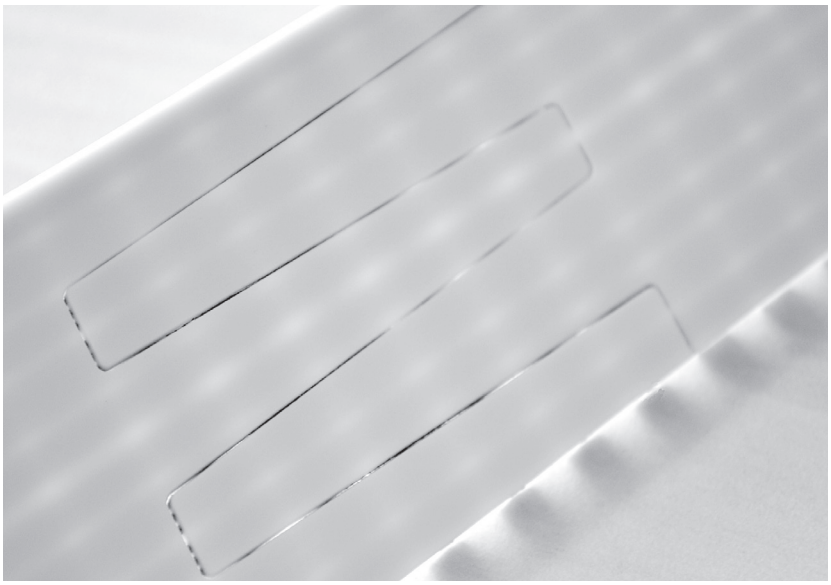
Design "DC-PRO"

Ordering code for timing belt: 100 ATN20 / 8000 DC
Ordering code for lock: 100 ATN20 DC-PRO

Lock, preassembled:

Ordering code for timing belt: 100 ATN20 / 8000 DC assembled
Ordering code for lock: 100 ATN20 DC-PRO assembled

BRECO® timing belt PinLock



The BRECO® PinLock is a simple and fast-assembly timing belt connection that demonstrates high-quality workmanship and outstanding running properties even at first glance. The optimised finger shape ensures equal load distribution in every cross section, thereby allowing for a high load-bearing capacity of the connection. The precise water-jet-cut finger contours guarantee both ends of the belt can be easily joined during on-site assembly and ensure quiet, conformal running.

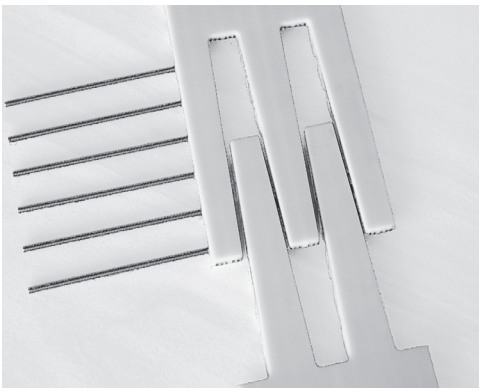
The CNC-milled bore paths are ultra-straight and the rust-proof threaded pins are tightened using a cordless screwdriver, which makes assembly extremely simple. The BRECO® PinLock is a secure timing belt connection that can be used several times and is also suitable for coated timing belts and timing belts with welded-on profiles.

Our highly qualified team of engineers is at your disposal to bring you at the forefront of belt drive design.

BRECO® timing belt PinLock

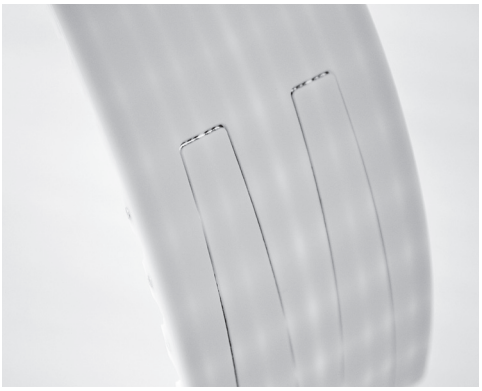
Facts and Figures

- produced by meter
- cut, punched to length
- drilled and fixed with pins



Advantages

- a maximum-precision timing belt connection
- high level of flexibility and running smoothness
- an accurate and ultra-straight bore path for connection pins
- can be assembled/disassembled several times
- simple on-site assembly



Available belt types and widths, PinLock-Type / admissible tensile forces

Belt width		[mm]	25	32	50	75	96 (only T10/AT10) /100
T10	PinLock 6	[N]	–	–	–	–	–
	PinLock 10	[N]	300	400	600	900	1200
TK10K6	PinLock 6	[N]	–	–	–	–	–
	PinLock 10	[N]	300	–	600	–	–
TK10K13	PinLock 6	[N]	–	–	–	–	–
	PinLock 10	[N]	–	400	600	900	1200
AT10	PinLock 6	[N]	200	300	400	600	800
	PinLock 10	[N]	400	500	800	1200	1600
ATK10K6	PinLock 6	[N]	–	–	400	–	–
	PinLock 10	[N]	–	300	800	–	–
ATK10K13	PinLock 6	[N]	–	300	400	600	800
	PinLock 10	[N]	–	500	800	1200	1600
T20	PinLock 6	[N]	400	500	800	1200	1600
	PinLock 10	[N]	700	900	1500	2200	3000
AT20	PinLock 6	[N]	500	600	1000	1500	2000
	PinLock 10	[N]	1000	1200	2000	3000	4000
ATK20K13	PinLock 6	[N]	–	–	–	1500	2000
	PinLock 10	[N]	–	–	–	3000	4000

PinLock 6/10: Lock with 6 alt. 10 bores for threaded pins.

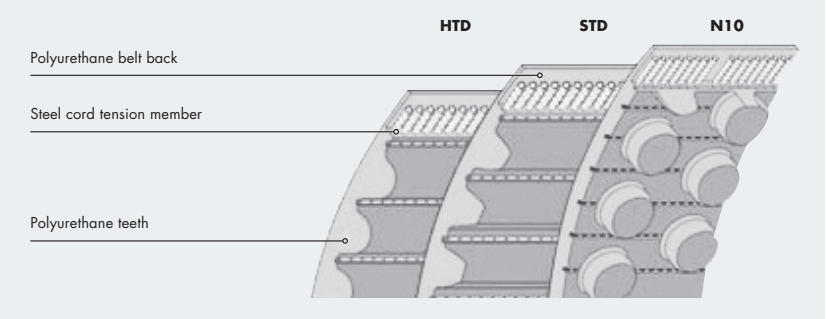
Introduction and properties

CONTI® SYNCHRODRIVE timing belts enable a wide range of customer specific drive solutions from linear engineering to individual transport solutions. A large variety of versions and adaptation possibilities ensures universal application in very different fields.

Purpose designed for the realisation of self-guiding systems, the nubbed belt N10 completes the CONTI® SYNCHRODRIVE belt series. Its high tracking stability means there is no need to fit side flanges. The nubbed belt stays in complete contact with the pulley and ensures the positive meshing of the teeth in both senses of motion.

Areas of application

The properties of CONTI® SYNCHRODRIVE timing belts open up areas of application in linear and transport engineering as well as in lifting systems and car wash plants. The CONTI® SYNCHRODRIVE N10 nubbed belts allow new areas of application in linear and transport engineering, e.g. in the positioning of door and gate opening systems.



Properties

- silicone-free
- oil and grease resistant
- suitable for temperatures ranging from –30°C to +80°C
  (for further advice on operational temperatures, please ask our technical experts)
- hard-wearing
- resistant to hydrolysis
- resistant to UV radiation and ozone
- maintenance-free
- can be welded to thermoplastics

Versions

CONTI® SYNCHRODRIVE drive belts are available in two different versions: as a timing belt in profiles: 3M, 5M, 8M, 14M (HTD profile), S3M, S5M, S8M (STD profile) as well as in imperial pitches XL, L and H and nubbed belt N10.

Versions and construction

HF high flexibility version for all profiles except for 3 mm pitch, e.g. for drives with small pulley diameters

HP high power reinforced version HTD and STD profiles, e.g. for heavy-duty control systems

HS high stiffness of tension member HTD and STD profiles, e.g. for high-precision linear drives

XHP extremely high power tensile-strength HTD 14M profile, e.g. for lifting systems

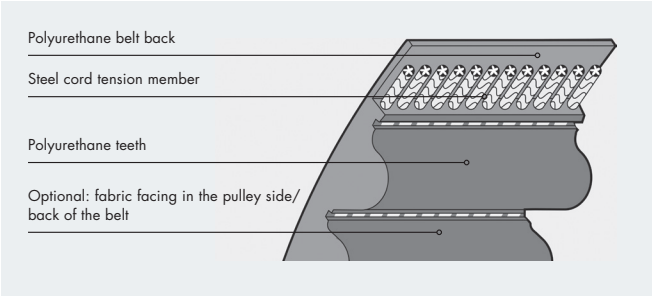
PAZ with polyamide fabric facing on the teeth side, e.g. for sliding-rail transport systems; antistatic PAZ version on request

PAR with polyamide fabric facing on the back of the belt, e.g. for skid queuing conveyors; antistatic PAR version on request

V endless belt in HF version and lengths from 1000 mm, all profiles except for 3 mm pitch, e.g. for rotary drives with large center distances

Other special versions can be supplied on request with minimum order quantity, e.g. aramide tension member.

Construction



Our synchronous drive belts are made up of:
- polyurethane teeth and back, color: black
- steel cord tension member, with balanced right/left-handed cord twist

Polyurethane teeth and back

Belt teeth and back are made from a tough polyurethane elastomer with excellent adhesion to the tension member. The high wear resistance of the polyurethane ensures trouble-free drive performance and a long service life. These features are enhanced even more by the balanced layout of the tension cords.

Steel cord tension member

Synchronous drive belts for positive drive systems must have a high resistance to elongation and a high tensile strength. Extra strong steel tension cords, laid parallel to the belt edges, guarantee the belt's high loading capacity and accurate running properties.

Designation

CONTI® SYNCHRODRIVE synchronous drive belts are specified in accordance with defined standards for the different belt types showing the pitch length, tooth pitch and belt width.

Pitch length [m]

The pitch length of the belt is the overall circumference, or length measured at the neutral pitch line. The pitch length is located in the middle of the tension member.

Tooth pitch [mm]

The tooth pitch is the linear distance between two adjacent teeth at the pitch line.

Belt width [mm]

The belt width and width designation are identical.

Examples

CONTI® SYNCHRODRIVE synchronous drive belts – M 30 – 8M – 50 HP	
M	open-ended type
30	pitch length 30 m
8M	tooth pitch 8 mm, HTD profile
50	belt width 50 mm
HP	reinforced version

CONTI® SYNCHRODRIVE synchronous drive belts – V 2400 – S 5M – 30 HF	
V	endless type
2400	belt length 2400 mm
S 5M	tooth pitch 5 mm, STD profile
30	belt width 30 mm
HF	flexible version

CONTI® SYNCHRODRIVE synchronous drive belts – 10 × M 30 H 100 PAZ	
10	number of rolls
M	open-ended type
30	30 m pitch length 30 m
H	tooth pitch 0.5 Inch = 12.7 mm
100	1.0 Inch = 25.4 mm belt width
PAZ	belt width 1.0 Inch = 25.4 mm

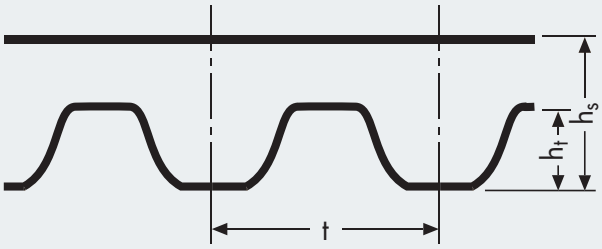
The number of teeth is a function of pitch length and pitch:

$$z = \frac{L_B}{t}$$

Product selection

Profile

CONTI® SYNCHRODRIVE synchronous drive belts are manufactured in various profile sizes. Dimensions of HTD and STD synchronous drive belts correspond to the specifications contained in the ISO/F DIS 13050 (draft version). The table on page 11.5 gives a summary of the profile dimensions as well as other technical information for the belts. Special pulleys must be used for linear drives with high precision requirements. More information about pulleys is available from Angst+Pfister technical staff.



Tooth profile STD S 5M, STD S 8M, STD S 3M*

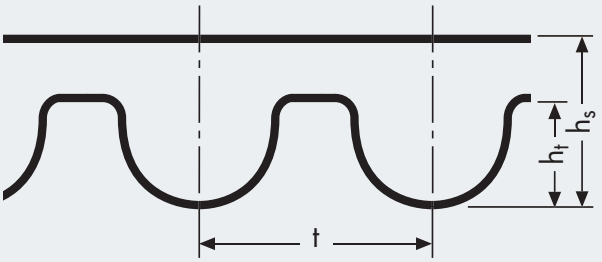
Lengths

CONTI® SYNCHRODRIVE synchronous drive belts are available in either the open-ended or endless version.

Widths

CONTI® SYNCHRODRIVE synchronous drive belts are supplied in several standard widths. Dimensions are given in the table on page 11.5.

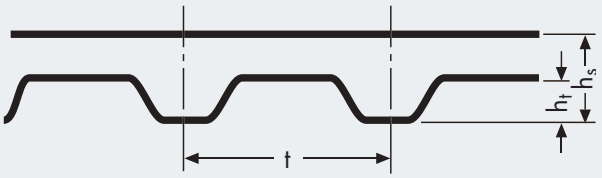
Other widths are available on request.



Tooth profile HTD 3M, HTD 5M, HTD 8M, HTD 14M

Versions

CONTI® SYNCHRODRIVE synchronous drive belts made from polyurethane with steel cords aligned parallel to the belt edges and are precision made components for applications in drive and transportation engineering. Several versions are available to meet various operating requirements.



Tooth profile XL, L, H

*on request

Specifications

Tooth profile

Tooth profile		HTD				STD			Imperial		
		3M	5M	8M	14M	S 3M	S 5M	S 8M	XL	L	H
Tooth pitch t	[mm]	3.00	5.00	8.00	14.00	3.00	5.00	8.00	5.08	9.525	12.70
	[in.]								0.20	0.375	0.50
Belt thickness h_s	[mm]	2.40	3.60	5.60	10.00	2.30	3.40	5.20	2.30	3.60	4.30
Tooth heigth h_t	[mm]	1.30	2.10	3.40	6.10	1.14	1.90	3.00	1.27	1.91	2.29
Weight m_{spec} per mm of belt width, type:											
HF	10^{-3} kg/m		3.36	5.40	10.37		3.21	5.24	2.16	3.650	4.53
HP	10^{-3} kg/m	3.15	4.06	6.32	11.27	3.08	3.91	6.22			
HS	10^{-3} kg/m		4.70	7.22	11.40		4.64	7.12			
XHP	10^{-3} kg/m				14.00						
Standard length type:											
M L_B	[m]						30 or 60				

Belt width / b [mm]

Tooth profile HTD				STD			Imperial		
3M	5M	8M	14M	S 3M	S 5M	S 8M	XL	L	H
5	5			5	5		6.35		
10	10	10		10	10	10	9.40	9.40	
15	15	15		15	15	15	12.70	12.70	12.70
	20	20				20	19.05	19.05	19.05
25	25	25	25	25	25		25.40		25.40
		30				30			
			40					38.10	38.10
50	50	50	50/55	50	50	50	50.80	50.80	50.80
		85	85			85			76.20
		100	100			100			101.60
			120			120*			
			150**						

other intermediate widths on request
*only in version HS
**only in version XHP

Tolerances

CONTI® SYNCHRODRIVE synchronous drive belts are precision made products. Manufacturing involves reliable process techniques and maximum accuracy throughout all stages. Deviations in length, width and thickness are subject to extremely tight tolerances.

Belt length tolerances

Pitch length L_B [mm]	Length tolerance
L_B	± 0.1

Belt width tolerances

Tooth profile		HTD				STD			Imperial		
		3M	5M	8M	14M	S 3M	S 5M	S 8M	XL	L	H
Belt width b	up to 25 mm	± 0.5	± 0.5	± 0.6	± 0.6	± 0.5	± 0.5	± 0.6	± 0.5	± 0.6	± 0.6
	> 25 – 50 mm	± 0.6	± 0.6	± 0.7	± 1.0	± 0.6	± 0.6	± 0.7	± 0.6	± 0.7	± 0.7
	> 50 mm			± 0.8	± 1.2			± 0.8		± 0.8	± 0.8

Belt thickness tolerances (Type M)

Tooth profile		HTD				STD			Imperial		
		3M	5M	8M	14M	S 3M	S 5M	S 8M	XL	L	H
Belt thickness h_s	[mm]	2.4	3.6	5.6	10.0	2.3	3.4	5.2	2.3	3.6	4.3
Thickness tolerance	[mm]	± 0.25	± 0.25	± 0.4	± 0.6	± 0.25	± 0.25	± 0.4	± 0.25	± 0.4	± 0.4

Calculation documentation HTD profile

Selecting the tooth profile

A suitable tooth profile is selected from the chart below by locating the point at which the effective pull to be transmitted intersects with the possible belt width. The belt with the greatest power transmitting capacity should be selected. In borderline cases, it is recommended that the smaller profile is taken as a basis for drive design calculation.

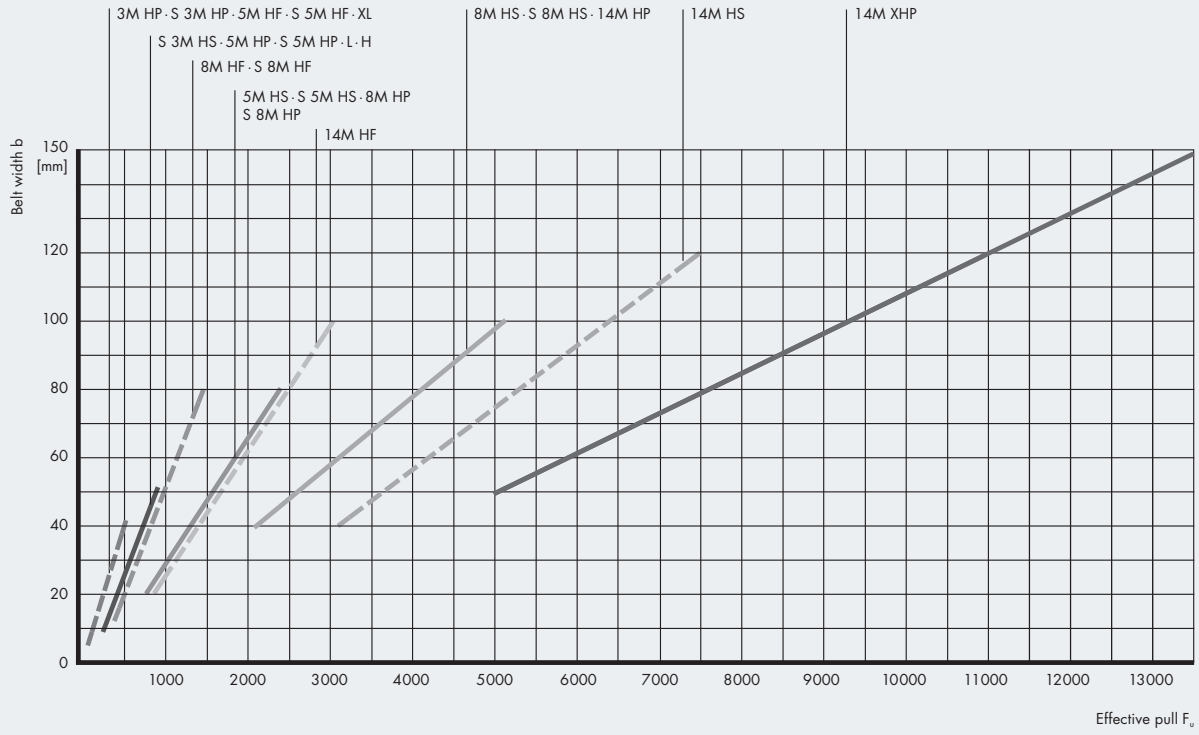
Specific load on tooth flank F_{Tspec}
Admissible tensile load F_{Tadm}
Specific spring constant c_{spec}

The values required for the specific load on tooth flank, tension member load and specific spring constant in order to arrive at a precise drive design can be taken from the diagrams and tables on the following pages.

The specific load on tooth flank F_{Uspec} can be taken from charts of page 11.8, 11.10 and 11.12 after calculating speed n [min^{-1}] from the given belt speed v [m/s] and the pulley diameter d_0 [mm] for the corresponding profile.

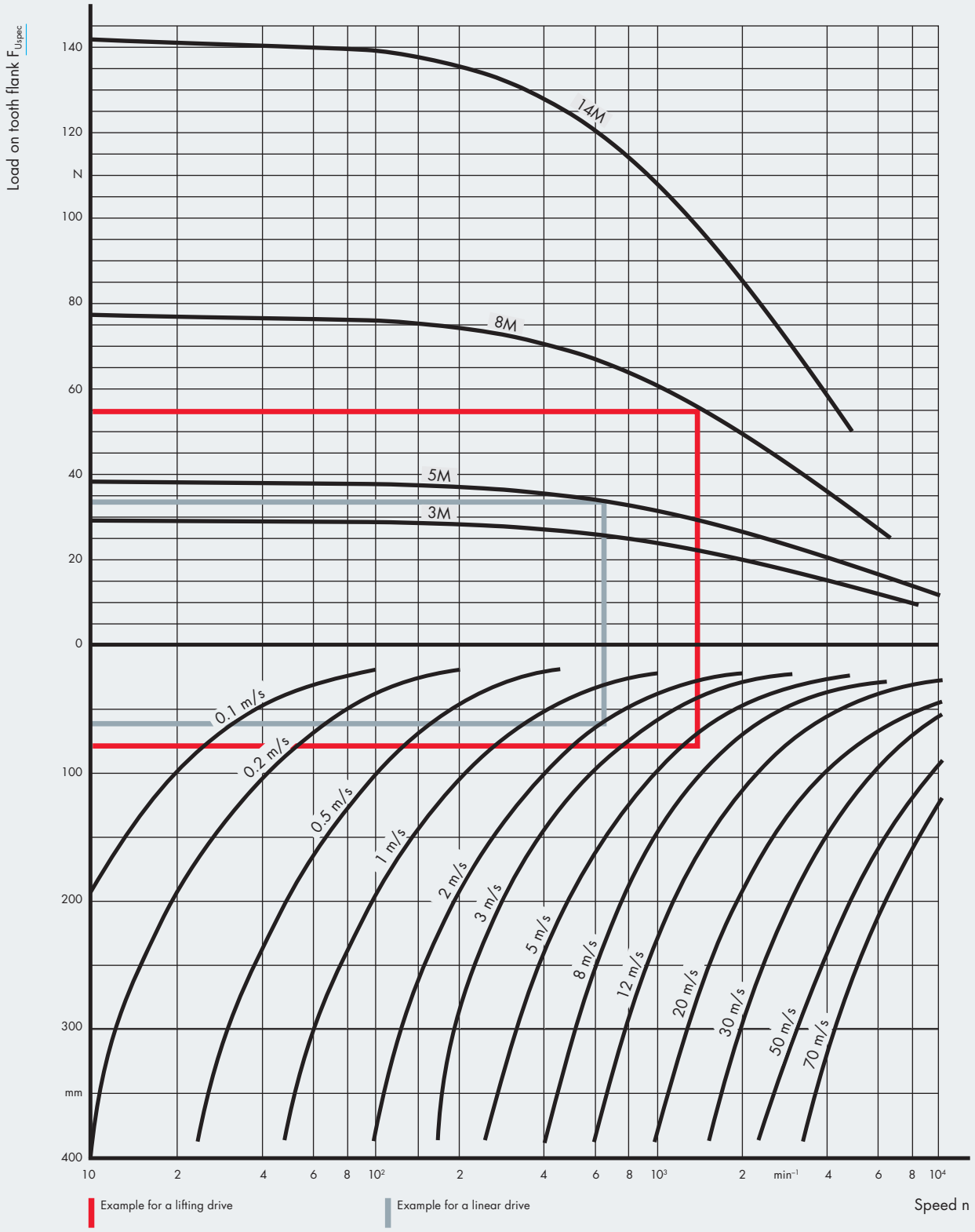
Admissible tensile load F_{Tadm} in N is given in the following tables showing the specific spring constant c_{spec} [N/mm] for calculating takeup allowance △a.

CONTI® SYNCHRODRIVE diagram for selecting synchronous drive belts



CONTI® SYNCHRODRIVE HTD synchronous drive belts 3M, 5M, 8M, 14M

Specific load on tooth flank F_{Tspec} [N] per 10 mm belt width and per meshing tooth



Admissible tensile load* F_{Tadm} at 0.4% elongation

Tooth profile type/version		HTD 3M	HTD 5M				HTD 8M				HTD 14M				
		HP	HF	HP	HS	V-HF	HF	HP	HS	V-HF	HF	HP	HS	XHP	V-HF
Belt width b [mm]	5	150	150												
	10	300	300	650	1200		650	1200							
	15	450	450	975	1800		975	1800	3150						
	20	600	600	1300	2400	300	1300	2400	4200		2400				
	25	750	750	1625	3000	375	1625	3000	5250	750	3000	5250			
	30	900	900	1950	3600	450	1950	3600	6300	900	3600	6300	7500		1800
	40	1200	1200	2600	4800	600	2600	4800	8400	1200	4800	8400	10000	19000	2400
	50	1500	1500	3250	6000	750	3250	6000	10500	1500	6000	10500	12500	23800	3000
	55						3575	6600	11550	1650	6600	11550	13750	26100	3300
	85						5525	10200	17850	2550	10200	17850	21250	40400	5100
	100						6500	12000	21000	3000	12000	21000	25000	47600	6000
	115											24150	28750	54700	
	120											25200	30000	57100	
	150													71400	

* The breaking load equals about 4 times the admissible load on the tension members.

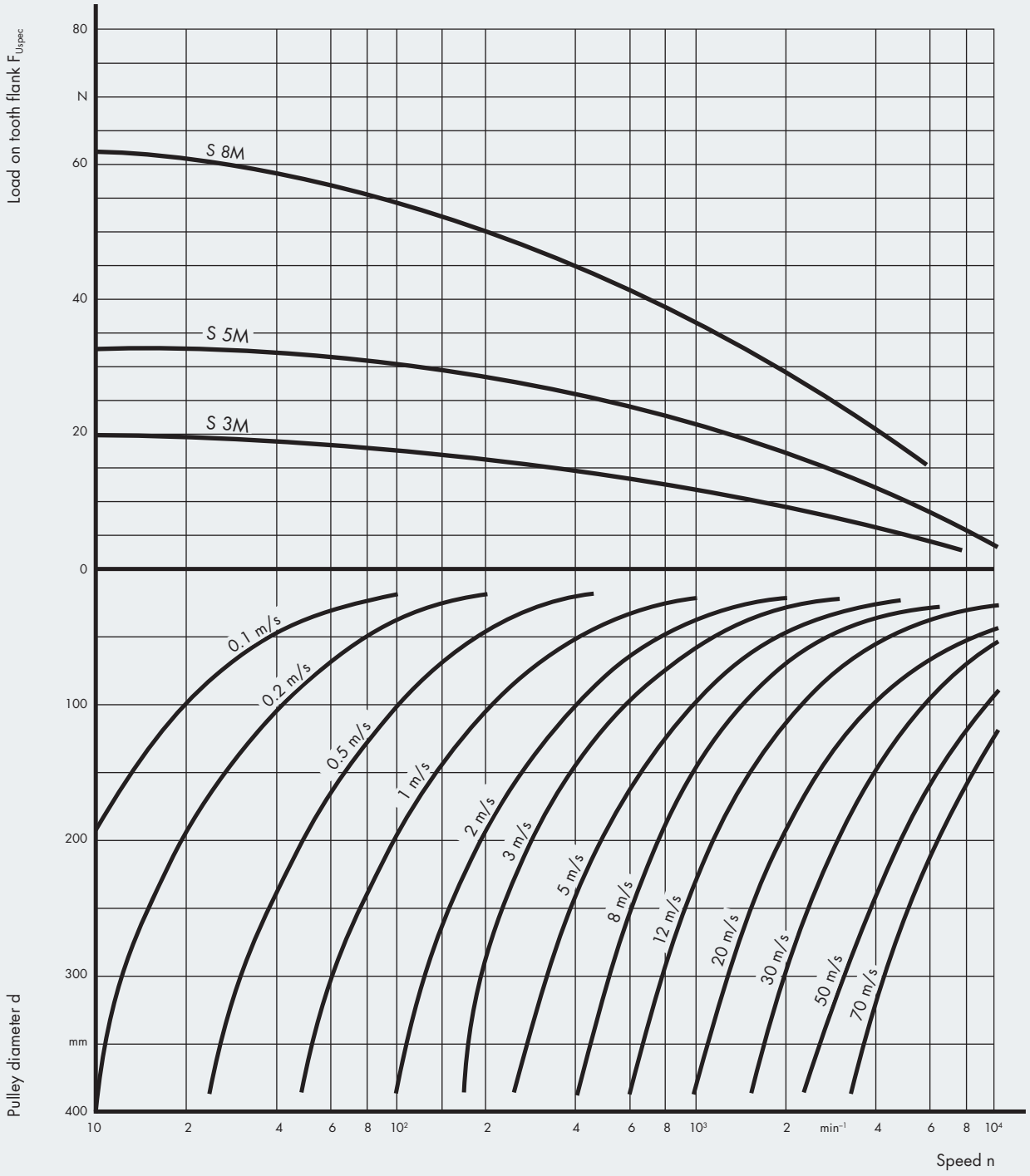
Specific spring constant c_{spec} [N/mm]

Tooth profile type/version		HTD 3M	HTD 5M			HTD 8M			HTD 14M			
		M HP	M HF	M HP	M HS	M HF	M HP	M HS	M HF	M HP	M HS	M XHP
c_{spec}	[N/mm]	$7.5 \cdot 10^3$	$7.5 \cdot 10^3$	$20 \cdot 10^3$	$35 \cdot 10^3$	$20 \cdot 10^3$	$35 \cdot 10^3$	$53 \cdot 10^3$	$35 \cdot 10^3$	$53 \cdot 10^3$	$63 \cdot 10^3$	$120 \cdot 10^3$

Calculation documentation STD profile

CONTI® SYNCHRODRIVE synchronous drive belts S 3M, S 5M, S 8M

Specific load on tooth flank F_{Tspec} [N] per 10 mm belt width and per meshing tooth



Admissible tensile load* F_{Tadm} [N] at 0.4% elongation

Tooth profile type/version		STD S 3M	STD S 5M				STD S 8M			
		HP	HF	HP	HS	V-HF	HF	HP	HS	V-HF
Belt width b [mm]	5	150	150							
	10	300	300	650	1200		650			
	15	450	450	975	1800		975	1800	3150	
	20	600	600	1300	2400	300	1300	2400	4200	
	25	750	750	1625	3000	375	1625	3000	5250	750
	30	900	900	1950	3600	450	1950	3600	6300	900
	50	1500	1500	3250	6000	750	3250	6000	10500	1500
	85						5525	10200	17850	2550
	100						6500	12000	21000	3000
	115								24150	
	120								25200	

* The breaking load equals about 4 times the admissible load on the tension members.

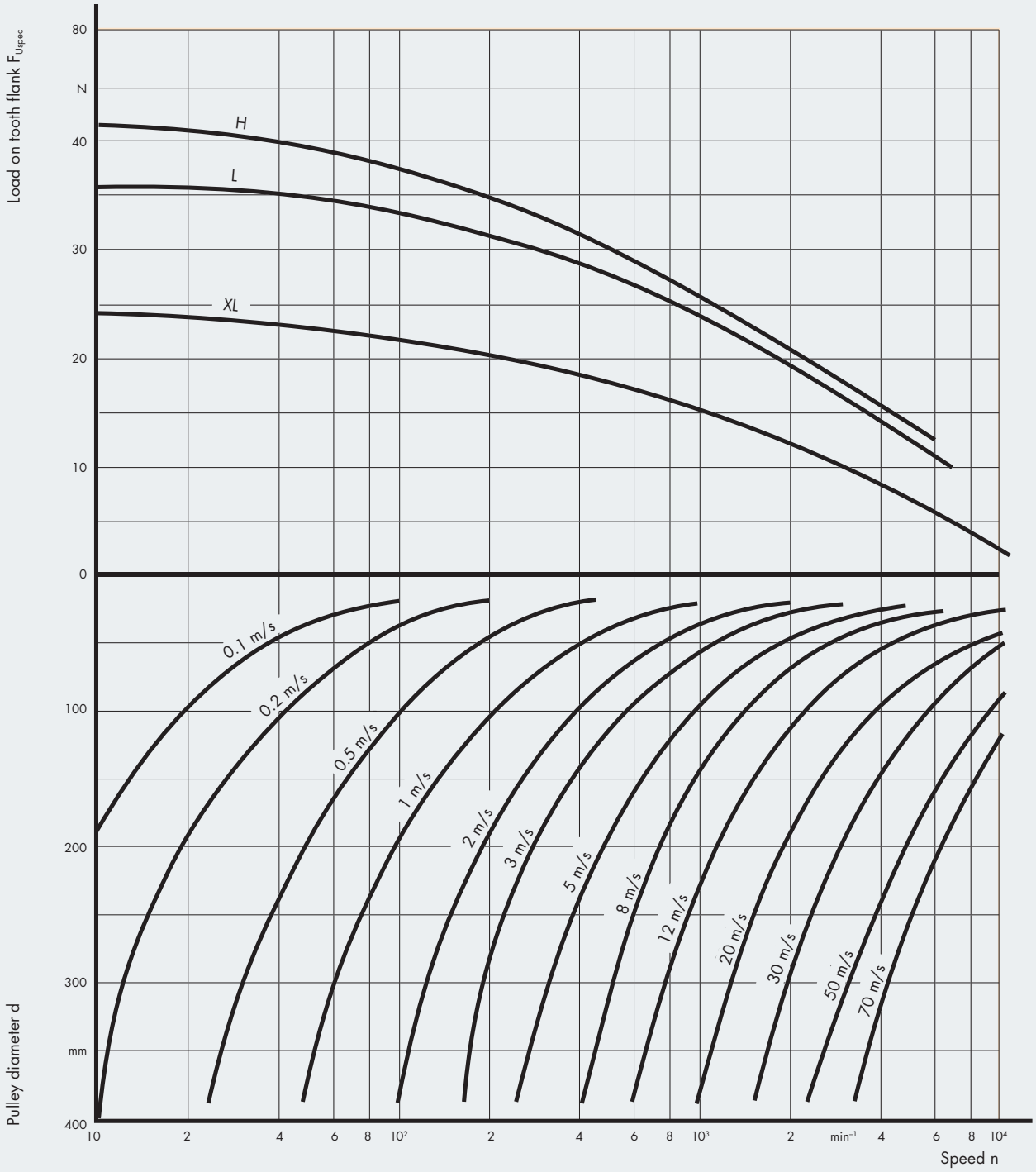
Specific spring constant c_{spec} [N/mm]

Tooth profile type/version		STD S 3M	STD S 5M			STD S 8M		
		HP	HF	HP	HS	HF	HP	HS
c_{spec}	[N/mm]	$7.5 \cdot 10^3$	$7.5 \cdot 10^3$	$20 \cdot 10^3$	$35 \cdot 10^3$	$20 \cdot 10^3$	$35 \cdot 10^3$	$53 \cdot 10^3$

Calculation documentation XL, L, H profiles

CONTI® SYNCHRODRIVE synchronous drive belts XL, L, H

Specific load on tooth flank F_{Tspec} [N] per 10 mm belt width and per meshing tooth



Admissible tensile load* F_{Tadm} [N] at 0.4% elongation

Tooth profile type/version			XL		L		H	
			M-HF	V-HF	M-HF	V-HF	M-HF	V-HF
Belt width b [mm]	(1/4")	6.35	200					
	(3/8")	9.53	300		650		650	
	(1/2")	12.70	400		850		850	
	(3/4")	19.10	600	300	1300		1300	
	(1")	25.40	750	375	1625	750	1625	750
	(1 1/4")	38.10	1200	600	2600	1200	2600	1200
	(2")	50.80	1500	750	3250	1500	3250	1500

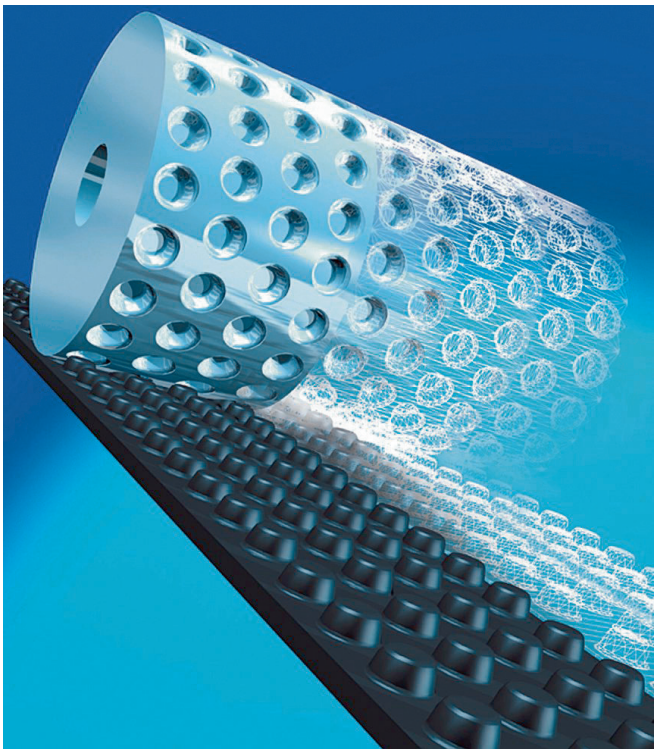
* The breaking load equals about 4 times the admissible load on the tension members.

Specific spring constant c_{spec} [N/mm]

Tooth profile type/version		XL	L	H
		M-HF	M-HF	M-HF
c_{spec}	[N/mm]	$7.5 \cdot 10^3$	$20 \cdot 10^3$	$20 \cdot 10^3$

N10 nubbed belt

Small belt width and reliable alignment – the CONTI® SYNCHRODRIVE N10 nubbed belt ideally meets both these requirements. Its surface with the nubs in a staggered pattern allows positive-engaging and self-guiding drives. Furthermore, the nubs lead to smooth meshing in both directions of belt travel, thereby ensuring high precision and synchronous transmission, also for linear drive applications. The belts – manufactured from hard-wearing polyurethane and reinforced with steel cord tension members – guarantee excellent efficiency and constant belt tension.



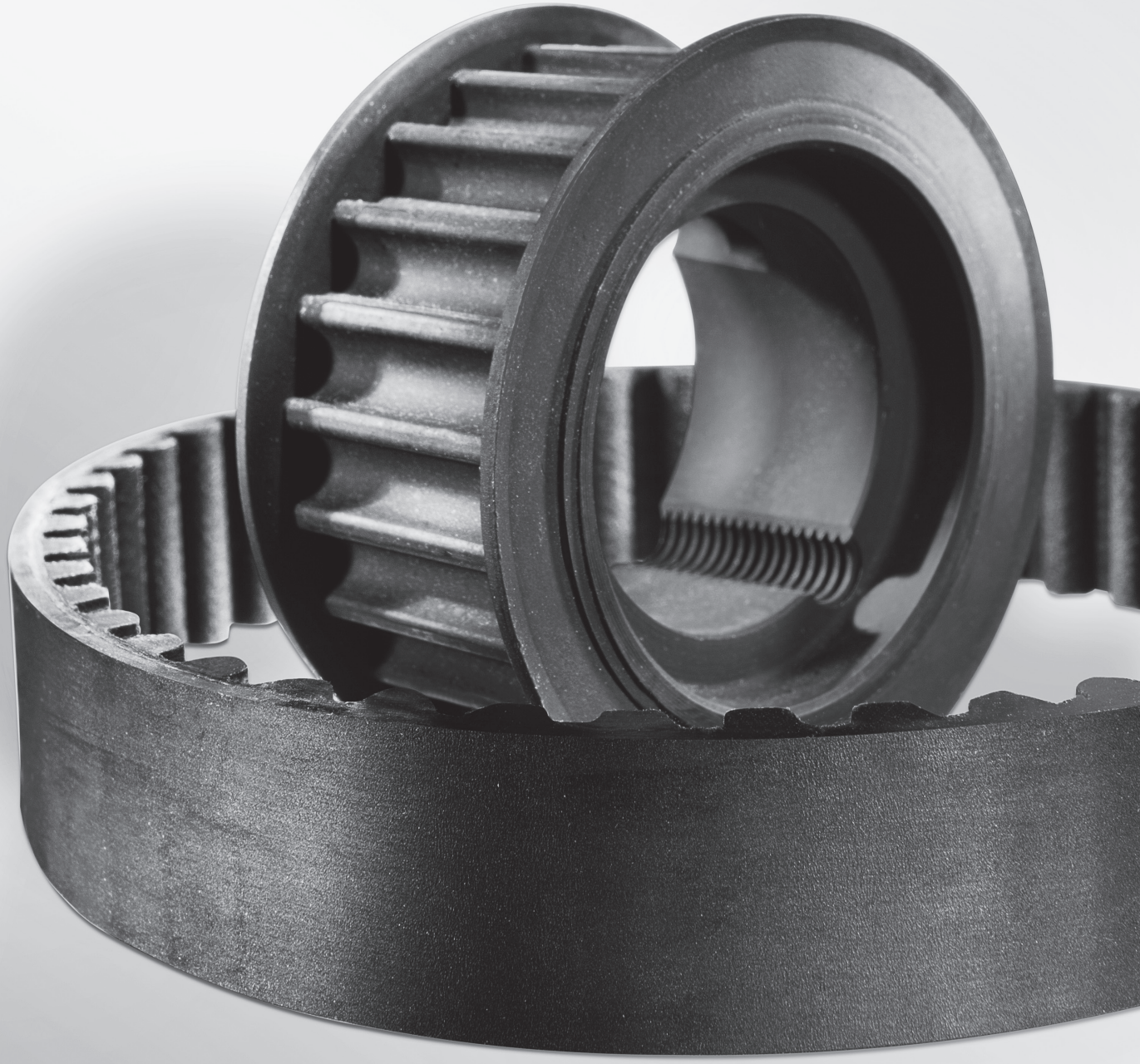
For use with nubbed belts, matching components have been developed: pulleys, supporting/guiding rails with recesses and clamping plates. A complete system is available whose versatility enables entirely new designs and completely new applications of transport and linear drives, e.g. for positioning plotter pins.

Technical information

- nub pitch length in direction of belt travel 10 mm
- axial distance between rows of nubs 10 mm
- maximum belt width 100 mm
- belt body made of hard-wearing polyurethane resistant to various agents

Special types:
- coated types to reduce friction wear, e.g. fabric coating on both sides
- special reverse side design, e.g. to transport hot or sensitive materials
- subsequent additions to nubbed belts, e.g. cleats or brushes
- mechanical processing, e.g. punching of holes in belts for vacuum conveyors

Rubber Timing Belts Calculation



Angst+Pfister

Introduction / Properties

The calculation method for classical rubber belts is different to the one for PUR belts as shown in the previous chapters. This has a historical background as the selection procedure is based on so called “Power-Rating Tables”, which made it easy to choose a suitable belt. The main factors are the power rating, the rotational speed and pulley diameter. After selecting a suitable belt it has to be reviewed by taking all influencing factors into account. The PR-Calc procedure is used to calculate all rubber belts, but also some PUR belts.

Calculation procedure

Step 1 – Definition of belt type

A belt needs to be selected based on the performance of a drive, such as power, rotational speed and geometry. As a general rule, the lower the power rating of a drive, the smaller the pitch of the belt. It might be initially difficult to select the exact belt for the drive, but after a preliminary choice, the optimal result can be achieved by fine tuning the selection. If the initial belt width is too narrow or too wide, it could be necessary to change the pitch. The HTD profile is commonly used on many applications and represents a generally good starting choice for many belt drives. Alternative pitch profiles are available for specific applications: consult your Angst+Pfister technical expert for advice.

P [kW]	v_{max} [m/s]	n [min^{-1}]	Application example	Z_{1min}	d_{1min} [mm]	Belt type	Power level	Profile type
≤2.5	50	≤14000	Small drives with high rotational speed	10	9.55	CONTI® SYNCHROBELT		HTD 3M
≤9	50	≤14000	Low power drives with high rotational speed	14	22.28			HTD 5M
≤100	50	≤6000	Medium performance	22	56.02			HTD 8M
≤240	50	≤4000	Medium performance with big pulleys	28	124.78			HTD 14M
≤9	50	≤14000	Small drives with high rotational speed and increased power rating	10	9.55	CONTI® SYNCHROFORCE	CXP	HTD 3M
≤33	50	≤14000	Medium sized drives with high rotational speed	14	22.28		CXP	HTD 5M
≤510	50	≤6000	Machines and tooling machines with moderate performance	22	56.02		CXP	HTD 8M
≤540	50	≤6000	Machines and tooling machines with moderate performance	22	56.02		CXP	STD/CTD 8M
≤510	50	≤4000	Heavy duty machines, high torque	28	124.78		CXP	HTD/CTD 14M
≤150	20	≤6000	High torque, low rotational speed	22	56.02		CXA	HTD 8M
≤160	20	≤6000	High torque, low rotational speed	22	56.02		CXA	STD/CTD 8M
≤570	20	≤2200	High torque, low rotational speed	28	124.78		CXA	HTD/CTD14M
≤580	30	≤6000	Heavy pulsing drives	22	56.02		Extreme	HTD 8M
≤610	30	≤6000	Heavy pulsing drives	22	56.02		Extreme	STD/CTD 8M
≤1400	30	≤4000	Heavy pulsing drives	28	124.78		Extreme	HTD/CTD 14M
≤310	40	≤5500	PUR belts for high torques Substitute for chains	22	56.02	CONTI® SYNCHROCHAIN		CTD 8M
≤880	40	≤4000	PUR belts for very high torques Substitute for chains	28	124.78			CTD 14M

Contact our technical support for special applications and belts such as double sided tooth profile, trapezoid profiles, open-end or silicon free belts.

CONTI® SYNCHROTWIN, CONTI® SYNCHROLINE, CONTI® SYNCHROCOLOR

Step 2 - Total Service Factor c_0

The Total Service Factor c_0 is determined from the sum of the Load Factor c_2, the Acceleration Factor c_3 and the Fatigue Factor c_4. The above factors are found in the tables on pages 12.7 and 12.8.

$$c_0 = c_2 + c_3 + c_4$$

Step 3 – Specific performance P_N

To determine the specific performance P_N, consult the "Power Rating Tables" relevant to the selected belt. The value depends on the rotational speed and diameter of the small pulley.

$$P_N$$

Step 4 – Definition of belt length

The belt length can only be a multiple of the pitch and therefore depends on the profile type. The length of the belt depends on the pulley diameters d_{02} and d_{01} as well as the center distance a. Based on the calculated length L_B the next convenient standard belt length from the catalogue is selected.

$$L_{B[mm]} \cong \frac{\pi}{2} \cdot (d_{02} - d_{01}) + 2 \cdot a + \frac{(d_{02} - d_{01})^2}{4 \cdot a}$$

Step 5 – Calculation of belt width

The calculated overall service factor c_0 is multiplied by the installed power rating on the driving pulley (P) and results in the calculated belt power rating. In relation to the specific performance P_N and the service factors c_1 and c_5, the belt width factor can be calculated. This can now be used to select the correct belt width from the "Power Rating Tables". Attention: Always select the next wider belt from the table. c_{6cal} must always be smaller than c_6 according to the table. The values for the teeth in mesh factor c_1 and length factor c_5 can be found in the tables on pages 12.6 and 12.9 respectively..

$$c_{6cal} = \frac{P \cdot c_0}{P_N \cdot c_1 \cdot c_5}$$

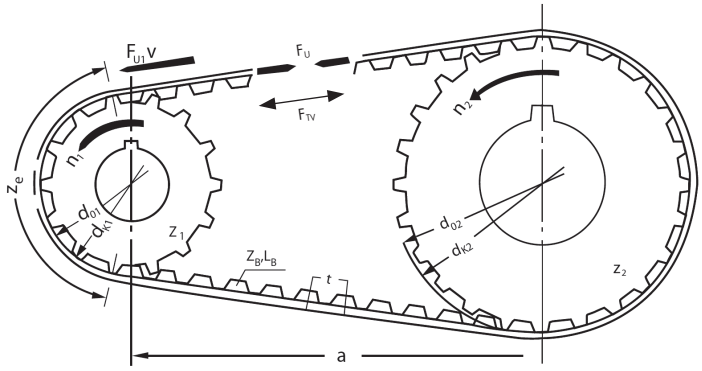
Step 6 – Review permissible circumferential force

A final check of the permissible circumferential force can be done with this formula; the calculated value must be below the values in tables on page 12.12.

$$F_u = \frac{19.1 \cdot 10^6 \cdot P}{n \cdot d_0}$$

By following all this steps, the belt is selected. Further information can be found in the following list of formulae.

List of formulae



Circumferential force	F_U	[N]
Specific tooth force	F_{Tspec}	[N/cm]
Admissible tensile load	F_{Tadm}	[N]
Pre-tension force per span	F_{TV}	[N]
Static bearing load	F_W	[N]
Torque	M	[Nm]
Acceleration torque	M_B	[Nm]
Power	P	[kW]
Moment of inertia	J	[kgm²]
Density	ρ	[kg/dm³]
Velocity	v	[m/s]
Rotational speed	n	[min⁻¹]
Angular speed	ω	[s⁻¹]
Center distance	a	[mm]
Belt length	L_B	[mm]
Belt width	b	[mm]
Pulley width	B	[mm]
Bore diameter	d	[mm]
Pitch circle diameter	d_0	[mm]
Crown diameter	d_K	[mm]
Span length	L_T	[mm]
Pitch	t	[mm]
Pulley wrap angle	β	[°]
Acceleration time	t_B	[s]
Number of teeth on belt	z_B	
Number of teeth when i = 1	z	
Number of teeth in mesh	z_e	
Number of teeth of small pulley	z_1	
Number of teeth of large pulley	z_2	
Ratio	i	

Used symbols

Teeth in mesh factor	c_1
Load factor	c_2
Acceleration factor	c_3
Fatigue factor	c_4
Length factor	c_5
Width factor (only for CONTI® SYNCHROFORCE and CONTI® SYNCHROCHAIN)	c_6

Further formulae to calculate drives

Circumferential force	$F_U = \frac{2 \cdot 10^3 \cdot M}{d_0}$	$F_U = \frac{19.1 \cdot 10^6 \cdot P}{n \cdot d_0}$	$F_U = \frac{10^3 \cdot P}{v}$
Torque	$M = \frac{d_0 \cdot F_U}{2 \cdot 10^3}$	$M = \frac{9.55 \cdot 10^3 \cdot P}{n}$	$M = \frac{d_0 \cdot P}{2 \cdot v}$
Power	$P = \frac{M \cdot n}{9.55 \cdot 10^3}$	$M = \frac{F_U \cdot d_0 \cdot n}{19.1 \cdot 10^6}$	$P = \frac{F_U \cdot v}{10^3}$
Belt length	for i = 1 $L_B = 2 \cdot a + \pi \cdot d_0$ $L_B = 2 \cdot a + z \cdot t$	for i ≠ 1 $L_{B[mm]} \cong \frac{\pi}{2} \cdot (d_{02} + d_{01}) + 2 \cdot a + \frac{(d_{02} - d_{01})^2}{4 \cdot a}$	
Pitch circle diameter	$d_0 = \frac{z \cdot t}{\pi}$	**Angular speed**	$\omega = \frac{\pi \cdot n}{30}$
Rotational speed	$n = \frac{19.1 \cdot 10^3 \cdot v}{d_0}$	**Circumferential speed**	$v = \frac{d_0 \cdot n}{19.1 \cdot 10^3}$
Acceleration torque	$M_B = \frac{J \cdot \Delta n}{9.55 \cdot t_B}$	**Moment of inertia**	$J = 98.2 \cdot 10^{-15} \cdot B \cdot \rho \cdot (d_k^4 - d^4)$
Static bearing load	$F_W = k_1 \cdot k_2 \cdot F_U \cdot \sin\frac{\beta}{2}$	$F_W \cong k_1 \cdot k_2 \cdot \frac{60 \cdot 10^6 \cdot P \cdot \sin\frac{\beta}{2}}{t \cdot z_k \cdot n_k}$	
Static span force	$F_{TV} = \frac{F_U}{2} \cdot k_1 \cdot k_2$	**Dynamic bearing load**	Consult here for the engineering support from Angst+Pfister
Ratio	$i = \frac{n_1}{n_2} = \frac{z_2}{z_1}$	**Calculated overal service factor**	$c_{0cal} = \frac{P_N \cdot c_6 \cdot c_1 \cdot c_5}{P}$
Center distance	$a \cong \frac{1}{4} \cdot \left[L_B - \frac{t}{2} \cdot (z_2 + z_1) + \sqrt{\left[L_B - \frac{t}{2} \cdot (z_2 + z_1) \right]^2 - 2 \cdot \left[\frac{t}{\pi} \cdot (z_2 - z_1) \right]^2} \right]$		

Calculation example

Aim of calculation
Define a timing belt for a roller table which is used for heavy duty tasks. Starting torque of the motor is 2.5 times higher than the rated operational torque.

Operating conditions are

Given values			
Applied motor power	P	=	12 kW
Rotational speed of motor pulley	n_1	=	1450 min^{-1}
Rotational speed of driven pulley	n_2	=	1000 min^{-1} (±2%)
Diameter of large pulley	d_{02}	≤	145 mm
Center distance	a	≈	300 mm
Objective	Define a belt and the pulleys		

Notes for belt drive calculation

Transmission ratio i
Transmission ratio i is obtained from the ratio of pulley speeds n_1 and n_2 or the number of teeth z_2 and z_1 the pitch diameters of pulleys d_{02} and d_{01}:

$$i = \frac{n_1}{n_2} = \frac{z_2}{z_1} = \frac{d_{02}}{d_{01}}$$

Number of teeth z and pitch diameter d_0 of the pulleys
The number of teeth z and the pitch diameter d_0 of the pulleys are determined by means of pitch t of the chosen tooth profile:

$$z_2 = \frac{\pi \cdot d_{02}}{t} \qquad d_{02} = \frac{z_2 \cdot t}{\pi} [mm]$$

$$z_1 = \frac{\pi \cdot d_{01}}{t} \qquad d_{01} = \frac{z_1 \cdot t}{\pi} [mm]$$

Arc of contact β
For two-pulley drives, the arc of contact β around the small pulley is calculated as follows:

$$\beta = 2 \cdot \arccos\left[\frac{t \cdot (z_2 - z_1)}{2 \cdot \pi \cdot a}\right]^{\circ} \text{ (degrees)}$$

Solution

Step 1 – Definition of belt type
Pre-selection of belt: Synchroforce CXP HTD 8M
(Tooling machines with moderate performance)

Step 2 – Definition of total service factor
$c_2 = 1.4$ from table page 12.7
$c_3 = 0$ from table page 12.8
$c_4 = 0.2$ from table page 12.8

$$c_0 = c_2 + c_3 + c_4 = 1.4 + 0 + 0.2 = \underline{\underline{1.6}}$$

Step 3 – Specific performance P_N
To define P_N, the number of teeth of the driven pulley is needed.
(Condition: d_{02} = minimum 150 mm)

$$d_{02} = \frac{z_{02} \cdot t}{\pi} \Rightarrow z_{02} = \frac{d_{02} \cdot \pi}{t} = \frac{145 \cdot \pi}{8} = 56.94$$

Selected: $\underline{\underline{z_{02} = 56}}$ and $\underline{\underline{d_{02} = 142.6 \text{ mm}}}$

$$i = \frac{n_{01}}{n_{02}} = \frac{1450}{1000} = 1.45$$

$$i = \frac{z_{02}}{z_{01}} \Rightarrow z_{01} = \frac{z_{02}}{i} = \frac{56}{1.45} = 38.62$$

Selected: $\underline{\underline{z_{01} = 38}}$ and $\underline{\underline{d_{01} = 96.77 \text{ mm}}}$

according to power rating tables for Synchroforce CXP HTD 8M,
P_N = 12.99 kW (see chapter 13).

Step 4 – Definition of belt length

Belt length:

$$L_B \cong \frac{\pi}{2} \cdot (d_{02} + d_{01}) + 2 \cdot a + \frac{(d_{02} - d_{01})^2}{4 \cdot a} \cong \frac{\pi}{2} \cdot (142.6 + 96.77) + 2 \cdot 300 + \frac{(142.6 - 96.77)^2}{4 \cdot 300} \cong 978 \text{ mm}$$

Available belt length: L_B 960 mm

Step 5 – Calculation of belt width

Center distance:

$$a \cong \frac{1}{4} \cdot \left[L_B - \frac{t}{2} \cdot (z_2 + z_1) + \sqrt{\left[L_B - \frac{t}{2} \cdot (z_2 + z_1) \right]^2 - 2 \cdot \left[\frac{t}{\pi} \cdot (z_2 - z_1) \right]^2} \right]$$

$$a \cong \frac{1}{4} \cdot \left[960 - \frac{8}{2} \cdot (56 + 38) + \sqrt{\left[960 - \frac{8}{2} \cdot (56 + 38) \right]^2 - 2 \cdot \left[\frac{8}{\pi} \cdot (56 - 38) \right]^2} \right] \cong 291.1 \text{ mm}$$

Arc of contact:

$$\beta = 2 \cdot \arccos \left[\frac{t \cdot (z_2 - z_1)}{2 \cdot \pi \cdot a} \right] = 2 \cdot \arccos \left[\frac{8 \cdot (56 - 38)}{2 \cdot \pi \cdot 291.1} \right] = 170.97°$$

Number of teeth in mesh:

$$z_e = z_k \cdot \frac{\beta}{360} = 38 \cdot \frac{170.97}{360} = 18$$

Teeth in mesh factor: $c_1 = 1.0$ from table page 12.6

Length factor: $c_5 = 1.0$ from table page 12.9

Width factor:

$$c_{6cal} = \frac{P \cdot c_0}{P_N \cdot c_1 \cdot c_5} = \frac{12 \cdot 1.6}{12.99 \cdot 1 \cdot 1} = 1.48$$

Selected belt width b = 30 mm with c_6 = 1.58

Calculated total service factor:

$$c_{0cal} = \frac{P_N \cdot c_6 \cdot c_1 \cdot c_5}{P} = \frac{12.99 \cdot 1.58 \cdot 1.0 \cdot 1.0}{12} = 1.71$$

Step 6 – Review permissible circumferential force

$$F_U = \frac{19.1 \cdot 10^6 \cdot P}{n \cdot d_0} = \frac{19.1 \cdot 10^6 \cdot 12}{1450 \cdot 96.77} = 1633 \text{ N}$$

F_{Uadm} = 1800 N according to table on page 12.12

$F_{Uadm} \geq F_U \Rightarrow$ verified

Step 7 – Definition of pre-tension force

Initial load factor: $k_1 = 1$ from table page 12.11

Initial service factor: $k_2 = 1.16$ from table page 12.11

Static bearing force:

$$F_W = k_1 \cdot k_2 \cdot F_U \cdot \sin \frac{\beta}{2} = 1 \cdot 1.16 \cdot 1633 \quad \frac{170.97}{2} = 1888 \text{ N}$$

Static span force:

$$F_{TV} = \frac{F_U}{2}, k_1 \cdot k_2 = \frac{1633}{2} \cdot 1 \cdot + 1.16 = 947 \text{ N}$$

Result

Use the following components for this drive: **CONTI® SYNCHROFORCE CXP HTD 960 – 8M – 30**

Driving pulley with flanges: **Pulley HTD 38 – 8M – 30F**

Driven pulley without flanges: **Pulley HTD 56 – 8M – 30**

Calculation factors
Teeth in mesh factor c_1

The teeth in mesh factor c_1 takes account of the number of teeth z_e of the small pulley z_1 that mesh in the belt:

$$z_e = z_1 \cdot \frac{\beta}{360} \qquad \beta[°] = 2 \cdot \arccos\left[\frac{t \cdot (z_2 - z_1)}{2 \cdot \pi \cdot a}\right]$$

The teeth in mesh factors are given in the following table.

Meshing number of teeth z_e	**Teeth in mesh factor c_1**
3	0.4
4	0.6
5	0.8
≥ 6	1.0

Calculation factors
Load factor c_2

The load factor c_2 takes into account the type of machine and the kind of driving motor. Specific operating conditions are not yet considered in these values. The provided factors are approximate values for reference.

		Prime movers		
		Electric motors with a low starting torque (up to 1.5 times the rated torque) Water and steam turbines	Electric motors with a medium starting torque (1.5 to 2.5 times the rated torque)	Electric motors with high starting and breaking torque (more than 2.5 times the rated torque) Hydraulic motors
Driven machines		Int. combustion engine with 8 or more cylinders	Int. combustion engine with 4 or 6 cylinders	Int. combustion engine with 4 or fewer cylinders
Office equipment	Scanners, printers, photocopiers	1.1	1.2	1.3
Precision equipment	Sensitive measuring instruments	1.0	1.1	1.2
Domestic appliances	Centrifuges	1.0	1.1	1.2
	Kitchen appliances, universal cutters	1.1	1.2	1.3
Sewing machines	Domestic sewing machines	1.1	1.2	1.3
	Industrial sewing machines	1.2	1.3	1.4
Laundry machines	Tumble driers	1.2	1.4	1.6
	Washing machines	1.4	1.6	1.8
Conveyor systems	Belt conveyors for lightweight goods	1.1	1.2	1.3
	Belt and roller conveyors for moderately heavy loads	1.2	1.4	1.6
	Belt conveyors for heavy goods, elevators, feed screws, bucked elevators	1.4	1.6	1.8
Mechanical stirrers	Mixers, liquid substances	1.2	1.4	1.6
	Mixers, semi-liquid substances	1.3	1.5	1.7
Bakery machines	Bakery dough mixers	1.4	1.6	1.8
Machine tools	Lathes	1.2	1.4	1.6
	Drilling, grinding, milling and planing machines	1.3	1.5	1.7
Wood working machines	Wood turning lathes and band saws	1.2	1.3	1.5
	Planing machines and circular saws	1.2	1.4	1.6
Sawing-mill machines		1.4	1.6	1.8
Brickworks machinery	Mixing machines	1.4	1.6	1.8
	Loam mills	1.6	1.8	2.0
Textile machinery	Bobbin winding and warping machines	1.2	1.4	1.6
	spinning and twisting machines, weaving machines	1.3	1.5	1.7
Paper industry	Agitators, calenders, driers	1.2	1.4	1.6
	Pumps, stuff grinders	1.4	1.6	1.8
Printing machines	Slitting and folding machines	1.2	1.4	1.6
	Rotary presses	1.3	1.5	1.7
Screen machines	Drum screens	1.2	1.4	1.6
	Vibration screens	1.3	1.5	1.7
Fans, blowers	Exhausters, radial blowers	1.4	1.6	1.8
	Pit ventilators, axial blowers	1.6	1.8	2.0
Compressors	Helical compressors	1.4	1.5	1.6
	Piston compressors	1.6	1.8	2.0
Pumps	Centrifugal and gear pumps	1.2	1.4	1.6
	Reciprocating pumps	1.7	1.9	2.1
Generators	Generators and exisers	1.4	1.6	1.8
Elevators	Elevators and hoists	1.4	1.6	1.8
Centrifuges		1.5	1.7	1.9
Rubber industry	Rubber processing machines	1.5	1.7	1.9
Mills	Hammer mills	1.5	1.7	1.9
	Ball, roller and gravel mills	1.7	1.9	2.1

Calculation factors
Acceleration factor c_3

The acceleration factor c_3 is to be applied when the step-up transmission ratio is > 1.24.

Transmission ratio 1/i	**Acceleration factor c_3**
1.00 – 1.24	0
1.25 – 1.74	0.1
1.75 – 2.49	0.2
2.50 – 3.49	0.3
≥3.50	0.4

Calculation factors
Fatigue factor c_4

The fatigue factor c_4 takes into account the daily operating period and particular operating conditions.

Type and period of operation	**Fatigue factor c_4**
Daily operating period 10 – 16 hours	+0.2
Daily operating period exceeding 16 hours	+0.4
Additional belt deflection e.g. idler	+0.2
Intermittent operation	–0.2

Calculation factors
Length factor c_5

The length factor c_5 takes into account the belt flexing frequency as function of the timing belt length L_B.

Timing belt 3M

Belt length L_B [mm]	<191	191 – 260	261 – 400	401 – 600	>600	
c_5	0.8	0.9	1.0	1.1	1.2	

Timing belt 5M

Belt length L_B [mm]	<441	441 – 500	501 – 800	801 – 1100	>1100	
c_5	0.8	0.9	1.0	1.1	1.2	

Timing belt 8M

Belt length L_B [mm]	<640	640 – 959	960 – 1279	1280 – 1799	>1799	
c_5	0.8	0.9	1.0	1.1	1.2	

Timing belt 14M

Belt length L_B [mm]	<1400	1400 – 1777	1778 – 2099	2100 – 2589	2590 – 3499	>3499
c_5	0.8	0.9	0.95	1.0	1.05	1.1

Calculation factors
Width factor c_6*

The c_6 factors are listed together with the power ratings P_N for the different profiles in the corresponding tables (see chapter 13).

*only applies to CONTI® SYNCHROFORCE and CONTI® SYNCHROCHAIN

Calculation factors
Initial load factor k_1*

The initial load factor k_1 takes into account different operating conditions.

Applies to all synchrobelt applications	1.0
Light-duty drives, constant load	0.85
Average load	1
Frequent load change	1.25
Impact load	1.4

*only applies to CONTI® SYNCHROFORCE

Calculation factor
Initial service factor k_2

The initial service factor k_2 takes into account the service factor calculated on the basis of the selected belt width.

Calculated service factor c_{0cal}	**Initial service factor k_2**
Applies to all synchrobelt applications	1.0
≤1.49	1.12
1.50 – 1.74	1.13 – 1.16
1.75 – 2.00	1.17 – 1.20
>2.00	1.20 – 1.60

Admissible circumferential force F_{Uadm}

Selection of timing belt width

The permissible circumferential force F_{Uadm} is shown in the table below.

CONTI® SYNCHROFORCE
Admissible circumferential force F_{Uadm} [N]

Pitch	3M	5M	8M			14M		
Width [mm]	CXP F_{Uadm} [N]	CXP F_{Uadm} [N]	CXP F_{Uadm} [N]	CXA F_{Uadm} [N]	Extreme F_{Uadm} [N]	CXP F_{Uadm} [N]	CXA F_{Uadm} [N]	Extreme F_{Uadm} [N]
6	88	185						
9	142	290						
12	196	395						
15	250	500						
20	340	675	1150	1900	1900			
30			1800	2900	2900			
40			2450	3900	3900	3550	5800	6750
50			3100	4900	4900	4450	7350	8500
55						4900	8100	9375
85						7600	12650	14625

CONTI® SYNCHROCHAIN
Admissible circumferential force F_{Uadm} [N]

	8M	14M
Belt width [mm]	F_{Uadm}	F_{Uadm}
12	1150	
21	2140	
36	3790	
62	6650	
37		6600
68		12090
90		15980
125		22175

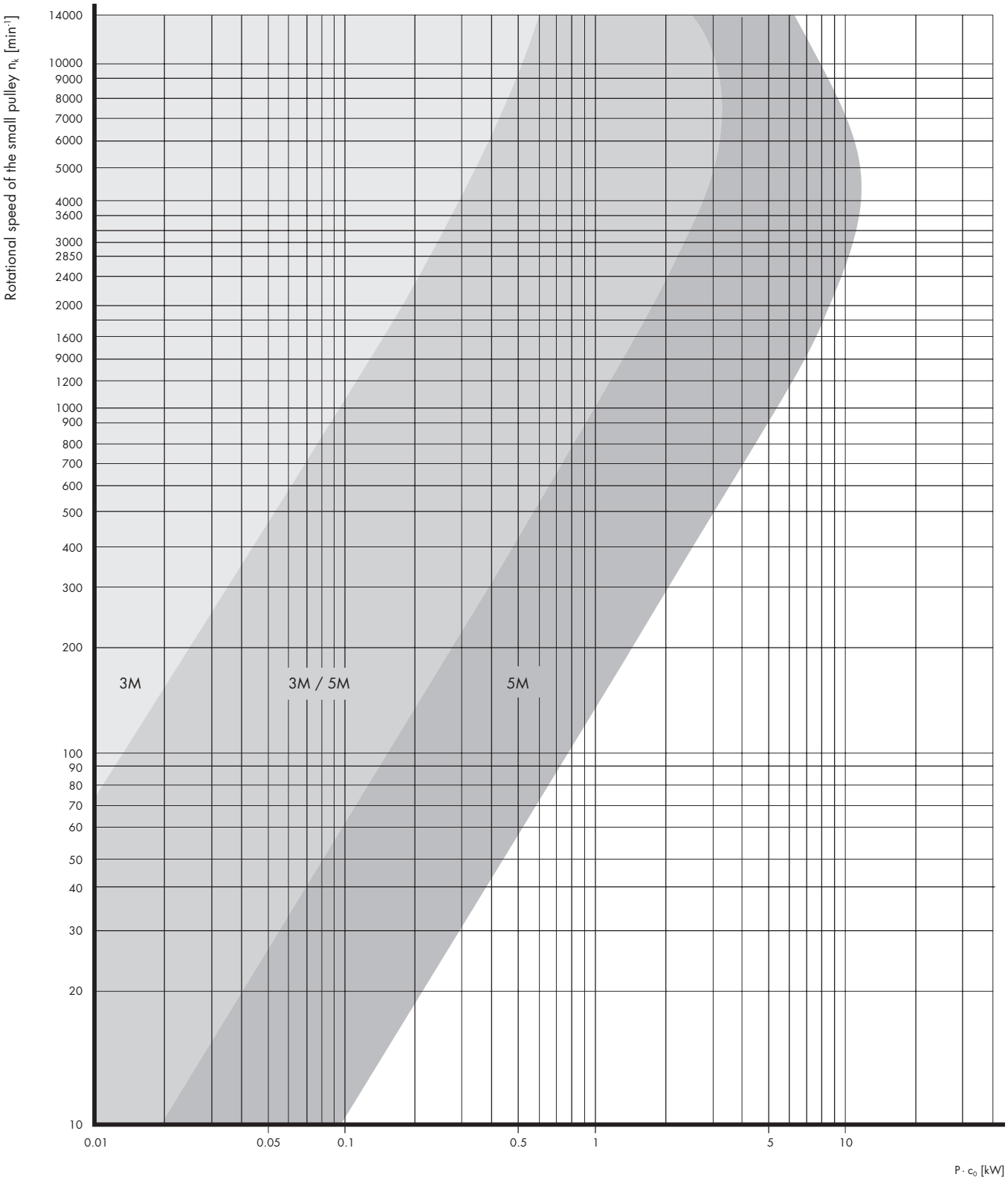
CONTI® SYNCHROBELT
Admissible circumferential force F_{Uadm} [N]

	3M	5M	8M	14M
Belt width [mm]	F_{Uadm}	F_{Uadm}	F_{Uadm}	F_{Uadm}
6	50			
9	80	120		
15	145	230		
20			550	
25		410		
30			870	
40				1700
50			1500	
55				2600
85			3200	4200
115				6100
170				11000

Belt pitch selection tables

CONTI® SYNCHROBELT HTD timing belt 3M, 5M

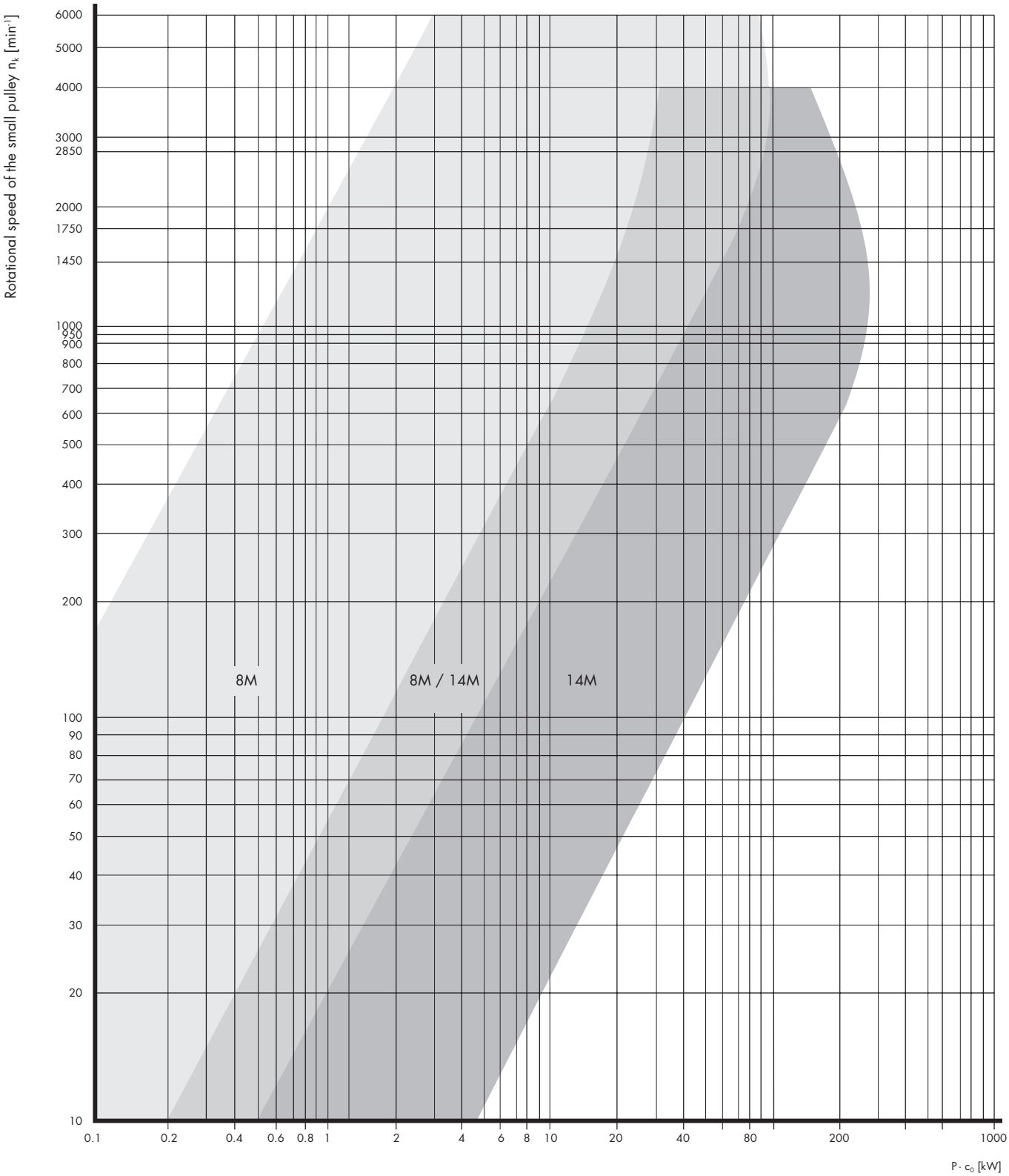
Selecting the correct pitch for a belt can be done by using the following diagrams. To do so, the power rating of the drive has to be defined and adjusted with the total service factor c_0 as well as the rotational speed has to be defined.



Belt pitch selection tables

CONTI® SYNCHROBELT HTD timing belt 8M, 14M

Should it happen during the belt selection process that the suitable pitch is right in between two available profiles pitches, it might be worthwhile to make an effort and go through the calculation for both pitches. Designing pulleys as big as possible will have the best performance efficiency.



Angst+Pfister

Belt pretension

Frequency measuring method

With this method, the initial installation tension is obtained by measuring the natural frequency of the belt span when vibrating.

$F_{stat} = 4 \cdot m \cdot L_f^2 \cdot f^2$ [N]

m Timing belt weight [kg/m]
L_f Free span length [mm]
f Natural frequency [Hz]

Specific belt weights for CONTI® SYNCHROFORCE

Timing belt profile	CXP					CXA			EXTREME			
	HTD 3M	HTD 5M	HTD 8M	HTD 14M	STD S 8M	HTD 8M	HTD 14M	STD S 8M	HTD 8M	HTD 14M	CTD 8M	CTD 14M
Mass per mm width [kg/m]	$2.50 \cdot 10^{-3}$	$3.40 \cdot 10^{-3}$	$5.70 \cdot 10^{-3}$	$10.30 \cdot 10^{-3}$	$5.20 \cdot 10^{-3}$	$4.13 \cdot 10^{-3}$	$8.16 \cdot 10^{-3}$	$4.13 \cdot 10^{-3}$	$4.49 \cdot 10^{-3}$	$9.7 \cdot 10^{-3}$	$4.49 \cdot 10^{-3}$	$9.7 \cdot 10^{-3}$

Specific belt weights for CONTI® SYNCHROBELT

Timing belt profile	HTD 3M	HTD 5M	HTD 8M	HTD 14M
Mass per mm width [kg/m]	$2.40 \cdot 10^{-3}$	$3.70 \cdot 10^{-3}$	$5.60 \cdot 10^{-3}$	$10.10 \cdot 10^{-3}$

Specific belt weights for CONTI® SYNCHROCHAIN

Timing belt profile	HTD 8M	HTD 14M
Mass per mm width [kg/m]	$4.22 \cdot 10^{-3}$	$7.7.3 \cdot 10^{-3}$

In practice the installation tension is checked by making a simple comparison between the predefined desired frequency and the measured frequency. The desired frequency is calculated from the predefined installation tension:

$$f = \sqrt{\frac{F_{stat}}{4 \cdot m \cdot L_f^2}} \text{ [Hz]}$$

If the measured frequency is higher than the calculated desired frequency, the initial tension of the timing belt must be reduced. In the reverse case, its initial tension must be increased.

CONTI® SYNCHROBELT HTD
Introduction

Positive drive system without slippage

In the same way as with a gear drive, the belt's teeth mesh with the toothing of the drive pulleys. The special tooth profile of belt and pulleys guarantees a precise synchronism and a high degree of safety against tooth jump.

High power output

The rounded HTD tooth profile combined with the wear resistant facing fabric as well as with the high dynamic load-bearing capacity of the tension cord ensures operating efficiency.

HTD synchronous drive belts render possible a positive transmission of power and high torques in fields of application where only chain or gears drives have been used to date.

Minimum space requirements

The high power output allows compact design of heavy-duty drives with low weight.

Extensive speed range

The high strength of the belt teeth as well as the excellent flexibility of the synchronous drive belts allow operationally safe and reliable drive versions in the lower speed range and at belt speeds up to 50 m/s.

Low synchronous drive belt tension

Positive power transmission requires low initial tension. The HTD tooth profile guarantees a high degree of safety against tooth jump and low axle and bearing loads.

No lubrication and maintenance

CONTI® SYNCHROBELT HTD synchronous drive belts are free from maintenance: no lubrication and retensioning required. HTD synchronous drive belts are insensitive to corrosion and stable in length.

Low-noise running

The flexible synchronous drive belt construction, the frictionless meshing of the teeth and the combination of fabric-faced rubber teeth with toothed pulleys of metal or of synthetic material reduce the running noise to a minimum.

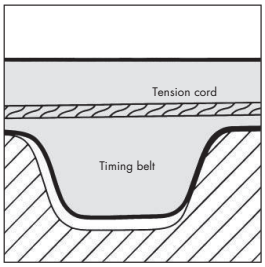
High efficiency

The flexible synchronous drive belt construction as well as the exact dimensional match of the tooth profile of the belts and pulleys allow drives with an efficiency of 98%.

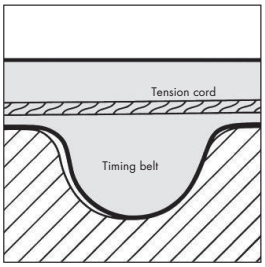
Synchronous drive belts of the standard version are:

- oil resistant to a degree
- tropics-resistant
- remain stable over a temperature range from –20°C to +100°C according to application
- ozone-resistant
- insensitive to weathering

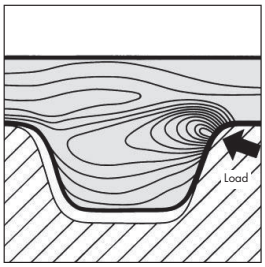
Stress distribution in synchronus drive belts with trapezoidal and HTD tooth profile



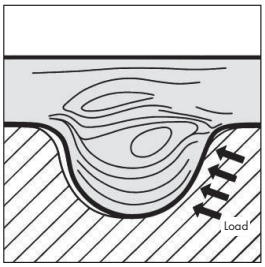
Trapezoidal profile



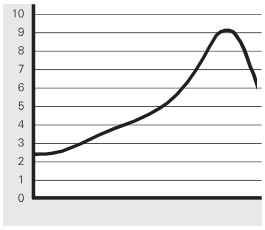
CONTI® SYBCHROBELT HTD tooth profile



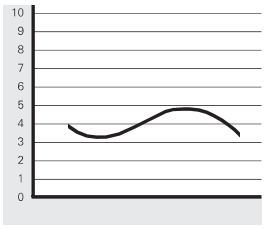
Stress distribution in the trapezoidal tooth



Stress distribution in the CONTI® SYNCHROBELT HTD tooth



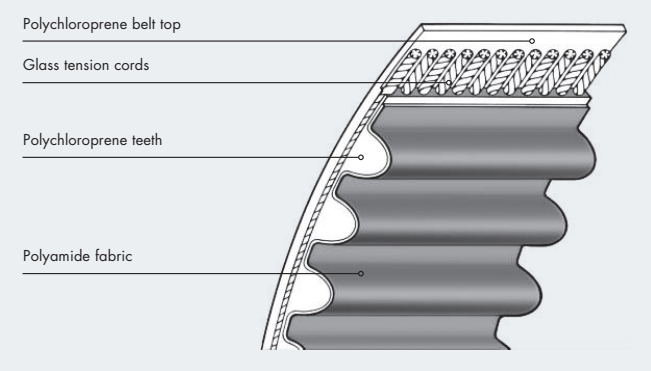
Load distribution across the tooth



Load distribution across the tooth

CONTI® SYNCHROBELT HTD
Construction

These are the components of the synchronous drive belt:
- teeth and belt top of polychloroprene
- polyamide fabric (facing fabric)
- glass tension cords



Teeth and belt top of polychloroprene

The teeth and the belt top are made from highly loadable polychloroprene based elastomer materials. A special manufacturing process ensures an excellent adhesion both on the tensile member and on the facing fabric.

Polyamide fabric

A durable protection of the teeth is an essential precondition for a smooth operation and a long service life. This is ensured by the application of particularly abrasion-resistant polyamide fabrics with low friction coefficients.

Glass tension cords

Synchronous belt drives call for a high degree of length stability and tensile strength. These requirements are optimally met by low-elongation tensile members of glass cord helically wound over the entire belt width. Any longitudinal off-track running will be largely prevented by the use of tensile cords entwined in pairs.

Further design features:
- high resistance to fatigue failure
- temperature and ageing-resistant
- high resistance to tearing

Designation

CONTI® SYNCHROBELT HTD synchronous drive belts are designated by the following data:

- pitch length [mm]
  The pitch length of the synchronous drive belt is the overall circumference measured on the neutral pitch line. The pitch length is located in the middle of the tensile member.
  The precise pitch length can only be determined on suitable measuring devices. See section “Length Measurement” (page 13.6) for further information.
- tooth pitch [mm]
  The tooth pitch is the linear distance between two adjacent teeth along the pitch line.
- synchronous drive belt width [mm]
  The synchronous drive belt width and the width designation are identical.

Example

CONTI® SYNCHROBELT HTD synchronous drive belt
960 – 8M – 50
960: 960 mm pitch length
8M: 8 mm tooth pitch
50: 50 mm synchronous drive belt width

The number of teeth z is a function of pitch length and pitch:
$z = L_B / t$

Available belt range

CONTI® SYNCHROBELT HTD synchronous drive belts are used in the entire drive technology sector, from the field of precision mechanics to the construction of heavy machinery. A comprehensive standard programme has been established for all these loads and conditions of application.

CONTI® SYNCHROBELT HTD synchronous drive belts are supplied in 4 tooth pitch versions:

HTD 3M: 3 mm tooth pitch
HTD 5M: 5 mm tooth pitch
HTD 8M: 8 mm tooth pitch
HTD 14M: 14 mm tooth pitch

The length and width dimensions that can be supplied are shown in the tables 1–4 (pages 13.3 to 13.5).

CONTI® SYNCHROBELT HTD
Product selection: Tooth profile HTD 3M

Profile HTD 3M

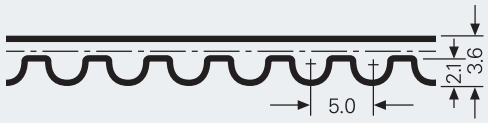
Standard lengths

Table 1

Designation	Pitch length L_p [mm]	No. of teeth z	Designation	Pitch length L_p [mm]	No. of teeth z	Designation	Pitch length L_p [mm]	No. of teeth z
111–3M	111	37	300–3M	300	100	564–3M	564	188
117–3M*	117	39	312 –3M	312	104	570–3M	570	190
129–3M	129	43	318– 3M	318	106	597–3M*	597	199
141–3M*	141	47	321– 3M	321	107	600–3M*	600	202
144–3M	144	48	330– 3M	330	110	606–3M	606	202
150 –3M	150	50	336–3M	336	112	612–3M*	612	204
156–3M*	156	52	339–3M	339	113	615–3M	615	205
159 –3M	159	53	357–3M	357	119	633–3M	633	211
168–3M	168	56	363–3M	363	121	669–3M	669	223
174–3M	174	58	384–3M	384	128	687–3M	687	229
177 –3M	177	59	390–3M	390	130	708–3M	708	236
180–3M*	180	60	393–3M	393	131	711 –3M	711	237
186–3M*	186	62	396–3M	396	132	738–3M*	738	246
192–3M*	192	64	420–3M	420	140	753–3M*	753	251
201 –3M	201	67	432–3M	432	144	822–3M	822	274
204–3M*	204	68	435–3M	435	145	843–3M*	843	281
210 –3M	210	70	447–3M	447	149	882–3M	882	294
213–3M	213	71	474–3M	474	158	945–3M	945	315
216– 3M	216	72	477–3M	477	159	960–3M*	960	320
225–3M	225	75	480–3M	480	160	1002–3M	1002	334
240–3M	240	80	486–3M*	486	162	1041–3M	1041	347
246–3M*	246	82	489–3M*	489	163	1068–3M	1068	356
252–3M	252	84	495–3M*	495	165	1071 –3M	1071	357
255–3M	255	85	501 –3M	501	167	1125–3M	1125	375
261–3M	261	87	510 –3M	510	170	1170–3M	1170	390
267–3M	267	89	513– 3M	513	171	1176–3M*	1176	392
270–3M	270	90	522–3M*	522	174	1245–3M	1245	415
285–3M*	285	95	525–3M*	525	175	1500 –3M	1500	500
294– 3M*	294	98	537–3M	537	179	1569 –3M	1569	523

*non stock items, delivery on request
Standard widths: 6, 9, 15 mm, intermediate widths on request

CONTI® SYNCHROBELT HTD
Product selection: Tooth profile HTD 5M



Profile HTD 5M

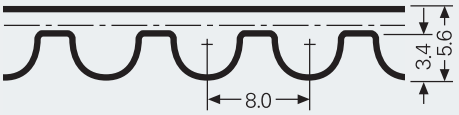
Standard lengths

Table 2

Designation	Pitch length L_B [mm]	No. of teeth z	Designation	Pitch length L_B [mm]	No. of teeth z
225–5M*	225	45	800–5M	800	160
265–5M*	265	53	835–5M	835	167
275–5M	275	55	840–5M	840	168
295–5M*	295	59	850–5M	850	170
300–5M	300	60	860–5M	860	172
325–5M	325	65	890–5M	890	178
330–5M	330	66	900–5M	900	180
335–5M	335	67	925–5M	925	185
350–5M	350	70	940–5M	940	188
375–5M	375	75	950–5M	950	190
385–5M	385	77	1000–5M	1000	200
390–5M	390	78	1050–5M	1050	210
400–5M	400	80	1125–5M	1125	225
405–5M	405	81	1200–5M	1200	240
420–5M	420	84	1240–5M	1240	248
425–5M	425	85	1270–5M	1270	254
450–5M	450	90	1350–5M	1350	270
460–5M	460	92	1420–5M	1420	284
475–5M	475	95	1500–5M	1500	300
500–5M	500	100	1595–5M	1595	319
525–5M*	525	105	1690–5M	1690	338
535–5M	535	107	1800–5M	1800	360
550–5M	550	110	2000–5M	2000	400
565–5M	565	113	2525–5M	2525	505
575–5M	575	115			
600–5M	600	120			
615–5M	615	123			
620–5M	620	124			
630–5M	630	126			
635–5M	635	127			
665–5M	665	133			
670–5M	670	134			
700–5M	700	140			
710–5M	710	142			
740–5M	740	148			
750–5M	750	150			
755–5M	755	151			

*non stock items, delivery on request
Standard widths: 9, 15, 25 mm, intermediate widths on request

CONTI® SYNCHROBELT HTD
Product selection: Tooth profile HTD 8M



Profile HTD 8M

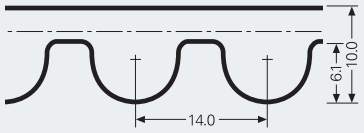
Standard lengths

Table 3

Designation	Pitch length L_B [mm]	No. of teeth z	Designation	Pitch length L_B [mm]	No. of teeth z
288–8M	288	36	1200–8M	1200	150
304–8M	304	38	1216–8M	1216	152
312–8M	312	44	1224–8M	1224	153
352–8M	352	44	1256–8M	1256	157
376–8M	376	47	1280–8M	1280	160
384–8M	384	48	1304–8M	1304	163
400–8M	400	50	1328–8M*	1328	166
416–8M	416	52	1360–8M	1360	170
512–8M	512	64	1392–8M	1392	174
520–8M	520	65	1424–8M	1424	178
536–8M	536	67	1440–8M	1440	180
576–8M	576	72	1520–8M	1520	190
424–8M	424	53	1552–8M	1552	194
472–8M*	474	59	1600–8M	1600	200
480–8M	480	60	1696–8M	1696	212
560–8M	560	70	1760–8M	1760	220
600–8M	600	75	1800–8M	1800	225
624–8M*	624	78	2000–8M	2000	250
632–8M	632	79	2240–8M	2240	280
640–8M	640	80	2248–8M	2248	281
656–8M	656	82	2400–8M	2400	300
688–8M	688	86	2408–8M	3408	426
720–8M	720	90	2600–8M	2600	325
760–8M	760	95	2800–8M	2800	350
776–8M*	776	97	3008–8M	3008	367
784–8M	784	98	3600–8M	3600	450
800–8M	800	100	3808–8M	3808	477
880–8M	880	110	4400–8M	4400	550
912– 8M*	912	114			
920–8M	920	115			
960–8M	960	120			
1000–8M	1000	125			
1016–8M	1016	127			
1040–8M	1040	130			
1064–8M	1064	133			
1080–8M	1080	135			
1120–8M	1120	140			
1160–8M	1160	145			
1176–8M	1176	147			

*non stock items, delivery on request
Standard widths: 20, 30, 50, 85 mm, intermediate widths on request

CONTI® SYNCHROBELT HTD
Product selection: Tooth profile HTD 14M



Profile HTD 14M

Standard lengths

Table 4

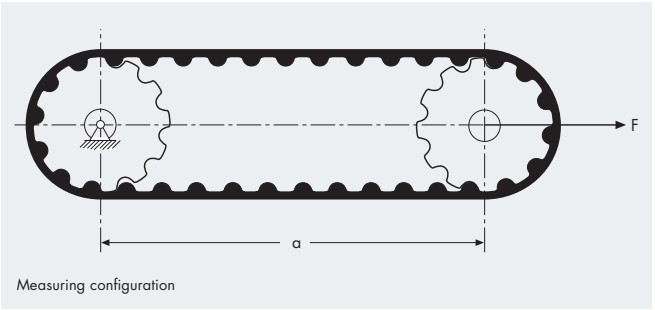
Designation	Pitch length L_B [mm]	No. of teeth z
966–14M	966	69
1050–14M	1050	75
1190–14M	1190	85
1400–14M	1400	100
1610–14M	1610	115
1778–14M	1778	127
1890–14M	1890	135
2100–14M	2100	150
2310–14M	2310	165
2450–14M	2450	175
2590–14M	2590	185
2800–14M	2800	200
3150–14M	3150	225
3360–14M	3360	240
3500–14M	3500	250
3668–14M	3668	262
3850–14M	3850	275
4326–14M	4326	309
4578–14M	4578	327

Standard widths: 40, 55, 85, 115, 170 mm,
intermediate widths on request

CONTI® SYNCHROBELT HTD
Length measurement

The pitch length is decisive for the calculation and application of CONTI® SYNCHROBELT HTD synchronous drive belts. A precise measurement can only be made on suitable measuring equipment.

The synchronous drive belt is placed over two equal size measuring pulleys with the same pitch diameters. The movable measuring pulley is loaded in such a way that the measuring force F will act on the synchronous drive belt. To ensure a correct position of the synchronous drive belt on the pulleys and a uniform tension on both belt sides, the synchronous drive belt must have completed at least 2 rotations under load. The centre distance a is then measured between the two pulleys.



Measuring configuration

The pitch length L_B is double the centre distance a plus the pitch circumference U_0 of the synchronous drive belt test pulleys.

$$L_B = 2 \cdot a + U_0$$
$$= 2 \cdot a + \pi \, d_0$$
$$= 2 \cdot a + z \cdot t$$

The test measurement lay-out is shown in the following figure. The dimensions of the measuring pulleys and the measuring forces are indicated in table 5.

CONTI® SYNCHROBELT HTD
Measuring pulleys and test force

Overview

Table 5

Tooth profile			HTD 3M		HTD 5M		HTD 8M		HTD 14M	
Tooth pitch t	[mm]		3		5		8		14	
No. of teeth z	[mm]	A	12		20		30		36	
		B	20		48		48			
		C	40							
Pitch diameter d_0	[mm]	A	11.46		31.83		76.39		160.43	
		B	19.10		76.39		122.23			
		C	38.20							
Pitch circumference U_0	[mm]	A	36		100		240		504	
		B	60		240		384			
		C	120							
Outside diameter d_a	[mm]	A	10.70	± 0.013	30.69	± 0.013	75.02	± 0.013	157.63	± 0.025
		B	18.34	± 0.013	75.25	± 0.013	120.86	± 0.013		
		C	37.44	± 0.013						
Measuring force F for width b	[N]	6 mm	40							
		9 mm	60		110					
		15 mm	110		210					
		20 mm					480		725*	
		25 mm			340					
		30 mm					*			
		40 mm							*	

*for synchronous drive belts with a larger width, length measurement is performed on narrower belts at a correspondingly reduced measuring force

CONTI® SYNCHROBELT HTD
Tolerances

CONTI® SYNCHROBELT HTD synchronous drive belts are precision products. They are manufactured with maximum care and accuracy. The tolerances for length, width and thickness variations are as per following tables.

Length tolerances for synchronous drive belts

Table 6

Pitch length L_B [mm]	**Tolerance of centre distance deviation** [mm]
≤150	±0.15
>150–255	±0.20
>255–400	±0.23
>400–560	±0.25
>560–800	±0.30
>800–1000	±0.33
>1000–1270	±0.38
>1270–1500	±0.40
>1500–1800	±0.43
>1800–2000	±0.45
>2000–2250	±0.48
>2250	The tolerance value increases by a further 0.05 mm per 500 mm increase in length.

For further information on length measurement, see page 13.6.

Width tolerances for synchronous drive belts

Table 7

Belt width b	**Width tolerance for pitch length L_B** [mm]		
	up to 880 mm	> **880 mm up to 1760 mm**	> **1760 mm**
≤9	+0.4	+0.4	
	–0.8	–0.8	
>9–40	+0.8	+0.8	+0.8
	–0.8	–1.2	–1.2
>40–50	+0.8	+1.2	+1.2
	–1.2	–1.2	–1.5
>50–85	+1.2	+1.5	+1.5
	–1.2	–1.5	–2.0
>85–170	+1.5	+1.5	+2.0
	–1.5	–2.0	–2.0
>170		+4.8	+4.8
		–4.8	–4.8

Thickness tolerances for synchronous drive belts

Table 8

Tooth profile		**HTD 3M**	**HTD 5M**	**HTD 8M**	**HTD 14M**
Belt thickness h_s	[mm]	2.4	3.6	5.6	10.0
Thickness tolerance standard construction	[mm]	±0.20	±0.25	±0.40	±0.60
Thickness tolerance special construction	[mm]	±0.12	±0.15	±0.20	±0.25

CONTI® SYNCHROBELT HTD
Power ratings

Timing belts 3M, 6 mm belt width / Power rating P_N [kW]

Table 9

Speed of small toothed pulley	Number of teeth of small pulley z_1														
	10	12	14	16	18	20	24	28	32	40	48	56	64	72	80
n_1 [rpm]	Pitch Ø d_0 [mm]														
	9.55	11.46	13.37	15.28	17.19	19.10	22.92	26.74	30.56	38.20	45.84	53.48	61.12	68.75	76.39
20	0.001	0.001	0.001	0.001	0.002	0.002	0.002	0.003	0.003	0.004	0.005	0.007	0.008	0.008	0.009
40	0.002	0.002	0.002	0.003	0.003	0.003	0.004	0.005	0.006	0.009	0.011	0.013	0.015	0.017	0.019
60	0.002	0.003	0.003	0.004	0.005	0.005	0.007	0.008	0.009	0.013	0.016	0.020	0.023	0.025	0.028
100	0.004	0.005	0.006	0.007	0.008	0.009	0.011	0.013	0.016	0.021	0.027	0.033	0.038	0.042	0.047
200	0.008	0.010	0.011	0.013	0.015	0.017	0.022	0.027	0.032	0.043	0.055	0.066	0.075	0.084	0.094
300	0.011	0.013	0.016	0.018	0.021	0.024	0.030	0.036	0.043	0.057	0.073	0.087	0.100	0.112	0.125
400	0.013	0.016	0.019	0.023	0.026	0.029	0.037	0.045	0.053	0.070	0.090	0.107	0.122	0.138	0.153
500	0.016	0.019	0.023	0.027	0.031	0.035	0.043	0.053	0.062	0.083	0.105	0.125	0.143	0.161	0.179
600	0.018	0.022	0.026	0.031	0.035	0.040	0.050	0.060	0.071	0.094	0.120	0.142	0.163	0.183	0.203
700	0.020	0.025	0.030	0.035	0.040	0.045	0.056	0.067	0.080	0.105	0.133	0.159	0.181	0.204	0.226
800	0.023	0.028	0.033	0.038	0.044	0.050	0.062	0.075	0.088	0.116	0.147	0.174	0.199	0.224	0.249
900	0.025	0.030	0.036	0.042	0.048	0.054	0.068	0.081	0.096	0.126	0.159	0.189	0.216	0.243	0.270
950	0.026	0.032	0.038	0.044	0.050	0.057	0.070	0.085	0.100	0.132	0.166	0.197	0.225	0.253	0.280
1000	0.027	0.033	0.039	0.046	0.052	0.059	0.073	0.088	0.103	0.136	0.172	0.204	0.233	0.262	0.291
1200	0.031	0.038	0.045	0.052	0.060	0.068	0.084	0.101	0.118	0.156	0.195	0.232	0.264	0.297	0.330
1400	0.035	0.043	0.051	0.059	0.067	0.076	0.094	0.113	0.133	0.174	0.218	0.258	0.294	0.331	0.367
1450	0.036	0.044	0.052	0.061	0.069	0.078	0.097	0.116	0.136	0.178	0.223	0.264	0.302	0.339	0.376
1600	0.039	0.047	0.056	0.065	0.075	0.084	0.104	0.125	0.146	0.191	0.239	0.283	0.323	0.363	0.402
1800	0.042	0.052	0.062	0.071	0.082	0.092	0.114	0.136	0.159	0.208	0.260	0.307	0.350	0.393	0.436
2000	0.046	0.056	0.067	0.077	0.088	0.100	0.123	0.147	0.172	0.225	0.280	0.330	0.376	0.422	0.468
2400	0.053	0.065	0.077	0.089	0.101	0.114	0.141	0.168	0.197	0.256	0.317	0.374	0.426	0.477	0.527
2850	0.061	0.074	0.087	0.100	0.116	0.130	0.160	0.191	0.223	0.289	0.357	0.419	0.477	0.533	0.588
3200	0.066	0.081	0.096	0.111	0.126	0.142	0.174	0.208	0.242	0.313	0.386	0.452	0.513	0.573	0.630
3600	0.073	0.088	0.105	0.121	0.138	0.155	0.190	0.226	0.263	0.339	0.417	0.488	0.552	0.615	0.674
4000	0.079	0.096	0.113	0.131	0.149	0.168	0.205	0.244	0.284	0.365	0.447	0.521	0.588	0.652	0.713
5000	0.093	0.114	0.134	0.155	0.176	0.198	0.242	0.286	0.331	0.423	0.513	0.593	0.664	0.728	0.786
6000	0.108	0.131	0.154	0.178	0.202	0.226	0.275	0.325	0.375	0.473	0.569	0.650	0.718	0.776	0.823
7000	0.121	0.147	0.173	0.199	0.226	0.252	0.306	0.360	0.413	0.517	0.613	0.691	0.751	0.794	0.820
8000	0.134	0.162	0.191	0.219	0.248	0.277	0.335	0.392	0.448	0.553	0.646	0.715	0.758	0.778	0.771
10000	0.158	0.191	0.224	0.257	0.290	0.323	0.386	0.447	0.504	0.602	0.674	0.705	0.690	0.630	0.517
12000	0.181	0.218	0.255	0.291	0.327	0.362	0.428	0.488	0.540	0.617	0.645	0.607	0.494		
14000	0.203	0.243	0.283	0.322	0.359	0.394	0.459	0.514	0.556	0.592	0.551	0.407			

CONTI® SYNCHROBELT HTD
Power ratings

Timing belts 3M, 9 mm belt width / Power rating P_N [kW]

Table 10

Speed of small toothed pulley	Number of teeth of small pulley z_1														
	10	12	14	16	18	20	24	28	32	40	48	56	64	72	80
n_1 [rpm]	Pitch Ø d_0 [mm]														
	9.55	11.46	13.37	15.28	17.19	19.10	22.92	26.74	30.56	38.20	45.84	53.48	61.12	68.75	76.39
20	0.001	0.002	0.002	0.002	0.003	0.003	0.004	0.004	0.005	0.007	0.009	0.011	0.012	0.014	0.016
40	0.003	0.003	0.004	0.004	0.005	0.006	0.007	0.009	0.010	0.004	0.018	0.022	0.025	0.028	0.031
60	0.004	0.005	0.006	0.007	0.008	0.009	0.011	0.013	0.016	0.021	0.027	0.033	0.037	0.042	0.047
100	0.006	0.008	0.009	0.011	0.013	0.014	0.018	0.022	0.026	0.035	0.045	0.054	0.062	0.070	0.078
200	0.013	0.016	0.019	0.022	0.025	0.029	0.036	0.044	0.052	0.071	0.091	0.109	0.124	0.140	0.155
300	0.018	0.022	0.026	0.030	0.035	0.039	0.049	0.060	0.071	0.095	0.121	0.145	0.165	0.186	0.207
400	0.022	0.027	0.032	0.038	0.043	0.049	0.061	0.074	0.087	0.117	0.149	0.177	0.203	0.228	0.253
500	0.026	0.032	0.038	0.044	0.051	0.058	0.072	0.087	0.103	0.137	0.174	0.207	0.237	0.267	0.296
600	0.030	0.037	0.044	0.051	0.059	0.066	0.083	0.100	0.118	0.156	0.198	0.236	0.269	0.303	0.337
700	0.034	0.041	0.049	0.058	0.066	0.075	0.093	0.112	0.132	0.175	0.221	0.263	0.300	0.338	0.375
800	0.038	0.046	0.055	0.064	0.073	0.083	0.102	0.123	0.145	0.192	0.243	0.289	0.330	0.371	0.412
900	0.041	0.050	0.060	0.070	0.080	0.090	0.112	0.135	0.159	0.210	0.264	0.314	0.358	0.403	0.447
950	0.043	0.052	0.062	0.073	0.083	0.094	0.117	0.140	0.165	0.218	0.275	0.326	0.372	0.418	0.465
1000	0.045	0.055	0.065	0.076	0.086	0.098	0.121	0.146	0.171	0.226	0.285	0.338	0.386	0.434	0.482
1200	0.051	0.063	0.075	0.087	0.099	0.112	0.139	0.167	0.196	0.258	0.324	0.384	0.438	0.493	0.547
1400	0.058	0.071	0.084	0.098	0.112	0.126	0.156	0.187	0.220	0.288	0.361	0.427	0.488	0.548	0.608
1450	0.060	0.073	0.086	0.100	0.116	0.129	0.160	0.192	0.225	0.295	0.370	0.438	0.500	0.562	0.623
1600	0.064	0.078	0.093	0.108	0.124	0.139	0.172	0.207	0.242	0.317	0.397	0.469	0.535	0.601	0.667
1800	0.070	0.086	0.102	0.118	0.135	0.152	0.188	0.225	0.264	0.345	0.431	0.509	0.580	0.652	0.722
2000	0.076	0.093	0.110	0.128	0.146	0.165	0.204	0.244	0.285	0.372	0.464	0.547	0.624	0.700	0.776
2400	0.088	0.107	0.127	0.147	0.168	0.189	0.233	0.279	0.326	0.424	0.526	0.620	0.706	0.791	0.875
2850	0.100	0.122	0.145	0.168	0.191	0.216	0.265	0.316	0.369	0.478	0.592	0.696	0.791	0.885	0.977
3200	0.110	0.134	0.158	0.183	0.209	0.235	0.289	0.344	0.401	0.519	0.640	0.751	0.853	0.952	1.049
3600	0.120	0.146	0.173	0.201	0.228	0.257	0.315	0.375	0.437	0.563	0.693	0.811	0.919	1.023	1.124
4000	0.130	0.159	0.188	0.217	0.247	0.278	0.341	0.405	0.471	0.605	0.742	0.866	0.979	1.087	1.191
5000	0.155	0.188	0.222	0.257	0.292	0.328	0.401	0.475	0.550	0.702	0.854	0.989	1.109	1.220	1.321
6000	0.178	0.216	0.255	0.295	0.334	0.375	0.457	0.539	0.623	0.788	0.945	1.088	1.207	1.310	1.396
7000	0.200	0.243	0.286	0.330	0.374	0.419	0.509	0.599	0.688	0.863	1.027	1.163	1.270	1.353	1.409
8000	0.222	0.269	0.316	0.364	0.412	0.461	0.557	0.653	0.747	0.926	1.087	1.211	1.295	1.344	1.354
10000	0.263	0.317	0.372	0.427	0.482	0.537	0.643	0.746	0.844	1.017	1.150	1.219	1.220	1.152	1.007
12000	0.301	0.363	0.424	0.485	0.544	0.603	0.715	0.819	0.311	1.054	1.125	1.094	0.952		
14000	0.337	0.404	0.471	0.536	0.599	0.660	0.772	0.869	0.947	1.032	1.001	0.816			

CONTI® SYNCHROBELT HTD
Power ratings

Timing belts 3M, 15 mm belt width / Power rating P_N [kW]

Table 11

Speed of small toothed pulley	Number of teeth of small pulley z_1														
	10	12	14	16	18	20	24	28	32	40	48	56	64	72	80
n_1 [rpm]	Pitch Ø d_0 [mm]														
	9.55	11.46	13.37	15.28	17.19	19.10	22.92	26.74	30.56	38.20	45.84	53.48	61.12	68.75	76.39
20	0.002	0.003	0.003	0.004	0.005	0.005	0.006	0.008	0.009	0.013	0.016	0.020	0.022	0.025	0.028
40	0.005	0.006	0.007	0.008	0.009	0.010	0.013	0.016	0.019	0.025	0.033	0.039	0.045	0.050	0.056
60	0.007	0.008	0.010	0.012	0.014	0.016	0.019	0.024	0.028	0.038	0.049	0.059	0.067	0.075	0.084
100	0.012	0.014	0.017	0.020	0.023	0.026	0.032	0.039	0.047	0.053	0.081	0.098	0.111	0.125	0.139
200	0.023	0.028	0.034	0.040	0.046	0.052	0.065	0.079	0.094	0.127	0.163	0.195	0.223	0.251	0.279
300	0.032	0.039	0.046	0.054	0.062	0.070	0.088	0.107	0.127	0.170	0.217	0.259	0.297	0.334	0.371
400	0.039	0.048	0.058	0.067	0.077	0.088	0.109	0.132	0.157	0.209	0.267	0.318	0.363	0.408	0.454
500	0.047	0.057	0.068	0.080	0.091	0.104	0.125	0.156	0.184	0.246	0.312	0.372	0.425	0.478	0.531
600	0.054	0.066	0.079	0.092	0.105	0.119	0.148	0.179	0.211	0.230	0.355	0.423	0.483	0.543	0.604
700	0.061	0.074	0.088	0.103	0.118	0.134	0.166	0.200	0.236	0.313	0.396	0.471	0.538	0.606	0.673
800	0.067	0.082	0.098	0.114	0.131	0.148	0.184	0.221	0.261	0.345	0.436	0.518	0.591	0.665	0.739
900	0.074	0.090	0.107	0.125	0.143	0.162	0.201	0.242	0.234	0.376	0.474	0.562	0.642	0.722	0.802
950	0.077	0.094	0.112	0.130	0.149	0.169	0.209	0.251	0.296	0.391	0.492	0.584	0.667	0.750	0.833
1000	0.080	0.098	0.116	0.135	0.155	0.175	0.217	0.261	0.307	0.435	0.510	0.605	0.691	0.778	0.863
1200	0.092	0.113	0.134	0.156	0.178	0.201	0.249	0.299	0.331	0.462	0.580	0.688	0.786	0.883	0.980
1400	0.104	0.127	0.151	0.175	0.200	0.226	0.279	0.335	0.394	0.517	0.647	0.766	0.875	0.983	1.091
1450	0.107	0.130	0.155	0.180	0.206	0.232	0.287	0.344	0.404	0.530	0.663	0.785	0.896	1.007	1.118
1600	0.115	0.141	0.167	0.194	0.222	0.250	0.309	0.370	0.434	0.539	0.711	0.841	0.960	1.078	1.196
1800	0.126	0.154	0.183	0.212	0.242	0.273	0.337	0.434	0.473	0.619	0.772	0.912	1.041	1.169	1.296
2000	0.137	0.167	0.198	0.230	0.262	0.296	0.365	0.437	0.511	0.637	0.831	0.981	1.119	1.256	1.392
2400	0.158	0.192	0.228	0.264	0.301	0.340	0.418	0.500	0.584	0.730	0.944	1.112	1.267	1.420	1.571
2850	0.180	0.219	0.260	0.301	0.343	0.386	0.475	0.567	0.662	0.858	1.062	1.249	1.421	1.590	1.756
3200	0.197	0.240	0.284	0.329	0.375	0.422	0.518	0.617	0.720	0.931	1.149	1.349	1.532	1.711	1.887
3600	0.216	0.262	0.310	0.359	0.410	0.461	0.565	0.673	0.783	1.010	1.244	1.456	1.651	1.840	2.023
4000	0.234	0.285	0.336	0.389	0.443	0.498	0.611	0.726	0.844	1.086	1.333	1.557	1.761	1.958	2.146
5000	0.278	0.338	0.399	0.461	0.524	0.588	0.719	0.852	0.988	1.232	1.536	1.781	2.000	2.204	2.391
6000	0.319	0.388	0.458	0.528	0.600	0.673	0.820	0.969	1.118	1.418	1.710	1.964	2.183	2.376	2.542
7000	0.360	0.436	0.514	0.592	0.672	0.752	0.914	1.076	1.238	1.554	1.855	2.106	2.308	2.470	2.588
8000	0.398	0.482	0.568	0.654	0.740	0.827	1.001	1.175	1.345	1.672	1.969	2.202	2.369	2.478	2.519
10000	0.471	0.570	0.669	0.768	0.866	0.965	1.158	1.346	1.524	1.645	2.100	2.247	2.280	2.198	1.986
12000	0.540	0.651	0.762	0.871	0.979	1.086	1.291	1.481	1.654	1.929	2.084	2.069	1.867		
14000	0.605	0.727	0.847	0.965	1.079	1.190	1.397	1.578	1.729	1.913	1.902	1.633			

CONTI® SYNCHROBELT HTD
Power ratings

Timing belts 5M, 9 mm belt width / Power rating P_N [kW]

Table 12

Speed of small toothed pulley	Number of teeth of small pulley z_1														
	14	16	18	20	24	28	32	36	40	44	48	56	64	72	80
n_1 [rpm]	Pitch Ø d_0 [mm]														
	22.28	25.46	28.65	31.83	38.20	44.56	50.93	57.30	63.66	70.03	76.39	89.13	101.86	114.59	127.32
20	0.004	0.005	0.006	0.007	0.009	0.011	0.013	0.015	0.017	0.020	0.022	0.027	0.031	0.034	0.038
40	0.009	0.011	0.012	0.014	0.017	0.021	0.025	0.030	0.035	0.040	0.045	0.054	0.061	0.069	0.077
60	0.013	0.016	0.018	0.021	0.026	0.032	0.038	0.045	0.052	0.059	0.067	0.080	0.092	0.103	0.115
100	0.022	0.026	0.030	0.035	0.044	0.053	0.064	0.075	0.086	0.099	0.112	0.134	0.153	0.172	0.192
200	0.045	0.053	0.061	0.069	0.087	0.107	0.127	0.149	0.173	0.198	0.224	0.288	0.306	0.345	0.383
300	0.061	0.072	0.083	0.094	0.118	0.144	0.172	0.201	0.232	0.264	0.298	0.357	0.407	0.458	0.509
400	0.076	0.089	0.103	0.117	0.147	0.178	0.212	0.247	0.285	0.324	0.365	0.436	0.499	0.561	0.623
500	0.091	0.106	0.122	0.139	0.173	0.210	0.250	0.291	0.335	0.380	0.428	0.510	0.583	0.656	0.728
600	0.104	0.122	0.140	0.159	0.199	0.241	0.285	0.332	0.381	0.433	0.486	0.580	0.662	0.745	0.827
700	0.117	0.137	0.158	0.179	0.223	0.270	0.320	0.372	0.426	0.483	0.542	0.646	0.738	0.829	0.921
800	0.130	0.152	0.174	0.198	0.246	0.298	0.352	0.410	0.469	0.531	0.596	0.709	0.809	0.910	1.010
900	0.142	0.166	0.191	0.216	0.269	0.325	0.384	0.446	0.511	0.578	0.647	0.769	0.879	0.987	1.096
950	0.148	0.173	0.199	0.225	0.280	0.338	0.400	0.464	0.531	0.600	0.672	0.799	0.912	1.026	1.137
1000	0.154	0.180	0.206	0.234	0.291	0.352	0.415	0.481	0.551	0.623	0.697	0.828	0.945	1.062	1.178
1200	0.177	0.207	0.237	0.268	0.334	0.402	0.474	0.549	0.627	0.708	0.792	0.939	1.071	1.203	1.334
1400	0.199	0.232	0.266	0.301	0.374	0.451	0.531	0.614	0.700	0.790	0.882	1.044	1.190	1.335	1.479
1450	0.205	0.239	0.273	0.309	0.384	0.462	0.544	0.630	0.718	0.809	0.903	1.069	1.219	1.367	1.514
1600	0.221	0.257	0.295	0.333	0.413	0.497	0.585	0.676	0.770	0.867	0.967	1.143	1.302	1.459	1.614
1800	0.242	0.281	0.322	0.364	0.451	0.542	0.637	0.735	0.837	0.941	1.048	1.238	1.408	1.576	1.741
2000	0.262	0.305	0.349	0.394	0.488	0.585	0.687	0.792	0.901	1.012	1.126	1.328	1.508	1.686	1.859
2400	0.301	0.350	0.400	0.451	0.558	0.668	0.783	0.901	1.022	1.146	1.272	1.494	1.693	1.885	2.071
2850	0.343	0.398	0.455	0.513	0.632	0.756	0.884	1.015	1.148	1.284	1.421	1.663	1.875	2.077	2.268
3200	0.374	0.434	0.496	0.559	0.688	0.821	0.958	1.098	1.240	1.383	1.528	1.780	1.998	2.203	2.391
3600	0.409	0.474	0.541	0.609	0.749	0.892	1.039	1.187	1.337	1.488	1.639	1.899	2.119	2.320	2.497
4000	0.443	0.513	0.585	0.658	0.807	0.959	1.114	1.271	1.428	1.584	1.739	2.002	2.218	2.407	2.564
5000	0.523	0.605	0.688	0.771	0.941	1.113	1.284	1.454	1.620	1.783	1.939	2.186	2.362	2.484	2.545
6000	0.598	0.689	0.782	0.875	1.061	1.246	1.426	1.600	1.765	1.920	2.061	2.255	2.342	2.335	2.222
7000	0.668	0.768	0.869	0.969	1.166	1.357	1.538	1.706	1.857	1.989	2.099	2.195	2.135		
8000	0.733	0.841	0.948	1.053	1.257	1.447	1.619	1.770	1.893	1.985	2.043	1.990			
10000	0.850	0.968	1.082	1.191	1.388	1.553	1.678	1.753	1.772	1.726	1.608				
12000	0.950	1.071	1.183	1.284	1.449	1.552	1.579	1.518	1.355						
14000	1.030	1.146	1.247	1.329	1.429	1.426	1.299								

CONTI® SYNCHROBELT HTD
Power ratings

Timing belts 5M, 15 mm belt width / Power rating P_N [kW]

Table 13

Speed of small toothed pulley	Number of teeth of small pulley z_1														
	14	16	18	20	24	28	32	36	40	44	48	56	64	72	80
n_1 [rpm]	Pitch Ø d_0 [mm]														
	22.28	25.46	28.65	31.83	38.20	44.56	50.93	57.30	63.66	70.03	76.39	89.13	101.86	114.59	127.32
20	0.009	0.010	0.012	0.013	0.017	0.020	0.024	0.028	0.033	0.037	0.042	0.051	0.058	0.065	0.073
40	0.017	0.020	0.023	0.026	0.033	0.040	0.048	0.057	0.065	0.075	0.085	0.102	0.116	0.131	0.145
60	0.026	0.030	0.035	0.039	0.050	0.061	0.072	0.085	0.098	0.112	0.127	0.152	0.174	0.196	0.218
100	0.043	0.050	0.058	0.066	0.083	0.101	0.121	0.141	0.164	0.187	0.212	0.254	0.290	0.327	0.363
200	0.085	0.100	0.115	0.131	0.165	0.202	0.241	0.283	0.327	0.374	0.424	0.508	0.581	0.653	0.726
300	0.116	0.136	0.157	0.178	0.224	0.273	0.325	0.380	0.439	0.500	0.565	0.675	0.772	0.868	0.965
400	0.145	0.169	0.195	0.222	0.278	0.338	0.401	0.469	0.540	0.614	0.692	0.826	0.944	1.062	1.180
500	0.172	0.201	0.231	0.262	0.328	0.399	0.473	0.551	0.634	0.720	0.810	0.966	1.104	1.242	1.380
600	0.198	0.231	0.265	0.301	0.376	0.456	0.541	0.629	0.723	0.820	0.922	1.098	1.255	1.411	1.567
700	0.222	0.260	0.298	0.338	0.422	0.511	0.605	0.704	0.807	0.915	1.027	1.223	1.397	1.571	1.745
800	0.246	0.287	0.330	0.374	0.467	0.565	0.668	0.776	0.889	1.007	1.129	1.343	1.534	1.724	1.915
900	0.269	0.314	0.361	0.409	0.510	0.616	0.728	0.845	0.967	1.095	1.226	1.458	1.665	1.871	2.077
950	0.281	0.328	0.376	0.426	0.531	0.641	0.757	0.879	1.006	1.137	1.274	1.514	1.729	1.943	2.156
1000	0.292	0.341	0.391	0.443	0.551	0.666	0.786	0.912	1.043	1.180	1.321	1.569	1.791	2.013	2.233
1200	0.336	0.391	0.449	0.508	0.632	0.762	0.899	1.041	1.189	1.342	1.501	1.780	2.031	2.281	2.530
1400	0.378	0.440	0.504	0.571	0.709	0.854	1.006	1.163	1.327	1.497	1.671	1.980	2.257	2.533	2.807
1450	0.388	0.452	0.518	0.586	0.728	0.876	1.032	1.193	1.361	1.534	1.712	2.028	2.312	2.594	2.873
1600	0.418	0.487	0.558	0.631	0.783	0.942	1.108	1.281	1.459	1.644	1.833	2.169	2.471	2.771	3.067
1800	0.458	0.533	0.610	0.689	0.855	1.027	1.207	1.394	1.586	1.785	1.988	2.349	2.674	2.994	3.310
2000	0.496	0.577	0.661	0.746	0.924	1.110	1.303	1.502	1.708	1.920	2.136	2.520	2.866	3.205	3.539
2400	0.570	0.663	0.758	0.855	1.057	1.267	1.485	1.709	1.940	2.175	2.415	2.840	3.221	3.591	3.951
2850	0.649	0.754	0.862	0.972	1.199	1.435	1.678	1.927	2.181	2.440	2.703	3.166	3.576	3.969	4.344
3200	0.709	0.823	0.940	1.059	1.305	1.559	1.819	2.086	2.357	2.632	2.909	3.394	3.820	4.221	4.596
3600	0.775	0.899	1.026	1.155	1.421	1.694	1.973	2.258	2.545	2.835	3.126	3.630	4.064	4.464	4.826
4000	0.839	0.973	1.109	1.248	1.532	1.823	2.119	2.419	2.721	3.022	3.323	3.837	4.270	4.655	4.989
5000	0.991	1.147	1.305	1.465	1.790	2.119	2.449	2.777	3.102	3.419	3.728	4.229	4.606	4.893	5.078
6000	1.134	1.309	1.486	1.665	2.022	2.379	2.729	3.071	3.399	3.710	4.001	4.424	4.664	4.748	4.655
7000	1.268	1.461	1.654	1.846	2.229	2.601	2.959	3.296	3.607	3.886	4.129	4.400	4.406		
8000	1.394	1.601	1.807	2.011	2.409	2.786	3.135	3.448	3.718	3.937	4.097	4.131			
10000	1.622	1.851	2.073	2.287	2.686	3.031	3.310	3.509	3.614	3.613	3.491				
12000	1.818	2.056	2.281	2.488	2.841	3.092	3.219	3.200	3.013						
14000	1.981	2.216	2.426	2.606	2.860	2.944	2.823								

CONTI® SYNCHROBELT HTD
Power ratings

Timing belts 5M, 25 mm belt width / Power rating P_N [kW]

Table 14

Speed of small toothed pulley	Number of teeth of small pulley z_1														
	14	16	18	20	24	28	32	36	40	44	48	56	64	72	80
n_1 [rpm]	Pitch Ø d_0 [mm]														
	22.28	25.46	28.65	31.83	38.20	44.56	50.93	57.30	63.66	70.03	76.39	89.13	101.86	114.59	127.32
20	0.015	0.018	0.021	0.023	0.030	0.036	0.043	0.051	0.058	0.067	0.076	0.091	0.104	0.117	0.130
40	0.030	0.036	0.041	0.047	0.059	0.072	0.086	0.101	0.117	0.134	0.151	0.182	0.207	0.233	0.259
60	0.046	0.054	0.062	0.070	0.089	0.108	0.129	0.152	0.175	0.201	0.227	0.272	0.311	0.350	0.389
100	0.076	0.089	0.103	0.117	0.148	0.180	0.215	0.253	0.292	0.334	0.379	0.454	0.519	0.584	0.648
200	0.152	0.179	0.206	0.235	0.296	0.361	0.431	0.506	0.585	0.669	0.757	0.908	1.037	1.167	1.297
300	0.208	0.243	0.280	0.319	0.400	0.488	0.581	0.679	0.784	0.893	1.009	1.207	1.379	1.551	1.724
400	0.259	0.303	0.349	0.396	0.497	0.604	0.717	0.837	0.964	1.097	1.236	1.477	1.688	1.898	2.109
500	0.307	0.359	0.413	0.469	0.587	0.712	0.845	0.985	1.132	1.287	1.448	1.727	1.973	2.220	2.466
600	0.353	0.413	0.474	0.538	0.673	0.815	0.966	1.125	1.291	1.465	1.647	1.962	2.242	2.522	2.801
700	0.397	0.464	0.533	0.605	0.765	0.814	1.082	1.258	1.443	1.636	1.836	2.186	2.497	2.808	3.118
800	0.440	0.514	0.590	0.669	0.834	1.009	1.193	1.386	1.588	1.799	2.017	2.400	2.741	3.082	3.422
900	0.481	0.562	0.645	0.731	0.911	1.101	1.301	1.510	1.729	1.956	2.192	2.605	2.975	3.345	3.713
950	0.502	0.585	0.672	0.761	0.948	1.146	1.353	1.571	1.797	2.033	2.277	2.705	3.089	3.472	3.864
1000	0.522	0.609	0.699	0.791	0.985	1.190	1.405	1.630	1.865	2.108	2.360	2.804	3.201	3.598	3.993
1200	0.600	0.699	0.802	0.908	1.129	1.362	1.606	1.860	2.125	2.399	2.682	3.182	3.631	4.078	4.523
1400	0.675	0.786	0.901	1.020	1.267	1.526	1.797	2.079	2.372	2.675	2.987	3.539	4.036	4.530	5.020
1450	0.693	0.808	0.926	1.047	1.300	1.566	1.844	2.133	2.432	2.742	3.061	3.625	4.134	4.639	5.140
1600	0.747	0.870	0.997	1.128	1.399	1.684	1.981	2.289	2.609	2.938	3.277	3.878	4.419	4.956	5.487
1800	0.818	0.952	1.090	1.232	1.527	1.836	2.157	2.491	2.836	3.130	3.554	4.200	4.783	5.358	5.925
2000	0.886	1.031	1.180	1.334	1.651	1.983	2.328	2.686	3.054	3.433	3.820	4.508	5.128	5.738	6.337
2400	1.018	1.184	1.354	1.529	1.890	2.265	2.655	3.056	3.469	3.831	4.321	5.083	5.768	6.435	7.084
2850	1.161	1.348	1.541	1.738	2.144	2.665	3.000	3.447	3.903	4.367	4.838	5.670	6.411	7.123	7.803
3200	1.267	1.471	1.680	1.894	2.333	2.787	3.255	3.733	4.219	4.712	5.210	6.085	6.855	7.586	8.272
3600	1.385	1.607	1.834	2.066	2.541	3.030	3.531	4.042	4.559	5.080	5.603	6.515	7.304	8.038	8.707
4000	1.500	1.739	1.983	2.231	2.740	3.262	3.794	4.333	4.876	5.420	5.962	6.896	7.688	8.403	9.030
5000	1.773	2.052	2.335	2.622	3.205	3.796	4.390	4.983	5.570	6.147	6.710	7.634	8.347	8.908	9.300
6000	2.029	2.343	2.660	2.980	3.624	4.267	4.902	5.522	6.122	6.694	7.233	8.039	8.534	8.769	8.710
7000	2.269	2.615	2.962	3.309	3.999	4.675	5.327	5.946	6.522	7.047	7.511	8.075	8.192		
8000	2.496	2.868	3.240	3.608	4.329	5.018	5.661	6.246	6.759	7.188	7.521	7.701			
10000	2.908	3.321	3.725	4.115	4.847	5.493	6.030	6.435	6.685	6.757	6.630				
12000	3.265	3.699	4.111	4.495	5.161	5.659	5.953	6.004	5.775						
14000	3.566	3.999	4.391	4.734	5.245	5.474	5.363								

CONTI® SYNCHROBELT HTD
Power ratings

Timing belts 8M, 20 mm belt width / Power rating P_N [kW]

Table 15

Speed of small toothed pulley	Number of teeth of small pulley z_1																
	22	24	26	28	30	32	34	36	38	40	44	48	52	56	64	72	80
n_1 [rpm]	Pitch Ø d_0 [mm]																
	56.02	61.12	66.21	71.30	76.39	81.49	86.58	91.67	96.77	101.86	112.05	122.23	132.42	142.60	162.97	183.35	203.72
10	0.02	0.02	0.02	0.03	0.03	0.04	0.04	0.05	0.05	0.06	0.06	0.07	0.07	0.08	0.09	0.10	0.11
20	0.03	0.04	0.04	0.05	0.06	0.07	0.08	0.09	0.10	0.11	0.12	0.13	0.14	0.15	0.17	0.19	0.21
50	0.08	0.09	0.11	0.13	0.16	0.18	0.21	0.23	0.26	0.28	0.31	0.33	0.36	0.38	0.43	0.48	0.53
100	0.16	0.18	0.22	0.27	0.31	0.36	0.41	0.47	0.52	0.56	0.62	0.67	0.72	0.77	0.87	0.96	1.06
200	0.33	0.37	0.45	0.53	0.62	0.72	0.82	0.93	1.05	1.13	1.24	1.34	1.44	1.54	1.73	1.93	2.12
300	0.49	0.53	0.65	0.77	0.90	1.04	1.19	1.34	1.51	1.64	1.78	1.93	2.07	2.22	2.50	2.77	3.05
400	0.65	0.71	0.84	0.99	1.16	1.34	1.54	1.74	1.96	2.12	2.31	2.50	2.68	2.87	3.23	3.59	3.94
500	0.81	0.89	1.02	1.22	1.42	1.64	1.88	2.13	2.39	2.59	2.82	3.05	3.27	3.50	3.94	4.37	4.80
600	0.98	1.07	1.21	1.43	1.67	1.93	2.21	2.51	2.82	3.05	3.32	3.59	3.85	4.11	4.63	5.13	5.63
700	1.14	1.24	1.38	1.64	1.92	2.22	2.54	2.88	3.23	3.50	3.81	4.11	4.41	4.71	5.30	5.88	6.44
800	1.30	1.42	1.56	1.85	2.17	2.50	2.86	3.24	3.64	3.94	4.29	4.63	4.97	5.30	5.96	6.60	7.23
950	1.55	1.69	1.83	2.16	2.52	2.91	3.33	3.77	4.24	4.59	4.99	6.38	5.78	6.16	6.92	7.66	8.38
1000	1.63	1.77	1.93	2.26	2.64	3.05	3.49	3.95	4.44	4.80	5.22	5 .63	6.04	6.44	7.23	8.00	8.76
1200	1.95	2.13	2.31	2.65	3.10	3.58	4.09	4.64	5.21	5.63	6.12	6.60	7.08	7.54	8.46	9.34	10.20
1450	2.35	2.57	2.79	3.14	3.66	4.23	4.83	5.47	6.15	6.64	7.21	7.78	8.33	8.87	9.92	10.93	11.90
1600	2.60	2.83	3.07	3.42	3.99	4.61	5.27	5.96	6.69	7.23	7.85	8.46	9.05	9.63	10.76	11.83	12.86
1800	2.92	3.18	3.45	3.79	4.42	5.11	5.83	6.60	7.41	8.00	8.68	9.34	9.99	10.62	11.83	12.99	14.07
2000	3.24	3.53	3.83	4.19	4.84	5.59	5.38	7.22	8.11	8.76	9.49	10.20	10.89	11.57	12.86	14.07	15.20
2200	3.56	3.87	4.20	4.59	5.26	6.06	6.92	7.83	8.73	9.49	10.27	11.03	11.77	12.48	13.84	15.09	16.25
2500	4.03	4.39	4.76	5.20	5.86	6.75	7.71	8.71	9.78	10.55	11.40	12.23	13.02	13.78	15.20	16.49	17.63
2850	4.58	4.98	5.40	5.89	6.53	7.53	8.59	9.71	10.88	11.74	12.66	13.54	14.38	15.18	16.64	17.90	18.97
3000	4.81	5.23	5.67	6.19	6.81	7.85	8.95	10.12	1134	12.23	13.17	14.07	14.93	15.74	17.19	18.43	19.44
3500	5.58	6.06	6.56	7.15	7.76	8.88	10.12	11.43	12.80	13.78	14.79	15.74	16.61	17.42	18.79	19.84	20.53
4000	6.34	6.87	7.42	8.09	8.76	9.84	11.20	12.64	14.15	15.20	16.25	17.19	18.05	18.79	19.96	20.65	
4500	7.07	7.66	8.26	8.98	9.71	10.73	12.20	13.75	15.37	16.49	17.53	18.43	19.21	19.84	20.65		
5000	7.79	8.42	9.07	9.84	10.62	11.53	13.10	14.75	16.47	17.63	18.62	19.44	20.08	20.53			
5500	8.49	9.16	9.84	10.65	11.47	12.28	13.90	15.63	17.43	18.62	19.51	20.18	20.62				
6000	9.16	9.86	10.57	11.42	12.26	13.09	14.60	16.39	18.25	19.44	20.18	20.65					

CONTI® SYNCHROBELT HTD
Power ratings

Timing belts 8M, 30 mm belt width / Power rating P_N [kW]

Table 16

Speed of small toothed pulley	Number of teeth of small pulley z_1																
	22	24	26	28	30	32	34	36	38	40	44	48	52	56	64	72	80
n_1 [rpm]	Pitch Ø d_0 [mm]																
	56.02	61.12	66.21	71.30	76.39	81.49	86.58	91.67	96.77	101.86	112.05	122.23	132.42	142.60	162.97	183.35	203.72
10	0.03	0.03	0.04	0.04	0.05	0.06	0.06	0.07	0.08	0.09	0.10	0.11	0.11	0.12	0.14	0.15	0.17
20	0.05	0.06	0.07	0.08	0.10	0.11	0.13	0.15	0.17	0.18	0.19	0.21	0.23	0.24	0.27	0.30	0.33
50	0.13	0.15	0.18	0.21	0.24	0.28	0.32	0.37	0.41	0.44	0.49	0.53	0.57	0.61	0.68	0.76	0.84
100	0.26	0.29	0.35	0.42	0.49	0.57	0.65	0.73	0.83	0.83	0.97	1.05	1.13	1.21	1.37	1.52	1.67
200	0.51	0.58	0.70	0.84	0.98	1.13	1.25	1.47	1.65	1.78	1.95	2.11	2.27	2.42	2.73	3.04	3.34
300	0.77	0.84	1.02	1.21	1.41	1.63	1.87	2.12	2.38	2.58	2.81	3.04	3.27	3.49	3.94	4.38	4.81
400	1.03	1.12	1.32	1.57	1.83	2.12	2.42	2.75	3.09	3.34	3.64	3.94	4.23	4.52	5.09	5.66	6.21
500	1.28	1.40	1.61	1.92	2.24	2.59	2.96	3.35	3.78	4.08	4.45	4.81	5.16	5.52	6.21	6.90	7.57
600	1.54	1.68	1.90	2.26	2.64	3.05	3.49	3.95	4.44	4.81	5.24	5.66	6.07	6.49	7.30	8.10	8.88
700	1.80	1.96	2.18	2.59	3.03	3.50	4.00	4.54	5.10	5.52	6.00	6.49	6.96	7.43	8.36	9.27	10.17
800	2.05	2.24	2.46	2.92	3.42	3.95	4.51	5.11	5.74	6.21	6.76	7.30	7.83	8.36	9.40	10.42	11.41
950	2.44	2.66	2.89	3.40	3.98	4.60	5.25	5.95	6.69	7.23	7.87	8.49	9.11	9.72	10.92	12.09	13.23
1000	2.57	2.80	3.04	3.56	4.17	4.81	5.50	6.23	7.00	7.57	8.23	8.88	9.53	10.17	11.41	12.63	13.82
1200	3.08	3.36	3.64	4.19	4.90	5.65	6.45	7.31	8.22	8.88	9.66	10.42	11.17	11.90	13.35	14.75	16.10
1450	3.71	4.05	4.40	4.95	5.78	6.67	7.62	8.63	9.70	10.48	11.38	12.27	13.14	13.99	16.66	17.26	18.80
1600	4.09	4.46	4.85	5.39	6.30	7.27	8.31	9.40	10.56	11.41	12.39	13.35	14.28	15.20	16.99	18.69	20.33
1800	4.60	5.01	5.44	5.98	6.98	8.06	9.20	10.41	11.69	12.63	13.70	14.75	15.77	16.77	18.69	20.53	22.26
2000	5.11	5.56	6.04	6.60	7.65	8.82	10.07	11.40	12.79	13.82	14.98	16.10	17.20	18.27	20.33	22.26	24.06
2200	5.61	6.11	6.63	7.25	8.30	9.57	10.92	12.36	13.87	14.98	16.22	17.42	18.59	19.72	21.88	23.89	25.73
2500	6.36	6.92	7.51	8.21	9.25	10.66	12.17	13.76	15.44	16.66	18.01	19.32	20.58	21.79	24.06	26.13	27.97
2850	7.23	7.86	8.52	9.31	10.31	11.89	13.56	15.33	17.19	18.54	20.00	21.41	22.74	24.02	26.36	28.42	30.16
3000	7.59	8.26	8.95	9.77	10.76	12.40	14.14	15.98	17.92	19.32	20.82	22.26	23.62	24.91	27.26	29.28	30.94
3500	8.81	9.57	10.36	11.30	12.26	14.03	15.99	18.06	20.24	21.79	23.40	24.91	26.32	27.62	29.87	31.62	32.83
4000	10.01	10.86	11.73	12.78	13.85	15.56	17.72	19.99	22.38	24.06	25.73	27.26	28.65	29.87	31.83	33.07	
4500	11.17	12.11	13.06	14.21	15.37	16.98	19.31	21.77	24.34	26.13	27.80	29.28	30.56	31.62	33.07		
5000	12.31	13.32	14.34	15.58	16.82	18.27	20.76	23.38	26.12	27.97	29.58	30.94	32.03	32.83			
5500	13.42	14.49	15.57	16.88	18.18	19.48	22.06	24.81	27.68	29.58	31.06	32.21	33.01				
6000	14.49	15.61	16.74	18.10	19.46	20.79	23.21	26.06	29.03	30.94	32.21	33.07					

CONTI® SYNCHROBELT HTD
Power ratings

Timing belts 8M, 50 mm belt width / Power rating P_N [kW]

Table 17

Speed of small toothed pulley	Number of teeth of small pulley z_1																
	22	24	26	28	30	32	34	36	38	40	44	48	52	56	64	72	80
n_1 [rpm]	Pitch Ø d_0 [mm]																
	56.02	61.12	66.21	71.30	76.39	81.49	86.58	91.67	96.77	101.86	112.05	122.23	132.42	142.60	162.97	183.35	203.72
10	0.04	0.05	0.06	0.07	0.08	0.10	0.11	0.13	0.14	0.15	0.17	0.18	0.20	0.21	0.24	0.26	0.29
20	0.09	0.11	0.12	0.14	0.17	0.20	0.22	0.25	0.29	0.31	0.34	0.37	0.39	0.42	0.47	0.53	0.58
50	0.22	0.25	0.30	0.36	0.42	0.49	0.56	0.64	0.72	0.77	0.84	0.91	0.98	1.05	1.18	1.32	1.45
100	0.45	0.50	0.61	0.72	0.85	0.98	1.12	1.27	1.43	1.54	1.69	1.83	1.96	2.10	2.37	2.63	2.90
200	0.89	1.01	1.22	1.45	1.70	1.96	2.24	2.54	2.86	3.08	3.38	3.65	3.93	4.20	4.74	5.27	5.79
300	1.34	1.46	1.76	2.09	2.45	2.83	3.24	3.67	4.13	4.47	4.87	5.27	5.66	6.05	6.82	7.58	8.33
400	1.78	1.94	2.29	2.71	3.18	3.67	4.20	4.76	5.35	5.79	6.31	6.82	7.33	7.83	8.82	9.80	10.76
500	2.22	2.43	2.80	3.32	3.88	4.49	5.13	5.81	6.84	7.07	7.70	8.33	8.94	9.55	10.76	11.94	13.11
600	2.67	2.91	3.29	3.91	4.57	5.28	6.04	6.85	7.70	8.33	9.07	9.80	10.52	11.24	12.64	14.03	15.39
700	3.11	3.40	3.78	4.49	5.25	6.07	6.93	7.86	8.83	9.55	10.40	11.24	12.06	12.88	14.49	16.06	17.61
800	3.56	3.88	4.26	5.06	5.92	6.83	7.81	8.85	9.95	10.76	11.71	12.64	13.57	14.49	16.28	18.05	15.77
950	4.22	4.61	5.00	5.90	6.89	7.96	9.10	10.31	11.58	12.53	13.63	14.71	15.78	16.84	18.91	20.94	22.92
1000	4.44	4.85	5.26	6.17	7.21	8.33	9 .52	10.79	12.12	13.11	14.26	15.39	16.51	17.61	19.77	21.88	23.94
1200	5.33	5.81	6.31	7.25	8.48	9.79	11.19	12.67	14.23	15.39	16.73	18.05	19.34	20.62	23.13	25.55	27.91
1450	6.43	7.01	7.61	8.57	10.01	11.56	13.21	14.95	16.80	18.16	19.72	21.26	22.76	24.25	27.13	29.92	32.60
1600	7.09	7.73	8.39	9.34	10.92	12.60	14.39	16.29	18.30	19.77	21.47	23.13	24.75	26.35	29.45	32.42	35.26
1800	7.97	8.69	9.43	10.35	12.09	13.96	15.94	18.04	20.26	21.88	23.74	25.55	27.33	29.07	32.42	35.60	38.63
2000	8.85	9.64	10.46	11.44	13.25	15.28	17.45	19.75	22.17	23.94	25.95	27.91	29.82	31.69	35.26	38.63	41.78
2200	9.72	10.58	11.48	12.56	14.37	16.58	18.93	21.41	24.04	25.95	28.11	30.20	32.23	34.21	37.97	41.47	44.71
2500	11.02	11.99	13.01	14.22	16.02	18.48	21.08	23.85	26.76	28.87	31.22	33.50	35.69	37.80	41.78	45.40	48.66
2850	12.52	13.62	14.76	16.13	17.88	20.61	23.51	26.57	29.81	32.14	34.69	37.14	39.48	41.70	45.81	49.44	52.54
3000	13.16	14.32	15.51	16.94	18.65	21.50	24.51	27.71	31.07	33.50	36.12	38.63	41.01	43.27	47.40	50.97	53.94
3500	15.27	16.60	17.96	19.60	21.26	24.34	27.74	31.33	35.11	37.80	40.62	43.27	45.75	48.04	52.03	55.19	57.43
4000	17.34	18.83	20.35	22.17	24.02	27.00	30.75	34.70	38.85	41.78	44.71	47.40	49.85	52.03	55.57	57.89	
4500	19.38	21.00	22.66	24.66	26.68	29.48	33.54	37.81	42.29	45.40	48.35	50.97	53.26	55.19	57.89		
5000	21.36	23.11	24.90	27.05	29.21	31.75	36.08	40.64	45.41	48.66	51.51	53.94	55.93	57.43			
5500	23.29	25.15	27.05	29.32	31.60	33.88	38.38	43.17	48.18	51.51	54.16	55.27	57.79				
6000	25.15	27.12	29.10	31.48	33.85	36.20	40.41	45.39	50.58	53.94	56.27	57.89					

CONTI® SYNCHROBELT HTD
Power ratings

Timing belts 8M, 85 mm belt width / Power rating P_N [kW]

Table 18

Speed of small toothed pulley	Number of teeth of small pulley z_1														
	32	34	36	38	40	44	48	52	56	60	64	68	72	76	80
n_1 [rpm]	Pitch Ø d_0 [mm]														
	81.49	86.58	91.67	96.77	101.86	112.05	122.23	132.42	142.60	152.79	162.97	173.16	183.35	193.53	203.72
10	0.17	0.20	0.22	0.25	0.27	0.29	0.32	0.34	0.37	0.39	0.41	0.44	0.46	0.48	0.50
20	0.34	0.39	0.44	0.50	0.54	0.59	0.64	0.68	0.73	0.78	0.82	0.87	0.92	0.96	1.01
50	0.85	0.98	1.11	1.24	1.34	1.47	1.59	1.71	1.83	1.94	2.06	2.18	2.29	2.40	2.52
100	1.70	1.95	2.21	2.49	2.68	2.94	3.18	3.42	3.65	3.89	4.12	4.35	4.58	4.81	5.04
200	3.41	3.90	4.42	4.98	5.36	5.87	6.35	6.83	7.30	7.77	8.24	8.70	9.16	9.62	10.07
300	4.93	5.63	6.39	7.18	7.77	8.47	9.16	9.85	10.52	11.20	11.86	12.53	13.18	13.84	14.49
400	6.39	7.30	8.28	9.31	10.07	10.97	11.86	12.75	13.62	14.43	15.35	16.20	17.04	17.88	18.72
500	7.80	8.93	10.12	11.37	12.31	13.40	14.49	15.56	16.62	17.67	18.72	19.75	20.78	21.79	22.80
600	9.19	10.51	11.91	13.39	14.49	15.77	17.04	18.30	19.54	20.78	22.00	23.21	24.41	25.59	26.77
700	10.55	12.06	13.67	15.36	16.62	18.09	19.54	20.98	22.40	23.81	25.20	26.58	27.94	29.30	30.64
800	11.89	13.59	15.39	17.30	18.72	20.37	22.00	23.61	25.20	26.77	28.33	29.87	31.40	32.91	34.40
950	13.85	15.83	17.93	20.15	21.79	23.71	26.59	27.46	29.30	31.11	32.91	34.68	36.43	38.17	39.88
1000	14.49	16.57	18.76	21.09	22.80	24.80	26.77	28.72	30.64	32.53	34.40	36.25	38.08	39.88	41.66
1200	17.03	19.46	22.04	24.76	26.77	29.10	31.40	33.66	35.88	38.08	40.24	42.37	44.47	46.54	48.58
1450	20.11	22.98	26.02	29.22	31.69	34.31	36.98	39.61	42.19	44.73	47.22	49.67	52.07	54.43	56.74
1600	21.92	25.04	28.34	31.83	34.40	37.35	40.24	43.07	45.88	48.58	51.25	53.87	56.43	58.94	61.39
1800	24.28	27.73	31.38	35.24	38.08	41.31	44.47	47.56	50.59	53.54	56.43	59.25	61.99	64.67	67.27
2000	26.59	30.36	34.36	38.57	41.66	45.16	48.58	51.91	55.15	58.31	61.39	64.37	67.27	70.07	72.78
2200	28.85	32.94	37.26	41.83	45.16	48.91	52.56	56.11	59.55	62.89	66.12	69.24	72.25	75.14	77.92
2500	32.15	36.69	41.50	46.57	50.25	54.35	58.31	62.14	65.83	69.38	72.78	76.04	79.14	82.08	84.85
2850	35.87	40.91	46.25	51.88	55.95	60.40	64.67	68.75	72.65	76.35	79.86	83.15	86.23	89.08	91.70
3000	37.41	42.67	48.23	54.09	58.31	62.89	67.27	71.44	75.40	79.14	82.64	85.91	88.94	91.70	94.20
3500	42.38	48.30	54.55	61.13	65.83	70.76	75.40	79.74	83.76	87.46	90.81	93.81	96.43	98.66	100.49
4000	47.03	53.56	60.44	67.68	72.78	77.92	82.64	86.95	90.81	94.20	97.11	99.49	101.34		
4500	51.36	58.43	65.88	73.70	79.14	84.31	88.94	92.99	96.43	99.22	101.34				
5000	55.34	52.90	70.85	79.17	84.85	89.89	94.20	97.75	100.49	102.36					
5500	59.08	66.94	75.31	84.05	89.89	94.59	98.37	101.14							
6000	63.15	70.53	79.23	88.30	94.20	98.37	101.34								

CONTI® SYNCHROBELT HTD
Power ratings

Timing belts 14M, 40 mm belt width / Power rating P_N [kW]

Table 19

Speed of small toothed pulley	Number of teeth of small pulley z_1																
	28	29	30	32	34	36	38	40	42	44	46	48	52	56	64	72	80
n_1 [rpm]	Pitch Ø d_0 [mm]																
	124.78	129.23	133.69	142.60	151.52	160.43	169.34	178.25	187.17	196.08	204.99	213.90	231.73	249.55	285.21	320.86	356.51
10	0.2	0.2	0.2	0.2	0.3	0.3	0.3	0.4	0.4	0.4	0.4	0.4	0.5	0.5	0.6	0.7	0.7
20	0.4	0.4	0.4	0.5	0.6	0.6	0.7	0.7	0.8	0.8	0.8	0.9	1.0	1.0	1.2	1.3	1.5
40	0.7	0.8	0.8	1.0	1.1	1.2	1.4	1.4	1.5	1.6	1.7	1.8	1.9	2.1	2.4	2.7	3.0
60	1.1	1.2	1.3	1.5	1.7	1.9	2.0	2.2	2.3	2.4	2.5	2.7	2.9	3.1	3.6	4.0	4.5
100	1.8	1.9	2.1	2.4	2.8	3.1	3.4	3.6	3.8	4.0	4.2	4.4	4.9	5.2	6.0	6.7	7.5
200	3.6	3.9	4.2	4.8	5.5	6.2	6.8	7.2	7.6	8.0	8.4	8.9	9.7	10.5	12.0	13.5	15.0
300	4.9	5.3	5.7	6.6	7.5	8.5	9.2	9.7	10.3	10.8	11.4	12.0	13.1	14.2	16.5	18.9	21.3
400	6.1	6.6	7.1	8.2	9.3	10.5	11.4	12.0	12.7	13.3	14.0	14.7	16.0	17.4	20.1	22.9	25.8
500	7.2	7.8	8.4	9.6	11.0	12.3	13.3	14.1	14.8	15.6	16.4	17.2	18.7	20.2	23.3	26.4	29.6
600	8.2	8.9	9.5	11.0	12.5	14.0	15.1	15.9	16.8	17.6	18.5	19.4	21.1	22.7	26.1	29.5	32.9
700	9.1	9.9	10.6	12.2	13.8	15.6	16.8	17.7	18.6	19.5	20.5	21.4	23.2	25.0	28.5	32.1	36.7
800	10.0	10.8	11.6	13.3	15.1	17.0	18.3	19.3	20.2	21.2	22.2	23.2	25.1	27.0	30.7	34.5	38.1
950	11.2	12.1	13.0	14.9	16.9	19.0	20.4	21.4	22.5	23.5	24.6	25.7	27.7	29.7	33.5	37.3	41.0
1000	11.6	12.5	13.5	15.4	17.5	19.6	21.0	22.1	23.2	24.3	25.3	26.4	28.5	30.4	34.3	38.1	41.7
1200	13.0	14.1	15.1	17.3	19.5	21.8	23.4	24.5	25.6	26.8	27.9	29.0	31.1	33.1	37.0	40.5	43.8
1450	14.6	15.7	16.9	19.2	21.7	24.2	25.8	27.0	28.2	29.3	30.5	31.6	33.6	35.6	38.9	41.8	44.2
1600	15.4	16.6	17.8	20.2	22.8	25.4	27.1	28.2	29.4	30.5	31.6	32.7	34.7	36.4	39.4	41.7	43.3
1800	16.4	17.6	18.9	21.4	24.0	26.8	28.4	29.6	30.7	31.8	32.8	33.8	35.5	37.0	39.2	40.5	40.7
2000	17.2	18.5	19.8	22.4	25.1	27.9	29.5	30.6	31.6	32.6	33.5	34.4	35.8	36.9	38.1	38.0	36.5
2200	18.5	19.2	20.5	23.2	25.9	28.7	30.3	31.3	32.2	33.1	33.8	34.5	35.5	36.1	36.0	34.2	
2400	20.0	20.6	21.1	23.8	26.5	29.3	30.8	31.7	32.4	33.1	33.7	34.1	34.6	34.5	32.9		
2600	21.3	21.9	22.5	24.2	26.9	29.6	31.0	31.7	32.3	32.7	33.0	33.2	33.1	32.2	29.2		
2850	22.9	23.6	24.1	25.3	27.1	29.7	30.8	31.2	31.5	31.6	31.6	31.4	30.5	29.9			
3000	23.8	24.5	25.0	26.2	27.2	29.5	30.5	30.7	30.8	30.6	30.5	30.6	30.2	29.1			
3500	26.5	27.1	27.6	28.6	29.3	29.9	30.3	30.5	30.5	30.3	29.8	29.1					
4000	28.6	29.0	29.4	30.1	30.4	30.6	30.4	29.9	29.1								

CONTI® SYNCHROBELT HTD
Power ratings

Timing belts 14M, 55 mm belt width / Power rating P_N [kW]

Table 20

Speed of small toothed pulley	Number of teeth of small pulley z_1																
	28	29	30	32	34	36	38	40	42	44	46	48	52	56	64	72	80
n_1 [rpm]	Pitch Ø d_0 [mm]																
	124.78	129.23	133.69	142.60	151.52	160.43	169.34	178.25	187.17	196.08	204.99	213.90	231.73	249.55	285.21	320.86	356.51
10	0.3	0.3	0.3	0.4	0.4	0.5	0.5	0.5	0.6	0.6	0.6	0.7	0.7	0.8	0.9	1.0	1.1
20	0.5	0.6	0.6	0.7	0.8	0.9	1.0	1.1	1.1	1.2	1.3	1.3	1.4	1.6	1.8	2.0	2.2
40	1.1	1.2	1.3	1.4	1.6	1.9	2.0	2.1	2.3	2.4	2.5	2.6	2.9	3.1	3.6	4.0	4.5
60	1.6	1.7	1.9	2.2	2.5	2.8	3.0	3.2	3.4	3.6	3.8	4.0	4.3	4.7	5.4	6.0	6.7
100	2.7	2.9	3.1	3.6	4.1	4.7	5.0	5.3	5.7	6.0	6.3	6.6	7.2	7.8	8.9	10.1	11.2
200	5.4	5.8	6.3	7.2	8.2	9.3	10.1	10.7	11.3	11.9	12.6	13.2	14.5	15.7	17.9	20.1	22.3
300	7.3	7.9	8.6	9.9	11.2	12.7	13.7	14.5	15.3	16.2	17.0	17.9	19.5	21.2	24.6	28.1	31.8
400	9.1	9.9	10.6	12.2	13.9	15.7	16.9	17.9	18.9	19.9	20.9	22.0	24.0	25.9	30.0	34.2	38.4
500	10.7	11.6	12.5	14.4	16.4	18.4	19.9	21.0	22.1	23.3	24.4	25.6	27.9	30.1	34.7	39.4	44.2
600	12.2	13.2	14.2	16.4	18.6	20.9	22.5	23.8	25.1	26.3	27.6	28.9	31.4	33.9	38.9	44.0	49.1
700	13.6	14.7	15.9	18.2	20.7	23.2	25.0	26.4	27.8	29.1	30.6	31.9	34.6	37.3	42.7	48.0	53.4
800	15.0	16.2	17.4	19.9	22.6	25.4	22.3	28.8	30.2	31.7	33.2	34.7	37.5	40.4	45.9	51.5	57.1
950	16.8	18.1	19.5	22.3	25.3	28.3	30.4	32.0	33.6	35.2	36.8	38.4	41.4	44.4	50.2	56.9	61.4
1000	17.4	18.7	20.1	23.0	26.1	29.2	31.4	33.0	34.6	36.2	37.9	39.5	42.6	45.5	51.4	57.1	62.6
1200	19.5	21.0	22.6	25.8	29.1	32.6	34.9	36.6	38.4	40.1	41.8	43.4	46.6	49.6	55.4	60.8	65.9
1450	21.8	23.5	25.2	28.7	32.4	36.2	38.6	40.4	42.2	43.9	45.6	47.3	50.4	53.3	58.6	63.1	66.9
1600	23.1	24.8	26.6	30.3	34.1	38.0	40.5	42.3	44.0	45.8	47.4	49.1	52.1	54.7	59.4	63.2	65.9
1800	24.5	26.4	28.2	32.1	36.0	40.1	42.6	44.4	46.1	47.7	49.3	50.8	53.5	55.8	59.5	61.8	62.6
2000	25.8	27.7	29.6	33.6	37.6	41.8	44.3	46.0	47.6	49.1	50.5	51.9	54.1	55.9	58.1	58.6	57.0
2200	27.8	28.8	30.8	34.8	38.9	43.1	45.6	47.1	48.5	49.9	51.1	52.2	53.9	55.0	55.4	53.5	
2400	30.0	30.9	31.8	35.8	39.9	44.1	46.4	47.8	49.0	50.1	51.1	51.9	52.8	53.0	51.3		
2600	32.1	33.0	33.9	36.5	40.6	44.7	46.9	48.0	48.9	49.7	50.3	50.8	50.8	50.0	46.5		
2850	34.5	35.5	36.4	38.2	41.0	44.9	46.8	47.5	48.1	48.4	48.6	48.4	47.5	47.1			
3000	35.9	36.9	37.8	39.6	41.2	44.8	46.4	46.9	47.1	47.1	47.1	47.4	47.3	46.3			
3500	40.1	41.0	41.9	43.5	44.8	45.9	46.7	47.2	47.5	47.4	47.0	46.3					
4000	43.5	44.3	45.0	46.2	47.0	47.4	47.5	47.1	46.3								

CONTI® SYNCHROBELT HTD
Power ratings

Timing belts 14M, 85 mm belt width / Power rating P_N [kW]

Table 21

Speed of small toothed pulley	Number of teeth of small pulley z_1																
	28	29	30	32	34	36	38	40	42	44	46	48	52	56	64	72	80
n_1 [rpm]	Pitch Ø d_0 [mm]																
	124.78	129.23	133.69	142.60	151.52	160.43	169.34	178.25	187.17	196.08	204.99	213.90	231.73	249.55	285.21	320.86	356.51
10	0.4	0.5	0.5	0.6	0.7	0.8	0.8	0.9	0.9	1.0	1.0	1.1	1.2	1.3	1.5	1.7	1.9
20	0.9	1.0	1.0	1.2	1.4	1.5	1.7	1.8	1.9	2.0	2.1	2.2	2.4	2.6	3.0	3.3	3.7
40	1.8	1.9	2.1	2.4	2.7	3.1	3.3	3.6	3.8	4.0	4.2	4.4	4.8	5.2	5.9	6.7	7.4
60	2.7	2.9	3.1	3.6	4.1	4.6	5.0	5.3	5.6	5.5	6.3	6.6	7.2	7.8	8.9	10.0	11.1
100	4.4	4.8	5.2	6.0	6.8	7.7	8.4	8.9	9.4	9.9	10.4	11.0	12.0	13.0	14.9	16.7	18.6
200	8.9	9.6	10.4	12.0	13.7	15.5	16.7	17.7	18.8	19.8	20.9	21.9	24.0	26.0	29.7	33.4	37.1
300	12.2	13.2	14.2	16.4	18.7	21.1	22.8	24.1	25.5	26.9	28.3	29.7	32.4	35.2	40.9	46.7	52.8
400	15.1	16.4	17.6	20.3	23.1	26.1	28.1	29.7	31.4	33.1	34.7	36.4	39.8	43.1	49.8	56.7	63.8
500	17.8	19.3	20.8	23.9	27.1	30.6	33.0	34.8	36.7	38.6	40.6	42.5	46.3	50.0	57.7	65.5	73.4
600	20.3	22.0	23.7	27.2	30.9	34.7	37.4	39.5	41.6	43.7	45.9	48.0	52.2	56.3	64.7	73.1	81.7
700	22.7	24.6	26.3	30.2	34.3	38.6	41.8	43.8	46.1	48.4	50.7	53.0	57.5	62.0	70.9	79.8	88.8
800	24.8	26.8	28.9	33.1	37.5	42.2	45.3	47.8	50.2	52.7	55.1	57.6	62.4	67.0	76.4	85.7	94.9
950	27.9	30.1	32.3	37.0	41.9	47.1	60.6	53.2	56.8	58.6	61.1	63.8	68.8	73.7	83.4	93.0	102.3
1000	28.8	31.1	33.4	38.3	43.3	48.6	52.1	54.8	57.5	60.2	62.9	65.6	70.8	75.7	85.5	95.0	104.3
1200	32.4	34.9	37.5	42.8	48.4	54.2	58.0	60.9	63.8	66.6	69.4	72.3	77.6	82.6	92.3	101.5	110.0
1450	36.3	39.1	41.9	47.8	53.8	60.1	64.2	67.2	70.2	73.1	76.0	78.8	84.0	88.9	97.8	105.7	112.4
1600	38.3	41.3	44.2	50.3	56.7	63.2	67.4	70.4	73.3	76.2	79.1	81.9	86.9	91.4	99.5	106.2	111.1
1800	40.8	43.9	47.0	53.4	60.0	66.7	71.0	73.9	76.8	79.6	82.3	84.9	89.5	93.5	99.9	104.3	106.4
2000	43.0	46.1	49.3	55.9	62.7	69.7	73.9	76.7	79.4	82.0	84.5	86.9	90.8	93.9	98.2	99.7	97.9
2200	46.3	48.1	51.3	58.1	65.0	72.0	76.1	78.7	81.2	83.5	85.7	87.7	90.7	92.8	94.3	92.0	
2400	50.0	51.5	53.0	59.8	66.7	73.7	77.7	80.0	82.2	84.1	85.8	87.4	89.3	90.0	88.1		
2600	53.5	55.1	56.7	61.1	67.9	74.8	78.5	80.5	82.3	83.7	85.0	85.9	86.4	85.5	80.9		
2850	57.7	69.4	61.0	64.0	68.7	76.4	78.7	80.1	81.2	81.9	82.3	82.4	81.5	81.5			
3000	60.1	51.8	63.4	66.4	69.2	75.3	78.3	793	79.9	80.1	80.4	81.2	81.7	80.7			
3500	67.4	69.0	70.5	73.3	75.8	77.8	79.5	80.7	81.4	81.7	81.4	80.7					
4000	73.3	74.8	76.1	78.3	80.0	81.2	81.7	81.5	80.7								

CONTI® SYNCHROBELT HTD
Power ratings

Timing belts 14M, 115 mm belt width / Power rating P_N [kW]

Table 22

Speed of small toothed pulley	Number of teeth of small pulley z_1																
	28	29	30	32	34	36	38	40	42	44	46	48	52	56	64	72	80
n_1 [rpm]	Pitch Ø d_0 [mm]																
	124.78	129.23	133.69	142.60	151.52	160.43	169.34	178.25	187.17	196.08	204.99	213.90	231.73	249.55	285.21	320.86	356.51
10	0.6	0.7	0.7	0.8	1.0	1.1	1.2	1.2	1.3	1.4	1.5	1.5	1.7	1.8	2.1	2.3	2.6
20	1.2	1.3	1.5	1.7	1.9	2.2	2.3	2.5	2.6	2.8	2.9	3.1	3.4	3.6	4.2	4.7	5.2
40	2.5	2.7	2.9	3.4	3.8	4.3	4.7	5.0	5.2	5.5	5.8	6.1	6.7	7.3	8.3	9.3	10.4
60	3.7	4.0	4.4	5.0	5.7	6.5	7.0	7.4	7.9	8.3	8.8	9.2	10.1	10.9	12.5	14.0	15.6
100	6.2	6.7	7.3	8.4	9.6	10.8	11.7	12.4	13.1	13.8	14.6	15.3	16.8	18.2	20.8	23.3	25.9
200	12.4	13.5	14.5	16.8	19.1	21.6	23.4	24.8	26.2	27.7	29.2	30.7	33.6	36.3	41.5	46.7	51.8
300	17.0	18.4	19.9	22.9	26.1	29.4	31.8	33.7	35.6	37.5	39.5	41.5	45.3	49.2	57.1	65.3	73.7
400	21.1	22.9	24.6	28.4	32.3	36.4	39.3	41.6	43.9	46.2	48.6	50.9	55.6	60.2	69.6	79.3	89.2
500	24.9	26.9	29.0	33.4	37.9	42.7	46.1	48.7	51.3	54.0	56.7	59.4	64.7	70.0	80.6	91.5	102.6
600	28.4	30.7	33.1	38.0	43.1	48.5	52.3	55.2	58.2	61.1	64.1	67.1	73.0	78.7	90.4	102.2	114.2
700	31.7	34.2	36.8	42.3	48.0	53.9	58.0	61.2	64.4	67.6	70.9	74.1	80.4	86.6	99.1	111.6	124.2
800	34.7	37.5	40.3	46.2	52.4	58.9	63.4	66.8	70.2	73.6	77.1	80.6	87.2	93.7	106.8	119.8	132.7
950	39.0	42.1	45.2	51.8	58.6	65.8	70.6	74.3	78.0	81.7	85.4	89.1	96.2	103.1	116.7	130.1	143.1
1000	40.3	43.5	46.7	53.5	60.6	67.9	72.9	76.7	80.4	84.2	88.0	91.8	98.9	105.9	119.6	133.0	146.0
1200	45.3	48.8	52.4	59.9	67.7	75.7	81.1	85.2	89.2	93.1	97.1	101.1	108.5	115.6	129.3	142.2	154.2
1450	50.7	54.6	58.6	66.8	75.3	84.1	89.9	94.0	98.2	102.3	106.3	110.3	117.6	124.5	137.1	148.3	157.8
1600	53.6	57.7	61.8	70.4	79.3	88.4	94.3	98.5	102.6	106.7	110.7	114.6	121.7	128.1	139.6	149.1	156.3
1800	57.1	61.4	65.7	74.7	83.9	93.4	99.4	103.5	107.6	111.5	115.3	119.0	125.5	131.1	140.4	146.9	150.1
2000	60.1	64.6	69.1	78.3	87.8	97.5	103.5	107.5	111.3	115.0	118.5	121.8	127.4	131.9	138.3	140.7	138.8
2200	64.8	67.3	71.9	81.3	91.0	100.8	106.7	110.4	113.9	117.2	120.3	123.1	127.5	130.5	133.1	130.6	
2400	70.0	72.2	74.3	83.8	93.5	103.3	108.9	112.3	115.3	118.1	120.6	122.8	125.7	126.9	124.9		
2600	75.0	77.2	79.4	85.6	95.3	105.0	110.2	113.1	115.6	117.8	119.6	121.0	122.0	121.0	115.3		
2850	80.9	83.2	85.5	89.8	96.5	105.9	110.6	112.7	114.3	115.5	116.2	116.4	115.5	116.0			
3000	84.3	86.6	88.9	93.2	97.2	105.9	110.1	111.6	112.6	113.1	113.6	114.9	116.0	115.1			
3500	94.6	96.9	99.1	103.2	106.7	109.7	112.2	114.1	115.3	116.0	115.9	115.1					
4000	103.2	105.3	107.2	110.5	113.1	114.9	115.8	115.9	115.1								

CONTI® SYNCHROBELT HTD
Power ratings

Timing belts 14M, 170 mm belt width / Power rating P_N [kW]

Table 23

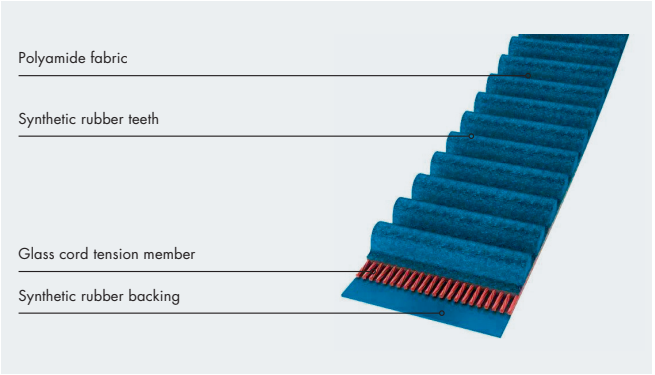
Speed of small toothed pulley	Number of teeth of small pulley z_1														
	36	38	40	42	44	46	48	52	56	60	64	68	72	76	80
n_1 [rpm]	Pitch Ø d_0 [mm]														
	160.43	169.34	178.25	187.17	196.08	204.99	213.90	231.73	249.55	267.38	285.21	303.03	320.86	338.68	356.51
10	1.6	1.8	1.9	2.0	2.1	2.2	2.3	2.6	2.8	3.0	3.2	3.4	3.6	3.8	3.9
20	3.3	3.6	3.8	4.0	4.2	4.4	4.7	5.1	5.5	5.9	6.3	6.7	7.1	7.5	7.9
40	6.6	7.1	7.5	8.0	8.4	8.9	9.3	10.2	11.1	11.8	12.6	13.4	14.2	15.0	15.8
60	9.9	10.7	11.3	12.0	12.6	13.3	14.0	15.3	16.6	17.8	18.9	20.1	21.3	22.5	23.7
100	16.4	17.8	18.9	20.0	21.1	22.2	23.3	25.6	27.6	29.6	31.6	33.5	35.5	37.5	39.5
200	32.9	35.6	37.7	39.9	42.1	44.4	46.7	51.1	55.2	59.2	63.1	67.1	71.0	74.9	78.9
400	55.4	59.8	63.3	66.8	70.3	73.9	77.5	84.5	91.6	98.7	105.9	113.2	120.7	128.2	135.8
500	65.0	70.1	74.1	78.1	82.2	86.3	90.4	98.5	106.4	114.5	122.7	130.9	139.2	147.6	156.1
600	73.9	79.6	84.0	88.5	93.0	97.6	102.2	111.0	119.8	128.6	137.5	146.5	155.5	164.6	173.8
700	82.1	88.3	93.1	98.0	102.9	107.9	112.8	122.4	131.8	147.3	150.8	160.3	169.9	179.4	189.0
800	89.7	96.4	101.6	106.8	112.0	117.3	122.6	132.7	142.7	152.6	162.6	172.5	182.4	192.3	202.1
950	100.1	107.5	113.1	118.7	124.4	130.0	135.7	146.5	157.0	167.4	177.7	188.0	198.1	208.2	218.0
1000	103.4	110.9	116.7	122.4	128.2	133.9	139.7	150.6	161.2	171.8	182.2	192.5	202.6	212.6	222.4
1200	115.3	123.5	129.6	135.7	141.8	147.9	153.9	165.2	176.1	186.6	197.0	207.0	216.7	226.1	235.2
1450	128.1	136.8	143.2	149.5	155.8	161.9	168.0	179.2	189.7	199.7	209.1	218.0	226.3	234.0	241.1
1600	134.7	143.6	150.0	156.4	162.6	168.7	174.7	185.5	195.4	204.6	213.1	220.9	227.9	234.0	239.2
1800	142.3	151.4	157.7	163.9	169.9	175.8	181.5	191.4	200.1	207.9	214.7	220.3	224.9	228.2	230.3
2000	148.6	157.7	163.8	169.7	175.4	180.8	185.9	194.6	201.6	207.4	211.8	214.7	216.1	215.8	213.9
2200	153.7	162.7	168.4	173.8	178.9	183.6	188.1	194.9	199.8	203.0	204.4	203.8	201.3	196.5	
2400	157.6	166.2	171.4	176.1	180.5	184.4	187.9	192.5	194.7	194.7	192.4	187.6			
2600	160.3	168.4	172.8	176.7	180.1	183.0	185.3	187.2	186.1	182.3	178.5				
2850	161.9	169.1	172.4	175.0	177.0	178.2	178.7	177.8	179.1	177.5					
3000	161.9	168.5	170.9	172.7	173.6	174.6	176.7	179.0	178.2						
3500	168.3	172.2	175.4	177.6	178.8	179.0	178.2								
4000	176.7	178.5	179.1	178.2											

CONTI® SYNCHROBELT HTD PIONEER

Timing belts for the lower and medium power range, allergen and carbon black free, with the same technical features as the CONTI® SYNCHROBELT.

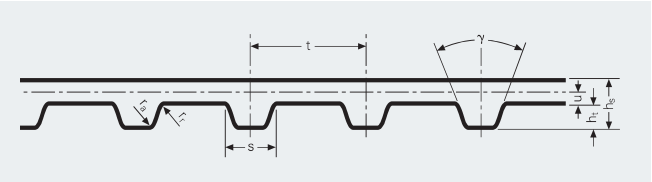
Properties

- conditionally resistant to oil
- temperature range from –20°C to +100°C
- suitable for tropical climates
- resistant to aging and ozone
- allergen-free
- free of carbon black
- maintenance-free
- suitable for counterflex



All sizes and prices are available on request

CONTI® SYNCHROBELT Imperial Pitch
Available sizes



Timing profile

Parameters

Table 25

Tooth Profile		DIN ISO code	MXL	XL	L	H	XH
Tooth pitch t		[mm]	2.032	5.080	9.525	12.700	22.225
		[Inch]	0.080 (2/25")	0.200 (1/5")	0.375 (3/8")	0.500 (1/2")	0.875 (7/8")
Flank angle γ		[deg]	40	50	40	40	40
Belt thickness h_s		[mm]	1.14	2.3	3.6	4.3	11.2
Tooth height h_t		[mm]	0.51	1.27	1.91	2.29	6.35
Top width of tooth s		[mm]	1.14	2.57	4.65	6.12	12.57
Top radius r_a		[mm]	0.13	0.38	0.51	1.02	1.19
Bottom radius r_r		[mm]	0.13	0.38	0.51	1.02	1.57
Range of pitch lengths u		[mm]	0.254	0.254	0.381	0.686	1.397
Weight (belt width 25.4 mm)		[kg/m]	0.013	0.016	0.089	0.117	0.235
Range of pitch lengths L_B	from	[mm]	109.73	152.40	314.33	609.60	1289.05
	to	[mm]	1026.16	1600.20	1524.00	4318.00	4445.00
Stock widths b	from	[mm]	3.18	6.35	12.7	19.05	50.8
	to	[mm]	6.35	25.4	76.2	127.0	177.8

Pitches

CONTI® SYNCHROBELT synchronous drive belts are supplied in 5 imperial pitch sizes. They comply with DIN ISO 5296 standard and can be used internationally. Stock pitches and their dimensions are shown in the above table.

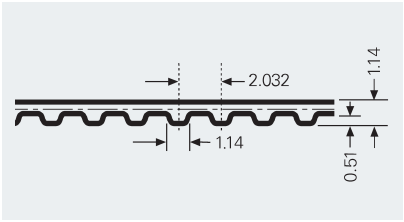
Lengths

CONTI® SYNCHROBELT synchronous drive belts are available in lengths to cover a broad range of applications. In addition, special belt lengths can be furnished on a made-to-order basis. For stock lengths, refer to tables 26 to 30 on pages 13.26 to 13.30.

Widths

Widths are indicated in the tables for stock lengths. Non-stock widths are also available on request.

CONTI® SYNCHROBELT Imperial Pitch
Product selection: tooth profile MXL / tooth pitch 2.032 mm (0.080 inch)



Standard lengths

Table 26

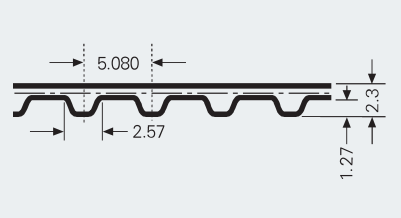
Designation	Pitch length L_s [mm]	No. of teeth	Designation	Pitch length L_s [mm]	No. of teeth
43.2 MXL*	109.73	54	96.0 MXL	243.84	120
44.0 MXL	111.76	55	97.6 MXL	247.90	122
44.8 MXL	113.79	56	98.4 MXL	249.94	123
46.4 MXL	117.86	58	100.0 MXL	254.00	125
48.0 MXL	121.92	60	100.8 MXL	256.03	126
48.8 MXL*	123.95	61	105.6 MXL*	268.22	132
50.4 MXL*	128.02	63	112.0 MXL	284.48	140
54.4 MXL	138.18	68	120.0 MXL	304.80	150
56.0 MXL	142.24	70	124.0 MXL*	314.96	155
56.8 MXL	144.27	71	131.2 MXL	333.25	164
57.6 MXL	146.30	72	132.0 MXL*	335.28	165
60.0 MXL	152.40	75	132.8 MXL	337.31	166
61.6 MXL	156.46	77	136.0 MXL	345.44	170
64.0 MXL	162.56	80	140.0 MXL	355.60	175
65.6 MXL*	166.62	82	144.0 MXL	365.76	180
67.2 MXL	170.69	84	147.2 MXL	373.89	184
68.0 MXL*	172.72	85	180.0 MXL*	457.20	225
69.6 MXL	176.78	87	188.8 MXL	479.55	236
70.4 MXL	178.82	88	200.8 MXL*	510.03	251
72.0 MXL	182.88	90	238.4 MXL*	605.54	298
75.2 MXL	191.01	94	277.6 MXL	705.10	347
76.0 MXL	193.04	95	292.0 MXL*	741.68	365
77.6 MXL	197.10	97	296.8 MXL*	753.87	371
80.0 MXL	203.20	100	297.6 MXL*	755.90	372
80.8 MXL	205.23	101	320.0 MXL*	812.80	400
82.4 MXL	209.30	103	329.6 MXL*	837.18	412
84.0 MXL*	213.36	105	347.2 MXL*	881.89	434
84.8 MXL	215.39	106	362.4 MXL*	920.50	453
88.0 MXL	223.52	110	370.4 MXL*	940.82	463
89.6 MXL	227.58	112	398.4 MXL*	1011.94	498
90.4 MXL	229.62	113	402.4 MXL*	1022.10	503
91.2 MXL	231.65	114	404.0 MXL*	1026.16	505
94.4 MXL	239.78	118			

*on request

Stock widths

Designation	012	019	025
Width [mm]	3.18	4.74	6.35

CONTI® SYNCHROBELT Imperial Pitch
Product selection: tooth profile XL / tooth pitch 5.080 mm (0.200 inch)



Standard lengths

Table 27

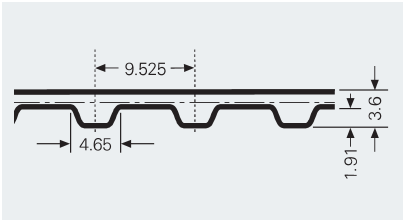
Designation	Pitch length L_B [mm]	No. of teeth	Designation	Pitch length L_B [mm]	No. of teeth
60 XL	152.40	30	190 XL	482.60	95
70 XL	177.80	35	196 XL*	497.84	98
76 XL*	193.04	38	198 XL*	502.92	99
80 XL	203.20	40	200 XL	508.00	100
86 XL*	218.44	43	210 XL	533.40	105
90 XL	228.60	45	220 XL	558.80	110
92 XL*	233.68	46	230 XL	584.20	115
94 XL*	238.76	47	232 XL*	589.28	116
96 XL	243.84	48	240 XL	609.60	120
100 XL	254.00	50	244 XL	619.76	122
102 XL	259.08	51	248 XL*	629.92	124
106 XL	269.24	53	250 XL	635.00	125
108 XL*	274.32	54	260 XL	660.40	130
110 XL	279.40	55	270 XL	685.80	135
112 XL*	284.48	56	272 XL*	690.88	136
114 XL*	289.56	57	274 XL*	695.96	137
116 XL*	294.64	58	280 XL*	711.20	140
118 XL*	299.72	59	286 XL*	726.44	143
120 XL	304.80	60	290 XL*	736.60	145
124 XL*	314.96	62	296 XL*	751.84	148
126 XL*	320.04	63	300 XL	762.00	150
128 XL	325.12	64	306 XL*	777.24	153
130 XL	330.20	65	316 XL	802.64	158
134 XL*	340.36	67	322 XL*	817.88	161
136 XL*	345.44	68	330 XL	838.20	165
138 XL*	350.52	69	340 XL*	863.60	170
140 XL	355.60	70	344 XL	873.76	172
148 XL*	375.92	74	350 XL*	889.00	175
150 XL	381.00	75	380 XL	965.20	190
156 XL*	396.24	78	382 XL*	970.28	191
160 XL	406.40	80	388 XL*	985.52	194
162 XL*	411.48	81	392 XL*	995.68	196
166 XL*	421.64	83	412 XL*	1046.48	206
168 XL*	426.72	84	414 XL*	1051.56	207
170 XL	431.80	85	438 XL*	1112.52	219
174 XL*	441.96	87	460 XL*	1168.40	230
176 XL*	447.04	88	498 XL*	1264.92	249
178 XL*	452.12	89	506 XL*	1285.24	253
180 XL	457.20	90	514 XL*	1305.56	257
182 XL*	462.28	91	580 XL*	1473.20	290
184 XL*	467.36	92	630 XL*	1600.20	315
188 XL*	477.52	94			

* on request

Stock widths

Designation	025	031	037
Width [mm]	6.35	7.94	9.53

CONTI® SYNCHROBELT Imperial Pitch
Product selection: tooth profile L / tooth pitch 9.525 mm (0.375 inch)



Standard lengths

Table 28

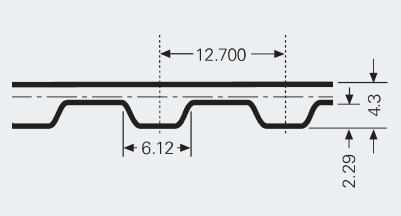
Designation	Pitch length L_s [mm]	No. of teeth	Designation	Pitch length L_s [mm]	No. of teeth
124 L	314.33	33	322 L	819.15	86
150 L	381.00	40	345 L	876.30	92
187 L	476.25	50	367 L	933.45	98
210 L	533.40	56	390 L	990.60	104
225 L	571.50	60	420 L	1066.80	112
236 L*	600.08	63	450 L	1143.00	120
240 L	609.60	64	454 L*	1152.53	121
244 L*	619.13	65	480 L	1219.20	128
255 L	647.70	68	510 L	1295.40	136
270 L	685.80	72	540 L	1371.60	144
285 L	723.90	76	600 L	1524.00	160
300 L	762.00	80			

*on request

Stock widths

Designation	050	075	100
Width [mm]	12.7	19.05	25.4

CONTI® SYNCHROBELT Imperial Pitch
Product selection: tooth profile H / tooth pitch 12.700 mm (0.500 inch)



Standard lengths

Table 29

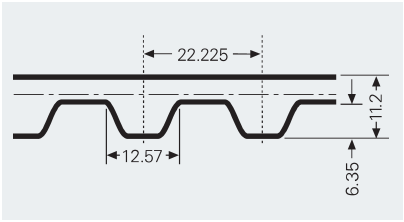
Designation	Pitch length L_B [mm]	No. of teeth	Designation	Pitch length L_B [mm]	No. of teeth
240 H	609.60	48	600 H	1524.00	120
255 H	647.70	51	630 H	1600.20	126
270 H	685.80	54	660 H	1676.40	132
300 H	762.00	60	700 H	1778.00	140
330 H	838.20	66	730 H*	1854.20	146
335 H*	850.90	67	750 H	1905.00	150
360 H	914.40	72	800 H	2032.00	160
370 H*	939.80	74	850 H	2159.00	170
390 H	990.60	78	900 H	2286.00	180
420 H	1066.80	84	1000 H	2540.00	200
450H	1143.00	90	1100 H	2794.00	220
480H	1219.20	96	1140 H	2895.60	228
510 H	1295.40	102	1250 H	3175.00	250
540 H	1371.60	108	1400 H	3556.00	280
570 H	1447.80	114	1700 H	4318.00	340

*on request

Stock widths

Designation	075	100	150	200	300
Width [mm]	19.05	25.4	38.1	50.8	76.2

CONTI® SYNCHROBELT Imperial Pitch
Product selection: tooth profile XH / tooth pitch 22.225 mm (0.875 inch)



Standard lengths

Table 30

Designation	Pitch length L_b [mm]	No. of teeth	Designation	Pitch length L_b [mm]	No. of teeth
507 XH	1289.05	58	980 XH	2489.20	112
534 XH*	1356.36	61	1120 XH	2844.80	128
560 XH	1422.40	64	1260 XH	3200.40	144
630 XH	1600.20	72	1400 XH	3556.00	160
700 XH	1778.00	80	1540 XH	3911.60	176
770 XH	1955.80	88	1750 XH	4445.00	200
840 XH	2133.60	96			

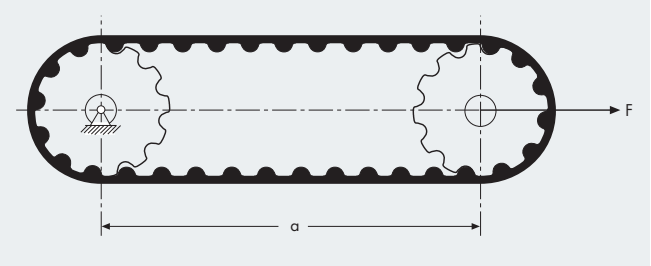
*on request

Stock widths

Designation	200	300	400	500
Width [mm]	50.8	76.2	101.6	127.0

CONTI® SYNCHROBELT Imperial Pitch
Length measurement

The pitch length is required when specifying a CONTI® SYNCHROBELT synchronous drive belt for a given application. Exact measurement is only possible using a suitable measuring fixture.



The belt is placed on a measuring fixture consisting of two equal diameter measuring pulleys of corresponding pitch. The shaft of one of the pulleys is fixed in position. The specified measuring tension F is applied to the belt by moving the other pulley. The tensioned belt is rotated around the pulleys for at least two revolutions to properly seat it in the pulley's tooth spacing and to equally divide the total tension between the two strands of the belt. Centre distance a (distance between the two pulley centres) is then measured.

The pitch length L_B is double the centre distance a plus the pitch circumference U_0 of the synchronous drive belt test pulleys.

$$L_B = 2 \cdot a + U_0$$
$$= 2 \cdot a + \pi \cdot d_0$$
$$= 2 \cdot a + z \cdot t$$

The test measurement lay-out is shown in the following figure. The dimensions of the measuring pulleys and the measuring forces are indicated in table 31 (page 13.32).

CONTI® SYNCHROBELT Imperial Pitch
Measuring pulleys and test force

Overview

Table 31

Tooth profile			**MXL**	**XL**	**L**	**H**	**XH**
Tooth pitch t	[mm]		2.032	5.080	9.525	12.700	22.225
No. of teeth z		1	16	20	20	20	24
		2	36	40	48	40	
Pitch diameter d_0	[mm]	1	10.349	32.340	60.638	80.851	169.787
		2	23.285	64.681	145.531	161.701	
Outside diameter d_a	[mm]	1	9.841	31.832	59.876	79.479	166.993
			± 0.013	± 0.013	± 0.013	± 0.013	± 0.025
		2	22.777	64.173	144.771	166.331	
			±0.013	± 0.013	± 0.013	± 0.025	
Measuring force F for width b	[N]	Width	[mm]				
		012	3.0	13			
		019	4.8	20	32		
		025	6.4	27	36		
		031	7.9	36	44		
		037	9.5	44	53		
		050	12.7	53	82	105	263
		075	19.1		132	180	445
		100	25.4			245	620
		150	38.1			380	980	1600
		200	50.8				1340	2000
		300	76.2				2100	3100
		400	101.6					4450*
		500	127.0					

*for synchronous drive belts with a larger width, length measurement is performed on narrower belts at a correspondingly reduced measuring force

CONTI® SYNCHROBELT Imperial Pitch Tolerances

CONTI® SYNCHROBELT synchronous drive belts are high-precision products. They are manufactured with maximum care and accuracy, and to extremely close tolerances for length, width and thickness.

Belt length tolerances

Table 32

Standard belt length reference 1/10 inch	**Pitch length L_B** [mm]	**Centre distance tolerance** [mm]
>36	>91.4	±0.15
>36–100	>91.4–254.0	±0.20
>100–150	>254.0–381.0	±0.23
>150–200	>381.0–508.0	±0.25
>200–300	>508.0–762.0	±0.30
>300–390	>762.0–990.6	±0.33
>390–480	>990.6–1219.2	±0.38
>480–600	>1219.2–1524.0	±0.40
>600–700	>1524.0–1778.0	±0.43
>700–800	>1778.0–2032.0	±0.45
>800–900	>2032.0–2286.0	±0.48
>900–1000	>2286.0–2540.0	±0.50
>1000–1100	>2540.0–2794.0	±0.53
>1100–1200	>2794.0–3048.0	±0.55
>1200–1260	>3048.0–3200.4	±0.58
>1260–1400	>3200.4–3556.0	±0.60
>1400–1600	>3556.0–4064.0	±0.65
>1600–1700	>4064.0–4318.0	±0.68
>1700–1800	>4318.0–4572.0	±0.70

Tolerances for belt width

Table 33

Belt width b 1/100 inch	Width [mm]	**Length width tolerance L_B** [mm] up to 838.2 mm	>838.2 up to 1676.4 mm	>1676.4 mm
012–037	3.0–9.5	+0.5 –0.8		
>037–150	>9.5–38.1	+0.8 –0.8	+0.8 –1.3	+0.8 –1.3
>150–200	>38.1–50.8	+0.8 –1.3	+1.3 –1.3	+1.3 –1.5
>200–300	>50.8–76.2	+1.3 –1.5	+1.5 –1.5	+1.5 –2.0

the width tolerance for profile XH is +/– 4.8 mm and does not depend on nominal pitch length

Thickness Tolerances

Table 34

Tooth Profile		**MXL**	**XL**	**L**	**H**	**XH**
Belt thickness h_s	[mm]	1.14	2.3	3.6	4.3	11.2
Standard type thickness tolerance	[mm]	+0.20/–0.05	±0.20	±0.25	±0.25	±0.65
Special type thickness tolerance	[mm]	+0.20/–0.05	±0.15	±0.15	±0.15	±0.25

CONTI® SYNCHROBELT Imperial Pitch
Power ratings

Timing belts MXL 6.35 mm belt width – Power rating P_N [W]

Table 35

Speed of small toothed pulley	Number of teeth of small pulley z_1												
	10	11	12	13	14	15	16	18	20	22	23	24	25
n_1 [rpm]	Pitch Ø d_0 [mm]												
	6.47	7.11	7.76	8.41	9.06	9.70	10.35	11.64	12.94	14.23	14.88	15.52	16.17
100	1	1	1	1	1	1	1	1	2	2	2	2	2
200	2	2	2	2	2	2	3	3	3	3	4	4	4
300	2	3	3	3	3	4	4	4	5	5	5	6	6
400	3	3	4	4	4	5	5	6	6	7	7	8	8
500	4	4	5	5	5	6	6	7	8	9	9	9	10
600	5	5	6	6	7	7	8	8	9	10	11	11	12
700	5	6	7	7	8	8	9	10	11	12	13	13	14
800	6	7	8	8	9	9	10	11	13	14	14	15	16
950	7	8	9	10	10	11	12	13	15	16	17	18	19
1100	9	9	10	11	12	13	14	16	17	19	20	21	22
1200	9	10	11	12	13	14	15	17	19	21	22	23	24
1300	10	11	12	13	14	15	16	18	20	22	23	24	26
1450		13	14	15	16	17	18	20	23	25	26	27	28
1600		14	15	16	18	19	20	23	25	28	29	30	31
1700		15	16	17	19	20	21	24	27	29	31	32	33
1800		16	17	18	20	21	23	25	28	31	32	34	35
1900		16	18	19	21	22	24	27	30	33	34	36	37
2000		17	19	20	22	24	25	28	31	35	36	38	39
2100		18	20	21	23	25	26	30	33	36	38	40	41
2200		19	21	22	24	26	28	31	35	38	40	41	43
2300		20	22	23	25	27	29	32	36	40	42	43	45
2400		21	23	24	26	28	30	34	38	41	43	45	47
2500		22	24	26	27	29	31	35	39	43	45	47	49
2600		22	24	27	29	31	33	37	41	45	47	49	51
2850			27	29	31	34	36	40	45	49	51	54	56
3000			28	31	33	35	38	42	47	52	54	56	59
3200			30	33	35	38	40	45	50	55	58	60	63
3400			32	35	37	40	43	48	53	59	61	64	67
3600			34	37	40	42	45	51	56	62	65	68	71
3800			36	39	42	45	48	54	60	66	69	71	74
4000			38	41	44	47	50	56	63	69	72	75	78
4200			40	43	46	49	53	59	66	72	76	79	82
4400			41	45	48	52	55	62	69	76	79	83	86
4600			43	47	51	54	58	65	72	79	83	86	90
4800			45	49	53	56	60	68	75	83	86	90	94
5000					55	59	63	71	78	86	90	94	98
5500					60	65	69	78	86	95	99	103	108
6000					66	71	75	85	94	103	108	113	117
7000					77	82	88	99	109	120	126	131	137
8000					88	94	100	113	125	137	144	150	156
9000					99	106	113	127	140	154	161	168	175
10000					109	117	125	140	156	171	179	186	194
12000					131	140	150	168	186	204	213	222	231

CONTI® SYNCHROBELT Imperial Pitch

Width factor c_6					
Width factor c_6	0.45	0.75	1.00	1.57	2.18
Belt width reference	**012**	**019**	**025**	037	050
Width [mm]	**3.18**	**4.76**	**6.35**	9.53	12.7

Standard widths are highlighted in bold

CONTI® SYNCHROBELT Imperial Pitch
Power ratings

Timing belts XL 25.4 mm belt width – Power rating P_N [W]

Table 36

Speed of small toothed pulley	Number of teeth of small pulley z_1												
	10	11	12	13	14	16	18	20	22	24	26	28	30
n_1 [rpm]	Pitch Ø d_0 [mm]												
	16.17	17.79	19.40	21.02	22.64	25.87	29.11	32.34	35.57	38.81	42.04	45.28	48.51
100	15	17	19	20	22	25	28	31	34	37	40	43	46
200	31	34	37	40	43	49	56	62	68	74	80	86	93
300	46	51	56	60	65	74	83	93	102	111	120	130	139
400	62	68	74	80	86	99	111	124	136	148	161	173	185
500	77	85	93	100	108	124	139	154	170	185	201	216	232
600	93	102	111	120	130	148	167	185	204	222	241	259	278
700	108	119	130	141	151	173	195	216	238	259	281	302	324
800	124	136	148	161	173	198	222	247	272	296	321	346	370
950	147	161	176	191	205	235	264	293	322	352	381	410	439
1100	170	187	204	221	238	272	305	339	373	407	441	474	508
1200	185	204	222	241	259	296	333	370	407	444	481	517	554
1300	201	221	241	261	281	321	361	401	441	481	520	560	600
1450		246	269	291	313	358	402	447	491	536	580	624	668
1600		272	296	321	346	395	444	493	542	591	639	688	737
1800		305	333	361	389	444	499	554	609	664	719	773	827
2000		339	370	401	432	493	554	615	676	737	797	858	918
2200		373	407	441	474	542	609	676	743	809	876	942	1007
2400		407	444	481	517	591	664	737	809	882	954	1025	1096
2600		441	481	520	560	639	719	797	876	954	1031	1108	1185
2850			527	570	614	700	787	873	958	1043	1127	1211	1294
3000			554	600	646	737	827	918	1007	1096	1185	1272	1359
3200			591	639	688	785	882	977	1073	1167	1261	1354	1446
3400			627	679	731	833	936	1037	1138	1237	1336	1434	1531
3600			664	719	773	882	989	1096	1202	1307	1411	1514	1615
3850			709	768	826	942	1056	1170	1283	1394	1504	1612	1719
4000			737	797	858	977	1096	1214	1331	1446	1559	1671	1781
4200			773	836	900	1025	1149	1272	1394	1514	1632	1748	1862
4400			809	876	942	1073	1202	1331	1457	1582	1704	1824	1942
4600			846	915	983	1120	1255	1388	1519	1649	1775	1899	2021
4800			882	954	1025	1167	1307	1446	1582	1715	1846	1974	2099
5000					1067	1214	1359	1502	1643	1781	1915	2047	2175
5500					1170	1331	1488	1643	1794	1942	2086	2225	2360
6000					1272	1446	1615	1781	1942	2099	2250	2395	2535
6500					1374	1559	1740	1915	2086	2250	2407	2558	2700
7000					1474	1671	1862	2047	2225	2395	2558	2711	2854
7500					1573	1781	1982	2175	2360	2535	2700	2854	2996
8000					1671	1889	2099	2299	2489	2668	2834	2987	3125
8500					1767	1995	2213	2419	2613	2794	2959	3109	3241
9000					1862	2099	2323	2535	2732	2912	3075	3219	3342
10000					2047	2299	2535	2753	2950	3125	3277	3401	3498

CONTI® SYNCHROBELT Imperial Pitch

Width factor c_6											
Width factor c_6	0.15	0.21	0.28	0.35	0.42	0.57	0.71	0.86	1.00	1.29	1.56
Belt width reference	**025**	**031**	**037**	043	050	062	075	087	100	125	150
Width [mm]	**6.35**	**7.94**	**9.35**	10.9	12.7	15.7	19.05	22.1	25.4	31.8	38.1

Standard widths are highlighted in bold

CONTI® SYNCHROBELT Imperial Pitch
Power ratings

Timing belts L 25.4 mm belt width – Power rating P_N [kW]

Table 37

Speed of small toothed pulley	Number of teeth of small pulley z_1												
	12	14	16	18	20	22	24	28	32	36	40	44	48
n_1 [rpm]	Pitch Ø d_0 [mm]												
	36.38	42.45	48.51	54.57	60.64	66.70	72.77	84.89	97.02	109.15	121.28	133.40	145.53
100	0.05	0.05	0.06	0.07	0.08	0.09	0.09	0.11	0.12	0.14	0.15	0.17	0.19
200	0.09	0.11	0.12	0.14	0.15	0.17	0.19	0.22	0.25	0.28	0.31	0.34	0.37
300	0.14	0.16	0.19	0.21	0.23	0.26	0.28	0.32	0.37	0.42	0.46	0.51	0.56
400	0.19	0.22	0.25	0.28	0.31	0.34	0.37	0.43	0.49	0.56	0.62	0.68	0.74
500	0.23	0.27	0.31	0.35	0.39	0.42	0.46	0.54	0.62	0.69	0.77	0.85	0.92
600	0.28	0.32	0.37	0.42	0.46	0.51	0.56	0.65	0.74	0.83	0.92	1.01	1.10
700	0.32	0.38	0.43	0.49	0.54	0.59	0.65	0.76	0.86	0.97	1.07	1.18	1.28
800	0.37	0.43	0.49	0.56	0.62	0.68	0.74	0.86	0.98	1.10	1.22	1.34	1.46
950	0.44	0.51	0.59	0.66	0.73	0.80	0.88	1.02	1.16	1.31	1.45	1.59	1.73
1100	0.51	0.59	0.68	0.76	0.85	0.93	1.01	1.18	1.34	1.51	1.67	1.83	1.99
1200	0.56	0.65	0.74	0.83	0.92	1.01	1.10	1.28	1.46	1.64	1.81	1.99	2.15
1300	0.60	0.70	0.80	0.90	1.00	1.10	1.19	1.39	1.58	1.77	1.96	2.14	2.32
1450		0.78	0.89	1.00	1.11	1.22	1.33	1.54	1.76	1.96	2.17	2.37	2.56
1600		0.86	0.98	1.10	1.22	1.34	1.46	1.70	1.93	2.15	2.37	2.59	2.80
1700		0.92	1.04	1.17	1.30	1.43	1.55	1.80	2.04	2.28	2.51	2.73	2.95
1800		0.97	1.10	1.24	1.37	1.51	1.64	1.90	2.15	2.40	2.64	2.87	3.09
1900		1.02	1.16	1.31	1.45	1.59	1.73	2.00	2.26	2.52	2.77	3.01	3.24
2000		1.07	1.22	1.37	1.52	1.67	1.81	2.10	2.37	2.64	2.90	3.14	3.37
2100		1.13	1.28	1.44	1.60	1.75	1.90	2.20	2.48	2.76	3.02	3.27	3.50
2200		1.18	1.34	1.51	1.67	1.83	1.99	2.29	2.59	2.87	3.14	3.40	3.63
2300		1.23	1.40	1.57	1.74	1.91	2.07	2.39	2.69	2.98	3.26	3.52	3.75
2400		1.28	1.46	1.64	1.81	1.99	2.15	2.48	2.80	3.09	3.37	3.63	3.87
2500		1.34	1.52	1.71	1.89	2.06	2.24	2.58	2.90	3.20	3.48	3.74	3.98
2600		1.39	1.58	1.77	1.96	2.14	2.32	2.67	3.00	3.30	3.59	3.85	4.08
2850			1.73	1.93	2.13	2.33	2.52	2.89	3.24	3.55	3.84	4.09	4.31
3000			1.81	2.03	2.24	2.44	2.64	3.02	3.37	3.69	3.98	4.22	4.42
3200			1.93	2.15	2.37	2.59	2.80	3.19	3.55	3.87	4.14	4.37	4.55
3400			2.04	2.28	2.51	2.73	2.95	3.35	3.71	4.03	4.29	4.50	4.64
3600			2.15	2.40	2.64	2.87	3.09	3.50	3.87	4.18	4.42	4.60	4.70
3800			2.26	2.52	2.77	3.01	3.24	3.65	4.01	4.31	4.53	4.67	4.72
4000			2.37	2.64	2.90	3.14	3.37	3.79	4.14	4.42	4.61	4.71	4.71
4200			2.48	2.76	3.02	3.27	3.50	3.92	4.27	4.52	4.68	4.72	4.65
4400			2.59	2.87	3.14	3.40	3.63	4.05	4.37	4.60	4.71	4.70	4.55
4600			2.69	2.98	3.26	3.52	3.75	4.16	4.47	4.66	4.72	4.64	4.40
4800			2.80	3.09	3.37	3.63	3.87	4.27	4.55	4.70	4.71	4.55	4.21
5000					3.48	3.74	3.98	4.36	4.61	4.72	4.66	4.42	3.97
5200					3.59	3.85	4.08	4.45	4.67	4.72	4.59	4.25	3.68
5400					3.69	3.95	4.18	4.52	4.70	4.70	4.48	4.04	3.34
5600					3.79	4.05	4.27	4.58	4.72	4.65	4.35	3.78	2.94
6000					3.98	4.22	4.42	4.68	4.71	4.48	3.97	3.14	1.96

CONTI® SYNCHROBELT Imperial Pitch

Width factor c_6												
Width factor c_6	0.28	0.48	0.57	0.71	0.86	1.00	1.29	1.56	1.84	2.14	2.72	3.36
Belt width reference	037	**050**	062	**075**	087	**100**	125	150	175	200	250	300
Width [mm]	9.53	**12.7**	15.7	**19.05**	22.1	**25.4**	31.8	38.1	44.5	50.8	63.5	76.2

Standard widths are highlighted in bold

CONTI® SYNCHROBELT Imperial Pitch
Power ratings

Timing belts H pro 25.4 mm belt width – Power rating P_N [kW]

Table 38

Speed of small toothed pulley	Number of teeth of small pulley z_1												
	16	18	20	22	24	26	28	30	32	36	40	44	48
n_1 [rpm]	Pitch Ø d_0 [mm]												
	64.68	72.77	80.85	88.94	97.02	105.11	113.19	121.28	129.36	145.53	161.70	177.87	194.04
100	0.21	0.24	0.26	0.29	0.32	0.34	0.37	0.40	0.42	0.48	0.53	0.58	0.63
200	0.42	0.48	0.53	0.58	0.63	0.69	0.74	0.79	0.85	0.95	1.06	1.16	1.27
300	0.63	0.71	0.79	0.87	0.95	1.03	1.11	1.19	1.27	1.43	1.58	1.74	1.90
400	0.85	0.95	1.06	1.16	1.27	1.37	1.48	1.58	1.69	1.90	2.11	2.32	2.53
500	1.06	1.19	1.32	1.45	1.58	1.72	1.85	1.98	2.11	2.37	2.63	2.90	3.16
600	1.27	1.43	1.58	1.74	1.90	2.06	2.22	2.37	2.53	2.84	3.16	3.47	3.78
700	1.48	1.66	1.85	2.03	2.22	2.40	2.58	2.76	2.95	3.31	3.67	4.03	4.39
800	1.69	1.90	2.11	2.32	2.53	2.74	2.95	3.16	3.36	3.78	4.19	4.60	5.00
950	2.01	2.25	2.50	2.75	3.00	3.25	3.49	3.74	3.98	4.47	4.95	5.43	5.91
1100	2.32	2.61	2.90	3.18	3.47	3.75	4.03	4.32	4.60	5.16	5.71	6.25	6.79
1200	2.53	2.84	3.16	3.47	3.78	4.09	4.39	4.70	5.00	5.61	6.20	6.79	7.37
1300	2.74	3.08	3.42	3.75	4.09	4.42	4.75	5.08	5.41	6.06	6.69	7.32	7.94
1450		3.43	3.80	4.18	4.55	4.92	5.28	5.65	6.01	6.72	7.42	8.10	8.77
1600		3.78	4.19	4.60	5.00	5.41	5.81	6.20	6.60	7.37	8.13	8.86	9.57
1700		4.01	4.44	4.88	5.31	5.73	6.16	6.57	6.99	7.80	8.59	9.35	10.09
1800		4.24	4.70	5.16	5.61	6.06	6.50	6.94	7.37	8.22	9.04	9.83	10.60
1900		4.47	4.95	5.43	5.91	6.38	6.84	7.30	7.75	8.63	9.49	10.30	11.08
2000		4.70	5.21	5.71	6.20	6.69	7.18	7.66	8.13	9.04	9.92	10.76	11.56
2100		4.93	5.46	5.98	6.50	7.01	7.51	8.01	8.50	9.44	10.35	11.20	12.01
2200		5.16	5.71	6.25	6.79	7.32	7.84	8.36	8.86	9.83	10.76	11.63	12.45
2300		5.38	5.96	6.52	7.08	7.63	8.17	8.70	9.22	10.22	11.16	12.05	12.87
2400		5.61	6.20	6.79	7.37	7.94	8.50	9.04	9.57	10.60	11.56	12.45	13.27
2500		5.83	6.45	7.06	7.66	8.24	8.81	9.37	9.92	10.96	11.94	12.84	13.65
2600		6.06	6.69	7.32	7.94	8.54	9.13	9.70	10.26	11.32	12.31	13.20	14.01
2850			7.30	7.97	8.63	9.28	9.90	10.50	11.08	12.18	13.17	14.05	14.80
3000			7.66	8.36	9.04	9.70	10.35	10.96	11.56	12.66	13.65	14.50	15.21
3200			8.13	8.86	9.57	10.26	10.92	11.56	12.16	13.27	14.23	15.03	15.66
3400			8.59	9.35	10.09	10.80	11.48	12.12	12.73	13.83	14.75	15.48	16.00
3600			9.04	9.83	10.60	11.32	12.01	12.66	13.27	14.34	15.21	15.84	16.22
3800			9.49	10.30	11.08	11.83	12.52	13.17	13.77	14.80	15.59	16.11	16.33
4000			9.92	10.76	11.56	12.31	13.01	13.65	14.23	15.21	15.90	16.27	16.30
4200			10.35	11.20	12.01	12.77	13.46	14.09	14.65	15.55	16.13	16.33	16.14
4400			10.76	11.63	12.45	13.20	13.89	14.50	15.03	15.84	16.27	16.28	15.83
4600			11.16	12.05	12.87	13.62	14.29	14.87	15.37	16.07	16.33	16.12	15.38
4800			11.56	12.45	13.27	14.01	14.65	15.21	15.66	16.22	16.30	15.83	14.77
5000					13.65	14.37	14.99	15.50	15.90	16.31	16.18	15.42	13.99
5200					14.01	14.70	15.29	15.75	16.09	16.33	15.95	14.88	13.04
5400					14.34	15.01	15.55	15.56	16.22	16.27	15.63	14.20	11.92
5600					14.65	15.29	15.78	16.13	16.31	16.14	15.19	13.38	10.61
6000					15.21	15.75	16.13	16.31	16.30	15.63	13.99	11.29	7.42

CONTI® SYNCHROBELT Imperial Pitch

Width factor c_6															
Width factor c_6	0.42	0.57	0.71	0.86	1.00	1.29	1.56	1.84	2.14	2.72	3.36	4.06	6.15	7.5	8.89
Belt width reference	050	062	**075**	087	**100**	125	**150**	175	**200**	250	**300**	350	400	500	600
Width [mm]	12.7	15.7	**19.05**	22.1	**25.4**	31.8	**38.1**	44.5	**50.8**	63.5	**76.2**	88.9	101.6	127.0	152.4

Standard widths are highlighted in bold

CONTI® SYNCHROBELT Imperial Pitch

Timing belts XH 25.4 mm belt width – Power rating P_N [kW]

Table 39

Speed of small toothed pulley	Number of teeth of small pulley z_1										
	20	22	24	26	28	30	32	34	36	38	40
n_1 [rpm]	Pitch Ø d_0 [mm]										
	141.49	155.64	169.79	183.94	198.08	212.23	226.38	240.53	254.68	268.83	282.98
100	0.63	0.69	0.75	0.81	0.88	0.94	1.00	1.06	1.12	1.19	1.25
200	1.25	1.37	1.50	1.62	1.75	1.87	2.00	2.12	2.25	2.37	2.49
300	1.87	2.06	2.25	2.43	2.62	2.80	2.99	3.17	3.36	3.54	3.73
400	2.49	2.74	2.99	3.23	3.48	3.73	3.97	4.21	4.46	4.70	4.94
500	3.11	3.42	3.73	4.03	4.33	4.64	4.94	5.24	5.54	5.83	6.13
600	3.73	4.09	4.46	4.82	5.18	5.54	5.89	6.24	6.60	6.94	7.29
700	4.33	4.76	5.18	5.60	6.01	6.42	6.83	7.23	7.63	8.02	8.41
800	4.94	5.42	5.89	6.36	6.83	7.29	7.74	8.19	8.63	9.06	9.49
950	5.83	6.39	6.94	7.49	8.02	8.55	9.06	9.57	10.06	10.55	11.02
1100	6.71	7.34	7.96	8.57	9.17	9.75	10.32	10.87	11.40	11.92	12.41
1200	7.29	7.96	8.63	9.28	9.91	10.52	11.11	11.69	12.24	12.76	13.26
1300	7.85	8.57	9.28	9.96	10.62	11.26	11.87	12.46	13.02	13.54	14.04
1450		9.46	10.22	10.94	11.64	12.30	12.93	13.52	14.08	14.59	15.06
1600		10.32	11.11	11.87	12.59	13.26	13.89	14.47	14.99	15.46	15.87
1700		10.87	11.69	12.46	13.18	13.85	14.47	15.03	15.52	15.95	16.30
1800		11.40	12.24	13.02	13.74	14.40	14.99	15.52	15.97	16.34	16.62
1900		11.92	12.76	13.54	14.26	14.90	15.46	15.95	16.34	16.64	16.84
2000		12.41	13.26	14.04	14.74	15.35	15.87	16.30	16.62	16.84	16.93
2100		12.89	13.74	14.50	15.18	15.75	16.22	16.58	16.82	16.93	16.91
2200		13.34	14.19	14.93	15.57	16.10	16.51	16.78	16.92	16.92	16.76
2300		13.78	14.61	15.32	15.92	16.39	16.72	16.90	16.93	16.79	16.48
2400		14.19	14.99	15.68	16.22	16.62	16.87	16.94	16.84	16.55	16.05
2500		14.57	15.35	15.99	16.47	16.79	16.93	16.89	16.64	16.17	15.49
2600		14.93	15.68	16.26	16.67	16.90	16.93	16.74	16.33	15.67	14.77
2700		15.27	15.97	16.49	16.82	16.94	16.84	16.50	15.90	15.04	13.89
2850			16.34	16.75	16.93	16.87	16.55	15.94	15.04	13.82	12.26
2900			16.44	16.81	16.94	16.81	16.40	15.70	14.69	13.34	11.64
3000			16.62	16.90	16.91	16.64	16.05	15.15	13.89	12.26	10.25
3100			16.76	16.94	16.82	16.39	15.61	14.48	12.96	11.03	8.68
3200			16.87	16.93	16.66	16.05	15.07	13.69	11.89	9.64	6.93
3300			16.92	16.86	16.44	15.64	14.43	12.79	10.68	8.09	4.98
3400			16.94	16.74	16.15	15.15	13.69	11.77	9.33	6.36	2.82
3500			16.91	16.56	15.79	14.56	12.85	10.61	7.83	4.46	
3600			16.84	16.33	15.35	13.89	11.89	9.33	6.17	2.37	
3700			16.72	16.03	14.85	13.12	10.83	7.91	4.35		
3800			16.55	15.67	14.26	12.26	9.64	6.36	2.37		
3900			16.33	15.25	13.59	11.31	8.35	4.67			
4000			16.05	14.77	12.85	10.25	6.93	2.82			
4200			15.35	13.59	11.10	7.83	3.71				
4400			14.43	12.14	9.01	4.98					

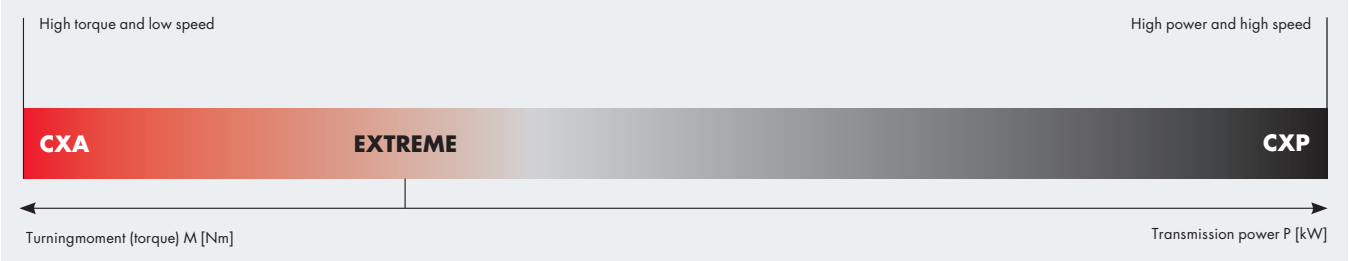
CONTI® SYNCHROBELT Imperial Pitch

Width factor c_6												
Width factor c_6	1.00	1.29	1.56	1.84	2.14	2.72	3.36	4.06	4.76	6.15	7.50	8.89
Belt width reference	100	125	150	175	**200**	250	**300**	350	**400**	**500**	600	700
Width [mm]	25.4	31.8	38.1	44.5	**50.8**	63.5	**76.2**	88.9	**101.6**	**127.0**	152.4	177.8

Standard widths are highlighted in bold

CONTI® SYNCHROFORCE
Introduction

The special compounding in the CONTI® SYNCHROFORCE line of high performance timing belts opens the way to completely new application areas. Together with the belts' running properties, this makes possible long-lasting drive solutions for heavy-duty applications. CONTI® SYNCHROFORCE high performance timing belts are available in a total of three types. This optimally covers the complete performance spectrum and ensures that the right material match is available for each particular application.



Viewed in terms of the physics involved, drive load can, in principle, be broken down into two types: high-torque loads and loads induced by high belt speed and high transmission capacities (power).

CONTI® SYNCHROFORCE EXTREME for high tension load at speeds of up to 30 m/s

The CONTI® SYNCHROFORCE EXTREME timing belt has been specially developed for use in intermittently loaded drives with extreme acceleration loads. The belt features a special design which is extremely stretch and tear resistant to enable it to absorb the impact loads that occur with hard accelerations and decelerations.

CONTI® SYNCHROFORCE CXA for maximum tension loads at speeds of up to 20 m/s

A timing belt with particularly high tear strength and resistance to tooth deformation is required for reliable transmission of high torque at low speeds. The CONTI® SYNCHROFORCE CXA thus comes equipped with a special NBR-based high performance compound and ultra-tear-resistant aramid tensile cords. Embedded in the heavy-duty compound, these tensile cords staunchly resist tension load and even cope with extremely high starting torques permanently and reliably.

CONTI® SYNCHROFORCE CXP for high belt speeds of up to 50 m/s

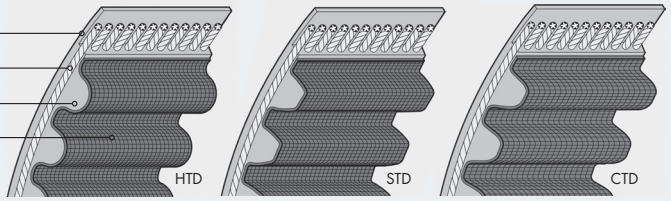
This heavy-duty timing belt is especially well suited for applications in which large amounts of power has to be transmitted under a high dynamic load at belt speeds of up to 50 m/s. In combination with the polychloroprene based compounding, the ultra-strong glass fiber tensile cord gives the timing belts high flex fatigue strength along with a highly reliable power transmission capability.

CONTI® SYNCHROFORCE
Construction

CONTI® SYNCHROFORCE high performance timing belts
are composite products constructed in the following way:

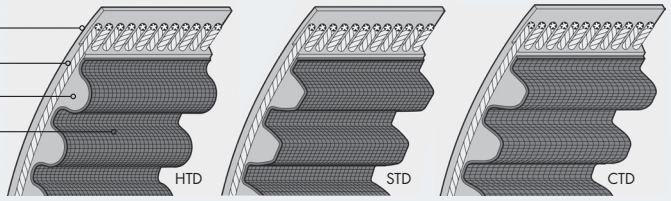
HNBR backing
K-Glass tension cord
HNBR teeth
Polyamide fabric

EXTREME



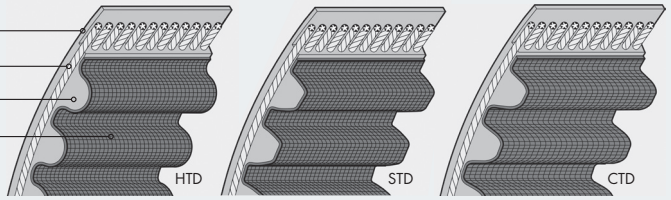
NBR backing
Aramide tension cord
NBR teeth
Polyamide fabric

CXA



Polychloroprene backing
Glass tension cord
Polychloroprene teeth
Polyamide fabric

CXP



CONTI® SYNCHROFORCE
Properties

Synchronous transmission

CONTI® SYNCHROFORCE high performance timing belts transmit rotary motions at exact angles and a constant belt speed. The precise tooth match between belt and drive pulley ensures a high degree of synchronicity and reliably prevents belt ratcheting.

Compact and economical belt configurations

The high tear resistance and high dynamic load carrying capacity of CONTI® SYNCHROFORCE high performance belts allow for synchronous drives even where space is at a premium. This establishes ideal conditions for the design of economically compact, lightweight drives.

No lubrication and maintenance needed

CONTI® SYNCHROFORCE high performance belts are maintenance-free. No lubricating or retightening is required. Their construction and the materials used ensure a constant belt tension.

Low-noise operation

The optimized sectional match between timing belt and pulley and a belt construction with a multiply treated polyamide fabric, plus a dramatic reduction in the required timing belt width that using CONTI® SYNCHROFORCE high performance timing belts afford, all make for considerably less noise, even at high belt speeds.

Resistance to external influences

CONTI® SYNCHROFORCE high performance belts are as standard:

- temperature resistant from –20°C to +100°C for the versions CXA and CXP
- temperature resistant from –30°C to +130°C for the version Extreme
- tropicalized
- ozone-resistant
- conditionally oil-resistant
- electrically conductive to ISO 9563 (except for the CXA version)

Labeling

The CONTI® SYNCHROFORCE high performance belt labeling contains the following information:

- tooth shape
- pitch length
- tooth pitch
- timing belt width
- type

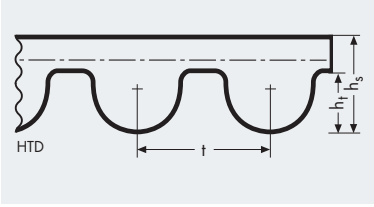
Profiles

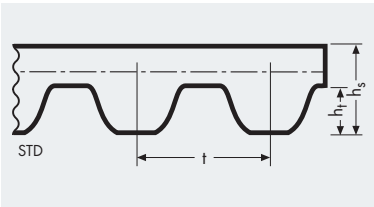
CONTI® SYNCHROFORCE high performance timing belts are available in three profile designs, depending on the particular type.

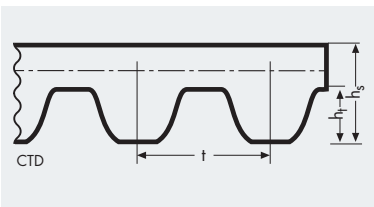
The HTD profile (HTD: High Torque Drive) offers especially good protection from belt ratcheting. This is thanks to the height of its teeth and their semi-rounded geometry. The HTD profile is well suited to transmitting high torque.

The STD profile (STD: Super Torque Drive) provides optimum engagement performance thanks to its arched geometry. Even at high belt speeds, drives with the STD profile exhibit very good running precision and are extremely quiet in operation.

The CTD profile (CTD: Conti Torque Drive) is the symbiosis of the HTD and the STD profile and combines both profile advantages in a single profile. The archshaped pulley-entry geometry, on the one hand, and the higher tooth, on the other, make for ideal conditions for use on dynamic drives with simultaneously high tension load.







CONTI® SYNCHROFORCE
Pitches

The available metric pitch gauges are 3M, 5M, 8M and 14M. The synchroforce line types are available in the following profiles and pitch gauges.

EXTREME	CXA	CXP
HTD 8M	HTD 8M	HTD 3M
HTD 14M	HTD 14M	HTD 5M
STD S8M	STD S8M	STD S8M
CTD C8M	CTD C8M	HTD 8M
CTD C14M	CTD C14M upon request	HTD 14M
		CTD C8M on request
		CTD C14M on request

other versions on request

The available lengths and standard widths for the HTD and STD profiles are shown in the tables on the following pages.

CONTI® SYNCHROFORCE
Tooth profile HTD 3M

Profile HTD 3M

Standard lengths

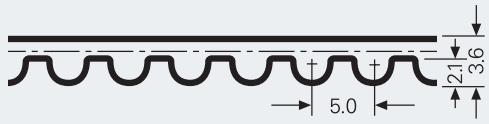
Table 41

Designation	No. of teeth z	Designation	No. of teeth z
111 – 3M	37	420 – 3M	140
117 – 3M	39	432 – 3M	144
129 – 3M	43	435 – 3M	145
141 – 3M	47	447 – 3M	149
144 – 3M	48	474 – 3M	158
150 – 3M	50	480 – 3M	160
156 – 3M	52	486 – 3M	162
159 – 3M	53	489 – 3M	163
168 – 3M	56	495 – 3M	165
174 – 3M	58	501 – 3M	167
177 – 3M	59	513 – 3M	171
180 – 3M	60	522 – 3M	174
186 – 3M	62	525 – 3M	175
192 – 3M	64	537 – 3M	179
201 – 3M	67	564 – 3M	188
204 – 3M	68	570 – 3M	190
210 – 3M	70	597 – 3M	199
213 – 3M	71	600 – 3M	200
216 – 3M	72	606 – 3M	202
225 – 3M	75	612 – 3M	204
234 – 3M	78	615 – 3M	205
240 – 3M	80	633 – 3M	211
246 – 3M	82	669 – 3M	223
252 – 3M	84	708 – 3M	236
255 – 3M	85	711 – 3M	237
261 – 3M	87	738 – 3M	246
267 – 3M	89	753 – 3M	251
270 – 3M	90	822 – 3M	274
285 – 3M	95	843 – 3M	281
294 – 3M	98	882 – 3M	294
300 – 3M	100	945 – 3M	315
312 – 3M	104	960 – 3M	320
318 – 3M	106	1002 – 3M	334
321 – 3M	107	1041 – 3M	347
330 – 3M	110	1068 – 3M	356
336 – 3M	112	1071 – 3M	357
339 – 3M	113	1125 – 3M	375
357 – 3M	119	1170 – 3M	390
363 – 3M	121	1176 – 3M	392
384 – 3M	128	1245 – 3M	415
390 – 3M	130	1500 – 3M	500
393 – 3M	131	1569 – 3M	523
396 – 3M	132		

Stock widths

6 mm	
9 mm	
15 mm	intermediate widths on request

CONTI® SYNCHROFORCE
Tooth profile HTD 5M



Profile HTD 5M

Standard lengths

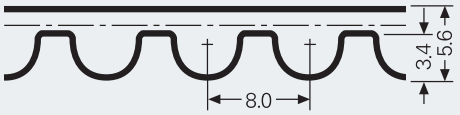
Table 42

Designation	No. of teeth z	Designation	No. of teeth z
200 – 5M	40	635 – 5M	127
225 – 5M	45	665 – 5M	133
265 – 5M	53	700 – 5M	140
275 – 5M	55	710 – 5M	142
285 – 5M	57	740 – 5M	148
295 – 5M	59	755 – 5M	151
300 – 5M	60	800 – 5M	160
330 – 5M	66	835 – 5M	167
350 – 5M	70	840 – 5M	168
375 – 5M	75	860 – 5M	172
385 – 5M	77	890 – 5M	178
400 – 5M	80	900 – 5M	180
405 – 5M	81	925 – 5M	185
425 – 5M	85	950 – 5M	190
450 – 5M	90	1000 – 5M	200
460 – 5M	92	1050 – 5M	210
475 – 5M	95	1125 – 5M	225
500 – 5M	100	1200 – 5M	240
525 – 5M	105	1270 – 5M	254
535 – 5M	107	1420 – 5M	284
550 – 5M	110	1500 – 5M	300
565 – 5M	113	1595 – 5M	319
600 – 5M	120	1690 – 5M	338
615 – 5M	123	1800 – 5M	360
620 – 5M	124	2000 – 5M	400
630 – 5M	126		

Stock widths

9 mm	
15 mm	
25 mm	intermediate widths on request

CONTI® SYNCHROFORCE
Tooth profile HTD 8M



Profile HTD 8M

Standard lengths

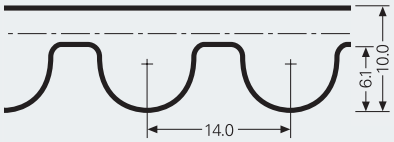
Table 43

Designation	No. of teeth z	Designation	No. of teeth z
288 – 8M	36	1120 – 8M	140
304 – 8M	38	1160 – 8M	145
352 – 8M	44	1200 – 8M	150
376 – 8M	47	1280 – 8M	160
384 – 8M	48	1304 – 8M	163
400 – 8M	50	1328 – 8M	166
416 – 8M	52	1360 – 8M	170
424 – 8M	53	1424 – 8M	178
472 – 8M	59	1440 – 8M	180
480 – 8M	60	1520 – 8M	190
560 – 8M	70	1600 – 8M	200
600 – 8M	75	1760 – 8M	220
624 – 8M	78	1800 – 8M	225
640 – 8M	80	2000 – 8M	250
656 – 8M	82	2040 – 8M	255
688 – 8M	86	2248 – 8M	281
720 – 8M	90	2400 – 8M	300
776 – 8M	97	2600 – 8M	325
784 – 8M	98	2800 – 8M	350
800 – 8M	100	3008 – 8M	376
880 – 8M	110	3048 – 8M	381
912 – 8M	114	3200 – 8M	400
920 – 8M	115	3280 – 8M	410
960 – 8M	120	3408 – 8M	426
1040 – 8M	130	3808 – 8M	476
1080 – 8M	135		

Stock widths

20 mm	
30 mm	
50 mm	
85 mm	intermediate widths on request

CONTI® SYNCHROFORCE
Tooth profile HTD 14M



Profile HTD 14M

Standard lengths

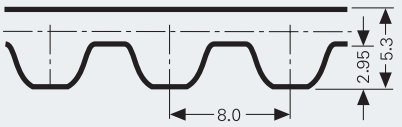
Table 44

Designation	No. of teeth z
966 – 14M	69
1050 – 14M	75
1190 – 14M	85
1400 – 14M	100
1610 – 14M	115
1778 – 14M	127
1890 – 14M	135
2100 – 14M	150
2310 – 14M	165
2450 – 14M	175
2590 – 14M	185
2800 – 14M	200
3150 – 14M	225
3360 – 14M	240
3500 – 14M	250
3668 – 14M	262
3850 – 14M	275
4326 – 14M	309
4578 – 14M	327

Stock widths

40 mm	
55 mm	
85 mm	
115 mm	
170 mm	intermediate widths on request

CONTI® SYNCHROFORCE
Tooth profile STD S8M



Profile STD S8M

Standard lengths

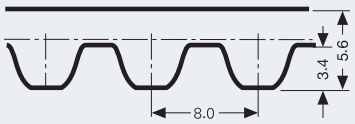
Table 45

Designation	No. of teeth z	Designation	No. of teeth z
440 – S8M	55	1136 – S8M	142
464 – S8M	58	1152 – S8M	144
480 – S8M	60	1160 – S8M	145
528 – S8M	66	1168 – S8M	146
560 – S8M	70	1176 – S8M	147
600 – S8M	75	1184 – S8M	148
632 – S8M	79	1192 – S8M	149
640 – S8M	80	1200 – S8M	150
656 – S8M	82	1208 – S8M	151
672 – S8M	84	1216 – S8M	152
688 – S8M	86	1240 – S8M	155
696 – S8M	87	1256 – S8M	157
712 – S8M	89	1264 – S8M	158
720 – S8M	90	1280 – S8M	160
728 – S8M	91	1296 – S8M	162
736 – S8M	92	1304 – S8M	163
760 – S8M	95	1312 – S8M	164
768 – S8M	96	1344 – S8M	168
784 – S8M	98	1368 – S8M	171
792 – S8M	99	1400 – S8M	175
800 – S8M	100	1408 – S8M	176
824 – S8M	103	1440 – S8M	180
840 – S8M	105	1480 – S8M	185
848 – S8M	106	1512 – S8M	189
864 – S8M	108	1520 – S8M	190
880 – S8M	110	1552 – S8M	194
912 – S8M	114	1600 – S8M	200
920 – S8M	115	1624 – S8M	203
944 – S8M	118	1760 – S8M	220
960 – S8M	120	1776 – S8M	222
992 – S8M	124	1800 – S8M	225
1000 – S8M	125	1816 – S8M	227
1024 – S8M	128	1912 – S8M	239
1032 – S8M	129	2000 – S8M	250
1056 – S8M	132	2240 – S8M	280
1064 – S8M	133	2272 – S8M	284
1072 – S8M	134	2392 – S8M	299
1080 – S8M	135	2800 – S8M	350
1096 – S8M	137	2848 – S8M	356
1120 – S8M	140	3048 – S8M	381

Stock widths

20 mm	
30 mm	
50 mm	
85 mm	intermediate widths on request

CONTI® SYNCHROFORCE
Tooth profile CTD C8M / CTD C14M



Profile CTD C8M

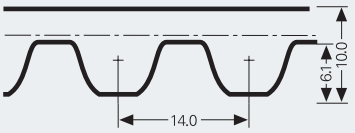
Standard lengths

Table 46

Designation	No. of teeth z
288 – C8M	36
352 – C8M	44
416 – C8M	52
544 – C8M	68
640 – C8M	80
1280 – C8M	160
1600 – C8M	200

Stock widths

12 mm	
21 mm	
36 mm	
62 mm	intermediate widths on request



Profile CTD C14M

Standard lengths

Table 47

Designation	No. of teeth
1568 – C14M	112
1750 – C14M	125
2240 – C14M	160
2380 – C14M	170
3920 – C14M	280

Stock widths

20 mm	
37 mm	
68 mm	
90 mm	
125 mm	intermediate widths on request

CONTI® SYNCHROFORCE
Tolerances

CONTI® SYNCHROFORCE heavy-duty timing belts are precision products. They are manufactured with great care and accuracy. The tolerances for length, width and height are listed in the following tables.

Length tolerances for timing belts

Table 48

Pitch length L_B [mm]	**Tolerance as center distance deviation** [mm]
up to 150	± 0.15
151–255	± 0.20
256–400	± 0.23
401–560	± 0.25
561–800	± 0.30
801–1000	± 0.33
1001–1270	± 0.38
1271–1500	± 0.40
1501–1800	± 0.43
1801–2000	± 0.45
2001–2250	± 0.48
>2250	Tolerance value 0.05 mm for every 500 mm increase in length

Width tolerances for timing belts

Table 49

Belt width b [mm]	**Width tolerance for pitch length L_B** [mm]		
	<880 mm	881–1760 mm	>1760 mm
≤9	+0.4	+0.4	
	–0.8	–0.8	
10–40	+0.8	+0.8	+0.8
	–0.8	–1.2	–1.2
41–50	+0.8	+1.2	+1.2
	–1.2	–1.2	–1.5
51–85	+1.2	+1.5	+1.5
	–1.2	–1.5	–2.0
86–170	+1.5	+1.5	+2.0
	–1.5	–2.0	–2.0
>170		+4.8	+4.8
		–4.8	–4.8

Height tolerances for timing belts

Table 50

Tooth pitch	**3M**	**5M**	**8M**	**14M**
Tooth pitch t [mm]	3	5	8	14
Height tolerance standard type	±0.20	±0.25	±0.40	±0.60

special type tolerances on request

The test setup is shown in Fig. 1. The measuring forces for the length measurements are given in Table 51.

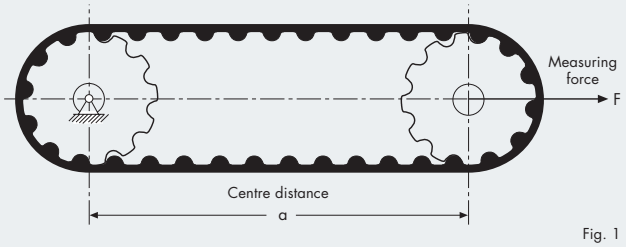


Fig. 1

Measuring forces for length measurements

Table 51

Tooth pitch	**3M**	**5M**	**8M**	**14M**
Tooth pitch t [mm]	3	5	8	14
Measuring force for b = 9 mm	100	200		
Measuring force for b = 20 mm			780	1100

the measuring forces for timing belts of other widths are available on request

CONTI® SYNCHROFORCE CXP
Power ratings

Pitch HTD 3M, 6 mm belt width – Power rating P_N [kW]

Table 52

Speed of small toothed pulley	Number of teeth of small pulley z_1														
	10	**12**	**14**	**16**	**18**	**20**	**24**	**28**	**32**	**40**	**48**	**56**	**64**	**72**	**80**
n_1 [rpm]	**Pitch Ø d_0 [mm]**														
	9.55	**11.46**	**13.37**	**15.28**	**17.19**	**19.10**	**22.92**	**26.74**	**30.56**	**38.20**	**45.84**	**53.48**	**61.12**	**68.75**	**76.39**
20	0.003	0.004	0.004	0.005	0.006	0.007	0.008	0.010	0.012	0.015	0.018	0.022	0.025	0.029	0.032
40	0.005	0.007	0.008	0.010	0.011	0.013	0.016	0.019	0.022	0.028	0.034	0.041	0.047	0.054	0.060
60	0.007	0.010	0.012	0.014	0.016	0.018	0.023	0.027	0.031	0.040	0.050	0.059	0.068	0.078	0.087
100	0.011	0.015	0.018	0.022	0.025	0.029	0.036	0.043	0.050	0.064	0.078	0.093	0.108	0.123	0.138
200	0.019	0.027	0.034	0.040	0.047	0.053	0.066	0.079	0.092	0.118	0.145	0.172	0.200	0.228	0.256
300	0.027	0.038	0.048	0.057	0.066	0.075	0.094	0.112	0.131	0.169	0.207	0.246	0.285	0.325	0.365
400	0.034	0.048	0.061	0.073	0.084	0.096	0.120	0.144	0.168	0.217	0.266	0.316	0.366	0.417	0.468
500	0.041	0.058	0.073	0.088	0.102	0.116	0.145	0.174	0.204	0.263	0.322	0.383	0.444	0.505	0.566
600	0.047	0.068	0.085	0.102	0.119	0.136	0.170	0.204	0.238	0.307	0.377	0.447	0.518	0.589	0.660
700	0.053	0.077	0.097	0.116	0.136	0.155	0.193	0.232	0.271	0.350	0.429	0.509	0.589	0.670	0.750
800	0.059	0.086	0.108	0.130	0.152	0.173	0.216	0.260	0.303	0.391	0.480	0.569	0.659	0.748	0.837
900	0.064	0.094	0.119	0.143	0.167	0.191	0.238	0.286	0.335	0.432	0.529	0.627	0.726	0.823	0.921
950	0.067	0.098	0.125	0.150	0.175	0.200	0.249	0.300	0.350	0.451	0.554	0.656	0.758	0.860	0.962
1000	0.070	0.102	0.130	0.156	0.182	0.208	0.260	0.313	0.365	0.471	0.577	0.684	0.790	0.897	1.002
1200	0.080	0.118	0.150	0.181	0.212	0.242	0.302	0.363	0.424	0.547	0.670	0.793	0.915	1.036	1.157
1400	0.090	0.133	0.170	0.205	0.240	0.274	0.343	0.412	0.481	0.620	0.758	0.896	1.032	1.168	1.301
1450	0.092	0.137	0.175	0.211	0.247	0.282	0.353	0.424	0.495	0.637	0.779	0.921	1.061	1.199	1.336
1600	0.099	0.148	0.189	0.228	0.267	0.305	0.382	0.459	0.535	0.689	0.842	0.994	1.144	1.292	1.437
1800	0.107	0.162	0.207	0.250	0.293	0.335	0.420	0.504	0.588	0.756	0.923	1.087	1.250	1.409	1.565
2000	0.116	0.175	0.225	0.272	0.318	0.364	0.456	0.547	0.639	0.820	1.000	1.177	1.350	1.519	1.684
2400	0.131	0.201	0.259	0.313	0.367	0.420	0.526	0.631	0.735	0.942	1.145	1.343	1.536	1.722	1.902
2850	0.147	0.228	0.294	0.357	0.418	0.479	0.599	0.718	0.836	1.069	1.294	1.513	1.722	1.923	2.113
3200	0.159	0.248	0.321	0.389	0.456	0.522	0.653	0.783	0.910	1.160	1.402	1.633	1.853	2.060	2.255
3600	0.171	0.270	0.349	0.424	0.498	0.570	0.712	0.853	0.990	1.259	1.515	1.758	1.986	2.199	2.395
4000	0.183	0.290	0.377	0.458	0.537	0.615	0.768	0.919	1.066	1.350	1.620	1.872	2.105	2.318	2.511
5000	0.208	0.337	0.440	0.536	0.629	0.720	0.897	1.069	1.236	1.553	1.843	2.106	2.338	2.538	2.705
6000	0.231	0.380	0.497	0.607	0.711	0.814	1.012	1.201	1.383	1.720	2.019	2.275	2.488	2.653	2.771
7000	0.250	0.418	0.549	0.670	0.786	0.898	1.113	1.317	1.509	1.856	2.149	2.385	2.560	2.670	2.715
8000	0.266	0.453	0.597	0.728	0.853	0.974	1.203	1.417	1.615	1.962	2.238	2.438	2.558	2.595	2.546
10000	0.292	0.512	0.679	0.829	0.970	1.103	1.352	1.576	1.775	2.094	2.301	2.388	2.351	2.184	1.883
12000	0.311	0.562	0.747	0.912	1.064	1.206	1.463	1.685	1.871	2.127	2.221	2.144	1.887	1.446	0.814
14000	0.325	0.602	0.803	0.979	1.139	1.286	1.542	1.750	1.909	2.069	2.009	1.717	1.184		

Width factor c_6

Synchronous drive belt width [mm]	3	**6**	**9**	12	**15**	20
Width factor c_6	0.38	1	1.63	2.25	2.88	3.92

standard widths are highlighted in bold

CONTI® SYNCHROFORCE CXP
Power ratings

Pitch HTD 5M, 9 mm belt width – Power rating P_N [kW]

Table 53

Speed of small toothed pulley	Number of teeth of small pulley z_1														
	14	16	18	20	24	28	32	36	40	44	48	56	64	72	80
n_1 [rpm]	Pitch Ø d_0 [mm]														
	22.28	25.46	28.65	31.83	38.20	44.56	50.93	57.30	63.66	70.03	76.39	89.13	101.86	114.59	127.32
20	0.02	0.02	0.02	0.03	0.03	0.04	0.05	0.06	0.06	0.07	0.08	0.09	0.11	0.12	0.14
40	0.03	0.04	0.05	0.05	0.06	0.08	0.09	0.10	0.12	0.13	0.15	0.17	0.20	0.23	0.26
60	0.05	0.06	0.06	0.07	0.09	0.11	0.13	0.15	0.17	0.19	0.21	0.25	0.29	0.33	0.38
100	0.07	0.09	0.10	0.12	0.15	0.18	0.21	0.24	0.27	0.30	0.33	0.40	0.46	0.53	0.60
200	0.13	0.16	0.19	0.21	0.27	0.33	0.38	0.44	0.50	0.56	0.62	0.74	0.86	0.98	1.11
300	0.18	0.22	0.27	0.31	0.39	0.47	0.55	0.63	0.71	0.80	0.88	1.05	1.23	1.40	1.58
400	0.23	0.29	0.34	0.39	0.49	0.60	0.70	0.81	0.92	1.02	1.13	1.35	1.57	1.79	2.02
500	0.28	0.35	0.41	0.47	0.60	0.72	0.85	0.98	1.11	1.24	1.37	1.63	1.90	2.17	2.43
600	0.32	0.40	0.48	0.55	0.70	0.85	0.99	1.14	1.29	1.45	1.60	1.91	2.21	2.52	2.83
700	0.37	0.46	0.54	0.63	0.79	0.96	1.13	1.30	1.47	1.65	1.82	2.17	2.51	2.86	3.20
800	0.41	0.51	0.61	0.70	0.89	1.08	1.27	1.46	1.65	1.84	2.03	2.42	2.80	3.18	3.56
900	0.45	0.56	0.67	0.77	0.98	1.19	1.39	1.60	1.81	2.02	2.24	2.66	3.08	3.49	3.90
950	0.47	0.59	0.70	0.81	1.02	1.24	1.46	1.68	1.90	2.12	2.34	2.77	3.21	3.64	4.07
1000	0.49	0.61	0.73	0.84	1.07	1.29	1.52	1.75	1.98	2.21	2.43	2.89	3.34	3.79	4.23
1200	0.56	0.71	0.84	0.98	1.24	1.50	1.76	2.02	2.29	2.55	2.81	3.33	3.84	4.34	4.84
1400	0.63	0.80	0.95	1.10	1.40	1.70	1.99	2.29	2.58	2.87	3.17	3.74	4.30	4.85	5.39
1450	0.65	0.82	0.98	1.13	1.44	1.74	2.05	2.35	2.65	2.95	3.25	3.84	4.41	4.97	5.52
1600	0.70	0.89	1.06	1.23	1.56	1.88	2.21	2.54	2.86	3.18	3.50	4.12	4.73	5.32	5.89
1800	0.76	0.97	1.16	1.34	1.71	2.06	2.42	2.77	3.12	3.47	3.81	4.48	5.13	5.75	6.34
2000	0.83	1.05	1.26	1.46	1.85	2.24	2.62	3.00	3.38	3.75	4.11	4.82	5.49	6.13	6.74
2400	0.95	1.21	1.44	1.67	2.12	2.56	3.00	3.42	3.84	4.25	4.65	5.41	6.13	6.80	7.41
2850	1.07	1.37	1.64	1.90	2.40	2.90	3.38	3.85	4.31	4.75	5.18	5.99	6.72	7.38	7.96
3200	1.16	1.48	1.78	2.06	2.61	3.14	3.65	4.15	4.63	5.10	5.54	6.36	7.09	7.71	8.24
3600	1.26	1.61	1.93	2.24	2.83	3.40	3.94	4.47	4.97	5.45	5.90	6.71	7.41	7.98	8.41
4000	1.35	1.73	2.08	2.40	3.03	3.63	4.21	4.75	5.27	5.75	6.20	6.99	7.64	8.12	8.44
5000	1.55	2.00	2.40	2.78	3.48	4.15	4.76	5.33	5.85	6.32	6.73	7.39	7.80	7.96	7.85
6000	1.73	2.24	2.68	3.09	3.86	4.56	5.19	5.75	6.23	6.64	6.97	7.37	7.42	7.11	
7000	1.88	2.44	2.92	3.36	4.17	4.88	5.49	6.01	6.42	6.73	6.92	6.97			
8000	2.01	2.62	3.13	3.59	4.41	5.11	5.68	6.12	6.42	6.59	6.61				
10000	2.23	2.89	3.44	3.92	4.73	5.33	5.74	5.94	5.93	5.69	5.23				
12000	2.38	3.09	3.65	4.12	4.83	5.26	5.41	5.26	4.79	4.01					
14000	2.48	3.20	3.75	4.18	4.75	4.93	4.72	4.10	3.07						

Width factor c_6

Synchronous drive belt width [mm]	6	**9**	12	**15**	20	**25**	30
Width factor c_6	0.58	1	1.42	1.85	2.55	3.25	3.96

standard widths are highlighted in bold

CONTI® SYNCHROFORCE CXP
Power ratings

Pitch HTD 8M, 20 mm belt width – Power rating P_N [kW]

Table 54

Speed of small toothed pulley	Number of teeth of small pulley z_1															
	22	24	26	28	30	32	34	36	38	40	44	48	52	56	64	72
n_1 [rpm]	Pitch Ø d_0 [mm]															
	56.02	61.12	66.21	71.30	76.39	81.49	86.58	91.67	96.77	101.86	112.05	122.23	132.42	142.60	162.97	183.35
10	0.07	0.08	0.09	0.10	0.11	0.12	0.13	0.14	0.15	0.16	0.18	0.20	0.23	0.25	0.30	0.35
40	0.25	0.28	0.31	0.34	0.38	0.41	0.45	0.48	0.52	0.55	0.63	0.71	0.79	0.87	1.04	1.22
50	0.30	0.34	0.38	0.42	0.46	0.50	0.54	0.59	0.63	0.68	0.77	0.87	0.96	1.07	1.28	1.49
100	0.56	0.63	0.71	0.78	0.86	0.93	1.01	1.10	1.18	1.26	1.44	1.61	1.80	1.99	2.38	2.79
200	1.05	1.18	1.32	1.45	1.60	1.74	1.89	2.04	2.19	2.35	2.67	3.01	3.35	3.70	4.43	5.19
300	1.51	1.70	1.89	2.09	2.30	2.51	2.72	2.94	3.16	3.38	3.85	4.33	4.82	5.32	6.37	7.47
400	1.96	2.20	2.45	2.71	2.97	3.24	3.52	3.80	4.09	4.38	4.98	5.60	6.24	6.89	8.25	9.67
500	2.39	2.69	3.00	3.31	3.63	3.96	4.30	4.65	5.00	5.35	6.09	6.84	7.62	8.42	10.08	11.81
600	2.82	3.17	3.53	3.90	4.28	4.67	5.07	5.47	5.88	6.31	7.17	8.06	8.98	9.92	11.87	13.91
700	3.24	3.64	4.05	4.48	4.92	5.36	5.82	6.28	6.76	7.24	8.23	9.26	10.31	11.39	13.64	15.98
800	3.65	4.10	4.57	5.05	5.54	6.05	6.56	7.08	7.62	8.16	9.28	10.44	11.62	12.84	15.37	18.01
950	4.26	4.79	5.33	5.89	6.47	7.05	7.65	8.27	8.89	9.53	10.83	12.18	13.56	14.99	17.94	21.02
1000	4.46	5.01	5.58	6.17	6.77	7.39	8.01	8.66	9.31	9.97	11.34	12.75	14.20	15.69	18.78	22.01
1200	5.25	5.91	6.58	7.27	7.98	8.70	9.44	10.19	10.96	11.75	13.36	15.02	16.73	18.48	22.12	25.92
1450	6.23	7.00	7.80	8.61	9.45	10.31	11.19	12.08	12.99	13.92	15.83	17.80	19.82	21.90	26.22	30.72
1600	6.80	7.65	8.52	9.41	10.33	11.26	12.22	13.20	14.20	15.21	17.29	19.44	21.66	23.93	28.64	33.56
1800	7.56	8.50	9.47	10.46	11.48	12.52	13.58	14.67	15.78	16.91	19.22	21.61	24.07	26.60	31.84	37.31
2000	8.31	9.34	10.40	11.50	12.62	13.76	14.93	16.13	17.34	18.58	21.13	23.76	26.46	29.24	34.99	41.01
2200	9.05	10.18	11.33	12.52	13.74	14.99	16.27	17.57	18.89	20.24	23.02	25.88	28.82	31.85	38.12	44.67
2500	10.15	11.41	12.71	14.05	15.41	16.81	18.24	19.70	21.19	22.71	25.82	29.02	32.33	35.72	42.76	50.10
2850	11.42	12.84	14.30	15.80	17.34	18.91	20.52	22.16	23.84	25.54	29.04	32.65	36.36	40.18	48.09	56.36
3000	11.96	13.44	14.97	16.54	18.16	19.80	21.49	23.21	24.96	26.74	30.41	34.19	38.08	42.07	50.36	59.01
3500	13.73	15.44	17.20	19.00	20.85	22.74	24.68	26.65	28.66	30.71	34.92	39.26	43.73	48.32	57.83	67.77
4000	15.48	17.41	19.39	21.42	23.51	25.64	27.82	30.05	32.31	34.63	39.37	44.26	49.30	54.47	65.20	76.41
4500	17.21	19.35	21.55	23.81	26.13	28.50	30.92	33.40	35.92	38.49	43.76	49.20	54.80	60.55	72.47	84.93
5000	18.91	21.27	23.69	26.17	28.72	31.33	33.99	36.71	39.48	42.31	48.10	54.08	60.23	66.55	79.66	93.35
5500	20.60	23.17	25.80	28.51	31.28	34.12	37.03	39.99	43.01	46.08	52.40	58.91	65.61	72.50	86.78	101.69
6000	22.28	25.05	27.90	30.83	33.83	36.90	40.04	43.24	46.50	49.83	56.65	63.69	70.94	78.39	93.83	109.95

Width factor c_6

Synchronous drive belt width [mm]	**20**	**30**	40	**50**	65	**85**
Width factor c_6	1	1.58	2.16	2.73	3.60	4.76

standard widths are highlighted in bold

CONTI® SYNCHROFORCE CXP
Power ratings

Pitch STD S8M and CTD C8M, 20 mm belt width – Power rating P_N [kW]

Table 55

Speed of small toothed pulley	Number of teeth of small pulley z_1															
	22	24	26	28	30	32	34	36	38	40	44	48	52	56	64	72
n_1 [rpm]	Pitch Ø d_0 [mm]															
	56.02	61.12	66.21	71.30	76.39	81.49	86.58	91.67	96.77	101.86	112.05	122.23	132.42	142.60	162.97	183.35
10	0.07	0.08	0.09	0.10	0.11	0.12	0.13	0.15	0.16	0.17	0.19	0.21	0.24	0.26	0.32	0.37
40	0.26	0.29	0.33	0.36	0.40	0.43	0.47	0.51	0.54	0.58	0.66	0.74	0.83	0.92	1.10	1.28
50	0.32	0.36	0.40	0.44	0.48	0.53	0.57	0.62	0.66	0.71	0.81	0.91	1.01	1.12	1.34	1.57
100	0.59	0.67	0.74	0.82	0.90	0.98	1.06	1.15	1.24	1.33	1.51	1.69	1.89	2.08	2.50	2.92
200	1.10	1.24	1.38	1.53	1.68	1.83	1.98	2.14	2.30	2.47	2.81	3.16	3.52	3.88	4.65	5.45
300	1.59	1.79	1.99	2.20	2.41	2.63	2.86	3.08	3.32	3.55	4.04	4.54	5.06	5.59	6.69	7.84
400	2.06	2.31	2.58	2.85	3.12	3.41	3.70	3.99	4.29	4.60	5.23	5.88	6.55	7.24	8.66	10.15
500	2.51	2.83	3.15	3.48	3.82	4.16	4.52	4.88	5.25	5.62	6.39	7.19	8.00	8.84	10.58	12.40
600	2.96	3.33	3.71	4.10	4.49	4.90	5.32	5.75	6.18	6.62	7.53	8.46	9.43	10.42	12.47	14.61
700	3.40	3.82	4.26	4.70	5.16	5.63	6.11	6.60	7.10	7.60	8.64	9.72	10.83	11.96	14.32	16.78
800	3.83	4.31	4.80	5.30	5.82	6.35	6.89	7.44	8.00	8.57	9.75	10.96	12.20	13.48	16.14	18.92
950	4.47	5.03	5.60	6.19	6.79	7.41	8.04	8.68	9.33	10.00	11.37	12.79	14.24	15.73	18.83	22.07
1000	4.68	5.26	5.86	6.48	7.11	7.76	8.41	9.09	9.77	10.47	11.91	13.39	14.91	16.48	19.72	23.11
1200	5.52	6.20	6.91	7.63	8.37	9.13	9.91	10.70	11.51	12.34	14.03	15.77	17.56	19.41	23.23	27.22
1450	6.54	7.35	8.19	9.04	9.92	10.83	11.75	12.69	13.64	14.62	16.62	18.69	20.82	23.00	27.53	32.26
1600	7.14	8.03	8.94	9.88	10.84	11.83	12.83	13.86	14.91	15.97	18.16	20.42	22.74	25.12	30.07	35.24
1800	7.94	8.92	9.94	10.98	12.05	13.15	14.26	15.40	16.57	17.75	20.18	22.69	25.27	27.93	33.43	39.17
2000	8.72	9.81	10.93	12.07	13.25	14.45	15.68	16.93	18.21	19.51	22.19	24.94	27.78	30.70	36.74	43.06
2200	9.50	10.69	11.90	13.15	14.43	15.74	17.08	18.45	19.84	21.26	24.17	27.17	30.26	33.44	40.03	46.91
2500	10.66	11.98	13.35	14.75	16.18	17.65	19.16	20.69	22.25	23.84	27.11	30.48	33.94	37.51	44.89	52.61
2850	11.99	13.48	15.01	16.59	18.21	19.86	21.55	23.27	25.03	26.82	30.49	34.28	38.18	42.19	50.50	59.18
3000	12.56	14.12	15.72	17.37	19.06	20.79	22.56	24.37	26.21	28.08	31.93	35.90	39.98	44.18	52.88	61.97
3500	14.42	16.21	18.06	19.95	21.89	23.88	25.91	27.98	30.10	32.25	36.67	41.22	45.91	50.73	60.73	71.16
4000	16.25	18.28	20.36	22.49	24.68	26.92	29.21	31.55	33.93	36.36	41.34	46.47	51.76	57.19	68.46	80.23
4500	18.07	20.31	22.63	25.00	27.43	29.92	32.47	35.07	37.72	40.41	45.95	51.66	57.54	63.57	76.10	89.17
5000	19.86	22.33	24.87	27.48	30.15	32.89	35.69	38.55	41.46	44.42	50.50	56.78	63.24	69.88	83.64	98.02
5500	21.63	24.32	27.09	29.93	32.85	35.83	38.88	41.99	45.16	48.39	55.02	61.85	68.89	76.12	91.12	106.78
6000	23.39	26.30	29.29	32.37	35.52	38.74	42.04	45.40	48.83	52.32	59.49	66.88	74.49	82.31	98.52	115.45

Width factor c_6

Synchronous drive belt width [mm]	**20**	**30**	40	**50**	65	**85**
Width factor c_6	1	1.58	2.16	2.73	3.60	4.76

standard widths are highlighted in bold

CONTI® SYNCHROFORCE CXP
Power ratings

Pitch HTD 14M and CTD C14M, 40 mm belt width – Power rating P_N [kW]

Table 56

Speed of small toothed pulley	Number of teeth of small pulley z_1															
	28	**29**	**30**	**32**	**34**	**36**	**38**	**40**	**42**	**44**	**46**	**48**	**52**	**56**	**64**	**72**
n_1 [rpm]	**Pitch Ø d_0 [mm]**															
	124.78	**129.23**	**133.69**	**142.60**	**151.52**	**160.43**	**169.34**	**178.25**	**187.17**	**196.08**	**204.99**	**213.90**	**231.73**	**249.55**	**285.21**	**320.86**
10	0.49	0.52	0.55	0.60	0.66	0.71	0.76	0.81	0.86	0.91	0.96	1.01	1.11	1.21	1.42	1.62
20	0.93	1.00	1.05	1.16	1.26	1.37	1.46	1.56	1.66	1.76	1.86	1.95	2.15	2.34	2.73	3.12
40	1.78	1.90	2.01	2.22	2.42	2.62	2.81	3.00	3.19	3.37	3.56	3.75	4.12	4.50	5.24	6.00
60	2.59	2.77	2.93	3.24	3.53	3.82	4.10	4.38	4.65	4.93	5.20	5.48	6.02	6.57	7.66	8.76
100	4.15	4.43	4.70	5.20	5.67	6.13	6.59	7.03	7.48	7.92	8.36	8.80	9.67	10.55	12.29	14.04
200	7.80	8.34	8.85	9.80	10.70	11.57	12.42	13.26	14.10	14.93	15.75	16.57	18.20	19.82	23.04	26.24
300	11.21	12.00	12.73	14.10	15.40	16.65	17.87	19.07	20.26	21.44	22.61	23.77	26.07	28.36	32.87	37.31
400	14.44	15.46	16.41	18.18	19.84	21.45	23.01	24.54	26.06	27.55	29.04	30.50	33.41	36.28	41.91	47.41
500	17.52	18.77	19.92	22.06	24.07	26.00	27.88	29.72	31.53	33.31	35.08	36.82	40.27	43.65	50.24	56.62
600	20.47	21.93	23.27	25.76	28.10	30.33	32.50	34.62	36.70	38.75	40.77	42.76	46.67	50.50	57.90	64.98
700	23.30	24.96	26.49	29.31	31.94	34.46	36.90	39.27	41.60	43.88	46.13	48.33	52.66	56.86	64.92	72.53
800	26.01	27.86	29.56	32.70	35.61	38.39	41.08	43.68	46.23	48.72	51.16	53.56	58.23	62.75	71.32	79.30
950	29.89	32.01	33.95	37.51	40.81	43.95	46.95	49.87	52.70	55.45	58.14	60.77	65.86	70.72	79.80	88.03
1000	31.13	33.33	35.35	39.05	42.47	45.71	48.81	51.82	54.73	57.56	60.32	63.02	68.21	73.16	82.34	90.57
1200	35.85	38.37	40.67	44.86	48.71	52.32	55.77	59.08	62.26	65.34	68.32	71.20	76.69	81.82	91.05	98.91
1450	41.24	44.11	46.71	51.41	55.68	59.66	63.42	66.99	70.39	73.64	76.74	79.71	85.25	90.28	98.81	105.32
1600	44.22	47.27	50.02	54.98	59.45	63.59	67.47	71.13	74.59	77.88	80.99	83.93	89.34	94.12	101.84	107.09
1800	47.89	51.15	54.09	59.32	64.00	68.29	72.26	75.97	79.44	82.69	85.72	88.55	93.59	97.85	104.01	107.05
2000	51.24	54.69	57.76	63.21	68.02	72.38	76.38	80.06	83.45	86.57	89.42	92.03	96.50	99.99	104.09	104.32
2200	54.28	57.87	61.06	66.65	71.53	75.89	79.83	83.39	86.62	89.52	92.11	94.40	98.08	100.58	102.10	98.93
2400	57.02	60.72	63.98	69.65	74.53	78.82	82.62	86.00	88.97	91.57	93.80	95.67	98.35	99.64	98.07	90.92
2600	59.46	63.24	66.55	72.23	77.03	81.18	84.78	87.88	90.52	92.72	94.50	95.85	97.34	97.19	92.02	
2850	62.10	65.94	69.26	74.86	79.48	83.35	86.58	89.23	91.34	92.92	94.01	94.59	94.28	92.02	81.65	
3000	63.47	67.32	70.62	76.13	80.59	84.23	87.19	89.51	91.24	92.39	92.99	93.04	91.50	87.80		
3500	66.91	70.65	73.77	78.71	82.36	84.99	86.73	87.65	87.77	87.13	85.75	83.63				
4000	68.65	72.10	74.84	78.81	81.25	82.44	82.51	81.54	79.56	76.60	72.68					

Width factor c_6

Synchronous drive belt width [mm]	**40**	**55**	**85**	**115**	**170**
Width factor c_6	1	1.44	2.31	3.18	4.78

standard widths are highlighted in bold

CONTI® SYNCHROFORCE CXA
Power ratings

Pitch HTD 8M 20 mm belt width – Power rating P_N [kW]

Table 57

Speed of small toothed pulley	Number of teeth of small pulley z_1															
	22	24	26	28	30	32	34	36	38	40	44	48	52	56	64	72
n_1 [rpm]	Pitch Ø d_0 [mm]															
	56.02	61.12	66.21	71.30	76.39	81.49	86.58	91.67	96.77	101.86	112.05	122.23	132.42	142.60	162.97	183.35
20	0.23	0.26	0.29	0.33	0.36	0.40	0.43	0.47	0.50	0.53	0.60	0.67	0.73	0.78	0.87	0.93
50	0.52	0.60	0.67	0.75	0.83	0.91	1.00	1.08	1.16	1.24	1.40	1.55	1.69	1.82	2.04	2.17
100	0.96	1.11	1.25	1.40	1.55	1.71	1.86	2.02	2.17	2.33	2.63	2.92	3.19	3.43	3.84	4.08
200	1.77	2.03	2.31	2.59	2.87	3.16	3.45	3.74	4.03	4.32	4.88	5.42	5.92	6.38	7.12	7.57
300	2.50	2.88	3.27	3.67	4.08	4.49	4.91	5.32	5.74	6.15	6.95	7.71	8.42	9.07	10.10	10.72
400	3.19	3.68	4.18	4.70	5.22	5.74	6.27	6.80	7.33	7.85	8.87	9.84	10.74	11.55	12.85	13.59
500	3.84	4.43	5.04	5.66	6.29	6.93	7.56	8.20	8.84	9.46	10.68	11.84	12.90	13.86	15.37	16.22
600	4.46	5.15	5.86	6.58	7.31	8.05	8.79	9.52	10.26	10.98	12.38	13.71	14.92	16.01	17.70	18.61
700	5.05	5.83	6.63	7.45	8.28	9.11	9.95	10.78	11.60	12.41	13.98	15.46	16.81	18.01	19.84	20.79
800	5.61	6.49	7.38	8.29	9.21	10.13	11.05	11.97	12.88	13.77	15.49	17.10	18.57	19.86	21.81	22.76
950	6.42	7.42	8.44	9.47	10.52	11.57	12.61	13.65	14.67	15.67	17.59	19.38	20.98	22.38	24.44	25.34
1000	6.68	7.72	8.78	9.85	10.94	12.02	13.11	14.18	15.23	16.27	18.25	20.09	21.73	23.16	25.23	26.11
1200	7.66	8.85	10.06	11.29	12.52	13.75	14.97	16.17	17.35	18.50	20.69	22.69	24.45	25.95	28.01	28.69
1450	8.80	10.16	11.53	12.92	14.31	15.69	17.05	18.39	19.69	20.95	23.31	25.43	27.26	28.75	30.63	30.89
1600	9.43	10.88	12.35	13.82	15.29	16.75	18.18	19.58	20.93	22.24	24.67	26.82	28.63	30.08	31.75	31.69
1800	10.22	11.78	13.36	14.93	16.50	18.04	19.55	21.01	22.42	23.76	26.24	28.38	30.13	31.46	32.75	32.14
2000	10.95	12.62	14.29	15.95	17.59	19.20	20.76	22.27	23.71	25.07	27.54	29.62	31.25	32.40	33.18	31.92
2200	11.63	13.39	15.14	16.87	18.58	20.23	21.83	23.36	24.81	26.17	28.59	30.55	32.00	32.91	33.07	31.04
2500	12.56	14.43	16.28	18.09	19.86	21.56	23.18	24.71	26.13	27.44	29.68	31.36	32.44	32.89	31.89	
2850	13.52	15.48	17.41	19.28	21.07	22.78	24.37	25.84	27.18	28.37	30.27	31.48	31.96	31.70		
3000	13.88	15.88	17.83	19.71	21.51	23.19	24.76	26.19	27.47	28.58	30.29	31.25	31.43			
3500	14.93	17.00	18.97	20.84	22.57	24.15	25.55	26.76	27.77	28.56	29.44	29.36				
4000	15.74	17.80	19.74	21.51	23.09	24.46	25.59	26.47	27.08	27.41						
4500	16.31	18.32	20.14	21.74	23.08	24.15	24.90	25.34	25.43							
5000	16.66	18.55	20.20	21.55	22.57	23.23	23.52									
6000	16.73	18.23	19.32	19.96												

Width factor c_6

Synchronous drive belt width [mm]	**20**	**30**	40	**50**	65	**85**
Width factor c_6	1	1.58	2.16	2.73	3.60	4.76

standard widths are highlighted in bold

CONTI® SYNCHROFORCE CXA
Power ratings

Pitch STD 8M and CTD C8M, 20 mm belt width – Power rating P_N [kW]

Table 58

Speed of small toothed pulley	Number of teeth of small pulley z_1															
	22	**24**	**26**	**28**	**30**	**32**	**34**	**36**	**38**	**40**	**44**	**48**	**52**	**56**	**64**	**72**
n_1 [rpm]	**Pitch Ø d_0 [mm]**															
	56.02	**61.12**	**66.21**	**71.30**	**76.39**	**81.49**	**86.58**	**91.67**	**96.77**	**101.86**	**112.05**	**122.23**	**132.42**	**142.60**	**162.97**	**183.35**
20	0.24	0.27	0.31	0.34	0.38	0.42	0.45	0.49	0.53	0.56	0.63	0.70	0.76	0.82	0.91	0.97
50	0.55	0.63	0.71	0.79	0.87	0.96	1.05	1.13	1.22	1.30	1.47	1.63	1.78	1.92	2.14	2.27
100	1.01	1.16	1.31	1.47	1.63	1.79	1.96	2.12	2.28	2.44	2.76	3.06	3.35	3.61	4.03	4.29
200	1.86	2.13	2.42	2.72	3.01	3.32	3.62	3.93	4.23	4.53	5.12	5.69	6.22	6.70	7.48	7.95
300	2.63	3.03	3.44	3.86	4.29	4.72	5.15	5.59	6.02	6.45	7.29	8.10	8.84	9.52	10.61	11.25
400	3.35	3.86	4.39	4.93	5.48	6.03	6.59	7.15	7.70	8.25	9.32	10.34	11.28	12.13	13.49	14.27
500	4.03	4.65	5.29	5.94	6.60	7.27	7.94	8.61	9.28	9.93	11.22	12.43	13.55	14.56	16.14	17.03
600	4.68	5.40	6.15	6.91	7.67	8.45	9.23	10.00	10.77	11.53	13.00	14.39	15.67	16.81	18.59	19.54
700	5.30	6.12	6.97	7.82	8.69	9.57	10.44	11.32	12.18	13.03	14.68	16.23	17.65	18.91	20.83	21.83
800	5.89	6.81	7.75	8.70	9.67	10.64	11.60	12.57	13.52	14.46	16.27	17.96	19.50	20.85	22.90	23.90
950	6.74	7.79	8.86	9.95	11.04	12.14	13.24	14.33	15.40	16.45	18.47	20.35	22.03	23.50	25.66	26.61
1000	7.01	8.10	9.22	10.34	11.48	12.62	13.76	14.89	16.00	17.08	19.16	21.09	22.82	24.32	26.49	27.41
1200	8.05	9.30	10.57	11.85	13.15	14.44	15.72	16.98	18.22	19.43	21.72	23.82	25.67	27.24	29.41	30.12
1450	9.24	10.66	12.11	13.57	15.03	16.48	17.90	19.31	20.67	21.99	24.48	26.70	28.62	30.19	32.16	32.44
1600	9.90	11.42	12.97	14.51	16.06	17.59	19.09	20.56	21.98	23.35	25.90	28.16	30.07	31.59	33.34	33.27
1800	10.73	12.37	14.03	15.68	17.32	18.94	20.52	22.06	23.54	24.95	27.55	29.80	31.64	33.04	34.39	33.75
2000	11.50	13.25	15.00	16.75	18.47	20.16	21.80	23.38	24.89	26.33	28.92	31.10	32.81	34.02	34.84	33.52
2200	12.22	14.06	15.90	17.72	19.50	21.24	22.92	24.53	26.05	27.48	30.02	32.07	33.60	34.56	34.72	32.60
2500	13.19	15.15	17.09	19.00	20.85	22.64	24.34	25.94	27.44	28.82	31.17	32.93	34.06	34.54	33.48	29.93
2850	14.19	16.25	18.28	20.24	22.13	23.92	25.59	27.13	28.54	29.79	31.78	33.05	33.56	33.28	30.46	24.92
3000	14.58	16.67	18.72	20.70	22.58	24.35	26.00	27.50	28.84	30.01	31.81	32.82	33.00	32.35	28.65	22.16
3500	15.68	17.85	19.92	21.88	23.70	25.36	26.83	28.10	29.16	29.99	30.92	30.83	29.72			
4000	16.52	18.69	20.73	22.59	24.25	25.68	26.87	27.79	28.43	28.78	28.55	27.04				
4500	17.12	19.23	21.15	22.83	24.24	25.35	26.15	26.60	26.70	26.43	24.74	21.50				
5000	17.49	19.48	21.21	22.62	23.70	24.40	24.69	24.57	24.00	22.98	19.54					
6000	17.57	19.15	20.29	20.95	21.10	20.68	19.66	18.03	15.77	12.86						

Width factor c_6

Synchronous drive belt width [mm]	**20**	**30**	40	**50**	65	**85**
Width factor c_6	1	1.58	2.16	2.73	3.60	4.76

standard widths are highlighted in bold

CONTI® SYNCHROFORCE CXA
Power ratings

Pitch HTD 14M and CTD C14M, 40 mm belt width – Power rating P_N [kW]

Table 59

Speed of small toothed pulley	Number of teeth of small pulley z_1															
	28	29	30	32	34	36	38	40	42	44	46	48	52	56	64	72
n_1 [rpm]	Pitch Ø d_0 [mm]															
	124.78	129.23	133.69	142.60	151.52	160.43	169.34	178.25	187.17	196.08	204.99	213.90	231.73	249.55	285.21	320.86
20	1.68	1.76	1.84	2.01	2.17	2.34	2.51	2.68	2.85	3.03	3.21	3.39	3.75	4.12	4.87	5.64
40	3.14	3.30	3.45	3.76	4.07	4.39	4.71	5.04	5.37	5.70	6.04	6.38	7.07	7.77	9.20	10.66
60	4.52	4.74	4.96	5.41	5.86	6.33	6.79	7.27	7.75	8.23	8.72	9.21	10.21	11.22	13.28	15.39
100	7.10	7.45	7.80	8.52	9.24	9.97	10.71	11.46	12.22	12.98	13.75	14.53	16.11	17.70	20.95	24.26
200	12.96	13.60	14.25	15.56	16.89	18.23	19.58	20.95	22.33	23.72	25.12	26.53	29.38	32.25	38.05	43.92
300	18.24	19.15	20.06	21.90	23.76	25.63	27.53	29.44	31.36	33.29	35.23	37.17	41.09	45.02	52.91	60.78
400	23.10	24.24	25.39	27.70	30.04	32.39	34.76	37.13	39.52	41.92	44.32	46.72	51.53	56.33	65.87	75.26
500	27.59	28.95	30.31	33.05	35.81	38.58	41.37	44.16	46.95	49.74	52.53	55.31	60.85	66.34	77.13	87.58
600	31.77	33.33	34.88	38.00	41.14	44.28	47.43	50.57	53.70	56.82	59.93	63.02	69.14	75.16	86.82	97.88
700	35.68	37.40	39.13	42.59	46.06	49.52	52.97	56.41	59.83	63.22	66.58	69.91	76.46	82.84	95.00	106.25
800	39.32	41.20	43.08	46.84	50.60	54.33	58.04	61.72	65.37	68.97	72.52	76.02	82.86	89.44	101.74	112.76
950	44.32	46.41	48.49	52.63	56.73	60.79	64.80	68.75	72.63	76.44	80.16	83.80	90.80	97.40	109.27	119.17
1000	45.88	48.02	50.16	54.41	58.61	62.76	66.84	70.85	74.78	78.63	82.38	86.04	93.03	99.56	111.10	120.43
1200	51.57	53.90	56.22	60.81	65.30	69.69	73.96	78.11	82.12	85.99	89.71	93.26	99.87	105.75	115.18	121.23
1450	57.54	60.04	62.49	67.30	71.94	76.40	80.66	84.71	88.54	92.14	95.49	98.59	103.98	108.25	113.18	112.95
1600	60.57	63.11	65.60	70.43	75.05	79.43	83.56	87.42	90.99	94.27	97.24	99.88	104.17	107.05	108.30	
1800	63.97	66.52	69.01	73.77	78.23	82.37	86.18	89.62	92.68	95.36	97.62	99.47	101.84	102.38		
2000	66.691	69.195	71.613	76.173	80.343	84.096	87.409	90.26	92.629	94.497	95.848	96.664	96.635			
2200	68.755	71.158	73.449	77.682	81.421	84.636	87.299	89.387	90.875	91.743	91.97	91.537				

Width factor c_6

Synchronous drive belt width [mm]	**40**	**55**	**85**	**115**	**170**
Width factor c_6	1	1.44	2.31	3.18	4.78

standard widths are highlighted in bold

CONTI® SYNCHROFORCE EXTREME
Power ratings

Pitch HTD 8M, 20 mm Belt width – Power rating P_N [kW]

Table 60

Speed of small toothed pulley	Number of teeth of small pulley z_1															
	22	24	26	28	30	32	34	36	38	40	44	48	52	56	64	72
n_1 [rpm]	Pitch Ø d_0 [mm]															
	56.02	61.12	66.21	71.30	76.39	81.49	86.58	91.67	96.77	101.86	112.05	122.23	132.42	142.60	162.97	183.35
10	0.11	0.12	0.14	0.15	0.16	0.17	0.19	0.20	0.22	0.23	0.26	0.29	0.32	0.35	0.41	0.48
40	0.37	0.41	0.45	0.49	0.54	0.58	0.63	0.67	0.72	0.77	0.86	0.96	1.06	1.17	1.38	1.59
50	0.44	0.49	0.55	0.60	0.65	0.71	0.76	0.82	0.87	0.93	1.05	1.17	1.29	1.42	1.67	1.93
100	0.81	0.90	1.00	1.09	1.19	1.29	1.39	1.49	1.60	1.70	1.92	2.13	2.36	2.58	3.05	3.53
200	1.48	1.65	1.82	1.99	2.17	2.35	2.54	2.72	2.91	3.11	3.50	3.89	4.30	4.72	5.57	6.44
300	2.10	2.34	2.59	2.83	3.09	3.35	3.61	3.87	4.14	4.41	4.97	5.54	6.12	6.70	7.91	9.16
400	2.70	3.00	3.32	3.64	3.96	4.30	4.63	4.97	5.32	5.67	6.38	7.11	7.85	8.61	10.16	11.76
500	3.27	3.65	4.03	4.42	4.81	5.21	5.62	6.03	6.45	6.88	7.74	8.63	9.53	10.45	12.33	14.27
600	3.83	4.27	4.72	5.17	5.64	6.11	6.58	7.07	7.56	8.06	9.07	10.10	11.16	12.24	14.44	16.72
700	4.38	4.88	5.39	5.91	6.44	6.98	7.53	8.08	8.64	9.21	10.37	11.55	12.76	13.99	16.51	19.11
800	4.92	5.48	6.06	6.64	7.23	7.84	8.45	9.07	9.70	10.34	11.64	12.97	14.33	15.71	18.54	21.46
950	5.71	6.37	7.03	7.71	8.40	9.10	9.81	10.53	11.26	12.00	13.51	15.06	16.63	18.23	21.52	24.91
1000	5.97	6.65	7.35	8.06	8.78	9.51	10.26	11.01	11.78	12.55	14.13	15.74	17.39	19.06	22.50	26.05
1200	7.00	7.80	8.61	9.44	10.29	11.14	12.02	12.90	13.80	14.70	16.55	18.44	20.37	22.33	26.36	30.51
1450	8.25	9.19	10.15	11.13	12.12	13.13	14.16	15.20	16.26	17.33	19.50	21.73	24.00	26.32	31.06	35.96
1600	8.98	10.01	11.05	12.12	13.20	14.30	15.42	16.56	17.71	18.87	21.24	23.67	26.14	28.66	33.83	39.16
1800	9.95	11.08	12.24	13.42	14.62	15.84	17.08	18.34	19.61	20.90	23.53	26.22	28.96	31.75	37.47	43.38
2000	10.90	12.14	13.41	14.71	16.02	17.36	18.72	20.10	21.49	22.90	25.78	28.73	31.73	34.79	41.06	47.53
2200	11.84	13.19	14.57	15.98	17.40	18.86	20.33	21.83	23.34	24.88	28.01	31.20	34.46	37.79	44.60	51.63
2500	13.23	14.74	16.28	17.85	19.45	21.07	22.72	24.39	26.08	27.80	31.29	34.86	38.51	42.22	49.84	57.69
2850	14.82	16.51	18.24	20.00	21.79	23.61	25.45	27.33	29.22	31.15	35.06	39.06	43.15	47.30	55.84	64.63
3000	15.50	17.27	19.07	20.91	22.78	24.68	26.61	28.57	30.55	32.56	36.66	40.84	45.11	49.46	58.38	67.58
3500	17.72	19.74	21.80	23.90	26.04	28.21	30.42	32.66	34.93	37.23	41.90	46.69	51.57	56.54	66.74	77.25
4000	19.89	22.16	24.48	26.84	29.24	31.68	34.16	36.67	39.22	41.80	47.05	52.42	57.90	63.48	74.94	86.74
4500	22.03	24.55	27.11	29.73	32.39	35.09	37.84	40.62	43.44	46.30	52.12	58.06	64.13	70.32	83.00	96.08
5000	24.14	26.90	29.71	32.57	35.49	38.45	41.46	44.51	47.60	50.73	57.11	63.62	70.27	77.05	90.95	105.28
5500	26.23	29.22	32.27	35.38	38.55	41.77	45.03	48.35	51.70	55.11	62.03	69.11	76.33	83.69	98.79	114.35
6000	28.28	31.51	34.8	38.16	41.57	45.04	48.57	52.14	55.76	59.43	66.90	74.53	82.32	90.26	106.54	123.32

Width factor c_6

Synchronous drive belt width [mm]	**20**	**30**	40	**50**	65	**85**
Width factor c_6	1	1.58	2.16	2.73	3.60	4.76

standard widths are highlighted in bold

CONTI® SYNCHROFORCE EXTREME
Power ratings

Pitch STD 8M and CTD C8M, 20 mm belt width – Power rating P_N [kW]

Table 61

Speed of small toothed pulley	Number of teeth of small pulley z_1															
	22	24	26	28	30	32	34	36	38	40	44	48	52	56	64	72
n_1 [rpm]	Pitch Ø d_0 [mm]															
	56.02	61.12	66.21	71.30	76.39	81.49	86.58	91.67	96.77	101.86	112.05	122.23	132.42	142.60	162.97	183.35
10	0.12	0.13	0.14	0.16	0.17	0.18	0.20	0.21	0.23	0.24	0.27	0.30	0.34	0.37	0.43	0.50
40	0.38	0.43	0.47	0.52	0.56	0.61	0.66	0.71	0.76	0.81	0.91	1.01	1.12	1.23	1.45	1.67
50	0.47	0.52	0.57	0.63	0.68	0.74	0.80	0.86	0.92	0.98	1.10	1.23	1.36	1.49	1.76	2.03
100	0.85	0.95	1.05	1.15	1.25	1.35	1.46	1.57	1.68	1.79	2.01	2.24	2.47	2.71	3.20	3.71
200	1.55	1.73	1.91	2.09	2.28	2.47	2.66	2.86	3.06	3.26	3.67	4.09	4.52	4.95	5.85	6.77
300	2.21	2.46	2.71	2.98	3.24	3.51	3.79	4.07	4.35	4.64	5.22	5.81	6.42	7.04	8.31	9.62
400	2.83	3.15	3.48	3.82	4.16	4.51	4.86	5.22	5.58	5.95	6.70	7.46	8.24	9.04	10.67	12.35
500	3.44	3.83	4.23	4.64	5.05	5.47	5.90	6.34	6.78	7.22	8.13	9.06	10.00	10.97	12.95	14.99
600	4.03	4.49	4.95	5.43	5.92	6.41	6.91	7.42	7.94	8.46	9.52	10.61	11.72	12.85	15.17	17.55
700	4.60	5.13	5.66	6.21	6.76	7.33	7.90	8.48	9.07	9.67	10.89	12.13	13.40	14.69	17.34	20.07
800	5.17	5.76	6.36	6.97	7.60	8.23	8.87	9.53	10.19	10.86	12.22	13.62	15.04	16.49	19.47	22.53
950	6.00	6.68	7.38	8.09	8.82	9.55	10.30	11.06	11.83	12.60	14.19	15.81	17.46	19.14	22.60	26.16
1000	6.27	6.99	7.72	8.46	9.22	9.99	10.77	11.56	12.37	13.18	14.83	16.53	18.26	20.02	23.63	27.35
1200	7.35	8.19	9.04	9.91	10.80	11.70	12.62	13.54	14.48	15.44	17.38	19.36	21.38	23.45	27.68	32.04
1450	8.66	9.65	10.65	11.68	12.73	13.79	14.87	15.96	17.07	18.19	20.48	22.82	25.20	27.63	32.62	37.75
1600	9.43	10.51	11.61	12.72	13.86	15.02	16.19	17.39	18.59	19.82	22.31	24.85	27.45	30.10	35.51	41.12
1800	10.45	11.64	12.85	14.09	15.35	16.64	17.94	19.26	20.59	21.95	24.71	27.53	30.40	33.33	39.35	45.55
2000	11.45	12.75	14.08	15.44	16.82	18.23	19.65	21.10	22.57	24.05	27.07	30.16	33.31	36.53	43.12	49.91
2200	12.43	13.85	15.30	16.77	18.28	19.80	21.35	22.92	24.51	26.12	29.41	32.76	36.19	39.68	46.83	54.21
2500	13.89	15.48	17.09	18.74	20.42	22.12	23.85	25.61	27.39	29.19	32.86	36.61	40.43	44.33	52.33	60.57
2850	15.56	17.34	19.15	21.00	22.88	24.79	26.73	28.69	30.69	32.70	36.81	41.02	45.30	49.67	58.63	67.87
3000	16.27	18.13	20.02	21.96	23.92	25.92	27.94	30.00	32.08	34.19	38.49	42.88	47.36	51.93	61.30	70.96
3500	18.60	20.72	22.89	25.10	27.34	29.63	31.94	34.29	36.67	39.09	44.00	49.02	54.14	59.36	70.07	81.11
4000	20.89	23.27	25.70	28.18	30.70	33.27	35.87	38.51	41.18	43.89	49.41	55.04	60.80	66.66	78.68	91.08
4500	23.14	25.78	28.47	31.21	34.01	36.85	39.73	42.65	45.61	48.61	54.72	60.97	67.34	73.83	87.15	100.88
5000	25.35	28.24	31.20	34.20	37.26	40.37	43.53	46.73	49.98	53.26	59.96	66.80	73.79	80.90	95.50	110.54
5500	27.54	30.68	33.89	37.15	40.48	43.86	47.29	50.76	54.29	57.86	65.13	71.57	80.15	87.88	103.73	120.07
6000	29.70	33.09	36.54	40.07	43.65	47.30	50.99	54.75	58.55	62.40	70.24	78.26	86.44	94.77	111.87	129.49

Width factor c_6

Synchronous drive belt width [mm]	**20**	**30**	**40**	**50**	**65**	**85**
Width factor c_6	1	1.58	2.16	2.73	3.60	4.76

standard widths are highlighted in bold

CONTI® SYNCHROFORCE EXTREME
Power ratings

Pitch HTD 14M and CTD C14M, 40 mm belt width – Power rating P_N [kW]

Table 62

Speed of small toothed pulley	Number of teeth of small pulley z_1															
	28	29	30	32	34	36	38	40	42	44	46	48	52	56	64	72
n_1 [rpm]	Pitch Ø d_0 [mm]															
	124.78	129.23	133.69	142.60	151.52	160.43	169.34	178.25	187.17	196.08	204.99	213.90	231.73	249.55	285.21	320.86
10	1.34	1.40	1.45	1.56	1.68	1.79	1.91	2.02	2.14	2.26	2.38	2.50	2.74	2.99	3.48	3.99
20	2.31	2.41	2.50	2.70	2.89	3.09	3.29	3.49	3.69	3.89	4.10	4.31	4.72	5.15	6.00	6.88
40	3.98	4.15	4.31	4.65	4.98	5.32	5.67	6.01	6.36	6.71	7.06	7.42	8.14	8.87	10.35	11.86
60	5.47	5.70	5.93	6.39	6.85	7.32	7.79	8.27	8.74	9.23	9.71	10.20	11.19	12.19	14.23	16.30
100	8.17	8.51	8.85	9.54	10.23	10.93	11.63	12.34	13.06	13.78	14.51	15.24	16.72	18.21	21.25	24.35
200	14.09	14.67	15.26	16.44	17.63	18.84	20.05	21.27	22.51	23.75	25.00	26.26	28.81	31.38	36.62	41.96
300	19.37	20.17	20.98	22.60	24.24	25.90	27.57	29.25	30.95	32.66	34.38	36.11	39.61	43.15	50.35	57.69
400	24.28	25.29	26.30	28.33	30.39	32.46	34.55	36.66	38.79	40.93	43.09	45.26	49.65	54.09	63.11	72.31
500	28.93	30.13	31.33	33.76	36.21	38.68	41.17	43.69	46.22	48.77	51.34	53.93	59.16	64.45	75.20	86.16
600	33.38	34.77	36.15	38.95	41.78	44.63	47.51	50.41	53.34	56.28	59.25	62.23	68.26	74.37	86.77	99.42
700	37.68	39.24	40.81	43.97	47.16	50.38	53.62	56.90	60.20	63.52	66.87	70.24	77.05	83.94	97.94	112.22
800	41.85	43.58	45.32	48.83	52.37	55.95	59.55	63.19	66.85	70.55	74.26	78.01	85.57	93.22	108.77	124.62
950	47.89	49.87	51.87	55.88	59.94	64.03	68.16	72.32	76.51	80.74	84.99	89.28	97.93	106.68	124.48	142.63
1000	49.86	51.92	54.00	58.18	62.40	66.66	70.96	75.29	79.66	84.06	88.49	92.95	101.95	111.07	129.60	148.49
1200	57.54	59.92	62.31	67.13	72.01	76.92	81.88	86.88	91.92	97.00	102.11	107.25	117.65	128.16	149.55	171.35
1450	66.75	69.52	72.29	77.89	83.54	89.25	95.00	100.80	106.65	112.54	118.47	124.44	136.50	148.70	173.51	198.80
1600	72.12	75.10	78.10	84.15	90.26	96.42	102.63	108.90	115.22	121.58	127.99	134.44	147.47	160.65	187.45	214.78
1800	79.11	82.38	85.67	92.31	99.00	105.76	112.58	119.45	126.38	133.36	140.39	147.47	161.76	176.22	205.62	235.59
2000	85.93	89.49	93.06	100.27	107.54	114.89	122.29	129.76	137.28	144.87	152.50	160.19	175.71	191.42	223.35	255.91
2200	92.61	96.44	100.29	108.06	115.90	123.81	131.80	139.84	147.95	156.12	164.35	172.64	189.36	206.29	240.71	275.80
2400	99.16	103.26	107.39	115.70	124.10	132.57	141.12	149.73	158.42	167.16	175.97	184.84	202.76	220.88	257.73	295.31
2600	105.59	109.96	114.35	123.21	132.15	141.17	150.27	159.45	168.69	178.01	187.39	196.84	215.91	235.21	274.45	
2850	113.49	118.18	122.90	132.42	142.03	151.72	161.50	171.37	181.30	191.32	201.40	211.55	232.05	252.80	294.97	
3000	118.15	123.04	127.95	137.86	147.86	157.96	168.14	178.41	188.76	199.18	209.68	220.25	241.59	263.19		
3500	133.35	138.87	144.42	155.60	166.89	178.29	189.78	201.37	213.05	224.81	236.66	248.59				
4000	148.10	154.22	160.39	172.80	185.34	198.00	210.76	223.63	236.60	249.66	262.82					

Width factor c_6

Synchronous drive belt width [mm]	**40**	**55**	**85**	**115**	**170**
Width factor c_6	1	1.44	2.31	3.18	4.78

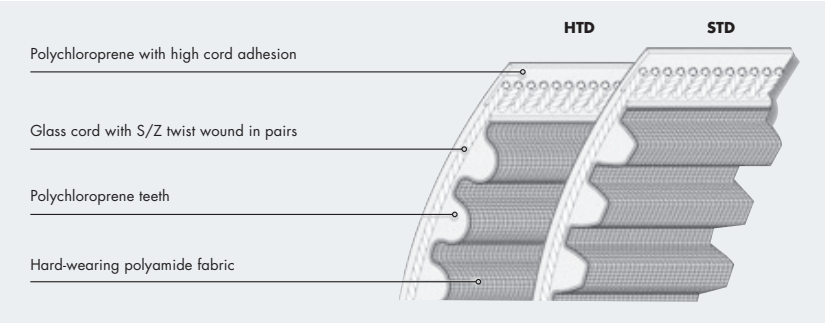
standard widths are highlighted in bold

CONTI® SYNCHROLINE

The CONTI® SYNCHROLINE was developed for use in automatic door opening systems. Its excellent length stability ensures high operational reliability and a long maintenance-free service life. As a lifetime product it is very hard-wearing and its matched materials ensure it runs smoothly in continuous operations. It is easy to handle and to mount. It enjoys reliable in-service behaviour even under frequent load changes.

Areas of application

The CONTI® SYNCHROLINE is used in automatic door opening systems.



Properties

- moderate oil-resistance
- suitable for temperatures ranging from –20°C to +100°C according to application
- resistant to ozone
- maintenance-free

Versions

The CONTI® SYNCHROLINE is available in the following profiles and widths: 5M, 8M (HTD profile) and S8M (STD profile) in widths of 10 mm, 12 mm, 15 mm and 20 mm.

HTD

Profile	Belt width [mm]
HTD 5M	10–20
HTD 8M	10–20

STD

Profile	Belt width [mm]
STD S8M	10–20

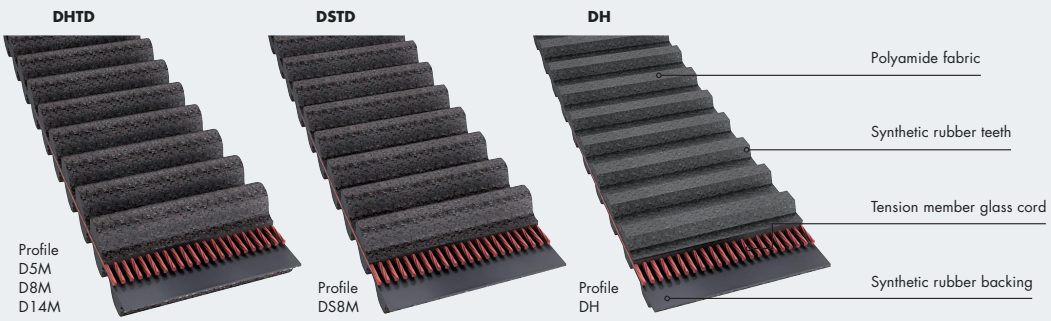
CONTI® SYNCHROTWIN

The CONTI® SYNCHROTWIN double-sided timing belt is a drive element that allows opposing motion drives even in high output classes. The heavy-duty versions CXP for high rpm rates and CXA (on request) for high torques are characterized by their constant length and the teeth's high resistance to deformation. The standard version allows a particularly economic synchronous power transmission on both sides in the lower and middleperformance range.

Side A		Side B		Total
50%		50%		
60%	+	40%	=	100 %
20%		80%		

Areas of application

CONTI® SYNCHROTWIN double-sided timing belts are suitable for same-direction and opposing rotary movements. They hence enable compact space- and weight-saving drives with an efficiency of up to 98%.



Properties

- conditionally resistant to oil
- temperature range, depending on application, from –20°C to +100°C
- electrically conductive according to ISO 9563
- suitable for tropical climates
- resistant to aging and ozone
- maintenance-free
- suitable for counterbending
- increased power ratings

Versions

The CONTI® SYNCHROTWIN is available in three versions: The heavy-duty versions with aramid-fibre-reinforced elastomer enables the sense of rotation to be reversed even for high rpm rates and torques. The standard version allows economic solutions in the lower and middle performance range and is also available in the DH trapezoidal profile. The standard version allows economic solutions in the lower and middle performance range and is also available in the DH trapezoidal profile.

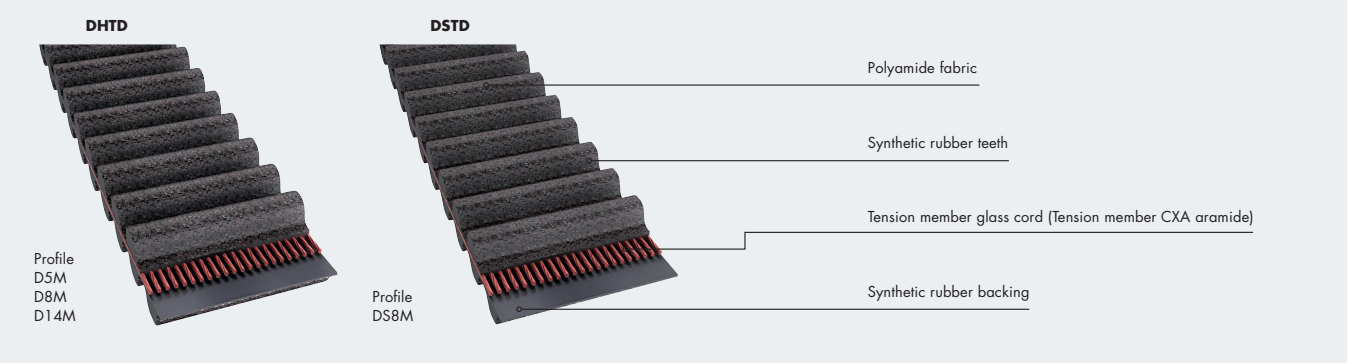
Profile	**CXP range L_B*** [mm]	**Standard range L_B*** [mm]
DHTD D5M	565–1500	565–1500
DHTD D8M	600–2400	600–2400
DHTD D14M	966–2310	966–2310
DSTD DS8M	600–2392	600–2392
DH		658.80–1905.00

*L_B = belt length
SYNCHROTWIN CXA – on demand

CONTI® SYNCHROTWIN CXP

Properties

- conditionally resistant to oil
- temperature range, depending on application, from –20°C to +100°C
- electrically conductive to ISO 9563
- suitable for tropical climates
- resistant to aging and ozone
- maintenance-free
- suitable by counterbending
- increased power rating



DHTD

Profile	Length range L_B [mm]
DHTD D5M CXP	565–2000
DHTD D8M CXP	600–2600
DHTD D14M CXP	966–2450

DSTD

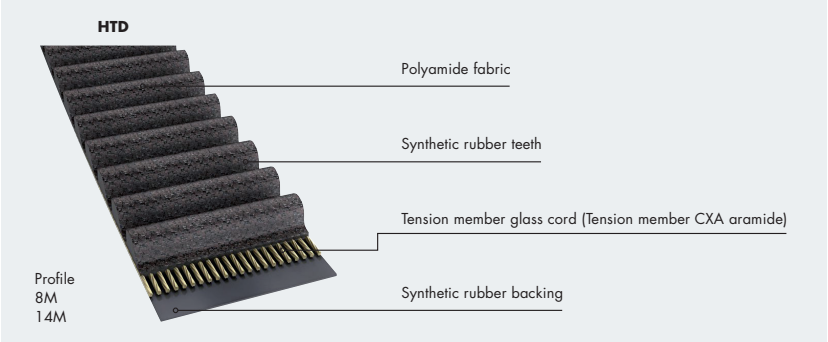
Profile	Length range L_B [mm]
DSTD DS8M CXP	600–2392

CONTI® SYNCHROCOLOR

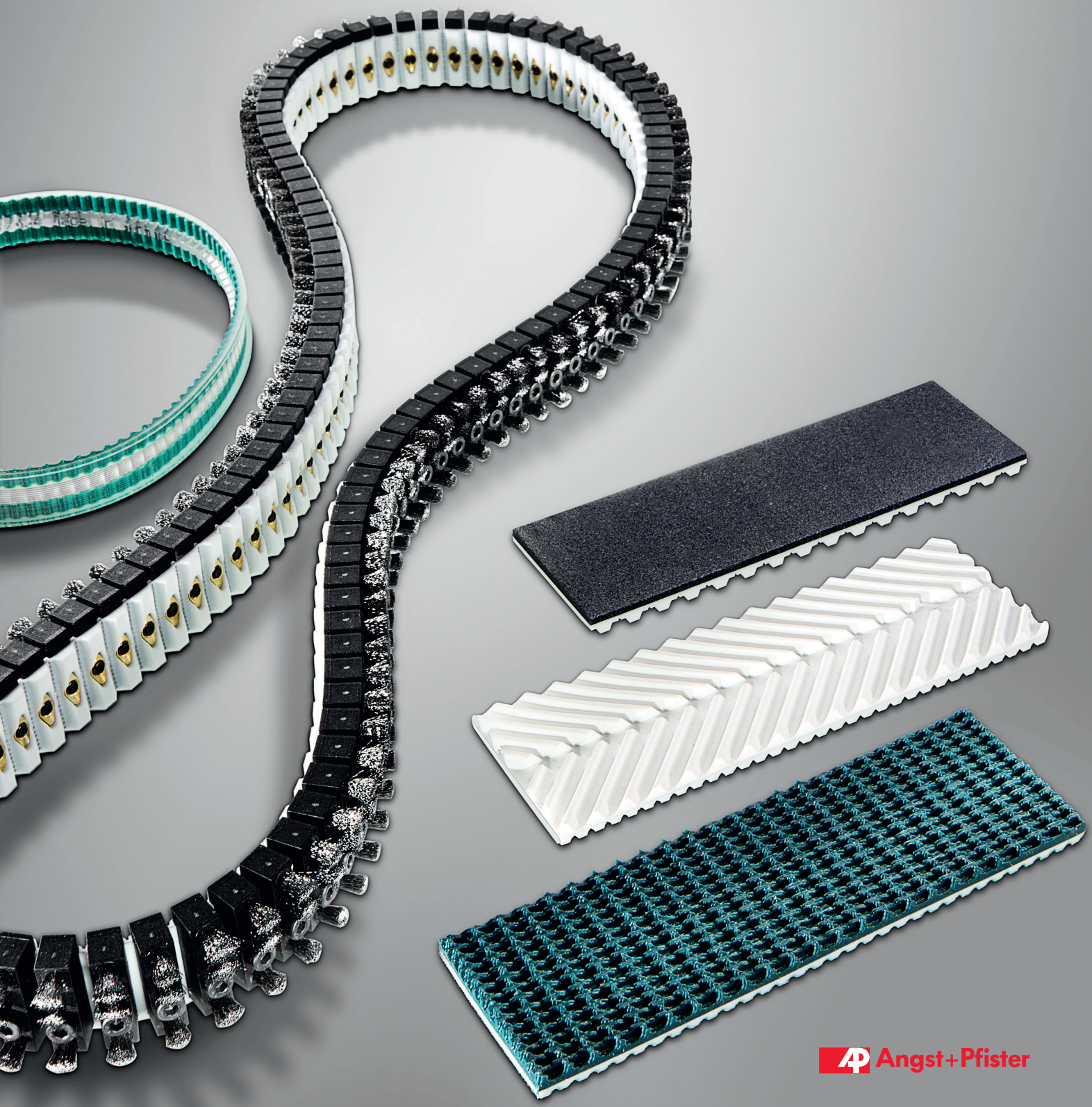
The CONTI® SYNCHROCOLOR was developed specifically for the conditions encountered in painting lines and skid units. Thanks to their distinctive and silicone-free material compounding and purity of the surface, CONTI® SYNCHROCOLOR timing belts do not contain any substances that damage paintwork.

Properties

- temperature range, depending on application, from –20°C to +100°C
- paint compatible
- free of silicon
- electrically conductive according to ISO 9563
- conditionally resistant to oil
- ozone-resistant
- suitable for tropical climates
- ageing-resistant
- suited for counterbending and back-tensioners
- maintenance free

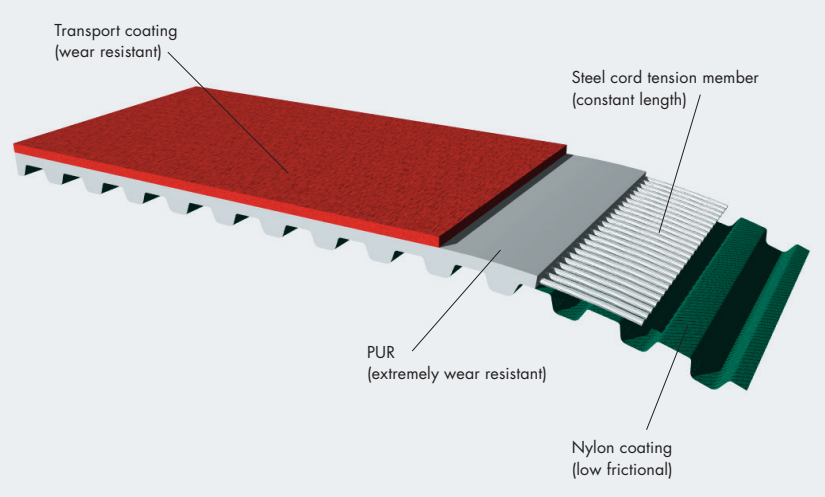


Timing Belt Reworking and Coatings



Angst+Pfister

Introduction



Timing belt construction

BRECO® and BRECOFLEX® timing belts consist of wear resistant polyurethane (PUR) and high tensile steel cords. The coating options of the timing belts provide a variety of application possibilities in transport technology.

Correct coating selection depends on the properties of the conveyed item and the required grip. Main factors for an efficient transport application are:
- high friction for non-slip conveyance
- soft or hard coatings depending on characteristics of transported material
- low friction to reduce drag (PAZ/PAR)

Every material involved behaves 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 maintained by making incisions in thick coatings.

Resistance

Depending on the application, the resistance of each coating material is to be viewed separately. The material resistance depends, amongst 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 above approximately 40°C can reduce longevity.

Friction

The friction of the belt on a sliding guide generates heat. This increases with the weight of the items to be transported. The guide material must be selected such that the friction of the transport belt in contact with it, results in a minimum value. The guide should guarantee good heat dissipation under high pressure forces.

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

Information

Ask for advice on coatings over 75 mm wide and approximately 2 mm thick, due to different processing properties.

Drives with reverse bending

Coated timing belts are generally suitable for drives with reverse bending. In such applications, belts with very soft coatings (e.g., Sylomer) should be installed with reduced pretensioning. Coatings that are manufactured based on natural rubber, such as Linatex, can be used for reverse bending applications only to a limited extent. Please consult our technical staff for further information.

Temperature effect / synchronising pulley diameter

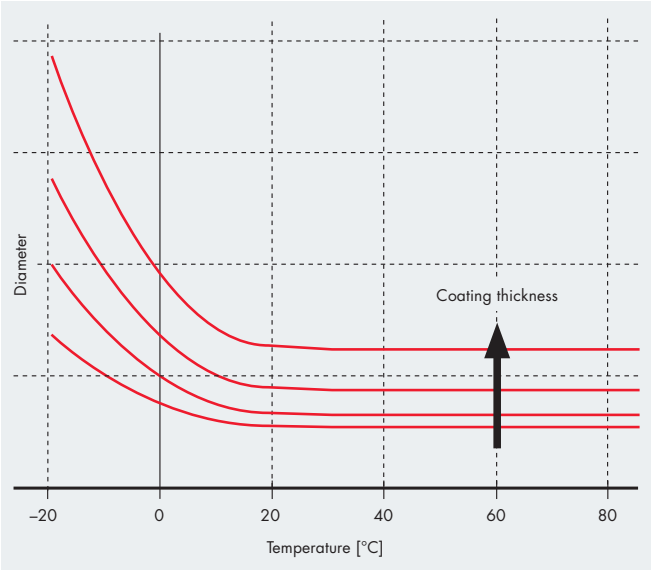
When transporting hot goods (above approx. 80°C) it must be ensured that the duration of contact is as short as possible, to avoid heating the belt substructure to above 80°C. For a short period of time, a coated belt can withstand higher thermal stress, as long as sufficient cooling is provided in the remaining cycle period.

For temperatures above approximately 60°C the tooth shear strength reduces slightly. An additional safety measure is only needed if the teeth are subjected to major stress.

At low ambient temperatures, the flexibility of the coating reduces. Larger diameters for the timing pulleys should therefore be selected compared to normal temperature conditions (see diagram). The flexibility of the timing belt also reduces at low temperatures.

The minimum diameters serve as a guideline. They apply at an ambient temperature of 20°C and linear speed of 1 m/s, also assuming a low burden from the transported goods. If the exact application details are known, it is possible to reduce the diameters.

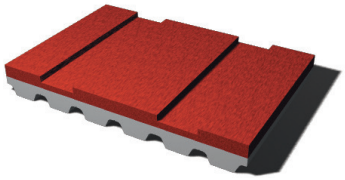
The minimum pulley diameters shown in the following tables for the different coatings, apply for homogeneous coatings with an even thickness. Interruptions in the coating, e.g., due to cuts or grooves, cause significant notch effects and require considerably higher minimum diameters.



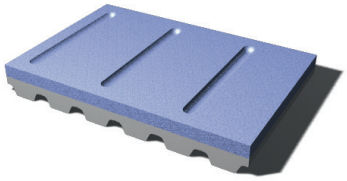
Timing pulley diameter related to the temperature

Mechanical reworking

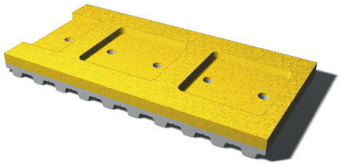
PU timing belts can be mechanically processed to obtain specific functional characteristics. Timing belts with thicker than standard backs offer a broad range of possibilities for engineers and are available also for mechanical processing.



Available versions:
- version T
- version DR
- coated timing belt

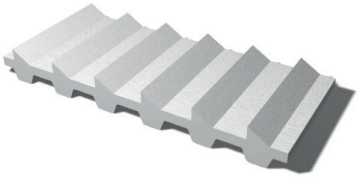


Please note that timing belts with thicker backs are less flexible and require pulleys with larger diameters. Better flexibility is achieved through transverse grooves or slits.



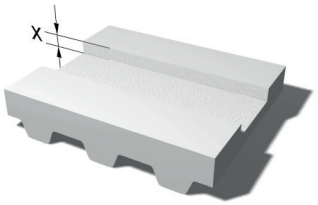
Perforated PU timing belts are used in vacuum transport systems. The preferred version of these timing belts is manufactured with cord free zones. Flex timing belts are also available for this purpose.

Backside cross milling



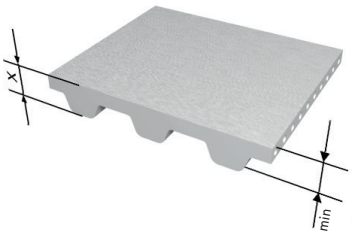
Cross grooves on the belt back enhance the flexibility of the belt. Milled grooves are, in as much as they are possible from the technical feasibility point of view, used to improve safe loading and secure positioning of the products on the belt.

Backside longitudinal milling



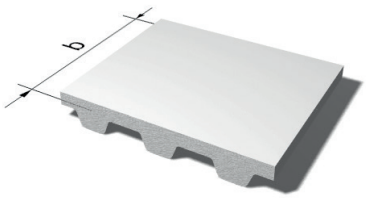
Independent of the belt pitch, the belt back shaping offers a wide range of design variants for customised solutions. In this manner, belt guiding can be achieved by a trapezoidal back profile, or a round section supported and moved by means of a prism shaped cross section. Dimensions are to be indicated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

Backside grinding



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

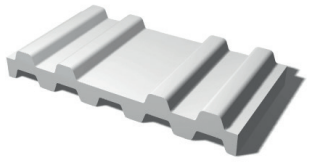
Grinded belt edges



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.

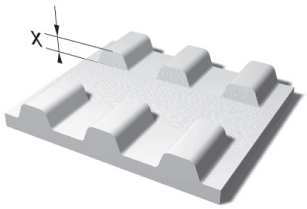
Removal of teeth

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 position the transported goods in a specific location.



Milling of teeth lengthwise

Timing belts with tooth profiles milled lengthwise are often used in combination with cord-free zones in vacuum transport systems.



Perforation of timing belts

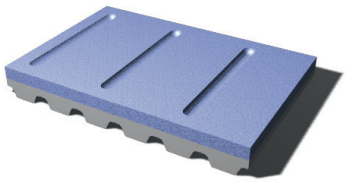
The use of perforated timing belts is preferred for areas without tension members (to a limited degree also available as Flex timing belts) and areas with teeth removed in the longitudinal direction, for vacuum applications. The multitude of design possibilities for timing belts in the field of vacuum applications, ranges from the transport of delicate films up to sheet bars of several square meters in size.

Mechanical processing

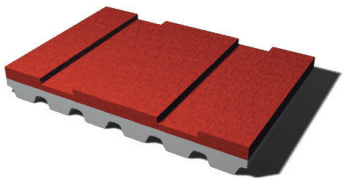
Coated timing belts can be mechanically reworked for special functional characteristics, depending on the properties of the coating.

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.

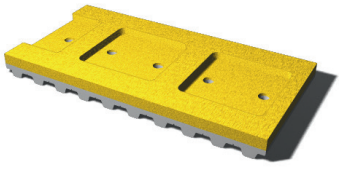
Perforated timing belts are used in vacuum transport systems. Flex timing belts are also available for this purpose. The preferred version of timing belts is manufactured with cord-free zones. The teeth are milled accordingly.



Sylomer - blue (groove milled)



Linatex (Cross milled)

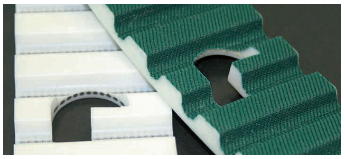


PU - yellow (square milled with bore holes)

Water jet cutting

- precise
- fast
- clean
- variety of uses
- environmentally friendly

In addition to milling, drilling, stamping and grinding, timing belts can also be reworked with a water jet cutting machine. Water jet cutting offers a wide range of possibilities. A variety of cut-out contours can be obtained 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

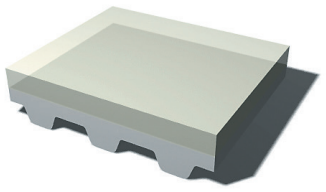
Coatings for general transport purposes (glass, wood, metal, paper, textiles, cardboard packaging, wet area)

T version (extruded)

Properties		
Color	transparent	
Standard thickness [mm]	1.5 (5 mm pitch)	2 (pitch 10 mm, 15 mm, 20 mm, inch pitch)
Min. pulley diameter [mm]	80	80
Material/hardness	polyurethane/approx. 85 Shore A	
Tolerances	tolerance for total thickness (timing belt + coating) ±0.4 mm (grinded ±0.1 mm possible)	
Temperature resistance	–20°C to +80°C	
Chemical resistance	resistant to simple oils and grease, petrol, ozone	
Processing	contours can be grinded and milled and surface grinded	

PU 385

Properties				
Color	transparent			
Standard thickness [mm]	3	4	5	6
Min. pulley diameter [mm]	80	120	150	180
Material/hardness	polyurethane/approx. 85 Shore A			
Tolerances	tolerance for total thickness (timing belt + coating) ±0.4 mm (grinded ±0.1 mm possible)			
Temperature resistance	–20°C to +80°C			
Chemical resistance	resistant to simple oils and grease, petrol, ozone			
Processing	contours can be grinded and milled and surface grinded			



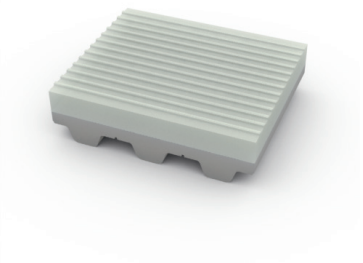
HV film

Properties		
Color	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) ±0.4 mm (grinded ±0.1 mm possible)	
Temperature resistance	–20°C to +80°C	
Chemical resistance	resistant to simple oils and grease	
Processing	contours can be grinded and milled	

Coatings for general transport purposes

T-groove (TR1 and TR2)

Properties		
Color	transparent	
Standard thickness [mm]	TR1: 2.4 Groove depth: 0.5	TR2: 2.5 Groove depth: 1.4
Min. pulley diameter [mm]	80	80
Material/hardness	polyurethane/approx. 85 Shore A	
Tolerances	tolerance for total thickness (timing belt + coating) ±0.5 mm	
Temperature resistance	–20°C to +80°C	
Chemical resistance	resistant to simple oils and grease, petrol, ozone	
Processing	–	

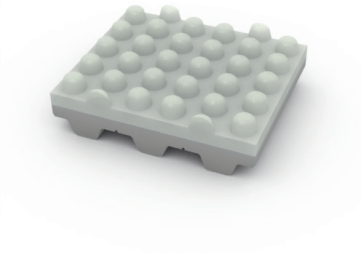


WM 385

Properties	
Color	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°C
Chemical resistance	resistant to simple oils and grease, petrol, ozone
Processing	–

NP 385

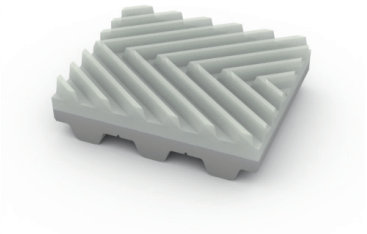
Properties	
Color	transparent
Standard thickness [mm]	4
Min. pulley diameter [mm]	120
Material/hardness	polyurethane/approx. 85 Shore A
Tolerances	tolerance for total thickness (timing belt + coating) ±0.4 mm
Temperature resistance	–20°C to +80°C
Chemical resistance	resistant to simple oils and grease, petrol, ozone
Processing	–



Coatings for general transport purposes

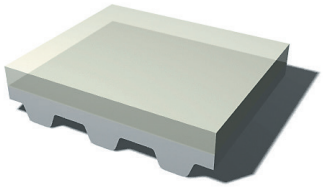
FG 385

Properties	
Color	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°C
Chemical resistance	resistant to simple oils and grease, petrol, ozone
Processing	–
Note	The symmetrical position of the coating profile on the belt is not ensured. If this is required, please specify when ordering



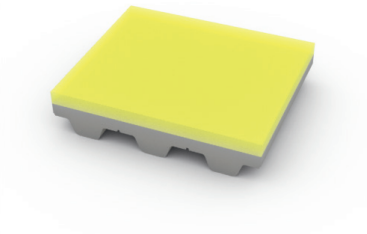
PU 60

Properties					
Color	transparent				
Standard thickness [mm]	2	3	4	5	6
Min. pulley diameter [mm]	80	80	120	150	180
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°C				
Chemical resistance	resistant to simple oils and grease, petrol, ozone				
Processing	contours can be grinded and milled and surface grinded				
Special feature	high wear resistance				



Polythan D15

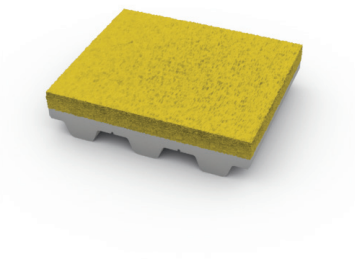
Properties					
Color	light yellow-transparent, other colors upon request				
Standard thickness [mm]	2	3	4	5	6
Min. pulley diameter [mm]	60	80	80	100	100
Material/hardness	polyurethane / approx. 70 Shore A				
Tolerances	tolerance for total thickness (timing belt + coating) ±0.6 mm (grinded ±0.1 mm possible)				
Temperature resistance	–20°C to +80°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				



Coatings for general transport purposes

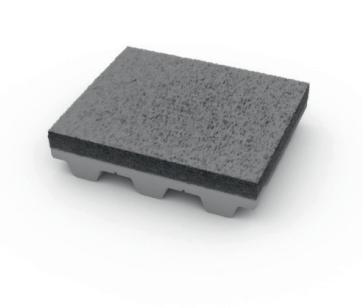
PU yellow

Properties							
Color	yellow						
Standard thickness [mm]	2	3	4	5	6	8	10
Min. pulley diameter [mm]	70	70	90	110	110	110	130
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°C						
Chemical resistance	resistant to simple oils, grease, petrol and ozone						
Processing	contours can be grinded and milled and surface grinded						
Other areas of use	solar industry						



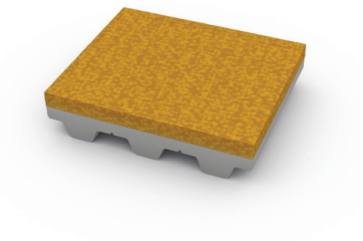
Pu grey

Properties							
Color	grey						
Standard thickness [mm]	2	3	4	5	6	8	10
Min. pulley diameter [mm]	70	70	90	110	110	110	130
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°C						
Chemical resistance	resistant to simple oils and grease, not water-resistant						
Processing	contours can be grinded and milled and surface grinded						



Celloflex

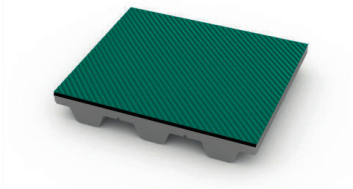
Properties							
Color	light yellow-brown						
Standard thickness [mm]	2	3	4	5	6	8	10
Min. pulley diameter [mm]	40	60	60	80	80	100	120
Material/hardness	microcellular elastomer polyurethane / approx. 350 kg/m³						
Tolerances	tolerance for total thickness (timing belt + coating) ±0.7						
Temperature resistance	–30°C to +80°C						
Chemical resistance	resistant to simple oils and grease, ozone						
Processing	contours can be grinded and milled and surface grinded						



Coatings for general transport purposes

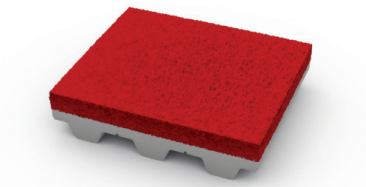
Hamid

Properties	
Color	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	–



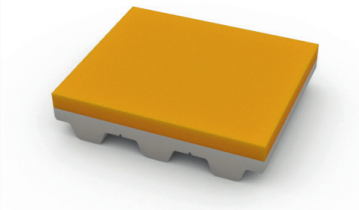
Linatex HM

Properties							
Color	red						
Standard thickness [mm]	2	3	4	5	6	8	10
Min. pulley diameter [mm]	60	80	80	80	100	100	120
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	above 3 mm coating thickness please ask for advice						



RP 430

Properties					
Color	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				



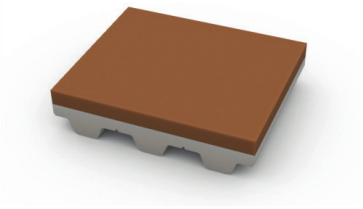
Coatings for general transport purposes

Correx

Properties		
Color	light brown	
Standard thickness [mm]	6	10
Min. pulley diameter [mm]	80	120
Material/hardness	para rubber / approx. 36 Shore A	
Tolerances	tolerance for total thickness (timing belt + coating) ±0.7 mm (grinded ±0.2 mm possible)	
Temperature resistance	up to approx. +70°C	
Chemical resistance	resistant to simple oils and grease	
Processing	contours can be grinded and milled to some extent and surface grinded	

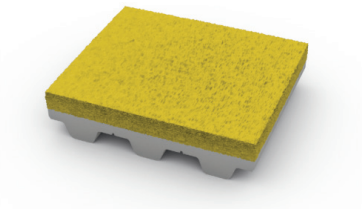
Sylomer brown

Properties			
Color	light brown		
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

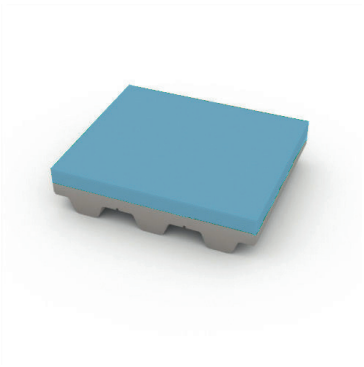
Properties			
Color	yellow		
Standard thickness [mm]	6	12	(other thicknesses upon request)
Min. pulley diameter [mm]	60	80	
Material/hardness	mixed cell polyurethane / 150 kg/m³		
Tolerances	tolerance for total thickness (timing belt + coating) ±0.7 mm (grinded ±0.3 mm possible)		
Temperature resistance	–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		



Coatings for general transport purposes

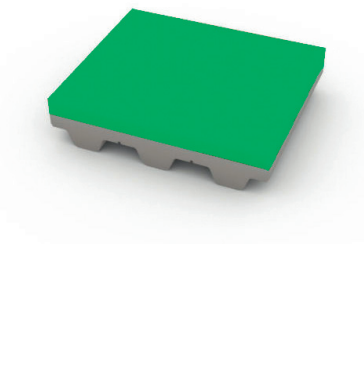
Sylomer blue

Properties			
Color	blue		
Standard thickness [mm]	6	12	(other thicknesses upon request)
Min. pulley diameter [mm]	60	80	
Material/hardness	mixed cell polyurethane / 220 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		



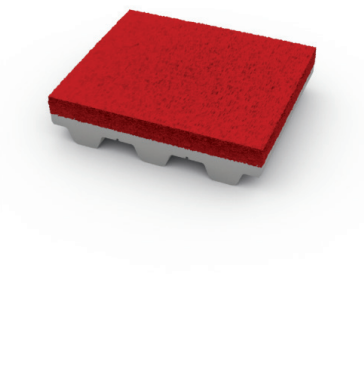
Sylomer green

Properties			
Color	green		
Standard thickness [mm]	6	12	(other thicknesses upon request)
Min. pulley diameter [mm]	60	80	
Material/hardness	mixed cell polyurethane / 300 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 red

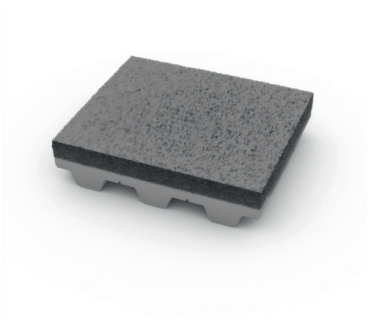
Properties			
Color	red		
Standard thickness [mm]	6	12	(other thicknesses upon request)
Min. pulley diameter [mm]	80	100	
Material/hardness	mixed cell polyurethane / 510 kg/m³		
Tolerances	tolerance for total thickness (timing belt + coating) ±0.7 mm (grinded ±0.3 mm possible)		
Temperature resistance	–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		



Coatings for general transport purposes

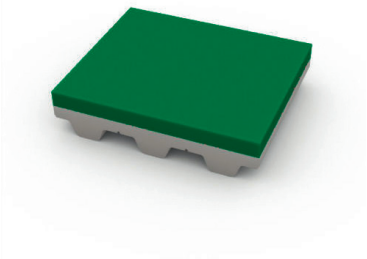
Sylomer grey

Properties			
Color	grey		
Standard thickness [mm]	6	12	(other thicknesses on request)
Min. pulley diameter [mm]	80	100	
Material/hardness	mixed cell polyurethane / 680 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		



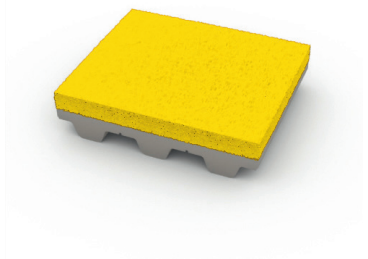
Sylodyn green

Properties	
Color	green
Standard thickness [mm]	6
Min. pulley diameter [mm]	100
Material/hardness	closed-cell polyurethane / 600 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



Sylodyn yellow

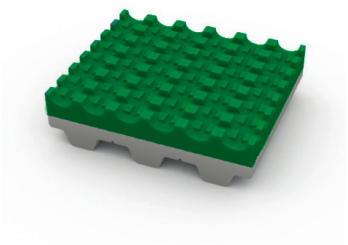
Properties	
Color	yellow
Standard thickness [mm]	6
Min. pulley diameter [mm]	80
Material/hardness	closed-cell polyurethane / 450 kg/m³
Tolerances	tolerance for total thickness (timing belt + coating) ±0.7 mm (grinded ±0.3 mm possible)
Temperature resistance	–30°C to +70°C
Chemical resistance	resistant to simple oils and grease
Processing	contours can be grinded and milled to some extent and surface grinded



Coatings for general transport purposes

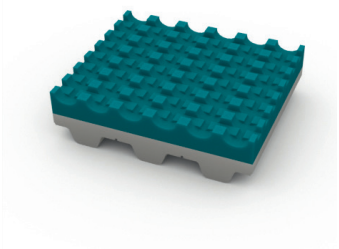
Supergrip green

Properties	
Color	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 +70°C
Chemical resistance	limited resistance to solvents, oils, and greases; resistant to acids and alkalis
Processing	–



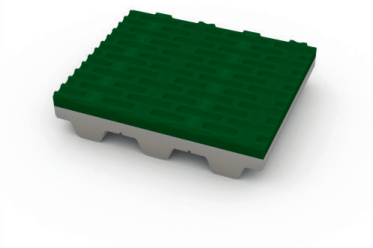
Supergrip blue

Properties	
Color	blue-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; silicon free
Processing	–



Minigrip green

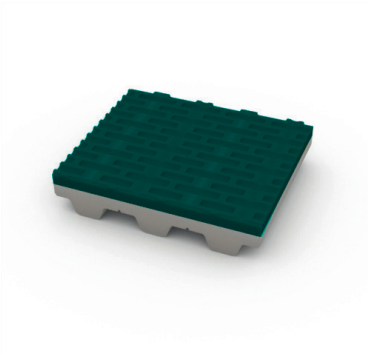
Properties	
Color	green
Standard thickness [mm]	1.5
Min. pulley diameter [mm]	30
Material/hardness	PVC / approx. 65 Shore A
Tolerances	tolerance for total thickness (timing belt + coating) ±0.5 mm
Temperature resistance	–10°C to +110°C
Chemical resistance	resistant to oils, greases, acids, and alkalis
Processing	–



Coatings for general transport purposes

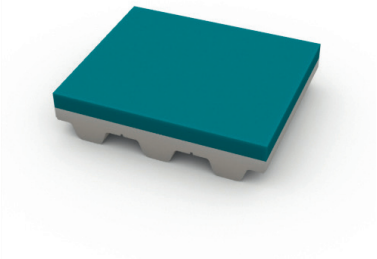
Minigrip blue

Properties	
Color	blue-green
Standard thickness [mm]	1.5
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	–



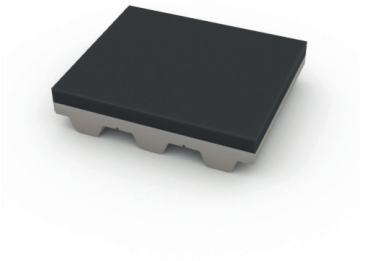
PVC film blue

Properties		
Color	blue	
Standard thickness [mm]	1	(2/3/4/5/6 mm upon request)
Min. pulley diameter [mm]	30	
Material/hardness	PVC / approx. 65 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	



Porol

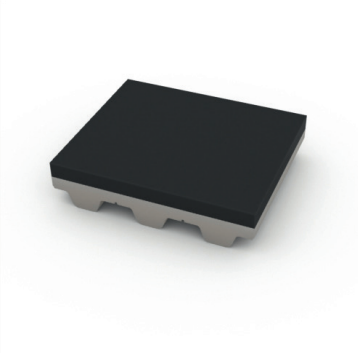
Properties			
Color	black		
Standard thickness [mm]	3	5	10
Min. pulley diameter	40	60	80
Material/hardness	closed-cell cellular rubber / 160 – 200 kg/m³		
Tolerances	tolerance for total thickness (timing belt + coating) ±0.7 mm		
Temperature resistance	–40°C to +75°C		
Chemical resistance	resistant to water, seawater, methanol, acetone, detergent, acids, and alkalis		
Processing	–		



Coatings for general transport purposes

NBR 65

Color	black	
Standard thickness [mm]	1.5	3
Min. pulley diameter [mm]	60	80
Material/hardness	Nitril rubber / approx. 60–70 Shore A	
Tolerances	tolerance for total thickness (timing belt + coating) ±0.6 mm (grinded ±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	



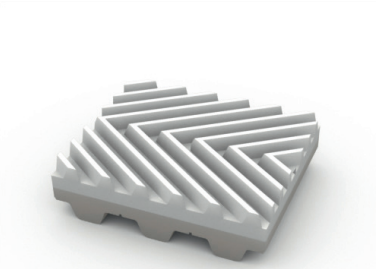
Coatings for food transport

Linaplus FG FDA

Properties			
Color	white		
Standard thickness [mm]	3	5	6
Min. pulley diameter [mm]	40	40	40
Material/hardness	vulcanised 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	resistant to chemicals; material does not leave pressure marks		
Processing	contours can be grinded and milled and surface grinded		
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		

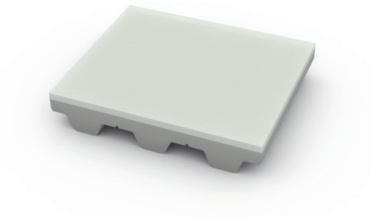
PVC herringbone FDA

Properties	
Color	white
Standard thickness [mm]	3
Min. pulley diameter [mm]	60
Material/hardness	PVC / approx. 65 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 Regulation (EC) 1935-2004, Regulation (EU) no. 10/2011 and European Commission Directives 90/128/EEC and 96/11/EC



HV film FDA

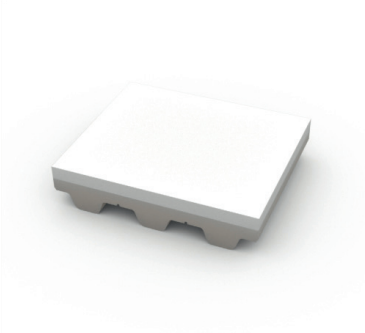
Properties		
Color	transparent glossy	
Standard thickness [mm]	1	2
Min. pulley diameter [mm]	60	80
Material/hardness	polyurethane / approx. 85 Shore A	
Tolerances	tolerance for total thickness (timing belt + coating) ±0.4 mm (grinded ±0.1 mm possible)	
Temperature resistance	–20°C to +80°C	
Chemical resistance	resistant to simple oils and grease	
Processing	contours can be grinded and milled	



Coatings for food transport

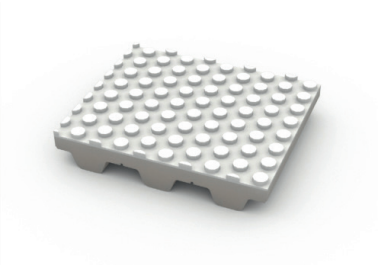
PVC film white FDA

Properties	
Color	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



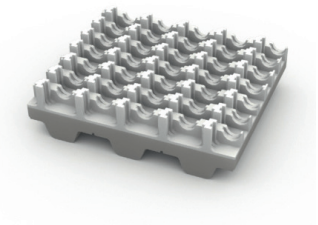
PVC dots white FDA

Properties	
Color	white
Standard thickness [mm]	1.5
Min. pulley diameter [mm]	60
Material/hardness	PVC / approx. 60 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



Supergrip FDA

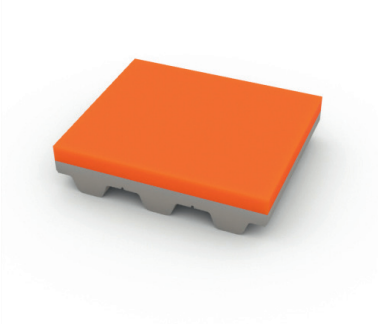
Properties	
Color	white
Standard thickness [mm]	4
Min. pulley diameter [mm]	60
Material/hardness	PVC / approx. 55 Shore A
Tolerances	tolerance for total thickness (timing belt + coating) ±0.5 mm
Temperature resistance	–10°C to +110°C
Chemical resistance	resistant to oils, greases, acids, and alkalis
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



Coatings for use at high temperatures

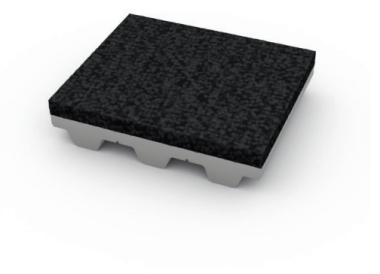
Linatrile

Properties			
Color	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		



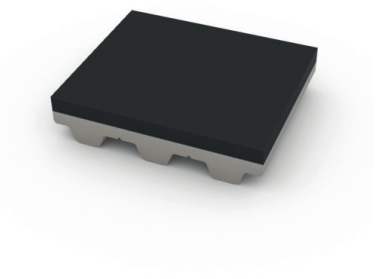
TT 60

Properties	
Color	black
Standard thickness [mm]	2
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	resistant to simple oils and greases; electrostatic properties
Processing	–
Areas of use	glass industry, as a conveyor belt in the warm area



Viton

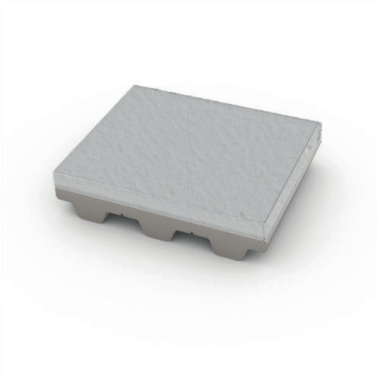
Properties		
Color	black	
Standard thickness [mm]	2	4
Min. pulley diameter [mm]	80	100
Material/hardness	synthetic fluoroelastomer / approx. 70 – 80 Shore A	
Tolerances	tolerance for total thickness (timing belt + coating) ±0.6 mm (grinded ±0.2 mm possible)	
Temperature resistance	–10°C to +190°C (up 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, cardboard packaging, transportation of glass and metal parts	



Coatings for use at high temperatures

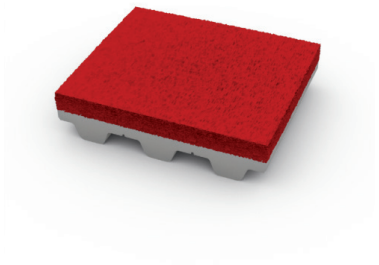
Chrome leather

Properties		
Color	grey	
Standard thickness [mm]	2	3
Min. pulley pdiameter [mm]	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	



Linard 60

Properties			
Color	red		
Standard thickness [mm]	3	5	6
Min. pulley diameter [mm]	60	60	60
Material/hardness	silica-reinforced natural rubber / approx. 60 Shore A		
Tolerancen	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		

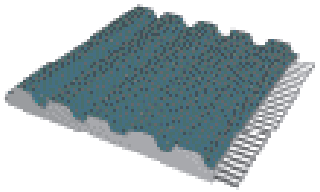


Coatings with low friction and electrically conductive properties

Coatings with low friction properties

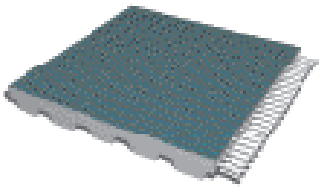
PAZ

Properties		
Color	green	
Standard thickness [mm]	0.5	0.8
Min. pulley diameter [mm]	15	25
Material/hardness	polyamide	
Tolerances	±0.2 mm	
Temperature resistance	–20°C to +50°C	
Chemical resistance	resistant to simple oils and grease	
Processing	–	



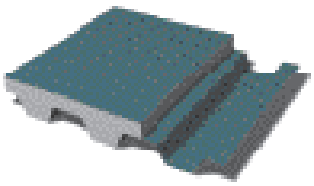
PAR

Properties		
Color	green	
Standard thickness [mm]	0.5	0.8
Min. pulley diameter [mm]	15	25
Material/hardness	polyamide	
Tolerances	±0.2 mm	
Temperature resistance	–20°C to +50°C	
Chemical resistance	resistant to simple oils and grease	
Processing	–	



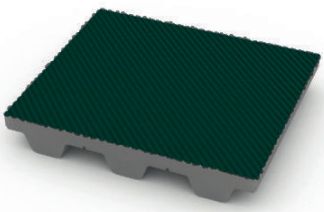
PAZ-PAR

Properties		
Color	green	
Standard thickness [mm]	0.5	0.8
Min. pulley diameter [mm]	15	25
Material/hardness	polyamide	
Tolerances	±0.2 mm	
Temperature resistance	–20°C to +50°C	
Chemical resistance	resistant to simple oils and grease	
Processing	–	



PA fabric, antistatic

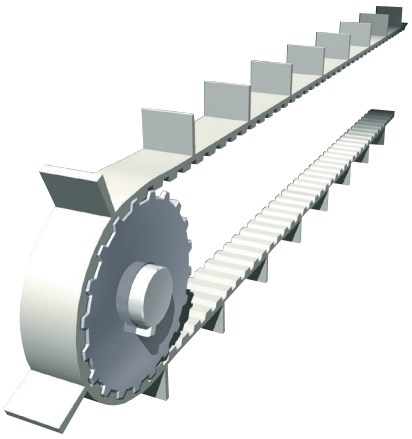
Properties	
Color	black
Standard thickness [mm]	0.6
Min. pulley diameter [mm]	20
Material/hardness	approx. 0.5 mm PU 385 / top layer 0.1 mm antistatic fabric
Tolerances	tolerance for total thickness (timing belt + coating) ±0.4 mm
Conductance	10^5 ohm when new
Potential applications	accumulation conveyors for electrical components



Applying profiles on belts

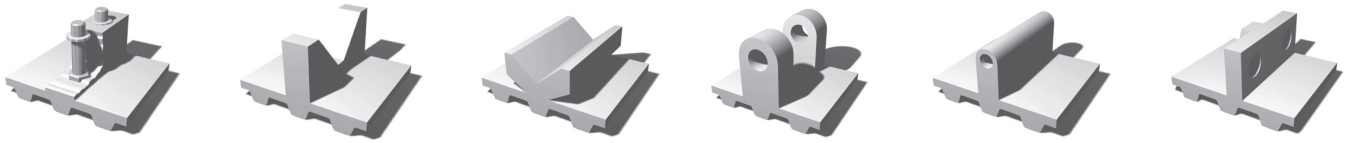
Welded on profiles

For whichever transport purpose timing belts are used, the belt can be fitted with any number and sequence of welded-on profiles.



Profile selection

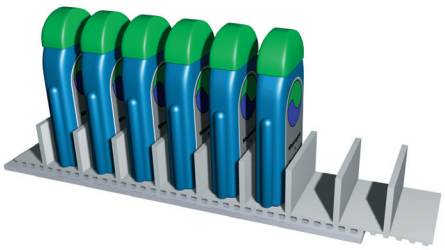
The profile is made out of polyurethane, the same high-quality compound as the timing belt. Depending on the transport requirement, the design can be customized according to the customer's demand. Therefore, an existing profile from our extensive stock can be used, or if needed, a semi-finished profile will be reworked accordingly. For exceptional requests and appropriate number of pieces, it is possible to manufacture new molds, to achieve the required solution.



Approach

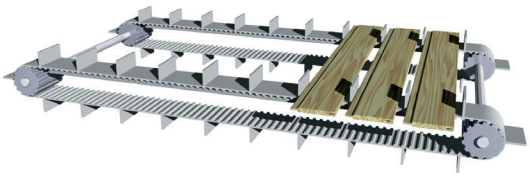
Belt length and pulley diameter are the basis for the drive selection, based on the machine configuration.

Many belt types from our manufacturing range can be equipped with flights/profiles. Timing belts together with guiding surfaces allow a reduced friction operation. PAZ version timing belts are also available to further reduce friction coefficient.



Profile selection

The material to be transported and the transport purpose influence the selection of the flight.



Over 3000 standard profiles

Profiles are manufactured as polyurethane moulded part. 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

Profiles from new tools

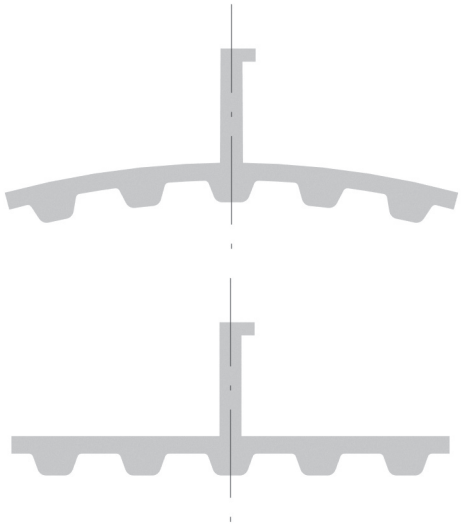
Within the framework of our production possibilities, there are practically no limitations for new design requirements as far as the shape of injection moulded flights are concerned. Costs for tools and moulds might apply.

Profile compound

The profiles consist of polyurethane, the same high-quality material as the timing belts themselves.

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 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

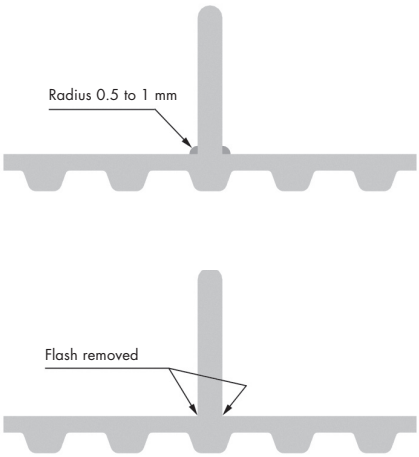
The reached profile position of each individual profile is ± 0.5 mm of the intended set point position. A tolerance of ± 0.5 mm is to be taken into account for the profile height.

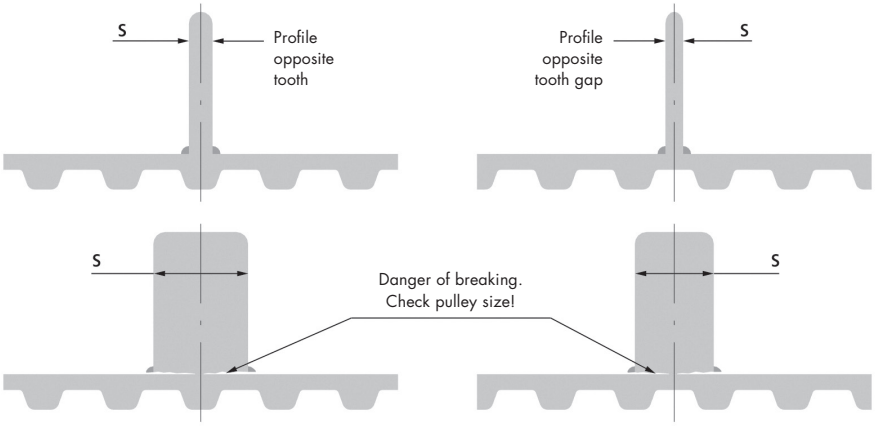
Ordering example

For the required timing belt with profiles the order should preferably be accompanied by a dimensional drawing. The timing belt with profiles can also be defined and transmitted by the order text. Example: Timing belt 50 T 10/5000 V-PAZ with welded-on profile, profile no. 2.3.2.015.008, number of profiles 100, profile pitch 50, profile position opposite the tooth.

Welding Flash

A flash builds up between flight and back of the belt. A polyurethane overhang with a 0.5 to 1 mm radius could form. Should the flash impair the intended function, ask for "flash removed" in your order information.





Profile thickness s

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

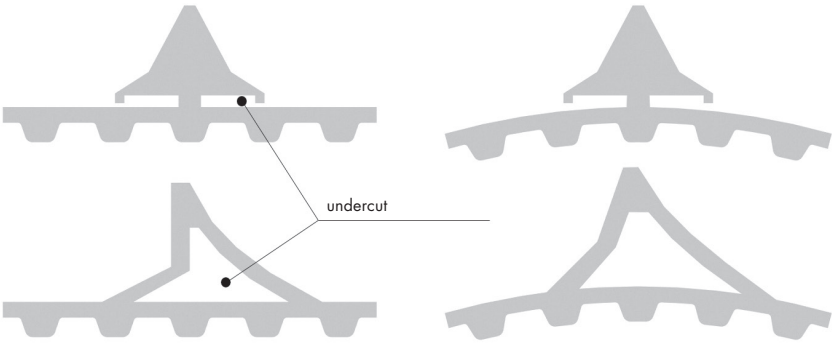
	Max. profile thickness [mm] when welded-on position is opposite tooth							**Max. profile thickness [mm] when welded-on position is opposite tooth gap**						
Number of teeth on pulley	**20**	**25**	**30**	**40**	**50**	**60**	**100**	**20**	**25**	**30**	**40**	**50**	**60**	**100**
T2.5	2.5	3	3	4	4.5	5	6	1.5	1.5	2	2	3	4	6
AT3	3	4	4	5	6	6.5	8	1.5	1.5	2	3	4	5	7
AT5/T5	5	6	6	8	9	10	12	2	2	3	4	6	8	10
AT10/T10	8	9	10	12	14	15	20	3	4	4	6	9	12	20
AT20/T20	12	13	15	18	20	23	30	5	5	6	8	12	20	30
MXL	2	2.5	2.5	3.5	4	4.5	5	1	1	1.5	1.5	2	3	5
XL	5	6	6	8	9	10	12	2	2	3	4	6	8	10
L	6	7	8	10	12	13	16	3	3	4	5	7	10	16
H	8	9	10	12	14	15	20	4	5	6	7	10	12	20
XH	13	14	15	18	20	23	30	5	5	6	8	12	20	30

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

- when the profile position is «opposite the tooth», profile thickness $s \leq 8$ 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).

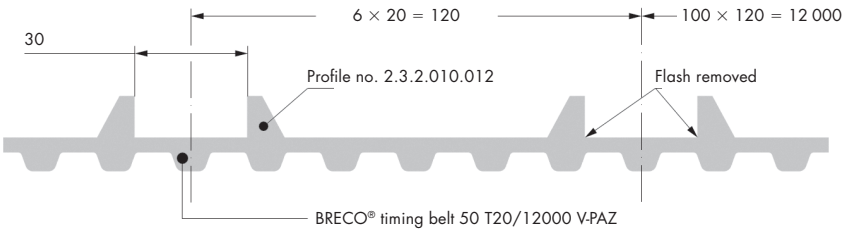
Profiles with undercut



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

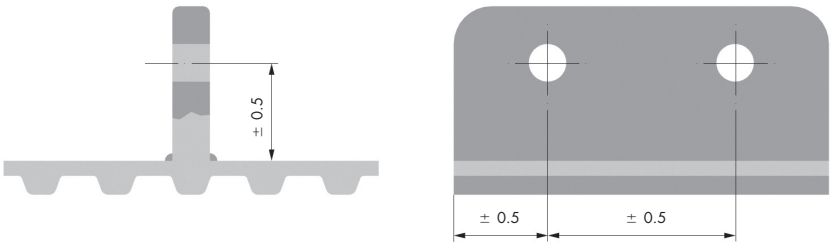
Profile pairs

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.



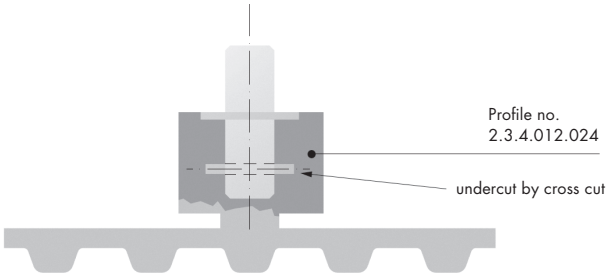
Profiles with bores

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



Profiles with moulded insert

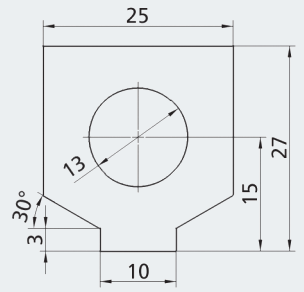
Profiles with moulded inserts can be manufactured for special functional characteristics. To shape moulded inserts (steel, aluminium or similar) please ensure the existence of appropriate undercuts. Remark: The orderer has to make available a sufficient number of moulded-in inserts with an approx. 5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



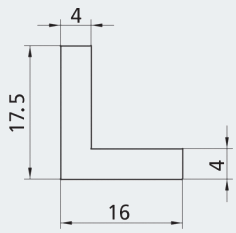
Joined version

Joining is made by welding the full profile fitting surface on the back of the belt.

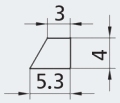
Selection of standard profiles



Depth: 50 mm
Profile no. 2.3.2.025.027



Depth: 48 mm
Profile no. 2.3.3.017.016



Depth: 25 mm
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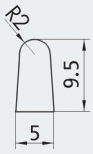

Depth: free
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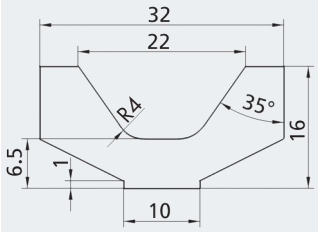

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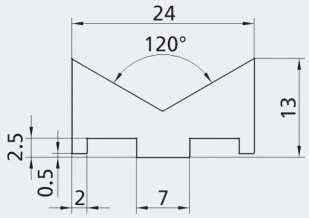

Depth: 15 mm
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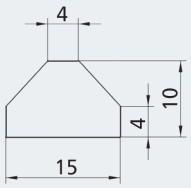

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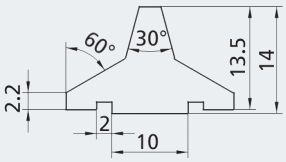

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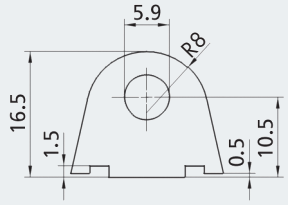

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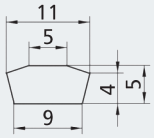

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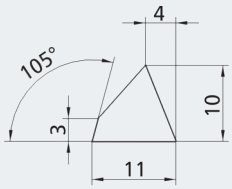
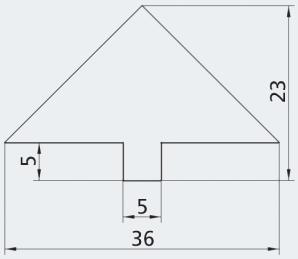


Depth: 98 mm
Profile no. 2.3.3.011.010



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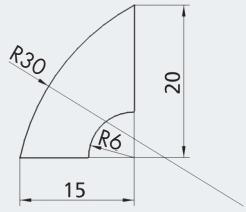

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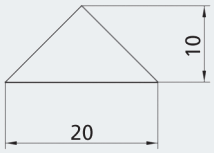

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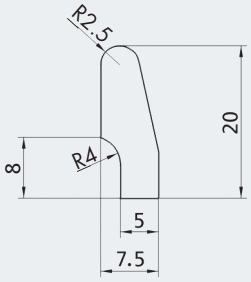

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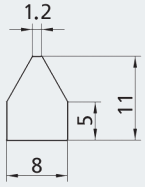

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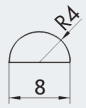

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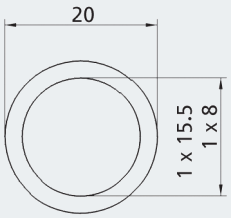

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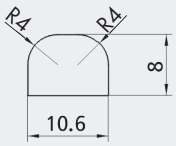

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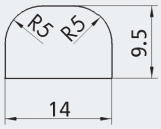

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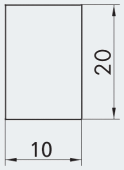

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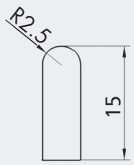

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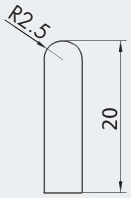

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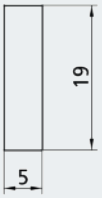

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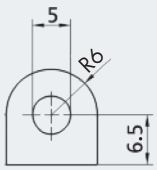

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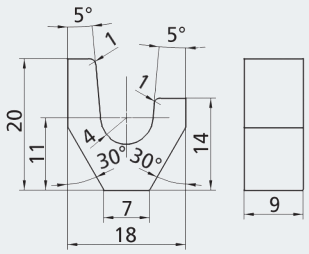

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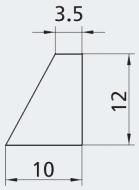

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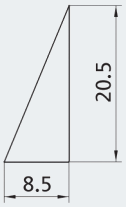

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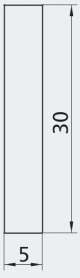

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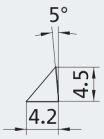

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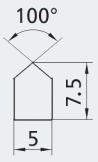

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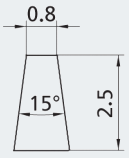

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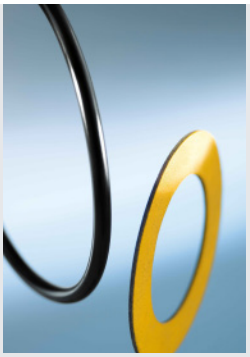
The Angst+Pfister Group is a leading international technical manufacturer and service provider for high-end industrial components. As a supply and solutions partner for engineering plastics, sealing, fluid handling, drive, and antivibration technology as well as sensors, Angst+Pfister combines efficient logistics concept with comprehensive product application engineering services. Besides providing customer-specific parts, the Group offers a product range consisting of approximately 100,000 standard items.

Our core product divisions

APSOplast®
Engineering Plastics
Technology



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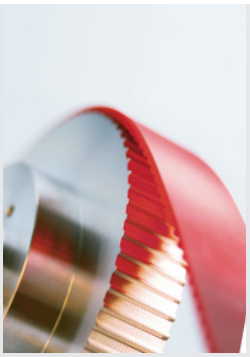
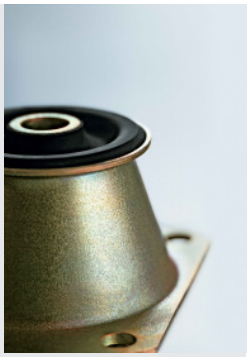
Technology

APSOfluid®
Fluid Handling
Technology



APSOdrive®
Drive
Technology



APSOvib®
Antivibration
Technology

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