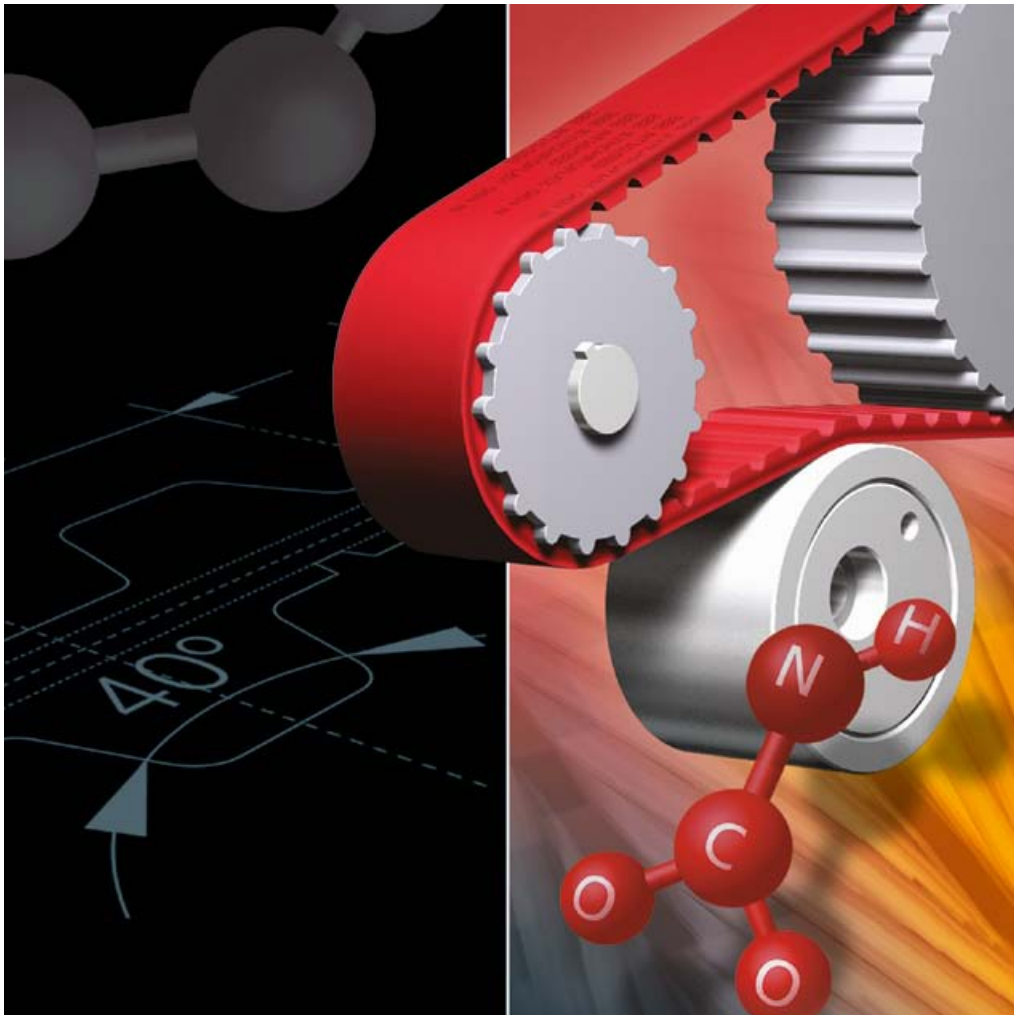
CONTI SYNCHROFLEX® Polyurethane Timing Belts
Overall catalog



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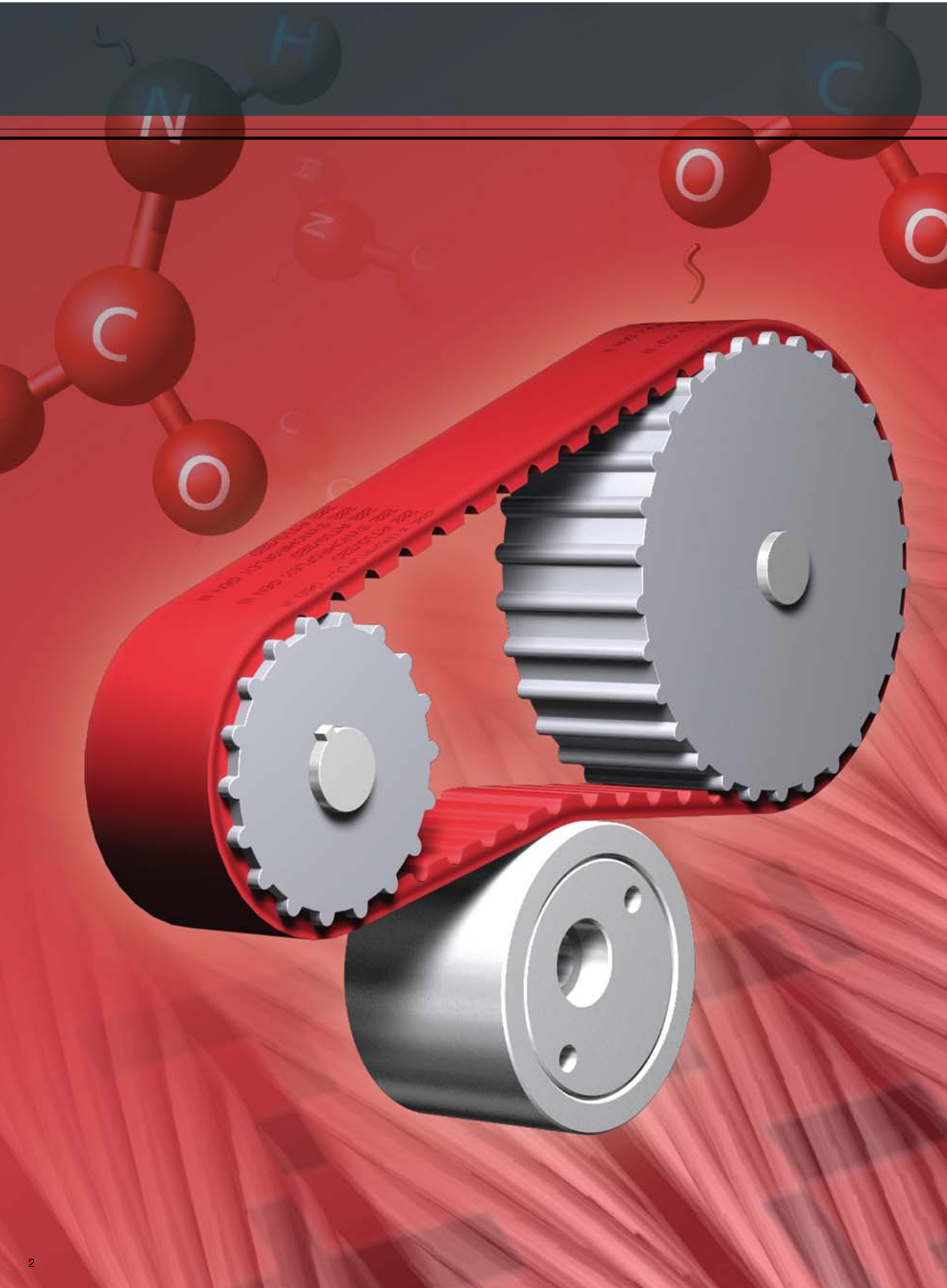
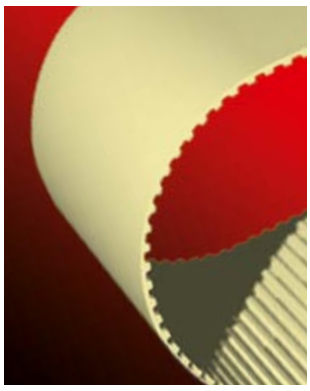


CONTI SYNCHROFLEX® Timing Belts

Advanced manufacture and high-performance materials combine for product excellence

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 galvanised 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.



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Manufacturing process

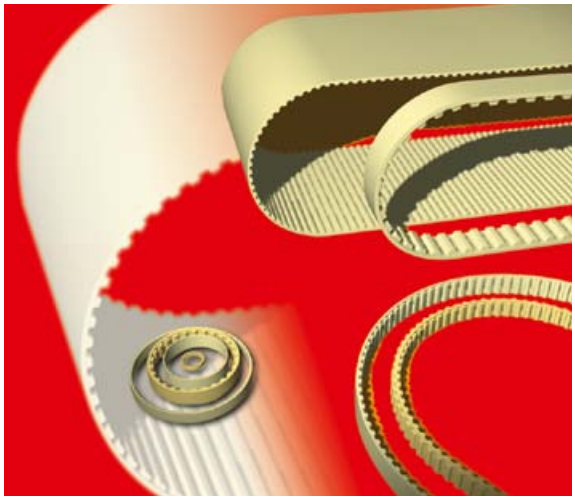
CONTI SYNCHROFLEX® Polyurethane Timing Belts consist of two components – a cast Polyurethane shell and a high grade steel cord tension member. The excellent bond between the two materials results in a very high power transmission capacity.

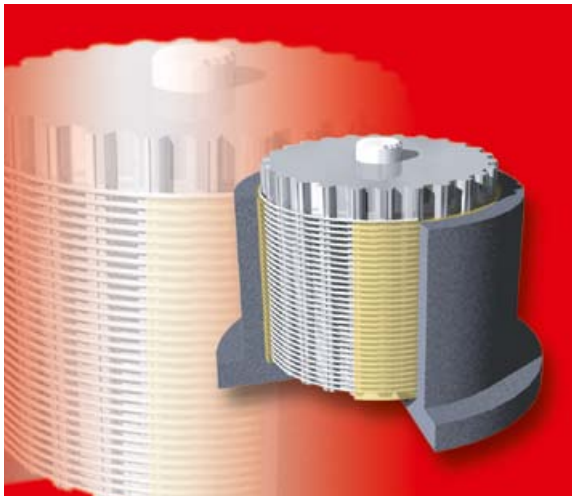
The manufacturing process – cast moulded polyurethane – combines the following advantages:

- The cast polyurethane timing belt is an exact image of the precision engineered mould. High pitch accuracy is achieved over the entire belt. The technology is particularly suitable for applications requiring high levels of angular accuracy, smooth running characteristics, high rotational speeds and long life.
- Excellent linearity with high pitch accuracy and repeatability allows the length to be optimised by adjusting the cord tension.
- The casting method combines with the capillary effect, producing an exceptionally high strength bond with the steel tension members.
- The high reproduction quality of the cast polyurethane process enables fine contoured features and smaller belt pitches to be moulded. Double-sided belts and profiled flights on the back of the belt can be moulded simultaneously.
- The process produces an effective belt width of up to 300 mm.
- Belt lengths from 55 mm to 6000 mm endless length.

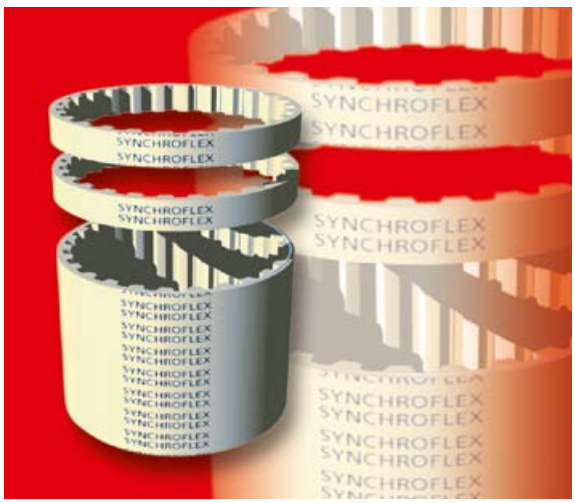
CONTI SYNCHROFLEX® Polyurethane Timing Belts are used across a very wide range of applications for the transmission of synchronous rotary motion in power transmission systems, servo and motion controls, conveyors and transfer lines. They operate in a rotational speed range of up to 20,000 rpm.

Applications include:
- office machinery
- electronic data processing equipment (EDP)
- textile machinery
- wood processing machinery
- machine tools
- printing machinery
- pumps
- compressors
- building machinery





Casting mould, illustrated with a spirally wound tension member on the mould core.



Ready de-moulded timing belt sleeve, partly separated into individual belts.

Construction

CONTI SYNCHROFLEX® Polyurethane Timing Belts are manufactured from wear resistant Polyurethane and high tensile steel cord tension members. Both high quality materials combine to form the basis for dimensionally stable and highly durable polyurethane timing belts. Polyurethane timing belts have very high longitudinal stiffness and no post-elongation of the tension members is to be expected in continuous operation. Only under extreme loading conditions and as a precaution after a brief run-in, a small loss of tension may necessitate a once-only retensioning.

The timing belts are temperature resistant with ambient temperatures from -30°C to +80°C. However, applications close to these temperature limits (< -10°C and > +50°C), may require adapted dimensioning. For specific temperature ranges, optional belt materials are available; e.g. the CONTI SYNCHROFLEX® GEN III Polyurethane Timing Belt range is temperature resistant up to +100°C. Please contact our technical specialists for this type of application.

CONTI SYNCHROFLEX® Polyurethane Timing Belts are manufactured using production methods that maintain very high tolerances to ensure a uniform load distribution during power transmission. They are equally suited for high torque transmission and precise positioning applications or the combination of both.

Properties:

mechanical

- positive fit, synchronous running
- constant length, no post-elongation
- low noise
- wear resistant
- low-maintenance
- highly flexible
- positional and angular accuracy
- fatigue resistant, low extension steel cord tension members
- belt speeds up to 80 ms^{-1}
- small production quantities available
- excellent power-to-weight ratio
- low pre-tension
- low bearing loads
- permits large centre distances
- permits large transmission ratios
- high degree of efficiency, max. 98%

chemical

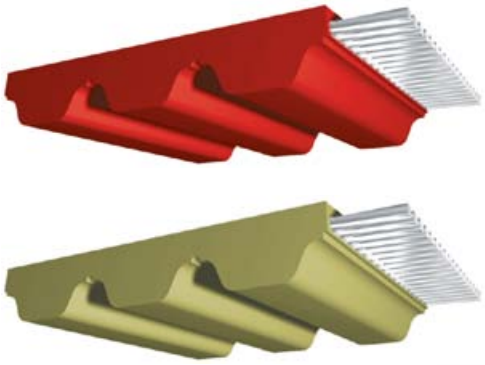
- hydrolysis stabilized
- resistant to aging
- temperature resistant from -30°C to 80°C, note: CONTI SYNCHROFLEX® Polyurethane Timing Belt GEN III up to 100°C (see information in the text ”Construction”)
- tropical climate resistant
- resistant against simple oils, fats and petrol
- resistant to some acids and alkalines

For further information about the environmental resistance characteristics of CONTI SYNCHROFLEX® Polyurethane Timing Belts please contact your Mulco sales partner.

Timing Belt Types

AT High capacity profile

Further development of the T profile resulted in the AT profile. This type of belt is characterised by the larger tooth shear strength resulting from the larger tooth volume and the stronger tension members.

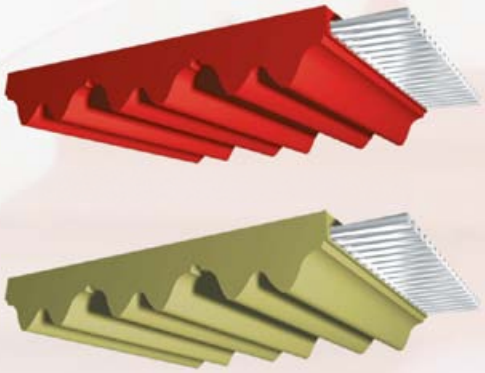


Further advantages:
- favourable tooth mesh
- strengthened tension members for constant pitch
- Improved performance up to 50 % as compared to the T profile
- precise transmission of movement in conjunction with synchronous pulleys with reduced or zero backlash
- reduction of meshing impacts or shocks
- compact drive dimensions

(also available in the GEN III version)

ATP High capacity profile

Further increased performance, noise reduction and extension of the belts useful life led to the development of the ATP timing belt in 1993. At the time, the main interest was focussed on the optimum tooth form. The basic concept of the new ATP profile provides the division of the trapezoidal tooth into two individual and load bearing teeth.

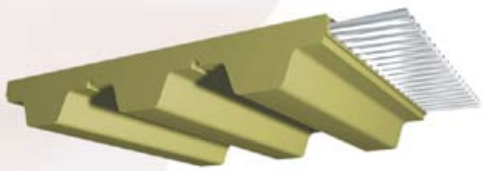


Performance increase up to 60 %, running noise reduced by up to 10 db(A) and an increased longevity by:
- tooth surface area increased by 70 %
- uniform load/tension distribution
- improved power dispersion
- reduced polygon effect
- small construction width
- optimised tooth mesh

(also available in the GEN III version)

T Standard profile

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



Preferred use:
- for standard drive tasks
- transmission tasks with double-sided belts
- for high bending stress
- for drives with contraflexure

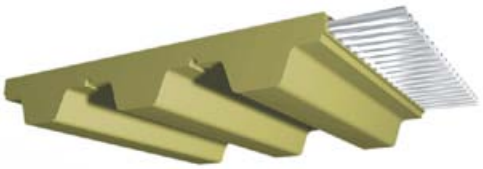
T in DL version

The DL timing belt (the belt is double-sided) is used in the power transmission and transport technology. Multiple-shaft drives with different rotational directions can be realised with this timing belt. Full load ability on both tooth sides.

Imperial profile

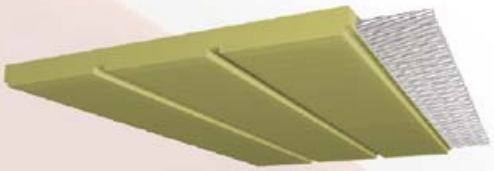
Imperial pitches according to DIN/ISO 5296 are available in the following sizes:

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



Preferred use:
- Applications in imperial units

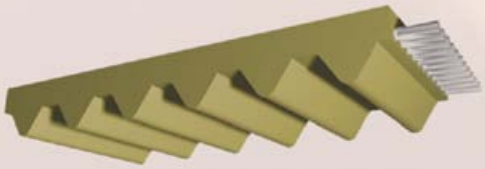
F F Flat belts



Preferred use:
- Friction drives (open length and endless)
- high-speed drives (CONTI SYNCHROFLEX® Belt)
- drives without synchronous transmission

K

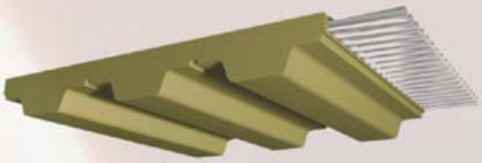
Serrated metric pitch profile.



Preferred use:
- Fine mechanical technology requiring small dimensions

V

The development of the PU timing belt started in 1954 with pitches other than standard.



Preferred use:
- tasks requiring special pitches
- spares

Please contact your nearest Mulco distributor to know more about our entire range of V-type belts.

Antistatic CONTI SYNCHROFLEX® Timing Belts

Characteristics of CONTI SYNCHROFLEX® Antistatic Timing Belts

The antistatic properties of CONTI SYNCHROFLEX® Polyurethane Timing Belts are achieved by:

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

2. **antistatic polyurethane mixture**
   A special conductive polyurethane mixture (max. belt length to 700 mm)

Other lengths on request.

Colour of antistatic timing belts: black.

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.

Quality assurance
Conductivity is measured using test equipment meeting ISO 9563 requirements. Upon request, the wear resistance of the antistatic layer can be checked on test timing belts with an antistatic facing. Due to the fact that extended operation will result in probable surface wear, the conductivity of the antistatic timing belts may deteriorate and regular checks of the resistance values are essential. When belts are to be used in environments with a high likelihood of explosion, please contact our technical specialists for advice.

Order example
CONTI SYNCHROFLEX® Timing Belt 25 T 5 / 630 EL-PU antistatic coated

For available lengths, please contact your Mulco sales partner.

“E” Tension Member

Highly flexible tension members – the “E” steel cord tension member

The smaller the diameter of each single wire, the more flexible the overall tension member is! This relationship led us to develop CONTI SYNCHROFLEX® Polyurethane Timing Belts with “E” tension members.

The cross sectional area of the “E” tension member comprises several strands of smaller diameter wires, each with excellent bending fatigue characteristics. With much improved overall flexibility CONTI SYNCHROFLEX® Polyurethane Timing Belts are particularly suited to smaller diameter pulleys and tension rollers; the minimum number of teeth and/or minimum diameter of the pulleys can be reduced by up to 30% compared with standard tension members. Timing belts with “E” tension members are recommended for multi-shaft drive applications with frequent reverse bending.

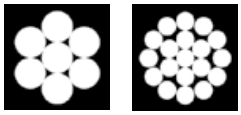
Summary:

- smaller diameter individual wires in the steel cord
- higher dynamic capabilities
- extremely high bonding and bending fatigue strength
- smaller pulley and tension roller diameters
- runs on standard diameter timing pulleys.

For applications under extreme conditions, please contact your Mulco sales partner.

Application information:

Steel cord tension members encapsulated in polyurethane:

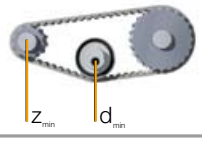
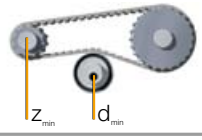


The smaller the diameter of the individual wire, the more flexible the whole timing belt.

Available versions:

- for the pitches AT 3 (standard), AT 5 (Gen III standard), AT 10, ATP10, T 5, T 10, T 20
- all standard belt lengths for the chosen pitch
- all standard pulley sizes for the chosen pitch
- all calculations as per the standard belt chosen

Timing belts with “E” tension members, minimum numbers of teeth:

Drive Type			AT 3 (Standard)	AT 5 (GEN III, Standard)	AT 10 ATP 10	T 5	T 10	T 20
without contraflexure 	Timing pulley	z_{min}	15	12	12	10	10	12
	Tension roller (smooth), running on teeth	d_{min} [mm]	20	18	50	18	50	80
with contraflexure 	Timing pulley	z_{min}	20	20	20	12	15	20
	Tension roller (smooth), running on the back of the belt	d_{min} [mm]	20	50	80	18	50	120

High-power version GEN III

CONTI SYNCHROFLEX® Timing Belt (SFX)
AT GEN III / ATP 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!

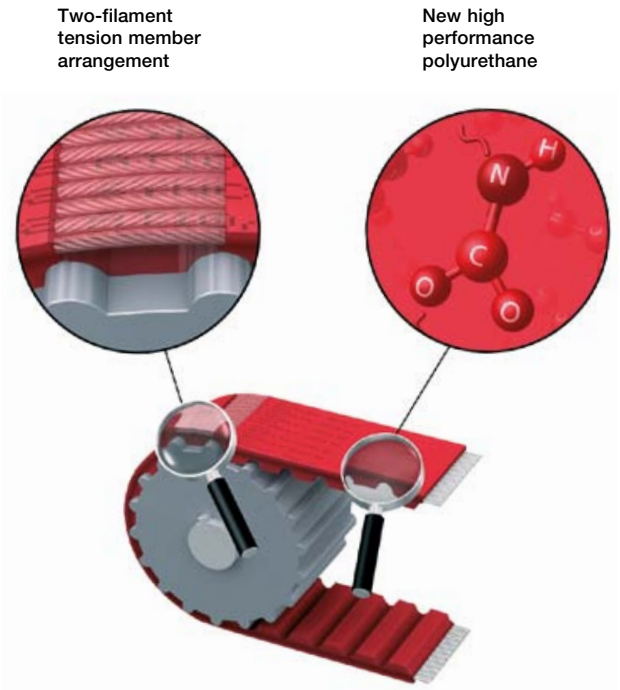
It was worth its while to focus on further developing the power drives of the AT and ATP range CONTI SYNCHROFLEX® polyurethane timing belts because the new GEN III generation excels in a 25% increase in power transmission compared with the AT/ ATP standard. Another economic bonus: all CONTI SYNCHROFLEX® GEN III polyurethane timing belts support the use of standard AT/ATP pulleys.

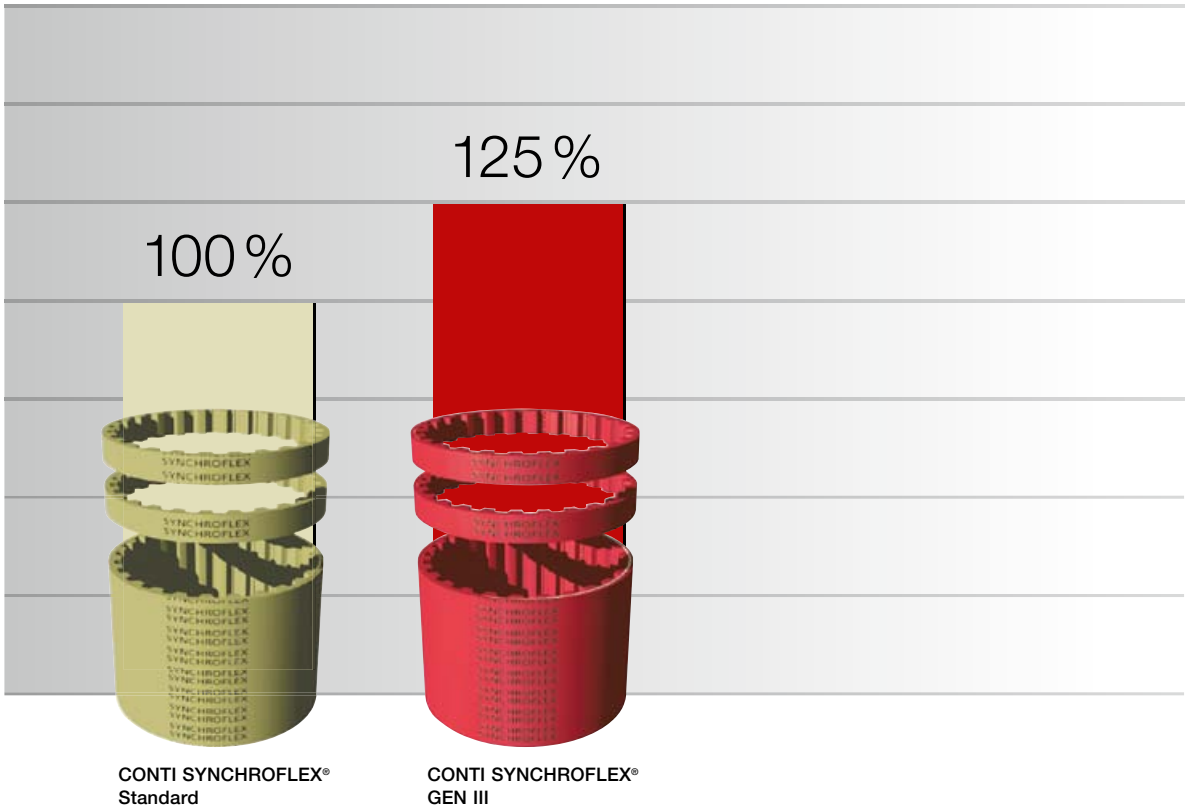
Mulco partners everywhere agree that advancement is synonymous to providing solutions for every product at a level of sophistication down to the smallest detail. A bifilar tension member arrangement and a higher packing density translates this into the CONTI SYNCHROFLEX® GEN III polyurethane timing belt 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 / ATP standard:

- increased tensile force F_{zul} to max. +45% due to closer wound cords
- Increased power transmission F_{spec} +25%
- redesigned bifilar steel (S and Z) cord balance for better tracking
- reduced flange friction
- lower running noise with narrower belt width for equal performance
- 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 contact your Mulco sales partner.)





Belt performance table

Belt performance table

AT 3 GEN III

Power transmission:	≤ 6 kW
Rotational speed:	approx. 20.000 min^{-1}
Peripheral speed:	approx. 80 ms^{-1}
Timing pulleys:	from z=15
Applications (Example):	small power drives, Handling technology

AT 3

Power transmission:	≤ 5 kW
Rotational speed:	approx. 20.000 min^{-1}
Peripheral speed:	approx. 80 ms^{-1}
Timing pulleys:	from z=15
Applications (Example):	small power drives, Handling technology

AT 5 GEN III

Power transmission:	≤ 18 kW
Rotational speed:	approx. 10.000 min^{-1}
Peripheral speed:	approx. 80 ms^{-1}
Timing pulleys:	from z=15
Applications (Example):	Machine tools, Pumps, Textile machinery

AT 5

Power transmission:	≤ 15 kW
Rotational speed:	approx. 10.000 min^{-1}
Peripheral speed:	approx. 80 ms^{-1}
Timing pulleys:	from z=15
Applications (Example):	Machine tools, Pumps, Textile machinery

AT 10 GEN III

Power transmission:	≤ 87 kW
Rotational speed:	approx. 10.000 min^{-1}
Peripheral speed:	approx. 60 ms^{-1}
Timing pulleys:	from z=15
Applications (Example):	Construction machines, Pumps, Paper-making machines, Compressors compactors, Textile machinery, Roller-table drives

AT 10

Power transmission:	≤ 70 kW
Rotational speed:	approx. 10.000 min^{-1}
Peripheral speed:	approx. 60 ms^{-1}
Timing pulleys:	from z=15
Applications (Example):	Construction machines, Pumps, Paper-making machines, Compressors compactors, Textile machinery, Roller-table drives

ATP 10 GEN III

Power transmission:	≤ 150 kW
Rotational speed:	approx. 10.000 min^{-1}
Peripheral speed:	approx. 60 ms^{-1}
Timing pulleys:	from z=15
Applications (Example):	Machine tools, Textile machinery, Power drives

ATP 10

Power transmission:	≤ 100 kW
Rotational speed:	approx. 10.000 min^{-1}
Peripheral speed:	approx. 60 ms^{-1}
Timing pulleys:	from z=15
Applications (Example):	Sanding machinery, Power drives, Machine tools

ATP 15 GEN III

Power transmission:	possible beyond 220 kW
Rotational speed:	approx. 10.000 min^{-1}
Peripheral speed:	approx. 50 ms^{-1}
Timing pulleys:	from z=20
Applications (Example):	Textile machinery, Machine tools, High power drives

ATP 15

Power transmission:	possible beyond 200 kW
Rotational speed:	approx. 10.000 min^{-1}
Peripheral speed:	approx. 50 ms^{-1}
Timing pulleys:	from z=20
Applications (Example):	Power drives, Machine tools

AT 20 GEN III

Power transmission:	possible beyond 2250 kW
Rotational speed:	approx. 6.500 min^{-1}
Peripheral speed:	approx. 40 ms^{-1}
Timing pulleys:	from z=18
Applications (Example):	Heavy-duty drives, Textile machinery, Printing machine, Machine tools

AT 20

Power transmission:	possible beyond 200 kW
Rotational speed:	approx. 6.500 min^{-1}
Peripheral speed:	approx. 40 ms^{-1}
Timing pulleys:	from z=18
Applications (Example):	Heavy-duty drives, Textile machinery, Printing Machine, Machine tools

K 1,5; T 2; M; T 2,5

Power transmission:	≤ 0,5 kW
Rotational speed:	approx. 20.000 min^{-1}
Peripheral speed:	approx. 80 ms^{-1}
Timing pulleys:	from z=10
Applications (Example):	Precision machine drives, Film camera drives, Positioning drives

T 5

Power transmission:	≤ 5 kW
Rotational speed:	approx. 10.000 min^{-1}
Peripheral speed:	approx. 80 ms^{-1}
Timing pulleys:	from z=10
Applications (Example):	Office machinery, Home appliances, Positioning and regulating drives

T 10

Power transmission:	≤ 30 kW
Rotational speed:	approx. 10.000 min^{-1}
Peripheral speed:	approx. 60 ms^{-1}
Timing pulleys:	from z=12
Applications (Example):	Machine tools, Main and subsidiary drives, Textile machinery, Printing machinery

T 20

Power transmission:	up to approx. 100 kW
Rotational speed:	approx. 6.500 min^{-1}
Peripheral speed:	approx. 40 ms^{-1}
Timing pulleys:	from z=15
Applications (Example):	Heavy Construction machines, Paper-making machines, Pumps, Compressors compactors, Textile machinery

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

Tolerances

CONTI SYNCHROFLEX® Timing Belts Tolerances

Length tolerances for standard CONTI SYNCHROFLEX® Polyurethane Timing Belts

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

Belt length	Length tolerance in relation to centre distance
up to 320 mm	± 0,15 mm
320 – 630 mm	± 0,18 mm
630 – 1000 mm	± 0,25 mm
1000 – 1960 mm	± 0,40 mm
1960 – 3500 mm	± 0,50 mm
3500 – 4500 mm	± 0,80 mm
4500 – 6000 mm	± 1,20 mm

Width tolerances for standard CONTI SYNCHROFLEX® Polyurethane Timing Belts

Type / group	up to 50 mm	50 – 100 mm	over 100 mm in % der Belt width
K 1	± 0,3 mm	± 0,5 mm	± 0,5 %
K 1,5	± 0,3 mm	± 0,5 mm	± 0,5 %
T 2	± 0,3 mm	± 0,5 mm	± 0,5 %
M (MXL)	± 0,3 mm	± 0,5 mm	± 0,5 %
T 2,5	± 0,3 mm	± 0,5 mm	± 0,5 %
T 5	± 0,3 mm	± 0,5 mm	± 0,5 %
T 5-DL	± 0,3 mm	± 0,5 mm	± 0,5 %
T 10	± 0,5 mm	± 0,5 mm	± 0,5 %
T 10-DL	± 0,5 mm	± 0,5 mm	± 0,5 %
T 20	± 1,0 mm	± 1,0 mm	± 1,0 %
T 20-DL	± 1,0 mm	± 1,0 mm	± 1,0 %
AT 3	± 0,3 mm	± 0,5 mm	± 0,5 %
AT 5	± 0,5 mm	± 0,5 mm	± 0,5 %
AT 10	± 1,0 mm	± 1,0 mm	± 1,0 %
ATP 10/ATP 15	± 1,0 mm	± 1,0 mm	± 1,0 %
ATP 20	± 1,0 mm	± 1,0 mm	± 1,0 %

Please note:

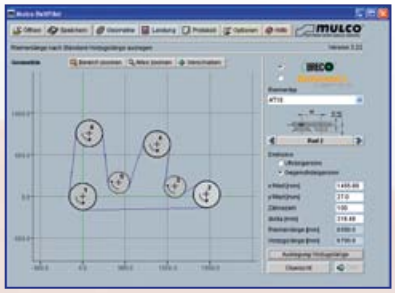
Tolerance for special tension members upon request.

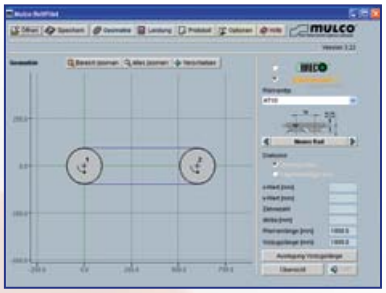
Mulco b@lt-pilot

Your direct road to perfect design solutions

Mulco belt-pilot – online support at www.mulco.net

Let others talk about being close to the customer, we as the market leading provider of polyurethane timing belts actually live by the idea. Mulco-Europe EWIV's secret of success has always been largely due to advising our customers before they enter the design stage. Mulco belt-pilot is taking our customer dedication a critical step further ahead. Our interactive Internet service offering enables you to calculate your personal design solutions online. Whatever field of technology you are interested in - power transmission, linear, transport or components - start Mulco belt-pilot at www.mulco.net for 24/7 access to the actual product information, CAD downloads and calculations you need.





Mulco b@lt-pilot

Many benefits.

- Interactive service offering with video-based e-learning option
- Extensive product databases
- Free use of CAD downloads
- Import the CAD drawings into your CAD system
- Calculate timing belts, pulleys and components
- Email inquiries supported

Belt tension gauges

Setting the correct pre-tension force

Clavis and SM4 belt tension gauges – simple, practical and efficient

Clavis and SM4 belt tension gauges allow you to measure the resonant frequency of a vibrating belt span. This resonant frequency directly depends on the belt tension. When starting to use or servicing a drive, these gauges are indispensable when it comes to properly adjusting the pre-tension force. A correct pre-tension force minimizes the load on the bearings, optimizes the running of the belt and, thus, extends the life of the drive. Moreover, it reduces the noise level and balances non-parallelism of wide polyurethane timing belts.

Clavis uses microphones to acoustically measure the frequency of the vibrating belt.

- Measuring ranges: 30 Hz … 600 Hz (standard) and 10 Hz … 300 Hz
- Precision: +/- 1 %
- For all polyurethane drive belt models with different tension members (e. g. steel, aramid, glass-fibre)
- Broad portfolio of replaceable sensor heads
- Integrated calibration equipment
- Battery-powered
- Steel tuning fork for fast frequency sampling included
- Ships with a calibration certificate and a case

Span tension gauge SM4 uses a sensor to measure the frequency of the vibrating belt.

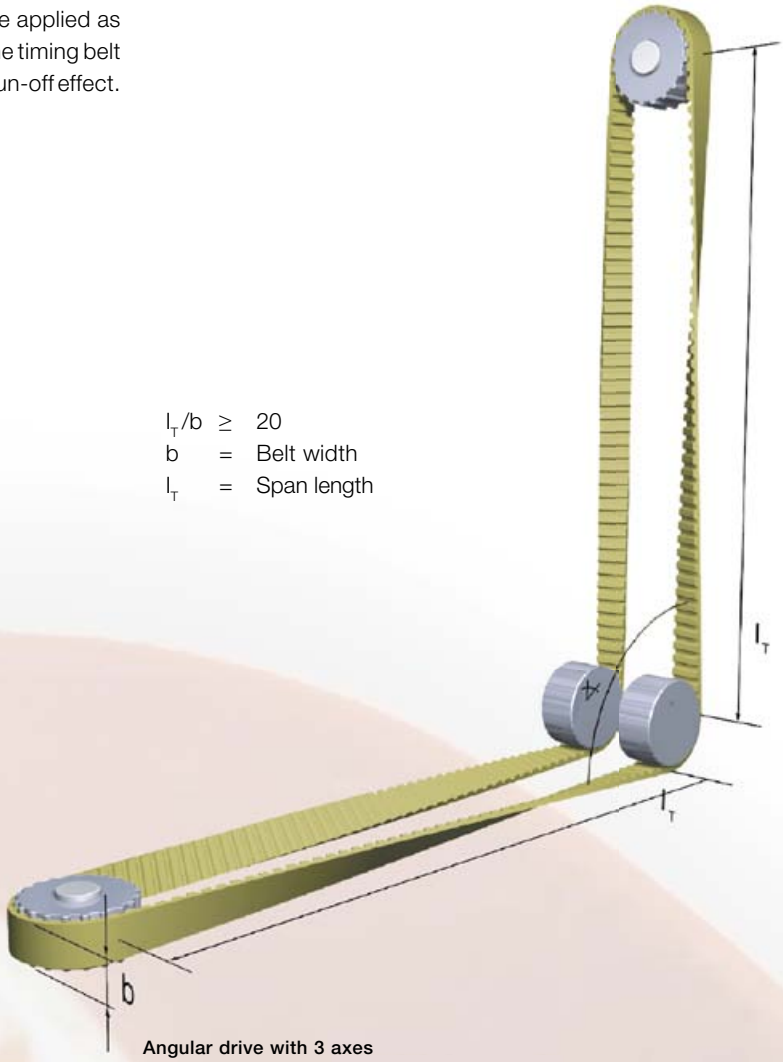
- Measuring range: 7 Hz … 350 Hz
- Precision: +/- 5 %
- For all polyurethane drive belt models with different tension members (e. g. steel, aramid, glass-fibre)
- Large display
- Weighs just 110 g
- Belt clip
- Battery-powered
- Ships with a transport case and protective sleeve

Angular drives

CONTI SYNCHROFLEX® Timing Belts can be applied as angular drives. Take into consideration that the timing belt can only be crossed (twisted). Eliminates the run-off effect.

Angular drive with 2 axes

$l_T/b \geq 20$
b = Belt width
l_T = Span length

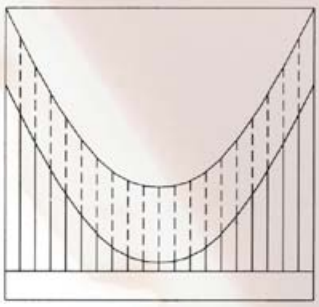


Angular drive with 3 axes

With crossed timing belt applications the outer tension members suffer a higher elongation than the inner ones. Due to the larger elongation in the edge zone the permitted proportional circumferencial force for the belt in the tension members is reduced.

No power reductions or special measures are necessary at a ratio of $l_T / b \geq 20$.

At a required ratio of $l_T / b < 20$ please contact our technical department for advice.



F_{zul} admissible tensile force

F_U The remaining peripheral force

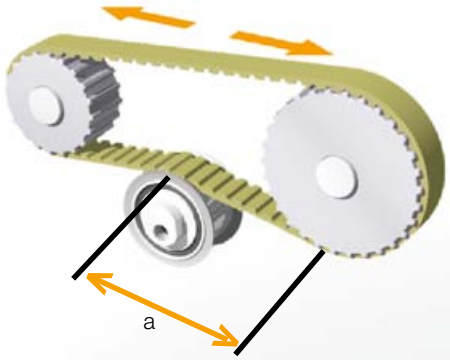
F_S Tensile force due to crossing

Guiding belts with flanges

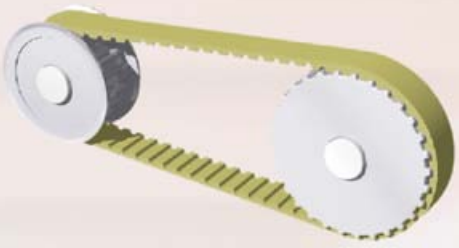
Timing belts must be guided to eliminate the lateral run-off effect. This is normally done by flanges.Minimum lateral forces and low frictional losses can be resulted by the optimum arrangement of the belt guidance.

For this purpose, the following possibilities are available:

- Timing belt guidance downstream of a large free span length (infeed length (a) should not be less than 5 times belt width)
- Guidance at the drive pulley (preferable for two shaft drives with short centre distance)
- Guide for low-transmission pulleys (preferably for multiple-shaft drives)
- Guidance on the tension rollers
  - Tension roller arrangement in the slack span side
  - With arrangement on the belt back side: consider minimum diameter with contraflexure
  - With arrangement on the belt toothed side: Length of arc of contact, min. 3 teeth
  - with changing rotational directions preferable in the span length centre
  - Condition: Minimum span length (a) between tensi-on roller and pulley should not be less than 5 times belt width
- Ensure high axis parallelity and flush alignment of all pulleys to achieve optimum guiding features.
- For cost reasons it is possible to fit flanges also to the smaller pulley after taking the functional reliability into consideration.



The application of CONTI SYNCHROFLEX® polyurethane timing belts in two-filament arrangement is the ideal prerequisition for an optimum belt guidance.



Tooth gap shapes

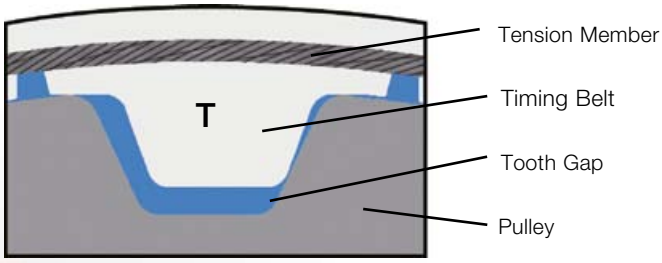
Timing belts are positive fitted drive elements. They work slippage-free with the respective synchronising pulleys. CONTI SYNCHROFLEX® timing belt drives can be optimised additionally for a movement transmission with a low flank backlash.

For some profiles and pitches, the SE or zero gap can be used for especially high accuracy drives. Please contact us for technical advice.

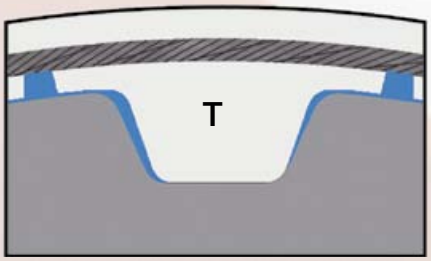
- Prerequisites for the application:
  Pitch matching between timing belts and pulley.

- Influencing factors of the pitch matching:
  - Pre-tension force
  - No. of teeth in mesh (z_e)
  - Load rate (rotational speed, dynamic behaviour...)
  - Manufacturing tolerances

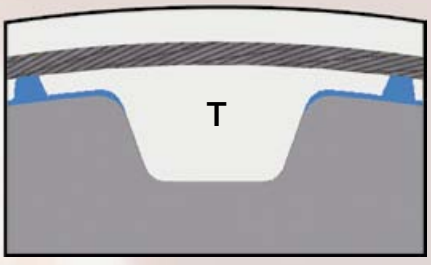
Tooth gap shapes



Normal Backlash
Tooth Gap



Reduced Backlash
“SE” Tooth Gap



Zero Backlash
“0” Tooth Gap

Safety factors

The width of a timing belt is correct when the permissible values for tooth shear strength, tension cord strength and flexibility are not exceeded under unfavourable operating conditions. In our catalogue, load limits are stated which have been reliably proven and confirmed by bench tests and results obtained in practice. A safety factor is only required for drives with transmission into higher speed.

It is important, that the unfavourable load types occuring in the drive are known resp. correctly estimated by the engineer. With a positive fit transmission, even short-period overloads act via the timing belt being the drive member. Some instructions to this issue:

Rated operation
Design timing belts for the operating condition of the rated load. The rated load is the operating condition at which the drive should transmit the torque or the power at rated speeds under normal conditions.

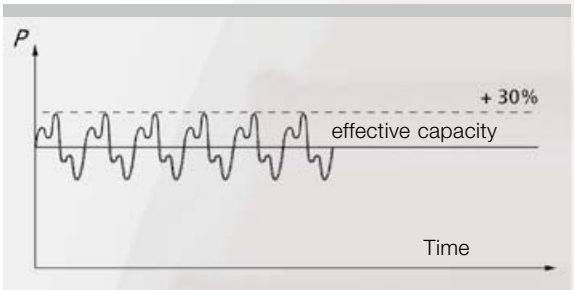
Start-up characteristics
a) Drive side: The max. torque of the drive machine under start-up conditions is to be taken into consideration. The start-up torque, e.g. for three-phase squirrel cage motors amounts to 2 to 2.5 times the rated value.

b) On the drive side: If necessary, „initial torques“ affective to the drive part timing belt are to be taken into consideration under start-up characteristics.

Check load case a) or b) with rotational speed n=0.

Braking
It might have to be defined whether braking leads to loads which fully act via the timing belt and possibly exceed the type of load produced by the rated operation or the start-up characteristics. During braking a possible torque reversal should be taken into consideration.

Unevennesses (load variations, shock loads)
In addition to the rated load, superimposed vibration and shock loads could act on the timing belt as the transmission member. For the illustrated example, increase the calculated belt width by the factor of 1.3.



Moments of inertia
Moments of inertia and/or centrifugal masses in the drives generally create a uniform running behaviour. Depending on the acceleration and deceleration characteristic it has to be differentiated and checked whether the moments of inertia create an additional load on the timing belt.

Step-up transmission
The following safety factors are to be applied for step-up transmissions:

i = 0,66 up to 1,00	S = 1,1
i = 0,40 up to 0,66	S = 1,2
i < 0,40	S = 1,3

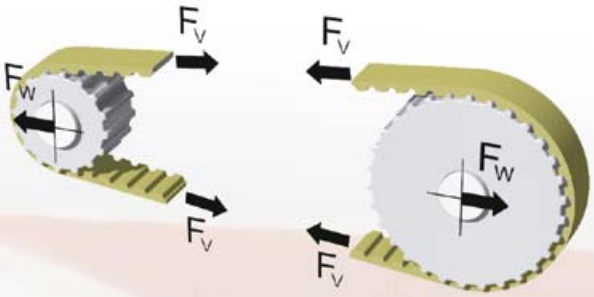
During braking a torque reversal may occur which would change a reduction ration into a step-up drive.

Pre-tension force

Pre-tension force

Pre-tension is intended to guarantee a minimum tensioning force at the slack span side to ensure smooth tooth meshing into the driven pulley.

Generally, the pre-tension should only be set as high as necessary. The necessary pre-tension force of the spans F_V depends on the max. peripheral force F_U, the belt length L_B (number of teeth Z_B) and the drive configuration.



The recommendations shown in the table refer to the pre-tension force setting per span.

Drive configuration	Pre-tension force of each individual span
Two-shaft drive	
$Z_B < 60$	$F_V = 1/3\ F_U$
$60 \leq Z_B < 150$	$F_V = 1/2\ F_U$
$Z_B > 150$	$F_V = 2/3\ F_U$
Multiple-shaft drive	
$l_{Load\ span} \leq l_{Slack\ span}$	$F_V = F_U$
$l_{Load\ span} > l_{Slack\ span}$	$F_V > F_U$
Linear drive	$F_V \geq F_U$

In every case, the tension cord strength is the top limit of the span load. Take into consideration that especially with multiple-shaft and linear drives, an addition of the pre-tension force and the peripheral force in relation to the load span force is to be expected.

Influencing factors

Belt stiffness
Friction forces created by the interaction of the tooth mesh (especially at the slack span) intensify the span forces, which in turn increase the degree of elongation. This influence may lead to the slack span tooth mesh butting against the driven pulley, thereby causing the belt to jump.
Elongation being directly depending on the belt stiffness, the high stiffness of the steel cord tension members permits a comparably low pre-tension.

Peripheral force
The peripheral force acts in proportion to the elongation of the load span, i.e. excessive slackening of the slack span can be counter-acted by a pre-tension matched to the peripheral force.

Belt length
Belt elongation resulting from the effect of the peripheral force and the friction forces is also approximately in proportion to the belt length. Therefore, the tendency of running up or jumping is considerably influenced by the belt length. Even under high peripheral forces with the resulting friction forces, a very short timing belt will elongate to only a small degree, so that even when subject to low pre-tension forces there will be no danger of running up or jumping of teeth. On the contrary, with short timing belts peripheral deviations of the pulleys could cause heavy pre-tension fluctuations and, as a result, extreme peak values.

Proportion of the span lengths
Especially with multiple-shaft drives the load span is often markedly longer than the slack span side. For this reason, a slight elongation of the load span results in a very unfavourable slack on the span side. Therefore, the pre-tension force of spans of such ratios should be higher than the peripheral force.

Precise transmission of movement
There is a high transmission accuracy possible in the reverse operation with CONTI SYNCHROFLEX® Timing Belts, when the span pre-tension forces are selected in the same size of the peripheral force.

Pre-tension force

Consequences of faulty pre-tension setting:

too low pre-tension
- the teeth of the slack span side run up on or override the teeth of the driven pulley
- Wear on the faces caused by the friction force during meshing
- Forced breakage by excessive elongation due to full overriding

excessive pre-tension
- high bearing load of the shafts
- Reduction of the transmittable power
- Wear and tear at the belt tooth

Measuring with frequency measuring meter

The intrinsic frequency of a vibrating belt span can be measured by means of various Mulco belt tension measuring meters. The pre-tension force of the span can be calculated from the measured intrinsic frequency:

$$F_V = 4 \cdot m \cdot l_T^2 \cdot f^2$$

The corresponding intrinsic frequency can be calculated, if the pre-tension is preset:

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

f: Frequency of the variations in Hz
m: Mass of the belt per meter length in kg/m
l_T: drum span length subject to vibration in m
F_V: Span force in N

Please contact your Mulco partner for the various measuring meters (see page 16).

General informations

Design
- In the transmission configuration, design at least one adjustable axis, plan one adjustable tension roller (not spring-loaded) for fix centre distances
- the bearing has to be absolutely rigid
- Note the importance of a parallel run and flush alignment of the timing pulleys

Transport/storing
- Upon receipt, unpack the timing belt immediately and store in circular position (SYNCHROFLEX® Timing Belts) in a dry place at room temperature
- Do not bend

Mounting
- Fit timing belts on the pulleys when slack without exerting any force
- Exert no force when fitting with fixed centre distances (SYNCHROFLEX® Timing Belts) if necessary, fit together with timing pulleys
- Apply pre-tensioning force according to the chapter „Pre-tension“
- secure adjustable axis against slippage
- Do not clamp the timing belt between the flanges

Operation
- Protect the drives against dust, dirt, hot surrounding media as well as acids and alkalis
- Take into consideration the ambient temperatures (see Characteristics of polyurethane timing belts)

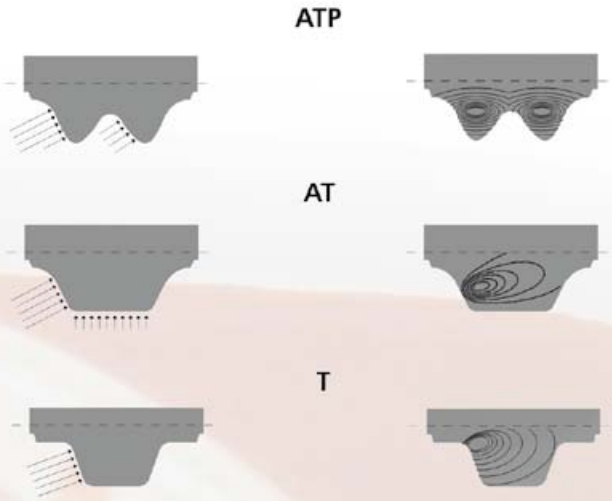
Basis of calculation

Providing the following conditions of tooth strength (1st), tension member tensile strength (2nd) and flexibility (3rd) are met, then a maintenance-free timing belt operation can be expected.

1. Tooth shear strength

specific tooth shear strength

Force distribution Load distribution



The specific tooth shear strength depends on the rotational speed. The maximum specific tooth shear strength is the limit load the belt tooth can bear in continuous operation. The values are stated in tables for each timing belt type. The timing belt drive is correctly designed, when not exceeding the admissible tooth shear strength. Generally, a special safety factor is not necessary, see chapter „Safety factors“.

The high specific tooth shear strength of the ATP profile, for example, is achieved by the optimised force and load distribution. The effective force is distributed to two tooth faces.

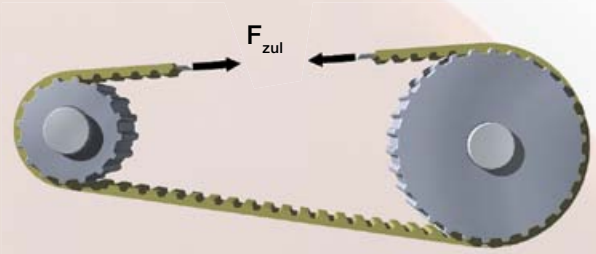
The working loads can be distributed more effectively with more belt teeth meshing in the pulley.

Due to the high pitch accuracy of CONTI SYNCHROFLEX® Timing Belts, generally, it can be calculated with 12 belt teeth in mesh, unless there are less than that number actually in mesh.

2. Tension member strength

Admissible tensile stress on the belt‘s cross-section

The timing belt is designed correctly, when the maximum admissible tensile force in the steel cord tension members is not exceeded under operation conditions. The table values for F_{zul} refer to the constant loading.



3. Flexibility

Minimum number of teeth, minimum diameter

The recommended minimum number of teeth and/or the minimum diameter for a malfunction-free operation depends on the selected belt type. Take especially into consideration that the minimum number of teeth and/or the minimum diameter is higher when using a belt arrangement „with contraflexure“ (e. g. due to a tension roller).

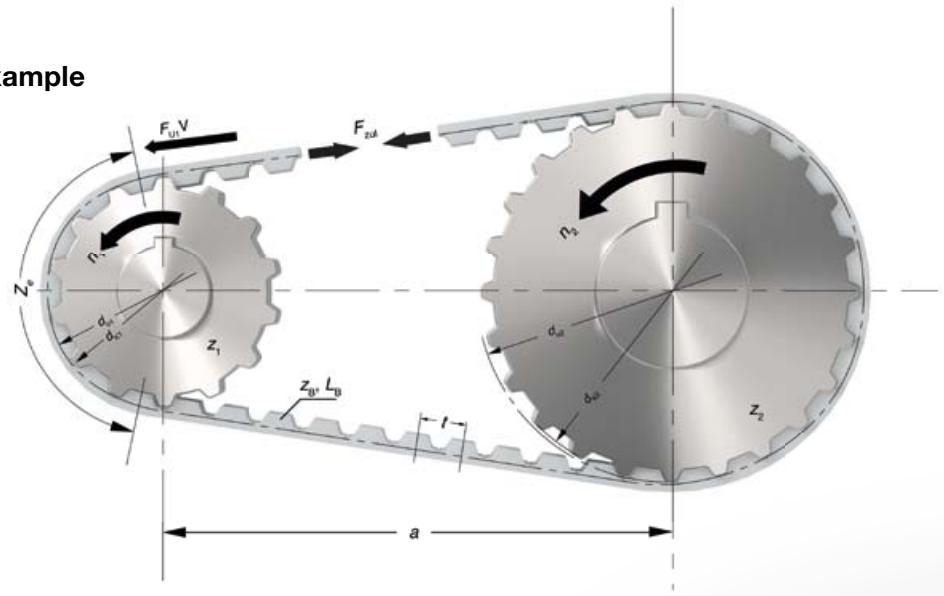
Drive layout without contraflexure

Drive layout with contraflexure

Calculation example

Calculation example

Terms, definitions



Peripheral force	F_U	[N]
specific tooth force	F_{Uspec}	[N/cm]
admissible tensile force	F_{zul}	[N]
Pre-tension force	F_V	[N]
Shaft force	F_W	[N]
Torque	M	[Nm]
Acceleration torque	M_B	[Nm]
specific torque	M_{spec}	[Ncm/cm]
Power	P	[kW]
specific power	P_{spec}	[W/cm]
Load bearing torque	J	[kgm²]
Load	m	[kg]
Density	p	[kg/dm³]
Speed	v	[m/s]
Rotational speed	n	[min⁻¹]
Angular speed	w	[s⁻¹]
Frequency	f_e	[s⁻¹]

Centre distance	a	[mm]
Belt length	L_B	[mm]
Belt width	b	[mm]
Pulley width	B	[mm]
Bore, pulley	d	[mm]
Pitch circle diameter	d_o	[mm]
Outside diameter	d_K	[mm]
Span length	L_T	[mm]
Pitch	t	[mm]
Number of belt teeth	z_B	
Number of teeth with i = 1	z	
Number of teeth in mesh	z_e	
No. of teeth, small pulley	z_1	
No. of teeth, large pulley	z_2	
Ratio	i	
Acceleration time	t_B	[s]

Peripheral force

$$F_U = \frac{2 \cdot 10^3 \cdot M}{d_0} = \frac{19{,}1 \cdot 10^6 \cdot P}{n \cdot d_0} = \frac{10^3 \cdot P}{v}$$

Torque

$$M = \frac{d_0 \cdot F_U}{2 \cdot 10^3} = \frac{9{,}55 \cdot 10^3 \cdot P}{n} = \frac{d_0 \cdot P}{2 \cdot v}$$

Power

$$P = \frac{M \cdot n}{9{,}55 \cdot 10^3} = \frac{F_U \cdot d_0 \cdot n}{19{,}1 \cdot 10^6} = \frac{F_U \cdot v}{10^3}$$

Belt Length for i =1

$$L_B = 2a + \pi \cdot d_0 = 2a + z \cdot t$$

Angular speed

$$\omega = \frac{\pi \cdot n}{30}$$

Rotational speed

$$n = \frac{19{,}1 \cdot 10^3 \cdot v}{d_0}$$

Speed

$$v = \frac{d_0 \cdot n}{19{,}1 \cdot 10^3}$$

Pitch circle diameter

$$d_0 = \frac{z \cdot t}{\pi}$$

Acceleration torque

$$M_B = \frac{J \cdot \Delta n}{9{,}55 \cdot t_B}$$

Load bearing torque

$$J = 98{,}2 \cdot 10^{-15} \cdot B \cdot \rho \cdot (d_K^4 - d^4)$$

Apply all equations with the dimensions mentioned here.

Calculation example

Task

A roll table drive must be designed for heavy conveying duties. Under start-up conditions approx. 2.5 times the running torque is exerted on the timing belt.

The application conditions are:

Given:

Power	P =	10	kW
Nominal speed	n =	800	min^{-1}
Start-up torque	M =	300	Nm
Ratio	i =	1	
Number of teeth	z =	25	
Centre distance	a =	625	mm

Required:

The timing belt pitch is to be determined and the belt width is to be calculated.

Formulea:

$$b = \frac{100 \cdot M}{z_1 \cdot z_e \cdot M_{spec}} \quad M[Nm]$$

$$b = \frac{1000 \cdot P}{z_1 \cdot z_e \cdot P_{spec}} \quad P[kW]$$

$$F_U = \frac{2 \cdot 10^3 \cdot M}{d_0} \quad F_U\,[N]$$

$$L = 2 \cdot a + z \cdot t \quad [mm]$$

$$d_0 = \frac{z \cdot t}{\pi} \quad [mm]$$

Calculation example

How to proceed

Belt length:

Profile preselection: AT10. Calculation of the belt length with formula:

$$L = 2 \cdot a + z \cdot t$$
$$= 2 \cdot 625 + 25 \cdot 10$$
$$= \underline{1500 \text{ mm}}$$

Calculation of the belt width:

1. Tooth shear strength

In the calculation $z_e = 12$ will be used (see basis of calculation).
Calculation of the belt width with the nominal speed from the power equations.

$$b = \frac{1000 \cdot P}{z_1 \cdot z_e \cdot P_{spec}}$$
$$= \frac{1000 \cdot 10}{25 \cdot 12 \cdot 6{,}96}$$
$$= 4{,}79 \text{ cm} = \underline{47{,}9 \text{ mm}}$$

Calculation of the belt width under start-up torque when rotational speed n = 0.

$$b = \frac{100 \cdot M}{z_1 \cdot z_e \cdot M_{spec}}$$
$$= \frac{100 \cdot 300}{25 \cdot 12 \cdot 11{,}70}$$
$$= 8{,}54 \text{ cm} = \underline{85{,}4 \text{ mm}}$$

The belt width is to be determined from the least favourable load conditions.
Selected: the next larger standard belt width <u>b = 100 mm.</u>

2. Tension member strength

The corresponding peripheral force can be calculated from the general data supplied:

$$F_U = \frac{2 \cdot 10^3 \cdot M}{d_0}$$
$$= \frac{2 \cdot 10^3 \cdot M}{79{,}58} = \underline{7539 \text{ N} < 16000 \text{ N}}$$

The tabular value F_{zul} for AT 10 with 100 mm belt width is 16000 N. Thus, there is a sufficient tension member safety factor.

3. Flexibility

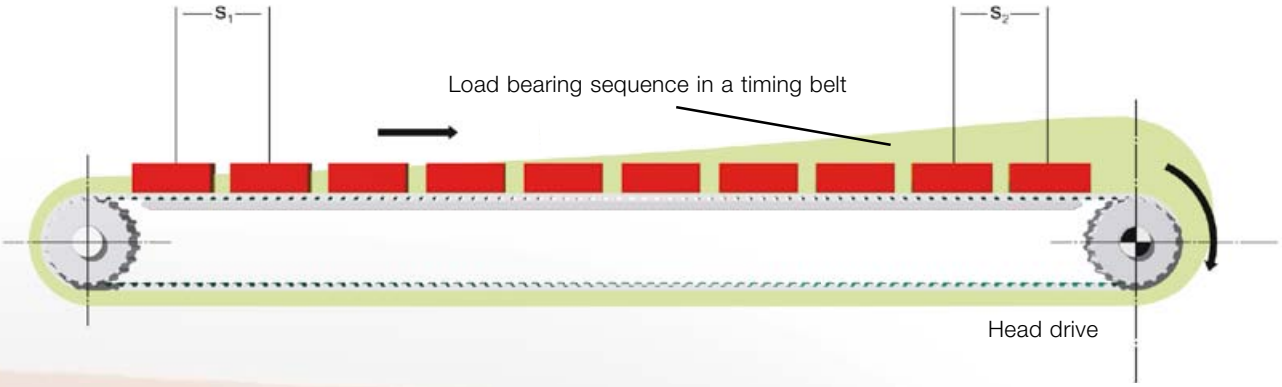
The design is a drive „without contraflexure“. The minimum number of teeth according to the table is adhered to.

Result:

The drive is correctly designed with a belt width of 100 mm. A maintenance-free operation can be expected.
Order code: CONTI SYNCHROFLEX® 100 AT 10/1500

CONTI SYNCHROFLEX® Timing Belts used for transportation

Transport belts should be designed preferably with a head drive. The goods to be transported can consist of one or more individual loads. Multiple individual loads can be seen as a line load.



Calculation of the Peripheral force F_U

From the overall transport load, the required haul-off force or the peripheral force F_U for the drive pulley assemblies can be derived:

$$F_U = 9{,}81 \cdot m \cdot \mu$$

Peripheral force at the drive pulley.	F_U	[N]
Mass of the items to be transported	m	[kg]
Friction factor of the timing belt in relation to the bed plate	μ	

As friction factor μ (slide friction), the following values can be assumed:

Steel/PUR 92 Shore A	0,6 - 0,7
PE/PUR	0,3 - 0,4

In general, friction factors show large ranges. Trials should be carried out, if necessary. Errors and omissions excepted.

Information on the force/elongation behaviour

The grid surface in the picture shows the force/elongation behaviour in the timing belt under operating conditions. The individual spacing between the transported products increases towards the drive pulley due to belt elongation.

Centre s1 < s2

Pre-tension force

We recommend to set the pre-tension force in the transport timing belt such that a residual pre-tension force is always maintained on the slack span side under operating conditions. The following pre-tension force is required::

$$F_V > 0{,}5 \cdot F_U$$

Calculating the Belt width b

$$b = \frac{F_U}{z_e \cdot F_{Uspec}} \; F_U\,[N]$$

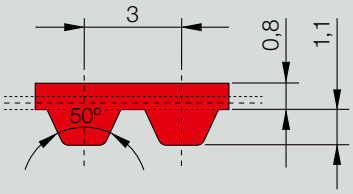
F_U: peripheral force (calculated)

F_{Uspec}: specific load of the belt teeth

z_e: number of teeth in mesh for endless joined belts: $z_{emax} = 12$

AT high performance Timing Belts

AT 3 GEN III



CONTI SYNCHROFLEX® Timing Belt (SFX) AT 3 GEN III

High performance AT profile with metric pitch and trapezoidal teeth.

Standard version:

- single-sided
- high performance polyurethane in red colour
- 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 / Length* GEN III	Number of teeth
AT 3 / 150	50
AT 3 / 201	67
AT 3 / 201 FN68	67
AT 3 / 252	84
AT 3 / 267	89
AT 3 / 270	90
AT 3 / 300	100
AT 3 / 351	117
AT 3 / 399	133
AT 3 / 417	139
AT 3 / 450	150
AT 3 / 486 FN18	162
AT 3 / 501	167
AT 3 / 549	183
AT 3 / 600	200
AT 3 / 639	213
AT 3 / 648	216
AT 3 / 648 FN24	216
AT 3 / 714	238

Type / Length* GEN III	Number of teeth
AT 3 / 816	272
AT 3 / 816 FA	272
AT 3 / 900	300
AT 3 / 1011	337

Preferred belt width* in mm:
6, 10, 16, 25, 32

* Other dimensions upon request.

Order example

CONTI SYNCHROFLEX® Timing Belt 10 AT3 / 450 GEN III

- Belt width in mm
- Type/ Pitch
- Belt length in mm
- Specification Generation III

AT 3 GEN III Technical data

1. Tooth shear strength (specific belt tooth strength)

R.p.m. n [min^{-1}]	F_{Uspec} [N/cm]	M_{spec} [Ncm/cm]	P_{spec} [W/cm]
0	40,43	1,93	0,00
20	40,00	1,91	0,04
40	39,60	1,89	0,08
60	39,21	1,87	0,12
80	38,85	1,86	0,16
100	38,50	1,84	0,19
150	37,70	1,80	0,28
200	36,98	1,77	0,37
300	35,69	1,70	0,54
400	34,60	1,65	0,69
500	33,64	1,61	0,84
600	32,79	1,57	0,98
700	32,03	1,53	1,12
800	31,34	1,50	1,25
900	30,70	1,47	1,38
1000	30,11	1,44	1,51
1100	29,56	1,41	1,63
1200	29,05	1,39	1,74
1300	28,58	1,36	1,86
1400	28,13	1,34	1,97
1500	27,70	1,32	2,08
1600	27,30	1,30	2,18
1700	26,91	1,29	2,29
1800	26,55	1,27	2,39
1900	26,20	1,25	2,49
2000	25,88	1,24	2,59
2200	25,25	1,21	2,78

R.p.m. n [min^{-1}]	F_{Uspec} [N/cm]	M_{spec} [Ncm/cm]	P_{spec} [W/cm]
2400	24,66	1,18	2,96
2500	24,40	1,17	3,05
2600	24,14	1,15	3,14
2800	23,63	1,13	3,31
3000	23,16	1,11	3,47
3200	22,71	1,09	3,63
3400	22,30	1,07	3,79
3600	21,90	1,05	3,94
3800	21,53	1,03	4,09
4000	21,16	1,01	4,23
4500	20,34	0,97	4,58
5000	19,59	0,94	4,90
5500	18,90	0,90	5,20
6000	18,28	0,87	5,48
6500	17,69	0,85	5,75
7000	17,15	0,82	6,00
7500	16,65	0,80	6,24
8000	16,18	0,77	6,47
8500	15,74	0,75	6,69
9000	15,31	0,73	6,89
9500	14,91	0,71	7,08
10000	14,54	0,69	7,27
12000	13,19	0,63	7,91
15000	11,53	0,55	8,64
18000	10,16	0,49	9,15
20000	9,38	0,45	9,37

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

2. Tension member strength (permitted tensile force of the belt F_{zul}), Belt weight

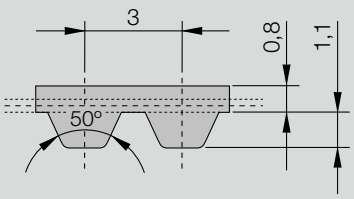
Belt width	b	[mm]	6	10	16	25	32
Tension member strength	F_{zul}	[N]	330	599	1002	1608	2079
Belt weight	AT 3 GEN III	[kg/m]	0,016	0,026	0,042	0,065	0,083

3. Flexibility (Minimum numbers of teeth, minimum diameter)

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

AT high performance Timing Belts

AT 3



CONTI SYNCHROFLEX® Timing Belt (SFX) AT 3

High performance AT profile with metric pitch and trapezoidal teeth.

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

Available versions:

- single-sided
- with reinforced design
- with Aramide tension member
- polyurethane special materials upon request
- antistatic, coloured, mechanical reworked

FA: with bigger back thickness

FN: with profiles on the back of the belt

Type / Length*	Number of teeth
AT 3 / 150	50
AT 3 / 201	67
AT 3 / 201 FN68	67
AT 3 / 252	84
AT 3 / 267	89
AT 3 / 270	90
AT 3 / 300	100
AT 3 / 351	117
AT 3 / 399	133
AT 3 / 417	139
AT 3 / 450	150
AT 3 / 486 FN18	162
AT 3 / 501	167
AT 3 / 549	183
AT 3 / 600	200
AT 3 / 639	213
AT 3 / 648	216
AT 3 / 648 FN24	216
AT 3 / 714	238

Type / Length*	Number of teeth
AT 3 / 816	272
AT 3 / 816 FA	272
AT 3 / 900	300
AT 3 / 1011	337

Preferred belt width* in mm:
6, 10, 16, 25, 32

* Other dimensions upon request.

Order example

CONTI SYNCHROFLEX® Timing Belt 10 AT3 / 450

Belt width in mm
Type/ Pitch
Belt length in mm

AT 3 Technical data

1. Tooth shear strength (specific belt tooth strength)

R.p.m. n [min^{-1}]	F_{Uspec} [N/cm]	M_{spec} [Ncm/cm]	P_{spec} [W/cm]	R.p.m. n [min^{-1}]	F_{Uspec} [N/cm]	M_{spec} [Ncm/cm]	P_{spec} [W/cm]
0	32,34	1,544	0,000	2200	20,20	0,964	2,222
20	32,00	1,528	0,032	2400	19,73	0,942	2,367
40	31,68	1,513	0,063	2500	19,52	0,932	2,440
60	31,37	1,498	0,094	2600	19,31	0,922	2,510
80	31,08	1,484	0,124	2800	18,90	0,902	2,646
100	30,80	1,471	0,154	2880	18,75	0,895	2,700
150	30,16	1,440	0,226	3000	18,53	0,885	2,779
200	29,58	1,412	0,296	3200	18,17	0,868	2,907
300	28,55	1,363	0,428	3400	17,84	0,852	3,033
400	27,68	1,322	0,554	3600	17,52	0,837	3,153
500	26,91	1,285	0,673	3800	17,22	0,822	3,272
600	26,23	1,252	0,787	4000	16,93	0,808	3,386
700	25,62	1,223	0,897	4500	16,27	0,777	3,660
730	25,45	1,215	0,929	5000	15,67	0,748	3,917
800	25,07	1,197	1,003	5500	15,12	0,722	4,158
900	24,56	1,173	1,105	6000	14,62	0,698	4,386
1000	24,09	1,150	1,204	6500	14,15	0,676	4,598
1100	23,65	1,129	1,301	7000	13,72	0,655	4,802
1200	23,24	1,110	1,394	7500	13,32	0,636	4,995
1300	22,86	1,091	1,486	8000	12,94	0,618	5,176
1400	22,50	1,074	1,575	8500	12,59	0,601	5,350
1460	22,29	1,064	1,627	9000	12,25	0,585	5,512
1500	22,16	1,058	1,662	9500	11,93	0,570	5,666
1600	21,84	1,043	1,747	10000	11,63	0,555	5,815
1700	21,53	1,028	1,830	12000	10,55	0,504	6,330
1800	21,24	1,014	1,911	15000	9,22	0,440	6,914
1900	20,96	1,001	1,991	18000	8,13	0,388	7,316
2000	20,70	0,988	2,070	20000	7,50	0,358	7,499

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

2. Tension member strength (permitted tensile force of the belt F_{zul}), Belt weight

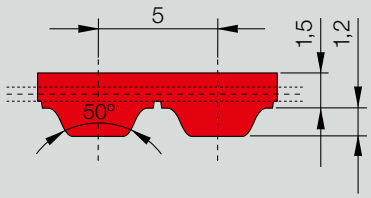
Belt width	b	[mm]	6	10	16	25	32
Tension member strength	F_{zul}	[N]	190	380	646	1102	1406
Belt weight	AT 3	[kg/m]	0,014	0,023	0,037	0,058	0,074

3. Flexibility (Minimum numbers of teeth, minimum diameter)

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

AT high performance Timing Belts

AT 5 GEN III



CONTI SYNCHROFLEX® Timing Belt (SFX) AT 5 GEN III

High performance AT profile with metric pitch and trapezoidal teeth.

Standard version:

- single-sided
- high performance polyurethane in red colour
- 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 / Length* GEN III	Number of teeth
AT 5 / 225	45
AT 5 / 255	51
AT 5 / 260	52
AT 5 / 280	56
AT 5 / 300	60
AT 5 / 330	66
AT 5 / 340	68
AT 5 / 375	75
AT 5 / 390	78
AT 5 / 420	84
AT 5 / 450	90
AT 5 / 455	91
AT 5 / 480	96
AT 5 / 490	98
AT 5 / 500	100
AT 5 / 525	105
AT 5 / 545	109
AT 5 / 600	120
AT 5 / 610	122
AT 5 / 620	124
AT 5 / 630	126
AT 5 / 660	132
AT 5 / 670	134
AT 5 / 690	138
AT 5 / 710	142

Type / Length* GEN III	Number of teeth
AT 5 / 720	144
AT 5 / 750	150
AT 5 / 780	156
AT 5 / 825	165
AT 5 / 860	172
AT 5 / 875	175
AT 5 / 900	180
AT 5 / 920	184
AT 5 / 975	195
AT 5 / 1050	210
AT 5 / 1125	225
AT 5 / 1230	246
AT 5 / 1500	300
AT 5 / 1750	350
AT 5 / 2000	400
AT 5 / 3350 FA**	670
AT 5 / 3800 FA**	760

Preferred belt width* in mm:
6, 10, 16, 25, 32, 50, 75, 100

* Other dimensions upon request.
** Please request technical support from your Mulco sales partner.

Order example

CONTI SYNCHROFLEX® Timing Belt 50 AT5 / 450 GEN III

- Belt width in mm
- Type / Pitch
- Belt length in mm
- Specification Generation III

AT 5 GEN III Technical data

1. Tooth shear strength (specific belt tooth strength)

R.p.m. n [min^{-1}]	F_{Uspec} [N/cm]	M_{spec} [Ncm/cm]	P_{spec} [W/cm]	R.p.m. n [min^{-1}]	F_{Uspec} [N/cm]	M_{spec} [Ncm/cm]	P_{spec} [W/cm]
0	44,13	3,51	0,00	2000	27,38	2,18	4,56
20	43,63	3,48	0,07	2200	26,63	2,12	4,89
40	43,13	3,44	0,14	2400	26,00	2,07	5,20
60	42,63	3,40	0,21	2600	25,38	2,02	5,50
80	42,25	3,36	0,28	2800	24,80	1,97	5,79
100	41,88	3,33	0,35	3000	24,28	1,93	6,06
200	40,00	3,19	0,67	3200	23,76	1,89	6,34
300	38,63	3,08	0,96	3400	23,30	1,85	6,60
400	37,25	2,96	1,24	3600	22,85	1,82	6,85
500	36,25	2,88	1,51	3800	22,41	1,78	7,10
600	35,25	2,80	1,76	4000	22,01	1,85	7,34
700	34,28	2,74	2,00	4500	21,08	1,68	7,90
800	33,50	2,68	2,24	5000	20,23	1,61	8,43
900	32,88	2,61	2,46	5500	19,45	1,55	8,91
1000	32,13	2,56	2,68	6000	18,75	1,49	9,38
1100	31,50	2,51	2,89	6500	18,10	1,44	9,80
1200	31,00	2,64	3,10	7000	17,49	1,39	10,20
1300	30,38	2,42	3,30	7500	16,93	1,35	10,58
1400	29,88	2,38	3,49	8000	16,39	1,30	10,93
1500	29,38	2,34	3,68	8500	15,89	1,26	11,25
1600	29,00	2,30	3,86	9000	15,41	1,23	11,55
1700	28,50	2,27	4,04	9500	14,96	1,19	11,84
1800	28,13	2,24	4,21	10000	14,54	1,16	12,11
1900	27,75	2,21	4,39				

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

2. Tension member strength (permitted tensile force of the belt F_{zul}), Belt weight

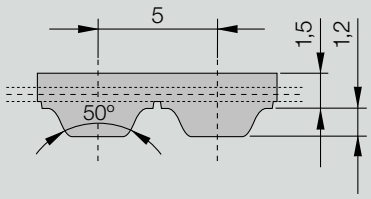
Belt width	b	[mm]	6	10	16	25	32	50	75	100
Tension member strength	F_{zul}	[N]	417	787	1342	2175	2823	4489	6803	9117
Belt weight	AT 5 GEN III	[kg/m]	0,022	0,036	0,058	0,090	0,115	0,180	0,270	0,360

3. Flexibility (Minimum numbers of teeth, minimum diameter)

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

AT high performance Timing Belts

AT 5



CONTI SYNCHROFLEX® Timing Belt (SFX) AT 5

High performance AT profile with metric pitch and trapezoidal teeth.

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

Available versions:

- single-sided
- with “E” tension member for a better flexibility
- with reinforced design
- with Aramide tension member
- polyurethane special materials upon request
- antistatic, coloured, mechanical reworked

Type / Length*	Number of teeth
AT 5 / 225	45
AT 5 / 255	51
AT 5 / 260	52
AT 5 / 280	56
AT 5 / 300	60
AT 5 / 330	66
AT 5 / 340	68
AT 5 / 375	75
AT 5 / 390	78
AT 5 / 420	84
AT 5 / 450	90
AT 5 / 455	91
AT 5 / 480	96
AT 5 / 490	98
AT 5 / 500	100
AT 5 / 525	105
AT 5 / 545	109
AT 5 / 600	120
AT 5 / 610	122
AT 5 / 620	124
AT 5 / 630	126
AT 5 / 660	132
AT 5 / 670	134
AT 5 / 690	138
AT 5 / 710	142

Type / Length*	Number of teeth
AT 5 / 720	144
AT 5 / 750	150
AT 5 / 780	156
AT 5 / 825	165
AT 5 / 860	172
AT 5 / 875	175
AT 5 / 900	180
AT 5 / 920	184
AT 5 / 975	195
AT 5 / 1050	210
AT 5 / 1125	225
AT 5 / 1230	246
AT 5 / 1500	300
AT 5 / 1750	350
AT 5 / 2000	400
AT 5 / 3350 FA**	670
AT 5 / 3800 FA**	760

Preferred belt width* in mm:
10, 16, 25, 32, 50

* Other dimensions upon request.
** Please request technical support from your Mulco sales partner.

Order example

CONTI SYNCHROFLEX® Timing Belt 10 AT5 / 450

Belt width in mm
Type / Pitch
Belt length in mm

AT 5 Technical data

1. Tooth shear strength (specific belt tooth strength)

R.p.m. n [min^{-1}]	F_{Uspec} [N/cm]	M_{spec} [Ncm/cm]	P_{spec} [W/cm]	R.p.m. n [min^{-1}]	F_{Uspec} [N/cm]	M_{spec} [Ncm/cm]	P_{spec} [W/cm]
0	35,3	2,810	0,000	2000	21,9	1,740	3,650
20	34,9	2,780	0,058	2200	21,3	1,695	3,910
40	34,5	2,750	0,115	2400	20,8	1,654	4,160
60	34,1	2,720	0,171	2600	20,3	1,615	4,400
80	33,8	2,690	0,225	2800	19,84	1,579	4,63
100	33,5	2,660	0,279	3000	19,42	1,545	4,85
200	32,0	2,550	0,534	3200	19,01	1,513	5,07
300	30,9	2,460	0,771	3400	18,64	1,483	5,28
400	29,8	2,370	0,995	3600	18,28	1,454	5,48
500	29,0	2,300	1,207	3800	17,93	1,427	5,68
600	28,2	2,240	1,409	4000	17,61	1,401	5,87
700	27,5	2,190	1,603	4500	16,86	1,342	6,32
800	26,8	2,140	1,789	5000	16,18	1,288	6,74
900	26,3	2,090	1,969	5500	15,56	1,239	7,13
1000	25,7	2,050	2,140	6000	15,00	1,194	7,50
1100	25,2	2,010	2,310	6500	14,48	1,152	7,84
1200	24,8	1,970	2,480	7000	13,99	1,113	8,16
1300	24,3	1,936	2,640	7500	13,54	1,077	8,46
1400	23,9	1,903	2,790	8000	13,11	1,043	8,74
1500	23,5	1,872	2,940	8500	12,71	1,011	9,00
1600	23,2	1,843	3,090	9000	12,33	0,981	9,24
1700	22,8	1,816	3,230	9500	11,97	0,953	9,47
1800	22,5	1,789	3,370	10000	11,63	0,925	9,69
1900	22,2	1,764	3,510				

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

2. Tension member strength (permitted tensile force of the belt F_{zul}), Belt weight

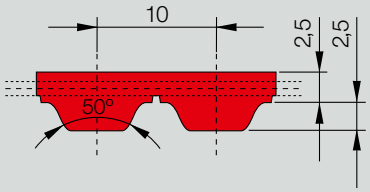
Belt width	b	[mm]	6	10	16	25	32	50	75	100
Tension member strength	F_{zul}	[N]	350	700	1260	2030	2660	4200	6370	8610
Belt weight	AT 5	[kg/m]	0,020	0,034	0,054	0,085	0,109	0,170	0,255	0,340

3. Flexibility (Minimum numbers of teeth, minimum diameter)

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

AT high performance Timing Belts

AT 10 GEN III



CONTI SYNCHROFLEX® Timing Belt (SFX) AT 10 GEN III

High performance AT profile with metric pitch and trapezoidal teeth.

Standard version:

- single-sided
- high performance polyurethane in red colour
- 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 / Length* GEN III	Number of teeth
AT 10 / 440	44
AT 10 / 460	46
AT 10 / 500	50
AT 10 / 560	56
AT 10 / 570	57
AT 10 / 580	58
AT 10 / 600	60
AT 10 / 610	61
AT 10 / 660	66
AT 10 / 700	70
AT 10 / 730	73
AT 10 / 780	78
AT 10 / 800	80
AT 10 / 840	84
AT 10 / 840 FN2	84
AT 10 / 880	88
AT 10 / 890	89
AT 10 / 920	92
AT 10 / 960	96
AT 10 / 980	98
AT 10 / 1000	100
AT 10 / 1010	101
AT 10 / 1050	105
AT 10 / 1080	108
AT 10 / 1100	110

Type / Length* GEN III	Number of teeth
AT 10 / 1150	115
AT 10 / 1200	120
AT 10 / 1210	121
AT 10 / 1250	125
AT 10 / 1280	128
AT 10 / 1300	130
AT 10 / 1320	132
AT 10 / 1350	135
AT 10 / 1360	136
AT 10 / 1360 FN2	136
AT 10 / 1400	140
AT 10 / 1480	148
AT 10 / 1500	150
AT 10 / 1600	160
AT 10 / 1700	170
AT 10 / 1720	172
AT 10 / 1800	180
AT 10 / 1860	186
AT 10 / 1940	194
AT 10 / 2910 FN2	291

Preferred belt width* in mm:
16, 25, 32, 50, 75, 100, 150

* Other dimensions upon request.

Order example

CONTI SYNCHROFLEX® Timing Belt 32 AT10/800 GEN III

- Belt width in mm
- Type/Pitch
- Belt length in mm
- Specification Generation III

AT 10 GEN III Technical data

1. Tooth shear strength (specific belt tooth strength)

R.p.m. n [min^{-1}]	F_{Uspec} [N/cm]	M_{spec} [Ncm/cm]	P_{spec} [W/cm]	R.p.m. n [min^{-1}]	F_{Uspec} [N/cm]	M_{spec} [Ncm/cm]	P_{spec} [W/cm]
0	91,88	14,63	0,00	2000	50,38	8,03	16,80
20	90,50	14,41	0,30	2200	48,75	7,75	17,88
40	89,25	14,21	0,60	2400	47,25	7,51	18,88
60	88,13	14,01	0,88	2600	45,75	7,29	19,83
80	87,00	13,84	1,16	2800	44,38	7,08	20,73
100	85,88	13,68	1,43	3000	43,13	6,88	21,59
200	81,25	12,94	2,71	3200	42,00	6,69	22,40
300	77,63	12,35	3,88	3400	40,88	6,50	23,16
400	74,38	11,85	4,96	3600	39,88	6,34	23,89
500	71,75	11,41	5,98	3800	38,88	6,18	24,59
600	69,38	11,04	6,94	4000	37,88	6,03	25,25
700	67,13	10,69	7,84	4500	35,63	5,68	26,75
800	65,25	10,39	8,70	5000	33,63	5,36	28,13
900	63,50	10,10	9,53	5500	31,88	5,08	29,25
1000	61,88	9,85	10,31	6000	30,25	4,81	30,25
1100	60,38	9,61	11,08	6500	28,75	4,56	31,13
1200	59,00	9,39	11,80	7000	27,25	4,34	31,88
1300	57,75	9,19	12,50	7500	26,00	4,13	32,50
1400	56,50	8,99	13,18	8000	24,71	3,94	33,00
1500	55,38	8,80	13,84	8500	23,55	3,75	33,38
1600	54,25	8,64	14,46	9000	22,44	3,58	33,63
1700	53,25	8,48	15,08	9500	21,40	3,40	33,88
1800	52,25	8,31	15,68	10000	20,40	3,25	34,00
1900	51,25	8,16	16,25				

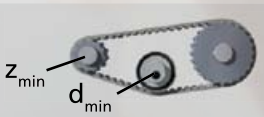
Rotational speeds over 10000 rpm and/or belt speeds over 60 m/s need special drive designs. Please ask our advice.

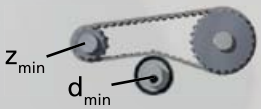
2. Tension member strength (permitted tensile force of the belt F_{zul}), Belt weight

Belt width	b	[mm]	16	25	32	50	75	100	150
Tension member strength	F_{zul}	[N]	3000	5000	6750	10750	16500	22000	33500
Belt weight	AT 10 GEN III	[kg/m]	0,117	0,183	0,234	0,365	0,548	0,730	1,095

3. Flexibility (Minimum numbers of teeth, minimum diameter)

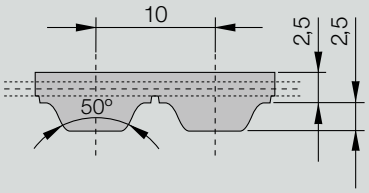
Timing pulley	z_{min}	15	Drive type without contraflexure
Tension roller (smooth), running on teeth	d_{min} [mm]	50	
Timing pulley	z_{min}	25	Drive type with contraflexure
Tension roller (smooth), running on the back of the belt	d_{min} [mm]	120	





AT high performance Timing Belts

AT 10



CONTI SYNCHROFLEX® Timing Belt (SFX) AT 10

High performance AT profile with metric pitch and trapezoidal teeth.

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

Available versions:

- single-sided
- with “E” tension member for a better flexibility
- with reinforced design
- with Aramide tension member
- polyurethane special materials upon request
- antistatic, coloured, mechanical reworked

FN: with profiles on the back of the belt

Type / Length*	Number of teeth
AT 10 / 440	44
AT 10 / 460	46
AT 10 / 500	50
AT 10 / 560	56
AT 10 / 570	57
AT 10 / 580	58
AT 10 / 600	60
AT 10 / 610	61
AT 10 / 660	66
AT 10 / 700	70
AT 10 / 730	73
AT 10 / 780	78
AT 10 / 800	80
AT 10 / 840	84
AT 10 / 840 FN2	84
AT 10 / 880	88
AT 10 / 890	89
AT 10 / 920	92
AT 10 / 960	96
AT 10 / 980	98
AT 10 / 1000	100
AT 10 / 1010	101
AT 10 / 1050	105
AT 10 / 1080	108
AT 10 / 1100	110

Type / Length*	Number of teeth
AT 10 / 1150	115
AT 10 / 1200	120
AT 10 / 1210	121
AT 10 / 1250	125
AT 10 / 1280	128
AT 10 / 1300	130
AT 10 / 1320	132
AT 10 / 1350	135
AT 10 / 1360	136
AT 10 / 1360 FN2	136
AT 10 / 1400	140
AT 10 / 1480	148
AT 10 / 1500	150
AT 10 / 1600	160
AT 10 / 1700	170
AT 10 / 1720	172
AT 10 / 1800	180
AT 10 / 1860	186
AT 10 / 1940	194
AT 10 / 2910 FN2	291

Preferred belt width* in mm:
16, 25, 32, 50, 75, 100

* Other dimensions upon request.

Order example

CONTI SYNCHROFLEX® Timing Belt 32 AT10 / 800

Belt width in mm
Type / Pitch
Belt length in mm

AT 10 Technical data

1. Tooth shear strength (specific belt tooth strength)

R.p.m. n [min^{-1}]	F_{Uspec} [N/cm]	M_{spec} [Ncm/cm]	P_{spec} [W/cm]	R.p.m. n [min^{-1}]	F_{Uspec} [N/cm]	M_{spec} [Ncm/cm]	P_{spec} [W/cm]
0	73,5	11,70	0,000	2000	40,30	6,42	13,44
20	72,4	11,53	0,241	2200	39,00	6,20	14,30
40	71,4	11,37	0,476	2400	37,80	6,01	15,10
60	70,5	11,21	0,705	2600	36,60	5,83	15,86
80	69,6	11,07	0,928	2800	35,50	5,66	16,58
100	68,7	10,94	1,145	3000	34,50	5,50	17,27
200	65,0	10,35	2,170	3200	33,60	5,35	17,92
300	62,1	9,88	3,100	3400	32,70	5,20	18,53
400	59,5	9,48	3,970	3600	31,90	5,07	19,11
500	57,4	9,13	4,780	3800	31,10	4,94	19,67
600	55,5	8,83	5,550	4000	30,30	4,82	20,20
700	53,7	8,55	6,270	4500	28,50	4,54	21,40
800	52,2	8,31	6,960	5000	26,90	4,29	22,50
900	50,8	8,08	7,620	5500	25,50	4,06	23,40
1000	49,5	7,88	8,250	6000	24,20	3,85	24,20
1100	48,3	7,69	8,860	6500	23,00	3,65	24,90
1200	47,2	7,51	9,440	7000	21,80	3,47	25,50
1300	46,2	7,35	10,000	7500	20,80	3,30	26,00
1400	45,2	7,19	10,540	8000	19,77	3,15	26,40
1500	44,3	7,04	11,070	8500	18,84	3,00	26,70
1600	43,4	6,91	11,570	9000	17,95	2,86	26,90
1700	42,6	6,78	12,060	9500	17,12	2,72	27,10
1800	41,8	6,65	12,540	10000	16,32	2,60	27,20
1900	41,0	6,53	13,000				

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

2. Tension member strength (permitted tensile force of the belt F_{zul}), Belt weight

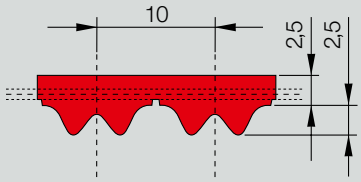
Belt width	b	[mm]	16	25	32	50	75	100	150
Tension member strength	F_{zul}	[N]	2000	3500	4750	7750	12000	16000	24500
Belt weight	AT 10	[kg/m]	0,101	0,158	0,202	0,315	0,473	0,630	0,945

3. Flexibility (Minimum numbers of teeth, minimum diameter)

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

ATP high performance Timing Belts

ATP 10 GEN III



CONTI SYNCHROFLEX® Timing Belt (SFX) ATP 10 GEN III

High performance ATP profile with metric pitch and optimised meshing of the double engagement toothform.

Standard version

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

Type / GEN III	Length*	Number of teeth
ATP 10	/ 630	63
ATP 10	/ 660	66
ATP 10	/ 700	70
ATP 10	/ 780	78
ATP 10	/ 840	84
ATP 10	/ 890	89
ATP 10	/ 920	92
ATP 10	/ 1010	101
ATP 10	/ 1080	108
ATP 10	/ 1150	115

Type / GEN III	Length*	Number of teeth
ATP 10	/ 1280	128
ATP 10	/ 1400	140
ATP 10	/ 1650	165
ATP 10	/ 1800	180

Preferred belt width* in 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 in mm
- Type/Pitch
- Belt length in mm
- Specification Generation III

ATP 10 GEN III Technical data

1. Tooth shear strength (specific belt tooth strength)

R.p.m. n [min^{-1}]	F_{Uspec} [N/cm]	M_{spec} [Ncm/cm]	P_{spec} [W/cm]
0	105,050	16,713	0,000
20	103,508	16,468	0,345
40	102,064	16,238	0,680
60	100,706	16,023	1,007
80	99,424	15,818	1,326
100	98,210	15,626	1,637
150	95,432	15,183	2,385
200	92,956	14,790	3,098
300	88,706	14,110	4,433
400	85,093	13,538	5,671
500	81,989	13,045	6,830
600	79,257	12,609	7,923
700	76,817	12,222	8,985
800	74,614	11,871	9,945
900	72,604	11,551	10,887
1000	70,758	11,257	11,789
1100	69,049	10,986	12,654
1200	67,461	10,733	13,487
1300	65,975	10,496	14,290
1400	64,580	10,275	15,063
1500	63,265	10,065	15,811
1600	62,022	9,868	16,534
1700	60,844	9,680	17,234
1800	59,723	9,502	17,911
1900	58,655	9,332	18,568

R.p.m. n [min^{-1}]	F_{Uspec} [N/cm]	M_{spec} [Ncm/cm]	P_{spec} [W/cm]
2000	57,636	9,170	19,205
2200	55,722	8,865	20,425
2400	53,957	8,584	21,575
2600	52,318	8,324	22,663
2800	50,790	8,081	23,694
3000	49,358	7,853	24,671
3200	48,010	7,638	25,597
3400	46,737	7,436	26,476
3600	45,532	7,245	27,310
3800	44,387	7,062	28,102
4000	43,297	6,888	28,855
4500	40,780	6,488	30,575
5000	38,513	6,127	32,084
5500	36,452	5,799	33,403
6000	34,561	5,499	34,549
6500	32,815	5,221	35,538
7000	31,194	4,963	36,380
7500	29,679	4,722	37,087
8000	28,260	4,496	37,666
8500	26,923	4,283	38,128
9000	25,661	4,082	38,477
9500	24,464	3,892	38,721
10000	23,328	3,711	38,865

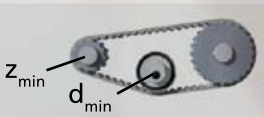
Rotational speeds over 10000 rpm and/or belt speeds over 60 m/s need special drive designs. Please ask our advice.

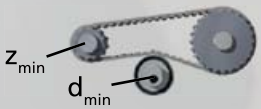
2. Tension member strength (permitted tensile force of the belt F_{zul}), Belt weight

Belt width	b	[mm]	16	25	32	50	75	100	150
Tension member strength	F_{zul}	[N]	3000	5000	6750	10750	16500	22000	33500
Belt weight	ATP 10 GEN III	[kg/m]	0,109	0,170	0,218	0,340	0,510	0,680	1,020

3. Flexibility (Minimum numbers of teeth, minimum diameter)

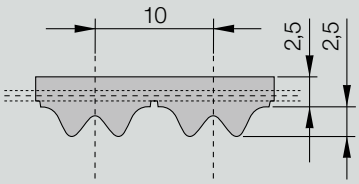
Timing pulley	z_{min}	15	Drive type without contraflexure
Tension roller (smooth), running on teeth	d_{min} [mm]	50	
Timing pulley	z_{min}	25	Drive type with contraflexure
Tension roller (smooth), running on the back of the belt	d_{min} [mm]	120	





ATP high performance Timing Belts

ATP 10



CONTI SYNCHROFLEX® Timing Belt (SFX) ATP 10

High performance ATP profile with metric pitch and optimised meshing of the double engagement toothform.

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

Available versions:

- single-sided
- with “E” tension member for a better flexibility
- with reinforced tension member design
- polyurethane special materials upon request (Standard: 93ShA, colour: red)
- antistatic, coloured, mechanical reworked

Type / Length*	Number of teeth
ATP 10 / 630	63
ATP 10 / 660	66
ATP 10 / 700	70
ATP 10 / 780	78
ATP 10 / 840	84
ATP 10 / 890	89
ATP 10 / 920	92
ATP 10 / 1010	101
ATP 10 / 1080	108
ATP 10 / 1150	115

Type / Length*	Number of teeth
ATP 10 / 1280	128
ATP 10 / 1400	140
ATP 10 / 1650	165
ATP 10 / 1800	180

Preferred belt width* in mm:
16, 25, 32, 50, 75, 100

* Other dimensions upon request.

Order example

CONTI SYNCHROFLEX® Timing Belt 32 ATP10/780

Belt width in mm
Type/Pitch
Belt length in mm

ATP 10 Technical data

1. Tooth shear strength (specific belt tooth strength)

R.p.m. n [min^{-1}]	F_{Uspec} [N/cm]	M_{spec} [Ncm/cm]	P_{spec} [W/cm]
0	95,500	15,199	0,000
20	94,098	14,976	0,314
40	92,785	14,767	0,619
60	91,551	14,571	0,915
80	90,385	14,385	1,205
100	89,282	14,210	1,488
150	86,756	13,808	2,169
200	84,505	13,449	2,817
300	80,642	12,835	4,032
400	77,357	12,312	5,157
500	74,535	11,863	6,211
600	72,052	11,467	7,205
700	69,834	11,114	8,147
730	69,212	11,015	8,420
800	67,831	10,796	9,043
900	66,004	10,505	9,900
1000	64,325	10,238	10,720
1100	62,772	9,990	11,507
1200	61,328	9,761	12,265
1300	59,977	9,546	12,994
1400	58,709	9,344	13,698
1460	57,984	9,228	14,108
1500	57,514	9,154	14,377
1600	56,348	8,968	15,025
1700	55,313	8,803	15,671
1800	54,294	8,641	16,287

R.p.m. n [min^{-1}]	F_{Uspec} [N/cm]	M_{spec} [Ncm/cm]	P_{spec} [W/cm]
1900	53,323	8,487	16,884
2000	52,396	8,339	17,464
2200	50,656	8,062	18,572
2400	49,052	7,807	19,619
2600	47,562	7,570	20,609
2800	46,173	7,349	21,546
2880	45,642	7,264	21,907
3000	44,871	7,141	22,434
3200	43,645	6,946	23,276
3400	42,488	6,762	24,075
3600	41,393	6,588	24,834
3800	40,352	6,422	25,554
4000	39,361	6,264	26,239
4500	37,073	5,900	27,803
5000	35,012	5,572	29,175
5500	33,138	5,274	30,374
6000	31,419	5,000	31,417
6500	29,832	4,748	32,316
7000	28,358	4,513	33,082
7500	26,981	4,294	33,724
8000	25,691	4,089	34,252
8500	24,475	3,895	34,670
9000	23,328	3,713	34,989
9500	22,240	3,540	35,211
10000	21,207	3,375	35,342

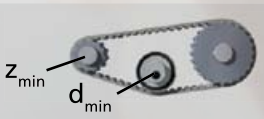
Rotational speeds over 10000 rpm and/or belt speeds over 60 m/s need special drive designs. Please ask for our advice.

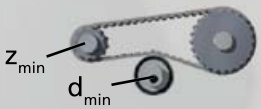
2. Tension member strength (permitted tensile force of the belt F_{zul}), Belt weight

Belt width	b	[mm]	16	25	32	50	75	100	150
Tension member strength	F_{zul}	[N]	2000	3500	4750	7750	12000	16000	24500
Belt weight	ATP 10	[kg/m]	0,096	0,150	0,192	0,300	0,450	0,600	0,900

3. Flexibility (Minimum numbers of teeth, minimum diameter)

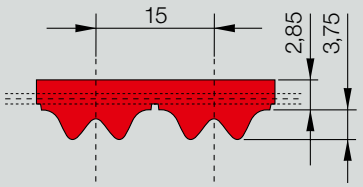
Timing pulley	z_{min}	15	Drive type without contraflexure
Tension roller (smooth), running on teeth	d_{min} [mm]	50	
Timing pulley	z_{min}	25	Drive type with contraflexure
Tension roller (smooth), running on the back of the belt	d_{min} [mm]	120	





ATP high performance Timing Belts

ATP 15 GEN III



CONTI SYNCHROFLEX® Timing Belt (SFX) ATP 15 GEN III

Type / GEN III	Length*	Number of teeth
ATP 15	/ 1125	75
ATP 15	/ 1185	79

Type / GEN III	Length*	Number of teeth
ATP 15	/ 1260	84
ATP 15	/ 1560	104

Preferred belt width* in mm:
25, 32, 50, 75, 100, 150

* Other dimensions upon request.

High performance ATP profile with metric pitch and optimised meshing of the double engagement toothform.

Standard version

- single-sided
- high performance polyurethane in red colour
- 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 in mm
Type/Pitch
Belt length in mm
Specification Generation III

ATP 15 GEN III Technical data

1. Tooth shear strength (specific belt tooth strength)

R.p.m. n [min^{-1}]	F_{Uspec} [N/cm]	M_{spec} [Ncm/cm]	P_{spec} [W/cm]
0	157,672	37,641	0,000
20	155,054	37,016	0,775
40	152,609	36,433	1,526
60	150,315	35,885	2,255
80	148,155	35,369	2,963
100	146,114	34,882	3,653
150	141,455	33,770	5,305
200	137,318	32,782	6,866
300	130,215	31,087	9,766
400	124,258	29,664	12,426
500	119,128	28,440	14,891
600	114,623	27,364	17,193
700	110,606	26,405	19,356
800	106,984	25,540	21,397
900	103,684	24,753	23,329
1000	100,564	24,029	25,163
1100	97,853	23,361	26,910
1200	95,250	22,739	28,575
1300	92,817	22,159	30,166
1400	90,535	21,614	31,687
1500	88,385	21,100	33,144
1600	86,353	20,615	34,541
1700	84,427	20,155	35,881
1800	82,596	19,718	37,168
1900	80,851	19,302	38,404
2000	79,185	18,904	39,592

R.p.m. n [min^{-1}]	F_{Uspec} [N/cm]	M_{spec} [Ncm/cm]	P_{spec} [W/cm]
2200	76,062	18,158	41,834
2400	73,182	17,471	43,909
2600	70,510	16,833	45,831
2800	68,018	16,238	47,612
3000	65,683	15,681	49,262
3200	63,486	15,156	50,789
3400	61,413	14,661	52,201
3600	59,449	14,192	53,504
3800	57,584	13,747	54,705
4000	55,809	13,323	55,809
4500	51,711	12,345	58,175
5000	48,022	11,464	60,027
5500	44,667	10,663	61,417
6000	41,591	9,929	62,386
6500	38,751	9,251	62,970
7000	36,113	8,621	63,198
7500	33,651	8,034	63,095
8000	31,342	7,482	62,684
8500	29,169	6,964	61,984
9000	27,116	6,474	61,012
9500	25,171	6,009	59,782
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 for our advice.

2. Tension member strength (permitted tensile force of the belt F_{zul}), Belt weight

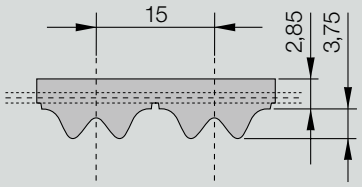
Belt width	b	[mm]	25	32	50	75	100	150
Tension member strength	F_{zul}	[N]	6300	8550	13950	21600	28800	44100
Belt weight	ATP 15 GEN III	[kg/m]	0,218	0,279	0,436	0,654	0,872	1,308

3. Flexibility (Minimum numbers of teeth, minimum diameter)

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

ATP high performance Timing Belts

ATP 15



CONTI SYNCHROFLEX® Timing Belt (SFX) ATP 15

Type / GEN III	Length*	Number of teeth
ATP 15 /	1125	75
ATP 15 /	1185	79

Type / GEN III	Length*	Number of teeth
ATP 15 /	1260	84
ATP 15 /	1560	104

Preferred belt width* in mm:
25, 32, 50, 75, 100, 150

* Other dimensions upon request.

High performance ATP profile with metric pitch and optimised meshing of the double engagement toothform.

Available versions:

- single-sided
- with “E” tension member for a better flexibility
- with reinforced tension member design
- polyurethane special materials upon request (Standard: 93ShA, colour: red)
- antistatic, coloured, mechanical reworked

Order example

CONTI SYNCHROFLEX® Timing Belt 32 ATP15/1260

Belt width in mm
Type/Pitch
Belt length in mm

ATP 15 Technical data

1. Tooth shear strength (specific belt tooth strength)

R.p.m. n [min^{-1}]	F_{Uspec} [N/cm]	M_{spec} [Ncm/cm]	P_{spec} [W/cm]
0	143,325	34,216	0,000
20	140,945	33,648	0,705
40	138,722	33,117	1,387
60	136,637	32,620	2,050
80	134,674	32,151	2,693
100	132,818	31,708	3,320
150	128,584	30,697	4,822
200	124,832	29,799	6,241
300	118,367	28,258	8,877
400	112,952	26,965	11,295
500	108,288	25,852	13,536
600	104,193	24,874	15,629
700	100,542	24,003	17,595
800	97,249	23,216	19,450
900	94,249	22,500	21,206
1000	91,495	21,843	22,874
1100	88,949	21,235	24,461
1200	86,583	20,670	25,975
1300	84,372	20,142	27,421
1400	82,297	19,647	28,804
1500	80,343	19,180	30,128
1600	78,495	18,739	31,398
1700	76,745	18,321	32,616
1800	75,080	17,924	33,786
1900	73,494	17,545	34,910
2000	71,980	17,184	35,990
2200	69,141	16,506	38,027
2400	66,523	15,881	39,914
2600	64,094	15,301	41,661
2800	61,828	14,760	43,280
3000	59,706	14,254	44,779
3200	57,709	13,777	46,167
3400	55,824	13,327	47,451
3600	54,040	12,901	48,636
3800	52,345	12,496	49,727
4000	50,731	12,111	50,731
4500	47,006	11,222	52,881
5000	43,652	10,421	54,565
5500	40,602	9,693	55,828
6000	37,806	9,026	56,709
6500	35,225	8,409	57,240
7000	32,827	7,837	57,447
7500	30,589	7,303	57,354
8000	28,490	6,802	56,980
8500	26,515	6,330	56,344
9000	24,649	5,884	55,460
9500	22,881	5,462	54,342
10000	21,201	5,061	53,003

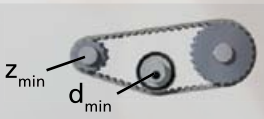
Rotational speeds over 10000 rpm and/or belt speeds over 50 m/s need special drive designs. Please ask for our advice.

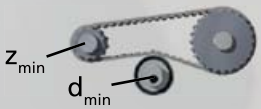
2. Tension member strength (permitted tensile force of the belt F_{zul}), Belt weight

Belt width	b	[mm]	25	32	50	75	100	150
Tension member strength	F_{zul}	[N]	4950	6750	11250	17550	23850	36450
Belt weight	ATP 15	[kg/m]	0,200	0,256	0,400	0,600	0,800	1,200

3. Flexibility (Minimum numbers of teeth, minimum diameter)

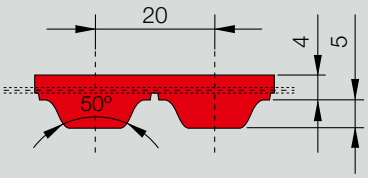
Timing pulley	z_{min}	20	Drive type without contraflexure
Tension roller (smooth), running on teeth	d_{min} [mm]	100	
Timing pulley	z_{min}	30	Drive type with contraflexure
Tension roller (smooth), running on the back of the belt	d_{min} [mm]	60	





AT high performance Timing Belts

AT 20 GEN III



CONTI SYNCHROFLEX® Timing Belt (SFX) AT 20 GEN III

High performance AT profile with metric pitches and trapezoidal teeth.

Standard version:

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

Type / Length* GEN III	Number of teeth
AT 20 / 1000**	50
AT 20 / 1100	55
AT 20 / 1200**	60
AT 20 / 1260	63
AT 20 / 1500**	75
AT 20 / 1600**	80
AT 20 / 1700	85
AT 20 / 1760**	88
AT 20 / 1800	90
AT 20 / 1900**	95

Type / Length* GEN III	Number of teeth
AT 20 / 1960**	98

Preferred belt width* in mm:
32, 50, 75, 100

* Other dimensions upon request.
** In combination with reduced pulley gap please ask for technical support from your Mulco sales partner.

Order example

CONTI SYNCHROFLEX® Timing Belt 32 AT20/1000 GEN III

- Belt width in mm
- Type/Pitch
- Belt length in mm
- Specification Generation III

AT 20 GEN III Technical data

1. Tooth shear strength (specific belt tooth strength)

R.p.m. n [min^{-1}]	F_{Uspec} [N/cm]	M_{spec} [Ncm/cm]	P_{spec} [W/cm]
0	183,750	58,489	0,000
20	180,310	57,395	1,202
40	177,108	56,375	2,361
60	174,112	55,422	3,482
80	171,298	54,526	4,568
100	168,645	53,682	5,622
150	162,609	51,760	8,130
200	157,268	50,060	10,485
300	148,138	47,154	14,814
400	140,512	44,726	18,735
500	133,963	42,642	22,327
600	128,226	40,816	25,645
700	123,120	39,190	28,728
800	118,521	37,726	31,606
900	114,336	36,394	34,301
1000	110,498	35,173	36,833
1100	106,953	34,044	39,216
1200	103,660	32,996	41,464
1300	100,585	32,017	43,587
1400	97,701	31,099	45,594
1500	94,986	30,235	47,493
1600	92,421	29,419	49,291
1700	89,990	28,645	50,995
1800	87,681	27,910	52,608
1900	85,481	27,209	54,138

R.p.m. n [min^{-1}]	F_{Uspec} [N/cm]	M_{spec} [Ncm/cm]	P_{spec} [W/cm]
2000	83,380	26,541	55,587
2200	79,444	25,288	58,259
2400	75,816	24,133	60,653
2600	72,451	23,062	62,791
2800	69,314	22,063	64,693
3000	66,375	21,128	66,375
3200	63,612	20,248	67,852
3400	61,003	19,418	69,137
3600	58,534	18,632	70,241
3800	56,189	17,886	71,173
4000	53,957	17,175	71,943
4500	48,806	15,535	73,209
5000	44,170	14,060	73,617
5500	39,955	12,718	73,251
6000	36,091	11,488	72,183
6500	32,525	10,353	70,470

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

2. Tension member strength (permitted tensile force of the belt F_{zul}), Belt weight

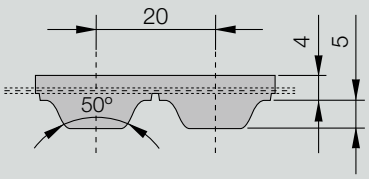
Belt width	b	[mm]	25	32	50	75	100	150
Tension member strength	F_{zul}	[N]	6300	8550	13950	21600	28800	44100
Belt weight	AT 20 GEN III	[kg/m]	0,290	0,371	0,583	0,87	1,16	1,74

3. Flexibility (Minimum numbers of teeth, minimum diameter)

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

AT high performance Timing Belts

AT 20



CONTI SYNCHROFLEX® Timing Belt (SFX) AT 20

High performance AT profile with metric pitches and trapezoidal teeth.

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

Available versions:

- single-sided
- polyurethane special materials upon request
- antistatic, coloured, mechanical reworked

Type / Length*	Number of teeth
AT 20 / 1000**	50
AT 20 / 1100	55
AT 20 / 1200**	60
AT 20 / 1260	63
AT 20 / 1500**	75
AT 20 / 1600**	80
AT 20 / 1700	85
AT 20 / 1760**	88
AT 20 / 1800	90
AT 20 / 1900**	95

Type / Length*	Number of teeth
AT 20 / 1960**	98

Preferred belt width* in mm:
32, 50, 75, 100

* Other dimensions upon request.
** In combination with reduced pulley gap please ask for technical support from your Mulco sales partner.

Order example

CONTI SYNCHROFLEX® Timing Belt 50 AT20 / 1500

Belt width in mm
Type / Pitch
Belt length in mm

AT 20 Technical data

1. Tooth shear strength (specific belt tooth strength)

R.p.m. n [min^{-1}]	F_{Uspec} [N/cm]	M_{spec} [Ncm/cm]	P_{spec} [W/cm]
0	147,0	46,80	0,000
20	144,2	45,90	0,962
40	141,7	45,10	1,889
60	139,3	44,30	2,790
80	137,0	43,60	3,650
100	134,9	42,90	4,500
200	125,8	40,00	8,390
300	118,5	37,70	11,850
400	112,4	35,80	14,990
500	107,2	34,10	17,860
600	102,6	32,70	20,500
700	98,5	31,40	23,000
800	94,8	30,20	25,300
900	91,5	29,10	27,400
1000	88,4	28,10	29,500
1100	85,6	27,20	31,400
1200	82,9	26,40	33,200
1300	80,5	25,60	34,900
1400	78,2	24,90	36,500
1500	76,0	24,20	38,000
1600	73,9	23,50	39,400
1700	72,0	22,90	40,800
1800	70,1	22,30	42,100
1900	68,4	21,80	43,300
2000	66,7	21,20	44,500
2200	63,6	20,20	46,600
2400	60,7	19,31	48,500
2600	58,0	18,45	50,200
2800	55,5	17,65	51,800
3000	53,1	16,90	53,100
3200	50,9	16,20	54,300
3400	48,8	15,53	55,300
3600	46,8	14,91	56,200
3800	45,0	14,31	56,900
4000	43,2	13,74	57,600
4500	39,0	12,43	58,600
5000	35,3	11,25	58,800
5500	32,0	10,17	60,600
6000	28,9	9,19	61,700
6500	26,0	8,28	62,400

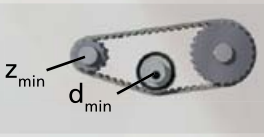
Rotational speeds over 6500 rpm and/or belt speeds over 40 m/s need special drive designs. Please ask for our advice.

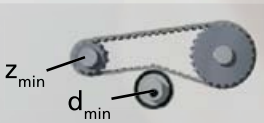
2. Tension member strength (permitted tensile force of the belt F_{zul}), Belt weight

Belt width	b	[mm]	32	50	75	100	150
Tension member strength	F_{zul}	[N]	6750	11250	17550	23850	36450
Belt weight	AT 20	[kg/m]	0,339	0,530	0,795	1,060	1,590

3. Flexibility (Minimum numbers of teeth, minimum diameter)

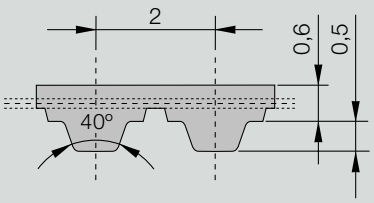
Timing pulley	z_{min}	18	Drive type without contraflexure
Tension roller (smooth), running on teeth	d_{min} [mm]	120	
Timing pulley	z_{min}	25	Drive type with contraflexure
Tension roller (smooth), running on the back of the belt	d_{min} [mm]	180	





T standard Timing Belts

T 2



CONTI SYNCHROFLEX® Timing Belt (SFX) T 2

Standard T profile with metric pitch and trapezoidal teeth.

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

Available versions:

- single-sided
- with Aramide tension member
- polyurethane special materials upon request
- antistatic, coloured, mechanical reworked

FA: with bigger back thickness

FN: with profiles on the back of the belt

Type	/ Length*		Number of teeth
T 2	/ 68		34
T 2	/ 90		45
T 2	/ 108		54
T 2	/ 118		59
T 2	/ 120		60
T 2	/ 120	FA	60
T 2	/ 138		69
T 2	/ 140		70
T 2	/ 144		72
T 2	/ 150		75
T 2	/ 160		80
T 2	/ 180		90
T 2	/ 200		100
T 2	/ 220		110
T 2	/ 220	FA	110

Type	/ Length*		Number of teeth
T 2	/ 220	FN2	110
T 2	/ 240		120
T 2	/ 256		128
T 2	/ 262		131
T 2	/ 280		140
T 2	/ 292		146
T 2	/ 320		160
T 2	/ 360		180
T 2	/ 600		300
T 2	/ 710		355
T 2	/ 710	FA	355
T 2	/ 1296	FA	648

Preferred belt width* in mm:
4, 6, 10

* Other dimensions upon request.

Order example

CONTI SYNCHROFLEX® Timing Belt 6 T2/240

Belt width in mm
Type/Pitch
Belt length in mm

T 2 Technical data

1. Tooth shear strength (specific belt tooth strength)

R.p.m. n [min^{-1}]	F_{Uspec} [N/cm]	M_{spec} [Ncm/cm]	P_{spec} [W/cm]
0	6,58	0,209	0,000
20	6,36	0,202	0,004
40	6,18	0,197	0,008
60	6,03	0,192	0,012
80	5,90	0,188	0,016
100	5,79	0,184	0,019
150	5,56	0,177	0,028
200	5,38	0,171	0,036
300	5,10	0,162	0,051
400	4,89	0,156	0,065
500	4,72	0,150	0,079
600	4,58	0,146	0,092
700	4,45	0,142	0,104
730	4,42	0,141	0,108
800	4,35	0,138	0,116
900	4,25	0,135	0,127
1000	4,16	0,132	0,139
1100	4,08	0,130	0,150
1200	4,01	0,128	0,160
1300	3,94	0,125	0,171
1400	3,88	0,124	0,181
1460	3,85	0,123	0,187
1500	3,82	0,122	0,191
1600	3,77	0,120	0,201
1700	3,72	0,118	0,211
1800	3,67	0,117	0,220
1900	3,62	0,115	0,229
2000	3,58	0,114	0,239
2200	3,50	0,111	0,257

R.p.m. n [min^{-1}]	F_{Uspec} [N/cm]	M_{spec} [Ncm/cm]	P_{spec} [W/cm]
2400	3,42	0,109	0,274
2500	3,39	0,108	0,282
2600	3,35	0,107	0,290
2800	3,29	0,105	0,307
2880	3,26	0,104	0,313
3000	3,23	0,103	0,323
3200	3,17	0,101	0,338
3400	3,12	0,099	0,354
3600	3,07	0,098	0,368
3800	3,02	0,096	0,383
4000	2,98	0,095	0,397
4500	2,88	0,092	0,432
5000	2,78	0,088	0,463
5500	2,70	0,086	0,495
6000	2,63	0,084	0,526
6500	2,56	0,081	0,555
7000	2,49	0,079	0,581
7500	2,43	0,077	0,607
8000	2,37	0,075	0,632
8500	2,32	0,074	0,657
9000	2,27	0,072	0,681
9500	2,22	0,071	0,703
10000	2,18	0,069	0,727
12000	2,02	0,064	0,808
15000	1,82	0,058	0,910
18000	1,66	0,053	0,996
20000	1,57	0,050	1,047

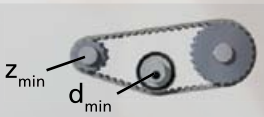
Rotational speeds over 20000 rpm and/or belt speeds over 80 m/s need special drive designs. Please ask for our advice.

2. Tension member strength (permitted tensile force of the belt F_{zul}), Belt weight

Belt width	b	[mm]	4	6	10	16	25	32
Tension member strength	F_{zul}	[N]	39	65	117	195	312	403
Belt weight	T 2	[kg/m]	0,004	0,007	0,011	0,018	0,028	0,035

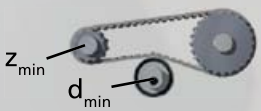
3. Flexibility (Minimum numbers of teeth, minimum diameter)

Timing pulley	z_{min}		10
Tension roller (smooth), running on teeth	d_{min}	[mm]	15



Drive type without contraflexure

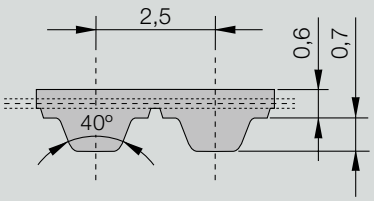
Timing pulley	z_{min}		18
Tension roller (smooth), running on the back of the belt	d_{min}	[mm]	15



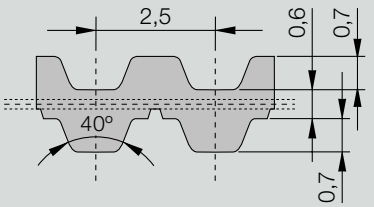
Drive type with contraflexure

T standard Timing Belts

T 2,5 / T 2,5-DL



CONTI SYNCHROFLEX® Timing Belt (SFX) T 2,5



CONTI SYNCHROFLEX® Timing Belt (SFX) T 2,5-DL

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

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

Available versions:

- single-sided (as standard)
- with Aramide tension member
- polyurethane special materials upon request
- antistatic, coloured, mechanical reworked

DL: double-sided

FA: with bigger back thickness

FN: with profiles on the back of the belt

Type	/ Length*		Number of teeth
T 2,5	/ 55	FA	22
T 2,5	/ 75	FN2	30
T 2,5	/ 120		48
T 2,5	/ 145		58
T 2,5	/ 160		64
T 2,5	/ 160	FA	64
T 2,5	/ 177,5		71
T 2,5	/ 180		72
T 2,5	/ 182,5		73
T 2,5	/ 200		80
T 2,5	/ 210	FA	84
T 2,5	/ 210	FN28	84
T 2,5	/ 220	FN3	88
T 2,5	/ 225		90
T 2,5	/ 230		92
T 2,5	/ 230	FA	92
T 2,5	/ 245		98
T 2,5	/ 250		100
T 2,5	/ 265		106
T 2,5	/ 285		114
T 2,5	/ 285	FA	114
T 2,5	/ 290		116
T 2,5	/ 305		122
T 2,5	/ 305	FA	122
T 2,5	/ 305	FN1	122
T 2,5	/ 317,5		127

Type	/ Length*		Number of teeth
T 2,5	/ 317,5	DL	127
T 2,5	/ 330		132
T 2,5	/ 380		152
T 2,5	/ 395		158
T 2,5	/ 400	FA	160
T 2,5	/ 415	DL	166
T 2,5	/ 420		168
T 2,5	/ 420	FN168	168
T 2,5	/ 457,5	DL	183
T 2,5	/ 480		192
T 2,5	/ 500		200
T 2,5	/ 500	FA	200
T 2,5	/ 540		216
T 2,5	/ 540	FA	216
T 2,5	/ 600	FA	240
T 2,5	/ 620		248
T 2,5	/ 650		260
T 2,5	/ 650	FN2	260
T 2,5	/ 780		312
T 2,5	/ 780	FA	312
T 2,5	/ 950		380
T 2,5	/ 1300		520
T 2,5	/ 1300	FA	520
T 2,5	/ 1350	FA	540
T 2,5	/ 1475	FA	590

Preferred belt width* in mm:
4, 6, 10

* Other dimensions upon request.

Order example

CONTI SYNCHROFLEX® Timing Belt 10 T2,5 / 380

Belt width in mm
Type / Pitch
Belt length in mm

T 2,5 / T 2,5-DL Technical data

1. Tooth shear strength (specific belt tooth strength)

R.p.m. n [min^{-1}]	F_{Uspec} [N/cm]	M_{spec} [Ncm/cm]	P_{spec} [W/cm]
0	9,03	0,359	0,000
20	8,72	0,347	0,007
40	8,48	0,337	0,014
60	8,28	0,329	0,021
80	8,10	0,322	0,027
100	7,95	0,316	0,033
150	7,64	0,304	0,048
200	7,39	0,294	0,062
300	7,01	0,279	0,088
400	6,71	0,267	0,112
500	6,48	0,258	0,135
600	6,28	0,250	0,157
700	6,11	0,243	0,178
730	6,07	0,241	0,185
800	5,97	0,237	0,199
900	5,83	0,232	0,219
1000	5,71	0,227	0,238
1100	5,61	0,223	0,257
1200	5,51	0,219	0,275
1300	5,41	0,215	0,293
1400	5,33	0,212	0,311
1460	5,28	0,210	0,321
1500	5,25	0,209	0,328
1600	5,17	0,206	0,345
1700	5,10	0,203	0,361
1800	5,04	0,200	0,378
1900	4,97	0,198	0,394
2000	4,91	0,195	0,409
2200	4,80	0,191	0,440
2400	4,70	0,187	0,470
2500	4,65	0,185	0,484
2600	4,60	0,183	0,499
2800	4,51	0,180	0,527
2880	4,48	0,178	0,538
3000	4,43	0,176	0,554
3200	4,36	0,173	0,581
3400	4,28	0,170	0,607
3600	4,22	0,168	0,632
3800	4,15	0,165	0,657
4000	4,09	0,163	0,682
4500	3,95	0,157	0,740
5000	3,82	0,152	0,796
5500	3,71	0,148	0,850
6000	3,60	0,143	0,901
6500	3,51	0,140	0,950
7000	3,42	0,136	0,997
7500	3,33	0,133	1,042
8000	3,26	0,130	1,086
8500	3,18	0,127	1,128
9000	3,11	0,124	1,168
9500	3,05	0,121	1,207
10000	2,99	0,119	1,245
12000	2,77	0,110	1,384
15000	2,50	0,099	1,561
18000	2,28	0,091	1,708
20000	2,15	0,086	1,791

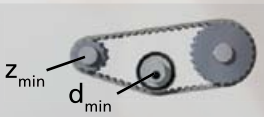
Rotational speeds over 20000 rpm and/or belt speeds over 80 m/s need special drive designs. Please ask for our advice.

2. Tension member strength (permitted tensile force of the belt F_{zul}), Belt weight

Belt width	b	[mm]	4	6	10	16	25	32
Tension member strength	F_{zul}	[N]	39	65	117	195	312	403
Belt weight	T 2,5	[kg/m]	0,006	0,009	0,015	0,024	0,038	0,048
	T 2,5-DL	[kg/m]	0,006	0,009	0,016	0,025	0,040	0,051

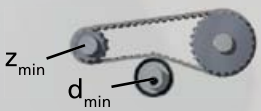
3. Flexibility (Minimum numbers of teeth, minimum diameter)

Timing pulley	z_{min}		10
Tension roller (smooth), running on teeth	d_{min}	[mm]	15



Drive type without contraflexure

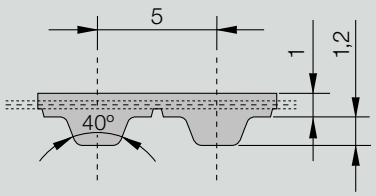
Timing pulley	z_{min}		18
Tension roller (smooth), running on the back of the belt	d_{min}	[mm]	15



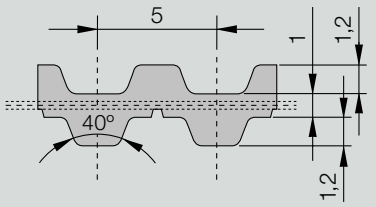
Drive type with contraflexure

T standard Timing Belts

T 5 / T 5-DL



CONTI SYNCHROFLEX® Timing Belt (SFX) T 5



CONTI SYNCHROFLEX® Timing Belt (SFX) T 5-DL

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

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

Available versions:

- single-sided (as standard)
- with "E" tension member for a better flexibility
- with Aramide tension member
- polyurethane special materials upon request
- antistatic, coloured, mechanical 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 T5/455

Belt width in mm

Type/Pitch

Belt length in mm

Type	/ Length*	Number of teeth
T 5	/ 100	20
T 5	/ 150	30
T 5	/ 150 DL	30
T 5	/ 165	33
T 5	/ 165 FN33	33
T 5	/ 180	36
T 5	/ 185	37
T 5	/ 200	40
T 5	/ 210	42
T 5	/ 215	43
T 5	/ 220	44
T 5	/ 225	45
T 5	/ 225 FN90	45
T 5	/ 245	49
T 5	/ 250	50
T 5	/ 255	51
T 5	/ 260	52
T 5	/ 260 DL	52
T 5	/ 260 FN1	52
T 5	/ 270	54
T 5	/ 280	56
T 5	/ 295	59
T 5	/ 300 DL	60
T 5	/ 305	61
T 5	/ 330	66
T 5	/ 330 DL	66
T 5	/ 340	68
T 5	/ 340 FN6	68
T 5	/ 355	71
T 5	/ 365	73
T 5	/ 390	78
T 5	/ 390 FN1	78
T 5	/ 400	80
T 5	/ 410	82
T 5	/ 410 DL	82
T 5	/ 420	84
T 5	/ 455	91
T 5	/ 460	92
T 5	/ 460 FN4	92
T 5	/ 460 DL	92
T 5	/ 480	96
T 5	/ 500	100
T 5	/ 500 FN10	100
T 5	/ 505	101
T 5	/ 510	102
T 5	/ 510 FN1	102
T 5	/ 515 DL	103
T 5	/ 525	105
T 5	/ 525 FA	105
T 5	/ 525 DL	105
T 5	/ 545	109
T 5	/ 550	110
T 5	/ 560	112
T 5	/ 575	115
T 5	/ 590	118

Type	/ Length*	Number
T 5	/ 590 DL	118
T 5	/ 600 FN	120
T 5	/ 610	122
T 5	/ 615 FN	123
T 5	/ 620	124
T 5	/ 620 DL	124
T 5	/ 625 DL	125
T 5	/ 630	126
T 5	/ 630 FA	126
T 5	/ 650	130
T 5	/ 650 FA	130
T 5	/ 660	132
T 5	/ 660 FN30	132
T 5	/ 690	138
T 5	/ 690 FA	138
T 5	/ 690 FN3	138
T 5	/ 700	140
T 5	/ 720	144
T 5	/ 725	145
T 5	/ 750	150
T 5	/ 750 DL	150
T 5	/ 765	153
T 5	/ 780	156
T 5	/ 800	160
T 5	/ 800 FN2	160
T 5	/ 815	163
T 5	/ 815 DL	163
T 5	/ 840	168
T 5	/ 840 FN	168
T 5	/ 860 FN1	172
T 5	/ 860 DL	172
T 5	/ 900	180
T 5	/ 920	184
T 5	/ 925	185
T 5	/ 925 FN1	185
T 5	/ 940	188
T 5	/ 940 DL	188
T 5	/ 990	198
T 5	/ 990 FN4	198
T 5	/ 1075	215
T 5	/ 1075 FA	215
T 5	/ 1100	220
T 5	/ 1100 DL	220
T 5	/ 1100 FN22	220
T 5	/ 1140 FN1	228
T 5	/ 1160	232
T 5	/ 1215	243
T 5	/ 1215 FN	243
T 5	/ 1315	263
T 5	/ 1325 DL	265
T 5	/ 1350 FN1	270
T 5	/ 1380	276
T 5	/ 1380 FN1	276
T 5	/ 1500	300

Preferred belt width* in mm:
6, 10, 16, 25, 50

* Other dimensions upon request.

T 5 / T 5-DL Technical data

1. Tooth shear strength (specific belt tooth strength)

R.p.m. n [min^{-1}]	F_{Uspec} [N/cm]	M_{spec} [Ncm/cm]	P_{spec} [W/cm]
0	24,00	1,910	0,000
20	23,40	1,861	0,039
40	22,90	1,819	0,076
60	22,40	1,783	0,112
80	22,00	1,751	0,147
100	21,70	1,723	0,180
200	20,30	1,614	0,338
300	19,30	1,536	0,483
400	18,55	1,476	0,618
500	17,93	1,427	0,747
600	17,41	1,385	0,870
700	16,96	1,349	0,989
800	16,56	1,318	1,104
900	16,20	1,289	1,215
1000	15,88	1,263	1,323
1100	15,58	1,240	1,428
1200	15,31	1,218	1,531
1300	15,06	1,198	1,632
1400	14,83	1,180	1,730
1500	14,61	1,162	1,826
1600	14,40	1,146	1,920
1700	14,21	1,131	2,010
1800	14,03	1,116	2,100
1900	13,85	1,102	2,190

R.p.m. n [min^{-1}]	F_{Uspec} [N/cm]	M_{spec} [Ncm/cm]	P_{spec} [W/cm]
2000	13,69	1,089	2,28
2200	13,38	1,065	2,45
2400	13,10	1,042	2,62
2600	12,84	1,021	2,78
2800	12,59	1,002	2,94
3000	12,37	0,984	3,09
3200	12,16	0,967	3,24
3400	11,96	0,951	3,39
3600	11,77	0,936	3,53
3800	11,59	0,922	3,67
4000	11,42	0,909	3,81
4500	11,03	0,878	4,14
5000	10,68	0,850	4,45
5500	10,36	0,825	4,75
6000	10,07	0,802	5,04
6500	9,81	0,780	5,31
7000	9,56	0,761	5,58
7500	9,33	0,742	5,83
8000	9,11	0,725	6,08
8500	8,91	0,709	6,31
9000	8,72	0,694	6,54
9500	8,54	0,679	6,76
10000	8,37	0,666	6,97

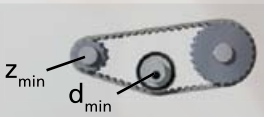
Rotational speeds over 10000 rpm and/or belt speeds over 80 m/s need special drive designs. Please ask for our advice.

2. Tension member strength (permitted tensile force of the belt F_{zul}), Belt weight

Belt width	b	[mm]	6	10	16	25	32	50	75	100
Tension member strength	F_{zul}	[N]	180	330	570	930	1200	1920	2940	3930
Belt weight	T 5	[kg/m]	0,014	0,024	0,038	0,060	0,077	0,120	0,180	0,240
	T 5-DL	[kg/m]	0,016	0,027	0,043	0,067	0,086	0,135	0,203	0,270

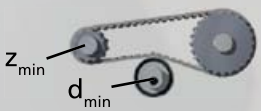
3. Flexibility (Minimum numbers of teeth, minimum diameter)

Timing pulley	z_{min}		10
Tension roller (smooth), running on teeth	d_{min}	[mm]	30



Drive type without contraflexure

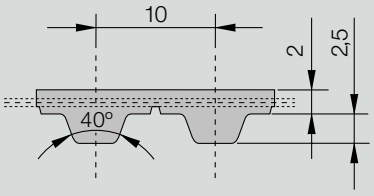
Timing pulley	z_{min}		15
Tension roller (smooth), running on the back of the belt	d_{min}	[mm]	30



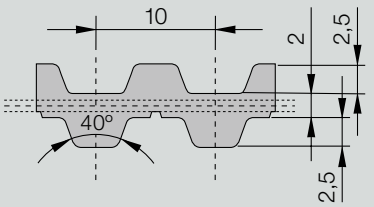
Drive type with contraflexure

T standard Timing Belts

T 10 / T 10-DL



CONTI SYNCHROFLEX® Timing Belt (SFX) T 10



CONTI SYNCHROFLEX® Timing Belt T (SFX) 10-DL

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

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

Available version

- single-sided (as standard)
- with "E" tension member for a better flexibility
- with Aramide tension member
- polyurethane special materials upon request
- antistatic, coloured, mechanical reworked

DL: double-sided

FA: with bigger back thickness

FN: with profiles on the back of the belt

Order example

CONTI SYNCHROFLEX® Timing Belt 16 T10/260

Belt width in mm

Type/Pitch

Belt length in mm

Type / Length*	Number of teeth
T 10 / 260	26
T 10 / 260 DL	26
T 10 / 350	35
T 10 / 370	37
T 10 / 400	40
T 10 / 410	41
T 10 / 410 FA	41
T 10 / 420 FN21	42
T 10 / 440	44
T 10 / 450	45
T 10 / 500	50
T 10 / 500 FN	50
T 10 / 530	53
T 10 / 530 DL	53
T 10 / 560	56
T 10 / 600	60
T 10 / 610	61
T 10 / 630	63
T 10 / 630 DL	63
T 10 / 660	66
T 10 / 660 DL	66
T 10 / 680	68
T 10 / 690	69
T 10 / 700	70
T 10 / 720	72
T 10 / 720 DL	72
T 10 / 730	73
T 10 / 750	75
T 10 / 760	76
T 10 / 780	78
T 10 / 780 FN78	78
T 10 / 800 FN80	80
T 10 / 810	81
T 10 / 840	84
T 10 / 840 DL	84
T 10 / 840 FN84	84
T 10 / 850	85
T 10 / 880	88
T 10 / 890	89
T 10 / 920	92
T 10 / 960	96
T 10 / 970	97
T 10 / 970 FN97	97

Type / Length*	Number of teeth
T 10 / 980	98
T 10 / 980 DL	98
T 10 / 1010	101
T 10 / 1080	108
T 10 / 1110	111
T 10 / 1140	114
T 10 / 1150	115
T 10 / 1210	121
T 10 / 1210 DL	121
T 10 / 1240	124
T 10 / 1240 DL	124
T 10 / 1250	125
T 10 / 1250 DL	125
T 10 / 1300	130
T 10 / 1320	132
T 10 / 1320 DL	132
T 10 / 1350	135
T 10 / 1350 DL	135
T 10 / 1390	139
T 10 / 1400	140
T 10 / 1420	142
T 10 / 1420 DL	142
T 10 / 1450	145
T 10 / 1460	146
T 10 / 1460 FN146	146
T 10 / 1500	150
T 10 / 1560	156
T 10 / 1610	161
T 10 / 1610 DL	161
T 10 / 1750	175
T 10 / 1780	178
T 10 / 1800 FN12	180
T 10 / 1880	188
T 10 / 1880 DL	188
T 10 / 1960	196
T 10 / 2250	225
T 10 / 3100	310
T 10 / 4780	478
T 10 / 4780 DL**	478

Preferred belt width* in mm:
16, 25, 32, 50

* Other dimensions upon request.
** Please request technical support from your Mulco sales partner.

T 10 / T 10-DL Technical data

1. Tooth shear strength (specific belt tooth strength)

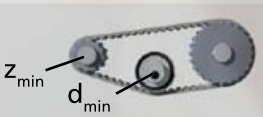
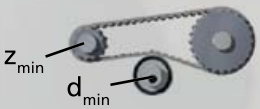
R.p.m. n [min^{-1}]	F_{Uspec} [N/cm]	M_{spec} [Ncm/cm]	P_{spec} [W/cm]	R.p.m. n [min^{-1}]	F_{Uspec} [N/cm]	M_{spec} [Ncm/cm]	P_{spec} [W/cm]
0	50,5	8,04	0,000	2000	25,40	4,04	8,46
20	49,0	7,80	0,163	2200	24,60	3,92	9,03
40	47,7	7,60	0,318	2400	23,90	3,81	9,58
60	46,6	7,42	0,466	2600	23,30	3,71	10,10
80	45,7	7,27	0,609	2800	22,70	3,62	10,60
100	44,8	7,13	0,746	3000	22,20	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 for our advice.

2. Tension member strength (permitted tensile force of the belt F_{zul}), Belt weight

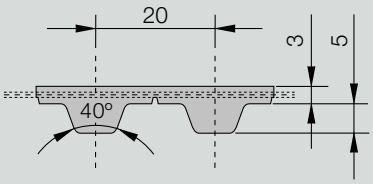
Belt width	b	[mm]	16	25	32	50	75	100	150
Tension member strength	F_{zul}	[N]	1200	2000	2700	4300	6600	8800	13400
Belt weight	T 10	[kg/m]	0,077	0,120	0,154	0,240	0,360	0,480	0,720
	T 10-DL	[kg/m]	0,091	0,143	0,182	0,285	0,428	0,570	0,855

3. Flexibility (Minimum numbers of teeth, minimum diameter)

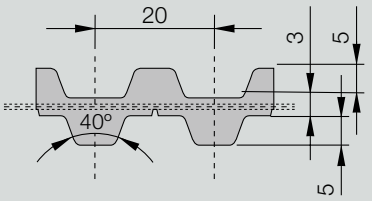
Timing pulley	z_{min}		12	 Drive type without contraflexure
Tension roller (smooth), running on teeth	d_{min}	[mm]	60	
Timing pulley	z_{min}		20	 Drive type with contraflexure
Tension roller (smooth), running on the back of the belt	d_{min}	[mm]	60	

T standard Timing Belts

T 20 / T 20-DL



CONTI SYNCHROFLEX® Timing Belt (SFX) T 20



CONTI SYNCHROFLEX® Timing Belt (SFX) T 20-DL

Type / Length*	Number of teeth
T 20 / 1260	63
T 20 / 1460	73
T 20 / 1780	89
T 20 / 1880	94
T 20 / 2600	130

Type / Length*	Number of teeth
T 20 / 2600 DL**	130
T 20 / 3100	155
T 20 / 3620	181
T 20 / 3620 DL**	181

Preferred belt width* in mm:
32, 50, 75, 100

* Other dimensions upon request.

** In combination with reduced pulley gap please ask for technical support from your Mulco sales partner.

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

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

Available versions:

- single-sided (as standard)
- with “E” tension member for a better flexibility
- with Aramide tension member (except DL)
- polyurethane special materials upon request
- antistatic, coloured, mechanical reworked

DL: double-sided

Order example

CONTI SYNCHROFLEX® Timing Belt 50 T20 / 2600

Belt width in mm
Type / Pitch
Belt length in mm

T 20 / T 20-DL Technical data

1. Tooth shear strength (specific belt tooth strength)

R.p.m. n [min^{-1}]	F_{Uspec} [N/cm]	M_{spec} [Ncm/cm]	P_{spec} [W/cm]
0	101,5	32,30	0,000
20	98,1	31,20	0,654
40	95,3	30,30	1,271
60	92,8	29,50	1,856
80	90,7	28,90	2,420
100	88,7	28,20	2,960
200	81,2	25,90	5,420
300	75,9	24,20	7,590
400	71,8	22,90	9,570
500	68,4	21,80	11,410
600	65,6	20,90	13,110
700	63,1	20,10	14,730
800	60,9	19,40	16,250
900	59,0	18,78	17,700
1000	57,2	18,22	19,080
1100	55,6	17,71	20,400
1200	54,2	17,24	21,700
1300	52,8	16,80	22,900
1400	51,5	16,40	24,000
1500	50,3	16,02	25,200
1600	49,2	15,66	26,200
1700	48,2	15,33	27,300
1800	47,2	15,01	28,300
1900	46,2	14,71	29,300

R.p.m. n [min^{-1}]	F_{Uspec} [N/cm]	M_{spec} [Ncm/cm]	P_{spec} [W/cm]
2000	45,3	14,42	30,2
2200	43,6	13,89	32,0
2400	42,1	13,40	33,7
2600	40,7	12,95	35,2
2800	39,4	12,53	36,7
3000	38,1	12,13	38,1
3200	37,0	11,77	39,4
3400	35,9	11,42	40,7
3600	34,9	11,09	41,8
3800	33,9	10,78	42,9
4000	33,0	10,49	43,9
4500	30,8	9,81	46,2
5000	28,9	9,21	48,2
5500	27,2	8,66	49,9
6000	25,6	8,16	51,2
6500	24,2	7,69	52,4

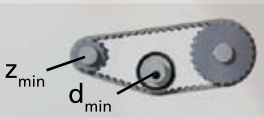
Rotational speeds over 6500 rpm and/or belt speeds over 40 m/s need special drive designs. Please ask for our advice.

2. Tension member strength (permitted tensile force of the belt F_{zul}), Belt weight

Belt width	b	[mm]	32	50	75	100	150
Tension member strength	F_{zul}	[N]	4750	7750	12000	16000	24500
Belt weight	T 20	[kg/m]	0,269	0,420	0,630	0,840	1,260
	T 20-DL	[kg/m]	0,355	0,555	0,833	1,110	1,665

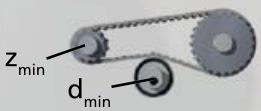
3. Flexibility (Minimum numbers of teeth, minimum diameter)

Timing pulley	z_{min}		15
Tension roller (smooth), running on teeth	d_{min}	[mm]	120



Drive type without contraflexure

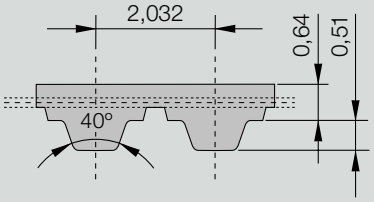
Timing pulley	z_{min}		25
Tension roller (smooth), running on the back of the belt	d_{min}	[mm]	120



Drive type with contraflexure

Imperial Timing Belts

M (MXL)



CONTI SYNCHROFLEX® Timing Belt (SFX) M (MXL)

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

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

Available versions:

- single-sided
- with Aramide tension member
- polyurethane special materials upon request
- antistatic, coloured, mechanical 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 / 243,86	120
M 256 / 256,03	126

Type / Length*	Number of teeth
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	250
M 520 / 520,19	256
M 599 / 599,44	295
M 731 / 731,52	360
M1178 / 1178,56	580

Preferred belt width* in mm:
4, 6, 10

* Other dimensions upon request.

Order example

CONTI SYNCHROFLEX® Timing Belt 6 M / 182

Belt width in mm
Type / Pitch
Belt length in mm

M (MXL) Technical data

1. Tooth shear strength (specific belt tooth strength)

R.p.m. n [min^{-1}]	F_{Uspec} [N/cm]	M_{spec} [Ncm/cm]	P_{spec} [W/cm]
0	6,58	0,209	0,000
20	6,36	0,202	0,004
40	6,18	0,197	0,008
60	6,03	0,192	0,012
80	5,90	0,188	0,016
100	5,79	0,184	0,019
150	5,56	0,177	0,028
200	5,38	0,171	0,036
300	5,10	0,162	0,051
400	4,89	0,156	0,065
500	4,72	0,150	0,079
600	4,58	0,146	0,092
700	4,45	0,142	0,104
730	4,42	0,141	0,108
800	4,35	0,138	0,116
900	4,25	0,135	0,127
1000	4,16	0,132	0,139
1100	4,08	0,130	0,150
1200	4,01	0,128	0,160
1300	3,94	0,125	0,171
1400	3,88	0,124	0,181
1460	3,85	0,123	0,187
1500	3,82	0,122	0,191
1600	3,77	0,120	0,201
1700	3,72	0,118	0,211
1800	3,67	0,117	0,220
1900	3,62	0,115	0,229
2000	3,58	0,114	0,239
2200	3,50	0,111	0,257
2400	3,42	0,109	0,274

R.p.m. n [min^{-1}]	F_{Uspec} [N/cm]	M_{spec} [Ncm/cm]	P_{spec} [W/cm]
2500	3,39	0,108	0,282
2600	3,35	0,107	0,290
2800	3,29	0,105	0,307
2880	3,26	0,104	0,313
3000	3,23	0,103	0,323
3200	3,17	0,101	0,338
3400	3,12	0,099	0,354
3600	3,07	0,098	0,368
3800	3,02	0,096	0,383
4000	2,98	0,095	0,397
4500	2,88	0,092	0,432
5000	2,78	0,088	0,463
5500	2,70	0,086	0,495
6000	2,63	0,084	0,526
6500	2,56	0,081	0,555
7000	2,49	0,079	0,581
7500	2,43	0,077	0,607
8000	2,37	0,075	0,632
8500	2,32	0,074	0,657
9000	2,27	0,072	0,681
9500	2,22	0,071	0,703
10000	2,18	0,069	0,727
12000	2,02	0,064	0,808
15000	1,82	0,058	0,910
18000	1,66	0,053	0,996
20000	1,57	0,050	1,047

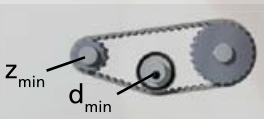
Rotational speeds over 20000 rpm and/or belt speeds over 80 m/s need special drive designs. Please ask for our advice.

2. Tension member strength (permitted tensile force of the belt F_{zul}), Belt weight

Belt width	b	[mm]	4	6	10	16	25	32
Tension member strength	F_{zul}	[N]	39	65	117	195	312	403
Belt weight	M	[kg/m]	0,005	0,007	0,012	0,019	0,030	0,038

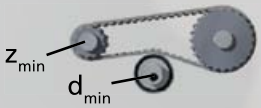
3. Flexibility (Minimum numbers of teeth, minimum diameter)

Timing pulley	z_{min}		10
Tension roller (smooth), running on teeth	d_{min}	[mm]	15



Drive type without contraflexure

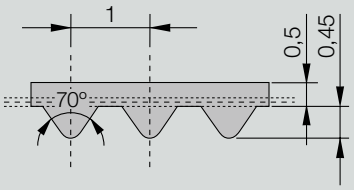
Timing pulley	z_{min}		18
Tension roller (smooth), running on the back of the belt	d_{min}	[mm]	15



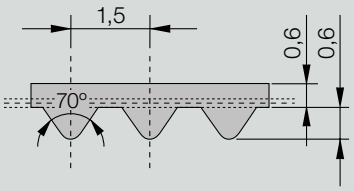
Drive type with contraflexure

Serrated Profile Timing Belts

K 1 / K 1,5



CONTI SYNCHROFLEX® Timing Belt (SFX) K 1



CONTI SYNCHROFLEX® Timing Belt (SFX) K 1,5

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 / 67,5**	45
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

Type / Length*	Number of teeth
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* in mm:
4, 6, 10

* Other dimensions upon request.
** In casting polyurethane 93 ShA, red colour.

Serrated metric pitch profile.

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

Available versions:

- single-sided
- with Aramide tension member
- polyurethane special materials upon request
- antistatic, coloured, mechanical reworked

Order example

CONTI SYNCHROFLEX® Timing Belt 6 K1,5 / 100,5

Belt width in mm
Type / Pitch
Belt length in mm

K / K1,5 Technical data

1. Tooth shear strength (specific belt tooth strength)

R.p.m. n [min^{-1}]	F_{Uspec} [N/cm]	M_{spec} [Ncm/cm]	P_{spec} [W/cm]
0	6,45	0,154	0,000
20	6,23	0,149	0,003
40	6,06	0,145	0,006
60	5,91	0,141	0,009
80	5,79	0,138	0,012
100	5,68	0,136	0,014
150	5,46	0,130	0,020
200	5,28	0,126	0,026
300	5,00	0,119	0,037
400	4,80	0,115	0,048
500	4,63	0,111	0,058
600	4,49	0,107	0,067
700	4,37	0,104	0,076
730	4,33	0,103	0,079
800	4,26	0,102	0,085
900	4,17	0,100	0,094
1000	4,08	0,097	0,102
1100	4,00	0,095	0,110
1200	3,93	0,094	0,118
1300	3,87	0,092	0,126
1400	3,81	0,091	0,133
1460	3,77	0,090	0,138
1500	3,75	0,090	0,141
1600	3,69	0,088	0,148
1700	3,64	0,087	0,155
1800	3,60	0,086	0,162
1900	3,55	0,085	0,169
2000	3,51	0,084	0,175
2200	3,43	0,082	0,189
2400	3,35	0,080	0,201

R.p.m. n [min^{-1}]	F_{Uspec} [N/cm]	M_{spec} [Ncm/cm]	P_{spec} [W/cm]
2500	3,32	0,079	0,207
2600	3,29	0,079	0,214
2800	3,22	0,077	0,225
2880	3,20	0,076	0,230
3000	3,17	0,076	0,238
3200	3,11	0,074	0,249
3400	3,06	0,073	0,260
3600	3,01	0,072	0,271
3800	2,96	0,071	0,281
4000	2,92	0,070	0,292
4500	2,82	0,067	0,317
5000	2,73	0,065	0,341
5500	2,65	0,063	0,364
6000	2,57	0,061	0,385
6500	2,51	0,060	0,408
7000	2,44	0,058	0,427
7500	2,38	0,057	0,446
8000	2,33	0,056	0,466
8500	2,27	0,054	0,482
9000	2,22	0,053	0,499
9500	2,18	0,052	0,518
10000	2,13	0,051	0,532
12000	1,98	0,047	0,594
15000	1,78	0,042	0,667
18000	1,63	0,039	0,733
20000	1,54	0,037	0,770

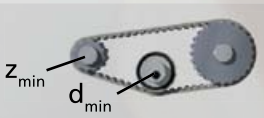
Rotational speeds over 20000 rpm and/or belt speeds over 80 m/s need special drive designs. Please ask for our advice.

2. Tension member strength (permitted tensile force of the belt F_{zul}), Belt weight

Belt width	b	[mm]	4	6	10	16	25	32
Tension member strength	F_{zul}	[N]	39	65	117	195	312	403
Belt weight	K 1	[kg/m]	0,0044	0,007	0,011	0,018	0,028	0,035
	K 1,5	[kg/m]	0,004	0,006	0,010	0,016	0,025	0,032

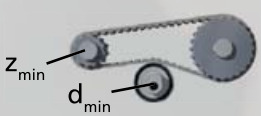
3. Flexibility (Minimum numbers of teeth, minimum diameter)

Timing pulley	z_{min}		14
Tension roller (smooth), running on teeth	d_{min}	[mm]	15



Drive type without contraflexure

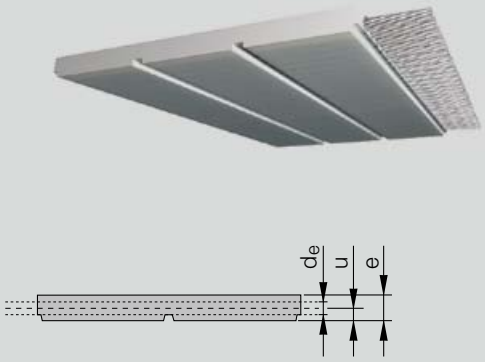
Timing pulley	z_{min}		20
Tension roller (smooth), running on the back of the belt	d_{min}	[mm]	15



Drive type with contraflexure

F Flat Belts

F / AF / BF / CF / DF



CONTI SYNCHROFLEX® Flat Belt (SFX)

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

Type	Mould Nr.	Length [mm]	e [mm]	u [mm]	d_e [mm]
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	435,00	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	51772-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	282,74	0,90	0,450	0,30
DF 130	51636-Z	815,34	0,90	0,450	0,30
DF 153	39979-Z	959,40	0,90	0,450	0,30

Order example

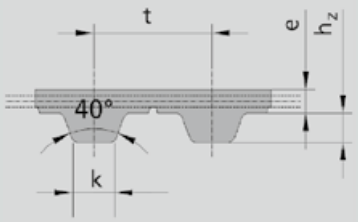
CONTI SYNCHROFLEX® Flat Belt 10 AF/108

Belt width in mm

Type / No. of grooves

Timing Belts with special tooth profiles

V (excerpts of XL, L, H)



Type		Imperial pitch	Shape No.	Length l [mm]	Pitch t [mm]	Module m	Number of teeth z	k [mm]	hz [mm]	e [mm]
V 177/5	F	XL	K5841-F	177,80	5,080	1,617	35	1,20	1,20	0,85
V 203/5	F	XL	K5369-F	203,20	5,080	1,617	40	1,37	1,27	0,80
V 233/5	F	XL	K5674-F	233,68	5,080	1,617	46	1,37	1,22	1,28
V 284/5	F	XL	K5445-F	284,48	5,080	1,617	56	1,80	1,20	0,70
V 304/5	F	XL	K5368-F	304,80	5,080	1,617	60	1,37	1,27	0,60
V 381/5	F	XL	K6026-F	381,00	5,080	1,617	75	1,35	1,25	0,95
V 406/5	F	XL	K6064-F	406,40	5,080	1,617	80	1,37	1,27	1,30
V 508/5	F	XL	K6011-F	508,00	5,080	1,617	100	1,32	1,22	1,32
V 609/5	F	XL	K5546-F	609,60	5,080	1,617	120	1,36	1,20	0,70
V 635/5	F	XL	K5394-F	635,00	5,050	1,617	125	1,32	1,20	0,60
V 685/5	F	XL	K5821-F	685,80	9,538	1,617	135	1,62	1,20	0,70
V 889/5	F	XL	K5601-F	889,00	5,050	1,617	175	1,80	1,20	1,00
V 1097/5	F	XL	K5993-F	1097,28	5,080	1,617	216	1,37	1,27	1,30
V 1102/5	F	XL	K5776-F	1102,36	5,080	1,617	217	1,80	1,20	1,20
V 1178/5	F	XL	K5876-F	1178,56	5,080	1,617	232	1,80	1,20	1,00
V 1584/5	F	XL	K5600-F	1584,96	5,080	1,617	312	1,80	1,20	1,00
V 438/9	F	L	K5095-F	438,15	9,525	3,032	46	3,20	1,80	1,00
V 571/9	F	L	K6114-F	571,50	9,525	3,032	60	3,26	1,91	1,69
V 971/9	F	L	K5354-F	971,55	9,525	3,032	102	3,25	1,90	1,40
V 990/9	F	L	K5185-F	990,60	9,525	3,032	104	3,10	2,20	1,65
V 1000/9	F	L	K5202-F	1000,13	9,525	3,032	105	3,10	2,20	1,65
V 1028/9	F	L	K5589-F	1028,70	9,525	3,032	108	3,10	1,90	1,65
V 1104/9	F	L	K5435-F	1104,90	9,525	3,032	116	3,25	1,90	2,30
V 1152/9	F	L	K5493-F	1152,53	9,525	3,032	121	3,10	1,90	1,65
V 1257/9	F	L	K5310-F	1257,30	9,525	3,032	132	3,20	1,90	1,65
V 1390/9	F	L	K5449-F	1390,65	9,525	3,032	146	3,20	1,90	1,30
V 914/12	F	H	K5692-F	914,40	12,700	4,043	72	4,30	2,20	1,85
V 1270/12	F	H	K5258-F	1270,00	12,700	4,043	100	4,45	2,18	2,01
V 1778/12	F	H	K5260-F	1778,00	12,700	4,043	140	4,40	2,30	1,40

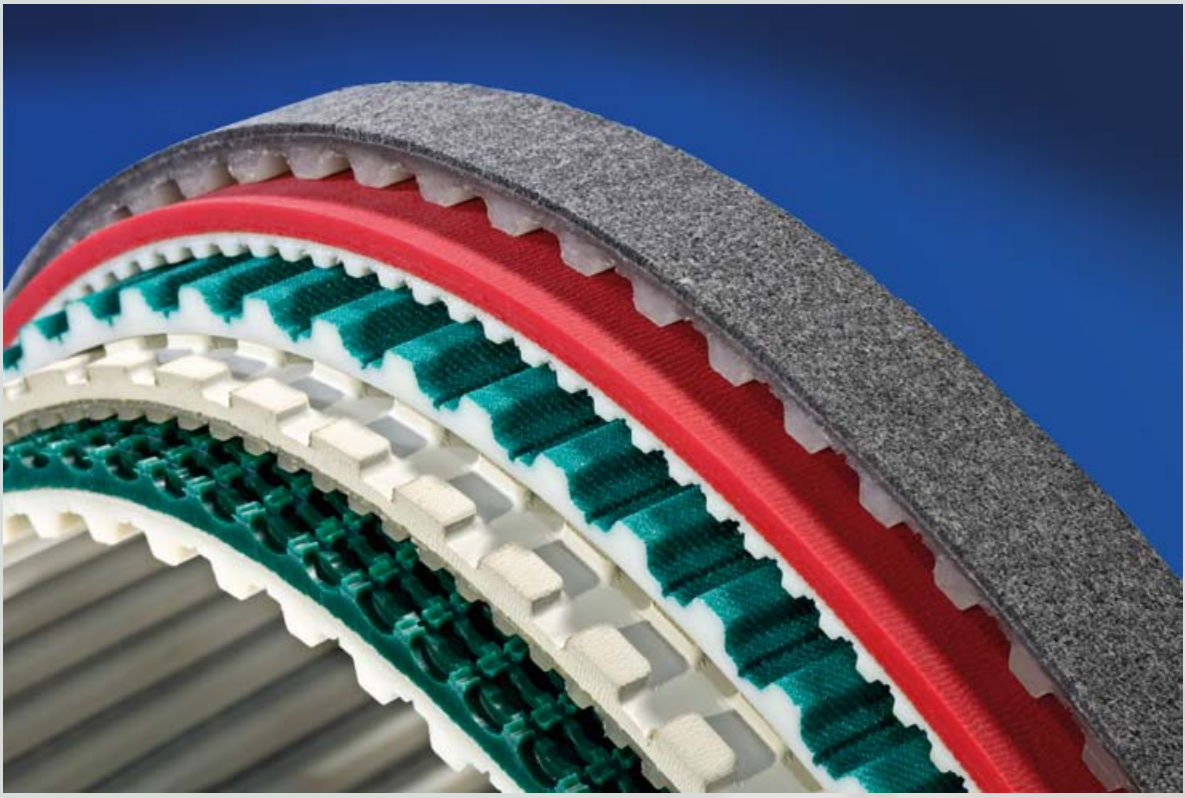
Order example

CONTI SYNCHROFLEX® Flat Belt 10 V 177 / 5 F

Belt width in mm

Type/ Length

Coated timing belts



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

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

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

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

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

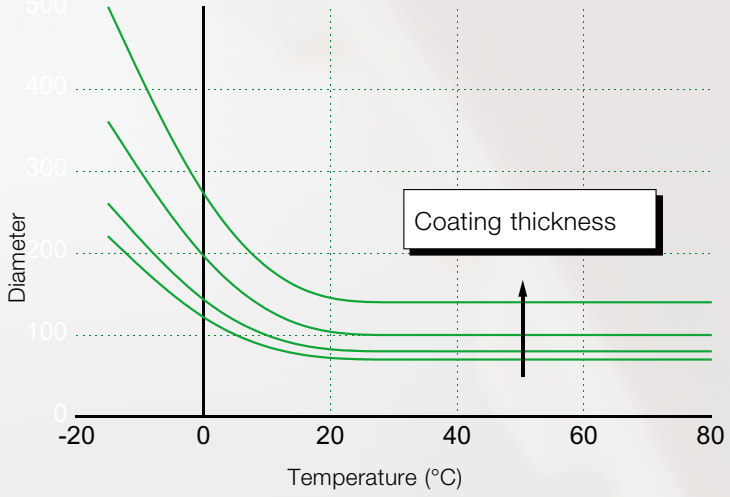
Friction
The friction of the belt on a support produces heat. This increases the more the belt is loaded by the items to be transported. The bed support must be selected such that the friction value of the transport belt in contact with the material of the bed plate results in a minimum value. The bed plate should guarantee good heat dissipation under high pressure forces.
The friction value is temperature dependent. It increases as the temperature rises and reduces at temperatures below zero (frost).

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

Drives with contraflexure
Generally, coated timing belts are suitable for drives with contraflexure. Very smooth coatings (e.g. Sylomer) must be adjusted with reduced pre-tension.

Temperature influence
If hot items (above approx. 80°C) are transported, ensure that the contact time is as short as possible to avoid heating of the belt substructure to over 80°C. A coated belt can resist a thermally higher load over short distances or a short period, assuming that there being sufficient cooling for the remainder of the revolution.
The tooth shear strength is slightly reduced in a temperature range of over approx. 60°C. An additional safety factor is only required with a high tooth load.
The flexibility of the coating is reduced with low ambient temperatures. To this effect, select larger timing pulley diameters compared to normal temperatures (see diagram). The flexibility of the timing belt is also reduced with low temperatures.
The stated minimum diameters are standard values. They are valid with the ambient temperature of 20°C and a speed of 1m/s. A low load of the goods to be transported is presumed. Reducing the diameters is possible with precise knowledge of the application. Relevant advice can be obtained from your Mulco partner.

Synchronising pulley diameter depending on the temperature

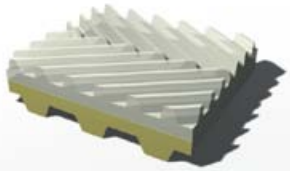


Coated timing belts

NP 385

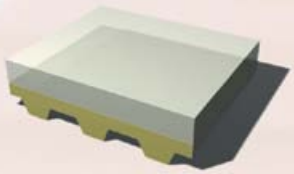
Material designation:	polyurethane
Colour:	transparent
Hardness:	85 Shore A
Available thickness:	4 mm
Minimum diameter:	120 mm
Temperature resistance:	-20°C to +50°C
Resistances:	resistant against simple oils and fats
Properties:	nub tip contact with the product to be transported
Application fields:	transport with oil influence, sheet transport, elevator, brick making, glass industry

FG 385



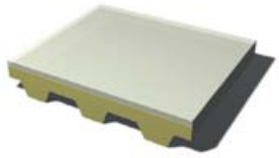
Material designation:	polyurethane
Colour:	transparent
Hardness:	85 Shore A
Available thickness:	4 mm
Minimum diameter:	120 mm
Temperature resistance:	-20°C to +50°C
Resistances:	resistant against simple oils and fats
Properties:	linear contact of the product to be transported
Application fields:	transport with oil influence, sheet transport, elevator, brick making, glass industry

PUR 385



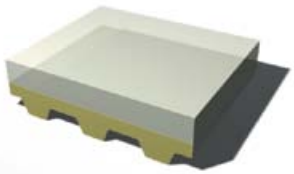
Material designation:	polyurethane				
Colour:	transparent				
Hardness:	85 Shore A				
Available thickness:	3	4	5	6	mm
Minimum diameter:	80	120	150	180	mm
Temperature resistance:	-20°C to +50°C				
Resistances:	resistant to petrol, ozone, simple fats and oils				
Properties:	high resistance to wear, high coefficient of friction				
Application fields:	transport of parts showing a coarse surface or burrs, woodworking and sheet fabricating industry, glass industry, cardboard transport				

HV1 film



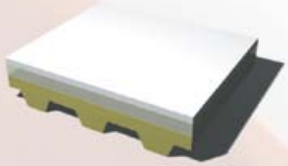
Material designation:	polyurethane
Colour:	transparent, shiny
Hardness:	88 Shore A
Available thickness:	1 mm
Minimum diameter:	60 mm
Melting range:	approx. 166°C
Resistances:	resistant to some cleaning agents
Properties:	good wear resistance, adhesive
Application fields:	foodstuff industry, glass and woodworking industry, sheet fabricating industry, cardboard transport

Polythane D15



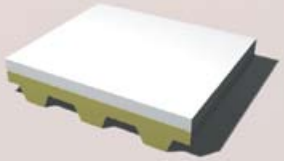
Material designation:	polyurethane
Colour:	transparent/yellowish
Hardness:	70 Shore A
Available thickness:	2 3 to 6 mm
Minimum diameter:	60 80 mm
Temperature resistance:	80°C
Resistances:	resistant against simple oils and fats
Properties:	wear resistant
Application fields:	general transport tasks, woodworking and glass industry, sheet fabricating industry

Compound coating



Material designation:	e.g. PUR/silicone
Colour:	white
Hardness:	60 / 50 Shore A
Available thickness:	2.4 mm
Minimum diameter:	60 mm
Temperature resistance:	in accordance with the materials used, Silicone: short-term 180°C
Resistances:	in accordance with the materials used
Properties:	non-stick
Application fields:	light weight transport tasks, air filter transport, textile and wood industry

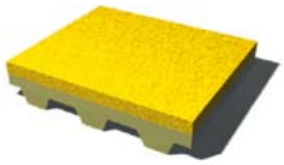
PVC white



Material designation:	PVC
Colour:	white
Hardness:	approx. 40 Shore A
Available thickness:	2 mm (more thicknesses on request)
Minimum diameter:	60 mm
Temperature resistance:	-15C° to +90°C
Resistances:	top covering layer is resistant against acid, salts and bases
Properties:	FDA approval for contact with foodstuff
Application fields:	foodstuff industry, film processing, pharmaceutical and packaging industry

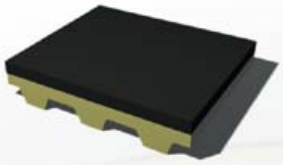
Coated timing belts

PU yellow



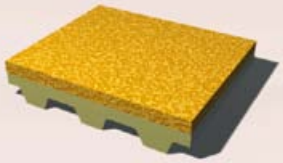
Material designation:	polyurethane							
Colour:	yellow							
Hardness:	approx. 55 ± 7 Shore A							
Available thickness:	2	3	4	5	6	8	10	mm
Minimum diameter:	60	60	80	100	100	100	20	mm
Temperature resistance:	-10°C to +60°C							
Resistances:	resistant against simple oils and fats							
Properties:	good wear resistance, very good to rework							
Application fields:	vacuum transport belts subject to high loads, paper industry, textile industry, glass and wood industry							

Porol



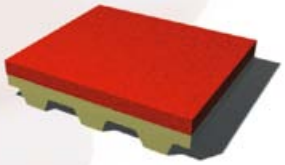
Material designation:	cellular rubber			
Colour:	black			
Density, hardness:	190 g/dm3, approx. 15 Shore A			
Available thickness:	3	5	10	mm
Minimum diameter:	40	60	80	mm
Temperature resistance:	-40°C to +70°C			
Resistances:	resistance to some simple fats and oils			
Properties:	smooth foam quality, high coefficient of friction			
Application fields:	transport of sensitive parts, paper industry, textile industry, cardboard transport			

Celloflex



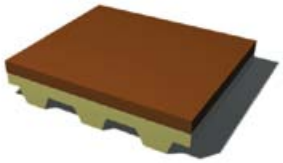
Material designation:	microcellular elastomeric polyurethane					
Colour:	yellow-brown					
Density:	350 g/dm3					
Available thickness:	1	2	3	4	5	mm
Minimum diameter:	40	40	60	60	80	mm
Temperature resistance:	-30°C to +80°C					
Resistances:	resistance to some simple fats and oils					
Properties:	highly flexible, high damping ratio					
Application fields:	transport of sensitive items, film and packaging industry, textile transport					

Linatex



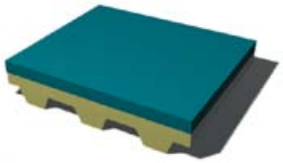
Material designation:	natural rubber									
Colour:	red									
Hardness:	approx. 40 Shore A									
Available thickness:	1.5	2.4	3	5	6.4	8	10	12	20	mm
Minimum diameter:	25	30	40	40	40	40	60	80	80	mm
Temperature resistance:	-40°C to +70°C									
Resistances:	resistant to some oils and abrasion when wet									
Properties:	wear resistant to a limited extent, high coefficient of friction, high resistance to rupture, is still flexible at lower temperatures, please request for advice for coating thicknesses over 2.4 mm									
Application fields:	transport or haul-off belts subject to high friction, wood, paper, textile industry, transport with a high acceleration									

Sylomer



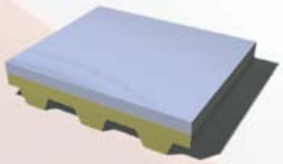
Material designation:	Elastomeric PUR			
Colour:	Blue (R)	Green (L)	Brown (M)	
Density:	220	300	400	g/dm3
Available thickness:	3-25	3-25	3-25	mm
Minimum diameter:	80 - 120	80 - 120	80 - 120	mm
Temperature resistance:	-30°C to +70°C			
Resistances:	resistance to some oils and fats			
Properties:	good wear resistance, not suitable for sharpedged items			
Application fields:	transport of light weight parts, paper and textile industry, haul-off belts, pressure belts			

PVC blue



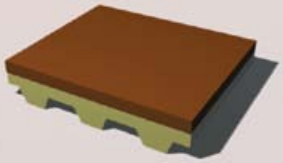
Material designation:	PVC
Colour:	blue
Hardness:	approx. 40 Shore A
Available thickness:	1 mm
Minimum diameter:	30 mm
Temperature resistance:	-15°C to +90°C
Resistances:	top covering layer is resistant against acid, salts and bases
Properties:	high coefficient of friction
Application fields:	paper, film, wood and sheet transport, pharmaceutic and packaging industry, application in card reading units

Chrome-leather



Material designation:	leather		
Colour:	grey-blue		
Hardness:	-		
Available thickness:	2	3	mm
Minimum diameter:	80	100	mm
Temperature resistance:	60°C		
Resistances:	resistant against simple oils and fats		
Properties:	good friction even with oiled surfaces of items to be transported, good wear resistance behaviour		
Application fields:	transport of fatty or oily parts, sheet and tube industry, transport of sensitive products, caterpillar haul-offs in the cable industry, transport of lacquered parts		

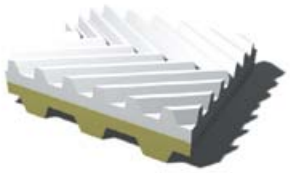
Correx



Material designation:	para rubber		
Colour:	brown		
Hardness:	approx. 35 to 40 shore A		
Available thickness:	6	10	mm
Minimum diameter:	80	120	mm
Temperature resistance:	up to approx. 70°C		
Resistances:	resistant to some oils and fats		
Properties:	wear resistant quality, good carrying behaviour		
Application fields:	general transport tasks, sheet and tube transport, cardboard transport		

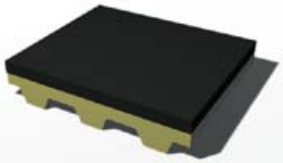
Coated timing belts

PVC herringbone



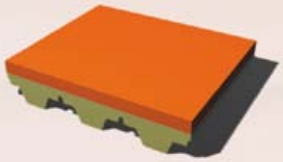
Material designation:	PVC
Colour:	white
Hardness:	approx. 65 Shore A
Available thickness:	3 mm
Minimum diameter:	60 mm
Temperature resistance:	-10°C to +110°C
Resistances:	resistant to some oils and fats
Properties:	FDA approval for contact with foodstuff
Application fields:	foodstuff industry, elevators, transport of glass in wet areas

Viton



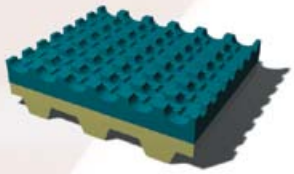
Material designation:	FKM mix
Colour:	black
Hardness:	75 ± 5 Shore A
Available thickness:	2 4 mm
Minimum diameter:	80 100 mm
Temperature resistance:	-10°C to +275°C
Resistances:	high heat resistance, resistant against simple oils and fats, petrol, acids, lyes, ozone
Application fields:	short-term transport of parts with high residual heat, belts with glue and adhesive contact, metal part and glas transport

Linatrile



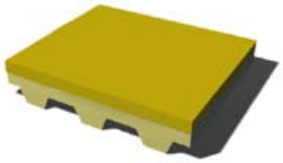
Material designation:	vulcanized material based on nitrile
Colour:	orange
Hardness:	55 Shore A
Available thickness:	3-6 mm (more thicknesses on request, max. 25 mm)
Minimum diameter:	depending on the selected thickness, the thicker the coating the larger the diameter must be selected
Temperature resistance:	-20°C to +110°C
Resistances:	resistant against oil, fat and other chemicals
Properties:	good wear resistance, ageing stability, fatigue resisting
Application fields:	haul-off belts in the textile area, transport of waxy materials

Supergrip green/blue



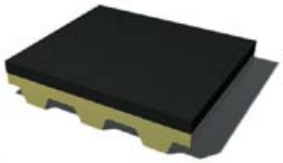
Material designation:	PVC	
Colour:	green	blue
Hardness:	approx. 40 Shore A	approx. 40 Shore A
Available thickness:	4 mm	4 mm
Minimum diameter:	60 mm	60 mm
Temperature resistance:	-15°C to +90°C	-15°C to + 90°C
Resistances:	resistant against simple oils and fats	not resistant to oil
Properties:	high resistance to wear, high coefficient of friction	
Application fields:	particularly suitable for inclined conveying, transport of light weight items, elevators in the wood and paper industry	

RP 400



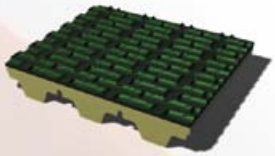
Material designation:	rubber	
Colour:	yellow	
Hardness:	35 Shore A	
Available thickness:	2 3 4 5 6 mm	(more thicknesses on request, max. 30 mm)
Minimum diameter:	30 40 40 60 60 mm	
Temperature resistance:	-10°C to +80°C	
Resistances:	resistant to some oils and fats	
Properties:	very high resistance against wear and tear	
Application fields:	glass and steel industry, abrasive material up to a size of 40 mm	

NBR



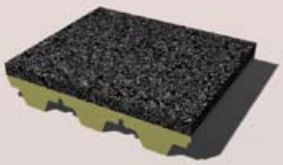
Material designation:	Nitrile Butadiene Rubber
Colour:	black
Hardness:	65 ± 5 Shore A
Available thickness:	1,5 3 mm
Minimum diameter:	60 80 mm
Temperature resistance:	-20°C to +70°C
Resistances:	well resistant against oils, resistant to a limit extent against petrol, acid and alkalis
Application fields:	general transport tasks

PVC Minigrip



Material designation:	PVC
Colour:	green/blue
Hardness:	approx. 65 Shore A
Available thickness:	1,5 mm
Minimum diameter:	30 mm
Temperature resistance:	-10°C to +110°C
Resistances:	resistant to some oils and fats
Properties:	high coefficient of friction
Application fields:	transport of damp parts, good carrying behaviour due to profiled surface

TT 60

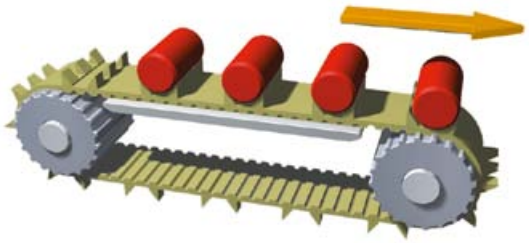


Material designation:	polyester fleece
Colour:	black
Available thickness:	2 mm
Minimum diameter:	120 mm
Temperature resistance:	-10°C to +120°C
Resistances:	resistance to oils and fats
Properties:	electro-static properties
Application fields:	glass industry as transport belt in the hot area

Integrated flights

CONTI SYNCHROFLEX® Timing Belts with cast flights/profiles:

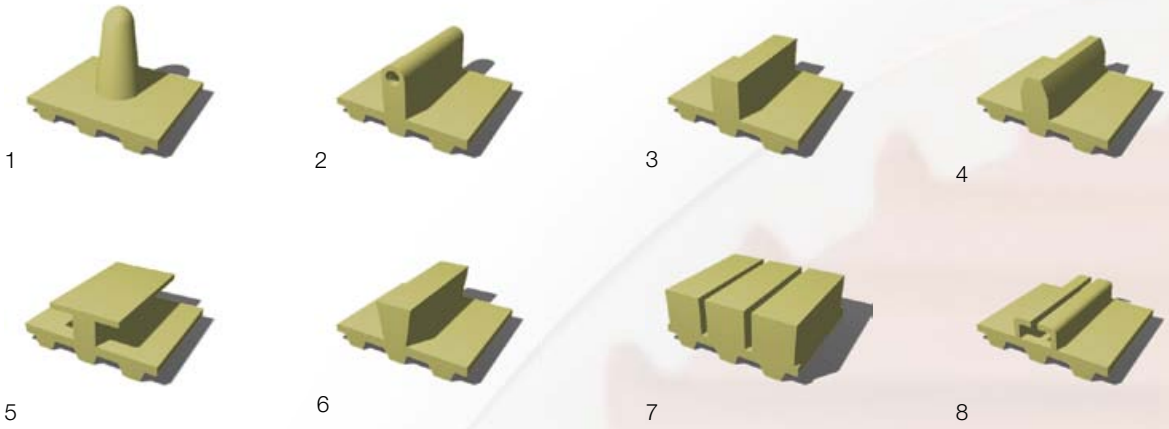
CONTI SYNCHROFLEX® Timing Belts with profiles offer further opportunities for the designer with flights or cleats on the belt back. Can be used in conveying, feeding or positioning.



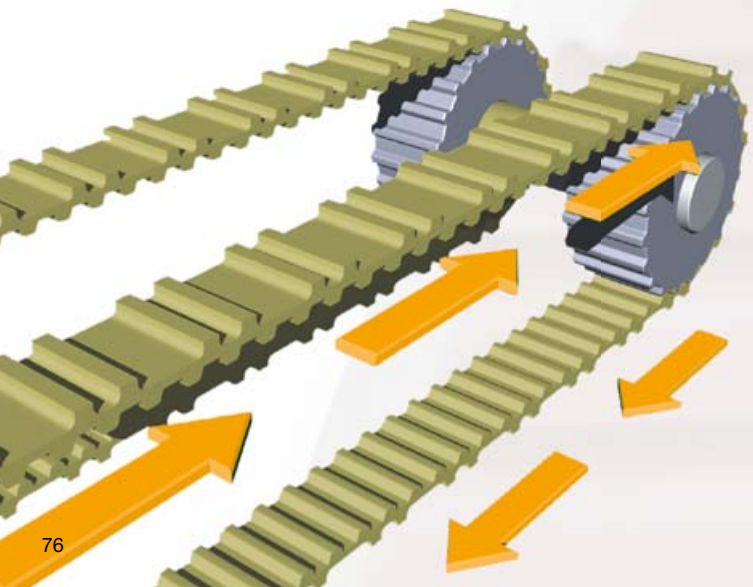
Assembly belt

Maximum precision is achieved by the manufacture in one operating step using a timing belt mould. Customer requirements with regard to the shape of the flights and their number can be taken into consideration at the time of producing a new mould. Best flight centre distance tolerance achievable: +/- 0.05 mm.

Examples of flighted CONTI SYNCHROFLEX® Timing Belts from a single mould:



Application example



Applications:

Synchronising technology to achieve maximum precision

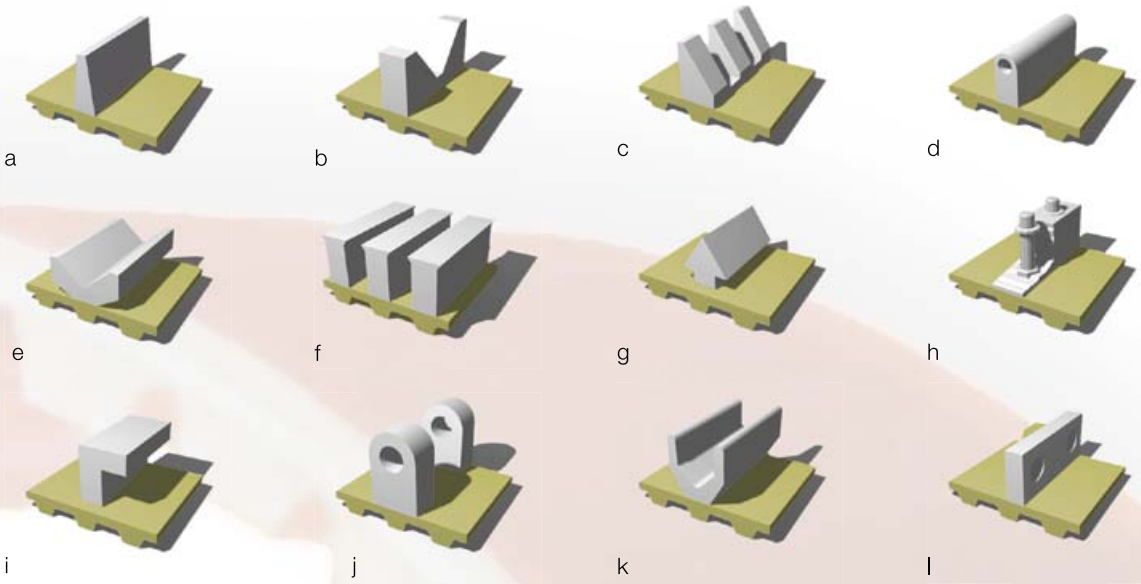
- EDP equipment
- Office machinery
- Fine mechanical technology
- Packaging machinery
- Indexing systems
- Synchronous conveyors
- Handling technology
- Transport technology

Please contact us for technical advice if you require more detailed information on special belt dimensions (existing timing belt moulds).

CONTI SYNCHROFLEX® Timing Belts with welded flights/profiles:

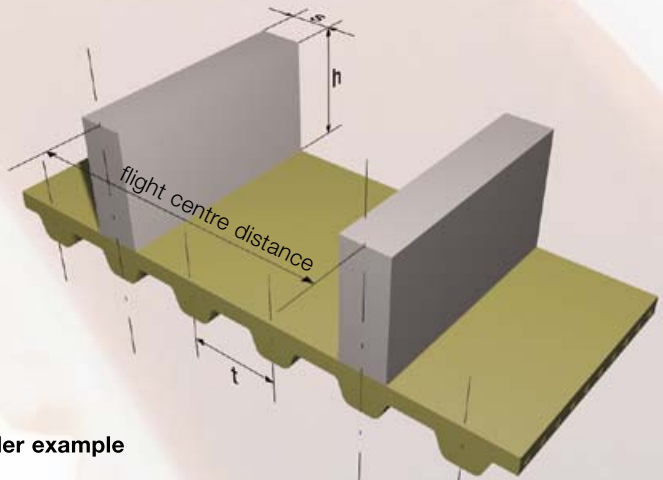
All CONTI SYNCHROFLEX® Timing Belts as from pitch T 2.5 can be retrofitted with flights. In line with the customer's drawing, the desired number of flights are thermally butt-welded to the back of the belt. The achievable weld-on tolerance of each individual flight is ± 0.5 mm. Hundreds of shapes of flights are available. Please ask for additional information. For special customer requirements new flights can be manufactured.

Examples of possible flight shapes requiring mechanical re-work:



The various shapes of flights allow an adaptation of the transport timing belt to the envisaged practical function. The flight pitch is freely selectable. The flights can be manufactured with moulded inserts. Profile attachments can be retrofitted (positioned). The welding point itself and the maximum bending stress are subject to special parameters.

Please contact us for technical advice.



Applications:
General transport technology
- Conveying/transporting
- Separation
- Positioning
- Indexing
- Feeding

Order example

CONTI SYNCHROFLEX® Timing Belt 25 T 10 / 1960 - FN 49

Belt width in mm
Type/ Pitch
Belt length in mm
Number of profiles

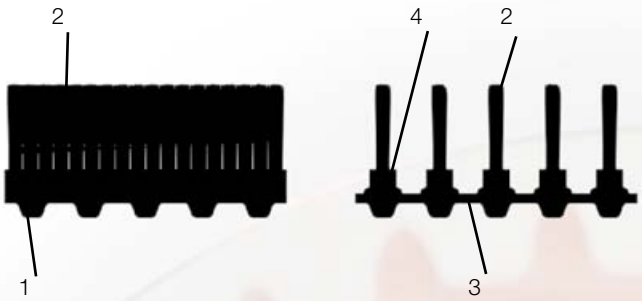
Brush timing belts

A solution for almost every application

To complement standard applications in power transmission, linear and transport technology, we offer the CONTI SYNCHROFLEX® Brush Timing Belt for special applications.

Construction
The timing belt is either equipped with a stronger back with brush or - to meet the individual application - with brush flights. The thickness of the back is between 10 and 20 mm, depending on the fibre thickness and cutting length. Flight centre-distance, fibre density and type are individual matched to each application.

1. Timing belts with reinforced back (the necessary flexibility is achieved by notches in the back of the belt).
2. Brushes/fibres
3. Standard timing belt
4. Profile



Versatile application

Conveying:
- Transport of sensitive parts for example: glass, ceramics, paper
- Conveying of materials featuring delicate surfaces
- Accumulation conveying due to the extremely low coefficient of friction
- Larger contact surface resulting from the fanned fibre arrangement
- Reduced conveying noise
- Dirt and chips cannot accumulate on the contact surface
- Combination with all transport flights

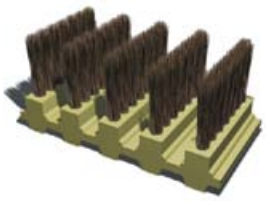
Cleaning:
- Dry and wet application
- Surface treatment

Product range
Brush timing belts are available in any length offered in our product range and in the following pitches:

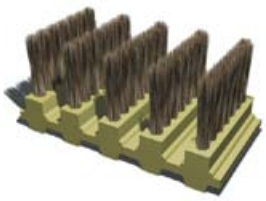
T 5, T 10, T 20, AT 5, AT 10, AT 20

Please contact us for more detailed information on fibre materials, data on chemical resistances and admissible temperature ranges.

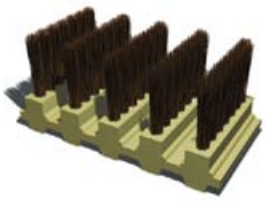
Natural fibres and hair
(max. cutting length 30 mm)



Horsehair, soft

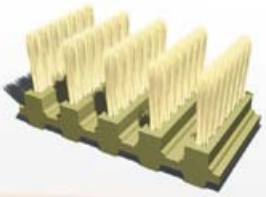


Horsehair mix, semi-hard

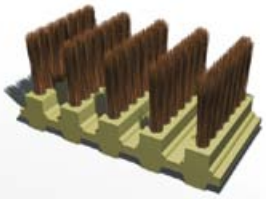


Calcutta bristles,
semi-hard

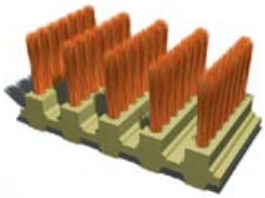
Plant fibres
(cutting length 10 to 75 mm)



Mex. fibre, semi-hard

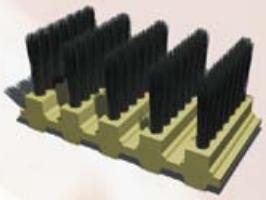


Arenga, hard

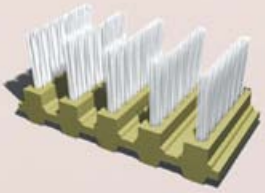


Coconut fibre, hard

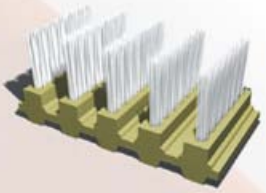
Artificial bristles
(any cutting length)



Mypren 0.20 mm dia.

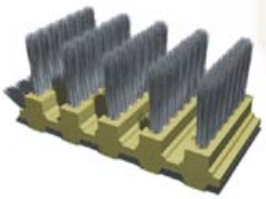


Nylon 6 Ø 0.15 to 0.5 mm
straight or corrugated

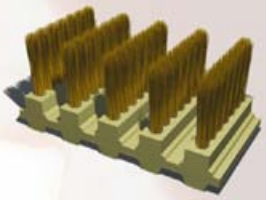


Nylon 6.6.
Ø 0.15 - 0.5 mm
straight or corrugated

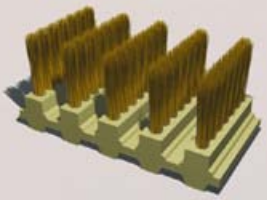
Wire
(any cutting length)



Steel wire
Ø 0.15 - 0,4 mm
straight or corrugated



Brass wire
Ø 0,1 - 0,4 mm
straight or corrugated



Phosphate bronze
Ø 0,1 - 0,4 mm
straight or corrugated

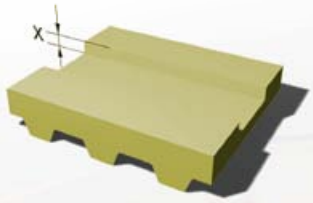
Mechanical rework

CONTI SYNCHROFLEX® Timing Belts can be mechanically reworked to meet special functional features. Timing belts with a thick backing are especially suited for mechanical rework. They offer far reaching design possibilities for the designer.

Available types: Version FA and coatings/coverings
Please note that the flexibility of timing belts with a thicker back is reduced and therefore, requiring larger pulley diameters. Belt flexibility can be improved by cross grooving or incisions.

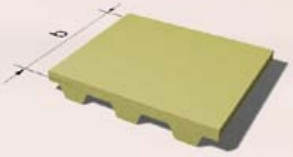
Back cross milling
Cross grooves on the belt back enhance the flexibility of the belt. Milled grooves are, in as much as they are possible from the technical feasibility point of view, used to improve safe loading and secure positioning of the products on the belts.

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

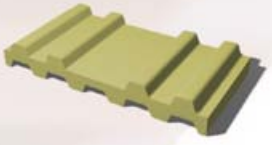


Back grinding
All CONTI SYNCHROFLEX® Timing Belts can be ground and finished for reasons of precision or in order to obtain a roughened surface. Note that the belts must not be ground to anything less than the overall thickness x because otherwise the tension members might take damage.

Edge grinding
Particularly accurate belt width tolerances can be achieved by grinding the belt edges.

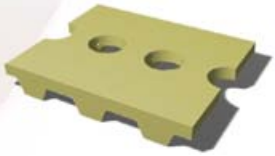


Removing individual teeth
The removal of individual teeth or groups of teeth is possible and practical due to the high dimensional precision meshing, when the remaining teeth are to serve as precise position load areas.



Longitudinal milling of teeth
Machining the tooth profile is significant for CONTI SYNCHROFLEX® Timing Belts which are protected from running off laterally for instance by bed plates. The processing depth x is indicated as measured from the tooth top surface.

Perforated timing belts
Aramide tension members should be preferably used with CONTI SYNCHROFLEX® Timing Belts in this type of application.



List of Catalogues

All our information at a glance

- **BRECO®, BRECOFLEX® timing belts**
- **BRECO® ATN-system**
- **CONTI SYNCHROFLEX®** Polyurethane Timing Belts Overall catalog
- **CONTI SYNCHROCHAIN®** Timing belts for the highest torques
- **CONTI SYNCHRODRIVE®** Polyurethane Synchronous Drive Belts
- **CONTI SYNCHRODRIVE® N10 Nubbed Belt**
- **PULLEYS & COMPONENTS** for polyurethane timing belt drives

All product information can be requested from your Mulco Partner.

New information material available for download at www.mulco.net

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