



MATERIAL HANDLING COMPACT CATALOGUE



optibelt
ALPHA SPECIAL
customised
solutions

“A matter of trust.”

Paul, 46, construction foreman

POLYURETHANE TIMING BELTS

Polyurethane timing belts are convincing due to their impressive product features.

They set standards regarding strength, elongation and wear.

The thermal and chemical capacity is exceptional.

It is good to know that these benefits are combined with competent technical service.

FIRST CLASS PRODUCTS FOR FLEXIBLE DRIVE SOLUTIONS AND CONVEYANCE CHALLENGES

Optibelt is capable of implementing even the most challenging requirements cost-effectively.

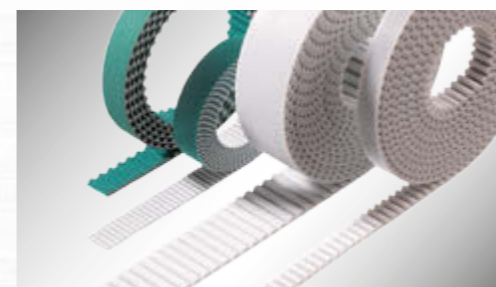
Professionalism you can also benefit from.



POWER TRANSMISSION DRIVES 5



MECHANICAL BELT JOINTS 26



LINEAR DRIVES 9



ROUND BELTS AND HOLLOW ROUND BELTS 28

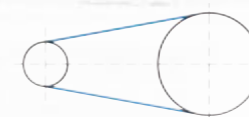


CONVEYOR DRIVES 11



TIMING BELT PULLEYS 34

POWER TRANSMISSION DRIVES



ALPHA POWER ALPHA FLEX
ALPHA TORQUE
endless

LINEAR DRIVES



ALPHA LINEAR
open-ended

CONVEYOR DRIVES



ALPHA V ALPHA SPECIAL
ALPHA SRP
endless welded/endless

APPLICATION EXAMPLES

- Machine tools
- Textile machines
- Printing machines
- Packaging machines
- Office equipment
- Medical appliances
- Robots
- Handling devices

- Positioning drives
- Lifting drives
- Handling devices
- Door and gate opening drives
- Washing bays
- Plotters
- Packaging machines
- Gantry robots

- Parallel conveyors
- Synchronous conveyors
- Inclined conveyors
- Accumulating conveyors
- Vacuum conveyors
- Take-up and transfer units
- Separators
- Workpiece positioners



optibelt ALPHA – BELT PRODUCT RANGE

PRODUCT GROUPS				
	ALPHA TORQUE ALPHA POWER ALPHA SRP	ALPHA FLEX	ALPHA LINEAR	ALPHA V
	Cast, endless	Extruded, endless	Extruded, open-ended	Welded, endless
BASIC PROFILES	PROFILES			
Profile, imperial	MXL, XL, L (ALPHA TORQUE)	H	XL, L, H, XH	XL, L, H, XH
Profile T	T2.5, T5, T10, T20, DT5, DT10	T5, T10, T20 DT5, DT10	T5, T10, T20, T10 groove free	T5, T10, T20, TT5, DT5 ¹ , DT10 ¹
Profile TK, wedge			T5K6, T10K6, T10K13	T5K6, T10K6, T10K13
Profile AT	AT5, AT10	AT5, AT10, AT20, DAT5, DAT10	AT5, AT10, AT20	AT5, AT10, AT20, DAT5 ¹ , DAT10 ¹
Profile ATK, wedge			AT5K6, AT10K6, AT10K13	AT5K6, AT10K6, AT10K13
Profile ATL			ATL5, ATL10, ATL20	
Profile HTD		5M, 8M, 14M, D5M, D8M	5M, 8M, 14M, 14ML, 14MLP S8M	5M, 8M, 14M, D5M ¹ , D8M ¹
Profile F, flat belts			F2, F2.5, F3, FL3	F2, F2.5, F3, FL3
Standard tension cord ²	Steel	Steel Steel, highly flexible	Steel Aramid excluding AT20, 14M, XH, F2.5, F3, L, 5M, 14ML, 14MLP, T5K6, AT5, AT20, AT5K6, FL3 Steel, highly flexible T5, ATL10, AT20, F2.5, F3, 14M, 14ML, 14MLP, T5K6, AT5K6, ATL10, ATL20, FL3, XL, L, H, XH Stainless steel excluding L, 5M, 14M, T5, AT5, ATL10, AT20, F2.5, F3, 14ML, 14MLP, T5K6, AT5K6, ATL5, ATL20, FL3	
Special tension cords	Aramid Steel, highly flexible Stainless steel Polyester, Vectran	Stainless steel		On request
Optionally without coiling sleeve	–	–		+ ³

¹ Double-sided profiles available on request² And without the corresponding profiles TK, ATK³ Profile T10 available without coiling sleeve, further profiles available on request

POWER TRANSMISSION DRIVES

Ideal dynamic power transmission is now possible with high tensile, low vibration, no-maintenance drive belts that are masters of the art of optimal performance.

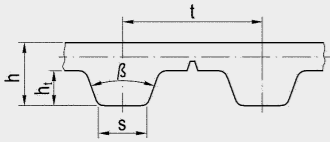
This is where PU timing belts **optibelt ALPHA TORQUE**, **optibelt ALPHA POWER** and **optibelt ALPHA FLEX** come into their own.

These high performance cast hard polyurethane belts stand out with their high tensile strength and abrasion resistance, their extreme ozone and UV resistance, and their exceptional resistance to oils and greases. This impressive reliability enables them to achieve slip-free synchronous power transmission of up to several hundred kilowatts.

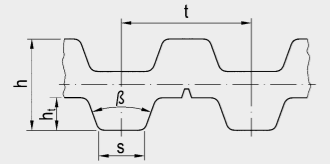
optibelt ALPHA TORQUE

– FOR POWER TRANSMISSION DRIVES

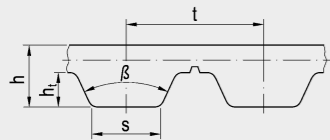
PROFILES



MXL, XL, L, T2.5, T5, T10, T20



DT2.5, DT5, DT10



AT5, AT10



ENDLESS, CAST optibelt ALPHA TORQUE POLYURETHANE TIMING BELTS HAVE THE FOLLOWING FEATURES:

- Useful sleeve widths of up to 380 mm
- Belt lengths up to 2250 mm
- Unlimited choice of colours on request
- Position of tolerance field variable, e.g. for fixed drive centre distances
- Available single-toothed profiles: AT5, AT10, T2.5, T5, T10, T20, MXL, XL, L
- Double-toothed version available for profiles DT2.5, DT5, DT10
- Tension cords: steel, highly flexible steel, stainless steel, aramid, polyester, Vectran

optibelt ALPHA POWER

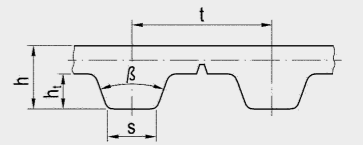
– FOR HIGH PERFORMANCE POWER TRANSMISSION DRIVES



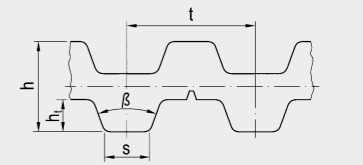
ENDLESS, CAST optibelt ALPHA POWER POLYURETHANE TIMING BELTS HAVE THE FOLLOWING FEATURES:

- Improved mechanical properties in optibelt ALPHA POWER
- Up to 30% higher power transfer
- Available with single-toothed profiles: AT5, AT10, T2.5, T5, T10, T20
- Double-toothed version available for profiles DT2.5, DT5, DT10
- Very accurate pitch and low tolerances
- Strong attachment of polyurethane to tension cord
- Position of tolerance field variable, e.g. for fixed drive centre distances
- Tension cords: steel, highly flexible steel, stainless steel

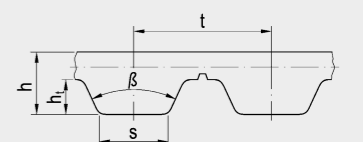
PROFILES



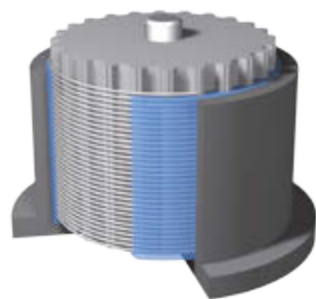
T2.5, T5, T10, T20



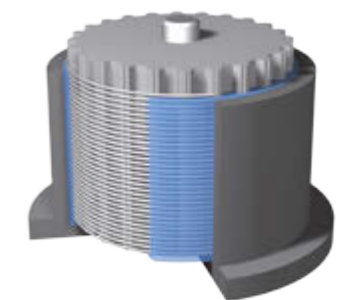
DT2.5, DT5, DT10



AT5, AT10



Casting process for
optibelt ALPHA POWER,
optibelt ALPHA TORQUE
timing belts

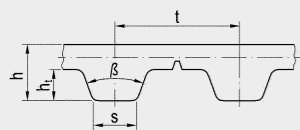


Casting process for
optibelt ALPHA POWER,
optibelt ALPHA TORQUE
timing belts

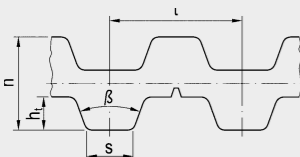
optibelt ALPHA FLEX

– FOR POWER TRANSMISSION DRIVES

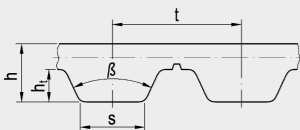
PROFILES



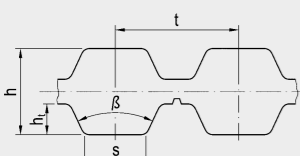
H, T5, T10, T20



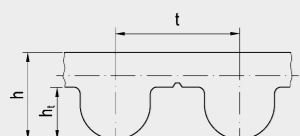
DT5, DT10



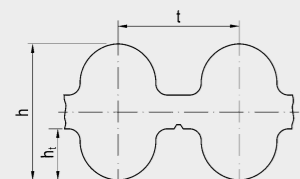
AT5, AT10, AT20



DAT5, DAT10



5M, 8M, 14M

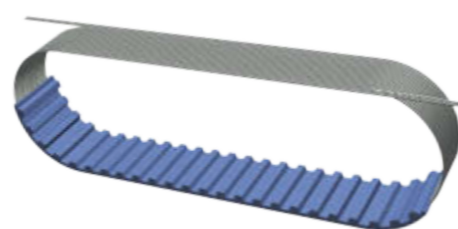


D5M, D8M



ENDLESS, EXTRUDED optibelt ALPHA FLEX POLYURETHANE TIMING BELTS HAVE THE FOLLOWING FEATURES:

- Length range from approx. 1100 mm to 22 000 mm
- Length range producible in separation stages
- Production widths 100 mm and 150 mm
- Optionally available with polyamide fabric on the teeth from a length of 1500 mm
- Direct welding on of cleats and V-guides possible
- With options of highly flexible and stainless steel tension cords
- Available with S+Z cord twist
- Available in profiles H, T5, T10, T20, AT5, AT10, AT20, 5M, 8M, 14M
- Double-toothed profiles for DT5, DT10, DAT5, DAT10, D5M, D8M available

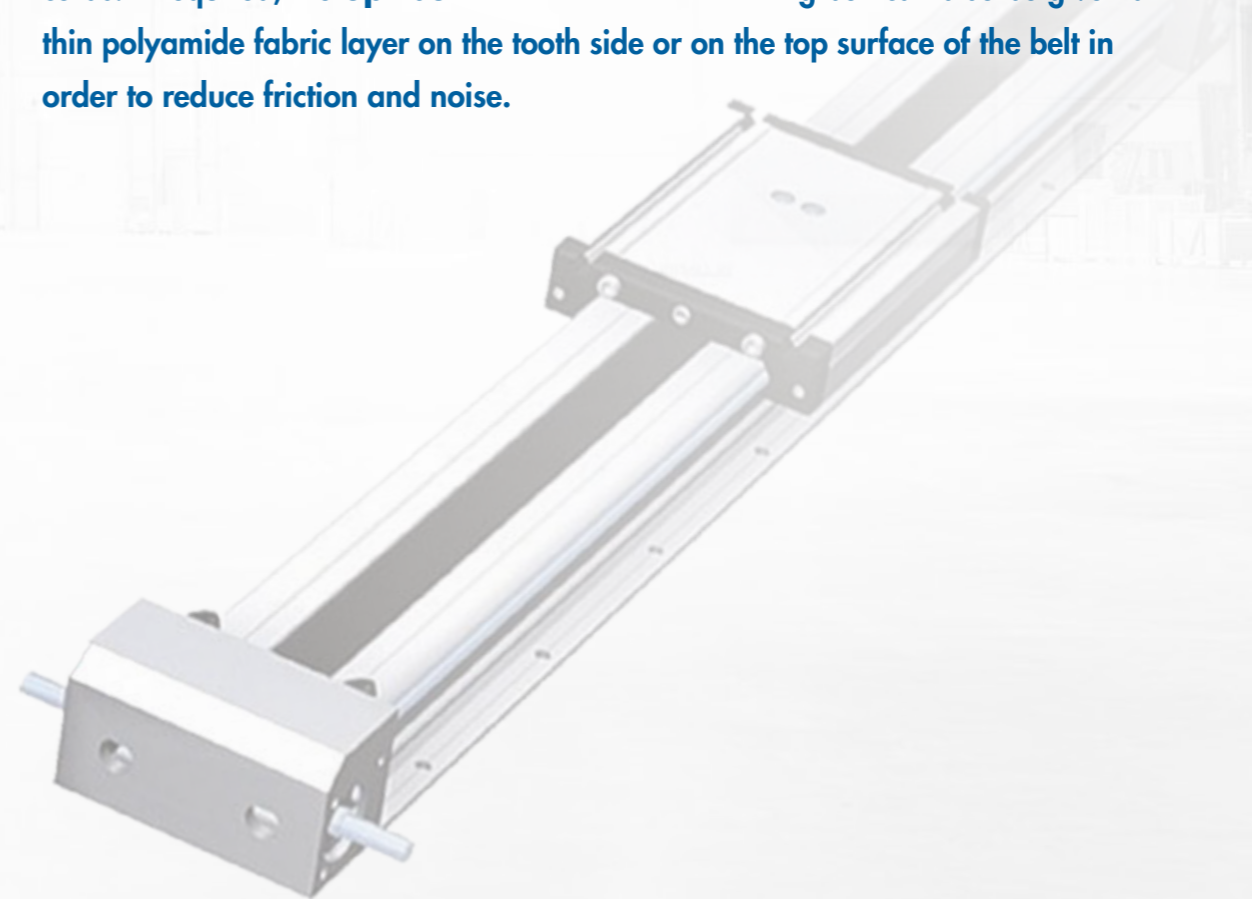


Concept of the **optibelt ALPHA FLEX** timing belt with dual (S+Z) spirally wound tension cords and extruded and moulded polyurethane

LINEAR DRIVES

For exact positioning and repetition accuracy in linear drives, **optibelt ALPHA LINEAR** timing belts are a reliable choice.

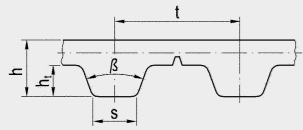
They are extruded and moulded from thermoplastic polyurethane and therefore show exceptional dimensional stability. In addition, they feature low tooth deformation and high abrasion resistance due to high-strength steel and aramid tension cords. If required, the **optibelt ALPHA LINEAR** timing belt can also be given a thin polyamide fabric layer on the tooth side or on the top surface of the belt in order to reduce friction and noise.



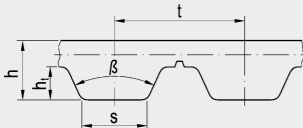
optibelt ALPHA LINEAR

– FOR LINEAR DRIVES

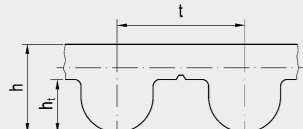
PROFILES



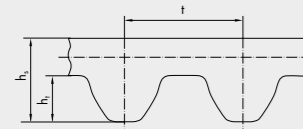
XL, L, H, XH, T5, T10, T20



AT5, AT10, AT20,
ATL5, ATL10, ATL20

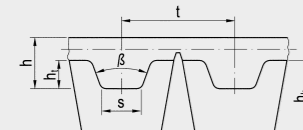


5M, 8M, 14M, 14ML, 14MLP

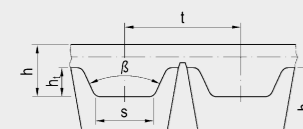


S8M

F2, F2.5, F3, FL3



T5K6, T10K6, T10K13

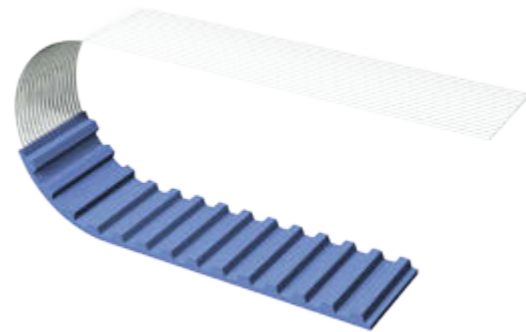


AT5K6, AT10K6, AT10K13



OPEN-ENDED EXTRUDED optibelt ALPHA LINEAR POLYURETHANE TIMING BELTS HAVE THE FOLLOWING FEATURES:

- High tensile strength with low elongation
- High-precision positioning
- Tension cords: steel, highly flexible steel, stainless steel, aramid
- With options of reinforced belt top surface, T2, yellow PU foam and APL plus
- ATL version timing belts for linear drives
- Polyamide fabric layers on tooth side and/or belt top surface available
- PU also available with FDA approval for food contact
- Optional colours available
- Roll length 50 m or 100 m, > 100 m available on request
- Available in profiles XL, L, H, XH, T5, T10, T20, TT5, AT5, AT10, AT20, ATL5, ATL10, ATL20, 5M, 8M, 14M, 14ML, 14MLP, S8M, F2, F2.5, F3, FL3, T5K6, T10K6, T10K13, AT5K6, AT10K6, AT10K13



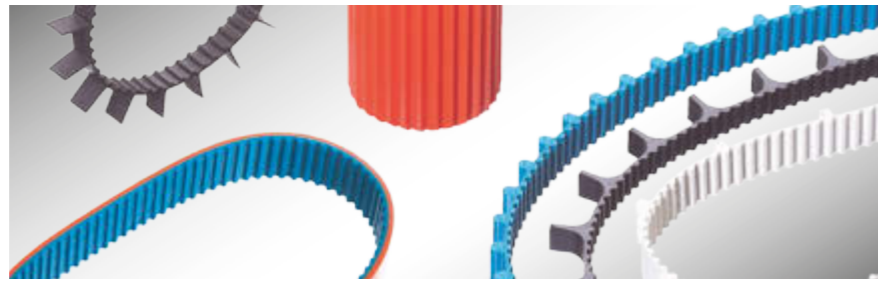
Design of the **optibelt ALPHA LINEAR** timing belt with parallel tension cords and extruded polyurethane

CONVEYOR DRIVES

Tailor-made and extremely cost-effective conveying concepts can be sustainably achieved with **optibelt ALPHA V** and **optibelt ALPHA SRP** timing belts. These are ideal for a wide range of conveying applications and can be endlessly welded from linear belts as required for the application. With their exceptional tensile strength and a precisely moulded cleat structure, these timing belts made of flowable cast polyurethane stand out due to their very precise and low-vibration performance. Their individual configurability is another convincing feature: Cleats and V-guides can be directly welded on, allowing them to be precisely matched to the goods to be conveyed.

optibelt ALPHA SRP

– FOR CONVEYOR DRIVES

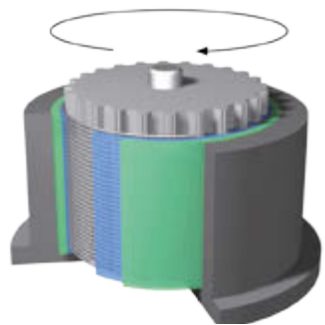


MOULDING BY DISPLACEMENT CASTING



optibelt ALPHA SRP timing belts with cleats

MOULDING BY CENTRIFUGAL CASTING



optibelt ALPHA SRP timing belts with coating

FEATURES OF THE CAST optibelt ALPHA SRP WITH CLEATS:

- Easy production of small belts with cleats through moulding process
- Large number of cleats within a small space
- Finely developed, precisely shaped cleat geometries due to flowable cast polyurethane
- Reproducible high precision
- High stability of the adhesion between the cleat and the base belt due to homogeneous compounding

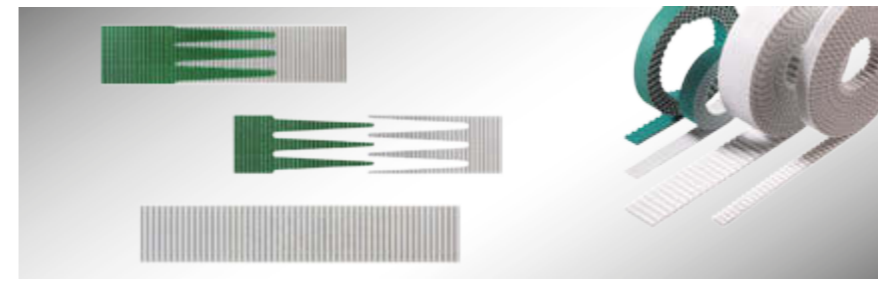
FEATURES OF THE CAST optibelt ALPHA SRP WITH A POLYURETHANE BACKING:

- Production of small coated timing belts or flat belts by moulding
- Coating without joints, no binding running direction
- Consistently high manufacturing precision
- High stability of the adhesion between the backing and the base belt due to homogeneous compounding

THE optibelt ALPHA SRP MOULDS ARE BASED ON THE MOULDS FOR THE optibelt ALPHA POWER AND optibelt ALPHA TORQUE TIMING BELTS.

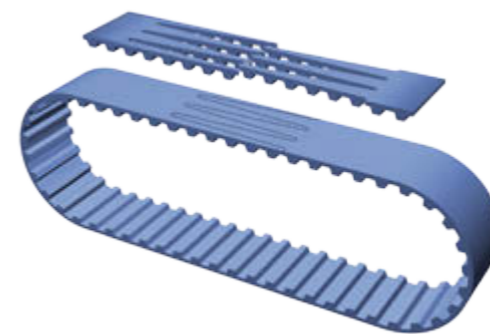
optibelt ALPHA V

– FOR CONVEYING APPLICATIONS



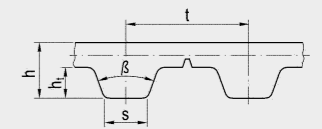
OPEN-ENDED WELDED optibelt ALPHA V POLYURETHANE TIMING BELTS HAVE THE FOLLOWING FEATURES:

- Minimum belt length ranges from 400 mm to 1200 mm, depending on width and pitch
- Lengths producible in separation stages
- Can be supplied cost-effectively and at short notice
- Ideal for conveyor drives
- Polyamide fabric available on tooth side and/or belt top surface
- PU also available with FDA approval for food contact
- The reinforced top surface version and the T2, yellow PU foam and APL plus versions can be welded on without a joint
- Direct welding on of cleats and V-guides possible
- Despite discontinuous tension cords, these belts offer approx. 50% of the performance of endless timing belts
- Available with profiles: XL, L, H, XH, T5, T10, T20, AT5, AT10, AT20, 5M, 8M, 14M, T5K6, T10K6, T10K13, AT5K6, AT10K6, AT10K13, F2, F2.5, F3, FL3

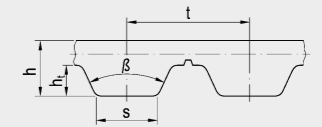


Finger-shaped punched-out belt ends and welded optibelt ALPHA V timing belt

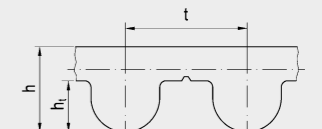
PROFILES



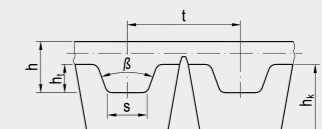
XL, L, H, XH, T5, T10, T20, TT5



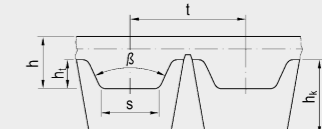
AT5, AT10, AT20



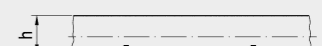
5M, 8M, 14M, 14ML



T5K6, T10K6, T10K13



AT5K6, AT10K6, AT10K13



F2, F2.5, F3, FL3

ALPHA SPECIAL

- WITH COATINGS
- WITH MECHANICAL PROCESSING
- WITH CLEATS

optibelt ALPHA SPECIAL - WITH COATINGS



In contrast to other PVC foils, this coating is applied as standard during the production process itself as a foil on the **optibelt ALPHA LINEAR**; welding to **optibelt ALPHA V** together with the coating is possible without a joint; consistent adhesion; easy, low-cost transport coating.

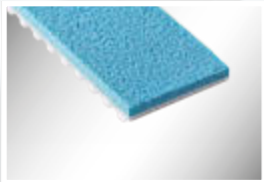
TIMING BELTS WITH COATINGS

optibelt ALPHA SPECIAL belts have a coating on the top surface and undergo additional mechanical processing. The wide range of coatings and finishing options combined with the features of the timing belt allow innovative solutions to be developed for conveyor applications.



OVERVIEW OF COATINGS, MATERIAL QUALITIES AND SURFACE FINISHES

FOAM



POLYURETHANE (PU)

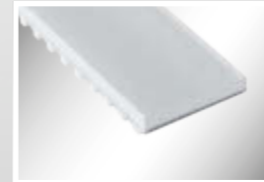
- Sylomer R (see Fig.)
- Sylomer L
- Celloflex
- Sylomer M
- PU-Smart
- PU 06



RUBBER

- Porol (see Fig.)
- EPDM

SMOOTH OR SLIGHTLY STRUCTURED



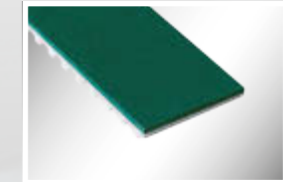
POLYURETHANE (PU)

- PU foil 65 Shore A
- Polythane D15
- Polythane D44
- PU foil blue
- PU foil 85 Shore A
- T2 (see Fig.)
- PU foil 92 Shore A
- Reinforced top surface



RUBBER

- RP 400 (see Fig.)
- Correx beige
- Linatex
- Linaplus FGL
- NG red
- Linatrilite
- Elastomer green



POLYVINYL CHLORIDE (PVC)

- PVC foil petrol blue (see Fig.)
- PVC foil green
- PVC foil blue
- PVC foil white
- APL plus

PROFILED OR STRUCTURED



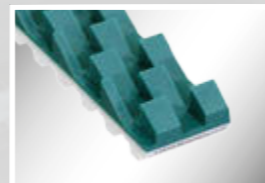
POLYURETHANE (PU)

- PU longitudinal groove (see Fig.)
- Pointed cone
- PU longitudinal groove, rough
- PU spike profile
- Pebbles, rounded cone



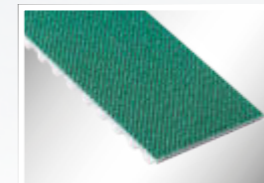
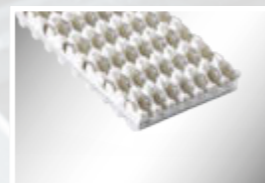
RUBBER

- Supergrip black (see Fig.)
- Supergrip blue



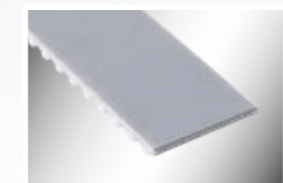
POLYVINYL CHLORIDE (PVC)

- PVC shark tooth (see Fig. above)
- PVC longitudinal groove
- Supergrip petrol blue
- Supergrip green
- Supergrip white (see Fig. below)
- Minigrip petrol blue
- Minigrip green
- PVC cleats
- PVC fishbone pattern
- PVC sawtooth
- PVC triangular profile



PA FABRIC

- PA fabric (see Fig.)
- PA fabric antistatic



SPECIAL

- PTFE (see Fig. above)
- TT60
- Para fleece
- Chrome leather (see Fig. below)
- Viton

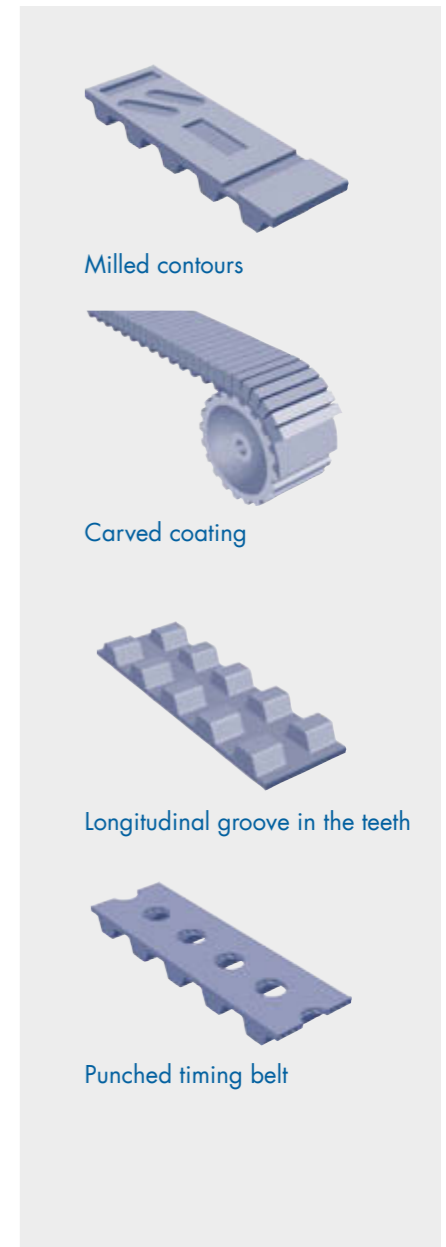
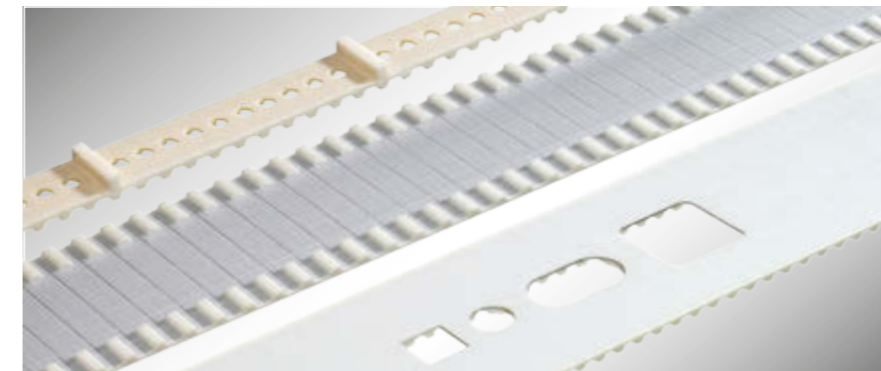


OPTIBELT – EXTRACT FROM STANDARD COATINGS

Picture of the coating	Name, colour, material	Hardness / density	Temperature resistance														
	Standard thickness s [mm] Minimum pulley Ø [mm]	Degree of grip	Abrasion resistance														
	Sylomer L, green, PU foam <table border="1"> <tr> <td>s</td> <td>6.0</td> <td>12.0</td> <td>15.0</td> <td>20.0</td> <td>25.0</td> </tr> <tr> <td>Ø</td> <td>120</td> <td>240</td> <td>300</td> <td>400</td> <td>500</td> </tr> </table>	s	6.0	12.0	15.0	20.0	25.0	Ø	120	240	300	400	500	≈ 300 kg/m ³ Degree of grip	-30°C...+70°C Abrasion resistance		
s	6.0	12.0	15.0	20.0	25.0												
Ø	120	240	300	400	500												
	PU 06, yellow, fine pored PU <table border="1"> <tr> <td>s</td> <td>2.0</td> <td>3.0</td> <td>4.0</td> <td>5.0</td> <td>6.0</td> <td>8.0</td> </tr> <tr> <td>Ø</td> <td>60</td> <td>70</td> <td>80</td> <td>100</td> <td>120</td> <td>160</td> </tr> </table>	s	2.0	3.0	4.0	5.0	6.0	8.0	Ø	60	70	80	100	120	160	≈ 55 Shore A Degree of grip	-10°C...+60°C Abrasion resistance
s	2.0	3.0	4.0	5.0	6.0	8.0											
Ø	60	70	80	100	120	160											
	PU foil 85 Shore A, transparent, PU <table border="1"> <tr> <td>s</td> <td>2.0</td> <td>3.0</td> <td>4.0</td> <td></td> <td></td> <td></td> </tr> <tr> <td>Ø</td> <td>60</td> <td>80</td> <td>100</td> <td></td> <td></td> <td></td> </tr> </table>	s	2.0	3.0	4.0				Ø	60	80	100				≈ 85 Shore A Degree of grip	-10°C...+70°C Abrasion resistance
s	2.0	3.0	4.0														
Ø	60	80	100														
	Linatex, red, natural rubber <table border="1"> <tr> <td>s</td> <td>1.5</td> <td>2.4</td> <td>3.2</td> <td>5.0</td> <td>6.4</td> <td>8.0</td> </tr> <tr> <td>Ø</td> <td>30</td> <td>50</td> <td>65</td> <td>100</td> <td>140</td> <td>180</td> </tr> </table>	s	1.5	2.4	3.2	5.0	6.4	8.0	Ø	30	50	65	100	140	180	≈ 38 Shore A Degree of grip	-40°C...+70°C Abrasion resistance
s	1.5	2.4	3.2	5.0	6.4	8.0											
Ø	30	50	65	100	140	180											
	PU longitudinal groove, fine, transparent, PU <table border="1"> <tr> <td>s</td> <td>3.5</td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>Ø</td> <td>70</td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> </table>	s	3.5						Ø	70						≈ 85 Shore A Degree of grip	-10°C...+70°C Abrasion resistance
s	3.5																
Ø	70																
	Supergrip petrol blue, polyvinyl chloride <table border="1"> <tr> <td>s</td> <td>3.0</td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>Ø</td> <td>60</td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> </table>	s	3.0						Ø	60						≈ 40 Shore A Degree of grip	-10°C...+90°C Abrasion resistance
s	3.0																
Ø	60																
	APL plus, red, elastic PVC <table border="1"> <tr> <td>s</td> <td>2.0</td> <td>3.0</td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>Ø</td> <td>60</td> <td>80</td> <td></td> <td></td> <td></td> <td></td> </tr> </table>	s	2.0	3.0					Ø	60	80					≈ 65 Shore A Degree of grip	-20°C...+100°C Abrasion resistance
s	2.0	3.0															
Ø	60	80															

optibelt ALPHA SPECIAL

– WITH MECHANICAL PROCESSING



MECHANICAL PROCESSING

Additional geometrical and dimensional adaptations can be made to standard timing belts, coated belts, and timing belts with cleats in order to expand the range of possible applications.

The following mechanical processing methods are available:

- Grinding
- Milling
- Water jet cutting
- Punching
- Drilling
- Cutting, carving



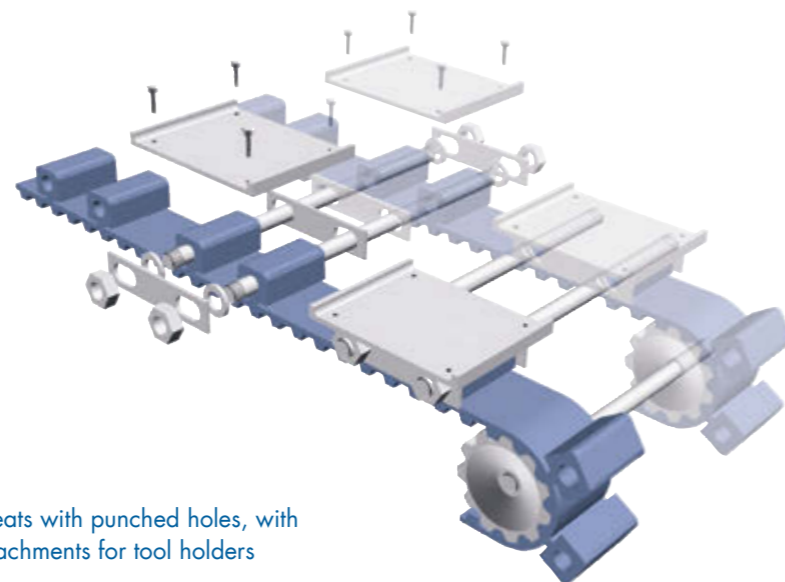
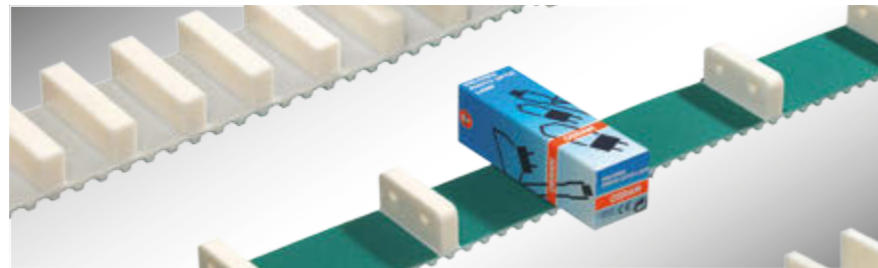
optibelt ALPHA SPECIAL

- WITH CLEATS

TIMING BELT WITH CLEATS

Cleats can be applied to **optibelt ALPHA LINEAR**, **optibelt ALPHA V** and **optibelt ALPHA FLEX** timing belts using various methods. These include welding, chemical bonding and mechanical connections. The in-house injection moulding process incorporated in the production cycle ensures good product availability.

If the right cleat for the job is not available in the existing range, it can be custom made or adapted cost-effectively to your specification. We would be pleased to help you find the ideal solution for your conveying requirements.



Cleats with punched holes, with attachments for tool holders



optibelt ALPHA SPECIAL

- WITH CLEATS



In contrast to coatings that rely on a frictional connection, cleats allow for positive-fit traction of goods on conveyors. They can also:

- Convey and, if necessary, align products longitudinally and/or laterally
- Position products on the conveyor belt
- Separate products
- Secure items for high acceleration and/or high speed transfer
- Synchronise the conveyed goods with the base belt

The Optibelt cleat range includes a large number of cast blanks and cleats that are ready for use for many purposes. If none of these cleats fits your requirements, a suitable cleat can be made

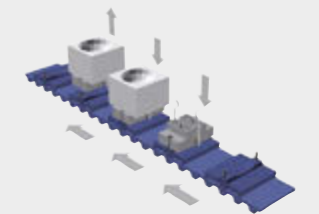
- By mechanically processing an existing cleat,
- With a custom-made injection mould.

The use of an injection mould is ideal for producing medium quantities or more of simple cleat shapes and small quantities of more complex cleat shapes. This can be done in the company's own tool shop.

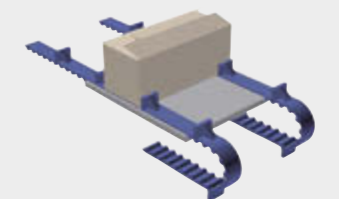
Available standard polyurethane cleat materials:

- PU 92 Shore A, white
- PU 65 and 85 Shore A, transparent
- PU 98 Shore A, greyish white
- PU FDA 85 Shore A, transparent/blue
- PU (with GFK)

FURTHER MATERIALS AND COLOURS AVAILABLE ON REQUEST.



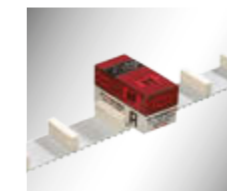
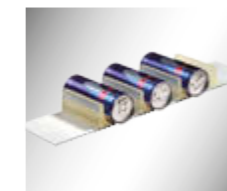
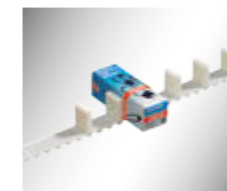
Cleats as workpiece holders



Parallel conveyors with supporting table

Shape and function of the cleat

simple							special			
rectangular	round	T-shaped, L-shaped	fan-shaped	trapezoidal shape	trapezoidal V-shape	triangular	concave, convex	groove	holes	inserts



optibelt ALPHA SPECIAL

– CUSTOMISED SOLUTIONS

The finishing of PU timing belts is one of our specialities. Thanks to our many years of experience, we are able to develop optimal solutions for special types of applications for our customers in the transport, food, packaging, glass, wood, linear and medical sectors.

- All open-ended or joined belt product groups can be used for transporting purposes. Application examples include: Parallel or synchronous conveyor, inclined conveyor, accumulating conveyor, vacuum conveyor, withdrawal facility, separator or workpiece positioner.
- The base belts selected for the requirements can be adapted as necessary to the conveying task with coatings and/or cleats.
- The dimensions and geometry of the base belt, the coating and the cleat can be adapted by mechanical processing, including in combination with each other.

These subsequently machined special belts are labelled "SPECIAL" in addition to their product group name.

For example, the product group name of an endless welded **optibelt ALPHA V** polyurethane timing belt with subsequently applied coating is changed to **optibelt ALPHA V SPECIAL**.

COATED TIMING BELTS HAVE THE FOLLOWING FEATURES:

- Special chemical resistance, e.g. for applications in the food industry
- High abrasion resistance, e.g. for accumulating conveyors
- High temperature resistance, e.g. for conveying heat-treated parts
- Good cutting resistance, e.g. for conveying sharp-edged goods
- Non-stick, e.g. for contact with adhesives
- Antistatic, e.g. for transport with electronic components
- Good damping properties, e.g. for damping the impact when sensitive goods are placed on the belt

optibelt ALPHA SPECIAL

– APPLICATION EXAMPLES



Fig. 1: Customised solution for conveying semi-finished goods

The example given in Fig. 1 shows a customised solution developed for conveying semi-finished goods. In this particular case, an **optibelt ALPHA V AT20 – ST** was coated with Sylomer L green PU foam coating material. Afterwards, grooves and holes were cut out with a water jet, and vacuum pockets machined with NC mills, so that vacuum technology could be used to convey the semi-finished goods onwards for additional processing.

For a special machinery manufacturer, Optibelt has developed a solution (see Fig. 2), for conveying cut-on-demand material (pipe, square and rectangular profiles) – without changing the belt type.

Furthermore, the solution proposed should prevent slippage of the cut material due to the start-stop frequency. The belts should run synchronously parallel to each other, depending on the lengths of the cut profile and the number of belts (4-6 belts). The top surface of the belt is equipped with foam profiles (Sylomer R, blue, PU foam) and PU cleats to ensure that the different profiles are conveyed in a precise position.



Fig. 2: Customised solution for conveying cut material

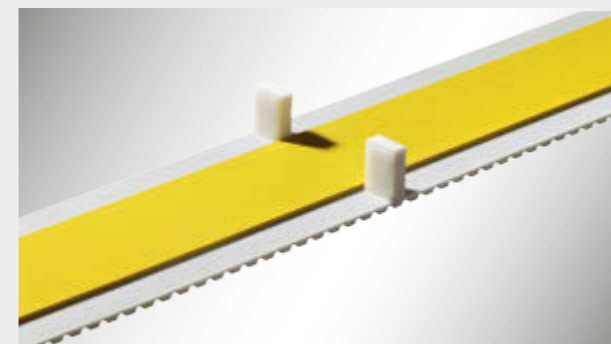


Fig. 3: Customised solution for conveying pet/animal food packaging

The customised solution shown in Fig. 3 was commissioned by a customer from the pet/animal food industry in order to convey empty pet/animal food packaging to filling stations. The top surface of the belt was coated with a natural rubber (RP 400, yellow) and equipped with cleats. The welded cleats have an additional glass fibre reinforced protective layer in order to counter the high shear forces of the sharp-edged empty pet/animal food packaging. Furthermore, the cleats ensure exact positioning of the goods to be conveyed.

TIMING BELTS FOR THE PACKAGING INDUSTRY

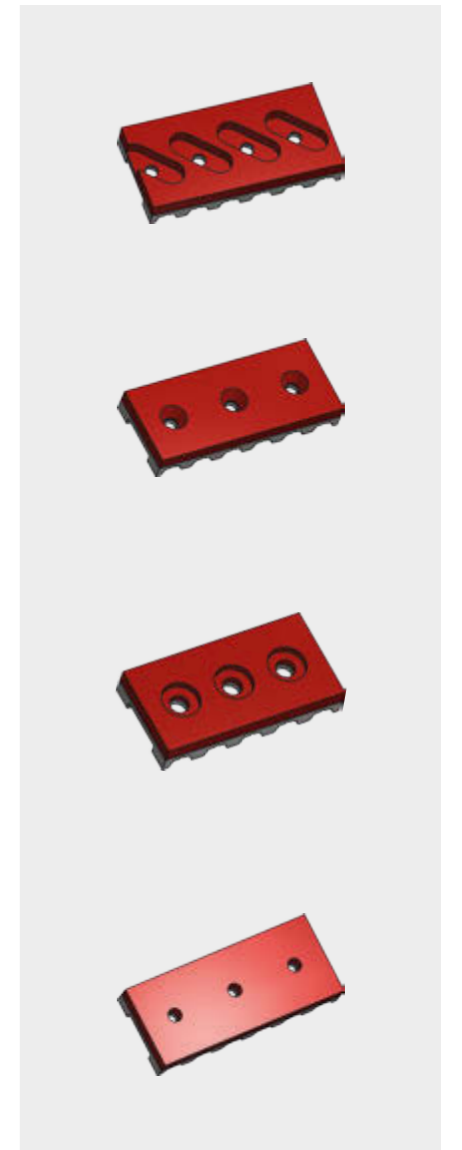
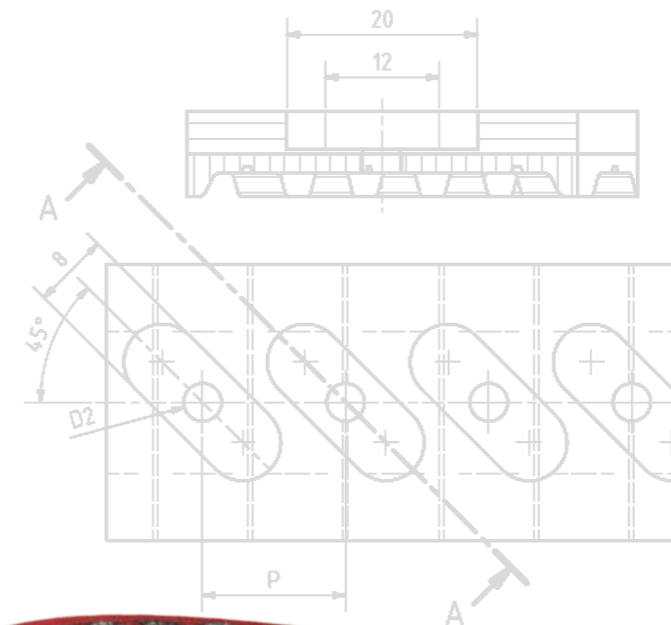
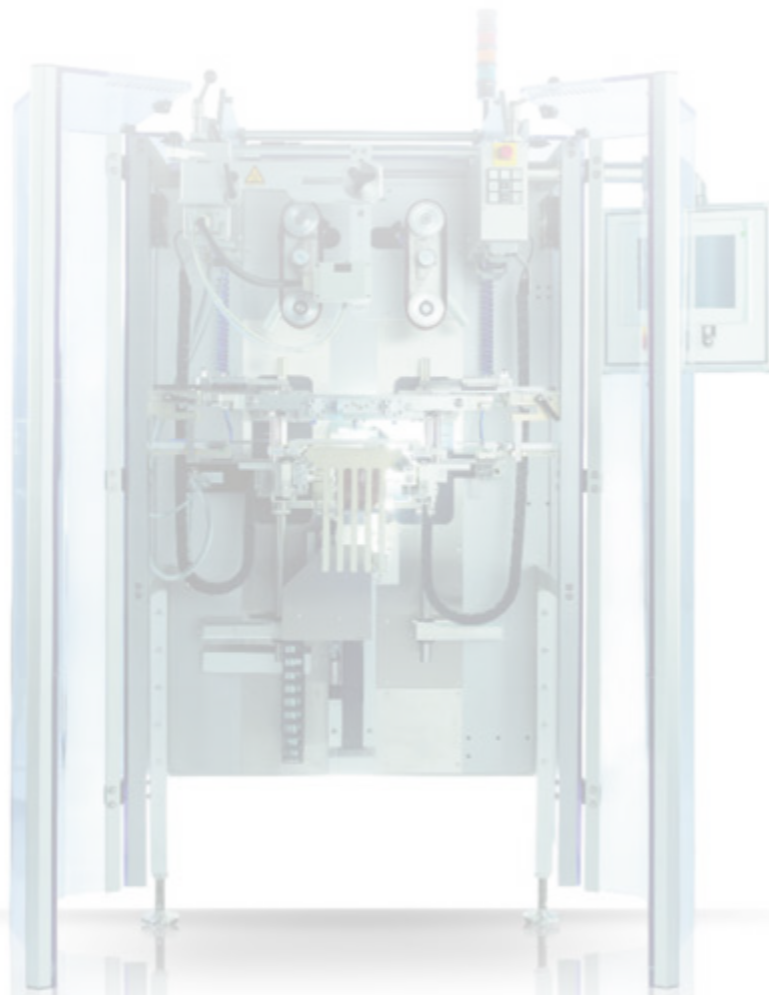
TIMING BELTS FOR FORM, FILL & SEAL MACHINES

All rubber and polyurethane timing belts of the Optibelt product portfolio can be provided with various coatings for form, fill & seal machines. With the aid of these timing belts, the foil that was previously sealed in a longitudinal direction to form a tube is withdrawn from a filling tube. Due to additional sealing in the transverse direction, a bag is produced that can then be filled. This bag is sealed completely by another transverse seal. This system is used globally in the food and non-food sector. From potting soil to frozen products to salad, consumer products are packed in this way every day.

In this area, optibelt **ALPHA SPECIAL** discharge belts with and without vacuum support have proven successful, with common profiles such as T10, L and H being available in various length ranges.

Of particular note are the rubber timing belts with special coatings. These are produced in a vulcanization process from a base belt with a coating that is neither bonded nor exhibits a joint. The materials Red Rubber 40 and silicone rubber are used for this purpose. However, Linatex® and other types of rubber can also be applied to the belt subsequently with a joint in the rubber. In addition, polyurethane coatings – e.g. with PU O6 foam, yellow – are possible. The material requested is also applied subsequently or in an endless spraying process (only in the case of polyurethane timing belts).

However, if higher cycle times are used for the packaging machines, timing belts with vacuum support are a good choice. Optibelt offers various variants and designs of the tooth-side grooves and vacuum pockets.



TIMING BELT JOINTS

BESIDES THE ZS / ZSi TIMING BELT JOINT, THE RANGE OF MECHANICAL CONNECTIONS HAS BEEN EXTENDED BY THE PINJOIN TIMING BELT JOINT.

TIMING BELT JOINT ZS AND ZSi

THE TIMING BELT JOINT ZS / ZSi IS DESIGNED TO ALLOW REPEATED DETACHING AND JOINING OF TIMING BELTS IN THE APPLICATION ITSELF.

Both designs are offered in stainless steel as standard for the AT10 and H profiles. This connection can therefore be used in the food and pharmaceutical industry in combination with suitable timing belts. For the T10 profile, the tooth side inserts are made of brass, which is not suitable for application in the food and pharmaceutical industry.

The back plates are connected with the inserts on the toothed side using bolts that are screwed on through the belt. The top surface of the belt is 1 mm higher in the ZSi so that the back plates are embedded inside the timing belt and finish flush with the height of the top surface of the belt.

The standard widths for lock connections in profiles AT10 and T10 are 25, 32 and 50 mm, and in the H profile, 25.4, 38.1 or 50.8 mm.

Further intermediate widths, and widths exceeding 50 mm, are available on request.

THE PINJOIN TIMING BELT JOINT

THE PINJOIN TIMING BELT JOINT IS DESIGNED FOR JOINING BELTS WITH A ONE-OFF, PERMANENT JOINT IN THE APPLICATION ITSELF.

The connection is made with stainless steel threaded pins that fit into laterally drilled holes running longitudinally through the tooth. This connection can therefore be used in the food and pharmaceutical industry in combination with suitable timing belts.

The PinJoin connection is also suitable for connecting coated belts. In the area of the joint, however, the coating is positioned flush face to face.

The standard widths for lock connections for the AT10 profile are: 25, 32 or 50 mm.

Additional profiles, intermediate widths and widths exceeding 50 mm are available on request.

optibelt RR / RR Plus

– POLYURETHANE ROUND BELTS

Optibelt round belts consist of high grade materials which are produced as open-ended rolls in different diameters from 2 mm to 20 mm in special production processes. The **optibelt RR Plus** version of the round section belt additionally incorporates a polyester tension cord.

PROPERTIES

- Favourable coefficient of friction
- Good slip resistance for conveying goods
- Good abrasion and wear resistance
- High elasticity, good damping
- High tensile strength
- Colour-fast
- Resistant to greases, oils and numerous chemicals
- UV and ozone resistant
- **optibelt RR Plus** version particularly low stretch

ADVANTAGES

- Welding on the spot, including for the **optibelt RR Plus** version
- No disassembly of the drive/shafts
- Quick rectification of breakdowns
- Short downtimes
- Easy to store (supplied in rolls)
- Immediate availability
- Wide variety of design options, since any length can be produced

optibelt RR ROUND BELTS ARE MAINLY USED IN CONVEYOR SYSTEMS, E.G. FOR CONVEYING:

- Tiles, plates, flat glass
- Veneers in wood processing
- Roof tiles, marble, concrete slabs
- Cardboard conveyance in the packaging sector
- Also as guiding belts for the conveyance of bottles and cans
- **optibelt RR Plus** is especially suitable for use in long conveyors.



82 SHORE A YELLOW

For use with small idler pulleys; flexible at low temperatures; very elastic; low power transmission capacity



85 SHORE A LIGHT BLUE FDA

For use in the food processing industry, in direct contact with goods



88 SHORE A GREEN (SMOOTH/ROUGH)

For use in all areas with medium loading; the rough version offers advantages when transporting damp or greasy products and improves the entrainment effect.



92 SHORE A WHITE

For applications in the medium to heavy duty range, the white version still offers sufficient flexibility.

Suitable for continuous use at high temperatures.



98 SHORE A BLUE

Especially suitable for high loads and high temperatures; extra hard grade; minimum pulley diameters must be observed.



65 SHORE A BLACK

For special applications; belt diameters available from 5 mm to 12 mm; very flexible at low temperatures; extremely soft material

optibelt HRR

– POLYURETHANE HOLLOW ROUND BELTS

Optibelt hollow round belts are particularly suitable for use in light drive systems and conveyor systems, especially for small pulley diameters. Available as endless metre ware in 75 Shore A in the diameters 4.8 / 6.3 / 8 / 9.5 mm red/smooth and in 85 Shore A 4.8 / 6.3 mm green/rough, these belts are similar to a strong, thick-walled tube and can be used flexibly due to this special property. Hollow round belts should be welded in principle, but they can also alternatively be joined securely and tightly with special metal sleeves made of brass. This variant is fast and uncomplicated to perform on the job and obtains ideal results for quickly remedying downtime due to belt fracture or as a long-term solution for drives and conveyors with light loads and low speeds.

PROPERTIES

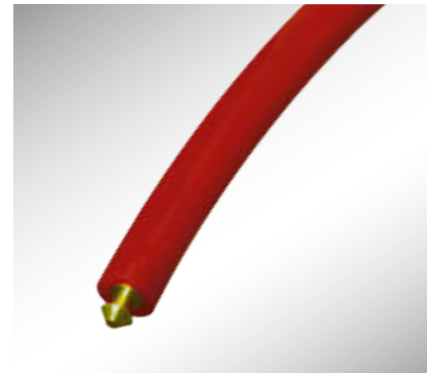
- Favourable coefficient of friction
- Good slip resistance for conveying goods
- Good abrasion and wear resistance
- High elasticity, good damping
- Colour-fast
- Resistant to greases, oils and numerous chemicals
- UV and ozone resistant

ADVANTAGES

- For extremely small pulley diameters
- No disassembly of the drive/shafts
- Quick rectification of breakdowns
- Short downtimes
- Easy to store (supplied in rolls)
- Immediate availability
- Allows a wide variety of design options since any length can be manufactured

Optibelt HRR BELTS SOLD BY THE METRE ARE MAINLY USED IN CONVEYOR SYSTEMS, E.G. FOR CONVEYING:

- Tiles, plates, flat glass
- Veneers in wood processing
- Roof tiles, marble, concrete slabs
- Cardboard conveyance in the packaging sector
- Also as guiding belts for the conveyance of bottles and cans



75 SHORE A RED/SMOOTH

For use with small pulley diameters, for quick repairs



85 SHORE A GREEN/ROUGH

For use with medium drives, for quick repairs

JOINING TOOL

FRICITION WELDING TOOL RS02 FOR ROUND SECTION, V-BELT AND SPECIAL PROFILES

ADVANTAGES OF THE RS02:

- Precision clamping jaws and automatic 0 setting prevent offset welded seams
- Speed-controlled frictional heat guarantees a 100% weld
- No poor welding seams caused by temperature fluctuations or draughts

ACCESSORIES FOR THE FRICTION WELDING TOOL RS02:

- Friction welding device
- 1 set of standard clamping jaws of choice
- 1 Allen key
- 1 shears AS02
- 1 side cutter SE02
- 1 carrying case with rigid foam lining

STANDARD CLAMPING JAWS:

- For round belts, Ø 6 mm to 20 mm
- For V-belts, 6 x 4 mm to 22 x 14 mm
- For various special profiles



FOR ROUND BELTS



FOR V-BELTS



FOR SPECIAL PROFILES

Further standard clamping jaws for round belts and V-belts are available at additional cost.

We can also produce clamping jaws for special PU profiles on request.



JOINING TOOLS

Service case BASIC

This five-piece service case BASIC provides the user with a complete set of standard equipment for occasional use.

The SG02 welding tool has a longer warm-up phase than the premium model and is suitable only for urethane belts that can be welded using the two corresponding guiding clamps as required.

The FZ01 guiding clamps are used for round belts with a diameter of up to 10 mm and for V-belts with profiles of up to 10, whereas the FZ02/3 model is used for round belts from 8 mm upwards in diameter and V-belts up to profile 32.

To ensure the perfect cut for optimum welding results, the set also includes a pair of shears as well as a side cutter for removing the weld seam.



GUIDING CLAMPS FZ02/3

for round belts with diameters from 8 mm and V-belt profiles up to 32 (D)



SIDE CUTTER SE02

for removing the weld seam



SHEARS AS02

for cutting round belts and V-belts



GUIDING CLAMPS FZ01

for round belts with diameters of up to 10 mm and V-belt profiles up to 10 (Z)



WELDING TOOL SG02

for PU 290-300°C;
power supply: 230 V

Service case PREMIUM

This five-piece service case PREMIUM is suitable for daily use. With its ergonomic and temperature regulated EErgo welding tool, TPE and urethane belts can be welded quite easily at the press of a button. Due to the short warm-up phase, of less than two minutes, the tool is optimised for instant use.

The versatile FZ01 Vario clamps are a perfect complement to the other tools in the welding set. The quick clamping function allows round belts with diameters up to 10 mm and V-belts up to profile 10 to be clamped and welded within a short space of time. The exchangeable profile jaws also make it possible to process special profiles. The service case PREMIUM also includes a second set of guiding clamps, which are used for round belts with diameters from 8 mm upwards and V-belts with profiles of up to 32.

The set is completed by a pair of shears with an adjustable angled stop that allows both straight and angled cuts, and a side cutter for removing welded seams.



GUIDING CLAMPS FZ02/3

for round belts with diameters from 8 mm and V-belt profiles up to 32 (D)



SIDE CUTTER SE02

for removing the weld seam



SHEARS AS04

with adjustable angled stop



GUIDING CLAMPS FZ01 VARIO

with exchangeable profile jaws,
for round belts with diameters of up to 10 mm and V-belt profiles up to 10 (Z)



WELDING TOOL EErgo

for TPE and PU; under 2 minutes warm-up time; temperature regulated welding tool, ergonomic and quick

TIMING BELT PULLEYS

optibelt ZRS

STANDARD TIMING BELT PULLEYS WITH CYLINDRICAL DRILLED HOLE

Profile	Width code	Number of teeth
XL	037	10 – 72
L	050	10 – 84
	075	10 – 84
	100	10 – 84
H	075	14 – 48
	100	14 – 120
	150	14 – 120
	200	14 – 120
XH	300	16 – 120
	200	18 – 96
	300	18 – 96
	400	18 – 96



Standard timing belt pulleys with cylindrical drilled hole

Profile	Belt width [mm]	Number of teeth
5M	9	12 – 72
	15	12 – 72
	25	12 – 72
8M	20	22 – 192
	30	22 – 192
	50	22 – 192
	85	22 – 192
14M	40	28 – 216
	55	28 – 216
	85	28 – 216
	115	28 – 216
	170	28 – 216

Profile	Belt width [mm]	Number of teeth
T5	10	10 – 60
	16	10 – 60
	25	10 – 60
T10	16	10 – 60
	25	10 – 60
	32	18 – 60
	50	18 – 60
AT5	10	12 – 60
	16	12 – 60
	25	12 – 60
AT10	16	15 – 60
	25	15 – 60
	32	18 – 60
	50	18 – 60

optibelt ZRS

STANDARD TIMING BELT PULLEYS FOR TAPER BUSHES

Profile	Belt width [mm]	Number of teeth
5M	15	34 – 150
8M	20	22 – 90
	30	22 – 144
	50	28 – 192
	85	34 – 192
14M	40	28 – 216
	55	28 – 216
	85	28 – 216
	115	28 – 216
	170	38 – 216

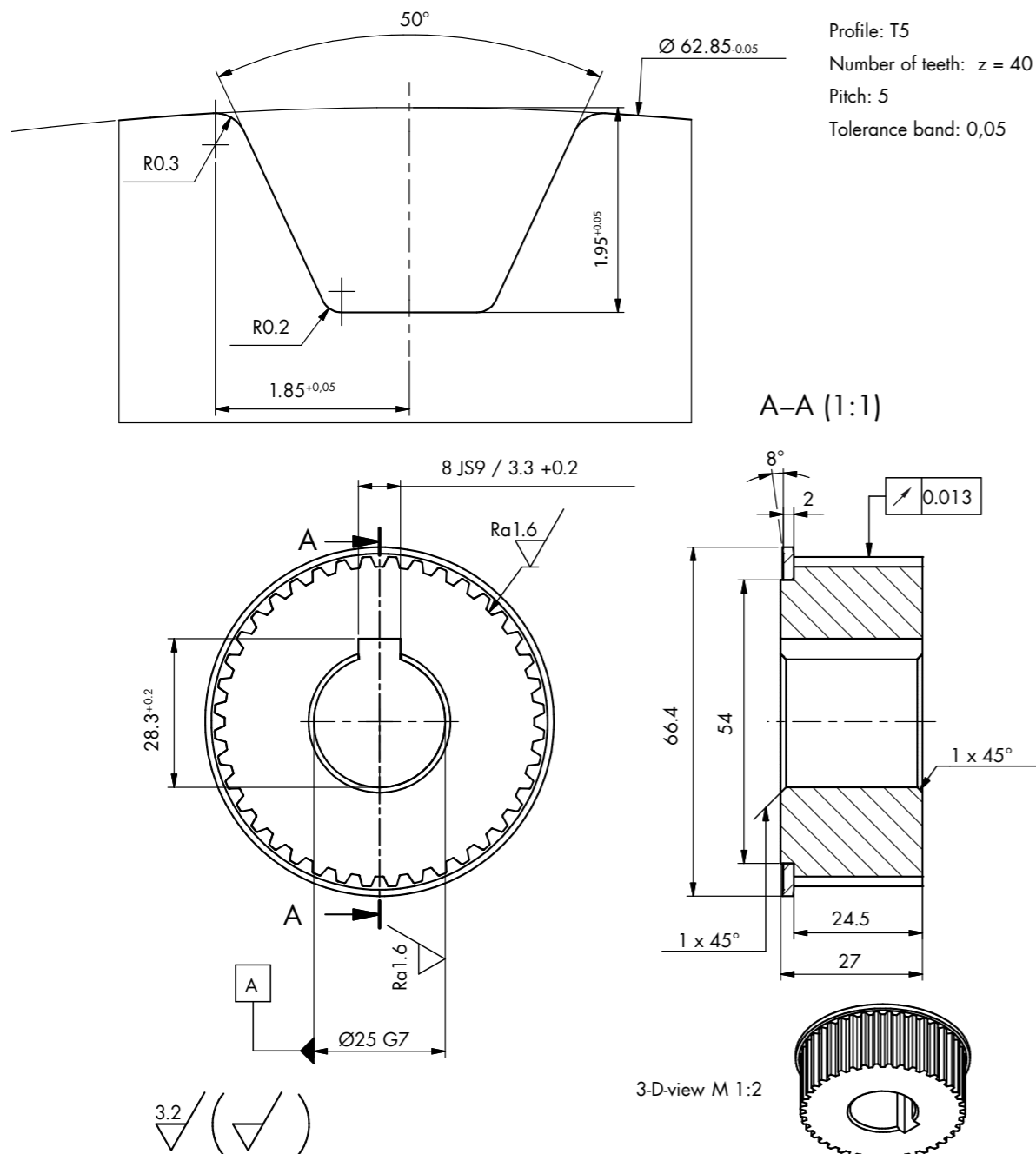


Taper bushes

Standard timing belt pulleys for taper bushes

Profile	Width code	Number of teeth
L	050	18 – 120
	075	18 – 120
	100	18 – 120
H	100	16 – 120
	150	18 – 120
	200	18 – 120
	300	20 – 120
XH	200	18 – 48
	300	18 – 48
	400	20 – 48

TIMING BELT PULLEY ACCORDING TO DRAWING CUSTOMISED SOLUTION



optibelt ONLINE

– CLEAT SELECTOR

FINDING THE RIGHT CLEAT

With an online tool, Optibelt now enables quick and clear access to its comprehensive cleat range. Using this cleat selector, customers can select their individual transport solution from a standard spectrum of more than 400 different cleat shapes, specifically for their application, or have them adapted subsequently to their requirements. The selection mask of this online tool can be used to access the most important basic data regarding the shape, material and dimensions of the cleats. Each hit with the associated information can then be downloaded free of charge as a PDF or CAD file.

– DATA SHEET SELECTOR

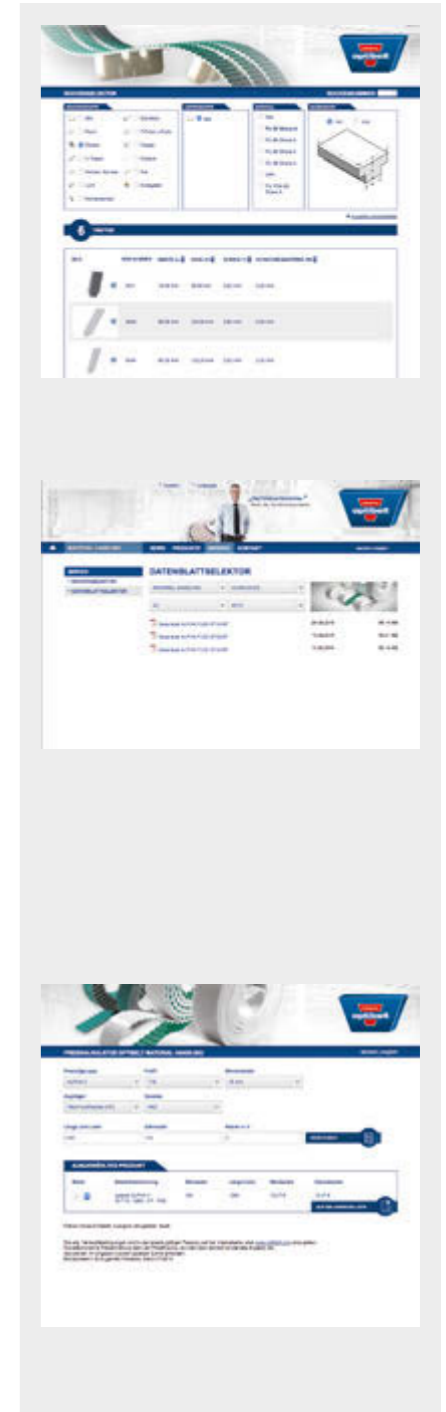
CURRENT DATA SHEETS ON DEMAND

The data sheet selector allows quick and clear online access to data sheets for the Optibelt product groups **optibelt ALPHA TORQUE**, **optibelt ALPHA POWER**, **optibelt ALPHA FLEX**, **optibelt ALPHA LINEAR** and **optibelt ALPHA V**. By selecting the base belts, profiles and tension cords, the corresponding data sheet for the timing belt can be found. The data sheet does not only include the most important basic data about the belts, but also relevant design data, such as minimum diameters for pulleys and idlers. Each data sheet can then be downloaded free of charge as a PDF file.

– PRICE CALCULATOR

QUICK COST SUMMARY

With the aid of the price calculator, the prices for the standard products **optibelt ALPHA FLEX**, **optibelt ALPHA LINEAR** and **optibelt ALPHA V** of the Optibelt Material Handling segment can be requested quickly and easily online. Depending on the base belt selected with the requested profile, the tension cords available and the possible fabric combinations are displayed. Based on this, the prices for suitable drive solutions can be calculated specifically. Following this, an official quotation indicating the price and the delivery time can be requested.



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