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Products & Applications

optibelt **OMEGA HL**



Drive solutions with Optibelt



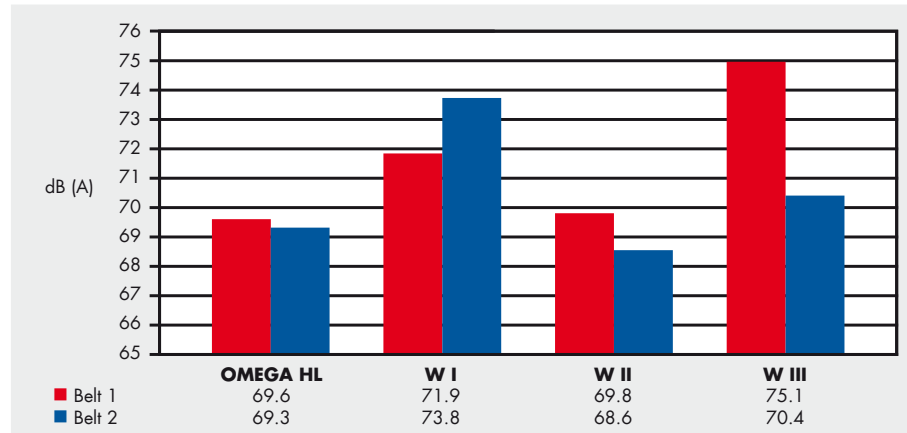
Optibelt

Advantages

On drives with a low belt speed, Optibelt OMEGA HL timing belts surpass the capacity of Optibelt OMEGA HP by up to 25 %. In addition, the design was optimised so that Optibelt OMEGA HL is much more suitable for shock loaded drives with shock loading. When used for new drive designs in these types of application, Optibelt OMEGA HL achieves the highest possible functional reliability in combination with an optimum efficiency.

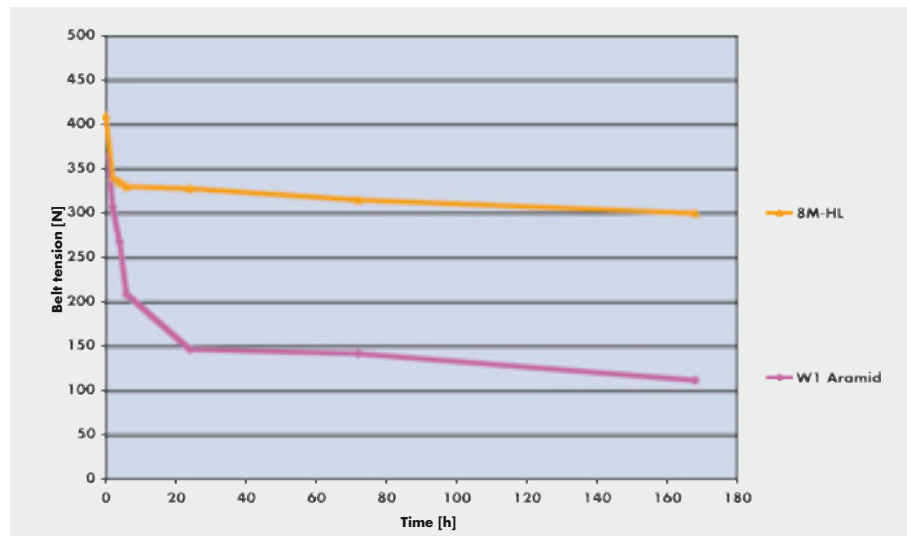
- Suitable for high torques
- Highest possible precision, exact synchronicity
- Optimised absorption of shock loading
- Extremely low noise
- System cost savings due to a reduction of the drive volume
- Maintenance-free
- Temperature-resistant from $-30\text{ }^{\circ}\text{C}$ to $+100\text{ }^{\circ}\text{C}$
- Up to 2.5 times the power transmission capability of Optibelt OMEGA
- Lower bearing load
- Optimised wear behaviour

Noise level



Specification: Belt dimension: 1120 8M HL 20
Wattage: $P = 4.8\text{ kW}$
Drive pulleys: $n_1 = 3000\text{ min}^{-1}$
 $z_1 = 22; z_2 = 44$
Shaft loading: 600 N

Belt tension loss



Areas of application

- Machine drives
- Replacement of chains, depending on the application
- Conveyor systems
- Lumber mills and the paper industry
- Textile machinery
- Garden machinery

Timing pulleys

Optibelt OMEGA HL timing belts do not require any special pulleys. The section is tailored to the standard HTD® and RPP® pulleys.

OMEGA HL

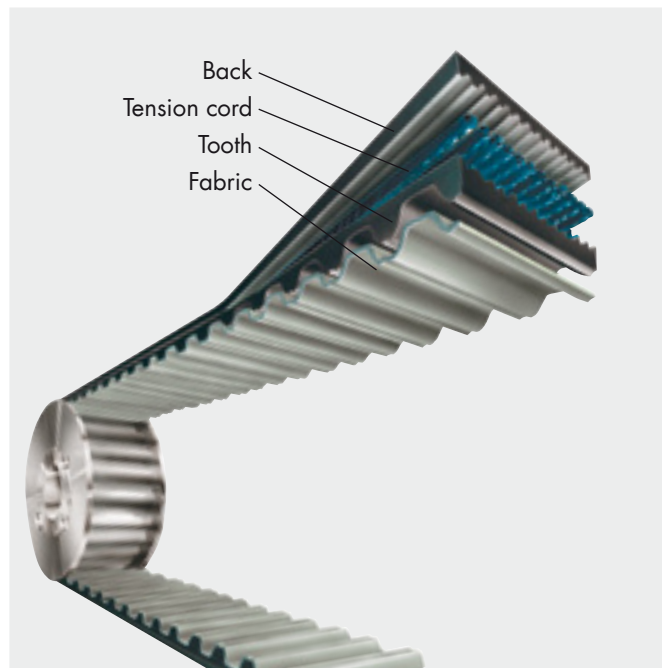
Structure

Back:

Like the material of the teeth, the back of the Optibelt OMEGA HL is made of polychloroprene reinforced by aramid fibres. Because of that, an even more abrasion-resistant surface is in contact with the reverse idler. Additionally this protects the cords against environmental influences.

Tension cord:

In contrast to the Optibelt OMEGA HP with glass fibre cord, a substantially updated glass fibre cord is used in Optibelt OMEGA HL. In this way, its capacity can be further increased by up to 25 % and its resistance to shock loading is considerably increased.



Teeth:

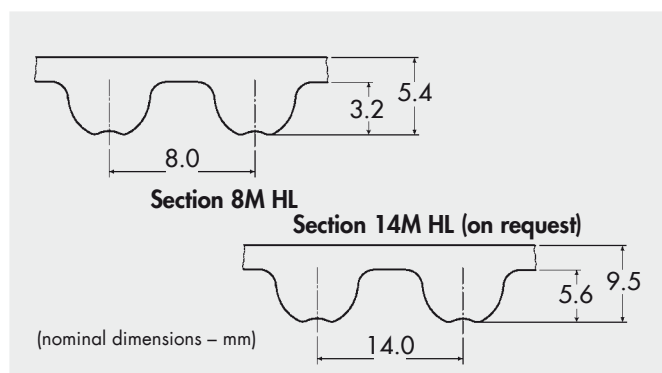
Underneath the fabric on the tooth face, a high strength polychloroprene compound provides a safe power transfer to the tension cord. The tooth hardness which is substantially higher than that of Optibelt OMEGA is achieved by using aramid fibre mixed into the compound.

This material ensures in a very high tooth shape stability and an increased shear strength of every individual tooth of Optibelt OMEGA HL.

Fabric:

The shear strength of the teeth is reinforced by a strong fabric with superior adhesion to the interior compounds.

The design of the section of the Optibelt OMEGA and the minimal friction from the fabric ensure a comparatively smooth engagement of the belt tooth into the pulley tooth. In addition, the polyamide fabric used is extremely abrasion-resistant.



The new high power timing belt for extremely high loads over the total range of speeds

Optibelt developed this belt in the pitches 8M and 14M especially for drives with high torques and intermittent shock loads often found in high performance machinery.

For this construction, the design and the material of the timing belt was optimised in such a way so as to achieve the highest possible functional reliability in combination with an optimum efficiency when used for new drive designs. It is initially available in section 8M.

Optibelt OMEGA, OMEGA HP and OMEGA HL timing belts are tailored to Optibelt ZRS timing pulleys with HTD® or RPP® teeth. For applications using other pulleys, please contact the Optibelt Application Engineering Department.

A reinforced glass fibre cord tension cord is used. This innovative material is characterised by a combination of the following important properties:

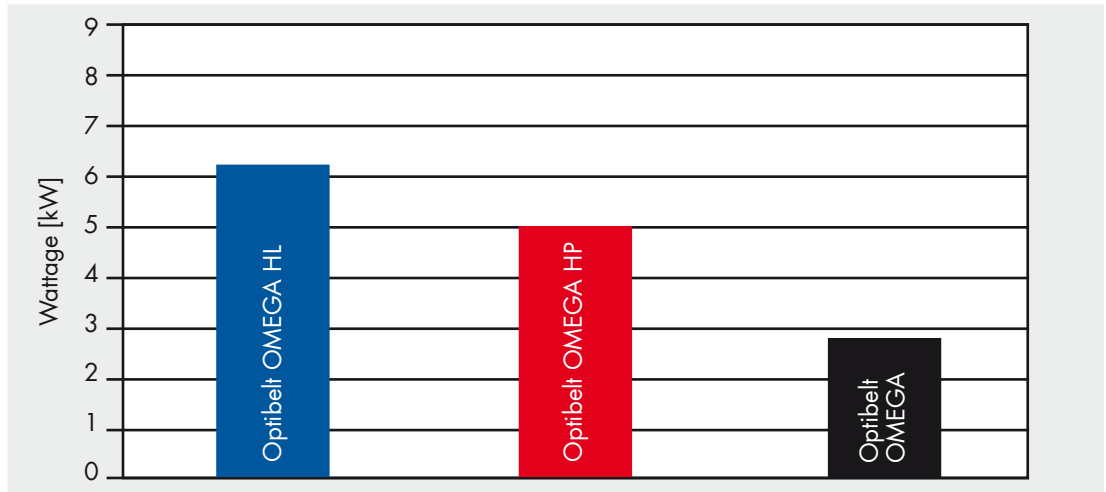
- Good resistance to shock loads
- Very high dynamic loading capacity
- Elastic stretch and subsequent elongation that is only very small

By means of these properties, the belt power transmission capability can be increased by another 25 % in comparison with the OMEGA HP. In contrast to an aramid tension cord which also has a very high resistance to shock load, the reinforced glass fibre cord shows a very small remaining elongation over the belt life. The aramid cord shows a very pronounced remaining elongation, for details see diagram. The pitch length can be maintained despite this minimal loss of tension of the reinforced glass cord and so the belt teeth are evenly stressed during the operational life.

In addition, the reinforced glass cord allows the belts to be used on medium and high speed drives, in contrast belts with an aramid cord can only be used on low to medium speed drives. Reinforced glass cord enables the area of application to be substantially expanded in comparison to that for belts with aramid cord.

The high power timing belt for high torques with both low and high belt speeds

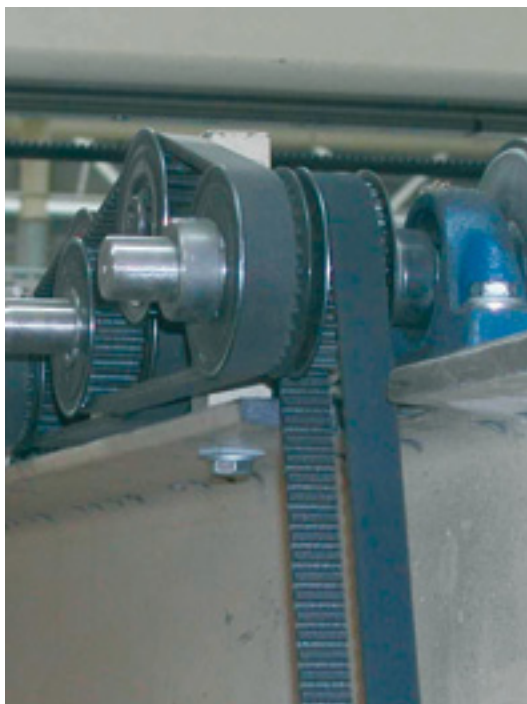
Wattage comparison



Nowadays, high power drives demand high quality drive belts. Prolonged operating life, increased capacity, reduction of replacement intervals, material savings and system cost savings – all these requirements are fulfilled by the new generation of Optibelt timing belts.

The answer is:

optibelt *OMEGA HL*



= **optimised configuration and utilisation of drives**

Optibelt OMEGA HL, the name speaks for itself:

- O** – Optimised tooth shape
- M** – Made in Germany
- E** – Enormous performance potential
- G** – Generally narrow overall width
- A** – Application variety

HL – High load

Optibelt OMEGA HL:
the first choice of design engineers

optibelt



Power Transmission



Power Transmission

A climber in a red tank top and green shorts is climbing a yellow rock face. A large, curved, grey timing belt with a ribbed profile is overlaid on the right side of the image, curving from the bottom towards the top. The background is a clear blue sky.

optibelt *OMEGA HL*

**The new high power timing belt
for extremely high loads
over the total range of speeds**

Optibelt developed this belt in the pitches 8M and 14M especially for drives with high torques and intermittent loads like those commonly used in machines.

For this application, the design and the material of the timing belt was optimised in such a way so as to achieve the highest possible functional reliability in combination with an optimum efficiency when used for new configurations of a drive.

Optibelt Service Tools

Economic situations are now demanding that belt drives be properly installed and maintained to ensure that all available cost savings are realized. Large energy savings can be realized as well as time! All these costs are not usually associated to belt installations or the belt drives themselves; however using the proper belt effectively ensures a cost savings many times the cost of the individual drive components! The total drive cost or cost of ownership has to be understood in order to evaluate the savings realized by Optibelt products and the service tools we make available to the market.

The implementation of cost/energy reductions can take place easily and quickly with our technical devices. These devices are easy to use and operate. The wide range of tools has been expanded with a new offering that encompasses all installation and maintenance requirements in one kit! This economically priced SERVICE KIT contains a variety of technical devices that optimize the efficiency and operation of existing drives as well ensuring the proper initial installation on new equipment. The SERVICE KIT contains the following aids:

- Optibelt Service-Box: a selection of useful aids for quick help on site
- Optibelt laser pointer II: for correct pulley alignment
- Optibelt Tension Notebox: for the durable documentation of the tension values on the respective drive
- Optibelt TT mini S frequency tension tester: for the simple measurement of ideal belt tension

optibelt Service-Box

When dealing with V-belts and ribbed belts, a level of tension that is too low results in unnecessary slipping of the belts, an issue that is difficult to notice and is rarely realized. This additional friction leads to increased energy consumption, and decreased belt life. The friction ages and hardens the belt resulting in mechanical efficiency losses that result in energy costs being realized that could easily be eliminated. In addition the reduction in belt life extends more costs by shutting down equipment more often to maintain and replace belt components. Not to mention the opportunity costs of working on these drives instead of something else. A level of tension that is too high leads to an increased bearing and shaft loads which can damage other components of the equipment. Also it can apply a distortion of the belt composition that is undesirable. When dealing with timing belts, the teeth may not engage cleanly with a low or a high tension value being introduced. It is easy to avoid these issues with the tools provided in the service-box.



optibelt *SERVICE KIT*

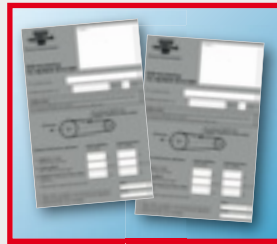


optibelt laser pointer II

On top of this, the mechanic can quickly and precisely align many types of drives, as well as other equipment. Reducing the friction in a belt drive means less pulley wear, longer running drive components, increased time between replacements and energy cost reductions. Total cost of ownership is reduced! Use of the Optibelt laser pointer II usually pays for itself in less than one month when dealing with multiple or large drives.

optibelt Tension Notebox

While setting the correct drive tension is of great importance, it is equally important to be able to repeat the action and achieve the cost savings into the future and with other people that may be involved. The proven Optibelt "Tension notes" adhesive labels document the set values for the correct



tension methods. This provides the service technician at a future date the required information in a reliable manner without having to search through documentation of equipment. These adhesive labels can then be attached where appropriate for quick access to the information. As a result the maintenance and installation work can be carried out quicker and in a more accurate manner. Costs are subsequently reduced.

optibelt *TT mini S*



... with a flexible swan neck for effortless measurements at difficult-to-reach places

The Optibelt TT mini S frequency tension tester is an appliance that is used to check the tension of drive belts by means of measuring frequency. Thanks to its compact design, this tension tester offers universal application possibilities for drives in machine construction, in the automotive industry and many

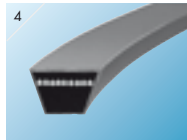
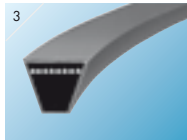
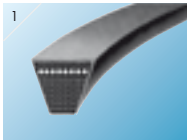
other application areas. The Optibelt TT mini S can even be used in difficult-to-reach places. V-belts, ribbed belts and timing belts can be simply and quickly reached in order to check their tension values. The Optibelt TT mini S offers more advantages with its Hertz [Hz] display, large measuring range from 10-600 Hz, simple and repeat measurement accuracy, small and compact construction (size of a mobile telephone), automatic switch-off function, plant calibration and CE approval.



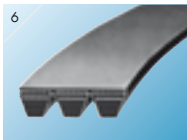
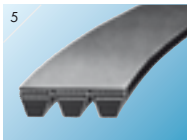
Lieferprogramm Product Range



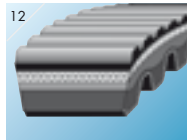
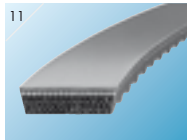
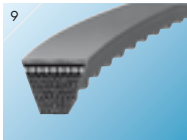
1 **optibelt RED POWER II**
5 **optibelt KB RED POWER II**
Hochleistungs-Schmalkeilriemen,
wartungsfrei
*High performance wedge belts,
maintenance-free*



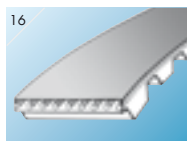
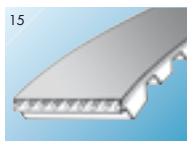
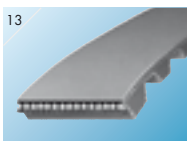
2 **optibelt BLUE POWER**
6 **optibelt KB BLUE POWER**
Hochleistungs-Schmalkeilriemen
High performance wedge belts



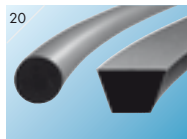
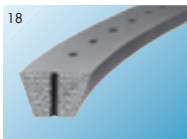
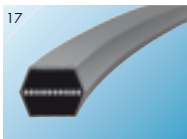
3 **optibelt SK**
7 **optibelt KB SK**
Schmalkeilriemen
Wedge belts



4 **optibelt VB**
8 **optibelt KB VB**
Klassische Keilriemen
Classical V-belts



9 **optibelt Super X-POWER M-S**
Keilriemen, flankenoffen,
formgezahnt
*V-belts, raw edge,
moulded cogged*



10 **optibelt Super KBX-POWER**
Kraftbänder, flankenoffen
Kraftbands, raw edge

11 **optibelt SUPER VX**
Breitkeilriemen, flankenoffen,
formgezahnt
*Variable speed belts,
raw edge, moulded cogged*

12 **optibelt SUPER DVX**
Doppel-Breitkeilriemen,
flankenoffen, formgezahnt
*Double section variable speed belts,
raw edge, moulded cogged*

13 **optibelt ZR**
optibelt ZR linear
Zahnriemen aus Chloropren
Chloroprene timing belts



14 **optibelt OMEGA HL**
optibelt OMEGA HP
optibelt OMEGA FanPower
optibelt OMEGA linear
Zahnriemen aus Chloropren
Chloroprene timing belts

15 **optibelt ALPHA Power**
16 **optibelt ALPHA**
optibelt ALPHA linear / V
optibelt ALPHAflex
Zahnriemen aus Polyurethan
Polyurethane timing belts

17 **optibelt DK**
Doppelkeilriemen
Double section V-belts

18 **optimat OE**
Endliche Keilriemen
DIN 2216, gelocht
*Open-ended V-belt,
punched*

19 **optibelt RB**
Rippenbänder
Ribbed belts

20 **optibelt RR / RR PLUS**
Kunststoffrundriemen
Plastic round section belting

20 **optibelt KK**
Kunststoffkeilriemen
Plastic V-belt

21 **optibelt KS**
Keilrillenscheiben
V-grooved pulleys

22 **optibelt ZRS**
Zahnriemenscheiben
Timing belt pulleys

23 **optibelt RBS**
Rippenbandscheiben
Ribbed belt pulleys

24 **optibelt SERVICE KIT**

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