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**optibelt**

Products & Applications

# optibelt *OMEGA HP*



Drive solutions with Optibelt



Power Transmission

# optibelt *OMEGA HP*

# The high performance

Compact synchronous drives are used in the whole area of mechanical drive engineering. For that, performance, optimised running behaviour and operational reliability are only some of the high demands made on the timing belt. Modern manufacturing technologies plus quality inspections in all stages of processing guarantee super reliability and a continuously high quality standard for Optibelt products. The Optibelt OMEGA HP high performance timing belt was especially developed for heavily loaded, high speed drives. Improved materials and highly developed process engineering form the basis for this very high performance level. For every power transmission requirement there is an appropriate belt section.

# optibelt

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**optibelt**  
Power Transmission

**schneller**  
**stärker**  
**kompakter**

**stronger**  
**faster**  
**more compact**

... für Hochleistungsantriebe ... for high powered drives

# optibelt *OMEGA HP*

Zahnriemen Timing Belts

Made in Germany

# timing belt for extremely loaded, high speed drives!

Among experts, Optibelt timing belts enjoy an excellent reputation. They are considered to be particularly powerful and extremely durable. The product series "Optibelt OMEGA" stands for an extraordinarily high quality standard. It is now supplemented by a high performance timing belt: Faster, stronger, more compact – that is how the new Optibelt OMEGA HP presents itself, a timing belt for the highest demands.

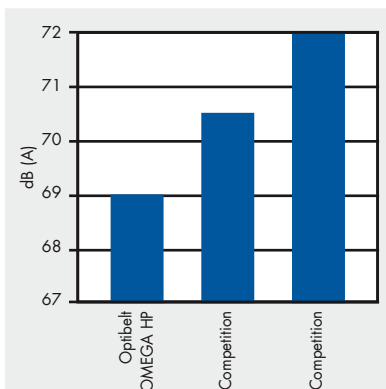
## The **optibelt OMEGA HP**

### Advantages

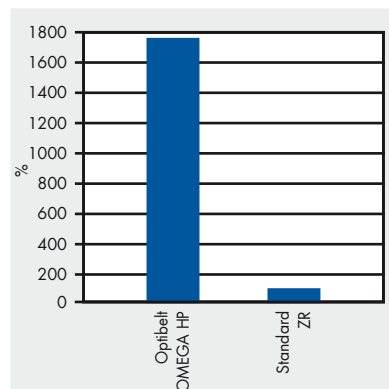
- highest precision, exact synchronicity
- temperature-resistant from  $-30\text{ }^{\circ}\text{C}$  to  $+100\text{ }^{\circ}\text{C}$
- up to 18 times the life compared to standard timing belts
- very low noise generation
- low bearing loads
- maintenance-free
- improved wear characteristics
- increased power transmission results in drive size reductions, saving costs
- up to 2 times the power transmission of Optibelt OMEGA timing belts, in the section 5M, even 3 times the power transmission of Optibelt OMEGA possible



### Noise level



### Life



### Timing pulleys

The geometry of the Optibelt OMEGA HP enables it to fit all common curvilinear toothed timing pulleys. The timing belt design ensures an optimum support of the belt tooth in the pulley.

### Preferred areas of application

- textile machines
- machine tools
- compressors
- printing presses
- woodworking machines
- paper machines

## Structure

### Top surface

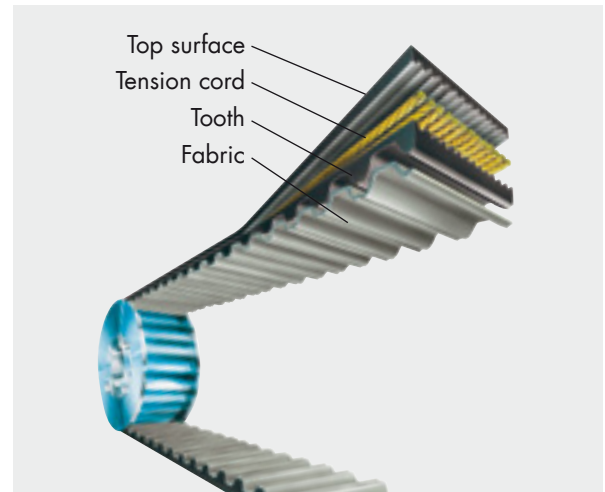
A durable and flexible top surface protects the tension cord from external influences. Furthermore, the polychloroprene material is resistant to mineral oils and moisture and protects from wear due to friction.

### Tension cord

The tension member consists of twisted contra-rotating special glass fibre cords in pairs. This tension cord is characterised by high tensile strength, very good flexibility and very low stretch.

### Teeth

The teeth consist of a new type of material mixed with aramid fibres, guaranteeing high shear strength. They are designed to engage into the pulley teeth with the lowest friction. The indent in the tooth tip promotes low noise generation.



### Fabric

The specially developed nylon fabric impresses with its extraordinarily low coefficient of friction and its low noise characteristics. Furthermore, it protects the tooth from early wear and prevents tooth shear.

## Standard properties and special constructions

As a standard all Optibelt OMEGA HP timing belts are resistant to a limited extent to oil, heat, cold, tropical conditions and ozone and are, therefore, insensitive to the influences of the weather. There are no special markings.

### Oil resistance

The oil resistance prevents the damaging influence of mineral oils and greases, so long as these substances are not permanently, or in larger amounts, in contact with the timing belt.

### Temperature resistance

The timing belt accepts ambient temperatures of  $\approx -30\text{ }^{\circ}\text{C}$  up to  $+100\text{ }^{\circ}\text{C}$ . Temperatures exceeding these values will result in early ageing and brittleness and thus in early belt failure.

### Electrical conductivity (antistatic)

The electrical conductivity allows the safe leakage of electrostatic charges. On timing belt drives such charges can be so high that without this electrical conductivity there is a danger of ignition due to sparking. The application of timing belts with

electrically conductive (antistatic) properties requires a test in accordance with ISO 9563 and confirmation by the issue of a final inspection certificate.

### Noise generation

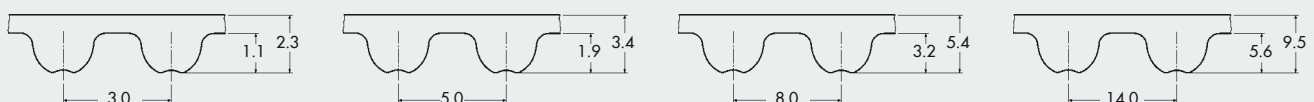
The optimised tooth shape and the indent in the tip of the tooth of the Optibelt OMEGA HP results in substantially lower noise levels. In connection with the newly developed materials, the noise level can be further reduced even with high speeds and high belt tensions.

### Belt life

Dynamic tests with the Optibelt OMEGA HP suggest a life expectancy up to 18 times longer than standard timing belts. This results in a substantially higher operational reliability.

### Efficiency

The especially developed tooth fabric and the flexible belt structure allow a nearly friction-free drive with an efficiency of 98 %.



Type 3M HP

Type 5M HP

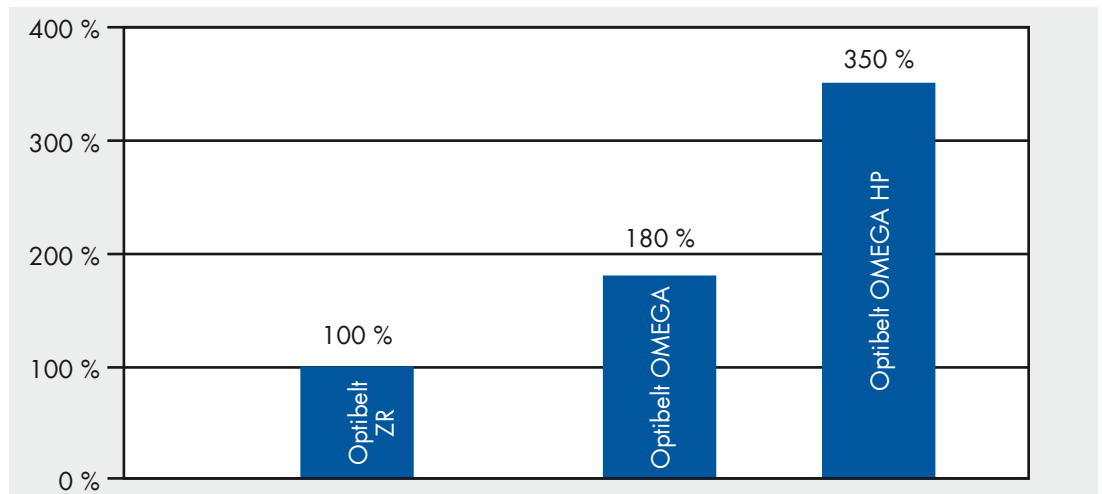
Type 8M HP

Type 14M HP

(average values only – mm)

# optibelt *OMEGA HP*

## Comparison of performance



High performance drives today require top class drive belts. Extended lifetime, higher performance, reduction of replacement intervals, material and system cost savings – all these requirements apply to the new generation of Optibelt timing belts.

The answer is:

## optibelt *OMEGA HP*

The new member of the family is brilliant due to up to

an 18 times longer life

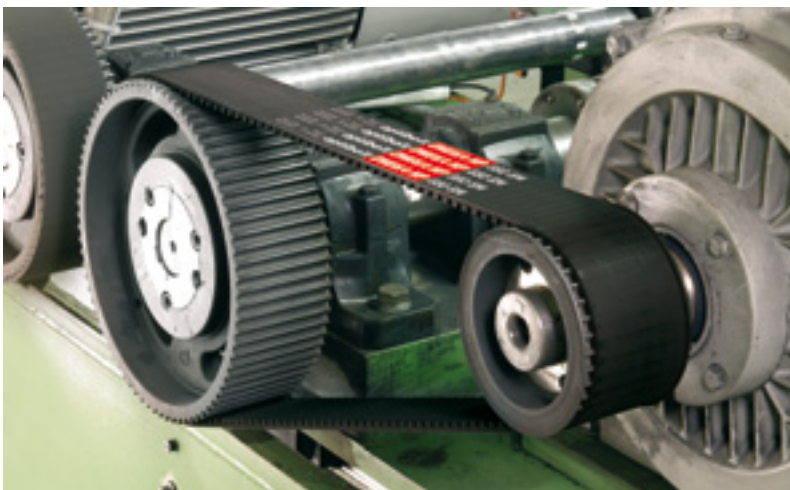
2 times higher performance (in the section 5M, up to 3 times higher performance possible)

40% system cost savings with the same performance

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### = optimised drive dimensioning and utilisation

Due to the unique shape of the teeth, Optibelt OMEGA HP high performance timing belts can be used with all commercially available standard timing pulleys with curvilinear teeth. No special pulleys are required.



Optibelt OMEGA HP,  
the name speaks for itself:

- O** – Optimised tooth section
- M** – Made in Germany
- E** – Enormous performance potential
- G** – Greatly reduced overall width
- A** – A wide range of application

**HP** – High performance

Optibelt OMEGA HP:  
the first choice for design engineers

## 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*



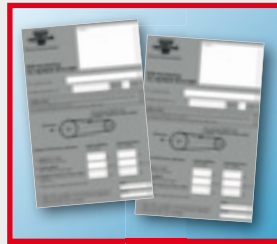
## **optibelt laser pointer II**

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



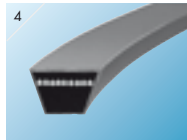
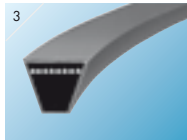
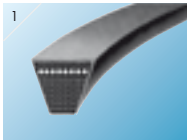
other application areas. The Optibelt TT mini S can even be used in difficult-to-reach places. V-belts, ribbed belts and timing belts can be simply and quickly reached in order to check their tension values. The Optibelt TT mini S offers more advantages with its Hertz [Hz] display, large measuring range 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.



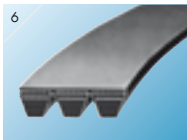
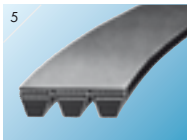
## Lieferprogramm Product Range



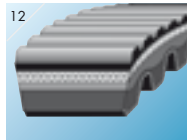
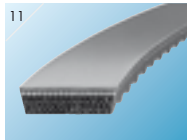
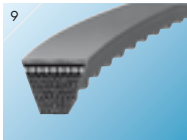
1 **optibelt RED POWER II**  
5 **optibelt KB RED POWER II**  
Hochleistungs-Schmalkeilriemen,  
wartungsfrei  
*High performance wedge belts,  
maintenance-free*



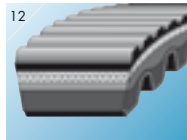
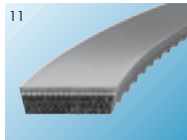
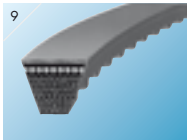
2 **optibelt BLUE POWER**  
6 **optibelt KB BLUE POWER**  
Hochleistungs-Schmalkeilriemen  
*High performance wedge belts*



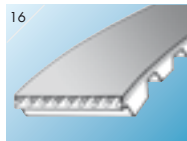
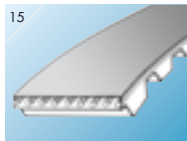
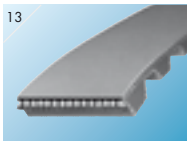
3 **optibelt SK**  
7 **optibelt KB SK**  
Schmalkeilriemen  
*Wedge belts*



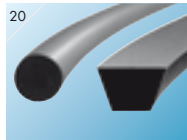
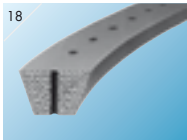
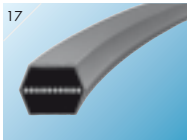
4 **optibelt VB**  
8 **optibelt KB VB**  
Klassische Keilriemen  
*Classical V-belts*



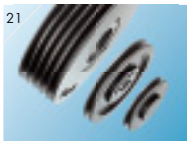
9 **optibelt Super X-POWER M-S**  
Keilriemen, flankenoffen,  
formgezahnt  
*V-belts, raw edge,  
moulded cogged*



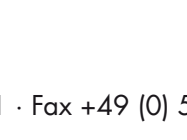
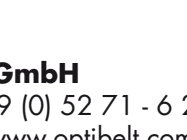
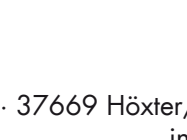
10 **optibelt Super KBX-POWER**  
Kraftbänder, flankenoffen  
*Kraftbands, raw edge*



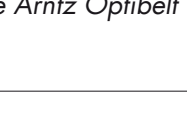
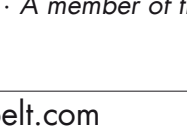
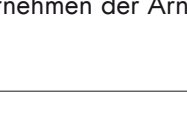
11 **optibelt SUPER VX**  
Breitkeilriemen, flankenoffen,  
formgezahnt  
*Variable speed belts,  
raw edge, moulded cogged*



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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