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Power Transmission

TECHNICAL MANUAL

OPTIBELT V-BELT DRIVES

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Quality

is the result of design fuelled by intent.

CERTIFICATION

AFAQ

N° QUAL/1999/13054

The Quality System developed by
Das Qualitätsmanagementsystem der:

ARNTZ GmbH
ARNTZ Beteiligungs GmbH & Co. KG
OPTIBELT GmbH
ARNTZ OPTIBELT GmbH
OPTIBELT PRODUKTIONS GmbH & Co. KG

for the following activities
für die folgenden Tätigkeitsbereiche:

DESIGN, PRODUCTION AND SALES OF DRIVE SYSTEMS AND RUBBER SHEETS.

DESIGN, HERSTELLUNG UND VERTRIEB VON ANTRIEBSELEMENTEN UND GUMMIPLATTEN.

carried out in the following location(s)
ausgeübt an folgenden (folgenden) Standort(en)

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Certificate of Registration

Quality Management System

This is to certify that

ARNTZ BELTING COMPANY LIMITED
PENNYBURN PASS
LONDONDERRY
BT48 0AE

Hold Certificate No. FM 21305 and operate a quality management system which complies with the requirements of BS EN ISO 9002:1994 for the activities detailed in the scope of registration.

Originally registered 18 August 1992

This certificate does not expire. To check its validity telephone +44 (0)20 8996 9000

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Technical Manual for V-Belt Drives

This manual contains all the important technical information and methods required for calculating drives using Optibelt V-belts and pulleys in industrial applications.

The following drive elements from Optibelt´s comprehensive range are described in detail:

optibelt **SK**	High performance wedge belts
optibelt **RED POWER II**	High performance wedge belts, service free
optibelt **VB**	Classical V-belts
optibelt **SUPER TX M=S**	V-belts – raw-edge, moulded cogged –
optibelt **KB**	Kraftbands with high performance wedge belts and classical V-belts
optibelt **KB RED POWER II**	Kraftbands with high performance wedge belts, service free
optibelt **KBX**	Kraftbands – raw-edge, moulded cogged – with high performance wedge belts and classical V-belts
optibelt **SUPER VX**	Variable speed belts – raw-edge, moulded cogged –
optibelt **SUPER DVX**	Variable speed belts – raw-edge, double cogged moulded
optibelt **DK**	Double section V-belts
optibelt **PKR**	Endless V-belts and Kraftbands with patterned top surface
optibelt **KK**	Plastic V-belting
optibelt **RR**	Plastic round section belting
optibelt **KS**	V-grooved pulleys
optibelt **RE**	Variable speed pulleys
optibelt **TB**	Taper bushes

Our engineers from the Applications Engineering Dept. will be pleased to provide advice free of charge on the use of these types of drives and to assist in designing to your specific requirements.

Especially with large-scale series you should by no means renounce our service. Using state-of-the-art programmes, CAP-drive calculation, we deliver the optimum solution.

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Standard Range Drive belts

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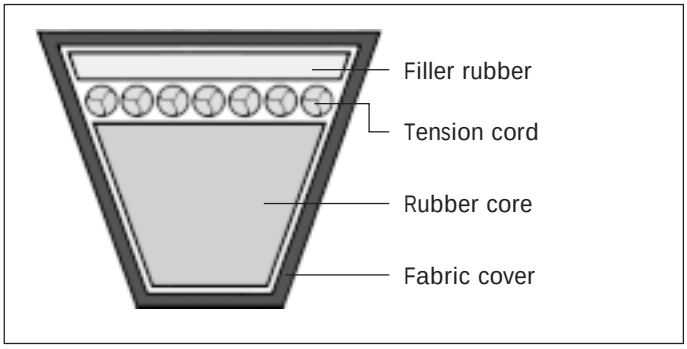
Standard Range

optibelt SK Wedge Belts to BS 3790/DIN 7753 Part 1

Construction

Optibelt SK wedge belts consist of



The base and filler rubbers are extruded to precise profile dimensions and weight per unit length to give a better fit in the pulley grooves and vibration free running.

Polyester tension cord is standard, with yarn constructions matched to section. The cord is specially impregnated and then encapsulated in a special rubber compound to give a perfect bond to the base and filler rubber. In addition the cord is pre-stretched prior to building into the belt to give lower stretch characteristics on the drive. As a result, we were able to reduce significantly our recommended minimum allowances for drive centre adjustment, compared to those specified in BS/DIN/ISO.

The fabric cover is treated with a wear resistant rubber compound. This renders the belt resistant to oil, heat and cold and to the effects of dust.

Properties

Optibelt SK wedge belts are the result of intensive product and material development. The use of the best materials and the most advanced production methods, backed up by the most modern static and dynamic test equipment ensures that the finished product is a most efficient method of transmitting power

Optibelt SK wedge belts differ from classical V-belts as follows:

- Considerable reduction in cross sectional area for similar power transmission capability (belt width to height ratio approx. 1:1.2). This allows substantial savings in pulley face widths and therefore costs.
- Lower comparative belt weight per unit length and consequently lower centrifugal force permits belt speeds of up to 42 m/sec.
- Greater flexibility permits higher flexing rates ($f_{B\,max}$ = 100 per sec.).
- Greater surface area relative to belt section ensures better heat dissipation.
- Less deformation of the belt cross section when in contact with the pulley therefore better contact between the belt edges and the pulley grooves.

All these properties result in a performance significantly higher than that of classical V-belts with approximately the same top widths. Therefore Optibelt SK wedge belts should be used on all new drive designs.

Applications

Optibelt SK wedge belts with the sections SPZ, SPA, SPB and SPC were specially developed for all industrial applications from lightly loaded drives, such as those for pumps, to heavily loaded stone crusher drives.

Standards

Optibelt SK wedge belts SPZ, SPA, SPB and SPC conform to BS 3790, DIN 7753 Part 1 and ISO 4184.

British, German and ISO standards specify the datum width as a basis for the standardisation of V-belts and grooves. This is the width of a V-belt that remains unchanged when the belt is bent perpendicular to the base of its cross section. The datum length Ld of the belt is the length measured at the position of the datum width and is the basis of standardisation.

Optibelt offer a more comprehensive range of belt sections and lengths than those included in any individual standard.

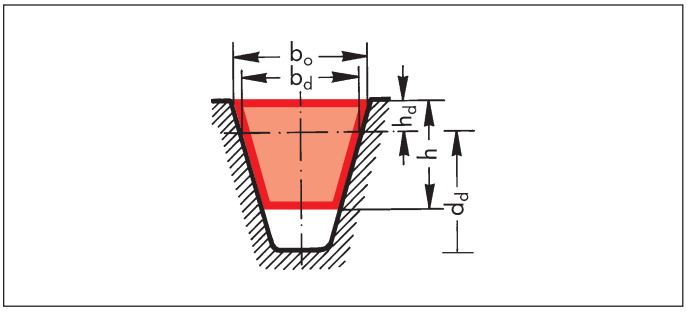


Table 1

Section			SPZ	SPA	SPB	SPC
Belt top width	b_o	≈	9.7	12.7	16.3	22
Datum width	b_d		8,5	11	14	19
Belt heigth	h	≈	8	10	13	18
Distance down to datum line	h_d	≈	2	2,8	3,5	4,8
Recommended minimum pulley datum diameter	$d_{d\,min}$		63	90	140	224
Belt weight (kg/m)		≈	0.074	0.123	0.195	0.377
Max. flexing rate (s^{-1})	$f_{B\,max}$	≈	100			
Max. belt speed (m/s)	v_{max}	≈	42			

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Standard Range

optibelt SK Wedge Belts to USA Standard RMA / MPTA

Construction / Properties

Optibelt SK wedge belts to USA Standard RMA / MPTA have the same construction and properties as wedge belts to BS 3790 and DIN 7753 Part 1.

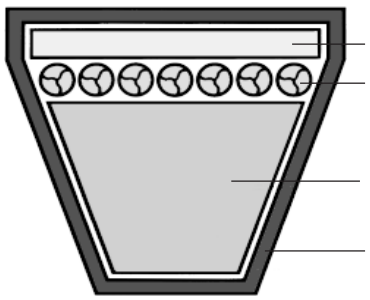


Table 2

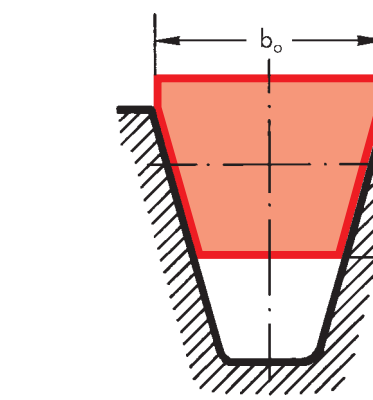
Section			3V/9N	5V/15N	8V/25N
Belt top width	b_o	≈	9	15	25
Belt heigth	h	≈	8	13	23
Recommended minimum pulley datum diameter	$d_{a\ min}$		63	140	335
Belt weight (kg / m)		≈	0.074	0.195	0.575
Max. flexing rate per sec.	$f_{B\ max}$	≈	100		
Max. belt speed (m / s)	v_{max}	≈	42		

Standardisation / Dimensions

The three wedge belt sections standardised in the USA are 3V / 9N, 5V / 15N and 8V / 25N. The cross section dimensions of these belts and the lengths by which they are identified are not in accordance with BS 3790 or DIN 7753.

The section 3V / 9N roughly corresponds to SPZ; and 5V / 15N to the section SPB. There is no comparable BS / DIN / ISO wedge belt section for 8V / 25N. It is possible to use belts of 3V / 9N and 5V / 15N section in SPZ-Z / 10 or SPB-B / 17 pulleys, respectively; but the use of SPZ or SPB belts in RMA / MPTA standard pulleys is not normally recommended. The top width of the American pulley grooves are narrower than those of the corresponding BS / DIN / ISO pulleys. This can cause wear on the upper edges of SPZ and SPB section belts and can lead to premature failure.

Optibelt SK wedge belts in SPB section have been so designed that they are also suitable for use with 5V / 15N pulleys.



The belt length designation refers to the effective outside length.

Example:

Inch designation		Metric designation	
3V 750		9N 1905	
3V	= belt top width (3 / 8")	9	= belt top width (9 mm)
		N	= designation for single V-belt
750	= outside length in inches x 10	1905	= effective outside length in mm (1 inch = 25.4 mm)

$$L_a = \frac{750 \cdot 25.4}{10}$$

L_a = 1905 mm

Applications

The use of Optibelt SK wedge belt drives in sections 3V / 9N and 5V / 15N is recommended for machines exported to countries such as the USA and Canada where these belt sections are standardised and used predominantly.

Section 8V / 25N is primarily employed in very heavy duty drives such as mills or stone crushers. As these wedge belts transmit very high levels of power, they can sometimes form a more compact drive than the SPC section.

For this reason, the 8V / 25N section has continued to be used in Europe for such applications. A further advantage is the fact that single wedge belts can be replaced by Kraftbands, without changing the pulley geometry, should unexpected belt vibration problems develop.

Drive Calculation

Drive calculations follow procedures described in this manual. Power ratings for 3V / 9N and 5V / 15N sections are the same as those for SPZ and SPB sections respectively but, for 3V / 9N and 5V / 15N the pulley outside diameter is the basis for calculation, not the pitch or datum diameter. Slight differences in the theoretical drive speed and the speed ratio are not significant in practice.

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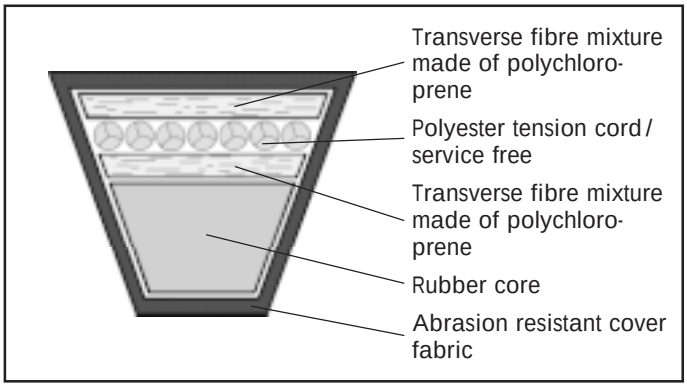
Standard Range

optibelt *RED POWER II* High Performance Wedge Belts

Construction

Optibelt Red Power II wedge belts.



The tension cord for all sections and cross sections consists of a special polyester cord. Due to the special treatment of the tension cord the Optibelt Red Power II wedge belt is very low stretch and service free, so that retensioning is not necessary.

The fibre mixture over and under the tension cord guarantees highly dynamic load of the belt and provides good flexibility in combination with the polyester tension cord.

The cover fabric is extremely wear resistant, flexible and abrasion proof.

Properties

The high-quality components in connection with product manufacturing make the Optibelt Red Power II a service free V-belt. Production is continuously monitored using state-of-the-art static and dynamic testing devices.

Application with drives using idler pulleys is possible due to the special set-up of the Optibelt Red Power II.

Its properties:

- service free
- strong power rating
- favourable cost
- SetConstant
- environmentally friendly

Optibelt Red Power II are oil-resistant, heat-resistant and dust protected as standard.

Using the electrically conductive Optibelt Red Power II requires testing the stipulated properties according to ISO 1813. With our acceptance test certificate according to EN 10204 “3.1.B” we prove its anti-static properties.

V-belt tensioning

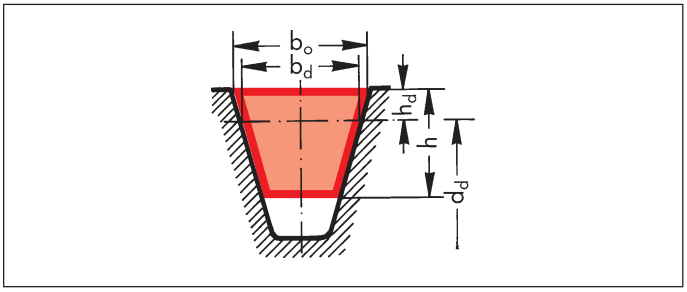
For the initial fitting of Optibelt Red Power II the same calculation methods are used as for standard Optibelt V-belts. The tensioning values are to be calculated on the same basis or to be taken from the table on page 129. Once correctly tensioned Optibelt Red Power II V-belts need no retensioning.

Applications

Optibelt Red Power II wedge belts were especially developed for mechanical engineering. The fields of application are among others compressors, pumps, presses, fans and other heavy duty drives.

Standardisation / Dimensions

Optibelt Red Power II wedge belts with the sections SPZ, SPA, SPB, SPC, 3V/9N, 5V/25N are standardised according to DIN 7753 Part 1, ISO 4184 and RMA/MPTA.



Section			SPZ	SPA	SPB	SPC
Belt top width	b_o	≈	9.7	12.7	16.3	22
Datum width	b_d		8.5	11	14	19
Belt heigth	h	≈	8	10	13	18
Distance down to datum line	h_d	≈	2	2,8	3,5	4,8
Recommended minimum pulley datum diameter	$d_{d\,min}$		63	90	140	224
Belt weight (kg/m)		≈	0.074	0.123	0.195	0.377
Maximum flex rate (per sec.)	$f_{B\,max}$	≈	100			
Maximum belt speed (m/s)	v_{max}	≈	42			

Section			3V/9N	5V/15N	8V/25N
Belt top width	b_o	≈	9	15	25
Datum width	h	≈	8	13	23
Recommended minimum pulley datum diameter	$d_{a\,min}$		63	140	335
Belt weight (kg/m)		≈	0.074	0.195	0.575
Maximum flex rate (per sec.)	$f_{B\,max}$	≈	100		
Maximum belt speed (m/s)	v_{max}	≈	42		

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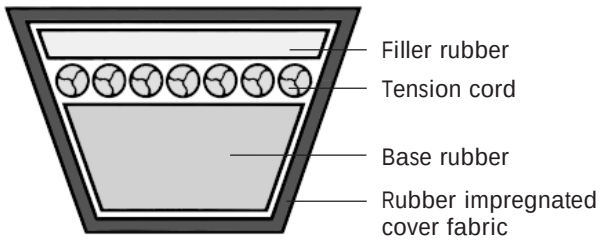
Standard Range

optibelt *VB* Classical V-Belts to BS 3790 and DIN 2215

Construction / Properties

Optibelt VB classical V-belts are manufactured using the same production processes as those for Optibelt SK wedge belts.



The components used are perfectly suited to the power ratings P_N shown in later tables. These values are significantly higher than those quoted in BS 3790 or DIN 2218 and therefore offer a greater factor of safety on critical drives.

- Optibelt VB classical V-belts have a belt width to belt height ratio of approx. 1:1.6.
- The maximum belt speed v_{max} = 30 m / s should not be exceeded.
- The permissible flex rate is considerably lower that that for wedge belts, at $f_{B\,max}$ = 80 per second.

Applications

Optibelt VB classical V-belts are employed primarily as replacements on industrial drives. For new drives, it is almost always recommended that wedge belts be specified for reasons of space and cost. However, special drives, such as V-flat, often can only use classical V-belts. Similarly, difficult drives for agricultural and horticultural machinery are often unsuitable for wedge belts by virtue of the use of small pulleys or back bend idlers.For these applications special belt constructions may be necessary. It is not possible within this Manual to describe all of the special constructions or the calculation data applicable to them. It is therefore requested that all details of such drives are forwarded to our Applications Engineering Department for calculation and recommendation.

Standardisation / Dimensions

The Optibelt range also includes sections 5, 8, 20 and 25 from an earlier edition of DIN 2215. These sections should, where possible, be avoided on replacement and rationalisation grounds.

The British and ISO Standards specify the datum length for measuring and identifying the belt length. The datum length is the circumferential length of the belt measured at a datum width lp. The earlier DIN standard length designation using the inside length L_i is replaced by the datum length L_d. For the conversion factors from pitch to inside length, please see page 141.

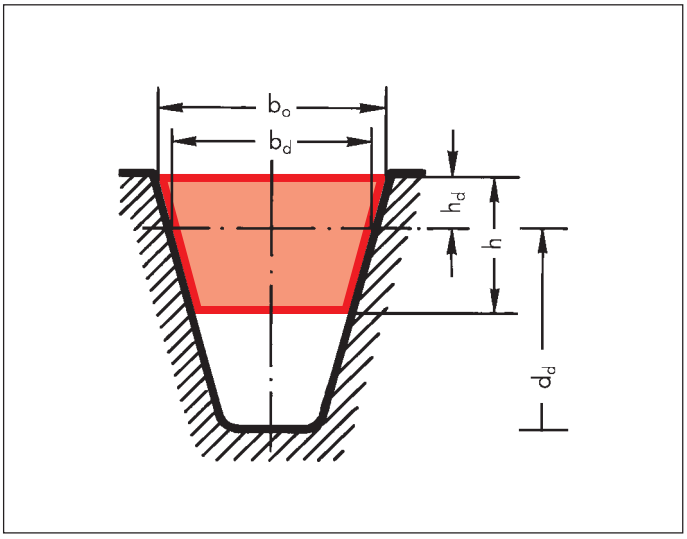


Table 3

Section	DIN 2215		(5)	6	(8)	10	13	17	(20)	22	(25)	32	40
	BS 3790 / ISO 4184		–	Y	–	Z	A	B	–	C	–	D	E
Belt top width	b_o	≈	5	6	8	10	13	17	20	22	25	32	40
Datum width	b_d		4.2	5.3	6.7	8.5	11	14	17	19	21	27	32
Belt heigth	h	≈	3	4	5	6	8	11	12,5	14	16	20	25
Distance down to datum line	h_d	≈	1.3	1.6	2.0	2.5	3.3	4.2	4.8	5.7	6.3	8.1	12
Recommended minimum pulley datum diameter	$d_{d\,min}$		20	28	40	50	71	112	160	180	250	355	500
Belt weight (kg / m)		≈	0.018	0.026	0.042	0.064	0.109	0.190	0.266	0.324	0.420	0.690	0.958
Max. flexing rate (per sec.)	$f_{B\,max}$	≈	80										
Max. belt speed (m / s)	v_{max}	≈	30										

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Standard Range

optibelt *SUPER TX M=S* V-Belts – raw edge, moulded cogged – BS/DIN/ISO, RMA/MPTA

The advantages of the Optibelt Super TX M=S V-belts are evident where –

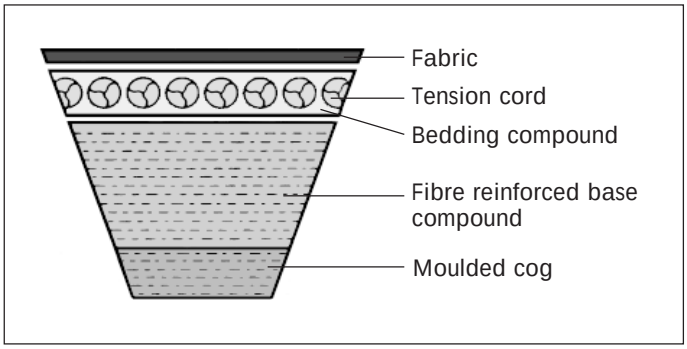
- extremely small pulley diameters
- high belt speeds
- extraordinary power transmission requirements
- high ambient temperatures

render the use of wrapped V-belts uneconomical and impractical.

Optibelt Super TX M=S V-belts sections XPZ, XPA, XPB, XPC, 3VX/9NX, 5VX/15NX, ZX/X10, AX/X13, BX/X17 and CX/X22 offer the best technical and economic solutions for these conditions through their use of high grade components coupled to the most advanced production machinery.

Construction/Properties

Optibelt Super TX M=S belts consist of



The base compound consists of a polychloroprene rubber mixture filled with fibres arranged to lie across the belt section. These provide an effective support to the tension cord.

The result is

- very high flexibility
- high transverse stiffness
- considerably increased abrasion/wear resistance and
- insensitivity to slip

The use of a new type of polyester cord, specially developed Optibelt Super TX M=S V-belts imparts

- remarkably low stretch properties

to the belt.

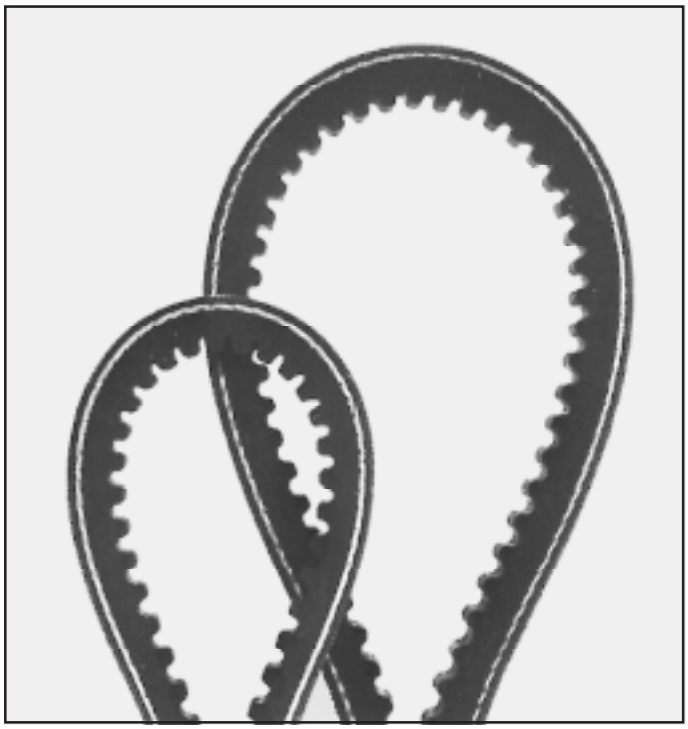
This specially designed tension cord is securely locked into the bedding compound. Perfect adhesion between the components is ensured even under the highest dynamic loading conditions.

The fabric layers at the top of the belt support the tension cord and contribute to the

- greater belt flexibility.

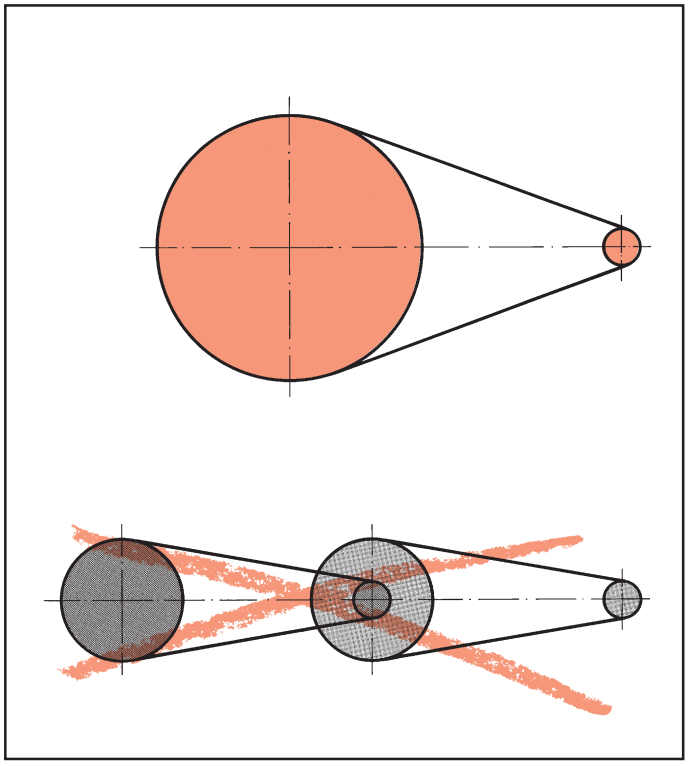
The fibre reinforced base compound, in conjunction with the Optibelt tension cord and the moulded cog, offers increased and more efficient transmission of power.

The moulded cogs reduce bending stress and give outstanding flexibility. As a result, significantly smaller pulleys than those used with conventional fabric wrapped V-belts can be employed.



With Optibelt Super TX M=S V-belts drive ratios (i) of up to 12 to 1 are possible.

Multi-stage drives can be eliminated.



optibelt
Power Transmission

Standard Range

optibelt SUPER TX M=S V-Belts – raw edge, moulded cogged – BS/DIN/ISO, RMA/MPTA

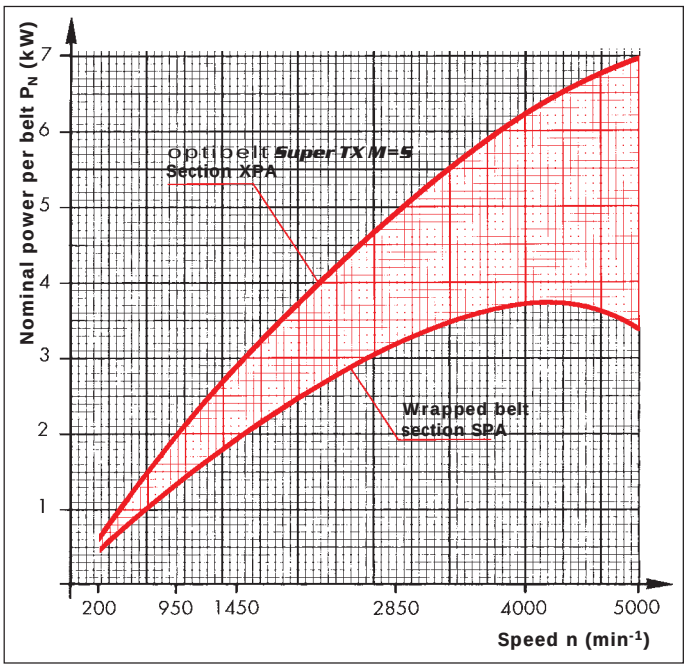
Optibelt Super TX M=S V-belts are more heat and oil resistant than wrapped V-belts as new, high quality rubber compounds are used.

Weight and space requirements are reduced by their ability to transmit higher power even with small diameter pulleys often resulting in a

- significant reduction in cost.

Power Comparison

Pulley datum diameter d_d = 140 mm
Ratio i = 1:1



Drive Calculation

Drive designs using Optibelt Super TX M=S belts should be undertaken following the example given on pages 59 to 61. The higher power ratings given in the relevant tables, apply. These are based on a theoretical laboratory running time of 25,000 hours.

Belt Tension/Static Shaft Loading

Belt tension and static shaft loading are calculated as for wrapped belts. The shaft loading is usually no greater than that for the same drive using wrapped belts. It is often possible, due to a reduction in the number of belts used, that the shaft loading could be lower. The individual Super TX belt requires a higher tension than the wrapped belt in order to utilise its greater power transmission capability.

The precision ground sides of the Optibelt Super TX M=S V-belts ensure uniform seating in the pulley grooves, resulting in smoother running.

Applications

The use of Optibelt Super TX M=S belts in borderline cases is recommended wherever difficulties are anticipated with wrapped V-belts.

Standardisation/Dimensions

The cross sections and dimensions of Optibelt Super TX M=S V-belts correspond to BS 3790:1981, DIN 7753 Part 1, DIN 2215, ISO 4184 and RMA/MPTA.

The basis for the length measurement is the datum length (L_d) to BS/DIN/ISO.

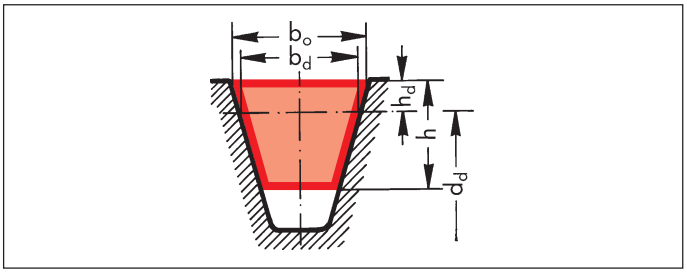


Table 4

Section	Belt top width $b_o \approx$	Datum with b_d	Belt height $h \approx$	Distance down to datum line $h_d \approx$	Belt weight (kg/m) ≈
XPZ	9.7	8.5	8	2	0.065
XPA	12.7	11	10	2.8	0.105
XPB	16.3	14	13	3.5	0.183
XPC	22	19	18	4.8	0.340
3VX/9NX	9	—	8	—	0.065
5VX/15NX	15	—	13	—	0.183
ZX/X10	10	8.5	6	2.5	0.062
AX/X13	13	11	8	3.3	0.099
BX/X17	17	14	11	4.2	0.165
CX/X22	22	19	14	5.7	0.276

Pulleys

Optibelt Super TX M=S V-belts are used with pulleys to BS 3790, DIN 2211, DIN 2217, ISO 4183 and RMA/MPTA. Considerably smaller minimum pulley datum diameters are acceptable.

Table 5

Recommend minimum pulley datum diameter (mm)			
Section	raw edge, moulded cogged	Section	wrapped
XPZ	56	SPZ	63
XPA	71	SPA	90
XPB	112	SPB	140
XPC	180	SPC	224
3VX/9NX	56	3V/9N	63
5VX/15NX	112	5V/15N	140
ZX/X10	40	Z/10	50
AX/X13	63	A/13	71
BX/X17	90	B/17	112
CX/X22	140	C/22	180

optibelt
Power Transmission

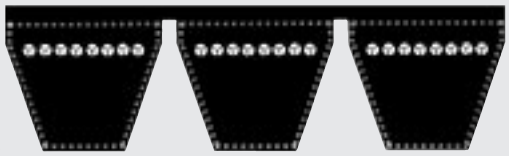
Standard Range
optibelt *KB* Kraftbands

Construction

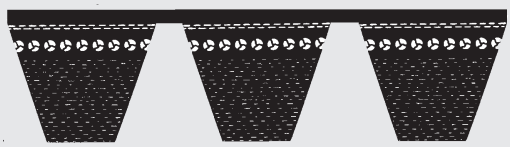
The Optibelt KB Kraftbands are made up of individual V-belts rigidly connected by a cover plate. This compact drive element with single-belt-characteristics is also known as a joined V-belt. According to application Kraftbands are fitted with two, three, four or five ribs. It is also possible to provide the cover plate with specially patterned surfaces.

Raw edge, moulded cogged Optibelt KBX Kraftbands with the belt sections 3VX/9JX, 5VX/15JX, XPZ, XPA, AX/HAX, BX/HBX are available upon request in lengths from 1250 to 3550 mm.

Optibelt KB



Optibelt KBX



In mechanical engineering Kraftbands are successfully used for example in screen vibrators, saw mills, stone crushers, road construction machinery, pulpers, compressors, fans, lathes, grinding and milling machines.

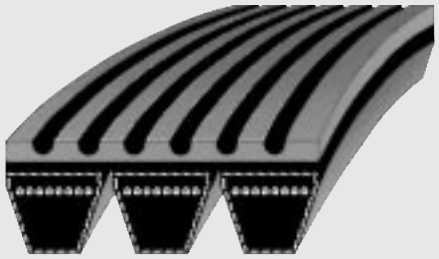
In agricultural machinery Optibelt KB Kraftbands are also used as coupling belts. Due to the single belt characteristics is is possible to achieve smooth engagement.

For conveying, Optibelt KB Kraftbands can be supplied with special top surfaces.

With these patterned top surfaces they are especially suitable for transporting containers and heavy material, for example for loading aircraft. See also the chapter on conveyor belts.

PKR 0

PKR 3



Applications

Optibelt KB Kraftbands are predominantly employed for solving problems associated with:

- pulsating run
- large centre distances in combination with small pulley diameters (long span lengths)
- vertical shafts
- reversing drives
- V-flat drives
- coupling drives
- conveyor systems (materials handling technology)

Kraftbands must be protected from direct contact with undesired material such as stones, grit, wood shavings etc. In such operating conditions the drive has to be protected by protective grid or similar devices.

Standardisation – Optibelt KB Kraftband

Optibelt-KB Kraftbands with high-performance wedge belts are manufactured according to international practice using sections 3V/9J, 5V/15J, 8V/25J. They comply with the standard ISO 8419 lengths in the reference system. The pulleys are standardised to ISO 5290. 8419 lengths. The pulleys are standardised to ISO 5290.

optibelt
Power Transmission

Standard Range
optibelt KB Kraftbands

The ISO Committee TC 41/SC1 has used the American Standard RMA/MPTA as the basis for this international standard. The sections 3V, 5V, and 8V have been designated 9J, 15J and 25J respectively.

Example: 9J

9 = approx. 9 mm nominal top width of pulley groove
J = joined

Standardisation – Classical V-Belts

In the course of international and national standardisation, Optibelt-KB Kraftbands using classical V-belts have been brought into line with the USA Standard RMA/MPTA (A,B,C,D)and the USA Standard ASAE S 211. ...(HA, HB, HC, HD). The RMA/MPTA standard applies for the use of Kraftbands in mechanical engineering; the agricultural machinery standard ASAE S 211. ...applies when using Kraftbands in agricultural machinery. Despite the different section designation, the belt cross sections are identical in both standards.

The pulleys are standardised according to ISO 5291.

Optibelt-KB Kraftband SPZ, SPA, SPB and SPC

Optibelt KB Kraftbands are employed for extreme shock loads, large centre distances in combination with comparatively small pulley diameters and vertical drives. They are used for coupling drives and for conveying works. With the same power transmission, the Kraftband offers better running properties and/or safety.

Optibelt Kraftbands with sections SPZ, SPA and SPC can be applied in standard V-grooved pulleys according to DIN 2211 and ISO 4183.

Drive Calculation

Drives using Optibelt-KB Kraftbands in mechanical engineering are to be fitted as shown in the calculation examples on pages 78 to 80 of this manual using the power ratings of the relevant belt sections. In ISO 5290, the nominal top width of the pulley groove is specified as the base value. The position of the datum diameter is given as an approximate value. For the geometric and power calculation, the outside diameter is used. Small computational differences in rotational frequency and speed ratio have no practical effect.

For Kraftbands with classical V-belts, as a rule, the calculation uses the datum diameter as well. The power ratings correspond to the sections of the classical V-belts.

For conversion factors for Optibelt-KB Kraftbands, see page 142.

Drives on agricultural machinery employ special design calculations and methods. We, therefore, request that you send us your technical details.

Kraftband sets must be used for drives with more than 5 ribs. The following combinations should be used.

Table 6

No. of ribs	Kraftband combination
2	2
3	3
4	4
5	5
6	3/3
7	3/4
7	4/4
9	5/4
10	5/5
11	4/3/4
12	4/4/4
13	4/5/4
14	5/4/5
15	5/5/5
16	4/4/4/4
17	4/4/5/4
18	5/4/4/5
19	5/4/5/5
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22	5/4/4/4/5
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26	5/4/4/4/4/5
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35	5/5/5/5/5/5/5
36	5/5/4/4/4/4/5/5
37	5/5/5/4/4/4/5/5
38	5/5/5/4/4/5/5/5
39	5/5/5/5/4/5/5/5
40	5/5/5/5/5/5/5/5

Ordering Example

The drive of a mill is equipped with Optibelt KB Kraftbands, size 5V 1600/15J 4064 mm L_a. It was calculated with 18 ribs. In total, 4 Kraftbands are required - 2 belts each with 4 ribs and 2 belts each with 5 ribs (see Table 6).

The order wording would then read:
1 set comprising 2 Optibelt KB Kraftbands 4-5V 1600/15J 4064 mm L_a and 2 Optibelt KB Kraftbands 5-5V 1600/15J 4064 mm L_a.

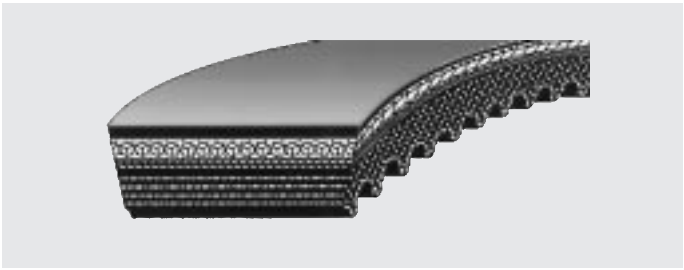
4 or 5 = number of ribs
5V/15J = section
1600 = outside length in inches: 10
4064 = outside length in mm

optibelt
Power Transmission

Standard Range

optibelt SUPER VX and SUPER DVX Variable Speed Belts – raw edge – moulded cogged – DIN 7719/ISO 1604

Optibelt Super VX Variable Speed Belts – raw edge – moulded cogged –



Rising demands made on the variable speed belt by the continuous increase in transmitted power led to the development of the raw edge, moulded cogged, variable speed belt.

The base compound consists of a chloroprene and rubber mixture filled with transversely oriented fibres. The high grade and exceptionally low stretch polyester or Aramid tension cord is embedded in a rubber cushioning compound. It is effectively supported by the reinforced base compound and by layers of compound impregnated fabric around the outside of the section. For exceptionally difficult drives layers of special cross cord material can be used between the base and cushion compounds.

The special properties of the raw edge, moulded cogged, variable speed belt are:

- high power transmission capability
- excellent flexibility in the direction of travel
- extreme transverse rigidity
- especially smooth running
- superior resistance to abrasion and slip
- long service life

Sections

Belt widths of 13 - 100 mm
Belt thicknesses of 5 - 25 mm

Dimensions

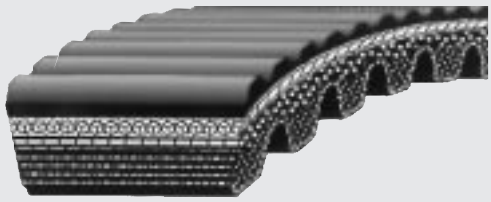
Lengths ranging from 500 to 5000 mm

Standardised dimensions to DIN/ISO and USA Standard RMA/MPTA

Applications

industrial machinery	special drives
variable speed drives	compactors
printing machinery	multi-colour offset drives
gearboxes	variable diameter pulley sets
agricultural machinery	thresher drum drives
textile machinery	winding machinery
machine tools	lathes
automotive technology	snowmobile drives

Optibelt Super DVX Variable Speed Belts – raw edge – moulded double cogged –



Further increases in demand on the performance of drive elements and the trend towards designing ever smaller, space saving drive units, led to the development of the double cogged, raw edge Optibelt Super DVX variable speed belt.

Double cogged Optibelt variable speed belts make it possible to employ the smallest diameter pulleys, even below Standard recommendations. The double cogged design improves heat dissipation thereby significantly reducing the belt running temperature. The production method and the structure of the belt have been derived from the raw edge Super VX variable speed belt. Depending upon the application, this belt can also be equipped with layers of special cross cord material in the base compound. The belt is double cogged, with the depth and spacing of the cogs matched to the specific belt section. The polyester or Aramid tension cord ensures ideal power transmission, increased service life, and extremely low stretch characteristics.

The features of the Super DVX variable speed belt can be summarised as follows:

- acceptance of extremely high axial forces
- high flexibility and low flex fatigue
- improved heat dissipation
- use with the smallest pulley diameters
- extremely smooth running at high belt speeds
- long service life

Sections

Belt widths of 20 - 85 mm
Belt thicknesses of 10 - 30 mm

Dimensions

Lengths ranging from 600 to 3500 mm

Sections and dimensions comparable to DIN/ISO

Optibelt VS Variable Speed Belts – wrapped

The first generation variable speed belt was the Optibelt VS. In its design, the Optibelt VS is similar to the wrapped, classical V-belt or wedge belt.

This belt construction is still available.

Sections and dimensions: upon request

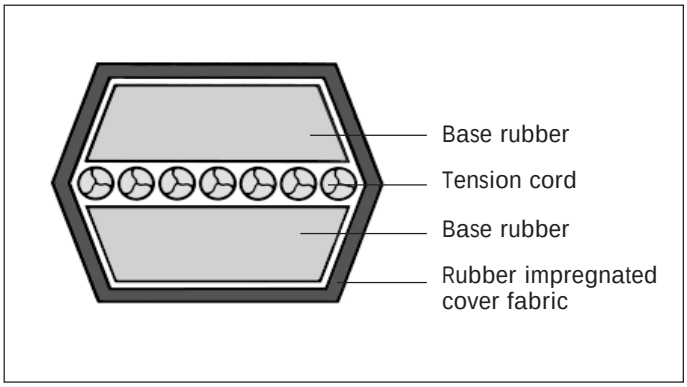
optibelt
Power Transmission

Standard Range
optibelt DK Double Section V-Belts

Construction

A cross through the Optibelt DK double section V-belt reveals a hexagon made up of two congruent trapeziums. The neutral axis containing the tension cord is exactly half way up the.

Optibelt DK double section V-belts comprise:



Properties / Applications

The polyester tension cord positioned at the centre of the imparts extreme flexibility and low stretch properties to the Optibelt DK double section V-belt. The belt is therefore particularly suited for flexing in different directions in the same plane. Optibelt DK double section V-belts are used where several pulleys are arranged in one plane and the direction of rotation of one or more of the driven pulleys must be changed without crossing the belts. Because of the positioning of the tension cord in the neutral axis and the special shape of the double section V-belt, the tension cord is not subjected to any force other than tension unlike standard V-belts bent around an outside idler. The Optibelt DK double section V-belt comes into its own on typical serpentine arrangements. Special constructions are also possible. In the main, double section V-belts are used on agricultural machinery. They are, however, also finding increasing use in industrial machinery applications.

Standardisation

The cross dimensions of the Optibelt DK double section V-belts correspond to DIN 7722 and ISO 5289.

These are thes HAA, HBB, HCC and HDD, that equate to the USA Standard ASAE S 211. ..., thereby ensuring an international interchange facility.

The effective / nominal length of the Optibelt DK double section V-belt is measured on the effective / outside diameter of the measured pulley. This length equates roughly to length of the belt at its widest part, the middle length.

Conversion factors are as follows:

Section AA / HAA effective length = middle length – 4 mm
Section BB / HBB effective length = middle length – 8 mm
Section CC / HCC effective length = middle length + 3 mm
Section DD / HDD effective length = middle length !

Experience has shown that, in practical use / ordering, these conversion factors can be ignored.

Grooved Pulleys

No special pulleys are required for Optibelt DK double section V-belts. Pulleys conforming to ISO 4183, BS 3790,DIN 2211, DIN 2217 and ASAE S 211. ... are suitable.

Section AA / HAA in grooved pulleys for A / 13-SPA
Section BB / HBB in grooved pulleys for B / 17-SPB
Section CC / HCC in grooved pulleys for C / 22-SPC
Section DD / HDD in grooved pulleys for D / 32

Special Sections

For special applications, we also supply double section V-belts withs 22 x 22 and 25 x 22. These are not standardised.

Drive Calculation

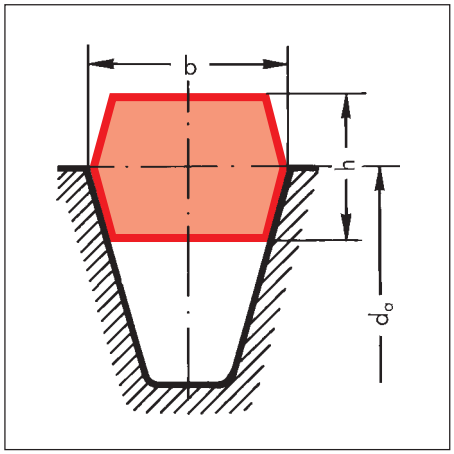
Drive calculations for Optibelt DK double section V-belts differ from those given in this manual for two pulley drives. Multi pulley calculations are so complicated that they cannot be shown here.

Effective lengths, rotational speeds, transmission ratios and belt speeds are determined by the effective / outside pulley diameters.

Our engineers will be pleased to assist in the design of drives using Optibelt DK double section V-belts.

Table 7

Section	DIN / ISO section	HAA	HBB	HCC	HDD	–	–
	Abreviated designation	AA	BB	CC	DD	22 x 22	25 x 22
Belt width	b ≈	13	17	22	32	22	25
Belt height	h ≈	10	13	17	25	22	22
Recommended minimum pulley datum diameter	$d_{a\ min}$	80	125	224	355	280	280
Belt weight (kg / m)	≈	0.150	0.250	0.440	0.935	0.511	0.625
Max. belt speed (m / s)	$v_{max.}$ ≈	30					



Standard Properties

According to the respective requirements, all Optibelt V-belts are manufactured using carefully selected basic materials and continuously updated technical procedures.

Regular routine checks during production, sophisticated lab tests and careful testing of the raw materials used guarantee a uniformly high level of quality that can be expected from every Optibelt drive element. Reliability and long service life are considered the most important criteria.

Oil Resistant

Oil resistance prevents damaging through mineral oils and mineral fats, insofar as those substances are not continuously and in great quantities in contact with the V-belts. Animal and vegetable fats as well as water-soluble cooling and cutting oils result in any case in a reduction of the service life. For higher concentrations, we recommend the use of our special constructions "05" and Super TX V-belts respectively.

Heat Resistant

Standard V-Belts allow ambient temperatures of up to approximately + 70°C. Higher temperatures lead to a premature ageing and hardening of the V-belts. Therefore, we recommend in such cases the use of our special construction XHR. For details see page 17.

Dust protection

Dust reduces the service life of V-belts enormously. Wear-resistant fabric covers make Optibel V-belts resistant to dust. This is demonstrated by its continual application in cement factories, mills, in the stone processing industries, and in the mining industry.

M=S Matched Sets

This stands for raw-edge moulded cogged V-belts that can be used in a set without measuring.
Due to specific manufacturing techniques, extremely narrow length tolerances can be achieved so that V-belts of a nominal length can be optionally combined. A precise edging results in a smooth running operation. The even power transmission of all V-belts ensures a high efficiency and thus helps save energy. Set code numbers are not necessary, there is no set bundling. As a consequence, storage and costs can be reduced.

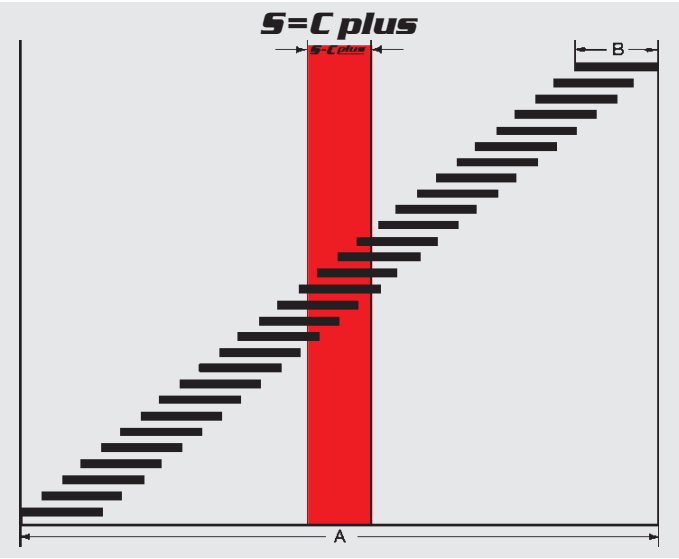
S=C plus "SetConstant".

This stands for wrapped V-belts that can be used in a set without measuring.

The advantages are the following:

- Saves energy, high efficiency of approximately 97% more level transmission of performance
- disposes of the well-known narrow S=C plus tolerances: always by the nominal measure
- extremely low stretch
- longer service life
- Set code numbers are not required
- reduces vibrations
- requires only little adjustment
- reduces self-heating, thus ageing-resistant
- longer maintenance intervals

Example for S=C plus length tolerances for a high-performance wedge belt with 5000 mm datum length.



The dimension (A) is the tolerance permitted according to DIN of an individual V-belt with a length of 5000 mm. If you want to assemble sets for multi-groove drives, the individual elements may not show deviations of more than 6 mm (B) among each other.

The tolerance of the Optibelt S=C plus V-belt is considerably lower than the set tolerance permitted according to the standard.

S=C plus V-belts are always near the nominal length.

Special Constructions

Anti-Static

Optibelt V-belts do have anti-static properties. In the case of V-belts with inadequate antistatic properties, the electrostatic charge can be so high that there is a risk of ignition due to sparking. The use of anti-static belts requires a check of the required properties in accordance with ISO 1813. We present proof of the anti-static properties of the belts in the form of our final inspection certificate according to EN 10204 "3.1.B".

We charge an extra fee for this additional service. We strongly recommend your to order anti-static belts always separately.

Extra Heat Resistant V-Belts, Special Construction XHR

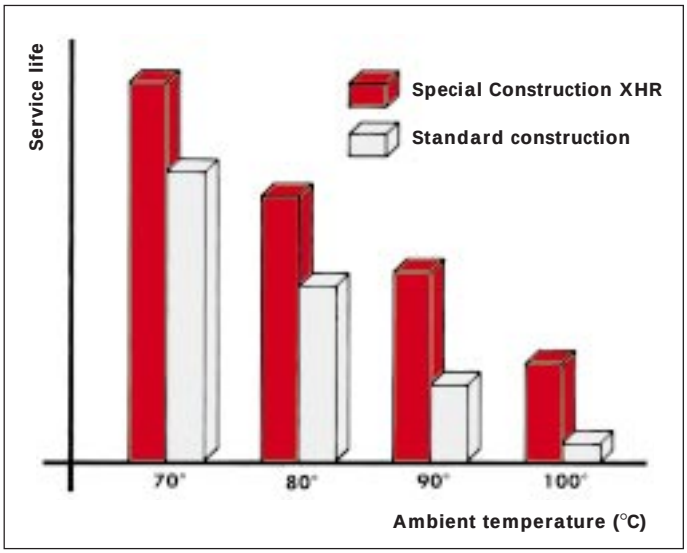
The servicelife of standard Optibelt V-belts can be greatly reduced due to the effects of temperature.

In case of ambient temperatures that vary constantly between approx. + 70 °C up to approx. + 90 °C, we recommend our special construction XHR. Special rubber compounds largely prevent premature ageing and brittleness. In borderline cases, trials are recommended, as individual drive parameters such as belt speed and pulley diameter also have an influence on the belt life.

The following diagram illustrates the high degree to which the ambient temperature influences the service life of V-belts. It shows that the special construction XHR provides within the high-temperature range for a longer service life in comparison to the standard design. However, you cannot expect the same service life as under normal conditions. Alternatively you can also use Optibelt Super TX under these conditions.

Extra Cold Resistant V-Belts Special Construction XCR

Minimum order quantities on request.



Smooth Running Selected V-belts, Special Construction LR

Drives that have to fulfil high requirements with regard to smooth running - that is with variations of shaft centre distances - like for example lathes and grinders, and are supposed to guarantee a vibration free operation, may be equipped with Optibelt V-belts "selected smooth running". Shaft centre distance fluctuations are measured electronically on test machines. The measurements comply with the Optibelt Works Standards or the conditions agreed with our customers.

Mining Industry

Optibelt SK wedge belts and Optibelt VB classical V-belts are approved by the State Mining Office of North Rhine-Westphalia (LOBA NW) and the National Coal Board and can be used in underground mining as well as in spaces and areas above ground that are exposed to fire and explosion risks. Please request information on sections and lengths separately.

Applications with Other Special Constructions

For particular applications such as general engineering machinery, agricultural machinery and horticulture, further special constructions are also available in intermediate sizes for

- special drives with tensioning, guide and idler pulleys
- coupling functions
- shock loads
- extreme operating conditions

These Optibelt V-belt special constructions can incorporate different tension cord types and arrangements with a variety of rubber mixtures, different fabric qualities and a differing number of fabric covers and top surface elements.

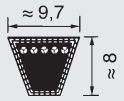
All special executions and intermediate lengths must be ordered in sets or in multiples thereof.

It is not possible to describe all criteria within the framework of these descriptions. For further information please contact our Applications Engineering Department.

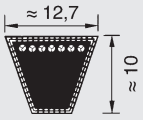
optibelt
Power Transmission

Standard Range

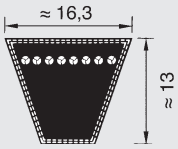
optibelt SK Wedge Belts to BS 3790/DIN 7753 Part 1/ISO 4184



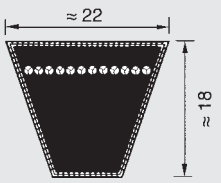
SPZ



SPA



SPB



SPC

Section SPZ			Section SPA				Section SPB	Section SPC
Datum length ISO (mm) L_d			Datum length ISO (mm) L_d				Datum length ISO (mm) L_d	Datum length ISO (mm) L_d
487	1037	**1637**	732	**1382**	**2120**	**3350**	**1250**	**2000**
512	1047	**1662**	757	**1400**	**2132**	**3382**	**1320**	**2120**
562	1060	**1687**	782	**1407**	**2182**	**3550**	**1400**	**2240**
587	1077	**1700**	800	**1432**	**2207**	**3750**	**1500**	**2360**
612	1087	**1737**	807	**1457**	**2232**	**4000**	**1600**	**2500**
630	1112	**1762**	832	**1482**	**2240**	**4250**	**1700**	**2650**
637	1120	**1787**	850	**1500**	**2282**	**4500**	**1800**	**2800**
662	1137	**1800**	857	**1507**	**2300**		**1900**	**3000**
670	**1162**	**1812**	882	**1532**	**2307**		**2000**	**3150**
687	**1180**	**1837**	900	**1557**	**2332**		**2120**	**3350**
710	**1187**	**1862**	907	**1582**	**2360**		**2240**	**3550**
722	**1202**	**1887**	932	**1600**	**2382**		**2360**	**3750**
737	**1212**	**1900**	950	**1607**	**2432**		**2500**	**4000**
750	**1237**	**1937**	957	**1632**	**2482**		**2650**	**4250**
762	**1250**	**1987**	982	**1657**	**2500**		**2800**	**4500**
772	**1262**	**2000**	1000	**1682**	**2532**		**3000**	**4750**
787	**1287**	**2037**	1007	**1700**	**2582**		**3150**	**5000**
800	**1312**	**2120**	1032	**1707**	**2607**		**3250**	**5300**
812	**1320**	**2137**	1060	**1732**	**2632**		**3350**	**5600**
825	**1337**	**2187**	1082	**1757**	**2650**		**3550**	**6000**
837	**1347**	**2240**	1107	**1782**	**2682**		**3750**	**6300**
850	**1362**	**2287**	1120	**1800**	**2732**		**4000**	**6700**
862	**1387**	**2360**	1132	**1807**	**2782**		**4250**	**7100**
875	**1400**	**2500**	1157	**1832**	**2800**		**4500**	**7500**
887	**1412**	**2650**	1180	**1857**	**2832**		**4750**	**8000**
900	**1437**	**2800**	**1207**	**1882**	**2847**		**5000**	**8500**
912	**1462**	**3000**	**1232**	**1900**	**2882**		**5300**	**9000**
925	**1487**	**3150**	**1250**	**1907**	**2932**		**5600**	**9500**
937	**1500**	**3350**	**1257**	**1932**	**2982**		**6000**	**10000**
950	**1512**	**3550**	**1272**	**1957**	**3000**		**6300**	10600
962	**1537**		**1282**	**1982**	**3032**		**6700**	11200
987	**1562**		**1307**	**2000**	**3082**		**7100**	12500
1000	**1587**		**1320**	**2032**	**3150**		**7500**	
1012	**1600**		**1332**	**2057**	**3182**		**8000**	
1024	**1612**		**1357**	**2082**	**3282**			
Maximum production length: 4 500 mm Minimum order quantity: Over 1800 mm = 20 belts for non standard lengths 60 belts for certain special constructions Weight: ≈ 0.074 kg/m			Maximum production length: 4 500 mm Minimum order quantity: Over 1800 mm = 31 belts for standard lengths 93 belts for certain special constructions Weight: ≈ 0.123 kg/m				Max. production length: 10 000 mm Minimum order quantity: Over 1800 mm = 25 belts for standard lengths 75 belts for certain special constructions Weight: ≈ 0.195 kg/m	Max. production length: 18 000 mm Minimum order quantity: Over 2000 mm = 16 belts for standard lengths 48 belts for certain special constructions Weight: ≈ 0.377 kg/m

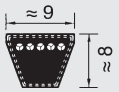
Datum length ≙ pitch length.

Lengths in **bold print** are in the S=C plus range.

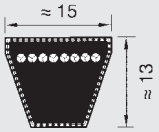
optibelt
Power Transmission

Standard Range

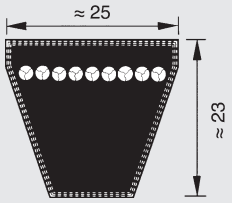
optibelt SK Wedge Belts to USA Standard RMA/MPTA



3V/9N



5V/15N



8V/25N

Section 3V/9N		Section 5V/15N		Section 8V/25N	
Designation	Designation (outside length mm) L_a	Designation	Designation (outside length mm) L_a	Designation	Designation (outside length mm) L_a
3V 250	9N 635	**5V 530**	**15N 1346**	**8V 1000**	**25N 2540**
3V 265	9N 673	**5V 560**	**15N 1422**	**8V 1120**	**25N 2845**
3V 280	9N 711	**5V 600**	**15N 1524**	**8V 1180**	**25N 2997**
3V 300	9N 762	**5V 630**	**15N 1600**	**8V 1250**	**25N 3175**
3V 315	9N 800	**5V 670**	**15N 1702**	**8V 1320**	**25N 3353**
3V 335	9N 851	**5V 710**	**15N 1803**	**8V 1400**	**25N 3556**
3V 355	9N 902	**5V 750**	**15N 1905**	**8V 1500**	**25N 3810**
3V 375	9N 952	**5V 800**	**15N 2032**	**8V 1600**	**25N 4064**
3V 400	9N 1016	**5V 850**	**15N 2159**	**8V 1700**	**25N 4318**
3V 425	9N 1079	**5V 900**	**15N 2286**	**8V 1800**	**25N 4572**
3V 450	9N 1143	**5V 950**	**15N 2413**	**8V 1900**	**25N 4826**
3V 475	9N 1206	**5V 1000**	**15N 2540**	**8V 2000**	**25N 5080**
3V 500	**9N 1270**	**5V 1060**	**15N 2692**	**8V 2120**	**25N 5385**
3V 530	**9N 1346**	**5V 1120**	**15N 2845**	**8V 2240**	**25N 5690**
3V 560	**9N 1422**	**5V 1180**	**15N 2997**	**8V 2360**	**25N 5994**
3V 600	**9N 1524**	**5V 1250**	**15N 3175**	**8V 2500**	**25N 6350**
3V 630	**9N 1600**	**5V 1320**	**15N 3353**	**8V 2650**	**25N 6731**
3V 670	**9N 1702**	**5V 1400**	**15N 3556**	**8V 2800**	**25N 7112**
3V 710	**9N 1803**	**5V 1500**	**15N 3810**	**8V 3000**	**25N 7620**
3V 750	**9N 1905**	**5V 1600**	**15N 4064**	**8V 3150**	**25N 8001**
3V 800	**9N 2032**	**5V 1700**	**15N 4318**	**8V 3350**	**25N 8509**
3V 850	**9N 2159**	**5V 1800**	**15N 4572**	**8V 3550**	**25N 9017**
3V 900	**9N 2286**	**5V 1900**	**15N 4826**	**8V 3750**	**25N 9525**
3V 950	**9N 2413**	**5V 2000**	**15N 5080**	8V 4000	25N 10160
3V 1000	**9N 2540**	**5V 2120**	**15N 5385**	8V 4250	25N 10795
3V 1060	**9N 2692**	**5V 2240**	**15N 5690**	8V 4500	25N 11430
3V 1120	**9N 2845**	**5V 2360**	**15N 5994**	8V 4750	25N 12065
3V 1180	**9N 2997**	**5V 2500**	**15N 6350**	8V 5000	25N 12700
3V 1250	**9N 3175**	**5V 2650**	**15N 6731**		
3V 1320	**9N 3353**	**5V 2800**	**15N 7112**		
3V 1400	**9N 3556**	**5V 3000**	**15N 7620**		
		5V 3150	**15N 8001**		
		5V 3350	**15N 8509**		
		5V 3550	**15N 9017**		

Maximum production length: 4 250 mm L_a
Minimum order quantity:
Over 1800 mm L_a =
20 belts for non standard lengths
60 belts for certain special constructions
Weight: ≈ 0.074 kg/m

Maximum production length: 10 000 mm L_a
Minimum order quantity:
Over 1800 mm L_a =
25 belts for non standard lengths
75 belts for certain special constructions
Weight: ≈ 0.195 kg/m

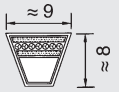
Maximum standard production length: 18 000 mm L_a
Over 18 000 to 19 000 mm on request
Minimum order quantity:
Over 2540 mm L_a =
11 belts for non standard lengths
33 belts for certain special constructions
Weight: ≈ 0.575 kg/m

Lengths in **bold print** are in the S=C plus range.

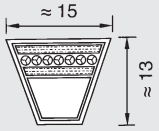
optibelt
Power Transmission

Standard Range

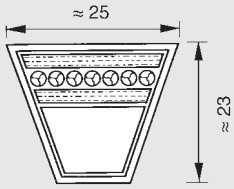
optibelt *RED POWER II* High Performance Wedge Belt
USA Standard RMA / MPTA



3V / 9N



5V / 15N



8V / 25N

Section 3V / 9N		Section 5V / 15N		Section 8V / 25N	
Designation	Designation (outside length mm) L_a	Designation	Designation (outside length mm) L_a	Designation	Designation (outside length mm) L_a
3V 475	**9N 1206**	**5V 530**	**15N 1346**	**8V 1000**	**25N 2540**
3V 500	**9N 1270**	**5V 560**	**15N 1422**	**8V 1120**	**25N 2845**
3V 530	**9N 1346**	**5V 600**	**15N 1524**	**8V 1180**	**25N 2997**
3V 560	**9N 1422**	**5V 630**	**15N 1600**	**8V 1250**	**25N 3175**
3V 600	**9N 1524**	**5V 670**	**15N 1702**	**8V 1320**	**25N 3353**
3V 630	**9N 1600**	**5V 710**	**15N 1803**	**8V 1400**	**25N 3556**
3V 670	**9N 1702**	**5V 750**	**15N 1905**	**8V 1500**	**25N 3810**
3V 710	**9N 1803**	**5V 800**	**15N 2032**	**8V 1600**	**25N 4064**
3V 750	**9N 1905**	**5V 850**	**15N 2159**	**8V 1700**	**25N 4318**
3V 800	**9N 2032**	**5V 900**	**15N 2286**	**8V 1800**	**25N 4572**
3V 850	**9N 2159**	**5V 950**	**15N 2413**	**8V 1900**	**25N 4826**
3V 900	**9N 2286**	**5V 1000**	**15N 2540**	**8V 2000**	**25N 5080**
3V 950	**9N 2413**	**5V 1060**	**15N 2692**	**8V 2120**	**25N 5385**
3V 1000	**9N 2540**	**5V 1120**	**15N 2845**	**8V 2240**	**25N 5690**
3V 1060	**9N 2692**	**5V 1180**	**15N 2997**	**8V 2360**	**25N 5994**
3V 1120	**9N 2845**	**5V 1250**	**15N 3175**	**8V 2500**	**25N 6350**
3V 1180	**9N 2997**	**5V 1320**	**15N 3353**	**8V 2650**	**25N 6731**
3V 1250	**9N 3175**	**5V 1400**	**15N 3556**	**8V 2800**	**25N 7112**
3V 1320	**9N 3353**	**5V 1500**	**15N 3810**	**8V 3000**	**25N 7620**
3V 1400	**9N 3556**	**5V 1600**	**15N 4064**	**8V 3150**	**25N 8001**
		5V 1700	**15N 4318**	**8V 3350**	**25N 8509**
		5V 1800	**15N 4572**		
		5V 1900	**15N 4826**		
		5V 2000	**15N 5080**		
		5V 2120	**15N 5385**		
		5V 2240	**15N 5690**		
		5V 2360	**15N 5994**		
		5V 2500	**15N 6350**		
		5V 2650	**15N 6731**		
		5V 2800	**15N 7112**		
		5V 3000	**15N 7620**		
		5V 3150	**15N 8001**		

Maximum production length: 4 000 mm L_a
Minimum order quantity:
1206 mm L_a – 2032 mm L_a =
80 belts for non standard lengths
Over 2032mm L_a =
98 belts for non standard lengths
Weight: ≈ 0,074 kg / m

Maximum production length: 8 000 mm L_a
Minimum order quantity:
1270 mm L_a – 2032 mm L_a =
50 belts for non standard lengths
Over 2032 mm L_a =
72 belts for non standard lengths
Weight: ≈ 0,195 kg / m

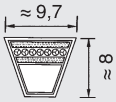
Maximum production length: 8 500 mm L_a
Minimum order quantity:
Over 2540 mm L_a =
40 belts for non standard lengths
Weight: ≈ 0,575 kg / m

Lengths in **bold print** are in the S=C plus range.

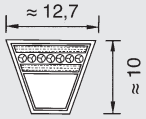
optibelt
Power Transmission

Standard Range

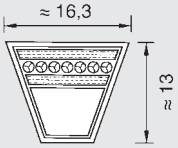
optibelt *RED POWER II* High Performance Wedge Belt
BS 3790/DIN 7753 Part 1/ISO 4184



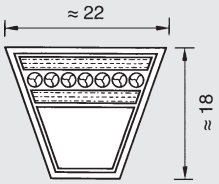
SPZ



SPA



SPB



SPC

Section SPZ	Section SPA	Section SPB	Section SPC
Datum length ISO (mm) L_d	Datum length ISO (mm) L_d	Datum length ISO (mm) L_d	Datum length ISO (mm) L_d
1202	**1207**	**1250**	**2000**
1212	**1232**	**1320**	**2120**
1237	**1250**	**1400**	**2240**
1250	**1257**	**1500**	**2360**
1262	**1282**	**1600**	**2500**
1287	**1307**	**1700**	**2650**
1312	**1320**	**1800**	**2800**
1320	**1332**	**1900**	**3000**
1337	**1357**	**2000**	**3150**
1362	**1382**	**2120**	**3350**
1387	**1400**	**2240**	**3550**
1400	**1407**	**2360**	**3750**
1412	**1432**	**2500**	**4000**
1437	**1457**	**2650**	**4250**
1462	**1482**	**2800**	**4500**
1487	**1500**	**3000**	**4750**
1500	**1507**	**3150**	**5000**
1512	**1532**	**3350**	**5300**
1537	**1557**	**3550**	**5600**
1562	**1582**	**3750**	**6000**
1587	**1600**	**4000**	**6300**
1600	**1607**	**4250**	**6700**
1612	**1632**	**4500**	**7100**
1637	**1657**	**4750**	**7500**
1662	**1682**	**5000**	**8000**
1687	**1700**	**5300**	
1700	**1707**	**5600**	
1737	**1732**	**6000**	
1762	**1757**	**6300**	
1787	**1782**	**6700**	
1800	**1800**	**7100**	
1837	**1807**	**7500**	
1862	**1832**	**8000**	
1887	**1857**		
1900	**1882**		
1937	**1900**		
1987	**1907**		
2000	**1932**		
2037	**1957**		
2120	**1982**		
	2000		
	2032		
	2057		
	2082		
	2120		
	2132		
	2182		
	2207		
	2232		
	2240		
	2282		
	2300		
	2307		
	2332		
	2360		
	2382		
	2432		
	2482		
	2500		
	2532		
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	2650		
	2682		
	2732		
	2782		
	2800		
	2832		
	2847		
	2882		
	2932		
	2982		
	3000		
	3032		
	3082		
	3150		
	3182		
	3282		
	3350		
	3382		
	3550		
	3750		
	4000		
Maximum production length: 4 000 mm Minimum order quantity: 1202 mm – 2120 mm = 76 belts for non standard lengths Over 2120 mm = 70 belts for non standard lengths Weight: ≈ 0,074 kg/m	Maximum production length: 4 000 mm Minimum order quantity: 1207 mm – 2120 mm = 62 belts for non standard lengths Over 2120 mm = 78 belts for non standard lengths Weight: ≈ 0,123 kg/m	Max. prod. length: 8 000 mm Minimum order quantity: 1250 mm – 2120 mm = 50 belts for non standard lengths Over 2120 mm = 72 belts for non standard lengths Weight: ≈ 0,195 kg/m	Max. prod. length: 8 000 mm Minimum order quantity: Over 2000 mm = 44 belts for non standard lengths Weight: ≈ 0,377 kg/m

Datum length L_d ≙ pitch length L_w/L_p.

Lengths in **bold print** are in the S=C plus range.

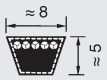
optibelt
Power Transmission

Standard Range

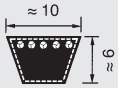
optibelt VB Classical V-Belts to DIN 2215/ISO 4184

5

Y/6



8



Z/10

Section 5*		Section Y/6*		Section 8		Section Z/10								
Datum length ISO L_d (mm)	Inside length L_i (mm)	Datum length ISO L_d (mm)	Inside length L_i (mm)	Datum length ISO L_d (mm)	Inside length L_i (mm)	Belt No.	Datum length ISO L_d (mm)	Inside length L_i (mm)	Belt No.	Datum length ISO L_d (mm)	Inside length L_i (mm)	Belt No.	Datum length ISO L_d (mm)	Inside length L_i (mm)
200	190	295	280	335*	315*	Z 11	312*	290*	Z 38 1/2	997	975	**Z 68**	**1747**	**1725**
239	229	315	300	375*	355*	Z 12 1/2	337*	315*	Z 39	1022	1000	**Z 69**	**1772**	**1750**
270	260	350	335	420*	400*	Z 14	397*	375*	Z 40	1038	1016	**Z 70**	**1797**	**1775**
290	280	415	400	445*	425*	Z 15	422*	400*	Z 40 1/2	1052	1030	**Z 71**	**1822**	**1800**
310	300	440	425	470*	450*	Z 16	447*	425*	Z 41	1063	1041	**Z 73**	**1872**	**1850**
325	315	465	450	495*	475*	Z 17	472*	450*	Z 41 1/2	1072	1050	**Z 75**	**1922**	**1900**
332	322	515	500	510*	490*	Z 18	497*	475*	Z 42	1082	1060	**Z 78**	**1997**	**1975**
345	335	555	540	550*	530*	Z 19	502*	480*	Z 43	1102	1080	**Z 79**	**2022**	**2000**
385	375	615	600	580*	560*	Z 19 3/4	522*	500*	Z 43 1/4	1122	1100	**Z 83 1/2**	**2142**	**2120**
435	425	865	850	595*	575*	Z 20	537*	515*	Z 44	1142	1120	**Z 88**	**2262**	**2240**
485	475			620*	600*	Z 20 1/2	547*	525*	Z 45	1172	1150	**Z 93**	**2382**	**2360**
510	500			650*	630*	Z 21	552*	530*	Z 46	1187	1165	**Z 98**	**2522**	**2500**
540	530			690*	670*	Z 21 1/4	562*	540*	Z 46 1/2	1202	1180			
564	554			720*	700*	Z 22	582*	560*	Z 47	1216	1194			
610	600			730*	710*	Z 23	597	575	Z 48	1237	1215			
				770*	750*	Z 24	622	600	Z 48 1/2	1247	1225			
				795*	775*	Z 25	652	630	Z 49	1272	1250			
				820*	800*	Z 26	672	650	Z 50	1292	1270			
				845	825	Z 27	692	670	Z 51	1317	1295			
				870	850	Z 27 1/2	722	700	Z 52	1342	1320			
				895	875	Z 28	732	710	Z 53	1368	1346			
				920	900	Z 28 1/2	747	725	Z 54	1393	1371			
				970	950	Z 29	752	730	Z 55	1422	1400			
				1020	1000	Z 29 1/2	772	750	Z 56	1444	1422			
				1040	1020	Z 30	787	765	Z 57	1472	1450			
				1070	1050	Z 31	797	775	Z 58	1497	1475			
				1095	1075	Z 31 1/2	822	800	Z 59	1522	1500			
				1140	1120	Z 32	842	820	Z 60	1546	1524			
				1220	1200	Z 33	847	825	**Z 61**	**1572**	**1550**			
				1270	1250	Z 33 1/2	872	850	**Z 62**	**1597**	**1575**			
						Z 34	887	865	**Z 63**	**1622**	**1600**			
						Z 35	897	875	**Z 64**	**1648**	**1626**			
						Z 36	922	900	**Z 65**	**1673**	**1651**			
						Z 37	947	925	**Z 66**	**1697**	**1675**			
						Z 38	972	950	**Z 67**	**1722**	**1700**			

Other sizes on request
Weight: ≈ 0,018 kg/m

Other sizes on request
Weight: ≈ 0,026 kg/m

Weight: ≈ 0,042 kg/m

Maximum production length: 4 500 mm
Minimum order quantity:
Over 1800 mm =
20 belts for non standard lengths
60 belts for certain special constructions
Weight: ≈ 0,064 kg/m

Datum length ≙ pitch length. *** raw edge, moulded cogged V-belts.** Other sizes on request.

Lengths in **bold print** are in the S=C plus range.

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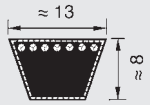
Power Transmission

Standard Range

optibelt *VB* Classical V-Belts to DIN 2215 / ISO 4184



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Section A / 13

Belt No.	Datum length ISO L_d (mm)	Inside length L_i (mm)	Belt No.	Datum length ISO L_d (mm)	Inside length L_i (mm)	Belt No.	Datum length ISO L_d (mm)	Inside length L_i (mm)	Belt No.	Datum length ISO L_d (mm)	Inside length L_i (mm)
A 16	**437**	**407**	**A 41**	**1071**	**1041**	**A 69**	**1780**	**1750**	**A 105**	**2697**	**2667**
A 18	**487**	**457**	**A 41½**	**1080**	**1050**	**A 70**	**1805**	**1775**	**A 107**	**2755**	**2725**
A 19	**510**	**480**	**A 42**	**1090**	**1060**	**A 71**	**1830**	**1800**	**A 108**	**2773**	**2743**
A 20	**538**	**508**	**A 42½**	**1105**	**1075**	**A 72**	**1855**	**1825**	**A 110**	**2830**	**2800**
A 21	**565**	**535**	**A 43**	**1130**	**1100**	**A 73**	**1884**	**1854**	**A 112**	**2875**	**2845**
A 22	**590**	**560**	**A 43½**	**1135**	**1105**	**A 74**	**1910**	**1880**	**A 114**	**2926**	**2896**
A 23	**605**	**575**	**A 44**	**1150**	**1120**	**A 75**	**1930**	**1900**	**A 116**	**2976**	**2946**
A 23½	**630**	**600**	**A 45**	**1173**	**1143**	**A 76**	**1960**	**1930**	**A 118**	**3030**	**3000**
A 24	**640**	**610**	**A 45½**	**1180**	**1150**	**A 77**	**1986**	**1956**	**A 120**	**3078**	**3048**
A 25	**660**	**630**	**A 46**	**1198**	**1168**	**A 78**	**2010**	**1980**	**A 124**	**3180**	**3150**
A 26	**680**	**650**	**A 46½**	**1210**	**1180**	**A 79**	**2030**	**2000**	**A 128**	**3280**	**3250**
A 26½	**700**	**670**	**A 47**	**1230**	**1200**	**A 80**	**2062**	**2032**	**A 132**	**3380**	**3350**
A 27	**716**	**686**	**A 47½**	**1245**	**1215**	**A 81**	**2090**	**2060**	**A 136**	**3484**	**3454**
A 27½	**730**	**700**	**A 48**	**1250**	**1220**	**A 82**	**2113**	**2083**	**A 140**	**3580**	**3550**
A 28	**740**	**710**	**A 48½**	**1255**	**1225**	**A 83**	**2130**	**2100**	**A 144**	**3688**	**3658**
A 29	**760**	**730**	**A 49**	**1280**	**1250**	**A 83½**	**2150**	**2120**	**A 148**	**3780**	**3750**
A 29½	**780**	**750**	**A 50**	**1300**	**1270**	**A 84**	**2164**	**2134**	**A 158**	**4030**	**4000**
A 30	**797**	**767**	**A 51**	**1330**	**1300**	**A 84½**	**2180**	**2150**	**A 167**	**4280**	**4250**
A 31	**805**	**775**	**A 52**	**1350**	**1320**	**A 85**	**2190**	**2160**	**A 187**	**4780**	**4750**
A 31½	**830**	**800**	**A 53**	**1380**	**1350**	**A 86**	**2230**	**2200**	**A 197**	**5030**	**5000**
A 32	**843**	**813**	**A 54**	**1405**	**1375**	**A 87**	**2240**	**2210**			
A 32½	**855**	**825**	**A 55**	**1430**	**1400**	**A 88**	**2270**	**2240**			
A 33	**871**	**841**	**A 56**	**1452**	**1422**	**A 89**	**2291**	**2261**			
A 34	**880**	**850**	**A 57**	**1480**	**1450**	**A 90**	**2316**	**2286**			
A 34½	**905**	**875**	**A 58**	**1505**	**1475**	**A 91**	**2341**	**2311**			
A 35	**919**	**889**	**A 59**	**1530**	**1500**	**A 92**	**2367**	**2337**			
A 35½	**930**	**900**	**A 60**	**1555**	**1525**	**A 93**	**2390**	**2360**			
A 36	**944**	**914**	**A 61**	**1580**	**1550**	**A 94**	**2418**	**2388**			
A 37	**955**	**925**	**A 62**	**1605**	**1575**	**A 95**	**2443**	**2413**			
A 37½	**980**	**950**	**A 63**	**1630**	**1600**	**A 96**	**2468**	**2438**			
A 38	**995**	**965**	**A 64**	**1655**	**1625**	**A 97**	**2494**	**2464**			
A 38½	**1005**	**975**	**A 65**	**1680**	**1650**	**A 98**	**2530**	**2500**			
A 39	**1030**	**1000**	**A 66**	**1706**	**1676**	**A 100**	**2570**	**2540**			
A 40	**1046**	**1016**	**A 67**	**1730**	**1700**	**A 102**	**2621**	**2591**			
A 40½	**1060**	**1030**	**A 68**	**1755**	**1725**	**A 104**	**2680**	**2650**			

Maximum production length: 10 000 mm
Minimum order quantity:
Over 1800 mm =
31 belts for non standard lengths
93 belts for certain special constructions

Weight: ≈ 0,109 kg / m

Datum length ≙ pitch length. Other sizes on request.

Lengths in **bold print** are in the S=C plus range.

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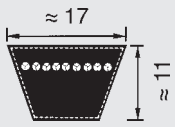
Standard Range

optibelt VB Classical V-Belts to DIN 2215/ISO 4184



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Section B/17

Belt No.	Datum length ISO L_d (mm)	Inside length L_i (mm)	Belt No.	Datum length ISO L_d (mm)	Inside length L_i (mm)	Belt No.	Datum length ISO L_d (mm)	Inside length L_i (mm)	Belt No.	Datum length ISO L_d (mm)	Inside length L_i (mm)
B 23	610	570	**B 51**	**1340**	**1300**	**B 87**	**2250**	**2210**	**B 140**	**3590**	**3550**
B 24	655	615	**B 52**	**1360**	**1320**	**B 88**	**2280**	**2240**	**B 142**	**3640**	**3600**
B 25	670	630	**B 52½**	**1375**	**1335**	**B 89**	**2301**	**2261**	**B 144**	**3698**	**3658**
B 26	690	650	**B 53**	**1390**	**1350**	**B 90**	**2326**	**2286**	**B 146**	**3740**	**3700**
B 26½	710	670	**B 53½**	**1400**	**1360**	**B 91**	**2340**	**2300**	**B 148**	**3790**	**3750**
B 27	726	686	**B 54**	**1412**	**1372**	**B 92**	**2377**	**2337**	**B 150**	**3850**	**3810**
B 28	750	710	**B 55**	**1440**	**1400**	**B 93**	**2400**	**2360**	**B 151**	**3890**	**3850**
B 29	765	725	**B 56**	**1462**	**1422**	**B 94**	**2428**	**2388**	**B 152**	**3901**	**3861**
B 30	790	750	**B 57**	**1490**	**1450**	**B 94½**	**2440**	**2400**	**B 154**	**3952**	**3912**
B 31	815	775	**B 58**	**1513**	**1473**	**B 95**	**2453**	**2413**	**B 155**	**3990**	**3950**
B 32	840	800	**B 59**	**1540**	**1500**	**B 96**	**2478**	**2438**	**B 156**	**4002**	**3962**
B 32½	865	825	**B 60**	**1565**	**1525**	**B 96½**	**2490**	**2450**	**B 158**	**4040**	**4000**
B 33	876	836	**B 61**	**1590**	**1550**	**B 97**	**2505**	**2465**	**B 160**	**4104**	**4064**
B 34	890	850	**B 62**	**1615**	**1575**	**B 98**	**2540**	**2500**	**B 162**	**4155**	**4115**
B 34½	915	875	**B 63**	**1640**	**1600**	**B 99**	**2555**	**2515**	**B 165**	**4240**	**4200**
B 35	929	889	**B 64**	**1665**	**1625**	**B 100**	**2580**	**2540**	**B 167**	**4290**	**4250**
B 36	940	900	**B 65**	**1690**	**1650**	**B 101**	**2605**	**2565**	**B 173**	**4434**	**4394**
B 37	965	925	**B 66**	**1716**	**1676**	**B 102**	**2640**	**2600**	**B 175**	**4490**	**4450**
B 37½	990	950	**B 67**	**1740**	**1700**	**B 103**	**2656**	**2616**	**B 177**	**4540**	**4500**
B 38	1005	965	**B 68**	**1765**	**1725**	**B 104**	**2690**	**2650**	**B 180**	**4612**	**4572**
B 38½	1015	975	**B 69**	**1790**	**1750**	**B 105**	**2707**	**2667**	**B 187**	**4790**	**4750**
B 39	1040	1000	**B 69½**	**1801**	**1761**	**B 106**	**2740**	**2700**	**B 195**	**4993**	**4953**
B 40	1056	1016	**B 70**	**1815**	**1775**	**B 107**	**2758**	**2718**	**B 197**	**5040**	**5000**
B 40½	1070	1030	**B 71**	**1840**	**1800**	**B 108**	**2790**	**2750**	**B 208**	**5340**	**5300**
B 41	1080	1040	**B 72**	**1869**	**1829**	**B 110**	**2840**	**2800**	**B 210**	**5374**	**5334**
B 41½	1090	1050	**B 73**	**1890**	**1850**	**B 112**	**2885**	**2845**	**B 220**	**5640**	**5600**
B 42	1100	1060	**B 74**	**1920**	**1880**	**B 114**	**2940**	**2900**	**B 236**	**6040**	**6000**
B 42½	1115	1075	**B 75**	**1940**	**1900**	**B 115**	**2961**	**2921**	**B 240**	**6136**	**6096**
B 43	1130	1090	**B 76**	**1970**	**1930**	**B 116**	**2990**	**2950**	**B 248**	**6340**	**6300**
B 43¼	1140	1100	**B 77**	**1990**	**1950**	**B 118**	**3040**	**3000**	**B 264**	**6740**	**6700**
B 44	1160	1120	**B 78**	**2021**	**1981**	**B 120**	**3088**	**3048**	**B 276**	**7040**	**7000**
B 45	1190	1150	**B 79**	**2040**	**2000**	**B 122**	**3139**	**3099**	**B 280**	**7140**	**7100**
B 45½	1203	1163	**B 80**	**2072**	**2032**	**B 124**	**3190**	**3150**			
B 46	1215	1175	**B 81**	**2100**	**2060**	**B 126**	**3240**	**3200**			
B 46½	1220	1180	**B 82**	**2123**	**2083**	**B 128**	**3290**	**3250**			
B 47	**1240**	**1200**	**B 83**	**2140**	**2100**	**B 130**	**3342**	**3302**			
B 48	**1255**	**1215**	**B 83½**	**2160**	**2120**	**B 132**	**3390**	**3350**			
B 48½	**1265**	**1225**	**B 84**	**2174**	**2134**	**B 134**	**3444**	**3404**			
B 49	**1290**	**1250**	**B 85**	**2200**	**2160**	**B 136**	**3490**	**3450**			
B 50	**1315**	**1275**	**B 86**	**2240**	**2200**	**B 138**	**3545**	**3505**			

Maximum production length: 15 500 mm
Minimum order quantity:
Over 1800 mm =
21 belts for non standard lengths
63 belts for certain special constructions

Weight: ≈ 0,196 kg/m

Datum length ≙ pitch length. Other sizes on request.

Lengths in **bold print** are in the S=C plus range.

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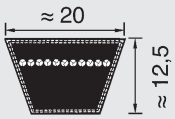
Power Transmission

Standard Range

optibelt *VB* Classical V-Belts to DIN 2215/ISO 4184



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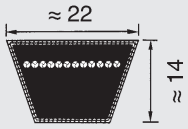
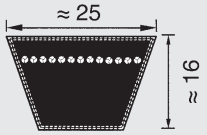


C/22



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Section 20		Section C/22						Section 25	
Datum length ISO L_d (mm)	Inside length L_i (mm)	Belt No.	Datum length ISO L_d (mm)	Inside length L_i (mm)	Belt No.	Datum length ISO L_d (mm)	Inside length L_i (mm)	Datum length ISO L_d (mm)	Inside length L_i (mm)
950	900	C 43	1148	1090	**C 102**	**2649**	**2591**	1460	1400
1050	1000	**C 47**	**1258**	**1200**	**C 104**	**2700**	**2642**	1560	1500
1170	1120	**C 48**	**1273**	**1215**	**C 105**	**2725**	**2667**	1660	1600
1230	1180	**C 49**	**1308**	**1250**	**C 106**	**2750**	**2692**	1760	1700
1300	**1250**	**C 51**	**1353**	**1295**	**C 108**	**2808**	**2750**	1860	1800
1370	**1320**	**C 52**	**1378**	**1320**	**C 110**	**2858**	**2800**	1960	1900
1450	**1400**	**C 53**	**1408**	**1350**	**C 112**	**2903**	**2845**	2060	2000
1550	**1500**	**C 54**	**1433**	**1375**	**C 114**	**2954**	**2896**	2180	2120
1650	**1600**	**C 55**	**1458**	**1450**	**C 115**	**2979**	**2921**	2300	2240
1750	**1700**	**C 56**	**1483**	**1425**	**C 116**	**3008**	**2950**	2420	2360
1850	**1800**	**C 57**	**1508**	**1450**	**C 117**	**3023**	**2965**	2560	2500
1950	**1900**	**C 58**	**1533**	**1475**	**C 118**	**3058**	**3000**	2710	2650
2050	**2000**	**C 59**	**1558**	**1500**	**C 120**	**3106**	**3048**	2760	2700
2170	**2120**	**C 60**	**1582**	**1524**	**C 122**	**3157**	**3099**	2860	2800
2290	**2240**	**C 61**	**1608**	**1550**	**C 124**	**3208**	**3150**	3060	3000
2410	**2360**	**C 62**	**1632**	**1574**	**C 126**	**3258**	**3200**	3210	3150
2550	**2500**	**C 63**	**1658**	**1600**	**C 128**	**3308**	**3250**	3410	3350
2700	**2650**	**C 65**	**1708**	**1650**	**C 130**	**3360**	**3302**	3610	3550
2850	**2800**	**C 66**	**1734**	**1676**	**C 132**	**3408**	**3350**	3810	3750
3050	**3000**	**C 67**	**1758**	**1700**	**C 134**	**3462**	**3404**	4060	4000
3200	**3150**	**C 68**	**1785**	**1727**	**C 136**	**3508**	**3450**	4310	4250
3400	**3350**	**C 69**	**1808**	**1750**	**C 138**	**3563**	**3505**	4560	4500
3600	**3550**	**C 70**	**1836**	**1778**	**C 140**	**3608**	**3550**	4810	4750
3800	**3750**	**C 71**	**1858**	**1800**	**C 142**	**3665**	**3607**	5060	5000
4050	**4000**	**C 72**	**1887**	**1829**	**C 144**	**3716**	**3658**	5360	5300
4550	**4500**	**C 73**	**1912**	**1854**	**C 146**	**3758**	**3700**	5660	5600
5050	**5000**	**C 74**	**1938**	**1880**	**C 148**	**3808**	**3750**	6060	6000
6050	**6000**	**C 75**	**1958**	**1900**	**C 150**	**3868**	**3810**	6360	6300
		C 76	**1988**	**1930**	**C 158**	**4058**	**4000**	6760	6700
		C 77	**2014**	**1956**	**C 162**	**4158**	**4100**	7160	7100
		C 78	**2039**	**1981**	**C 166**	**4274**	**4216**	7560	7500
		C 79	**2058**	**2000**	**C 167**	**4308**	**4250**	8060	8000
		C 80	**2090**	**2032**	**C 168**	**4325**	**4267**	8560	8500
		C 81	**2118**	**2060**	**C 170**	**4376**	**4318**	9060	9000
		C 82	**2141**	**2083**	**C 173**	**4452**	**4394**		
		C 83	**2166**	**2108**	**C 175**	**4503**	**4445**		
		C 83½	**2178**	**2120**	**C 177**	**4558**	**4500**		
		C 84	**2192**	**2134**	**C 180**	**4630**	**4572**		
		C 85	**2217**	**2159**	**C 187**	**4808**	**4750**		
		C 86	**2242**	**2184**	**C 190**	**4884**	**4826**		
		C 87	**2268**	**2210**	**C 195**	**5011**	**4953**		
		C 88	**2298**	**2240**	**C 197**	**5058**	**5000**		
		C 89	**2319**	**2261**	**C 208**	**5358**	**5300**		
		C 90	**2344**	**2286**	**C 210**	**5392**	**5334**		
		C 92	**2395**	**2337**	**C 220**	**5658**	**5600**		
		C 93	**2418**	**2360**	**C 225**	**5773**	**5715**		
		C 94	**2446**	**2388**	**C 236**	**6058**	**6000**		
		C 95	**2471**	**2413**	**C 240**	**6154**	**6096**		
		C 96	**2496**	**2438**	**C 248**	**6358**	**6300**		
		C 96½	**2508**	**2450**	**C 264**	**6758**	**6700**		
		C 97	**2522**	**2464**	**C 270**	**6916**	**6858**		
		C 98	**2558**	**2500**	**C 280**	**7158**	**7100**		
		C 99	**2583**	**2525**	**C 295**	**7558**	**7500**		
		C 100	**2598**	**2540**	**C 300**	**7678**	**7620**		
		C 101	**2618**	**2560**	**C 315**	**8058**	**8000**		

Maximum production length:
10 000 mm
Minimum order quantity:
Over 1800 mm =
18 belts for non standard lengths
54 belts for certain special constructions

Weight: ≈ 0,266 kg/m

Maximum standard production length: 18 000 mm
Over 18 000 to 19 000 mm on request
Minimum order quantity:
Over 1800 mm =
16 belts for non standard lengths
48 belts for certain special constructions

Weight: ≈ 0,324 kg/m

Maximum standard production length:
18 000 mm
Over 18 000 to 19 000 mm
on request
Minimum order quantity:
Over 1800 mm =
14 belts for non standard lengths
42 belts for certain special constructions

Weight: ≈ 0,420 kg/m

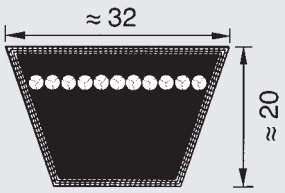
Datum length ≙ pitch length. Other sizes on request.

Lengths in **bold print** are in the S=C plus range.

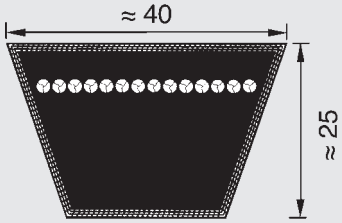
optibelt
Power Transmission

Standard Range

optibelt *VB* Classical V-Belts to DIN 2215/ISO 4184



D/32



E/40

Section D/32

Belt No.	Datum length ISO L_d (mm)	Inside length L_i
D 79	**2075**	**2000**
D 98	**2575**	**2500**
D 104	**2725**	**2650**
D 110	**2875**	**2800**
D 118	**3075**	**3000**
D 120	**3123**	**3048**
D 124	**3225**	**3150**
D 128	**3326**	**3251**
D 132	**3425**	**3350**
D 135	**3500**	**3425**
D 136	**3529**	**3454**
D 140	**3625**	**3550**
D 144	**3733**	**3658**
D 148	**3825**	**3750**
D 154	**4000**	**3925**
D 158	**4075**	**4000**
D 162	**4190**	**4115**
D 167	**4325**	**4250**
D 173	**4469**	**4394**
D 177	**4575**	**4500**
D 180	**4647**	**4572**
D 187	**4825**	**4750**
D 195	**5028**	**4953**
D 197	**5075**	**5000**
D 208	**5375**	**5300**
D 210	**5409**	**5334**
D 220	**5675**	**5600**
D 225	**5790**	**5715**
D 236	**6075**	**6000**
D 240	**6171**	**6096**
D 248	**6375**	**6300**
D 264	**6775**	**6700**
D 270	**6933**	**6858**
D 280	**7175**	**7100**
D 295	**7575**	**7500**
D 300	**7695**	**7620**
D 315	**8075**	**8000**
D 330	**8457**	**8382**
D 335	**8575**	**8500**
D 354	**9075**	**9000**
D 374	**9575**	**9500**
D 394	**10075**	**10000**
D 441	11275	11200

Maximum standard production length: 18 000 mm
Over 18 000 to 19 000 mm on request
Minimum order quantity:
Over 2000 mm =
11 belts for non standard lengths
33 belts for certain special constructions

Weight: ≈ 0,668 kg/m

Section E/40

Belt No.	Datum length ISO L_d (mm)	Inside length L_i
E 118	**3080**	**3000**
E 158	**4080**	**4000**
E 197	**5080**	**5000**
E 220	**5680**	**5600**
E 236	**6080**	**6000**
E 248	**6380**	**6300**
E 280	**7180**	**7100**
E 295	**7580**	**7500**
E 315	**8080**	**8000**
E 354	**9080**	**9000**
E 394	**10080**	**10000**
E 441	11280	11200
E 492	12580	12500

Maximum production length: 19 000 mm
Minimum order quantity for **all** sizes:
7 belts
21 belts for certain special constructions

Weight: ≈ 0,958 kg/m

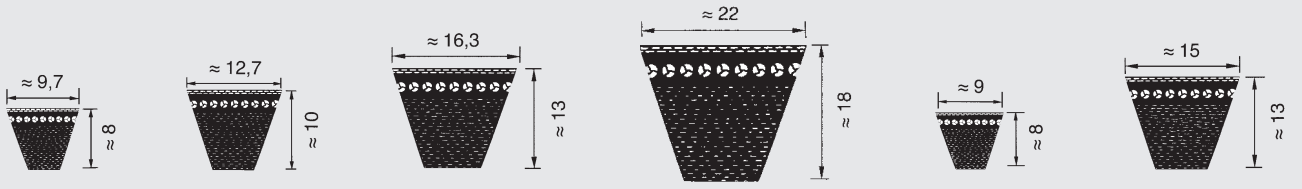
Datum length ≙ pitch length. Other sizes on request.

Lengths in **bold print** are in the S=C plus range.

optibelt
Power Transmission

Standard Range

optibelt SUPER TX M=S Wedge Belts – Raw Edge, Moulded Cogged – DIN 7753 Part 1/ISO 4184 and RMA/MPTA



XPZ XPA XPB XPC 3VX/9NX 5VX/15NX

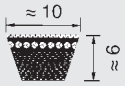
Section XPZ	Section XPA	Section XPB	Section XPC	Section 3VX/9NX		Section 5VX/15NX	
Datum length ISO L_d (mm)	Datum length ISO L_d (mm)	Datum length ISO L_d (mm)	Datum length ISO L_d (mm)	Designation	Designation L_a (outside length mm)	Designation	Designation L_a (outside length mm)
587 1202	732 1500	1250	2000	**3VX 250**	9NX 635	**5VX 500**	15NX 1270
612 1212	757 1507	1320	2120	**3VX 265**	9NX 673	**5VX 530**	15NX 1346
630 1237	782 1532	1400	2240	**3VX 280**	9NX 711	**5VX 560**	15NX 1422
637 1250	800 1557	1500	2360	**3VX 300**	9NX 762	**5VX 600**	15NX 1524
662 1262	807 1582	1600	2500	**3VX 315**	9NX 800	**5VX 630**	15NX 1600
670 1287	832 1600	1700	2650	**3VX 335**	9NX 851	**5VX 670**	15NX 1702
687 1312	850 1607	1800	2800	**3VX 355**	9NX 902	**5VX 710**	15NX 1803
710 1320	857 1632	1900	3000	**3VX 375**	9NX 952	**5VX 750**	15NX 1905
737 1337	882 1700	2000	3150	**3VX 400**	9NX 1016	**5VX 800**	15NX 2032
750 1362	900 1757	2120	3350	**3VX 425**	9NX 1079	**5VX 850**	15NX 2159
762 1387	907 1800	2240	3550	**3VX 450**	9NX 1143	**5VX 900**	15NX 2286
772 1400	932 1882	2360		**3VX 475**	9NX 1206	**5VX 950**	15NX 2413
787 1412	950 1900	2500		**3VX 500**	9NX 1270	**5VX 1000**	15NX 2540
800 1437	957 2000	2650		**3VX 530**	9NX 1346	**5VX 1060**	15NX 2692
812 1462	982 2120	2800		**3VX 560**	9NX 1422	**5VX 1120**	15NX 2845
825 1487	1000 2240	3000		**3VX 600**	9NX 1524	**5VX 1180**	15NX 2997
837 1500	1007 2360	3150		**3VX 630**	9NX 1600	**5VX 1250**	15NX 3175
850 1512	1030 2500	3350		**3VX 670**	9NX 1702	**5VX 1320**	15NX 3353
862 1537	1060 2650	3550		**3VX 710**	9NX 1803	**5VX 1400**	15NX 3556
875 1562	1082 2800			**3VX 750**	9NX 1905		
887 1587	1107 3000			**3VX 800**	9NX 2032		
900 1600	1120 3150			**3VX 850**	9NX 2159		
912 1612	1132 3350			**3VX 900**	9NX 2286		
925 1662	1157 3550			**3VX 950**	9NX 2413		
937 1700	1180			**3VX 1000**	9NX 2540		
950 1762	1207			**3VX 1060**	9NX 2692		
962 1800	1232			**3VX 1120**	9NX 2845		
987 1900	1250			**3VX 1180**	9NX 2997		
1000 2000	1257			**3VX 1250**	9NX 3175		
1012 2120	1272			**3VX 1320**	9NX 3353		
1037 2240	1282			**3VX 1400**	9NX 3556		
1060 2360	1307						
1077 2500	1320						
1087 2650	1332						
1112 2800	1357						
1120 3000	1382						
1137 3150	1400						
1162 3350	1432						
1180 3550	1457						
1187	1482						
Weight: ≈ 0,065 kg/m	Weight: ≈ 0,111 kg/m	Weight: ≈ 0,183 kg/m	Weight: ≈ 0,340 kg/m	Weight: ≈ 0,065 kg/m		Weight: ≈ 0,183 kg/m	

Datum length ≙ pitch length. Other sizes on request.

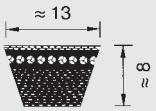
optibelt
Power Transmission

Standard Range

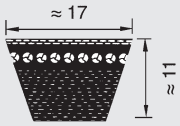
optibelt SUPER TX M=S V-Belt – Raw Edge, Moulded Cogged – to BS 3790/DIN 2215/ISO 4184



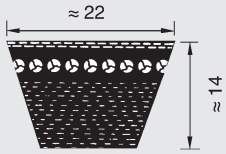
ZX/X10



AX/X13



BX/X17



CX/X22

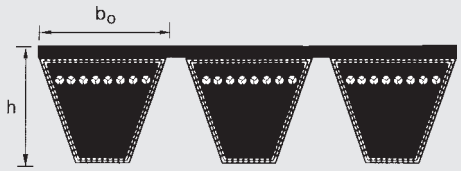
Section ZX/X10		Section AX/X13		Section BX/X17		Section CX/X22	
Belt No.	Datum length ISO L_d (mm)	Belt No.	Datum length ISO L_d (mm)	Belt No.	Datum length ISO L_d (mm)	Belt No.	Datum length ISO L_d (mm)
ZX 23	597	AX 23	605	BX 23	610	CX 39	1058*
ZX 24	622	AX 23½	630	BX 25	670	CX 43	1148*
ZX 25	652	AX 24	640	BX 26	690	CX 49	1308*
ZX 26	672	AX 25	660	BX 28	750	CX 52	1378*
ZX 27	692	AX 26½	700	BX 29	765	CX 55	1458*
ZX 28	732	AX 27	716	BX 30	790	CX 59	1558*
ZX 29	752	AX 28	740	BX 31	815	CX 62	1632*
ZX 29½	772	AX 29	760	BX 32	840	CX 67	1758*
ZX 31½	822	AX 30	797	BX 33	876	CX 68	1758*
ZX 32	842	AX 31	830	BX 34	890	CX 71	1858*
ZX 33	847	AX 32	843	BX 34½	915	CX 75	1958*
ZX 33½	872	AX 33	871	BX 35	929	CX 79	2058*
ZX 35	897	AX 34	880	BX 36	940	CX 81	2118*
ZX 36	922	AX 35	919	BX 37	965	CX 85	2217*
ZX 37	947	AX 35½	930	BX 38	1005	CX 88	2298*
ZX 38	972	AX 36	944	BX 39	1040	CX 90	2344*
ZX 40	1038*	AX 37	955	BX 40	1056	CX 93	2418*
ZX 42	1082*	AX 37½	980	BX 41	1080	CX 96	2496*
ZX 46½	1202*	AX 38	995	BX 42	1100	CX 98	2558*
ZX 52	1342*	AX 39	1030	BX 43	1130	CX 110	2858*
ZX 55	1422*	AX 40	1046	BX 44	1160	CX 118	3058*
ZX 59	1522*	AX 41½	1080	BX 45	1190	CX 124	3208*
		AX 42	1090	BX 45½	1203	CX 132	3408*
		AX 43	1130	BX 46	1215		
		AX 44	1150	BX 46½	1220		
		AX 45½	1180	BX 47	1240		
		AX 46	1198	BX 48	1255		
		AX 47	1230	BX 49	1290		
		AX 48	1250	BX 50	1315		
		AX 49	1280	BX 51	1340		
		AX 50	1300	BX 52	1360		
		AX 51	1330	BX 53	1390		
		AX 52	1350	BX 54	1412		
		AX 53	1380	BX 55	1440		
		AX 54	1405	BX 57	1490		
		AX 55	1430	BX 58	1513		
		AX 56	1452	BX 59	1540		
		AX 57	1480	BX 61	1590		
		AX 58	1505	BX 62	1615		
		AX 59	1530	BX 63	1640		
		AX 62	1605	BX 67	1740		
		AX 63	1630	BX 69	1790		
		AX 67	1730	BX 71	1840		
		AX 70	1805	BX 73	1890		
		AX 71	1830	BX 75	1940		
		AX 75	1930	BX 79	2040		
		AX 79	2030	BX 88	2280		
		AX 88	2270	BX 93	2400		
		AX 93	2390	BX 98	2540		
		AX 98	2530	BX 103	2656*		
		AX 104	2680*	BX 104	2690*		
		AX 110	2830*	BX 110	2840*		
		AX 118	3030*	BX 118	3040*		
		AX 124	3180*	BX 124	3190*		
		AX 132	3380*	BX 132	3390*		
Weight: ≈ 0,062 kg/m		Weight: ≈ 0,099 kg/m		Weight: ≈ 0,165 kg/m		Weight: ≈ 0,276 kg/m	

Datum length ≙ pitch length. Other sizes on request. *Non stock items.

optibelt
Power Transmission

Standard Range

optibelt *KB* Kraftbands with Wedge Belts to DIN / ISO



Section	SPZ	SPA	SPB	SPC
$b_o \approx$ (mm)	9,7	12,7	16,5	22,0
h ≈ (mm)	10,5	12,5	15,6	22,6

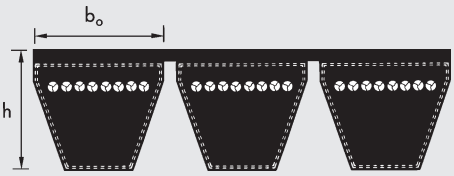
Section SPZ	Section SPA	Section SPB	Section SPC
Datum length ISO L_d (mm)	Datum length ISO L_d (mm)	Datum length ISO L_d (mm)	Datum length ISO L_d (mm)
1250	1250	2000	3000
1400	1400	2120	3150
1500	1500	2240	3350
1600	1600	2360	3550
1700	1700	2500	3750
1800	1800	2650	4000
1900	1900	2800	4250
2000	2000	3000	4500
2120	2120	3150	4750
2240	2240	3350	5000
2360	2360	3550	5300
2500	2500	3750	5600
2650	2650	4000	6000
2800	2800	4250	6300
3000	3000	4500	6700
3150	3150	4750	7100
3350	3350	5000	7500
3550	3550	5300	8000
	3750	5600	8500
	4000	6000	9000
	4250	6300	9500
	4500	6700	10000
		7100	10600
		7500	11200
		8000	11800
			12500
Maximum production length: 4500 mm L_d Non standard lengths from 1800 mm L_d **Minimum order quantity for special lengths:** 8 belts with 5 ribs or 10 belts with 4 ribs or 14 belts with 3 ribs or 21 belts with 2 ribs or a multiple thereof Weight: ≈ 0,120 kg/m per rib **Minimum order quantities for Aramid belts on request.**	Maximum production length: 4500 mm L_d Non standard lengths from 1800 mm L_d **Minimum order quantity for all sizes:** 6 belts with 5 ribs or 8 belts with 4 ribs or 11 belts with 3 ribs or 16 belts with 2 ribs or a multiple thereof Weight: ≈ 0,166 kg/m per rib **Minimum order quantities for Aramid belts on request.**	Maximum production length: 10000 mm L_d Non standard lengths from 2000 mm L_d **Minimum order quantity for special lengths:** 4 belts with 5 ribs or 5 belts with 4 ribs or 7 belts with 3 ribs or 11 belts with 2 ribs or a multiple thereof Weight: ≈ 0,261 kg/m per rib **Minimum order quantities for Aramid belts on request.**	Maximum production length: 12500 mm L_d Non standard lengths from 3000 mm L_d **Minimum order quantity for all sizes:** 3 belts with 5 ribs or 4 belts with 4 ribs or 5 belts with 3 ribs or 8 belts with 2 ribs or a multiple thereof Weight: ≈ 0,555 kg/m per rib **Minimum order quantities for Aramid belts on request.**

Datum length ≙ pitch length. Other sizes on request.

optibelt
Power Transmission

Standard Range

optibelt *KB* Kraftbands with Wedge Belts to RMA / MPTA



Section	3V / 9J	5V / 15J	8V / 25J
$b_o \approx$ (mm)	9,0	15,0	25,0
h $\approx$ (mm)	9,9	15,1	25,5

Section 3V / 9J

Designation	Designation (outside length mm) L_a
3V 500	9J 1270
3V 530	9J 1346
3V 560	9J 1422
3V 600	9J 1524
3V 630	9J 1600
3V 670	9J 1702
3V 710	9J 1803
3V 750	9J 1905
3V 800	9J 2032
3V 850	9J 2159
3V 900	9J 2286
3V 950	9J 2413
3V 1000	9J 2540
3V 1060	9J 2692
3V 1120	9J 2845
3V 1180	9J 2997
3V 1250	9J 3175
3V 1320	9J 3353
3V 1400	9J 3556

Maximum production length: 4250 mm L_a
Non standard lengths from 1800 mm L_a
Minimum order quantity for special lengths:
9 belts with 5 ribs or
12 belts with 4 ribs or
16 belts with 3 ribs or
24 belts with 2 ribs
or a multiple thereof
Weight: ≈ 0,102 kg / m per rib
Minimum order quantities for Aramid belts on request.

Section 5V / 15J

Designation	Designation (outside length mm) L_a
5V 560	15J 1422
5V 600	15J 1524
5V 630	15J 1600
5V 670	15J 1702
5V 710	15J 1803
5V 750	15J 1905
5V 800	15J 2032
5V 850	15J 2159
5V 900	15J 2286
5V 950	15J 2413
5V 1000	15J 2540
5V 1060	15J 2692
5V 1120	15J 2845
5V 1180	15J 2997
5V 1250	15J 3175
5V 1320	15J 3353
5V 1400	15J 3556
5V 1500	15J 3810
5V 1600	15J 4064
5V 1700	15J 4318
5V 1800	15J 4572
5V 1900	15J 4826
5V 2000	15J 5080
5V 2120	15J 5385
5V 2240	15J 5690
5V 2360	15J 5994
5V 2500	15J 6350
5V 2650	15J 6731
5V 2800	15J 7112
5V 3000	15J 7620
5V 3150	15J 8001
5V 3350	15J 8509
5V 3550	15J 9017

Maximum production length: 10 000 mm L_a
Non standard lengths from 1800 mm L_a
Minimum order quantity for special lengths:
6 belts with 5 ribs or
7 belts with 4 ribs or
10 belts with 3 ribs or
15 belts with 2 ribs
or a multiple thereof
Weight: ≈ 0,252 kg / m per rib
Minimum order quantities for Aramid belts on request.

Section 8V / 25J

Designation	Designation (outside length mm) L_a
8V 1000	25J 2540
8V 1060	25J 2692
8V 1120	25J 2845
8V 1180	25J 2997
8V 1250	25J 3175
8V 1320	25J 3353
8V 1400	25J 3556
8V 1500	25J 3810
8V 1600	25J 4064
8V 1700	25J 4318
8V 1800	25J 4572
8V 1900	25J 4826
8V 2000	25J 5080
8V 2120	25J 5385
8V 2240	25J 5690
8V 2360	25J 5994
8V 2500	25J 6350
8V 2650	25J 6731
8V 2800	25J 7112
8V 3000	25J 7620
8V 3150	25J 8001
8V 3350	25J 8509
8V 3550	25J 9017
8V 3750	25J 9525
8V 4000	25J 10160
8V 4250	25J 10795
8V 4500	25J 11430
8V 4750	25J 12065

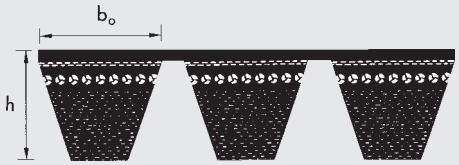
Maximum standard length: 15 000 mm L_a
Over 15 000 to 18 000 mm on request
Non standard lengths from 2540 mm L_a
Minimum order quantity for all sizes:
2 belts with 5 ribs or
2 belts with 4 ribs or
3 belts with 3 ribs
or a multiple thereof
Weight: ≈ 0,693 kg / m per rib
Minimum order quantities for Aramid belts on request.

Other sizes on request.

optibelt
Power Transmission

Standard Range

optibelt *KBX* Kraftbands – Raw Edge, Moulded Cogged – to USA Standard RMA/MPTA



Section	3VX/9JX	5VX/15JX
$b_o \approx$ (mm)	9,0	15,0
h $\approx$ (mm)	9,9	15,1

Section 3VX/9JX		Section 5VX/15JX	
Designation	Designation L_a (outside length mm)	Designation	Designation L_a (outside length mm)
3VX 500	9JX 1270	**5VX 500**	15JX 1270
3VX 530	9JX 1346	**5VX 530**	15JX 1346
3VX 560	9JX 1422	**5VX 560**	15JX 1422
3VX 600	9JX 1524	**5VX 600**	15JX 1524
3VX 630	9JX 1600	**5VX 630**	15JX 1600
3VX 670	9JX 1702	**5VX 670**	15JX 1702
3VX 710	9JX 1803	**5VX 710**	15JX 1803
3VX 750	9JX 1905	**5VX 750**	15JX 1905
3VX 800	9JX 2032	**5VX 800**	15JX 2032
3VX 850	9JX 2159	**5VX 850**	15JX 2159
3VX 900	9JX 2286	**5VX 900**	15JX 2286
3VX 950	9JX 2413	**5VX 950**	15JX 2413
3VX 1000	9JX 2540	**5VX 1000**	15JX 2540
3VX 1060	9JX 2692	**5VX 1060**	15JX 2692
3VX 1120	9JX 2845	**5VX 1120**	15JX 2845
3VX 1180	9JX 2997	**5VX 1180**	15JX 2997
3VX 1250	9JX 3175	**5VX 1250**	15JX 3175
3VX 1320	9JX 3353	**5VX 1320**	15JX 3353
3VX 1400	9JX 3556	**5VX 1400**	15JX 3556

Minimum order quantity on request.

Kraftbands with the Sections XPZ, XPA, XPB, AX/HAX and BX/HBX can be supplied on request.

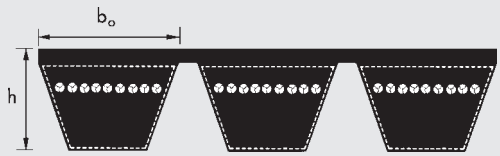
Weight: ≈ 0,117 kg/m per rib		Weight: ≈ 0,241 kg/m per rib	

Other sizes on request.

optibelt
Power Transmission

Standard Range

optibelt *KB* Kraftbands with Classical V-Belts to DIN/ISO, ASAE



Section	A/HA	B/HB	C/HC	D/HD
$b_o \approx$ (mm)	13,0	17,0	22,0	32,0
h $\approx$ (mm)	9,9	13,0	16,2	22,4

Section A/HA

(Section A) Inside length Belt No.	L_i (mm)	(Section HA) Outside length L_a (mm)
47	1200	1236
51	1300	1336
56	1422	1458
57	1450	1486
59	1500	1536
64	1625	1661
67	1700	1736
71	1800	1836
75	1900	1936
79	2000	2036
88	2240	2276
98	2500	2536
100	2540	2570
104	2650	2686
112	2845	2881
120	3048	3084
128	3250	3286
144	3658	3694
158	4000	4036
167	4250	4286
187	4750	4786

Maximum production length: 8 000 mm
Non standard lengths from 1800 mm
Minimum order quantity for non listed sizes:
1200 to 2000 mm
6 belts with 5 ribs or
8 belts with 4 ribs or
10 belts with 3 ribs or
16 belts with 2 ribs
or a multiple thereof
2001 to 8000 mm
6 belts with 5 ribs or
8 belts with 4 ribs or
11 belts with 3 ribs or
16 belts with 2 ribs
or a multiple thereof
Weight: ≈ 0,163 kg/m per rib
Minimum order quantities for Aramid belts on request.

Section B/HB

(Section B) Inside length Belt No.	L_i (mm)	(Section HB) Outside length L_a (mm)	(Section B) Inside length Belt No.	L_i (mm)	(Section HB) Outside length L_a (mm)
47	1200	1262	146	3700	3762
51	1300	1362	148	3750	3812
55	1400	1462	158	4000	4062
59	1500	1562	167	4250	4312
61	1550	1612	177	4500	4562
63	1600	1662	187	4750	4812
64	1625	1687	197	5000	5062
67	1700	1762	208	5300	5362
71	1800	1862	220	5600	5662
73	1850	1912			
75	1900	1962			
79	2000	2062			
83	2100	2162			
88	2240	2302			
91	2300	2362			
94½	2400	2462			
98	2500	2562			
102	2600	2662			
106	2700	2762			
112	2845	2907			
118	3000	3062			
120	3048	3110			
128	3250	3312			
132	3350	3412			
140	3550	3612			

Maximum production length: 10000 mm
Non standard lengths from 1800 mm
Minimum order quantity for non listed sizes:
5 belts with 5 ribs or
6 belts with 4 ribs or
9 belts with 3 ribs or
13 belts with 2 ribs
or a multiple thereof
Weight: 1≈ 0,266 kg/m per rib
Minimum order quantities for Aramid belts on request.

Section C/HC

(Section C) Inside length Belt No.	L_i (mm)	(Section HC) Outside length L_a (mm)
90	2286	2361
98	2500	2575
108	2750	2825
120	3048	3123
128	3250	3325
140	3550	3625
146	3700	3775
151	3850	3925
167	4250	4325
177	4500	4575
187	4750	4825
197	5000	5075
208	5300	5375
220	5600	5675
236	6000	6075
248	6300	6375

Max. production length: 12 000 mm
Non standard lengths
from 2286 mm
Minimum order quantity for special lengths:
2286 to 10 000 mm
4 belts with 5 ribs or
5 belts with 4 ribs or
6 belts with 3 ribs or
10 belts with 2 ribs
or a multiple thereof
10 001 to 12 000 mm
3 belts with 5 ribs or
4 belts with 4 ribs or
5 belts with 3 ribs or
8 belts with 2 ribs
or a multiple thereof
Weight: ≈ 0,447 kg/m per rib
Minimum order quantities for Aramid belts on request.

Section D/HD

(Section D) Inside length Belt No.	L_i (mm)	(Section HD) Outside length L_a (mm)
98	2500	2611
110	2800	2911
120	3048	3159
128	3250	3361
144	3658	3769
158	4000	4111
162	4115	4226
173	4394	4505
180	4572	4683
195	4953	5064
210	5334	5445
225	5715	5826
240	6096	6207
255	6477	6588
270	6858	6969
285	7239	7350
300	7620	7731
315	8000	8111
330	8382	8493
345	8763	8874
360	9144	9255
390	9906	10017
420	10668	10779
450	11430	11541
480	12200	12311
540	13716	13827
600	15240	15351
660	16764	16875
700	17780	17891

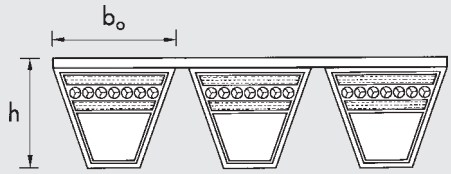
Max. production length: 12 200 mm
Non standard lengths
from 2500 mm
Minimum order quantities for all sizes:
2 belts with 5 ribs or
2 belts with 4 ribs or
3 belts with 3 ribs or
5 belts with 2 ribs
or a multiple thereof
Weight: ≈ 0,798 kg/m per rib
Minimum order quantities for Aramid belts on request.

Other sizes on request.

optibelt
Power Transmission

Standard Range

optibelt RED POWER II Kraftbands with High Performance Wedge Belts DIN / ISO



Section	SPZ	SPA	SPB	SPC
$b_o \approx$ (mm)	9,7	12,7	16,5	22,0
h $\approx$ (mm)	10,5	12,5	15,6	22,6

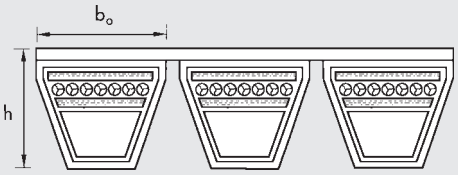
Section SPZ	Section SPA	Section SPB	Section SPC
Datum length ISO L_d (mm)	Datum length ISO L_d (mm)	Datum length ISO L_d (mm)	Datum length ISO L_d (mm)
1250	1250	2000	3000
1400	1400	2120	3150
1500	1500	2240	3350
1600	1600	2360	3550
1700	1700	2500	3750
1800	1800	2650	4000
1900	1900	2800	4250
2000	2000	3000	4500
2120	2120	3150	4750
2240	2240	3350	5000
2360	2360	3550	5300
2500	2500	3750	5600
2650	2650	4000	6000
2800	2800	4250	6300
3000	3000	4500	6700
3150	3150	4750	7100
3350	3350	5000	7500
3550	3550	5300	8000
	3750	5600	
	4000	6000	
	4250	6300	
	4500	6700	
		7100	
		7500	
		8000	
Maximum production length: 4 500 mm L_d Non standard lengths from 1800 mm L_d Minimum order quantity for special lengths: 8 belts with 5 ribs or 10 belts with 4 ribs or 14 belts with 3 ribs or 21 belts with 2 ribs or a multiple thereof Weight: ≈ 0,120 kg/m per rib	Maximum production length: 4 500 mm L_d Non standard lengths from 1800 mm L_d Minimum order quantity for special lengths: 6 belts with 5 ribs or 8 belts with 4 ribs or 11 belts with 3 ribs or 16 belts with 2 ribs or a multiple thereof Weight: ≈ 0,166 kg/m per rib	Maximum production length: 8 000 mm L_d Non standard lengths from 2000 mm L_d Minimum order quantity for special lengths: 12 belts with 5 ribs or 15 belts with 4 ribs or 20 belts with 3 ribs or 30 belts with 2 ribs or a multiple thereof Weight: ≈ 0,261 kg/m per rib	Maximum production length: 8 000 mm L_d Non standard lengths from 3000 mm L_d Minimum order quantity for all sizes: 8 belts with 5 ribs or 11 belts with 4 ribs or 14 belts with 3 ribs or 22 belts with 2 ribs or a multiple thereof Weight: ≈ 0,555 kg/m per rib

Datum length L_d ≙ pitch length L_w/L_p. Other sizes on request.

optibelt
Power Transmission

Standard Range

optibelt *RED POWER II* Kraftbands with High Performance Wedge Belts DIN / ISO, RMA / MPTA



Section	3V / 9J	5V / 15J	8V / 25J
$b_o \approx$ (mm)	9,0	15,0	25,0
h $\approx$ (mm)	9,9	15,1	25,5

Section 3V / 9J

Designation	Designation (outside length mm) L_a
3V 500	9J 1270
3V 530	9J 1346
3V 560	9J 1422
3V 600	9J 1524
3V 630	9J 1600
3V 670	9J 1702
3V 710	9J 1803
3V 750	9J 1905
3V 800	9J 2032
3V 850	9J 2159
3V 900	9J 2286
3V 950	9J 2413
3V 1000	9J 2540
3V 1060	9J 2692
3V 1120	9J 2845
3V 1180	9J 2997
3V 1250	9J 3175
3V 1320	9J 3353
3V 1400	9J 3556

Maximum production length: 4 000 mm L_a
Non standard lengths from 1800 mm L_a
Minimum order quantities for special lengths:

1270 to 2032 mm L_a	Over 2032 mm L_a
19 belts with 5 ribs or	23 belts with 5 ribs or
24 belts with 4 ribs or	29 belts with 4 ribs or
32 belts with 3 ribs or	38 belts with 3 ribs or
48 belts with 2 ribs	58 belts with 2 ribs
or a multiple thereof	or a multiple thereof

Weight:
≈ 0,102 kg / m per rib

Section 5V / 15J

Designation	Designation (outside length mm) L_a
5V 560	15J 1422
5V 600	15J 1524
5V 630	15J 1600
5V 670	15J 1702
5V 710	15J 1803
5V 750	15J 1905
5V 800	15J 2032
5V 850	15J 2159
5V 900	15J 2286
5V 950	15J 2413
5V 1000	15J 2540
5V 1060	15J 2692
5V 1120	15J 2845
5V 1180	15J 2997
5V 1250	15J 3175
5V 1320	15J 3353
5V 1400	15J 3556
5V 1500	15J 3810
5V 1600	15J 4064
5V 1700	15J 4318
5V 1800	15J 4572
5V 1900	15J 4826
5V 2000	15J 5080
5V 2120	15J 5385
5V 2240	15J 5690
5V 2360	15J 5994
5V 2500	15J 6350
5V 2650	15J 6731
5V 2800	15J 7112
5V 3000	15J 7620
5V 3150	15J 8001

Maximum production length: 8 000 mm L_a
Non standard lengths from 1800 mm L_a
Minimum order quantities for special lengths:

1270 to 2032 mm L_a	Over 2032 mm L_a
12 belts with 5 ribs or	13 belts with 5 ribs or
15 belts with 4 ribs or	16 belts with 4 ribs or
20 belts with 3 ribs or	22 belts with 3 ribs or
30 belts with 2 ribs	33 belts with 2 ribs
or a multiple thereof	or a multiple thereof

Weight:
≈ 0,252 kg / m per rib

Section 8V / 25J

Designation	Designation (outside length mm) L_a
8V 1000	25J 2540
8V 1060	25J 2692
8V 1120	25J 2845
8V 1180	25J 2997
8V 1250	25J 3175
8V 1320	25J 3353
8V 1400	25J 3556
8V 1500	25J 3810
8V 1600	25J 4064
8V 1700	25J 4318
8V 1800	25J 4572
8V 1900	25J 4826
8V 2000	25J 5080
8V 2120	25J 5385
8V 2240	25J 5690
8V 2360	25J 5994
8V 2500	25J 6350
8V 2650	25J 6731
8V 2800	25J 7112
8V 3000	25J 7620
8V 3150	25J 8001
8V 3350	25J 8509

Maximum production length: 8 500 mm L_a
Non standard lengths from 2540 mm L_a
Minimum order quantities for all sizes:
8 belts with 5 ribs or
10 belts with 4 ribs or
13 belts with 3 ribs or
20 belts with 2 ribs
or a multiple thereof

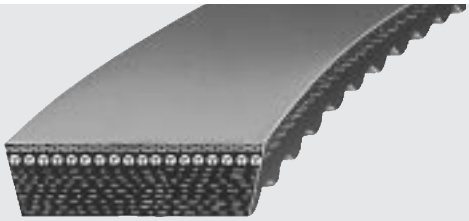
Weight:
≈ 0,693 kg / m per rib

Other sizes on request.

optibelt
Power Transmission

Standard Range

optibelt SUPER VX Variable Speed Belts – Raw Edge, Moulded Cogged – DIN 7719/ISO 1604



Section / Inside length L_i (mm)	ISO-Designation (Datum length) L_d
13 x 5	
468	
500	
17 x 5	
426	W 16 450
476	W 16 500
536	W 16 560
570	W 16 600
606	W 16 630
776	W 16 800
21 x 6	
530	W 20 560
600	W 20 630
610	W 20 640
675	W 20 710
770	W 20 800
870	W 20 900
970	W 20 1000
1220	W 20 1250
22 x 8	
485	
525	
565	
650	
700	
750	
800	
850	
900	
950	
1000	
1060	
1185	

Section / Inside length L_i (mm)	ISO-Designation (Datum length) L_d
26 x 8	
655	W 25 690
672	W 25 710
710	W 25 750
750	W 25 790
762	W 25 800
800	W 25 840
862	W 25 900
962	W 25 1000
1082	W 25 1120
28 x 8	
600	
650	
700	
750	
800	
850	
900	
950	
1000	
1060	
1120	
1180	
1250	
1320	
1400	
1450	
1500	
30 x 10	
650	
665	
700	
800	
850	
875	
900	
950	
1000	
1035	
1050	
1120	
1200	
1320	
1340	
1500	
1600	

Section / Inside length L_i (mm)	ISO-Designation (Datum length) L_d
32 x 10	
750	W 31,5 800
790	W 31,5 840
820	W 31,5 870
850	W 31,5 900
900	W 31,5 950
950	W 31,5 1000
1000	W 31,5 1050
1073	W 31,5 1120
1120	W 31,5 1170
1180	W 31,5 1230
1200	W 31,5 1250
1353	W 31,5 1400
37 x 10	
660	
800	
850	
900	
950	
1000	
1020	
1060	
1120	
1180	
1250	
1320	
1400	
1500	
1600	
1700	
1800	
41 x 13	
925	W 40 990
1000	W 40 1060
1040	W 40 1100
1060	W 40 1120
1120	W 40 1180
1180	W 40 1240
1190	W 40 1250
1250	W 40 1310
1340	W 40 1400
1440	W 40 1500
1600	W 40 1660
1740	W 40 1800
1940	W 40 2000

Section / Inside length L_i (mm)	ISO-Designation (Datum length) L_d
47 x 13	
1000	
1060	
1120	
1180	
1250	
1320	
1400	
1500	
1600	
1700	
1800	
52 x 16	
1180	W 50 1250
1250	W 50 1320
1325	W 50 1400
1400	W 50 1480
1525	W 50 1600
1600	W 50 1680
1725	W 50 1800
1925	W 50 2000
2165	W 50 2240
2240	W 50 2320
55 x 16	
1400	
1500	
1600	
1700	
1800	
65 x 20	
1706	W 63 1800
1906	W 63 2000

Section / Inside length L_i (mm)	ISO-Designation (Datum length) L_d
70 x 18	
1600	
1700	
1800	
1900	
2000	
2240	
2500	

Standard production data
Belt lengths up to 5000 mm
Belt top widths up to 100 mm
Belt thicknesses 5 to 25 mm
24° angle for sections 13 x 5; 17 x 5.
30° angle for sections 52 x 16; 55 x 16; 65 x 20 and 70 x 18.
27° angle for all other sections. Sizes in accordance with USA Standard RMA/MTPA and variable speed belts with angles of 22° to 42° can be supplied on request. Minimum order quantities are necessary.

Other sizes and double cogged variable speed belts can be supplied on request.

Tolerances

Length	±	1 % of the nominal belt length
Angle	±	1.5° of the nominal angle
Height	≤ 8 mm	= ± 0.8 mm
	> 8 to 20 mm	= ± 1.0 mm
	> 20 mm	= ± 1.5 mm
Width	±	0.75 mm

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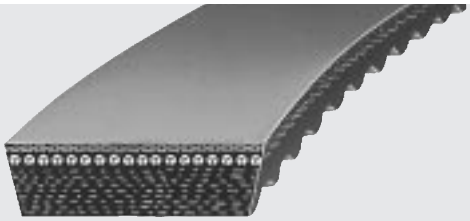
Power Transmission

Standard Range

optibelt *SUPER VX* Variable Speed Belts – Raw Edge, Moulded Cogged – According to USA-Standard RMA / MPTA



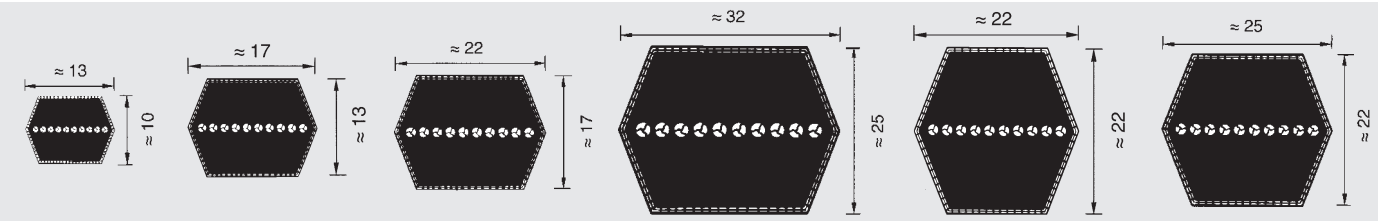
RMA / MPTA designation	RMA / MPTA designation	RMA / MPTA designation	RMA / MPTA designation
1422 V 235	1922 V 751	2530 V 934	3230 V 630
1422 V 240	1922 V 756	2530 V 990	3230 V 670
1422 V 270			3230 V 710
1422 V 290	1926 V 250	2830 V 337	3230 V 723
1422 V 300	1926 V 275	2830 V 363	3230 V 750
1422 V 330	1926 V 290	2830 V 366	3230 V 800
1422 V 340	1926 V 407	2830 V 367	3230 V 850
1422 V 360	1926 V 415	2830 V 393	
1422 V 400	1926 V 427	2830 V 396	3432 V 450
1422 V 420		2830 V 422	3432 V 456
1422 V 440	2230 V 266		3432 V 480
1422 V 460	2230 V 273	2926 V 471	3432 V 528
1422 V 470	2230 V 275	2926 V 486	3432 V 534
1422 V 480	2230 V 326	2926 V 521	
1422 V 540	2230 V 375	2926 V 546	4036 V 541
1422 V 600		2926 V 574	4036 V 574
1422 V 660	2322 V 329	2926 V 586	
	2322 V 347	2926 V 606	4430 V 530
1430 V 215	2322 V 364	2926 V 616	4430 V 548
	2322 V 396	2926 V 636	4430 V 555
1922 V 277	2322 V 421	2926 V 646	4430 V 560
1922 V 282	2322 V 434	2926 V 666	4430 V 570
1922 V 298	2322 V 441	2926 V 686	4430 V 578
1922 V 321	2322 V 461	2926 V 726	4430 V 600
1922 V 332	2322 V 481	2926 V 750	4430 V 610
1922 V 338	2322 V 486	2926 V 776	4430 V 630
1922 V 363	2322 V 521	2926 V 786	4430 V 652
1922 V 381	2322 V 541		4430 V 660
1922 V 386	2322 V 601	3226 V 392	4430 V 670
1922 V 403	2322 V 661	3226 V 400	4430 V 690
1922 V 426	2322 V 681	3226 V 433	4430 V 700
1922 V 443	2322 V 701	3226 V 450	4430 V 710
1922 V 454	2322 V 801	3226 V 505	4430 V 730
1922 V 460		3226 V 545	4430 V 750
1922 V 484	2426 V 353	3226 V 585	4430 V 790
1922 V 526	2426 V 363	3226 V 603	4430 V 800
1922 V 544		3226 V 650	4430 V 850
1922 V 604	2530 V 500	3226 V 663	
1922 V 630	2530 V 530	3226 V 723	4436 V 525
1922 V 646	2530 V 560	3226 V 783	4436 V 551
1922 V 666	2530 V 600	3226 V 843	4436 V 561
1922 V 686	2530 V 630		4436 V 576
1922 V 706	2530 V 670	3230 V 419	4436 V 646
1922 V 721	2530 V 710	3230 V 528	4436 V 750
1922 V 726	2530 V 750	3230 V 560	
	2530 V 790	3230 V 585	
	2530 V 800	3230 V 600	

Standard products – minimum order quantity on request. Other sizes and double cogged variable speed belts on request.

optibelt
Power Transmission

Standard Range

optibelt DK Double Section V-Belts to DIN / ISO, ASAE



AA / HAA **BB / HBB** **CC / HCC** **DD / HDD** **22 x 22** **25 x 22**

Section AA / HAA		Section BB / HBB				Section CC / HCC		Section DD / HDD	
Reference length (mm)	Belt No.	Reference length (mm)	Belt No.	Reference length (mm)	Belt No.	Reference length (mm)	Belt No.	Reference length (mm)	Belt No.
2000	77	1980	75	3750	145	2280	86	upon request	
2032	78	2180	83	4010	155	2500	94		
2370	91	2300	88	4040	156	2800	106		
2500	96	2370	90	4200	162	3200	122		
2650	102	2500	95	4470	173	3310	126		
2667	103	2540	97	4500	174	3765	144		
2800	108	2600	99	4750	184	4000	153		
3300	128	2650	101	5000	194	4216	162		
3920	152	2740	105	5639	221	4300	165		
		2800	107	6900	270	4500	173		
		2850	109			5000	193		
		2900	111			5300	204		
		2920	112			5340	206		
		3000	115			5750	224		
		3030	116						
		3150	121						
		3250	125						
		3280	126						
		3325	128						
		3390	131						
		3450	133						
		3500	135						
		3550	137						
		3658	141						
		3730	144						
Weight: ≈ 0,150 kg / m		Weight: ≈ 0,250 kg / m				Weight: ≈ 0,440 kg / m		Weight: ≈ 0,935 kg / m	
								Section 22 x 22	
								5180 5220 5850 6270	
								Weight: ≈ 0,511 kg / m	
								Section 25 x 22	
								upon request	
								Weight: ≈ 0,625 kg / m	

Non standard lengths and special constructions from:

Section AA / HAA 1350 to 28 000 mm
Section BB / HBB 1350 to 28 000 mm
Section CC / HCC 1600 to 28 000 mm
Section DD / HDD 3000 to 10 000 mm
Section 22 x 22 3000 to 10 000 mm
Section 25 x 22 1600 to 28 000 mm

Minimum order quantity for special lengths on request.

Conversion factors from the belt number to the reference length:

Section AA / HAA – Belt No. x 25,4 = mm + 53 mm

Section BB / HBB – (up to Belt No. 210)
Belt No. x 25,4 = mm + 74 mm
(over Belt No. 210)
Belt No. x 25,4 = mm + 36 mm

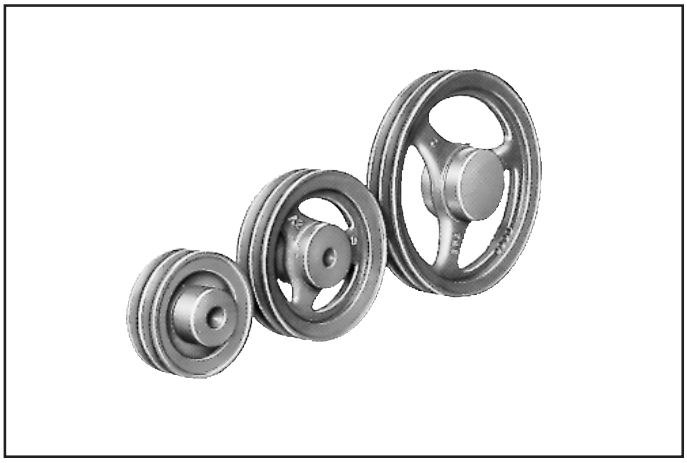
Section CC / HCC – (up to Belt No. 210)
Belt No. x 25,4 = mm + 107 mm
(over Belt No. 210)
Belt No. x 25,4 = mm + 56 mm

Section DD / HDD – (up to Belt No. 210)
Belt No. x 25,4 = mm + 132 mm
(over Belt No. 210)
Belt No. x 25,4 = mm + 69 mm

optibelt
Power Transmission

Standard Range

optibelt *KS* V-Grooved Pulleys – optibelt *TB* Taper Bushes
optibelt *RE* Variable Speed Pulleys

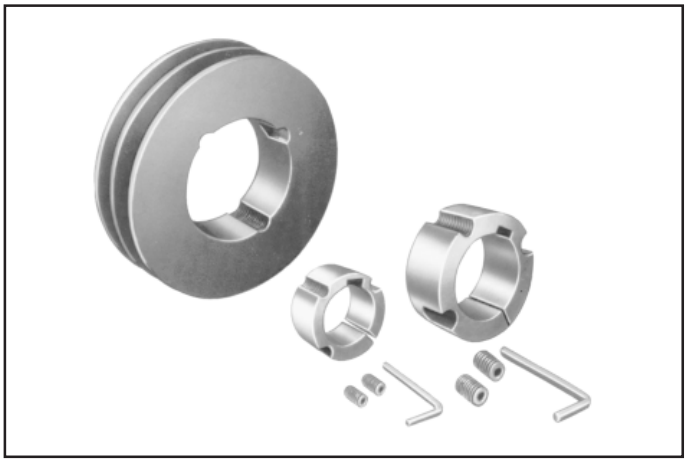


Optibelt KS V-Grooved Pulleys

Optibelt-KS V-Grooved Pulleys are available in pilot bored and for taper bush versions for all common belt sections.

Optibelt RE Variable Speed Pulleys

Optibelt-RE Variable Speed Pulleys allow for a multi-stage speed change between driving and driven pulley. They can be used with classical as well as variable speed belts.

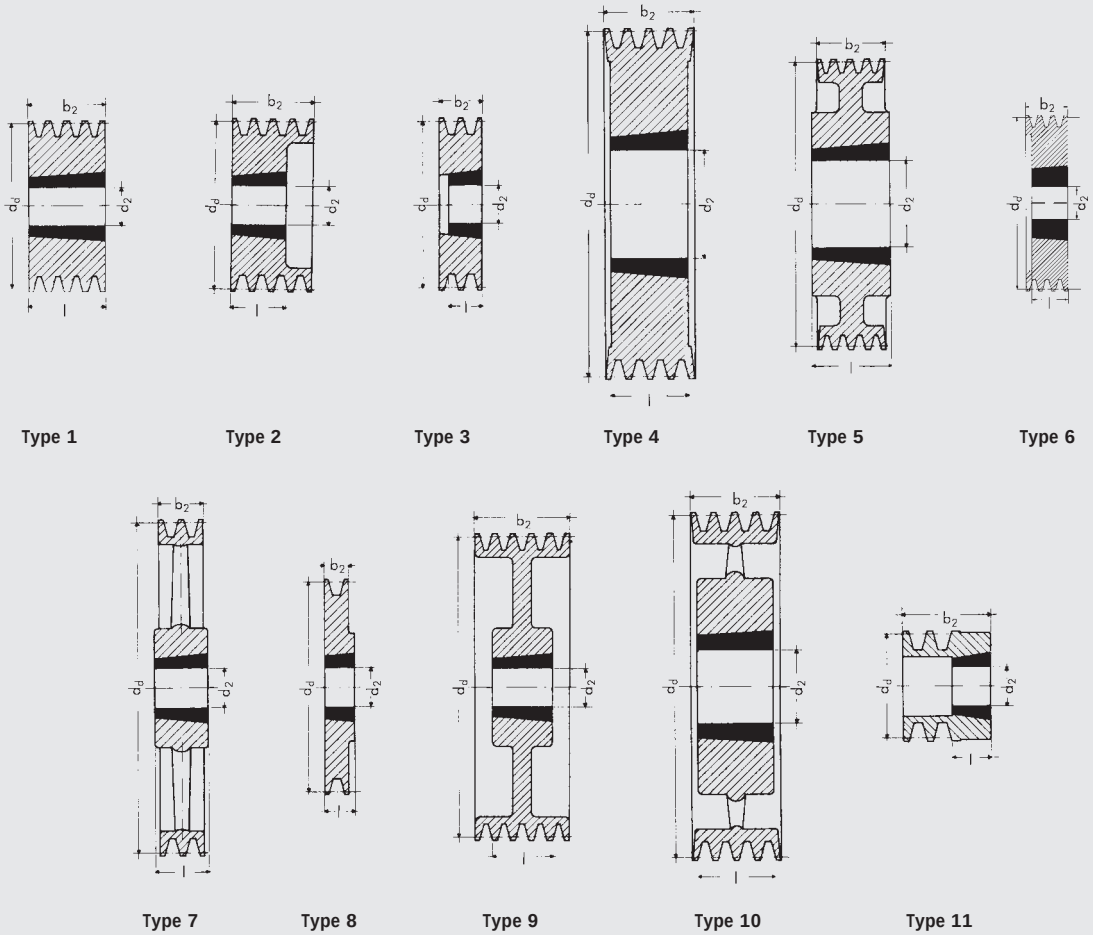


Optibelt TB Taper Bushes

Optibelt TB Taper Bushes are used for simple installations of pulleys on shafts with or without keyway.

Standard Range

optibelt KS V-Grooved Pulleys, Types



Balancing

V-grooved pulleys are statically balanced in accordance with the guidelines in VDI 2060, as standard:

Quality level Q 16; for dia. $d_d \geq 400$ mm at n = 1500 r.p.m.; for dia. $d_d > 400$ mm at v = 30 m/s.

The pulleys are balanced without keys on smooth balancing spindles. Machines whose runners are balanced with a keyway entered in the end of the shaft have to be ordered with the following remark: “Balanced with pilot bore and empty key on smooth balancing spindles without fitted keyway.”

Balancing in one plane to quality level Q 6.3 on request.

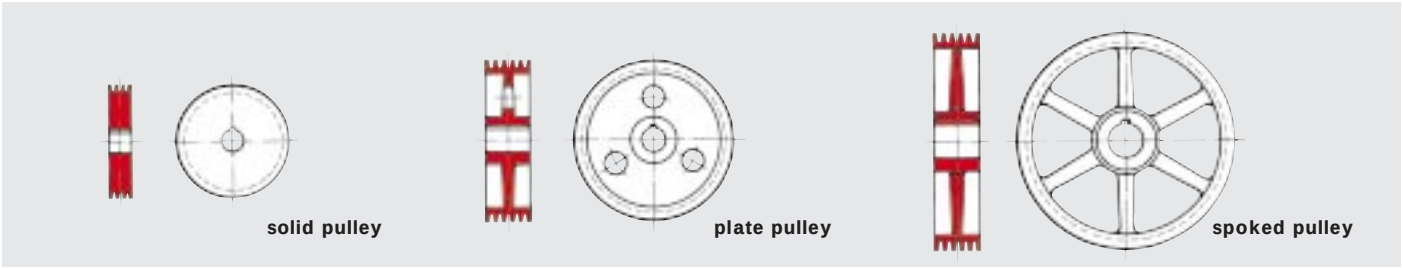
We recommend balancing in two planes to quality level Q 6.3, or finer, when v ≥ > 30 m/s or the ratio or datum diameter to face width d_d: b_2 is < 4 at v > 20 m/s.

In such cases, the pulley operational speed must be stated.

Special pulleys and custom designed pulleys on request

Standard Range

Pulleys – Standards – Design Criteria – Types



An essential component in V-belt drive systems is the V-belt pulley, or V- pulley as it is usually termed. These pulleys are predominantly made from GG 20 cast iron and are available pilot bored, finished bored or with a taper bush.

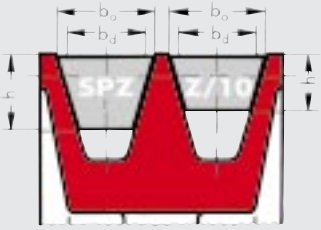
The British and DIN Standards are based on the ISO Standard as are the standards of all industrialised countries.

ISO 4183 Grooved Pulleys for Classical V-Belts and Wedge Belts.

V-belt pulleys with grooves for wedge belts to BS 3790:1981 and DIN 7753 Part 1 are also suitable for classical V-belts with the same datum width b_d to BS 3790:1981 and DIN 2215. These are known as dual duty pulleys.

Example

	Belt		Groove
Section	SPZ	Z/10	SPZ – Z/10
Top width	$b_o \approx 9,7$	$b_o \approx 10$	$b_1 \approx 9,7$
Datum width	$b_d = 8,5$		$b_d = 8,5$
Belt height/ groove depth	$h \approx 8$	$h \approx 6$	$t_{min} = 11$



The following should be observed in the selection of pulleys:

- Use standard pulley diameters.
  If design considerations make this impossible, a standard diameter should, as a minimum requirement, be chosen for the largest pulley in the drive.
- Do not select a pulley smaller than the minimum recommended size in the interest of belt service life and overall drive efficiency.
- If manufacturing your own pulleys, the overall shape and machining must conform to the relevant Standards.
- Groove pulleys are generally balanced in one plane (statically), to quality level Q 16 as in VDI 2060.
- Balancing in two planes (dynamically), quality level Q 6.3, becomes necessary if:
  $v > 30$ m/s or
  the ratio of datum diameter to pulley face width d_d:b_2 is < 4 at $v > 20$ m/s.

Note: The timely replacement of pulleys damaged by corrosion or erosion prevents premature failure of the belts.

Furthermore, it is essential that the belts should never run with their inside circumference in contact with the bottom of the groove as this can quickly lead to damage and premature failure (Exception: special drives such as V-flat drives).

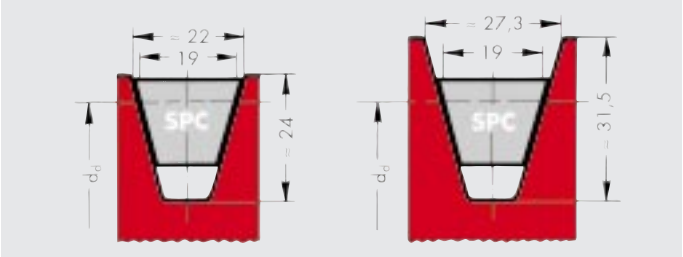
Deep Grooved Pulleys

Deep grooved pulleys are employed for special drive situations such as,

- the use of guide idlers
- twist drives or
- drives subject to severe vibration.

The increased groove top width "b_1" and depth "t" of deep grooved pulleys improves the running characteristics of the belt, particularly as it enters the groove. Belt turnover and run out are prevented.

Deep Grooved Pulleys are not suitable for use with Kraftbands



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Standard Range

V-Grooved Pulleys DIN 2211 Page 1 for Wedge Belts and DIN 2217 Page 1 for Classical V-Belts

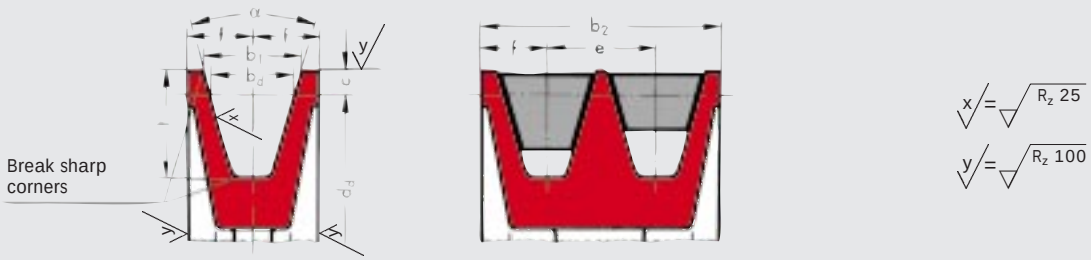

Table 8

V-belt Section	ISO designation	–	Y*	–	Z*	A*	B*	–	C*	–	D	E
	DIN 2215 designation	**5**	**6**	**8**	**10**	**13**	**17**	**20**	**22**	**25**	**32**	**40**
Wedge belt Section	DIN 7753 Part 1 and ISO designation	–	–	–	SPZ*	SPA*	SPB*	–	SPC*	–	–	–
b_d		4.2	5.3	6.7	8.5	11.0	14.0	17.0	19.0	21.0	27.0	32.0
$b_1 \approx$		5.0	6.3	8.0	9.7	12.7	16.3	20.0	22.0	25.0	32.0	40.0
c		1.3	1.6	2.0	2.0	2.8	3.5	5.1	4.8	6.3	8.1	12.0
e		6 ± 0.3	8 ± 0.3	10 ± 0.3	12 ± 0.3	15 ± 0.3	19 ± 0.4	23 ± 0.4	25.5 ± 0.5	29 ± 0.5	37 ± 0.6	44.5 ± 0.7
f		5 ± 0.5	6 ± 0.5	7 ± 0.6	8 ± 0.6	10 ± 0.6	12.5 ± 0.8	15 ± 0.8	17 ± 1.0	19 ± 1.0	24 ± 2.0	29 ± 2.0
t	Endless belts	6 $^{+0.6}_{0}$	7 $^{+0.6}_{0}$	9 $^{+0.6}_{0}$	11 $^{+0.6}_{0}$	14 $^{+0.6}_{0}$	18 $^{+0,6}_{0}$	18 $^{+0.6}_{0}$	24 $^{+0.6}_{0}$	22 $^{+0.6}_{0}$	28 $^{+0.6}_{0}$	33 $^{+0.6}_{0}$
	Open ended V-belting DIN 2216							21 $^{+0.6}_{0}$		26 $^{+0.6}_{0}$	33 $^{+0.6}_{0}$	38 $^{+0.6}_{0}$
$d_{d\ min}$	V-Belts	20	28	40	50	71	112	160	180	250	355	500
	Wedge belts	–	–	–	63	90	140	–	224	–	–	–
α		32° ± 1° $d_d \leq 50$	32° ± 1° $d_d \leq 63$	32° ± 1° $d_d \leq 75$	–	–	–	–	–	–	–	–
		–	–	–	34° ± 1° $d_d \leq 80$	34° ± 1° $d_d \leq 118$	34° ± 1° $d_d \leq 190$	34° ± 1° $d_d \leq 250$	34° ± 1° $d_d \leq 315$	34° ± 1° $d_d \leq 355$	–	–
		36° ± 1° $d_d > 50$	36° ± 1° $d_d > 63$	36° ± 1° $d_d > 75$	–	–	–	–	–	–	36° ± 30' $d_d \leq 500$	36° ± 30' $d_d \leq 630$
		–	–	–	38° ± 1° $d_d > 80$	38° ± 1° $d_d > 118$	38° ± 1° $d_d > 190$	38° ± 1° $d_d > 250$	38° ± 30' $d_d > 315$	38° ± 30' $d_d > 355$	38° ± 30' $d_d > 500$	38° ± 30' $d_d > 630$
Face width for z number of grooves $b_2 = (z - 1)\ e + 2\ f$	**1**	10.0	12.0	14.0	16.0	20.0	25.0	30.0	34.0	38.0	48.0	58.0
	2	16.0	20.0	24.0	28.0	35.0	44.0	53.0	59.5	67.0	85.0	102.5
	3	22.0	28.0	34.0	40.0	50.0	63.0	76.0	85.0	96.0	122.0	147.0
	4	28.0	36.0	44.0	52.0	65.0	82.0	99.0	110.5	125.0	159.0	191.5
	5	34.0	44.0	54.0	64.0	80.0	101.0	122.0	136.0	154.0	196.0	236.0
	6	40.0	52.0	64.0	76.0	95.0	120.0	145.0	161.5	183.0	233.0	280.5
	7		60.0	74.0	88.0	110.0	139.0	168.0	187.0	212.0	270.0	325.0
	8			84.0	100.0	125.0	158.0	191.0	212.5	241.0	307.0	369.5
	9				112.0	140.0	177.0	214.0	238.0	270.0	344.0	414.0
	10					155.0	196.0	237.0	263.5	299.0	381.0	458.5
	11						215.0	260.0	289.0	328.0	418.0	503.0
	12							283.0	314.5	357.0	455.0	547.5

(Figures in mm)

* These V-pulleys also accept Optibelt Super TX M=S V-belts.

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Standard Range

V-Grooved Pulleys DIN 2211 Page 1 for Wedge Belts and DIN 2217 Page 1 for Classical V-Belts

Table 9

V-belt section	ISO designation	–	Y	–	Z	A	B	–	C	–	D	E	Datum diameter d_d		Run out and side wobble tolerance
	DIN 2215 designation	5	6	8	10	13	17	20	22	25	32	40			
Wedge belt section	DIN 7753 Part 1 and ISO 4184 designation	–	–	–	SPZ	SPA	SPB	–	SPC	–	–	–	min	max	
Datum diameter d_d		20.0 22.0 25.0 28.0 31.5 35.5 40.0	 28.0 31.5 35.5 40.0	 40	 40▪	 	 	 	 	 	 	 	20.0 22.0 25.0 28.0 31.5 35.5 40.0	20.4 22.4 25.4 28.4 32.0 36.1 40.6	
		45.0 50.0 56.0 63.0	45.0 50.0 56.0 63.0	45 50 56 63	**45▪** **50▪** **56▪** **63** **67**	 **63▪** **67▪**	 	 	 	 	 	 	45.0 50.0 56.0 63.0 67.0	45.7 50.8 56.9 64.0 68.0	0.2
		71.0 80.0 	71.0 80.0 90.0 100.0	71 80 90 100	**71** **75** **80** **85** **90** **95** **100** **106**	**71▪** **75▪** **80▪** **85▪** **90** **95** **100** **106**	 **90▪** **95▪** **100▪** **106▪**	 	 	 	 	 	71.0 75.0 80.0 85.0 90.0 95.0 100.0 106.0	72.1 76.1 81.3 86.3 91.4 96.4 101.6 107.6	
		      	112.0 125.0 	112 125 140 160	**112** **118** **125** **132** **140** **150** **160**	**112** **118** **125** **132** **140** **150** **160**	**112▪** **118▪** **125▪** **132▪** **140** **150** **160**	 160	 140• 150• 160•	 	 	 	112.0 118.0 125.0 132.0 140.0 150.0 160.0	113.8 119.9 127.0 134.1 142.2 152.4 162.6	0.3
		      	 	 180 200 	**170** **180** **190** **200** **212** **224** **250**	**170** **180** **190** **200** **212** **224** **225** **236** **250**	**170** **180** **190** **200** **212** **224** **225** **236** **250** **265**	 180 200 224 250	 **180▪** 190▪ **200▪** **212▪** **224** **225** **236** **250** **265**	 250	 	 	170.0 180.0 190.0 200.0 212.0 224.0 225.0 236.0 250.0 265.0	172.7 182.9 193.0 203.2 215.4 227.6 228.6 239.8 254.0 269.0	0.4
		      	 	 	280 **300** **315** **355** **400**	**280** **300** **315** **355** **400**	**280** **300** **315** **335** **355** **375** **400** **425**	280 315 355 400 	**280** **300** **315** **335** **355** **375** **400** **425**	280 315 355 400 	 355 400 	 	280.0 300.0 315.0 335.0 355.0 375.0 400.0 425.0	284.5 304.8 320.0 340.0 360.7 380.7 406.4 431.4	0.5
		      	 	 	450 **500** **560** **630**	**450** **500** **560** **630**	**450** **500** **560** **630**	450 500 560 630	**450** **475** **500** **560** **630**	450 500 560 630	450 500 560 630	 500 560 630	450.0 475.0 500.0 560.0 630.0	457.2 482.2 508.0 569.0 640.1	0.6
		      	 	 	710	710 800 900 1000	**710** **800** **900** **1000**	710 800 900 1000	**710** **800** 900 **1000**	710 800 900 1000	710 800 900 1000	710 800 900 1000	710.0 800.0 900.0 1000.0	721.4 812.8 914.4 1016.0	0.8
		      	 	 	 	 	 	1120 1250 1400 1600	1120 **1250** 1400 1600	1120 1250 1400 1600	1120 1250 1400 1600	1120 1250 1400 1600	1120.0 1250.0 1400.0 1600.0	1137.9 1270.0 1422.4 1625.6	1.0
		      	 	 	 	 	 	1800 2000	1800 2000	1800 2000	1800 2000	1800 2000	1800.0 2000.0	1828.8 2032.0	1.2
Admissible datum diameter variations relative to one another (mm)		0.3			0.4			0.6					—		

For further details see standard DIN 2211 Page 1 and DIN 2217 Page 1. These V-grooved pulleys also accept Optibelt Super TX M=S V-belts.
Figures in bold type are the preferred datum diameters. For classical V-belts only. For Optibelt Super TX M=S wedge belts.

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Standard Range
V-Grooved Pulleys USA Standard RMA / MPTA for Wedge Belts

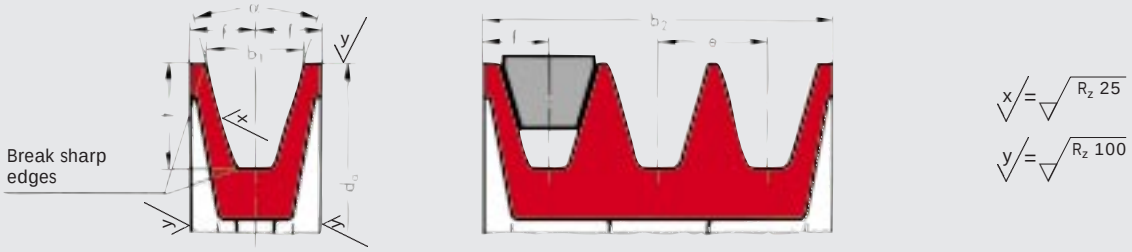

Table 10

Belt section USA Standard RMA / MPTA		**3V / 9N**	**5V / 15N**	**8V / 25N**
b_1		8.89 ± 0.13	15.24 ± 0.13	25.4 ± 0.13
e		10.30 ± 0.40	17.50 ± 0.40	28.6 ± 0.40
f		9.00 $^{+ 2.00}_{- 1.00}$	13.00 $^{+ 3.00}_{- 1.00}$	19.0 $^{+ 6.00}_{- 2.00}$
t_{min}		8.6	15.0	25.1
$d_{a\ min}$		63	140	315
α		36° ± 25‘ d_a 63 to 90	— —	— — —
		38° ± 25’ d_a > 90 to 150	38° ± 25’ d_a 140 to 255	38° ± 25’ 315 to 40
		40° ± 25’ d_a > 150 to 305	40° ± 25’ d_a > 255 to 405	40° ± 25’ d_a >405 to 570
		42° ± 25’ d_a > 305	42° ± 25’ d_a > 405	42° ± 25’ d_a > 570
Face width b_2 for number of grooves z $b_2 = (z - 1)\ e + 2\ f$	**1**	18.0	26.0	38.0
	2	28.3	43.5	66.6
	3	38.6	61.0	95.2
	4	48.9	78.5	123.8
	5	59.2	96.0	152.4
	6	69.5	113.5	181.0
	7	79.8	131.0	209.6
	8	90.1	148.5	238.2
	9	100.4	166.0	266.8
	10	110.7	183.5	295.4
	11	121.0	201.0	324.0
	12	131.3	218.5	352.6
			(Values in mm)	

For drives with several grooves the total of all deviations from the nominal value e for all groove distances of a pulley + / - 0.8 mm must not be exceeded. For further details see US-Standard RMA / MPTA.

Note:

The permissible variations of the V-grooved pulley according to US-Standard RMA / MPTA deviate only slightly from the values contained in ISO 5290 “Grooved pulleys for joined narrow belts” (Kraftbands). Therefore Optibelt KB Krafbands can be used for V-grooved pulleys manufactured according to both standards.
These V-grooved pulleys are also used for Optibelt Super TX M=S V-belts.

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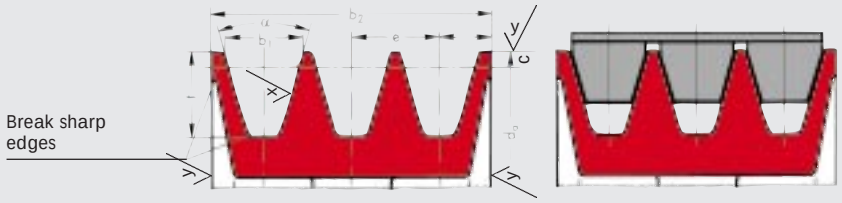
Standard Range
V-Pulleys for Kraftbands



$\sqrt{x} = \sqrt{R_z\ 25}$

$\sqrt{y} = \sqrt{R_z\ 100}$

Table 11: V-pulleys for Kraftbands with wedge belts according to ISO 5290

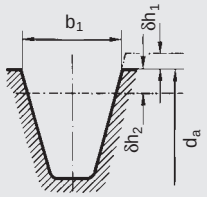
Section	d_a	$\alpha°$ ± 30	b_1 ≈'	δh_{1max}	δh_{2max}	t_{min}	e	Tol e[1]	Σ Tol e[2]	f_{min}	$d_{a\ min}$
3V/9J	67 to 90 > 90 to 150 > 150 to 300 > 300	36 38 40 42	8.9	0.20	0.30	8.9	10.3	± 0.25	± 0.5	9	67
5V/15J	180 to 250 > 250 to 400 > 400	38 40 42	15.2	0.25	0.40	15.2	17.5	± 0.25	± 0.5	13	180
8V/25J	315 to 400 > 400 to 560 > 560	38 40 42	25.4	0.30	0.50	25.4	28.6	± 0.40	± 0.8	19	315

For further details please see Standard ISO 5290.
1) Tolerance for the dimension 'e' between two adjacent grooves.
2) The sum of all deviations from the nominal dimension 'e' for all the groove spacings of a pulley must not exceed the tolerance shown.

The International Standard ISO 5290 specifies pulley groove dimensions for belt sections 3V/9J, 5V/15J, 8V/25J. The groove top width 'b_1' is used as the basic reference dimension for standardisation of the grooves and the joined V-belts. The pulley groove and the joined V-belts are considered in the Standard ISO 5290 as a single unit.

The values of δh_1 and δh_2 were chosen to ensure that

1. the belt joining band does not come into contact with the outside diameter of the pulley in order to avoid the belts separating from the joining band,
2. the belts are still seated deep enough in the pulley grooves to ensure full transmission of power.



b_1 = effective width
d_a = effective outside diameter

The groove faces must be straight at least to the level of $d_a - 2\ \delta h_2$.

Table 12: V-pulleys for Kraftbands with section SPZ, SPA, SPB and SPC according to DIN 2211/ISO 4183

Section	d_d	$\alpha°$ ± 30'	b_1 ≈	c	t_{min}	e	Tol e[1]	Σ Tol e[2]	f_{min}	$d_{d\ min}$
SPZ	71 to 80 > 190	34 38	9.7	2.0	11	12.0	± 0.3	± 0.6	8.0	71
SPA	100 to 118 > 80	34 38	12.7	2.8	14	15.0	± 0.3	± 0.6	10.0	100
SPB	160 to 190 > 190	34 38	16.3	3.5	18	19.0	± 0.4	± 0.8	12.5	160
SPC	250 to 315 > 315	34 38	22.0	4.8	24	25.5	± 0.40	± 0.8	17.0	250

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Standard Range
V-Pulleys for Kraftbands

Table 13: V-pulleys for Kraftbands with classical V-belts ISO 5291

Section	d_a	$\alpha°$ ± 30'	b_1 ≈	δh_{1max}	δh_{2max}	c	t_{min}	e	Tol e[1)]	Σ Tol e[2)]	f_{min}	$d_{a\ min}$
AJ/HA	80 to 125 > 125	34 38	13.0	0.20	0.35	1.5	12.0	15.88	± 0.3	± 0.6	9.0	80
BJ/HB	130 to 195 > 195	34 38	16.5	0.25	0.40	2.0	14.0	19.05	± 0.4	± 0.8	11.5	130
CJ/HC	210 to 325 > 325	34 38	22.4	0.30	0.45	3.0	19.0	25.40	± 0.5	± 1.0	16.0	210
DJ/HD	370 to 490 > 490	36 38	32.8	0.30	0.55	4.5	26.0	36.53	± 0.6	± 1.2	23.0	370

1) Tolerance for the dimension 'e' between two adjacent grooves.
2) The sum of all deviations from the nominal dimension 'e' for all the groove spacings of a pulley must not exceed the tolerance shown.

Table 14: Pulley width for Kraftbands

Section	3V/9J	5V/15J	8V/25J	SPZ	SPA	SPB	SPC	AJ/HA	BJ/HB	CJ/HC	DJ/HD
Number of grooves	**Face width b_2 for number of grooves z** $b_2 = (z - 1)\ e + 2\ f$										
2	28.30	43.50	66.60	28.00	35.00	44.00	59.50	33.88	42.05	57.40	82.53
3	38.60	61.00	95.20	40.00	50.00	63.00	85.00	49.76	61.10	82.80	119.06
4	48.90	78.50	123.80	52.00	65.00	82.00	110.50	65.64	80.15	108.20	155.59
5	59.20	96.00	152.40	64.00	80.00	101.00	136.00	81.52	99.20	133.60	192.12
6	69.50	113.50	181.00	76.00	95.00	120.00	161.50	97.40	118.25	159.00	228.65
7	79.80	131.00	209.60	88.00	110.00	139.00	187.00	113.28	137.30	184.40	265.18
8	90.10	148.50	238.20	100.00	125.00	158.00	212.50	129.16	156.35	209.80	301.71
9	100.40	166.00	266.80	112.00	140.00	177.00	238.00	145.04	175.40	235.20	338.24
10	110.70	183.50	295.40	124.00	155.00	196.00	263.50	160.92	194.45	260.60	374.77
11	121.00	201.00	324.00	136.00	170.00	215.00	289.00	176.80	213.50	286.00	401.30
12	131.30	218.50	352.60	148.00	185.00	234.00	314.50	192.68	232.55	311.40	447.83
13	141.60	236.00	381.20	160.00	200.00	253.00	340.00	20856	251.60	336.80	484.36
14	151.90	253.50	409.80	172.00	215.00	272.00	365.50	224.44	270.65	362.20	520.89
15	162.20	271.00	438.40	184.00	230.00	291.00	391.00	240.32	289.70	387.60	557.42
16	172.50	288.50	467.00	196.00	245.00	310.00	416.50	256.20	308.75	413.00	593.95
17	182.80	306.00	495.60	208.00	260.00	329.00	442.00	272.08	327.80	438.40	630.48
18	193.10	323.50	524.20	220.00	275.00	348.00	467.50	287.96	346.85	463.80	667.01
19	203.40	341.00	552.80	232.00	290.00	367.00	493.00	303.84	365.90	489.20	703.54
20	213.70	358.50	581.40	244.00	305.00	386.00	518.50	319.72	384.95	514.60	740.07
21	224.00	376.00	610.00	256.00	320.00	405.00	544.00	335.60	404.00	540.00	776.60
22	234.30	393.50	638.60	268.00	335.00	424.00	569.50	351.48	423.05	565.40	813.13
23	244.60	411.00	667.20	280.00	350.00	443.00	595.00	367.36	442.10	590.80	849.66
24	254.90	428.50	695.80	292.00	365.00	462.00	620.50	383.24	461.15	616.20	886.19
25	265.20	446.00	724.40	304.00	380.00	481.00	646.00	399.12	480.20	641.60	922.72
26	275.50	463.50	753.00	316.00	395.00	500.00	671.50	415.00	499.25	667.00	959.25
27	285.80	481.00	781.60	328.00	410.00	519.00	697.00	430.88	518.30	692.40	995.78
28	296.10	498.50	810.20	340.00	425.00	538.00	722.50	446.76	537.35	717.80	1032.31
29	306.40	516.00	838.80	352.00	440.00	557.00	748.00	462.64	556.40	743.20	1068.84
30	316.70	533.50	867.40	364.00	455.00	576.00	773.50	478.52	575.45	768.60	1105.37
31	327.00	551.00	896.00	376.00	470.00	595.00	799.00	494.40	594.50	794.00	1141.90
32	337.30	568.50	924.60	388.00	485.00	614.00	824.50	510.28	613.55	819.40	1178.43
33	347.60	586.00	953.20	400.00	500.00	633.00	850.00	526.16	632.60	844.80	1214.96
34	357.90	603.50	981.80	412.00	515.00	652.00	875.50	542.04	651.65	870.20	1251.49
35	368.20	621.00	1010.40	424.00	530.00	671.00	901.00	557.92	670.70	895.60	1288.02
36	378.50	638.50	1039.00	436.00	545.00	690.00	926.50	573.80	689.75	921.00	1324.55
37	388.80	656.00	1067.60	448.00	560.00	709.00	952.00	589.68	708.80	946.40	1361.08
38	399.10	673.50	1096.20	460.00	575.00	728.00	977.50	605.56	727.85	971.80	1397.61
39	409.40	691.00	1124.80	472.00	590.00	747.00	1003.00	621.44	746.90	997.20	1434.14
40	419.70	708.50	1153.40	484.00	605.00	766.00	1028.50	637.32	765.95	1022.60	1470.67

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Power Transmission

Standard Range
Deep Grooved Pulleys

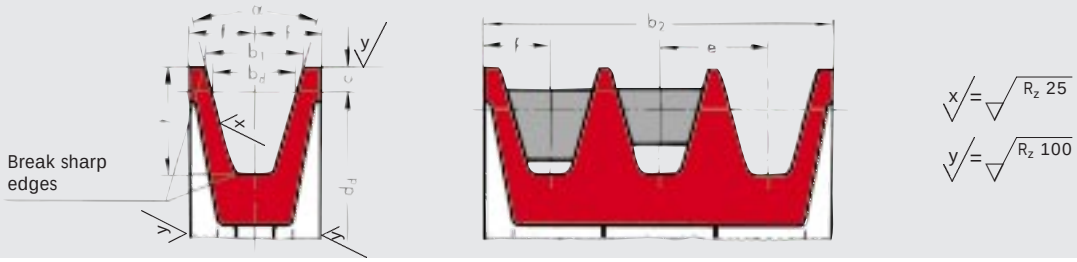

Table 15

Section DIN 7753 Part 1 / ISO designation			**SPZ**	**SPA**	**SPB**	**SPC**
For V-belts according to DIN 2215 and 2216			10	13	17	22
b_d			8.5	11.0	14.0	19.0
$b_1 \approx$	$\alpha = 34°$		11.0	15.0	18.9	26.3
	$\alpha = 38°$		11.3	15.4	19.5	27.3
c			4.0	6.5	8.0	12.0
e			14 ± 0.3	18 ± 0.3	23.0 ± 0.4	31 ± 0.5
f			8 ± 0.6	10 ± 0.6	12.5 ± 0.8	17 ± 1.0
t_{min}			13	18	22.5	31.5
α	for datum diameter d_d for wedge belts DIN 7753 Part 1		34° ± 1° d_d 63 to 80	34° ± 1° d_d 90 to 118	34° ± 1° d_d 140 to 190	34° ± 30‘ d_d 224 to 315
			38° ± 1° d_d > 80	38° ± 1° d_d >118	38° ± 1° d_d > 190	38° ± 30‘ d_d > 315
α	for datum diameter d_d with classical V-belts according to DIN 2215		34° ± 1° d_d 50 to 80	34° ± 1° d_d 71 to 118	34° ± 1° d_d 112 to 190	34° ± 30‘ d_d 180 to 315
			38° ± 1° d_d > 80	38° ± 1° d_d >118	38° ± 1° d_d > 190	38° ± 30‘ d_d > 315
Face width b_2 for number of grooves z $b_2 = (z - 1)\ e + 2\ f$		**1**	16	20	25	34
		2	29	37	47	64
		3	42	54	69	94
		4	55	71	91	124
		5	68	88	113	154
		6	81	105	135	184
		7	94	122	157	214
		8	107	139	179	244
		9	120	156	201	274
		10	133	173	223	304
		11	146	190	245	334
		12	159	207	267	364

Please note the minimum pulley diameters, page 11.
Warning: Do not use Kraftbands in deep grooved pulleys.

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Power Transmission

Standard Range

optibelt KS V-Grooved Pulleys for Taper Bushes – Grooves to DIN 2211

Section SPZ/10

Datum diameter d_d (mm)	No. of grooves	Type		Weight without bush (≈ kg)	Taper bush
50▲	1	●	11	0.30	1008
	2	●	11	0.40	1008
56▲	1	●	11	0.40	1008
	2	●	11	0.50	1108
60▲	1	●	8	0.20	1008
	2	●	11	0.60	1108
63	1	●	8	0.20	1108
	2	●	6	0.30	1108
	3	●	6	0.40	1108
67	1	●	8	0.30	1108
	2	●	6	0.40	1108
	3	●	6	0.50	1108
71	1	●	8	0.30	1108
	2	●	6	0.40	1108
	3	●	6	0.60	1108
75	1	●	8	0.40	1108
	2	●	6	0.40	1210
	3	●	6	0.50	1210
80	1	●	8	0.50	1210
	2	●	6	0.60	1210
	3	●	6	0.70	1210
	4	●	6	0.80	1210
85	1	●	8	0.60	1210
	2	●	6	0.50	1610
	3	●	6	0.60	1610
	4	●	6	0.90	1610
	5	●	6	1.00	1610
90	1	●	8	0.70	1210
	2	●	6	0.70	1610
	3	●	6	0.80	1610
	4	●	6	1.00	1610
	5	●	6	1.20	1610
95	1	●	8	0.70	1210
	2	●	6	0.80	1610
	3	●	6	0.90	1610
	4	●	6	1.10	1610
	5	●	6	1.30	1610
100	1	●	8	0.80	1210
	2	●	6	0.90	1610
	3	●	6	1.10	1610
	4	●	6	1.10	1610
	5	●	6	1.30	2012
	6*	●	6	1.40	2012
106	1	●	8	0.9	1610
	2	●	6	1.1	1610
	3	●	6	1.3	1610
	4	●	6	1.3	1610
	5	●	6	1.5	2012
	6*	●	6	1.6	2012
112	1	●	8	1.0	1610
	2	●	6	1.3	1610
	3	●	6	1.3	2012
	4	●	6	1.5	2012
	5	●	6	1.8	2012
	6*	●	6	1.9	2012
118	1	●	8	0.9	1610
	2	●	6	1.3	1610
	3	●	6	1.6	2012
	4	●	6	1.8	2012
	5	●	6	1.8	2012
	6*	●	6	2.0	2517
125	1	●	8	1.0	1610
	2	●	6	1.4	1610
	3	●	2	1.8	2012
	4	●	2	2.2	2012
	5	●	6	2.3	2012
	6*	●	6	2.5	2517
132	1	●	8	1.1	1610
	2	●	6	1.5	1610
	3	●	2	2.3	2012
	4	●	2	2.5	2012
	5	●	6	2.7	2517
	6*	●	6	2.9	2517
140	1	●	8	1.2	1610
	2	●	2	1.7	1610
	3	●	2	2.6	2012
	4	●	2	2.9	2012
	5	●	2	3.2	2517
	6*	●	2	3.5	2517
	8*	●	4	4.0	2517
150	1	●	8	1.2	1610
	2	●	8	2.0	2012
	3	●	2	3.1	2012
	4	●	2	3.7	2517
	5	●	2	4.0	2517
	6*	●	2	4.4	2517
	8*	●	4	5.1	2517

▲ for Section 10 only

No. of grooves z	1	2	3	4	5	6	8
Face width b_2 (mm)	16	28	40	52	64	76	100

Taper bush	1008	1108	1210	1610	2012	2517	3020
Bore d_2 (mm) from ... to ...	10-25	10-28	11-32	14-42	14-50	16-60	25-75

● Solid pulley
O Plate pulley (with or without lightening holes)
✕ Spoked pulley

Material: EN-GJL 200 (GG 20) DIN 1691

* Non stock item

Bore diameter d_2 see page 65

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Power Transmission

Standard Range

optibelt KS V-Grooved Pulleys for Taper Bushes – Grooves to DIN 2211

Section SPZ / 10

Datum diameter d_d (mm)	No. of grooves	Type		Weight without bush (≈ kg)	Taper bush
160	1	●	8	1.3	1610
	2	●	8	2.5	2012
	3	●	2	3.6	2012
	4	●	2	4.4	2517
	5	●	2	4.8	2517
	6*	●	2	5.2	2517
	8*	●	4	5.6	2517
170	1	●	8	1.5	1610
	2	●	8	2.5	2012
	3	O	9	4.2	2012
	4	●	2	5.3	2517
	5	●	2	5.9	2517
	6*	●	2	6.5	2517
180	1	●	8	1.6	1610
	2	●	8	2.5	2012
	3	O	9	4.8	2012
	4	O	9	6.1	2517
	5	O	9	6.3	2517
	6*	O	9	6.8	2517
	8*	●	4	7.1	3020
190	1	●	8	1.8	1610
	2	●	8	2.6	2012
	3	O	9	4.9	2012
	4	O	9	5.3	2517
	5	O	9	6.3	2517
	6*	O	9	6.9	2517
200	1	●	8	2.3	2012
	2	●	8	2.8	2012
	3	O	9	3.5	2012
	4	O	9	4.7	2517
	5	O	9	5.5	2517
	6*	O	9	6.1	2517
	8*	●	4	9.3	3020
224	1	O	5	2.5	2012
	2	O	5	3.2	2012
	3	O	9	3.9	2012
	4	O	9	5.2	2517
	5	O	9	6.0	2517
	6*	O	9	6.6	2517
	8*	●	4	11.8	3020
250	1	x	7	2.8	2012
	2	x	7	3.5	2012
	3	x	10	4.3	2012
	4	x	10	5.7	2517
	5	x	10	7.0	2517
	6	x	10	7.0	2517
	8*	x	10	10.5	3020
280	1	x	7	2.9	2012
	2	x	7	4.0	2012
	3	x	7	5.3	2517
	4	x	10	6.4	2517
	5	x	10	7.1	2517
	6*	x	10	7.8	2517
	8*	x	10	10.8	3020
315	1	x	7	3.1	2012
	2	x	7	4.2	2012
	3	x	7	6.1	2517
	4	x	10	7.6	2517
	5	x	10	8.6	2517
	6*	x	10	9.3	2517
355	1	x	7	3.5	2012
	2	x	7	5.1	2012
	3	x	7	7.3	2517
	4	x	10	8.9	2517
	5	x	10	10.0	2517
	6*	x	10	10.7	2517
	8*	x	10	16.0	3030
400	1	x	7	6.0	2012
	2	x	7	6.3	2517
	3	x	7	8.0	2517
	4	x	10	10.1	2517
	5	x	10	11.7	3020
	6*	x	10	14.5	3020
	8*	x	10	18.2	3030
450	1	x	7	6.1	2517
	2	x	7	8.2	2517
	3	x	7	9.8	2517
	4	x	10	11.8	3020
	5	x	10	13.9	3020
	6*	x	10	16.9	3030
	8*	x	10	24.0	3535
500	2	x	7	9.1	2517
	3	x	7	11.4	2517
	4	x	10	14.3	3020
	5	x	10	17.6	3020
	6*	x	10	19.9	3020
630	3	x	7	15.9	2517
	4	x	10	20.0	3020
	5	x	10	22.7	3020
	6*	x	7	33.6	3535

No. of grooves z	1	2	3	4	5	6	8
Face width b_2 (mm)	16	28	40	52	64	76	100

Taper bush	1610	2012	2517	3020	3030	3535
Bore d_2 (mm) from ... to ...	14-42	14-50	16-60	25-75	35-75	35-90

● Solid pulley
O Plate pulley (with or without lightening holes)
X Spoked pulley

Material: EN-GJL 200 (GG 20)
DIN 1691

* Non stock item

Bore diameter d_2 see page 65

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Power Transmission

Standard Range

optibelt KS V-Grooved Pulleys for Taper Bushes – Grooves to DIN 2211

Section SPA / 13

Datum diameter d_d (mm)	No. of grooves	Type		Weight without bush (≈ kg)	Taper bush
63▲	1	●	11	0.60	1108
	2	●	11	0.80	1108
67▲	1	●	8	0.30	1108
	2	●	6	0.50	1108
71▲	1	●	8	0.30	1108
	2	●	6	0.50	1108
	3	●	6	0.70	1108
75▲	1	●	8	0.40	1108
	2	●	6	0.60	1108
	3	●	6	0.80	1108
80▲	1	●	8	0.50	1210
	2	●	6	0.60	1210
	3	●	6	0.90	1210
85▲	1	●	8	0.60	1210
	2	●	6	0.70	1210
	3	●	6	1.00	1210
90	1	●	8	0.70	1210
	2	●	6	0.70	1610
	3	●	6	1.00	1610
	4	●	6	1.20	1615
95	1	●	8	0.80	1210
	2	●	6	0.90	1610
	3	●	6	1.10	1610
	4	●	6	1.40	1615
100	1	●	8	0.80	1610
	2	●	6	0.90	1610
	3	●	2	1.20	1610
	4	●	2	1.70	1610
	5	●	6	1.90	1610
106	1	●	8	0.90	1610
	2	●	6	1.10	1610
	3	●	2	1.40	1610
	4	●	6	2.00	2012
	5	●	6	2.00	2012
112	1	●	8	1.00	1610
	2	●	6	1.20	1610
	3	●	6	1.30	2012
	4	●	6	1.90	2012
	5	●	6	2.10	2012
118	1	●	8	1.20	1610
	2	●	6	1.40	1610
	3	●	2	1.80	2012
	4	●	2	2.00	2012
	5	●	2	2.40	2012
125	1	●	8	1.40	1610
	2	●	2	1.70	1610
	3	●	2	2.00	2012
	4	●	2	2.50	2012
	5	●	2	2.70	2012
132	1	●	8	1.60	1610
	2	●	2	1.80	2012
	3	●	2	2.30	2012
	4	●	2	2.60	2517
	5	●	2	2.90	2517
140	1	●	8	1.8	1610
	2	●	2	2.0	2012
	3	●	2	2.8	2517
	4	●	2	3.1	2517
	5	●	2	3.4	2517
150	1	●	8	1.4	1610
	2	●	2	2.4	2012
	3	●	2	3.5	2517
	4	●	2	3.8	2517
	5	●	2	4.2	2517
160	1	O	5	1.9	1610
	2	●	2	2.9	2012
	3	●	2	3.9	2517
	4	●	2	4.4	2517
	5	●	2	5.1	2517
170	1	O	5	2.0	1610
	2	●	2	3.1	2012
	3	●	2	4.6	2517
	4	●	2	5.5	2517
	5	●	2	5.9	3020
180	1	O	5	2.1	1610
	2	O	9	3.4	2012
	3	●	2	5.1	2517
	4	●	2	5.9	2517
	5	●	2	6.2	3020
190	1	O	5	2.3	1610
	2	O	9	3.8	2012
	3	●	2	5.4	2517
	4	●	2	6.8	2517
	5	●	2	7.4	3020

▲ for Section 13 only

No. of grooves z	1	2	3	4	5
Face width b_2 (mm)	20	35	50	65	80

Taper bush	1108	1210	1610	1615	2012	2517	3020
Bore d_2 (mm) from ... to ...	10-28	11-32	14-42	14-42	14-50	16-60	25-75

● Solid pulley
O Plate pulley (with or without lightening holes)
✕ Spoked pulley

Material: EN-GJL 200 (GG 20)
DIN 1691

Bore diameter d_2 see page 65

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Power Transmission

Standard Range

optibelt KS V-Grooved Pulleys for Taper Bushes – Grooves to DIN 2211

Section SPA / 13

Datum diameter d_d (mm)	No. of grooves	Type		Weight without bush (≈ kg)	Taper bush	Datum diameter d_d (mm)	No. of grooves	Type		Weight without bush (≈ kg)	Taper bush
200	1	O	5	2.6	2012	450	1	x	7	7.0	2012
	2	O	5	4.1	2517		2	x	7	10.3	2517
	3	O	9	4.9	2517		3	x	7	14.1	3020
	4	●	2	7.4	3020		4	x	10	15.5	3020
	5	●	4	8.4	3020		5	x	7	24.3	3535
212	1	O	5	2.7	2012	500	1	x	7	8.0	2517
	2	O	5	4.3	2517		2	x	7	11.6	2517
	3	O	9	5.2	2517		3	x	7	16.0	3020
	4	●	2	7.3	3020		4	x	10	18.2	3020
	5	●	2	8.2	3020		5	x	7	27.3	3535
224	1	x	7	2.7	2012	560	1	x	7	11.6	2517
	2	O	5	4.4	2517		2	x	7	15.5	3020
	3	O	9	5.5	2517		3	x	7	17.8	3020
	4	●	2	7.4	3020		4	x	7	26.7	3535
	5	●	2	8.3	3020		5	x	7	30.4	3535
236	1	x	7	2.8	2012	630	1	x	7	10.1	2517
	2	O	5	4.6	2517		2	x	7	16.0	3020
	3	O	9	5.7	2517		3	x	7	22.0	3020
	4	●	2	7.8	3020		4	x	7	30.8	3535
	5	●	2	8.7	3020		5	x	7	33.7	3535
250	1	x	7	2.9	2012						
	2	x	7	4.8	2517						
	3	O	9	5.9	2517						
	4	O	9	8.0	3020						
	5	O	9	9.0	3020						
280	1	x	7	3.3	2012						
	2	x	7	5.4	2517						
	3	O	9	6.7	2517						
	4	O	9	8.8	3020						
	5	O	5	15.5	3535						
315	1	x	7	3.6	2012						
	2	x	7	6.0	2517						
	3	O	5	8.3	3020						
	4	O	9	9.7	3020						
	5	O	5	17.0	3535						
355	1	x	7	4.2	2012						
	2	x	7	6.7	2517						
	3	x	7	9.2	3020						
	4	x	10	11.0	3020						
	5	x	7	18.6	3535						
400	1	x	7	4.9	2012						
	2	x	7	8.1	2517						
	3	x	7	11.0	3020						
	4	x	10	12.8	3020						
	5	x	7	21.0	3535						

No. of grooves z	1	2	3	4	5
Face width b_2 (mm)	20	35	50	65	80

Taper bush	2012	2517	3020	3535
Bore d_2 (mm) from ... to ...	14-50	16-60	25-75	35-90

● Solid pulley
O Plate pulley (with or without lightening holes)
✕ Spoked pulley

Material: EN-GJL 200 (GG 20)
DIN 1691

Bore diameter d_2 see page 65

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Power Transmission

Standard Range

optibelt KS V-Grooved Pulleys for Taper Bushes – Grooves to DIN 2211

Section SPB / 17

Datum diameter d_d (mm)	No. of grooves	Type		Weight without bush (≈ kg)	Taper bush
100▲	1	●	1	0.9	1610
	2	●	6	1.2	1610
	3	●	6	1.7	1610
112▲	1	●	1	1.1	1610
	2	●	6	1.5	1610
	3	●	6	2.0	1610
118▲	1	●	1	1.3	1610
	2	●	6	1.7	1610
	3	●	6	2.3	1610
125▲	1	●	1	1.5	1610
	2	●	2	1.9	2012
	3	●	2	2.4	2012
	4	●	4	3.0	2012
	5	●	6	3.5	2012
132▲	1	●	1	1.8	1610
	2	●	2	2.2	2012
	3	●	2	2.8	2012
	4	●	4	3.4	2012
	5	●	4	3.7	2012
140	1	●	1	2.3	1610
	2	●	2	2.7	2012
	3	●	2	3.3	2012
	4	●	2	3.7	2517
	5	●	2	4.5	2517
	6	●	4	4.6	2517
150	1	●	1	2.7	1610
	2	●	2	3.1	2012
	3	●	2	3.9	2517
	4	●	2	4.4	2517
	5	●	4	5.2	2517
	6	●	4	5.6	2517
160	1	●	1	2.5	1610
	2	●	2	2.9	2012
	3	●	2	4.2	2517
	4	●	4	4.9	2517
	5	●	4	6.0	2517
	6	●	4	5.4	3020
170	1	●	1	2.9	1610
	2	●	2	3.3	2012
	3	●	2	4.9	2517
	4	●	4	5.7	2517
	5	●	4	6.1	3020
	6	●	4	6.5	3020
	8	●	4	8.0	3020
180	1	●	1	4.1	1610
	2	●	8	4.5	2517
	3	●	2	5.5	2517
	4	●	4	6.9	2517
	5	●	4	7.1	3020
	6	●	4	7.7	3020
	8	●	4	9.5	3020
190	1	●	8	4.6	2012
	2	●	8	5.0	2517
	3	●	2	6.3	2517
	4	●	4	7.6	2517
	5	●	4	8.1	3020
	6	●	4	9.2	3020
	8	●	4	11.2	3030
200	1	●	8	5.0	2012
	2	●	8	5.4	2517
	3	●	2	6.5	2517
	4	●	2	8.8	3020
	5	●	2	9.1	3020
	6	●	4	10.3	3020
	8	●	4	13.5	3535
212	1	●	8	4.2	2012
	2	●	8	4.9	2517
	3	●	2	6.0	2517
	4	●	2	9.8	3020
	5	●	2	11.0	3020
	6	●	4	14.3	3535
	8	●	4	16.6	3535
224	1	●	8	4.7	2012
	2	●	8	5.3	2517
	3	●	2	6.3	2517
	4	●	2	11.3	3020
	5	●	2	12.7	3020
	6	●	4	17.0	3535
	8	●	4	19.3	3535
	10	●	4	21.8	3535
236	1	●	8	5.0	2012
	2	●	8	5.5	2517
	3	x	10	7.0	2517
	4	x	10	14.5	3020
	5	●	6	16.9	3535
	6	●	4	20.0	3535
	8	●	4	22.3	3535
	10	●	4	25.3	3535

▲ for Section 17 only

No. of grooves z	1	2	3	4	5	6	8	10
Face width b_2 (mm)	25	44	63	82	101	120	158	196

Taper bush	1610	2012	2517	3020	3030	3535
Bore d_2 (mm) from ... to ...	14-42	14-50	16-60	25-75	35-75	35-90

● Solid pulley
O Plate pulley (with or without lightening holes)
✕ Spoked pulley

Material: EN-GJL 200 (GG 20)
DIN 1691

Bore diameter d_2 see page 65

optibelt
Power Transmission

Standard Range

optibelt KS V-Grooved Pulleys for Taper Bushes – Grooves to DIN 2211

Section SPB/17

Datum diameter d_d (mm)	No. of grooves	Type		Weight without bush (≈ kg)	Taper bush
250	1	●	8	5.4	2012
	2	x	7	5.5	2517
	3	●	2	7.7	3020
	4	●	2	19.6	3020
	5	●	2	21.7	3535
	6	●	4	23.3	3535
	8	●	4	27.5	3535
	10	●	4	29.3	3535
265	2	●	7	6.2	2517
	3	O	9	8.0	3020
	4	O	9	9.5	3020
	6	O	9	16.7	3525
	8	O	9	24.0	3525
280	1	x	7	6.1	2012
	2	x	7	6.8	2517
	3	x	10	8.6	3020
	4	O	9	10.1	3020
	5	O	9	17.8	3535
	6	O	9	19.6	3535
	8	O	9	26.7	3535
	10	O	9	30.5	3535
300	2	x	7	7.3	2517
	3	x	10	9.2	3020
	4	O	9	14.3	3020
	5	O	9	18.2	3535
	6	O	9	21.9	3535
	8	O	9	26.2	3535
315	1	x	7	7.2	2012
	2	x	7	7.8	2517
	3	x	10	9.6	3020
	4	O	5	17.1	3535
	5	O	9	18.8	3535
	6	O	9	23.0	3535
	8	O	9	26.0	3535
	10	O	9	31.5	3535
335	2	x	7	7.8	2517
	3	x	10	10.5	3020
	4	x	7	18.3	3535
	5	x	10	19.5	3535
	6	x	10	22.0	3535
	8	x	10	28.2	3535
	10*	x	10	36.0	4040
355	2	x	7	8.7	3020
	3	x	10	10.8	3020
	4	x	7	18.6	3535
	5	x	10	20.8	3535
	6	O	9	22.8	3535
	8	x	10	27.0	3535
	10*	x	10	38.0	4040
375	2	x	7	9.5	3020
	3	x	10	11.5	3020
	4	x	10	16.5	3525
	6	x	10	25.0	3535
	8	x	10	28.0	4040
400	2	x	7	10.0	3020
	3	x	7	18.3	3535
	4	x	7	20.5	3535
	5	x	10	23.4	3535
	6	x	10	25.1	3535
	8	x	10	36.5	4040
	10*	x	10	41.0	4040
425	2	x	7	11.5	3020
	3	x	7	18.0	3535
	4	x	10	19.5	3535
	6	x	10	25.1	4040
	8	x	10	52.5	4545
450	2	x	7	12.1	3020
	3	x	7	21.9	3535
	4	x	7	24.5	3535
	5	x	10	27.3	3535
	6	x	10	35.5	4040
	8	x	10	40.9	4040
	10*	x	10	53.5	4545
500	2	x	7	13.2	3020
	3	x	7	23.1	3535
	4	x	7	26.6	3535
	5	x	10	29.9	3535
	6	x	10	38.9	4040
	8	x	10	45.5	4040
	10*	x	10	61.0	4545
560	2	x	7	16.5	3030
	3	x	7	25.9	3535
	4	x	7	29.0	3535
	5	x	7	35.3	4040
	6	x	10	43.1	4040
	8	x	10	49.0	4545
	10*	x	10	55.7	4545

No. of grooves z	1	2	3	4	5	6	8	10
Face width b_2 (mm)	25	44	63	82	101	120	158	196

Taper bush	2012	2517	3020	3030	3535	4040	4545
Bore d_2 (mm) from ... to ...	14-50	16-60	25-75	35-75	35-90	40-100	55-110

● Solid pulley
O Plate pulley (with or without lightening holes)
✕ Spoked pulley

Material: EN-GJL 200 (GG 20)
DIN 1691

* Non stock item

Bore diameter d_2 see page 65

optibelt
Power Transmission

Standard Range

optibelt KS V-Grooved Pulleys for Taper Bushes – Grooves to DIN 2211

Section SPB/17

Datum diameter d_d (mm)	No. of grooves	Type		Weight without bush (≈ kg)	Taper bush	Datum diameter d_d (mm)	No. of grooves	Type		Weight without bush (≈ kg)	Taper bush
630	2	x	7	18.5	3020						
	3	x	7	28.9	3535						
	4	x	7	33.3	3535						
	5	x	7	43.1	4040						
	6	x	10	49.2	4040						
	8	x	10	62.0	4545						
	10*	x	10	72.0	4545						
710	3	x	7	33.2	3535						
	4	x	7	39.1	3535						
	5	x	7	50.2	4040						
	6	x	10	62.3	4545						
	8	x	10	71.0	4545						
	10*	x	10	80.0	4545						
800	3	x	7	36.7	3535						
	4	x	7	48.8	4040						
	5	x	7	56.1	4040						
	6	x	10	71.4	4545						
	8	x	10	90.9	4545						
	10*	x	10	102.0	4545						
900	3	x	7	46.8	3535						
	4	x	7	60.0	4040						
	5	x	7	74.8	4545						
	6	x	10	81.5	4545						
	8	x	10	110.0	4545						
	10*	x	10	126.0	5050						
1000	3	x	7	56.5	4040						
	4	x	7	66.5	4040						
	5	x	7	80.5	4545						
	6	x	10	90.0	4545						
	8	x	10	132.0	5050						
	10*	x	10	147.0	5050						

No. of grooves z	2	3	4	5	6	8	10
Face width b_2 (mm)	44	63	82	101	120	158	196

Taper bush	3030	3535	4040	4545	5050
Bore d_2 (mm) from ... to ...	35-75	35-90	40-100	55-110	70-125

● Solid pulley
O Plate pulley (with or without lightening holes)
✕ Spoked pulley

Material: EN-GJL 200 (GG 20) DIN 1691

* Non stock item

Bore diameter d_2 see page 65

optibelt
Power Transmission

Standard Range

optibelt KS V-Grooved Pulleys for Taper Bushes – Grooves to DIN 2211

Section SPC / 22

Datum diameter d_d (mm)	No. of grooves	Type		Weight without bush (≈ kg)	Taper bush
200▲	3	●	4	9.0	2517
	4	●	4	10.5	3020
	5	●	4	14.0	3535
	6	●	4	17.0	3535
212▲	3	●	4	10.0	3020
	4	●	4	12.5	3020
	5	●	4	15.0	3535
	6	●	4	18.0	3535
224	2	●	4	8.1	3020
	3	●	4	11.0	3020
	4	●	4	14.0	3535
	5	●	4	16.2	3535
	6	●	4	19.0	3535
	8	●	4	24.9	3535
236	3	●	4	12.0	3020
	4	●	4	17.2	3535
	5	●	4	19.1	3535
	6	●	4	20.8	3535
	8	●	4	25.5	3535
250	2	●	4	9.8	3020
	3	●	4	14.5	3020
	4	●	4	20.7	3535
	5	●	4	22.8	3535
	6	●	4	26.0	3535
	8	●	4	29.7	3535
	10*	●	4	34.0	4040
265	3	●	8	21.2	3535
	4	O	9	24.0	3535
	5	O	9	26.2	3535
	6	O	9	29.0	3535
	8	O	9	33.3	3535
280	3	●	8	24.0	3535
	4	O	9	29.0	3535
	5	O	9	31.0	3535
	6	O	9	33.8	3535
	8	O	9	37.5	3535
	10*	O	9	45.0	4040
300	3	O	5	21.0	3535
	4	O	9	25.0	3535
	5	O	9	28.5	3535
	6	O	9	29.0	3535
	8	●	4	46.5	4040
	10*	O	9	53.5	4545
315	3	O	5	21.6	3535
	4	O	9	24.6	3535
	5	O	9	29.0	3535
	6	O	9	31.4	3535
	8	●	4	50.0	4040
	10*	O	9	58.0	4545
335	3	O	5	22.5	3535
	4	O	9	26.5	3535
	5	O	9	30.0	3535
	6	O	9	35.0	3535
	8	O	9	58.0	4040
355	3	O	5	22.9	3535
	4	O	9	28.3	3535
	5	O	9	32.5	3535
	6	O	9	36.0	3535
	8	O	9	67.5	4040
	10*	O	9	121.0	4545
375	3	O	5	23.8	3535
	4	O	9	30.0	3535
	5	O	9	33.0	3535
	6	O	9	45.5	4040
	8	O	9	68.0	4545
400	3	x	7	24.1	3535
	4	x	10	28.0	3535
	5	x	10	34.0	3535
	6	O	9	48.0	4040
	8	O	9	65.0	4545
	10*	O	9	88.0	5050
425	3	x	7	26.0	3535
	4	x	10	31.0	3535
	5	O	9	45.0	4040
	6	O	9	58.0	4545
	8	O	9	74.0	4545
450	3	x	7	28.6	3535
	4	x	10	33.5	3535
	5	x	10	45.0	4040
	6	O	9	61.1	4545
	8	O	9	78.7	5050
	10*	O	9	101.0	5050
475	3	x	7	40.0	3535
	4	x	10	47.0	3535
	5	x	10	47.2	4040
	6	O	9	62.8	4545
	8	O	9	81.5	5050

▲ for Section 22 only

No. of grooves z	3	4	5	6	8	10
Face width b_2 (mm)	85	110,5	136	161,5	212,5	263,5

Taper bush	2517	3020	3535	4040	4545	5050
Bore d_2 (mm) from ... to ...	16-60	25-75	35-90	40-100	55-110	70-125

● Solid pulley
O Plate pulley (with or without lightening holes)
✕ Spoked pulley

Material: EN-GJL 200 (GG 20)
DIN 1691

* Non stock item

Bore diameter d_2 see page 65

optibelt
Power Transmission

Standard Range

optibelt KS V-Grooved Pulleys for Taper Bushes – Grooves to DIN 2211

Section SPC/22

Datum diameter d_d (mm)	No. of grooves	Type		Weight without bush (≈ kg)	Taper bush	Datum diameter d_d (mm)	No. of grooves	Type		Weight without bush (≈ kg)	Taper bush
500	3	x	7	30.9	3535						
	4	x	10	39.0	3535						
	5	x	10	48.7	4040						
	6	x	10	60.2	4545						
	8	O	9	87.4	5050						
	10*	O	9	127.0	5050						
560	3	x	7	36.0	3535						
	4	x	10	50.0	4040						
	5	x	10	63.0	4545						
	6	x	10	77.0	5050						
	8	x	10	94.0	5050						
	10*	O	9	115.0	5050						
630	3	x	7	48.5	4040						
	4	x	7	61.0	4545						
	5	x	10	77.0	5050						
	6	x	10	86.0	5050						
	8	x	10	105.5	5050						
	10*	O	9	130.0	5050						
710	3	x	7	—	4040						
	4	x	7	—	4545						
	5	x	10	—	5050						
	6	x	10	—	5050						
	8	x	10	—	5050						
	10*	O	9	—	5050						
800	3	x	7	—	4545						
	4	x	7	—	5050						
	5	x	10	—	5050						
	6	x	10	—	5050						
	8	x	10	—	5050						
	10*	O	9	—	5050						
1000	5	x	10	—	5050						
	6	x	10	—	5050						
	8	x	10	—	5050						
	10*	O	9	—	5050						
1250	5	x	10	—	5050						
	6	x	10	—	5050						
	8	x	10	—	5050						
	10*	O	9	—	5050						

No. of grooves z	3	4	5	6	8	10
Face width b_2 (mm)	85	110,5	136	161,5	212,5	263,5

Taper bush	3535	4040	4545	5050
Bore d_2 (mm) from ... to ...	35-90	40-100	55-110	70-125

● Solid pulley
O Plate pulley (with or without lightening holes)
✕ Spoked pulley

Material: EN-GJL 200 (GG 20)
DIN 1691

* Non stock item

Bore diameter d_2 see page 65

optibelt
Power Transmission

Standard Range

optibelt KS V-Grooved Pulleys for Cylindrical Bore – Grooves according to DIN 2211

Section SPZ / 10

Datum diameter d_d (mm)	No. of grooves	Type	Weight (≈ kg)	Finished bore d_{max} (mm)	Distance through hub l (mm)	Datum diameter d_d (mm)	No. of grooves	Type	Weight (≈ kg)	Finished bore d_{max} (mm)	Distance through hub l (mm)
45▲	1	O	0.23	16	24	132	1	O	0.81	30	24
	2	O	0.30	16	35		2	O	1.30	38	35
	3	O	0.40	16	35		3	O	1.62	40	40
50▲	1	O	0.30	20	24	140	1	O	0.92	28	24
	2	O	0.40	20	35		2	O	1.40	38	38
	3	O	0.50	20	40		3	O	1.69	38	40
56▲	1	O	0.32	20	24	150	1	x	1.05	28	24
	2	O	0.45	25	35		2	O	1.50	38	38
	3	O	0.65	25	40		3	O	1.85	38	40
63	1	O	0.34	25	24	160	1	x	1.22	32	30
	2	O	0.60	25	35		2	x	1.60	38	38
	3	O	0.85	25	40		3	x	2.40	42	40
71	1	O	0.34	25	24	170	1	x	1.66	40	30
	2	O	0.62	25	35		2	x	1.85	40	38
	3	O	1.00	30	40		3	x	3.00	42	40
75	1	O	0.35	24	24	180	1	x	2.10	32	30
	2	O	0.64	24	35		2	x	3.05	38	38
	3	O	1.05	28	40		3	x	3.50	42	40
80	1	O	0.35	25	24	190	1	x	2.25	35	30
	2	O	0.65	30	35		2	x	2.35	35	38
	3	O	1.10	38	35		3	x	4.00	35	40
85	1	O	0.30	25	24	200	1	x	2.40	32	38
	2	O	0.70	30	35		2	x	2.85	38	38
	3	O	1.10	38	35		3	x	4.45	42	40
90	1	O	0.38	25	24	212	1	x	2.60	35	30
	2	O	0.75	30	35		2	x	3.40	35	38
	3	O	1.15	38	38		3	x	5.00	38	40
95	1	O	0.40	28	24	225	1	x	2.80	32	38
	2	O	0.83	28	35		2	x	4.00	38	38
	3	O	1.20	38	38		3	x	5.30	42	40
100	1	O	0.48	28	24	250	1	x	3.30	32	38
	2	O	0.90	30	35		2	x	4.80	38	38
	3	O	1.25	38	38		3	x	6.00	42	40
106	1	O	0.50	30	24	280	1	x	3.85	35	34
	2	O	0.96	28	35		2	x	5.20	42	38
	3	O	1.32	38	38		3	x	7.00	48	40
112	1	O	0.54	28	24	315	1	x	4.35	35	34
	2	O	1.00	30	35		2	x	6.80	42	38
	3	O	1.40	38	38		3	x	8.25	48	40
118	1	O	0.60	28	24	355	1	x	4.60	35	34
	2	O	1.10	38	35		2	x	8.00	42	40
	3	O	1.47	38	38		3	x	10.00	48	45
125	1	O	0.70	28	24						
	2	O	1.20	30	35						
	3	O	1.55	38	40						

▲ for Section 10 only

No. of grooves z	1	2	3
Face width b_2 (mm)	16	28	40

● Solid pulley
O Plate pulley (with or without lightening holes)
X Spoked pulley
Hub position: flush one side
Material: EN-GJL 200 (GG 20) · DIN 1691

optibelt
Power Transmission

Standard Range

optibelt KS V-Grooved Pulleys for Cylindrical Bore – Grooves according to DIN 2211

Section SPA / 13

Datum diameter d_d (mm)	No. of grooves	Type	Weight (≈ kg)	Finished bore d_{max} (mm)	Distance through hub l (mm)
50▲	1	O	0.34	18	34
	2	O	0.48	18	49
	3	O	0.55	18	47
56▲	1	O	0.42	20	34
	2	O	0.62	20	49
	3	O	0.74	20	47
63▲	1	O	0.52	25	34
	2	O	0.77	25	49
	3	O	0.85	25	47
	4▽	O	1.23	25	60
	5▽	O	1.48	25	70
71▲	1	O	0.50	25	34
	2	O	0.89	28	49
	3	O	0.96	32	42
	4▽	O	1.47	32	60
	5▽	O	1.83	32	70
75▲	1	O	0.53	24	34
	2	O	1.02	24	49
	3	O	1.08	24	42
	4▽	O	1.76	24	60
	5▽	O	1.92	28	82
80▲	1	O	0.56	28	34
	2	O	1.04	32	49
	3	O	1.19	38	42
	4▽	O	1.89	38	60
	5▽	O	2.00	38	55
85	1	O	0.64	24	34
	2	O	1.20	28	49
	3	O	1.40	28	42
	4▽	O	1.98	28	53
	5▽	O	2.20	32	55
90	1	O	0.88	28	34
	2	O	1.47	32	49
	3	O	1.62	38	42
	4▽	O	2.22	42	53
	5▽	O	2.51	42	67
95	1	O	0.76	28	34
	2	O	1.57	28	49
	3	O	1.89	28	42
	4▽	O	2.47	32	53
	5▽	O	2.75	35	67
100	1	O	0.84	28	34
	2	O	1.36	32	49
	3	O	1.98	38	52
	4▽	O	2.72	42	53
	5▽	O	3.10	42	60
106	1	O	0.88	28	34
	2	O	1.65	28	49
	3	O	2.20	32	42
	4▽	O	3.24	32	53
	5▽	O	3.85	35	60
112	1	O	1.09	28	34
	2	O	1.75	38	49
	3	O	2.38	38	42
	4▽	O	3.37	42	53
	5▽	O	3.95	42	60
118	1	O	1.10	32	34
	2	O	1.80	38	49
	3	O	2.42	42	42
	4▽	O	3.42	42	53
	5▽	O	4.10	48	65
125	1	O	1.38	32	34
	2	O	1.90	38	49
	3	O	2.55	42	42
	4▽	O	3.49	42	53
	5▽	O	4.40	48	65
132	1	O	1.45	32	34
	2	O	2.20	38	49
	3	O	2.58	42	42
	4▽	O	3.58	42	53
	5▽	O	4.75	48	65
140	1	O	1.52	32	34
	2	O	2.33	38	49
	3	O	2.63	42	42
	4▽	O	3.65	42	53
	5▽	O	4.95	48	65
150	1	x	1.60	38	36
	2	x	2.59	38	49
	3	O	2.95	42	42
	4▽	O	4.04	42	53
	5▽	O	5.15	48	65
160	1	x	1.75	38	36
	2	x	2.40	38	49
	3	x	2.80	42	42
	4▽	O	3.62	48	60
	5▽	O	5.45	48	70
170	1	x	2.00	35	36
	2	x	2.90	35	49
	3	x	3.20	35	42
	4▽	x	4.20	35	60
	5▽	x	5.80	38	70

▲ for Section 13 only

▽ d_d + 4 mm

No. of grooves z	1	2	3	4	5
Face width b_2 (mm)	20	35	50	65	80

● Solid pulley
O Plate pulley (with or without lightening holes)
X Spoked pulley
Hub position: flush one side
Material: GG 20 – DIN 1691

optibelt
Power Transmission

Standard Range

optibelt KS V-Grooved Pulleys for Cylindrical Bore – Grooves according to DIN 2211

Section SPA / 13

Datum diameter d_d (mm)	No. of grooves	Type	Weight (≈ kg)	Finished bore d_{max} (mm)	Distance through hub l (mm)
180	1	x	2.02	38	36
	2	x	3.15	42	49
	3	x	3.60	42	42
	4▽	x	4.65	48	60
	5▽	x	6.13	48	70
190	1	x	2.02	38	36
	2	x	3.20	42	49
	3	x	4.00	42	42
	4▽	x	5.24	48	60
	5▽	x	6.31	48	70
200	1	x	2.40	38	36
	2	x	2.85	42	49
	3	x	4.21	48	42
	4▽	x	4.95	55	60
	5▽	x	6.45	60	70
212	1	x	2.70	40	36
	2	x	3.40	42	49
	3	x	4.40	42	42
	4▽	x	5.68	42	60
	5▽	x	6.85	42	70
225	1	x	2.75	40	36
	2	x	3.87	42	49
	3	x	4.60	42	42
	4▽	x	6.50	42	60
	5▽	x	7.25	42	70
236	1	x	3.30	38	36
	2	x	4.10	42	49
	3	x	4.90	48	42
	4▽	x	6.20	55	60
	5▽	x	7.50	55	70
250	1	x	3.40	42	36
	2	x	4.32	48	49
	3	x	5.30	48	42
	4▽	x	7.00	55	60
	5▽	x	7.85	60	70
280	1	x	3.90	42	44
	2	x	5.35	48	53
	3	x	6.50	48	47
	4▽	x	8.52	55	60
	5▽	x	9.90	60	70
300	1	x	4.25	48	44
	2	x	5.90	48	53
	3	x	7.50	55	47
	4▽	x	9.82	55	60
	5▽	x	11.30	60	70

▽ d_d + 4 mm

Datum diameter d_d (mm)	No. of grooves	Type	Weight (≈ kg)	Finished bore d_{max} (mm)	Distance through hub l (mm)
315	1	x	4.78	48	44
	2	x	6.60	48	53
	3	x	8.75	55	47
	4▽	x	11.80	55	60
	5▽	x	12.50	60	70
355	1	x	5.50	48	44
	2	x	7.70	55	53
	3	x	9.55	55	47
	4▽	x	11.80	55	60
	5▽	x	12.85	60	70
400	1▽	x	6.85	50	50
	2▽	x	8.80	55	53
	3▽	x	10.95	60	47
	4▽	x	12.40	60	67
	5▽	x	15.90	60	82
450	1▽	x	7.50	55	50
	2▽	x	9.40	55	53
	3▽	x	12.15	60	47
	4▽	x	14.20	65	67
	5▽	x	18.30	65	82
500	1▽	x	10.50	55	50
	2▽	x	10.70	55	55
	3▽	x	13.45	60	60
	4▽	x	16.25	65	67
	5▽	x	22.80	65	82
560	1▽	x	14.00	55	60
	2▽	x	13.10	55	60
	3▽	x	15.60	60	74
	4▽	x	19.40	65	67
	5▽	x	24.50	65	82

▽ d_d + 4 mm

No. of grooves z	1	2	3	4	5
Face width b_2 (mm)	20	35	50	67	82

● Solid pulley
O Plate pulley (with or without lightening holes)
X Spoked pulley
Hub position: flush one side
Material: GG 20 – DIN 1691

optibelt
Power Transmission

Standard Range

optibelt KS V-Grooved Pulleys for Cylindrical Bore – Grooves according to DIN 2211

Section SPB/17

Datum diameter d_d (mm)	No. of grooves	Type	Weight (≈ kg)	Finished bore d_{max} (mm)	Distance through hub l (mm)
56▲	1	O	0.61	20	41
	2	O	1.00	20	60
	3	O	1.00	22	62
63▲	1	O	0.76	20	41
	2	O	1.20	20	60
	3	O	1.20	22	62
71▲	1	O	0.79	22	41
	2	O	1.31	22	60
	3	O	1.60	22	55
75▲	1	O	0.82	25	41
	2	O	1.42	25	60
	3	O	1.85	25	62
80▲	1	O	1.03	28	41
	2	O	1.65	28	60
	3	O	2.05	28	55
	4▽	O	2.40	28	70
	5▽	O	2.73	28	80
85▲	1	O	1.10	30	41
	2	O	1.70	30	60
	3	O	2.15	30	55
	4▽	O	2.70	30	70
	5▽	O	3.00	30	75
90▲	1	O	1.17	32	41
	2	O	1.80	38	60
	3	O	2.30	38	55
	4▽	O	3.05	38	70
	5▽	O	3.30	38	75
95▲	1	O	1.25	35	41
	2	O	2.00	38	60
	3	O	2.50	38	67
	4▽	O	2.90	38	70
	5▽	O	3.60	38	75
100▲	1	O	1.32	32	41
	2	O	2.11	38	60
	3	O	2.85	38	55
	4▽	O	3.81	38	70
	5▽	O	4.45	38	75
	6▽	O	5.20	38	124
106▲	1	O	1.45	28	41
	2	O	2.00	28	60
	3	O	3.00	30	55
	4▽	O	4.30	30	70
	5▽	O	5.10	32	75
	6▽	O	6.00	32	124
112▲	1	O	1.53	32	41
	2	O	2.35	38	60
	3	O	3.10	38	55
	4▽	O	4.75	42	67
	5▽	O	5.61	42	75
	6▽	O	6.15	42	85
118▲	1	O	1.57	32	41
	2	O	2.43	38	60
	3	O	3.20	42	55
	4▽	O	6.20	42	70
	5▽	O	7.20	42	75
	6▽	O	6.60	42	85
125▲	1	O	1.66	32	41
	2	O	2.55	38	60
	3	O	3.28	42	55
	4▽	O	4.74	42	70
	5▽	O	8.60	42	75
	6▽	O	8.00	48	85
132▲	1	O	1.88	30	41
	2	O	2.63	30	60
	3	O	3.49	42	55
	4▽	O	6.30	42	70
	5▽	O	9.40	42	75
	6▽	O	8.50	42	85
140	1	O	2.10	32	41
	2	O	2.90	38	60
	3	O	3.90	42	55
	4▽	O	6.92	42	70
	5▽	O	7.58	48	75
	6▽	O	11.40	48	85
150	1	O	2.43	32	43
	2	O	3.24	38	48
	3	O	4.28	42	60
	4▽	O	6.76	42	70
	5▽	O	8.43	48	75
	6▽	O	12.10	48	85
160	1	x	2.50	38	43
	2	x	3.32	42	48
	3	x	4.60	48	60
	4▽	O	7.01	48	70
	5▽	O	9.35	48	75
	6▽	O	12.85	55	85
170	1	x	2.85	42	43
	2	x	3.44	42	48
	3	x	4.89	42	60
	4▽	O	7.20	48	70
	5▽	O	8.90	48	75
	6▽	O	13.10	48	85

▲ for Section 17 only

▽ d_d + 5,5 mm

No. of grooves z	1	2	3	4	5	6
Face width b_2 (mm)	25	44	63	86	105	124

● Solid pulley
O Plate pulley (with or without lightening holes)
× Spoked pulley
Hub position: flush one side
Material: GG 20 – DIN 1691

optibelt
Power Transmission

Standard Range

optibelt KS V-Grooved Pulleys for Cylindrical Bore – Grooves according to DIN 2211

Section SPB / 17

Datum diameter d_d (mm)	No. of grooves	Type	Weight (≈ kg)	Finished bore d_{max} (mm)	Distance through hub l (mm)
180	1	x	3.10	38	43
	2	x	3.90	42	48
	3	x	5.28	48	60
	4▽	x	7.42	48	70
	5▽	O	9.05	55	75
	6▽	O	10.80	60	85
190	1	x	3.19	42	43
	2	x	4.22	42	48
	3	x	5.49	42	60
	4▽	x	7.69	48	70
	5▽	O	9.22	50	75
	6▽	O	11.95	55	85
200	1	x	3.40	38	43
	2	x	4.45	42	48
	3	x	5.85	48	60
	4▽	x	7.98	50	60
	5▽	O	9.50	55	80
	6▽	O	12.20	60	90
212	1	x	3.75	42	43
	2	x	4.66	42	48
	3	x	6.15	48	60
	4▽	x	7.70	50	70
	5▽	x	10.30	50	80
	6▽	O	13.51	55	90
225	1	x	4.00	42	43
	2	x	5.40	42	48
	3	x	6.90	48	60
	4▽	x	8.64	55	70
	5▽	O	11.72	50	90
	6▽	O	14.75	55	90
250	1	x	4.20	42	43
	2	x	6.10	48	55
	3	x	8.60	55	60
	4▽	x	9.70	60	70
	5▽	x	13.20	65	80
	6▽	x	17.00	65	90
280	1	x	5.70	48	49
	2	x	7.04	48	55
	3	x	9.67	55	60
	4▽	x	11.52	60	70
	5▽	x	15.50	65	80
	6▽	x	18.00	65	90
300	1	x	5.90	48	49
	2	x	7.50	48	55
	3	x	10.50	55	67
	4▽	x	12.40	60	80
	5▽	x	15.40	65	80
	6▽	x	18.25	70	90
315	1	x	6.40	48	49
	2	x	8.22	55	55
	3	x	12.90	55	67
	4▽	x	13.00	60	80
	5▽	x	17.60	65	80
	6▽	x	20.60	75	90
355	1	x	7.00	48	49
	2	x	9.70	55	55
	3	x	13.40	55	67
	4▽	x	18.25	60	80
	5▽	x	18.75	65	75
	6▽	x	19.75	75	90
400	1▽	x	8.46	50	49
	2▽	x	10.00	55	55
	3▽	x	14.30	60	67
	4▽	x	18.50	65	80
	5▽	x	22.50	70	85
	6▽	x	28.00	75	90
450	1▽	x	9.86	50	55
	2▽	x	10.87	55	55
	3▽	x	15.05	60	67
	4▽	x	20.50	65	80
	5▽	x	26.00	70	80
	6▽	x	28.90	75	90
500	1▽	x	10.70	50	55
	2▽	x	13.70	60	59
	3▽	x	15.20	65	67
	4▽	x	21.30	70	80
	5▽	x	30.00	75	80
	6▽	x	33.80	80	90
560	2▽	x	15.00	60	55
	3▽	x	24.20	65	67
	4▽	x	26.20	70	80
	5▽	x	34.40	75	80
	6▽	x	39.00	80	90
630	2▽	x	20.20	60	80
	3▽	x	27.00	65	80
	4▽	x	30.80	75	86
	5▽	x	37.20	80	90
	6▽	x	44.00	90	100

▽ d_d + 5,5 mm

No. of grooves z	1	2	3	4	5	6
Face width b_2 (mm)	25	44	63	86	105	124

● Solid pulley
O Plate pulley (with or without lightening holes)
X Spoked pulley
Hub position: flush one side
Material: GG 20 – DIN 1691

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Power Transmission

Standard Range

optibelt KS V-Grooved Pulleys for Cylindrical Bore – Grooves according to DIN 2211

Section SPC/22

Datum diameter d_d (mm)	No. of grooves	Type	Weight (≈ kg)	Finished bore d_{max} (mm)	Distance through hub l (mm)
180	1	O	4.20	40	54
	2	O	7.20	50	64
	3	O	10.40	55	90
	4	O	10.50	55	95
	5	O	18.00	60	100
	6	O	23.70	65	115
200	1	O	4.80	40	54
	2	O	7.80	50	64
	3	O	10.60	55	90
	4	O	11.20	60	95
	5	O	15.40	65	100
	6	O	27.00	70	125
225	1	x	5.50	48	54
	2	x	7.80	52	64
	3	x	10.60	52	90
	4	x	13.10	55	95
	5	x	16.70	60	100
	6	x	35.00	60	115
250	1	x	7.30	52	54
	2	x	8.80	52	64
	3	x	11.10	65	90
	4	x	15.30	70	95
	5	x	19.00	75	100
	6	x	23.70	60	115
280	1	x	8.70	52	54
	2	x	10.90	55	64
	3	x	15.60	70	90
	4	x	17.50	75	95
	5	x	20.50	75	100
315	1	x	9.10	52	54
	2	x	13.00	55	74
	3	x	17.10	70	90
	4	x	20.00	75	95
	5	x	24.70	80	100
	6	x	31.20	85	115
335	2	x	14.00	55	74
	3	x	18.30	55	90
	4	x	22.40	60	95
	5	x	28.30	65	100
	6	x	34.40	75	115
355	2	x	15.20	60	74
	3	x	19.20	70	90
	4	x	25.80	70	95
	5	x	32.00	75	100
	6	x	36.20	75	115
400	3	x	20.60	70	90
	4	x	28.00	70	105
	5	x	32.00	75	100
450	2	x	21.10	70	80
	3	x	26.30	75	90
	4	x	31.10	75	105
	5	x	42.20	80	110
	6	x	48.50	80	120
500	3	x	28.40	75	90
	4	x	34.10	75	105
	5	x	48.20	80	110
	6	x	52.50	80	120
560	3	x	31.10	75	90
	4	x	39.00	75	105
	5	x	54.10	85	110
	6	x	61.50	85	120
630	3	x	38.50	80	90
	4	x	48.10	80	105
	5	x	62.20	85	110
	6	x	73.20	85	120

No. of grooves z	1	2	3	4	5	6
Face width b_2 (mm)	38	64	90	116	142	168

● Solid pulley
O Plate pulley (with or without lightening holes)
× Spoked pulley
Hub position: flush one side
Material: GG 20 – DIN 1691

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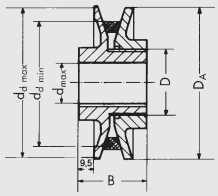
Power Transmission

Standard Range

optibelt *RE* Variable Speed Pulleys



Plain bored variable datum diameters pulleys

Material: AL

Designation	D_A (mm)	D (mm)	Finished bore d_{max} (mm)	B (mm)	Section	$d_{d\,min}$ (mm)	$d_{d\,max}$ (mm)	Variation factor	Weight (≈ kg)
R 083-1	83	40	26	48	SPZ Z/10	63 57	79 77	1.25 1.35	0.90
R 093-1	93	45	28	48	SPZ SPA Z/10 A/13	67 66 61 60	89 87 87 85	1.33 1.32 1.43 1.42	1.03
R 108-1	108	50	28	48	SPZ SPA Z/10 A/13	79 81 73 75	94 102 93 100	1.19 1.26 1.27 1.33	1.65
R 121-1	121	55	28	48	SPZ SPA Z/10 A/13	92 94 86 88	107 115 106 113	1.16 1.22 1.23 1.28	1.75
R 138-1	138	55	38	48	SPZ SPA SPB Z/10 A/13 B/17	109 111 116 103 105 109	124 132 131 123 130 128	1.14 1.19 1.13 1.19 1.24 1.17	2.60
R 160-1	160	80	52	48	SPZ SPA SPB Z/10 A/13 B/17	119 121 126 113 115 119	134 143 153 133 141 150	1.13 1.18 1.21 1.18 1.23 1.26	4.50
R 180-1	180	80	52	48	SPA SPB A/13 B/17	141 146 135 139	163 173 161 170	1.16 1.18 1.19 1.22	5.40

Al = Aluminium

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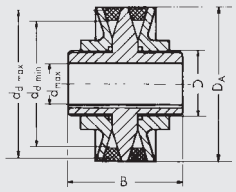
Power Transmission

Standard Range

optibelt *RE* Variable Speed Pulleys



Plain bored variable datum diameters pulleys

Material: Al

Designation	D_A (mm)	D (mm)	Finished bore d_{max} (mm)	B (mm)	Section	$d_{d\ min}$ (mm)	$d_{d\ max}$ (mm)	Variation factor	Weight (≈ kg)
R 083-2	83	40	26	76	SPZ Z/10	63 57	79 77	1.25 1.35	1.50
R 093-2	93	45	28	76	SPZ SPA Z/10 A/13	67 66 61 60	89 87 87 85	1.33 1.32 1.43 1.42	1.75
R 108-2	108	50	28	76	SPZ SPA Z/10 A/13	79 81 73 75	94 102 93 100	1.19 1.26 1.27 1.33	2.15
R 121-2	121	55	28	76	SPZ SPA Z/10 A/13	92 94 86 88	107 115 106 113	1.16 1.22 1.23 1.28	2.70
R 138-2	138	55	38	76	SPZ SPA SPB Z/10 A/13 B/17	109 111 116 103 105 109	124 132 131 123 130 128	1.14 1.19 1.13 1.19 1.24 1.17	4.50
R 160-2	160	80	52	90	SPZ SPA SPB Z/10 A/13 B/17	119 121 126 113 115 119	134 143 153 133 141 150	1.13 1.18 1.21 1.18 1.23 1.26	7.50
R 180-2	180	80	52	90	SPA SPB A/13 B/17	141 146 135 139	163 173 161 170	1.16 1.18 1.19 1.22	9.20

Al = Aluminium

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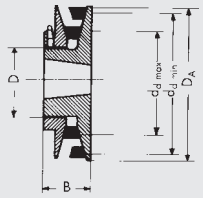
Power Transmission

Standard Range

optibelt *RE* Variable Speed Pulleys



Variable datum diameters pulleys for taper bushes

Material: GG

Designation	D_A (mm)	D (mm)	Finished bore d_{max} (mm)	B (mm)	Section	$d_{d\,min}$ (mm)	$d_{d\,max}$ (mm)	Variation factor	Weight without bush (≈ kg)	Taper bush
TB-R 092-1	92	46	25	31	SPZ Z/10	60 55	89 88	1.48 1.60	0.85	1008
TB-R 108-1	108	50	28	35	SPZ SPA Z/10 A/13 B/17	75 76 68 70 87	93 102 92 100 97	1.24 1.34 1.35 1.43 1.11	1.20	1108
TB-R 120-1	120	55	28	35	SPZ SPA Z/10 A/13 B/17	87 88 80 82 98	105 114 104 112 108	1.20 1.29 1.30 1.36 1.10	1.50	1108
TB-R 138-1	138	65	32	38	SPZ SPA Z/10 A/13 B/17	105 106 98 100 116	123 132 122 130 126	1.17 1.24 1.24 1.30 1.09	2.20	1215
TB-R 159-1	159	75	42	39	SPZ SPA Z/10 A/13 B/17	126 128 122 128 125	144 154 152 152 148	1.14 1.20 1.24 1.18 1.18	3.50	1615
TB-R 180-1	180	75	42	45	SPZ SPA SPB Z/10 A/13 B/17	133 134 137 128 128 132	151 160 173 151 158 170	1.14 1.19 1.26 1.17 1.23 1.29	4.20	1615

Taper bush	1008	1108	1215	1615
bore d_2 (mm) from ... to ...	10-25	10-28	11-32	14-42

GG = cast iron

Bore diameter d_2 see page 65

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Standard Range
optibelt *TB* Taper Bushes

Taper bushes with metrical bore, grooves according to DIN 6885 Part 1

	Taper bush															
	1008	1108	1210	1215	1310	1610	1615	2012	2517	3020	3030	3525	3535	4040	4545	5050
Bore diameter d_2 **(mm)**	10 11 12 14 16 18 19 20 22 24▲ 25▲	10 11 12 14 16 18 19 20 22 24 25 28▲	11 12 14 16 18 19 20 22 24 25 28 30 32	11 12 14 16 18 19 20 22 24 25 28 30 32	14 16 18 19 20 22 24 25 28 30 32 35	14 16 18 19 20 22 24 25 28 30 32 35 38 40 42▲	14 16 18 19 20 22 24 25 28 30 32 35 38 40 42▲	14 16 18 19 20 22 24 25 28 30 32 35 38 40 42 45 48 50	16 18 19 20 22 24 25 28 30 32 35 38 40 42 45 48 50 55 60	25 28 30 32 35 38 40 42 45 48 50 55 60 65 70 75	35 38 40 42 45 48 50 55 60 65 70 75	35 38 40 42 45 48 50 55 60 65 70 75 80 85 90	35 38 40 42 45 48 50 55 60 65 70 75 80 85 90	40 42 45 48 50 55 60 65 70 75 80 85 90 95 100	55 60 65 70 75 80 85 90 95 100 105 110	70 75 80 85 90 95 100 105 110 115 120 125
														Material: GG 20		
C torque (Nm)	5.7	5.7	20	20	20	20	20	31	49	92	92	115	115	172	195	275
Bush length (mm)	22.3	22.3	25.4	38.1	25.4	25.4	38.1	31.8	44.5	50.8	76.2	63.5	88.9	101.6	114.3	127.0
Weight for $d_{2\ min}$ (≈ kg)	0.12	0.16	0.28	0.39	0.32	0.41	0.60	0.75	1.06	2.50	3.75	3.90	5.13	7.68	12.70	15.17

▲ This is a flat-groove bore.

Flat groove taper bushes

Bore diameter d_2 (mm)	Groove width b (mm)	Groove depth t_2 (mm)	Bore diameter d_2 (mm)	Groove width b (mm)	Groove depth t_2 (mm)
24	8	2.0	28	28	2.0
25	8	1.3	42	12	2.2

Taper bushes with inch bore, grooves according to British Standard BS 46 Part 1

	Taper bush															
	1008	1108	1210	1215	1310	1610	1615	2012	2517	3020	3030	3525	3535	4040	4545	5050
Bore diameter d_2 **(inch)**	3/8* 1/2 5/8 3/4 7/8 1▲	3/8* 1/2 5/8 3/4 7/8 1 1 1/8▲*	1/2 5/8 3/4 7/8 1 1 1/8 1 1/4	5/8* 3/4 7/8 1 1 1/8 1 1/4	1/2* 5/8* 3/4* 7/8* 1* 1 1/8 1 1/4 1 3/8	1/2 5/8 3/4 7/8 1 1 1/8 1 1/4 1 3/8 1 1/2 1 5/8	1/2 5/8 3/4 7/8* 1 1 1/8 1 1/4 1 3/8 1 1/2 1 5/8▲*	5/8* 3/4 7/8 1 1 1/8 1 1/4 1 3/8 1 1/2 1 5/8 1 3/4 1 7/8 2	3/4 7/8 1 1 1/8 1 1/4 1 3/8 1 1/2 1 5/8 1 3/4 1 7/8 2 2 1/8 2 1/4 2 3/8 2 1/2	1 1/4 1 3/8 1 1/2 1 5/8 1 3/4* 1 7/8 2 2 1/8* 2 1/4 2 3/8 2 1/2 2 5/8 2 3/4 2 7/8 3	1 1/4 1 3/8 1 1/2 1 5/8 1 3/4* 1 7/8 2 2 1/8* 2 1/4 2 3/8 2 1/2 2 5/8* 2 3/4* 2 7/8 3	1 1/2 1 5/8 1 3/4 1 7/8 2 2 1/8 2 1/4 2 3/8 2 1/2 2 5/8 2 3/4 2 7/8 3 3 1/8 3 1/4 3 3/8 3 1/2▲	1 1/2 1 5/8 1 3/4 1 7/8 2 2 1/8 2 1/4 2 3/8 2 1/2 2 5/8 2 3/4 2 7/8 3 3 1/8 3 1/4 3 3/8 3 1/2▲	1 3/4* 1 7/8* 2* 2 1/8* 2 1/4* 2 3/8* 2 1/2* 2 5/8* 2 3/4* 2 7/8* 3* 3 1/8* 3 1/4* 3 3/8* 3 1/2* 3 3/4▲* 4▲*	2 1/4* 2 3/8* 2 1/2* 2 3/4* 2 7/8* 3* 3 1/4* 3 3/8* 3 1/2* 3 3/4* 4* 4 1/4▲* 4 1/2▲*	3* 3 1/4* 3 1/2* 3 3/4* 4* 4 1/4* 4 1/2* 4 3/4* 5▲*
														Material: GG 20		
Starting torque (Nm)	5.7	5.7	20	20	20	20	20	31	49	92	92	115	115	172	195	275
Bush length (mm)	22.3	22.3	25.4	38.1	25.4	25.4	38.1	31.8	44.5	50.8	76.2	63.5	88.9	101.6	114.3	127.0
Weight for $d_{2\ min}$ (≈ kg)	0.12	0.16	0.28	0.39	0.32	0.41	0.60	0.75	1.06	2.50	3.75	3.90	5.13	7.68	12.70	15.17

* Non stock item ▲ This is a flat-groove bore.

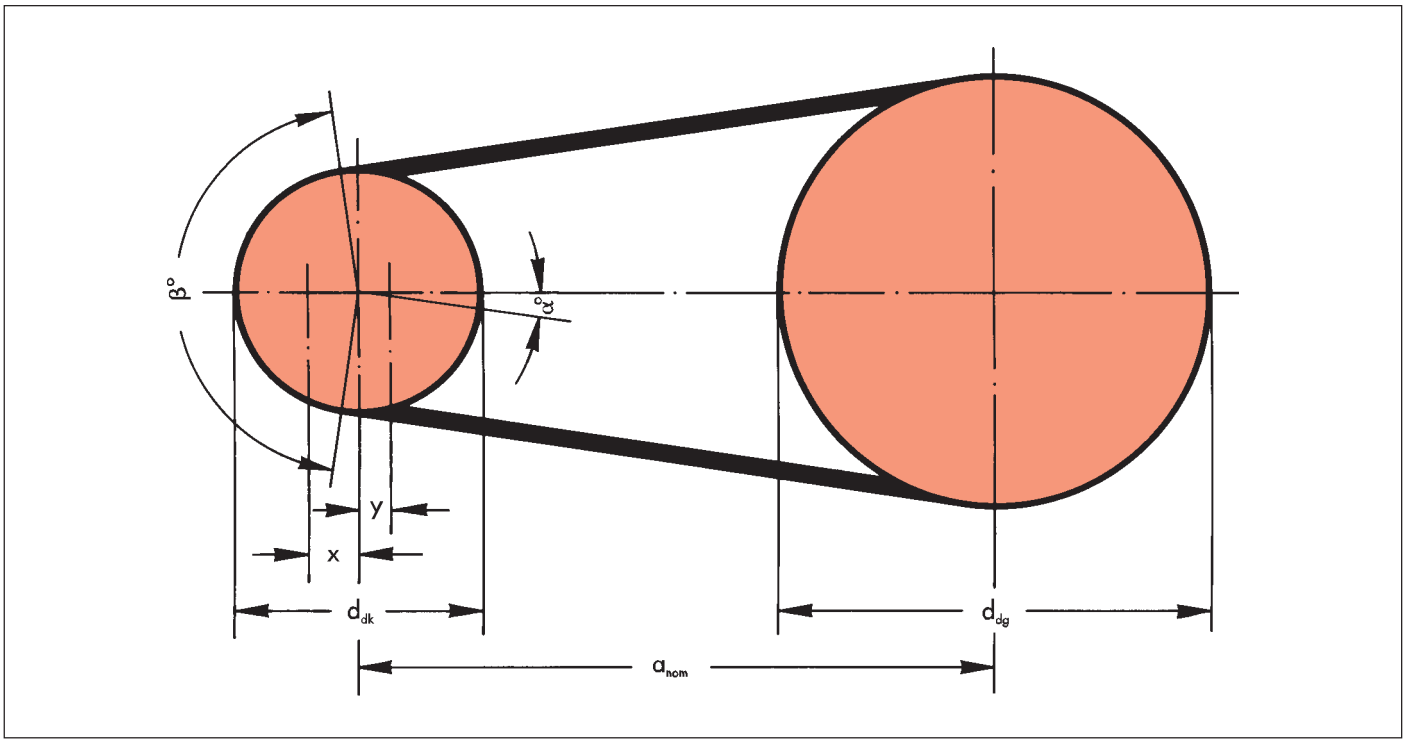
optibelt
Power Transmission

Design Calculation
Abbreviations used in Formulae

a	=	drive centre distance provisional	(mm)
a_{nom}	=	drive centre distance calculated with a standard belt length	(mm)
b_d	=	datum width	
b_1	=	top width	
c_1	=	arc of contact correction factor	
c_2	=	service factor	
c_3	=	belt length factor	
c_4	=	number of idlers	
d_{dg}	=	datum diameter of large pulley (selection to BS 3790/DIN 2211)	(mm)
d_{dk}	=	datum diameter of small pulley (selection to BS 3790/DIN 2211)	(mm)
d_{d1}	=	datum diameter of the driver pulley	(mm)
d_{d2}	=	datum diameter of the driven pulley	(mm)
E	=	belt deflection per 100 mm span length	(mm)
E_a	=	belt deflection for a given span length	(mm)
f	=	load used to set belt tension	(N)
f_B	=	flex rate	(sec^{-1})
i	=	drive ratio	
k	=	constant for calculating centrifugal force in belt set	
L	=	span length	(mm)
L_{iSt}	=	standard inside belt length	(mm)
L_{ith}	=	calculated inside belt length	(mm)
L_{dSt}	=	standard belt datum length	(mm)
L_{dth}	=	calculated belt datum length	(mm)
n_g	=	speed of the larger pulley	(rpm)
n_k	=	speed of the smaller pulley	(rpm)
n_1	=	speed of the driver pulley	(rpm)
n_2	=	speed of the driven pulley	(rpm)
P	=	motor or normal running power	(kW*)
P_B	=	design power	(kW*)
P_N	=	nominal power rating per belt	(kW*)
S_a	=	minimum static shaft loading	(N)
T	=	minimum static tension per belt	(N)
v	=	belt speed	(m/s)
x	=	minimum allowance above centre distance a_{nom} for belt stretch and wear	(mm)
y	=	minimum allowance below centre distance a_{nom} for easy belt fitting	(mm)
z	=	number of belts	
α	=	angle of belt drive = $90° - \frac{\beta}{2}$	(degrees)
β	=	arc of contact on small pulley	(degrees)

* 1 kW = 1kNm/s

The terms pitch diameter (d_w), pitch length (L_w) and pitch circumference (U_w) used previously have been changed to datum diameter (d_d), datum length (L_d) and datum circumference (U_d), in order to bring them into line with current Standard terminology.



Design Calculation

Optibelt Nominal Power Rating P_N – Arc of Contact Correction Factor c_1

The Optibelt nominal power ratings P_N in Tables 25 to 48 are based upon an internationally recognised basic formula and a theoretical belt life of 25,000 hours ander ideal conditions. This formula contains material constants that take into account the quality of the raw materials used and make allowances for production methods. The special qualities of Optibelt V-belts made it possible for example to use other material constants than those given in DIN Standards. As a result, the nominal Optibelt power ratings P_N significantly exceed the ratings given, for wedge belts in BS 3790 and DIN 7753 Part 2 and for classical V-belts in BS 3790 and DIN 2218, for the same theoretical belt life. The nominal power ratings P_N are based on the smallest loaded pulley in the drive system. The belt power rating value P_N is calculated taking into account

- the datum diameter of the smaller pulley d_{dk}
- the speed of the smaller pulley n_k
- the drive ratio i
- an assumed arc of contact at the smaller pulley of = 180°
- a reference belt length for the specific belt section.

In order to account for the true drive data, based on the arc of contact and the belt lengths employed, correction factors for the arc of contact c_1 and length c_3 have been introduced.

If required, drive calculations can be provided for any theoretical belt life.

Intermediate values for nominal power rating, arc of contact and length correction factors can be foand by linear interpolation.

The factor c_1 corrects the power rating P_N when the arc of contact is smaller than 180°, as the P_N value was calculated on the arc of contact β = 180° on the smaller pulley.

Table 16

$\frac{d_{dg} - d_{dk}}{a_{nom}}$	$\beta \approx$	c_1
0	180°	1.00
0.05	177°	1.00
0.10	174°	1.00
0.15	171°	1.00
0.20	168°	0.99
0.25	165°	0.99
0.30	162°	0.99
0.35	160°	0.99
0.40	156°	0.99
0.45	153°	0.98
0.50	150°	0.98
0.55	147°	0.98
0.60	144°	0.98
0.65	141°	0.97
0.70	139°	0.97
0.75	136°	0.97
0.80	133°	0.96
0.85	130°	0.96
0.90	126°	0.96
0.95	123°	0.95
1.00	119°	0.94
1.05	115°	0.94
1.10	112°	0.93
1.15	109°	0.93
1.20	106°	0.92
1.25	103°	0.91
1.30	100°	0.91
1.35	96°	0.90
1.40	92°	0.88
1.45	88°	0.87
1.50	84°	0.86
1.55	80°	0.84
1.60	77°	0.83

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Power Transmission

Design Calculation
Service Factor c_2

The service factor c2 takes account of the daily operating time and of the type of driver and driven machine. It applies exclusively to two-pulley drives. Other arrangements such as drives with tension and guide idlers have not been taken into consideration. Pages 114-116 provide the relevant basic design guidelines for drives with more than two pulleys.

Adverse operating conditions (e.g. aggressive dust, particularly high ambient temperatures or the effects of various media) **have not** been taken into account. As it is practically impossible to cover every conceivable combination of driver / driven machine / operating conditions in a summary that complies with the relevant standards, the service factors are **approximate values.**

In special cases, e.g. increased starting torque (direct on-line starting of fans), on drives with frequent starts and stops, on systems subject to exceptional shock loads, or when significant masses are to be accelerated or braked, the service factor must be increased.

Empirical value:

With a starting torque > 1.8, this figure is to be divided by 1.5 in order to calculate the minimum service factor c_2. Example: Starting torque MA = 3.0; c_2 selected 2.0. Please consult our Applications Engineering Department for the solution of special problems.

Table 17

Types of Driven Machine	Types of Prime Movers: A.c. motors and three-phase squirrel cage motors with a normal starting torque (up to 1.8 times nominal torque), e.g. synchronous motors and single-phase motors with starting-aid phase, three-phase squirrel cage motors with direct start, star-delta connection or slip ring starters; direct-current shunt-wound motors, combustion engines and turbines n > 600 rpm			Types of Prime Movers: A.c. motors and three-phase squirrel cage motors with high starting torque (over 1.8 times nominal torque), e.g. single-phase motors with high starting torque; direct-current series-wound motors with series connection and compound; combustion engines and turbines n ≤ 600 rpm		
	Service factor c_2 for daily operation time of (hours)			Service factor c_2 for daily operation time of (hours)		
	up to 10	over 10 below 16	over 16	up to 10	over 10 below 16	over 16
Light drives Centrifugal pumps and compressors, belt conveyors (lightweight materials), fans and pumps up to 7.5 kW	1.1	1.1	1.2	1.1	1.2	1.3
Medium drives Plate cutters, presses, chain and belt conveyors (heavy materials), screen vibrators, generators and exciters, bakery machinery, machine tools (lathes and grinders), laundry machinery, printing machines, fans and pumps over 7.5 kW	1.1	1.2	1.3	1.2	1.3	1.4
Heavy duty drives Crushing plants, piston compressors, heavy-duty conveyors, directional throw conveyors, push conveyors (screw, plate belts, bucket and shovel conveyors), lifts, brick presses, textile machinery, paper machinery, piston pumps, dredger pumps, saw mills, hammer mills	1.2	1.3	1.4	1.4	1.5	1.6
Very heavy duty drives Heavy-duty mills, stone crushers, calenders, mixers, winches, cranes, dredgers, heavy duty wood working machinery	1.3	1.4	1.5	1.5	1.6	1.8

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Power Transmission

Design Calculation

Length Factor c_3 for optibelt Wedge Belts and Kraftbands

The length factor c_3 takes into account the flex rate of the belt based on the reference length for the particular belt section.

This results in the following relationships:

Belt length > reference length	$c_3 > 1.0$
Belt length = reference length	$c_3 = 1.0$
Belt length < reference length	$c_3 < 1.0$

Table 18

Section SPZ, XPZ		Section SPA, XPA		Section SPB, XPB		Section SPC, XPC	
Datum length (mm)	c_3	Datum length (mm)	c_3	Datum length (mm)	c_3	Datum length (mm)	c_3
630	**0.83**	800	**0.81**	1250	**0.83**	2000	**0.85**
670	**0.84**	850	**0.82**	1320	**0.84**	2120	**0.86**
710	**0.85**	900	**0.83**	1400	**0.85**	2240	**0.86**
750	**0.86**	950	**0.84**	1500	**0.86**	2360	**0.87**
800	**0.87**	1000	**0.85**	1600	**0.87**	2500	**0.88**
850	**0.88**	1060	**0.86**	1700	**0.88**	2650	**0.89**
900	**0 89**	1120	**0.86**	1800	**0.89**	2800	**0.90**
950	**0.90**	1180	**0.87**	1900	**0.90**	3000	**0.91**
1000	**0.91**	1250	**0.88**	2000	**0.91**	3150	**0.91**
1060	**0.92**	1320	**0.89**	2120	**0.92**	3350	**0.92**
1120	**0.93**	1400	**0.90**	2240	**0.93**	3550	**0.93**
1180	**0.94**	1500	**0.91**	2360	**0.93**	3750	**0.94**
1250	**0.95**	1600	**0.92**	2500	**0.94**	4000	**0.95**
1320	**0.96**	1700	**0.93**	2650	**0.95**	4250	**0 96**
1400	**0.98**	1800	**0.94**	2800	**0.96**	4500	**0.97**
1500	**0.99**	1900	**0.95**	3000	**0.97**	4750	**0.98**
1600	**1.00**	2000	**0.96**	3150	**0.98**	5000	**0.98**
1700	**1.01**	2120	**0.97**	3350	**0.99**	5300	**0.99**
1800	**1.02**	2240	**0.98**	**3550**	**1.00**	**5600**	**1.00**
1900	**1.03**	2360	**0.99**	3750	**1.01**	6000	**1.01**
2000	**1.04**	**2500**	**1.00**	4000	**1.02**	6300	**1.02**
2120	**1.05**	2650	**1.01**	4250	**1.03**	6700	**1.03**
2240	**1.06**	2800	**1.02**	4500	**1.04**	7100	**1.04**
2360	**1.07**	3000	**1.03**	4700	**1.04**	7500	**1.04**
2500	**1.08**	3150	**1.04**	5000	**1.05**	8000	**1.05**
2650	**1.09**	3350	**1.05**	5300	**1.06**	8500	**1.06**
2800	**1.10**	3550	**1.06**	5600	**1.07**	9000	**1.07**
3000	**1.11**	3750	**1.07**	6000	**1.08**	9500	**1.08**
3150	**1.12**	4000	**1.08**	6300	**1.09**	10000	**1.09**
3350	**1.13**	4250	**1.09**	6700	**1.10**	10600	**1.09**
3550	**1.15**	4500	**1.10**	7100	**1.11**	11200	**1.10**
3750	**1.16**	4750	**1.11**	7500	**1.12**	11800	**1.11**
4000	**1.17**	5000	**1.12**	8000	**1.13**	12500	**1.12**
4250	**1.18**	5300	**1.13**	8500	**1.14**	13200	**1.13**
4500	**1.19**	5600	**1.14**	9000	**1.15**	14000	**1.14**
		6000	**1.15**	9500	**1.16**	15000	**1.15**
				10000	**1.17**		

optibelt
Power Transmission

Design Calculation

Length Factor c_3 for optibelt Wedge Belts and Kraftbands

Table 19

Section 3V/9N, 3VX/9NX 3V/9J, 3VX/9JX			Section 5V/15N, 5VX/15NX 5V/15J, 5VX/15JX			Section 8V/25N 8V/25J		
Belt designation	Outside length (mm)	c_3	Belt designation	Outside length (mm)	c_3	Belt designation	Outside length (mm)	c_3
3V 265	673	**0.84**	5V 500	1270	**0.84**	8V 1000	2540	**0.87**
3V 280	711	**0.85**	5V 530	1346	**0.85**	8V 1060	2692	**0.87**
3V 300	762	**0.86**	5V 560	1422	**0.85**	8V 1120	2845	**0 88**
3V 315	800	**0.87**	5V 600	1524	**0.87**	8V 1180	2997	**0.89**
3V 335	851	**0.88**	5V 630	1600	**0.87**	8V 1250	3175	**0.90**
3V 355	902	**0.90**	5V 670	1702	**0.88**	8V 1320	3353	**0.91**
3V 375	952	**0.91**	5V 710	1803	**0.89**	8V 1400	3556	**0.92**
3V 400	1016	**0.92**	5V 750	1905	**0.90**	8V 1500	3810	**0.93**
3V 425	1079	**0.93**	5V 800	2032	**0.91**	8V 1600	4064	**0.93**
3V 450	1143	**0.94**	5V 850	2159	**0.92**	8V 1700	4318	**0.94**
3V 475	1206	**0.95**	5V 900	2286	**0.93**	8V 1800	4572	**0.95**
3V 500	1270	**0.96**	5V 950	2413	**0.94**	8V 1900	4826	**0.96**
3V 530	1346	**0.97**	5V 1000	2540	**0.95**	8V 2000	5080	**0.97**
3V 560	1422	**0.98**	5V 1060	2692	**0.96**	8V 2120	5385	**0.98**
3V 600	1524	**0.99**	5V 1120	2845	**0.96**	8V 2240	5690	**0.98**
3V 630	**1600**	**1.00**	5V 1180	2997	**0.97**	8V 2360	5994	**0.99**
3V 670	1702	**1.01**	5V 1250	3175	**0.98**	**8V 2500**	**6350**	**1.00**
3V 710	1803	**1.02**	5V 1320	3353	**0.99**	8V 2650	6731	**1.01**
3V 750	1905	**1.03**	**5V 1400**	**3556**	**1.00**	8V 2800	7112	**1.02**
3V 800	2032	**1.04**	5V 1500	3810	**1.01**	8V 3000	7620	**1.03**
3V 850	2159	**1.05**	5V 1600	4064	**1.02**	8V 3150	8001	**1.03**
3V 900	2286	**1.07**	5V 1700	4318	**1.03**	8V 3350	8509	**1.04**
3V 950	2413	**1.07**	5V 1800	4572	**1.04**	8V 3550	9017	**1.05**
3V 1000	2540	**1.08**	5V 1900	4826	**1.05**	8V 3750	9525	**1.06**
3V 1060	2692	**1.09**	5V 2000	5080	**1.06**	8V 4000	10160	**1.07**
3V 1120	2845	**1.11**	5V 2120	5385	**1.07**	8V 4250	10795	**1.08**
3V 1180	2997	**1.11**	5V 2240	5690	**1.07**	8V 4500	11430	**1.09**
3V 1250	3175	**1.13**	5V 2360	5994	**1.08**	8V 4750	12065	**1.09**
3V 1320	3353	**1.14**	5V 2500	6350	**1.09**	8V 5000	12700	**1.10**
3V 1400	3556	**1.15**	5V 2650	6731	**1.10**	8V 5300	13462	**1.11**
3V 1500	3810	**1.16**	5V 2800	7112	**1.11**	8V 5600	14224	**1.12**
3V 1600	4064	**1.17**	5V 3000	7620	**1.12**	8V 6000	15240	**1.13**
3V 1700	4318	**1.18**	5V 3150	8001	**1.13**	8V 6300	16002	**1.13**
3V 1800	4572	**1.19**	5V 3350	8509	**1.14**			
3V 1900	4826	**1.20**	5V 3550	9017	**1.15**			
3V 2000	5080	**1.21**	5V 3750	9525	**1.16**			
			5V 4000	10160	**1.17**			

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Design Calculation

Length Factor c_3 for optibelt Wedge Belts and Kraftbands

Table 20

Section 5*		Section Y/6*		Section 8		Section Z/10, ZX/X10		Section A/13, AX/X13		Section B/17, BX/X17		Section 20	
Datum length (mm)	c_3	Datum length (mm)	c_3	Datum length (mm)	c_3	Datum length (mm)	c_3	Datum length (mm)	c_3	Datum length (mm)	c_3	Datum length (mm)	c_3
172	**0.87**	280	**0,97**	299*	**0.86**	422*	**0.86**	660	**0.80**	900	**0.81**	948	**0.75**
202	**0.91**	295	**0,99**	334*	**0.88**	447*	**0.87**	740	**0.82**	990	**0.83**	998	**0.76**
248	**0.95**	**315**	**1,00**	374*	**0.91**	472*	**0.88**	780	**0.83**	1040	**0.84**	1048	**0.77**
277	**0.97**	330	**1,01**	419*	**0.93**	497*	**0.89**	830	**0.85**	1100	**0.85**	1168	**0.79**
292	**0.99**	350	**1,02**	444*	**0.94**	522*	**0.90**	880	**0.86**	1140	**0.85**	1228	**0.80**
312	**1.00**	370	**1,04**	469*	**0.95**	552*	**0.92**	930	**0.87**	1220	**0.87**	1298	**0.81**
327	**1.01**	390	**1,05**	494*	**0.97**	582*	**0.93**	980	**0.88**	1290	**0.88**	1368	**0.82**
334	**1.01**	415	**1,06**	549*	**0.99**	622	**0.94**	1030	**0.89**	1360	**0.89**	1448	**0.83**
347	**1.02**	440	**1 07**	**579***	**1.00**	652	**0.95**	1090	**0.90**	1440	**0.90**	1548	**0.85**
364	**1.03**	465	**1,09**	594*	**1.01**	692	**0.96**	1150	**0.91**	1540	**0.92**	1648	**0.86**
387	**1.05**	490	**1,10**	619*	**1.01**	732	**0.98**	1210	**0.92**	1640	**0.93**	1848	**0.88**
418	**1.06**	515	**1,11**	649*	**1.02**	**822**	**1.00**	1280	**0.94**	1740	**0.94**	2048	**0.91**
437	**1.07**	555	**1,13**	689*	**1.04**	847	**1.01**	1350	**0.95**	1840	**0.95**	2168	**0.92**
487	**1.10**	615	**1,15**	729*	**1.05**	887	**1.02**	1430	**0.96**	1940	**0.97**	2298	**0.93**
512	**1.11**	725	**1,19**	769*	**1.06**	922	**1.02**	1530	**0.97**	2040	**0.98**	2408	**0.94**
524	**1.11**	765	**1,20**	819*	**1.08**	947	**1.03**	1630	**0.99**	2160	**0.99**	2548	**0.95**
542	**1.12**	865	**1,23**	869	**1.09**	997	**1.04**	**1730**	**1.00**	**2280**	**1.00**	2698	**0.96**
566	**1.13**			894	**1.10**	1022	**1.05**	1830	**1.01**	2400	**1.01**	2848	**0.98**
612	**1.15**			919	**1.10**	1082	**1.06**	1930	**1.02**	2590	**1.03**	3048	**0.99**
				969	**1.11**	1142	**1.07**	2030	**1.03**	2690	**1.04**	**3198**	**1.00**
				1019	**1.13**	1172	**1.08**	2150	**1.05**	2840	**1.05**	3398	**1.01**
				1139	**1.15**	1202	**1.08**	2270	**1.06**	3040	**1.06**	3598	**1.03**
				1269	**1.18**	1272	**1.10**	2390	**1.07**	3190	**1.07**	3798	**1.04**
				1339	**1.19**	1342	**1.11**	2530	**1.08**	3390	**1.09**	4048	**1.05**
				1419	**1.20**	1422	**1.12**	2680	**1.10**	3590	**1.10**	4298	**1.06**
				1519	**1.22**	1522	**1.14**	2830	**1.11**	3790	**1.11**	4548	**1.08**
						1622	**1.15**	3030	**1.12**	4040	**1.13**	4798	**1.09**
								3180	**1.14**	4290	**1.14**	5048	**1.10**
								3380	**1.15**	4540	**1.15**	5348	**1.11**
								3780	**1.17**	4790	**1.17**	5648	**1.13**
								4030	**1.19**	5040	**1.18**	6048	**1.14**
								4530	**1.22**	5340	**1.19**	6348	**1.15**
								5030	**1.24**	5640	**1.20**	7148	**1.18**
										6040	**1.22**	8048	**1.21**
										6340	**1.23**		

Section C/22, CX/X22				Section 25				Section D/32				Section E/40	
1458	**0.80**	5058	**1.06**	1311	**0.75**	4311	**0.99**	3225	**0.86**	10075	**1.10**	4830	**0.92**
1558	**0.81**	5358	**1.07**	1461	**0.77**	**4561**	**1.00**	3425	**0.87**	10675	**1.11**	5080	**0.93**
1658	**0.83**	5658	**1.09**	1561	**0.78**	4811	**1.01**	3625	**0.88**	11275	**1.13**	5380	**0.94**
1858	**0.85**	6058	**1.10**	1661	**0.79**	5061	**1.02**	3825	**0.89**	11875	**1.14**	5680	**0.95**
1958	**0.86**	6358	**1.11**	1761	**0.80**	5361	**1.04**	4075	**0.91**	12575	**1.15**	6080	**0.96**
2058	**0.87**	6758	**1.13**	1861	**0.81**	5661	**1.05**	4325	**0.92**	13275	**1.16**	6380	**0.97**
2178	**0.88**	7158	**1.14**	1961	**0.82**	6061	**1.06**	4575	**0.93**	14075	**1.18**	6780	**0.99**
2298	**0.89**	7558	**1.15**	2061	**0.83**	6361	**1.07**	4825	**0.94**	15075	**1.19**	**7180**	**1.00**
2418	**0.90**	8058	**1.17**	2181	**0.85**	6761	**1.09**	5075	**0.95**	16075	**1.21**	7580	**1.01**
2558	**0.92**	9058	**1.19**	2301	**0.86**	7161	**1.10**	5375	**0.96**			8080	**1.03**
2708	**0.93**	10058	**1.22**	2421	**0.87**	7561	**1.11**	5675	**0.98**			8580	**1.04**
2858	**0.94**			2561	**0.88**	8061	**1.13**	6075	**0.99**			9080	**1.05**
3058	**0.95**			2711	**0.89**	9061	**1.15**	**6375**	**1.00**			9580	**1.06**
3208	**0.96**			2861	**0.90**	10061	**1.18**	6775	**1.01**			10080	**1.07**
3608	**0.99**			3061	**0.92**	11261	**1.20**	7175	**1.03**			10680	**1.09**
3808	**1.00**			3211	**0.93**	12561	**1.23**	7575	**1.04**			11280	**1.10**
4058	**1.01**			3411	**0.94**			8075	**1.05**			11880	**1.11**
4308	**1.03**			3611	**0.95**			8575	**1.06**			12580	**1.12**
4558	**1.04**			3811	**0.96**			9075	**1.08**			13280	**1.14**
4808	**1.05**			4061	**0.98**			9575	**1.09**			14080	**1.15**
												15080	**1.17**
												16080	**1.18**

*** Raw edge, moulded cogged V-belts**

optibelt
Power Transmission

Design Calculation

Guidelines for Selecting V-Belt and Kraftband Sections

By using the following diagrams, the most suitable belt section as far as efficiency and size are concerned, can be selected for a specific application. The most efficient power transmission is achieved by selecting as large a pulley diameter as possible for the section in question. The limits to be observed are the maximum permissible circumferential speed, namely V_{max} = 42 m/s for high performance wedge belts and V_{max} = 30 m/s for classical V-belts.

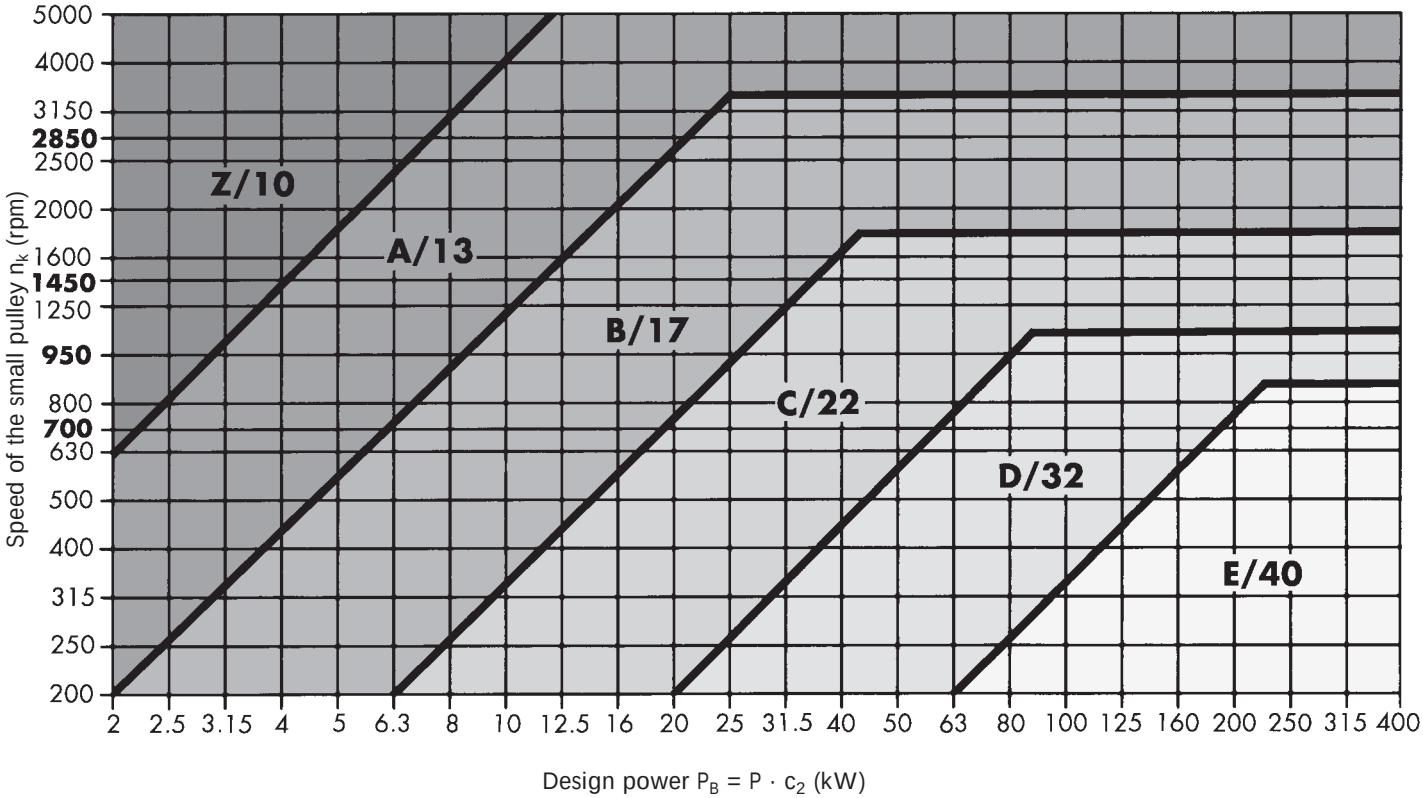
Experience has shown that the minimum pulley diameters should be avoided. These drives require a larger number of belts needing wider pulleys, and are therefore more costly.

In borderline cases it is recommended that the next smaller section belt be used on the same diameter pulley, as the smaller section will often save both cost and space. A further recommended solution is the use of the raw edge Optibelt Super TX M=S V-belts.

In such boundary areas it is advisable to design the drive with both sections and then to select the most suitable.

Comparing space requirement and costs, the wedge belt normally proves to be significantly superior to the classical V-belt for almost all industrial machinery drives. For this reason, new designs use wedge belts almost exclusively. It is only in special cases, for replacement requirements and with V-flat drives, that the use of classical section V-belts will be necessary.

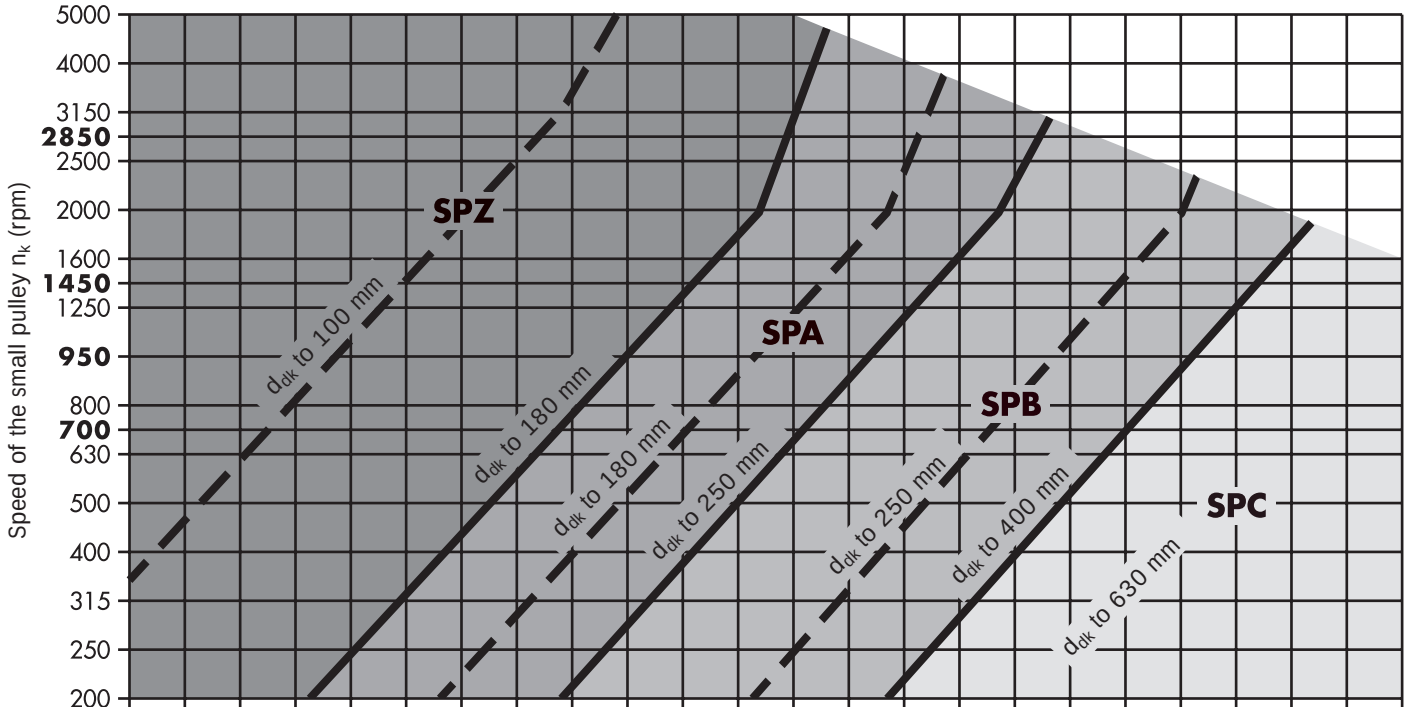
Diagram 1: Optibelt VB classical V-belts to BS 3790/DIN 2215



Design Calculation

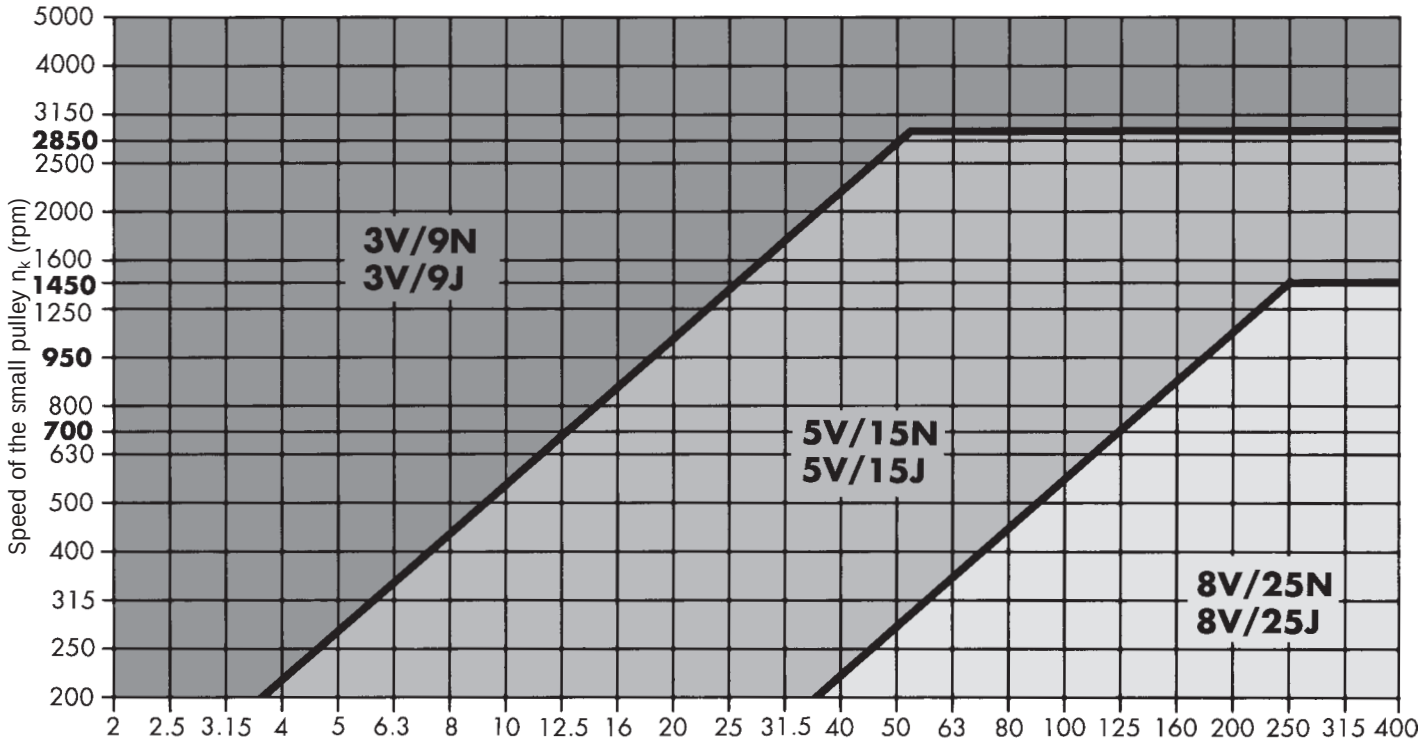
Guidelines for Selecting V-Belt and Kraftband Sections

Diagram 2: Optibelt SK wedge belts to BS 3790/DIN 7753 Part 1



Design power $P_B = P \cdot c_2$ (kW)

Diagram 3: Optibelt SK wedge belts to USA Standard RMA/MPTA



Design power $P_B = P \cdot c_2$ (kW)

Design Calculation

Guidelines for Selecting V-Belt and Kraftband Sections

Diagram 4: Optibelt Super TX M=S wedge belts

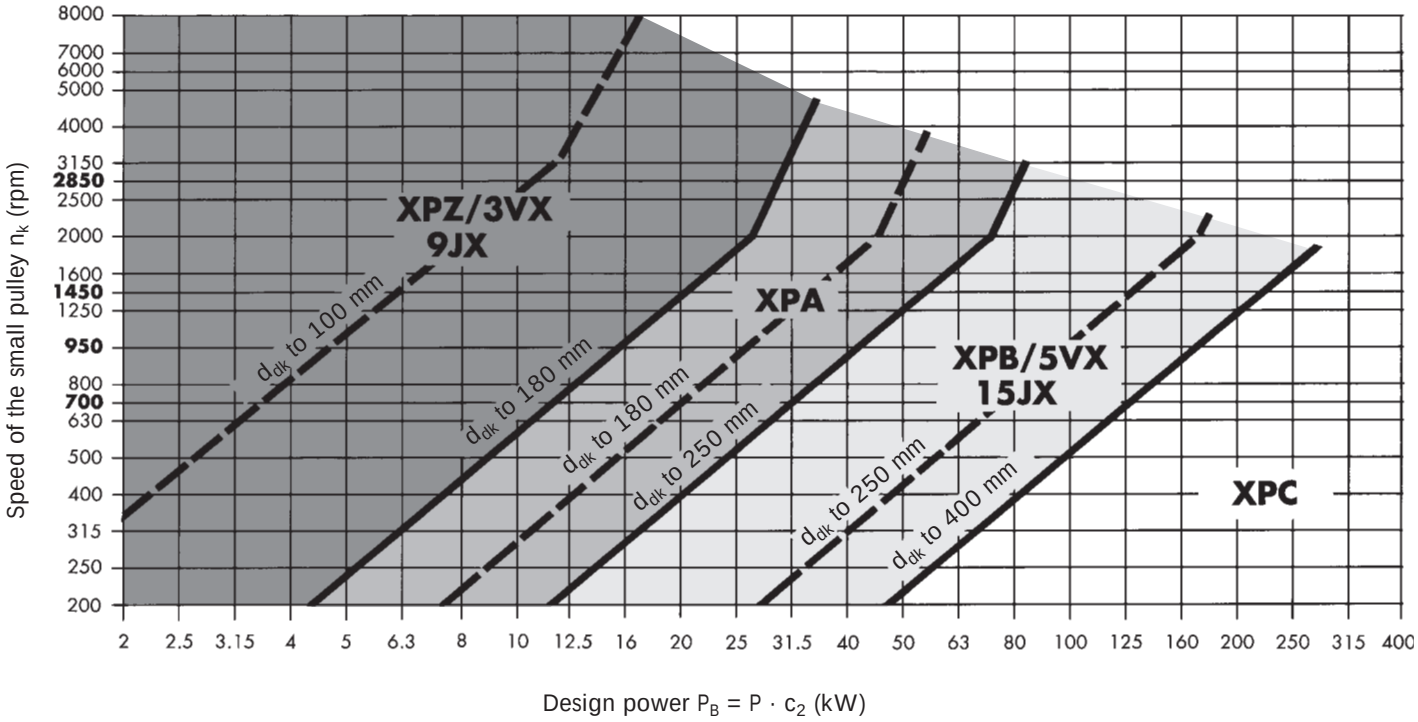
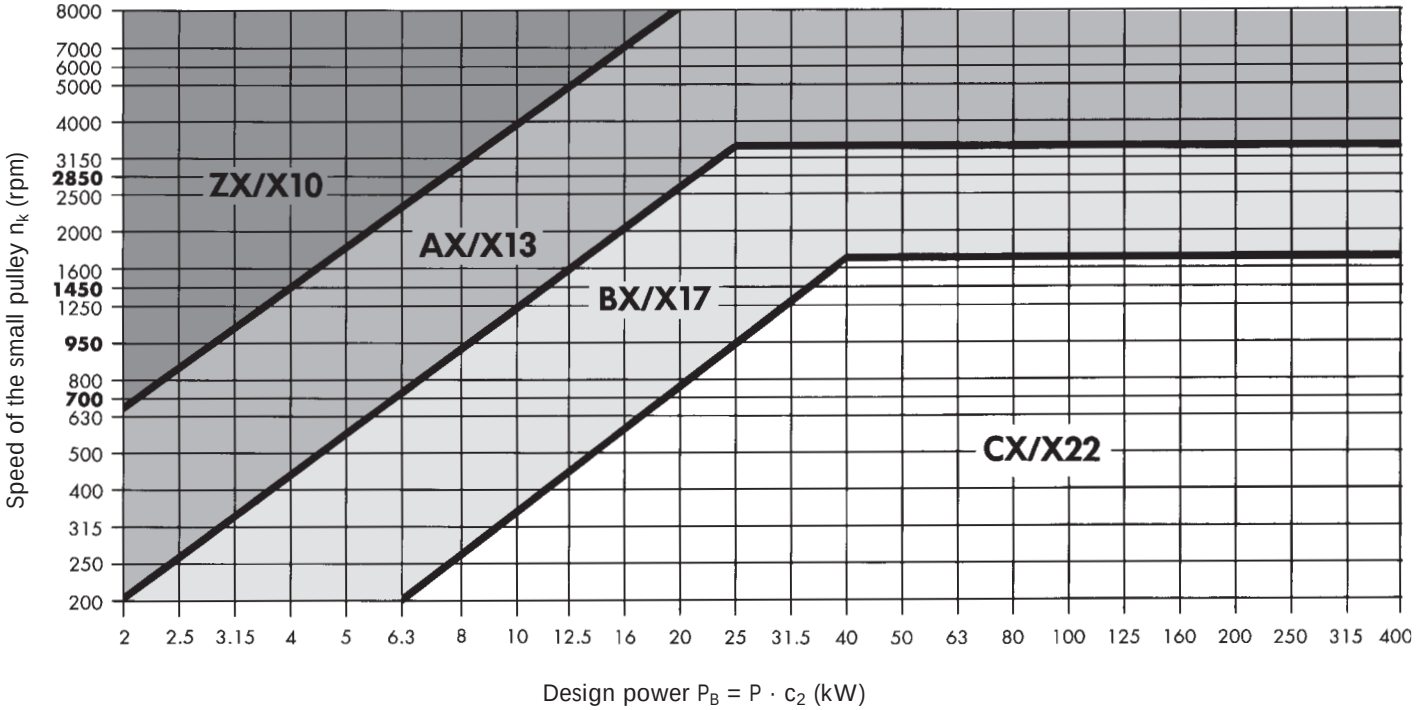


Diagram 5: Optibelt Super TX M=S classical V-belts



Design Calculation

Minimum Allowance x / y for Adjusting Drive Centre Distance a_{nom}

Table 21: Optibelt SK wedge belts

Datum length (mm)	Minimum allowance x (mm) – for tensioning	Minimun allowance y (mm) – for fitting			
		SPZ, XPZ	SPA, XPA	SPB, XPB	SPC, XPC
487 ≤ 670	10	10	10	—	—
> 670 ≤ 1 000	15	15	15	—	—
> 1 000 ≤ 1 250	20	15	15	—	—
> 1 250 ≤ 1 800	25	20	20	20	—
> 1 800 ≤ 2 240	25	20	20	20	25
> 2 240 ≤ 3 000	35	20	20	20	30
> 3 000 ≤ 4 000	45	20	20	20	30
> 4 000 ≤ 5 000	55	20	20	25	30
> 5 000 ≤ 6 300	70	25	25	30	35
> 6 300 ≤ 8 000	85	25	25	35	40
> 8 000 ≤ 10 000	110	30	30	35	45
> 10 000 ≤ 12 500	135	—	—	35	45
> 12 500 ≤ 15 000	150	—	—	45	55
> 15 000 ≤ 18 000	190	—	—	45	55

Table 22: Optibelt SK wedge belts

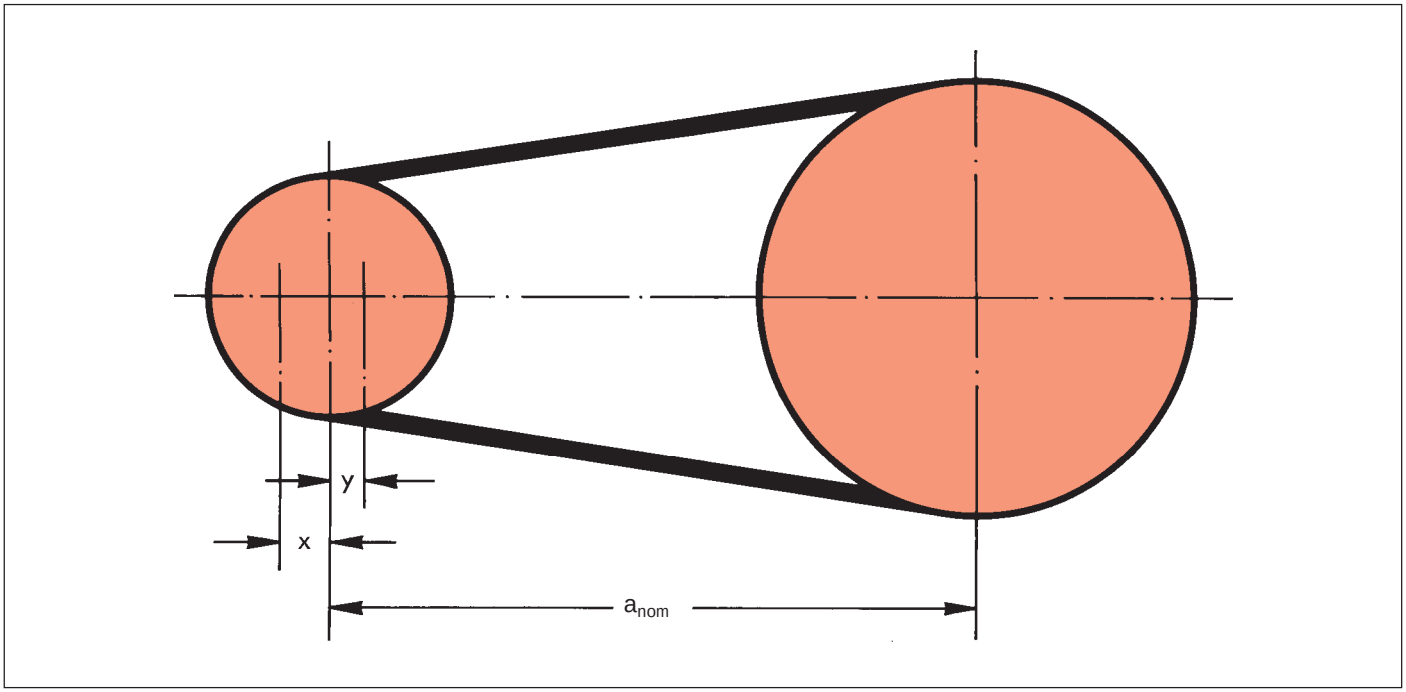
Length designation	Outside length (mm)	Minimum allowance x (mm) – for tensioning	Minimum allowance y (mm) – for fitting		
			3V / 9N, 3VX / 9NX	5V / 15N, 5VX / 15NX	8V / 25N
> 265 ≤ 400	> 673 ≤ 1 016	15	15	—	—
> 400 ≤ 475	> 1 016 ≤ 1 206	20	15	—	—
> 475 ≤ 710	> 1 206 ≤ 1 803	25	20	20	—
> 710 ≤ 850	> 1 803 ≤ 2 159	25	20	20	—
> 850 ≤ 1 180	> 2 159 ≤ 2 997	35	20	20	40
> 1 180 ≤ 1 600	> 2 997 ≤ 4 064	45	20	20	40
> 1 600 ≤ 2 000	> 4 064 ≤ 5 080	55	20	25	40
> 2 000 ≤ 2 500	> 5 080 ≤ 6 350	70	—	30	45
> 2 500 ≤ 3 150	> 6 350 ≤ 8 001	85	—	35	45
> 3 150 ≤ 4 000	> 8 001 ≤ 10 160	110	—	35	50
> 4 000 ≤ 5 000	> 10 160 ≤ 12 700	135	—	35	50
> 5 000 ≤ 6 000	> 12 700 ≤ 15 240	150	—	45	60
> 6 000 ≤ 7 100	> 15 240 ≤ 18 034	190	—	45	60

Design Calculation

Minimum Allowance x / y for Adjusting Drive Centre Distance a_{nom}

Table 23: Optibelt VB classical V-belts

Datum length (mm)	Minimum allowance x (mm) – for tensioning	Minimum allowance y (mm) – for fitting										
		5	Y/6	8	Z/10, ZX/X10	A/13, AX/X13	B/17, BX/X17	20	C/22, CX/X22	25	D/32	E/40
≤ 200	5	10	—	—	—	—	—	—	—	—	—	—
> 200 ≤ 250	5	10	10	—	—	—	—	—	—	—	—	—
> 250 ≤ 315	5	10	10	10	10	—	—	—	—	—	—	—
> 315 ≤ 670	10	—	—	10	10	10	10	—	—	—	—	—
> 670 ≤ 1 000	15	—	—	10	15	15	15	—	—	—	—	—
> 1 000 ≤ 1 250	20	—	—	15	15	15	15	20	20	—	—	—
> 1 250 ≤ 1 800	25	—	—	15	20	20	20	20	25	25	—	—
> 1 800 ≤ 2 240	25	—	—	20	20	20	20	25	25	30	35	—
> 2 240 ≤ 3 000	35	—	—	—	20	20	20	25	30	30	35	40
> 3 000 ≤ 4 000	45	—	—	—	20	20	20	25	30	30	35	40
> 4 000 ≤ 5 000	55	—	—	—	20	20	20	30	30	30	35	40
> 5 000 ≤ 6 300	70	—	—	—	—	20	25	35	35	35	40	45
> 6 300 ≤ 8 000	85	—	—	—	—	20	25	40	40	40	45	50
> 8 000 ≤ 10 000	110	—	—	—	—	25	25	40	45	45	45	50
> 10 000 ≤ 12 500	135	—	—	—	—	—	30	40	45	45	50	55
> 12 500 ≤ 15 000	150	—	—	—	—	—	40	50	55	55	60	65
> 15 000 ≤ 18 000	190	—	—	—	—	—	40	50	55	55	60	65



Design Calculation

Minimum Allowance x / y for Adjusting Drive Centre Distance a_{nom}

Table 24: Optibelt KB Kraftbands with wedge belts

Length designation	Outside length (mm)	Minimum allowance x (mm) – for tensioning	Minimum allowance y (mm) – for smooth fitting			
			SPZ, 3V / 9J	SPA, SPB, 5V / 15J	8V / 25J	SPC
475 ≤ 710	1 206 ≤ 1 803	25	35	40	—	—
> 710 ≤ 850	> 1 803 ≤ 2 159	25	35	40	—	—
> 850 ≤ 1 180	> 2 159 ≤ 2 997	35	35	40	80	—
> 1 180 ≤ 1 600	> 2 997 ≤ 4 064	45	35	40	80	80
> 1 600 ≤ 2 000	> 4 064 ≤ 5 080	55	40	45	85	85
> 2 000 ≤ 2 500	> 5 080 ≤ 6 350	70	45	50	85	85
> 2 500 ≤ 3 150	> 6 350 ≤ 8 001	85	50	55	95	95
> 3 150 ≤ 4 000	> 8 001 ≤ 10 160	110	50	55	95	95
> 4 000 ≤ 5 000	> 10 160 ≤ 12 700	135	—	60	95	95
> 5 000 ≤ 6 000	> 12 700 ≤ 15 240	150	—	70	105	105
> 6 000 ≤ 7 100	> 15 240 ≤ 18 034	190	—	85	120	120

Note: Datum lengths must be considered for Kraftbands with sections SPZ, SPA, SPB and SPC.
For raw edge Kraftbands, the same x / y values apply.

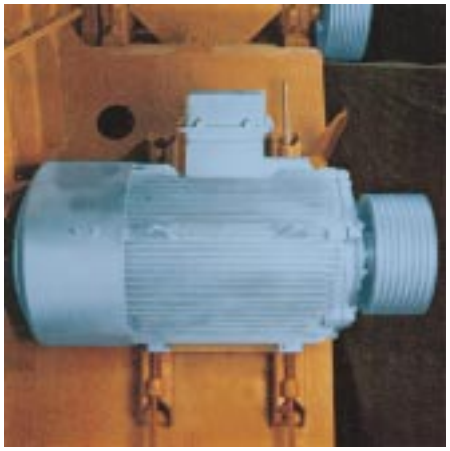
Table 25: Optibelt KB Kraftbands with classical V-belts

Lengths (mm)	Minimum allowance x (mm) – for tensioning	Minimum allowance y (mm) – for smooth fitting			
		A / HA	B / HB	C / HC	D / HD
1 200 ≤ 1 800	25	30	35	—	—
> 1 800 ≤ 2 240	25	30	35	—	—
> 2 240 ≤ 3 000	35	30	35	50	85
> 3 000 ≤ 4 000	45	30	35	50	85
> 4 000 ≤ 5 000	55	30	40	55	90
> 5 000 ≤ 6 300	70	35	45	60	90
> 6 300 ≤ 8 000	85	45	55	65	100
> 8 000 ≤ 10 000	110	45	55	65	100
> 10 000 ≤ 12 500	135	50	60	75	100
> 12 500 ≤ 15 000	150	60	70	85	110
> 15 000 ≤ 18 000	190	70	85	95	125

optibelt
Power Transmission

Design Calculation
Formulae and Calculation Examples

Prime mover



3-phase motor
P = 132 kW
n_1 = 1485 rpm
Star delta start
Starting torque $M_A = 0.65\ M_N$

Operating conditions

Daily operation: approx. 18 hours
Number of starts: one per day
Operating conditions: normal room temperature, no exposure to oil, water or dust
Drive centre distance: between 1300 and 1500, variable
Pulley diameter: $d_{d1} \leq 300$ mm

Driven machine

Fan
P = 132 kW
n_2 = 825 ± 15 rpm
Start-up: under load
Type of loading: continuous

Note: The calculation takes into consideration the standard specified by ISO for datum diameter d_d (supersedes pitch diameter d_w) and datum length L_d (supersedes pitch length L_w).

Formulae	Calculation example
Service factor c_2 from table 17 page 68	c_2 = **1.3**
Design Power $P_B = P \cdot c_2$	$P_B = 132 \cdot 1.3 =$ **171.6 kW**
Selection of belt section from Diagram 4 page 74	**SPB**
Speed ratio $i = \frac{n_1}{n_2} = \frac{d_{d2}}{d_{d1}}$	$i = \frac{1485}{825} =$ **1.8**
Datum diameters of the pulleys d_{d1} selected from table 9 page 42 $d_{d2} = d_{d1} \cdot i$ $d_{d1} = \frac{d_{d2}}{i}$	d_{d1} = **280 mm** selected d_{d2} = 280 mm · 1.8 = 504 d_{d2} = **500 mm** selected from table 9 page 42

optibelt
Power Transmission

Design Calculation
Formulae and Calculation Example

Formulae

Recalculation of the speed of the driven unit

$$i_{vorh} = \frac{d_{d2}}{d_{d1}}$$

$$n_{2\ vorh} = \frac{n_1}{i_{vorh}}$$

Drive centre distance (preleminary choice)

Recommended: $a > 0{,}7\ (d_{dg} + d_{dk})$

$a < 2\ \ (d_{dg} + d_{dk})$

Belt datum length

$$L_{dth} \approx 2\,a + 1{,}57\,(d_{dg} + d_{dk}) + \frac{(d_{dg} - d_{dk})^2}{4\,a}$$

actual:

$$L_{dth} = 2\,a \cdot \sin\frac{\beta}{2} + \frac{\pi}{2}(d_{dg} + d_{dk}) + \frac{\alpha \cdot \pi}{180°}(d_{dg} - d_{dk})$$

Drive centre distance (actual)

Calculated from L_{dSt} and L_{dth}

(if $L_{dSt} > L_{dth}$) $a_{nom} \approx a + \frac{L_{dSt} - L_{dth}}{2}$

(if $L_{dSt} < L_{dth}$) $a_{nom} \approx a - \frac{L_{dth} - L_{dSt}}{2}$

actual:

$$a_{nom} = \frac{L_{dSt} - \frac{\pi}{2}(d_{dg} + d_{dk})}{4} + \sqrt{\left[\frac{L_{dSt} - \frac{\pi}{2}(d_{dg} + d_{dk})}{4}\right]^2 - \frac{(d_{dg} - d_{dk})^2}{8}}$$

Minimum allowance x/y for adjusting drive centre distance a_{nom}

x/y from Table 21 page 75

Belt speed and flex rate

$$v = \frac{d_{dk} \cdot n_k}{19100} \qquad (v_{max} \approx 42\ m/s)$$

$$f_b = \frac{2 \cdot 1000 \cdot v}{L_{dSt}} \qquad (f_{B\,max} \approx 100\ s^{-1})$$

Calculation example

$$i_{vorh} = \frac{500}{280} = \mathbf{1{,}79}$$

$$n_{2\ vorh} = \frac{1485}{1{,}79} = \mathbf{830\ rpm}$$

Required:
825 ± 15 rpm
(requirement met)

a = **1400 mm** selected

$$L_{dth} \approx 2 \cdot 1400 + 1.57 \cdot 780 + \frac{220^2}{4 \cdot 1400} \approx 4033\ mm$$

next standard length selected from page 18

L_{dSt} = **4000 mm**

$$a_{nom} \approx 1400 - \frac{4033 - 4000}{2} \approx \mathbf{1383.5\ mm}$$

x ≥ **45 mm** / y ≥ **20 mm**

Speed and flex rate of the belt

$$v = \frac{280 \cdot 1485}{19100} = \mathbf{21.76\ m/s}$$

$$f_b = \frac{2 \cdot 1000 \cdot 21.76}{4000} = \mathbf{10.88\ s^{-1}}$$

optibelt
Power Transmission

Design Calculation
Formulae and Calculation Examples

Formulae	Calculation example
Arc of contact and correction factor $\frac{d_{dg} - d_{dk}}{a_{nom}}$ $\beta°$ approximate and c_1 from table 16 page 67 actual: $\cos \frac{\beta}{2} = \frac{d_{dg} - d_{dk}}{2\ a_{nom}}$	$\frac{500 - 280}{1383.5} = 0{,}16$ $\beta \approx 170.$ $c_1 = \mathbf{1.0}$ } linear interpolated
Length factor c_3 from table 18 page 69	$c_3 = \mathbf{1.02}$
Nominal power per belt P_N for $\{ d_{dk} = 280$ mm, $i = 1.79$, $n_k = 1485$ min^{-1} Section SPB from table 28 page 84	$P_N = 20.63 + 1.23 = \mathbf{21.86\ kW}$
Number of belts $z = \frac{P \cdot c_2}{P_N \cdot c_1 \cdot c_3}$	$z = \frac{132 \cdot 1.3}{21.86 \cdot 1.0 \cdot 1.02} = \mathbf{7.70}$ Suggested: **8 Optibelt SK wedge belts SPB 4000 L_d S=C plus**
Minimum static tension per belt $T \approx \frac{500 \cdot (2.02 - c_1) \cdot P_B}{c_1 \cdot z \cdot v} + k \cdot v^2$ k from Diagram 8 page 123 (Multiply 'T' by 1.3 at initial installation)	$T \approx \frac{500 \cdot (2.02 - 1.0) \cdot 171.6}{1.0 \cdot 8 \cdot 21.76} + 0.19 \cdot 473.5 \approx \mathbf{593\ N}$ Initial installation: $T = 593\ N \cdot 1.3 = \mathbf{771\ N}$
Minimum static shaft loading $S_a \approx 2\ T \cdot \sin \frac{\beta}{2} \cdot z$ (Multiply by a factor of 1.3 at initial installation)	$S_a \approx 2 \cdot 593 \cdot 0.9962 \cdot 8 \approx \mathbf{9452\ N}$ Initial installation: $S_a = 9452\ N \cdot 1.3 = \mathbf{12288\ N}$
Belt deflection $E_a \approx \frac{E \cdot L}{100}$ E from Diagram 8 page 123 $L = a_{nom} \cdot \sin \frac{\beta}{2}$	$E_a \approx \frac{2.7 \cdot 1378}{100} \approx \mathbf{37\ mm}$ $E \approx 2.7$ mm $L = 1383.5 \cdot 0.9962 \cdot 1378$ mm

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Power Transmission

Drive Calculation

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The drive is to be equipped with:

- 8 Optibelt SK wedge belts SPC 6300 L_d S = C plus
- Optibelt KS V-grooved pulley for taper bushes TB SPC 400-8
- Optibelt TB taper bush 4545 (bore diameter 55-110 mm)
- Optibelt KS V-grooved pulley for taper bushes TB SPC 800-8
- Optibelt TB taper bush 5050 (bore diameter 70-125 mm)

				Deviations / Hints
Prime mover	**:**	**three-phase motor**		
Driven machine	**:**	**fan**		
Design power	PB:	373.33	kW	
Power prime mover	**P:**	**224.00**	**kW**	
Torque driver pulley	M:	1205	Nm	
Speed of the driver pulley	**n_1:**	**1775**	**1/min**	
Actual output rpm speed	**n_2:**	**88**	**1/min**	-1 1/min
Datum diameter pulley 1	**d_{d1}:**	**400.00**	**mm**	
Datum diameter pulley 2	**d_{d2}:**	**800.00**	**mm**	
Datum length	L_d:	6300	mm	
Actual drive centre distance	a:	**2198.40**	**mm**	-1.60 mm
Actual drive ratio	i:	2.00		0.1%
Min. allow. for drive centre distance for belt mounting	y:	35.00	mm	
Min. allow. for drive centre distance for belt tensioning	x:	70.00	mm	
Actual service factor	**c_2:**	**1.87**		
Belt speed	v:	37.17	m/s	Specific force required
Flex rate	fB:	11.80	1/s	
Nominal power rating per belt	P_N:	51.84	kW	
Angle factor	c_1:	0.99		
Belt length correction factor	c_3:	1.02		
Arc of contact of small pulley	β:	169.60	°	
Pulley face width	b_2:	212.50	mm	
Belt span length	<:	2189.30	mm	
Calculated number of belts	**zth:**	**7.11**		for increased c_2 = 1.67
Drive weight		276.87	kg	
Statistic axle load, initial assembly	Sast:	23988	N	
Statistic axle load, existing belts	Sast:	18452	N	
Dynamic axle load	Sadyn:	10547	N	

Procedures tensioning setting		**initial assembly**	**operating tension**
For increased c_2 = 1.67		New belts	existing belts
1. OPTIKRIK II + III	static belt tension per V-belt :	1505 N	1158 N
2. Depth of impression with tensioning gauge	test force :	125 N	125 N
	depth of belt deflection :	40 mm	50 mm
3. Length addition per 1000 mm belt length	:	5.8 mm	4.3 mm
4. Optibelt TT 2 tension tester	Frequency :	14.4 Hz	12.7 Hz

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Power Transmission

Power Ratings

Section SPZ, 3V/9N, 3V/9J

Nominal Power Rating P_N (kW) for $\beta = 180°$ and $L_d = 1600$ mm

Table 26

Pulleys	v (m/s)	n_k (min^{-1})	Datum diameter of small pulley d_{dk} (mm) 63	71	80	85	90	95	100	112	125	132	140	150	160	180	200	Additional power (kW) per belt for speed ratio i 1,01 to 1,05	1,06 to 1,26	1,27 to 1,57	>1,57
Statically balanced		**700**	0.50	0.68	0.88	1.00	1.11	1.22	1.33	1.60	1.88	2.03	2.20	2.42	2.63	3.05	3.47	0.01	0.06	0.09	0.11
		950	0.63	0.87	1.14	1.29	1.44	1.59	1.74	2.08	2.46	2.66	2.89	3.17	3.45	4.00	4.54	0.01	0.09	0.12	0.15
		1450	0.87	1.23	1.62	1.84	2.06	2.27	2.49	3.00	3.54	3.83	4.16	4.56	4.96	5.75	6.51	0.02	0.13	0.19	0.23
		2850	1.38	2.03	2.74	3.13	3.52	3.90	4.27	5.15	6.07	6.55	7.08	7.72	8.34	9.50	10.55	0.04	0.26	0.37	0.46
		100	0.10	0.13	0.16	0.18	0.20	0.22	0.24	0.28	0.33	0.35	0.38	0.42	0.45	0.52	0.59	0.00	0.01	0.01	0.02
		200	0.18	0.24	0.30	0.34	0.37	0.41	0.44	0.52	0.61	0.66	0.71	0.78	0.85	0.98	1.12	0.00	0.02	0.03	0.03
		300	0.25	0.33	0.43	0.48	0.53	0.58	0.63	0.75	0.88	0.95	1.03	1.13	1.23	1.42	1.62	0.00	0.03	0.04	0.05
		400	0.32	0.43	0.55	0.62	0.68	0.75	0.81	0.97	1.14	1.23	1.34	1.47	1.59	1.85	2.10	0.01	0.04	0.05	0.06
		500	0.38	0.51	0.66	0.75	0.83	0.91	0.99	1.19	1.39	1.51	1.63	1.79	1.95	2.26	2.57	0.01	0.05	0.07	0.08
		600	0.44	0.60	0.78	0.87	0.97	1.07	1.16	1.39	1.64	1.77	1.92	2.11	2.29	2.66	3.02	0.01	0.06	0.08	0.10
		700	0.50	0.68	0.88	1.00	1.11	1.22	1.33	1.60	1.88	2.03	2.20	2.42	2.63	3.05	3.47	0.01	0.06	0.09	0.11
		800	0.55	0.76	0.99	1.12	1.24	1.37	1.50	1.79	2.12	2.29	2.48	2.72	2.96	3.44	3.91	0.01	0.07	0.11	0.13
		900	0.61	0.84	1.09	1.24	1.38	1.52	1.66	1.99	2.35	2.54	2.75	3.02	3.29	3.81	4.33	0.01	0.08	0.12	0.15
		1000	0.66	0.91	1.19	1.35	1.51	1.66	1.81	2.18	2.57	2.78	3.02	3.31	3.61	4.18	4.75	0.01	0.09	0.13	0.16
		1100	0.71	0.98	1.29	1.46	1.63	1.80	1.97	2.37	2.79	3.02	3.28	3.60	3.92	4.54	5.16	0.02	0.10	0.14	0.18
		1200	0.76	1.06	1.39	1.57	1.76	1.94	2.12	2.55	3.01	3.26	3.54	3.88	4.22	4.90	5.56	0.02	0.11	0.16	0.19
		1300	0.80	1.12	1.48	1.68	1.88	2.07	2.27	2.73	3.23	3.49	3.79	4.16	4.52	5.24	5.95	0.02	0.12	0.17	0.21
		1400	0.85	1.19	1.58	1.79	2.00	2.21	2.42	2.91	3.44	3.72	4.04	4.43	4.82	5.58	6.32	0.02	0.13	0.18	0.23
	(5)	1500	0.89	1.26	1.67	1.89	2.12	2.34	2.56	3.08	3.64	3.94	4.28	4.69	5.11	5.91	6.69	0.02	0.14	0.20	0.24
		1600	0.93	1.32	1.76	2.00	2.23	2.47	2.70	3.26	3.85	4.16	4.52	4.95	5.39	6.23	7.05	0.02	0.15	0.21	0.26
		1700	0.98	1.39	1.85	2.10	2.35	2.59	2.84	3.42	4.05	4.38	4.75	5.21	5.66	6.55	7.40	0.02	0.16	0.22	0.27
		1800	1.02	1.45	1.93	2.20	2.46	2.72	2.98	3.59	4.24	4.59	4.98	5.46	5.93	6.85	7.74	0.03	0.17	0.24	0.29
		1900	1.06	1.51	2.02	2.29	2.57	2.84	3.11	3.75	4.43	4.80	5.20	5.70	6.19	7.15	8.07	0.03	0.18	0.25	0.31
		2000	1.10	1.57	2.10	2.39	2.68	2.96	3.24	3.91	4.62	5.00	5.42	5.94	6.45	7.44	8.38	0.03	0.19	0.26	0.32
		2100	1.13	1.63	2.18	2.48	2.78	3.08	3.37	4.07	4.81	5.20	5.64	6.17	6.70	7.72	8.68	0.03	0.19	0.28	0.34
		2200	1.17	1.69	2.26	2.58	2.89	3.20	3.50	4.22	4.99	5.39	5.84	6.40	6.94	7.99	8.98	0.03	0.20	0.29	0.35
		2300	1.20	1.74	2.34	2.67	2.99	3.31	3.63	4.38	5.17	5.58	6.05	6.62	7.18	8.25	9.26	0.03	0.21	0.30	0.37
		2400	1.24	1.80	2.42	2.75	3.09	3.42	3.75	4.52	5.34	5.77	6.25	6.84	7.41	8.50	9.52	0.03	0.22	0.32	0.39
		2500	1.27	1.85	2.49	2.84	3.19	3.53	3.87	4.67	5.51	5.95	6.44	7.04	7.63	8.74	9.77	0.04	0.23	0.33	0.40
		2600	1.31	1.90	2.57	2.93	3.28	3.64	3.99	4.81	5.67	6.12	6.63	7.25	7.84	8.97	10.01	0.04	0.24	0.34	0.42
		2700	1.34	1.96	2.64	3.01	3.38	3.74	4.10	4.95	5.83	6.30	6.81	7.44	8.05	9.19	10.24	0.04	0.25	0.35	0.44
		2800	1.37	2.01	2.71	3.09	3.47	3.85	4.22	5.08	5.99	6.46	6.99	7.63	8.25	9.40	10.45	0.04	0.26	0.37	0.45
		2900	1.40	2.05	2.78	3.17	3.56	3.95	4.33	5.22	6.14	6.63	7.16	7.81	8.44	9.60	10.64	0.04	0.27	0.38	0.47
	(10)	3000	1.43	2.10	2.85	3.25	3.65	4.05	4.43	5.34	6.29	6.78	7.33	7.99	8.62	9.79	10.82	0.04	0.28	0.39	0.48
		3100	1.45	2.15	2.91	3.33	3.74	4.14	4.54	5.47	6.43	6.93	7.49	8.16	8.79	9.96	10.99	0.04	0.29	0.41	0.50
		3200	1.48	2.19	2.98	3.40	3.82	4.24	4.64	5.59	6.57	7.08	7.64	8.32	8.95	10.12	11.14	0.05	0.30	0.42	0.52
		3300	1.51	2.24	3.04	3.48	3.91	4.33	4.74	5.71	6.71	7.22	7.79	8.47	9.11	10.28	11.27	0.05	0.31	0.43	0.53
		3400	1.53	2.28	3.10	3.55	3.99	4.42	4.84	5.83	6.84	7.36	7.93	8.61	9.26	10.41	11.39	0.05	0.31	0.45	0.55
		3500	1.56	2.32	3.16	3.62	4.06	4.50	4.94	5.94	6.96	7.49	8.07	8.75	9.39	10.54	11.48	0.05	0.32	0.46	0.56
		3600	1.58	2.36	3.22	3.68	4.14	4.59	5.03	6.04	7.08	7.61	8.20	8.88	9.52	10.65	11.56	0.05	0.33	0.47	0.58
		3700	1.60	2.40	3.28	3.75	4.22	4.67	5.12	6.15	7.20	7.73	8.32	9.00	9.64	10.75	11.62	0.05	0.34	0.49	0.60
		3800	1.62	2.44	3.33	3.81	4.29	4.75	5.20	6.25	7.31	7.85	8.43	9.12	9.75	10.83	11.67	0.05	0.35	0.50	0.61
		3900	1.64	2.48	3.39	3.88	4.36	4.83	5.29	6.35	7.41	7.95	8.54	9.22	9.85	10.90	11.69	0.06	0.36	0.51	0.63
		4000	1.66	2.51	3.44	3.94	4.43	4.90	5.37	6.44	7.51	8.06	8.64	9.32	9.93	10.96	11.70	0.06	0.37	0.53	0.64
		4100	1.68	2.55	3.49	4.00	4.49	4.97	5.45	6.53	7.61	8.15	8.73	9.41	10.01	11.00	11.68	0.06	0.38	0.54	0.66
		4200	1.70	2.58	3.54	4.05	4.55	5.04	5.52	6.61	7.70	8.24	8.82	9.48	10.08	11.03	11.64	0.06	0.39	0.55	0.68
		4300	1.72	2.61	3.58	4.11	4.62	5.11	5.59	6.69	7.78	8.32	8.90	9.55	10.13	11.04	11.59	0.06	0.40	0.57	0.69
		4400	1.73	2.64	3.63	4.16	4.67	5.18	5.66	6.77	7.86	8.40	8.97	9.61	10.17	11.03	11.51	0.06	0.41	0.58	0.71
		4500	1.75	2.67	3.67	4.21	4.73	5.24	5.73	6.84	7.93	8.47	9.03	9.66	10.21	11.01	11.41	0.06	0.42	0.59	0.73
	(15)	4600	1.76	2.70	3.71	4.26	4.78	5.30	5.79	6.91	8.00	8.53	9.09	9.70	10.23	10.97		0.07	0.43	0.60	0.74
		4700	1.77	2.73	3.75	4.30	4.84	5.35	5.85	6.97	8.06	8.59	9.13	9.73	10.24	10.92		0.07	0.44	0.62	0.76
		4800	1.78	2.75	3.79	4.35	4.88	5.40	5.91	7.03	8.11	8.63	9.17	9.76	10.23	10.85		0.07	0.44	0.63	0.77
		4900	1.80	2.78	3.83	4.39	4.93	5.45	5.96	7.08	8.16	8.68	9.20	9.77	10.22	10.76		0.07	0.45	0.64	0.79
		5000	1.81	2.80	3.86	4.43	4.97	5.50	6.01	7.13	8.20	8.71	9.22	9.77	10.19	10.65		0.07	0.46	0.66	0.81
		5100	1.81	2.82	3.89	4.47	5.02	5.55	6.05	7.18	8.24	8.74	9.24	9.75	10.15			0.07	0.47	0.67	0.82
		5200	1.82	2.84	3.93	4.50	5.05	5.59	6.10	7.22	8.27	8.76	9.24	9.73	10.09			0.07	0.48	0.68	0.84
		5300	1.83	2.86	3.95	4.53	5.09	5.63	6.14	7.26	8.29	8.77	9.23	9.70	10.03			0.08	0.49	0.70	0.85
		5400	1.83	2.87	3.98	4.56	5.12	5.66	6.17	7.29	8.31	8.77	9.22	9.66	9.95			0.08	0.50	0.71	0.87
		5500	1.84	2.89	4.01	4.59	5.16	5.69	6.20	7.31	8.32	8.77	9.20	9.60				0.08	0.51	0.72	0.89
		5600	1.84	2.90	4.03	4.62	5.18	5.72	6.23	7.33	8.32	8.75	9.16	9.53				0.08	0.52	0.74	0.90
		5800	1.84	2.93	4.07	4.66	5.23	5.77	6.28	7.36	8.30	8.71	9.07	9.37				0.08	0.54	0.76	0.93
	(20)	6000	1.84	2.94	4.10	4.70	5.27	5.80	6.31	7.36	8.26	8.62	8.93					0.09	0.56	0.79	0.97
		6200	1.84	2.96	4.12	4.72	5.29	5.82	6.32	7.35	8.19	8.51	8.76					0.09	0.57	0.81	1.00
		6400	1.83	2.96	4.13	4.74	5.30	5.83	6.32	7.31	8.08	8.35	8.54					0.09	0.59	0.84	1.03
		6600	1.81	2.96	4.14	4.74	5.30	5.82	6.30	7.25	7.94							0.09	0.61	0.87	1.06
		6800	1.79	2.95	4.14	4.74	5.29	5.80	6.26	7.16	7.78							0.10	0.63	0.89	1.10
		7000	1.77	2.94	4.12	4.72	5.27	5.76	6.21	7.05	7.58							0.10	0.65	0.92	1.13
		7200	1.74	2.91	4.10	4.69	5.23	5.71	6.14	6.92	7.34							0.10	0.67	0.95	1.16
	(25)	7400	1.70	2.89	4.07	4.65	5.18	5.64	6.05	6.76								0.11	0.69	0.97	1.19
		7600	1.66	2.85	4.02	4.60	5.11	5.56	5.94	6.58								0.11	0.70	1.00	1.22
		7800	1.62	2.81	3.97	4.53	5.03	5.46	5.82	6.37								0.11	0.72	1.03	1.26
		8000	1.57	2.76	3.91	4.46	4.94	5.34	5.67	6.13								0.11	0.74	1.05	1.29
		8200	1.51	2.70	3.83	4.37	4.83	5.21	5.50									0.12	0.76	1.08	1.32
		8400	1.45	2.63	3.75	4.27	4.70	5.05	5.32									0.12	0.78	1.10	1.35

Where v > 42 m/s, please consult our Applications Engineering Department

(30) (35) (40)

v (m/s)

Dynamically balanced (for details see DIN 2211)

Pulleys

Note: Pulley diameters shown are outside diameters for sections 3V/9N, 3V/9J.

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Power Transmission

Power Ratings

Section SPA

Nominal Power Rating P_N (kW) for $\beta = 180°$ and $L_d = 2500$ mm

Table 27

Pulleys	v (m/s)	n_k (min^{-1})	Datum diameter of small pulley d_{dk} (mm) 90	100	112	118	125	132	140	150	160	180	200	224	250	280	315	Additional power (kW) per belt for speed ratio i 1,01 to 1,05	1,06 to 1,26	1,27 to 1,57	>1,57
Statically balanced		**700**	1.17	1.55	1.99	2.21	2.47	2.72	3.01	3.37	3.73	4.44	5.14	5.97	6.85	7.86	9.01	0.02	0.15	0.21	0.26
		950	1.49	1.98	2.57	2.86	3.20	3.53	3.91	4.39	4.86	5.78	6.70	7.78	8.92	10.21	11.68	0.03	0.20	0.29	0.36
		1450	2.04	2.76	3.62	4.04	4.53	5.02	5.57	6.25	6.92	8.24	9.52	11.02	12.58	14.30	16.18	0.05	0.31	0.44	0.54
		2850	3.14	4.40	5.88	6.60	7.43	8.23	9.13	10.21	11.25	13.21	14.97	16.81	18.43	19.78	20.57	0.09	0.61	0.87	1.07
		100	0.23	0.30	0.37	0.40	0.45	0.49	0.54	0.60	0.65	0.77	0.89	1.03	1.18	1.35	1.55	0.00	0.02	0.03	0.04
		200	0.42	0.54	0.68	0.75	0.83	0.91	1.00	1.11	1.22	1.45	1.67	1.94	2.22	2.55	2.92	0.01	0.04	0.06	0.07
		300	0.59	0.76	0.96	1.07	1.18	1.30	1.43	1.60	1.76	2.09	2.41	2.80	3.21	3.68	4.23	0.01	0.06	0.09	0.11
		400	0.75	0.97	1.24	1.37	1.52	1.67	1.85	2.06	2.28	2.70	3.12	3.63	4.16	4.78	5.49	0.01	0.09	0.12	0.15
		500	0.90	1.17	1.50	1.66	1.85	2.03	2.25	2.51	2.77	3.30	3.81	4.43	5.09	5.84	6.70	0.02	0.11	0.15	0.19
		600	1.04	1.36	1.75	1.94	2.16	2.38	2.63	2.95	3.26	3.87	4.48	5.21	5.98	6.86	7.88	0.02	0.13	0.18	0.22
		700	1.17	1.55	1.99	2.21	2.47	2.72	3.01	3.37	3.73	4.44	5.14	5.97	6.85	7.86	9.01	0.02	0.15	0.21	0.26
		800	1.30	1.72	2.23	2.47	2.76	3.05	3.38	3.78	4.19	4.99	5.77	6.71	7.70	8.82	10.11	0.03	0.17	0.24	0.30
		900	1.43	1.90	2.45	2.73	3.05	3.37	3.74	4.19	4.64	5.52	6.39	7.43	8.52	9.76	11.17	0.03	0.19	0.27	0.34
	(5)	1000	1.55	2.06	2.68	2.98	3.34	3.69	4.09	4.58	5.07	6.04	7.00	8.12	9.32	10.66	12.18	0.03	0.22	0.31	0.37
		1100	1.66	2.23	2.90	3.23	3.61	4.00	4.43	4.97	5.50	6.55	7.59	8.80	10.09	11.53	13.15	0.04	0.24	0.34	0.41
		1200	1.77	2.38	3.11	3.47	3.88	4.30	4.76	5.34	5.92	7.05	8.16	9.46	10.84	12.37	14.08	0.04	0.26	0.37	0.45
		1300	1.88	2.54	3.31	3.70	4.15	4.59	5.09	5.71	6.33	7.54	8.72	10.10	11.55	13.17	14.96	0.04	0.28	0.40	0.49
		1400	1.99	2.69	3.52	3.93	4.40	4.87	5.41	6.07	6.72	8.01	9.26	10.72	12.25	13.93	15.79	0.05	0.30	0.43	0.52
		1500	2.09	2.83	3.71	4.15	4.65	5.15	5.72	6.42	7.11	8.47	9.79	11.32	12.91	14.66	16.56	0.05	0.32	0.46	0.56
		1600	2.19	2.97	3.91	4.37	4.90	5.43	6.02	6.76	7.49	8.91	10.29	11.89	13.54	15.34	17.29	0.05	0.34	0.49	0.60
		1700	2.28	3.11	4.09	4.58	5.14	5.69	6.32	7.09	7.86	9.34	10.78	12.44	14.14	15.99	17.95	0.06	0.37	0.52	0.64
		1800	2.37	3.24	4.27	4.78	5.37	5.95	6.61	7.42	8.21	9.76	11.25	12.97	14.71	16.59	18.56	0.06	0.39	0.55	0.67
		1900	2.46	3.37	4.45	4.98	5.60	6.20	6.89	7.73	8.56	10.17	11.71	13.47	15.25	17.14	19.10	0.06	0.41	0.58	0.71
		2000	2.54	3.50	4.62	5.18	5.82	6.45	7.16	8.03	8.89	10.55	12.14	13.94	15.75	17.65	19.57	0.07	0.43	0.61	0.75
		2100	2.62	3.62	4.79	5.37	6.03	6.69	7.42	8.33	9.22	10.93	12.56	14.39	16.22	18.11	19.98	0.07	0.45	0.64	0.79
	(10)	2200	2.70	3.74	4.95	5.55	6.24	6.92	7.68	8.61	9.53	11.29	12.95	14.81	16.65	18.52	20.32	0.07	0.47	0.67	0.82
		2300	2.78	3.85	5.11	5.73	6.44	7.14	7.93	8.89	9.83	11.63	13.32	15.20	17.04	18.87	20.58	0.08	0.50	0.70	0.86
		2400	2.85	3.96	5.26	5.90	6.63	7.36	8.17	9.15	10.12	11.95	13.67	15.57	17.39	19.17	20.77	0.08	0.52	0.73	0.90
		2500	2.92	4.07	5.41	6.07	6.82	7.56	8.39	9.41	10.39	12.26	14.00	15.90	17.70	19.41	20.87	0.08	0.54	0.76	0.94
		2600	2.99	4.17	5.55	6.23	7.00	7.76	8.62	9.65	10.65	12.56	14.31	16.20	17.96	19.60	20.90	0.09	0.56	0.79	0.97
		2700	3.05	4.27	5.69	6.38	7.18	7.96	8.83	9.88	10.90	12.83	14.59	16.47	18.19	19.72	20.83	0.09	0.58	0.82	1.01
		2800	3.11	4.36	5.82	6.53	7.34	8.14	9.03	10.11	11.14	13.09	14.85	16.70	18.36	19.78	20.68	0.09	0.60	0.86	1.05
		2900	3.16	4.45	5.94	6.67	7.50	8.32	9.22	10.32	11.36	13.32	15.08	16.90	18.49	19.77	20.44	0.10	0.62	0.89	1.09
		3000	3.22	4.53	6.06	6.81	7.66	8.49	9.41	10.51	11.57	13.54	15.29	17.07	18.57	19.70		0.10	0.65	0.92	1.12
	(15)	3100	3.26	4.61	6.18	6.94	7.80	8.64	9.58	10.70	11.77	13.74	15.47	17.20	18.60			0.10	0.67	0.95	1.16
		3200	3.31	4.69	6.29	7.06	7.94	8.80	9.74	10.87	11.95	13.92	15.62	17.29	18.58			0.11	0.69	0.98	1.20
		3300	3.35	4.76	6.39	7.18	8.07	8.94	9.89	11.03	12.11	14.07	15.75	17.34	18.51			0.11	0.71	1.01	1.24
		3400	3.39	4.83	6.49	7.29	8.19	9.07	10.03	11.18	12.26	14.21	15.84	17.35	18.38			0.11	0.73	1.04	1.27
		3500	3.43	4.89	6.58	7.39	8.31	9.19	10.17	11.32	12.40	14.32	15.91	17.33	18.20			0.12	0.75	1.07	1.31
		3600	3.46	4.95	6.66	7.48	8.41	9.31	10.28	11.44	12.52	14.42	15.95	17.26				0.12	0.77	1.10	1.35
		3700	3.49	5.01	6.74	7.57	8.51	9.41	10.39	11.55	12.62	14.48	15.95	17.15				0.12	0.80	1.13	1.39
		3800	3.51	5.06	6.81	7.65	8.60	9.50	10.49	11.64	12.70	14.53	15.93	16.99				0.13	0.82	1.16	1.42
		3900	3.53	5.10	6.88	7.73	8.68	9.59	10.57	11.72	12.77	14.55	15.87	16.79				0.13	0.84	1.19	1.46
		4000	3.55	5.14	6.94	7.79	8.75	9.66	10.65	11.79	12.82	14.55	15.78	16.54				0.13	0.86	1.22	1.50
		4100	3.57	5.17	6.99	7.85	8.81	9.73	10.71	11.84	12.85	14.52	15.66					0.14	0.88	1.25	1.54
	(20)	4200	3.58	5.20	7.04	7.90	8.87	9.78	10.76	11.87	12.87	14.47	15.50					0.14	0.90	1.28	1.57
		4300	3.58	5.23	7.08	7.95	8.91	9.82	10.79	11.89	12.86	14.39	15.30					0.14	0.93	1.31	1.61
		4400	3.58	5.25	7.11	7.98	8.95	9.85	10.81	11.90	12.84	14.28	15.07					0.15	0.95	1.34	1.65
		4500	3.58	5.26	7.13	8.01	8.97	9.87	10.82	11.88	12.80	14.15	14.80					0.15	0.97	1.37	1.69
		4600	3.58	5.27	7.15	8.03	8.99	9.88	10.82	11.86	12.73	13.99						0.15	0.99	1.41	1.72
		4700	3.57	5.27	7.16	8.04	8.99	9.88	10.80	11.81	12.65	13.80						0.16	1.01	1.44	1.76
		4800	3.55	5.27	7.16	8.04	8.99	9.86	10.77	11.75	12.55	13.58						0.16	1.03	1.47	1.80
		4900	3.53	5.26	7.16	8.03	8.97	9.84	10.72	11.67	12.43	13.33						0.16	1.05	1.50	1.84
		5000	3.51	5.25	7.15	8.01	8.95	9.80	10.66	11.57	12.28	13.05						0.17	1.08	1.53	1.87
		5100	3.48	5.23	7.13	7.99	8.91	9.74	10.58	11.45	12.11							0.17	1.10	1.56	1.91
		5200	3.45	5.21	7.10	7.95	8.86	9.68	10.49	11.32	11.92							0.17	1.12	1.59	1.95
	(25)	5300	3.42	5.18	7.06	7.91	8.80	9.60	10.39	11.17	11.71							0.18	1.14	1.62	1.99
		5400	3.38	5.14	7.02	7.85	8.73	9.51	10.27	11.00	11.48							0.18	1.16	1.65	2.02
		5500	3.33	5.10	6.96	7.79	8.65	9.41	10.13	10.81	11.22							0.18	1.18	1.68	2.06
		5600	3.28	5.05	6.90	7.71	8.56	9.29	9.97	10.60								0.19	1.21	1.71	2.10
		5700	3.23	4.99	6.83	7.63	8.45	9.16	9.80	10.37								0.19	1.23	1.74	2.13
		5800	3.17	4.93	6.75	7.54	8.34	9.01	9.62	10.12								0.19	1.25	1.77	2.17
		5900	3.11	4.86	6.66	7.43	8.21	8.85	9.42	9.84								0.20	1.27	1.80	2.21
		6000	3.04	4.79	6.57	7.32	8.07	8.68	9.20	9.55								0.20	1.29	1.83	2.25
		6100	2.96	4.70	6.46	7.19	7.92	8.49	8.96									0.20	1.31	1.86	2.28
		6200	2.89	4.62	6.34	7.06	7.75	8.29	8.70									0.21	1.33	1.89	2.32
	(30)	6300	2.80	4.52	6.22	6.91	7.57	8.07	8.43									0.21	1.36	1.92	2.36
		6400	2.71	4.42	6.09	6.75	7.38	7.84	8.14									0.21	1.38	1.96	2.40
		6500	2.62	4.31	5.94	6.58	7.17	7.59	7.83									0.22	1.40	1.99	2.43
		6600	2.52	4.19	5.79	6.40	6.95											0.22	1.42	2.02	2.47
		6700	2.42	4.07	5.62	6.21	6.72											0.22	1.44	2.05	2.51
		6800	2.31	3.94	5.45	6.01	6.48											0.23	1.46	2.08	2.55
		6900	2.19	3.80	5.27	5.79	6.22											0.23	1.49	2.11	2.58
		7000	2.07	3.66	5.07	5.56	5.94											0.23	1.51	2.14	2.62

Where v > 42 m/s, please consult our Applications Engineering Department

(35) (40)

v (m/s)

Dynamically balanced (for details see DIN 2211)

Pulleys

optibelt
Power Transmission

Power Ratings

Section SPB, 5V/15N, 5V/15J

Nominal Power Rating P_N (kW) for $\beta = 180°$ and $L_d = 3550$ mm

Table 28

Pulleys	v (m/s)	n_k (min^{-1})	Datum diameter of small pulley d_{dk} (mm)														Additional power (kW) per belt for speed ratio i			
			140	150	160	180	190	200	212	224	236	250	280	315	355	375	400	1,01 to 1,05	1,06 to 1,26	1,27 to 1,57	>1,57
Statically balanced		**700**	3.46	4.04	4.62	5.77	6.34	6.91	7.59	8.26	8.92	9.70	11.33	13.21	15.30	16.33	17.59	0.05	0.33	0.47	0.58
		950	4.42	5.19	5.95	7.46	8.20	8.94	9.82	10.69	11.56	12.56	14.66	17.04	19.67	20.94	22.50	0.07	0.45	0.64	0.78
		1450	6.09	7.20	8.29	10.44	11.49	12.53	13.76	14.96	16.15	17.50	20.30	23.36	26.59	28.08	29.83	0.11	0.69	0.97	1.20
		2850	9.07	10.83	12.53	15.71	17.18	18.57	20.13	21.57	22.87	24.21	26.40	27.68				0.21	1.35	1.92	2.35
		100	0.66	0.76	0.85	1.04	1.14	1.23	1.35	1.46	1.57	1.70	1.98	2.30	2.66	2.84	3.07	0.01	0.05	0.07	0.08
		200	1.21	1.39	1.57	1.94	2.12	2.30	2.51	2.73	2.94	3.19	3.72	4.33	5.02	5.36	5.79	0.01	0.09	0.13	0.16
		300	1.71	1.97	2.24	2.77	3.03	3.29	3.61	3.92	4.23	4.59	5.36	6.24	7.25	7.74	8.36	0.02	0.14	0.20	0.25
		400	2.17	2.52	2.87	3.56	3.91	4.25	4.66	5.06	5.47	5.94	6.93	8.08	9.38	10.03	10.82	0.03	0.19	0.27	0.33
		500	2.62	3.05	3.48	4.32	4.75	5.16	5.66	6.16	6.66	7.23	8.45	9.85	11.43	12.22	13.18	0.04	0.24	0.34	0.41
	⑤	600	3.05	3.55	4.06	5.06	5.56	6.05	6.64	7.23	7.81	8.48	9.92	11.56	13.41	14.32	15.44	0.04	0.28	0.40	0.49
		700	3.46	4.04	4.62	5.77	6.34	6.91	7.59	8.26	8.92	9.70	11.33	13.21	15.30	16.33	17.59	0.05	0.33	0.47	0.58
		800	3.85	4.51	5.17	6.46	7.10	7.74	8.50	9.26	10.00	10.87	12.70	14.79	17.11	18.25	19.64	0.06	0.38	0.54	0.66
		900	4.23	4.96	5.69	7.13	7.84	8.55	9.39	10.22	11.05	12.00	14.02	16.30	18.84	20.07	21.57	0.07	0.43	0.61	0.74
		1000	4.60	5.40	6.20	7.78	8.56	9.33	10.25	11.16	12.06	13.10	15.28	17.75	20.47	21.79	23.39	0.07	0.47	0.67	0.82
		1100	4.95	5.83	6.69	8.41	9.25	10.09	11.08	12.06	13.03	14.15	16.50	19.13	22.01	23.40	25.07	0.08	0.52	0.74	0.91
		1200	5.29	6.24	7.17	9.01	9.92	10.82	11.88	12.93	13.97	15.16	17.65	20.44	23.46	24.89	26.62	0.09	0.57	0.81	0.99
	⑩	1300	5.62	6.63	7.63	9.60	10.57	11.52	12.65	13.77	14.87	16.13	18.76	21.67	24.79	26.26	28.02	0.10	0.62	0.87	1.07
		1400	5.94	7.01	8.08	10.16	11.19	12.20	13.40	14.57	15.73	17.06	19.80	22.82	26.02	27.51	29.27	0.10	0.66	0.94	1.15
		1500	6.24	7.38	8.51	10.71	11.79	12.85	14.11	15.34	16.55	17.93	20.78	23.88	27.12	28.62	30.35	0.11	0.71	1.01	1.24
		1600	6.54	7.73	8.92	11.23	12.36	13.48	14.79	16.07	17.33	18.76	21.69	24.86	28.11	29.58	31.26	0.12	0.76	1.08	1.32
		1700	6.82	8.07	9.31	11.73	12.91	14.07	15.44	16.77	18.07	19.54	22.54	25.74	28.96	30.39	31.99	0.12	0.81	1.14	1.40
		1800	7.08	8.40	9.69	12.21	13.44	14.64	16.05	17.42	18.76	20.27	23.31	26.52	29.68	31.04	32.53	0.13	0.85	1.21	1.48
		1900	7.34	8.71	10.05	12.67	13.93	15.18	16.63	18.04	19.40	20.94	24.02	27.20	30.25	31.53	32.86	0.14	0.90	1.28	1.57
	⑮	2000	7.58	9.00	10.39	13.10	14.41	15.68	17.17	18.61	20.00	21.56	24.64	27.77	30.68	31.84	32.99	0.15	0.95	1.34	1.65
		2100	7.81	9.28	10.72	13.51	14.85	16.15	17.67	19.14	20.55	22.11	25.19	28.24	30.94	31.96	32.89	0.15	0.99	1.41	1.73
		2200	8.02	9.54	11.03	13.89	15.26	16.59	18.14	19.62	21.04	22.61	25.65	28.58	31.05	31.90	32.57	0.16	1.04	1.48	1.81
		2300	8.22	9.79	11.31	14.24	15.64	17.00	18.57	20.06	21.48	23.05	26.03	28.81	30.98	31.63		0.17	1.09	1.55	1.90
		2400	8.41	10.02	11.58	14.57	16.00	17.37	18.95	20.45	21.87	23.41	26.31	28.91	30.74	31.16		0.18	1.14	1.61	1.98
		2500	8.58	10.23	11.83	14.88	16.32	17.70	19.29	20.79	22.20	23.72	26.50	28.88	30.31			0.18	1.18	1.68	2.06
		2600	8.74	10.42	12.06	15.15	16.61	18.00	19.59	21.08	22.47	23.95	26.60	28.71				0.19	1.23	1.75	2.14
	⑳	2700	8.88	10.60	12.26	15.39	16.86	18.26	19.84	21.31	22.67	24.11	26.60	28.41				0.20	1.28	1.82	2.23
		2800	9.01	10.76	12.45	15.61	17.08	18.48	20.05	21.50	22.82	24.19	26.49	27.96				0.21	1.33	1.88	2.31
		2900	9.12	10.90	12.61	15.79	17.27	18.66	20.20	21.62	22.90	24.20	26.28	27.36				0.21	1.37	1.95	2.39
		3000	9.22	11.02	12.75	15.95	17.42	18.79	20.31	21.69	22.91	24.13	25.96					0.22	1.42	2.02	2.47
		3100	9.30	11.12	12.86	16.07	17.53	18.88	20.37	21.70	22.85	23.98						0.23	1.47	2.08	2.56
		3200	9.36	11.21	12.96	16.16	17.60	18.93	20.38	21.64	22.72	23.74						0.23	1.52	2.15	2.64
		3300	9.41	11.27	13.02	16.21	17.63	18.93	20.33	21.53	22.52	23.42						0.24	1.56	2.22	2.72
	㉕	3400	9.44	11.31	13.07	16.23	17.63	18.89	20.22	21.35	22.25	23.01						0.25	1.61	2.29	2.80
		3500	9.45	11.33	13.08	16.22	17.58	18.80	20.06	21.10	21.90	22.51						0.26	1.66	2.35	2.89
		3600	9.45	11.33	13.08	16.17	17.49	18.66	19.84	20.78								0.26	1.71	2.42	2.97
		3700	9.42	11.30	13.04	16.08	17.36	18.47	19.57	20.40								0.27	1.75	2.49	3.05
		3800	9.38	11.25	12.98	15.95	17.18	18.22	19.23	19.94								0.28	1.80	2.55	3.13
		3900	9.31	11.18	12.89	15.78	16.95	17.93	18.83	19.41								0.29	1.85	2.62	3.21
	㉚	4000	9.23	11.09	12.77	15.58	16.68	17.58	18.36	18.81								0.29	1.89	2.69	3.30
		4100	9.13	10.97	12.62	15.33	16.36	17.17										0.30	1.94	2.76	3.38
		4200	9.01	10.82	12.44	15.04	16.00	16.71										0.31	1.99	2.82	3.46
		4300	8.86	10.65	12.23	14.71	15.58	16.19										0.32	2.04	2.89	3.54
		4400	8.70	10.46	11.99	14.33	15.11	15.62										0.32	2.08	2.96	3.63
		4500	8.51	10.24	11.72	13.92	14.60	14.98										0.33	2.13	3.03	3.71
		4600	8.30	9.99	11.42	13.45												0.34	2.18	3.09	3.79
	㉟	4700	8.07	9.72	11.08	12.94												0.34	2.23	3.16	3.87
		4800	7.82	9.41	10.72	12.38												0.35	2.27	3.23	3.96
		4900	7.54	9.08	10.31	11.78												0.36	2.32	3.29	4.04
		5000	7.24	8.72	9.87	11.13												0.37	2.37	3.36	4.12
		5100	6.92	8.33	9.40													0.37	2.42	3.43	4.20
		5200	6.57	7.91	8.89													0.38	2.46	3.50	4.29
		5300	6.19	7.46	8.34													0.39	2.51	3.56	4.37
	㊵	5400	5.79	6.98	7.76													0.40	2.56	3.63	4.45
		5500	5.37	6.47	7.14													0.40	2.61	3.70	4.53

Where v > 42 m/s, please consult our Applications Engineering Department

v (m/s)

Dynamically balanced (for details see DIN 2211) — Pulleys

Note: Pulley diameters shown are outside diameters for sections 5V/15N, 5V/15J.

optibelt
Power Transmission

Power Ratings

Section SPC

Nominal Power Rating P_N (kW) for $\beta = 180°$ and $L_d = 5600$ mm

Table 29

Pulleys	v (m/s)	n_k (min^{-1})	Datum diameter of small pulley d_{dk} (mm)													Additional power (kW) per belt for speed ratio i			
			224	250	280	300	315	335	355	375	400	450	500	560	630	710	1,01 to 1,05	1,06 to 1,26	1,27 to 1,57	>1,57
Statically balanced		**700**	10.46	13.11	16.13	18.11	19.58	21.52	23.44	25.34	27.68	32.24	36.64	41.70	47.28	53.19	0.14	0.90	1.28	1.57
		950	13.27	16.71	20.58	23.11	24.97	27.42	29.82	32.18	35.05	40.55	45.70	51.38	57.27	62.91	0.19	1.22	1.73	2.13
		1450	17.79	22.48	27.64	30.92	33.30	36.35	39.26	42.02	45.25	50.94	55.51	59.36	61.37		0.29	1.86	2.65	3.25
		2850	20.63	25.52	29.58	31.27	31.96										0.57	3.67	5.20	6.38
		50	1.08	1.31	1.58	1.75	1.89	2.06	2.23	2.41	2.62	3.05	3.48	3.99	4.58	5.25	0.01	0.06	0.09	0.11
		100	1.99	2.44	2.94	3.28	3.53	3.87	4.20	4.53	4.95	5.77	6.58	7.56	8.68	9.95	0.02	0.13	0.18	0.22
		200	3.64	4.49	5.46	6.11	6.59	7.22	7.86	8.49	9.28	10.84	12.38	14.22	16.34	18.73	0.04	0.26	0.37	0.45
		300	5.16	6.40	7.81	8.75	9.44	10.37	11.29	12.21	13.34	15.60	17.83	20.47	23.50	26.90	0.06	0.39	0.55	0.67
		350	5.89	7.31	8.94	10.01	10.82	11.88	12.94	13.99	15.30	17.88	20.44	23.45	26.90	30.77	0.07	0.45	0.64	0.78
	5	400	6.59	8.20	10.04	11.25	12.16	13.36	14.55	15.73	17.21	20.11	22.97	26.35	30.20	34.48	0.08	0.51	0.73	0.90
		450	7.28	9.07	11.11	12.46	13.47	14.80	16.12	17.44	19.07	22.28	25.44	29.15	33.37	38.04	0.09	0.58	0.82	1.01
		500	7.95	9.91	12.16	13.64	14.75	16.21	17.66	19.10	20.88	24.39	27.83	31.86	36.42	41.44	0.10	0.64	0.91	1.12
		550	8.60	10.74	13.19	14.80	16.00	17.59	19.16	20.72	22.65	26.44	30.15	34.48	39.34	44.66	0.11	0.71	1.00	1.23
		600	9.23	11.55	14.19	15.93	17.22	18.93	20.62	22.30	24.37	28.44	32.39	36.99	42.13	47.70	0.12	0.77	1.10	1.34
		650	9.85	12.34	15.17	17.03	18.42	20.24	22.05	23.84	26.05	30.37	34.56	39.40	44.78	50.55	0.13	0.84	1.19	1.45
		700	10.46	13.11	16.13	18.11	19.58	21.52	23.44	25.34	27.68	32.24	36.64	41.70	47.28	53.19	0.14	0.90	1.28	1.57
		750	11.05	13.87	17.06	19.16	20.72	22.77	24.80	26.80	29.26	34.04	38.64	43.89	49.62	55.61	0.15	0.96	1.37	1.68
		800	11.63	14.60	17.98	20.19	21.83	23.99	26.11	28.21	30.78	35.77	40.54	45.95	51.80	57.81	0.16	1.03	1.46	1.79
	10	850	12.19	15.32	18.87	21.19	22.91	25.17	27.39	29.58	32.26	37.44	42.36	47.89	53.80	59.77	0.17	1.09	1.55	1.90
		900	12.74	16.02	19.74	22.16	23.96	26.31	28.63	30.90	33.68	39.03	44.08	49.71	55.63	61.47	0.18	1.16	1.64	2.01
		950	13.27	16.71	20.58	23.11	24.97	27.42	29.82	32.18	35.05	40.55	45.70	51.38	57.27	62.91	0.19	1.22	1.73	2.13
		1000	13.79	17.37	21.40	24.03	25.96	28.50	30.98	33.41	36.36	41.99	47.21	52.92	58.71	64.08	0.20	1.29	1.83	2.24
		1050	14.30	18.02	22.20	24.91	26.92	29.53	32.09	34.58	37.61	43.34	48.62	54.30	59.94	64.95	0.21	1.35	1.92	2.35
		1100	14.79	18.64	22.97	25.77	27.84	30.53	33.16	35.71	38.80	44.62	49.92	55.54	60.96	65.53	0.22	1.41	2.01	2.46
		1150	15.26	19.25	23.72	26.61	28.73	31.49	34.18	36.78	39.93	45.81	51.10	56.61	61.76	65.79	0.23	1.48	2.10	2.57
		1200	15.72	19.84	24.44	27.41	29.58	32.41	35.15	37.80	40.99	46.90	52.16	57.52	62.33	65.72	0.24	1.54	2.19	2.69
	15	1250	16.17	20.41	25.13	28.17	30.40	33.28	36.07	38.76	41.98	47.91	53.10	58.25	62.65	65.31	0.25	1.61	2.28	2.80
		1300	16.60	20.96	25.80	28.91	31.18	34.12	36.95	39.67	42.91	48.82	53.90	58.81	62.73		0.26	1.67	2.37	2.91
		1350	17.01	21.49	26.44	29.62	31.93	34.91	37.77	40.52	43.77	49.63	54.58	59.19	62.55		0.27	1.74	2.46	3.02
		1400	17.41	21.99	27.06	30.29	32.63	35.65	38.54	41.30	44.55	50.34	55.12	59.37	62.10		0.28	1.80	2.56	3.13
		1450	17.79	22.48	27.64	30.92	33.30	36.35	39.26	42.02	45.25	50.94	55.51	59.36	61.37		0.29	1.86	2.65	3.25
		1500	18.16	22.94	28.20	31.53	33.93	37.00	39.92	42.68	45.88	51.44	55.76	59.15			0.30	1.93	2.74	3.36
		1550	18.51	23.39	28.72	32.09	34.52	37.61	40.53	43.27	46.43	51.83	55.86				0.31	1.99	2.83	3.47
		1600	18.84	23.81	29.22	32.62	35.06	38.16	41.07	43.79	46.90	52.10	55.81				0.32	2.06	2.92	3.58
		1650	19.16	24.20	29.68	33.11	35.56	38.66	41.56	44.24	47.29	52.25	55.59				0.33	2.12	3.01	3.69
	20	1700	19.45	24.58	30.11	33.56	36.02	39.11	41.98	44.62	47.58	52.28	55.21				0.34	2.19	3.10	3.80
		1750	19.73	24.92	30.51	33.98	36.43	39.51	42.35	44.93	47.79	52.19	54.67				0.35	2.25	3.19	3.92
		1800	19.99	25.25	30.88	34.35	36.80	39.85	42.64	45.16	47.91	51.97					0.36	2.31	3.29	4.03
		1850	20.24	25.55	31.21	34.68	37.12	40.14	42.87	45.32	47.94	51.62					0.37	2.38	3.38	4.14
		1900	20.46	25.82	31.51	34.97	37.39	40.37	43.04	45.39	47.87	51.14					0.38	2.44	3.47	4.25
		1950	20.66	26.07	31.77	35.22	37.61	40.54	43.13	45.39	47.70	50.52					0.39	2.51	3.56	4.36
		2000	20.85	26.29	31.99	35.42	37.79	40.65	43.16	45.30	47.44	49.76					0.40	2.57	3.65	4.48
		2050	21.01	26.49	32.18	35.58	37.91	40.69	43.11	45.13	47.07						0.41	2.64	3.74	4.59
	25	2100	21.16	26.66	32.34	35.69	37.97	40.68	42.99	44.87	46.60						0.42	2.70	3.83	4.70
		2150	21.28	26.79	32.45	35.76	37.99	40.60	42.79	44.52	46.02						0.43	2.77	3.92	4.81
		2200	21.38	26.91	32.52	35.78	37.95	40.46	42.51	44.08	45.33						0.44	2.83	4.02	4.92
		2250	21.46	26.99	32.56	35.75	37.85	40.25	42.16	43.55	44.53						0.45	2.89	4.11	5.04
		2300	21.52	27.04	32.55	35.67	37.70	39.97	41.73								0.46	2.96	4.20	5.15
		2350	21.56	27.06	32.50	35.54	37.49	39.63	41.21								0.47	3.02	4.29	5.26
		2400	21.57	27.05	32.41	35.36	37.22	39.21	40.61								0.48	3.09	4.38	5.37
		2450	21.57	27.02	32.28	35.13	36.89	38.72	39.93								0.49	3.15	4.47	5.48
		2500	21.53	26.94	32.10	34.84	36.50	38.16	39.16								0.50	3.22	4.56	5.60
	30	2550	21.48	26.84	31.88	34.50	36.05										0.51	3.28	4.66	5.71
		2600	21.40	26.71	31.62	34.10	35.53										0.52	3.34	4.75	5.82
		2650	21.30	26.54	31.30	33.65	34.95										0.53	3.41	4.84	5.93
		2700	21.17	26.33	30.94	33.14	34.30										0.54	3.47	4.93	6.04
		2750	21.02	26.10	30.54	32.58	33.59										0.55	3.54	5.02	6.16
		2800	20.84	25.83	30.08												0.56	3.60	5.11	6.27
		2850	20.63	25.52	29.58												0.57	3.67	5.20	6.38
		2900	20.40	25.18	29.03												0.58	3.73	5.29	6.49
	35	2950	20.14	24.80	28.42												0.59	3.79	5.39	6.60
		3000	19.86	24.38	27.77												0.60	3.86	5.48	6.71
		3050	19.55	23.93	27.06												0.61	3.92	5.57	6.83
		3100	19.21	23.43	26.30												0.62	3.99	5.66	6.94
		3150	18.84	22.90	25.49												0.63	4.05	5.75	7.05
		3200	18.44	22.33	24.62												0.64	4.12	5.84	7.16
		3250	18.02	21.72	23.69												0.65	4.18	5.93	7.27
		3300	17.56	21.07													0.66	4.24	6.02	7.39
		3350	17.08	20.38													0.67	4.31	6.12	7.50
	40	3400	16.56	19.65													0.68	4.37	6.21	7.61
		3450	16.02	18.87													0.69	4.44	6.30	7.72
		3500	15.44	18.05													0.70	4.50	6.39	7.83

Where v > 42 m/s, please consult our Applications Engineering Department

v (m/s)

Dynamically balanced (for details see DIN 2211) — Pulleys

optibelt
Power Transmission

Power Ratings

Section 8V/25N, 8V/25J

Nominal Power Rating P_N (kW) for $\beta = 180°$ and 8V 2500/6350 mm L_a

Table 30

Pulleys	v (m/s)	n_k (min^{-1})	Datum diameter of small pulley d_{dk} (mm) 335	355	375	425	450	475	500	530	560	600	630	710	800	Additional power (kW) per belt for speed ratio i 1,01 to 1,05	1,06 to 1,26	1,27 to 1,57	>1,57
Statically balanced		**700**	25.67	28.61	31.52	38.62	42.08	45.49	48.82	52.74	56.57	61.51	65.09	74.10	83.23	0.28	1.83	2.60	3.18
		950	32.09	35.77	39.37	48.03	52.17	56.17	60.03	64.47	68.68	73.95	77.62	86.13	93.33	0.38	2.48	3.52	4.32
		1450	40.47	44.90	49.10	58.51	62.60	66.25	69.44	72.63	75.10	77.18	77.79	0.59	3.79	5.38	6.60		
		50	2.63	2.89	3.16	3.82	4.15	4.48	4.80	5.19	5.58	6.10	6.48	7.51	8.65	0.02	0.13	0.19	0.23
		100	4.87	5.38	5.89	7.15	7.78	8.41	9.03	9.78	10.52	11.51	12.24	14.19	16.37	0.04	0.26	0.37	0.45
		150	6.97	7.71	8.46	10.30	11.22	12.13	13.03	14.12	15.20	16.63	17.70	20.53	23.68	0.06	0.39	0.56	0.68
		200	8.97	9.94	10.91	13.31	14.51	15.69	16.88	18.29	19.69	21.56	22.94	26.61	30.68	0.08	0.52	0.74	0.91
	⑤	250	10.89	12.08	13.27	16.22	17.68	19.14	20.59	22.31	24.03	26.30	28.00	32.46	37.40	0.10	0.65	0.93	1.14
		300	12.74	14.15	15.56	19.04	20.76	22.47	24.18	26.21	28.22	30.89	32.87	38.09	43.84	0.12	0.78	1.11	1.36
		350	14.54	16.16	17.78	21.77	23.74	25.71	27.66	29.98	32.28	35.32	37.57	43.49	49.98	0.14	0.91	1.30	1.59
		400	16.28	18.11	19.93	24.42	26.64	28.84	31.02	33.62	36.19	39.58	42.10	48.66	55.82	0.16	1.05	1.48	1.82
		450	17.97	20.00	22.01	26.99	29.44	31.87	34.28	37.14	39.97	43.69	46.44	53.59	61.33	0.18	1.18	1.67	2.05
		500	19.61	21.83	24.04	29.48	32.16	34.81	37.43	40.54	43.60	47.62	50.59	58.27	66.50	0.20	1.31	1.86	2.27
	⑩	550	21.20	23.61	26.00	31.89	34.78	37.64	40.46	43.80	47.08	51.38	54.54	62.67	71.30	0.22	1.44	2.04	2.50
		600	22.74	25.33	27.90	34.22	37.31	40.36	43.37	46.92	50.41	54.95	58.28	66.79	75.70	0.24	1.57	2.23	2.73
		650	24.23	27.00	29.74	36.46	39.75	42.98	46.16	49.91	53.57	58.33	61.80	70.61	79.69	0.26	1.70	2.41	2.96
		700	25.67	28.61	31.52	38.62	42.08	45.49	48.82	52.74	56.57	61.51	65.09	74.10	83.23	0.28	1.83	2.60	3.18
		750	27.06	30.16	33.23	40.69	44.32	47.87	51.35	55.42	59.38	64.46	68.13	77.26	86.31	0.30	1.96	2.78	3.41
		800	28.40	31.66	34.87	42.67	46.45	50.14	53.74	57.94	62.01	67.20	70.92	80.06	88.88	0.32	2.09	2.97	3.64
	⑮	850	29.68	33.09	36.44	44.56	48.47	52.28	55.99	60.30	64.44	69.70	73.44	82.49	90.92	0.34	2.22	3.15	3.87
		900	30.91	34.46	37.94	46.34	50.38	54.29	58.09	62.47	66.67	71.95	75.67	84.52	92.42	0.36	2.35	3.34	4.09
		950	32.09	35.77	39.37	48.03	52.17	56.17	60.03	64.47	68.68	73.95	77.62	86.13	93.33	0.38	2.48	3.52	4.32
		1000	33.21	37.01	40.72	49.61	53.84	57.90	61.81	66.27	70.48	75.68	79.25	87.31	93.63	0.40	2.61	3.71	4.55
		1050	34.27	38.18	42.00	51.09	55.38	59.49	63.42	67.87	72.04	77.12	80.56	88.04	93.28	0.42	2.74	3.90	4.78
	⑳	1100	35.27	39.29	43.19	52.45	56.79	60.93	64.85	69.27	73.36	78.28	81.53	88.30	92.28	0.44	2.88	4.08	5.00
		1150	36.21	40.32	44.30	53.69	58.06	62.20	66.11	70.46	74.44	79.13	82.16	88.06	90.56	0.46	3.01	4.27	5.23
		1200	37.09	41.28	45.33	54.82	59.20	63.32	67.17	71.42	75.25	79.66	82.42	87.31	88.14	0.49	3.14	4.45	5.46
		1250	37.90	42.16	46.27	55.82	60.19	64.27	68.04	72.16	75.80	79.87	82.31	86.03		0.51	3.27	4.64	5.69
		1300	38.65	42.97	47.12	56.69	61.03	65.04	68.71	72.65	76.06	79.74	81.80			0.53	3.40	4.82	5.91
		1350	39.33	43.70	47.88	57.44	61.71	65.63	69.17	72.90	76.04	79.25	80.89			0.55	3.53	5.01	6.14
	㉕	1400	39.93	44.34	48.54	58.04	62.24	66.04	69.42	72.90	75.72		79.56			0.57	3.66	5.19	6.37
		1450	40.47	44.90	49.10	58.51	62.60	66.25	69.44	72.63	75.10		77.79			0.59	3.79	5.38	6.60
		1500	40.93	45.37	49.56	58.84	62.80	66.27	69.24							0.61	3.92	5.57	6.82
		1550	41.31	45.75	49.91	59.01	62.81	66.08	68.80							0.63	4.05	5.75	7.05
		1600	41.62	46.04	50.16	59.04	62.65	65.69	68.11							0.65	4.18	5.94	7.28
		1650	41.85	46.24	50.30	58.90	62.31	65.08	67.18							0.67	4.31	6.12	7.51
	㉚	1700	41.99	46.34	50.33	58.61	61.77	64.25	65.99							0.69	4.44	6.31	7.73
		1750	42.05	46.35	50.24	58.15	61.05	63.19	64.54							0.71	4.57	6.49	7.96
		1800	42.03	46.25	50.04	57.52	60.12									0.73	4.70	6.68	8.19
		1850	41.92	46.05	49.71	56.72	58.98									0.75	4.84	6.86	8.42
		1900	41.72	45.74	49.26	55.74	57.64									0.77	4.97	7.05	8.64
	㉟	1950	41.42	45.32	48.69	54.58	56.08									0.79	5.10	7.23	8.87
		2000	41.04	44.79	47.98	53.23	54.31									0.81	5.23	7.42	9.10
		2050	40.55	44.15	47.14											0.83	5.36	7.61	9.33
		2100	39.97	43.40	46.16											0.85	5.49	7.79	9.55
		2150	39.29	42.52	45.05											0.87	5.62	7.98	9.78
		2200	38.50	41.53	43.79											0.89	5.75	8.16	10.01
		2250	37.62	40.41	42.40											0.91	5.88	8.35	10.23

Where v > 42 m/s, please consult our Applications Engineering Department

																				v (m/s)
	㊵																			
Dynamically balanced (for details see USA Standard RMA/MPTA)																				Pulleys

optibelt
Power Transmission

Power Ratings

optibelt RED POWER II Section SPZ, 3V/9N, 3V/9J

Nominal Power Rating P_N (kW) for $\beta = 180°$ and $L_d = 1600$ mm

Table 31

Pulleys	v (m/s)	n_k (min^{-1})	Datum diameter of small pulley d_{dk} (mm) 63	71	80	85	90	95	100	112	125	132	140	150	160	180	200
Statically balanced		**700**	0.60	0.80	1.02	1.14	1.26	1.38	1.50	1.78	2.08	2.25	2.43	2.66	2.89	3.35	3.80
		950	0.77	1.03	1.32	1.48	1.64	1.80	1.96	2.33	2.74	2.95	3.20	3.50	3.80	4.40	4.99
		1450	1.08	1.47	1.89	2.13	2.36	2.60	2.83	3.38	3.96	4.28	4.63	5.07	5.50	6.36	7.19
		2850	1.80	2.50	3.28	3.70	4.12	4.53	4.94	5.90	6.90	7.43	8.01	8.72	9.41	10.70	11.88
		100	0.11	0.15	0.18	0.20	0.22	0.24	0.26	0.31	0.36	0.38	0.41	0.45	0.49	0.56	0.64
		200	0.21	0.27	0.34	0.38	0.41	0.45	0.49	0.58	0.67	0.72	0.78	0.85	0.92	1.07	1.21
		300	0.30	0.38	0.48	0.54	0.59	0.65	0.70	0.83	0.97	1.04	1.13	1.24	1.34	1.55	1.76
		400	0.38	0.49	0.62	0.69	0.77	0.84	0.91	1.08	1.26	1.36	1.47	1.61	1.74	2.02	2.29
		500	0.45	0.60	0.76	0.85	0.93	1.02	1.11	1.32	1.54	1.66	1.80	1.97	2.13	2.47	2.80
		600	0.53	0.70	0.89	0.99	1.10	1.20	1.30	1.55	1.82	1.96	2.12	2.32	2.52	2.91	3.30
		700	0.60	0.80	1.02	1.14	1.26	1.38	1.50	1.78	2.08	2.25	2.43	2.66	2.89	3.35	3.80
		800	0.67	0.89	1.14	1.28	1.41	1.55	1.68	2.00	2.35	2.53	2.74	3.00	3.26	3.77	4.28
		900	0.74	0.99	1.26	1.41	1.57	1.72	1.87	2.22	2.61	2.81	3.05	3.34	3.62	4.19	4.75
		1000	0.80	1.08	1.38	1.55	1.72	1.88	2.05	2.44	2.86	3.09	3.35	3.66	3.98	4.60	5.22
		1100	0.87	1.17	1.50	1.68	1.86	2.05	2.23	2.66	3.12	3.36	3.64	3.99	4.33	5.01	5.67
		1200	0.93	1.25	1.61	1.81	2.01	2.21	2.40	2.87	3.36	3.63	3.93	4.30	4.67	5.40	6.12
		1300	0.99	1.34	1.73	1.94	2.15	2.36	2.57	3.07	3.61	3.89	4.21	4.61	5.01	5.79	6.55
		1400	1.05	1.43	1.84	2.07	2.29	2.52	2.74	3.28	3.85	4.15	4.49	4.92	5.34	6.17	6.98
	5	1500	1.11	1.51	1.95	2.19	2.43	2.67	2.91	3.48	4.08	4.40	4.77	5.22	5.67	6.54	7.40
		1600	1.17	1.59	2.06	2.31	2.57	2.82	3.08	3.68	4.31	4.65	5.04	5.52	5.99	6.91	7.80
		1700	1.23	1.67	2.16	2.44	2.70	2.97	3.24	3.87	4.54	4.90	5.31	5.81	6.30	7.26	8.20
		1800	1.28	1.75	2.27	2.55	2.84	3.12	3.40	4.06	4.77	5.14	5.57	6.09	6.61	7.61	8.58
		1900	1.34	1.83	2.37	2.67	2.97	3.26	3.56	4.25	4.99	5.38	5.82	6.37	6.91	7.95	8.96
		2000	1.39	1.90	2.47	2.79	3.10	3.41	3.71	4.44	5.21	5.62	6.08	6.64	7.20	8.28	9.32
		2100	1.44	1.98	2.57	2.90	3.22	3.55	3.87	4.62	5.42	5.85	6.32	6.91	7.49	8.60	9.67
		2200	1.49	2.05	2.67	3.01	3.35	3.68	4.02	4.80	5.63	6.07	6.57	7.17	7.77	8.91	10.01
		2300	1.54	2.13	2.77	3.12	3.47	3.82	4.16	4.98	5.84	6.29	6.80	7.43	8.04	9.22	10.33
		2400	1.59	2.20	2.87	3.23	3.59	3.95	4.31	5.15	6.04	6.51	7.03	7.68	8.31	9.51	10.64
		2500	1.64	2.27	2.96	3.34	3.71	4.09	4.45	5.32	6.24	6.72	7.26	7.92	8.56	9.79	10.94
		2600	1.69	2.34	3.05	3.44	3.83	4.22	4.60	5.49	6.43	6.93	7.48	8.16	8.82	10.07	11.23
		2700	1.74	2.40	3.14	3.55	3.95	4.34	4.73	5.66	6.62	7.13	7.70	8.39	9.06	10.33	11.50
		2800	1.78	2.47	3.23	3.65	4.06	4.47	4.87	5.82	6.81	7.33	7.91	8.61	9.29	10.58	11.76
		2900	1.83	2.54	3.32	3.75	4.17	4.59	5.01	5.98	6.99	7.52	8.11	8.83	9.52	10.82	12.00
	10	3000	1.87	2.60	3.41	3.85	4.28	4.71	5.14	6.13	7.17	7.71	8.31	9.04	9.74	11.05	12.23
		3100	1.91	2.66	3.49	3.94	4.39	4.83	5.27	6.28	7.34	7.89	8.50	9.24	9.95	11.27	12.44
		3200	1.95	2.73	3.58	4.04	4.50	4.95	5.39	6.43	7.51	8.07	8.69	9.44	10.15	11.47	12.64
		3300	1.99	2.79	3.66	4.13	4.60	5.06	5.52	6.58	7.67	8.24	8.87	9.63	10.35	11.67	12.81
		3400	2.03	2.85	3.74	4.22	4.70	5.17	5.64	6.72	7.83	8.41	9.05	9.81	10.53	11.85	12.98
		3500	2.07	2.90	3.82	4.31	4.80	5.28	5.75	6.85	7.99	8.57	9.21	9.98	10.70	12.01	13.12
		3600	2.11	2.96	3.89	4.40	4.90	5.39	5.87	6.99	8.14	8.73	9.38	10.15	10.87	12.17	13.25
		3700	2.15	3.02	3.97	4.49	4.99	5.49	5.98	7.12	8.28	8.88	9.53	10.30	11.02	12.31	13.36
		3800	2.18	3.07	4.04	4.57	5.09	5.60	6.09	7.24	8.42	9.02	9.68	10.45	11.17	12.43	13.45
		3900	2.22	3.13	4.12	4.65	5.18	5.70	6.20	7.37	8.56	9.16	9.82	10.59	11.31	12.55	13.52
		4000	2.25	3.18	4.19	4.73	5.27	5.79	6.30	7.49	8.68	9.29	9.95	10.72	11.43	12.65	13.57
		4100	2.29	3.23	4.26	4.81	5.35	5.89	6.41	7.60	8.81	9.42	10.08	10.84	11.54	12.73	13.60
		4200	2.32	3.28	4.32	4.89	5.44	5.98	6.50	7.71	8.93	9.54	10.20	10.96	11.65	12.80	13.61
		4300	2.35	3.33	4.39	4.96	5.52	6.07	6.60	7.82	9.04	9.65	10.31	11.06	11.74	12.85	13.60
		4400	2.38	3.37	4.45	5.03	5.60	6.15	6.69	7.92	9.15	9.76	10.41	11.16	11.82	12.89	13.57
	15	4500	2.41	3.42	4.51	5.10	5.68	6.24	6.78	8.02	9.25	9.86	10.51	11.24	11.89	12.91	13.51
		4600	2.44	3.46	4.58	5.17	5.75	6.32	6.87	8.11	9.34	9.95	10.59	11.32	11.95	12.91	
		4700	2.47	3.51	4.63	5.24	5.83	6.40	6.95	8.20	9.43	10.04	10.67	11.38	12.00	12.90	
		4800	2.49	3.55	4.69	5.30	5.90	6.47	7.03	8.29	9.52	10.12	10.74	11.44	12.03	12.87	
		4900	2.52	3.59	4.75	5.36	5.96	6.54	7.11	8.37	9.59	10.19	10.81	11.49	12.05	12.82	
		5000	2.54	3.63	4.80	5.42	6.03	6.61	7.18	8.45	9.67	10.25	10.86	11.52	12.06	12.76	
		5100	2.57	3.67	4.85	5.48	6.09	6.68	7.25	8.52	9.73	10.31	10.91	11.54	12.06		
		5200	2.59	3.70	4.90	5.53	6.15	6.74	7.31	8.58	9.79	10.36	10.94	11.56	12.04		
		5300	2.61	3.74	4.95	5.59	6.21	6.80	7.38	8.64	9.84	10.40	10.97	11.56	12.01		
		5400	2.63	3.77	4.99	5.64	6.26	6.86	7.43	8.70	9.89	10.44	10.99	11.55	11.97		
		5500	2.65	3.80	5.03	5.69	6.31	6.91	7.49	8.75	9.93	10.47	11.00	11.53			
		5600	2.67	3.83	5.08	5.73	6.36	6.97	7.54	8.80	9.96	10.48	11.00	11.50			
		5800	2.70	3.89	5.15	5.82	6.45	7.06	7.63	8.88	10.00	10.50	10.97	11.40			
	20	6000	2.73	3.94	5.22	5.89	6.53	7.14	7.71	8.94	10.01	10.48	10.90				
		6200	2.75	3.99	5.28	5.96	6.60	7.20	7.77	8.97	10.00	10.42	10.79				
		6400	2.77	4.02	5.33	6.01	6.65	7.25	7.82	8.99	9.95	10.33	10.63				
		6600	2.78	4.06	5.38	6.05	6.69	7.29	7.84	8.98	9.88						
		6800	2.79	4.08	5.41	6.09	6.72	7.31	7.86	8.95	9.77						
		7000	2.80	4.10	5.43	6.11	6.74	7.32	7.85	8.89	9.62						
		7200	2.80	4.11	5.45	6.12	6.74	7.31	7.83	8.81	9.45						
	25	7400	2.79	4.11	5.45	6.12	6.73	7.29	7.78	8.70							
		7600	2.78	4.11	5.45	6.11	6.71	7.25	7.72	8.57							
		7800	2.77	4.10	5.43	6.08	6.67	7.19	7.64	8.41							
		8000	2.75	4.09	5.41	6.05	6.62	7.12	7.54	8.22							
		8200	2.72	4.06	5.37	6.00	6.55	7.03	7.42								
		8400	2.69	4.03	5.32	5.94	6.47	6.92	7.28								

Where v > 42 m/s, please consult our Applications Engineering Department

Pulleys	v (m/s)	Additional power (kW) per belt for speed ratio i 1,01 to 1,05	1,06 to 1,26	1,27 to 1,57	>1,57
Statically balanced		0.01	0.06	0.09	0.11
		0.01	0.09	0.12	0.15
		0.02	0.13	0.19	0.23
		0.04	0.26	0.37	0.46
		0.00	0.01	0.01	0.02
		0.00	0.02	0.03	0.03
		0.00	0.03	0.04	0.05
		0.01	0.04	0.05	0.06
		0.01	0.05	0.07	0.08
		0.01	0.06	0.08	0.10
		0.01	0.06	0.09	0.11
		0.01	0.07	0.11	0.13
		0.01	0.08	0.12	0.15
		0.01	0.09	0.13	0.16
		0.02	0.10	0.14	0.18
		0.02	0.11	0.16	0.19
		0.02	0.12	0.17	0.21
		0.02	0.13	0.18	0.23
	5	0.02	0.14	0.20	0.24
		0.02	0.15	0.21	0.26
		0.02	0.16	0.22	0.27
		0.03	0.17	0.24	0.29
		0.03	0.18	0.25	0.31
		0.03	0.19	0.26	0.32
		0.03	0.19	0.28	0.34
		0.03	0.20	0.29	0.35
		0.03	0.21	0.30	0.37
		0.03	0.22	0.32	0.39
		0.04	0.23	0.33	0.40
		0.04	0.24	0.34	0.42
		0.04	0.25	0.35	0.44
		0.04	0.26	0.37	0.45
		0.04	0.27	0.38	0.47
	10	0.04	0.28	0.39	0.48
		0.04	0.29	0.41	0.50
		0.05	0.30	0.42	0.52
		0.05	0.31	0.43	0.53
		0.05	0.31	0.45	0.55
		0.05	0.32	0.46	0.56
		0.05	0.33	0.47	0.58
		0.05	0.34	0.49	0.60
		0.05	0.35	0.50	0.61
		0.06	0.36	0.51	0.63
		0.06	0.37	0.53	0.64
		0.06	0.38	0.54	0.66
		0.06	0.39	0.55	0.68
		0.06	0.40	0.57	0.69
		0.06	0.41	0.58	0.71
	15	0.06	0.42	0.59	0.73
		0.07	0.43	0.60	0.74
		0.07	0.44	0.62	0.76
		0.07	0.44	0.63	0.77
		0.07	0.45	0.64	0.79
		0.07	0.46	0.66	0.81
		0.07	0.47	0.67	0.82
		0.07	0.48	0.68	0.84
		0.08	0.49	0.70	0.85
		0.08	0.50	0.71	0.87
		0.08	0.51	0.72	0.89
		0.08	0.52	0.74	0.90
		0.08	0.54	0.76	0.93
	20	0.09	0.56	0.79	0.97
		0.09	0.57	0.81	1.00
		0.09	0.59	0.84	1.03
		0.09	0.61	0.87	1.06
		0.10	0.63	0.89	1.10
		0.10	0.65	0.92	1.13
		0.10	0.67	0.95	1.16
	25	0.11	0.69	0.97	1.19
		0.11	0.70	1.00	1.22
		0.11	0.72	1.03	1.26
		0.11	0.74	1.05	1.29
		0.12	0.76	1.08	1.32
		0.12	0.78	1.10	1.35

30 35 40 — v (m/s)

Dynamically balanced (for details see DIN 2211) — Pulleys

Note: Pulley diameters shown are outside diameters for sections 3V/9N, 3V/9J.

optibelt
Power Transmission

Power Ratings

optibelt RED POWER II Section SPA

Nominal Power Rating P_N (kW) for $\beta = 180°$ and $L_d = 2500$ mm

Table 32

Pulleys	v (m/s)	n_k (min^{-1})	Datum diameter of small pulley d_{dk} (mm)														Additional power (kW) per belt for speed ratio i			
			90	100	112	118	125	132	140	150	160	180	200	224	250	280	315	1,01 to 1,05	1,06 to 1,26	1,27 to 1,57	>1,57
Statically balanced		**700**	1.34	1.73	2.20	2.43	2.70	2.97	3.28	3.66	4.03	4.78	5.53	6.41	7.35	8.42	9.66	0.02	0.15	0.21	0.26
		950	1.72	2.24	2.86	3.16	3.52	3.88	4.28	4.78	5.28	6.27	7.24	8.40	9.63	11.03	12.62	0.03	0.20	0.29	0.36
		1450	2.40	3.16	4.07	4.52	5.04	5.56	6.15	6.88	7.61	9.03	10.43	12.08	13.81	15.75	17.93	0.05	0.31	0.44	0.54
		2850	3.91	5.29	6.91	7.71	8.63	9.53	10.54	11.79	13.00	15.33	17.52	19.96	22.35	24.75	27.01	0.09	0.61	0.87	1.07
		100	0.26	0.32	0.40	0.44	0.48	0.52	0.57	0.64	0.70	0.82	0.94	1.09	1.24	1.42	1.63	0.00	0.02	0.03	0.04
		200	0.47	0.59	0.74	0.81	0.89	0.98	1.07	1.19	1.31	1.54	1.78	2.06	2.35	2.70	3.09	0.01	0.04	0.06	0.07
		300	0.66	0.84	1.05	1.16	1.28	1.40	1.54	1.72	1.89	2.23	2.57	2.98	3.41	3.91	4.49	0.01	0.06	0.09	0.11
		400	0.84	1.08	1.36	1.49	1.65	1.81	2.00	2.22	2.45	2.90	3.34	3.87	4.44	5.08	5.83	0.01	0.09	0.12	0.15
		500	1.02	1.30	1.65	1.82	2.01	2.21	2.43	2.71	2.99	3.54	4.09	4.73	5.43	6.23	7.14	0.02	0.11	0.15	0.19
		600	1.18	1.52	1.93	2.13	2.36	2.60	2.86	3.19	3.52	4.17	4.81	5.58	6.40	7.34	8.42	0.02	0.13	0.18	0.22
		700	1.34	1.73	2.20	2.43	2.70	2.97	3.28	3.66	4.03	4.78	5.53	6.41	7.35	8.42	9.66	0.02	0.15	0.21	0.26
		800	1.50	1.94	2.47	2.73	3.04	3.34	3.68	4.11	4.54	5.39	6.22	7.22	8.28	9.48	10.87	0.03	0.17	0.24	0.30
		900	1.64	2.14	2.73	3.02	3.36	3.70	4.08	4.56	5.04	5.98	6.91	8.01	9.18	10.52	12.05	0.03	0.19	0.27	0.34
	(5)	1000	1.79	2.34	2.98	3.31	3.68	4.05	4.48	5.00	5.52	6.56	7.58	8.78	10.07	11.53	13.19	0.03	0.22	0.31	0.37
		1100	1.93	2.53	3.23	3.59	3.99	4.40	4.86	5.43	6.00	7.12	8.23	9.54	10.94	12.51	14.31	0.04	0.24	0.34	0.41
		1200	2.07	2.71	3.48	3.86	4.30	4.74	5.24	5.86	6.47	7.68	8.88	10.29	11.78	13.47	15.39	0.04	0.26	0.37	0.45
		1300	2.20	2.90	3.72	4.13	4.60	5.07	5.61	6.27	6.93	8.23	9.51	11.02	12.61	14.41	16.43	0.04	0.28	0.40	0.49
		1400	2.33	3.07	3.96	4.39	4.90	5.40	5.97	6.68	7.38	8.77	10.13	11.73	13.42	15.31	17.44	0.05	0.30	0.43	0.52
		1500	2.46	3.25	4.19	4.65	5.19	5.72	6.33	7.08	7.83	9.30	10.73	12.42	14.20	16.19	18.41	0.05	0.32	0.46	0.56
		1600	2.59	3.42	4.41	4.91	5.48	6.04	6.68	7.48	8.26	9.81	11.33	13.10	14.96	17.04	19.34	0.05	0.34	0.49	0.60
		1700	2.71	3.59	4.64	5.16	5.76	6.35	7.03	7.86	8.69	10.32	11.91	13.76	15.70	17.86	20.24	0.06	0.37	0.52	0.64
		1800	2.83	3.76	4.86	5.40	6.03	6.66	7.37	8.25	9.11	10.81	12.47	14.41	16.42	18.64	21.08	0.06	0.39	0.55	0.67
		1900	2.94	3.92	5.07	5.64	6.30	6.96	7.70	8.62	9.52	11.30	13.03	15.03	17.11	19.40	21.89	0.06	0.41	0.58	0.71
		2000	3.06	4.08	5.28	5.88	6.57	7.25	8.03	8.98	9.93	11.77	13.56	15.64	17.78	20.12	22.65	0.07	0.43	0.61	0.75
	(10)	2100	3.17	4.23	5.49	6.11	6.83	7.54	8.35	9.34	10.32	12.24	14.09	16.22	18.43	20.81	23.36	0.07	0.45	0.64	0.79
		2200	3.27	4.38	5.69	6.34	7.09	7.83	8.66	9.69	10.71	12.69	14.60	16.79	19.04	21.46	24.02	0.07	0.47	0.67	0.82
		2300	3.38	4.53	5.89	6.56	7.34	8.10	8.97	10.04	11.09	13.13	15.09	17.34	19.63	22.08	24.64	0.08	0.50	0.70	0.86
		2400	3.48	4.68	6.09	6.78	7.58	8.38	9.27	10.37	11.45	13.55	15.57	17.87	20.19	22.65	25.20	0.08	0.52	0.73	0.90
		2500	3.58	4.82	6.28	7.00	7.82	8.64	9.57	10.70	11.81	13.97	16.03	18.37	20.73	23.19	25.70	0.08	0.54	0.76	0.94
		2600	3.68	4.96	6.46	7.21	8.06	8.90	9.85	11.02	12.16	14.37	16.48	18.85	21.23	23.69	26.15	0.09	0.56	0.79	0.97
		2700	3.77	5.09	6.65	7.41	8.29	9.16	10.14	11.33	12.50	14.76	16.91	19.31	21.70	24.15	26.54	0.09	0.58	0.82	1.01
		2800	3.87	5.23	6.83	7.61	8.52	9.41	10.41	11.64	12.84	15.14	17.32	19.75	22.14	24.56	26.87	0.09	0.60	0.86	1.05
		2900	3.96	5.36	7.00	7.81	8.74	9.65	10.68	11.93	13.16	15.51	17.72	20.17	22.55	24.93	27.13	0.10	0.62	0.89	1.09
		3000	4.04	5.48	7.17	8.00	8.95	9.89	10.94	12.22	13.47	15.86	18.09	20.55	22.93	25.25		0.10	0.65	0.92	1.12
	(15)	3100	4.13	5.61	7.34	8.19	9.16	10.12	11.19	12.50	13.77	16.20	18.45	20.92	23.27			0.10	0.67	0.95	1.16
		3200	4.21	5.73	7.50	8.37	9.36	10.34	11.44	12.77	14.06	16.52	18.79	21.26	23.57			0.11	0.69	0.98	1.20
		3300	4.29	5.84	7.66	8.54	9.56	10.56	11.67	13.03	14.34	16.83	19.11	21.57	23.84			0.11	0.71	1.01	1.24
		3400	4.37	5.96	7.81	8.72	9.75	10.77	11.90	13.28	14.61	17.12	19.41	21.85	24.08			0.11	0.73	1.04	1.27
		3500	4.44	6.07	7.96	8.88	9.94	10.97	12.13	13.52	14.87	17.40	19.69	22.11	24.27			0.12	0.75	1.07	1.31
		3600	4.51	6.17	8.10	9.04	10.12	11.17	12.34	13.76	15.12	17.66	19.95	22.34				0.12	0.77	1.10	1.35
		3700	4.58	6.27	8.24	9.20	10.29	11.36	12.55	13.98	15.35	17.91	20.19	22.53				0.12	0.80	1.13	1.39
		3800	4.65	6.37	8.38	9.35	10.46	11.55	12.75	14.19	15.58	18.14	20.41	22.70				0.13	0.82	1.16	1.42
		3900	4.71	6.47	8.51	9.50	10.62	11.72	12.94	14.40	15.79	18.35	20.60	22.84				0.13	0.84	1.19	1.46
		4000	4.77	6.56	8.63	9.64	10.78	11.89	13.12	14.59	15.99	18.55	20.77	22.95				0.13	0.86	1.22	1.50
		4100	4.83	6.65	8.76	9.77	10.93	12.05	13.29	14.77	16.18	18.73	20.92					0.14	0.88	1.25	1.54
	(20)	4200	4.88	6.74	8.87	9.90	11.07	12.21	13.46	14.95	16.35	18.89	21.05					0.14	0.90	1.28	1.57
		4300	4.94	6.82	8.98	10.03	11.21	12.35	13.61	15.11	16.52	19.04	21.15					0.14	0.93	1.31	1.61
		4400	4.99	6.89	9.09	10.15	11.34	12.49	13.76	15.26	16.66	19.17	21.22					0.15	0.95	1.34	1.65
		4500	5.03	6.97	9.19	10.26	11.46	12.63	13.90	15.40	16.80	19.27	21.28					0.15	0.97	1.37	1.69
		4600	5.07	7.04	9.29	10.36	11.58	12.75	14.03	15.53	16.92	19.36						0.15	0.99	1.41	1.72
		4700	5.12	7.11	9.38	10.46	11.69	12.86	14.14	15.65	17.03	19.43						0.16	1.01	1.44	1.76
		4800	5.15	7.17	9.46	10.56	11.79	12.97	14.25	15.75	17.13	19.48						0.16	1.03	1.47	1.80
		4900	5.19	7.23	9.54	10.65	11.89	13.07	14.35	15.84	17.21	19.52						0.16	1.05	1.50	1.84
		5000	5.22	7.28	9.62	10.73	11.97	13.16	14.44	15.92	17.27	19.53						0.17	1.08	1.53	1.87
		5100	5.25	7.33	9.69	10.81	12.05	13.24	14.52	15.99	17.32							0.17	1.10	1.56	1.91
		5200	5.27	7.38	9.75	10.87	12.13	13.31	14.59	16.05	17.36							0.17	1.12	1.59	1.95
	(25)	5300	5.29	7.42	9.81	10.94	12.19	13.38	14.65	16.09	17.38							0.18	1.14	1.62	1.99
		5400	5.31	7.46	9.86	10.99	12.25	13.43	14.69	16.12	17.38							0.18	1.16	1.65	2.02
		5500	5.33	7.49	9.91	11.04	12.30	13.48	14.73	16.14	17.37							0.18	1.18	1.68	2.06
		5600	5.34	7.52	9.95	11.09	12.34	13.51	14.76	16.15								0.19	1.21	1.71	2.10
		5700	5.35	7.54	9.98	11.12	12.37	13.54	14.77	16.14								0.19	1.23	1.74	2.13
		5800	5.35	7.56	10.01	11.15	12.40	13.56	14.77	16.11								0.19	1.25	1.77	2.17
		5900	5.36	7.58	10.04	11.17	12.42	13.57	14.76	16.08								0.20	1.27	1.80	2.21
		6000	5.36	7.59	10.05	11.19	12.42	13.56	14.75	16.02								0.20	1.29	1.83	2.25
		6100	5.35	7.60	10.06	11.19	12.42	13.55	14.71									0.20	1.31	1.86	2.28
		6200	5.34	7.60	10.06	11.19	12.41	13.53	14.67									0.21	1.33	1.89	2.32
	(30)	6300	5.33	7.60	10.06	11.19	12.40	13.50	14.61									0.21	1.36	1.92	2.36
		6400	5.31	7.59	10.05	11.17	12.37	13.46	14.55									0.21	1.38	1.96	2.40
		6500	5.30	7.58	10.04	11.15	12.33	13.40	14.47									0.22	1.40	1.99	2.43
		6600	5.27	7.56	10.01	11.12	12.29											0.22	1.42	2.02	2.47
		6700	5.25	7.54	9.98	11.08	12.24											0.22	1.44	2.05	2.51
		6800	5.22	7.51	9.95	11.03	12.17											0.23	1.46	2.08	2.55
		6900	5.18	7.48	9.90	10.98	12.10											0.23	1.49	2.11	2.58
		7000	5.14	7.44	9.85	10.91	12.02											0.23	1.51	2.14	2.62
	v (m/s)		(35)	(40)														v (m/s)			
Dynamically balanced (for details see DIN 2211)	Pulleys																	Pulleys			

Where v > 42 m/s, please consult our Applications Engineering Department

optibelt
Power Transmission

Power Ratings

optibelt *RED POWER II* Section SPB, 5V/15N, 5V/15J

Nominal Power Rating P_N (kW) for $\beta = 180°$ and $L_d = 3550$ mm

Table 33

Pulleys	v (m/s)	n_k (min^{-1})	Datum diameter of small pulley d_{dk} (mm) 140	150	160	180	190	200	212	224	236	250	280	315	355	375	400	Additional power (kW) per belt for speed ratio i 1,01 to 1,05	1,06 to 1,26	1,27 to 1,57	>1,57
Statically balanced		**700**	4.02	4.64	5.27	6.50	7.12	7.73	8.46	9.18	9.91	10.74	12.52	14.57	16.88	18.02	19.44	0.05	0.33	0.47	0.58
		950	5.19	6.02	6.84	8.48	9.29	10.09	11.05	12.01	12.96	14.05	16.38	19.05	22.04	23.51	25.32	0.07	0.45	0.64	0.78
		1450	7.33	8.55	9.75	12.12	13.30	14.46	15.84	17.21	18.57	20.13	23.41	27.12	31.19	33.16	35.54	0.11	0.69	0.97	1.20
		2850	12.11	14.21	16.28	20.29	22.22	24.11	26.31	28.43	30.48	32.78	37.30	41.87				0.21	1.35	1.92	2.35
		100	0.74	0.84	0.94	1.14	1.24	1.34	1.46	1.58	1.70	1.84	2.13	2.47	2.86	3.05	3.29	0.01	0.05	0.07	0.08
		200	1.36	1.56	1.75	2.14	2.33	2.52	2.75	2.98	3.20	3.47	4.03	4.68	5.42	5.79	6.24	0.01	0.09	0.13	0.16
		300	1.94	2.23	2.51	3.07	3.35	3.63	3.97	4.30	4.63	5.02	5.84	6.78	7.86	8.39	9.06	0.02	0.14	0.20	0.25
		400	2.49	2.86	3.23	3.97	4.34	4.70	5.14	5.57	6.00	6.51	7.58	8.81	10.21	10.91	11.77	0.03	0.19	0.27	0.33
		500	3.02	3.47	3.93	4.84	5.29	5.74	6.27	6.81	7.34	7.96	9.27	10.78	12.50	13.35	14.40	0.04	0.24	0.34	0.41
	(5)	600	3.52	4.07	4.61	5.68	6.21	6.74	7.38	8.01	8.64	9.37	10.92	12.70	14.72	15.72	16.96	0.04	0.28	0.40	0.49
		700	4.02	4.64	5.27	6.50	7.12	7.73	8.46	9.18	9.91	10.74	12.52	14.57	16.88	18.02	19.44	0.05	0.33	0.47	0.58
		800	4.50	5.20	5.91	7.30	8.00	8.69	9.51	10.33	11.15	12.09	14.09	16.40	18.99	20.27	21.85	0.06	0.38	0.54	0.66
		900	4.96	5.75	6.53	8.09	8.86	9.63	10.54	11.45	12.36	13.41	15.63	18.18	21.04	22.44	24.18	0.07	0.43	0.61	0.74
		1000	5.42	6.28	7.15	8.86	9.71	10.55	11.55	12.55	13.55	14.69	17.13	19.91	23.02	24.55	26.43	0.07	0.47	0.67	0.82
		1100	5.86	6.81	7.75	9.61	10.53	11.45	12.54	13.63	14.71	15.95	18.59	21.60	24.95	26.59	28.61	0.08	0.52	0.74	0.91
		1200	6.29	7.32	8.33	10.35	11.34	12.33	13.51	14.68	15.84	17.18	20.01	23.24	26.82	28.56	30.70	0.09	0.57	0.81	0.99
	(10)	1300	6.72	7.82	8.91	11.07	12.14	13.20	14.46	15.71	16.95	18.38	21.40	24.83	28.62	30.46	32.71	0.10	0.62	0.87	1.07
		1400	7.13	8.31	9.47	11.78	12.91	14.04	15.39	16.72	18.04	19.56	22.75	26.37	30.35	32.28	34.62	0.10	0.66	0.94	1.15
		1500	7.54	8.78	10.02	12.47	13.68	14.87	16.29	17.70	19.09	20.70	24.06	27.86	32.02	34.02	36.44	0.11	0.71	1.01	1.24
		1600	7.93	9.25	10.56	13.14	14.42	15.68	17.18	18.66	20.13	21.81	25.34	29.30	33.61	35.67	38.16	0.12	0.76	1.08	1.32
		1700	8.32	9.71	11.09	13.81	15.15	16.47	18.04	19.60	21.13	22.89	26.57	30.68	35.12	37.24	39.78	0.12	0.81	1.14	1.40
		1800	8.69	10.16	11.60	14.45	15.86	17.24	18.89	20.51	22.11	23.94	27.76	32.00	36.56	38.71	41.28	0.13	0.85	1.21	1.48
		1900	9.06	10.59	12.11	15.09	16.55	18.00	19.71	21.39	23.05	24.96	28.90	33.26	37.91	40.10	42.68	0.14	0.90	1.28	1.57
	(15)	2000	9.42	11.02	12.60	15.70	17.23	18.73	20.51	22.25	23.97	25.94	30.00	34.47	39.18	41.38	43.95	0.15	0.95	1.34	1.65
		2100	9.77	11.44	13.08	16.30	17.88	19.44	21.28	23.09	24.86	26.88	31.05	35.60	40.37	42.55	45.10	0.15	0.99	1.41	1.73
		2200	10.11	11.84	13.55	16.89	18.52	20.13	22.03	23.90	25.72	27.80	32.06	36.68	41.45	43.63	46.13	0.16	1.04	1.48	1.81
		2300	10.44	12.24	14.00	17.46	19.15	20.81	22.76	24.67	26.54	28.67	33.01	37.68	42.45	44.59		0.17	1.09	1.55	1.90
		2400	10.77	12.62	14.45	18.01	19.75	21.46	23.46	25.43	27.34	29.51	33.92	38.61	43.34	45.43		0.18	1.14	1.61	1.98
		2500	11.08	12.99	14.88	18.55	20.33	22.09	24.14	26.15	28.10	30.31	34.77	39.47	44.14			0.18	1.18	1.68	2.06
		2600	11.39	13.36	15.29	19.07	20.90	22.69	24.79	26.84	28.82	31.06	35.56	40.26				0.19	1.23	1.75	2.14
	(20)	2700	11.68	13.71	15.70	19.57	21.44	23.28	25.42	27.50	29.52	31.78	36.30	40.96				0.20	1.28	1.82	2.23
		2800	11.97	14.05	16.09	20.05	21.97	23.84	26.02	28.13	30.17	32.45	36.98	41.59				0.21	1.33	1.88	2.31
		2900	12.24	14.38	16.47	20.52	22.47	24.37	26.59	28.73	30.79	33.09	37.61	42.13				0.21	1.37	1.95	2.39
		3000	12.51	14.69	16.83	20.96	22.95	24.88	27.13	29.29	31.37	33.67	38.17					0.22	1.42	2.02	2.47
		3100	12.76	15.00	17.18	21.39	23.41	25.37	27.64	29.82	31.91	34.21						0.23	1.47	2.08	2.56
		3200	13.01	15.29	17.52	21.80	23.85	25.83	28.13	30.32	32.41	34.71						0.23	1.52	2.15	2.64
		3300	13.24	15.57	17.84	22.19	24.27	26.27	28.58	30.78	32.87	35.15						0.24	1.56	2.22	2.72
	(25)	3400	13.47	15.84	18.15	22.56	24.66	26.68	29.00	31.20	33.28	35.55						0.25	1.61	2.29	2.80
		3500	13.68	16.10	18.44	22.91	25.03	27.06	29.39	31.59	33.66	35.89						0.26	1.66	2.35	2.89
		3600	13.89	16.34	18.72	23.24	25.37	27.42	29.75	31.94								0.26	1.71	2.42	2.97
		3700	14.08	16.57	18.98	23.54	25.69	27.74	30.07	32.25								0.27	1.75	2.49	3.05
		3800	14.26	16.79	19.23	23.83	25.99	28.04	30.36	32.52								0.28	1.80	2.55	3.13
		3900	14.43	16.99	19.46	24.09	26.25	28.30	30.61	32.75								0.29	1.85	2.62	3.21
	(30)	4000	14.59	17.18	19.67	24.33	26.50	28.54	30.83	32.94								0.29	1.89	2.69	3.30
		4100	14.74	17.35	19.87	24.55	26.71	28.75										0.30	1.94	2.76	3.38
		4200	14.87	17.52	20.05	24.74	26.90	28.92										0.31	1.99	2.82	3.46
		4300	15.00	17.66	20.21	24.91	27.06	29.06										0.32	2.04	2.89	3.54
		4400	15.11	17.79	20.35	25.06	27.19	29.17										0.32	2.08	2.96	3.63
		4500	15.20	17.91	20.48	25.18	27.30	29.25										0.33	2.13	3.03	3.71
		4600	15.29	18.01	20.59	25.28												0.34	2.18	3.09	3.79
	(35)	4700	15.36	18.10	20.68	25.35												0.34	2.23	3.16	3.87
		4800	15.42	18.17	20.75	25.39												0.35	2.27	3.23	3.96
		4900	15.47	18.22	20.80	25.41												0.36	2.32	3.29	4.04
		5000	15.50	18.26	20.84	25.40												0.37	2.37	3.36	4.12
		5100	15.52	18.28	20.85													0.37	2.42	3.43	4.20
		5200	15.53	18.29	20.84													0.38	2.46	3.50	4.29
		5300	15.52	18.28	20.82													0.39	2.51	3.56	4.37
	(40)	5400	15.50	18.25	20.77													0.40	2.56	3.63	4.45
		5500	15.46	18.20	20.70													0.40	2.61	3.70	4.53

Where v > 42 m/s, please consult our Applications Engineering Department

v (m/s)

Dynamically balanced (for details see DIN 2211)

Pulleys

Note: Pulley diameters shown are outside diameters for sections 5V/15N, 5V/15J.

optibelt
Power Transmission

Power Ratings

optibelt *RED POWER II* Section SPC

Nominal Power Rating P_N (kW) for $\beta = 180°$ and $L_d = 5600$ mm

Table 34

Pulleys	v (m/s)	n_k (min^{-1})	Datum diameter of small pulley d_{dk} (mm)													Additional power (kW) per belt for speed ratio i			
			224	250	280	300	315	335	355	375	400	450	500	560	630	710	1,01 to 1,05	1,06 to 1,26	1,27 to 1,57	>1,57
Statically balanced		**700**	11.09	13.84	16.98	19.05	20.59	22.64	24.66	26.67	29.16	34.06	38.86	44.48	50.84	57.82	0.14	0.90	1.28	1.57
		950	14.23	17.84	21.94	24.64	26.64	29.28	31.90	34.48	37.66	43.88	49.88	56.80	64.44	72.55	0.19	1.22	1.73	2.13
		1450	19.73	24.86	30.63	34.38	37.14	40.75	44.28	47.72	51.90	59.81	67.09	74.92	82.69		0.29	1.86	2.65	3.25
		2850	29.03	36.59	44.44	49.11	52.30										0.57	3.67	5.20	6.38
		50	1.12	1.35	1.63	1.80	1.94	2.12	2.30	2.47	2.69	3.13	3.57	4.09	4.69	5.37	0.01	0.06	0.09	0.11
		100	2.07	2.52	3.04	3.39	3.64	3.98	4.32	4.66	5.09	5.93	6.76	7.75	8.90	10.20	0.02	0.13	0.18	0.22
		200	3.80	4.67	5.66	6.32	6.81	7.46	8.11	8.76	9.56	11.16	12.75	14.64	16.82	19.29	0.04	0.26	0.37	0.45
		300	5.40	6.67	8.11	9.07	9.79	10.74	11.68	12.63	13.80	16.12	18.42	21.15	24.31	27.86	0.06	0.39	0.55	0.67
		350	6.17	7.63	9.30	10.40	11.23	12.32	13.41	14.50	15.84	18.52	21.16	24.30	27.92	31.98	0.07	0.45	0.64	0.78
	5	400	6.92	8.57	10.45	11.70	12.64	13.87	15.10	16.33	17.85	20.87	23.85	27.38	31.44	36.00	0.08	0.51	0.73	0.90
		450	7.65	9.49	11.59	12.98	14.02	15.40	16.77	18.13	19.82	23.17	26.48	30.40	34.89	39.92	0.09	0.58	0.82	1.01
		500	8.36	10.39	12.71	14.24	15.38	16.89	18.40	19.90	21.76	25.44	29.06	33.34	38.25	43.72	0.10	0.64	0.91	1.12
		550	9.06	11.28	13.80	15.47	16.72	18.37	20.01	21.64	23.66	27.66	31.59	36.23	41.53	47.42	0.11	0.71	1.00	1.23
		600	9.75	12.15	14.88	16.68	18.03	19.81	21.58	23.34	25.53	29.83	34.07	39.05	44.72	51.01	0.12	0.77	1.10	1.34
		650	10.43	13.00	15.94	17.88	19.32	21.24	23.14	25.02	27.36	31.97	36.49	41.80	47.82	54.48	0.13	0.84	1.19	1.45
		700	11.09	13.84	16.98	19.05	20.59	22.64	24.66	26.67	29.16	34.06	38.86	44.48	50.84	57.82	0.14	0.90	1.28	1.57
		750	11.74	14.67	18.00	20.21	21.84	24.01	26.16	28.29	30.93	36.11	41.18	47.09	53.76	61.04	0.15	0.96	1.37	1.68
		800	12.38	15.48	19.01	21.34	23.07	25.36	27.63	29.88	32.66	38.12	43.44	49.63	56.58	64.13	0.16	1.03	1.46	1.79
	10	850	13.01	16.28	20.01	22.46	24.28	26.69	29.08	31.44	34.36	40.09	45.65	52.10	59.30	67.08	0.17	1.09	1.55	1.90
		900	13.63	17.07	20.98	23.56	25.47	28.00	30.50	32.98	36.03	42.00	47.80	54.49	61.92	69.89	0.18	1.16	1.64	2.01
		950	14.23	17.84	21.94	24.64	26.64	29.28	31.90	34.48	37.66	43.88	49.88	56.80	64.44	72.55	0.19	1.22	1.73	2.13
		1000	14.83	18.60	22.88	25.70	27.79	30.54	33.26	35.95	39.26	45.70	51.91	59.03	66.83	75.05	0.20	1.29	1.83	2.24
		1050	15.41	19.35	23.81	26.74	28.91	31.78	34.60	37.39	40.82	47.48	53.88	61.17	69.12	77.40	0.21	1.35	1.92	2.35
		1100	15.99	20.08	24.72	27.76	30.02	32.99	35.92	38.80	42.34	49.21	55.77	63.22	71.28	79.57	0.22	1.41	2.01	2.46
		1150	16.56	20.81	25.62	28.77	31.10	34.17	37.20	40.18	43.83	50.89	57.61	65.19	73.32	81.57	0.23	1.48	2.10	2.57
		1200	17.11	21.51	26.49	29.75	32.17	35.34	38.45	41.52	45.27	52.51	59.37	67.06	75.23	83.40	0.24	1.54	2.19	2.69
	15	1250	17.65	22.21	27.36	30.72	33.21	36.47	39.68	42.83	46.68	54.08	61.06	68.84	77.01	85.03	0.25	1.61	2.28	2.80
		1300	18.19	22.89	28.20	31.66	34.22	37.58	40.88	44.11	48.05	55.60	62.69	70.52	78.64		0.26	1.67	2.37	2.91
		1350	18.71	23.56	29.03	32.59	35.22	38.67	42.04	45.35	49.37	57.06	64.23	72.09	80.14		0.27	1.74	2.46	3.02
		1400	19.22	24.22	29.84	33.50	36.19	39.72	43.18	46.55	50.66	58.47	65.70	73.56	81.49		0.28	1.80	2.56	3.13
		1450	19.73	24.86	30.63	34.38	37.14	40.75	44.28	47.72	51.90	59.81	67.09	74.92	82.69		0.29	1.86	2.65	3.25
		1500	20.22	25.49	31.40	35.24	38.07	41.75	45.35	48.85	53.09	61.09	68.40	76.17			0.30	1.93	2.74	3.36
		1550	20.70	26.10	32.16	36.09	38.97	42.73	46.39	49.95	54.25	62.31	69.62				0.31	1.99	2.83	3.47
		1600	21.17	26.71	32.90	36.91	39.84	43.67	47.39	51.00	55.35	63.47	70.77				0.32	2.06	2.92	3.58
		1650	21.63	27.29	33.62	37.70	40.70	44.59	48.36	52.02	56.41	64.56	71.82				0.33	2.12	3.01	3.69
	20	1700	22.08	27.86	34.32	38.48	41.52	45.47	49.30	52.99	57.42	65.59	72.78				0.34	2.19	3.10	3.80
		1750	22.51	28.42	35.00	39.23	42.32	46.33	50.20	53.93	58.38	66.54	73.65				0.35	2.25	3.19	3.92
		1800	22.94	28.97	35.66	39.96	43.09	47.15	51.06	54.82	59.29	67.43					0.36	2.31	3.29	4.03
		1850	23.35	29.50	36.30	40.67	43.84	47.94	51.89	55.66	60.14	68.25					0.37	2.38	3.38	4.14
		1900	23.76	30.01	36.92	41.35	44.56	48.70	52.67	56.47	60.95	68.99					0.38	2.44	3.47	4.25
		1950	24.15	30.51	37.52	42.00	45.25	49.43	53.42	57.23	61.70	69.65					0.39	2.51	3.56	4.36
		2000	24.53	30.99	38.11	42.63	45.91	50.12	54.13	57.94	62.40	70.24					0.40	2.57	3.65	4.48
		2050	24.90	31.46	38.66	43.24	46.55	50.78	54.80	58.60	63.04						0.41	2.64	3.74	4.59
	25	2100	25.25	31.91	39.20	43.82	47.15	51.40	55.43	59.22	63.62						0.42	2.70	3.83	4.70
		2150	25.60	32.34	39.72	44.37	47.72	51.99	56.01	59.79	64.14						0.43	2.77	3.92	4.81
		2200	25.93	32.76	40.21	44.90	48.27	52.54	56.56	60.31	64.61						0.44	2.83	4.02	4.92
		2250	26.25	33.16	40.68	45.40	48.78	53.05	57.06	60.78	65.01						0.45	2.89	4.11	5.04
		2300	26.55	33.55	41.13	45.87	49.26	53.53	57.52								0.46	2.96	4.20	5.15
		2350	26.84	33.92	41.56	46.32	49.71	53.97	57.93								0.47	3.02	4.29	5.26
		2400	27.12	34.27	41.96	46.73	50.12	54.37	58.29								0.48	3.09	4.38	5.37
		2450	27.39	34.60	42.33	47.12	50.51	54.73	58.61								0.49	3.15	4.47	5.48
		2500	27.64	34.91	42.69	47.48	50.85	55.05	58.88								0.50	3.22	4.56	5.60
	30	2550	27.88	35.21	43.01	47.80	51.17										0.51	3.28	4.66	5.71
		2600	28.11	35.49	43.32	48.10	51.45										0.52	3.34	4.75	5.82
		2650	28.32	35.75	43.59	48.37	51.69										0.53	3.41	4.84	5.93
		2700	28.52	35.99	43.85	48.60	51.90										0.54	3.47	4.93	6.04
		2750	28.70	36.21	44.07	48.80	52.07										0.55	3.54	5.02	6.16
		2800	28.87	36.41	44.27												0.56	3.60	5.11	6.27
		2850	29.03	36.59	44.44												0.57	3.67	5.20	6.38
		2900	29.17	36.75	44.59												0.58	3.73	5.29	6.49
	35	2950	29.29	36.90	44.70												0.59	3.79	5.39	6.60
		3000	29.40	37.02	44.79												0.60	3.86	5.48	6.71
		3050	29.50	37.12	44.85												0.61	3.92	5.57	6.83
		3100	29.58	37.20	44.88												0.62	3.99	5.66	6.94
		3150	29.64	37.25	44.88												0.63	4.05	5.75	7.05
		3200	29.69	37.29	44.85												0.64	4.12	5.84	7.16
		3250	29.72	37.31	44.79												0.65	4.18	5.93	7.27
		3300	29.73	37.30													0.66	4.24	6.02	7.39
		3350	29.73	37.27													0.67	4.31	6.12	7.50
	40	3400	29.71	37.21													0.68	4.37	6.21	7.61
		3450	29.68	37.14													0.69	4.44	6.30	7.72
		3500	29.63	37.04													0.70	4.50	6.39	7.83

Where v > 42 m/s, please consult our Applications Engineering Department

v (m/s)

Dynamically balanced (for details see DIN 2211) — Pulleys

optibelt
Power Transmission

Power Ratings

optibelt *RED POWER II* Section 8V/25N, 8V/25J

Nominal Power Rating P_N (kW) for β = 180° and 8V 2500/6350 mm L_a

Table 35

Pulleys	v (m/s)	n_k (min^{-1})	Datum diameter of small pulley d_{dk} (mm) 335	355	375	425	450	475	500	530	560	600	630	710	800	Additional power (kW) per belt for speed ratio i 1,01 to 1,05	1,06 to 1,26	1,27 to 1,57	>1,57
Statically balanced		**700**	28.21	31.31	34.38	41.89	45.56	49.17	52.72	56.90	60.98	66.28	70.14	79.91	89.95	0.28	1.83	2.60	3.18
		950	35.60	39.51	43.34	52.60	57.04	61.36	65.54	70.37	74.99	80.81	84.91	94.65	103.34	0.38	2.48	3.52	4.32
		1450	46.12	50.96	55.57	66.08	70.75	75.01	78.82	82.80	86.09	89.34	90.88			0.59	3.79	5.38	6.60
		50	2.80	3.08	3.36	4.04	4.39	4.73	5.07	5.47	5.88	6.42	6.82	7.88	9.07	0.02	0.13	0.19	0.23
		100	5.23	5.76	6.29	7.60	8.26	8.91	9.56	10.34	11.11	12.14	12.91	14.95	17.22	0.04	0.26	0.37	0.45
		150	7.50	8.28	9.05	10.98	11.93	12.88	13.83	14.96	16.09	17.59	18.71	21.67	24.96	0.06	0.39	0.56	0.68
		200	9.68	10.69	11.70	14.22	15.46	16.70	17.94	19.42	20.89	22.83	24.29	28.13	32.40	0.08	0.52	0.74	0.91
	⑤	250	11.78	13.03	14.27	17.35	18.88	20.40	21.92	23.73	25.53	27.91	29.68	34.37	39.56	0.10	0.65	0.93	1.14
		300	13.81	15.29	16.76	20.40	22.20	24.00	25.78	27.91	30.02	32.82	34.90	40.39	46.44	0.12	0.78	1.11	1.36
		350	15.79	17.49	19.17	23.36	25.43	27.49	29.53	31.97	34.39	37.58	39.96	46.19	53.04	0.14	0.91	1.30	1.59
		400	17.71	19.63	21.53	26.24	28.57	30.88	33.18	35.91	38.62	42.19	44.84	51.77	59.35	0.16	1.05	1.48	1.82
		450	19.58	21.71	23.82	29.04	31.62	34.18	36.72	39.73	42.71	46.64	49.54	57.12	65.35	0.18	1.18	1.67	2.05
		500	21.40	23.74	26.05	31.77	34.59	37.38	40.14	43.43	46.66	50.92	54.06	62.23	71.02	0.20	1.31	1.86	2.27
	⑩	550	23.18	25.71	28.23	34.42	37.47	40.48	43.46	46.99	50.48	55.04	58.39	67.07	76.34	0.22	1.44	2.04	2.50
		600	24.90	27.63	30.34	36.99	40.26	43.48	46.67	50.43	54.14	58.97	62.52	71.65	81.28	0.24	1.57	2.23	2.73
		650	26.58	29.50	32.39	39.48	42.96	46.38	49.76	53.74	57.64	62.73	66.44	75.93	85.83	0.26	1.70	2.41	2.96
		700	28.21	31.31	34.38	41.89	45.56	49.17	52.72	56.90	60.98	66.28	70.14	79.91	89.95	0.28	1.83	2.60	3.18
		750	29.79	33.07	36.30	44.21	48.06	51.85	55.56	59.91	64.16	69.64	73.61	83.57	93.62	0.30	1.96	2.78	3.41
		800	31.32	34.77	38.16	46.45	50.47	54.41	58.26	62.77	67.15	72.78	76.83	86.89	96.83	0.32	2.09	2.97	3.64
	⑮	850	32.80	36.41	39.96	48.59	52.77	56.85	60.83	65.47	69.96	75.69	79.79	89.86	99.53	0.34	2.22	3.15	3.87
		900	34.23	37.99	41.69	50.64	54.96	59.17	63.26	68.01	72.58	78.37	82.49	92.45	101.71	0.36	2.35	3.34	4.09
		950	35.60	39.51	43.34	52.60	57.04	61.36	65.54	70.37	74.99	80.81	84.91	94.65	103.34	0.38	2.48	3.52	4.32
		1000	36.92	40.97	44.93	54.46	59.01	63.41	67.66	72.55	77.19	82.99	87.04	96.43	104.39	0.40	2.61	3.71	4.55
		1050	38.19	42.36	46.44	56.21	60.85	65.32	69.62	74.54	79.18	84.91	88.86	97.79	104.83	0.42	2.74	3.90	4.78
	⑳	1100	39.40	43.69	47.87	57.85	62.57	67.10	71.42	76.33	80.93	86.55	90.36	98.70	104.64	0.44	2.88	4.08	5.00
		1150	40.55	44.95	49.23	59.39	64.16	68.72	73.04	77.93	82.45	87.90	91.53	99.14		0.46	3.01	4.27	5.23
		1200	41.64	46.14	50.50	60.81	65.62	70.18	74.49	79.31	83.72	88.95	92.36	99.10		0.49	3.14	4.45	5.46
		1250	42.66	47.25	51.69	62.12	66.94	71.49	75.75	80.47	84.74	89.70	92.83	98.55		0.51	3.27	4.64	5.69
		1300	43.63	48.30	52.80	63.30	68.12	72.63	76.82	81.41	85.50	90.12	92.93			0.53	3.40	4.82	5.91
		1350	44.53	49.26	53.82	64.36	69.15	73.60	77.70	82.12	85.98	90.20	92.64			0.55	3.53	5.01	6.14
	㉕	1400	45.36	50.15	54.74	65.29	70.03	74.39	78.36	82.58	86.18					0.57	3.66	5.19	6.37
		1450	46.12	50.96	55.57	66.08	70.75	75.01	78.82	82.80	86.09					0.59	3.79	5.38	6.60
		1500	46.82	51.68	56.31	66.74	71.32	75.43	79.07	82.76	85.70					0.61	3.92	5.57	6.82
		1550	47.44	52.32	56.95	67.26	71.72	75.66	79.09							0.63	4.05	5.75	7.05
		1600	47.98	52.88	57.48	67.64	71.95	75.70	78.87							0.65	4.18	5.94	7.28
		1650	48.46	53.34	57.91	67.87	72.00	75.53	78.43							0.67	4.31	6.12	7.51
	㉚	1700	48.85	53.72	58.24	67.95	71.88	75.15	77.74							0.69	4.44	6.31	7.73
		1750	49.16	54.00	58.46	67.86	71.57	74.56	76.80							0.71	4.57	6.49	7.96
		1800	49.40	54.18	58.56	67.62	71.07									0.73	4.70	6.68	8.19
		1850	49.54	54.27	58.55	67.22	70.38									0.75	4.84	6.86	8.42
		1900	49.61	54.25	58.42	66.65	69.49									0.77	4.97	7.05	8.64
	㉟	1950	49.59	54.13	58.18	65.90	68.40									0.79	5.10	7.23	8.87
		2000	49.47	53.91	57.81	64.98	67.10									0.81	5.23	7.42	9.10
		2050	49.27	53.58	57.31											0.83	5.36	7.61	9.33
		2100	48.98	53.14	56.69											0.85	5.49	7.79	9.55
		2150	48.59	52.59	55.93											0.87	5.62	7.98	9.78
		2200	48.10	51.93	55.04											0.89	5.75	8.16	10.01
		2250	47.51	51.15	54.02											0.91	5.88	8.35	10.23

Where v > 42 m/s, please consult our Applications Engineering Department

㊵

v (m/s)

Dynamically balanced (for details see USA Standard RMA/MPTA)

Pulleys

optibelt
Power Transmission

Power Ratings

optibelt SUPER TX M=S Section XPZ, 3VX

Nominal Power Rating P_N (kW) for $\beta = 180°$ and $L_d = 1600$ mm

Table 36

Pulleys	v (m/s)	n_k (min^{-1})	Datum diameter of small pulley d_{dk} (mm)														Additional power (kW) per belt for speed ratio i			
			56	60	63	71	80	85	90	95	100	112	125	140	160	180	200	1,01 to 1,05	1,06 to 1,26	1,27 to 1,57	>1,57
Statically balanced		**700**	0.63	0.73	0.81	1.00	1.22	1.34	1.46	1.58	1.70	1.98	2.29	2.63	3.08	3.53	3.97	0.01	0.06	0.08	0.10
		950	0.80	0.93	1.03	1.29	1.58	1.74	1.90	2.05	2.21	2.58	2.97	3.43	4.02	4.60	5.17	0.01	0.08	0.11	0.13
		1450	1.10	1.29	1.44	1.82	2.24	2.47	2.70	2.92	3.15	3.68	4.25	4.90	5.74	6.57	7.37	0.02	0.12	0.16	0.20
		2850	1.78	2.12	2.38	3.06	3.81	4.22	4.62	5.02	5.41	6.33	7.30	8.38	9.74	11.01	12.19	0.04	0.23	0.32	0.40
		100	0.13	0.14	0.16	0.19	0.23	0.25	0.27	0.29	0.31	0.36	0.41	0.47	0.55	0.63	0.70	0.00	0.01	0.01	0.01
		200	0.23	0.26	0.28	0.35	0.42	0.46	0.50	0.53	0.57	0.66	0.76	0.87	1.02	1.17	1.31	0.00	0.02	0.02	0.03
		300	0.32	0.37	0.40	0.49	0.59	0.65	0.71	0.76	0.82	0.95	1.09	1.25	1.46	1.67	1.88	0.00	0.02	0.03	0.04
		400	0.40	0.46	0.51	0.63	0.76	0.83	0.91	0.98	1.05	1.22	1.40	1.61	1.89	2.16	2.43	0.00	0.03	0.05	0.06
		500	0.48	0.56	0.61	0.76	0.92	1.01	1.10	1.19	1.27	1.48	1.71	1.96	2.30	2.63	2.96	0.01	0.04	0.06	0.07
		600	0.56	0.65	0.71	0.88	1.07	1.18	1.28	1.39	1.49	1.74	2.00	2.30	2.70	3.09	3.47	0.01	0.05	0.07	0.08
		700	0.63	0.73	0.81	1.00	1.22	1.34	1.46	1.58	1.70	1.98	2.29	2.63	3.08	3.53	3.97	0.01	0.06	0.08	0.10
		800	0.70	0.81	0.90	1.12	1.37	1.50	1.64	1.77	1.91	2.23	2.57	2.95	3.46	3.96	4.46	0.01	0.06	0.09	0.11
		900	0.77	0.89	0.99	1.23	1.51	1.66	1.81	1.96	2.11	2.46	2.84	3.27	3.83	4.39	4.93	0.01	0.07	0.10	0.13
		1000	0.83	0.97	1.07	1.35	1.65	1.81	1.98	2.14	2.31	2.69	3.11	3.58	4.20	4.80	5.40	0.01	0.08	0.11	0.14
		1100	0.90	1.05	1.16	1.45	1.78	1.96	2.14	2.32	2.50	2.92	3.37	3.88	4.55	5.21	5.85	0.01	0.09	0.12	0.15
		1200	0.96	1.12	1.24	1.56	1.92	2.11	2.31	2.50	2.69	3.14	3.63	4.18	4.90	5.61	6.30	0.01	0.10	0.14	0.17
		1300	1.02	1.19	1.32	1.66	2.05	2.26	2.46	2.67	2.88	3.36	3.88	4.47	5.24	6.00	6.73	0.02	0.10	0.15	0.18
		1400	1.07	1.26	1.40	1.77	2.17	2.40	2.62	2.84	3.06	3.58	4.13	4.76	5.58	6.38	7.16	0.02	0.11	0.16	0.19
		1500	1.13	1.33	1.48	1.87	2.30	2.54	2.77	3.01	3.24	3.79	4.38	5.04	5.91	6.75	7.58	0.02	0.12	0.17	0.21
		1600	1.19	1.40	1.55	1.96	2.42	2.67	2.92	3.17	3.42	4.00	4.62	5.32	6.23	7.12	7.98	0.02	0.13	0.18	0.22
	⑤	1700	1.24	1.46	1.63	2.06	2.54	2.81	3.07	3.33	3.59	4.20	4.85	5.59	6.55	7.48	8.38	0.02	0.14	0.19	0.24
		1800	1.29	1.52	1.70	2.16	2.66	2.94	3.22	3.49	3.76	4.40	5.09	5.86	6.86	7.83	8.77	0.02	0.14	0.20	0.25
		1900	1.34	1.59	1.77	2.25	2.78	3.07	3.36	3.65	3.93	4.60	5.32	6.12	7.16	8.17	9.14	0.02	0.15	0.22	0.26
		2000	1.39	1.65	1.84	2.34	2.90	3.20	3.50	3.80	4.10	4.80	5.54	6.38	7.46	8.50	9.51	0.02	0.16	0.23	0.28
		2100	1.44	1.71	1.91	2.43	3.01	3.33	3.64	3.95	4.26	4.99	5.76	6.63	7.75	8.83	9.87	0.03	0.17	0.24	0.29
		2200	1.49	1.77	1.97	2.52	3.12	3.45	3.78	4.10	4.42	5.18	5.98	6.88	8.04	9.15	10.21	0.03	0.18	0.25	0.31
		2300	1.54	1.83	2.04	2.61	3.23	3.57	3.91	4.25	4.58	5.37	6.19	7.12	8.32	9.46	10.55	0.03	0.18	0.26	0.32
		2400	1.58	1.88	2.10	2.69	3.34	3.69	4.05	4.39	4.74	5.55	6.40	7.36	8.59	9.76	10.87	0.03	0.19	0.27	0.33
		2500	1.63	1.94	2.17	2.78	3.45	3.81	4.18	4.54	4.89	5.73	6.61	7.60	8.86	10.06	11.19	0.03	0.20	0.28	0.35
		2600	1.67	1.99	2.23	2.86	3.55	3.93	4.31	4.68	5.04	5.91	6.81	7.83	9.12	10.34	11.49	0.03	0.21	0.30	0.36
		2700	1.71	2.05	2.29	2.94	3.66	4.05	4.43	4.81	5.19	6.08	7.01	8.05	9.37	10.62	11.78	0.03	0.22	0.31	0.38
		2800	1.76	2.10	2.35	3.02	3.76	4.16	4.56	4.95	5.34	6.25	7.21	8.27	9.62	10.88	12.06	0.03	0.22	0.32	0.39
		2900	1.80	2.15	2.41	3.10	3.86	4.27	4.68	5.08	5.48	6.42	7.40	8.49	9.86	11.14	12.33	0.04	0.23	0.33	0.40
		3000	1.84	2.20	2.47	3.18	3.96	4.38	4.80	5.21	5.62	6.58	7.59	8.69	10.09	11.39	12.58	0.04	0.24	0.34	0.42
		3100	1.88	2.25	2.53	3.25	4.05	4.49	4.92	5.34	5.76	6.74	7.77	8.90	10.32	11.63	12.82	0.04	0.25	0.35	0.43
		3200	1.92	2.30	2.58	3.33	4.15	4.60	5.04	5.47	5.90	6.90	7.95	9.10	10.54	11.86	13.05	0.04	0.26	0.36	0.45
		3300	1.95	2.35	2.64	3.40	4.24	4.70	5.15	5.60	6.03	7.06	8.12	9.29	10.75	12.08	13.27	0.04	0.26	0.37	0.46
	⑩	3400	1.99	2.39	2.69	3.48	4.34	4.80	5.27	5.72	6.17	7.21	8.29	9.48	10.95	12.29	13.47	0.04	0.27	0.39	0.47
		3500	2.03	2.44	2.75	3.55	4.43	4.91	5.38	5.84	6.30	7.36	8.46	9.66	11.15	12.48	13.66	0.04	0.28	0.40	0.49
		3600	2.06	2.48	2.80	3.62	4.52	5.01	5.49	5.96	6.42	7.51	8.62	9.84	11.34	12.67	13.84	0.04	0.29	0.41	0.50
		3700	2.10	2.53	2.85	3.69	4.60	5.10	5.59	6.07	6.55	7.65	8.78	10.01	11.52	12.85	14.00	0.05	0.30	0.42	0.52
		3800	2.13	2.57	2.90	3.75	4.69	5.20	5.70	6.19	6.67	7.79	8.94	10.18	11.69	13.02	14.15	0.05	0.30	0.43	0.53
		3900	2.16	2.61	2.95	3.82	4.78	5.29	5.80	6.30	6.79	7.92	9.09	10.34	11.86	13.17	14.28	0.05	0.31	0.44	0.54
		4000	2.20	2.66	3.00	3.89	4.86	5.39	5.90	6.41	6.91	8.06	9.23	10.50	12.01	13.32	14.40	0.05	0.32	0.45	0.56
		4100	2.23	2.70	3.04	3.95	4.94	5.48	6.00	6.52	7.02	8.19	9.38	10.65	12.16	13.45	14.50	0.05	0.33	0.47	0.57
		4200	2.26	2.74	3.09	4.01	5.02	5.57	6.10	6.62	7.13	8.31	9.51	10.79	12.30	13.57	14.59	0.05	0.34	0.48	0.58
		4300	2.29	2.77	3.13	4.08	5.10	5.65	6.19	6.72	7.24	8.44	9.65	10.93	12.43	13.68	14.66	0.05	0.34	0.49	0.60
		4400	2.32	2.81	3.18	4.14	5.18	5.74	6.29	6.82	7.35	8.56	9.77	11.06	12.56	13.78	14.71	0.05	0.35	0.50	0.61
		4500	2.35	2.85	3.22	4.20	5.25	5.82	6.38	6.92	7.45	8.67	9.90	11.18	12.67	13.87	14.75	0.06	0.36	0.51	0.63
		4600	2.37	2.89	3.26	4.25	5.33	5.90	6.47	7.02	7.55	8.78	10.02	11.30	12.77	13.94		0.06	0.37	0.52	0.64
		4700	2.40	2.92	3.31	4.31	5.40	5.98	6.55	7.11	7.65	8.89	10.13	11.41	12.87	14.00		0.06	0.38	0.53	0.65
		4800	2.43	2.96	3.35	4.37	5.47	6.06	6.64	7.20	7.75	9.00	10.24	11.52	12.95	14.05		0.06	0.38	0.54	0.67
		4900	2.45	2.99	3.39	4.42	5.54	6.14	6.72	7.29	7.84	9.10	10.34	11.62	13.03	14.08		0.06	0.39	0.56	0.68
		5000	2.48	3.02	3.42	4.47	5.61	6.21	6.80	7.38	7.93	9.20	10.44	11.71	13.10	14.10		0.06	0.40	0.57	0.70
	⑮	5100	2.50	3.05	3.46	4.53	5.67	6.28	6.88	7.46	8.02	9.29	10.54	11.80	13.16			0.06	0.41	0.58	0.71
		5200	2.52	3.08	3.50	4.58	5.74	6.36	6.96	7.54	8.11	9.38	10.63	11.88	13.20			0.06	0.42	0.59	0.72
		5300	2.54	3.11	3.53	4.63	5.80	6.42	7.03	7.62	8.19	9.47	10.71	11.95	13.24			0.07	0.42	0.60	0.74
		5400	2.57	3.14	3.57	4.67	5.86	6.49	7.10	7.70	8.27	9.55	10.79	12.01	13.27			0.07	0.43	0.61	0.75
		5500	2.59	3.17	3.60	4.72	5.92	6.56	7.17	7.77	8.34	9.63	10.86	12.07	13.28			0.07	0.44	0.62	0.77
		5600	2.61	3.20	3.64	4.77	5.98	6.62	7.24	7.84	8.42	9.70	10.93	12.12				0.07	0.45	0.64	0.78
		5800	2.64	3.25	3.70	4.85	6.09	6.74	7.37	7.97	8.55	9.84	11.05	12.20				0.07	0.46	0.66	0.81
		6000	2.68	3.30	3.76	4.94	6.19	6.85	7.49	8.10	8.68	9.96	11.15	12.25				0.07	0.48	0.68	0.84
		6200	2.71	3.35	3.81	5.01	6.28	6.95	7.59	8.21	8.79	10.06	11.22	12.26				0.08	0.50	0.70	0.86
		6400	2.74	3.39	3.86	5.08	6.37	7.05	7.69	8.31	8.89	10.15	11.28	12.25				0.08	0.51	0.73	0.89
		6600	2.76	3.43	3.91	5.15	6.45	7.13	7.78	8.40	8.98	10.22	11.30					0.08	0.53	0.75	0.92
	⑳	6800	2.79	3.46	3.95	5.21	6.53	7.21	7.86	8.48	9.05	10.27	11.31					0.08	0.54	0.77	0.95
		7000	2.81	3.49	3.99	5.27	6.59	7.28	7.93	8.54	9.11	10.30	11.29					0.09	0.56	0.79	0.97
		7200	2.82	3.52	4.02	5.31	6.65	7.34	7.99	8.59	9.16	10.31						0.09	0.58	0.82	1.00
		7400	2.83	3.54	4.05	5.36	6.70	7.39	8.04	8.64	9.19	10.31						0.09	0.59	0.84	1.03
		7600	2.84	3.56	4.08	5.40	6.75	7.43	8.07	8.67	9.20	10.28						0.09	0.61	0.86	1.06
		7800	2.85	3.57	4.10	5.43	6.78	7.47	8.10	8.68	9.21	10.23						0.10	0.62	0.89	1.09
		8000	2.85	3.59	4.12	5.45	6.81	7.49	8.12	8.68	9.19	10.17						0.10	0.64	0.91	1.11
		8200	2.85	3.59	4.13	5.47	6.83	7.50	8.12	8.67	9.17							0.10	0.66	0.93	1.14
		8400	2.85	3.60	4.14	5.49	6.84	7.50	8.11	8.65	9.12							0.10	0.67	0.95	1.17

Where v > 42 m/s, please consult our Applications Engineering Department

	㉕		㉚	㉟		㊵											v (m/s)
Dynamically balanced (for details see DIN 2211)																	Pulleys

Note: Pulley diameters shown are outside diameters for sections 3VX.

optibelt
Power Transmission

Power Ratings

optibelt SUPER TX M=S Section XPA

Nominal Power Rating P_N (kW) for $\beta = 180°$ and $L_d = 2500$ mm

Table 37

Pulleys	v (m/s)	n_k (min^{-1})	Datum diameter of small pulley d_{dk} (mm) 71	75	80	90	100	112	118	125	140	160	180	200	224	250	280	Additional power (kW) per belt for speed ratio i 1,01 to 1,05	1,06 to 1,26	1,27 to 1,57	>1,57
Statically balanced		**700**	0.97	1.14	1.35	1.76	2.17	2.66	2.90	3.18	3.78	4.57	5.35	6.13	7.05	8.04	9.17	0.02	0.13	0.19	0.23
		950	1.25	1.47	1.75	2.29	2.84	3.48	3.81	4.18	4.97	6.02	7.06	8.08	9.29	10.58	12.05	0.03	0.18	0.26	0.31
		1450	1.75	2.08	2.48	3.29	4.10	5.05	5.52	6.07	7.23	8.76	10.26	11.73	13.45	15.27	17.30	0.04	0.27	0.39	0.48
		2850	2.88	3.49	4.23	5.71	7.16	8.86	9.70	10.66	12.67	15.23	17.65	19.92	22.43	24.85	27.23	0.08	0.54	0.77	0.94
		100	0.19	0.21	0.25	0.31	0.38	0.46	0.49	0.54	0.64	0.76	0.89	1.02	1.17	1.33	1.51	0.00	0.02	0.03	0.03
		200	0.34	0.39	0.46	0.58	0.71	0.86	0.93	1.02	1.20	1.45	1.69	1.93	2.22	2.53	2.89	0.01	0.04	0.05	0.07
		300	0.48	0.56	0.65	0.83	1.02	1.24	1.35	1.48	1.75	2.11	2.46	2.82	3.24	3.69	4.21	0.01	0.06	0.08	0.10
		400	0.61	0.71	0.83	1.08	1.32	1.61	1.75	1.92	2.27	2.74	3.21	3.67	4.22	4.82	5.49	0.01	0.08	0.11	0.13
		500	0.74	0.86	1.01	1.31	1.61	1.96	2.14	2.35	2.78	3.36	3.94	4.51	5.19	5.91	6.75	0.01	0.09	0.13	0.16
		600	0.86	1.00	1.18	1.54	1.89	2.31	2.52	2.77	3.29	3.97	4.65	5.33	6.13	6.99	7.97	0.02	0.11	0.16	0.20
		700	0.97	1.14	1.35	1.76	2.17	2.66	2.90	3.18	3.78	4.57	5.35	6.13	7.05	8.04	9.17	0.02	0.13	0.19	0.23
		800	1.09	1.28	1.51	1.98	2.44	2.99	3.27	3.58	4.26	5.16	6.04	6.92	7.96	9.07	10.34	0.02	0.15	0.22	0.26
		900	1.20	1.41	1.67	2.19	2.71	3.32	3.63	3.98	4.74	5.74	6.72	7.70	8.85	10.09	11.49	0.03	0.17	0.24	0.30
		1000	1.30	1.53	1.82	2.40	2.97	3.65	3.98	4.37	5.21	6.30	7.39	8.46	9.73	11.08	12.61	0.03	0.19	0.27	0.33
		1100	1.41	1.66	1.98	2.60	3.23	3.97	4.33	4.76	5.67	6.86	8.04	9.21	10.58	12.05	13.70	0.03	0.21	0.30	0.36
		1200	1.51	1.78	2.12	2.80	3.48	4.28	4.68	5.14	6.12	7.42	8.69	9.94	11.42	13.00	14.77	0.04	0.23	0.32	0.40
	(5)	1300	1.61	1.90	2.27	3.00	3.73	4.59	5.02	5.52	6.57	7.96	9.32	10.67	12.25	13.92	15.80	0.04	0.25	0.35	0.43
		1400	1.70	2.02	2.41	3.20	3.97	4.90	5.35	5.89	7.01	8.49	9.95	11.38	13.05	14.83	16.81	0.04	0.27	0.38	0.46
		1500	1.80	2.13	2.55	3.39	4.22	5.20	5.69	6.25	7.45	9.02	10.56	12.07	13.84	15.71	17.79	0.04	0.28	0.40	0.49
		1600	1.89	2.25	2.69	3.58	4.46	5.50	6.01	6.61	7.88	9.54	11.16	12.75	14.61	16.56	18.73	0.05	0.30	0.43	0.53
		1700	1.98	2.36	2.83	3.76	4.69	5.79	6.33	6.96	8.30	10.05	11.75	13.42	15.36	17.40	19.64	0.05	0.32	0.46	0.56
		1800	2.07	2.47	2.96	3.95	4.92	6.08	6.65	7.31	8.72	10.55	12.33	14.07	16.09	18.20	20.52	0.05	0.34	0.48	0.59
		1900	2.15	2.57	3.09	4.13	5.15	6.36	6.96	7.66	9.12	11.04	12.90	14.71	16.81	18.98	21.35	0.06	0.36	0.51	0.63
		2000	2.24	2.68	3.22	4.31	5.38	6.64	7.27	8.00	9.53	11.52	13.46	15.33	17.50	19.73	22.16	0.06	0.38	0.54	0.66
		2100	2.32	2.78	3.35	4.48	5.60	6.92	7.57	8.33	9.92	11.99	14.00	15.94	18.17	20.45	22.92	0.06	0.40	0.56	0.69
		2200	2.40	2.88	3.48	4.65	5.82	7.19	7.87	8.66	10.31	12.46	14.53	16.53	18.81	21.15	23.64	0.06	0.42	0.59	0.73
		2300	2.48	2.98	3.60	4.82	6.03	7.46	8.17	8.98	10.69	12.91	15.05	17.10	19.44	21.81	24.32	0.07	0.44	0.62	0.76
		2400	2.56	3.07	3.72	4.99	6.25	7.73	8.46	9.30	11.07	13.36	15.55	17.65	20.04	22.44	24.96	0.07	0.45	0.65	0.79
		2500	2.63	3.17	3.84	5.16	6.46	7.99	8.74	9.61	11.44	13.79	16.04	18.19	20.62	23.04	25.55	0.07	0.47	0.67	0.82
		2600	2.71	3.26	3.95	5.32	6.66	8.24	9.02	9.92	11.80	14.22	16.52	18.71	21.17	23.60	26.09	0.08	0.49	0.70	0.86
	(10)	2700	2.78	3.35	4.07	5.48	6.86	8.49	9.29	10.22	12.15	14.63	16.99	19.21	21.69	24.13	26.58	0.08	0.51	0.73	0.89
		2800	2.85	3.44	4.18	5.63	7.06	8.74	9.56	10.51	12.50	15.03	17.43	19.69	22.19	24.62	27.03	0.08	0.53	0.75	0.92
		2900	2.92	3.53	4.29	5.79	7.26	8.98	9.83	10.80	12.83	15.42	17.87	20.15	22.66	25.08	27.42	0.08	0.55	0.78	0.96
		3000	2.98	3.62	4.40	5.94	7.45	9.22	10.09	11.09	13.16	15.81	18.29	20.59	23.11	25.49	27.77	0.09	0.57	0.81	0.99
		3100	3.05	3.70	4.50	6.09	7.64	9.45	10.34	11.36	13.49	16.18	18.69	21.01	23.52	25.87		0.09	0.59	0.83	1.02
		3200	3.11	3.78	4.61	6.23	7.82	9.68	10.59	11.63	13.80	16.53	19.08	21.41	23.91	26.21		0.09	0.61	0.86	1.05
		3300	3.18	3.86	4.71	6.38	8.00	9.91	10.83	11.90	14.11	16.88	19.44	21.78	24.26	26.50		0.10	0.63	0.89	1.09
		3400	3.24	3.94	4.81	6.52	8.18	10.13	11.07	12.16	14.40	17.21	19.80	22.14	24.58	26.75		0.10	0.64	0.91	1.12
		3500	3.30	4.02	4.91	6.65	8.36	10.34	11.31	12.41	14.69	17.53	20.13	22.46	24.87	26.96		0.10	0.66	0.94	1.15
		3600	3.35	4.09	5.00	6.79	8.53	10.55	11.53	12.66	14.97	17.84	20.45	22.77	25.13			0.11	0.68	0.97	1.19
		3700	3.41	4.16	5.09	6.92	8.69	10.75	11.75	12.89	15.24	18.14	20.75	23.05	25.36			0.11	0.70	0.99	1.22
		3800	3.46	4.23	5.18	7.05	8.86	10.95	11.97	13.13	15.50	18.42	21.03	23.31	25.55			0.11	0.72	1.02	1.25
		3900	3.52	4.30	5.27	7.17	9.01	11.15	12.18	13.35	15.75	18.69	21.29	23.54	25.70			0.11	0.74	1.05	1.29
	(15)	4000	3.57	4.37	5.36	7.29	9.17	11.33	12.38	13.57	15.99	18.94	21.54	23.74	25.82			0.12	0.76	1.08	1.32
		4100	3.62	4.43	5.44	7.41	9.32	11.52	12.58	13.78	16.23	19.18	21.76	23.92				0.12	0.78	1.10	1.35
		4200	3.66	4.50	5.52	7.53	9.47	11.70	12.77	13.98	16.45	19.41	21.96	24.07				0.12	0.80	1.13	1.38
		4300	3.71	4.56	5.60	7.64	9.61	11.87	12.95	14.18	16.66	19.62	22.15	24.19				0.13	0.81	1.16	1.42
		4400	3.75	4.61	5.68	7.75	9.75	12.04	13.13	14.37	16.86	19.82	22.31	24.28				0.13	0.83	1.18	1.45
		4500	3.79	4.67	5.75	7.86	9.88	12.20	13.30	14.55	17.05	20.00	22.45	24.35				0.13	0.85	1.21	1.48
		4600	3.83	4.73	5.82	7.96	10.01	12.35	13.47	14.72	17.23	20.16	22.56					0.13	0.87	1.24	1.52
		4700	3.87	4.78	5.89	8.06	10.14	12.50	13.63	14.89	17.40	20.31	22.66					0.14	0.89	1.26	1.55
		4800	3.91	4.83	5.96	8.16	10.26	12.64	13.78	15.05	17.56	20.44	22.73					0.14	0.91	1.29	1.58
		4900	3.94	4.88	6.03	8.25	10.38	12.78	13.92	15.19	17.71	20.56	22.78					0.14	0.93	1.32	1.62
		5000	3.97	4.92	6.09	8.34	10.49	12.91	14.06	15.33	17.84	20.66	22.81					0.15	0.95	1.34	1.65
		5100	4.00	4.97	6.15	8.43	10.60	13.04	14.19	15.47	17.97	20.74						0.15	0.97	1.37	1.68
		5200	4.03	5.01	6.20	8.51	10.70	13.16	14.31	15.59	18.08	20.81						0.15	0.98	1.40	1.71
	(20)	5300	4.06	5.05	6.26	8.59	10.80	13.27	14.42	15.70	18.18	20.85						0.16	1.00	1.42	1.75
		5400	4.08	5.09	6.31	8.67	10.89	13.37	14.53	15.81	18.27	20.88						0.16	1.02	1.45	1.78
		5500	4.11	5.12	6.36	8.74	10.98	13.47	14.63	15.91	18.34	20.89						0.16	1.04	1.48	1.81
		5600	4.13	5.15	6.41	8.81	11.06	13.56	14.72	15.99	18.40							0.16	1.06	1.51	1.85
		5700	4.15	5.18	6.45	8.87	11.14	13.65	14.81	16.07	18.45							0.17	1.08	1.53	1.88
		5800	4.16	5.21	6.49	8.93	11.22	13.73	14.88	16.14	18.49							0.17	1.10	1.56	1.91
		5900	4.18	5.24	6.53	8.99	11.28	13.80	14.95	16.20	18.51							0.17	1.12	1.59	1.94
		6000	4.19	5.26	6.56	9.04	11.35	13.86	15.01	16.25	18.52							0.18	1.14	1.61	1.98
		6100	4.20	5.28	6.59	9.09	11.41	13.92	15.06	16.29	18.52							0.18	1.16	1.64	2.01
		6200	4.21	5.30	6.62	9.14	11.46	13.97	15.10	16.32	18.50							0.18	1.17	1.67	2.04
		6300	4.22	5.32	6.65	9.18	11.51	14.01	15.14	16.34	18.47							0.18	1.19	1.69	2.08
		6400	4.22	5.33	6.67	9.22	11.55	14.05	15.16	16.35	18.42							0.19	1.21	1.72	2.11
		6500	4.22	5.34	6.69	9.25	11.58	14.07	15.18	16.34	18.36							0.19	1.23	1.75	2.14
		6600	4.22	5.35	6.71	9.28	11.62	14.09	15.19	16.33								0.19	1.25	1.77	2.18
	(25)	6700	4.22	5.36	6.73	9.30	11.64	14.10	15.18	16.31								0.20	1.27	1.80	2.21
		6800	4.22	5.36	6.74	9.32	11.66	14.11	15.17	16.28								0.20	1.29	1.83	2.24
		6900	4.21	5.36	6.75	9.34	11.67	14.10	15.15	16.23								0.20	1.31	1.86	2.27
		7000	4.20	5.36	6.75	9.35	11.68	14.09	15.12	16.18								0.21	1.33	1.88	2.31

Where v > 42 m/s, please consult our Applications Engineering Department

(30) (35) (40)

v (m/s)

Dynamically balanced (for details see DIN 2211)

Pulleys

optibelt
Power Transmission

Power Ratings

optibelt SUPER TX M=S Section XPB, 5VX

Nominal Power Rating P_N (kW) for $\beta = 180°$ and L_d = 3550 mm

Table 38

Pulleys	v (m/s)	n_k (min^{-1})	Datum diameter of small pulley d_{dk} (mm) 112	118	125	132	140	150	160	180	200	224	250	280	315	355	400	Additional power (kW) per belt for speed ratio i 1,01 to 1,05	1,06 to 1,26	1,27 to 1,57	>1,57
Statically balanced		**700**	2.87	3.26	3.71	4.16	4.68	5.32	5.96	7.24	8.50	10.01	11.64	13.50	15.65	18.07	20.76	0.04	0.29	0.41	0.50
		950	3.79	4.31	4.91	5.52	6.21	7.07	7.92	9.62	11.31	13.31	15.46	17.91	20.72	23.87	27.33	0.06	0.39	0.55	0.68
		1450	5.52	6.30	7.20	8.10	9.12	10.39	11.65	14.15	16.61	19.52	22.60	26.06	29.97	34.25	38.79	0.09	0.59	0.84	1.03
		2850	9.74	11.15	12.78	14.38	16.20	18.42	20.60	24.81	28.80	33.28	37.71	42.21	46.56			0.18	1.17	1.65	2.03
		100	0.48	0.54	0.61	0.67	0.75	0.85	0.95	1.14	1.34	1.57	1.82	2.11	2.45	2.83	3.26	0.01	0.04	0.06	0.07
		200	0.91	1.02	1.16	1.29	1.45	1.64	1.83	2.21	2.59	3.05	3.54	4.11	4.76	5.51	6.35	0.01	0.08	0.12	0.14
		300	1.32	1.49	1.69	1.89	2.12	2.40	2.69	3.25	3.82	4.49	5.22	6.05	7.02	8.12	9.35	0.02	0.12	0.17	0.21
		400	1.72	1.95	2.21	2.47	2.78	3.15	3.53	4.27	5.01	5.90	6.86	7.96	9.23	10.68	12.30	0.03	0.16	0.23	0.28
		500	2.11	2.39	2.72	3.05	3.42	3.89	4.35	5.27	6.19	7.29	8.48	9.84	11.41	13.19	15.18	0.03	0.20	0.29	0.36
		600	2.49	2.83	3.22	3.61	4.05	4.61	5.16	6.26	7.36	8.66	10.07	11.68	13.55	15.66	18.00	0.04	0.25	0.35	0.43
		700	2.87	3.26	3.71	4.16	4.68	5.32	5.96	7.24	8.50	10.01	11.64	13.50	15.65	18.07	20.76	0.04	0.29	0.41	0.50
	⑤	800	3.24	3.68	4.20	4.71	5.30	6.03	6.75	8.20	9.64	11.35	13.19	15.29	17.71	20.43	23.45	0.05	0.33	0.46	0.57
		900	3.61	4.10	4.68	5.25	5.91	6.72	7.53	9.15	10.75	12.66	14.71	17.04	19.73	22.74	26.06	0.06	0.37	0.52	0.64
		1000	3.97	4.51	5.15	5.78	6.51	7.41	8.30	10.09	11.85	13.95	16.20	18.76	21.70	24.99	28.59	0.06	0.41	0.58	0.71
		1100	4.32	4.92	5.62	6.31	7.10	8.09	9.07	11.01	12.94	15.23	17.67	20.45	23.63	27.17	31.03	0.07	0.45	0.64	0.78
		1200	4.67	5.32	6.08	6.83	7.69	8.76	9.82	11.93	14.01	16.48	19.12	22.10	25.51	29.29	33.38	0.08	0.49	0.70	0.85
		1300	5.02	5.72	6.53	7.34	8.27	9.42	10.56	12.83	15.06	17.71	20.53	23.72	27.34	31.33	35.63	0.08	0.53	0.75	0.93
		1400	5.36	6.11	6.98	7.85	8.84	10.07	11.29	13.71	16.10	18.92	21.92	25.29	29.11	33.30	37.77	0.09	0.57	0.81	1.00
		1500	5.69	6.49	7.42	8.35	9.40	10.71	12.01	14.59	17.12	20.11	23.27	26.83	30.82	35.18	39.79	0.09	0.61	0.87	1.07
		1600	6.02	6.87	7.86	8.84	9.96	11.35	12.73	15.45	18.12	21.27	24.59	28.31	32.48	36.98	41.70	0.10	0.65	0.93	1.14
	⑩	1700	6.35	7.25	8.29	9.33	10.51	11.97	13.43	16.29	19.11	22.41	25.88	29.75	34.06	38.69	43.47	0.11	0.70	0.99	1.21
		1800	6.67	7.62	8.72	9.81	11.05	12.59	14.12	17.12	20.07	23.52	27.13	31.15	35.58	40.30	45.12	0.11	0.74	1.05	1.28
		1900	6.99	7.98	9.14	10.28	11.58	13.20	14.79	17.94	21.01	24.60	28.35	32.49	37.03	41.82	46.61	0.12	0.78	1.10	1.35
		2000	7.30	8.34	9.55	10.75	12.11	13.79	15.46	18.74	21.93	25.65	29.52	33.77	38.40	43.22	47.96	0.13	0.82	1.16	1.42
		2100	7.61	8.69	9.95	11.21	12.62	14.38	16.12	19.52	22.83	26.67	30.66	35.00	39.70	44.52	49.16	0.13	0.86	1.22	1.50
		2200	7.91	9.04	10.35	11.66	13.13	14.96	16.76	20.29	23.71	27.67	31.75	36.18	40.91	45.69	50.18	0.14	0.90	1.28	1.57
		2300	8.20	9.38	10.75	12.10	13.63	15.52	17.39	21.03	24.56	28.63	32.80	37.29	42.04	46.75		0.15	0.94	1.34	1.64
		2400	8.50	9.72	11.13	12.53	14.12	16.08	18.00	21.76	25.39	29.55	33.80	38.34	43.08	47.69		0.15	0.98	1.39	1.71
	⑮	2500	8.78	10.05	11.51	12.96	14.60	16.62	18.61	22.48	26.20	30.45	34.76	39.32	44.02	48.49		0.16	1.02	1.45	1.78
		2600	9.06	10.37	11.88	13.38	15.07	17.15	19.19	23.17	26.97	31.30	35.67	40.24	44.87			0.16	1.06	1.51	1.85
		2700	9.34	10.69	12.25	13.79	15.53	17.67	19.77	23.84	27.73	32.12	36.52	41.08	45.62			0.17	1.10	1.57	1.92
		2800	9.61	11.00	12.60	14.19	15.98	18.17	20.33	24.49	28.45	32.90	37.32	41.85	46.27			0.18	1.15	1.63	1.99
		2900	9.87	11.30	12.95	14.58	16.41	18.67	20.87	25.12	29.14	33.64	38.07	42.55	46.81			0.18	1.19	1.68	2.06
		3000	10.13	11.60	13.29	14.96	16.84	19.15	21.40	25.73	29.81	34.34	38.77	43.17				0.19	1.23	1.74	2.14
		3100	10.38	11.89	13.62	15.33	17.26	19.61	21.91	26.32	30.45	35.00	39.40					0.20	1.27	1.80	2.21
		3200	10.62	12.17	13.95	15.70	17.66	20.07	22.41	26.88	31.05	35.62	39.98					0.20	1.31	1.86	2.28
		3300	10.86	12.44	14.26	16.05	18.06	20.51	22.89	27.42	31.62	36.19	40.49					0.21	1.35	1.92	2.35
	⑳	3400	11.09	12.71	14.57	16.39	18.44	20.93	23.35	27.93	32.16	36.72	40.94					0.22	1.39	1.97	2.42
		3500	11.32	12.97	14.87	16.73	18.81	21.34	23.79	28.42	32.67	37.19	41.33					0.22	1.43	2.03	2.49
		3600	11.54	13.22	15.15	17.05	19.17	21.74	24.22	28.89	33.14	37.62						0.23	1.47	2.09	2.56
		3700	11.75	13.47	15.43	17.36	19.51	22.12	24.62	29.32	33.57	38.00						0.23	1.51	2.15	2.63
		3800	11.95	13.70	15.70	17.66	19.84	22.48	25.01	29.74	33.97	38.33						0.24	1.55	2.21	2.71
		3900	12.15	13.93	15.96	17.95	20.16	22.82	25.38	30.12	34.33	38.61						0.25	1.60	2.26	2.78
		4000	12.34	14.15	16.21	18.23	20.46	23.16	25.73	30.47	34.65	38.84						0.25	1.64	2.32	2.85
		4100	12.52	14.36	16.45	18.49	20.75	23.47	26.05	30.80	34.94							0.26	1.68	2.38	2.92
	㉕	4200	12.70	14.56	16.68	18.75	21.03	23.76	26.36	31.10	35.18							0.27	1.72	2.44	2.99
		4300	12.87	14.75	16.90	18.99	21.29	24.04	26.64	31.37	35.38							0.27	1.76	2.50	3.06
		4400	13.03	14.94	17.11	19.22	21.54	24.30	26.91	31.60	35.54							0.28	1.80	2.56	3.13
		4500	13.18	15.11	17.31	19.43	21.77	24.54	27.15	31.81	35.66							0.28	1.84	2.61	3.20
		4600	13.32	15.28	17.49	19.63	21.98	24.76	27.36	31.98								0.29	1.88	2.67	3.28
		4700	13.46	15.43	17.67	19.82	22.18	24.97	27.56	32.12								0.30	1.92	2.73	3.35
		4800	13.58	15.58	17.83	20.00	22.37	25.15	27.73	32.22								0.30	1.96	2.79	3.42
		4900	13.70	15.71	17.98	20.16	22.53	25.31	27.88	32.30								0.31	2.00	2.85	3.49
		5000	13.81	15.84	18.12	20.31	22.68	25.46	28.00	32.33								0.32	2.05	2.90	3.56
	㉚	5100	13.91	15.95	18.25	20.44	22.82	25.58	28.10									0.32	2.09	2.96	3.63
		5200	14.00	16.06	18.36	20.56	22.93	25.68	28.17									0.33	2.13	3.02	3.70
		5300	14.08	16.15	18.46	20.66	23.03	25.76	28.21									0.34	2.17	3.08	3.77
		5400	14.15	16.23	18.55	20.75	23.11	25.82	28.23									0.34	2.21	3.14	3.84
		5500	14.22	16.30	18.63	20.83	23.17	25.85	28.22									0.35	2.25	3.19	3.92
		5600	14.27	16.36	18.69	20.88	23.22											0.35	2.29	3.25	3.99
		5700	14.31	16.41	18.74	20.93	23.24											0.36	2.33	3.31	4.06
		5800	14.34	16.45	18.77	20.95	23.25											0.37	2.37	3.37	4.13
	㉟	5900	14.37	16.47	18.80	20.96	23.24											0.37	2.41	3.43	4.20
		6000	14.38	16.49	18.80	20.95	23.20											0.38	2.45	3.48	4.27

Where v > 42 m/s, please consult our Applications Engineering Department

㊵

v (m/s)

Dynamically balanced (for details see DIN 2211)

Pulleys

Note: Pulley diameters shown are outside diameters for sections 5VX.

optibelt
Power Transmission

Power Ratings

optibelt SUPER TX M=S Section XPC

Nominal Power Rating P_N (kW) for $\beta = 180°$ and $L_d = 5600$ mm

Table 39

Pulleys	v (m/s)	n_k (min^{-1})	Datum diameter of small pulley d_{dk} (mm) 180	200	224	250	280	315	335	355	400	450	500	560	630	710	Additional power (kW) per belt for speed ratio i 1,01 to 1,05	1,06 to 1,26	1,27 to 1,57	>1,57
Statically balanced		**700**	9.39	11.26	13.50	15.91	18.68	21.87	23.67	25.47	29.46	33.82	38.08	43.06	48.67	54.78	0.08	0.49	0.70	0.85
		950	12.53	15.04	18.01	21.21	24.84	29.02	31.37	33.69	38.80	44.30	49.57	55.56	62.06	68.76	0.10	0.67	0.95	1.16
		1450	18.50	22.16	26.46	31.02	36.13	41.86	45.02	48.08	54.61	61.20	67.03	72.90	78.01		0.16	1.02	1.44	1.77
		2850	31.92	37.66	43.99	50.10	56.06	61.37									0.31	2.00	2.84	3.48
		50	0.73	0.87	1.04	1.23	1.44	1.69	1.83	1.97	2.28	2.64	2.99	3.40	3.89	4.45	0.01	0.04	0.05	0.06
		100	1.43	1.71	2.05	2.41	2.83	3.32	3.60	3.88	4.50	5.20	5.89	6.71	7.68	8.77	0.01	0.07	0.10	0.12
		150	2.12	2.54	3.04	3.59	4.21	4.94	5.35	5.76	6.69	7.72	8.75	9.98	11.41	13.03	0.02	0.11	0.15	0.18
		200	2.81	3.36	4.03	4.74	5.57	6.53	7.08	7.63	8.86	10.22	11.58	13.21	15.09	17.24	0.02	0.14	0.20	0.24
		250	3.48	4.17	5.00	5.90	6.92	8.12	8.80	9.48	11.01	12.70	14.39	16.40	18.73	21.38	0.03	0.18	0.25	0.31
		300	4.15	4.98	5.97	7.04	8.27	9.70	10.51	11.32	13.14	15.16	17.16	19.56	22.32	25.46	0.03	0.21	0.30	0.37
		350	4.82	5.78	6.93	8.17	9.60	11.26	12.20	13.15	15.26	17.59	19.91	22.67	25.86	29.47	0.04	0.25	0.35	0.43
		400	5.49	6.58	7.89	9.30	10.92	12.81	13.88	14.95	17.35	20.00	22.62	25.74	29.34	33.39	0.04	0.28	0.40	0.49
		450	6.14	7.37	8.84	10.42	12.24	14.35	15.55	16.75	19.43	22.38	25.30	28.77	32.76	37.23	0.05	0.32	0.45	0.55
	(5)	500	6.80	8.16	9.78	11.53	13.55	15.88	17.21	18.53	21.48	24.73	27.94	31.75	36.10	40.97	0.05	0.35	0.50	0.61
		550	7.45	8.94	10.72	12.64	14.84	17.40	18.85	20.29	23.51	27.05	30.55	34.67	39.37	44.60	0.06	0.39	0.55	0.67
		600	8.10	9.72	11.65	13.74	16.13	18.90	20.47	22.04	25.52	29.34	33.11	37.53	42.56	48.12	0.07	0.42	0.60	0.73
		650	8.74	10.49	12.58	14.83	17.41	20.39	22.08	23.76	27.51	31.60	35.62	40.33	45.66	51.52	0.07	0.46	0.65	0.79
		700	9.39	11.26	13.50	15.91	18.68	21.87	23.67	25.47	29.46	33.82	38.08	43.06	48.67	54.78	0.08	0.49	0.70	0.85
		750	10.02	12.03	14.42	16.99	19.93	23.33	25.25	27.16	31.39	36.00	40.50	45.73	51.58	57.90	0.08	0.53	0.75	0.92
		800	10.66	12.79	15.33	18.06	21.18	24.78	26.81	28.82	33.29	38.14	42.85	48.31	54.38	60.86	0.09	0.56	0.80	0.98
		850	11.29	13.54	16.23	19.12	22.41	26.21	28.35	30.47	35.16	40.24	45.15	50.82	57.06	63.67	0.09	0.60	0.85	1.04
		900	11.91	14.29	17.13	20.17	23.63	27.62	29.87	32.09	37.00	42.29	47.39	53.23	59.63	66.31	0.10	0.63	0.90	1.10
		950	12.53	15.04	18.01	21.21	24.84	29.02	31.37	33.69	38.80	44.30	49.57	55.56	62.06	68.76	0.10	0.67	0.95	1.16
	(10)	1000	13.15	15.77	18.90	22.24	26.04	30.40	32.84	35.26	40.57	46.25	51.67	57.80	64.37	71.03	0.11	0.70	1.00	1.22
		1050	13.76	16.51	19.77	23.26	27.22	31.76	34.30	36.81	42.30	48.15	53.71	59.93	66.53	73.09	0.11	0.74	1.05	1.28
		1100	14.37	17.24	20.64	24.27	28.39	33.10	35.73	38.32	43.99	50.00	55.67	61.97	68.55	74.95	0.12	0.77	1.10	1.34
		1150	14.98	17.96	21.49	25.27	29.54	34.42	37.14	39.81	45.64	51.79	57.55	63.89	70.42	76.59	0.12	0.81	1.15	1.40
		1200	15.58	18.67	22.34	26.26	30.68	35.71	38.52	41.27	47.25	53.52	59.35	65.70	72.12	78.00	0.13	0.84	1.20	1.47
		1250	16.17	19.38	23.19	27.23	31.81	36.99	39.88	42.70	48.82	55.19	61.07	67.39	73.66	79.17	0.14	0.88	1.25	1.53
		1300	16.76	20.09	24.02	28.20	32.91	38.24	41.20	44.10	50.34	56.80	62.70	68.97	75.02		0.14	0.91	1.29	1.59
		1350	17.35	20.78	24.84	29.15	34.00	39.47	42.50	45.46	51.81	58.33	64.24	70.41	76.21		0.15	0.95	1.34	1.65
		1400	17.93	21.47	25.66	30.09	35.07	40.68	43.78	46.79	53.23	59.80	65.68	71.72	77.21		0.15	0.98	1.39	1.71
		1450	18.50	22.16	26.46	31.02	36.13	41.86	45.02	48.08	54.61	61.20	67.03	72.90	78.01		0.16	1.02	1.44	1.77
	(15)	1500	19.07	22.83	27.26	31.93	37.16	43.02	46.23	49.34	55.93	62.52	68.28	73.93			0.16	1.05	1.49	1.83
		1550	19.64	23.50	28.04	32.84	38.18	44.14	47.41	50.55	57.19	63.77	69.42				0.17	1.09	1.54	1.89
		1600	20.19	24.16	28.82	33.72	39.18	45.24	48.55	51.73	58.40	64.94	70.45				0.17	1.12	1.59	1.95
		1650	20.75	24.81	29.58	34.59	40.16	46.32	49.66	52.87	59.56	66.03	71.38				0.18	1.16	1.64	2.02
		1700	21.29	25.46	30.34	35.45	41.11	47.36	50.74	53.97	60.65	67.03	72.19				0.18	1.19	1.69	2.08
		1750	21.83	26.10	31.08	36.29	42.05	48.37	51.78	55.02	61.69	67.95	72.88				0.19	1.23	1.74	2.14
		1800	22.37	26.73	31.81	37.12	42.96	49.35	52.78	56.03	62.66	68.78					0.20	1.26	1.79	2.20
		1850	22.90	27.35	32.53	37.93	43.85	50.30	53.75	57.00	63.57	69.52					0.20	1.30	1.84	2.26
		1900	23.42	27.96	33.24	38.72	44.72	51.22	54.67	57.92	64.41	70.17					0.21	1.33	1.89	2.32
		1950	23.93	28.56	33.93	39.50	45.56	52.10	55.56	58.79	65.18	70.72					0.21	1.37	1.94	2.38
		2000	24.44	29.16	34.61	40.26	46.38	52.95	56.40	59.61	65.89	71.17					0.22	1.40	1.99	2.44
		2050	24.95	29.74	35.28	41.00	47.18	53.77	57.21	60.39	66.52						0.22	1.44	2.04	2.50
	(20)	2100	25.44	30.32	35.94	41.72	47.95	54.55	57.97	61.11	67.08						0.23	1.47	2.09	2.56
		2150	25.93	30.88	36.58	42.42	48.69	55.29	58.68	61.78	67.57						0.23	1.51	2.14	2.63
		2200	26.41	31.44	37.21	43.11	49.41	56.00	59.35	62.39	67.98						0.24	1.54	2.19	2.69
		2250	26.88	31.98	37.82	43.77	50.10	56.66	59.98	62.96	68.31						0.24	1.58	2.24	2.75
		2300	27.35	32.52	38.42	44.42	50.76	57.29	60.56								0.25	1.61	2.29	2.81
		2350	27.80	33.04	39.01	45.05	51.40	57.88	61.09								0.26	1.65	2.34	2.87
		2400	28.25	33.55	39.58	45.65	52.00	58.42	61.57								0.26	1.68	2.39	2.93
		2450	28.69	34.06	40.14	46.24	52.58	58.93	62.00								0.27	1.72	2.44	2.99
		2500	29.13	34.55	40.68	46.80	53.13	59.39	62.38								0.27	1.75	2.49	3.05
		2550	29.55	35.03	41.20	47.34	53.64	59.81									0.28	1.79	2.54	3.11
	(25)	2600	29.97	35.50	41.71	47.86	54.13	60.18									0.28	1.82	2.59	3.18
		2650	30.38	35.95	42.20	48.35	54.58	60.51									0.29	1.86	2.64	3.24
		2700	30.77	36.40	42.67	48.83	55.00	60.80									0.29	1.89	2.69	3.30
		2750	31.16	36.83	43.13	49.28	55.39	61.04									0.30	1.93	2.74	3.36
		2800	31.55	37.25	43.57	49.70	55.74										0.30	1.96	2.79	3.42
		2850	31.92	37.66	43.99	50.10	56.06										0.31	2.00	2.84	3.48
		2900	32.28	38.05	44.40	50.48	56.35										0.31	2.04	2.89	3.54
		2950	32.63	38.43	44.79	50.83	56.60										0.32	2.07	2.94	3.60
		3000	32.97	38.80	45.15	51.15	56.81										0.33	2.11	2.99	3.66
		3050	33.31	39.16	45.50	51.45											0.33	2.14	3.04	3.72
	(30)	3100	33.63	39.50	45.83	51.73											0.34	2.18	3.09	3.79
		3150	33.94	39.83	46.14	51.97											0.34	2.21	3.14	3.85
		3200	34.24	40.14	46.43	52.19											0.35	2.25	3.19	3.91
		3250	34.54	40.44	46.71	52.38											0.35	2.28	3.24	3.97
		3300	34.82	40.72	46.96												0.36	2.32	3.29	4.03
		3350	35.09	40.99	47.19												0.36	2.35	3.34	4.09
		3400	35.35	41.25	47.40												0.37	2.39	3.39	4.15
		3450	35.59	41.49	47.58												0.37	2.42	3.44	4.21
		3500	35.83	41.71	47.75												0.38	2.46	3.49	4.27

Where v > 42 m/s, please consult our Applications Engineering Department

(35) (40)

v (m/s)

Dynamically balanced (for details see DIN 2211)

Pulleys

optibelt
Power Transmission

Power Ratings

optibelt SUPER TX M=S Section ZX/X10

Nominal Power Rating P_N (kW) for $\beta = 180°$ and $L_d = 822$ mm

Table 40

Pulleys	v (m/s)	n_k (min^{-1})	Datum diameter of small pulley d_{dk} (mm) 40	45	50	56	63	71	80	90	100	112	Additional power (kW) per belt for speed ratio i 1,01 to 1,05	1,06 to 1,26	1,27 to 1,57	>1,57
Statically balanced		**700**	0.22	0.27	0.32	0.37	0.44	0.51	0.59	0.67	0.76	0.85	0.00	0.02	0.03	0.04
		950	0.27	0.34	0.40	0.47	0.55	0.64	0.74	0.85	0.96	1.09	0.01	0.02	0.04	0.05
		1450	0.36	0.45	0.54	0.64	0.75	0.88	1.02	1.18	1.32	1.50	0.01	0.04	0.05	0.08
		2850	0.54	0.69	0.84	1.01	1.20	1.41	1.64	1.88	2.12	2.39	0.02	0.07	0.11	0.16
		100	0.05	0.06	0.07	0.08	0.09	0.10	0.12	0.14	0.15	0.17	0.00	0.00	0.00	0.01
		200	0.09	0.10	0.12	0.14	0.16	0.19	0.21	0.24	0.27	0.31	0.00	0.01	0.01	0.01
		300	0.12	0.14	0.16	0.19	0.22	0.26	0.30	0.34	0.38	0.43	0.00	0.01	0.01	0.02
		400	0.15	0.18	0.21	0.24	0.28	0.33	0.38	0.43	0.48	0.54	0.00	0.01	0.01	0.02
		500	0.17	0.21	0.25	0.29	0.34	0.39	0.45	0.51	0.58	0.65	0.00	0.01	0.02	0.03
		600	0.20	0.24	0.28	0.33	0.39	0.45	0.52	0.60	0.67	0.76	0.00	0.02	0.02	0.03
		700	0.22	0.27	0.32	0.37	0.44	0.51	0.59	0.67	0.76	0.85	0.00	0.02	0.03	0.04
	(2)	800	0.24	0.30	0.35	0.41	0.48	0.56	0.65	0.75	0.84	0.95	0.01	0.02	0.03	0.05
		900	0.26	0.32	0.38	0.45	0.53	0.62	0.71	0.82	0.92	1.04	0.01	0.02	0.03	0.05
		1000	0.28	0.35	0.41	0.49	0.57	0.67	0.77	0.89	1.00	1.13	0.01	0.03	0.04	0.06
		1100	0.30	0.37	0.44	0.52	0.62	0.72	0.83	0.95	1.07	1.21	0.01	0.03	0.04	0.06
		1200	0.32	0.40	0.47	0.56	0.66	0.77	0.89	1.02	1.15	1.30	0.01	0.03	0.04	0.07
		1300	0.34	0.42	0.50	0.59	0.70	0.81	0.94	1.08	1.22	1.38	0.01	0.03	0.05	0.07
		1400	0.36	0.44	0.52	0.62	0.74	0.86	1.00	1.14	1.29	1.46	0.01	0.04	0.05	0.08
		1500	0.37	0.46	0.55	0.65	0.77	0.90	1.05	1.20	1.36	1.53	0.01	0.04	0.06	0.09
		1600	0.39	0.48	0.58	0.69	0.81	0.95	1.10	1.26	1.42	1.61	0.01	0.04	0.06	0.09
		1700	0.40	0.50	0.60	0.71	0.85	0.99	1.15	1.32	1.49	1.68	0.01	0.04	0.06	0.10
		1800	0.42	0.52	0.62	0.74	0.88	1.03	1.20	1.38	1.55	1.75	0.01	0.05	0.07	0.10
		1900	0.43	0.54	0.65	0.77	0.91	1.07	1.24	1.43	1.61	1.82	0.01	0.05	0.07	0.11
		2000	0.44	0.56	0.67	0.80	0.95	1.11	1.29	1.48	1.67	1.89	0.01	0.05	0.07	0.11
		2100	0.46	0.57	0.69	0.83	0.98	1.15	1.34	1.53	1.73	1.95	0.01	0.05	0.08	0.12
		2200	0.47	0.59	0.71	0.85	1.01	1.19	1.38	1.59	1.78	2.01	0.01	0.06	0.08	0.13
	(5)	2300	0.48	0.61	0.73	0.88	1.04	1.22	1.42	1.63	1.84	2.08	0.02	0.06	0.08	0.13
		2400	0.49	0.62	0.75	0.90	1.07	1.26	1.46	1.68	1.89	2.14	0.02	0.06	0.09	0.14
		2500	0.50	0.64	0.77	0.93	1.10	1.29	1.50	1.73	1.95	2.19	0.02	0.06	0.09	0.14
		2600	0.51	0.65	0.79	0.95	1.13	1.33	1.54	1.78	2.00	2.25	0.02	0.07	0.10	0.15
		2700	0.52	0.67	0.81	0.97	1.16	1.36	1.58	1.82	2.05	2.31	0.02	0.07	0.10	0.15
		2800	0.53	0.68	0.83	0.99	1.18	1.39	1.62	1.86	2.09	2.36	0.02	0.07	0.10	0.16
		2900	0.54	0.70	0.84	1.02	1.21	1.43	1.66	1.91	2.14	2.41	0.02	0.07	0.11	0.17
		3000	0.55	0.71	0.86	1.04	1.24	1.46	1.70	1.95	2.19	2.46	0.02	0.08	0.11	0.17
		3100	0.56	0.72	0.88	1.06	1.26	1.49	1.73	1.99	2.23	2.51	0.02	0.08	0.11	0.18
		3200	0.57	0.74	0.89	1.08	1.29	1.52	1.77	2.03	2.28	2.56	0.02	0.08	0.12	0.18
		3300	0.58	0.75	0.91	1.10	1.31	1.55	1.80	2.07	2.32	2.60	0.02	0.08	0.12	0.19
		3400	0.59	0.76	0.93	1.12	1.34	1.57	1.83	2.10	2.36	2.65	0.02	0.09	0.13	0.19
		3500	0.60	0.77	0.94	1.14	1.36	1.60	1.86	2.14	2.40	2.69	0.02	0.09	0.13	0.20
		3600	0.60	0.78	0.95	1.16	1.38	1.63	1.89	2.17	2.44	2.73	0.02	0.09	0.13	0.21
		3700	0.61	0.79	0.97	1.17	1.40	1.66	1.93	2.21	2.47	2.77	0.03	0.09	0.14	0.21
		3800	0.62	0.80	0.98	1.19	1.43	1.68	1.95	2.24	2.51	2.81	0.03	0.10	0.14	0.22
		3900	0.62	0.81	1.00	1.21	1.45	1.71	1.98	2.27	2.54	2.84	0.03	0.10	0.14	0.22
		4000	0.63	0.82	1.01	1.23	1.47	1.73	2.01	2.30	2.58	2.88	0.03	0.10	0.15	0.23
		4100	0.64	0.83	1.02	1.24	1.49	1.75	2.04	2.33	2.61	2.91	0.03	0.10	0.15	0.23
		4200	0.64	0.84	1.03	1.26	1.51	1.78	2.07	2.36	2.64	2.94	0.03	0.11	0.15	0.24
		4300	0.65	0.85	1.05	1.27	1.53	1.80	2.09	2.39	2.67	2.97	0.03	0.11	0.16	0.25
		4400	0.65	0.86	1.06	1.29	1.54	1.82	2.12	2.42	2.70	3.00	0.03	0.11	0.16	0.25
		4500	0.66	0.87	1.07	1.30	1.56	1.84	2.14	2.44	2.72	3.02	0.03	0.12	0.17	0.26
		4600	0.66	0.87	1.08	1.32	1.58	1.86	2.16	2.47	2.75	3.05	0.03	0.12	0.17	0.26
	(10)	4700	0.67	0.88	1.09	1.33	1.60	1.88	2.18	2.49	2.77	3.07	0.03	0.12	0.17	0.27
		4800	0.67	0.89	1.10	1.34	1.61	1.90	2.21	2.52	2.80	3.09	0.03	0.12	0.18	0.27
		4900	0.68	0.90	1.11	1.36	1.63	1.92	2.23	2.54	2.82	3.11	0.03	0.13	0.18	0.28
		5000	0.68	0.90	1.12	1.37	1.64	1.94	2.25	2.56	2.84	3.13	0.03	0.13	0.18	0.29
		5100	0.68	0.91	1.13	1.38	1.66	1.96	2.27	2.58	2.86	3.14	0.03	0.13	0.19	0.29
		5200	0.69	0.92	1.14	1.39	1.67	1.97	2.28	2.60	2.87	3.16	0.04	0.13	0.19	0.30
		5300	0.69	0.92	1.15	1.40	1.69	1.99	2.30	2.61	2.89	3.17	0.04	0.14	0.20	0.30
		5400	0.69	0.93	1.15	1.41	1.70	2.00	2.32	2.63	2.91	3.18	0.04	0.14	0.20	0.31
		5500	0.69	0.93	1.16	1.42	1.71	2.02	2.33	2.65	2.92	3.19	0.04	0.14	0.20	0.31
		5600	0.70	0.94	1.17	1.43	1.72	2.03	2.35	2.66	2.93	3.20	0.04	0.14	0.21	0.32
		5800	0.70	0.95	1.18	1.45	1.75	2.06	2.38	2.69	2.95	3.21	0.04	0.15	0.21	0.33
		6000	0.70	0.96	1.20	1.47	1.77	2.08	2.40	2.71	2.97	3.21	0.04	0.15	0.22	0.34
		6200	0.71	0.96	1.21	1.49	1.79	2.10	2.42	2.72	2.97	3.20	0.04	0.16	0.23	0.35
		6400	0.71	0.97	1.22	1.50	1.81	2.12	2.44	2.74	2.98	3.18	0.04	0.16	0.24	0.37
		6600	0.71	0.98	1.23	1.51	1.82	2.14	2.45	2.74	2.97	3.16	0.04	0.17	0.24	0.38
		6800	0.71	0.98	1.24	1.52	1.83	2.15	2.46	2.75	2.96	3.13	0.05	0.17	0.25	0.39
	(15)	7000	0.71	0.98	1.24	1.53	1.84	2.16	2.47	2.74	2.95	3.09	0.05	0.18	0.26	0.40
		7200	0.71	0.98	1.25	1.54	1.85	2.17	2.47	2.74	2.93	3.04	0.05	0.18	0.27	0.41
		7400	0.70	0.99	1.25	1.55	1.86	2.17	2.47	2.73	2.90	2.99	0.05	0.19	0.27	0.42
		7600	0.70	0.99	1.25	1.55	1.86	2.18	2.47	2.71			0.05	0.19	0.28	0.43
		7800	0.70	0.99	1.26	1.55	1.87	2.18	2.46	2.69			0.05	0.20	0.29	0.45
		8000	0.69	0.98	1.26	1.56	1.87	2.17	2.45	2.66			0.05	0.20	0.30	0.46
		8200	0.68	0.98	1.25	1.56	1.87	2.17	2.43				0.06	0.21	0.30	0.47
		8400	0.68	0.98	1.25	1.55	1.86	2.16	2.41				0.06	0.21	0.31	0.48
					(20)		(25)	(30)								v (m/s)
								Dynamically balanced (for details see DIN 2211)								Pulleys

Where v > 30 m/s, please consult our Applications Engineering Department

optibelt
Power Transmission

Power Ratings

optibelt SUPER TX M=S Section AX/X13

Nominal Power Rating P_N (kW) for $\beta = 180°$ and $L_d = 1730$ mm

Table 41

Pulleys	v (m/s)	n_k (min^{-1})	Datum diameter of small pulley d_{dk} (mm) 63	71	80	90	95	100	106	112	118	125	132	140	150	160	180	Additional power (kW) per belt for speed ratio i 1,01 to 1,05	1,06 to 1,26	1,27 to 1,57	>1,57
Statically balanced		**700**	0.67	0.86	1.07	1.29	1.40	1.51	1.64	1.77	1.90	2.04	2.19	2.35	2.56	2.76	3.15	0.02	0.08	0.12	0.18
		950	0.82	1.06	1.33	1.61	1.76	1.90	2.06	2.23	2.39	2.58	2.76	2.97	3.23	3.49	3.98	0.03	0.11	0.16	0.24
		1450	1.05	1.39	1.76	2.16	2.36	2.56	2.79	3.02	3.25	3.51	3.76	4.05	4.40	4.74	5.41	0.04	0.17	0.24	0.37
		2850	1.39	1.96	2.58	3.23	3.55	3.86	4.23	4.58	4.92	5.31	5.68	6.09	6.57	7.03	7.84	0.09	0.33	0.47	0.73
		100	0.16	0.19	0.23	0.28	0.30	0.32	0.34	0.37	0.39	0.42	0.45	0.48	0.52	0.56	0.63	0.00	0.01	0.02	0.03
		200	0.27	0.34	0.41	0.49	0.52	0.56	0.61	0.65	0.70	0.75	0.80	0.86	0.93	1.00	1.14	0.01	0.02	0.03	0.05
		300	0.37	0.46	0.56	0.67	0.73	0.78	0.84	0.91	0.97	1.04	1.11	1.20	1.30	1.40	1.59	0.01	0.03	0.05	0.08
		400	0.46	0.57	0.70	0.84	0.91	0.98	1.06	1.14	1.22	1.32	1.41	1.51	1.64	1.77	2.02	0.01	0.05	0.07	0.10
		500	0.54	0.68	0.83	1.00	1.08	1.17	1.27	1.36	1.46	1.57	1.68	1.81	1.96	2.11	2.41	0.02	0.06	0.08	0.13
	②	600	0.61	0.77	0.95	1.15	1.25	1.34	1.46	1.57	1.68	1.81	1.94	2.09	2.27	2.44	2.79	0.02	0.07	0.10	0.15
		700	0.67	0.86	1.07	1.29	1.40	1.51	1.64	1.77	1.90	2.04	2.19	2.35	2.56	2.76	3.15	0.02	0.08	0.12	0.18
		800	0.74	0.94	1.17	1.42	1.55	1.67	1.81	1.96	2.10	2.26	2.43	2.61	2.84	3.06	3.50	0.02	0.09	0.13	0.21
		900	0.79	1.02	1.28	1.55	1.69	1.82	1.98	2.14	2.30	2.48	2.65	2.86	3.10	3.35	3.82	0.03	0.10	0.15	0.23
		1000	0.85	1.10	1.37	1.67	1.82	1.97	2.14	2.31	2.48	2.68	2.87	3.09	3.36	3.62	4.14	0.03	0.11	0.17	0.26
		1100	0.90	1.17	1.47	1.79	1.95	2.11	2.30	2.48	2.66	2.88	3.08	3.32	3.61	3.89	4.44	0.03	0.13	0.18	0.28
		1200	0.94	1.23	1.56	1.90	2.07	2.24	2.44	2.64	2.84	3.06	3.29	3.54	3.84	4.15	4.73	0.04	0.14	0.20	0.31
		1300	0.99	1.30	1.64	2.01	2.19	2.37	2.59	2.80	3.01	3.25	3.48	3.75	4.07	4.39	5.01	0.04	0.15	0.22	0.33
		1400	1.03	1.36	1.72	2.11	2.31	2.50	2.72	2.95	3.17	3.42	3.67	3.95	4.29	4.63	5.28	0.04	0.16	0.23	0.36
	⑤	1500	1.07	1.42	1.80	2.21	2.42	2.62	2.86	3.09	3.32	3.59	3.85	4.14	4.50	4.86	5.53	0.05	0.17	0.25	0.38
		1600	1.10	1.47	1.87	2.31	2.52	2.74	2.99	3.23	3.47	3.75	4.03	4.33	4.71	5.07	5.78	0.05	0.18	0.26	0.41
		1700	1.14	1.52	1.95	2.40	2.63	2.85	3.11	3.37	3.62	3.91	4.19	4.51	4.90	5.28	6.01	0.05	0.20	0.28	0.44
		1800	1.17	1.57	2.01	2.49	2.73	2.96	3.23	3.50	3.76	4.06	4.36	4.69	5.09	5.48	6.23	0.05	0.21	0.30	0.46
		1900	1.20	1.62	2.08	2.58	2.82	3.06	3.34	3.62	3.89	4.21	4.51	4.85	5.27	5.67	6.44	0.06	0.22	0.31	0.49
		2000	1.23	1.66	2.14	2.66	2.91	3.16	3.45	3.74	4.02	4.35	4.66	5.01	5.44	5.86	6.64	0.06	0.23	0.33	0.51
		2100	1.25	1.71	2.20	2.74	3.00	3.26	3.56	3.86	4.15	4.48	4.80	5.17	5.60	6.03	6.83	0.06	0.24	0.35	0.54
		2200	1.28	1.75	2.26	2.81	3.08	3.35	3.66	3.97	4.27	4.61	4.94	5.31	5.76	6.19	7.00	0.07	0.25	0.36	0.56
		2300	1.30	1.78	2.32	2.89	3.16	3.44	3.76	4.07	4.38	4.73	5.07	5.45	5.91	6.35	7.16	0.07	0.26	0.38	0.59
		2400	1.32	1.82	2.37	2.96	3.24	3.52	3.85	4.18	4.49	4.85	5.20	5.58	6.05	6.49	7.31	0.07	0.28	0.40	0.62
		2500	1.34	1.85	2.42	3.02	3.32	3.60	3.94	4.27	4.59	4.96	5.32	5.71	6.18	6.63	7.45	0.08	0.29	0.41	0.64
		2600	1.35	1.89	2.47	3.09	3.39	3.68	4.03	4.37	4.69	5.07	5.43	5.83	6.30	6.75	7.58	0.08	0.30	0.43	0.67
		2700	1.37	1.92	2.51	3.15	3.46	3.76	4.11	4.45	4.79	5.17	5.53	5.94	6.42	6.87	7.69	0.08	0.31	0.45	0.69
		2800	1.38	1.94	2.55	3.21	3.52	3.83	4.19	4.54	4.88	5.26	5.63	6.04	6.52	6.98	7.79	0.09	0.32	0.46	0.72
		2900	1.39	1.97	2.60	3.26	3.58	3.90	4.26	4.62	4.96	5.35	5.73	6.14	6.62	7.07	7.88	0.09	0.33	0.48	0.74
	⑩	3000	1.40	2.00	2.63	3.31	3.64	3.96	4.33	4.69	5.04	5.44	5.82	6.23	6.71	7.16	7.95	0.09	0.34	0.50	0.77
		3100	1.41	2.02	2.67	3.36	3.70	4.02	4.40	4.77	5.12	5.52	5.90	6.31	6.79	7.24	8.01	0.09	0.36	0.51	0.80
		3200	1.42	2.04	2.70	3.41	3.75	4.08	4.46	4.83	5.19	5.59	5.97	6.38	6.86	7.30	8.06	0.10	0.37	0.53	0.82
		3300	1.43	2.06	2.74	3.45	3.80	4.13	4.52	4.89	5.25	5.66	6.04	6.45	6.93	7.36	8.09	0.10	0.38	0.55	0.85
		3400	1.43	2.07	2.76	3.49	3.84	4.18	4.57	4.95	5.31	5.72	6.10	6.51	6.98	7.41	8.11	0.10	0.39	0.56	0.87
		3500	1.43	2.09	2.79	3.53	3.88	4.23	4.62	5.00	5.37	5.77	6.15	6.56	7.03	7.44	8.11	0.11	0.40	0.58	0.90
		3600	1.44	2.10	2.82	3.57	3.92	4.27	4.67	5.05	5.42	5.82	6.20	6.61	7.06	7.47		0.11	0.41	0.60	0.92
		3700	1.44	2.11	2.84	3.60	3.96	4.31	4.71	5.10	5.46	5.87	6.24	6.64	7.09	7.48		0.11	0.42	0.61	0.95
		3800	1.43	2.12	2.86	3.63	3.99	4.34	4.75	5.14	5.50	5.90	6.28	6.67	7.11	7.48		0.12	0.44	0.63	0.98
		3900	1.43	2.13	2.88	3.65	4.02	4.38	4.78	5.17	5.53	5.93	6.30	6.69	7.11	7.47		0.12	0.45	0.65	1.00
		4000	1.43	2.14	2.89	3.68	4.05	4.40	4.81	5.20	5.56	5.96	6.32	6.70	7.11	7.45		0.12	0.46	0.66	1.03
		4100	1.42	2.14	2.91	3.70	4.07	4.43	4.84	5.22	5.59	5.98	6.34	6.70	7.10			0.12	0.47	0.68	1.05
		4200	1.42	2.14	2.92	3.72	4.09	4.45	4.86	5.24	5.60	5.99	6.34	6.70	7.07			0.13	0.48	0.70	1.08
		4300	1.41	2.15	2.93	3.73	4.11	4.47	4.88	5.26	5.61	6.00	6.34	6.68	7.04			0.13	0.49	0.71	1.10
		4400	1.40	2.14	2.93	3.74	4.12	4.48	4.89	5.27	5.62	6.00	6.33	6.66	7.00			0.13	0.51	0.73	1.13
	⑮	4500	1.39	2.14	2.94	3.75	4.13	4.49	4.90	5.27	5.62	5.99	6.31	6.63	6.94			0.14	0.52	0.74	1.15
		4600	1.37	2.14	2.94	3.76	4.14	4.49	4.90	5.27	5.61	5.97	6.29					0.14	0.53	0.76	1.18
		4700	1.36	2.13	2.94	3.76	4.14	4.50	4.90	5.27	5.60	5.95	6.25					0.14	0.54	0.78	1.21
		4800	1.34	2.12	2.94	3.76	4.14	4.49	4.89	5.26	5.59	5.92	6.21					0.15	0.55	0.79	1.23
		4900	1.33	2.11	2.93	3.76	4.13	4.49	4.88	5.24	5.56	5.89	6.16					0.15	0.56	0.81	1.26
		5000	1.31	2.10	2.92	3.75	4.13	4.48	4.87	5.22	5.53	5.85	6.11					0.15	0.57	0.83	1.28
		5100	1.29	2.09	2.91	3.74	4.11	4.46	4.85	5.19	5.50							0.16	0.59	0.84	1.31
		5200	1.27	2.07	2.90	3.73	4.10	4.45	4.82	5.16	5.46							0.16	0.60	0.86	1.33
		5300	1.25	2.05	2.89	3.71	4.08	4.42	4.79	5.12	5.41							0.16	0.61	0.88	1.36
		5400	1.22	2.04	2.87	3.69	4.06	4.40	4.76	5.08	5.35							0.16	0.62	0.89	1.39
		5500	1.20	2.01	2.85	3.67	4.03	4.37	4.72	5.03	5.29							0.17	0.63	0.91	1.41
		5600	1.17	1.99	2.83	3.64	4.00	4.33	4.68									0.17	0.64	0.93	1.44
		5700	1.14	1.97	2.80	3.61	3.97	4.29	4.63									0.17	0.65	0.94	1.46
		5800	1.11	1.94	2.78	3.58	3.93	4.25	4.58									0.18	0.67	0.96	1.49
		5900	1.08	1.91	2.75	3.55	3.89	4.20	4.52									0.18	0.68	0.98	1.51
		6000	1.05	1.88	2.72	3.51	3.85	4.15	4.45									0.18	0.69	0.99	1.54

Where v > 30 m/s, please consult our Applications Engineering Department

⑳ ㉕ ㉚

v (m/s)

Dynamically balanced (for details see DIN 2211)

Pulleys

optibelt
Power Transmission

Power Ratings

optibelt SUPER TX M=S Section BX/X17

Nominal Power Rating P_N (kW) for β = 180° and L_d = 2280 mm

Table 42

Pulleys	v (m/s)	n_k (min^{-1})	Datum diameter of small pulley d_{dk} (mm)															Additional power (kW) per belt for speed ratio i			
			90	100	106	112	118	125	132	140	160	180	190	200	212	224	250	280	1,01 to 1,05	1,06 to 1,26	1,27 to 1,57	>1,57
Statically balanced		**700**	1.70	2.01	2.20	2.38	2.56	2.77	2.98	3.21	3.79	4.35	4.63	4.90	5.23	5.55	6.22	6.98	0.03	0.12	0.18	0.28
		950	2.12	2.52	2.76	2.99	3.23	3.49	3.76	4.06	4.79	5.51	5.86	6.20	6.61	7.01	7.85	8.78	0.04	0.17	0.24	0.37
		1450	2.82	3.39	3.72	4.05	4.37	4.75	5.11	5.53	6.53	7.49	7.95	8.40	8.94	9.45	10.52	11.66	0.07	0.26	0.37	0.57
		2850	4.16	5.06	5.59	6.10	6.60	7.16	7.70	8.30	9.67	10.86	11.39	11.87	12.39	12.82	13.51	13.82	0.13	0.50	0.72	1.12
		100	0.37	0.42	0.46	0.49	0.53	0.57	0.61	0.65	0.76	0.87	0.93	0.98	1.04	1.11	1.24	1.40	0.00	0.02	0.03	0.04
		200	0.64	0.75	0.82	0.88	0.94	1.01	1.09	1.17	1.37	1.57	1.67	1.76	1.88	1.99	2.24	2.52	0.01	0.04	0.05	0.08
		300	0.89	1.04	1.13	1.22	1.31	1.41	1.52	1.63	1.92	2.20	2.34	2.47	2.63	2.80	3.14	3.53	0.01	0.05	0.08	0.12
		400	1.11	1.31	1.42	1.54	1.65	1.78	1.91	2.06	2.43	2.78	2.96	3.13	3.34	3.54	3.98	4.47	0.02	0.07	0.10	0.16
		500	1.32	1.56	1.70	1.83	1.97	2.13	2.29	2.47	2.90	3.33	3.54	3.75	4.00	4.24	4.77	5.36	0.02	0.09	0.13	0.20
		600	1.51	1.79	1.95	2.11	2.27	2.46	2.64	2.85	3.36	3.85	4.10	4.34	4.63	4.91	5.51	6.19	0.03	0.11	0.15	0.24
		700	1.70	2.01	2.20	2.38	2.56	2.77	2.98	3.21	3.79	4.35	4.63	4.90	5.23	5.55	6.22	6.98	0.03	0.12	0.18	0.28
		800	1.87	2.22	2.43	2.63	2.84	3.07	3.30	3.56	4.20	4.83	5.14	5.44	5.80	6.15	6.90	7.73	0.04	0.14	0.20	0.32
		900	2.04	2.42	2.65	2.87	3.10	3.36	3.61	3.90	4.60	5.29	5.62	5.95	6.34	6.73	7.54	8.44	0.04	0.16	0.23	0.35
	⑤	1000	2.19	2.61	2.86	3.11	3.35	3.63	3.91	4.22	4.98	5.72	6.09	6.44	6.86	7.28	8.15	9.12	0.05	0.18	0.25	0.39
		1100	2.35	2.80	3.07	3.33	3.59	3.89	4.19	4.53	5.35	6.14	6.53	6.91	7.36	7.80	8.73	9.75	0.05	0.19	0.28	0.43
		1200	2.49	2.98	3.26	3.55	3.83	4.15	4.47	4.83	5.70	6.55	6.96	7.36	7.84	8.31	9.28	10.34	0.06	0.21	0.31	0.47
		1300	2.63	3.15	3.45	3.75	4.05	4.39	4.73	5.11	6.04	6.94	7.37	7.80	8.29	8.78	9.80	10.90	0.06	0.23	0.33	0.51
		1400	2.76	3.31	3.63	3.95	4.27	4.63	4.99	5.39	6.37	7.31	7.76	8.21	8.73	9.23	10.29	11.42	0.07	0.25	0.36	0.55
		1500	2.89	3.47	3.81	4.14	4.48	4.86	5.23	5.66	6.68	7.66	8.14	8.60	9.14	9.66	10.74	11.90	0.07	0.26	0.38	0.59
		1600	3.01	3.62	3.98	4.33	4.68	5.08	5.47	5.91	6.98	8.00	8.49	8.97	9.53	10.07	11.17	12.33	0.07	0.28	0.41	0.63
		1700	3.13	3.76	4.14	4.51	4.87	5.29	5.70	6.16	7.27	8.32	8.83	9.32	9.89	10.44	11.56	12.73	0.08	0.30	0.43	0.67
		1800	3.24	3.90	4.30	4.68	5.06	5.49	5.92	6.40	7.55	8.63	9.15	9.65	10.24	10.80	11.92	13.08	0.08	0.32	0.46	0.71
		1900	3.35	4.04	4.45	4.85	5.24	5.69	6.13	6.62	7.81	8.92	9.45	9.97	10.56	11.12	12.25	13.38	0.09	0.33	0.48	0.75
		2000	3.45	4.17	4.59	5.00	5.41	5.88	6.33	6.84	8.06	9.20	9.74	10.26	10.86	11.42	12.54	13.64	0.09	0.35	0.51	0.79
		2100	3.55	4.29	4.73	5.16	5.58	6.06	6.53	7.05	8.30	9.46	10.01	10.53	11.13	11.69	12.80	13.86	0.10	0.37	0.53	0.83
	⑩	2200	3.64	4.41	4.86	5.30	5.73	6.23	6.71	7.25	8.52	9.70	10.25	10.78	11.38	11.94	13.02	14.02	0.10	0.39	0.56	0.87
		2300	3.73	4.53	4.99	5.44	5.89	6.39	6.89	7.44	8.74	9.93	10.48	11.01	11.61	12.16	13.20	14.14	0.11	0.41	0.58	0.91
		2400	3.82	4.63	5.11	5.58	6.03	6.55	7.06	7.62	8.94	10.14	10.69	11.22	11.81	12.35	13.35	14.20	0.11	0.42	0.61	0.95
		2500	3.90	4.74	5.23	5.70	6.17	6.70	7.21	7.78	9.12	10.33	10.88	11.40	11.98	12.51	13.46	14.21	0.12	0.44	0.64	0.99
		2600	3.98	4.84	5.34	5.83	6.30	6.84	7.37	7.94	9.30	10.51	11.06	11.57	12.13	12.64	13.52		0.12	0.46	0.66	1.02
		2700	4.05	4.93	5.44	5.94	6.43	6.98	7.51	8.09	9.46	10.66	11.21	11.71	12.25	12.73	13.55		0.13	0.48	0.69	1.06
		2800	4.12	5.02	5.54	6.05	6.54	7.10	7.64	8.23	9.60	10.80	11.34	11.82	12.35	12.80	13.53		0.13	0.49	0.71	1.10
		2900	4.19	5.11	5.64	6.15	6.65	7.22	7.77	8.36	9.73	10.92	11.44	11.92	12.42	12.84	13.47		0.14	0.51	0.74	1.14
		3000	4.25	5.19	5.73	6.25	6.76	7.33	7.88	8.48	9.85	11.03	11.53	11.99	12.45	12.84	13.37		0.14	0.53	0.76	1.18
		3100	4.31	5.26	5.81	6.34	6.86	7.43	7.99	8.59	9.96	11.11	11.60	12.03					0.15	0.55	0.79	1.22
	⑮	3200	4.36	5.33	5.89	6.43	6.95	7.53	8.09	8.69	10.05	11.17	11.64	12.05					0.15	0.56	0.81	1.26
		3300	4.41	5.39	5.96	6.50	7.03	7.62	8.18	8.78	10.13	11.22	11.66	12.04					0.15	0.58	0.84	1.30
		3400	4.46	5.45	6.03	6.58	7.11	7.70	8.26	8.86	10.19	11.24	11.66	12.00					0.16	0.60	0.86	1.34
		3500	4.50	5.51	6.09	6.64	7.17	7.77	8.33	8.93	10.23	11.24	11.63	11.94					0.16	0.62	0.89	1.38
		3600	4.54	5.56	6.14	6.70	7.24	7.83	8.39	8.98	10.26	11.23							0.17	0.63	0.92	1.42
		3700	4.57	5.60	6.19	6.75	7.29	7.88	8.44	9.03	10.28	11.19							0.17	0.65	0.94	1.46
		3800	4.60	5.64	6.24	6.80	7.34	7.93	8.48	9.06	10.28	11.13							0.18	0.67	0.97	1.50
		3900	4.63	5.68	6.27	6.84	7.38	7.96	8.51	9.08	10.26	11.05							0.18	0.69	0.99	1.54
		4000	4.65	5.71	6.31	6.87	7.41	7.99	8.53	9.09	10.23	10.94							0.19	0.71	1.02	1.58
		4100	4.67	5.73	6.33	6.90	7.43	8.01	8.54	9.09	10.18								0.19	0.72	1.04	1.62
	⑳	4200	4.68	5.75	6.35	6.92	7.45	8.02	8.55	9.08	10.11								0.20	0.74	1.07	1.65
		4300	4.69	5.77	6.37	6.93	7.46	8.02	8.54	9.06	10.02								0.20	0.76	1.09	1.69
		4400	4.70	5.78	6.38	6.94	7.46	8.02	8.52	9.02	9.92								0.21	0.78	1.12	1.73
		4500	4.70	5.78	6.38	6.93	7.45	8.00	8.49	8.97	9.80								0.21	0.79	1.14	1.77
		4600	4.70	5.78	6.37	6.93	7.44	7.97	8.45										0.22	0.81	1.17	1.81
		4700	4.69	5.77	6.36	6.91	7.41	7.94	8.39										0.22	0.83	1.19	1.85
		4800	4.68	5.76	6.35	6.89	7.38	7.89	8.33										0.22	0.85	1.22	1.89
		4900	4.66	5.74	6.32	6.86	7.34	7.84	8.26										0.23	0.86	1.25	1.93
		5000	4.64	5.72	6.29	6.82	7.29	7.77	8.17										0.23	0.88	1.27	1.97

Where v > 30 m/s, please consult our Applications Engineering Department

																						v (m/s)
			㉕				㉚															
Dynamically balanced (for details see DIN 2211)																						Pulleys

optibelt
Power Transmission

Power Ratings

optibelt SUPER TX M=S Section CX/X22

Nominal Power Rating P_N (kW) for $\beta = 180°$ and $L_d = 3808$ mm

Table 43

Pulleys	v (m/s)	n_k (min^{-1})	Datum diameter of small pulley d_{dk} (mm) 140	150	160	180	200	224	250	280	315	335	355	400	450	500	630	Additional power (kW) per belt for speed ratio i 1,01 to 1,05	1,06 to 1,26	1,27 to 1,57	>1,57
Statically balanced		**700**	4.81	5.29	5.76	6.69	7.59	8.65	9.77	11.03	12.45	13.24	14.02	15.70	17.48	19.17	23.07	0.06	0.23	0.33	0.52
		950	6.07	6.68	7.28	8.46	9.61	10.94	12.34	13.89	15.62	16.58	17.50	19.46	21.47	23.28	26.99	0.08	0.32	0.45	0.70
		1450	8.23	9.07	9.89	11.49	13.01	14.76	16.54	18.44	20.47	21.52	22.50	24.39	25.99	27.00	26.57	0.13	0.48	0.69	1.07
		2850	12.16	13.34	14.45	16.45	18.14	19.73	20.88	21.39	20.80							0.25	0.95	1.36	2.11
		50	0.54	0.59	0.64	0.74	0.83	0.94	1.06	1.20	1.35	1.44	1.53	1.72	1.94	2.15	2.69	0.00	0.02	0.02	0.04
		100	0.98	1.07	1.16	1.34	1.51	1.72	1.94	2.19	2.47	2.63	2.79	3.15	3.54	3.93	4.90	0.01	0.03	0.05	0.07
		150	1.38	1.51	1.64	1.89	2.14	2.43	2.74	3.09	3.50	3.73	3.96	4.46	5.01	5.56	6.93	0.01	0.05	0.07	0.11
		200	1.76	1.92	2.08	2.41	2.72	3.10	3.50	3.95	4.47	4.76	5.06	5.70	6.40	7.09	8.83	0.02	0.07	0.10	0.15
		250	2.11	2.31	2.51	2.90	3.28	3.74	4.22	4.77	5.40	5.75	6.10	6.88	7.72	8.55	10.62	0.02	0.08	0.12	0.19
		300	2.45	2.69	2.92	3.37	3.82	4.35	4.91	5.55	6.29	6.70	7.10	8.00	8.98	9.94	12.33	0.03	0.10	0.14	0.22
		350	2.78	3.05	3.31	3.83	4.34	4.94	5.59	6.31	7.14	7.61	8.07	9.09	10.19	11.27	13.95	0.03	0.12	0.17	0.26
		400	3.10	3.39	3.69	4.27	4.84	5.52	6.23	7.05	7.97	8.49	9.00	10.14	11.36	12.55	15.49	0.04	0.13	0.19	0.30
		450	3.40	3.73	4.06	4.70	5.33	6.08	6.86	7.76	8.77	9.34	9.91	11.15	12.48	13.78	16.96	0.04	0.15	0.22	0.33
		500	3.70	4.06	4.42	5.12	5.81	6.62	7.48	8.45	9.55	10.17	10.78	12.12	13.56	14.95	18.34	0.04	0.17	0.24	0.37
		550	3.99	4.38	4.76	5.52	6.27	7.15	8.07	9.12	10.31	10.97	11.63	13.07	14.60	16.08	19.65	0.05	0.18	0.26	0.41
		600	4.27	4.69	5.10	5.92	6.72	7.66	8.65	9.77	11.04	11.75	12.45	13.98	15.60	17.16	20.87	0.05	0.20	0.29	0.44
		650	4.55	4.99	5.44	6.31	7.16	8.16	9.22	10.41	11.76	12.51	13.25	14.86	16.56	18.19	22.02	0.06	0.22	0.31	0.48
	⑤	700	4.81	5.29	5.76	6.69	7.59	8.65	9.77	11.03	12.45	13.24	14.02	15.70	17.48	19.17	23.07	0.06	0.23	0.33	0.52
		750	5.08	5.58	6.08	7.06	8.01	9.13	10.31	11.64	13.13	13.95	14.76	16.52	18.36	20.10	24.04	0.07	0.25	0.36	0.56
		800	5.33	5.86	6.39	7.42	8.42	9.60	10.84	12.22	13.78	14.64	15.48	17.30	19.20	20.97	24.93	0.07	0.27	0.38	0.59
		850	5.58	6.14	6.69	7.77	8.83	10.06	11.35	12.80	14.41	15.31	16.18	18.06	20.00	21.80	25.71	0.07	0.28	0.41	0.63
		900	5.83	6.42	6.99	8.12	9.22	10.50	11.85	13.35	15.03	15.95	16.85	18.78	20.76	22.57	26.40	0.08	0.30	0.43	0.67
		950	6.07	6.68	7.28	8.46	9.61	10.94	12.34	13.89	15.62	16.58	17.50	19.46	21.47	23.28	26.99	0.08	0.32	0.45	0.70
		1000	6.31	6.94	7.57	8.79	9.98	11.37	12.82	14.42	16.20	17.17	18.12	20.12	22.14	23.94	27.48	0.09	0.33	0.48	0.74
		1050	6.54	7.20	7.85	9.12	10.35	11.78	13.28	14.93	16.76	17.75	18.71	20.74	22.76	24.53	27.86	0.09	0.35	0.50	0.78
		1100	6.77	7.45	8.12	9.44	10.71	12.19	13.73	15.42	17.29	18.31	19.28	21.32	23.34	25.07	28.13	0.10	0.36	0.53	0.82
		1150	6.99	7.70	8.39	9.75	11.06	12.59	14.17	15.90	17.81	18.84	19.82	21.87	23.87	25.55	28.28	0.10	0.38	0.55	0.85
		1200	7.21	7.94	8.66	10.06	11.41	12.97	14.59	16.37	18.30	19.35	20.34	22.39	24.35	25.96	28.31	0.11	0.40	0.57	0.89
		1250	7.42	8.17	8.91	10.35	11.75	13.35	15.01	16.81	18.78	19.83	20.83	22.87	24.78	26.31	28.23	0.11	0.41	0.60	0.93
		1300	7.63	8.40	9.17	10.65	12.07	13.72	15.41	17.25	19.23	20.29	21.29	23.31	25.16			0.11	0.43	0.62	0.96
	⑩	1350	7.83	8.63	9.41	10.93	12.39	14.07	15.80	17.66	19.67	20.73	21.72	23.71	25.49			0.12	0.45	0.65	1.00
		1400	8.04	8.85	9.66	11.21	12.71	14.42	16.17	18.06	20.08	21.14	22.12	24.07	25.77			0.12	0.46	0.67	1.04
		1450	8.23	9.07	9.89	11.49	13.01	14.76	16.54	18.44	20.47	21.52	22.50	24.39	25.99			0.13	0.48	0.69	1.07
		1500	8.43	9.28	10.12	11.75	13.31	15.08	16.89	18.81	20.83	21.88	22.84	24.67	26.15			0.13	0.50	0.72	1.11
		1550	8.61	9.49	10.35	12.01	13.60	15.40	17.22	19.16	21.18	22.21	23.15	24.91				0.14	0.51	0.74	1.15
		1600	8.80	9.70	10.57	12.27	13.88	15.71	17.55	19.49	21.50	22.52	23.43	25.11				0.14	0.53	0.77	1.19
		1650	8.98	9.90	10.79	12.51	14.15	16.00	17.86	19.81	21.80	22.80	23.68	25.27				0.15	0.55	0.79	1.22
		1700	9.16	10.09	11.00	12.76	14.42	16.29	18.16	20.11	22.07	23.05	23.90	25.37				0.15	0.56	0.81	1.26
		1750	9.33	10.28	11.21	12.99	14.68	16.56	18.44	20.38	22.33	23.27	24.09	25.44				0.15	0.58	0.84	1.30
		1800	9.50	10.47	11.41	13.22	14.92	16.83	18.71	20.65	22.55	23.46						0.16	0.60	0.86	1.33
		1850	9.67	10.65	11.61	13.44	15.16	17.08	18.97	20.89	22.75	23.63						0.16	0.61	0.88	1.37
		1900	9.83	10.83	11.80	13.66	15.40	17.33	19.21	21.11	22.93	23.76						0.17	0.63	0.91	1.41
		1950	9.99	11.00	11.99	13.87	15.62	17.56	19.44	21.32	23.08	23.86						0.17	0.65	0.93	1.45
		2000	10.14	11.17	12.17	14.07	15.84	17.78	19.66	21.50	23.20	23.93						0.18	0.66	0.96	1.48
	⑮	2050	10.29	11.33	12.34	14.26	16.04	17.99	19.86	21.67	23.30							0.18	0.68	0.98	1.52
		2100	10.44	11.49	12.52	14.45	16.24	18.19	20.04	21.81	23.37							0.18	0.70	1.00	1.56
		2150	10.58	11.65	12.68	14.64	16.43	18.38	20.21	21.94	23.41							0.19	0.71	1.03	1.59
		2200	10.72	11.80	12.84	14.81	16.62	18.56	20.36	22.05	23.42							0.19	0.73	1.05	1.63
		2250	10.85	11.95	13.00	14.98	16.79	18.72	20.50	22.13	23.40							0.20	0.75	1.08	1.67
		2300	10.98	12.09	13.15	15.14	16.95	18.87	20.63	22.19								0.20	0.76	1.10	1.70
		2350	11.11	12.22	13.29	15.30	17.11	19.01	20.73	22.23								0.21	0.78	1.12	1.74
		2400	11.23	12.36	13.43	15.44	17.25	19.14	20.82	22.25								0.21	0.80	1.15	1.78
		2450	11.35	12.48	13.57	15.58	17.39	19.26	20.90	22.25								0.22	0.81	1.17	1.82
		2500	11.47	12.61	13.70	15.72	17.52	19.36	20.96	22.23								0.22	0.83	1.20	1.85
		2550	11.58	12.73	13.82	15.84	17.63	19.45	21.00									0.22	0.85	1.22	1.89
		2600	11.68	12.84	13.94	15.96	17.74	19.53	21.02									0.23	0.86	1.24	1.93
		2650	11.79	12.95	14.05	16.08	17.84	19.60	21.03									0.23	0.88	1.27	1.96
	⑳	2700	11.89	13.05	14.16	16.18	17.93	19.65	21.02									0.24	0.90	1.29	2.00
		2750	11.98	13.15	14.26	16.28	18.01	19.69	20.99									0.24	0.91	1.32	2.04
		2800	12.07	13.25	14.36	16.37	18.08	19.72										0.25	0.93	1.34	2.08
		2850	12.16	13.34	14.45	16.45	18.14	19.73										0.25	0.95	1.36	2.11
		2900	12.24	13.42	14.53	16.52	18.19	19.73										0.26	0.96	1.39	2.15
		2950	12.32	13.50	14.61	16.59	18.23	19.72										0.26	0.98	1.41	2.19
		3000	12.39	13.58	14.68	16.65	18.26	19.69										0.26	0.99	1.43	2.22
		3050	12.46	13.65	14.75	16.70	18.27											0.27	1.01	1.46	2.26
		3100	12.53	13.71	14.81	16.74	18.28											0.27	1.03	1.48	2.30
		3150	12.59	13.77	14.87	16.77	18.28											0.28	1.04	1.51	2.33
		3200	12.65	13.83	14.92	16.80	18.26											0.28	1.06	1.53	2.37
		3250	12.70	13.88	14.96	16.82	18.24											0.29	1.08	1.55	2.41
		3300	12.75	13.92	15.00	16.83												0.29	1.09	1.58	2.45
		3350	12.79	13.96	15.03	16.83												0.29	1.11	1.60	2.48
	㉕	3400	12.83	14.00	15.05	16.82												0.30	1.13	1.63	2.52
		3450	12.87	14.03	15.07	16.81												0.30	1.14	1.65	2.56
		3500	12.90	14.05	15.08	16.78												0.31	1.16	1.67	2.59

Where v > 30 m/s, please consult our Applications Engineering Department

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v (m/s)

Dynamically balanced (for details see DIN 2211)

Pulleys

optibelt
Power Transmission

Power Ratings

Section 5 – raw edge – moulded cogged

Nominal Power Rating P_N (kW) for $\beta = 180°$ and $L_d = 312$ mm

Table 44

Pulleys	v (m/s)	n_k (min^{-1})	Datum diameter of small pulley d_{dk} (mm)										Additional power (kW) per belt for speed ratio i			
			16	18	20	22.4	25	28	31.5	33.5	40	45	1,01 to 1,05	1,06 to 1,26	1,27 to 1,57	>1,57
Statically balanced		**700**	0.02	0.02	0.03	0.03	0.04	0.04	0.05	0.06	0.07	0.08	0.000	0.001	0.002	0.003
		950	0.02	0.03	0.04	0.04	0.05	0.06	0.07	0.07	0.09	0.10	0.000	0.002	0.002	0.004
		1450	0.03	0.04	0.05	0.06	0.07	0.08	0.10	0.11	0.13	0.15	0.001	0.002	0.004	0.005
		2850	0.06	0.07	0.09	0.11	0.13	0.15	0.18	0.19	0.24	0.28	0.001	0.005	0.007	0.011
		200	0.01	0.01	0.01	0.01	0.01	0.02	0.02	0.02	0.02	0.03	0.000	0.000	0.000	0.001
		300	0.01	0.01	0.01	0.02	0.02	0.02	0.02	0.03	0.03	0.04	0.000	0.001	0.001	0.001
		400	0.01	0.01	0.02	0.02	0.02	0.03	0.03	0.03	0.04	0.05	0.000	0.001	0.001	0.001
		500	0.01	0.02	0.02	0.02	0.03	0.03	0.04	0.04	0.05	0.06	0.000	0.001	0.001	0.002
		600	0.02	0.02	0.02	0.03	0.03	0.04	0.05	0.05	0.06	0.07	0.000	0.001	0.001	0.002
		700	0.02	0.02	0.03	0.03	0.04	0.04	0.05	0.06	0.07	0.08	0.000	0.001	0.002	0.003
		800	0.02	0.03	0.03	0.04	0.04	0.05	0.06	0.06	0.08	0.09	0.000	0.001	0.002	0.003
		900	0.02	0.03	0.03	0.04	0.05	0.06	0.06	0.07	0.09	0.10	0.000	0.002	0.002	0.003
		1000	0.03	0.03	0.04	0.04	0.05	0.06	0.07	0.08	0.10	0.11	0.000	0.002	0.002	0.004
		1100	0.03	0.03	0.04	0.05	0.06	0.07	0.08	0.08	0.10	0.12	0.000	0.002	0.003	0.004
		1200	0.03	0.04	0.04	0.05	0.06	0.07	0.08	0.09	0.11	0.13	0.001	0.002	0.003	0.004
		1300	0.03	0.04	0.05	0.06	0.07	0.08	0.09	0.10	0.12	0.14	0.001	0.002	0.003	0.005
		1400	0.03	0.04	0.05	0.06	0.07	0.08	0.10	0.10	0.13	0.15	0.001	0.002	0.003	0.005
		1500	0.03	0.04	0.05	0.06	0.07	0.09	0.10	0.11	0.14	0.16	0.001	0.003	0.004	0.006
		1600	0.04	0.05	0.06	0.07	0.08	0.09	0.11	0.12	0.14	0.17	0.001	0.003	0.004	0.006
		1700	0.04	0.05	0.06	0.07	0.08	0.10	0.11	0.12	0.15	0.18	0.001	0.003	0.004	0.006
		1800	0.04	0.05	0.06	0.07	0.09	0.10	0.12	0.13	0.16	0.18	0.001	0.003	0.004	0.007
		1900	0.04	0.05	0.06	0.08	0.09	0.11	0.12	0.13	0.17	0.19	0.001	0.003	0.005	0.007
		2000	0.04	0.06	0.07	0.08	0.09	0.11	0.13	0.14	0.18	0.20	0.001	0.003	0.005	0.007
		2100	0.05	0.06	0.07	0.08	0.10	0.12	0.14	0.15	0.18	0.21	0.001	0.004	0.005	0.008
		2200	0.05	0.06	0.07	0.09	0.10	0.12	0.14	0.15	0.19	0.22	0.001	0.004	0.005	0.008
	②	2300	0.05	0.06	0.07	0.09	0.11	0.13	0.15	0.16	0.20	0.23	0.001	0.004	0.006	0.009
		2400	0.05	0.06	0.08	0.09	0.11	0.13	0.15	0.17	0.21	0.24	0.001	0.004	0.006	0.009
		2500	0.05	0.07	0.08	0.10	0.11	0.13	0.16	0.17	0.21	0.25	0.001	0.004	0.006	0.009
		2600	0.05	0.07	0.08	0.10	0.12	0.14	0.16	0.18	0.22	0.25	0.001	0.004	0.006	0.010
		2700	0.06	0.07	0.09	0.10	0.12	0.14	0.17	0.18	0.23	0.26	0.001	0.005	0.007	0.010
		2800	0.06	0.07	0.09	0.11	0.13	0.15	0.17	0.19	0.24	0.27	0.001	0.005	0.007	0.010
		2900	0.06	0.07	0.09	0.11	0.13	0.15	0.18	0.19	0.24	0.28	0.001	0.005	0.007	0.011
		3000	0.06	0.08	0.09	0.11	0.13	0.16	0.19	0.20	0.25	0.29	0.001	0.005	0.007	0.011
		3100	0.06	0.08	0.10	0.12	0.14	0.16	0.19	0.21	0.26	0.30	0.001	0.005	0.007	0.012
		3200	0.06	0.08	0.10	0.12	0.14	0.17	0.20	0.21	0.27	0.31	0.001	0.005	0.008	0.012
		3300	0.06	0.08	0.10	0.12	0.14	0.17	0.20	0.22	0.27	0.31	0.001	0.006	0.008	0.012
		3400	0.07	0.08	0.10	0.13	0.15	0.18	0.21	0.22	0.28	0.32	0.002	0.006	0.008	0.013
		3500	0.07	0.09	0.11	0.13	0.15	0.18	0.21	0.23	0.29	0.33	0.002	0.006	0.008	0.013
		3600	0.07	0.09	0.11	0.13	0.16	0.18	0.22	0.24	0.29	0.34	0.002	0.006	0.009	0.013
		3700	0.07	0.09	0.11	0.13	0.16	0.19	0.22	0.24	0.30	0.35	0.002	0.006	0.009	0.014
		3800	0.07	0.09	0.11	0.14	0.16	0.19	0.23	0.25	0.31	0.36	0.002	0.006	0.009	0.014
		3900	0.07	0.09	0.12	0.14	0.17	0.20	0.23	0.25	0.32	0.36	0.002	0.007	0.009	0.015
		4000	0.07	0.10	0.12	0.14	0.17	0.20	0.24	0.26	0.32	0.37	0.002	0.007	0.010	0.015
		4100	0.08	0.10	0.12	0.15	0.17	0.21	0.24	0.26	0.33	0.38	0.002	0.007	0.010	0.015
		4200	0.08	0.10	0.12	0.15	0.18	0.21	0.25	0.27	0.34	0.39	0.002	0.007	0.010	0.016
		4300	0.08	0.10	0.13	0.15	0.18	0.21	0.25	0.27	0.34	0.40	0.002	0.007	0.010	0.016
		4400	0.08	0.10	0.13	0.16	0.18	0.22	0.26	0.28	0.35	0.40	0.002	0.007	0.011	0.016
		4500	0.08	0.11	0.13	0.16	0.19	0.22	0.26	0.28	0.36	0.41	0.002	0.008	0.011	0.017
		4600	0.08	0.11	0.13	0.16	0.19	0.23	0.27	0.29	0.36	0.42	0.002	0.008	0.011	0.017
		4700	0.08	0.11	0.13	0.16	0.20	0.23	0.27	0.30	0.37	0.43	0.002	0.008	0.011	0.018
		4800	0.09	0.11	0.14	0.17	0.20	0.24	0.28	0.30	0.38	0.44	0.002	0.008	0.012	0.018
		4900	0.09	0.11	0.14	0.17	0.20	0.24	0.28	0.31	0.38	0.44	0.002	0.008	0.012	0.018
		5000	0.09	0.12	0.14	0.17	0.21	0.24	0.29	0.31	0.39	0.45	0.002	0.008	0.012	0.019
		5100	0.09	0.12	0.14	0.18	0.21	0.25	0.29	0.32	0.40	0.46	0.002	0.009	0.012	0.019
		5200	0.09	0.12	0.15	0.18	0.21	0.25	0.30	0.32	0.40	0.47	0.002	0.009	0.013	0.019
		5300	0.09	0.12	0.15	0.18	0.22	0.26	0.30	0.33	0.41	0.47	0.002	0.009	0.013	0.020
		5400	0.09	0.12	0.15	0.18	0.22	0.26	0.31	0.33	0.42	0.48	0.002	0.009	0.013	0.020
		5500	0.10	0.12	0.15	0.19	0.22	0.26	0.31	0.34	0.42	0.49	0.002	0.009	0.013	0.021
		5600	0.10	0.13	0.16	0.19	0.23	0.27	0.32	0.34	0.43	0.50	0.002	0.009	0.014	0.021
		5700	0.10	0.13	0.16	0.19	0.23	0.27	0.32	0.35	0.44	0.50	0.003	0.010	0.014	0.021
		5800	0.10	0.13	0.16	0.19	0.23	0.28	0.33	0.35	0.44	0.51	0.003	0.010	0.014	0.022
	⑤	5900	0.10	0.13	0.16	0.20	0.24	0.28	0.33	0.36	0.45	0.52	0.003	0.010	0.014	0.022
		6000	0.10	0.13	0.16	0.20	0.24	0.28	0.34	0.36	0.46	0.53	0.003	0.010	0.015	0.022
										⑩						v (m/s)
										Statically balanced						Pulleys

optibelt
Power Transmission

Power Ratings

Section Y/6 – raw edge – moulded cogged

Nominal Power Rating P_N (kW) for $\beta = 180°$ and $L_d = 315$ mm

Table 45

Pulleys	v (m/s)	n_k (min^{-1})	Datum diameter of small pulley d_{dk} (mm) 20	22.4	25	28	31.5	35.5	40	45	50	56	Additional power (kW) per belt for speed ratio i 1,01 to 1,05	1,06 to 1,26	1,27 to 1,57	>1,57
Statically balanced	②	**700**	0.03	0.03	0.04	0.05	0.06	0.08	0.09	0.11	0.12	0.14	0.001	0.003	0.005	0.008
		950	0.03	0.04	0.05	0.07	0.08	0.10	0.12	0.14	0.16	0.18	0.001	0.005	0.007	0.011
		1450	0.05	0.06	0.08	0.10	0.12	0.15	0.17	0.20	0.24	0.27	0.002	0.007	0.010	0.016
		2850	0.08	0.11	0.14	0.18	0.22	0.27	0.32	0.38	0.43	0.50	0.004	0.014	0.020	0.032
		200	0.01	0.01	0.01	0.02	0.02	0.02	0.03	0.03	0.04	0.04	0.000	0.001	0.001	0.002
		300	0.01	0.02	0.02	0.02	0.03	0.03	0.04	0.05	0.06	0.06	0.000	0.001	0.002	0.003
		400	0.02	0.02	0.03	0.03	0.04	0.05	0.05	0.06	0.07	0.08	0.001	0.002	0.003	0.004
		500	0.02	0.02	0.03	0.04	0.05	0.06	0.07	0.08	0.09	0.10	0.001	0.002	0.004	0.006
		600	0.02	0.03	0.04	0.04	0.05	0.07	0.08	0.09	0.10	0.12	0.001	0.003	0.004	0.007
		700	0.03	0.03	0.04	0.05	0.06	0.08	0.09	0.11	0.12	0.14	0.001	0.003	0.005	0.008
		800	0.03	0.04	0.05	0.06	0.07	0.08	0.10	0.12	0.14	0.16	0.001	0.004	0.006	0.009
		900	0.03	0.04	0.05	0.06	0.08	0.09	0.11	0.13	0.15	0.18	0.001	0.004	0.006	0.010
		1000	0.03	0.04	0.06	0.07	0.09	0.10	0.12	0.15	0.17	0.19	0.001	0.005	0.007	0.011
		1100	0.04	0.05	0.06	0.08	0.09	0.11	0.14	0.16	0.18	0.21	0.001	0.005	0.008	0.012
		1200	0.04	0.05	0.07	0.08	0.10	0.12	0.15	0.17	0.20	0.23	0.002	0.006	0.009	0.013
		1300	0.04	0.06	0.07	0.09	0.11	0.13	0.16	0.19	0.21	0.25	0.002	0.006	0.009	0.014
		1400	0.04	0.06	0.08	0.09	0.12	0.14	0.17	0.20	0.23	0.26	0.002	0.007	0.010	0.016
		1500	0.05	0.06	0.08	0.10	0.12	0.15	0.18	0.21	0.24	0.28	0.002	0.007	0.011	0.017
		1600	0.05	0.07	0.09	0.11	0.13	0.16	0.19	0.22	0.26	0.30	0.002	0.008	0.011	0.018
		1700	0.05	0.07	0.09	0.11	0.14	0.17	0.20	0.24	0.27	0.31	0.002	0.008	0.012	0.019
		1800	0.05	0.07	0.09	0.12	0.15	0.18	0.21	0.25	0.29	0.33	0.002	0.009	0.013	0.020
		1900	0.06	0.08	0.10	0.12	0.15	0.19	0.22	0.26	0.30	0.35	0.003	0.009	0.014	0.021
		2000	0.06	0.08	0.10	0.13	0.16	0.19	0.23	0.27	0.32	0.36	0.003	0.010	0.014	0.022
		2100	0.06	0.08	0.11	0.14	0.17	0.20	0.24	0.29	0.33	0.38	0.003	0.010	0.015	0.023
		2200	0.06	0.09	0.11	0.14	0.17	0.21	0.25	0.30	0.34	0.40	0.003	0.011	0.016	0.024
		2300	0.07	0.09	0.12	0.15	0.18	0.22	0.26	0.31	0.36	0.41	0.003	0.011	0.016	0.026
		2400	0.07	0.09	0.12	0.15	0.19	0.23	0.27	0.32	0.37	0.43	0.003	0.012	0.017	0.027
		2500	0.07	0.10	0.13	0.16	0.19	0.24	0.28	0.33	0.38	0.44	0.003	0.012	0.018	0.028
		2600	0.07	0.10	0.13	0.16	0.20	0.24	0.29	0.35	0.40	0.46	0.003	0.013	0.019	0.029
		2700	0.08	0.10	0.13	0.17	0.21	0.25	0.30	0.36	0.41	0.48	0.004	0.013	0.019	0.030
		2800	0.08	0.11	0.14	0.17	0.22	0.26	0.31	0.37	0.43	0.49	0.004	0.014	0.020	0.031
		2900	0.08	0.11	0.14	0.18	0.22	0.27	0.32	0.38	0.44	0.51	0.004	0.014	0.021	0.032
		3000	0.08	0.11	0.15	0.18	0.23	0.28	0.33	0.39	0.45	0.52	0.004	0.015	0.021	0.033
		3100	0.09	0.12	0.15	0.19	0.24	0.29	0.34	0.40	0.47	0.54	0.004	0.015	0.022	0.034
		3200	0.09	0.12	0.16	0.20	0.24	0.29	0.35	0.42	0.48	0.55	0.004	0.016	0.023	0.036
		3300	0.09	0.12	0.16	0.20	0.25	0.30	0.36	0.43	0.49	0.57	0.004	0.016	0.024	0.037
		3400	0.09	0.13	0.16	0.21	0.25	0.31	0.37	0.44	0.50	0.58	0.004	0.017	0.024	0.038
		3500	0.09	0.13	0.17	0.21	0.26	0.32	0.38	0.45	0.52	0.60	0.005	0.017	0.025	0.039
		3600	0.10	0.13	0.17	0.22	0.27	0.33	0.39	0.46	0.53	0.61	0.005	0.018	0.026	0.040
		3700	0.10	0.14	0.18	0.22	0.27	0.33	0.40	0.47	0.54	0.62	0.005	0.018	0.026	0.041
		3800	0.10	0.14	0.18	0.23	0.28	0.34	0.41	0.48	0.55	0.64	0.005	0.019	0.027	0.042
		3900	0.10	0.14	0.18	0.23	0.29	0.35	0.42	0.49	0.57	0.65	0.005	0.019	0.028	0.043
		4000	0.10	0.14	0.19	0.24	0.29	0.36	0.43	0.50	0.58	0.67	0.005	0.020	0.029	0.044
		4100	0.11	0.15	0.19	0.24	0.30	0.36	0.44	0.51	0.59	0.68	0.005	0.020	0.029	0.045
		4200	0.11	0.15	0.19	0.25	0.31	0.37	0.44	0.52	0.60	0.69	0.006	0.021	0.030	0.047
		4300	0.11	0.15	0.20	0.25	0.31	0.38	0.45	0.54	0.61	0.71	0.006	0.021	0.031	0.048
		4400	0.11	0.16	0.20	0.26	0.32	0.39	0.46	0.55	0.63	0.72	0.006	0.022	0.031	0.049
		4500	0.11	0.16	0.21	0.26	0.32	0.39	0.47	0.56	0.64	0.73	0.006	0.022	0.032	0.050
		4600	0.12	0.16	0.21	0.27	0.33	0.40	0.48	0.57	0.65	0.75	0.006	0.023	0.033	0.051
	⑤	4700	0.12	0.16	0.21	0.27	0.34	0.41	0.49	0.58	0.66	0.76	0.006	0.023	0.034	0.052
		4800	0.12	0.17	0.22	0.28	0.34	0.42	0.50	0.59	0.67	0.77	0.006	0.024	0.034	0.053
		4900	0.12	0.17	0.22	0.28	0.35	0.42	0.51	0.60	0.68	0.79	0.006	0.024	0.035	0.054
		5000	0.12	0.17	0.22	0.28	0.35	0.43	0.51	0.61	0.70	0.80	0.007	0.025	0.036	0.055
		5100	0.12	0.17	0.23	0.29	0.36	0.44	0.52	0.62	0.71	0.81	0.007	0.025	0.037	0.057
		5200	0.13	0.18	0.23	0.29	0.36	0.44	0.53	0.63	0.72	0.82	0.007	0.026	0.037	0.058
		5300	0.13	0.18	0.24	0.30	0.37	0.45	0.54	0.64	0.73	0.84	0.007	0.026	0.038	0.059
		5400	0.13	0.18	0.24	0.30	0.38	0.46	0.55	0.65	0.74	0.85	0.007	0.027	0.039	0.060
		5500	0.13	0.19	0.24	0.31	0.38	0.47	0.56	0.65	0.75	0.86	0.007	0.027	0.039	0.061
		5600	0.13	0.19	0.25	0.31	0.39	0.47	0.56	0.66	0.76	0.87	0.007	0.028	0.040	0.062
		5700	0.14	0.19	0.25	0.32	0.39	0.48	0.57	0.67	0.77	0.88	0.008	0.028	0.041	0.063
		5800	0.14	0.19	0.25	0.32	0.40	0.49	0.58	0.68	0.78	0.89	0.008	0.029	0.042	0.064
		5900	0.14	0.20	0.26	0.33	0.40	0.49	0.59	0.69	0.79	0.90	0.008	0.029	0.042	0.065
		6000	0.14	0.20	0.26	0.33	0.41	0.50	0.60	0.70	0.80	0.91	0.008	0.030	0.043	0.067
								⑩		⑮						v (m/s)
								Statically balanced								Pulleys

optibelt
Power Transmission

Power Ratings

Section 8

Nominal Power Rating P_N (kW) for $\beta = 180°$ and $L_d = 579$ mm

Table 46

Pulleys	v (m/s)	n_k (min^{-1})	Datum diameter of small pulley d_{dk} (mm)									Additional power (kW) per belt for speed ratio i			
			35	40	45	50	56	63	71	80	90	1,01 to 1,05	1,06 to 1,26	1,27 to 1,57	>1,57
Statically balanced		**700**	0.12	0.15	0.18	0.21	0.25	0.29	0.34	0.39	0.45	0.00	0.01	0.01	0.01
		950	0.15	0.19	0.23	0.27	0.32	0.37	0.43	0.50	0.57	0.00	0.01	0.02	0.02
		1450	0.19	0.25	0.31	0.37	0.43	0.51	0.59	0.69	0.79	0.00	0.02	0.03	0.03
		2850	0.28	0.38	0.48	0.57	0.69	0.81	0.95	1.11	1.27	0.01	0.03	0.05	0.06
		100	0.03	0.03	0.04	0.04	0.05	0.06	0.07	0.08	0.09	0.00	0.00	0.00	0.00
		200	0.05	0.06	0.07	0.08	0.09	0.11	0.12	0.14	0.16	0.00	0.00	0.00	0.00
		300	0.06	0.08	0.09	0.11	0.13	0.15	0.17	0.20	0.23	0.00	0.00	0.01	0.01
		400	0.08	0.10	0.12	0.14	0.16	0.19	0.22	0.25	0.28	0.00	0.00	0.01	0.01
		500	0.09	0.12	0.14	0.16	0.19	0.22	0.26	0.30	0.34	0.00	0.01	0.01	0.01
		600	0.11	0.13	0.16	0.19	0.22	0.26	0.30	0.35	0.40	0.00	0.01	0.01	0.01
		700	0.12	0.15	0.18	0.21	0.25	0.29	0.34	0.39	0.45	0.00	0.01	0.01	0.01
		800	0.13	0.17	0.20	0.24	0.28	0.32	0.38	0.43	0.50	0.00	0.01	0.01	0.02
		900	0.14	0.18	0.22	0.26	0.30	0.35	0.41	0.48	0.55	0.00	0.01	0.02	0.02
	②	1000	0.15	0.19	0.24	0.28	0.33	0.38	0.45	0.52	0.59	0.00	0.01	0.02	0.02
		1100	0.16	0.21	0.25	0.30	0.35	0.41	0.48	0.56	0.64	0.00	0.01	0.02	0.02
		1200	0.17	0.22	0.27	0.32	0.38	0.44	0.51	0.59	0.68	0.00	0.01	0.02	0.02
		1300	0.18	0.23	0.29	0.34	0.40	0.47	0.55	0.63	0.72	0.00	0.02	0.02	0.03
		1400	0.19	0.24	0.30	0.36	0.42	0.49	0.58	0.67	0.77	0.00	0.02	0.03	0.03
		1500	0.20	0.26	0.32	0.37	0.44	0.52	0.61	0.70	0.81	0.00	0.02	0.03	0.03
		1600	0.20	0.27	0.33	0.39	0.46	0.55	0.64	0.74	0.85	0.00	0.02	0.03	0.03
		1700	0.21	0.28	0.34	0.41	0.48	0.57	0.67	0.77	0.88	0.00	0.02	0.03	0.04
		1800	0.22	0.29	0.36	0.42	0.50	0.59	0.69	0.80	0.92	0.00	0.02	0.03	0.04
		1900	0.22	0.30	0.37	0.44	0.52	0.62	0.72	0.84	0.96	0.00	0.02	0.04	0.04
		2000	0.23	0.31	0.38	0.46	0.54	0.64	0.75	0.87	0.99	0.00	0.02	0.04	0.04
		2100	0.24	0.32	0.40	0.47	0.56	0.66	0.77	0.90	1.03	0.00	0.02	0.04	0.04
		2200	0.24	0.33	0.41	0.49	0.58	0.68	0.80	0.93	1.06	0.01	0.03	0.04	0.05
		2300	0.25	0.34	0.42	0.50	0.60	0.70	0.83	0.96	1.10	0.01	0.03	0.04	0.05
		2400	0.25	0.34	0.43	0.51	0.61	0.73	0.85	0.98	1.13	0.01	0.03	0.04	0.05
		2500	0.26	0.35	0.44	0.53	0.63	0.75	0.87	1.01	1.16	0.01	0.03	0.05	0.05
		2600	0.27	0.36	0.45	0.54	0.65	0.77	0.90	1.04	1.19	0.01	0.03	0.05	0.05
	⑤	2700	0.27	0.37	0.46	0.56	0.66	0.79	0.92	1.07	1.22	0.01	0.03	0.05	0.06
		2800	0.27	0.38	0.47	0.57	0.68	0.80	0.94	1.09	1.25	0.01	0.03	0.05	0.06
		2900	0.28	0.38	0.48	0.58	0.69	0.82	0.96	1.12	1.28	0.01	0.03	0.05	0.06
		3000	0.28	0.39	0.49	0.59	0.71	0.84	0.99	1.14	1.31	0.01	0.03	0.06	0.06
		3100	0.29	0.40	0.50	0.60	0.72	0.86	1.01	1.17	1.34	0.01	0.04	0.06	0.06
		3200	0.29	0.40	0.51	0.62	0.74	0.88	1.03	1.19	1.36	0.01	0.04	0.06	0.07
		3300	0.30	0.41	0.52	0.63	0.75	0.89	1.05	1.21	1.39	0.01	0.04	0.06	0.07
		3400	0.30	0.42	0.53	0.64	0.77	0.91	1.07	1.24	1.41	0.01	0.04	0.06	0.07
		3500	0.30	0.42	0.54	0.65	0.78	0.93	1.09	1.26	1.44	0.01	0.04	0.06	0.07
		3600	0.31	0.43	0.55	0.66	0.79	0.94	1.10	1.28	1.46	0.01	0.04	0.07	0.07
		3700	0.31	0.43	0.55	0.67	0.81	0.96	1.12	1.30	1.49	0.01	0.04	0.07	0.08
		3800	0.31	0.44	0.56	0.68	0.82	0.97	1.14	1.32	1.51	0.01	0.04	0.07	0.08
		3900	0.31	0.44	0.57	0.69	0.83	0.99	1.16	1.34	1.53	0.01	0.05	0.07	0.08
		4000	0.32	0.45	0.58	0.70	0.84	1.00	1.17	1.36	1.55	0.01	0.05	0.07	0.08
		4100	0.32	0.45	0.58	0.71	0.85	1.02	1.19	1.38	1.57	0.01	0.05	0.08	0.09
		4200	0.32	0.46	0.59	0.72	0.86	1.03	1.21	1.40	1.59	0.01	0.05	0.08	0.09
		4300	0.32	0.46	0.60	0.73	0.88	1.04	1.22	1.41	1.61	0.01	0.05	0.08	0.09
		4400	0.33	0.47	0.60	0.73	0.89	1.06	1.24	1.43	1.63	0.01	0.05	0.08	0.09
		4500	0.33	0.47	0.61	0.74	0.90	1.07	1.25	1.45	1.65	0.01	0.05	0.08	0.09
		4600	0.33	0.48	0.62	0.75	0.91	1.08	1.27	1.46	1.66	0.01	0.05	0.09	0.10
		4700	0.33	0.48	0.62	0.76	0.92	1.09	1.28	1.48	1.68	0.01	0.05	0.09	0.10
		4800	0.33	0.48	0.63	0.77	0.93	1.10	1.29	1.49	1.69	0.01	0.06	0.09	0.10
		4900	0.33	0.49	0.63	0.77	0.94	1.11	1.31	1.51	1.71	0.01	0.06	0.09	0.10
		5000	0.34	0.49	0.64	0.78	0.94	1.13	1.32	1.52	1.72	0.01	0.06	0.09	0.10
		5100	0.34	0.49	0.64	0.79	0.95	1.14	1.33	1.53	1.74	0.01	0.06	0.09	0.11
		5200	0.34	0.50	0.65	0.79	0.96	1.15	1.34	1.55	1.75	0.01	0.06	0.10	0.11
		5300	0.34	0.50	0.65	0.80	0.97	1.16	1.35	1.56	1.76	0.01	0.06	0.10	0.11
	⑩	5400	0.34	0.50	0.66	0.81	0.98	1.17	1.36	1.57	1.77	0.01	0.06	0.10	0.11
		5500	0.34	0.51	0.66	0.81	0.99	1.17	1.38	1.58	1.78	0.01	0.06	0.10	0.11
		5600	0.34	0.51	0.67	0.82	0.99	1.18	1.38	1.59	1.79	0.01	0.06	0.10	0.12
		5700	0.34	0.51	0.67	0.83	1.00	1.19	1.39	1.60	1.80	0.01	0.07	0.11	0.12
		5800	0.34	0.51	0.68	0.83	1.01	1.20	1.40	1.61	1.81	0.01	0.07	0.11	0.12
		5900	0.34	0.51	0.68	0.84	1.01	1.21	1.41	1.62	1.82	0.01	0.07	0.11	0.12
		6000	0.34	0.52	0.68	0.84	1.02	1.22	1.42	1.63	1.82	0.01	0.07	0.11	0.12
		6200	0.34	0.52	0.69	0.85	1.03	1.23	1.43	1.64	1.83	0.01	0.07	0.11	0.13
		6400	0.34	0.52	0.69	0.86	1.04	1.24	1.45	1.65	1.84	0.01	0.07	0.12	0.13
		6600	0.34	0.52	0.70	0.87	1.05	1.25	1.46	1.66	1.84	0.02	0.08	0.12	0.14
		6800	0.34	0.53	0.70	0.87	1.06	1.26	1.47	1.67	1.84	0.02	0.08	0.13	0.14
		7000	0.34	0.53	0.71	0.88	1.07	1.27	1.48	1.67	1.84	0.02	0.08	0.13	0.15
		7200	0.33	0.53	0.71	0.88	1.07	1.28	1.48	1.67	1.84	0.02	0.08	0.13	0.15
		7400	0.33	0.53	0.71	0.89	1.08	1.28	1.48	1.67	1.83	0.02	0.09	0.14	0.15
		7600	0.33	0.53	0.72	0.89	1.08	1.29	1.49	1.67	1.81	0.02	0.09	0.14	0.16
		7800	0.32	0.53	0.72	0.89	1.09	1.29	1.49	1.66	1.80	0.02	0.09	0.14	0.16
		8000	0.32	0.52	0.72	0.89	1.09	1.29	1.48	1.65	1.78	0.02	0.09	0.15	0.17
			⑮		⑳		㉕		㉚						v (m/s)
									Dynamically balanced						Pulleys

Where v > 30 m/s, please consult our Applications Engineering Department

optibelt
Power Transmission

Power Ratings

Section Z/10

Nominal Power Rating P_N (kW) for $\beta = 180°$ and $L_d = 822$ mm

Table 47

Pulleys	v (m/s)	n_k (min^{-1})	Datum diameter of small pulley d_{dk} (mm) 45	50	56	63	71	80	90	100	112	Additional power (kW) per belt for speed ratio i 1,01 to 1,05	1,06 to 1,26	1,27 to 1,57	>1,57
Statically balanced		**700**	0.18	0.22	0.28	0.34	0.42	0.50	0.59	0.67	0.77	0.00	0.02	0.03	0.03
		950	0.22	0.28	0.35	0.44	0.53	0.64	0.75	0.86	1.00	0.00	0.02	0.04	0.04
		1450	0.29	0.38	0.48	0.60	0.74	0.89	1.06	1.22	1.40	0.01	0.03	0.06	0.06
		2850	0.42	0.58	0.77	0.98	1.22	1.47	1.75	2.02	2.33	0.01	0.07	0.11	0.12
		100	0.04	0.05	0.06	0.07	0.08	0.10	0.11	0.13	0.15	0.00	0.00	0.00	0.00
		200	0.07	0.08	0.10	0.12	0.15	0.17	0.20	0.23	0.27	0.00	0.00	0.01	0.01
		300	0.09	0.12	0.14	0.17	0.21	0.25	0.29	0.33	0.38	0.00	0.01	0.01	0.01
		400	0.12	0.15	0.18	0.22	0.26	0.31	0.37	0.42	0.48	0.00	0.01	0.02	0.02
		500	0.14	0.17	0.21	0.26	0.32	0.38	0.44	0.51	0.58	0.00	0.01	0.02	0.02
		600	0.16	0.20	0.25	0.30	0.37	0.44	0.51	0.59	0.68	0.00	0.01	0.02	0.03
		700	0.18	0.22	0.28	0.34	0.42	0.50	0.59	0.67	0.77	0.00	0.02	0.03	0.03
	(2)	800	0.19	0.25	0.31	0.38	0.46	0.55	0.65	0.75	0.87	0.00	0.02	0.03	0.03
		900	0.21	0.27	0.34	0.42	0.51	0.61	0.72	0.83	0.95	0.00	0.02	0.03	0.04
		1000	0.23	0.29	0.37	0.45	0.55	0.66	0.78	0.90	1.04	0.00	0.02	0.04	0.04
		1100	0.24	0.31	0.39	0.49	0.60	0.72	0.85	0.97	1.12	0.01	0.03	0.04	0.05
		1200	0.25	0.33	0.42	0.52	0.64	0.77	0.91	1.05	1.21	0.01	0.03	0.05	0.05
		1300	0.27	0.35	0.45	0.56	0.68	0.82	0.97	1.11	1.29	0.01	0.03	0.05	0.06
		1400	0.28	0.37	0.47	0.59	0.72	0.87	1.03	1.18	1.37	0.01	0.03	0.05	0.06
		1500	0.29	0.39	0.49	0.62	0.76	0.91	1.08	1.25	1.44	0.01	0.04	0.06	0.06
		1600	0.31	0.40	0.52	0.65	0.80	0.96	1.14	1.31	1.52	0.01	0.04	0.06	0.07
		1700	0.32	0.42	0.54	0.68	0.84	1.01	1.19	1.38	1.59	0.01	0.04	0.07	0.07
		1800	0.33	0.44	0.56	0.71	0.87	1.05	1.25	1.44	1.66	0.01	0.04	0.07	0.08
		1900	0.34	0.45	0.59	0.74	0.91	1.10	1.30	1.50	1.73	0.01	0.05	0.07	0.08
		2000	0.35	0.47	0.61	0.77	0.94	1.14	1.35	1.56	1.80	0.01	0.05	0.08	0.09
	(5)	2100	0.36	0.48	0.63	0.79	0.98	1.18	1.40	1.62	1.87	0.01	0.05	0.08	0.09
		2200	0.37	0.50	0.65	0.82	1.01	1.22	1.45	1.68	1.94	0.01	0.05	0.08	0.10
		2300	0.38	0.51	0.67	0.85	1.05	1.26	1.50	1.73	2.00	0.01	0.06	0.09	0.10
		2400	0.39	0.52	0.69	0.87	1.08	1.30	1.55	1.79	2.06	0.01	0.06	0.09	0.10
		2500	0.39	0.54	0.70	0.90	1.11	1.34	1.60	1.84	2.12	0.01	0.06	0.10	0.11
		2600	0.40	0.55	0.72	0.92	1.14	1.38	1.64	1.89	2.18	0.01	0.06	0.10	0.11
		2700	0.41	0.56	0.74	0.94	1.17	1.42	1.69	1.94	2.24	0.01	0.06	0.10	0.12
		2800	0.42	0.57	0.76	0.97	1.20	1.46	1.73	1.99	2.30	0.01	0.07	0.11	0.12
		2900	0.42	0.59	0.77	0.99	1.23	1.49	1.77	2.04	2.35	0.01	0.07	0.11	0.13
		3000	0.43	0.60	0.79	1.01	1.26	1.53	1.81	2.09	2.41	0.01	0.07	0.12	0.13
		3100	0.44	0.61	0.81	1.03	1.29	1.56	1.85	2.14	2.46	0.01	0.07	0.12	0.13
		3200	0.44	0.62	0.82	1.06	1.31	1.59	1.89	2.18	2.51	0.02	0.08	0.12	0.14
		3300	0.45	0.63	0.84	1.08	1.34	1.63	1.93	2.22	2.56	0.02	0.08	0.13	0.14
		3400	0.46	0.64	0.85	1.10	1.37	1.66	1.97	2.27	2.60	0.02	0.08	0.13	0.15
		3500	0.46	0.65	0.87	1.12	1.39	1.69	2.01	2.31	2.65	0.02	0.08	0.13	0.15
		3600	0.47	0.66	0.88	1.14	1.42	1.72	2.04	2.35	2.69	0.02	0.09	0.14	0.16
		3700	0.47	0.67	0.90	1.15	1.44	1.75	2.08	2.39	2.74	0.02	0.09	0.14	0.16
		3800	0.48	0.68	0.91	1.17	1.46	1.78	2.11	2.42	2.78	0.02	0.09	0.15	0.16
		3900	0.48	0.68	0.92	1.19	1.49	1.81	2.14	2.46	2.81	0.02	0.09	0.15	0.17
		4000	0.48	0.69	0.93	1.21	1.51	1.83	2.17	2.49	2.85	0.02	0.10	0.15	0.17
		4100	0.49	0.70	0.95	1.22	1.53	1.86	2.20	2.53	2.89	0.02	0.10	0.16	0.18
	(10)	4200	0.49	0.71	0.96	1.24	1.55	1.89	2.23	2.56	2.92	0.02	0.10	0.16	0.18
		4300	0.49	0.71	0.97	1.26	1.57	1.91	2.26	2.59	2.95	0.02	0.10	0.17	0.19
		4400	0.50	0.72	0.98	1.27	1.59	1.93	2.29	2.62	2.98	0.02	0.11	0.17	0.19
		4500	0.50	0.73	0.99	1.29	1.61	1.96	2.32	2.65	3.01	0.02	0.11	0.17	0.19
		4600	0.50	0.73	1.00	1.30	1.63	1.98	2.34	2.67	3.04	0.02	0.11	0.18	0.20
		4700	0.50	0.74	1.01	1.32	1.65	2.00	2.37	2.70	3.06	0.02	0.11	0.18	0.20
		4800	0.51	0.74	1.02	1.33	1.67	2.02	2.39	2.72	3.08	0.02	0.12	0.18	0.21
		4900	0.51	0.75	1.03	1.34	1.68	2.04	2.41	2.75	3.10	0.02	0.12	0.19	0.21
		5000	0.51	0.75	1.04	1.35	1.70	2.06	2.43	2.77	3.12	0.02	0.12	0.19	0.22
		5100	0.51	0.76	1.05	1.37	1.71	2.08	2.45	2.79	3.14	0.02	0.12	0.20	0.22
		5200	0.51	0.76	1.05	1.38	1.73	2.10	2.47	2.80	3.15	0.03	0.13	0.20	0.23
		5300	0.51	0.77	1.06	1.39	1.74	2.11	2.49	2.82	3.16	0.03	0.13	0.20	0.23
		5400	0.51	0.77	1.07	1.40	1.76	2.13	2.50	2.83	3.17	0.03	0.13	0.21	0.23
		5500	0.51	0.77	1.08	1.41	1.77	2.14	2.52	2.85	3.18	0.03	0.13	0.21	0.24
		5600	0.51	0.78	1.08	1.42	1.78	2.16	2.53	2.86	3.19	0.03	0.13	0.22	0.24
		5800	0.51	0.78	1.09	1.44	1.80	2.18	2.56	2.88	3.19	0.03	0.14	0.22	0.25
		6000	0.51	0.79	1.10	1.45	1.82	2.20	2.57	2.89	3.19	0.03	0.14	0.23	0.26
	(15)	6200	0.51	0.79	1.11	1.47	1.84	2.22	2.59	2.90	3.18	0.03	0.15	0.24	0.27
		6400	0.50	0.79	1.12	1.48	1.85	2.23	2.60	2.89	3.15	0.03	0.15	0.25	0.28
		6600	0.50	0.79	1.12	1.49	1.86	2.24	2.60	2.88	3.12	0.03	0.16	0.25	0.29
		6800	0.49	0.79	1.13	1.49	1.87	2.25	2.60	2.87	3.08	0.03	0.16	0.26	0.29
		7000	0.49	0.79	1.13	1.50	1.88	2.25	2.59	2.85	3.03	0.03	0.17	0.27	0.30
		7200	0.48	0.78	1.13	1.50	1.88	2.25	2.58	2.82	2.97	0.03	0.17	0.28	0.31
		7400	0.47	0.78	1.13	1.50	1.88	2.24	2.56	2.78	2.90	0.04	0.18	0.28	0.32
		7600	0.46	0.77	1.12	1.50	1.88	2.23	2.53			0.04	0.18	0.29	0.33
		7800	0.45	0.77	1.12	1.49	1.87	2.22	2.50			0.04	0.19	0.30	0.34
		8000	0.44	0.76	1.11	1.49	1.86	2.20	2.47			0.04	0.19	0.31	0.35
		8200	0.42	0.75	1.11	1.48	1.85	2.17				0.04	0.20	0.32	0.35
		8400	0.41	0.74	1.10	1.47	1.83	2.15				0.04	0.20	0.32	0.36

Where v > 30 m/s, please consult our Applications Engineering Department

(20) (25) (30)

v (m/s)

Dynamically balanced (for details see DIN 2211)

Pulleys

optibelt
Power Transmission

Power Ratings

Section A/13

Nominal Power Rating P_N (kW) for $\beta = 180°$ and $L_d = 1730$ mm

Table 48

Pulleys	v (m/s)	n_k (min^{-1})	Datum diameter of small pulley d_{dk} (mm) 71	80	90	95	100	106	112	118	125	132	140	150	160	180	Additional power (kW) per belt for speed ratio i 1,01 to 1,05	1,06 to 1,26	1,27 to 1,57	>1,57
Statically balanced		**700**	0.52	0.74	0.97	1.09	1.21	1.35	1.48	1.62	1.78	1.94	2.12	2.34	2.56	2.99	0.02	0.08	0.12	0.14
		950	0.63	0.92	1.23	1.38	1.53	1.71	1.89	2.07	2.28	2.49	2.72	3.01	3.29	3.85	0.02	0.10	0.16	0.18
		1450	0.81	1.22	1.67	1.89	2.11	2.37	2.62	2.88	3.17	3.46	3.79	4.19	4.59	5.36	0.03	0.16	0.25	0.28
		2850	1.04	1.75	2.51	2.88	3.25	3.67	4.09	4.50	4.96	5.41	5.90	6.48	7.03	8.03	0.06	0.31	0.49	0.55
		100	0.12	0.16	0.20	0.22	0.24	0.26	0.29	0.31	0.34	0.37	0.40	0.44	0.48	0.55	0.00	0.01	0.02	0.02
		200	0.21	0.28	0.36	0.39	0.43	0.48	0.52	0.57	0.62	0.67	0.73	0.80	0.87	1.02	0.00	0.02	0.03	0.04
		300	0.29	0.39	0.50	0.55	0.61	0.67	0.74	0.80	0.88	0.95	1.03	1.14	1.24	1.45	0.01	0.03	0.05	0.06
		400	0.35	0.48	0.63	0.70	0.77	0.85	0.94	1.02	1.12	1.21	1.32	1.46	1.59	1.86	0.01	0.04	0.07	0.08
	②	500	0.41	0.57	0.75	0.84	0.92	1.02	1.13	1.23	1.35	1.46	1.60	1.76	1.93	2.25	0.01	0.05	0.09	0.10
		600	0.47	0.66	0.86	0.97	1.07	1.19	1.31	1.43	1.57	1.71	1.86	2.06	2.25	2.63	0.01	0.06	0.10	0.12
		700	0.52	0.74	0.97	1.09	1.21	1.35	1.48	1.62	1.78	1.94	2.12	2.34	2.56	2.99	0.02	0.08	0.12	0.14
		800	0.57	0.81	1.08	1.21	1.34	1.50	1.65	1.81	1.99	2.16	2.36	2.61	2.86	3.34	0.02	0.09	0.14	0.16
		900	0.61	0.88	1.18	1.32	1.47	1.64	1.82	1.99	2.18	2.38	2.60	2.88	3.15	3.69	0.02	0.10	0.16	0.18
		1000	0.65	0.95	1.27	1.44	1.59	1.78	1.97	2.16	2.38	2.59	2.83	3.13	3.43	4.01	0.02	0.11	0.17	0.19
		1100	0.69	1.01	1.37	1.54	1.71	1.92	2.13	2.33	2.56	2.79	3.06	3.38	3.70	4.33	0.02	0.12	0.19	0.21
		1200	0.73	1.08	1.46	1.64	1.83	2.05	2.27	2.49	2.74	2.99	3.28	3.62	3.97	4.64	0.03	0.13	0.21	0.23
	⑤	1300	0.76	1.14	1.54	1.74	1.94	2.18	2.42	2.65	2.92	3.19	3.49	3.86	4.22	4.94	0.03	0.14	0.22	0.25
		1400	0.79	1.19	1.63	1.84	2.05	2.30	2.55	2.80	3.09	3.37	3.69	4.08	4.47	5.22	0.03	0.15	0.24	0.27
		1500	0.82	1.24	1.71	1.93	2.16	2.42	2.69	2.95	3.25	3.55	3.89	4.30	4.71	5.50	0.03	0.16	0.26	0.29
		1600	0.85	1.30	1.78	2.02	2.26	2.54	2.82	3.10	3.41	3.73	4.08	4.51	4.94	5.76	0.03	0.17	0.28	0.31
		1700	0.88	1.34	1.86	2.11	2.36	2.65	2.95	3.23	3.57	3.90	4.26	4.72	5.16	6.02	0.04	0.18	0.29	0.33
		1800	0.90	1.39	1.93	2.19	2.45	2.76	3.07	3.37	3.72	4.06	4.44	4.91	5.37	6.26	0.04	0.19	0.31	0.35
		1900	0.92	1.44	2.00	2.27	2.54	2.87	3.19	3.50	3.86	4.22	4.62	5.10	5.58	6.49	0.04	0.21	0.33	0.37
		2000	0.94	1.48	2.06	2.35	2.63	2.97	3.30	3.62	4.00	4.37	4.78	5.28	5.77	6.71	0.04	0.22	0.35	0.39
		2100	0.96	1.52	2.12	2.42	2.72	3.06	3.41	3.75	4.13	4.51	4.94	5.46	5.96	6.91	0.05	0.23	0.36	0.41
		2200	0.97	1.55	2.18	2.49	2.80	3.16	3.51	3.86	4.26	4.65	5.09	5.62	6.13	7.10	0.05	0.24	0.38	0.43
		2300	0.99	1.59	2.24	2.56	2.88	3.25	3.61	3.97	4.38	4.79	5.23	5.78	6.30	7.28	0.05	0.25	0.40	0.45
		2400	1.00	1.62	2.30	2.63	2.95	3.33	3.71	4.08	4.50	4.91	5.37	5.93	6.46	7.45	0.05	0.26	0.42	0.47
		2500	1.01	1.66	2.35	2.69	3.02	3.42	3.80	4.18	4.61	5.03	5.50	6.06	6.60	7.60	0.05	0.27	0.43	0.49
		2600	1.02	1.68	2.40	2.75	3.09	3.50	3.89	4.28	4.72	5.15	5.62	6.20	6.74	7.74	0.06	0.28	0.45	0.51
	⑩	2700	1.03	1.71	2.45	2.80	3.16	3.57	3.98	4.37	4.82	5.26	5.74	6.32	6.86	7.87	0.06	0.29	0.47	0.53
		2800	1.04	1.74	2.49	2.86	3.22	3.64	4.05	4.46	4.92	5.36	5.85	6.43	6.98	7.98	0.06	0.30	0.48	0.54
		2900	1.04	1.76	2.53	2.91	3.28	3.71	4.13	4.54	5.01	5.45	5.95	6.53	7.08	8.07	0.06	0.31	0.50	0.56
		3000	1.04	1.78	2.57	2.95	3.33	3.77	4.20	4.62	5.09	5.54	6.04	6.63	7.18	8.15	0.06	0.32	0.52	0.58
		3100	1.04	1.80	2.61	3.00	3.38	3.83	4.27	4.69	5.17	5.62	6.12	6.71	7.26	8.21	0.07	0.34	0.54	0.60
		3200	1.04	1.81	2.64	3.04	3.43	3.88	4.33	4.75	5.24	5.70	6.20	6.79	7.33	8.26	0.07	0.35	0.55	0.62
		3300	1.04	1.83	2.67	3.08	3.47	3.93	4.38	4.82	5.30	5.76	6.27	6.85	7.38	8.29	0.07	0.36	0.57	0.64
		3400	1.04	1.84	2.70	3.11	3.51	3.98	4.43	4.87	5.36	5.82	6.32	6.90	7.43	8.30	0.07	0.37	0.59	0.66
		3500	1.03	1.85	2.72	3.14	3.55	4.02	4.48	4.92	5.41	5.87	6.37	6.95	7.46	8.30	0.08	0.38	0.61	0.68
		3600	1.02	1.86	2.74	3.17	3.58	4.06	4.52	4.96	5.45	5.92	6.41	6.98	7.48		0.08	0.39	0.62	0.70
		3700	1.01	1.86	2.76	3.19	3.61	4.09	4.56	5.00	5.49	5.95	6.44	7.00	7.48		0.08	0.40	0.64	0.72
		3800	1.00	1.87	2.78	3.21	3.64	4.12	4.59	5.03	5.52	5.98	6.47	7.01	7.47		0.08	0.41	0.66	0.74
		3900	0.99	1.87	2.79	3.23	3.66	4.15	4.62	5.06	5.55	6.00	6.48	7.01	7.45		0.08	0.42	0.67	0.76
	⑮	4000	0.98	1.87	2.80	3.24	3.67	4.17	4.64	5.08	5.57	6.01	6.48	6.99	7.42		0.09	0.43	0.69	0.78
		4100	0.96	1.86	2.81	3.25	3.69	4.18	4.65	5.09	5.58	6.02	6.47	6.97	7.37		0.09	0.44	0.71	0.80
		4200	0.94	1.86	2.81	3.26	3.70	4.19	4.66	5.10	5.58	6.01	6.46	6.93			0.09	0.45	0.73	0.82
		4300	0.92	1.85	2.81	3.26	3.70	4.20	4.66	5.10	5.57	6.00	6.43	6.88			0.09	0.46	0.74	0.84
		4400	0.90	1.84	2.81	3.26	3.70	4.20	4.66	5.10	5.56	5.98	6.39	6.82			0.10	0.48	0.76	0.86
		4500	0.88	1.82	2.80	3.26	3.70	4.19	4.66	5.08	5.54	5.94	6.34	6.74			0.10	0.49	0.78	0.88
		4600	0.85	1.81	2.79	3.25	3.69	4.18	4.64	5.07	5.51	5.90					0.10	0.50	0.80	0.89
		4700	0.83	1.79	2.78	3.24	3.68	4.17	4.62	5.04	5.47	5.85					0.10	0.51	0.81	0.91
		4800	0.80	1.77	2.76	3.22	3.66	4.15	4.60	5.01	5.43	5.79					0.10	0.52	0.83	0.93
		4900	0.77	1.75	2.74	3.20	3.64	4.12	4.57	4.97	5.38	5.72					0.11	0.53	0.85	0.95
		5000	0.73	1.72	2.72	3.18	3.61	4.09	4.53	4.92	5.31	5.64					0.11	0.54	0.87	0.97
		5100	0.70	1.69	2.69	3.15	3.58	4.06	4.48	4.86							0.11	0.55	0.88	0.99
		5200	0.66	1.66	2.66	3.12	3.55	4.01	4.43	4.80							0.11	0.56	0.90	1.01
	⑳	5300	0.62	1.63	2.63	3.08	3.51	3.97	4.38	4.73							0.11	0.57	0.92	1.03
		5400	0.58	1.59	2.59	3.04	3.46	3.91	4.31	4.66							0.12	0.58	0.93	1.05
		5500	0.54	1.55	2.55	3.00	3.41	3.86	4.24	4.57							0.12	0.59	0.95	1.07
		5600	0.50	1.51	2.51	2.95	3.36	3.79									0.12	0.61	0.97	1.09
		5700	0.45	1.47	2.46	2.90	3.30	3.72									0.12	0.62	0.99	1.11
		5800	0.40	1.42	2.41	2.84	3.23	3.64									0.13	0.63	1.00	1.13
		5900	0.35	1.37	2.35	2.78	3.16	3.56									0.13	0.64	1.02	1.15
		6000	0.30	1.32	2.29	2.71	3.09	3.47									0.13	0.65	1.04	1.17

Where v > 30 m/s, please consult our Applications Engineering Department

	㉕		㉚																	v (m/s)
																				Pulleys

Dynamically balanced (for details see DIN 2211)

optibelt
Power Transmission

Power Ratings

Section B/17

Nominal Power Rating P_N (kW) for $\beta = 180°$ and $L_d = 2280$ mm

Table 49

Pulleys	v (m/s)	n_k (min^{-1})	Datum diameter of small pulley d_{dk} (mm) 112	125	132	140	150	160	170	180	190	200	212	224	236	250	280	Additional power (kW) per belt for speed ratio i 1,01 to 1,05	1,06 to 1,26	1,27 to 1,57	>1,57
Statically balanced		**700**	1.49	1.96	2.21	2.50	2.85	3.20	3.55	3.89	4.24	4.58	4.98	5.38	5.78	6.23	7.19	0.03	0.17	0.27	0.30
		950	1.83	2.45	2.77	3.15	3.61	4.06	4.51	4.96	5.40	5.83	6.35	6.86	7.36	7.94	9.14	0.05	0.23	0.37	0.41
		1450	2.37	3.25	3.72	4.24	4.89	5.52	6.14	6.75	7.35	7.94	8.63	9.31	9.96	10.70	12.20	0.07	0.35	0.56	0.63
		2850	2.99	4.37	5.08	5.87	6.80	7.67	8.49	9.24	9.93	10.56	11.22	11.78	12.24	12.62	12.90	0.14	0.69	1.10	1.24
		100	0.33	0.41	0.46	0.51	0.57	0.63	0.69	0.75	0.81	0.87	0.94	1.01	1.08	1.17	1.34	0.00	0.02	0.04	0.04
		200	0.58	0.73	0.81	0.91	1.02	1.14	1.25	1.37	1.48	1.59	1.73	1.86	1.99	2.15	2.47	0.01	0.05	0.08	0.09
		300	0.79	1.01	1.13	1.27	1.43	1.60	1.77	1.93	2.09	2.25	2.45	2.64	2.83	3.05	3.52	0.01	0.07	0.12	0.13
		400	0.99	1.27	1.43	1.60	1.82	2.03	2.25	2.46	2.67	2.88	3.13	3.37	3.62	3.91	4.51	0.02	0.10	0.15	0.17
		500	1.17	1.52	1.70	1.92	2.18	2.44	2.70	2.96	3.22	3.47	3.77	4.07	4.37	4.72	5.45	0.02	0.12	0.19	0.22
		600	1.33	1.74	1.96	2.21	2.52	2.83	3.13	3.44	3.74	4.03	4.39	4.74	5.09	5.49	6.34	0.03	0.14	0.23	0.26
		700	1.49	1.96	2.21	2.50	2.85	3.20	3.55	3.89	4.24	4.58	4.98	5.38	5.78	6.23	7.19	0.03	0.17	0.27	0.30
	⑤	800	1.63	2.16	2.44	2.77	3.16	3.56	3.95	4.33	4.72	5.09	5.55	5.99	6.43	6.94	8.00	0.04	0.19	0.31	0.35
		900	1.77	2.35	2.67	3.02	3.46	3.90	4.33	4.75	5.17	5.59	6.09	6.57	7.06	7.61	8.77	0.04	0.22	0.35	0.39
		1000	1.89	2.54	2.88	3.27	3.75	4.22	4.69	5.16	5.61	6.07	6.60	7.13	7.65	8.25	9.50	0.05	0.24	0.39	0.43
		1100	2.01	2.71	3.08	3.50	4.02	4.53	5.04	5.54	6.03	6.52	7.10	7.66	8.22	8.86	10.18	0.05	0.27	0.42	0.48
		1200	2.12	2.88	3.28	3.73	4.28	4.83	5.37	5.91	6.44	6.95	7.57	8.17	8.76	9.43	10.82	0.06	0.29	0.46	0.52
		1300	2.23	3.03	3.46	3.94	4.53	5.12	5.69	6.26	6.82	7.37	8.01	8.64	9.26	9.97	11.41	0.06	0.31	0.50	0.56
		1400	2.33	3.18	3.63	4.14	4.77	5.39	6.00	6.59	7.18	7.76	8.43	9.09	9.74	10.47	11.95	0.07	0.34	0.54	0.61
		1500	2.42	3.32	3.80	4.33	5.00	5.65	6.28	6.91	7.52	8.12	8.83	9.51	10.18	10.93	12.44	0.07	0.36	0.58	0.65
		1600	2.50	3.45	3.95	4.52	5.21	5.89	6.56	7.21	7.85	8.47	9.20	9.90	10.58	11.35	12.88	0.08	0.39	0.62	0.69
	⑩	1700	2.58	3.57	4.10	4.69	5.41	6.12	6.81	7.49	8.15	8.79	9.54	10.26	10.95	11.73	13.26	0.08	0.41	0.66	0.74
		1800	2.65	3.69	4.24	4.85	5.60	6.34	7.05	7.75	8.43	9.09	9.85	10.58	11.29	12.07	13.59	0.09	0.43	0.70	0.78
		1900	2.72	3.79	4.36	5.00	5.78	6.54	7.27	7.99	8.69	9.36	10.14	10.88	11.58	12.36	13.85	0.09	0.46	0.73	0.82
		2000	2.77	3.89	4.48	5.14	5.94	6.72	7.48	8.21	8.92	9.61	10.39	11.14	11.84	12.61	14.06	0.10	0.48	0.77	0.87
		2100	2.82	3.98	4.59	5.27	6.09	6.90	7.67	8.42	9.14	9.83	10.62	11.36	12.06	12.81	14.19	0.10	0.51	0.81	0.91
		2200	2.87	4.06	4.69	5.39	6.23	7.05	7.84	8.60	9.33	10.02	10.81	11.55	12.23	12.96	14.26	0.11	0.53	0.85	0.96
		2300	2.91	4.14	4.78	5.49	6.36	7.19	7.99	8.76	9.49	10.19	10.97	11.70	12.36	13.06	14.26	0.11	0.56	0.89	1.00
		2400	2.94	4.20	4.86	5.59	6.47	7.32	8.13	8.90	9.63	10.32	11.10	11.81	12.45	13.11	14.19	0.12	0.58	0.93	1.04
	⑮	2500	2.96	4.25	4.93	5.67	6.57	7.43	8.24	9.02	9.75	10.43	11.19	11.88	12.49	13.10	14.04	0.12	0.60	0.97	1.09
		2600	2.98	4.30	4.98	5.74	6.65	7.52	8.34	9.11	9.83	10.51	11.25	11.90	12.48			0.13	0.63	1.00	1.13
		2700	2.99	4.34	5.03	5.80	6.72	7.59	8.41	9.18	9.90	10.55	11.27	11.89	12.42			0.13	0.65	1.04	1.17
		2800	2.99	4.36	5.07	5.85	6.77	7.65	8.47	9.23	9.93	10.57	11.25	11.83	12.31			0.14	0.68	1.08	1.22
		2900	2.98	4.38	5.10	5.88	6.81	7.69	8.50	9.25	9.93	10.55	11.19	11.73	12.15			0.14	0.70	1.12	1.26
		3000	2.97	4.39	5.11	5.90	6.84	7.71	8.51	9.25	9.91	10.49	11.09	11.58	11.93			0.14	0.72	1.16	1.30
		3100	2.95	4.39	5.12	5.91	6.84	7.71	8.50	9.22	9.85	10.41						0.15	0.75	1.20	1.35
		3200	2.92	4.37	5.11	5.90	6.83	7.69	8.47	9.16	9.77	10.28						0.15	0.77	1.24	1.39
		3300	2.89	4.35	5.09	5.88	6.81	7.65	8.41	9.08	9.65	10.12						0.16	0.80	1.27	1.43
	⑳	3400	2.85	4.32	5.06	5.85	6.77	7.59	8.33	8.96	9.50	9.92						0.16	0.82	1.31	1.48
		3500	2.80	4.27	5.01	5.80	6.71	7.52	8.22	8.82	9.31	9.68						0.17	0.84	1.35	1.52
		3600	2.74	4.22	4.96	5.74	6.63	7.41	8.09									0.17	0.87	1.39	1.56
		3700	2.67	4.15	4.89	5.66	6.53	7.29	7.93									0.18	0.89	1.43	1.61
		3800	2.59	4.08	4.80	5.57	6.42	7.15	7.75									0.18	0.92	1.47	1.65
		3900	2.51	3.99	4.71	5.46	6.29	6.98	7.54									0.19	0.94	1.51	1.69
		4000	2.42	3.89	4.60	5.34	6.13	6.79	7.31									0.19	0.97	1.55	1.74
		4100	2.31	3.78	4.48	5.19	5.96											0.20	0.99	1.58	1.78
	㉕	4200	2.20	3.65	4.34	5.04	5.77											0.20	1.01	1.62	1.82
		4300	2.08	3.52	4.19	4.86	5.56											0.21	1.04	1.66	1.87
		4400	1.95	3.37	4.02	4.67	5.32											0.21	1.06	1.70	1.91
		4500	1.82	3.21	3.84	4.46	5.07											0.22	1.09	1.74	1.95
		4600	1.67	3.03	3.65													0.22	1.11	1.78	2.00
		4700	1.51	2.85	3.44													0.23	1.13	1.82	2.04
		4800	1.34	2.65	3.21													0.23	1.16	1.85	2.08
		4900	1.16	2.43	2.97													0.24	1.18	1.89	2.13
		5000	0.97	2.20	2.71													0.24	1.21	1.93	2.17

Where v > 30 m/s, please consult our Applications Engineering Department

			㉚															v (m/s)			
			Dynamically balanced (for details see DIN 2211)															Pulleys			

optibelt
Power Transmission

Power Ratings

Section 20

Nominal Power Rating P_N (kW) for β = 180° and L_d = 3198 mm

Table 50

Pulleys	v (m/s)	n_k (min^{-1})	Datum diameter of small pulley d_{dk} (mm) 140	160	180	200	224	236	250	280	315	355	Additional power (kW) per belt for speed ratio i 1,01 to 1,05	1,06 to 1,26	1,27 to 1,57	>1,57
Statically balanced		**700**	2.62	3.33	4.02	4.70	5.49	5.88	6.32	7.25	8.30	9.44	0.04	0.18	0.29	0.32
		950	3.21	4.11	4.99	5.83	6.82	7.30	7.84	8.97	10.21	11.53	0.05	0.24	0.39	0.44
		1450	4.08	5.30	6.46	7.56	8.80	9.38	10.03	11.32	12.61	13.81	0.07	0.37	0.59	0.67
		2850	4.64	6.11	7.29	8.16	8.75	8.85	8.79	7.99	5.78		0.15	0.73	1.17	1.31
		50	0.34	0.41	0.48	0.55	0.63	0.68	0.72	0.83	0.94	1.08	0.00	0.01	0.02	0.02
		100	0.60	0.73	0.86	0.99	1.15	1.22	1.31	1.50	1.71	1.96	0.01	0.03	0.04	0.05
		150	0.82	1.02	1.20	1.39	1.61	1.72	1.84	2.11	2.42	2.76	0.01	0.04	0.06	0.07
		200	1.04	1.28	1.52	1.76	2.04	2.18	2.34	2.68	3.07	3.51	0.01	0.05	0.08	0.09
		250	1.23	1.53	1.82	2.11	2.45	2.62	2.82	3.23	3.70	4.23	0.01	0.06	0.10	0.12
		300	1.42	1.76	2.11	2.44	2.84	3.04	3.27	3.75	4.29	4.91	0.02	0.08	0.12	0.14
		350	1.59	1.99	2.38	2.76	3.22	3.44	3.70	4.24	4.87	5.56	0.02	0.09	0.14	0.16
		400	1.76	2.20	2.64	3.07	3.58	3.83	4.11	4.72	5.41	6.19	0.02	0.10	0.16	0.18
		450	1.92	2.41	2.89	3.37	3.92	4.20	4.51	5.18	5.94	6.79	0.02	0.12	0.18	0.21
		500	2.07	2.61	3.13	3.65	4.26	4.56	4.90	5.63	6.45	7.36	0.03	0.13	0.21	0.23
		550	2.22	2.80	3.37	3.93	4.58	4.90	5.28	6.06	6.94	7.92	0.03	0.14	0.23	0.25
		600	2.36	2.98	3.59	4.19	4.90	5.24	5.64	6.47	7.41	8.45	0.03	0.15	0.25	0.28
		650	2.49	3.16	3.81	4.45	5.20	5.56	5.99	6.87	7.86	8.96	0.03	0.17	0.27	0.30
	⑤	700	2.62	3.33	4.02	4.70	5.49	5.88	6.32	7.25	8.30	9.44	0.04	0.18	0.29	0.32
		750	2.75	3.50	4.23	4.94	5.78	6.18	6.65	7.63	8.72	9.91	0.04	0.19	0.31	0.35
		800	2.87	3.66	4.43	5.18	6.05	6.48	6.97	7.98	9.12	10.35	0.04	0.21	0.33	0.37
		850	2.99	3.81	4.62	5.40	6.32	6.76	7.27	8.33	9.50	10.77	0.04	0.22	0.35	0.39
		900	3.10	3.96	4.81	5.62	6.57	7.03	7.56	8.66	9.87	11.16	0.05	0.23	0.37	0.42
		950	3.21	4.11	4.99	5.83	6.82	7.30	7.84	8.97	10.21	11.53	0.05	0.24	0.39	0.44
		1000	3.31	4.25	5.16	6.04	7.06	7.55	8.11	9.27	10.54	11.88	0.05	0.26	0.41	0.46
		1050	3.41	4.39	5.33	6.24	7.29	7.79	8.37	9.56	10.85	12.20	0.05	0.27	0.43	0.48
		1100	3.51	4.52	5.49	6.43	7.51	8.03	8.62	9.83	11.14	12.50	0.06	0.28	0.45	0.51
		1150	3.60	4.64	5.65	6.61	7.72	8.25	8.86	10.09	11.41	12.77	0.06	0.29	0.47	0.53
		1200	3.69	4.76	5.80	6.79	7.92	8.47	9.08	10.33	11.66	13.01	0.06	0.31	0.49	0.55
		1250	3.78	4.88	5.94	6.96	8.11	8.67	9.30	10.56	11.90	13.23	0.06	0.32	0.51	0.58
		1300	3.86	4.99	6.08	7.12	8.30	8.86	9.50	10.77	12.11	13.42	0.07	0.33	0.53	0.60
	⑩	1350	3.94	5.10	6.21	7.27	8.47	9.05	9.69	10.97	12.30	13.58	0.07	0.35	0.55	0.62
		1400	4.01	5.20	6.34	7.42	8.64	9.22	9.87	11.15	12.47	13.71	0.07	0.36	0.57	0.65
		1450	4.08	5.30	6.46	7.56	8.80	9.38	10.03	11.32	12.61	13.81	0.07	0.37	0.59	0.67
		1500	4.15	5.40	6.58	7.69	8.94	9.53	10.18	11.46	12.74	13.88	0.08	0.38	0.62	0.69
		1550	4.22	5.49	6.69	7.82	9.08	9.67	10.33	11.60	12.84	13.92	0.08	0.40	0.64	0.71
		1600	4.28	5.57	6.79	7.94	9.21	9.80	10.45	11.71	12.92	13.93	0.08	0.41	0.66	0.74
		1650	4.34	5.65	6.89	8.05	9.33	9.92	10.57	11.81	12.97	13.90	0.08	0.42	0.68	0.76
		1700	4.39	5.73	6.98	8.15	9.43	10.02	10.67	11.89	13.00	13.84	0.09	0.44	0.70	0.78
		1750	4.44	5.80	7.07	8.24	9.53	10.12	10.76	11.95	13.01	13.75	0.09	0.45	0.72	0.81
		1800	4.49	5.87	7.15	8.33	9.62	10.20	10.83	11.99	12.99	13.62	0.09	0.46	0.74	0.83
		1850	4.53	5.93	7.22	8.41	9.69	10.27	10.89	12.02	12.94	13.46	0.09	0.47	0.76	0.85
		1900	4.57	5.98	7.29	8.48	9.76	10.33	10.94	12.02	12.87	13.26	0.10	0.49	0.78	0.88
		1950	4.61	6.04	7.35	8.55	9.81	10.38	10.97	12.01	12.77	13.02	0.10	0.50	0.80	0.90
		2000	4.64	6.08	7.41	8.60	9.86	10.41	10.99	11.97	12.65	12.74	0.10	0.51	0.82	0.92
	⑮	2050	4.67	6.13	7.45	8.65	9.89	10.43	10.99	11.92	12.49		0.11	0.53	0.84	0.95
		2100	4.70	6.16	7.50	8.69	9.91	10.44	10.98	11.84	12.31		0.11	0.54	0.86	0.97
		2150	4.72	6.20	7.53	8.71	9.92	10.43	10.95	11.75	12.10		0.11	0.55	0.88	0.99
		2200	4.74	6.22	7.56	8.74	9.92	10.41	10.91	11.63	11.86		0.11	0.56	0.90	1.01
		2250	4.75	6.25	7.58	8.75	9.91	10.38	10.85	11.49	11.59		0.12	0.58	0.92	1.04
		2300	4.76	6.27	7.60	8.75	9.88	10.34	10.77	11.33			0.12	0.59	0.94	1.06
		2350	4.77	6.28	7.61	8.75	9.84	10.28	10.68	11.14			0.12	0.60	0.96	1.08
		2400	4.77	6.29	7.61	8.73	9.79	10.20	10.57	10.94			0.12	0.62	0.98	1.11
		2450	4.77	6.29	7.60	8.71	9.73	10.11	10.44	10.71			0.13	0.63	1.01	1.13
		2500	4.77	6.28	7.59	8.67	9.66	10.01	10.30	10.45			0.13	0.64	1.03	1.15
		2550	4.76	6.28	7.57	8.63	9.57	9.89					0.13	0.65	1.05	1.18
		2600	4.75	6.26	7.54	8.58	9.47	9.76					0.13	0.67	1.07	1.20
		2650	4.74	6.24	7.51	8.51	9.35	9.61					0.14	0.68	1.09	1.22
	⑳	2700	4.72	6.22	7.47	8.44	9.22	9.44					0.14	0.69	1.11	1.25
		2750	4.69	6.19	7.42	8.36	9.08	9.26					0.14	0.71	1.13	1.27
		2800	4.67	6.15	7.36	8.27	8.92						0.14	0.72	1.15	1.29
		2850	4.64	6.11	7.29	8.16	8.75						0.15	0.73	1.17	1.31
		2900	4.60	6.06	7.22	8.05	8.57						0.15	0.74	1.19	1.34
		2950	4.56	6.01	7.14	7.93	8.37						0.15	0.76	1.21	1.36
		3000	4.52	5.95	7.05	7.79	8.16						0.15	0.77	1.23	1.38

Where v > 30 m/s, please consult our Applications Engineering Department

					㉕	㉚											v (m/s)
						dynamically balanced											Pulleys

optibelt
Power Transmission

Power Ratings

Section C/22

Nominal Power Rating P_N (kW) for $\beta = 180°$ and $L_d = 3808$ mm

Table 51

Pulleys	v (m/s)	n_k (min^{-1})	Datum diameter of small pulley d_{dk} (mm) 180	200	212	224	236	250	265	280	300	315	335	355	375	400	450	Additional power (kW) per belt for speed ratio i 1,01 to 1,05	1,06 to 1,26	1,27 to 1,57	>1,57
Statically balanced		**700**	4.51	5.66	6.35	7.02	7.69	8.47	9.28	10.09	11.16	11.94	12.98	14.00	15.00	16.22	18.58	0.08	0.40	0.63	0.71
		950	5.60	7.08	7.95	8.81	9.67	10.64	11.67	12.69	14.01	14.98	16.24	17.47	18.66	20.10	22.79	0.11	0.54	0.86	0.97
		1450	7.23	9.24	10.42	11.56	12.67	13.93	15.24	16.49	18.08	19.20	20.62	21.93	23.13	24.46	26.56	0.16	0.82	1.31	1.48
		2850	7.54	9.81	10.94	11.91	12.69	13.37	13.79	13.88	13.47	12.74						0.32	1.61	2.58	2.90
		50	0.53	0.64	0.70	0.76	0.83	0.90	0.98	1.06	1.16	1.24	1.34	1.44	1.54	1.67	1.92	0.01	0.03	0.05	0.05
		100	0.95	1.16	1.28	1.39	1.51	1.65	1.80	1.95	2.14	2.28	2.48	2.67	2.86	3.09	3.56	0.01	0.06	0.09	0.10
		150	1.34	1.63	1.80	1.97	2.15	2.35	2.56	2.77	3.05	3.26	3.54	3.81	4.09	4.43	5.10	0.02	0.08	0.14	0.15
		200	1.69	2.07	2.30	2.52	2.75	3.00	3.28	3.55	3.92	4.19	4.55	4.91	5.26	5.70	6.57	0.02	0.11	0.18	0.20
		250	2.03	2.49	2.77	3.04	3.32	3.63	3.97	4.31	4.75	5.08	5.52	5.95	6.39	6.92	7.98	0.03	0.14	0.23	0.25
		300	2.35	2.90	3.22	3.54	3.87	4.24	4.64	5.03	5.55	5.94	6.45	6.97	7.47	8.10	9.34	0.03	0.17	0.27	0.31
		350	2.66	3.28	3.66	4.03	4.40	4.82	5.28	5.73	6.33	6.77	7.36	7.94	8.52	9.24	10.66	0.04	0.20	0.32	0.36
		400	2.95	3.66	4.08	4.49	4.91	5.39	5.90	6.41	7.08	7.58	8.24	8.89	9.54	10.34	11.92	0.05	0.23	0.36	0.41
		450	3.23	4.02	4.48	4.95	5.41	5.94	6.51	7.07	7.81	8.36	9.09	9.81	10.53	11.41	13.14	0.05	0.25	0.41	0.46
	(5)	500	3.51	4.37	4.88	5.39	5.89	6.47	7.09	7.71	8.52	9.12	9.92	10.70	11.48	12.44	14.32	0.06	0.28	0.45	0.51
		550	3.77	4.71	5.26	5.81	6.36	6.99	7.67	8.33	9.21	9.86	10.72	11.57	12.41	13.44	15.46	0.06	0.31	0.50	0.56
		600	4.03	5.04	5.63	6.23	6.82	7.50	8.22	8.94	9.88	10.58	11.50	12.41	13.30	14.40	16.55	0.07	0.34	0.54	0.61
		650	4.27	5.36	6.00	6.63	7.26	7.99	8.76	9.52	10.53	11.27	12.25	13.21	14.16	15.33	17.59	0.07	0.37	0.59	0.66
		700	4.51	5.66	6.35	7.02	7.69	8.47	9.28	10.09	11.16	11.94	12.98	14.00	15.00	16.22	18.58	0.08	0.40	0.63	0.71
		750	4.74	5.97	6.69	7.40	8.11	8.93	9.79	10.65	11.77	12.60	13.68	14.75	15.80	17.07	19.53	0.08	0.42	0.68	0.76
		800	4.97	6.26	7.02	7.77	8.52	9.38	10.29	11.18	12.36	13.23	14.36	15.47	16.56	17.89	20.42	0.09	0.45	0.72	0.81
		850	5.18	6.54	7.34	8.13	8.91	9.81	10.76	11.70	12.93	13.83	15.01	16.17	17.30	18.67	21.27	0.10	0.48	0.77	0.87
		900	5.39	6.81	7.65	8.48	9.29	10.24	11.23	12.20	13.48	14.42	15.64	16.83	18.00	19.40	22.05	0.10	0.51	0.81	0.92
		950	5.60	7.08	7.95	8.81	9.67	10.64	11.67	12.69	14.01	14.98	16.24	17.47	18.66	20.10	22.79	0.11	0.54	0.86	0.97
		1000	5.79	7.33	8.24	9.14	10.02	11.04	12.11	13.15	14.52	15.52	16.81	18.07	19.29	20.75	23.46	0.11	0.57	0.91	1.02
	(10)	1050	5.98	7.58	8.52	9.45	10.37	11.42	12.52	13.60	15.01	16.03	17.36	18.64	19.88	21.36	24.07	0.12	0.59	0.95	1.07
		1100	6.16	7.82	8.80	9.76	10.70	11.79	12.92	14.03	15.47	16.52	17.87	19.18	20.43	21.92	24.62	0.12	0.62	1.00	1.12
		1150	6.33	8.05	9.06	10.05	11.02	12.14	13.30	14.44	15.91	16.98	18.36	19.68	20.94	22.43	25.11	0.13	0.65	1.04	1.17
		1200	6.50	8.27	9.31	10.33	11.33	12.47	13.67	14.83	16.34	17.42	18.82	20.15	21.42	22.90	25.53	0.14	0.68	1.09	1.22
		1250	6.66	8.48	9.55	10.60	11.63	12.80	14.02	15.21	16.73	17.83	19.24	20.58	21.85	23.32	25.88	0.14	0.71	1.13	1.27
		1300	6.81	8.69	9.78	10.86	11.91	13.10	14.35	15.56	17.11	18.22	19.64	20.98	22.23	23.69	26.17	0.15	0.74	1.18	1.32
		1350	6.96	8.88	10.00	11.10	12.18	13.40	14.66	15.89	17.46	18.58	20.00	21.33	22.58	24.00	26.37	0.15	0.76	1.22	1.37
		1400	7.09	9.07	10.22	11.34	12.43	13.67	14.96	16.20	17.78	18.91	20.33	21.65	22.87	24.26	26.51	0.16	0.79	1.27	1.42
		1450	7.23	9.24	10.42	11.56	12.67	13.93	15.24	16.49	18.08	19.20	20.62	21.93	23.13	24.46	26.56	0.16	0.82	1.31	1.48
		1500	7.35	9.41	10.60	11.77	12.90	14.18	15.50	16.76	18.35	19.47	20.88	22.16	23.33	24.61	26.54	0.17	0.85	1.36	1.53
	(15)	1550	7.46	9.57	10.78	11.97	13.11	14.41	15.73	17.00	18.60	19.71	21.10	22.36	23.48	24.70	26.43	0.18	0.88	1.40	1.58
		1600	7.57	9.71	10.95	12.15	13.31	14.62	15.95	17.23	18.81	19.92	21.28	22.51	23.59	24.72	26.24	0.18	0.91	1.45	1.63
		1650	7.67	9.85	11.11	12.32	13.49	14.81	16.15	17.42	19.00	20.10	21.43	22.61	23.64	24.69	25.96	0.19	0.93	1.49	1.68
		1700	7.77	9.98	11.25	12.48	13.66	14.99	16.33	17.60	19.17	20.24	21.54	22.67	23.64	24.59	25.59	0.19	0.96	1.54	1.73
		1750	7.85	10.10	11.38	12.62	13.82	15.14	16.49	17.75	19.30	20.35	21.61	22.69	23.58	24.42	25.13	0.20	0.99	1.58	1.78
		1800	7.93	10.20	11.50	12.75	13.95	15.28	16.63	17.88	19.40	20.43	21.64	22.65				0.20	1.02	1.63	1.83
		1850	8.00	10.30	11.61	12.87	14.07	15.41	16.74	17.98	19.47	20.47	21.62	22.57				0.21	1.05	1.67	1.88
		1900	8.06	10.39	11.71	12.97	14.18	15.51	16.83	18.06	19.51	20.47	21.57	22.44				0.22	1.07	1.72	1.93
		1950	8.12	10.46	11.79	13.06	14.27	15.59	16.90	18.10	19.52	20.44	21.47	22.25				0.22	1.10	1.77	1.98
		2000	8.16	10.53	11.87	13.14	14.34	15.65	16.95	18.13	19.50	20.37	21.32	22.02				0.23	1.13	1.81	2.04
		2050	8.20	10.58	11.92	13.20	14.40	15.70	16.97	18.12	19.44							0.23	1.16	1.86	2.09
	(20)	2100	8.23	10.63	11.97	13.24	14.43	15.72	16.97	18.09	19.35							0.24	1.19	1.90	2.14
		2150	8.25	10.66	12.00	13.27	14.45	15.72	16.95	18.03	19.23							0.24	1.22	1.95	2.19
		2200	8.26	10.68	12.02	13.28	14.45	15.71	16.90	17.94	19.07							0.25	1.24	1.99	2.24
		2250	8.26	10.69	12.03	13.28	14.44	15.67	16.83	17.82	18.87							0.25	1.27	2.04	2.29
		2300	8.25	10.68	12.02	13.26	14.40	15.60	16.73									0.26	1.30	2.08	2.34
		2350	8.24	10.67	12.00	13.23	14.35	15.52	16.60									0.27	1.33	2.13	2.39
		2400	8.21	10.64	11.96	13.17	14.27	15.41	16.45									0.27	1.36	2.17	2.44
		2450	8.18	10.60	11.91	13.10	14.18	15.28	16.26									0.28	1.39	2.22	2.49
		2500	8.13	10.55	11.84	13.02	14.07	15.13	16.06									0.28	1.41	2.26	2.54
		2550	8.08	10.48	11.76	12.91	13.94											0.29	1.44	2.31	2.60
		2600	8.01	10.40	11.66	12.79	13.78											0.29	1.47	2.35	2.65
	(25)	2650	7.94	10.31	11.55	12.65	13.61											0.30	1.50	2.40	2.70
		2700	7.86	10.20	11.42	12.49	13.41											0.31	1.53	2.44	2.75
		2750	7.76	10.08	11.28	12.32	13.19											0.31	1.56	2.49	2.80
		2800	7.66	9.95	11.12	12.12												0.32	1.58	2.53	2.85
		2850	7.54	9.81	10.94	11.91												0.32	1.61	2.58	2.90
		2900	7.42	9.64	10.75	11.67												0.33	1.64	2.63	2.95
		2950	7.28	9.47	10.54	11.42												0.33	1.67	2.67	3.00
		3000	7.14	9.28	10.31	11.15												0.34	1.70	2.72	3.05
		3050	6.98	9.08														0.35	1.73	2.76	3.10
		3100	6.81	8.86														0.35	1.75	2.81	3.15
	(30)	3150	6.63	8.62														0.36	1.78	2.85	3.21
		3200	6.44	8.37														0.36	1.81	2.90	3.26
		3250	6.24	8.11														0.37	1.84	2.94	3.31

Where v > 30 m/s, please consult our Applications Engineering Department

v (m/s)

Dynamically balanced (for details see DIN 2211) — Pulleys

optibelt
Power Transmission

Power Ratings

Section 25

Nominal Power Rating P_N (kW) for $\beta = 180°$ and $L_d = 4561$ mm

Table 52

Pulleys	v (m/s)	n_k (min^{-1})	Datum diameter of small pulley d_{dk} (mm)										Additional power (kW) per belt for speed ratio i			
			224	236	250	280	315	355	400	450	500	560	1,01 to 1,05	1,06 to 1,26	1,27 to 1,57	>1,57
Statically balanced		**700**	5.68	6.47	7.38	9.28	11.45	13.84	16.43	19.16	21.74	24.62	0.12	0.61	0.97	1.09
		950	6.86	7.86	9.00	11.38	14.03	16.90	19.91	22.94	25.63	28.37	0.16	0.82	1.32	1.48
		1450	8.15	9.43	10.88	13.78	16.81	19.77	22.40	24.36	25.21	24.60	0.25	1.26	2.01	2.26
		2850	2.14	2.79	3.23	2.91	0.19						0.49	2.47	3.95	4.44
		50	0.71	0.78	0.87	1.05	1.26	1.50	1.76	2.06	2.35	2.69	0.01	0.04	0.07	0.08
		100	1.26	1.40	1.56	1.91	2.31	2.76	3.26	3.81	4.35	5.00	0.02	0.09	0.14	0.16
		150	1.76	1.96	2.20	2.69	3.27	3.92	4.64	5.44	6.22	7.15	0.03	0.13	0.21	0.23
		200	2.22	2.48	2.79	3.43	4.18	5.02	5.96	6.98	7.99	9.19	0.03	0.17	0.28	0.31
		250	2.65	2.97	3.34	4.13	5.04	6.07	7.21	8.46	9.69	11.14	0.04	0.22	0.35	0.39
		300	3.06	3.43	3.87	4.80	5.87	7.08	8.41	9.87	11.30	12.99	0.05	0.26	0.42	0.47
		350	3.44	3.88	4.38	5.44	6.67	8.05	9.57	11.23	12.86	14.76	0.06	0.30	0.49	0.55
	⑤	400	3.81	4.30	4.86	6.06	7.43	8.98	10.68	12.53	14.34	16.45	0.07	0.35	0.55	0.62
		450	4.16	4.70	5.33	6.65	8.17	9.87	11.75	13.78	15.75	18.05	0.08	0.39	0.62	0.70
		500	4.49	5.09	5.77	7.22	8.88	10.74	12.77	14.97	17.10	19.56	0.09	0.43	0.69	0.78
		550	4.81	5.45	6.20	7.77	9.56	11.56	13.75	16.11	18.37	20.97	0.10	0.48	0.76	0.86
		600	5.12	5.81	6.61	8.29	10.22	12.36	14.69	17.18	19.57	22.29	0.10	0.52	0.83	0.94
		650	5.41	6.15	7.00	8.80	10.85	13.12	15.58	18.20	20.70	23.51	0.11	0.56	0.90	1.01
		700	5.68	6.47	7.38	9.28	11.45	13.84	16.43	19.16	21.74	24.62	0.12	0.61	0.97	1.09
		750	5.95	6.78	7.73	9.75	12.02	14.53	17.22	20.05	22.70	25.61	0.13	0.65	1.04	1.17
		800	6.20	7.07	8.08	10.19	12.57	15.18	17.97	20.88	23.57	26.49	0.14	0.69	1.11	1.25
	⑩	850	6.43	7.35	8.40	10.61	13.09	15.79	18.67	21.64	24.35	27.25	0.15	0.74	1.18	1.33
		900	6.65	7.61	8.71	11.00	13.57	16.37	19.31	22.33	25.04	27.88	0.16	0.78	1.25	1.40
		950	6.86	7.86	9.00	11.38	14.03	16.90	19.91	22.94	25.63	28.37	0.16	0.82	1.32	1.48
		1000	7.06	8.09	9.27	11.73	14.46	17.40	20.44	23.48	26.12	28.72	0.17	0.87	1.39	1.56
		1050	7.24	8.30	9.52	12.06	14.86	17.85	20.92	23.93	26.50	28.93	0.18	0.91	1.46	1.64
		1100	7.40	8.50	9.76	12.36	15.22	18.26	21.33	24.31	26.77	28.99	0.19	0.95	1.53	1.72
		1150	7.55	8.69	9.98	12.64	15.56	18.62	21.69	24.60	26.92	28.88	0.20	1.00	1.60	1.79
		1200	7.69	8.85	10.18	12.90	15.86	18.93	21.98	24.80	26.96	28.62	0.21	1.04	1.66	1.87
		1250	7.81	9.00	10.36	13.13	16.12	19.20	22.20	24.90	26.87	28.18	0.22	1.08	1.73	1.95
	⑮	1300	7.92	9.14	10.52	13.33	16.35	19.42	22.36	24.92			0.23	1.13	1.80	2.03
		1350	8.02	9.25	10.66	13.51	16.54	19.59	22.45	24.83			0.23	1.17	1.87	2.10
		1400	8.09	9.35	10.78	13.66	16.69	19.71	22.46	24.65			0.24	1.21	1.94	2.18
		1450	8.15	9.43	10.88	13.78	16.81	19.77	22.40	24.36			0.25	1.26	2.01	2.26
		1500	8.20	9.50	10.96	13.87	16.89	19.78	22.26	23.96			0.26	1.30	2.08	2.34
		1550	8.23	9.54	11.01	13.93	16.92	19.73					0.27	1.34	2.15	2.42
		1600	8.24	9.57	11.05	13.97	16.92	19.63					0.28	1.39	2.22	2.49
		1650	8.24	9.57	11.06	13.97	16.87	19.46					0.29	1.43	2.29	2.57
	⑳	1700	8.22	9.56	11.04	13.94	16.78	19.24					0.29	1.47	2.36	2.65
		1750	8.18	9.52	11.01	13.88	16.64	18.95					0.30	1.52	2.43	2.73
		1800	8.12	9.47	10.95	13.79	16.46						0.31	1.56	2.50	2.81
		1850	8.04	9.39	10.87	13.66	16.23						0.32	1.60	2.57	2.88
		1900	7.95	9.29	10.76	13.50	15.95						0.33	1.65	2.64	2.96
		1950	7.84	9.17	10.62	13.30	15.63						0.34	1.69	2.70	3.04
		2000	7.70	9.03	10.46	13.07	15.25						0.35	1.73	2.77	3.12
		2050	7.55	8.87	10.27	12.80							0.36	1.78	2.84	3.20
	㉕	2100	7.38	8.68	10.06	12.49							0.36	1.82	2.91	3.27
		2150	7.19	8.47	9.82	12.15							0.37	1.86	2.98	3.35
		2200	6.97	8.23	9.55	11.76							0.38	1.91	3.05	3.43
		2250	6.74	7.97	9.25	11.34							0.39	1.95	3.12	3.51
		2300	6.48	7.69	8.92								0.40	1.99	3.19	3.59
		2350	6.21	7.38	8.56								0.41	2.04	3.26	3.66
		2400	5.91	7.04	8.17								0.42	2.08	3.33	3.74
		2450	5.58	6.68	7.75								0.42	2.12	3.40	3.82
		2500	5.24	6.29	7.30								0.43	2.17	3.47	3.90

Where v > 30 m/s, please consult our Applications Engineering Department

	㉚															v (m/s)
Dynamically balanced (for details see DIN 2211)																Pulleys

optibelt
Power Transmission

Power Ratings

Section D/32

Nominal Power Rating P_N (kW) for $\beta = 180°$ and $L_d = 6375$ mm

Table 53

Pulleys	v (m/s)	n_k (min^{-1})	Datum diameter of small pulley d_{dk} (mm)													Additional power (kW) per belt for speed ratio i			
			315	355	375	400	425	450	500	560	630	670	710	750	800	900	1,01 to 1,05	1,06 to 1,26	1,27 to 1,57	>1,57
Statically balanced		**700**	15.30	19.17	21.05	23.36	25.62	27.82	32.05	36.82	41.91	44.59	47.08	49.38	51.98	56.17	0.23	1.14	1.82	2.05
		950	18.50	23.20	25.45	28.15	30.75	33.23	37.80	42.59	47.12	49.16	50.77	51.93	52.71	51.90	0.31	1.54	2.47	2.78
		1450	21.43	26.56	28.81	31.31	33.45	35.22	37.54	38.01	35.03						0.47	2.36	3.77	4.24
		20	0.80	0.96	1.04	1.14	1.24	1.34	1.54	1.78	2.05	2.21	2.36	2.51	2.71	3.08	0.01	0.03	0.05	0.06
		40	1.46	1.77	1.93	2.12	2.31	2.50	2.87	3.32	3.84	4.13	4.42	4.71	5.07	5.79	0.01	0.06	0.10	0.12
		60	2.08	2.53	2.75	3.03	3.31	3.58	4.13	4.77	5.52	5.95	6.37	6.79	7.31	8.34	0.02	0.10	0.16	0.18
		80	2.66	3.25	3.54	3.90	4.26	4.61	5.32	6.17	7.14	7.69	8.24	8.78	9.46	10.80	0.03	0.13	0.21	0.23
		100	3.22	3.94	4.29	4.74	5.18	5.61	6.48	7.51	8.70	9.38	10.05	10.71	11.54	13.18	0.03	0.16	0.26	0.29
		120	3.76	4.61	5.03	5.55	6.07	6.58	7.61	8.82	10.23	11.02	11.81	12.59	13.56	15.49	0.04	0.19	0.31	0.35
		140	4.28	5.26	5.74	6.34	6.94	7.53	8.71	10.10	11.71	12.62	13.52	14.42	15.53	17.73	0.05	0.23	0.36	0.41
		160	4.79	5.89	6.43	7.11	7.78	8.45	9.78	11.35	13.16	14.19	15.20	16.21	17.46	19.93	0.05	0.26	0.42	0.47
		180	5.29	6.51	7.11	7.87	8.61	9.36	10.83	12.57	14.58	15.72	16.84	17.96	19.34	22.06	0.06	0.29	0.47	0.53
		200	5.77	7.11	7.78	8.61	9.43	10.24	11.86	13.77	15.97	17.22	18.45	19.67	21.18	24.15	0.06	0.32	0.52	0.58
		220	6.24	7.71	8.43	9.33	10.22	11.11	12.87	14.95	17.34	18.69	20.02	21.34	22.97	26.18	0.07	0.36	0.57	0.64
		240	6.70	8.29	9.07	10.04	11.01	11.97	13.86	16.10	18.68	20.12	21.56	22.98	24.73	28.16	0.08	0.39	0.62	0.70
		260	7.16	8.86	9.70	10.74	11.78	12.80	14.84	17.24	19.99	21.53	23.06	24.58	26.44	30.09	0.08	0.42	0.68	0.76
		280	7.60	9.42	10.31	11.43	12.53	13.63	15.79	18.35	21.27	22.91	24.54	26.14	28.11	31.96	0.09	0.45	0.73	0.82
		300	8.04	9.97	10.92	12.10	13.27	14.44	16.73	19.44	22.53	24.27	25.98	27.67	29.74	33.78	0.10	0.49	0.78	0.88
	⑤	320	8.47	10.51	11.51	12.77	14.00	15.23	17.66	20.51	23.77	25.59	27.39	29.16	31.33	35.55	0.10	0.52	0.83	0.94
		340	8.89	11.04	12.10	13.42	14.72	16.01	18.56	21.56	24.97	26.88	28.76	30.61	32.87	37.26	0.11	0.55	0.88	0.99
		360	9.30	11.56	12.68	14.06	15.43	16.78	19.46	22.59	26.16	28.15	30.10	32.02	34.37	38.90	0.12	0.58	0.94	1.05
		380	9.71	12.07	13.24	14.69	16.12	17.54	20.33	23.60	27.31	29.38	31.41	33.40	35.83	40.49	0.12	0.62	0.99	1.11
		400	10.11	12.58	13.80	15.31	16.80	18.28	21.19	24.59	28.44	30.59	32.68	34.74	37.24	42.02	0.13	0.65	1.04	1.17
		420	10.50	13.08	14.35	15.92	17.47	19.01	22.03	25.56	29.55	31.76	33.92	36.03	38.60	43.48	0.14	0.68	1.09	1.23
		440	10.88	13.56	14.89	16.52	18.13	19.73	22.86	26.51	30.62	32.90	35.12	37.29	39.91	44.88	0.14	0.71	1.14	1.29
		460	11.26	14.04	15.41	17.11	18.78	20.43	23.67	27.44	31.67	34.01	36.29	38.50	41.18	46.21	0.15	0.75	1.20	1.34
		480	11.63	14.52	15.93	17.69	19.42	21.12	24.46	28.34	32.69	35.09	37.41	39.67	42.39	47.47	0.16	0.78	1.25	1.40
		500	12.00	14.98	16.45	18.25	20.04	21.80	25.24	29.23	33.69	36.13	38.50	40.80	43.55	48.66	0.16	0.81	1.30	1.46
		520	12.36	15.44	16.95	18.81	20.65	22.46	26.00	30.09	34.65	37.14	39.55	41.88	44.66	49.78	0.17	0.84	1.35	1.52
		540	12.71	15.88	17.44	19.36	21.25	23.11	26.74	30.93	35.58	38.12	40.56	42.91	45.71	50.82	0.18	0.88	1.40	1.58
		560	13.06	16.32	17.92	19.90	21.84	23.75	27.47	31.75	36.49	39.06	41.53	43.90	46.71	51.78	0.18	0.91	1.46	1.64
		580	13.40	16.75	18.40	20.42	22.42	24.37	28.18	32.55	37.36	39.96	42.46	44.84	47.64	52.67	0.19	0.94	1.51	1.69
	⑩	600	13.73	17.18	18.86	20.94	22.98	24.98	28.87	33.32	38.20	40.83	43.34	45.73	48.52	53.47	0.19	0.97	1.56	1.75
		620	14.06	17.59	19.32	21.45	23.53	25.58	29.54	34.07	39.01	41.66	44.18	46.56	49.34	54.19	0.20	1.01	1.61	1.81
		640	14.38	18.00	19.77	21.94	24.07	26.16	30.20	34.79	39.79	42.45	44.98	47.35	50.10	54.82	0.21	1.04	1.66	1.87
		660	14.69	18.40	20.20	22.43	24.60	26.73	30.83	35.49	40.53	43.20	45.72	48.08	50.79	55.36	0.21	1.07	1.72	1.93
		680	15.00	18.79	20.63	22.90	25.11	27.28	31.45	36.17	41.24	43.92	46.43	48.76	51.42	55.81	0.22	1.10	1.77	1.99
		700	15.30	19.17	21.05	23.36	25.62	27.82	32.05	36.82	41.91	44.59	47.08	49.38	51.98	56.17	0.23	1.14	1.82	2.05
		720	15.59	19.54	21.46	23.81	26.11	28.34	32.63	37.44	42.55	45.22	47.68	49.95	52.47	56.44	0.23	1.17	1.87	2.10
		740	15.88	19.90	21.86	24.25	26.58	28.85	33.19	38.04	43.16	45.80	48.24	50.45	52.89	56.61	0.24	1.20	1.92	2.16
		760	16.16	20.26	22.25	24.68	27.04	29.34	33.73	38.61	43.72	46.35	48.74	50.90	53.24	56.67	0.25	1.23	1.98	2.22
		780	16.44	20.61	22.63	25.10	27.49	29.82	34.25	39.15	44.25	46.84	49.19	51.29	53.52	56.64	0.25	1.27	2.03	2.28
		800	16.71	20.95	23.00	25.50	27.93	30.28	34.75	39.66	44.74	47.30	49.59	51.61	53.73	56.50	0.26	1.30	2.08	2.34
		820	16.97	21.28	23.36	25.90	28.35	30.73	35.23	40.15	45.19	47.70	49.94	51.87			0.27	1.33	2.13	2.40
		840	17.22	21.60	23.71	26.28	28.76	31.16	35.68	40.61	45.60	48.06	50.22	52.07			0.27	1.36	2.18	2.45
		860	17.47	21.91	24.05	26.65	29.16	31.57	36.12	41.04	45.97	48.38	50.46	52.20			0.28	1.40	2.24	2.51
		880	17.71	22.21	24.38	27.00	29.54	31.97	36.53	41.44	46.30	48.64	50.63	52.26			0.29	1.43	2.29	2.57
	⑮	900	17.95	22.51	24.70	27.35	29.90	32.35	36.92	41.81	46.59	48.85	50.74	52.25			0.29	1.46	2.34	2.63
		920	18.18	22.79	25.00	27.68	30.25	32.71	37.29	42.14	46.84	49.01					0.30	1.49	2.39	2.69
		940	18.40	23.07	25.30	28.00	30.59	33.06	37.64	42.45	47.04	49.12					0.31	1.53	2.44	2.75
		960	18.61	23.33	25.59	28.31	30.91	33.39	37.96	42.72	47.19	49.18					0.31	1.56	2.50	2.81
		980	18.82	23.59	25.86	28.60	31.21	33.70	38.26	42.97	47.31	49.18					0.32	1.59	2.55	2.86
		1000	19.02	23.83	26.13	28.88	31.50	33.99	38.53	43.18	47.37	49.13					0.32	1.62	2.60	2.92
		1020	19.21	24.07	26.38	29.15	31.78	34.26	38.78	43.35	47.39						0.33	1.66	2.65	2.98
		1040	19.39	24.30	26.62	29.40	32.04	34.52	39.01	43.49	47.36						0.34	1.69	2.70	3.04
		1060	19.57	24.51	26.85	29.64	32.28	34.76	39.21	43.60	47.29						0.34	1.72	2.76	3.10
		1080	19.74	24.72	27.07	29.87	32.50	34.97	39.38	43.67	47.16						0.35	1.75	2.81	3.16
		1100	19.90	24.92	27.27	30.08	32.71	35.17	39.53	43.71	46.99						0.36	1.79	2.86	3.21
		1120	20.06	25.10	27.47	30.28	32.91	35.35	39.66	43.71							0.36	1.82	2.91	3.27
		1140	20.20	25.28	27.65	30.46	33.08	35.51	39.75	43.67							0.37	1.85	2.96	3.33
		1160	20.34	25.44	27.82	30.63	33.24	35.65	39.82	43.60							0.38	1.88	3.02	3.39
		1180	20.47	25.59	27.98	30.78	33.38	35.77	39.86	43.49							0.38	1.92	3.07	3.45
	⑳	1200	20.60	25.74	28.12	30.92	33.50	35.86	39.87	43.34							0.39	1.95	3.12	3.51
		1220	20.71	25.87	28.25	31.04	33.61	35.94	39.86								0.40	1.98	3.17	3.56
		1240	20.82	25.99	28.37	31.15	33.69	35.99	39.82								0.40	2.01	3.22	3.62
		1260	20.92	26.10	28.48	31.24	33.76	36.03	39.74								0.41	2.05	3.28	3.68
		1280	21.01	26.20	28.57	31.32	33.81	36.04	39.64								0.42	2.08	3.33	3.74
		1300	21.09	26.28	28.65	31.38	33.84	36.03	39.51								0.42	2.11	3.38	3.80
		1320	21.16	26.36	28.72	31.43	33.86	36.00									0.43	2.14	3.43	3.86
		1340	21.23	26.42	28.77	31.45	33.85	35.94									0.44	2.18	3.48	3.92
		1360	21.29	26.47	28.81	31.47	33.82	35.86									0.44	2.21	3.53	3.97
		1380	21.34	26.51	28.83	31.46	33.78	35.76									0.45	2.24	3.59	4.03
		1400	21.37	26.54	28.84	31.44	33.71	35.64									0.45	2.27	3.64	4.09

Where v > 30 m/s, please consult our Applications Engineering Department

	㉕		㉚		v (m/s)
		Dynamically balanced (for details see DIN 2211)			Pulleys

optibelt
Power Transmission

Power Ratings

Section E/40

Nominal Power Rating P_N (kW) for $\beta = 180°$ and $L_d = 7180$ mm

Table 54

Pulleys	v (m/s)	n_k (min^{-1})	Datum diameter of small pulley d_{dk} (mm) 450	500	560	630	670	710	750	800	850	900	950	1000	Additional power (kW) per belt for speed ratio i 1,01 to 1,05	1,06 to 1,26	1,27 to 1,57	>1,57
Statically balanced		**700**	26.44	31.70	37.57	43.78	47.00	49.97	52.68	55.67	58.21	60.27	61.83	62.87	0.38	1.92	3.07	3.45
		950	29.78	35.30	40.95	46.07	48.23	49.80	50.75	51.00	50.17	48.20	45.02		0.52	2.60	4.16	4.68
		1450	24.24	26.19	25.31	19.38									0.79	3.97	6.35	7.14
		20	1.47	1.72	2.02	2.37	2.57	2.76	2.96	3.20	3.44	3.68	3.92	4.16	0.01	0.05	0.09	0.10
		40	2.70	3.17	3.74	4.40	4.77	5.14	5.51	5.97	6.42	6.88	7.33	7.78	0.02	0.11	0.18	0.20
		60	3.83	4.52	5.34	6.29	6.83	7.37	7.90	8.57	9.22	9.88	10.53	11.18	0.03	0.16	0.26	0.30
		80	4.90	5.80	6.87	8.10	8.80	9.50	10.19	11.05	11.90	12.75	13.60	14.43	0.04	0.22	0.35	0.39
		100	5.92	7.03	8.34	9.85	10.70	11.55	12.40	13.44	14.49	15.52	16.55	17.57	0.05	0.27	0.44	0.49
		120	6.91	8.21	9.76	11.53	12.54	13.54	14.53	15.77	16.99	18.20	19.41	20.60	0.07	0.33	0.53	0.59
		140	7.87	9.36	11.13	13.17	14.33	15.47	16.61	18.02	19.42	20.80	22.18	23.54	0.08	0.38	0.61	0.69
		160	8.80	10.48	12.47	14.77	16.06	17.35	18.63	20.21	21.78	23.33	24.87	26.39	0.09	0.44	0.70	0.79
		180	9.70	11.57	13.78	16.32	17.76	19.18	20.59	22.34	24.07	25.79	27.48	29.16	0.10	0.49	0.79	0.89
	(5)	200	10.58	12.63	15.05	17.84	19.41	20.97	22.51	24.42	26.30	28.17	30.01	31.83	0.11	0.55	0.88	0.98
		220	11.43	13.66	16.29	19.32	21.02	22.71	24.37	26.44	28.47	30.48	32.47	34.42	0.12	0.60	0.96	1.08
		240	12.27	14.67	17.51	20.76	22.59	24.40	26.19	28.40	30.58	32.73	34.84	36.93	0.13	0.66	1.05	1.18
		260	13.08	15.66	18.69	22.17	24.12	26.05	27.96	30.31	32.62	34.90	37.14	39.34	0.14	0.71	1.14	1.28
		280	13.88	16.62	19.85	23.54	25.62	27.66	29.68	32.16	34.60	37.00	39.35	41.66	0.15	0.77	1.23	1.38
		300	14.66	17.56	20.98	24.88	27.07	29.23	31.35	33.96	36.52	39.02	41.48	43.88	0.16	0.82	1.31	1.48
		320	15.42	18.48	22.09	26.19	28.49	30.75	32.97	35.70	38.37	40.97	43.52	46.01	0.18	0.88	1.40	1.58
		340	16.16	19.38	23.16	27.46	29.86	32.22	34.54	37.38	40.15	42.85	45.48	48.03	0.19	0.93	1.49	1.67
		360	16.88	20.26	24.21	28.70	31.20	33.65	36.06	39.00	41.86	44.64	47.34	49.95	0.20	0.99	1.58	1.77
		380	17.59	21.11	25.23	29.90	32.49	35.04	37.52	40.55	43.50	46.35	49.10	51.76	0.21	1.04	1.66	1.87
		400	18.28	21.94	26.23	31.06	33.75	36.37	38.93	42.05	45.06	47.97	50.77	53.47	0.22	1.09	1.75	1.97
	(10)	420	18.95	22.76	27.19	32.19	34.96	37.66	40.29	43.48	46.55	49.51	52.34	55.05	0.23	1.15	1.84	2.07
		440	19.60	23.54	28.13	33.29	36.13	38.90	41.59	44.84	47.97	50.96	53.81	56.52	0.24	1.20	1.93	2.17
		460	20.24	24.31	29.04	34.34	37.26	40.09	42.83	46.14	49.30	52.31	55.17	57.86	0.25	1.26	2.02	2.27
		480	20.86	25.06	29.92	35.36	38.34	41.23	44.02	47.37	50.55	53.57	56.42	59.08	0.26	1.31	2.10	2.36
		500	21.46	25.78	30.78	36.33	39.37	42.31	45.14	48.52	51.72	54.73	57.55	60.16	0.27	1.37	2.19	2.46
		520	22.04	26.48	31.60	37.27	40.36	43.34	46.20	49.60	52.80	55.79	58.57	61.11	0.28	1.42	2.28	2.56
		540	22.61	27.16	32.39	38.17	41.31	44.32	47.20	50.60	53.79	56.75	59.46	61.92	0.30	1.48	2.37	2.66
		560	23.15	27.81	33.15	39.03	42.20	45.24	48.13	51.53	54.69	57.60	60.23	62.59	0.31	1.53	2.45	2.76
		580	23.68	28.44	33.88	39.84	43.04	46.10	48.99	52.38	55.50	58.33	60.87	63.11	0.32	1.59	2.54	2.86
		600	24.19	29.04	34.58	40.61	43.84	46.90	49.79	53.14	56.21	58.96	61.39	63.48	0.33	1.64	2.63	2.95
	(15)	620	24.68	29.63	35.24	41.34	44.58	47.64	50.51	53.83	56.81	59.46	61.76		0.34	1.70	2.72	3.05
		640	25.15	30.18	35.88	42.02	45.27	48.32	51.17	54.42	57.32	59.85	62.00		0.35	1.75	2.80	3.15
		660	25.60	30.71	36.47	42.65	45.90	48.94	51.75	54.93	57.72	60.12	62.09		0.36	1.81	2.89	3.25
		680	26.03	31.22	37.04	43.24	46.48	49.49	52.25	55.34	58.02	60.26	62.04		0.37	1.86	2.98	3.35
		700	26.44	31.70	37.57	43.78	47.00	49.97	52.68	55.67	58.21	60.27	61.83		0.38	1.92	3.07	3.45
		720	26.84	32.15	38.06	44.27	47.47	50.39	53.02	55.90					0.39	1.97	3.15	3.55
		740	27.21	32.57	38.52	44.71	47.87	50.73	53.29	56.03					0.41	2.03	3.24	3.64
		760	27.56	32.97	38.94	45.10	48.22	51.01	53.47	56.06					0.42	2.08	3.33	3.74
		780	27.89	33.34	39.32	45.44	48.50	51.21	53.57	55.99					0.43	2.14	3.42	3.84
		800	28.19	33.68	39.66	45.73	48.72	51.34	53.59	55.82					0.44	2.19	3.50	3.94
		820	28.48	34.00	39.97	45.96	48.87	51.40							0.45	2.24	3.59	4.04
	(20)	840	28.74	34.28	40.23	46.13	48.96	51.38							0.46	2.30	3.68	4.14
		860	28.98	34.54	40.46	46.25	48.99	51.27							0.47	2.35	3.77	4.24
		880	29.20	34.76	40.64	46.32	48.94	51.09							0.48	2.41	3.86	4.33
		900	29.39	34.95	40.78	46.32	48.83	50.83							0.49	2.46	3.94	4.43
		920	29.57	35.11	40.88	46.27									0.50	2.52	4.03	4.53
		940	29.71	35.24	40.94	46.15									0.51	2.57	4.12	4.63
		960	29.84	35.34	40.95	45.98									0.53	2.63	4.21	4.73
		980	29.93	35.41	40.91	45.74									0.54	2.68	4.29	4.83
		1000	30.01	35.44	40.83	45.43									0.55	2.74	4.38	4.92
		1020	30.06	35.44	40.71	45.07									0.56	2.79	4.47	5.02
		1040	30.08	35.40	40.53	44.63									0.57	2.85	4.56	5.12
	(25)	1060	30.07	35.33	40.31	44.13									0.58	2.90	4.64	5.22
		1080	30.04	35.22	40.04	43.56									0.59	2.96	4.73	5.32
		1100	29.99	35.08	39.72	42.93									0.60	3.01	4.82	5.42
		1120	29.90	34.90	39.35										0.61	3.07	4.91	5.52
		1140	29.79	34.68	38.93										0.62	3.12	4.99	5.61
		1160	29.65	34.43	38.46										0.64	3.18	5.08	5.71
		1180	29.48	34.14	37.93										0.65	3.23	5.17	5.81
		1200	29.29	33.81	37.36										0.66	3.28	5.26	5.91
		1220	29.06	33.44											0.67	3.34	5.34	6.01
		1240	28.80	33.03											0.68	3.39	5.43	6.11
	(30)	1260	28.52	32.58											0.69	3.45	5.52	6.21
		1280	28.20	32.09											0.70	3.50	5.61	6.30
		1300	27.86	31.55											0.71	3.56	5.70	6.40

Where v > 30 m/s, please consult our Applications Engineering Department

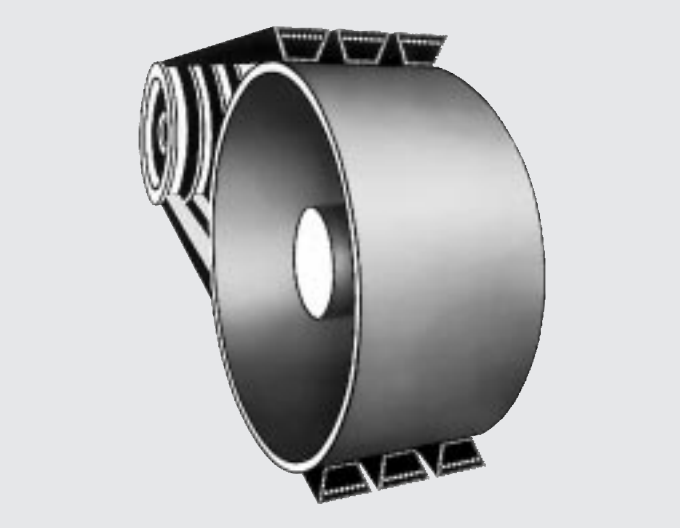
v (m/s)

Dynamically balanced (for details see DIN 2211)

Pulleys

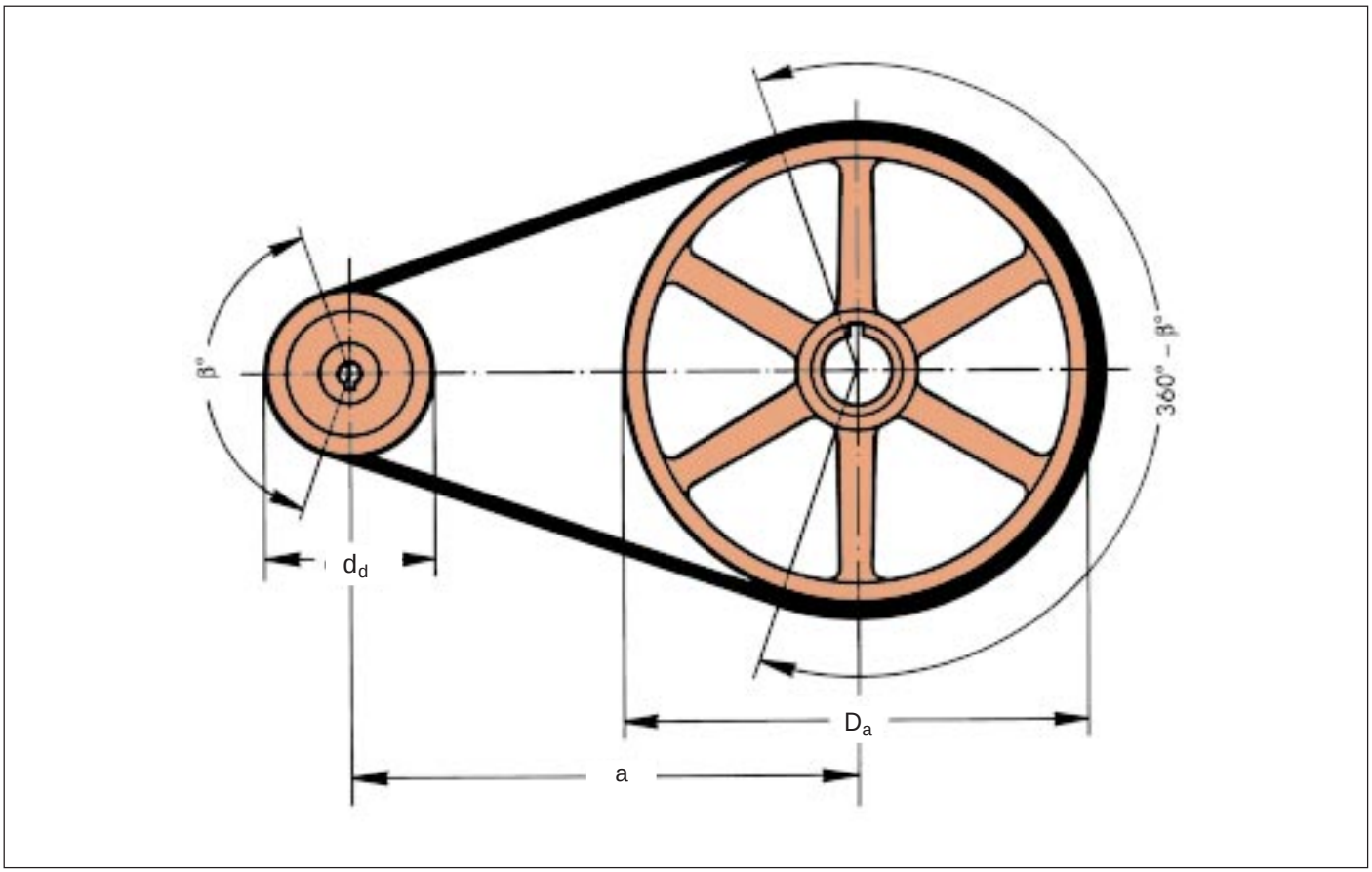
Special Drives
V-Flat Drives

The V-flat drive comprises one grooved pulley and one flat pulley. This type of power transmission can, under certain conditions, be used for drives with intermittent loading or with a large moment of inertia. As flywheels or flat pulleys are often already present, the costs of the drive can be reduced. When converting a flat belt drive to a V-flat drive, it will usually be economic to continue to use the flat pulley.



a	=	drive centre distance	(mm)
b	=	face width of the flat pulley	(mm)
b_u	=	bottom width of the belt	(mm)
b_2	=	face width of the grooved pulley	(mm)
D_a	=	outside diameter of the flat pulley	(mm)
D_Z	=	correction factor for determination of the theoretical diameter	(mm)
d_a	=	outside diameter of the grooved pulley	(mm)
d_d	=	datum diameter of the grooved pulley	(mm)
F_l	=	area of the V-belt on the flat pulley	(cm^2)
f	=	correction factor for calculating the face width of the flat pulley	(mm)
h	=	height of crown per 100 mm pulley face width	(mm)
i	=	speed ratio	
L_{ath}	=	calculated outside length of the Kraftband	(mm)
L_{dth}	=	calculated datum length of the V-belt	(mm)
p_f	=	specific surface pressure	(N/cm^2)
P	=	power to be transmitted by the belt drive	(kW)
S_n	=	circumferential force	(N)
α	=	arc of contact on the flat pulley = 360° - β	(degrees)
kf	=	factor	

Datum length $L_d \triangleq$ pitch length L_w



optibelt
Power Transmission

Special Drives
V-Flat Drives

Calculating V-Flat Drives

The calculation of a V-flat drive uses the same method as the one set out on pages 78 to 80. In order to ensure reliability and efficiency, the V-flat belt drive must fulfil the following requirements:

- The V-grooved pulley must always be the small pulley.
- When using single belts, only classical V-belts sections Z/10, A/13, B/17, C/22, D/32, E/40 must be used.
- Wedge belts must never be used as their narrow base and larger relative height tends to make them turn on their sides and twist.
- All Optibelt KB Kraftbands – both with wedge belts or classical V-belts – are particularly suitable for this type of drive due to their single-belt-characteristic. Turning over even under extreme shock load conditions is prevented.
- V-flat drives are particularly economical when

$$kf = \frac{D_a - d_d}{a} \text{ lies between 0.5 and 1.15}$$

The ideal drive dimensioning is achieved when kf = 0.85. If the kf-factor falls outside the recommended range, it is more economic to specify a normal V-belt drive.

- The following recommendations are made based on the above requirements:

	Classiscal V-belts	Kraftbands
Ratio	$i = \frac{D_a + D_Z}{d_d} \geq 3$	$i = \frac{D_a + D_Z}{d_a} \geq 3$
Drive centre distance	$a_{zul} \geq D_a$	$a_{zul} \geq D_a$
	$a = \frac{D_a - d_d}{0.85}$	$a = \frac{D_a - d_a}{0.85}$
K factor	$kf = \frac{D_a - d_d}{a}$	$kf = \frac{D_a - d_a}{a}$
	$0.5 \leq kf_{zul} \leq 1.15$	

- When calculating the number of belts and the belt tension, it should be noted that a special arc of contact factor c1 must be used as shown in the following table.

Table 55: Arc of contact factor c_1 (for V-flat belt drives only)

$kf = \frac{D_a - d_d}{a}$	β =	c_1
0	180°	0.75
0.07	176°	0.76
0.15	170°	0.77
0.22	167°	0.79
0.29	163°	0.79
0.35	163°	0.79
0.40	156°	0.81
0.45	153°	0.81
0.50	150°	0.82
0.57	146°	0.83
0.64	143°	0.84
0.70	140°	0.85
0.75	137°	0.85
0.80	134°	0.86
0.85	130°	0.86
0.92	125°	0.84
1.00	120°	0.82
1.07	115°	0.80
1.15	110°	0.78
1.21	106°	0.77
1.30	100°	0.73
1.36	96°	0.72
1.45	90°	0.70

- For classical V-belts, the length is calculated using the datum length Ld and for Kraftbands using the outside length La. Therefore, the correction factor D_z must be added to the outside diameter of the flat pulley in order to arrive at the theoretical design diameter.

Correction Factor D_z for Determination of the Theoretical Design Diameter

Classical V-belts

Section	Z/10	A/13	B/17	C/22	D/32	E/40
D_Z (mm)	7	10	13	18	23	25

Kraftbands

Section	3V/ 9J	5V/ 15J	8V/ 25J	SPZ	SPA	SPB	SPC	A/ HA	B/ HB	C/ HC	D/ HD
D_Z (mm)	13	23	41	12	15	19	26	12	20	24	35

Calculating the Datum Length for Classical V-Belts

$$L_{dth} \quad 2a + 1.57\,(d_d + D_a + D_Z) + \frac{(D_a + D_Z - d_d)^2}{4\,a}$$

Calculating the Outside Length for Kraftbands

$$L_{ath} \approx 2a + 1.57\,(d_a + D_a + D_Z) + \frac{(D_a + D_Z - d_a)^2}{4\,a}$$

Length conversion factors are given on pages 145/146. Datum length Ld = datum length L_w.

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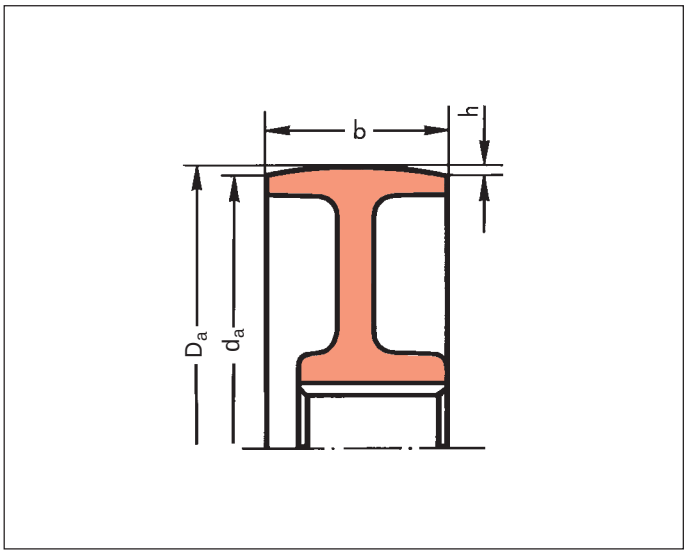
Special Drives
V-Flat Drives

- The flat pulley should be cylindrical in shape. With existing flat pulleys that are to be re-used for a V-flat belt drive, the height of the crown should be checked.



The following conditions must be met:

Maximum Crown Height

h_{max} = 1 mm pro 100 mm pulley face width

$$h = \frac{D_a - d_a}{2} \qquad (h < h_{max})$$

In addition, the pulley face width must be calculated or checked as shown in the following example:

Given / calculated:
V-Grooved pulley 6 grooves
Section B / 17
Drive centre distance a 850 mm

Solution:
$b = b_2 + f$
$b = 120 + 35 =$ **155 mm**

b_2 for classical V-belts, page 41, table 8
b_2 for Kraftbands, page 45, table 14
f from table 56.

Choose a standard flat pulley with face width b = **160 mm.**

Table 56: Factor f for determining the face width of the flat pulley

Z/10, SPZ, A/13/HA, 3V/9J		SPB 5V/15J		C/22/HC, SPC		D/32/HD, 8V/25J		E/40	
a	f	a	f	a	f	a	f	a	f
< 500	20	< 750	25	< 1000	30	< 1250	40	< 1750	45
500-750	25	750-1000	35	1000-1250	40	1250-1750	50	1750-2250	60
> 750	30	> 1000	40	> 1250	50	> 1750	65	> 2250	75

Calculation of the specific surface pressurepulley

Calculation the effective belt tension S_n (N)

$$S_n = \frac{P \cdot 1000}{v}$$

Surface pressure on flat pulley p_f (N / cm²)*

$$p_f = \frac{S_n}{F_l}$$

Area of belt contact on flat pulley F_l (cm²)

$$F_l = \frac{D_a \cdot \pi \cdot \alpha \cdot b_u \cdot z}{36\,000}$$

Recommended surface pressure p_f (N / cm²)*

$p_f \leq 4$ N / cm²*

Formula:

Calculating the static belt tension for V-flat belt drives T (N)

$$T = \frac{500 \cdot (2.25 - c_1) \cdot P_B}{c_1 \cdot z \cdot v} + k \cdot v^2$$

* 10 N / cm² = 1 bar = 10^5 Pascal

In addition to the calculation method set out on pages 78 to 80, the static belt tension for V-flat belt drives must be calculated according to the formulae shown here.

Special Drives
Tension / Guide Idlers

Idlers are grooved or flat pulleys that do not transmit any power in a drive system. As they also generate additional bending stresses in the belt, they should be employed sparingly and, where possible, confined to the following situations:

- with fixed drive centres, in order to produce the required tension and to take up the maximum possible belt stretch and wear
- as damping and guide idlers on very long, unsupported spans. Belts on such drives tend to vibrate more than normal and even to turn over in the pulley grooves
- as outside idlers where the arc of contact on one of the loaded pulleys is too low. Their inclusion increases the arc of contact and often reduces excessive slip or eliminates the need to increase the number of belts,
- as guide idlers on drives where the pulleys are not all on the same plane such as quarter turn drives
- to guide belts past obstructions,
- as pneumatically, hydraulically or spring loaded idlers to maintain an even, constant tension.
- as clutching idlers with which the driven pulley can be engaged or disengaged. Complex clutches are no longer required. Because of their single belt characteristics, Optibelt KB Kraftbands are particularly suited to these applications.

If, for the reasons listed above, it is absolutely essential to employ idlers, the following criteria must be observed when designing the drive:

- idler configuration,
- position of the idler in the belt span,
- idler diameter,
- idler shape,
- allowance for idler travel for fitting and for initial and subsequent tensioning of the belt,
- correction of the power rating P_N

Idler Configuration

In principle, idlers can be used internally or externally depending upon the drive situation.

Unless design requirements call for an outside idler, the inside idler is usually more advantageous. Its diameter can be kept smaller than that of the outside idler.

Depending upon the type of belt, **inside idlers** can either take the form of a grooved or flat pulley.

Table 57: Section dimensions

Belt type	Grooved pulley	Flat pulley
High-performance wedge belts DIN 7753 Part 1 SPZ; SPA; SPB; SPC	●	
High-performance wedge belts USA Standard RMA/MPTA 3V/9N; 5V/15N; 8V/25N	●	
Classical V-belts DIN 2215 Z/10; A/13; B/17; 20; C/22; 25; D/32; E/40	●	●
Kraftbands with high-performance wedge belts 3V/9J; 5V/15J; 8V/25J; SPA; SPZ; SPB; SPC	●	●
Kraftbands with classical V-belts A/HA; B/HB; C/HC; D/HD	●	●

For raw-edge V-belts and Kraftbands the same requirements as in table 57 are valid.

Inside idlers reduce the arc of contact on the loaded pulleys and with it the arc of contact correction factor c1. When calculating the number of belts, the arc of contact correction factor should be selected for the position of the idler at the point of maximum belt stretch (See Table 58, page 116).

Outside idlers must always take the form of flat pulleys as they run on the back of the belt. They increase the arc of contact. Care must be taken to ensure however that the maximum possible belt stretch is taken up and that contact with the opposite span is prevented. The reverse bending caused when outside idlers are used can lead to a reduction of the belt service life.

Special V-belt constructions upon request!

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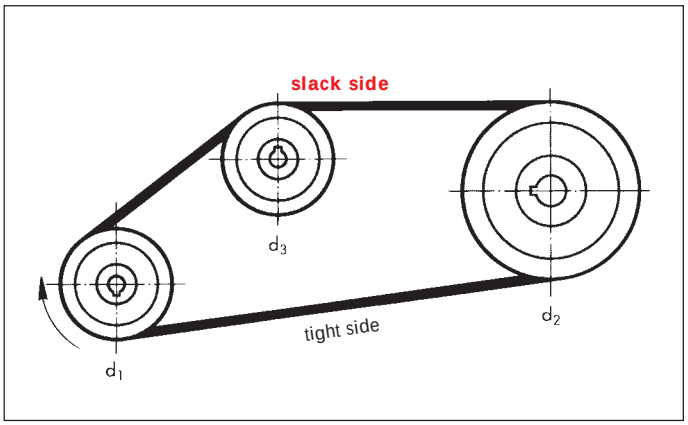
Special Drives
Tension / Guide Idlers

Position of the Idler in the Belt Span

Theoretical power transmission formulae and indeed practice has shown that idlers should, wherever possible, be placed in the slack side of the drive. The tension idler force can then be very significantly reduced. A spring loaded idler must not be employed in a reversing drive as the slack and tight sides of the drive are constantly changing.

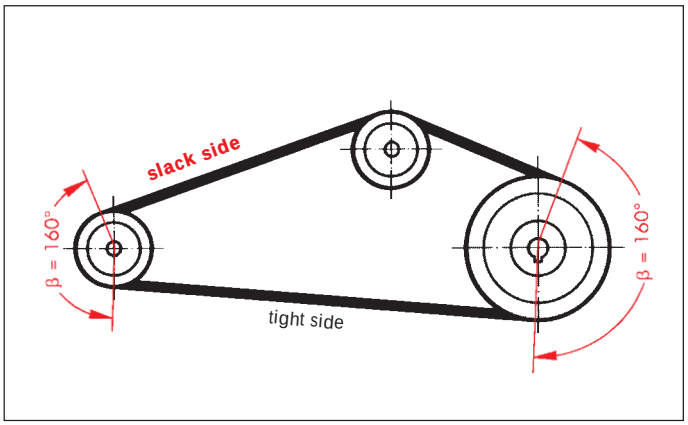
Our Applications Engineering Department will be pleased to assist in the design where spring loaded idlers present special problems.

Fig. 1



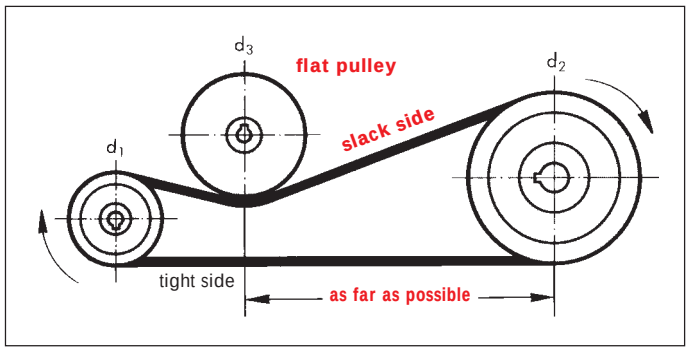
Grooved pulleys can be used as inside idlers anywhere on the slack side. Where possible, however, the arc of contact should be the same on both pulleys when the idler reaches its limit position, i.e. belt stretch is at its maximum.

Fig. 2



Flat pulleys, whether used as inside or outside idlers, are to be placed as far as possible away from the grooved pulley on to which the belt runs next. Any alignment errors between the idler and the pulley and the resultant sideways movement of the belt on the pulley are thus avoided.

Fig. 3



On drives with long belt spans grooved pulleys are the preferred choice for inside idlers because with flat pulleys transverse vibrations and belt turnover can occur.

Minimum Diameter for Inside Idlers

Inside idler ≥ smallest loaded pulley in the drive system or smallest permissible pulley diameter for the section used.

Minimum Diameter for Outside Idlers

Outside idler ≥ 1.35 times the smallest loaded pulley in the drive system.

Exceptions:

Section	Diameter of the smallest loaded pulley in the drive (mm)	Minimum diameter of the outside idler (mm)
Z/10	56 – 63	90
A/13	71 – 90	125
SPZ, 3V/9N	63 – 90	125
SPA	90 – 112	150

The belt service life is significantly reduced if the minimum recommended idler diameter is less than the size recommended.

Idler Design

Grooved pulleys which are used as idlers can normally have standard groove dimensions. On drives subject to severe vibration and with long drive centre distances, it is recommended that deep grooved pulleys be employed.

Flat pulleys should, where possible, be cylindrical and not crowned. Flanged pulleys are recommended as belt guides. The corners formed by the contact surface and pulley flange should be sharp. Round edges encourage the belt to run up on the flanges causing turn over.

Special Drives
Tension / Guide Idlers

The face width or the contact surface between the two flanges is calculated as follows:

$$b = b_2 + m$$

b = face width / contact surface (mm)
b_2 = face width of the grooved pulley (mm)
m = additional value (mm)

Section	Additional value m (mm)
SPZ, 3V/9N, Z/10	15
SPA, A/13	20
SPB, 5V/15N, B/17	25
SPC, C/22	30
8V/25N	35
D/32	40
E/40	45

also applies for raw edge V-belts

Drive Calculation

Calculating the length and determining the number of belts is basically the same as for two pulley drives. Certain details are, however, to be noted:

1. Calculate the belt length over two pulleys using the formula: see notes on standards page 66, 152/153.

$$L_{dth} \approx 2a + 1.57\,(d_{dg} + d_{dk}) + \frac{(d_{dg} - d_{dk})^2}{4a}$$

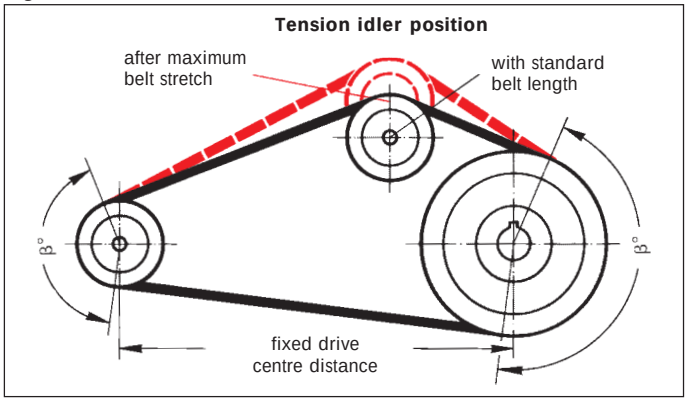
2. If the belt has to be fitted with a fixed drive centre distance, double the adjustment "**y**" must be added to the belt length L_{dth} (see pages 75/ 76).

$$L_d = L_{dth} + 2\,y$$

3. The next largest standard length L_{dSt} should then be selected. A check should be made, usually on the drawing, to determine whether the belt can be adequately tensioned with the idler in the outermost position. In this idler position, both the standard length L_{dSt} and double the adjustment "**x**" must be taken up (see pages 75/76).

$$L_d \text{ for idler end position} = L_{dSt} + 2\,x$$

Fig. 4



Number of Belts

The application of idlers increases the bending stress in the belts. To avoid a reduction in belt service life, the idler correction factor c_4 must also be included in the calculation. This correction factor takes the number of idlers into consideration whilst maintaining the minimum diameter.

Table 58

Number of idlers	c_4
0	1.00
1	0.91
2	0.86
3	0.81

The nominal power rating P_N per belt is, as before, based on the smallest loaded pulley. Calculation of the arc of contact correction factor c_1 must be based on the smallest contact angle of the loaded pulley which occurs when the belt is stretched to its maximum limit.

Table 59: Arc of contact correction factor c_1

β =	c_1	β =	c_1
75°	0.82	175°	1.00
80°	0.84	180°	1.00
85°	0.86	185°	1.00
90°	0.88	190°	1.00
95°	0.90	195°	1.01
100°	0.91	200°	1.01
105°	0.92	205°	1.01
110°	0.93	210°	1.01
115°	0.94	215°	1.01
120°	0.95	220°	1.01
125°	0.96	225°	1.01
130°	0.96	230°	1.01
135°	0.97	240°	1.02
140°	0.97	250°	1.02
145°	0.98		
150°	0.98		
155°	0.99		
160°	0.99		
165°	0.99		
170°	1.00		

The following formula for determining the number of belts is obtained using the idler correction factor c_4:

$$z = \frac{P \cdot c_2}{P_N \cdot c_1 \cdot c_3 \cdot c_4}$$

Special Drives
Twist Drives

Drives in which the belt run is transposed are often simply termed "twist" drives. These can be drives where the shafts are not parallel, whose pulleys and idlers are not all arranged on one plane, or drives with two parallel but counter rotating shafts. Because of the twisting of the belt, this type of drive requires a certain degree of lateral bending flexibility. The cross section of the V-belt is better suited for this purpose than the flat belt. In most applications twist drives use only single V-belts, but drives using belt sets are possible. The crossing of the belt spans and the non-aligned entry of the belt into the pulley leads to a reduction of the belt service life. The entry and exit angle between the belt and the pulley plane should not be more than 5°. The required inclination of the shafts and the pulleys relative to each other and the belt entry and exit angles should be confirmed by practical tests. In addition, certain critical drives may have a considerably improved safety factor if Optibelt special constructions are used.

The most important types of twist drives and the associated design guidelines are illustrated in the following text.

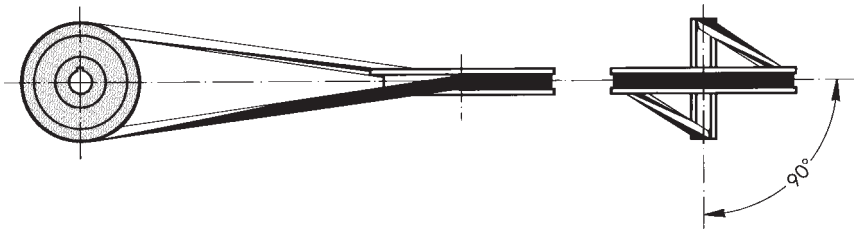
Quarter Twist Drive

The term quarter twist drive is used to describe systems where the shafts are at a 90° angle to each other.

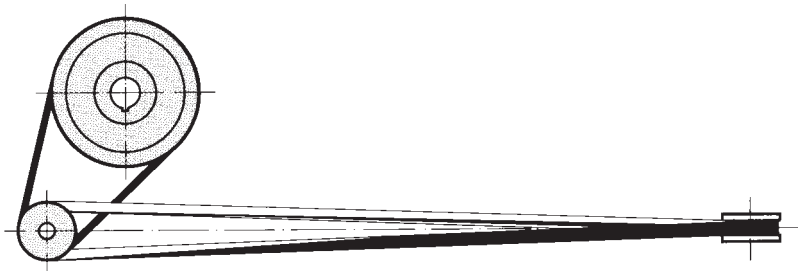
The ratio i or 1:i on quarter twist drives should not be greater than 2.5.

Where this is not possible, a two stage drive should be employed, in which one stage takes the form of a standard V-belt drive.

Quarter Twist Drive Ratio i or 1:i < 2.5

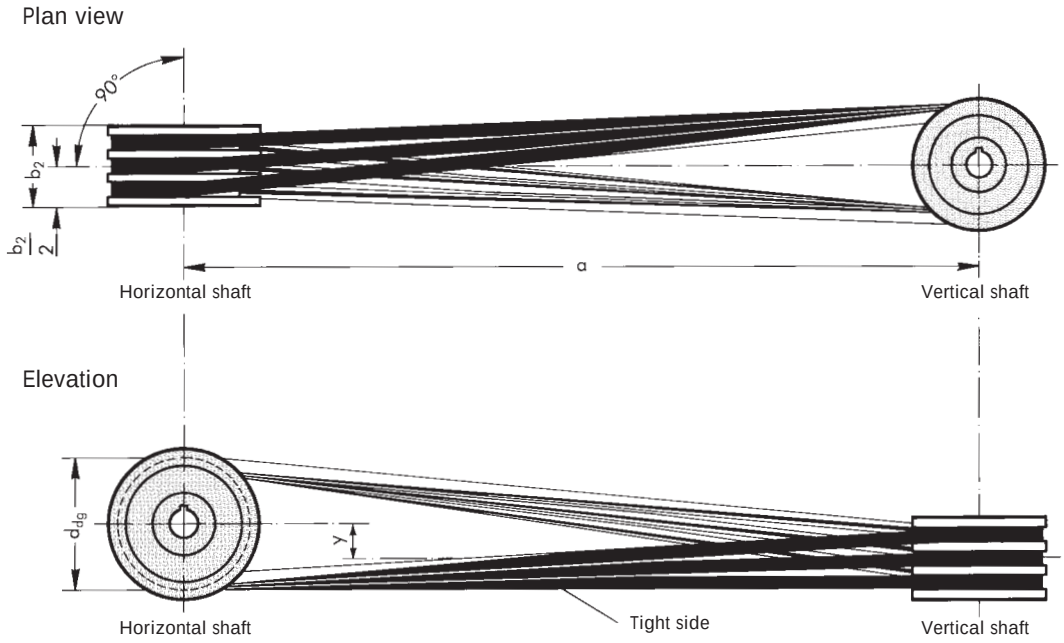


Quarter Twist Drive Ratio i or 1:i > 2.5



Special Drives
Twist Drives

Design guidelines for quarter twist drives



1. $a_{min} = 5.5\ (d_{dg} + b_2)$
2. The drive must be aligned so that a straight line drawn through the centre of the vertical shaft runs through the centre of the face b_2 of the pulley on the horizontal shaft (plan). The horizontal shaft must be at right angles to this straight line.
3. The horizontal centre line of the pulley on the horizontal shaft must be above and at a distance y_1 from the centre line of the pulley on the vertical shaft (elevation). The distance y_1 changes with the drive centre distance 'a'.
4. The direction of rotation must be arranged so that the tight side S_1 is at the bottom.
5. Deep grooved pulleys should be specified where possible for single belt drives. This ensures an improved entry and exit of the belt, thus preventing turnover.
6. Never specify deep grooved pulleys when using Kraftbands. Kraftband pulleys should always be used. We recommend, in any case, that our Applications Department be consulted.
7. When calculating the number of belts, the example given on pages 78 to 80 should be followed. An arc of contact correction factor $c_1 = 1$ must always be used.
8. The static belt tension 'T' should be calculated using the formula on page 113.
9. The drive centre distance must be adjustable so that the belt can be fitted without force, the necessary tension applied, and the belt stretch and wear taken up during its service life.

Table 60

Drive centre distance a (mm)	y_1 (mm) Classical V-belts	y_1 (mm) Wedge belts
1200 ≤ 1500	5	–
> 1500 ≤ 2000	8	5
> 2000 ≤ 2500	12	8
> 2500 ≤ 3000	17	10
> 3000 ≤ 3500	25	15
> 3500 ≤ 4000	35	25
> 4000 ≤ 4500	45	30
> 4500 ≤ 5000	55	40
> 5000 ≤ 5500	65	45
> 5500 ≤ 6000	80	55
> 6000	100	65

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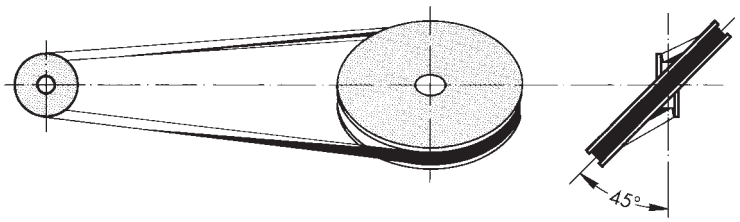
Special Drives
Twist Drives

Eighth twist drives

Eighth twist drives are seldom required. The shafts in this drive system are at an angle of 45° relative to each other.

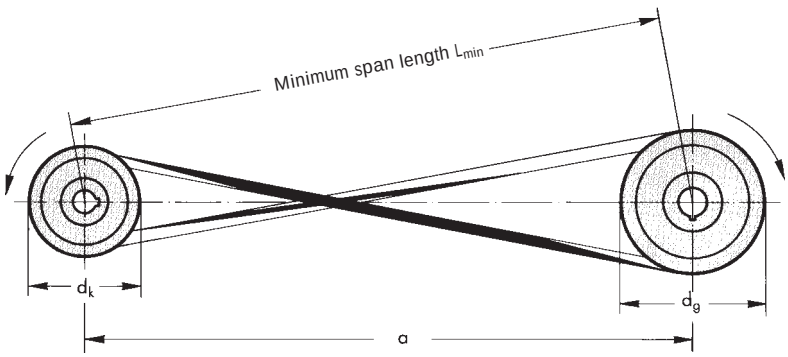
Design guidelines

1. $a_{min} = 4\ (d_{dg} + b_2)$
2. Otherwise the design guidelines for quarter twist drives are applicable.



Drives with 180° twist

The drive and the driven shafts are, as with conventional drives, parallel to each other. The belt is twisted through 180° so that both spans cross. A change in direction is thus achieved at very little cost.



Design guidelines

1. In order to guarantee the perfect running of the belts in the pulley grooves, the belt span length used must not be less than the minimum set out in the following table.

Table 61

Section	Minimum span length L_{min} (mm)
SPZ, 3V/9N	350
SPA	400
SPB, 5V/15N	450
SPC	600
8V/25N	700
A/13	460
B/17	560
C/22	720
D/32	940
E/40	1150

2. As far as possible, the crossover point of the belt should be arranged in the centre of the belt spans. The rubbing of the belt spans against each other is at a minimum at this point. In order to avoid contact completely, it is recommended that a guide pulley be placed in the slack side S_2 near the crossover point.
3. Length calculation

$$L \approx 2a + 1{,}57\ (d_g + d_k) + \frac{(d_g + d_k)^2}{4\ a}$$

4. Otherwise the design guidelines as detailed in points 4 to 9 for quarter twist drives are applicable.

◀ these values also apply for raw edge belts

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Special Drives

optibelt Drive Belts with Aramid Tension Cord

Aramid is an organic polyamide fibre that is manufactured by a complex chemical process. It is to be used wherever maximum stress and reliability is required. The processing of this fibre requires the highest level of experience and know-how as well as sophisticated testing facilities. Aramid is used as the tension cord material for highly loaded V-belts and Kraftbands.

Construction and Properties

Compared to materials customarily used for tension cords e.g. polyesters, Aramid is noted for its extremely low stretch properties. Its tensile strength is almost double that for the same thickness of standard fibre.

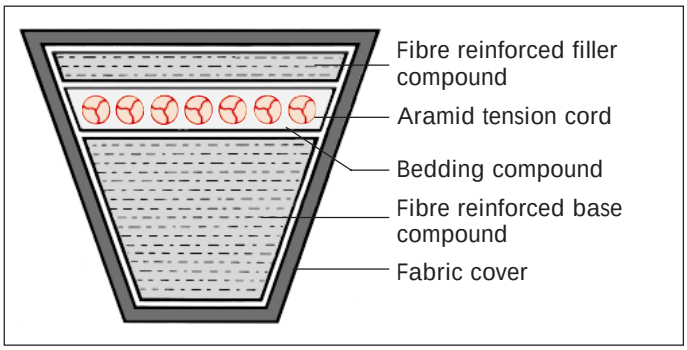
	Tensile strength (cN / tex)	Total extension at fracture (%)	Tension 2% (cN / tex)
Polyester	81	14	15
Aramid	190	4	73

cN = centiNewton Fibre weight: 1 tex = 1 g / 1000 m

Despite its extreme stability, this fibre is remarkably flexible and possesses sufficient elasticity to absorb shock loading or vibration.

These properties, which are of special importance for V-belts and Kraftbands, result in huge improvements in comparison to conventional constructions.

Optibelt V-belts in Aramid cord construction comprise:



The high grade, specially processed Aramid tension cord is embedded in a rubber compound. It is effectively supported by a filler and base of polychloroprene and natural rubber compounds containing transversely arranged fibres. The fabric cover is treated on both sides with a rubber compound and completely envelops the V-belt.

Applications

The advantages of Optibelt V-belts and Kraftbands that use Aramid tension cords are of special benefit where

- high power transmission levels are called for
- there are limitations on the drive width
- tthe adjustment available for tensioning is minimal
- the drive is exposed to high temperatures.

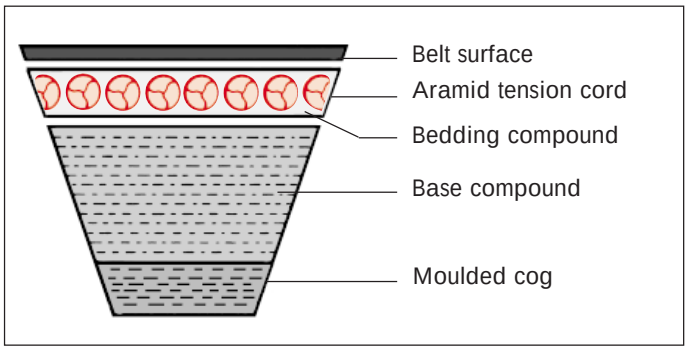
Thus, with the same number of belts and unchanged drive parameters, significantly higher power levels can be transmitted without reducing the service life of the belts. Even drive designs that have previously had to be classified as critical may now be considered as risk free. Service factors are improved; minimal belt stretch results in virtually maintenance free running.

For these reasons that Optibelt V-belts and Kraftbands with Aramid tension cord are to be found on drives with exceptional loading requirements -

- on critical drives in industrial engineering applications,
- on special machines,
- on agricultural machinery and
- on horticultural machinery.

Optibelt drive belts using Aramid tension cords may reduce the costs of the total drive, as there is a saving in both weight and volume due to the reduced installation width. They are oil resistant, and heat resistant up to approx. 100 °C, and dust protected, as standard.

A discussion of all the relevant criteria would be beyond the scope of this manual. We therefore recommend that you contact our Applications Engineering Department to discuss your specific problems.



Special applications can also be designed with raw edge V-belts and Kraftbands employing Aramid tension cords.

Drive Calculation

Calculation must follow the example given on pages 78 to 80.

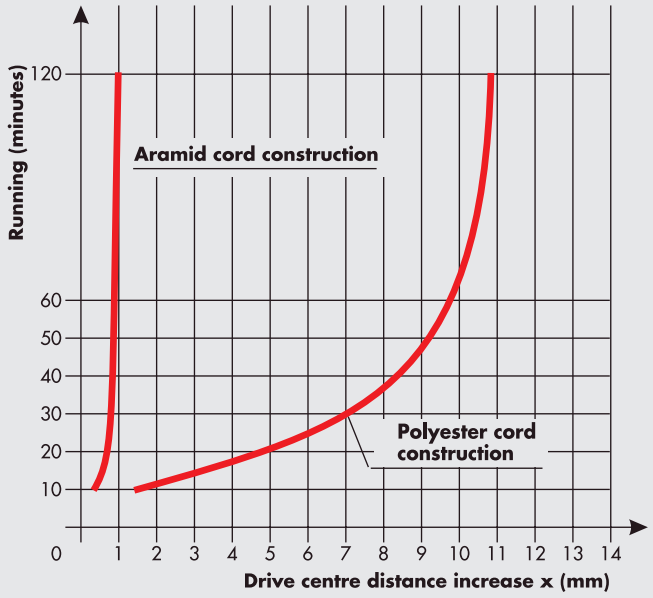
Please ask for the details of the higher power ratings.

Special Drives

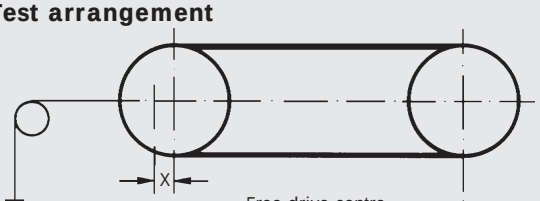
optibelt Drive Belts with Aramid Tension Cord

Diagram 6

Time/extension graph Belt size SPB 2000 L_d



Test arrangement

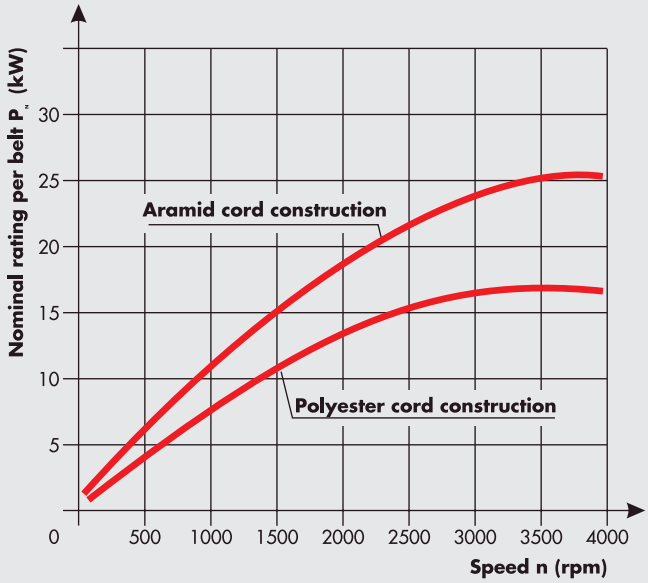


d_1/d_2 =180 mm
n_1 =1750 min^{-1}
Brake load P =15 kW

In this graph, the belt extension under load (drive centre distance increase) is plotted against time, for both materials. After only one hour, the increase with polyester is already several times that of Aramid.

Diagram 7

Power rating graph Belt size SPA 2500 L_d
Datum diameter of the small pulley d_{dk} = 200 mm
Speed ratio i > 1.57



This diagram shows, in a direct comparison, the significantly higher power rating of the Optibelt V-belt with the Aramid cord construction.

Sections / Lengths

Raw edge and wrapped Optibelt V-belts and Kraftbands are available with Aramid to BS/DIN/ISO and USA Standard RMA/MPTA.

Because of Aramid's special properties, belts for multi-grooved drives must be ordered in sets as the set tolerance is matched to the Aramid tension cord.

Lengths and minimum order quantities on request.

Datum length L_d ≙ pitch length L_w; outside length = L_a

optibelt
Power Transmission

Design Hints
Belt Tension for optibelt V-Belts

The correct level of belt tension has a direct and crucial bearing on the trouble free transmission of power and the achievement of acceptable belt service life. Belt tension which is either too high or too low often results in premature failure. Belts which are over tensioned sometimes cause damage to the bearings on the driver or driven units.

Experience has shown that the more common tensioning methods, e.g. the "thumb pressure method" do not ensure tension settings that would enable drives to be operated at optimum efficiency, It is therefore recommended that the required static belt tension 'T' be calculated for each drive using the Optibelt formulae. This tension is the lowest possible required by a drive to transmit the highest power level from the drive, taking account of the normal amount of slip.

Once the belt has been fitted and the initial tension applied, it should be checked using an Optibelt tension gauge. The belt should be monitored regularly during the first few hours of operation experience has shown that the first retensioning should be undertaken after approximately 30 minutes to four hours running under full load. This takes up the initial belt stretch and "bedding in" to the pulley grooves.

After approximately 24 hours of operation, it is often advisable to check the drive and retension the belts if necessary, particularly when not continuously run under full load. The time between checks can then be significantly increased. Our installation and maintenance aids on page 130 · 132 should be observed.

An over or under tensioning of the drive will be avoided if the belt tension is calculated, set and checked using one of the following methods:

I. Checking the Belt Tension by Span Deflection

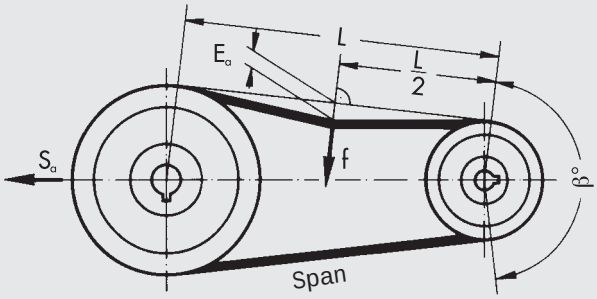
This method provides an indirect measurement of the calculated or actual static belt tension. It is applicable for belt sections SPZ, SPA, SPB, SPC, 3V/9N, 5V/15N, Z/10, A/13, B/17, 20, C/22, 25, D/32, XPZ, XPA, XPB, XPC, 3VX, 5VX, ZX/X10, AX/X13, BX/X17, CX/X22.

E	= belt deflection per 100 mm span length	(mm)
E_a	= belt deflection for a given span length	(mm)
f	= load used to set belt tension	(N)
k	= constant for calculation of centrifugal force	
L	= drive span length	(mm)
S_a	= minimum static shaft load	(N)
T	= minimum static tension per belt	(N)

1. Calculate the static belt tension using the following formula:

$$T \approx \frac{500 \cdot (2{,}02 - c_1) \cdot P_B}{c_1 \cdot z \cdot v} + k \cdot v^2$$

When first fitted, the belt should be tightened to 1.3 x T i.e 30% higher than the calculated belt tension.



2. Determine the belt deflection per 100 mm span length E from the belt tension/deflection graphs Diagrams 8 to 11.

3. Calculate the belt deflection for a given span length E_a, for the actual drive span length

$$E_a \approx \frac{E \cdot L}{100}$$

$$L = a_{nom} \cdot \sin \frac{\beta}{2}$$

Apply the load to set belt tension T (taken from Diagrams 8 to 11 for the appropriate belt section) to the centre of, and perpendicular to, the span, as shown in the illustration above. Measure the deflection and if necessary adjust the centres until the correct belt tension is achieved.

II. Checking Belt Tension by Speed Measurement

This method checks belt tension using the theoretical slip. The speeds of the driver and the driven pulleys are measured first in an unloaded condition and then under load.

S	= slip	(%)
n_{1L}	= driver pulley speed, no load	(rpm)
n_{2L}	= driven pulley speed, no load	(rpm)
n_{1B}	= driver pulley speed, under load	(rpm)
n_{2B}	= driven pulley speed, under load	(rpm)

Formula for calculating the slip:

$$S = \left(1 - \frac{n_{1L}/n_{2L}}{n_{1B}/n_{2B}}\right) \cdot 100$$

At the rated loading, the slip should not exceed 1 %. The belt service life is considerably shortened due to excessive flank wear and over heating when tension is too low and slip ensues underload.

optibelt
Power Transmission

Design Hints

Belt Tension for optibelt V-Belts and Kraftbands

Diagram 8: Belt tension graphs for Optibelt-SK wedge belts to BS 3790 and DIN 7753 Part 1

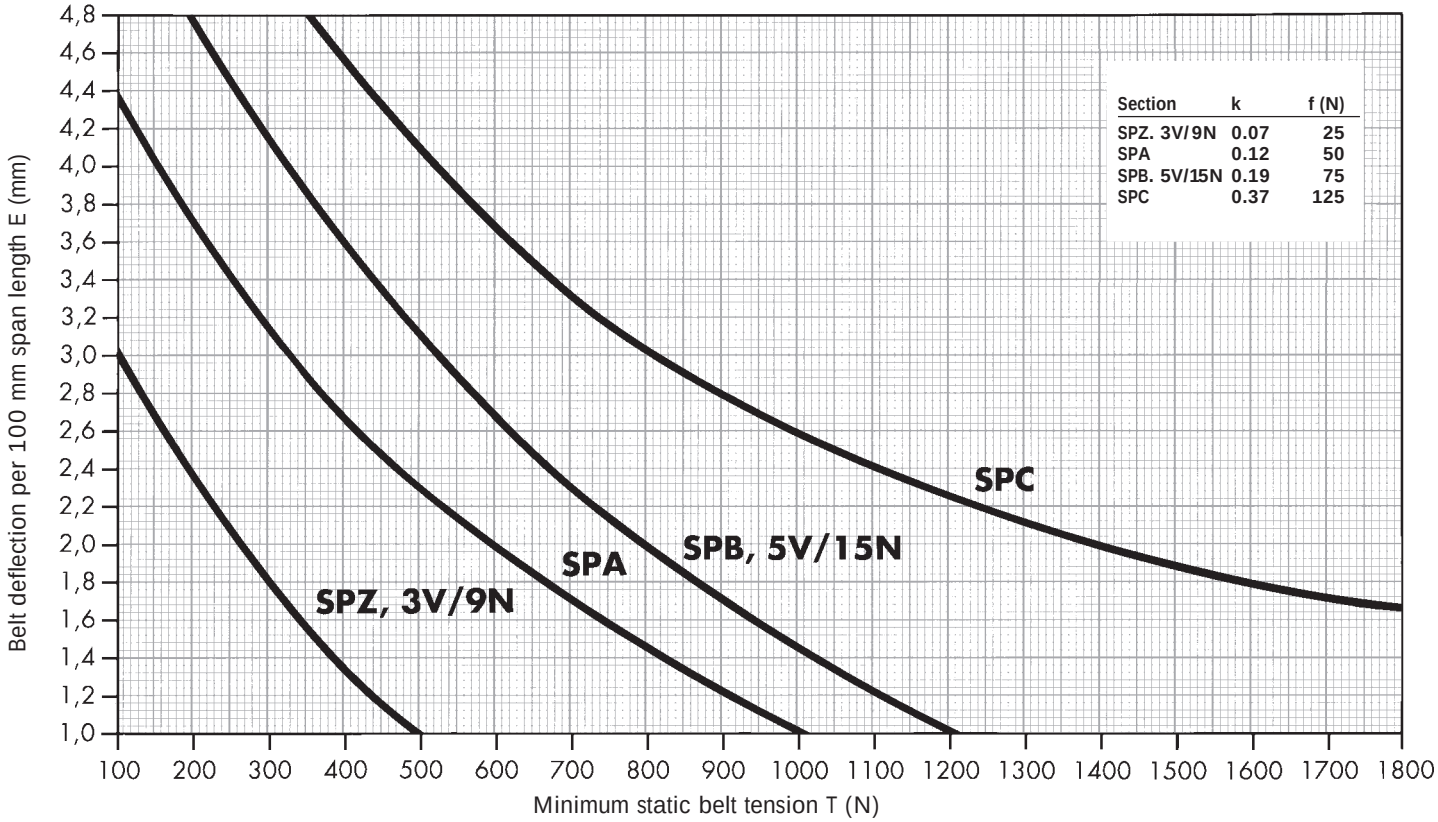
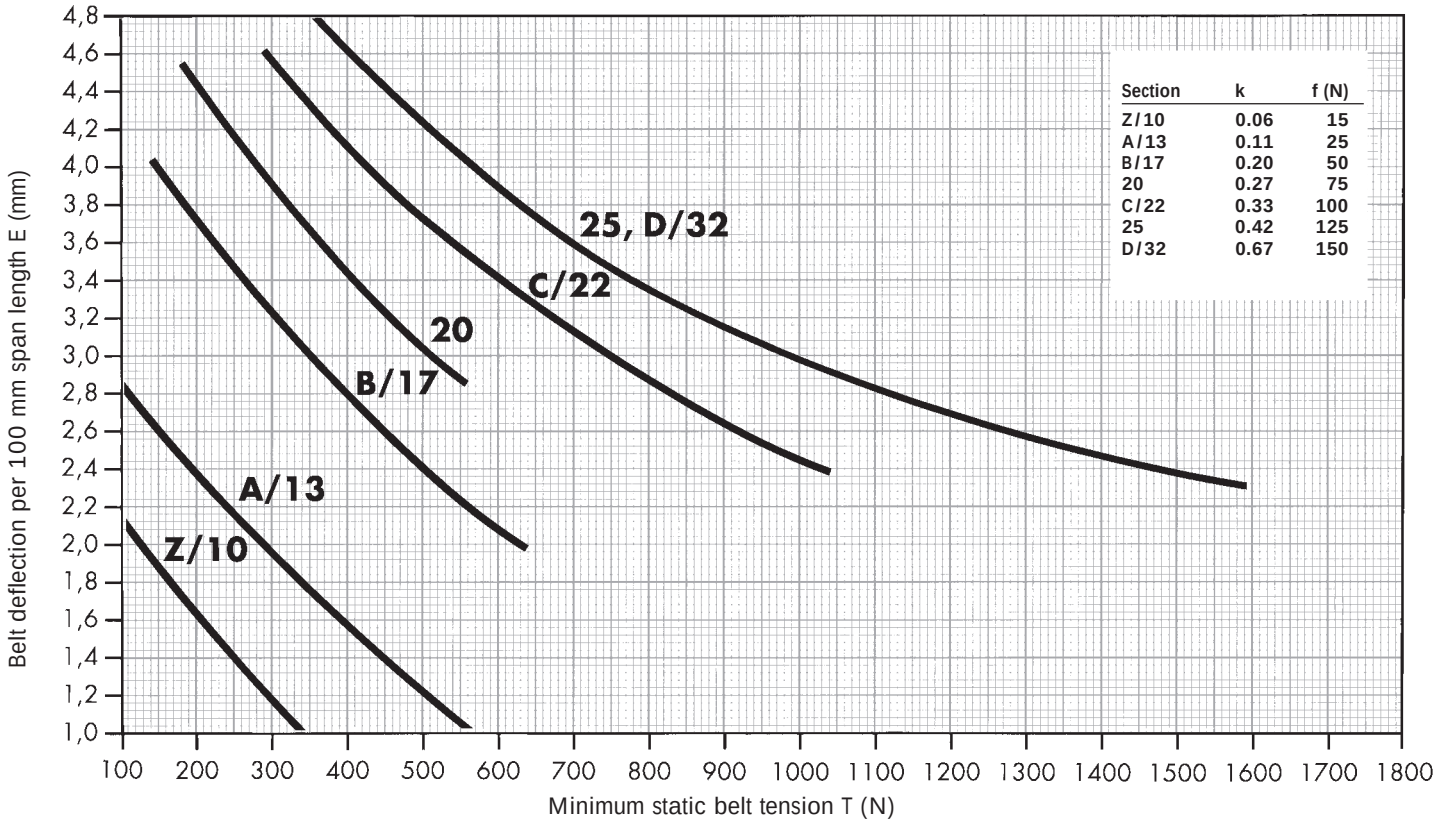


Diagram 9: Belt tension graphs for Optibelt-VB classical V-belts to BS 3790 and DIN 2215



Design Hints

Belt Tension for optibelt V-Belts and Kraftbands

Diagram 10: Belt tension graphs for Optibelt Super TX M=S wedge belts – raw edge, moulded cogged –

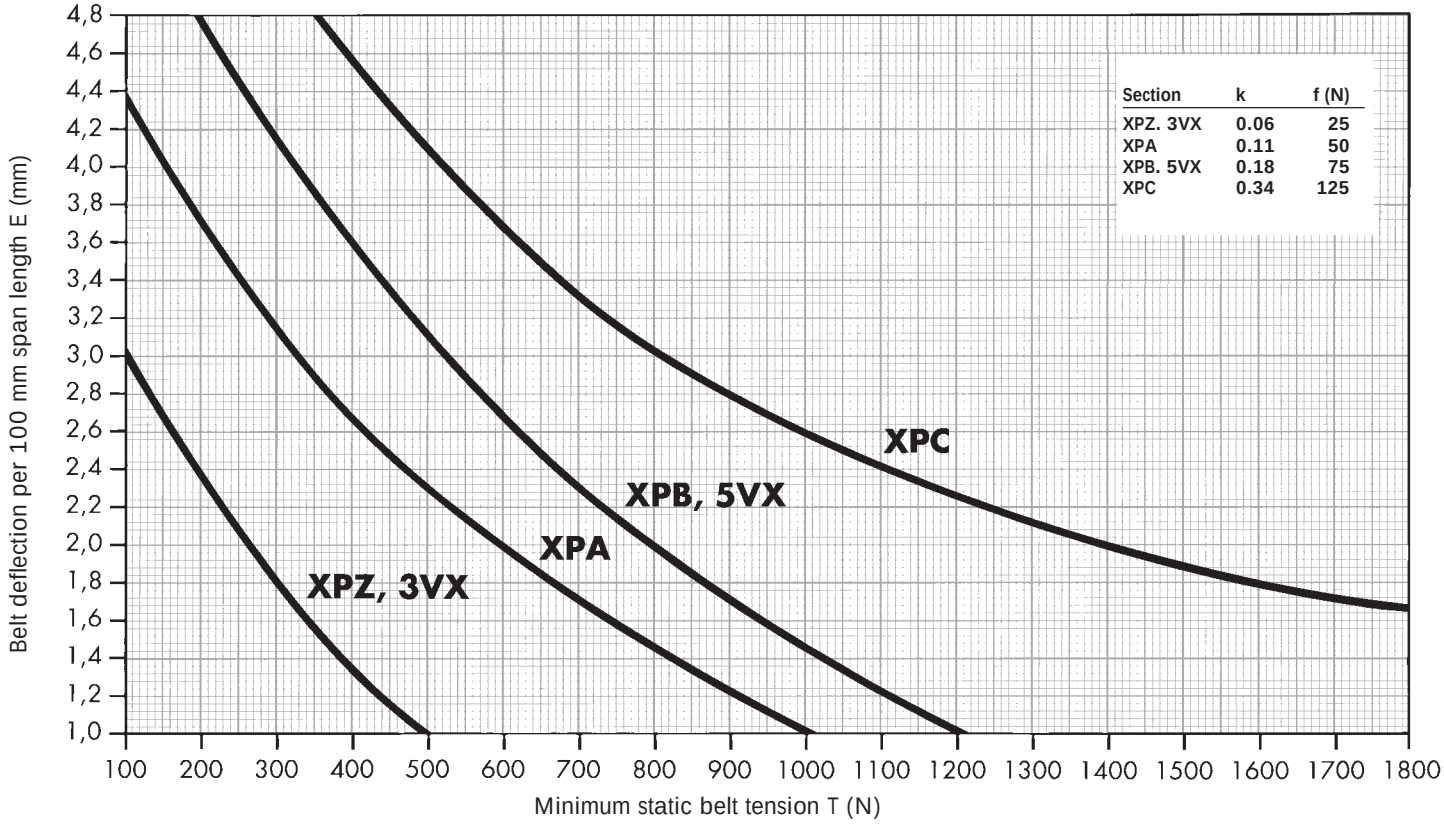
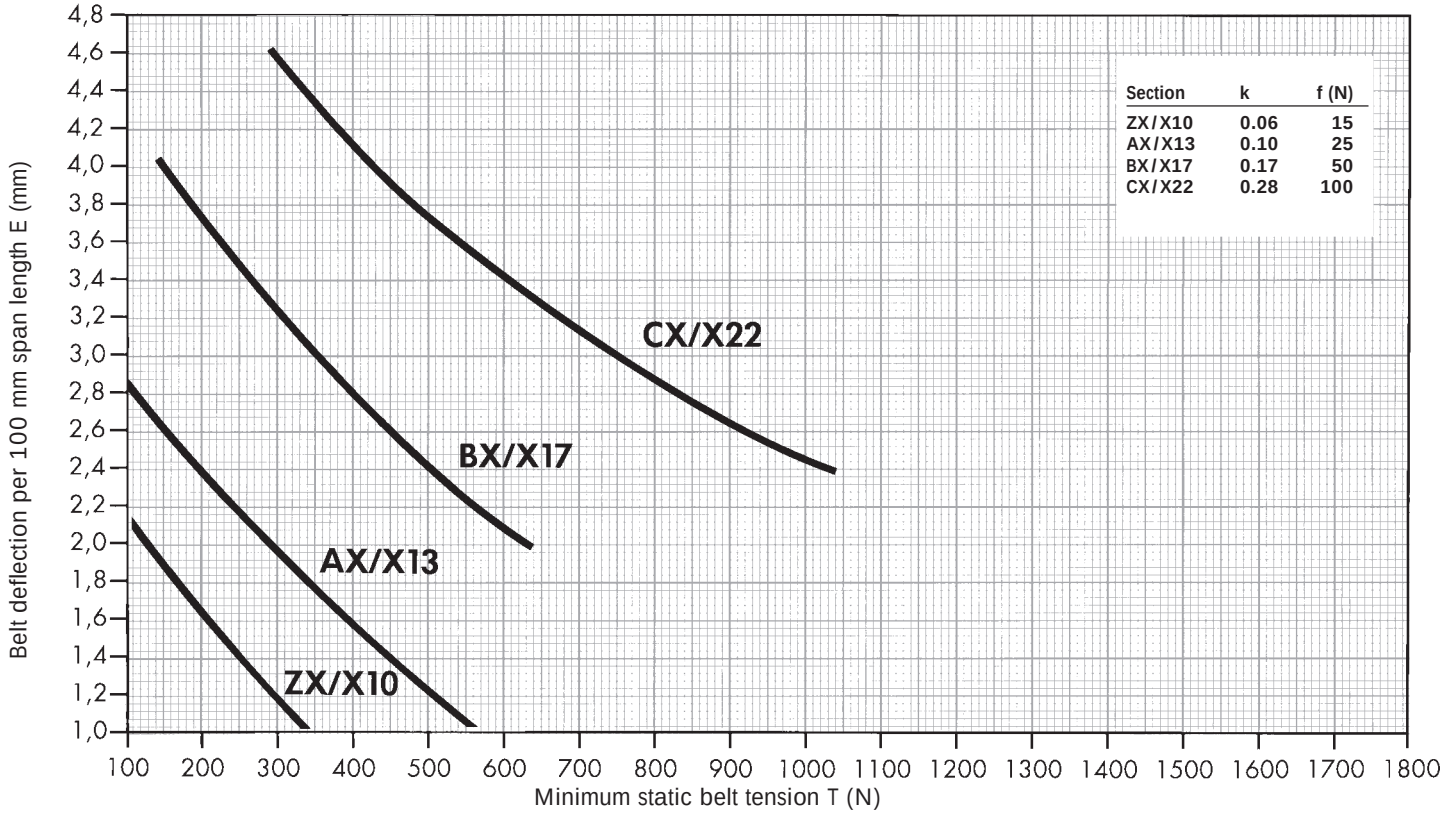


Diagram 11: Belt tension graphs for Optibelt Super TX M=S V-belts – raw edge, moulded cogged –



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Power Transmission

Design Hints

Belt Tension for optibelt V-Belts and optibelt KB Kraftbands

V. Belt Tensioning using a "Length Additional Value"

It has become evident that span deflection methods are not ideal for checking the tension of Kraftbands of all sections, and of individual belts. The following, very simple method for the setting and checking of belt tension is therefore recommended:

1. Calculate the static belt tension 'T'.

$$T \approx \frac{500 \cdot (2.02 - c_1) \cdot P_B}{c_1 \cdot z \cdot v} + k \cdot v^2$$

2. Measure the outside length "M" of the Kraftband or the single belt, whilst slack. The belt can be measured when fitted to the drive provided that it is completely **without** tension.

3. Procedure
   a) Fit the Kraftband or the single belt on to the pulleys. Provisionally tighten the belt in order to seat it into the pulley grooves.
   b) Next completely slacken the Kraftband or the single belt.
   c) Mark two lines on the top of the belt, distance 'M' apart. The lines must be marked on the free span length, not where the belt is on the pulleys ('M' should ideally be 1000 mm minimum or a multiple but in any case should be as long as possible).

   Important: The longer the measured section, the more accurate the tension setting will be.

4. Calculate the length additional value 'A' using the formula

$$A = \frac{M \cdot R}{1000}$$

R = stretch factor from Table 62, page 126

5. Tighten the Kraftband or the single belt until the distance 'M' is increased by the value 'A'. The drive will now be correctly tensioned.

6. If the drive is to be retensioned, the belt must first be slackened off again so that 'M' can be marked completely without tension. The procedure described under paragraphs 3. to 5. above must then be repeated.

Example:

P_B = 1136 kW
c_1 = 0.97
v = 25.91 m/s

Drive arrangement with one set comprising:
2 Optibelt KB Kraftbands 4-8V 3750/25J 9525 L_a
2 Optibelt KB Kraftbands 5-8V 3750/25J 9525 L_a

$$T \approx \frac{500 \cdot (2.02 - 0.97) \cdot 1136}{0.97 \cdot 18 \cdot 25.91} + 0.69 \cdot 25.91^2 = \mathbf{1782\ N}$$

Where 'M' is 4000 mm

$$A = \frac{4000 \cdot 5{,}4}{1000} = 21.6 \text{ mm}$$

Tighten the Kraftband until the lines marked on the top surface are 'M' plus the length additional value apart. This will set the correct tension.

When the belt is first installed the belt tension must be multiplied by 1.3.

Design Hints

Belt Tension for optibelt V-Belts and optibelt KB Kraftbands

Table 62: Length addition per 1000 mm belt length

Section	Kraftband	3V/9J	5V/15J	8V/25J	SPZ	SPA	SPB	SPC	A/HA	B/HB	C/HC
	Single belt	3V/9N	5V/15N	8V/25N	SPZ	SPA	SPB	SPC	A/13	B/17	C/22
Minimum static belt tension per rib/single belt T (N)		(mm)	(mm)	(mm)	(mm)	(mm)	(mm)	(mm)	(mm)	(mm)	(mm)
	50	0.8			0.8	0.8			0.8		
	75	1.2			1.2	1.0			1.0		
	100	1.6			1.6	1.3			1.3		
	125	2.1			2.1	1.6			1.6		
	150	2.6			2.6	1.9			1.9	0.8	
	175	3.0			3.0	2.2			2.2	0.9	
	200	3.5			3.5	2.5			2.5	1.1	
	225	4.0			4.0	2.8			2.8	1.2	
	250	4.5			4.5	3.0			3.0	1.4	
	275	4.9			4.9	3.3			3.3	1.5	
	300	5.3	1.3		5.3	3.6	1.3		3.6	1.6	1.6
	350	6.4	1.7		6.4	4.2	1.7		4.2	1.8	1.8
	400	7.6	2.0		7.6	4.7	2.0		4.7	2.0	2.1
	450	8.7	2.4		8.7	5.3	2.4		5.3	2.2	2.3
	500	10.0	2.7		10.0	5.8	2.7		5.8	2.5	2.5
	550		3.1				3.1			2.7	2.7
	600		3.4				3.4	2.0		3.0	2.9
	650		3.8				3.8	2.2		3.2	3.1
	700		4.1				4.1	2.4		3.5	3.4
	800		4.8				4.8	2.8		4.2	3.8
	900		5.5				5.5	3.3		4.8	4.2
	1000		6.2				6.2	3.7		5.3	4.7
	1100		6.9				6.9	4.1			5.1
	1200		7.6	2.9			7.6	4.5			5.5
	1300		8.3	3.3			8.3	5.0			
	1400		9.0	3.7			9.0	5.4			
	1500		9.7	4.1			9.7	5.8			
	1600		10.4	4.6			10.4	6.3			
	1700		11.1	5.0			11.1	6.8			
	1800		11.8	5.5			11.8	7.3			
	1900			6.0				7.8			
	2000			6.5				8.3			
	2100			7.0				8.8			
	2200			7.5				9.3			
	2300			8.0				9.8			
	2400			8.6							
	2500			9.6							
	2600			10.6							
	2700			11.7							
	2800			12.8							
	2900			13.5							
	3000			14.2							
	3100			14.9							
	3200			15.6							
	3300			16.3							
'k' for Kraftbands		0.12	0.25	0.69	0.12	0.16	0.25	0.55	0.16	0.27	0.45
'k' for single belts		0.07	0.19	0.57	0.07	0.12	0.19	0.37	0.11	0.20	0.33

Intermediate values may be determined by linear interpolation.
The figures apply only for drives with grooved pulleys.
Values for V-flat drives can be provided upon request.

optibelt
Power Transmission

Design Hints

Calculating the Axial Force / Shaft Loading under Dynamic Conditions

With drives having electric motors as the prime movers, care should be taken to ensure that the dynamic loading can be safely accommodated by the motor shafts and bearings to which it is applied.

Experience has shown that drives on

- electric motors,
- internal combustion engines,
- turbines,
- and very heavy-duty drives such as stone crushers, calenders, and heavily loaded mills,

call for the dynamic bearing load to be determined, that is the shaft and bearing loads on both the driver and the driven shafts.

Exact calculation of the "dynamic axial force" saves the unnecessary expense of:

- premature bearing failure
- shaft failure or
- over designed bearings and shafts.

In the case of two pulley drives, the driver and driven shafts and the bearings are subjected to the same dynamic axial force, but in opposite directions. When idlers are employed, the magnitude and the direction of the axial force are almost always different on each pulley. If the magnitude and direction of the dynamic axial force is to be determined, a graphical solution, using a vector diagram for the dynamic forces in the tight side S_1 and the slack side S_2, is always recommended.

If only the magnitude of the dynamic axial force is to be determined, this can be achieved using the formula for "$S_{a\,dyn}$". Data from the calculation examples given on pages 59 to 61.

P_B = 171.6 kW c_1 = 1.00

v = 21.76 m/s β = 170°

Dynamic tight side tension

$$S_1 \approx \frac{1020 \cdot P_B}{c_1 \cdot v}$$

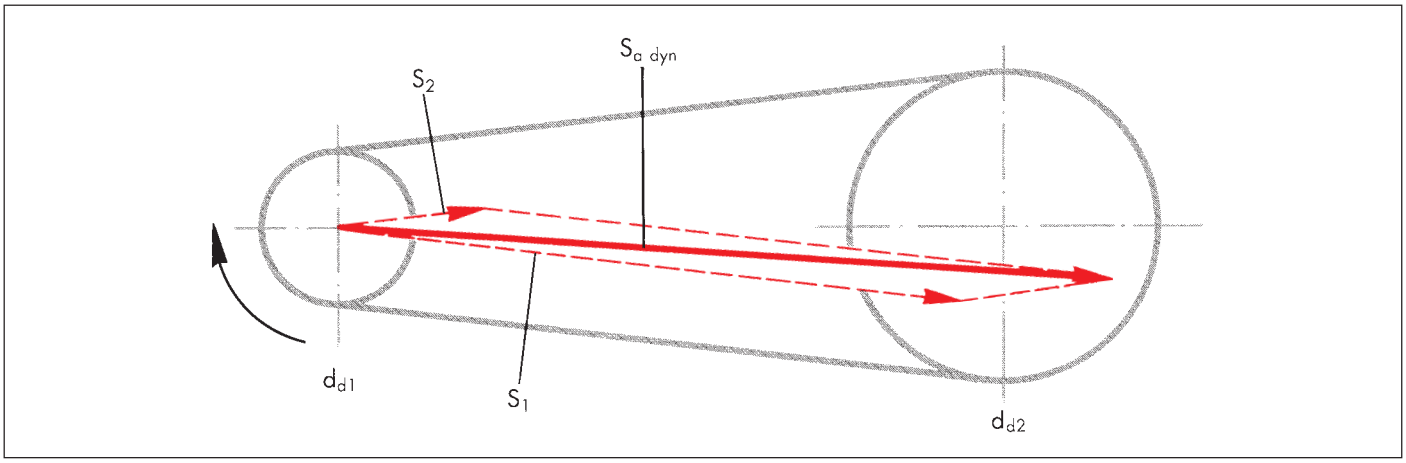
$$S_1 \approx \frac{1020 \cdot 171{,}6}{1.0 \cdot 21.76} \approx \mathbf{8044\ N}$$

Dynamic slack side tension

$$S_2 \approx \frac{1000 \cdot (1.02 - c_1) \cdot P_B}{c_1 \cdot v}$$

$$S_2 \approx \frac{1000 \cdot (1.02 - 1.0) \cdot 171.6}{1.0 \cdot 21.76} \approx \mathbf{158\ N}$$

A) Graphical solution



B) Solution using the formula for $S_{a\,dyn}$

Dynamic axial force

$$S_{a\,dyn} \approx \sqrt{S_1^2 + S_2^2 - 2\,S_1 \cdot S_2 \cdot \cos\beta}$$

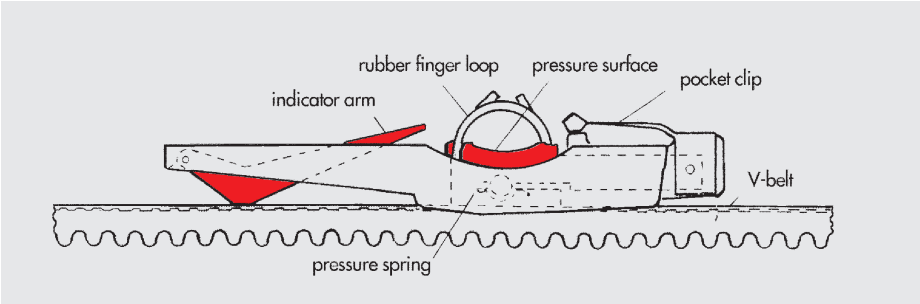
$$S_{a\,dyn} \approx \sqrt{8044^2 + 158^2 - 2 \cdot 8044 \cdot 158 \cdot (-0.9848)} \approx \mathbf{8200\ N}$$

optibelt
Power Transmission

Design Hints

Belt tensioning for optibelt tension gauges

Tension gauges optibelt *Optikrik*



Optikrik
Tension gauges

This gauge serves a simplified method of belt tensioning.

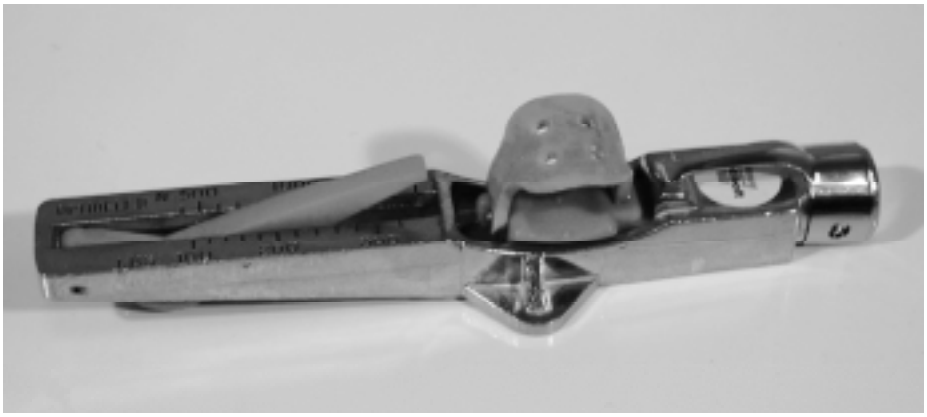
This simplified tensioning method should be used for example when technical data are not known and the optimum tension therefore cannot be calculated. This method requires only knowledge of the diameter of the small pulley and the belt section and construction.

The Optibelt tension gauge is used to read off the belt tensioning. By reducing or increasing the belt tensioning the desired value can be obtained.

For different tensioning values, Optikrik 0, I, II, III with corresponding measurement areas are available.

Instructions for use

1. The gauge is placed in the middle between the two pulleys on the back of the belt, in the case of sets of belts ideally on the central belt. Before doing this, ensure that the indicator is pushed down into the gauge body.(First press the indicator arm onto the scale)
2. Lay the gauge loosely on the belts to be measured and press a finger slowly on to the pressure surface.
3. Try not to touch the gauge with more than one finger during the measuring process.
4. Once you hear or feel a definite click, immediately release pressure and the indicator arm will remain in the measured position.
5. Carefully lift the gauge without moving the indicator arm. Read off the belt tensioning (see diagram). Read off the measurement at the exact point where the top surface of the indicator arm crosses the scale.
6. Reduce or increase the belt tensioning according to the measurement result until it is within the desired tension level.



optibelt *TT2* Tension Tester

This optibelt *TT2* Tension Tester is used for tension checking of drive belts by means of frequency measurement. Measurements are in Hertz (Hz). When belt parameters are entered, tension is indicated in Newton (N).

Advantages of the tester:

- Non-contact, repeated measurements
- Wide measurement spectrum from
- High accuracy of measurement
- Quality evaluation of the measurement result
- Storage in a data base
- Easy to use
- Universal measuring head for comfortable measuring
- Data communication via PC

optibelt
Power Transmission

Design Hints

Belt tensioning for Optibelt V-Belts

Section	Diameter of small pulley (mm)	Static belt tension T_{max} (N)					
		RED POWER II		Standard (wrapped)		SUPER TX M=S	
		initial fitting new V-belts	re-fitting existing V-belts	initial fitting	Retension	initial fitting	Retension
SPZ; 3V/9N; XPZ; 3VX/9NX	≤ 71 > 71 ≤ 90 > 90 ≤125 >125 *	250 300 400	200 250 300	200 250 350	150 200 250	250 300 400	200 250 300
SPA; XPA	≤100 >100 ≤140 >140 ≤200 >200 *	400 500 600	300 400 450	350 400 500	250 300 400	400 500 600	300 400 450
SPB; 5V/15N; XPB; 5VX/15NX	≤160 >160 ≤224 >224 ≤355 >355 *	700 850 1000	550 650 800	650 700 900	500 550 700	700 850 1000	550 650 800
SPC; XPC	≤250 >250 ≤355 >355 ≤560 >560 *	1400 1600 1900	1100 1200 1500	1000 1400 1800	800 1100 1400	1400 1600 1900	1100 1200 1500
Z/10; ZX/X10	≤ 50 > 50 ≤ 71 > 71 ≤100 >100 *	–	–	90 120 140	70 90 110	120 140 160	90 110 130
A/13; AX/X13	≤ 80 > 80 ≤100 >100 ≤132 >132 *	–	–	150 200 300	110 150 250	200 250 400	150 200 300
B/17; BX/X17	≤125 >125 ≤160 >160 ≤200 >200 *	–	–	300 400 500	250 300 400	450 500 600	350 400 450
C/22; CX/X22	≤200 >200 ≤250 >250 ≤355 >355 *	–	–	700 800 900	500 600 700	800 900 1000	600 700 800

* Tension values for these pulleys must be calculated.

Tension Gauges:

Optikrik 0	range:	70 – 150 N
Optikrik I	range:	150 – 600 N
Optikrik II	range:	500 – 1400 N
Optikrik III	range:	1300 – 3100 N

The static tension values shown are calculated for maximum power transmission capability (per V-belt) and should be applied only when accurate data is not available.

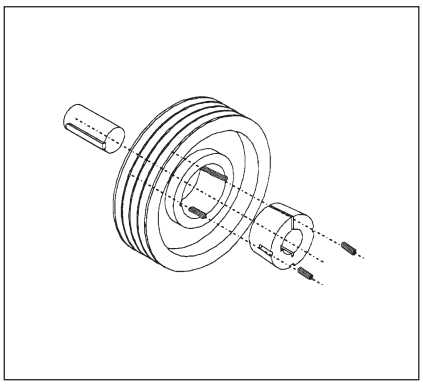
Calculation Basis

Wedge belts	speed v = 5 to 42 m/s
Classical V-belts	speed v = 5 to 30 m/s

optibelt
Power Transmission

Design Hints
Installation and Maintenance Aids

Safety: Before starting any maintenance work, it is extremely important that any machine components are in a safe position which cannot be changed during maintenance work. In addition, safety recommendations of the manufacturer are to be strictly observed.

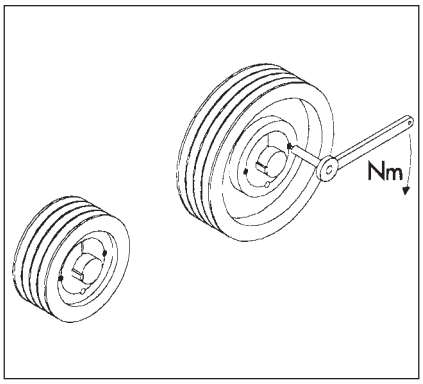


optibelt KS V-Grooved Pulley with Taper Bush

The V-grooved pulleys are to be checked for damage and correct dimensions before installation.

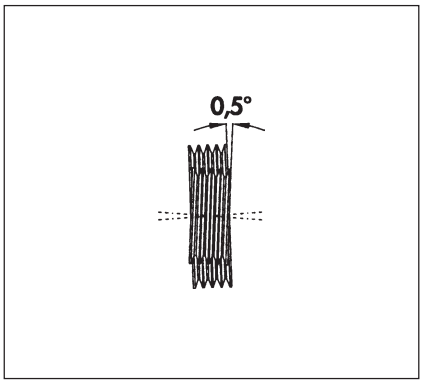
Installation (see figures on page 132)

1. All shiny surfaces like bore and end envelope of cone of the taper bush as well as the conical bore of the pulley have to be cleaned and degreased. Insert taper bush and hub and align all connecting bores. Half tapping holes have to face half plain borings.
2. Stud screws (TB 1008-3030) and / or fillister head screws (TB 3525-5050) should be slightly greased and screwed in. Do not jet tighten the screws.
3. Clean and degrease the shaft. Push pulley with taper bush to the desired position on the shaft. See alignment of the V-grooved pulley.
4. When using a keyway, it has to be inserted in the hub of the shaft first. Between the keyway and the bore hub there needs to be a certain tolerance.
5. With a socket wrench according to DIN 911 stud screws and / or fillister head screws have to be tightened uniformly using the tightening torque stated in the table.
6. After a short operation period (0.5 to 1 hour) check tightening torque of the screws and correct if necessary.
7. In order to prevent the ingress of foreign material, fill empty connecting bores with grease.



Taper Bushes, Screw Tightening Torque

Dimension	Opening width	No. of screws	Tightening torque (Nm)
TB 1008, 1108	3	2	5.7
TB 1210, 1215, 1310, 1610, 1615	5	2	20.0
TB 2012	6	2	31,0
TB 2517	6	2	49.0
TB 3020, 3030	8	2	92.0
TB 3525, 3535	10	3	115.0
TB 4040	12	3	172.0
TB 4545	14	3	195.0
TB 5050	14	3	275.0

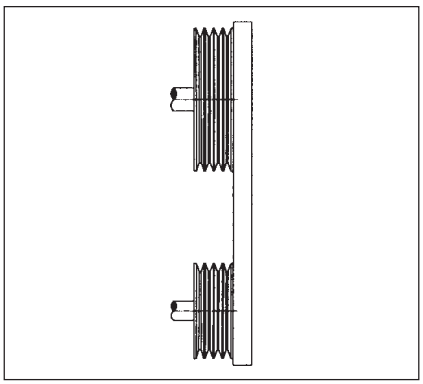


Horizontal Alignment of Shafts

Motor and drive shafts are to be aligned using a spirit level, if necessary.

Note!

Maximum recommended shaft deviation 0.5°



Vertical Alignment of the V-Grooved Pulleys

The alignment of the V-grooved pulleys is checked before and after tightening the taper bushes on a guide rail.

Note!

Check whether the face widths of the V-grooved pulleys have the same sizes. A possible deviation of the face width has to be taken into consideration. With a symmetrical face set-up, the distance of the parallel to the smaller face is half the deviation.

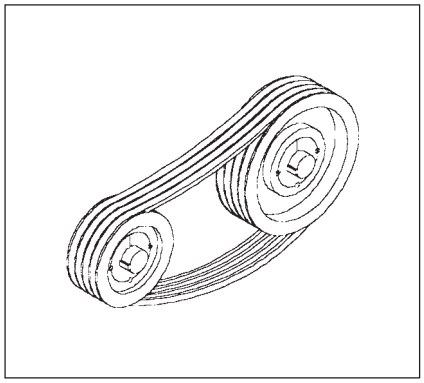
optibelt
Power Transmission

Design Hints
Installation and Maintenance Aids

Initial Installation

Always install the V-belts without using force. Installations using screw drivers, crowbars etc. cause inner and outer damages to the belt. V-belts installed under force might only run for several days. A proper installation of the belt saves you time and money.

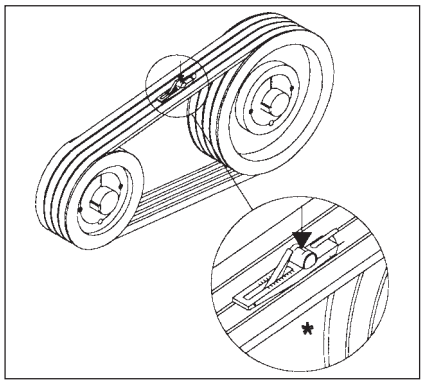
With too little setting range for the positioning, the V-grooved pulleys should be pushed onto the shafts with the belts already fitted.



Belt Tensioning

Use belt tensioning values according to Optibelt's recommendations. Set the motor to the given belt tension in a parallel mode. Operate the belt for some revolutions and check the belt tension again. By experience, belt tension should be checked again after an operation time of about 0.5 to 4 hours and corrected, if necessary.

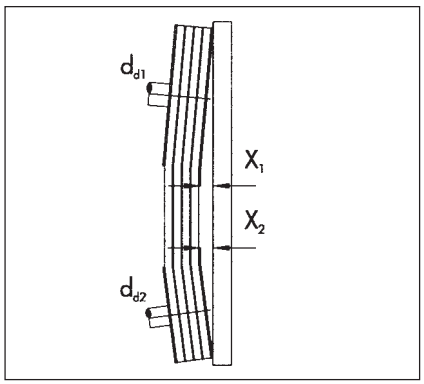
* For further hints on belt tensioning see page 128.



Admissible Shaft Deviation

After applying the initial installation tension the distances X_1, X_2 between the two pulleys dd1, d_{d2} and the parallel set to axis height are to be measured. The maximum admissible values for the distance X from the table should if possible be fallen short of, depending on the diameter dd. Depending on the pulley diameter, the intermediate values for X have to be interpolated.

Pulley diameter d_{d1}, d_{d2}	Max. admissible deviation X_1, X_2
112 mm	0.5 mm
224 mm	1.0 mm
450 mm	2.0 mm
630 mm	3.0 mm
900 mm	4.0 mm
1100 mm	5.0 mm
1400 mm	6.0 mm
1600 mm	7.0 mm



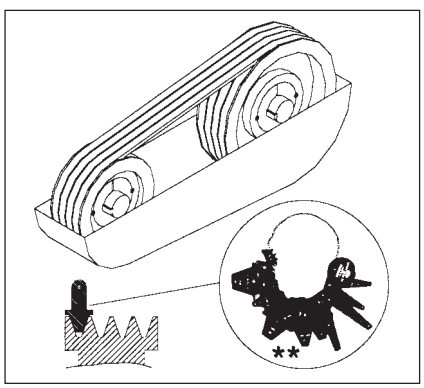
Control Processes

We recommend controlling the drive regularly, e.g. after 3 to 6 months. V-grooved pulleys are to be controlled for wear and consistence. Use the Optibelt section and pulley groove template as aids.

When changing V-grooved pulleys with taper bush (see figure on page 132) the following aspects have to be observed.

1. Loosen all screws. Screw out one or two screws depending on the bush size, grease them and screw them into the proof test bore.
2. Tighten the screw or screws equally until the bush unscrews from the hub and the pulley can be moved on the shaft freely.
3. Take off the pulley with the bush from the shaft.

**** Section and pulley groove template**



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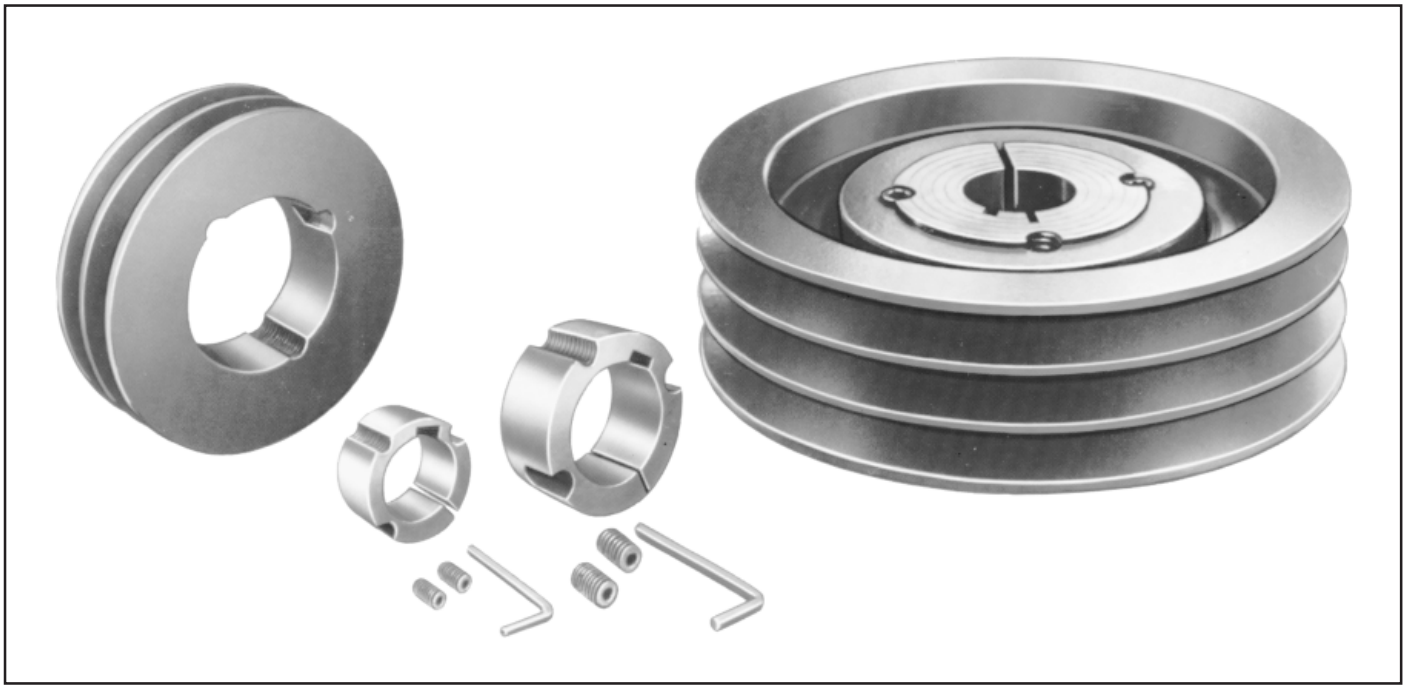
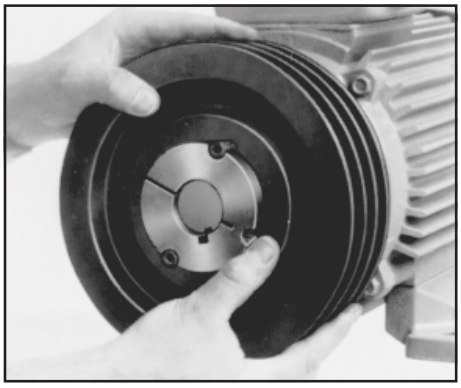
Power Transmission

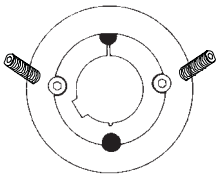
Design Hints
V-Grooved Pulleys with Taper Bushes



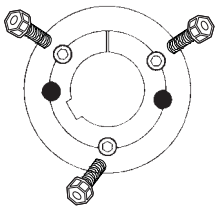


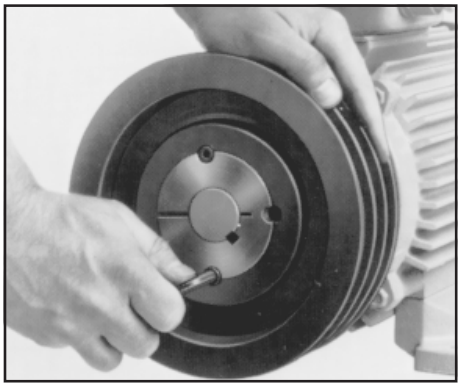
Assembley

Dimension
TB 1008-3030



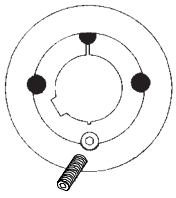
Dimension
TB 3525-5050



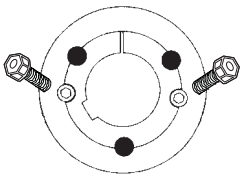


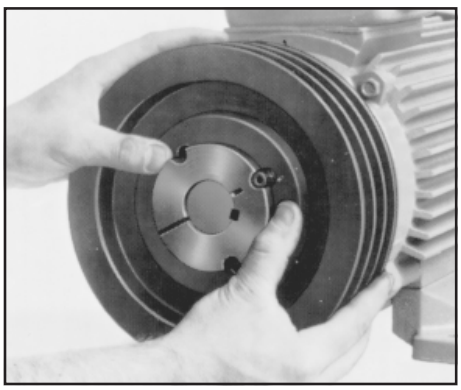
Disassembly

Dimension
TB 1008-3030



Dimension
TB 3525-5050





Design Hints
Storage

● General note on storage

Properly stored V-belts retain their properties for many years (see also DIN 7716). However, when stored under poor conditions or handled incorrectly, the physical properties of most rubber products will be impaired. This can be the consequence for example of the effects of oxygen, ozone, extreme temperatures, light, moisture or solvents.

● Storage area

The storage area should be dry and dust free. V-belts must not be stored close to chemicals, solvents, fuels, lubricants and acids etc.

● Temperature

V-belts should be stored at temperatures between + 15 °C and + 25 °C. Lower temperatures usually have no detrimental effect on the V-belts. Since, however, belts become very stiff at low temperatures, they should be warmed to approximately + 20 °C before fitting to avoid fracture and cracking.

Radiators and supply pipes should be screened. V-belts should be stored at least 1m away from radiators.

● Light

V-belts should be protected against light, especially direct sunlight and strong artificial light with a high ultra-violet content (ozone formation) such as naked fluorescent tubes. Illumination using conventional light bulbs is advisable.

● Ozone

In order to counteract the harmful effects of ozone, warehouses should not contain any appliances that generate ozone, for example fluorescent lights, mercury vapour lamps or high voltage electrical equipment. Combustion gases and vapours which could lead to the formation of ozone by photo-chemical processes must be avoided or eliminated.

● Moisture

Damp storage areas are unsuitable. Care must be taken to ensure that condensation does not develop. The most favourable relative air humidity is below 65%.

● Proper Storage

Because stress can promote both permanent deformation and cracking, care must be taken to ensure that V-belts are stored without stress i.e. without tension, compression or any other form of pressure.

If V-belts have to be stored horizontally and stacked upon each other, it is recommended that the stack height does not exceed 300 mm in order to avoid permanent deformation. If, in order to save space, V-belts are hung, the diameter of the cylinder on which the belts rest should be at least ten times the height of the belt section.

optibelt *S=C plus* and optibelt *SUPER TX M=S* belts do not need to be stored in sets as they can be formed into sets without having to be measured.

● Cleaning

Dirty V-belts can be cleaned using a 1:10 mixture of glycerine and methylated spirits. Petrol, benzole, turpentine and the like should not be used.

In addition, sharp objects, wire brushes, emery paper etc. must, under all circumstances, be avoided as these can cause damage to the belt.

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Design Hints
Physical Properties

These tables are provided to simplify selection of the correct Optibelt for any drive problem. Detailed information is given elsewhere in this manual.	Ambient temperature maximum / minimum (°C)		Oil resistant	Anti-static properties (after testing)	S=C plus SatzConstant[1] M=S Matched Set[2]	FRAS - for mining applications	Smooth running	Stretch	
	Standard construction	Special construction XHR	Standard construction					Standard construction	Sjpecial construction
SK high-performance wedge belts	– 40 + 70	– 30 + 90	limited	yes	yes[1]	ja	medium good	low	very low
RED POWER II high-performance wedge belts	– 30 + 100		good	yes	yes[1]		good	very low	
SUPER TX M=S raw edge, moulded cogged V-belts	– 30 + 90		good	yes	yes[2]		good	very low	
MARATHON 1, MARATHON 2 M=S automotive belts	– 30 + 90		good	yes	M2 yes[2]		good	very low	
VB classical V-belts	– 40 + 70	– 30 + 90	limited	yes	yes[1]	ja	medium good	low	very low
KB Kraftbands	– 40 + 70	– 35 + 90	limited	yes			good	low	very low
DK double section V-belts	– 35 + 85		good	yes			medium	low	
SUPER VX variable speed belts	– 30 + 90		good	yes			very good	very low	
RB ribbed belts	– 30 + 90	– 30 + 120	good	PJ PK, PL Special con-struction			very good	low	

Design Hints
Physical Properties

Recommended max. belt speed m/s	Efficiency	Behaviour under shock loading	Vibration behaviour	Use on variable speed pulleys	Synchronous	Recommended max. speed ratio	Use with outside idlers		Maintenance	**Recommended applications** There are a number of applications that can be covered by more than one type of belt. In these instances, belt selection must be made on an individual case basis.
							Standard construction	Special construction		
≤ 42	up to 97 %	good	low	possible	no	up to 1 : 10	limi-ted	good	low	Compressors, mixers, rotary print machines, extruders, worm compressors, textile looms, axial flow fans, rotary pumps
≤ 42	up to 97%	good	low	possible	no	up to 1 : 10	limi-ted	good	service free	Fans, pumps, mixers, grinders, special machinery, lathes and drills, grinders
depends on section ≤ 42	up to 97 %	good	low	possible	no	up to 1 : 12	limi-ted	good	low	Fans, pumps, mixers, grinders, special machinery, lathes and drills, grinders
≤ 42	up to 97 %	good	low	possible	no	up to 1 : 12	limi-ted	good	service free	Automobiles, generators, water pumps, fans
≤ 30	up to 97 %	good	low	possible	no	up to 1 : 12	limi-ted	good	low	Pumps, presses, crushers, rotary saws, pillar drills, planing machinery, concrete mixers, compressors, lawn mowers, aerators, bale presses, chaff cutters
depends on section ≤ 42	up to 97 %	very good	very low	not possible	no	up to 1 : 15	limi-ted	very good	low	Fans, shredders, road millers, extruders, rotary mowers, stone crushers, saw mills, vibration rollers, conveyors, mixers, combine harvesters, pulpers
≤ 30	up to 95 %	good	low	not possible	no	up to 1 : 5	very good	good	low	Special reversible drives, textile looms, sweepers, harvesters
depends on section ≤ 42	up to 95 %	good	low	gut	no	up to 1 : 12 for 2 variable speed pulleys	limi-ted		low	Special drives, compact units, snowmobile drives, multi-colour offset, adjustable pulley sets, thresher drum drives, spooling machines, lathes
depends on section ≤ 60	up to 96 %	good	very low	not possible	no	up to 1 : 35	good		low	Offset machines, washing machines, milling machines, drills, auxiliary drives, main shaft drives

Design Hints
Physical Properties

These tables are provided to simplify selection of the correct Optibelt for any drive problem. Detailed information is given elsewhere in this manual.	Ambient temperature maximum / minimum (°C)		Oil resistant	Anti-static properties (after testing)	Smooth running	Stretch
	Standard construction	Special construction XHR	Standard construction			
OMEGA timing belts	– 30 + 85		limited	yes	very good	keine
ZR timing belts	– 30 + 85	– 30 + 120	limited	yes	very good	keine
ZRM timing belts made of polyurethane	– 30 + 80		good	no	good	keine
RR plastic round section belting	– 10 + 80		good	no	medium	high
KK plastic V-belting	– 10 + 80		good	no	medium	high
Optimat OE open ended V-belting, punched DIN 2216	– 20 + 70		limited	no	medium	high
PKR V-belts with patterned top surface	– 30 + 70		limited	yes	medium	low
Optimax HF high-performance flat belts	– 20 + 110		limited	no	very good	low

Design Hints
Physical Properties

Recommended max. belt speed m/s	Efficiency	Behaviour under shock loading	Vibration behaviour	Use on variable speed pulleys	Synchronous	Recommended max. speed ratio	Use with outside idlers		Maintenance	**Recommended applications** There are a number of applications that can be covered by more than one type of belt. In these instances, belt selection must be made on an individual case basis.
							Standard construction	Special construction		
depends on section ≤ 80	up to 98 %	sensitive	depends on speed	not possible	yes	up to 1 : 10	good	gut	maintenance free	Textile machines, spinning machines, textile looms, printing machines, paper machines, wood working machines, machine tools, linear units, conveyors, skid unit, packing machines, door and gate openers, lifting devices, mixers, extruders, compressors
depends on section ≤ 80	up to 98 %	sensitive	depends on speed	not possible	yes	up to 1 : 10	good	gut	maintenance free	Copiers, food processors, swivel arm robots, gripper drives, belt grinders, cam shaft drives, brush drives, clocks, X-ray equipment, envelope stuffers, cameras, plotters, coin operated machinery, main and feed drives, conveyor drives, material feed, printers
depends on section ≤ 80	up to 98 %	sensitive	depends on speed	not possible	yes	up to 1 : 10	good	gut	maintenance free	Cameras, plotters, printers, coin operated machinery, main and feed drives, conveyor drives, sample conveyors, material feed, flight models
≤ 20	up to 95 %	good	low	not possible	no	up to 1 : 10	good	gut	frequent retensioning	Special machinery
≤ 20	up to 95 %	good	low	not possible	no	up to 1 : 10	good	gut	frequent retensioning	Packaging machinery, conveyor systems, ram conveyors, varnishing equipment
≤ 20	up to 90 %	good	medium	limited possible	no	up to 1 : 10	limited		frequent retensioning	Where installation conditions are difficult
depends on section ≤ 20	up to 95 %	good	low	limited possible	no	up to 1 : 10	limited	gut	low	Conveyor systems in the timber industry, in cement works, in agriculture, in the ceramics industry, in the glass industry, at airports, in sea and river ports
≤ 70	up to 95 %	good	very low	not possible	no	up to 1 : 12	very good		low	Water turbines, emergency power generators, saw mills, shredders, worm compressors, roller drives, transmission drives, conical drives, cross cutters, floor cleaning equipment, multiple positioning drives, crushers, sealing belts, hammer mills

Design Hints
Problems – Causes – Remedies

Problems	Causes	Remedies
Belt failure shortly after fitting	Forceful installation, causing damage to the tension cord	Follow installation instructions for easy belt fitting
	Ingress of foreign matter during operation	Fit protection guard
	Drive undersized, not enough belts	Check drive design and determine new dimensions
	Drive blocked	Remove cause
Breaks and cracks in the base of the belt (brittleness)	Outside idler pulley in use that does not comply with the positioning and sizes recommended by us	Observe Optibelt recommendations, e.g. increase the diameter; replace with an inside idler on the slack side of the drive; use Optibelt Red Power II or an Optibelt special construction
	Pulley diameter too small	Re-design using recommended minimum pulley diameters; use an Optibelt special construction or Optibelt Super TX M=S
	Excessive heat	Remove or baffle heat source; improve ventilation; Use Optibelt special construction XHR (extra heat resistant) or Optibelt Super TX M=S or V-belt with Aramid cord construction
	Excessive cold	Warm the belt before operation; use Optibelt special construction XCR (extra cold resistant)
	Excessive belt slip	Retension drive according to installation instructions; check drive design and redesign if necessary
	Contamination by chemicals	Protect drive from contamination source; use Optibelt special construction
Severe belt vibration	Drive undersized	Check drive design and modify if necessary
	Centre distance significantly longer than recommended	Shorten centre distance; Use an inside idler in the drive slack side; Re-design using Optibelt KB Kraftbands
	High shock load	Use Optibelt KB Kraftbands; Use an inside idler in the drive slack side; use an Optibelt special construction
	Belt tension too low	Correct tension
	Unbalanced V-pulleys	Balance pulleys
Belts cannot be retensioned	Insufficient allowance for centre distance in drive design	Modify drive to allow for the Optibelt recommended take-up
	Excessive stretch caused by inadequate performance	Carry out drive calculation and re-design
	Incorrect belt length	Use shorter belts

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Power Transmission

Design Hints
Problems – Causes – Remedies

Problems	Causes	Remedies
Belts turn over in pulley grooves	Poor drive alignment Incorrect belt / pulley groove section	Realign pulleys Match belt and pulley groove section
	Excessive wear in pulley grooves Excessive vibration	Renew pulleys Use an inside idler on drive slack side; use Optibelt KB Kraftbands
	Belt tension too low Foreign matter in the pulley grooves	Re-tension drive Remove foreign matter and install drive guard
Excessive wear on belt edges	Starting torque too high	Check drive design and re-design
	Incorrect pulley groove angle	Re-machine or replace pulleys
	Excessive pulley groove wear	Replace pulleys
	Incorrect belt / pulley groove section	Match belt and pulley groove section
	Poor pulley alignment	Realign pulleys
	Pulley diameter below recommended minimum	Increase pulley diameter (re-design drive); use Optibelt special construction or Optibelt TX M=S
	Belt tension too low	Check tension and retension
	Belt rubbing against or catching on protruding parts	Remove protruding parts; re-position drive
Excessive running noise	Poor pulley alignment	Realign pulleys
	Belt tension too low	Check tension and retension
	Drive overloaded	Check drive design and re-design if necessary
Belt swelling or softening and sticky	Contamination by oil, grease, chemicals	Protect drive from contamination source; use Optibelt XOR (extra oil resistant) or Optibelt Super TX M=S; Clean pulley grooves with petrol or alcohol before fitting new belts
Uneven belt stretch	Worn or badly machined pulley grooves	Replace pulleys
	Used belts mixed with new belts on the drive	Replace with a completely new set of belts
	Belts from different manufacturers used on same drive	Belt sets must comprise belts from one manufacturer only – Optibelt S=C plus, Optibelt Super TX M=S, Optibelt Red Power II

Should other problems occur, please contact our engineers from the applications engineering dept They will require comprehensive technical details in order to provide you with concrete solutions.

Design Hints

Length Measurement Conditions and Conversion Factors

Measuring the Belt Length

The belt is placed over two identically sized measuring pulleys with the design of groove shown in the following drawings. The dimensions are given in the Tables 63 to 69, on pages 141/142.

Pressure is applied to the adjustable pulleys so that the force Q is applied to the belt. Before measuring the drive centre distance a, the belt should be fully rotated three times under load. This ensures that the belt is well seated in the pulley, an essential pre-condition for the accuracy of the resulting measurement.

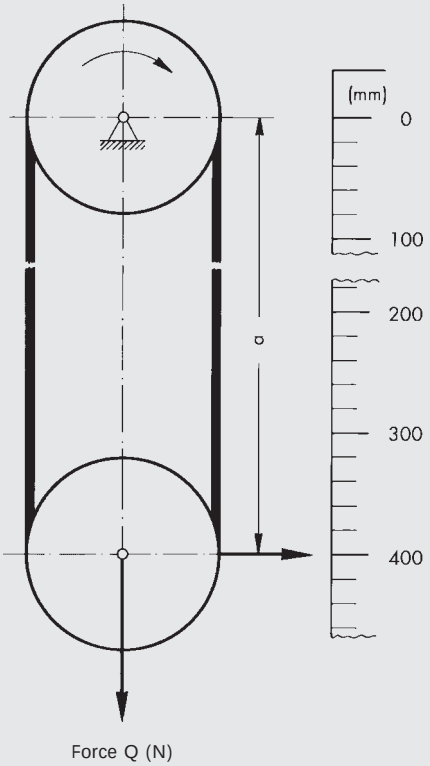
The length is obtained by adding the diameter of the pulley to twice the drive centre distance a.

$L_d = 2\ a + U_d$

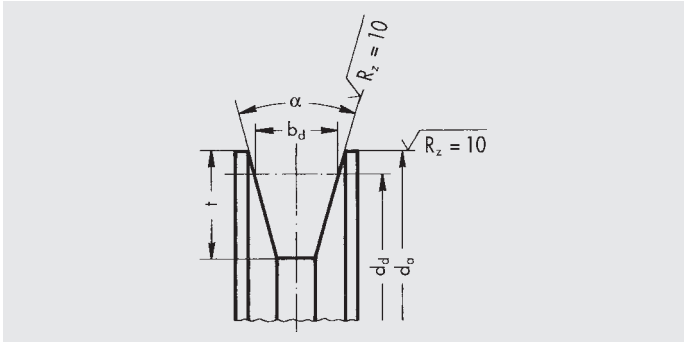
$L_a = 2\ a + U_a$

You will find the length conversion factors in the tables on pages 141/142 and 145/146.

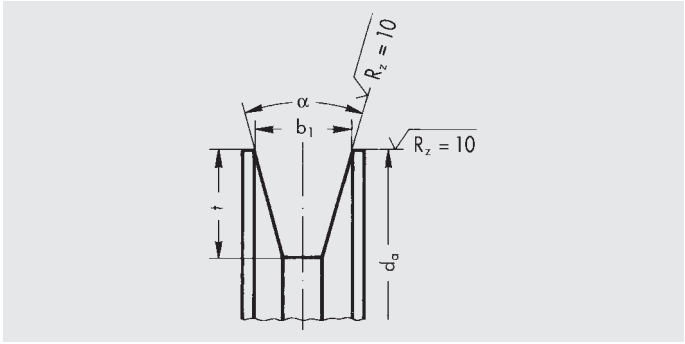
Arrangement for measuring belt length



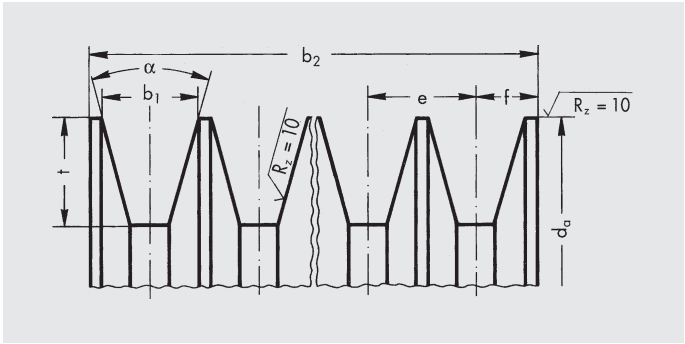
Measurement pulley for wedge belts to BS 3790, DIN 7753 Part 1 and classical V-belts to BS 3790 and DIN 2215



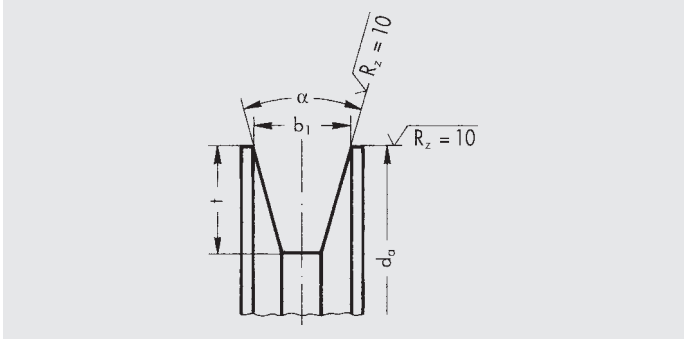
Measurement pulley for wedge belts USA Standard RMA/MPTA



Measurement pulley for Kraftbands



Measurement pulley for double section V-belts



Design Hints

Length Measurement Conditions and Conversion Factors

Table 63: Optibelt SK wedge belts
Optibelt Super TX M=S wedge belts, raw edge, moulded cogged
Measurement pulleys and force to BS 3790, DIN 7753 Part 1 and ISO 4183

Section	Datum circum-ference $U_d = d_d \cdot \pi$	Datum diameter d_d ± 0.05	Outside diameter d_a ± 0.05	Datum width b_d	Groove angle $\alpha°$ ± 10'	Groove depth t_{min}	Force Q (N)	Outside length L_a (mm)	Inside length L_i (mm)
SPZ; XPZ	300	95.49	100	8.5	36	11	360	$L_a \approx L_d$ + 13 $L_a \approx L_i$ + 51	$L_i \approx L_d$ – 38 $L_i \approx L_a$ – 51
SPA; XPA	450	143.24	149	11.0	36	14	560	$L_a \approx L_d$ + 18 $L_a \approx L_i$ + 63	$L_i \approx L_d$ – 45 $L_i \approx L_a$ – 63
SPB; XPB	600	190.99	198	14.0	36	18	900	$L_a \approx L_d$ + 22 $L_a \approx L_i$ + 82	$L_i \approx L_d$ – 60 $L_i \approx L_a$ – 82
SPC; XPC	1000	318.31	328	19.0	36	24	1500	$L_a \approx L_d$ + 30 $L_a \approx L_i$ + 113	$L_i \approx L_d$ – 83 $L_i \approx L_a$ – 113

Table 64: Optibelt SK wedge belts
Optibelt Super TX M=S wedge belts, raw edge, moulded cogged
Measurement pulleys and force to USA Standard RMA/MTPA

Section	Outside circum-ference $U_a = d_a \cdot \pi$	Outside diameter d_a ± 0,13	Upper groove width b_1 ± 0,13	Groove angle $\alpha°$ ± 15'	Groove depth t_{min}	Force Q (N)	Inside length L_i (mm)
3V/ 9N; 3VX/9NX	300	95.5	8.90	38	9.0	445	$L_i \approx L_a$ – 42
5V/15N; 5VX/15NX	600	191.0	15.24	38	15.0	1000	$L_i \approx L_a$ – 71
8V/25N	1000	318.3	25.40	38	25.5	2225	$L_i \approx L_a$ – 120

Table 65: Optibelt VB classical V-belts
Optibelt Super TX M=S classical V-belts, raw edge, moulded cogged
Measurement pulleys and force to BS 3790, DIN 2215 and ISO 4183

Section	Datum circum-ference $U_d = d_d \cdot \pi$	Datum diameter d_d ± 0,05	Outside diameter d_a ± 0,05	Datum width b_d	Groove angle $\alpha°$ ± 10'	Groove depth t_{min}	Force Q (N)	Outside length L_a (mm)	Inside length L_d (mm)
5	70	22.28	24.88	4.2	32	5	30	$L_a \approx L_i$ + 19 $L_a \approx L_d$ + 8	$L_d \approx L_i$ + 11 $L_d \approx L_a$ – 8
Y/6	90	28.65	31.85	5.3	32	6	40	$L_a \approx L_i$ + 25 $L_a \approx L_d$ + 10	$L_d \approx L_i$ + 15 $L_d \approx L_a$ – 10
8	140	44.56	48.56	6.7	32	8	80	$L_a \approx L_i$ + 31 $L_a \approx L_d$ + 12	$L_d \approx L_i$ + 19 $L_d \approx L_a$ – 12
Z/10; ZX/X10	180	57.30	62.30	8.5	34	10	110	$L_a \approx L_i$ + 38 $L_a \approx L_d$ + 16	$L_d \approx L_i$ + 22 $L_d \approx L_a$ – 16
A/13; AX/X13	300	95.50	102.10	11.0	34	12	200	$L_a \approx L_i$ + 50 $L_a \approx L_d$ + 20	$L_d \approx L_i$ + 30 $L_d \approx L_a$ – 20
B/17; BX/X17	400	127.32	135.72	14.0	34	15	300	$L_a \approx L_i$ + 69 $L_a \approx L_d$ + 29	$L_d \approx L_i$ + 40 $L_d \approx L_a$ – 29
20	520	165.52	175.12	17.0	34	18	750	$L_a \approx L_i$ + 79 $L_a \approx L_d$ + 31	$L_d \approx L_i$ + 48 $L_d \approx L_a$ – 31
C/22; CX/X22	700	222.82	234.22	19.0	34	20	750	$L_a \approx L_i$ + 88 $L_a \approx L_d$ + 30	$L_d \approx L_i$ + 58 $L_d \approx L_a$ – 30
25	800	254.65	267.25	21.0	34	22	750	$L_a \approx L_i$ + 100 $L_a \approx L_d$ + 39	$L_d \approx L_i$ + 61 $L_d \approx L_a$ – 39
D/32	1000	318.31	334.52	27.0	36	28	1400	$L_a \approx L_i$ + 126 $L_a \approx L_d$ + 51	$L_d \approx L_i$ + 75 $L_d \approx L_a$ – 51
E/40	1800	572.96	596.96	32.0	36	36	1800	$L_a \approx L_i$ + 157 $L_a \approx L_d$ + 77	$L_d \approx L_i$ + 80 $L_d \approx L_a$ – 77

Design Hints

Length Measurement Conditions and Conversion Factors

Table 66: Optibelt KB Kraftbands with high-performance wedge belts
Measurement pulleys and force

Section	Outside circum-ference $U_a = d_a \cdot \pi$	Outside diameter d_a ± 0,13	Upper groove width b_1 ± 0,13	Groove angle $\alpha°$ ± 15'	Groove depth t_{min}	Mean distance e	Tolerance $e^{1)}$	Σ Tol. $e^{2)}$	Force per rib Q (N)	Inside length L_i (mm)
3V/9J	300	95.50	8.90	38	9.0	10.30	± 0.25	± 0.5	445	$L_i \approx L_a$ – 42
5V/15J	600	191.00	15.20	38	15.0	17.50	± 0.25	± 0.5	1000	$L_i \approx L_a$ – 71
8V/25J	1000	318.30	25.40	38	25.5	28.60	± 0.40	± 0.8	2225	$L_i \approx L_a$ – 120

Table 67: Optibelt KB Kraftbands Section SPZ, SPA, SPB and SPC
Measurement pulleys and force

Section	Datum circum-ference $U_d = d_d \cdot \pi$	Datum diameter d_d ± 0,13	Outside diameter d_a ± 0,13	Datum width b_d	Groove angle $\alpha°$ ± 15'	Groove depth t_{min}	Mean distance e	Tolerance $e^{1)}$	Σ Tol. $e^{2)}$	Force per rib Q (N)	Datum length L_d (mm)
SPZ	300	95.49	100.00	8.5	36	11.0	12.00	± 0.30	± 0.5	360	$L_d \approx L_a$ – 13
SPA	450	143.24	149.00	11.0	36	14.0	15.00	± 0.30	± 0.5	560	$L_d \approx L_a$ – 18
SPB	600	190.99	198.00	14.0	36	18.0	19.00	± 0.40	± 0.8	900	$L_d \approx L_a$ – 22
SPC	1000	318.31	328.00	19.0	36	24.0	25.50	± 0.40	± 0.8	1500	$L_d \approx L_a$ – 30

Table 68: Optibelt KB Kraftbands with classical V-belts
Measurement pulleys and force

Section	Outside circum-ference $U_a = d_a \cdot \pi$	Outside diameter d_a ± 0,13	Upper groove width b_1 ± 0,13	Groove angle $\alpha°$ ± 15'	Groove depth t_{min}	Mean distance e	Tolerance $e^{1)}$	Σ Tol. $e^{2)}$	Force per rib Q (N)	Inside length L_i (mm)
A/HA	254	80.85	12.45	32	12.5	15.88	± 0.38	± 0.8	300	$L_i \approx L_a$ – 36
B/HB	381	121.28	16.00	32	14.5	19.05	± 0.38	± 0.8	450	$L_i \approx L_a$ – 62
C/HC	635	202.13	22.33	34	20.0	25.40	± 0.38	± 0.8	850	$L_i \approx L_a$ – 75
D/HD	889	282.96	31.98	34	28.0	36.53	± 0.38	± 0.8	1000	$L_i \approx L_a$ – 111

1) Tolerance for the mean distance e between two adjacent grooves.

2) The sum of all deviations from the nominal dimension e for all groove spacing on one pulley must not exceed the stated figure.

Table 69: Optibelt DK double section V-belts
Measurement pulleys and force according to DIN 5289

Section	Outside circumference $U_a = d_a \cdot \pi$	Outside diameter d_a	Upper groove width b_1	Groove angle $\alpha° \pm 20'$	Groove depth t_{min}	Force Q (N)
AA/HAA	300	95.49	12.6	34	8	300
BB/HBB	400	127.32	16.2	34	10	450
CC/HCC	600	190.99	22.3	34	14	850
DD/HDD	900	286.48	32.0	34	20	1400
22 x 22	600	190.99	22.3	34	14	750
25 x 22	942	300.00	25.0	34	22	1200

Design Hints
Length Tolerances

Table 70: Wedge belts DIN 7753 Part 1

Section	Pitch length (mm)	Length tolerance (mm Permissible deviation from pitch length		Set tolerance (mm) Permissible difference between the pitch lengths L_d of the belts in one and the same set on multiple belt drives			
		Optibelt		Optibelt		DIN 7753/ISO 4184	
		wrapped	DIN 7753	wrapped	raw edge	wrapped	raw edge
SPZ/XPZ SPA/XPA SPB/XPB SPC/XPC	> 630 ≤ 900	DIN	± 6 bis ± 9	2.0	2.0	2.0	2.0
	> 900 ≤ 1 250	DIN	± 9 bis ± 12	2.0	4.0	2.0	4.0
	> 1 250 ≤ 2 000	± 2.0	± 12 bis ± 20	± 2.0	6.0	2.0	6.0
	> 2 000 ≤ 3 150	± 2.0	± 20 bis ± 32	± 2.0	6.0	4.0	6.0
	> 3 150 ≤ 5 000*	± 2.0	± 32 bis ± 50	± 2.0	10.0*	6.0	10.0*
	> 5 000 ≤ 8 000	± 4.0	± 50 bis ± 80	± 4.0		10.0	
	> 8 000 ≤10 000	± 6.0	± 80 bis ±100	± 6.0		16.0	
	> 10 000 ≤12 500	± 8.0	±100 bis ±125	± 8.0			

Table 71: Classical V-belts DIN 2215

Section	Pitch length (mm)	Length tolerance (mm Permissible deviation from pitch length		Set tolerance (mm) Permissible difference between the pitch lengths L_d of the belts in one and the same set on multiple belt drives			
		Optibelt		Optibelt		DIN 2215/ISO 4184	
		wrapped	DIN 2215	wrapped	raw edge	wrapped	raw edge
5 Y/6 8 Z/10; ZX/X10 A/13; AX/X13 B/17; BX/X17 20 C/22; CX/X22 25 D/32 E/40	≤ 250	DIN	+ 8.0/– 4.0	2.0		2.0	2.0
	> 250 ≤ 315	DIN	+ 9.0/– 4.0	2.0		2.0	2.0
	> 315 ≤ 400	DIN	+ 10.0/– 5.0	2.0		2.0	2.0
	> 400 ≤ 500	DIN	+ 11.0/– 6.0	2.0		2.0	2.0
	> 500 ≤ 630	DIN	+ 13.0/– 6.0	2.0	2.0	2.0	2.0
	> 630 ≤ 800	DIN	+ 15.0/– 7.0	2.0	2.0	2.0	2.0
	> 800 ≤ 900	DIN	+ 17.0/– 8.0	2.0	2.0	2.0	2.0
	> 900 ≤ 1 250	DIN	+ 19.0/– 10.0	4.0	4.0	4.0	4.0
	> 1 250 ≤ 1 600	± 2,0	+ 23.0/– 11.0	± 2.0	4.0	4.0	4.0
	> 1 600 ≤ 2 000	± 2,0	+ 27.0/– 13.0	± 2.0	4.0	4.0	4.0
	> 2 000 ≤ 2 500	± 2,0	+ 31.0/– 16.0	± 2.0	6.0	8.0	8.0
	> 2 500 ≤ 3 150	± 2,0	+ 37.0/– 18.0	± 2.0	8.0	8.0	8.0
	> 3 150 ≤ 4 000*	± 2,0	+ 44.0/– 22.0	± 2.0	8.0*	12.0	12.0*
	> 4 000 ≤ 5 000	± 2,0	+ 52.0/– 26.0	± 2.0		12.0	
	> 5 000 ≤ 6 300	± 4,0	+ 63.0/– 32.0	± 4.0		20.0	
	> 6 300 ≤ 8 000	± 4,0	+ 77.0/– 38.0	± 4.0		20.0	
	> 8 000 ≤10 000	± 6,0	+ 93.0/– 46.0	± 6.0		32.0	
	>10 000 ≤12 500	± 8,0	+ 112.0/– 56.0	± 8.0		32.0	
	>12 500 ≤15 000	DIN	+ 140.0/– 70.0	DIN		48.0	
	>15 000 ≤20 000	DIN	+ 170.0/– 85.0	DIN		48.0	

* Maximum production length for raw edge V-belts ≤ 3550 mm.

Optibelt-S=C plus or Optibelt Super TX M=S V-belts can be used in sets without measuring or remeasuring.

Design Hints
Length Tolerances

Table 72: Wedge belts USA Standard RMA / MTPA

Section	Length designation	Outside length (mm)	Length tolerance (mm) Permissible deviation from outside lengths Replace complete belt sets		Set tolerance (mm) Permissible deviation between the outside lengths L_a of the belts in one and the same set on multiple belt drives Replace complete belt sets		
			Optibelt wrapped	RMA / MPTA	Optibelt wrapped	Optibelt raw edge	RMA / MPTA
3V / 9N; 3VX / 9NX, 5V / 15N; 5VX / 15NX; 8V / 25N	265 ≤ 500	673 ≤ 1 270	acc. RMA / MPTA	± 8	4	4	4
	530	1 346	± 2	± 10	± 2	4	4
	560	1 422	± 2	± 10	± 2	6	6
	600 ≤ 800	1 524 ≤ 2 032	± 2	± 10	± 2	6	6
	800 ≤ 1 000	2 032 ≤ 2 540	± 2	± 13	± 2	6	6
	1 000 ≤ 1 060	2 540 ≤ 2 692	± 2	± 15	± 2	6	6
	1 120 ≤ 1 400	2 845 ≤ 3 556	± 2	± 15	± 2	10*	10
	1 500 ≤ 1 900	3 810 ≤ 4 826	± 2	± 20	± 2		10
	2 000 ≤ 2 360	5 080 ≤ 5 994	± 4	± 20	± 4		10
	2 500 ≤ 3 000	6 350 ≤ 7 620	± 4	± 20	± 4		16
	3 150 ≤ 3 750	8 001 ≤ 9 525	± 6	± 25	± 6		16
	4 000	10 160	± 8	± 25	± 8		16
	4 250 ≤ 4 500	10 795 ≤ 11 430	± 8	± 30	± 8		16
	4 750 ≤ 5 000	12 065 ≤ 12 700	± 12	± 30	± 12		24

Table 73: Double section V-belts

Section	Reference length (mm)	Length tolerance (mm) Permissible deviation of the reference lengths	Set tolerance (mm) Permissible difference between the reference lengths of the double section V-belts in one and the same set on multiple belt drives
AA / HAA BB / HBB CC / HCC DD / HDD 22 x 22 25 x 22	1 250 < 1 320	+ 8 / – 16	4.0
	1 320 < 1 700	+ 9 / – 18	4.0
	1 700 < 2 120	+ 11 / – 22	5.0
	2 120 < 2 650	+ 13 / – 26	6.3
	2 650 < 3 350	+ 15 / – 30	8.0
	3 350 < 4 250	+ 18 / – 36	10.0
	4 250 < 5 300	+ 22 / – 44	12.5
	5 300 < 6 700	+ 26 / – 52	16.0
	6 700 < 8 500	+ 32 / – 64	20.0
	8 500 < 10 000	+ 39 / – 78	25.0

Table 74: Kraftbands with high-performance wedge belts and classical V-belts

Section	Length and set tolerances
3V / 9J; 3VX / 9JX 5V / 15J; 5VX / 15JX 8V / 25J	USA-Standard RMA / MPTA
SPZ; SPA; SPB; SPC	DIN / ISO
A / HA B / HB C / HC D / HD	DIN / ASAE

* Maximum production length for raw edge V-belts ≤ 3550 mm.

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Tables
Conversion Factors

Optibelt SK high-performance wedge belts DIN 7753 Part 1

Section	Cross-section b x h ≈	Section base width b_u ≈	Datum width b_d	Belt length: Nominal-length	Belt length: Outside length L_a	Belt length: Datum length L_d	Belt length: Inside length L_i	Recommended minimum pulley diameter (mm)		Belt weight (≈ kg/m)
SPZ	9.7 x 8	4.2	8.5	Datum length L_d	$L_a \approx L_d + 13$ $L_a \approx L_i + 51$	—	$L_i \approx L_d - 38$ $L_i \approx L_a - 51$	Datum diameter d_d	63	0.074
SPA	12.7 x 10	5.8	11.0		$L_a \approx L_d + 18$ $L_a \approx L_i + 63$	—	$L_i \approx L_d - 45$ $L_i \approx L_a - 63$		90	0.123
SPB	16.3 x 13	7.3	14.0		$L_a \approx L_d + 22$ $L_a \approx L_i + 82$	—	$L_i \approx L_d - 60$ $L_i \approx L_a - 82$		140	0.195
SPC	22.0 x 18	9.6	19.0		$L_a \approx L_d + 30$ $L_a \approx L_i + 113$	—	$L_i \approx L_d - 83$ $L_i \approx L_a - 113$		224	0.377

Optibelt SK high-performance wedge belts USA Standard RMA/MTPA

3V/9N	9.0 x 8	4.2	—	Outside length L_a	—	$L_d \approx L_a - 4$*	$L_i \approx L_a - 42$	Outside diamter d_a	63	0.074
5V/15N	15.0 x 13	7.3	—		—	$L_d \approx L_a - 11$*	$L_i \approx L_a - 71$		140	0.195
8V/25N	25.0 x 23	9.6	—		—	—	$L_i \approx L_a - 120$		335	0.575

* The conversion factors L_d to L_a is used when a section according to DIN 7753 Part 1 is to be replaced by the corresponding section according to RMA/MPTA.

Optibelt Super TX M=S wedge belts – raw edge, moulded cogged – DIN 7753 Part 1

XPZ	9.7 x 8	4.2	8.5	Datum length L_d	$L_a \approx L_d + 13$ $L_a \approx L_i + 51$	—	$L_i \approx L_d - 38$ $L_i \approx L_a - 51$	Datum diameter d_d	56	0.065
XPA	12.7 x 10	5.8	11.0		$L_a \approx L_d + 18$ $L_a \approx L_i + 63$	—	$L_i \approx L_d - 45$ $L_i \approx L_a - 63$		71	0.111
XPB	16.3 x 13	7.3	14.0		$L_a \approx L_d + 22$ $L_a \approx L_i + 82$	—	$L_i \approx L_d - 60$ $L_i \approx L_a - 82$		112	0.183
XPC	22.0 x 18	9.6	19.0		$L_a \approx L_d + 30$ $L_a \approx L_i + 113$	—	$L_i \approx L_d - 83$ $L_i \approx L_a - 113$		180	0.340

Optibelt Super TX M=S wedge belts – raw edge, moulded cogged – USA Standard RMA/MTPA

3VX/9NX	9.0 x 8	4.2	—	Outside length L_a	—	$L_d \approx L_a - 4$*	$L_i \approx L_a - 42$	Outside diamter d_a	56	0.065
5VX/15NX	15.0 x 13	7.3	—		—	$L_d \approx L_a - 11$*	$L_i \approx L_a - 71$		112	0.183

* The conversion factors L_d to L_a is used when a section to BS 3790 or DIN 7753 Part 1 is to be replaced by the corresponding section to RMA/MPTA.

Optibelt Super TX M=S V-belts – raw edge, moulded cogged

ZX/X10	10.0 x 6	5.9	8.5	Datum length L_d	$L_a \approx L_i + 38$ $L_a \approx L_d + 16$	—	$L_i \approx L_d - 22$ $L_i \approx L_a - 38$	Datum diameter d_d	40	0.062
AX/X13	13.0 x 8	7.5	11.0		$L_a \approx L_i + 50$ $L_a \approx L_d + 20$	—	$L_i \approx L_d - 30$ $L_i \approx L_a - 50$		63	0.099
BX/X17	17.0 x 11	9.4	14.0		$L_a \approx L_i + 69$ $L_a \approx L_d + 29$	—	$L_i \approx L_d - 40$ $L_i \approx L_a - 69$		90	0.165
CX/X22	22.0 x 14	12.3	19.0		$L_a \approx L_i + 88$ $L_a \approx L_d + 30$	—	$L_i \approx L_d - 58$ $L_i \approx L_a - 88$		140	0.276

Optibelt VB classical V-belts DIN 2215

5	5.0 x 3	2.8	4.2	Datum length L_d	$L_a \approx L_i + 19$ $L_a \approx L_d + 8$	$L_d \approx L_i + 11$ $L_d \approx L_a - 8$	—	Datum diameter d_d	20	0.018
Y/6	6.0 x 4	3.3	5.3		$L_a \approx L_i + 25$ $L_a \approx L_d + 10$	$L_d \approx L_i + 15$ $L_d \approx L_a - 10$	—		28	0.026
8	8.0 x 5	4.5	6.7		$L_a \approx L_i + 31$ $L_a \approx L_d + 12$	$L_d \approx L_i + 19$ $L_d \approx L_a - 12$	—		40	0.042
Z/10	10.0 x 6	5.9	8.5		$L_a \approx L_i + 38$ $L_a \approx L_d + 16$	$L_d \approx L_i + 22$ $L_d \approx L_a - 16$	—		50	0.064
A/13	13.0 x 8	7.5	11.0		$L_a \approx L_i + 50$ $L_a \approx L_d + 20$	$L_d \approx L_i + 30$ $L_d \approx L_a - 20$	—		71	0.109
B/17	17.0 x 11	9.4	14.0		$L_a \approx L_i + 69$ $L_a \approx L_d + 29$	$L_d \approx L_i + 40$ $L_d \approx L_a - 29$	—		112	0.196
20	20.0 x 12.5	11.4	17.0		$L_a \approx L_i + 79$ $L_a \approx L_d + 31$	$L_d \approx L_i + 48$ $L_d \approx L_a - 31$	—		160	0.266
C/22	22.0 x 14	12.3	19.0		$L_a \approx L_i + 88$ $L_a \approx L_d + 30$	$L_d \approx L_i + 58$ $L_d \approx L_a - 30$	—		180	0.324
25	25.0 x 16	14.0	21.0		$L_a \approx L_i + 100$ $L_a \approx L_d + 39$	$L_d \approx L_i + 61$ $L_d \approx L_a - 39$	—		250	0.420
D/32	32.0 x 20	18.2	27.0		$L_a \approx L_i + 126$ $L_a \approx L_d + 51$	$L_d \approx L_i + 75$ $L_d \approx L_a - 51$	—		355	0.668
E/40	40.0 x 25	22.8	32.0		$L_a \approx L_i + 157$ $L_a \approx L_d + 77$	$L_d \approx L_i + 80$ $L_d \approx L_a - 77$	—		500	0.958

Tables
Conversion Factors

Optibelt KB Kraftbands with high-performance wedge belts to ISO 5290/USA Standard RMA/MTPA

Section	Height * h ≈	Lower belt width b_u ≈ of the single belts	Belt length: Nominal length	Belt length: Outside length L_a	Belt length: Datum length L_d	Belt length: Inside length L_i	Recommended minimum pulley diameter (mm)		Rib weight (≈ kg/m)
3V/9J	9.9	4.2	Outside length L_a	—	—	$L_i \approx L_a$ – 42	Outside diameter d_a	67	0.122
5V/15J	15.1	7.3		—	—	$L_i \approx L_a$ – 71		160	0.252
8V/25J	25.5	9.6		—	—	$L_i \approx L_a$ – 120		315	0.693

Optibelt KB Kraftbands with high-performance wedge belts

SPZ	10.5	5.4	Datum length L_d	$L_a \approx L_d$ + 13	—	—	Datum diameter d_d	80	0.120
SPA	12.5	7.0		$L_a \approx L_d$ + 18	—	—		112	0.166
SPB	15.6	8.8		$L_a \approx L_d$ + 22	—	—		180	0.261
SPC	22.6	9.3		$L_a \approx L_d$ + 24	—	—		250	0.555

Optibelt KB Kraftbands USA Standard RMA/MTPA

A	9.9	7.5	Datum lenth L_d	$L_a \approx L_i$ + 36	$L_d \approx L_i$ + 30	—	Datum diameter d_d	80	0.163
B	13.0	9.4		$L_a \approx L_i$ + 62	$L_d \approx L_i$ + 40	—		125	0.266
C	16.2	12.3		$L_a \approx L_i$ + 75	$L_d \approx L_i$ + 58	—		200	0.447
D	22.4	18.2		$L_a \approx L_i$ + 111	$L_d \approx L_i$ + 75	—		355	0.798

Optibelt KB Kraftbands USA Standard ASAE S 211. ...

HA	9.9	7.5	Outside length L_a	—	—	$L_i \approx L_a$ – 36	Outside diameter d_a	80	0.163
HB	13.0	9.4		—	—	$L_i \approx L_a$ – 62		125	0.266
HC	16.2	12.3		—	—	$L_i \approx L_a$ – 75		200	0.447
HD	22.4	18.2		—	—	$L_i \approx L_a$ – 111		355	0.798

* The width of the Kraftband is a function of the number of ribs.

Optibelt DK double section V-belt DIN 7722/ISO 5289

Section	Cross-section b x h ≈	Section base width b_u ≈	Datum length	Belt length	Recommended minimum pulley diameter (mm)		Belt weight (≈ kg/m)
AA/HAA	13 x 10	—	Reference length	Reference length ≈ mean length – 4	Outside diameter d_a	80	0.150
BB/HBB	17 x 13	—		Reference length ≈ mean length – 8		125	0.250
CC/HCC	22 x 17	—		Reference length ≈ mean length + 3		224	0.440
DD/HDD	32 x 25	—		Reference length = mean length		355	0.935

Optibelt DK double section V-belt DIN 7722/ISO 5289s

22 x 22	22 x 22	—	Reference length	Reference length = mean length	Outside diameter d_a	280	0,511
25 x 22	25 x 22	—		Reference length = mean length		280	0,625

Optibelt FB automotive fan belts

Section	Cross-section b x h ≈	Section base width b_u ≈	Datum width b_d	Belt length: Nominal length	Belt length: Outside length L_a	Belt length: Datum length L_d	Belt length: Inside length L_i	Recommended minimum pulley diameter (mm)	Belt weight (≈ kg/m)
9.5	10 x 8	4.9	8.5	Outside length L_a	—	$L_d \approx L_a$ – 13	$L_i \approx L_a$ – 51	Agreed between vehicle and belt manufacturers	0.070
12.5	13 x 10	5.8	11.0		—	$L_d \approx L_a$ – 18	$L_i \approx L_a$ – 63		0.118

Optibelt Marathon 1/Marathon 2 M=S automotive V-belts – raw edge, moulded cogged, service free

AVX 10	10 x 8	4.9	8.5	Outside length L_a	—	$L_d \approx L_a$ – 13	$L_i \approx L_a$ – 51	Agreed between vehicle and belt manufacturers	0.076
AVX 13	13 x 10	5.8	11.0		—	$L_d \approx L_a$ – 18	$L_i \approx L_a$ – 63		0.118

optibelt
Power Transmission

Special Purpose Conveyor Belts
Product Description

Optibelt have developed a series of special purpose conveyor belts for the economical transportation of goods in a varied range of applications.

- Optibelt PKR endless V-belts according to DIN 2215 with patterned top surfaces
- Optibelt PKR endless V-belts according to DIN 2215 with light coloured fabric cover and patterned top surfaces within the standard belt height
- Optibelt KB Kraftbands with patterned top surfaces
- Optibelt PKR open ended V-belts to DIN 2216 with patterned top surfaces
- Optibelt FK open ended conveyor belting, punched
- Optimax HF high-performance flat belts

Construction / Quality

Special purpose conveyor elements are used in place of expensive conventional type conveyor belts. They run individually, or in sets adjacent to each other, transporting goods horizontally, or up or down inclines. Vertical conveying is also possible if the belts are arranged top surface to top surface gripping the articles between them.

Table 71

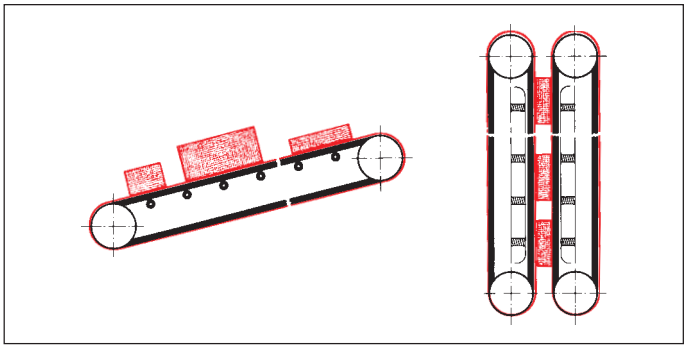
Design / Colour	Temperature resistance (°C)	Hardness (Shore A)	Oil resistance	Marking
SBR-NR / light coloured	– 40 to + 70	≈ 55/65*	no	no
CR / black	– 25 to + 100	≈ 65	limited	yes

CR / black is supplied as standard. We would be pleased to supply details of other designs.

SBR = styrene butadiene rubber
NR = natural rubber
CR = chloroprene rubber
* = 55 for surface over the standard height
* = 65 for surface within the standard height

Properties

Special surfaced belts are used in place of expensive conventional type conveyor belts. They run individually, or in sets arranged adjacent to each other, transporting goods horizontally, or up or down inclines. Vertical conveying is also possible if the belts are arranged top surface to top surface gripping the articles between them.



Applications

Here are just a few examples from the wide range of applications in which Optibelt conveyor belts are used successfully.

For transporting:

- doors, cupboard components, veneer and plastic panels in the woodworking industry
- body parts and sharp-edged sheet metal panels in the automobile industry
- cardboard and boxes in the packaging industry
- roof tiles, concrete slabs and paviors in cement works
- tiles
- sheet glass
- parcels
- bowling alley balls

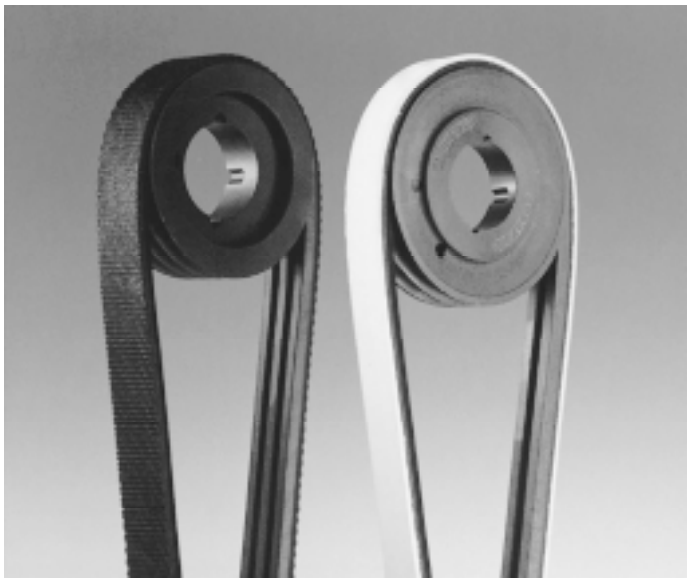
In addition to conveyor applications, these belts are also used for:

- labelling and closing tins, bottles and jars in the preserves industry
- lifting, topping and sorting beet, potatoes, lettuce, cauliflower and sprouts and many other vegetables

Because of their single belt characteristics and high permissible surface loading, Optibelt KB Kraftbands are especially suitable in conveyor systems and lifting platforms for:

- transporting cargo containers
- loading and unloading aeroplanes and railway wagons
- stowing and discharging ships cargoes

Optibelt KB with top surface



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Power Transmission

Special Purpose Conveyor Belts
Design Guidelines

Drive and Guide Pulleys

The drive and guide pulleys should be V-grooved pulleys. The minimum diameters should be selected in accordance with the standard recommendations for V-belts and Kraftbands. See the chapter on V-pulleys.

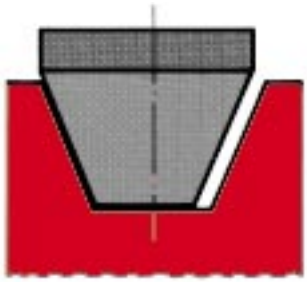
Due to the relatively low transporting speed (experience shows that it is usually less than 1 m/s) and the resulting low flex rate, pulley diameters can be reduced to approx. 10% below the recommended minimum. With greater reduction, there is the danger that the top surface separates from the base V-belt.

The driver pulley should be arranged at the discharge end of the conveyor so that the goods are pulled along.

Support Rollers / Tracks

In most cases, support rollers or tracks are required to prevent the belt from sagging under load.

Support rollers may be flat faced or V-pulleys. The dimensions of the pulley grooves should be such that the conveyor belt is supported at its base in the groove ground, and can only run with one edge along the pulley, and as a consequence does not become trapped in the groove.



The diameter and the number of support rollers required depends upon the length of the conveying span and the weight and size of the goods to be transported.

Support tracks, generally made of plastic, are either flat or with a key seat to improve guidance of the conveyor belt. Like it is the case with the support rollers, the grooves must be of an adequate width.

Adjustment of the drive centre distance allowances

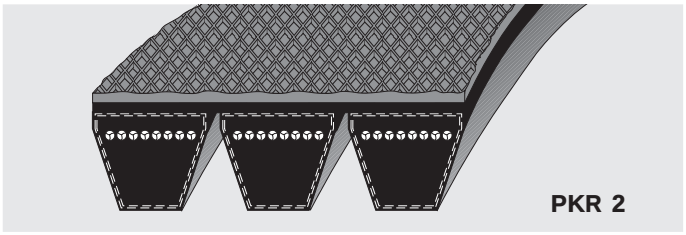
The tables on pages 76 and 77 show the drive centre distance allowances applicable to special purpose conveyor belts and Kraftbands.

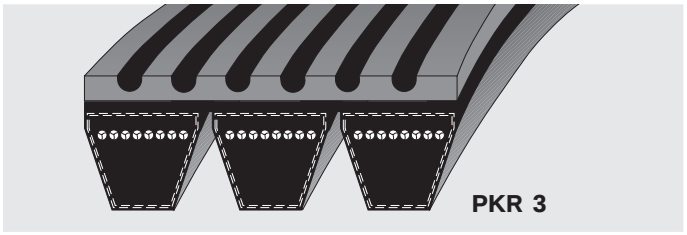
Options for Tensioning

An adequate belt tension is essential to the reliable operation of the conveyor system. Tension is applied by adjusting the drive centre distance or, when the centres are fixed, by the use of tension idlers.

When idlers are employed, they should be arranged inside the belt if possible, as otherwise the alternating flexing of the belt will reduce its service life.

optibelt *KB* Kraftbands with patterned top surface





Pattern	Height of surface		Pitch	Groove width
	Standard (mm)	maximal (mm)	(mm)	(mm)
PKR 0	3	5	—	—
PKR 1	3	5	10	—
PKR 2	3	5	—	—
PKR 3	5	—	—	3.7

Design / Colour	Temperature resistance (°C)	Hardness (Shore A)	Oil resistance	Marking
SBR-NR / light	- 40 to + 70	≈ 55	no	no
CR / black	- 25 to + 100	≈ 65	limited	yes

SBR = styrene butadiene rubber
NR = natural rubber
CR = chloroprene rubber

Table 75

Section	Cross-sectional dimensions of the base belt (mm)	Kraftband height without top surface (mm)	Length designation	Length (mm)	Max. production length (mm)	Pattern type			
						PKR 0	PKR 1	PKR 2	PKR 3
3V / 9J	9 x 8	9.9	500 ≤ 1 400	1 400 ≤ 3 556 L_a	4 250	●	●	●	—
5V / 15J	15 x 13	15.1	500 ≤ 3 550	1 400 ≤ 9 017 L_a	10 000	●	●	●	—
8V / 25J	25 x 23	25.5	1 000 ≤ 4 750	2 540 ≤ 12 065 L_a	15 000	●	●	●	—
SPB	16.3 x 13	15.6	—	2 400 ≤ 6 000 L_d	6 000	●	●	●	—
A / HA	13 x 8	9.9	—	1 400 ≤ 5 000 L_i	8 000	●	●	●	—
				2 850 ≤ 8 000 L_i	on request	—	—	—	●
B / HB	17 x 11	13.0	—	1 400 ≤ 7 100 L_i	10 000	●	●	●	—
C / HC	22 x 14	16.2	—	2 286 ≤ 7 100 L_i	12 000	●	●	●	—

L_a = outside length; L_i = inside length; L_d = datum length.

Range: see page 29/30. Minimum order quantity on request.

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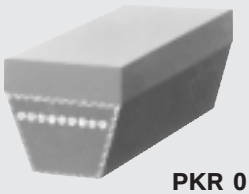
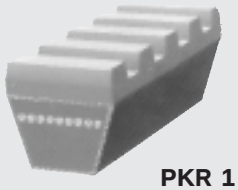
Special Purpose Conveyor Belts

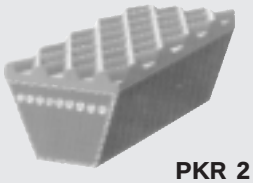
optibelt *PKR* Endless V-Belts with Patterned Top Surface



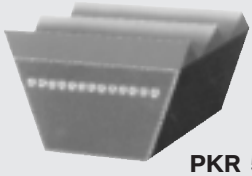
PKR 0



PKR 1



PKR 2



PKR 5

Table 76

Pattern	Height of top surface Standard (mm)	Height of top surface maximal (mm)	Pitch (mm)	Groove width (mm)
PKR 0	3	5	–	–
PKR 1	3	5	10	–
PKR 2	3	5	–	–
PKR 5	5	–	13	–

Table 77

Design / Colour	Temperature resistance (° C)	Hardness (Shore A)	Oil resistance	Marking
SBR-NR / light	- 40 to + 70	≈ 55 / 65*	no	no
CR / black	- 25 to + 100	≈ 65	limited	yes

SBR = styrene butadiene rubber
NR = natural rubber
CR = chloroprene rubber

* ≈ 55 for top surface above the standard height
* ≈ 65 for top surface within the standard height

Table 78

Section	Standard height (mm)	Standard inside length (mm)	Pattern type PKR 0	PKR 1	PKR 2	PKR 5	Minimun order quantities for V-belts patterned top surfaces PKR 0; PKR 1; PKR 2; PKR 5 for standard-range (as listed on pages 23 to 26)	for intermediate length (sizes not listed in this technical manual)
A / 13	8.0	1 200 ≤ 5000[1]	●	●	●	—	18 pcs.	31 pcs.
B / 17	11.0	1 200 ≤ 2 000[1]	●	●	●	—	15 pcs.	50 pcs.
		2 001 ≤ 7 100[1]	●	●	●	—	15 pcs.	42 pcs.
20	12.5	1 850 ≤ 2 000[2]	●	●	●	—	13 pcs.	21 pcs.
		2 001 ≤ 8 000[2]	●	●	●	—	13 pcs.	36 pcs.
C / 22	14.0	1 850 ≤ 2 000[2]	●	●	●	—	12 pcs.	57 pcs.
		2 001 ≤ 10 000[2]	●	●	●	—	12 pcs.	48 pcs.
25	16.0	1 850 ≤ 2 000[2]	●	●	●	—	11 pcs.	51 pcs.
		2 001 ≤ 10 000[2]	●	●	●	—	11 pcs.	42 pcs.
D / 32	20.0	2 850 ≤ 12 500[2]	●	●	●	—	9 pcs.	22 pcs.
		2 850 ≤ 12 500[2]	—	—	—	●[3]	8 pcs.	8 pcs.
E / 40	25.0	—	—	—	—	—	on request	on request

1) Maximum production length on request.
2) Maximum production length 21000 mm.
3) Only available in CR / black.
Section Z / 10 on request.

Table 79

Standard inside length (mm)	Pattern type PKR 0	PKR 2	Minimum quantitiy
3 550 ≤10 000[1]	●	●	10
2 850 ≤21 000[1]	●	●	10
3 550 ≤21 000[1]	●	●	8
3 550 ≤21 000[1]	●	●	8
2 850 ≤21 000[1]	●	●	8
2 850 ≤21 000[1]	●	●	6
4 000 ≤21 000[1]	●	●	5

When ordering, please state the overall height of the V-belt including top surface.
This is indicated by the section designation as follows.

Section B / 17 – top surface within the standard height	= 17 x 11
Section B / 17 – with additional 3 mm top surface	= 17 x 14
Section B / 17 – with additional 5 mm top surface	= 17 x 16

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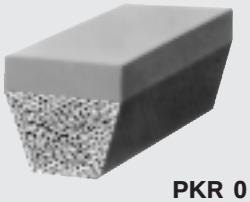
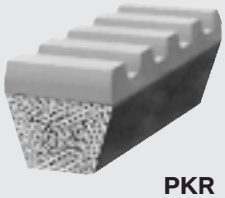
Special Purpose Conveyor Belts

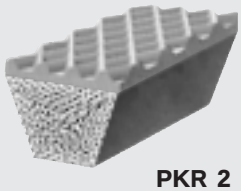
optimat *PKR* Open Ended V-Belting according to DIN 2216 with Patterned Top Surfaces



PKR 0



PKR 1



PKR 2

Table 80

Section	PKR 0 CR/red brown		PKR 0 SBR-NR/light coloured		PKR 1		PKR 2	
	S	P	S	P	S	P	S	P
Z/10	●	●	—	—	—	—	—	—
A/13	●	●	●	●	●	●	●	●
B/17	●	●	●	●	●	●	●	●
C/22	●	●	●	●	●	●	●	●
25	●	●	●	●	●	●	●	●
D/32	●	●	●	●	●	●	—	—

S = Standard; P = Polyester

Table 81

Pattern types	Top surface height		Pitch
	Standard (mm)	Max. (mm)	(mm)
PKR 0	2	3	–
PKR 1 A/13; B/17; C/22	3	3	10
PKR 1 25; D/32	5	5	10
PKR 2	3	–	–

Table 82

Design/ Colour	Temperature resistance (° C)	Hardness (Shore A)	Oil resistance	Marking
PKR 0				
CR/red brown	- 25 to + 100	≈ 50	limited	no
SBR-NR/light coloured	- 40 to + 70	≈ 45	no	no
PKR 1 and PKR 2				
NR/red brown	- 40 to + 70	≈ 48	no	no
SBR-NR/light coloured	- 40 to + 70	≈ 45	no	no
CR/red brown	- 25 to + 100	≈ 50	limited	no
CR/black	- 25 to + 100	≈ 68	limited	yes

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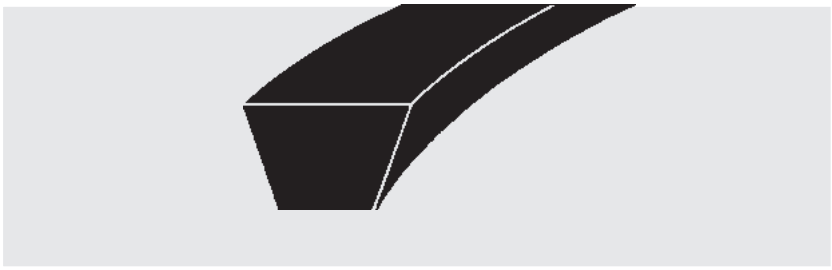
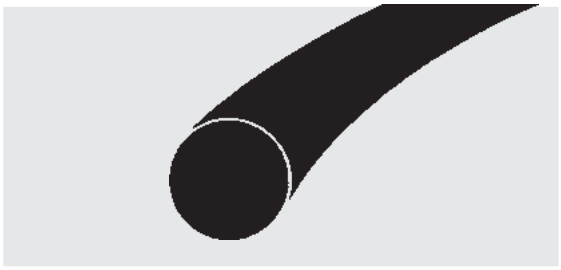
Power Transmission

Special Purpose Conveyor Belts

optibelt *RR* Plastic round section belting
optibelt *KK* Plastic V-belting





Section	Width x Height (mm)	Length of roll (m)
8	8 x 5	50
Z/10	10 x 6	50
A/13	13 x 8	50
B/17	17 x 11	50
C/22	22 x 14	25

Diameter (mm)	Length of roll (m)	Weight (≈ kg/m)
2	200	0.004
3	200	0.009
4	200	0.016
5	200	0.024
6	100	0.035
7	100	0.048
8	100	0.064
10	100	0.096
12	50	0.132
15	50	0.211

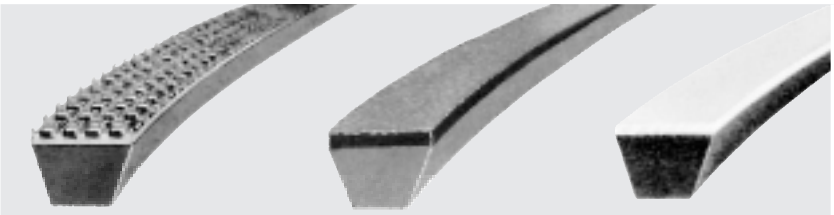
Optibelt RR round-section belting and Optibelt KK plastic V-belting are especially suited as transporting elements in the food industry, in ceramic industry plants, an for applications requiring oils and chemicals.

They can also be used as drive elements for specific ranges of capacity. Optibelt supplies different qualities that can be easily distinguished due to their different colours.

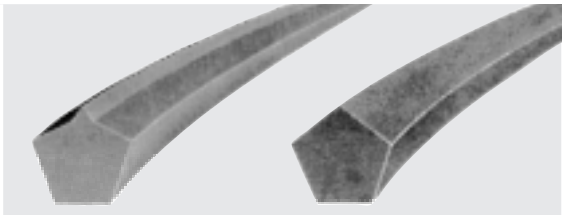
Minimum lengths for endless connection:

Round-Section belting:		200 mm
V-belting:	Section Z/10 to A/13:	300 mm
	Section B/17:	500 mm
	Section C/22:	700 mm

optibelt *KK* plastic V-belting with profile surface (white, 92 Shore A)
Plastic V-belting with pointed roof profile



Supergrip **Linatex** **HV 2-Laminate**



Form 1 **Form 2**

Section	Width x Hight (mm)	Length of roll (m)
8	8 x 5	50
Z/10	10 x 6	50
A/13	13 x 8	50
B/17	17 x 11	50
C/22	22 x 14	25

Form	Section	Length of roll (m)
1	A/13	25
2	A/13	25
1	B/17	25
2	B/17	25
1	C/22	25
2	C/22	25

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Table of Standards

Federal Republic of Germany

DIN 109 Sheet 1 – Drive elements, circumferential speeds
DIN 109 Sheet 2 – Drive elements, drive centre distances for V-belt drives
DIN 111 – Flat belts; dimensions, nominal torque
DIN 111 Sheet 2 – Flat belts - specification for electrical machines
DIN 2211 Sheet 1 – V-belts; dimensions; material
DIN 2211 Sheet 2 – V-belts; testing the grooves
DIN 2211 Sheet 3 – Wedge belts; specification for electrical machines
DIN 2215 – Endless V-belts, classical sections; minimum pulley datum diameters, inside and datum belt lengths
DIN 2216 – Open ended V-belting; dimensions
DIN 2217 Sheet 1 – V-belt pulleys for classical sections; dimensions, material
DIN 2217 Sheet 2 – V-belt pulleys for classical sections; groove checking
DIN 2218 – Endless V-belts, classical sections for industrial engineering applications; drive design, power ratings
DIN 7716 – Natural and synthetic rubber products; storage, cleaning and maintenance requirements
DIN 7719 Part 1 – Endless variable speed belts for industrial speed changers; belts and groove sections of the corresponding pulleys
DIN 7719 Part 2 – Endless variable speed belts for industrial speed changers; measuring the shaft centre distance fluctuation
DIN 7721 Part 1 – Synchronous belt drives, metric pitch; timing belts
DIN 7721 Part 2 – Synchronous belt drives, metric pitch; tooth profile for synchronous pulleys
DIN 7722 – Endless hexagonal belts for agricultural machinery and groove sections of the corresponding pulleys
DIN 7753 Part 1 – Endless wedge belts for industrial engineering applications; dimensions
DIN 7753 Part 2 – Endless wedge belts for industrial engineering applications; drive design and power ratings
DIN 7753 Part 3 – Endless wedge belts for automotive engineering applications; dimensions
DIN 7753 Part 4 – Endless wedge belts for automotive engineering applications; fatigue testing
DIN 7867 – Ribbed belts and pulleys
DIN/ISO 5210 – Joined wedge belts; sections 9J; 15J; 20J; 25J
DIN/ISO 5294 – Timing belt drives; pulleys
DIN/ISO 5296 – Timing belt drives; belts

ISO International Organisation for Standardisation

ISO 22 – The widths of flat belts and corresponding pulleys
ISO 63 – Flat belt drives; lengths
ISO 99 – Diameter of pulleys for flat belts
ISO 100 – Crown height of pulleys for flat belts
ISO 155 – Drive pulleys; limits for setting drive centre distances
ISO 254 – Type, quality and balancing of pulleys
ISO 255 – Pulleys for classical V-belts and wedge belts; geometrical groove checking
ISO 1081 – Drives with V-belts and grooved pulleys; terminology
ISO 1604 – Endless variable speed belts and pulleys for industrial engineering applications
ISO 1813 – Endless V-belts; electrical conductivity
ISO 2230 – See DIN 7716
ISO 2790 – Wedge belt drives for the automotive industry; dimensions
ISO 3410 – Endless variable speed belts and pulleys for agricultural applications
ISO 4183 – Grooved pulleys for classical V-belts and wedge belts
ISO 4184 – Classical V-belts and wedge belts; lengths
ISO 5256 – Synchronous belt drive; belt tooth pitch coding
Part 1 MXL; XL; L; H; XH; XXH
Part 2 MXL; XXL metric sizes
ISO 5287 – Wedge belt drives for the automotive industry; fatigue testing
ISO 5288 – Timing belt drives; definitions
ISO 5289 – Endless double section belts and pulleys for agricultural applications
ISO 5290 – Joined wedge belt pulleys;
groove sections 9J; 15J; 20J; 25J;
ISO 5291 – Joined classical V-belt pulleys;
groove sections AJ; BJ; CJ; DJ
ISO 5292 – Industrial V-belt drives; calculating ratings and drive centre distances
ISO 5294 – Synchronous belt drives; pulleys
ISO 5295 – Timing belts; calculating ratings and drive centre distances
ISO 5296 – Synchronous belt drives; belts
ISO 8370-1 – Dynamic testing for determining the effective area with V-belts
ISO 8370-2 – Dynamic testing for determining the effective area with ribbed belts
ISO/DIS 8419 – Joined wedge belt drives, lengths in the datum system
ISO/CD 9010 – Synchronous belt drives - belts for the automotive industry
ISO/CD 9011 – Synchronous belt drives - pulleys for the automotive industry
ISO 9563 – Anti-static endless timing belts; electrical conductivity; characteristics and test methods
ISO 9980 – Belt drives; V-belt pulleys; checking the geometry of the pulley grooves
ISO 9981 – Belt drives - pulleys and ribbed belts for the automotive industry; section PK
ISO 9982 – Belt drives - pulleys and ribbed belts for industrial applications; geometric data PH, PJ, PK, PL and PM
ISO 9982 – See DIN 7867

Australia

– Employs the same Standards as the United Kingdom

Austria

ÖNORM M 6504 – V-belt pulleys for classical V-belts, groove sections, material
ÖNORM M 6506 – Wedge belt pulleys; groove sections, material
ÖNORM M 6516 – V-belt drives; calculation, selection diagram
ÖNORM M 6516 – V-belt drives; calculation
Appendix
ÖNORM DIN 2215 – Endless V-belts; dimensions

Belgium

NBN E 24-001 – V-belt and pulley drives; terminology and explanations
NBN E 24-002 – Endless V-belts with classical sections; electrical conductivity
NBN E 24-003 – Endless V-belts with classical sections and V-belt pulleys for industrial applications
NBN E 24-004 – Endless wedge belts and V-belt pulleys for industrial applications
NBN E 24-005 – Endless variable speed belts and pulleys for industrial applications
NBN E 24-006 – Endless wedge belts and pulleys for the automotive industry
NBN E 24-007 – Endless flat belts and pulleys
NBN E 24-009 – Endless variable speed belts and pulleys for agricultural applications
NBN E 24-010 – Double section belts and pulleys for agricultural applications
NBN E 24-011 – V-belt pulleys for banded belts with wedge belts

Countries of the former USSR

GOST 1284-57 – Endless classical section V-belts; V-belt pulleys
GOST 5813-64 – Endless V-belts and pulleys for automotive engines, tractors and agricultural machinery

Denmark

DS/ISO 254 – Type, quality and balancing of pulleys
DS 2104 – V-belt pulleys for classical and wedge belts; checking the grooves
DS 2106 – V-belt pulleys; material, quality, balancing
DS 2107 – V-belt pulleys for classical sections; pulley types
DS 2108 – V-belt drives; allowances for drive centre adjustment
DS/ISO 5287 – Wedge belt drives for the automotive industry; fatigue testing
DS/ISO 5289 – Endless double section belts and pulleys for agricultural machinery applications
DS/ISO 5294 – Synchronous belt drives; pulleys
DS/ISO 5296 – Synchronous belt drives; belts

Finland

SFS 2491 – Endless classical section V-belts; sizes, lengths
SFS 2492 – Endless classical section V-belts; cross section checking
SFS 2493 – Endless classical section V-belts; drive calculation

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Table of Standards

SFS 2494	– Classical section belt pulleys; sizes, diameters
SFS 2495	– Classical section belt pulleys; checking the grooves
SFS 2496	– V-belt pulleys; material, balancing
SFS 3523	– Endless wedge belts, V-belt pulleys and terminology
SFS 3524	– Endless wedge belts; sizes, lengths
SFS 3525	– Endless wedge belts; length measurement
SFS 3526	– Wedge belt pulleys; sizes, diameters
SFS 3527	– Endless wedge belts; drive calculation

France

NF E 24-002 ISO 254	– Type, quality and balancing of belt pulleys
NF E 24-209 ISO 255	– Pulleys for classical V-belts and wedge belts; geometrical checking of the grooves
NF E 24-211 ISO4183	– Grooved pulleys for classical V-belts and wedge belts
NF E 24-212 ISO4184	– Classical V-belts and wedge belts; lengths
NF E 24-213	– V-belt drives - classical V-belts and wedge belts; cross-section checking
NF E 24-220/ISO5290	– Joined wedge belt pulleys; groove sections 9J; 15J; 25J
NF E 24-232/ISO1604	– Endless variable speed belts and pulleys for industrial applications
NF E 24-301/ISO5296	– Synchronous belt drives; belts
NF E 24-302/ISO5294	– Synchronous belt drives; pulleys
NF E 24-402/ISO9982	– Belt drives; pulleys and ribbed belts for industrial applications; geometrical data PH; PJ; PK; PL and PM
NF T 47-104	– Endless V-belts, electrical conductivity, sections Y; Z; A; B; C; D; E; SPZ; SPA; SPB; SPC
NF T 47-123	– Drives with V-belts and grooved pulleys; terminology

United Kingdom

BS 3733	– Endless classical section V-belts for agricultural applications
BS 3790	– Drives with endless wedge belts and V-belts
BS AU 150	– Endless wedge belts for the automotive industry

Israel

S.I. 429	– Endless V-belts for motor vehicles

Italy

UNI 5265	– Classical section endless V-belts; cross-section dimensions
UNI 5266	– Classical section V-belt pulleys
UNI 7509	– Classical section endless V-belts; electrical conductivity

Japan

JASO E 105/106	– Timing belts and pulleys for the automotive industry
JASO E 107/108	– V-belts and pulleys for the automotive industry
JIS B 1854	– V-belt pulleys for classical V-belts
JIS B 1855	– V-belt pulleys for wedge belts
JIS K 6323	– Endless classical section V-belts

Netherlands

NEN 1725	– Endless wedge belts and corresponding pulleys; dimensions for sections SPZ; SPA and SPB
NEN 1727	– Endless V-belts and corresponding pulleys; dimensions for sections Y; Z; Z; B; C; D; E

In addition the ISO Standards apply.

Poland

PN-66 M 85201	– Classical section endless V-belts; V-belt pulleys

Spain

UNE 18006	– Classical V-belts; dimensions
UNE 18007	– Flat belts and pulleys; dimensions
UNE 18009	– Pulleys for classical V-belts; dimensions
UNE 18077	– Flat belt pulleys; dimensions
UNE 18086	– Classical V-belts, cross section checking
UNE 18102	– Drive pulleys
UNE 18107	– V-belts; technology
UNE 18108	– V-belts for classical sections; groove checking
UNE 18117	– V-belt pulleys; production, machining

Sweden

SMS 979	– Endless flat belts and pulleys; dimensions
SMS 2475	– V-belt pulleys; types; balancing
SMS 2476	– Endless classical section V-belts; drive calculation
SMS 2477	– Endless classical section V-belts; dimensions, lengths
SMS 2479-2485	– Endless classical section V-belts; ratings
SMS 2489	– Endless classical section V-belts; cross section checking
SMS 2490	– Endless classical section V-belts; length measurement
SMS 2491	– Classical section V-belt pulleys; dimensions
SMS 2492	– Classical section V-belt pulleys; diameters, drive ratios
SMS 2493	– Classical section V-belt pulleys; checking the grooves
SMS 2494	– V-belt pulleys, sizing
SMS 2500	– V-belts and V-belt pulleys; terminology
SMS 2516	– Endless wedge belts; sections SPZ; SPB; SPC; cross sections, lengths
SMS 2517	– Endless wedge belts; sections SPZ; SPB; SPC; length measurement
SMS 2518	– Wedge belt pulleys; sections SPZ; SPB; SPC; dimensions
SMS 2565	– Endless variable speed belts for industrial applications; sections, lengths
SMS 2566	– Endless variable speed belts for industrial applications; length and section measurement
SMS 2567	– V-belt pulleys for endless variable speed belts for industrial applications

Switzerland

VSM 15425	– Belt pulleys for classical sections and wedge belts; groove sections, diameters
VSM 15426	– Endless classical V-belts and endless wedge belts; sections and belt lengths

USA

RMA/MPTA IP-20	– Classical Multiple V-Belts (A; B; C; D and E Cross Sections)
RMA/MPTA IP-21	– Double (Hexagonal) Belts (AA; BB; CC; DD Cross Sections)
RMA/MPTA IP-22	– Narrow Multiple V-belts (3V; 5V; and 8V Cross Sections)
RMA/MPTA IP-23	– Light Duty V-Belts (2L; 3L; 4L and 5L Cross-Sections)
RMA/MPTA IP-24	– Synchronous Belts (MXL; XL; L; H; XH and XXH Belt Sections)
RMA/MPTA IP-25	– Variable Speed V-Belts (12 Cross-Sections)
RMA/MPTA IP-26	– V-Ribbed Belts (PH; PJ; PL and PM Cross-Sections)
ASAE S 211. ...	– V-Belt Drives for Agricultural Machines
SAE J636b	– V-Belts and Pulleys for Automotive Applications

Yugoslavia

JUS G. E2.053	– Classical endless V-belts
JUS G. E2.054	– Classical endless V-belts; length measurement
JUS G. E2.055	– Classical endless V-belts; cross section measurement
JUS G. E2.057	– Endless V-belts; types
JUS G. E2.063	– Endless wedge belts; lengths
JUS G. E2.064	– Endless wedge belts; sections
JUS G. E2.065	– Endless wedge belts; cross section measurement

optibelt
Power Transmission

Data Sheet
for Calculation / Check of Drive

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Company

(stamp)

For test ☐ New drive ☐
For initial production ☐ Existing drive ☐
For series production ☐ Usage _____ belts / year

Fitted with:

Number	Size	Manufacturer

Prime Mover

Type (e.g. electric motor, diesel engine 3 cyl.) _____
Size of starting torque (e.g. M_A = 1.8 M_N) _____
Method of starting (e.g. star delta) _____
Operational hours per day _____ hours
Number of starts _____ per hour ☐ per day ☐
Rational reverses _____ per minute ☐ per hour ☐
Power: P normal _____ kW
P maximal _____ kW
or maximum torque _____ Nm bei n_1 _____ r.p.m.
Speed n_1 _____ r.p.m.
Position of shafts: horizontal ☐ vertical ☐
angled ☐ ∢ _____ °
Maximum allowable shaft loading $S_{a\,max}$ _____ N
Datum or outside diameter of pulley:

d_{d1}	_____ mm	d_{a1}	_____ mm
$d_{d1\,min}$	_____ mm	$d_{a1\,min}$	_____ mm
$d_{d1\,max}$	_____ mm	$d_{a1\,max}$	_____ mm

Pulley face width $b_{2\,max}$ _____ mm

Speed ratio i _____
Centre distance a _____ mm
Tension / guide pulleys: inside ☐ outside ☐
d_d _____ mm V-Pulley ☐
d_a _____ mm Flat pulley ☐

Operating Conditions: Ambient temperature

Exposure to oil ☐
water ☐
acid ☐
dust ☐

Driven Machine

Type (e.g. lathe, compressor) _____
Start: loaded ☐ unloaded ☐
Nature of load:: constant ☐ pulsating ☐
shock ☐
Rating: P normal _____ kW
P maximal _____ kW
or maximum torque _____ Nm bei n_2 _____ r.p.m.
Speed n_2 _____ r.p.m.
$n_{2\,min}$ _____ r.p.m.
$n_{2\,max}$ _____ r.p.m.
Maximum allowable shaft loading $S_{a\,max}$ _____ Newton
Datum or outside diameter of pulley:

d_{d2}	_____ mm	d_{a2}	_____ mm
$d_{d2\,min}$	_____ mm	$d_{a2\,min}$	_____ mm
$d_{d2\,max}$	_____ mm	$d_{a2\,max}$	_____ mm

Pulley face width $b_{2\,max}$ _____ mm

i_{min} _____ i_{max} _____
a_{min} _____ mm a_{max} _____ mm
in drive slack side ☐
in drive tight side ☐
movable ☐ (e.g. spring loaded)
fixed ☐

_____ °C minimum
_____ °C maximum
(e.g. oil mist, droplets) _____
(e.g. spray) _____
(type, concentration, temperature) _____
dust (type) _____

Special conditions: Where the drive is subjected to unusual conditions (e.g. inside or outside idler pulleys, three or multi-pulley drives, as well as drives with reverse rotational direction, sketches are required. Please use the back of this data sheet for sketches.

Drive description:

optibelt
Power Transmission

Data Sheet
for Calculating / Checking Conveyor Systems

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Corveyer Allee 15
37671 Höxter / Germany
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Fax +49 (0)52 71 / 6 22 00
info@optibelt.com
www.optibelt.com

Company

(stamp)

For one off use ☐ New drive ☐
For series production ☐ Existing drive ☐
Usage _____ belts / year

Fitted with:

Number	Section length	Top surface	Manufacturer

Prime Mover

Type (e.g. geared motor) _____
Size of starting torque (e.g. M_A = 1.8 M_N) _____
Method of starting (e.g. star delta) _____
Start under load ☐ unloaded ☐
Operational hours per day _____ hours
Number of starts _____ per hour ☐ per day ☐
Power: P normal _____ kW
P maximum _____ kW
or maximum torque _____ Nm at n_1 _____ r.p.m.
Rotational speed n_1 _____ r.p.m.
Rotational speed n_2 _____ r.p.m.
Conveying speed min _____ m / min
max _____ m / min
Continuously variable yes ☐ no ☐
Maximum allowable shaft loading $S_{a\,max}$ _____ Newton
Datum or autside diameter of the driver pulley:
d_{d1} _____ mm d_{a1} _____ mm
$d_{d1\,min}$ _____ mm $d_{a1\,min}$ _____ mm
$d_{d1\,max}$ _____ mm $d_{a1\,max}$ _____ mm
Datum or outside diameter of the guide pulleys:
d_{d2} _____ mm d_{a2} _____ mm
$d_{d2\,min}$ _____ mm $d_{a2\,min}$ _____ mm
$d_{d2\,max}$ _____ mm $d_{a2\,max}$ _____ mm
Speed ratio i _____ i_{min} _____ i_{max} _____
Position of shafts: horizontal ☐ vertical ☐
angled ☐ ∢ _____ °
Overall width of the system _____ mm
Drive centre distance a _____ mm a_{min} _____ mm a_{max} _____ mm
Allowance for tensioning – mm _____ + mm
Tension / guide pulleys: inside ☐ outside ☐
d_d _____ mm d_a _____ mm

Supporting pulleys V-pulleys ☐ Flat pulleys ☐
Bearings plain ☐ ball ☐
Number _____ pieces
d_d _____ mm d_a _____ mm
Spacing t _____ pieces
Support rails flat ☐ V-grooved ☐
Material (e.g. steel. plastic) _____

Material to be conveyed

Type (e.g. concrete slabs) _____
Condition of the corners round ☐ sharp ☐
Conditions of the contact surface rough ☐ smooth ☐
Conveyed horizontally ☐ vertically ☐
inclined ☐ ∢ _____ °
downwards ☐ upwards ☐
Dimensions l x w x h (mm) _____ x _____ x _____
Motion continuous ☐ cycled ☐
collected ☐

Operating Conditions

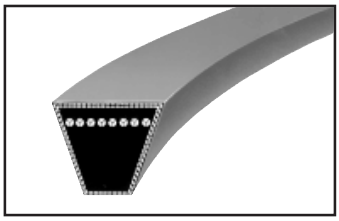
Exposure to oil ☐ (e.g. oil mist, droplets) _____
water ☐ (e.g. spray) _____
acid ☐ (type, concentration, temperature) _____
dust ☐ (type) _____
In the open air yes ☐ no ☐

The space overleaf is provided for sketches of the drive arrangement. Please include the dimensions of all the pulleys and idlers used in the proposed design

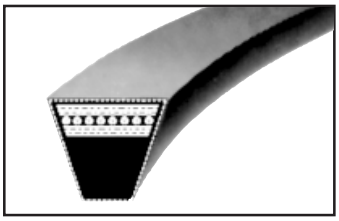
Notes on the proposed conveyor arrangement:

optibelt

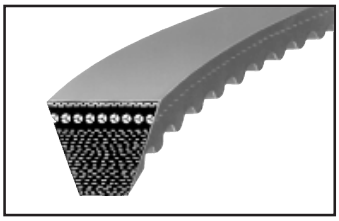
Power Transmission



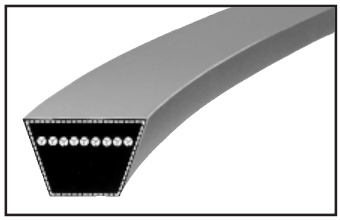
optibelt **SK**
High performance wedge belts to BS 3790, DIN 7753 Part 1 and RMA / MPTA



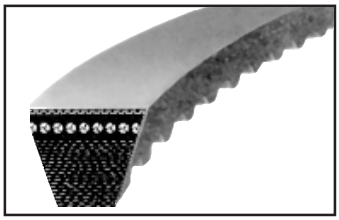
optibelt **RED POWER II**
High performance wedge belts to BS 3790, DIN 7753 Part 1 and RMA / MPTA - service free



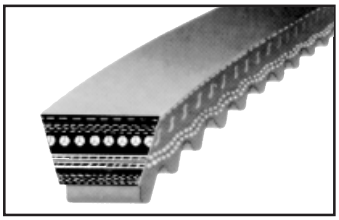
optibelt **SUPER TX M=S**
Moulded cogged raw edge belts to BS 3790 and DIN 7753 Part 1



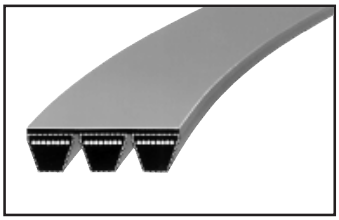
optibelt **VB**
Classical belts to BS 3790 and DIN 2215



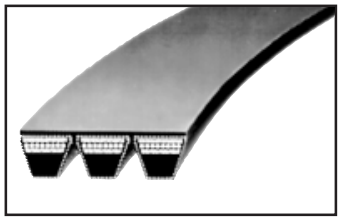
optibelt **MARATHON 1**
Automotive fan belts – raw edge, moulded cogged, maintenance free



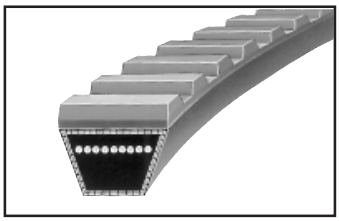
optibelt **MARATHON 2 M=S**
Automotive fan belts – raw edge, moulded cogged, maintenance free, heavy duty, may be used in sets without restrictions



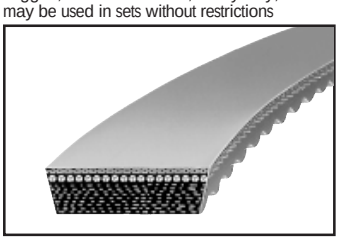
optibelt **KB**
Kraftbands



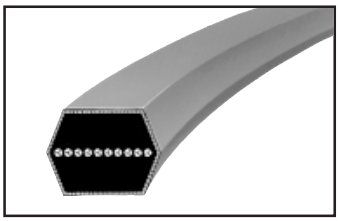
optibelt **KB RED POWER II**
Kraftbands



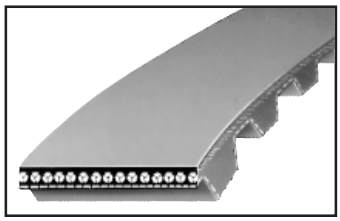
optibelt **PKR**
Endless V-belts with patterned top surface DIN 2215



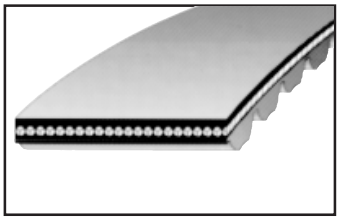
optibelt **SUPER VX**
Variable speed belts – moulded cogged raw edge



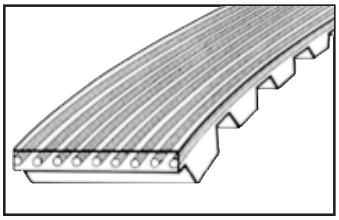
optibelt **DK**
Double section V-belts DIN 7722



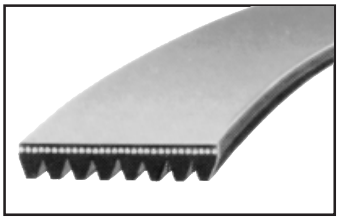
optibelt **ZR/HTD®/ZRK**
Timing belts



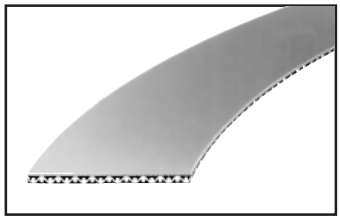
optibelt **OMEGA**
Timing belts



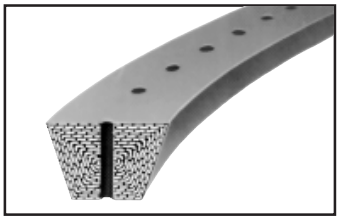
optibelt **ZRM/ZRP/ZRL/ Optiflex**
Polyurethane timing belts and open ended timing belting



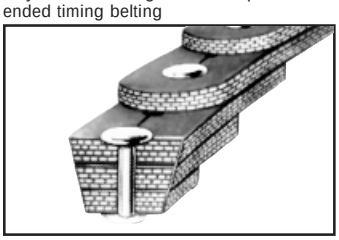
optibelt **RB/RBK**
Ribbed belts



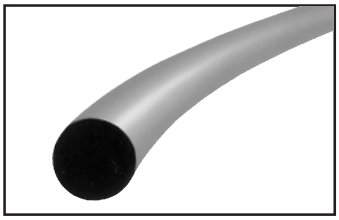
optimax **HF**
Endless flat belts



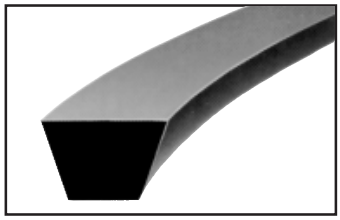
optimat **OE**
Open ended V-belting, punched DIN 2216



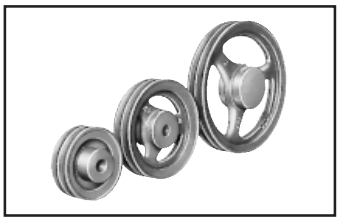
optibelt **LB**
Link belting



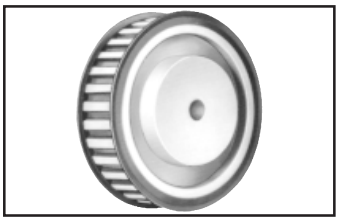
optibelt **RR**
Round plastic belting



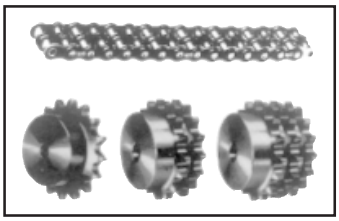
optibelt **KK**
Plastic V-belting



optibelt **KS**
V-grooved pulleys



optibelt **ZRS**
Timing belt pulleys



optichain **RK/RKB/KTR**
Roller chain
Chain sprockets

optibelt **CE**
Clamping bushes