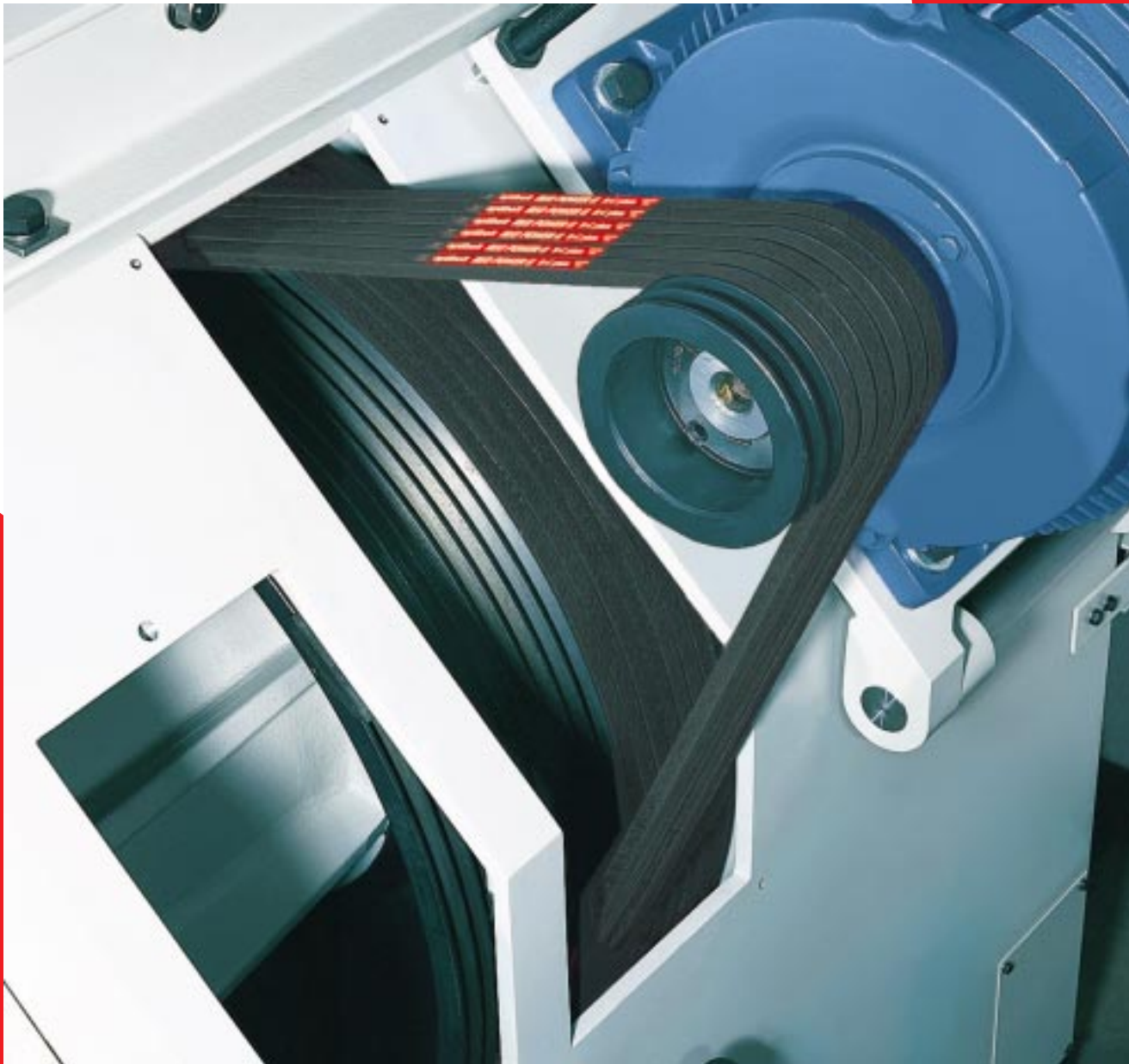




Power Transmission

RED POWER II
MAINTENANCE FREE

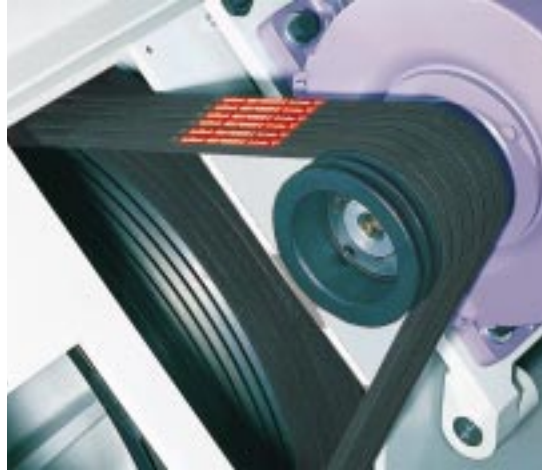
TECHNICAL INFORMATION



Optibelt Red Power II
Wedge Belts and Kraftbands

A practical example

16 hours a day, 260 days a year; a pelletiser drive in a feed mill. On the basis of a 25 000 hours theoretical life the drive should last for over 6 years.



RED POWER II

Maintenance Free V-Belts

The same drive, the same conditions using the "Optibelt Red Power II"

with 8 standard belts SPB 3750 L _d	with 6 "Red Power II" SPB 3750 L _d
Driver pulley 8-grooves Ø 170 mm	Driver pulley 6-grooves Ø 170 mm
Driven pulley 8-grooves Ø 900 mm	Driven pulley 6-grooves Ø 900 mm
Pulley face width 158 mm	Pulley face width 120 mm
Theoretical belt life 25 000 hours	Theoretical belt life 25 000 hours
Retensioning 10 times	Retensioning not required

Cost saved for the drive: approx. 20%

optibelt RED POWER II

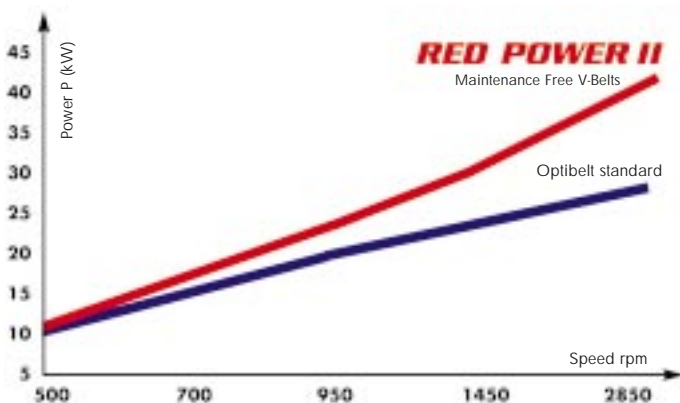
In a direct comparison between Optibelt standard construction and our improved "Optibelt Red Power II" it is clear that:

At a speed of 2850 rpm the "Optibelt Red Power II" is able to transmit

42% more power

Examples are endless. The "Optibelt Red Power II" is available in lengths from 1200 mm to 8500 mm and in belt sections SPZ, SPA, SPB, SPC, 3V/9N, 5V/15N and 8V/25N and Kraftband sections 3V/9J, 5V/15J, 8V/25J, SPZ, SPA, SPB and SPC.

Fewer belts + narrower V-grooved pulleys + space saving = less costs



Power rating comparison between Optibelt standard and "Optibelt Red Power II". Belt section SPB, pulley diameter 280 mm.

Advantage 1 - Maintenance free - optimum tension behaviour during service life

New production processes and raw materials make it possible to manufacture a new type of wrapped V-Belt which requires absolutely no maintenance or retensioning throughout its life. Following the initial tensioning to our recommendations the "Optibelt Red Power II" will never need any further attention. Laboratory tests prove that the second generation of "Optibelt Red Power II" has an exceptionally long service life and thus represents a real revolution in the world of power transmission. For the initial fitting of "Optibelt Red Power II" the same calculation methods apply as for Optibelt standard V-Belts.

The tension values are to be calculated on the same basis or can be gathered from the table on page 14.

Advantage 2 - Strong Power Ratings: Drive efficiency up to 97%

The power ratings of "Optibelt Red Power II" speak for themselves. They are substantially higher than present day wrapped wedge belts depending on section size and pulley diameter. The ratings for the "Optibelt Red Power II" are, in many cases, similar to those of raw edge moulded cogged belts. The drive efficiency is as high as 97%. "Optibelt Red Power II" are oil resistant, heat resistant and dust resistant as standard. The application of antistatic "Optibelt Red Power II" requires the confirmation by testing the stipulated properties to ISO 1813. We are proving the electrical conductivity with our final inspection certificate EN 10204 "3.1.B".

RED POWER II S=C plus SERVICE FREE

Advantage 3 - Cost Savings - less belts = lower cost

Real money can be saved by using "Optibelt Red Power II". The higher power ratings mean fewer belts on a drive. Fewer belts, narrower pulleys, therefore less space required - result: lower costs. What an argument!

Advantage 4 - S=C plus SetConstant

Naturally, the same applies to "Optibelt Red Power II" S=C plus. Due to the fact that it is less sensitive to shock loads. Red Power II runs very well in sets and is virtually smooth running. Belt length tolerances of the "Optibelt Red Power II" are well below the matched set tolerances around nominal lengths shown in Standards. By the way: the "Optibelt Red Power II" is also available as Kraftband.

Advantage 5 - Environmentally Friendly

Production of the "Optibelt Red Power II" is far more environmentally friendly than the production of many other belts. There is a little material waste during the production of the wrapped service free wedge belt. We are proud to say that we succeeded in producing the most environmentally friendly transmission belt, both with regard to production and waste removal and taking into account these power ratings.

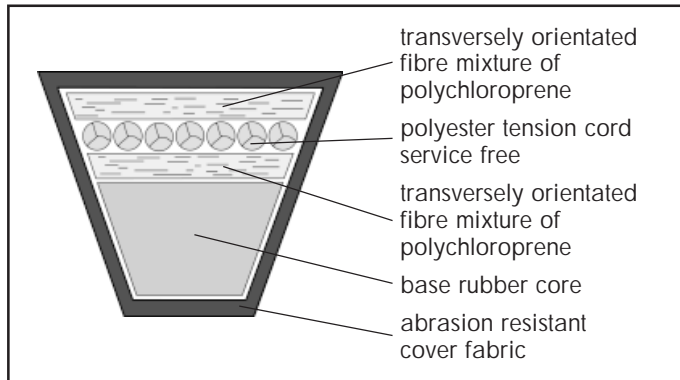
RED POWER II
Maintenance Free V-Belts

Description and Dimensions

optibelt **RED POWER II** High Performance Wedge Belts

Construction

"Optibelt Red Power II" Wedge Belts.



The tension cord for all belt sections and lengths is specially developed polyester cord. The special treatment of the cord ensures that the "Optibelt Red Power II" wedge belt has very low stretch properties and is service free. There is no retensioning required.

The fibre mixture above and below the tension cord enable the belts to carry high dynamic loads with no impairment of flexibility in connection with the polyester cord.

The cover fabric imparts excellent wear and abrasion resistance while maintaining good bending strength.

Properties

The use of very advanced manufacturing techniques together with high quality component parts makes the "Optibelt Red Power II" into a service free V-Belt. The use of the most modern static and dynamic test equipment enables a continuous supervision of the production.

The application of "Optibelt Red Power II", due to its special construction, is guaranteed in drives with idler pulleys.

Advantages:

- Service free
- Strong power transmission
- SetConstant
- Cost effective
- Environmentally friendly

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

The application of antistatic "Optibelt Red Power II" requires confirmation by testing the stipulated properties according to ISO 1813. We are proving the electrical conductivity with our final inspection certificate to EN 10204 "3.1.B".

V-Belt Tensioning

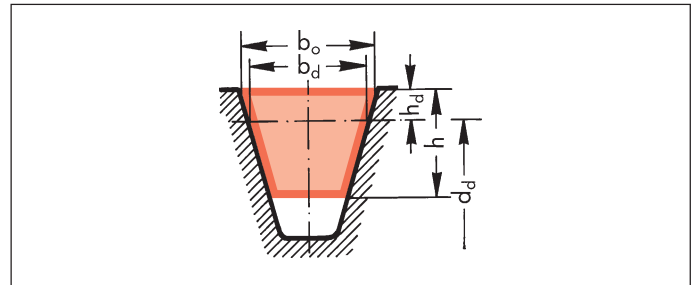
For the initial mounting of "Optibelt Red Power II" the same calculation methods apply as for Optibelt standard V-Belts. The tension values are to be calculated on the same basis or can be gathered from the table on page 14. "Optibelt Red Power II" V-Belts correctly tensioned once require no further retensioning.

Applications

"Optibelt Red Power II" Wedge Belts were specially developed for mechanical engineering. They may be used on any drives requiring high power transmission i.e. compressors, pumps, presses, fans etc.

Standards

"Optibelt Red Power II" Wedge Belts in sections SPZ, SPA, SPB, SPC, 3V/9N, 5V/15N and 8V/25N are conforming to DIN 7753 Part 1, ISO 4184 and RMA/MPTA standards.

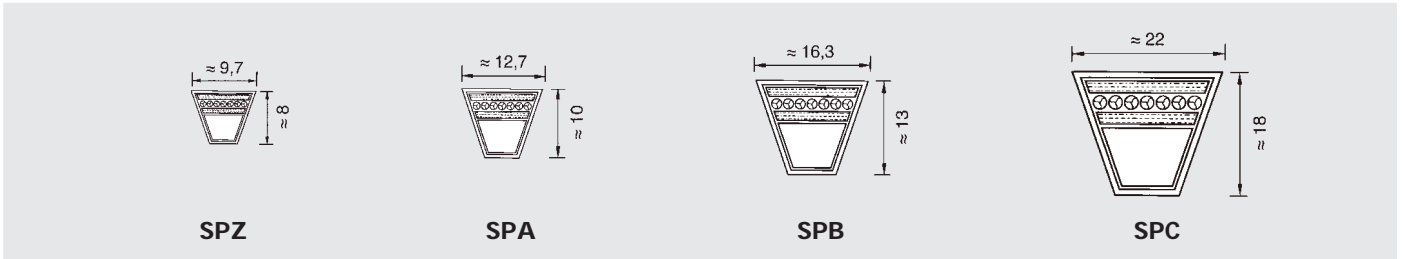


Section		SPZ	SPA	SPB	SPC
Belt top width	b_o	≈ 9.7	12.7	16.3	22
Belt datum width	b_d	8.5	11	14	19
Belt height	h	≈ 8	10	13	18
Distance down to pitch line	h_d	≈ 2	2.8	3.5	4.8
Recommended min. pulley datum diameter	$d_{d \min}$	63	90	140	224
Belt weight (kg/m)		≈ 0.074	0.123	0.195	0.377
Max. flexing rate (s-1)	$f_{B \max}$	≈ 100			
Max. belt speed (m/s)	v_{\max}	≈ 42			

Section		3V/9N	5V/15N	8V/25N
Belt top width	b_o	≈ 9	15	25
Belt height	h	≈ 8	13	23
Recommended min. pulley outside diameter	$d_{a \min}$	63	140	335
Belt weight (kg/m)		≈ 0.074	0.195	0.575
Max. flexing rate (s-1)	$f_{B \max}$	≈ 100		
Max. belt speed (m/s)	v_{\max}	≈ 42		

Standard Range

optibelt **RED POWER II** High Performance Wedge Belts to DIN 7753 Part 1/ISO 4184

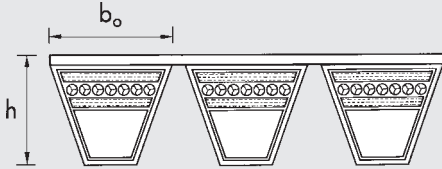


Section SPZ			Section SPA				Section SPB	Section SPC	
Datum length ISO (mm) L_d			Datum length ISO (mm) L_d				Datum length ISO (mm) L_d	Datum length ISO (mm) L_d	
1202	1587	2137	1207	1700	2282	3082	1250	2000	
1212	1600	2187	1232	1707	2300	3150	1320	2120	
1237	1612	2240	1250	1732	2307	3182	1400	2240	
1250	1637	2287	1257	1757	2332	3282	1500	2360	
1262	1662	2360	1282	1782	2360	3350	1600	2500	
1287	1687	2500	1307	1800	2382	3382	1700	2650	
1312	1700	2650	1320	1807	2432	3550	1800	2800	
1320	1737	2800	1332	1832	2482	3750	1900	3000	
1337	1762	3000	1357	1857	2500	4000	2000	3150	
1362	1787	3150	1382	1882	2532		2120	3350	
1387	1800	3350	1400	1900	2582		2240	3550	
1400	1837	3550	1407	1907	2607		2360	3750	
1412	1862		1432	1932	2632		2500	4000	
1437	1887		1457	1957	2650		2650	4250	
1462	1900		1482	1982	2682		2800	4500	
1487	1937		1500	2000	2732		3000	4750	
1500	1987		1507	2032	2782		3150	5000	
1512	2000		1532	2057	2800		3350	5300	
1537	2037		1557	2082	2832		3550	5600	
1562	2120		1582	2120	2847		3750	6000	
			1600	2132	2882		4000	6300	
			1607	2182	2932		4250	6700	
			1632	2207	2982		4500	7100	
			1657	2232	3000		4750	7500	
			1682	2240	3032		5000	8000	
							5300		
							5600		
							6000		
							6300		
							6700		
							7100		
							7500		
							8000		
Maximum manufacturing length: 4 000 mm Minimum production quantity: 1202 mm – 2120 mm = 76 pieces for intermediate lengths Over 2120 mm 70 pieces for intermediate lengths Belt weight: ≈ 0.074 kg/m			Maximum manufacturing length: 4 000 mm Minimum production quantity: 1207 mm – 2120 mm = 62 pieces for intermediate lengths Over 2120 mm 78 pieces for intermediate lengths Belt weight: ≈ 0.123 kg/m				Maximum manufacturing length: 8 000 mm Minimum production quantity: 1250 mm – 2120 mm = 50 pieces for intermediate lengths Over 2120 mm 72 pieces for intermediate lengths Belt weight: ≈ 0.195 kg/m		Maximum manufacturing length: 8 000 mm Minimum production quantity: Over 2000 mm = 44 pieces for intermediate lengths Belt weight: ≈ 0.377 kg/m

Datum length $\hat{=}$ Pitch length.

Standard Range

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



Section	SPZ	SPA	SPB	SPC
$b_0 \approx$ (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	

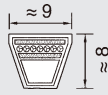
Max. manufacturing length: 4 500 mm L_d Intermediate lengths from 1800 mm L_d Minimum production quantity for non standard lengths: 8 pieces of 5 ribs or 10 pieces of 4 ribs or 14 pieces of 3 ribs or 21 pieces of 2 ribs or multiples thereof Belt weight: 1 rib \approx 0,120 kg/m	Max. manufacturing length: 4 500 mm L_d Intermediate lengths from 1800 mm L_d Minimum production quantity for non standard lengths: 6 pieces of 5 ribs or 8 pieces of 4 ribs or 11 pieces of 3 ribs or 16 pieces of ribs or multiples thereof Belt weight: 1 rib \approx 0,166 kg/m	Max. manufacturing length: 8 000 mm L_d Intermediate lengths from 2000 mm L_d Minimum production quantity for non standard lengths: 12 pieces of 5 ribs or 15 pieces of 4 ribs or 20 pieces of 3 ribs or 30 pieces of 2 ribs or multiples thereof Belt weight: 1 rib \approx 0,261 kg/m	Max. manufacturing length: 8 000 mm L_d Intermediate lengths from 3000 mm L_d Minimum production quantity for all lengths: 8 pieces of 5 ribs or 11 pieces of 4 ribs or 14 pieces of 3 ribs or 22 pieces of 2 ribs or multiples thereof Belt weight: 1 rib \approx 0,555 kg/m
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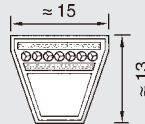
Power Transmission

Standard Range

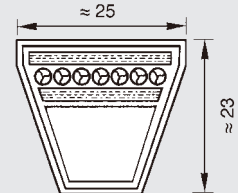
optibelt **RED POWER II** High Performance Wedge Belts to USA standard RMA/MPTA



3V/9N



5V/15N



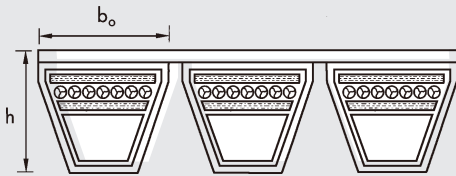
8V/25N

Section 3V/9N		Section 5V/15N		Section 8V/25N	
USA-Designation	Designation L_a (Outside length mm)	USA-Designation	Designation L_a (Outside length mm)	USA-Designation	Designation L_a (Outside length mm)
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		

<p>Max. manufacturing length: 4 000 mm L_a Minimum production quantity: 1206 mm L_a – 2032 mm L_a = 80 pieces for intermediate lengths Over 2032mm L_a = 98 pieces for intermediate lengths Belt weight: \approx 0,074 kg/m</p>	<p>Max. manufacturing length: 8 000 mm L_a Minimum production quantity: 1270 mm L_a – 2032 mm L_a = Over 2032 mm L_a = 72 pieces for intermediate lengths Belt weight: \approx 0,195 kg/m</p>	<p>Max. manufacturing length: 8 500 mm L_a Minimum production quantity: Over 2540 mm L_a = 40 pieces for intermediate lengths Belt weight: \approx 0,575 kg/m</p>
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Standard Range

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

Max. manufacturing length: 4 000 mm L_a
 Intermediate lengths from 1800 mm L_a
 Min. production quantities for non standard length:
 1270 to 2032 mm L_a Über 2032 mm L_a
 19 pieces of 5 ribs or 23 pieces of 5 ribs or
 24 pieces of 4 ribs or 29 pieces of 4 ribs or
 32 pieces of 3 ribs or 38 pieces of 3 ribs or
 48 pieces of 2 ribs or 58 pieces of 2 ribs
 or multiples thereof or multiples thereof

Belt weight:
 1 rib \approx 0,102 kg/m

Max. manufacturing length: 8 000 mm L_a
 Intermediate lengths from 1800 mm L_a
 Min. production quantities for non standard length:
 1270 to 2032 mm L_a Über 2032 mm L_a
 12 pieces of 5 ribs or 13 pieces of 5 ribs or
 15 pieces of 4 ribs or 16 pieces of 4 ribs or
 20 pieces of 3 ribs or 22 pieces of 3 ribs or
 30 pieces of 2 ribs or 33 pieces of 2 ribs
 or multiples thereof or multiples thereof

Belt weight:
 1 rib \approx 0,252 kg/m

Max. manufacturing length: 8 500 mm L_a
 Intermediate lengths from 2540 mm L_a
 Minimum production quantities for all lengths:
 8 pieces of 5 ribs or
 10 pieces of 4 ribs or
 13 pieces of 3 ribs or
 20 pieces of 2 ribs
 or multiples thereof

Belt weight:
 1 rib \approx 0,693 kg/m



Power Transmission

Power Ratings

optibelt **RED POWER II** Section SPZ, 3V/9N, 3V/9J
 Nominal Power rating P_N (kW) for $\beta = 180^\circ$ and $L_d = 1600$ mm

Pulleys	v (m/s)	n_k (min ⁻¹)	Datum diameter of small pulley d_{dk} (mm)																Additional power (kW) per belt for speed ratio r			
			63	71	80	85	90	95	100	112	125	132	140	150	160	180	200	1.01 to 1.05	1.06 to 1.26	1.27 to 1.57	>1.57	
statically balanced	5	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	0.01	0.06	0.09	0.11	
		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	0.01	0.09	0.12	0.15	
		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	0.02	0.13	0.19	0.23	
		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	0.04	0.26	0.37	0.46	
		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	0.00	0.01	0.01	0.02	
		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	0.00	0.02	0.03	0.03	
		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	0.00	0.03	0.04	0.05	
		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	0.01	0.04	0.05	0.06	
		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	0.01	0.05	0.07	0.08	
		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	0.01	0.06	0.08	0.10	
		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	0.01	0.06	0.09	0.11	
		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	0.01	0.07	0.11	0.13	
		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	0.01	0.08	0.12	0.15	
		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	0.01	0.09	0.13	0.16	
		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	0.02	0.10	0.14	0.18	
		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	0.02	0.11	0.16	0.19	
		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	0.02	0.12	0.17	0.21	
		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	0.02	0.13	0.18	0.23	
		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	0.02	0.14	0.20	0.24	
		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	0.02	0.15	0.21	0.26	
		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	0.02	0.16	0.22	0.27	
		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	0.03	0.17	0.24	0.29	
		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	0.03	0.18	0.25	0.31	
		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	0.03	0.19	0.26	0.32	
		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	0.03	0.19	0.28	0.34	
		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	0.03	0.20	0.29	0.35	
		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	0.03	0.21	0.30	0.37	
		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	0.03	0.22	0.32	0.39	
		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	0.04	0.23	0.33	0.40	
		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	0.04	0.24	0.34	0.42	
		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	0.04	0.25	0.35	0.44	
		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	0.04	0.26	0.37	0.45	
		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	0.04	0.27	0.38	0.47	
		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	0.04	0.28	0.39	0.48	
		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	0.04	0.29	0.41	0.50	
		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	0.05	0.30	0.42	0.52	
		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	0.05	0.31	0.43	0.53	
		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	0.05	0.31	0.45	0.55	
		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	0.05	0.32	0.46	0.56	
		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	0.05	0.33	0.47	0.58	
		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	0.05	0.34	0.49	0.60	
		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	0.05	0.35	0.50	0.61	
		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	0.06	0.36	0.51	0.63	
		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	0.06	0.37	0.53	0.64	
		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	0.06	0.38	0.54	0.66	
		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	0.06	0.39	0.55	0.68	
		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	0.06	0.40	0.57	0.69	
		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	0.06	0.41	0.58	0.71	
		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	0.06	0.42	0.59	0.73	
		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		0.07	0.43	0.60	0.74	
		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		0.07	0.44	0.62	0.76	
		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		0.07	0.44	0.63	0.77	
		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		0.07	0.45	0.64	0.79	
		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		0.07	0.46	0.66	0.81	
		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			0.07	0.47	0.67	0.82	
		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			0.07	0.48	0.68	0.84	
		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			0.08	0.49	0.70	0.85	
		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			0.08	0.50	0.71	0.87	
		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				0.08	0.51	0.72	0.89	
		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				0.08	0.52	0.74	0.90	
		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				0.08	0.54	0.76	0.93	
		6000	2.73	3.94	5.22	5.89	6.53	7.14	7.71	8.94	10.01	10.48	10.90					0.09	0.56	0.79	0.97	
		6200	2.75	3.99	5.28	5.96	6.60	7.20	7.77	8.97	10.00	10.42	10.79					0.09	0			



Power Transmission

Power Ratings

optibelt **RED POWER II** Section SPB, 5V/15N, 5V/15J
 Nominal Power rating P_N (kW) for $\beta = 180^\circ$ and $L_d = 3550$ mm

Pulleys	v (m/s)	n_k (min ⁻¹)	Datum diameter of small pulley d_{dk} (mm)																Additional power (kW) per belt for speed ratio r			
			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	700 950 1450 2850	100	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	
		200	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	
		300	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	
		400	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
		500	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	
	5	600	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	
		700	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	
		800	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	
		900	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	
		1000	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	
		1100	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	
		1200	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	
		1300	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	
		1400	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	
		1500	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	
	10	1600	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	
		1700	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	
		1800	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	
		1900	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	
		2000	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	
		2100	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	
		2200	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	
		2300	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	
		2400	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	
		15	2500	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
	2600		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	
	2700		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	
	2800		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	
	2900		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	
	3000		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	
	3100		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	
	3200		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	
	3300		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	
	20		3400	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
		3500	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	
		3600	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	
		3700	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	
		3800	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	
		3900	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	
		4000	13.89	16.34	18.72	23.24	25.37	27.42	29.75	31.94								0.26	1.71	2.42	2.97	
		4100	14.08	16.57	18.98	23.54	25.69	27.74	30.07	32.25								0.27	1.75	2.49	3.05	
		4200	14.26	16.79	19.23	23.83	25.99	28.04	30.36	32.52								0.28	1.80	2.55	3.13	
		25	4300	14.43	16.99	19.46	24.09	26.25	28.30	30.61	32.75							0.29	1.85	2.62	3.21	
	4400		14.59	17.18	19.67	24.33	26.50	28.54	30.83	32.94							0.29	1.89	2.69	3.30		
	4500		14.74	17.35	19.87	24.55	26.71	28.75									0.30	1.94	2.76	3.38		
	4600		14.87	17.52	20.05	24.74	26.90	28.92									0.31	1.99	2.82	3.46		
	4700		15.00	17.66	20.21	24.91	27.06	29.06									0.32	2.04	2.89	3.54		
	4800		15.11	17.79	20.35	25.06	27.19	29.17									0.32	2.08	2.96	3.63		
	4900		15.20	17.91	20.48	25.18	27.30	29.25									0.33	2.13	3.03	3.71		
	5000		15.29	18.01	20.59	25.28											0.34	2.18	3.09	3.79		
5100	15.36		18.10	20.68	25.35											0.34	2.23	3.16	3.87			
30	5200		15.42	18.17	20.75	25.39										0.35	2.27	3.23	3.96			
	5300	15.47	18.22	20.80	25.41										0.36	2.32	3.29	4.04				
	5400	15.50	18.26	20.84	25.40										0.37	2.37	3.36	4.12				
	5500	15.52	18.28	20.85											0.37	2.42	3.43	4.20				
	5600	15.53	18.29	20.84											0.38	2.46	3.50	4.29				
	5700	15.52	18.28	20.82											0.39	2.51	3.56	4.37				
	5800	15.50	18.25	20.77											0.40	2.56	3.63	4.45				
	5900	15.46	18.20	20.70											0.40	2.61	3.70	4.53				

When
v > 42 m/s,
consult our Applications
Engineering Dept.

v (m/s)

dynamically balanced (Particulars see DIN 2211)

Pulleys



Power Transmission

Power Ratings

optibelt **RED POWER II** Section SPC

Nominal Power rating P_N (kW) for $\beta = 180^\circ$ and $L_d = 5600$ mm

Pulleys	v (m/s)	n_k (min ⁻¹)	Datum diameter of small pulley d_{dk} (mm)													Additional power (kW) per belt for speed ratio r			
			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
5	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
	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	
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	
10	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
	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	
20	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
	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
	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
25	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
	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
30	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
	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
35	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
	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	2																	



Power Transmission

Power Ratings

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

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

Pulleys	v (m/s)	n_k (min ⁻¹)	Outside diameter of small pulley d_{dk} (mm)												Additional power (kW) per belt for speed ratio r				
			335	355	375	425	450	475	500	530	560	600	630	710	800	1.01 to 1.05	1.06 to 1.26	1.27 to 1.57	>1.57
statically balanced	5	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
	10	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
		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
	15	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
	20	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
		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
	25	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
		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
30	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		
	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		
35	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		
	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		
40	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		
	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		
40	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		

When $v > 42$ m/s, consult our Applications Engineering Dept.

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dynamically balanced (Particulars see USA-standard RMA/MPTA)

v (m/s)

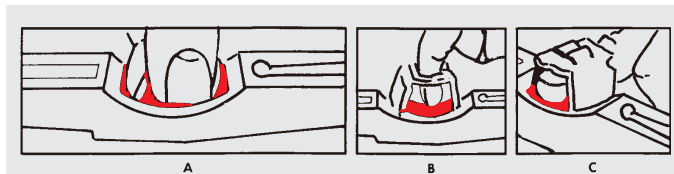
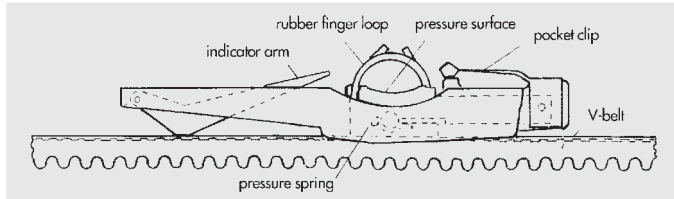
Pulleys

Design Hints

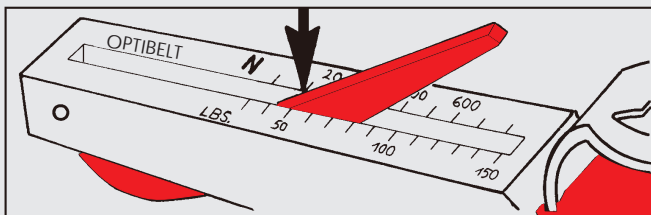
Tensioning for optibelt **RED POWER II** V-Belts

This simplified tensioning method should be used for installing the belt when the most important technical data is unavailable and the optimum tension cannot be calculated. This method requires knowledge of the pulley diameters only.

Optibelt tensioning gauges – Instructions for use



1. There are three ways to hold the gauges (see illustration).
2. The gauge is placed in the centre between the two pulleys on the top surface of the belt (beforehand depress the indicator arm fully into the scale surface).
3. Rest the gauge loosely on the belt to be measured and press slowly using one finger only in the fashion shown above (A, B or C) on the pressure surface.
4. Avoid touching the gauge with more than one finger during the measuring process.
5. When you hear or feel a distinct click, immediately stop applying pressure. The indicator arm remains in the position measured.



6. Carefully remove the gauge without disturbing the indicator arm, read off the belt tension (see illustration). The figure can be ascertained by reading off at the point where the top surface of the indicator arm crosses the scale.
7. To be sure of reading off the correct figure, use your thumbnail to mark the position of the upper edge of the indicator on the scale and turn the gauge sideways.
8. Increase or reduce the belt tension depending on the gauge result until it lies within the desired tension!

Procedure

1. Find the section used in the column.
2. Take for this the smallest pulley diameter in the drive system
3. Read off the corresponding static belt tension from the table.
4. Check the static belt tension with the tensioning gauge as described.

Example

- | | |
|---|--------|
| 1. Optibelt Red Power II section | SPA |
| 2. Smallest pulley diameter on drive | 180 mm |
| 3. Static belt tension – initial tension | 600 N |
| 4. Static tension –reinstallation/existing belt | 450 N |

Belt section	Diameter of the small pulley (mm)	Static belt tension N	
		RED POWER II	
		Initial installation/ new belts	Re-installation existing belts
SPZ 3V/9N	≤ 71	250	200
	> 71 ≤ 90	300	250
	> 90 ≤ 125	400	300
	> 125 *		
SPA	≤ 100	400	300
	> 100 ≤ 140	500	400
	> 140 ≤ 200	600	450
	> 200 *		
SPB 5V/15N	≤ 160	700	550
	> 160 ≤ 224	850	650
	> 224 ≤ 355	1000	800
	> 355 *		
SPC	≤ 250	1400	1100
	> 250 ≤ 355	1600	1200
	> 355 ≤ 560	1900	1500
	> 560 *		

*Tension values for these pulleys must be calculated.

Tension gauges:

Optikrik I	Range:	150 – 600 N
Optikrik II	Range:	500 – 1400 N
Optikrik III	Range:	1300 – 3100 N

The tension values (static belt tension) are guideline values and should be applied when accurate drive data is not available. They have been calculated for maximum transmission capability (per V-belt).

We recommend the use of Optibelt tension gauges for setting the belt tension. Allow the pulleys to rotate several times during and before installation respectively. This will enable the belts to settle evenly in the pulley grooves. Check tension after the belts have run for 5 to 10 minutes and adjust the belts to initial installation setting if necessary.

Basic Calculation:

Red Power II Wedge Belt speed: $v = 5$ up to 42 m/s

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Drive Calculations with optibelt *RED POWER II*

The drive requires:

- 6 piece(s) Optibelt Red Power II wedge belt service free SPB 3750 L_d S=C plus
- Optibelt-KS V-grooved pulley for taper bushes TB SPB 170-6
- Optibelt-TB taper bush 3020 (Bore diameter 25-75 mm)
- Optibelt-KS V-grooved pulley for taper bushes TB SPB 900-6
- Optibelt-TB taper bush 4545 (Bore diameter 55-110 mm)

Deviations/Hints

Type of driver unit	:	Electric motor 50 Hz	
Type of driven unit	:	Fan	
Design Power	P _B :	120.00 kW	
Driver Power	P:	75.00 kW	
Torque of driver pulley	M:	241 Nm	
Driver speed	n ₁ :	2977 1/min	
Required driven speed	n ₂ :	562 1/min	0 1/min
Datum diameter pulley 1	d _{d1} :	170.00 mm	
Datum diameter pulley 2	d _{d2} :	900.00 mm	
Datum length	L _d :	3750.00 mm	
Actual centre distance	a:	965.60 mm	- 34.40 mm
Actual drive ratio	i:	5.29	- 0.0%
Adjustment req. for belt fitting	y:	20.00 mm	
Adjustment req. for belt tensioning	x:	45.00 mm	
Actual service factor	c₂:	1.66	
Belt speed	v:	26.50 m/s	Dynamic balancing required!
Flex rate	f _B :	14.13 1/s	
Power per belt	P _N :	21.29 kW	
Arc of contact factor	c ₁ :	0.97	
Belt length factor	c ₃ :	1.01	
Arc of contact on small pulley	β:	135.60 °	
Pulley face width	b ₂ :	120.0 mm	
Span length	l:	894.00 mm	
Calculated number of belts	z₁:	5.78	required c₂ = 1.60
Weight of drive	:	107.59 kg	
Static shaft load, initial install.	S _{ast} :	7860 N	
Static shaft load (existing belts)	S _{ast} :	6046 N	
Dynamic shaft load	S _{a dyn} :	4956 N	

Tensioning recommendations	Initial inst.		Operating tension	
	new belts		existing belts	
proposed c ₂ = 1.60				
1. Optikrik II	Static tension per belt	707 N	544 N	N
2. Load/deflect. tension gauge	Load at centre of span	75 N	75 N	N
	Deflection	19 mm	26 mm	mm
3. Length addition value per 1000 mm belt length		4.2 mm	3.1 mm	mm
4. Optibelt TT Tension Tester	Frequency	33.7 1/s	29.5 1/s	1/s



Power Transmission

RED POWER II

MAINTENANCE FREE

optibelt RED POWER II S=C plus

- Service free - optimum tension throughout service life
- Homogeneous interplay in coordination: belt - edge pulley
- Reduced pulley groove wear due to improvements of the cover fabric
- Strong power ratings: drive efficiency up to 97%
- S=C plus - SetConstant
- Smooth running and low vibration
- High shock load resistance compared to V-Belts with Aramid tension cord
- Suitable for use with back bend idlers
- Larger range of lengths - up to 8500 mm
- Extended range of Kraftbands
- Environmentally friendly

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