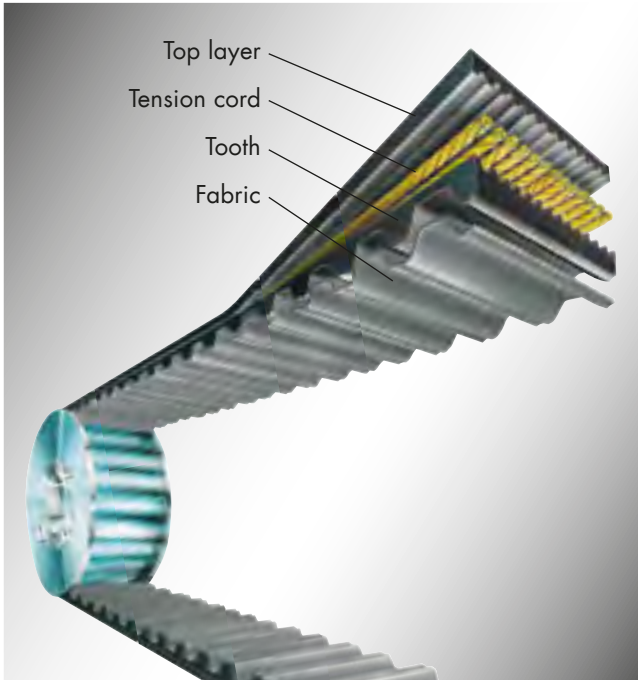


# PRODUCT DESCRIPTION

## optibelt OMEGA TIMING BELTS



### Structure



### Fabric

The polyamide fabric protects the teeth from premature wear and tooth root cracking. At the same time, the low coefficient of friction lowers the operating temperature and helps to reduce the running noise.

High performance optibelt OMEGA timing belts are the result of a continuing development process. Operational experience with optibelt ZR and optibelt HTD® has been applied to this belt generation. Endless optibelt OMEGA timing belts set the standard for synchronous performance and for positioning drives.

The geometry of the optibelt OMEGA tooth profile has been developed to run in the established, curvilinear timing belt pulleys. optibelt OMEGA timing belts can be used in 3M, 5M, 8M and 14M HTD® pulley profiles. optibelt ZRS HTD® timing belt pulleys are standard items in our range with pilot bores or bored for optibelt TB taper bushes. In addition, all OMEGA timing belts can also be used in RPP® timing belt pulleys. Special timing belt pulleys for optibelt OMEGA timing belts are not required.

### Top layer

The belt top layer consists of a flexible polychloroprene compound which protects the tension cord from external influences. In addition, it offers limited resistance to mineral oils and humidity as well as protection from frictional wear and tear.

### Tension cord

The tension member is composed of a pair of counter twisted glass fibre cords. These tension cords have high tensile strength, very high flexibility and very low stretch.

### Teeth

Just like the belt top layer, the teeth consist of a polychloroprene compound guaranteeing high shear strength. The dimples in the teeth promote quiet running.



Application example: lawn mowers

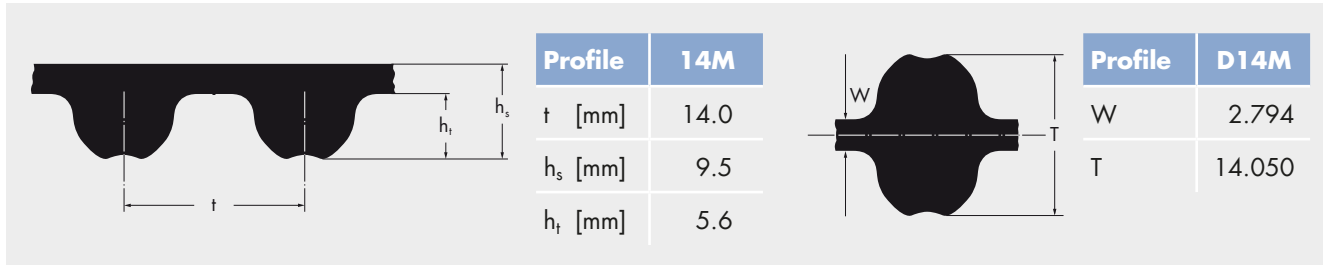
### Overview of the advantages and characteristics

- synchronous speed
- highest precision
- perceptibly lower noise level due to the OMEGA tooth profile
- use in standard HTD® and RPP® timing belt pulleys
- maintenance-free
- temperature resistant from -30 °C to +100 °C
- efficiency of up to 98 %

# PRODUCT DESCRIPTION

## optibelt **OMEGA** TIMING BELTS

### STANDARD PRODUCT RANGE



optibelt OMEGA 14M					
Belt designation	Pitch length [mm]	Number of teeth	Belt designation	Pitch length [mm]	Number of teeth
966 14M▲	966.00	69	2800 14M	2800.00	200
1092 14M	1092.00	78	3150 14M	3150.00	225
1190 14M▲	1190.00	85	3360 14M	3360.00	240
1344 14M	1344.00	96	3500 14M	3500.00	250
1400 14M▲	1400.00	100	3850 14M	3850.00	275
1456 14M	1456.00	104	4004 14M*•	4004.00	286
1512 14M	1512.00	108	4326 14M	4326.00	309
1610 14M▲	1610.00	115	4578 14M	4578.00	327
1680 14M	1680.00	120			
1778 14M▲	1778.00	127			
1890 14M▲	1890.00	135			
2100 14M▲	2100.00	150			
2310 14M▲	2310.00	165			
2450 14M	2450.00	175			
2590 14M	2590.00	185			

**Standard width:** 40 mm, 55 mm, 85 mm, 115 mm, 170 mm  
 • Not available ex stock  
 ▲ Double-sided available in HTD® \* Profile on request

**Order example:** 1400 = 1400 mm pitch length  
 14M = profile  
 55 = 55 mm belt width

TIMING BELTS: optibelt OMEGA 1400 14M 55

# POWER RATINGS

## optibelt **OMEGA** TIMING BELTS

### PROFILE AND DESIGN 14M



Table 24

Nominal power $P_N$ [kW] for profile and design 14M and a timing belt width of 40 mm																	
Speed of the small pulley $n_k$ [min <sup>-1</sup> ]	Number of teeth on the small pulley $z_k$																
	28	29	30	32	34	36	38	40	42	44	46	48	52	56	64	72	80
	Pitch diameter of the small pulley $d_{wk}$ [mm]																
	124.78	129.23	133.69	142.60	151.52	160.43	169.34	178.25	187.17	196.08	204.99	213.90	231.73	249.55	285.21	320.86	356.51
10	0.17	0.20	0.20	0.23	0.29	0.30	0.34	0.36	0.38	0.40	0.42	0.44	0.49	0.53	0.61	0.68	0.74
20	0.35	0.37	0.43	0.49	0.55	0.63	0.68	0.72	0.76	0.80	0.83	0.89	0.97	1.04	1.19	1.34	1.50
40	0.72	0.78	0.84	0.98	1.10	1.25	1.34	1.42	1.52	1.59	1.69	1.76	1.93	2.10	2.39	2.69	2.99
60	1.07	1.15	1.27	1.44	1.64	1.88	2.03	2.14	2.27	2.39	2.52	2.65	2.90	3.14	3.58	4.03	4.49
100	1.79	1.93	2.10	2.42	2.77	3.11	3.37	3.58	3.79	4.00	4.20	4.41	4.85	5.23	5.98	6.72	7.48
200	3.60	3.90	4.20	4.80	5.50	6.20	6.80	7.20	7.60	8.00	8.40	8.90	9.70	10.50	12.00	13.50	15.00
300	4.90	5.30	5.70	6.60	7.50	8.50	9.20	9.70	10.30	10.80	11.40	12.00	13.10	14.20	16.50	18.90	21.30
400	6.10	6.60	7.10	8.20	9.30	10.50	11.40	12.00	12.70	13.30	14.00	14.70	16.10	17.40	20.10	22.90	25.80
500	7.20	7.80	8.40	9.60	11.00	12.30	13.30	14.10	14.80	15.60	16.40	17.20	18.70	20.20	23.30	26.40	29.60
600	8.20	8.90	9.50	11.00	12.50	14.00	15.10	15.90	16.80	17.70	18.50	19.40	21.10	22.70	26.10	29.50	32.90
700	9.10	9.90	10.60	12.20	13.90	15.60	16.80	17.70	18.60	19.50	20.50	21.40	23.20	25.00	28.60	32.20	35.80
800	10.00	10.80	11.60	13.40	15.10	17.00	18.30	19.30	20.30	21.30	22.20	23.20	25.20	27.00	30.80	34.50	38.20
950	11.30	12.10	13.10	14.90	16.90	19.00	20.40	21.40	22.50	23.60	24.60	25.70	27.70	29.70	33.60	37.40	41.10
1000	11.60	12.60	13.50	15.40	17.50	19.60	21.00	22.10	23.20	24.30	25.40	26.50	28.50	30.50	34.40	38.20	41.90
1200	13.10	14.10	15.10	17.30	19.50	21.80	23.40	24.50	25.70	26.80	28.00	29.10	31.20	33.20	37.10	40.70	44.10
1450	14.60	15.70	16.90	19.20	21.70	24.20	25.90	27.10	28.30	29.40	30.60	31.70	33.80	35.70	39.20	42.30	44.80
1600	15.40	16.60	17.80	20.30	22.80	25.50	27.10	28.30	29.50	30.70	31.80	32.90	34.90	36.60	39.80	42.30	44.10
1800	16.40	17.70	18.90	21.50	24.10	26.80	28.50	29.70	30.90	32.00	33.00	34.00	35.80	37.30	39.80	41.30	43.00
2000	17.30	18.60	19.80	22.50	25.20	28.00	29.70	30.80	31.90	32.90	33.80	34.70	36.20	37.40	38.90		
2200	18.60	19.30	20.60	23.30	26.10	28.90	30.50	31.50	32.50	33.40	34.20	35.00	36.10	36.70			
2400	20.10	20.70	21.30	24.00	26.70	29.50	31.10	32.00	32.80	33.50	34.20	34.70	35.30	35.40			
2600	21.50	22.10	22.70	24.40	27.20	29.90	31.40	32.10	32.70	33.20	33.70	33.90	34.00				
2850	23.10	23.80	24.40	25.60	27.40	30.00	31.30	31.80	32.10	32.30	32.40	32.30	31.70				
3000	24.10	24.70	25.30	26.50	27.50	30.10	31.00	31.60	31.50	31.50	31.40	31.60					
3500			28.00	29.10	30.00	30.70	31.20	31.50	31.70								
4000				30.80	31.40												

Power ratings for other belt widths can be calculated by multiplying by the width correction factors.

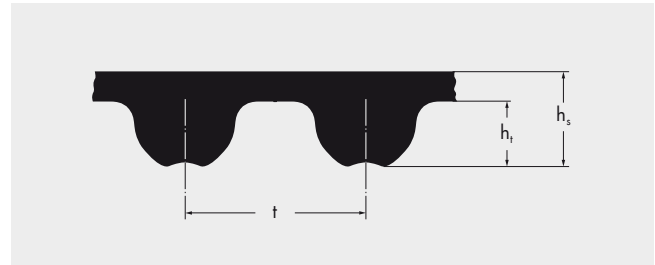
Width correction factor					
Profile and design 14M					
Standard belt width [mm]	40	55	85	115	170
Factor	1.00	1.50	2.50	3.47	5.28

# DIMENSIONS AND TOLERANCES

## TIMING BELTS IN optibelt OMEGA PROFILE



Timing belts with optibelt OMEGA profiles are produced in a wide range of lengths and widths. Many special lengths, widths and designs are available. Please contact our Application Engineering Department for further details. Timing belts with optibelt OMEGA profiles are produced to ground category G2 with a thickness tolerance of  $\pm 0.25$  mm as standard. If required, the belts can be ground to category G1 with a thickness tolerance of  $\pm 0.13$  mm.



**Table 37**  
**Nominal dimensions and weights**

Profile	2M	3M	5M	8M	D8M	14M
Tooth height $h_t$ [mm]	0.70	1.10	1.90	3.20	3.20	5.60
Total belt thickness $h_s$ [mm]	1.30	2.30	3.40	5.40	7.73	9.50
Tooth pitch $t$ [mm]	2.00	3.00	5.00	8.00	8.00	14.00
Weight [kg/m] for 10 mm belt width	0.013	0.024	0.035	0.058	0.067	0.100

### Length tolerances

Pitch length [mm]	$\leq 250$	$> 250$ $\leq 500$	$> 500$ $\leq 750$	$> 750$ $\leq 1000$	$> 1000$ $\leq 1250$	$> 1250$ $\leq 1500$	$> 1500$ $\leq 1750$	$> 1750$ $\leq 2000$	$> 2000$ $\leq 2250$	$> 2250$ $\leq 2500$	$> 2500$ $\leq 2750$	$> 2750$ $\leq 3000$	$> 3000$
Length tolerances given as centre distance deviation	$\pm 0.20$	$\pm 0.23$	$\pm 0.27$	$\pm 0.30$	$\pm 0.33$	$\pm 0.36$	$\pm 0.39$	$\pm 0.42$	$\pm 0.46$	$\pm 0.49$	$\pm 0.52$	$\pm 0.55$	$\pm 0.55$ $\pm 0.03^*$

### Width tolerance

Standard belt width	Allowed tolerance [mm] of the timing belt			
	Nominal width [mm]	Pitch length up to 838.2 mm	Pitch length 838.3 up to 1676.4 mm	Pitch length over 1676.4 mm
3.0 to 11.0		+ 0.4 - 0.8	+ 0.4 - 0.8	—
11.1 to 38.1		+ 0.8 - 0.8	+ 0.8 - 0.8	+ 0.8 - 1.2
38.2 to 50.8		+ 0.8 - 1.2	+ 1.2 - 1.2	+ 1.2 - 1.6
50.9 to 63.5		+ 1.2 - 1.2	+ 1.2 - 1.6	+ 1.6 - 1.6
63.6 to 76.2		+ 1.2 - 1.6	+ 1.6 - 1.6	+ 1.6 - 2.0
76.3 to 101.6		+ 1.6 - 1.6	+ 1.6 - 2.0	+ 2.0 - 2.0
101.7 to 177.8		+ 2.4 - 2.4	+ 1.6 - 2.0	+ 2.0 - 2.0
177.9 to max.		—	—	+ 4.8 - 6.4

\* For greater lengths additional 0.03 mm should be added in length steps of 250 mm.