

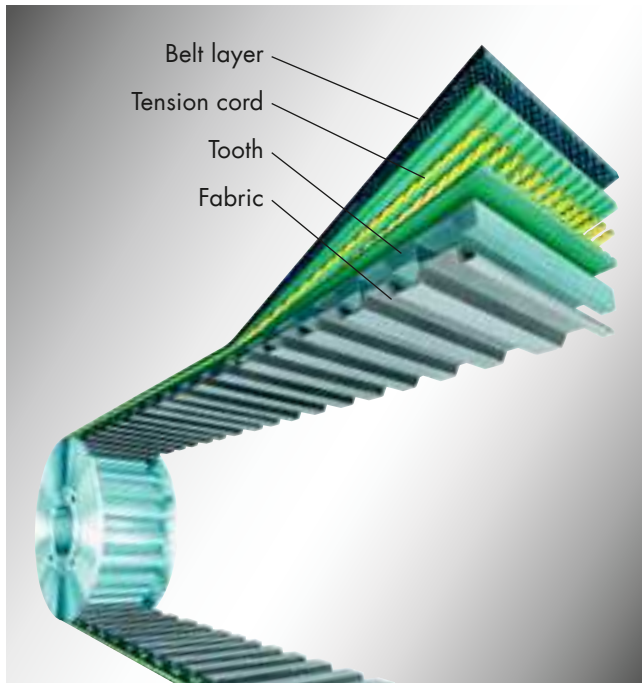
# PRODUCT DESCRIPTION

## optibelt ZR TIMING BELTS

### ISO 5296



#### Structure



#### Top layer

A flexible belt backing embeds the tension element and supports it against the reverse idlers. The top layer consists of a flexible high quality chloroprene compound. This protects the tension cord from oil, humidity, friction and wear and tear.

This top layer has some inherent resistance to mineral oils, but not to vegetable oils and water soluble cooling and cutting oils.

#### Tension cord

The tension cord is a continuous, spirally wound glass fibre. This material has a high tensile strength and is extremely flexible. The low-stretch properties of the tension cord ensure that the pitch of the belt corresponds to the pitch of the pulley – even when under strain.

#### Teeth

The teeth are made of a shear and wear resistant rubber compound vulcanised to form a unit with the belt back. The shape and arrangement of the teeth are such that the pulley engages the belt teeth precisely and with minimum friction. As long as six teeth or more are in mesh on the small pulley, the complete capacity of the timing belt can be used without any deduction.

#### Fabric

In order to obtain a low level of wear on the running surfaces as well as achieving a high level of tooth shear strength, a tough, wear resistant fabric is applied to the outer tooth surface.

#### Tooth pitch, designations

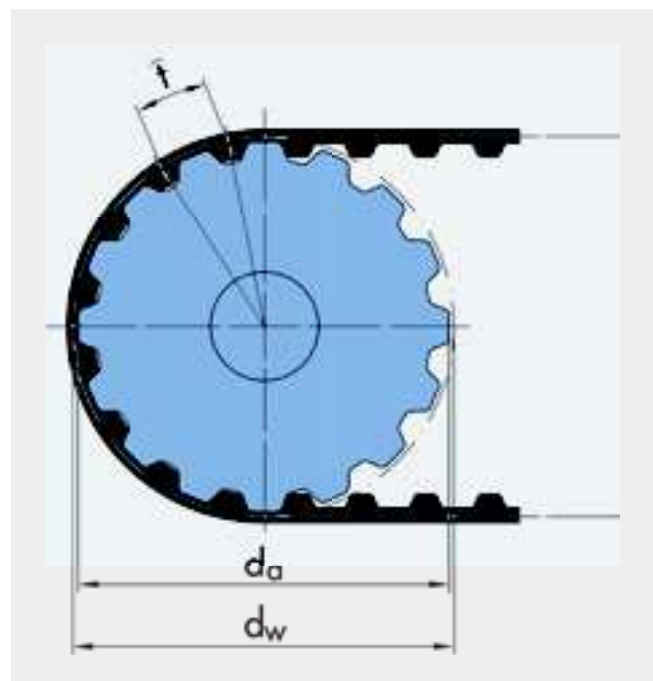
optibelt ZR timing belts are manufactured according to ISO 5296, timing belt pulleys according to ISO 5294. Both come in six standard profiles.

Due to the American origin of the timing belt profile, the length unit is "in" for inch. The width/length codes have thus been derived from the imperial (inch) measurements of widths and lengths.

Table 1: Belt profiles and tooth pitch

Profile	Tooth pitch t	
	[mm]	[inches]
MXL	2.032	0.080 or $\frac{2}{25}$
XL	5.080	0.200 or $\frac{1}{5}$
L	9.525	0.375 or $\frac{3}{8}$
H	12.700	0.500 or $\frac{1}{2}$
XH	22.225	0.875 or $\frac{7}{8}$
XXH	31.750	1.250 or $1\frac{1}{4}$

Tooth pitch is the distance from the centre of one tooth to the centre of the next measured at the pitch line, which corresponds with the level of the tension cord. The pitch or datum diameter of the pulley is a theoretical dimension which lies outside the outer diameter.



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#### Nominal size

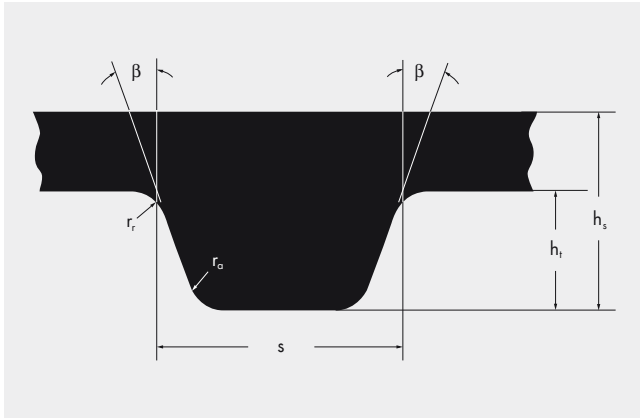


Table 2: Profile dimensions

Profile	MXL	XL	L	H	XH	XXH
Tooth angle $2\beta$ [°]	40	50	40	40	40	40
Tooth height $h_t$ [mm]	0.51	1.27	1.91	2.29	6.35	9.53
Foot radius $r_f$ [mm]	0.13	0.38	0.51	1.02	1.57	2.29
Head radius $r_a$ [mm]	0.13	0.38	0.51	1.02	1.19	1.52
Tooth width $s$ [mm]	1.14	2.57	4.65	6.12	12.57	19.05
Overall belt thickness $h_s$ [mm]	1.2	2.3	3.6	4.0	11.2	15.7

Table 3: Width tolerances for optibelt ZR timing belts according to ISO 5296

Profile	Standard width		Allowed deviation of width for belt pitch lengths		
	Dimension [mm]	Width code	Up to 838.20 mm	Over 838.20 mm up to 1676.40 mm	Over 1676.40 mm
			[mm]	[mm]	[mm]
MXL	3.2	012	+ 0.5 - 0.8	-	-
	4.8	019			
	6.4	025			
XL	6.4	025	+ 0.5 - 0.8	+ 0.5 - 0.8	-
	7.9	031			
	9.5	037			
L	12.7	050	+ 0.8 - 0.8	+ 0.8 - 1.3	+ 0.8 - 1.2
	19.1	075			
	25.4	100			
H	19.1	075	+ 0.8 - 0.8	+ 0.8 - 1.3	+ 0.8 - 1.3
	25.4	100			
	38.1	150			
H	50.8	200	+ 0.8 - 1.3	+ 1.3 - 1.3	+ 1.3 - 1.5
	76.2	300			
XH	50.8	200	+ 4.8 - 4.8	+ 4.8 - 4.8	+ 4.8 - 4.8
	76.2	300			
	101.6	400			
XXH	50.8	200	+ 4.8 - 4.8	+ 4.8 - 4.8	+ 4.8 - 4.8
	76.2	300			
	101.6	400			
	127.0	500			

#### Weight per metre

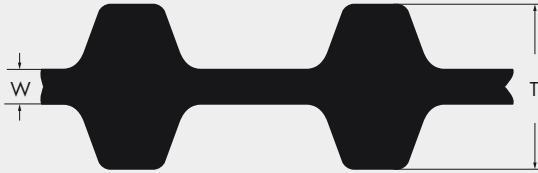
Profile	MXL	XL	L	H	XH	XXH
kg/m per 1 mm width	0.0012	0,0021	0.0035	0.0041	0.0110	0.0147

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## optibelt **ZR** DOUBLE-SIDED TIMING BELTS

### ISO 5296

### STANDARD PRODUCT RANGE



Profile s	DXL	DL	DH
W [mm]	0.508 ± 0.127	0.762 ± 0.127	1.372 ± 0.127
T [mm]	3.048 ± 0.178	4.572 ± 0.254	5.944 ± 0.127

Profile H						Profile XH			Profile XXH		
Belt designation	Pitch length [mm]	Number of teeth	Belt designation	Pitch length [mm]	Number of teeth	Belt designation	Pitch length [mm]	Number of teeth	Belt designation	Pitch length [mm]	Number of teeth
230 H	584.20	46	570 H▲	1447.80	114	507 XH	1289.05	58	700 XXH	1778.00	56
240 H▲	609.60	48	580 H	1473.20	116	560 XH	1422.40	64	800 XXH	2032.00	64
255 H	647.70	51	600 H▲	1524.00	120	630 XH	1600.20	72	900 XXH	2286.00	72
270 H▲	685.80	54	630 H▲	1600.20	126	700 XH	1778.00	80	1000 XXH	2540.00	80
280 H	711.20	56	650 H	1651.00	130	770 XH	1955.80	88	1200 XXH	3048.00	96
300 H▲	762.00	60	660 H▲	1676.40	132	840 XH	2133.60	96	1400 XXH	3556.00	112
310 H	787.40	62	670 H	1701.80	134	980 XH	2489.20	112	1600 XXH	4064.00	128
315 H	800.10	63	680 H	1727.20	136	1120 XH	2844.80	128	1800 XXH	4572.00	144
320 H	812.80	64	700 H▲	1778.00	140	1260 XH	3200.40	144			
330 H▲	838.20	66	720 H	1828.80	144	1400 XH	3556.00	160			
335 H	850.90	67	730 H	1854.20	146	1540 XH	3911.60	176			
340 H	863.60	68	750 H▲	1905.00	150	1750 XH	4445.00	200			
350 H	889.00	70	770 H	1955.80	154						
360 H▲	914.40	72	800 H▲	2032.00	160						
370 H	939.80	74	810 H	2057.40	162						
375 H	952.50	75	820 H	2082.80	164						
390 H▲	990.60	78	850 H▲	2159.00	170						
400 H	1016.00	80	860 H	2184.40	172						
410 H	1041.40	82	900 H▲	2286.00	180						
420 H▲	1066.80	84	950 H	2413.00	190						
430 H	1092.20	86	1000 H▲	2540.00	200						
450 H▲	1143.00	90	1100 H▲	2794.00	220						
465 H	1181.10	93	1120 H	2844.80	224						
480 H▲	1219.20	96	1140 H	2895.60	228						
490 H	1244.60	98	1150 H	2921.00	230						
510 H▲	1295.40	102	1250 H▲	3175.00	250						
520 H	1320.80	104	1400 H▲	3556.00	280						
530 H	1346.20	106	1700 H▲	4318.00	340						
540 H▲	1371.60	108									
560 H	1422.40	112									

The sizes marked ▲ are also available as double-sided timing belts.

Standard width	Width code	Standard width	Width code	Standard width	Width code
19.1 mm	<b>075</b>	50.8 mm	<b>200</b>	50.8 mm	<b>200</b>
25.4 mm	<b>100</b>	76.2 mm	<b>300</b>	76.2 mm	<b>300</b>
38.1 mm	<b>150</b>	101.6 mm	<b>400</b>	101.6 mm	<b>400</b>
50.8 mm	<b>200</b>	127.0 mm	<b>500</b>	127.0 mm	<b>500</b>
76.2 mm	<b>300</b>				

Further sizes on request.