

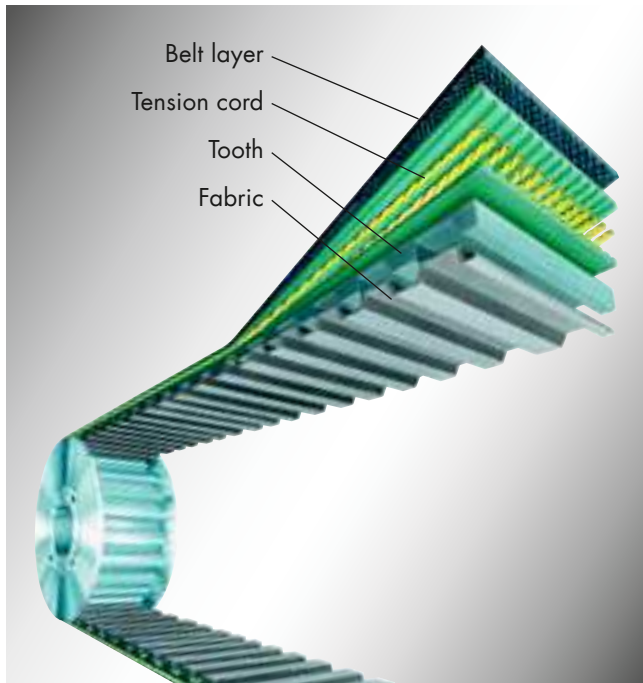
PRODUCT DESCRIPTION

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

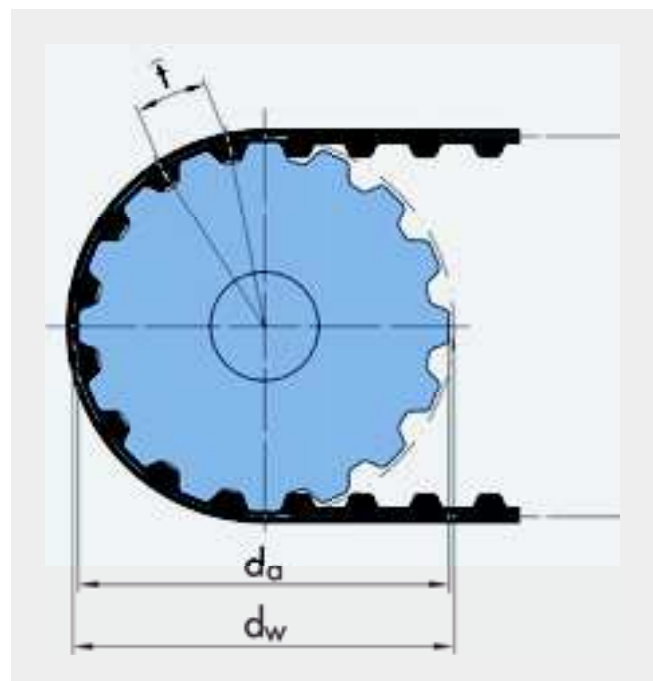
optibelt ZR timing belts are manufactured according to ISO 5296, timing belt pulleys according to ISO 5294. Both come in six standard profiles.

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

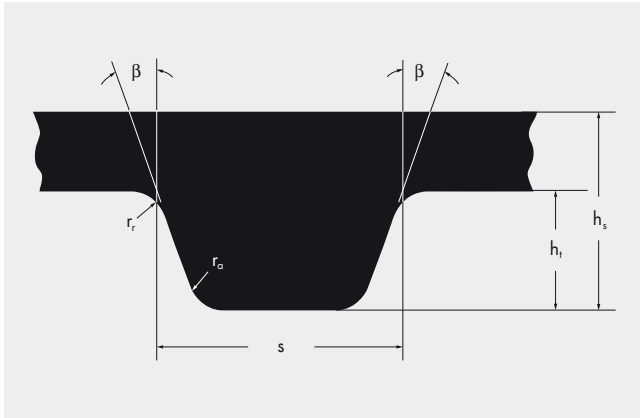


Table 2: Profile dimensions

Profile	MXL	XL	L	H	XH	XXH
Tooth angle 2β [°]	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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STANDARD PRODUCT RANGE



Profile	MXL	XL	L	H	XH	XXH
h_s [mm]	1.2	2.3	3.6	4.3	11.2	15.7
t [mm]	2.032	5.08	9.525	12.7	22.225	31.75

Profile XL						Profile L					
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
156 XL	396.24	78	286 XL•	726.44	143	109 L	276.23	29	439 L	1114.43	117
160 XL▲	406.40	80	290 XL	736.60	145	124 L	314.33	33	450 L▲	1143.00	120
162 XL•	411.48	81	296 XL•	751.84	148	150 L	381.00	40	454 L	1152.53	121
166 XL	421.64	83	300 XL▲	762.00	150	165 L	419.10	44	480 L▲	1219.20	128
168 XL•	426.72	84	306 XL•	777.24	153	169 L	428.63	45	510 L▲	1295.40	136
170 XL▲	431.80	85	310 XL▲	787.40	155	173 L	438.15	46	525 L	1333.50	140
174 XL•	441.96	87	316 XL	802.64	158	187 L▲	476.25	50	540 L▲	1371.60	144
176 XL	447.04	88	320 XL	812.80	160	202 L	514.35	54	600 L▲	1524.00	160
178 XL•	452.12	89	322 XL	817.88	161	210 L▲	533.40	56	630 L	1600.20	168
180 XL▲	457.20	90	330 XL	838.20	165	225 L▲	571.50	60	660 L	1676.40	176
182 XL	462.28	91	340 XL•	863.60	170	232 L	590.55	62	817 L	2075.18	218
184 XL•	467.36	92	344 XL•	873.76	172	236 L	600.08	63			
188 XL•	477.52	94	350 XL•	889.00	175	240 L▲	609.60	64			
190 XL▲	482.60	95	360 XL	914.40	180	255 L▲	647.70	68			
192 XL•	487.68	96	380 XL	965.20	190	259 L•	657.23	69			
194 XL	492.76	97	382 XL•	970.28	191	263 L•	666.75	70			
196 XL	497.84	98	388 XL•	985.52	194	270 L▲	685.80	72			
200 XL▲	508.00	100	390 XL	990.60	195	285 L▲	723.90	76			
210 XL▲	533.40	105	392 XL•	995.68	196	300 L▲	762.00	80			
220 XL▲	558.80	110	412 XL	1046.48	206	322 L▲	819.15	86			
230 XL▲	584.20	115	414 XL	1051.56	207	345 L▲	876.30	92			
240 XL▲	609.60	120	432 XL	1097.28	216	360 L	914.40	96			
244 XL•	619.76	122	434 XL	1102.36	217	367 L▲	933.45	98			
248 XL•	629.92	124	438 XL•	1112.52	219	375 L	952.50	100			
250 XL▲	635.00	125	460 XL	1168.40	230	390 L▲	990.60	104			
260 XL▲	660.40	130	498 XL•	1264.92	249	405 L	1028.70	108			
270 XL	685.80	135	506 XL•	1285.24	253	420 L▲	1066.80	112			
272 XL•	690.88	136	514 XL	1305.56	257	424 L•	1076.33	113			
274 XL•	695.96	137	580 XL•	1473.20	290	427 L•	1085.85	114			
280 XL▲	711.20	140	630 XL•	1600.20	315	435 L	1104.90	116			

The sizes marked ▲ are also available as double-sided timing belts.
Profiles and dimensions see page 34.

Standard width	Width code	Standard width	Width code
6.4 mm	025	12.7 mm	050
7.9 mm	031	19.1 mm	075
9.5 mm	037	25.4 mm	100
12.7 mm	050	38.1 mm	150
19.1 mm	075	50.8 mm	200
25.4 mm	100	76.2 mm	300

• Not available ex stock Further sizes on request