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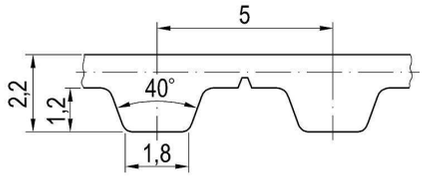
Technical Data Sheet
optibelt ALPHA TORQUE T5 - ST
PU Timing Belt, Cast Polyurethane, Endless

Dimensions, Tolerances

Profile:	T5
Tooth pitch t:	5 mm
Total thickness:	2.2 mm
Tooth height:	1.2 mm
Tooth tip width:	1.8 mm
Tooth flank angle:	40°
Length tolerance:	See table
Width tolerance, b ≤ 25 mm:	± 0.5 mm
Thickness tolerance:	± 0.15 mm

Construction

Polyurethane: Thermoset, 84 +/-4 Shore A, transparent
Tension cord: Steel, Ø 0.3 mm



Specific nominal power transmittable per tooth

Speed, small pulley n_k [1/min]	Specific nom. power $P_{N\,spez}$ [W/mm]	Speed, small pulley n_k [1/min]	Specific nom. power $P_{N\,spez}$ [W/mm]	Speed, small pulley n_K [1/min]	Specific nom. power $P_{N\,spez}$ [W/mm]
0 [1]	0.000	1200	0.152	3600	0.347
20	0.004	1300	0.162	3800	0.361
40 [2]	0.008	1400	0.171	4000	0.374
60	0.011	1500	0.181	4500	0.406
80 [3]	0.015	1600 [7]	0.190	5000	0.436
100	0.018	1700	0.199	5500	0.465
200 [4]	0.034	1800	0.208	6000	0.492
300	0.048	1900	0.217	6500	0.519
400 [5]	0.062	2000	0.225	7000	0.544
500	0.074	2200	0.242	7500	0.568
600	0.087	2400	0.258	8000	0.591
700	0.098	2600	0.274	8500	0.614
800 [6]	0.110	2800	0.290	9000	0.636
900	0.121	3000	0.304	9500	0.656
1000	0.131	3200 [8]	0.319	10000	0.677
1100	0.142	3400	0.333	v_{max} = 80 m/s	

[1] $F_{N\,spez}$ [N/mm] 2.450 [2] 2.317 [3] 2.222 [4] 2.035 [5] 1.852 [6] 1.646 [7] 1.425 [8] 1.196

Nominal power P_N

$$P_N = P_{N\,spez} \cdot z_k \cdot z_{eB} \cdot b / 10^3 \quad [kW]$$

$P_{N\,spez}$ Specific nominal power transmittable per tooth [W/mm]
z_k Number of teeth, small pulley
z_{eB} Number of teeth in mesh, small pulley, limited to $z_{eB\,max}$
$z_{eB\,max}$ 12, maximum allowable no. of teeth
b Belt width [mm]

Nominal torque M_N

$$M_N = P_N \cdot 9.55 \cdot 10^3 / n_k \quad [Nm]$$

n_k Speed, small pulley [1/min]

Nominal tensile force F_N

$$F_N = F_{N\,spez} \cdot z_{eB} \cdot b \quad [N]$$

$$F_{N\,spez} = P_{N\,spez} \cdot 6 \cdot 10^4 / (n_k \cdot t) \quad [N/mm]$$

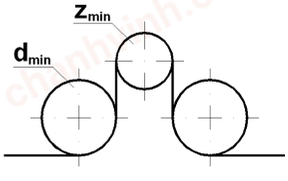
$F_{N\,spez}$ Specific nominal tensile force transmittable per tooth [N/mm]
t Tooth pitch [mm]

Cord tensile forces, belt weight

Belt width [1] b [mm]	6	10	12	16	20	25	32	50	75	100
Breaking strength F_{Br} [N]	880	1500	1880	2640	3360	4240	5500	8600	13200	17600
Allowable tensile force [2] F_{zul} [N]	220	375	470	660	840	1060	1375	2150	3300	4400
Weight per metre [kg/m]	0.013	0.022	0.026	0.035	0.044	0.055	0.070	0.110	0.165	0.220

[1] Other and intermediate widths possible [2] Allowable tensile force F_{zul} equivalent to 25% breaking strength F_{Br} of the cords

Timing belt pulleys, inside and outside idlers



No. of teeth: z_{min} = 10
Pitch-Ø: $d_{w\,min}$ = 15.92 mm
Plane, cylindrical idlers, Ø
Inside idler: d_{min} = 25 mm
Outside idler: d_{min} = 30 mm

Length tolerances, shown as centre distance tolerances

Length L_w [mm]		Tolerance a_{LTol} [mm]	Length L_w [mm]		Tolerance a_{LTol} [mm]
	≤ 305	± 0.14	> 780	≤ 990	± 0.28
> 305	≤ 390	± 0.16	> 990	≤ 1250	± 0.32
> 390	≤ 525	± 0.18	> 1250	≤ 1560	± 0.38
> 525	≤ 630	± 0.21	> 1560	≤ 1960	± 0.44
> 630	≤ 780	± 0.24	> 1960	≤ 2350	± 0.52

We would be pleased to offer advice about technical characteristics and drive design as well as special requirements. Further information can be found in OPTIBELT documentation. © OPTIBELT GmbH 09/2015. Subject to technical modification and change, errors and omissions excepted.