

Technical Data Sheet

optibelt ALPHA FLEX T5K6 - HF

PU Timing Belt, Optionally with Fabric PAZ, Endless

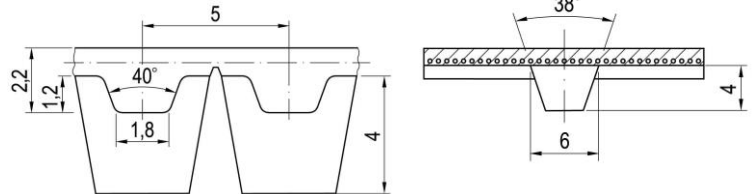


Dimensions, Tolerances

Profile:	T5K6
Tooth pitch t:	5 mm
Total thickness without Vguide:	2.2 mm
Tooth height:	1.2 mm
Tooth tip width:	1.8 mm
Tooth flank angle:	40°
Length tolerance:	±0.5 mm/m
Width tolerance:	±0.5 mm
Thickness tolerance:	±0.15 mm
V guide width, -height, -angle:	6 mm, 4 mm, 38°

Construction

Polyurethane:	Thermoplastic, 92 Shore A, white
Tension cord:	Steel, high flexible Ø 0.3 mm
Fabric optional:	Polyamide, tooth side (PAZ), green PAZ from 1500 mm production length



Je Zahn übertragbare, spezifische Nennleistung

Drehzahl, kl. Scheibe n_k [1/min]	Spez. Nenn- Leistung $P_{N\ spez}$ [W/mm]	Drehzahl, kl. Scheibe n_k [1/min]	Spez. Nenn- Leistung $P_{N\ spez}$ [W/mm]	Drehzahl, kl. Scheibe n_k [1/min]	Spez. Nenn- Leistung $P_{N\ spez}$ [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	$v_{max} = 80\text{ m/s}$	

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

Nennleistung P_N

$$P_N = P_{N\ spez} \cdot z_k \cdot z_{eB} \cdot (b - 6) / 10^3 \text{ [kW]}$$

$P_{N\ spez}$ 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

$$M_N = P_N \cdot 9.55 \cdot 10^3 / n_k \text{ [Nm]}$$

n_k Speed, small pulley [1/min]

Nominal tensile force F_N

$$F_N = F_{N\ spez} \cdot z_{eB} \cdot (b - 6) \text{ [N]}$$

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

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

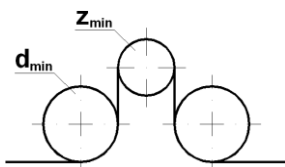
t Tooth pitch [mm]

Cord tensile forces, belt weight

Belt width ¹ b [mm]	16	25	32
Breaking strength F_{Br} [N]	2400	4080	5320
Allowable tensile force ² F_{zul} [N]	600	1020	1330
Weight per metre [kg/m]	0,038	0,060	0,076
Min. belt length [mm]	1500	1500	1500

¹ Smaller 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



Minimum number of teeth of the pulley:

$$z_{min} = 20$$

Minimum pitch diameter of the pulley:

$$d_{w\ min} = 31.83\text{ mm}$$

Plane, cylindrical idlers:

Minimum pitch diameter of an inside idler:

$$d_{min} = 28\text{ mm}$$

Minimum pitch diameter of an outside idler:

$$d_{min} = 45\text{ mm}$$