



Belt transmissions - V-belts [mm]

i Calculation without errors. Pulley 1 Pulley 2 Pulley 3

ii Project information

? V-Belts, 3 Pulleys

1.0 Manner of loading, operational parameters

2.0 Design of geometry and number of belts

3.0 Results, coefficients

4.0 Pulley and belts dimensions

? V-Belts, 2 Pulleys

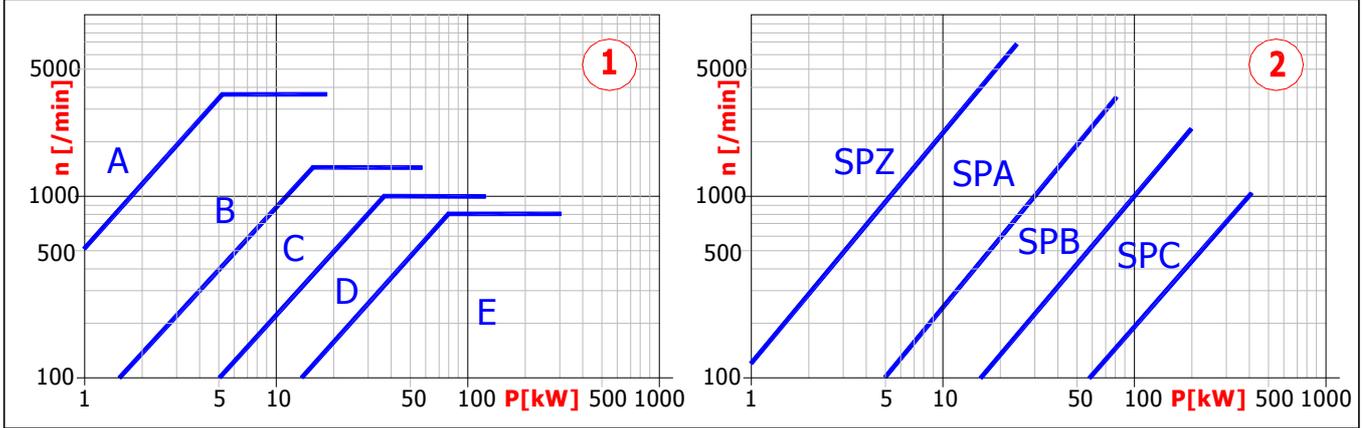
5.0 Manner of loading, operational parameters

5.1 Transferred power / power distributed to pulleys	P	10	9.67	[kW]
5.2 Speed of pulleys	n	1450.0	479.8	[/min]
5.3 Transmission ratio	i		3.022	
5.4 Torque	Mk	65.86	192.46	[Nm]
5.5 Type of driving units (loading)	<div style="border: 1px solid black; padding: 2px;"> A...Continuous or light shocks ▼ B...Medium duty ▼ C...Over 16 hours ▼ </div>			
5.6 Types of driven machine (loading)				
5.7 Daily loading of the transmission				
5.8 Belt slip coefficient		1.03	1.03	<input checked="" type="checkbox"/> [%]
5.9 Transmission efficiency		96.7	96.7	<input checked="" type="checkbox"/> [%]
5.10 Automatic design - press the button				

6.0 Design of geometry and number of belts

6.1 Recommended type of V-belt

$n = 1450$; $P = 10$



6.2 V-Belt type / Optimization

6.3 Table Pitch diameter (outer) selection

6.4 Calculating diameter of the pulley

6.5 Axis distance / optimum value / min-max

6.6 Length of the belt - Calculated/Min./Standardized

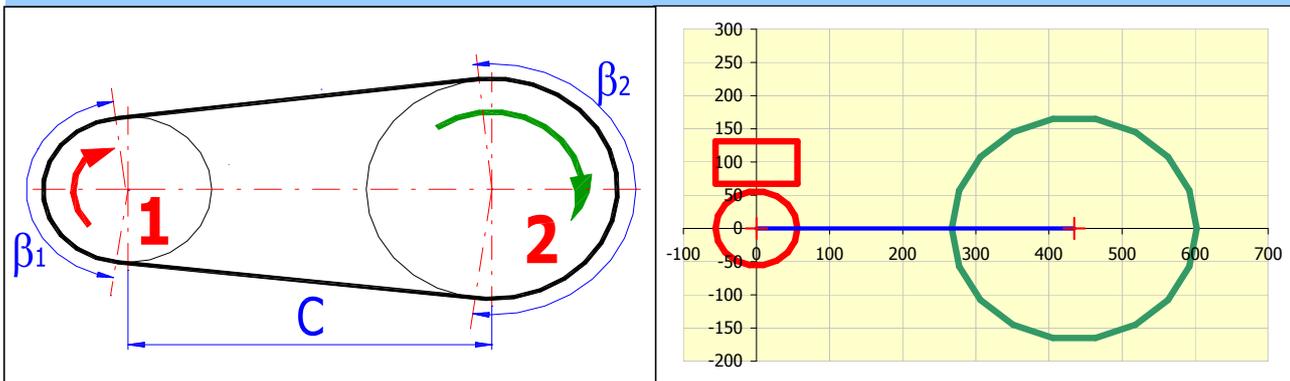
6.7 The angle of wrapping of the pulley (β_1 , β_2 , β_3)

6.8 Power transferred by one belt to a pulley

6.9 Calculated (exact) number of belts

6.10 Necessary number of belts / approximate weight

1...SPZ (ISO, DIN)	▼		
112	▼ 335 -	▼	
Dp	112.0	335.0	[mm]
c12	434.62	447	268 - 894 [mm]
Lw	1600.00	> 1285	1600 (1587) [mm]
β	150.27	209.73	[°]
PR	2.06	2.36	[kW]
k	4.85	4.09	
k/m	5	17.95	[kg]



7.0 Results, coefficients

7.1 Coefficients

- 7.2 - Coefficient of wrapping angle
- 7.3 - Coefficient of operational loading
- 7.4 - Coefficient of belth length

c1	0.92	1.06
c2	1.3	
c3	1.00	

7.5 Axis distance adjustability

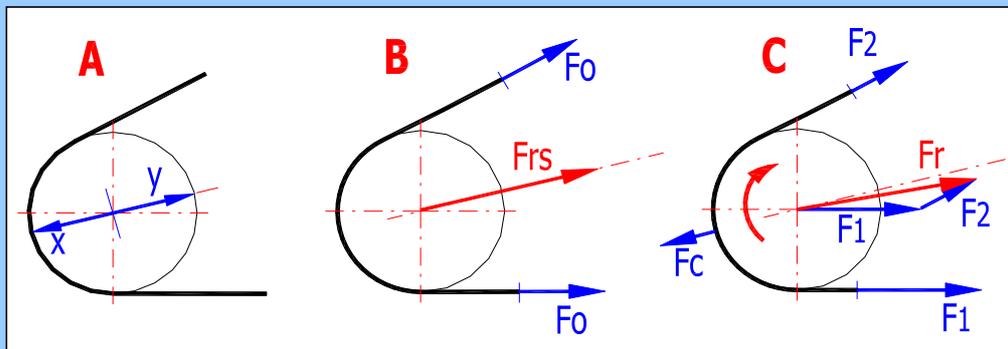
- 7.6 - For tightening of the belt
- 7.7 - For easier installation of the belt

x	16.55	[mm]
y	19.13	[mm]

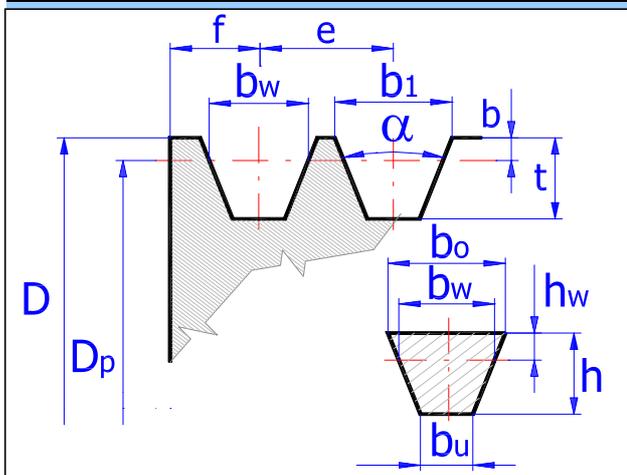
7.8 Force conditions, speed

- 7.9 - Coefficient of safety
- 7.10 - Belt speed / max. for the given type
- 7.11 - Bending frequency of the belt
- 7.12 - Tensile force
- 7.13 - Centrifugal force
- 7.14 - Prestressing of the belt
- 7.15 - Static force on the shaft (at rest)
- 7.16 - Force in the loaded belt strand
- 7.17 - Force in the unloaded belt strand
- 7.18 - Total radial force on the shaft (bearings)

	1.150	1.15	<input checked="" type="checkbox"/>	
v	8.50	< 40		[m/s]
fs	11			[/s]
Fu	1176.02			[N]
Fc	26.39			[N]
Fo	1042.84			[N]
Frs	2015.87			[N]
F1	1630.85			[N]
F2	454.83			[N]
Fr	2038.33			[N]



8.0 Pulley and belts dimensions



bw	8.5	Belt dimensions	[mm]
bo	9.7		[mm]
bu	4		[mm]
h	8		[mm]
hw	2		[mm]
D	116.00	339.01	[mm]
Dp	112.00	335.01	[mm]
α	36	36	[°]
b1	9.7	Pulley dimensions	[mm]
f	8		[mm]
e	12		[mm]
b	2		[mm]
t	11		[mm]
w	64		Pulley width

