

Toothed belt calculation

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Version 7.2

To
Company: 1
Fao: 1
Application: 1
Remarks: 1

From
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Responsible: STAS
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Conti CONTI SYNCHROFORCE CXP HTD

Tooth profile	PROF	=	3M	
Tooth pitch	T	=	3,00	mm
Number of teeth on small pulley	ZK	=	18	
Pitch diameter of small pulley	DWK	=	17,19	mm
Number of teeth on large pulley	ZG	=	46	
Pitch diameter of large pulley	DWG	=	43,93	mm
Speed of small pulley	NK	=	2045,11	rpm
Speed of large pulley	NG	=	800,26	rpm
Transmission ratio	I	=	2,56	
Belt length	LW	=	402,00	mm
Number of teeth on timing belt	Z	=	134,00	
Centre distance	AER	=	152,41	mm
Arc of contact on the small pulley	BETA	=	169,94	grd
Number of teeth in mesh on small pulley	ZE	=	8,50	
Belt speed	V	=	1,84	m/s
Belt flex frequency	BF	=	9,16	Hz
Overall service factor	C0	=	1,20	
Teeth in mesh factor	C1	=	1,00	
Length factor	C5	=	1,10	
Power to be transmitted	P	=	0,14	kW
Torque on small pulley	MDK	=	0,66	Nm
Torque on large pulley	MDG	=	1,69	Nm
Calculated belt width	BERR	=	3,48	mm
Chosen belt width	B	=	4,00	mm
Power rating for belt width	PR	=	0,21	kW
Calculated overall service factor	COER	=	1,47	
Effective pull	FU	=	76,79	N
Static belt tension	FSTAT	=	54,34	N
Total axle load	FV	=	108,26	N
Belt tension load factor	k1	=	1,25	
Belt tension service factor	k2	=	1,13	
Natural frequency of belt span	EIF	=	243	Hz

The permissible total span tension has been exceeded. (52 N)
no standard length, please contact the support.

CONTI HTD Timing belt 402 - 3M - 4 - SYNCHROFORCE CXP
Toothed pulley P 18 - 3M - 4
Toothed pulley P 46 - 3M - 4

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