

KISSsoft evaluation

File

Name : ChainDrive 1
 Description: KISSsoft example
 Changed by: kspl on: 07.03.2016 at: 10:55:55

Chain drive

Calculation method: DIN ISO 10823:2006

Chain type
 Standard DIN ISO 606:2012
 Type 06B
 Number of strands [ns] 2
 Pitch (mm) [p] 9.53

Center distance (mm) [a] 401.26
 Chain length (mm) [l] 993.04
 Number of parts (of chain) [NI] 104
 Speed of chain (m/s) [v] 3.17

Geometry of chain:

Maximum roller diameter (mm) [d1] 6.35
 Maximum bearing pin body diameter (mm) [d2] 3.28
 Minimum width between inner plates (mm) [b1] 5.72
 Maximum width over inner link (mm) [b2] 8.53
 Total width of chain (mm) [btot] 23.80
 Maximum inner plates depth (mm) [h2] 8.26
 Sectional area of two inner plates (mm²) [Ai] 9.82
 Ratio [th/ts] 1.00
 Minimum breaking force (kN) [Fu] 16.90

Geometry of chain sprocket 1:

Minimum tooth flank radius (mm) [remin] 29.46
 Medium tooth flank radius (mm) [re] 23.11
 Maximum tooth flank radius (mm) [remax] 16.76
 Minimal roll-seating radius (mm) [rimin] 3.21
 Medium roll-seating radius (mm) [ri] 3.27
 Maximum roll-seating radius (mm) [rimax] 3.33
 Minimal roll-seating angle (°) [alfamin] 115.50

Medium roll-seating angle (°)	[alfa]	125.50	
Maximum roll-seating angle (°)	[alfamax]	135.50	
Minimum outside diameter (mm)	[damin]	63.30	
Medium outside diameter (mm)	[da]	64.87	
Maximum outside diameter (mm)	[damax]	66.44	
Root diameter (mm)	[df]	54.54	0/-0.25
Root diameter tolerance			
Minimum tooth height over reference circle (mm)	[hamin]	1.59	
Medium tooth height over reference circle (mm)	[ha]	2.37	
Maximum tooth height over reference circle (mm)	[hamax]	3.16	
Facewidth of a tooth (mm)	[bf1]	5.03	h14
Facewidth over all teeth (mm)	[bftot]	14.56	
Measuring-pin diameter (mm)	[dr]	6.35	
Tolerance measuring-roll diameter (mm)			
Measure over rolls (mm)	[MR]	67.24	
Geometry of chain sprocket 2:			
Minimum tooth flank radius (mm)	[remin]	29.46	
Medium tooth flank radius (mm)	[re]	23.11	
Maximum tooth flank radius (mm)	[remax]	16.76	
Minimal roll-seating radius (mm)	[rimin]	3.21	
Medium roll-seating radius (mm)	[ri]	3.27	
Maximum roll-seating radius (mm)	[rimax]	3.33	
Minimal roll-seating angle (°)	[alfamin]	115.50	
Medium roll-seating angle (°)	[alfa]	125.50	
Maximum roll-seating angle (°)	[alfamax]	135.50	
Minimum outside diameter (mm)	[damin]	63.30	
Medium outside diameter (mm)	[da]	64.87	
Maximum outside diameter (mm)	[damax]	66.44	
Root diameter (mm)	[df]	54.54	0/-0.25
Root diameter tolerance			
Minimum tooth height over reference circle (mm)	[hamin]	1.59	
Medium tooth height over reference circle (mm)	[ha]	2.37	
Maximum tooth height over reference circle (mm)	[hamax]	3.16	
Facewidth of a tooth (mm)	[bf1]	5.03	h14
Facewidth over all teeth (mm)	[bftot]	14.56	
Measuring-pin diameter (mm)	[dr]	6.35	
Tolerance measuring-roll diameter (mm)			
Measure over rolls (mm)	[MR]	67.24	
		Gear 1	Gear 2
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Speed (1/min)	[n]	1000.00	1000.00
Number of teeth	[z]	20	20
Reference diameter (mm)	[d]	60.89	60.89

Loop (°)		180.00	180.00
Torque (Nm)	[T]	19.10	19.10
Radial force (N)	[Fa]	635.15	635.15
Nominal power (kW)	[Pn]	2.00	
Application factor	[f1]	1.00	
Factor for number of teeth	[f2]	0.95	
Operating power (kW)	[Pmax]	1.89	
Speed correction factor	[KPS]	1.00	
Nominal power plate fatigue resistance (kW)	[Pc1]	3.28	
Nominal power roll-/bush fatigue (kW)	[Pc2]	27.30	
Nominal power pin/bush wear (kW)	[Pc3]	264.53	
Maximum transmittable Power (kW)	[Pzul]	3.28	

Maximal possible variation for the input speed (due to polygon effect):

Minimal speed (1/min)	[nmin]	987.69
Maximal Speed (1/min)	[nmax]	1012.47

Lubrication proposal:
 Oil bath or centrifugal lubrication
 (coefficient $v \cdot p^{0.56}$ 11.22)

Utilization (%)	[A]	57.70
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Formula: $A = P_{max} / P_{zul} * 100$
 $P_{zul} = \min(P_{c1}, P_{c2}, P_{c3})$
 $P_{max} = P_n * f_1 * f_2$

End of Report lines:
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