Roller chain transmission

		Sprocket1	Sprocket2	
i	Calculation without errors.			
ii	Project information			
?	**Input sectinon**			
1.0	**The manner of loading, working parameters**			

			Sprocket1	Sprocket2	
1.1	Calculation units		Imperial (lbf, in, HP....) ▼		
1.2	Transferred power	P	1.46	1.43	[HP]
1.3	Speed of the sprocket wheel (desired)	n	175	210	[/min]
1.4	Speed of the sprocket wheel (actual)	n	175	207.81	[/min]
1.5	The desired / actual transmission ratio	i	0.833	0.842	
1.6	Torque	Mk	525.60	433.76	[lb.in]
1.7	The type of driving machine (loading)		B...Moderate shocks ▼		
1.8	The type of driven machine (loading)		A...Smooth ▼		
1.9	Type of lubrication		A...Requested failure free ▼		
1.10	Number of links of the chain		Even only ▼		
1.11	Number of teeth of the sprocket wheel		Even and odd ▼	Even and odd ▼	

2.0	**Automatic design**				

3.0	**Design and calculation**				
3.1	Chain selection - Standard chain No. (Pitch)		40 - 1 (0.5) ▼		
3.2	Chain pitch / chains strands number	t	0.500	1	
3.3	Sprocket - number of teeth / recomended	z	38	32	22 (min=11)
3.4	Pitch diameter	Dp	6.055	5.101	[in]
3.5	Desired axis distance / recomended	C	16.70	20	[in]
3.6	Actual axis distance / min.-max.	C	16.74	7.8 - 80	[in]
3.7	Number of chain links	X	102	102	
3.8	Length of the chain	L	51		[in]
3.9	Speed of the chain / max	v	277.38	< 4491	[ft/min]
3.10	Design power / table power	Pp	1.32	< 3.1	[HP]
3.11	Tensile force / Centrifugal force	Fu/Fc	173.7	0.3	[lbf]
3.12	Breaking force (table) / Force on the chain	FB/Fr	3186	174.0	[lbf]
3.13	Static coefficient of safety against breakage	SB	18.31	> 13.27	
3.14	Dynamic coefficient of safety against breakage	SD	18.31	> 12.76	
3.15	The calculated / permitted pressure in the chain joint	p	2551	< 3090.6	[psi]
3.16	Level of safety of the chain joint	SP	1.21	> 1.00	
3.17	Total weight of the transmission / chain	m	5.06	1.83	[lb]
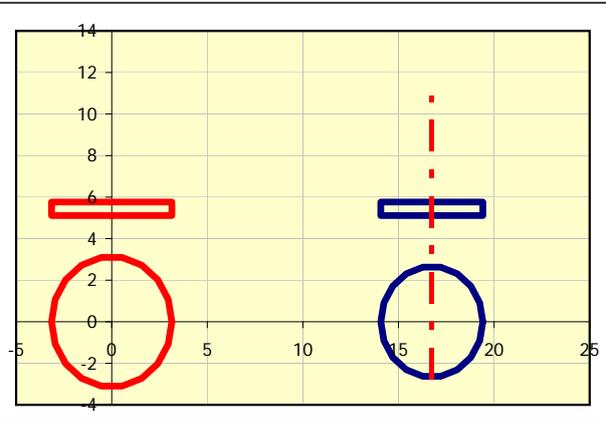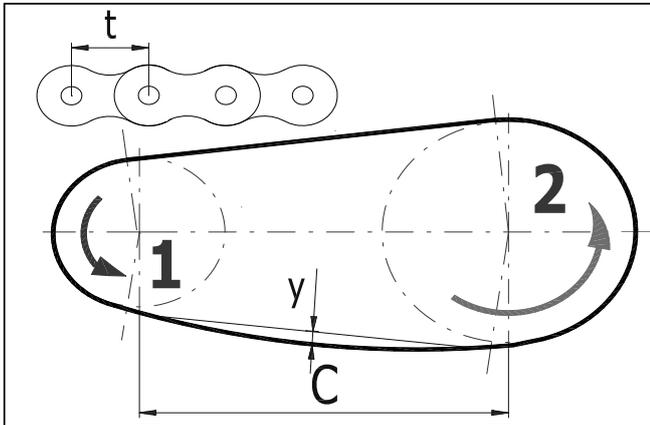
4.0   Results, coeficients

4.1 Coefficients for power corrections

4.2	Coefficient of the number of teeth	K1	0.70	0.70
4.3	Coefficient of the transmission ratio	K2	1.22	1.22
4.4	Coefficient of shock (Service factor)	K3	1.00	1.00
4.5	Coefficient of distances of axes	K4	1.07	1.07
4.6	Coefficient of lubrication	K5	1.00	1.00
4.7	Coefficient of temperature	K6	1.00	1.00
4.8	Coefficient of service life	K7	1.00	1.00

4.9   Calculation and setting of coefficients according to   ASME B29.1M   ▼

4.10 Recommended type of lubrication   Oil pressure circulation lubrication

4.11 Type of lubrication (permissible)   Oil dip with splash ring

4.12 Maximum slackness of the chain y 0.33   [in]

4.13 Minimum / Maximum speed of sprocket 2   276.43   278.72   [ft/min]

4.14 Coefficient of speed variation ξ 0.82   [%]

5.0   Dimensions
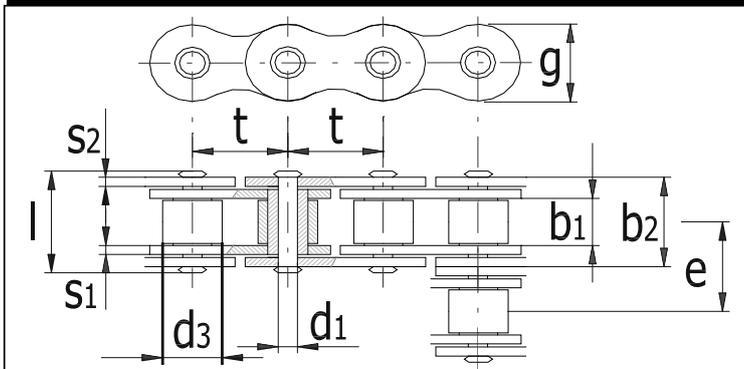
d1	0.156	[in]
d3	0.312	[in]
b1	0.312	[in]
b2	0.432	[in]
t	0.500	[in]
g	0.472	[in]
l	0.650	[in]
e	0.000	[in]
s1	0.060	[in]
s2	0.060	[in]
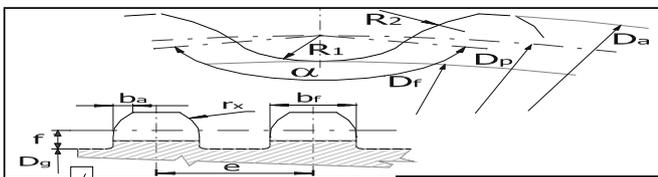
Da	6.289	5.336	[in]
Dp	6.055	5.101	[in]
Df	5.734	4.781	[in]
R1	0.160		[in]
R2	2.776	2.139	[in]
α	127.632	127.188	[°]

6.2 2D drawing scale   Automatic

6.3 Detail: Sprocket1