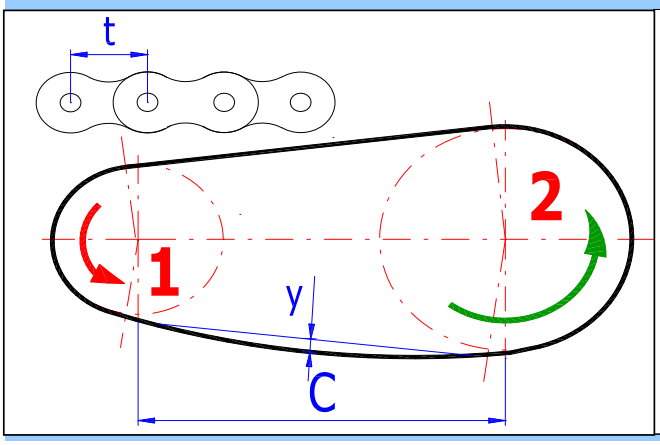
Roller chain transmission

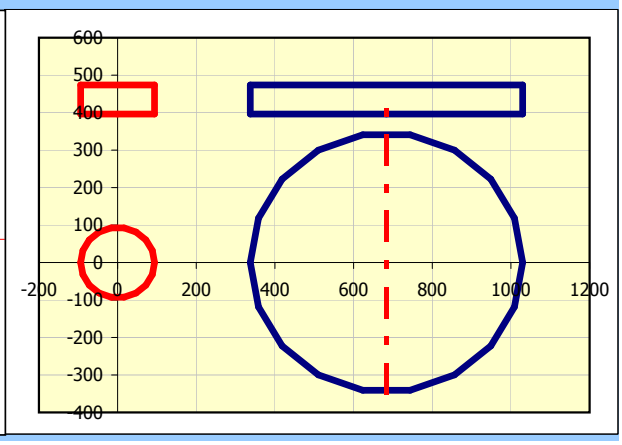
			Sprocket1	Sprocket2	
i	**Calculation without errors.**				
ii	**Project information**				
?	**Input sectinon**				
1.0	**The manner of loading, working parameters**				
1.1	Calculation units		SI Units (N, mm, kW...)		
1.2	Transferred power	P	9.60	9.41	[kW]
1.3	Speed of the sprocket wheel (desired)	n	116.5310732	30	[/min]
1.4	Speed of the sprocket wheel (actual)	n	116.5310732	29.57	[/min]
1.5	The desired / actual transmission ratio	i	3.884	3.941	
1.6	Torque	Mk	787.02	3039.75	[Nm]
1.7	The type of driving machine (loading)		A...Uniform loading or light shocks		
1.8	The type of driven machine (loading)		C...Medium duty		
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		Odd only	Odd only	
2.0	**Automatic design**				
2.1	**Chain type**				
2.2	D...Standard roller chains (EU) / DIN 8187, ISO R-606, BS 228				
2.3	Axis distance for Automatic design		700.00	Entered	[mm]
2.4	Range of smaller sprocket teeth		17	21	
2.5	Automatic design - press the button				
2.6	Sort results according to parameter		Transmission weight		
2.7	**Table of solutions**				

2.8	Type	z1	z2	n2	i	A	Pp	v	SD	p	SP	Pp%	m
2.9	20B - 2	17	67	29.6	3.94	683.6	17.04	1.05	12.88	15.95	1.06	92	110.2

3.0 Design and calculation

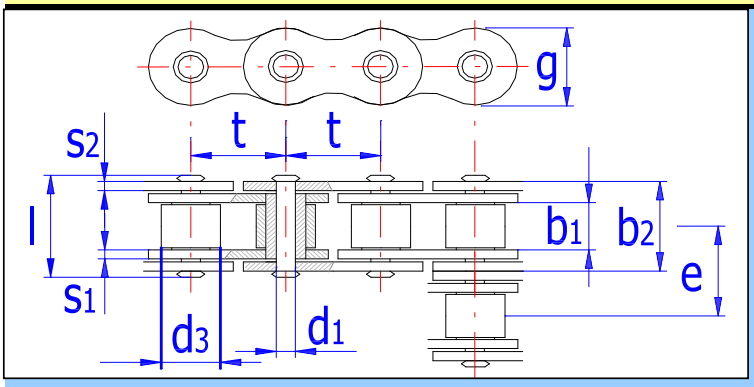
3.1	Chain selection - Standard chain No. (Pitch)		20B - 2 (31.75)		
3.2	Chain pitch / chains strands number	t	31.750	2	
3.3	Sprocket - number of teeth / recomended	z	17	67	17 (min=15)
3.4	Pitch diameter	Dp	172.790	677.373	[mm]
3.5	Desired axis distance / recomended	C	683.60	1270	[mm]
3.6	Actual axis distance / min.-max.	C	683.56	595 - 5080	[mm]
3.7	Number of chain links	X	88	88	
3.8	Length of the chain	L	2794		[mm]
3.9	Speed of the chain / max	v	1.05	< 7.98	[m/s]
3.10	Design power / table power	Pp	15.18	< 17.04	[kW]
3.11	Tensile force / Centrifugal force	Fu/Fc	9108.9	8.3	[N]
3.12	Breaking force (table) / Force on the chain	FB/Fr	170000	9117.3	[N]
3.13	Static coefficient of safety against breakage	SB	18.65	> 10.58	
3.14	Dynamic coefficient of safety against breakage	SD	13.32	> 12.83	
3.15	The calculated / permitted pressure in the chain joint	p	15.43	< 16.91	[MPa]
3.16	Level of safety of the chain joint	SP	1.10	> 1.00	
3.17	Total weight of the transmission / chain	m	110.22	20.96	[kg]



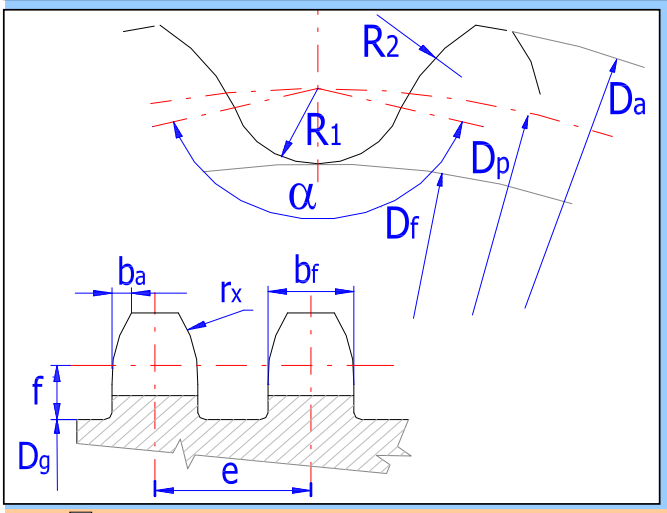


?	Results section				
4.0	**Results, coeficients**				
4.1	**Coefficients for power corrections**				
4.2	Coefficient of the number of teeth	K1	1.00	1.10	
4.3	Coefficient of the transmission ratio	K2	0.95	0.95	
4.4	Coefficient of shock (Service factor)	K3	1.40	1.40	
4.5	Coefficient of distances of axes	K4	1.18	1.18	
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		ISO 10823		
4.10	Recommended type of lubrication		Oil dip with splash ring		
4.11	Type of lubrication (permissible)		Oil drops		
4.12	Maximum slackness of the chain	y	13.67		[mm]
4.13	Minimum / Maximum speed of sprocket 2		1.04	1.06	[m/s]
4.14	Coefficient of speed variation	ξ	1.83		[%]

5.0 Dimensions



d1	10.190	[mm]
d3	19.050	[mm]
b1	19.560	[mm]
b2	29.000	[mm]
t	31.750	[mm]
g	26.000	[mm]
l	77.700	[mm]
e	36.450	[mm]
s1	4.500	[mm]
s2	3.500	[mm]



Da	187.871	692.454	[mm]
Dp	172.790	677.373	[mm]
Df	153.367	657.950	[mm]
R1	9.711		[mm]
R2	57.455	434.645	[mm]
α	124.706	128.657	[°]

bf	18.191		[mm]
ba	2.381		[mm]
rx	15.285		[mm]
f	22.225		[mm]
Dg	128.340	632.923	[mm]

6.0 ☐ Graphical output, CAD systems