Crosted Dur	Winston Theo	Christophor I	Luev. Chirag Bachani	

Transmission Speed					Zhao, Christopher	Luey, Chirag Bach	ani									
2600.000	rpm	given														
400.000	rpm	given, ideal														
6.500		given														
ar Property		-														
0.0050	m															
	m															
	m															
20.0000	deg															
N		Pitch Diameter (d0)	Pitch Radius (r0)	Outer Circle (do)	Root Circle (dr)	Face Width (bw)		Torque	Wt	Wr	w		Power		Addendum	∍dendum
19.0000	teeth	0.095	0.048	0.105	0.083	0.065	m	257.096	5412.557	1970.010	5759.923	N	70000.000	w		
47.0000	teeth	0.235	0.118	0.245	0.223	0.060	m	635.975	5412.557	1970.010	5759.923	N	70000.000	W		
27.0000	teeth	0.135	0.068	0.145	0.123	0.065	m	635.975	9421.858	3429.276	10026.532	N	70000.000	W		
71.0000	teeth	0.355	0.178	0.365	0.343	0.060	m	1672.380	9421.858	3429.276	10026.532	N	70000.000	W		
6.5049														_		
399.7003	rpm															
-0.07%																
		-														
0.4043																
0.3803																
			Left		Right											
Shaft		Diameter	Ау	Az	Ву	Bz		Му	Mz	М	V_A	V_B	sigma,bs	tau,T	tau,S	
2600.0000	rpm	0.0450	1546.4448	562.8599	3866.1120	1407.1497	N	-70.3575	193.3056	205.7115	1645.6922	4114.2304	22.9944	14.3691	3.4492	MPa
1051.0638	rpm	0.0600	8007.1475	1788.6436	6827.2674	329.3773	N	-98.3754	-440.3931	451.2470	8204.4900	6835.2081	21.2795	14.9954	3.8690	MPa
399.7003	rpm	0.0550	6460.7027	2351.5035	2961.1554	1077.7724	N	117.5752	323.0351	343.7668	6875.3362	3151.1958	21.0463	19.4680	3.8585	MPa
200000.0000	394.7200	0.2900	294./400													
								von-mises	von-mises							
									mean	ns	nsy					
		0.9505		0.8200		1.0000	197.3600	70.9822	24.8880		6.0589					
3.0000	2.8000	0.9505	0.7590	0.8200	1.0000	1.0000	197.3600	65.8535	33.7196	1.5398	5.2819					
0.0550	m	- left														
0.0700	m	middle														
0.0500	m	right														
0.1750																
		-														
0.1650	m															
0.1650	m m															
0.2450	m	-														
0.2450	m m	-														
0.2450 0.4100 0.6350	m m m	-														
0.2450 0.4100 0.6350 0.3550	m m m	-														
0.2450 0.4100 0.6350	m m m	-														
0.2450 0.4100 0.6350 0.3550	m m m	-														
	N 19.0000 47.0000 27.0000 71.0000 6.5049 399.7003 -0.07% 0.4043 0.3803 Shaft 2600.0000 1051.0638 399.7003 E 200000.0000  Kf 3.0000 3.0000 3.0000	N  19.0000 teeth 47.0000 teeth 47.0000 teeth 47.0000 teeth 47.0000 teeth 6.5049 399.7003 rpm -0.07%  0.4043 0.3803  Shaft  2600.0000 rpm 1051.0638 rpm 399.7003 rpm  E UTS 200000.0000 394.7200  Kf Kfs 3.0000 2.8000 3.0000 2.8000 3.0000 2.8000	N Pitch Diameter (d0)  19,0000 teeth 0,235 47,0000 teeth 0,355 27,0000 teeth 0,355 27,0000 teeth 0,355  6,5049 399,7003 rpm -0,07%  0,4043 0,3803  Shaft Diameter 2600,0000 rpm 0,0450 1051,0638 rpm 0,0600 399,7003 rpm 0,0550  E UTS Poisson Ratio 200000,0000 394,7200 0,2900  Kf Kfs Kfs kf (grinding) 3,0000 2,8000 0,9505 3,0000 2,8000 0,9505	N Pitch Diameter (d0) Pitch Radius (r0)  19,0000 teeth 0.095 0.048 47,0000 teeth 0.235 0.118 27,0000 teeth 0.355 0.178  27,0000 teeth 0.355 0.178  6.5049 399,7003 rpm -0.07%  Diameter Ay  2600,0000 rpm 0.0450 1546,4448 1051,0638 rpm 0.0600 8007,1475 399,7003 rpm 0.0550 6460,7027  E UTS Poisson Ratio Ys  200000,0000 394,7200 0.2900 294,7400  Kf Kfs kf (grinding) ks 3,0000 2,8000 0.9505 0.7590 3,0000 2,8000 0.9505 0.7590	N Pitch Diameter (d0) Pitch Radius (r0) Outer Circle (do) 19,0000 teeth 0,095 0,048 0,105 47,0000 teeth 0,235 0,118 0,245 27,0000 teeth 0,135 0,068 0,145 71,0000 teeth 0,355 0,178 0,365 6,5049 399,7003 rpm -0,07%  Diameter Ay Az 2600,0000 rpm 0,0450 1546,4448 502,8599 1051,0638 rpm 0,0600 8007,1475 1788,6436 399,7003 rpm 0,0550 6460,7027 2351,5035  E UTS Poisson Ratio Ys 200000,0000 394,7200 0,2900 294,7400  Kf Kfs kf (grinding) ks kr 3,0000 2,8000 0,9505 0,7763 0,8200 3,0000 2,8000 0,9505 0,7517 0,8200 3,0000 2,8000 0,9505 0,7590 0,8200	N Pitch Diameter (d0) Pitch Radius (r0) Outer Circle (do) Root Circle (dr)  19,0000 teeth 0.095 0.048 0.105 0.083 47,0000 teeth 0.235 0.118 0.245 0.223 27,0000 teeth 0.135 0.068 0.145 0.123 71,0000 teeth 0.355 0.178 0.365 0.343 6.5049 399,7003 rpm -0.07%  0.4043 0.3803  Shaft Diameter Ay Az By 2000,0000 rpm 0.0450 1546,4448 562,8599 3866.1120 1051,0638 rpm 0.0600 8007.1475 1788,6436 6827.2674 399,7003 rpm 0.0550 6460.7027 2351.5035 2961.1554  E UTS Poisson Ratio Ys 200000,0000 394,7200 0.2900 294,7400  Kf Kfs kf (grinding) ks kr kt 3,0000 2,8000 0.9505 0.7517 0.8200 1.0000 3,0000 2,8000 0.9505 0.7590 0.8200 1.0000	N Pitch Diameter (d0) Pitch Radius (r0) Outer Circle (do) Root Circle (dr) Face Width (bw)  19,0000 teeth 0.095 0.048 0.105 0.083 0.065 47,0000 teeth 0.235 0.118 0.245 0.223 0.060 27,0000 teeth 0.135 0.068 0.145 0.123 0.065 71,0000 teeth 0.355 0.178 0.365 0.343 0.060 6.5049 399,7003 rpm -0.07%  1. Left Right Shaft Diameter Ay Az By Bz 2600,0000 rpm 0.0450 1546,4448 562,8599 3866,1120 1407,1497 1051.0638 rpm 0.0600 8007,1475 1788,6436 6827,2674 329,3773 399,7003 rpm 0.0550 6460,7027 2351,5035 2961,1554 1077,7724  E UTS Poisson Ratio Ys 200000,0000 394,7200 0.2900 294,7400  Kf Kfs kf (grinding) ks kr kr kt km 3,0000 2,8000 0.9505 0.7763 0.8200 1.0000 1.0000 3,0000 2,8000 0.9505 0.7517 0.8200 1.0000 1.0000 3,0000 2,8000 0.9505 0.7590 0.8200 1.0000 1.0000	N	N	N	N	0.0050 m 0.0050 m 0.00650	0.00050 m 0.000500 m	N	N   Pitch Diameter (48)   Pitch Radius (v3)   Veter Circle (40)   Rost Circle (40)   Face Width (1900)   Torque   Wit   Wit	M   Pitch Diameter (40)   Pitch Radius (70)   Outer Circle (60)   Root Circle (67)   Face Wridth (bw)   Torque   Wit   Wir   Wir   Wir   Wir   Power   Power

Shaft 2 Shaft 3 918209361.7021 349178207.9712

207001.7021	0,0100
178207.9712	cycles

Gear Material			E (MPa)	Poisson Ratio	Туре																	
Gear 1	AISI 1045 Carbon Steel	500.0000	200000.0000	0.2850	pinion											ns						
Gear 2	AISI 1045 Carbon Steel	400.0000	200000.0000	0.2850	gear																	
Gear 3	AISI 1045 Carbon Steel	500.0000	200000.0000	0.2850	pinion																	
Gear 4	AISI 1045 Carbon Steel	400.0000	200000.0000	0.2850	gear																	
Contact Stress	S_c	Z_N	HBp/HBg	Ch	K_T	K_R	sigma,all (MPa)	-	Ke (sqrtPa)	ı	Ka	Ks	Km	Kv	ma. actual (I	ma, actual (M	IF ns		A	в ф	v V (m)	/s) Kv
Gear 1	1437.0000	0.7380	1.2500		1.0000	1.0000	1060.4686		466563.1271	0.7190	1.0000	1.0000	1.2000	1.6623	7560398.21	727.5604	1.4576	59.7	7730 0.8	3255 6.0	000 12.93	29 1.6623
Gear 2	1088.0000	0.7764	1.2500	1.0042	1.0000	1.0000	848.2032		466563.1271	0.7190	1.0000	1.0000	1.1000	1.6623	5029745.68	725.0297	1.1699	59.7	7730 0.8	3255 6.0	000 12.93	29 1.6623
Gear 3	1437.0000	0.7764	1.2500		1.0000	1.0000	1115.6426		466563.1271	0.7315	1.0000	1.0000	1.2000	1.5081	0405495.80	760.4055	1.4672	59.7	7730 0.8	3255 6.0	000 7.429	95 1.5081
Gear 4	1088.0000	0.8196	1.2500	1.0046	1.0000	1.0000	895.7861		466563.1271	0.7315	1.0000	1.0000	1.1000	1.5081	7760599.10	757.7606	1.1821	59.7	7730 0.8	3255 6.0	000 7.429	95 1.5081
Bending Stress	Sb	Yn	Kt	Kr	sigma, all (MPa)		Yj	ka	ks	km	kv	ki	kb	sigma. actual (Pa)	na. actual (M	ns	_					
Bending Stress Gear 1	<b>Sb</b> 464.5000	<b>Yn</b> 0.8392	<b>Kt</b>	Kr 1.0000	sigma, all (MPa) 389.8179		<b>Yj</b> 0.3500	<b>ka</b>	ks 1.0000	km 1.2000	kv 1.6623	ki 1.0000	kb 1.0000	sigma. actual (Pa) 94917027.8329	na. actual (M	ns 4.1069						
							-															
Gear 1	464.5000	0.8392	1.0000	1.0000	389.8179		0.3500	1.0000	1.0000	1.2000	1.6623	1.0000	1.0000	94917027.8329	94.9170 78.5482	4.1069						
Gear 1 Gear 2	464.5000 301.5000	0.8392 0.8641	1.0000	1.0000 1.0000	389.8179 260.5364		0.3500 0.4200	1.0000	1.0000	1.2000 1.1000	1.6623 1.6623	1.0000	1.0000	94917027.8329 78548234.8385	94.9170 78.5482 149.8943	4.1069 3.3169						
Gear 1 Gear 2 Gear 3	464.5000 301.5000 464.5000	0.8392 0.8641 0.8641	1.0000 1.0000 1.0000	1.0000 1.0000 1.0000	389.8179 260.5364 401.3902		0.3500 0.4200 0.3500	1.0000 1.0000 1.0000	1.0000 1.0000 1.0000	1.2000 1.1000 1.2000	1.6623 1.6623 1.5081	1.0000 1.0000 1.0000	1.0000 1.0000 1.0000	94917027.8329 78548234.8385 149894271.0744	94.9170 78.5482 149.8943	4.1069 3.3169 2.6778						
Gear 1 Gear 2 Gear 3	464.5000 301.5000 464.5000	0.8392 0.8641 0.8641	1.0000 1.0000 1.0000	1.0000 1.0000 1.0000	389.8179 260.5364 401.3902	Pr	0.3500 0.4200 0.3500	1.0000 1.0000 1.0000	1.0000 1.0000 1.0000 1.0000	1.2000 1.1000 1.2000	1.6623 1.6623 1.5081 1.5081	1.0000 1.0000 1.0000	1.0000 1.0000 1.0000	94917027.8329 78548234.8385 149894271.0744	94.9170 78.5482 149.8943	4.1069 3.3169 2.6778						
Gear 1 Gear 2 Gear 3 Gear 4	464.5000 301.5000 464.5000 301.5000	0.8392 0.8641 0.8641 0.8915	1.0000 1.0000 1.0000 1.0000	1.0000 1.0000 1.0000 1.0000	389.8179 260.5364 401.3902 268.8011	<b>Pr</b> 1645.6922	0.3500 0.4200 0.3500 0.4200	1.0000 1.0000 1.0000 1.0000	1.0000 1.0000 1.0000 1.0000	1.2000 1.1000 1.2000 1.1000	1.6623 1.6623 1.5081 1.5081	1.0000 1.0000 1.0000 1.0000	1.0000 1.0000 1.0000 1.0000	94917027.8329 78548234.8385 149894271.0744 124044448.8636	94.9170 78.5482 149.8943 124.0444	4.1069 3.3169 2.6778 2.1670						
Gear 1 Gear 2 Gear 3 Gear 4	464.5000 301.5000 464.5000 301.5000	0.8392 0.8641 0.8641 0.8915	1.0000 1.0000 1.0000 1.0000	1.0000 1.0000 1.0000 1.0000	389.8179 260.5364 401.3902 268.8011		0.3500 0.4200 0.3500 0.4200 X	1.0000 1.0000 1.0000 1.0000 P	1.0000 1.0000 1.0000 1.0000 C (N)	1.2000 1.1000 1.2000 1.1000 Bearing Spec	1.6623 1.6623 1.5081 1.5081 : Link	1.0000 1.0000 1.0000 1.0000	1.0000 1.0000 1.0000 1.0000	94917027.8329 78548234.8385 149894271.0744 124044448.8636 <b>d (m)</b>	94.9170 78.5482 149.8943 124.0444 D (m)	4.1069 3.3169 2.6778 2.1670 W (m)						
Gear 1 Gear 2 Gear 3 Gear 4  Lifetime Shaft 1	464.5000 301.5000 464.5000 301.5000 Hours	0.8392 0.8641 0.8641 0.8915 Rotation Speed	1.0000 1.0000 1.0000 1.0000 L10 2271.3600	1.0000 1.0000 1.0000 1.0000 Ap	389.8179 260.5364 401.3902 268.8011 <b>m</b> 3.0000	1645.6922	0.3500 0.4200 0.3500 0.4200 X	1.0000 1.0000 1.0000 1.0000 P 1645.6922 8204.4900	1.0000 1.0000 1.0000 1.0000 C (N)	1.2000 1.1000 1.2000 1.1000 Bearing Spec	1.6623 1.6623 1.5081 1.5081 Link s/ball-bears	1.0000 1.0000 1.0000 1.0000 C (N)	1.0000 1.0000 1.0000 1.0000 CO (N)	94917027.8329 78548234.8385 149894271.0744 124044448.8636 <b>d (m)</b> 0.0450	94.9170 78.5482 149.8943 124.0444  D (m) 0.0850	4.1069 3.3169 2.6778 2.1670 W (m) 0.0190	_					