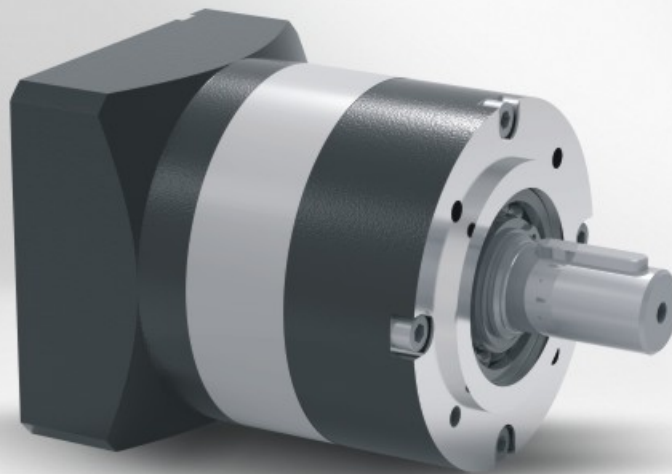


SPL

Powerful. Precision. Reliable

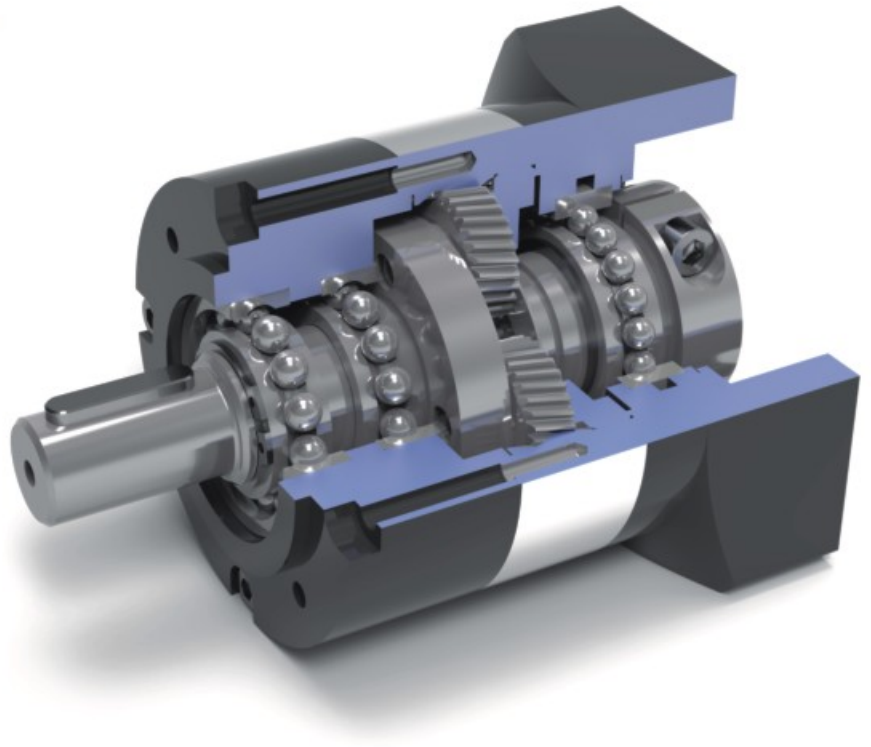
- ▶ Servo Planetary Gearbox
Valued Gearbox Solution





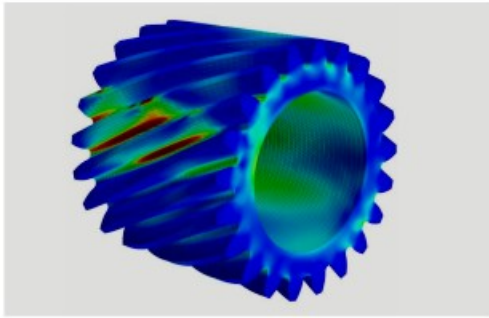
Helical Gear System Technology

Thanks to the tooth to tooth compact ratio more than 60%. The helical gearing and full needle bearing bring the benefits including higher torque capacity, smooth and lower noise running, decreased backlash and higher efficiency.



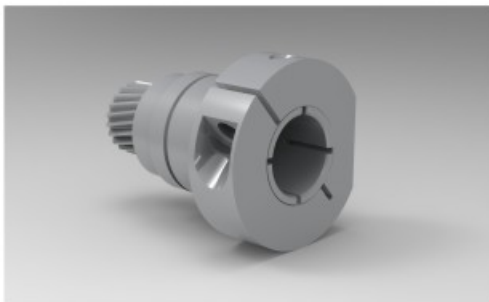
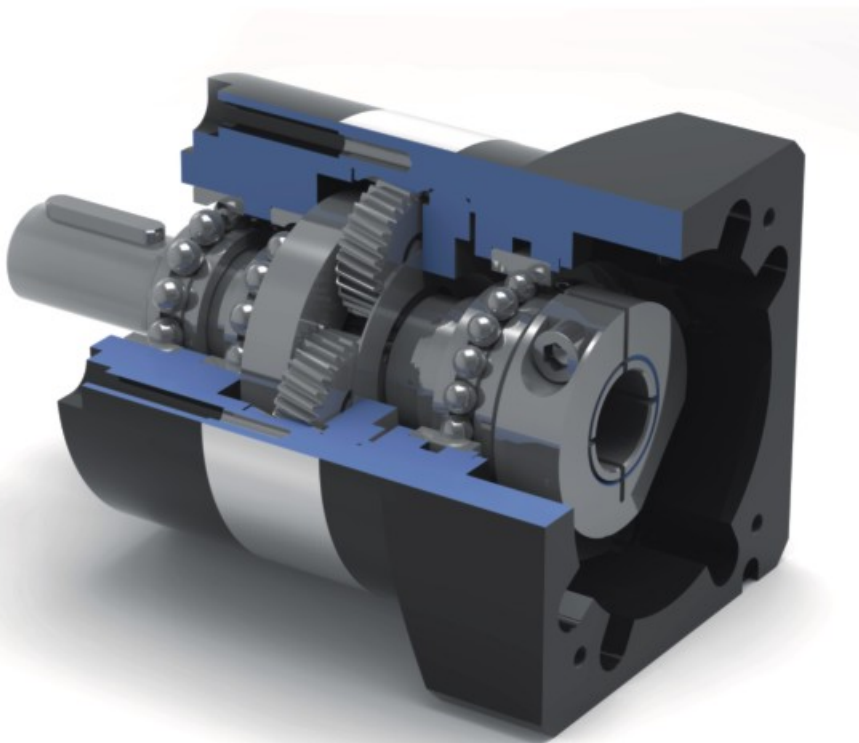
The Powerful Cantilever Planetary Carrier

The powerful cantilever planetary carrier provide great mechanical support for planetary gears, thus the complete gearbox can reach high level stability. Synthetic grease lubrication allows maintenance free for gearbox whole service life.



Gear Grinding and Heat Treatment Technology

The global leading gear grinding technology brings the great improvement for the tooth profile optimization, with the high level carburizing and quenching heat treatment technology to reach high precision and gear harden performance.



Dynamic Balance Clamping and Sealing System

For the gearbox input dynamic balance clamping design with perfect concentricity to decrease backlash and increase gearbox operation stability. The ultra sealing system offers grease leakage protection and support gearbox to reach IP65.

SPL040 1-stage

			1-stage							
Ratio	i		3	4	5	6	7	8	9	10
Nominal Output Torque		Nm	13	17	17	--	--	12	--	--
		in.lb	115	150	150	--	--	106	--	--
Emergency Stop Torque	T_{2Max}	Nm	26	34	34	--	--	24	--	--
		in.lb	230	301	301	--	--	212	--	--
Maximum Acceleration Torque	T_{2a}	Nm	23.4	30.6	30.6	--	--	21.6	--	--
		in.lb	207	271	271	--	--	191	--	--
Maximum Torque	T_{2a}	Nm	26	34	34	--	--	24	--	--
		in.lb	230	301	301	--	--	212	--	--
Permitted Average Input Speed	n_{1N}	rpm	4000							
Maximum Input Speed	n_{1Max}	rpm	8000							
Mean No Load Running Torque	T_{012}	Nm	0.022	0.019	0.017	--	--	0.017	--	--
		in.lb	0.19	0.17	0.15	--	--	0.15	--	--
Maximum Torsional Backlash	j_i	arcmin	≤ 12							
Torsional Rigidity	C_{121}	Nm/arcmin	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7
		in.lb/arcmin	6.20	6.20	6.20	6.20	6.20	6.20	6.20	6.20
Maximum Radial Load	F_{2AMax}	N	385							
		lb _r	86.5							
Maximum Axial Load	F_{2CMMax}	N	250							
		lb _r	56.2							
Max. Tilting Moment	M_{2AMMax}	Nm	30							
		in.lb	265.52							
Mass Moment of Inertia	j_i	kgcm ²	0.031	0.022	0.019	--	--	0.017	--	--
Operating Noise Level	L_{pA}	dB(A)	< 55							
Efficiency at Full loading	η	%	97							
Operating Temperature		°C	- 25 to +90							
		F	-13 to +194							
Lubrication			Synthetic Lubrication Grease							
Mouting Position			Any Directions							
Protection Class			IP 65							
Service lifetime	L_i	h	20,000(Continuous Operation)							
Weight	m	kg	0.4							
		lb _m	0.88							

SPL040 2-stages

		2-stages								
Ratio	i		12	15	16	20	25	32	40	64
Nominal Output Torque		Nm	16	16	16	17	17	17	17	13
		in.lb	142	142	142	150	150	150	150	115
Emergency Stop Torque	T_{2Max}	Nm	32	32	32	34	34	34	34	26
		in.lb	283	283	283	301	301	301	301	230
Maximum Acceleration Torque	T_{2B}	Nm	28.8	28.8	28.8	30.6	30.6	30.6	30.6	23.4
		in.lb	255	255	255	271	271	271	271	207
Maximum Torque	T_{2a}	Nm	32	32	32	34	34	34	34	26
		in.lb	283	283	283	301	301	301	301	230
Permitted Average Input Speed	n_{1N}	rpm	4000							
Maximum Input Speed	n_{1Max}	rpm	8000							
Mean No Load Running Torque	T_{012}	Nm	0.019	0.017	0.019	0.017	0.017	0.017	0.017	0.017
		in.lb	0.17	0.15	0.17	0.15	0.15	0.15	0.15	0.15
Maximum Torsional Backlash	j_i	arcmin	≤ 15							
Torsional Rigidity	C_{21}	Nm/arcmin	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7
		in.lb/arcmin	6.20	6.20	6.20	6.20	6.20	6.20	6.20	6.20
Maximum Radial Load	F_{2AMax}	N	385							
		lb _f	86.5							
Maximum Axial Load	F_{2OMax}	N	250							
		lb _f	56.2							
Max. Tilting Moment	M_{2OMax}	Nm	30							
		in.lb	265.52							
Mass Moment of Inertia	j_i	kgcm ²	0.031	0.029	0.023	0.022	0.019	0.019	0.017	0.016
Operating Noise Level	L_{pA}	dB(A)	< 55							
Efficiency at Full loading	η	%	95							
Operating Temperature		°C	- 25 to +90							
		F	-13 to +194							
Lubrication			Synthetic Lubrication Grease							
Mouting Position			Any Directions							
Protection Class			IP 65							
Service lifetime	L_n	h	20,000(Continuous Operation)							
Weight	m	kg	0.5							
		lb _m	1.1							

SPL040 3-stages

			3-stages							
Ratio	i		80	100	125	160	200	256	320	512
Nominal Output Torque		Nm	17	17	17	17	17	17	17	13
		in.lb	150	150	150	150	150	150	150	115
Emergency Stop Torque	T_{2Max}	Nm	34	34	34	34	34	34	34	26
		in.lb	301	301	301	301	301	301	301	230
Maximum Acceleration Torque	T_{2a}	Nm	30.6	30.6	30.6	30.6	30.6	30.6	30.6	23.4
		in.lb	271	271	271	271	271	271	271	207
Maximum Torque	T_{2a}	Nm	34	34	34	34	34	34	34	26
		in.lb	301	301	301	301	301	301	301	230
Permitted Average Input Speed	n_{1N}	rpm	4000							
Maximum Input Speed	n_{1Max}	rpm	8000							
Mean No Load Running Torque	T_{012}	Nm	0.017	0.017	0.017	0.017	0.017	0.017	0.017	0.017
		in.lb	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15
Maximum Torsional Backlash	j_i	arcmin	≤ 17							
Torsional Rigidity	C_{121}	Nm/arcmin	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7
		in.lb/arcmin	6.20	6.20	6.20	6.20	6.20	6.20	6.20	6.20
Maximum Radial Load	F_{2AMax}	N	385							
		lb _f	86.5							
Maximum Axial Load	F_{2CMMax}	N	250							
		lb _f	56.2							
Max. Tilting Moment	M_{2AMMax}	Nm	30							
		in.lb	265.52							
Mass Moment of Inertia	j_i	kgcm ²	0.029	0.019	0.019	0.029	0.016	0.016	0.016	0.016
Operating Noise Level	L_{pA}	dB(A)	< 55							
Efficiency at Full loading	η	%	93							
Operating Temperature		°C	- 25 to +90							
		F	-13 to +194							
Lubrication			Synthetic Lubrication Grease							
Mouting Position			Any Directions							
Protection Class			IP 65							
Service lifetime	L_n	h	20,000(Continuous Operation)							
Weight	m	kg	0.6							
		lb _m	1.32							

SPL060 1-stage

		1-stage								
Ratio	i		3	4	5	6	7	8	9	10
Nominal Output Torque		Nm	28	36	37	37	37	32	30	25
		in.lb	248	319	327	327	327	283	266	221
Emergency Stop Torque	T_{2Max}	Nm	56	72	74	74	74	64	60	50
		in.lb	496	637	655	655	655	566	531	443
Maximum Acceleration Torque	T_{2B}	Nm	50.4	64.8	66.6	66.6	66.6	57.6	54	45
		in.lb	446	574	589	589	589	510	478	398
Maximum Torque	T_{2a}	Nm	56	72	74	74	74	64	60	50
		in.lb	496	637	655	655	655	566	531	443
Permitted Average Input Speed	n_{1N}	rpm	4000							
Maximum Input Speed	n_{1Max}	rpm	6000							
Mean No Load Running Torque	T_{012}	Nm	0.24	0.2	0.17	0.15	0.15	0.15	0.15	0.15
		in.lb	2.12	1.77	1.50	1.33	1.33	1.33	1.33	1.33
Maximum Torsional Backlash	j_i	arcmin	≤ 8							
Torsional Rigidity	C_{21}	Nm/arcmin	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5
		in.lb/arcmin	22.13	22.13	22.13	22.13	22.13	22.13	22.13	22.13
Maximum Radial Load	F_{2AMax}	N	430							
		lb _f	96.7							
Maximum Axial Load	F_{2OMax}	N	320							
		lb _f	72							
Max. Tilting Moment	M_{2OMax}	Nm	80							
		in.lb	708.06							
Mass Moment of Inertia	j_1	kgcm ²	0.135	0.093	0.078	0.070	0.069	0.065	0.065	0.065
Operating Noise Level	L_{pA}	dB(A)	< 58							
Efficiency at Full loading	η	%	97							
Operating Temperature		°C	- 25 to +90							
		F	-13 to +194							
Lubrication			Synthetic Lubrication Grease							
Mouting Position			Any Directions							
Protection Class			IP 65							
Service lifetime	L_n	h	20,000(Continuous Operation)							
Weight	m	kg	1							
		lb _m	2.2							

SPL060 2-stages

			2-stages							
Ratio	i		12	15	16	20	25	32	40	64
Nominal Output Torque		Nm	30	31	42	42	42	42	42	33
		in.lb	266	274	372	372	372	372	372	292
Emergency Stop Torque	T_{2Max}	Nm	60	62	84	84	84	84	84	66
		in.lb	531	549	743	743	743	743	743	584
Maximum Acceleration Torque	T_{2a}	Nm	54	55.8	75.6	75.6	75.6	75.6	75.6	59.4
		in.lb	478	494	669	669	669	669	669	526
Maximum Torque	T_{2a}	Nm	60	62	84	84	84	84	84	66
		in.lb	531	549	743	743	743	743	743	584
Permitted Average Input Speed	n_{1N}	rpm	4000							
Maximum Input Speed	n_{1Max}	rpm	6000							
Mean No Load Running Torque	T_{012}	Nm	0.2	0.17	0.2	0.17	0.17	0.15	0.15	0.15
		in.lb	1.77	1.50	1.77	1.50	1.50	1.33	1.33	1.33
Maximum Torsional Backlash	j_i	arcmin	≤ 10							
Torsional Rigidity	C_{121}	Nm/arcmin	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5
		in.lb/arcmin	22.13	22.13	22.13	22.13	22.13	22.13	22.13	22.13
Maximum Radial Load	F_{2AMax}	N	430							
		lb _f	96.7							
Maximum Axial Load	F_{2CMMax}	N	320							
		lb _f	72							
Max. Tilting Moment	M_{2AMMax}	Nm	80							
		in.lb	708.06							
Mass Moment of Inertia	j_i	kgcm ²	0.105	0.095	0.088	0.075	0.075	0.064	0.064	0.064
Operating Noise Level	L_{pA}	dB(A)	< 58							
Efficiency at Full loading	η	%	95							
Operating Temperature		°C	- 25 to +90							
		F	-13 to +194							
Lubrication			Synthetic Lubrication Grease							
Mouting Position			Any Directions							
Protection Class			IP 65							
Service lifetime	L_n	h	20,000(Continuous Operation)							
Weight	m	kg	1.2							
		lb _m	2.65							

SPL060 3-stages

		3-stages								
Ratio	i		80	100	125	160	200	256	320	512
Nominal Output Torque		Nm	42	42	42	42	42	42	42	33
		in.lb	372	372	372	372	372	372	372	292
Emergency Stop Torque	T_{2Max}	Nm	84	84	84	84	84	84	84	66
		in.lb	743	743	743	743	743	743	743	584
Maximum Acceleration Torque	T_{2B}	Nm	75.6	75.6	75.6	75.6	75.6	75.6	75.6	59.4
		in.lb	669	669	669	669	669	669	669	526
Maximum Torque	T_{2a}	Nm	84	84	84	84	84	84	84	66
		in.lb	743	743	743	743	743	743	743	584
Permitted Average Input Speed	n_{1N}	rpm	4000							
Maximum Input Speed	n_{1Max}	rpm	6000							
Mean No Load Running Torque	T_{012}	Nm	0.17	0.17	0.17	0.15	0.15	0.15	0.15	0.15
		in.lb	1.50	1.50	1.50	1.33	1.33	1.33	1.33	1.33
Maximum Torsional Backlash	j_i	arcmin	≤ 12							
Torsional Rigidity	C_{121}	Nm/arcmin	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5
		in.lb/arcmin	22.13	22.13	22.13	22.13	22.13	22.13	22.13	22.13
Maximum Radial Load	F_{2AMax}	N	430							
		lb _r	96.7							
Maximum Axial Load	F_{2OMax}	N	320							
		lb _a	72							
Max. Tilting Moment	M_{2OMax}	Nm	80							
		in.lb	708.06							
Mass Moment of Inertia	j_1	kgcm ²	0.075	0.064	0.064	0.064	0.064	0.064	0.064	0.064
Operating Noise Level	L_{pA}	dB(A)	< 58							
Efficiency at Full loading	η	%	93							
Operating Temperature		°C	- 25 to +90							
		F	-13 to +194							
Lubrication			Synthetic Lubrication Grease							
Mouting Position			Any Directions							
Protection Class			IP 65							
Service lifetime	L_n	h	20,000(Continuous Operation)							
Weight	m	kg	1.4							
		lb _m	3.09							

SPL070 1-stage

			1-stage							
Ratio	i		3	4	5	6	7	8	9	10
Nominal Output Torque		Nm	35	42	44	40	40	38	36	32
		in.lb	310	372	389	354	354	336	319	283
Emergency Stop Torque	T_{2Max}	Nm	70	84	88	80	80	76	72	64
		in.lb	620	743	779	708	708	673	637	566
Maximum Acceleration Torque	T_{2a}	Nm	63	75.6	79.2	72	72	68.4	64.8	57.6
		in.lb	558	669	701	637	637	605	574	510
Maximum Torque	T_{2a}	Nm	70	84	88	80	80	76	72	64
		in.lb	620	743	779	708	708	673	637	566
Permitted Average Input Speed	n_{1N}	rpm	4000							
Maximum Input Speed	n_{1Max}	rpm	6000							
Mean No Load Running Torque	T_{012}	Nm	0.24	0.2	0.17	0.15	0.15	0.15	0.15	0.15
		in.lb	2.12	1.77	1.50	1.33	1.33	1.33	1.33	1.33
Maximum Torsional Backlash	j_i	arcmin	≤ 8							
Torsional Rigidity	C_{121}	Nm/arcmin	3	3	3	3	3	3	3	3
		in.lb/arcmin	26.55	26.55	26.55	26.55	26.55	26.55	26.55	26.55
Maximum Radial Load	F_{2AMax}	N	550							
		lb _f	123.6							
Maximum Axial Load	F_{2CMMax}	N	375							
		lb _f	84.3							
Max. Tilting Moment	M_{2OMMax}	Nm	80							
		in.lb	708.06							
Mass Moment of Inertia	j_i	kgcm ²	0.135	0.093	0.078	0.070	0.069	0.065	0.065	0.065
Operating Noise Level	L_{pA}	dB(A)	< 58							
Efficiency at Full loading	η	%	97							
Operating Temperature		°C	- 25 to +90							
		F	-13 to +194							
Lubrication			Synthetic Lubrication Grease							
Mouting Position			Any Directions							
Protection Class			IP 65							
Service lifetime	L_n	h	20,000(Continuous Operation)							
Weight	m	kg	1.4							
		lb _m	3.09							

SPL070 2-stages

		2-stages									
Ratio	i		12	15	16	20	25	32	40	64	
Nominal Output Torque		Nm	37	37	44	44	44	44	44	38	
		in.lb	327	327	389	389	389	389	389	336	
Emergency Stop Torque	T_{2Max}	Nm	74	74	88	88	88	88	88	76	
		in.lb	655	655	779	779	779	779	779	673	
Maximum Acceleration Torque	T_{2B}	Nm	66.6	66.6	79.2	79.2	79.2	79.2	79.2	68.4	
		in.lb	589	589	701	701	701	701	701	605	
Maximum Torque	T_{2a}	Nm	74	74	88	88	88	88	88	76	
		in.lb	655	655	779	779	779	779	779	673	
Permitted Average Input Speed	n_{1N}	rpm	4000								
Maximum Input Speed	n_{1Max}	rpm	6000								
Mean No Load Running Torque	T_{012}	Nm	0.2	0.17	0.2	0.17	0.17	0.15	0.15	0.15	
		in.lb	1.77	1.50	1.77	1.50	1.50	1.33	1.33	1.33	
Maximum Torsional Backlash	j_i	arcmin	≤ 10								
Torsional Rigidity	C_{21}	Nm/arcmin	3	3	3	3	3	3	3	3	
		in.lb/arcmin	26.55	26.55	26.55	26.55	26.55	26.55	26.55	26.55	
Maximum Radial Load	F_{2AMax}	N	550								
		lb _f	123.6								
Maximum Axial Load	F_{2OMax}	N	375								
		lb _f	84.3								
Max. Tilting Moment	M_{2OMax}	Nm	80								
		in.lb	708.06								
Mass Moment of Inertia	j_1	kgcm ²	0.105	0.095	0.088	0.075	0.075	0.064	0.064	0.064	
Operating Noise Level	L_{pA}	dB(A)	< 58								
Efficiency at Full loading	η	%	95								
Operating Temperature		°C	- 25 to +90								
		F	-13 to +194								
Lubrication			Synthetic Lubrication Grease								
Mouting Position			Any Directions								
Protection Class			IP 65								
Service lifetime	L_n	h	20,000(Continuous Operation)								
Weight	m	kg	2								
		lb _m	4.4								

SPL070 3-stages

			3-stages							
Ratio	i		80	100	125	160	200	256	320	512
Nominal Output Torque		Nm	45	45	45	45	45	45	45	38
		in.lb	398	398	398	398	398	398	398	336
Emergency Stop Torque	T_{2Max}	Nm	90	90	90	90	90	90	90	76
		in.lb	797	797	797	797	797	797	797	673
Maximum Acceleration Torque	T_{2a}	Nm	81	81	81	81	81	81	81	68.4
		in.lb	717	717	717	717	717	717	717	605
Maximum Torque	T_{2a}	Nm	90	90	90	90	90	90	90	76
		in.lb	797	797	797	797	797	797	797	673
Permitted Average Input Speed	n_{1N}	rpm	4000							
Maximum Input Speed	n_{1Max}	rpm	6000							
Mean No Load Running Torque	T_{012}	Nm	0.17	0.17	0.17	0.15	0.15	0.15	0.15	0.15
		in.lb	1.50	1.50	1.50	1.33	1.33	1.33	1.33	1.33
Maximum Torsional Backlash	j_i	arcmin	≤ 12							
Torsional Rigidity	C_{121}	Nm/arcmin	3	3	3	3	3	3	3	3
		in.lb/arcmin	26.55	26.55	26.55	26.55	26.55	26.55	26.55	26.55
Maximum Radial Load	F_{2AMax}	N	550							
		lb _f	123.6							
Maximum Axial Load	F_{2CMax}	N	375							
		lb _f	84.3							
Max. Tilting Moment	M_{2AMax}	Nm	80							
		in.lb	708.06							
Mass Moment of Inertia	j_i	kgcm ²	0.075	0.064	0.064	0.064	0.064	0.064	0.064	0.064
Operating Noise Level	L_{pA}	dB(A)	< 58							
Efficiency at Full loading	η	%	93							
Operating Temperature		°C	- 25 to +90							
		F	-13 to +194							
Lubrication			Synthetic Lubrication Grease							
Mouting Position			Any Directions							
Protection Class			IP 65							
Service lifetime	L_n	h	20,000(Continuous Operation)							
Weight	m	kg	2.4							
		lb _m	5.29							

SPL080 1-stage

		1-stage								
Ratio	i		3	4	5	6	7	8	9	10
Nominal Output Torque		Nm	75	90	95	85	82	80	78	65
		in.lb	664	797	841	752	726	708	690	575
Emergency Stop Torque	T_{2Max}	Nm	150	180	190	170	164	160	156	130
		in.lb	1328	1593	1682	1505	1452	1416	1381	1151
Maximum Acceleration Torque	T_{2B}	Nm	135	162	171	153	147.6	144	140.4	117
		in.lb	1195	1434	1513	1354	1306	1275	1243	1036
Maximum Torque	T_{2a}	Nm	150	180	190	170	164	160	156	130
		in.lb	1328	1593	1682	1505	1452	1416	1381	1151
Permitted Average Input Speed	n_{1N}	rpm	3000							
Maximum Input Speed	n_{1Max}	rpm	6000							
Mean No Load Running Torque	T_{012}	Nm	0.38	0.36	0.31	0.29	0.25	0.25	0.25	0.25
		in.lb	3.36	3.19	2.74	2.57	2.21	2.21	2.21	2.21
Maximum Torsional Backlash	j_i	arcmin	≤ 8							
Torsional Rigidity	C_{21}	Nm/arcmin	4	4	4	4	4	4	4	4
		in.lb/arcmin	35.40	35.40	35.40	35.40	35.40	35.40	35.40	35.40
Maximum Radial Load	F_{2AMax}	N	640							
		lb _f	143.9							
Maximum Axial Load	F_{2OMax}	N	420							
		lb _f	94.4							
Max. Tilting Moment	M_{2OMax}	Nm	200							
		in.lb	1770.14							
Mass Moment of Inertia	j_1	kgcm ²	0.770	0.520	0.450	0.420	0.400	0.390	0.390	0.390
Operating Noise Level	L_{PA}	dB(A)	< 60							
Efficiency at Full loading	η	%	97							
Operating Temperature		°C	- 25 to +90							
		F	-13 to +194							
Lubrication			Synthetic Lubrication Grease							
Mouting Position			Any Directions							
Protection Class			IP 65							
Service lifetime	L_n	h	20,000(Continuous Operation)							
Weight	m	kg	2							
		lb _m	4.41							

SPL080 2-stages

			2-stages							
Ratio	i		12	15	16	20	25	32	40	64
Nominal Output Torque		Nm	80	90	90	90	90	90	90	80
		in.lb	708	797	797	797	797	797	797	708
Emergency Stop Torque	T_{2Max}	Nm	160	180	180	180	180	180	180	160
		in.lb	1416	1593	1593	1593	1593	1593	1593	1416
Maximum Acceleration Torque	T_{2a}	Nm	144	162	162	162	162	162	162	144
		in.lb	1275	1434	1434	1434	1434	1434	1434	1275
Maximum Torque	T_{2a}	Nm	160	180	180	180	180	180	180	160
		in.lb	1416	1593	1593	1593	1593	1593	1593	1416
Permitted Average Input Speed	n_{1N}	rpm	3000							
Maximum Input Speed	n_{1Max}	rpm	6000							
Mean No Load Running Torque	T_{012}	Nm	0.36	0.31	0.36	0.31	0.31	0.25	0.25	0.25
		in.lb	3.19	2.74	3.19	2.74	2.74	2.21	2.21	2.21
Maximum Torsional Backlash	j_i	arcmin	≤ 10							
Torsional Rigidity	C_{121}	Nm/arcmin	4	4	4	4	4	4	4	4
		in.lb/arcmin	35.40	35.40	35.40	35.40	35.40	35.40	35.40	35.40
Maximum Radial Load	F_{2AMax}	N	640							
		lb _r	143.9							
Maximum Axial Load	F_{2CMMax}	N	420							
		lb _r	94.4							
Max. Tilting Moment	M_{2AMMax}	Nm	200							
		in.lb	1770.14							
Mass Moment of Inertia	j_i	kgcm ²	0.670	0.510	0.500	0.440	0.440	0.390	0.390	0.39
Operating Noise Level	L_{pA}	dB(A)	< 60							
Efficiency at Full loading	η	%	95							
Operating Temperature		°C	- 25 to +90							
		F	-13 to +194							
Lubrication			Synthetic Lubrication Grease							
Mouting Position			Any Directions							
Protection Class			IP 65							
Service lifetime	L_n	h	20,000(Continuous Operation)							
Weight	m	kg	2.8							
		lb _m	6.17							

SPL080 3-stages

		3-stages								
Ratio	i		80	100	125	160	200	256	320	512
Nominal Output Torque		Nm	95	95	95	95	95	95	95	82
		in.lb	841	841	841	841	841	841	841	726
Emergency Stop Torque	T_{2Max}	Nm	190	190	190	190	190	190	190	164
		in.lb	1682	1682	1682	1682	1682	1682	1682	1452
Maximum Acceleration Torque	T_{2B}	Nm	171	171	171	171	171	171	171	147.6
		in.lb	1513	1513	1513	1513	1513	1513	1513	1306
Maximum Torque	T_{2a}	Nm	190	190	190	190	190	190	190	164
		in.lb	1682	1682	1682	1682	1682	1682	1682	1452
Permitted Average Input Speed	n_{1N}	rpm	3000							
Maximum Input Speed	n_{1Max}	rpm	6000							
Mean No Load Running Torque	T_{012}	Nm	0.31	0.31	0.31	0.25	0.25	0.25	0.25	0.25
		in.lb	2.74	2.74	2.74	2.21	2.21	2.21	2.21	2.21
Maximum Torsional Backlash	j_i	arcmin	≤ 12							
Torsional Rigidity	C_{21}	Nm/arcmin	4	4	4	4	4	4	4	4
		in.lb/arcmin	35.40	35.40	35.40	35.40	35.40	35.40	35.40	35.40
Maximum Radial Load	F_{2AMax}	N	640							
		lb _r	143.9							
Maximum Axial Load	F_{2OMax}	N	420							
		lb _a	94.4							
Max. Tilting Moment	M_{2OMax}	Nm	200							
		in.lb	1770.14							
Mass Moment of Inertia	j_1	kgcm ²	0.500	0.440	0.700	0.390	0.390	0.390	0.390	0.390
Operating Noise Level	L_{pA}	dB(A)	< 60							
Efficiency at Full loading	η	%	93							
Operating Temperature		°C	- 25 to +90							
		F	-13 to +194							
Lubrication			Synthetic Lubrication Grease							
Mouting Position			Any Directions							
Protection Class			IP 65							
Service lifetime	L_n	h	20,000(Continuous Operation)							
Weight	m	kg	3.5							
		lb _m	7.72							

SPL Series Servo Planetary Gearbox

SPL090 1-stage

			1-stage							
Ratio	i		3	4	5	6	7	8	9	10
Nominal Output Torque		Nm	100	110	115	105	100	95	90	81
		in.lb	885	974	1018	929	885	841	797	717
Emergency Stop Torque	T_{2Max}	Nm	200	220	230	210	200	190	180	162
		in.lb	1770	1947	2036	1859	1770	1682	1593	1434
Maximum Acceleration Torque	T_{2a}	Nm	180	198	207	189	180	171	162	145.8
		in.lb	1593	1752	1832	1673	1593	1513	1434	1290
Maximum Torque	T_{2a}	Nm	200	220	230	210	200	190	180	162
		in.lb	1770	1947	2036	1859	1770	1682	1593	1434
Permitted Average Input Speed	n_{1N}	rpm	3000							
Maximum Input Speed	n_{1Max}	rpm	6000							
Mean No Load Running Torque	T_{s12}	Nm	0.38	0.36	0.31	0.29	0.25	0.25	0.25	0.25
		in.lb	3.36	3.19	2.74	2.57	2.21	2.21	2.21	2.21
Maximum Torsional Backlash	j_i	arcmin	≤ 8							
Torsional Rigidity	C_{121}	Nm/arcmin	4.8	4.8	4.8	4.8	4.8	4.8	4.8	4.8
		in.lb/arcmin	42.48	42.48	42.48	42.48	42.48	42.48	42.48	42.48
Maximum Radial Load	F_{2AMax}	N	1020							
		lb _f	229.3							
Maximum Axial Load	F_{2CMax}	N	570							
		lb _f	128.1							
Max. Tilting Moment	M_{2AMax}	Nm	200							
		in.lb	1770.14							
Mass Moment of Inertia	j_i	kgcm ²	0.770	0.520	0.450	0.420	0.400	0.390	0.390	0.390
Operating Noise Level	L_{pA}	dB(A)	< 60							
Efficiency at Full loading	η	%	97							
Operating Temperature		°C	- 25 to +90							
		F	-13 to +194							
Lubrication			Synthetic Lubrication Grease							
Mouting Position			Any Directions							
Protection Class			IP 65							
Service lifetime	L_n	h	20,000(Continuous Operation)							
Weight	m	kg	2.7							
		lb _m	5.95							

SPL090 2-stages

		2-stages								
Ratio	i		12	15	16	20	25	32	40	64
Nominal Output Torque		Nm	100	100	105	110	110	110	110	95
		in.lb	885	885	929	974	974	974	974	841
Emergency Stop Torque	T_{2Max}	Nm	200	200	210	220	220	220	220	190
		in.lb	1770	1770	1859	1947	1947	1947	1947	1682
Maximum Acceleration Torque	T_{2B}	Nm	180	180	189	198	198	198	198	171
		in.lb	1593	1593	1673	1752	1752	1752	1752	1513
Maximum Torque	T_{2a}	Nm	200	200	210	220	220	220	220	190
		in.lb	1770	1770	1859	1947	1947	1947	1947	1682
Permitted Average Input Speed	n_{1N}	rpm	3000							
Maximum Input Speed	n_{1Max}	rpm	6000							
Mean No Load Running Torque	T_{012}	Nm	0.36	0.31	0.36	0.31	0.31	0.25	0.25	0.25
		in.lb	3.19	2.74	3.19	2.74	2.74	2.21	2.21	2.21
Maximum Torsional Backlash	j_i	arcmin	≤ 10							
Torsional Rigidity	C_{21}	Nm/arcmin	4.8	4.8	4.8	4.8	4.8	4.8	4.8	4.8
		in.lb/arcmin	42.48	42.48	42.48	42.48	42.48	42.48	42.48	42.48
Maximum Radial Load	F_{2AMax}	N	1020							
		lb _f	229.3							
Maximum Axial Load	F_{2OMax}	N	570							
		lb _f	128.1							
Max. Tilting Moment	M_{2OMax}	Nm	200							
		in.lb	1770.14							
Mass Moment of Inertia	j_i	kgcm ²	0.670	0.510	0.500	0.440	0.440	0.390	0.390	0.390
Operating Noise Level	L_{pA}	dB(A)	< 60							
Efficiency at Full loading	η	%	95							
Operating Temperature		°C	- 25 to +90							
		F	-13 to +194							
Lubrication			Synthetic Lubrication Grease							
Mouting Position			Any Directions							
Protection Class			IP 65							
Service lifetime	L_n	h	20,000(Continuous Operation)							
Weight	m	kg	3.8							
		lb _m	8.38							

SPL090 3-stages

			3-stages							
Ratio	i		80	100	125	160	200	256	320	512
Nominal Output Torque		Nm	120	120	120	120	120	120	120	95
		in.lb	1062	1062	1062	1062	1062	1062	1062	841
Emergency Stop Torque	T_{2Max}	Nm	240	240	240	240	240	240	240	190
		in.lb	2124	2124	2124	2124	2124	2124	2124	1682
Maximum Acceleration Torque	T_{2a}	Nm	216	216	216	216	216	216	216	171
		in.lb	1912	1912	1912	1912	1912	1912	1912	1513
Maximum Torque	T_{2a}	Nm	240	240	240	240	240	240	240	190
		in.lb	2124	2124	2124	2124	2124	2124	2124	1682
Permitted Average Input Speed	n_{1N}	rpm	3000							
Maximum Input Speed	n_{1Max}	rpm	6000							
Mean No Load Running Torque	T_{012}	Nm	0.31	0.31	0.31	0.25	0.25	0.25	0.25	0.25
		in.lb	2.74	2.74	2.74	2.21	2.21	2.21	2.21	2.21
Maximum Torsional Backlash	j_i	arcmin	≤ 12							
Torsional Rigidity	C_{121}	Nm/arcmin	4.8	4.8	4.8	4.8	4.8	4.8	4.8	4.8
		in.lb/arcmin	42.48	42.48	42.48	42.48	42.48	42.48	42.48	42.48
Maximum Radial Load	F_{2AMax}	N	1020							
		lb _r	229.3							
Maximum Axial Load	F_{2CMMax}	N	570							
		lb _r	128.1							
Max. Tilting Moment	M_{2AMMax}	Nm	200							
		in.lb	1770.14							
Mass Moment of Inertia	j_i	kgcm ²	0.500	0.440	0.700	0.390	0.390	0.390	0.390	0.390
Operating Noise Level	L_{pA}	dB(A)	< 60							
Efficiency at Full loading	η	%	93							
Operating Temperature		°C	- 25 to +90							
		F	-13 to +194							
Lubrication			Synthetic Lubrication Grease							
Mouting Position			Any Directions							
Protection Class			IP 65							
Service lifetime	L_h	h	20,000(Continuous Operation)							
Weight	m	kg	5							
		lb _m	11.02							

SPL120 1-stage

		1-stage								
Ratio	i		3	4	5	6	7	8	9	10
Nominal Output Torque		Nm	190	240	245	240	235	210	200	196
		in.lb	1682	2124	2168	2124	2080	1859	1770	1735
Emergency Stop Torque	T_{2Max}	Nm	380	480	490	480	470	420	400	392
		in.lb	3363	4248	4337	4248	4160	3717	3540	3469
Maximum Acceleration Torque	T_{2B}	Nm	342	432	441	432	423	378	360	352.8
		in.lb	3027	3824	3903	3824	3744	3346	3186	3123
Maximum Torque	T_{2a}	Nm	380	480	490	480	470	420	400	392
		in.lb	3363	4248	4337	4248	4160	3717	3540	3469
Permitted Average Input Speed	n_{1N}	rpm	3000							
Maximum Input Speed	n_{1Max}	rpm	6000							
Mean No Load Running Torque	T_{012}	Nm	1	0.95	0.85	0.81	0.78	0.78	0.78	0.78
		in.lb	8.85	8.41	7.52	7.17	6.90	6.90	6.90	6.90
Maximum Torsional Backlash	j_i	arcmin	≤ 8							
Torsional Rigidity	C_{21}	Nm/arcmin	10	10	10	10	10	10	10	10
		in.lb/arcmin	88.51	88.51	88.51	88.51	88.51	88.51	88.51	88.51
Maximum Radial Load	F_{2AMax}	N	2070							
		lb _f	465.3							
Maximum Axial Load	F_{2OMax}	N	970							
		lb _f	218.1							
Max. Tilting Moment	M_{2OMax}	Nm	400							
		in.lb	3540.28							
Mass Moment of Inertia	j_1	kgcm ²	2.630	1.790	1.530	1.500	1.400	1.320	1.320	1.320
Operating Noise Level	L_{pA}	dB(A)	< 62							
Efficiency at Full loading	η	%	97							
Operating Temperature		°C	- 25 to +90							
		F	-13 to +194							
Lubrication			Synthetic Lubrication Grease							
Mouting Position			Any Directions							
Protection Class			IP 65							
Service lifetime	L_n	h	20,000(Continuous Operation)							
Weight	m	kg	6.5							
		lb _m	14.33							

SPL120 2-stages

			2-stages							
Ratio	i		12	15	16	20	25	32	40	64
Nominal Output Torque		Nm	210	210	220	230	255	255	250	210
		in.lb	1859	1859	1947	2036	2257	2257	2213	1859
Emergency Stop Torque	T_{2Max}	Nm	420	420	440	460	510	510	500	420
		in.lb	3717	3717	3894	4071	4514	4514	4425	3717
Maximum Acceleration Torque	T_{2a}	Nm	378	378	396	414	459	459	450	378
		in.lb	3346	3346	3505	3664	4062	4062	3983	3346
Maximum Torque	T_{2a}	Nm	420	420	440	460	510	510	500	420
		in.lb	3717	3717	3894	4071	4514	4514	4425	3717
Permitted Average Input Speed	n_{1N}	rpm	3000							
Maximum Input Speed	n_{1Max}	rpm	6000							
Mean No Load Running Torque	T_{012}	Nm	0.95	0.85	0.95	0.85	0.85	0.78	0.78	0.78
		in.lb	8.41	7.52	8.41	7.52	7.52	6.90	6.90	6.90
Maximum Torsional Backlash	j_i	arcmin	≤ 10							
Torsional Rigidity	C_{121}	Nm/arcmin	10	10	10	10	10	10	10	10
		in.lb/arcmin	88.51	88.51	88.51	88.51	88.51	88.51	88.51	88.51
Maximum Radial Load	F_{2AMax}	N	2070							
		lb _f	465.3							
Maximum Axial Load	F_{2CMMax}	N	970							
		lb _f	218.1							
Max. Tilting Moment	M_{2AMMax}	Nm	400							
		in.lb	3540.28							
Mass Moment of Inertia	j_i	kgcm ²	1.630	1.670	1.750	1.530	1.490	1.320	1.320	1.320
Operating Noise Level	L_{pA}	dB(A)	< 62							
Efficiency at Full loading	η	%	95							
Operating Temperature		°C	- 25 to +90							
		F	-13 to +194							
Lubrication			Synthetic Lubrication Grease							
Mouting Position			Any Directions							
Protection Class			IP 65							
Service lifetime	L_h	h	20,000(Continuous Operation)							
Weight	m	kg	9.5							
		lb _m	20.94							

SPL120 3-stages

		3-stages								
Ratio	i		80	100	125	160	200	256	320	512
Nominal Output Torque		Nm	255	255	255	255	255	255	255	210
		in.lb	2257	2257	2257	2257	2257	2257	2257	1859
Emergency Stop Torque	T_{2Max}	Nm	510	510	510	510	510	510	510	420
		in.lb	4514	4514	4514	4514	4514	4514	4514	3717
Maximum Acceleration Torque	T_{2B}	Nm	459	459	459	459	459	459	459	378
		in.lb	4062	4062	4062	4062	4062	4062	4062	3346
Maximum Torque	T_{2a}	Nm	510	510	510	510	510	510	510	420
		in.lb	4514	4514	4514	4514	4514	4514	4514	3717
Permitted Average Input Speed	n_{1N}	rpm	3000							
Maximum Input Speed	n_{1Max}	rpm	6000							
Mean No Load Running Torque	T_{012}	Nm	0.85	0.85	0.85	0.78	0.78	0.78	0.78	0.78
		in.lb	7.52	7.52	7.52	6.90	6.90	6.90	6.90	6.90
Maximum Torsional Backlash	j_i	arcmin	≤ 12							
Torsional Rigidity	C_{21}	Nm/arcmin	10	10	10	10	10	10	10	10
		in.lb/arcmin	88.51	88.51	88.51	88.51	88.51	88.51	88.51	88.51
Maximum Radial Load	F_{2AMax}	N	2070							
		lb _f	465.3							
Maximum Axial Load	F_{2OMax}	N	970							
		lb _f	218.1							
Max. Tilting Moment	M_{2OMax}	Nm	400							
		in.lb	3540.28							
Mass Moment of Inertia	j_1	kgcm ²	1.530	1.490	2.570	1.300	1.300	1.300	1.300	1.300
Operating Noise Level	L_{pA}	dB(A)	< 62							
Efficiency at Full loading	η	%	93							
Operating Temperature		°C	- 25 to +90							
		F	-13 to +194							
Lubrication			Synthetic Lubrication Grease							
Mouting Position			Any Directions							
Protection Class			IP 65							
Service lifetime	L_n	h	20,000(Continuous Operation)							
Weight	m	kg	11							
		lb _m	24.25							

SPL160 1-stage

			1-stage							
Ratio	i		3	4	5	6	7	8	9	10
Nominal Output Torque		Nm	440	544	585	500	480	450	415	400
		in.lb	3894	4815	5178	4425	4248	3983	3673	3540
Emergency Stop Torque	T_{2Max}	Nm	880	1088	1170	1000	960	900	830	800
		in.lb	7789	9630	10355	8851	8497	7966	7346	7081
Maximum Acceleration Torque	T_{2a}	Nm	792	979.2	1053	900	864	810	747	720
		in.lb	7010	8667	9320	7966	7647	7169	6611	6373
Maximum Torque	T_{2a}	Nm	880	1088	1170	1000	960	900	830	800
		in.lb	7789	9630	10355	8851	8497	7966	7346	7081
Permitted Average Input Speed	n_{1N}	rpm	3000							
Maximum Input Speed	n_{1Max}	rpm	6000							
Mean No Load Running Torque	T_{012}	Nm	2.55	2.45	2.3	2.2	2.2	2.2	2.2	2.2
		in.lb	22.57	21.68	20.36	19.47	19.47	19.47	19.47	19.47
Maximum Torsional Backlash	j_i	arcmin	≤ 8							
Torsional Rigidity	C_{121}	Nm/arcmin	28.7	28.7	28.7	28.7	28.7	28.7	28.7	28.7
		in.lb/arcmin	254.02	254.02	254.02	254.02	254.02	254.02	254.02	254.02
Maximum Radial Load	F_{2AMax}	N	7300							
		lb _f	1641.0							
Maximum Axial Load	F_{2CMMax}	N	6400							
		lb _f	1438.7							
Max. Tilting Moment	M_{2MMMax}	Nm	850							
		in.lb	7523.10							
Mass Moment of Inertia	j_i	kgcm ²	12.100	7.750	6.000	5.520	5.100	3.740	3.620	3.620
Operating Noise Level	L_{pA}	dB(A)	< 68							
Efficiency at Full loading	η	%	97							
Operating Temperature		°C	- 25 to +90							
		F	-13 to +194							
Lubrication			Synthetic Lubrication Grease							
Mouting Position			Any Directions							
Protection Class			IP 65							
Service lifetime	L_n	h	20,000(Continuous Operation)							
Weight	m	kg	15.5							
		lb _m	34.17							

SPL160 2-stages

		2-stages								
Ratio	i		12	15	16	20	25	32	40	64
Nominal Output Torque		Nm	450	450	450	564	608	608	608	450
		in.lb	3983	3983	3983	4992	5381	5381	5381	3983
Emergency Stop Torque	T_{2Max}	Nm	900	900	900	1128	1216	1216	1216	900
		in.lb	7966	7966	7966	9984	10762	10762	10762	7966
Maximum Acceleration Torque	T_{2B}	Nm	810	810	810	1015.2	1094.4	1094.4	1094.4	810
		in.lb	7169	7169	7169	8985	9686	9686	9686	7169
Maximum Torque	T_{2a}	Nm	900	900	900	1128	1216	1216	1216	900
		in.lb	7966	7966	7966	9984	10762	10762	10762	7966
Permitted Average Input Speed	n_{1N}	rpm	3000							
Maximum Input Speed	n_{1Max}	rpm	6000							
Mean No Load Running Torque	T_{012}	Nm	2.45	2.3	2.45	2.3	2.3	2.2	2.2	2.2
		in.lb	21.68	20.36	21.68	20.36	20.36	19.47	19.47	19.47
Maximum Torsional Backlash	j_i	arcmin	≤ 10							
Torsional Rigidity	C_{21}	Nm/arcmin	28.7	28.7	28.7	28.7	28.7	28.7	28.7	28.7
		in.lb/arcmin	254.02	254.02	254.02	254.02	254.02	254.02	254.02	254.02
Maximum Radial Load	F_{2AMax}	N	7300							
		lb _f	1641.0							
Maximum Axial Load	F_{2OMax}	N	6400							
		lb _f	1438.7							
Max. Tilting Moment	M_{2OMax}	Nm	850							
		in.lb	7523.10							
Mass Moment of Inertia	j_1	kgcm ²	10.100	8.100	7.470	6.650	5.810	6.340	5.360	4.080
Operating Noise Level	L_{pA}	dB(A)	< 68							
Efficiency at Full loading	η	%	95							
Operating Temperature		°C	- 25 to +90							
		F	-13 to +194							
Lubrication			Synthetic Lubrication Grease							
Mouting Position			Any Directions							
Protection Class			IP 65							
Service lifetime	L_n	h	20,000(Continuous Operation)							
Weight	m	kg	28							
		lb _m	61.73							

SPL Series Servo Planetary Gearbox

SPL160 3-stages

			3-stages							
Ratio	i		80	100	125	160	200	256	320	512
Nominal Output Torque		Nm	580	580	580	580	608	608	580	450
		in.lb	5133	5133	5133	5133	5381	5381	5133	3983
Emergency Stop Torque	T_{2Max}	Nm	1160	1160	1160	1160	1216	1216	1160	900
		in.lb	10267	10267	10267	10267	10762	10762	10267	7966
Maximum Acceleration Torque	T_{2a}	Nm	1044	1044	1044	1044	1094.4	1094.4	1044	810
		in.lb	9240	9240	9240	9240	9686	9686	9240	7169
Maximum Torque	T_{2a}	Nm	1160	1160	1160	1160	1216	1216	1160	900
		in.lb	10267	10267	10267	10267	10762	10762	10267	7966
Permitted Average Input Speed	n_{1N}	rpm	3000							
Maximum Input Speed	n_{1Max}	rpm	6000							
Mean No Load Running Torque	T_{012}	Nm	2.3	2.3	2.3	2.2	2.2	2.2	2.2	2.2
		in.lb	20.36	20.36	20.36	19.47	19.47	19.47	19.47	19.47
Maximum Torsional Backlash	j_i	arcmin	≤ 12							
Torsional Rigidity	C_{121}	Nm/arcmin	28.7	28.7	28.7	28.7	28.7	28.7	28.7	28.7
		in.lb/arcmin	254.02	254.02	254.02	254.02	254.02	254.02	254.02	254.02
Maximum Radial Load	F_{2AMax}	N	7300							
		lb _f	1641.0							
Maximum Axial Load	F_{2CMMax}	N	6400							
		lb _f	1438.7							
Max. Tilting Moment	M_{2MMMax}	Nm	850							
		in.lb	7523.10							
Mass Moment of Inertia	j_i	kgcm ²	7.400	7.300	7.300	6.500	6.500	6.500	6.500	6.500
Operating Noise Level	L_{pA}	dB(A)	< 68							
Efficiency at Full loading	η	%	93							
Operating Temperature		°C	- 25 to +90							
		F	-13 to +194							
Lubrication			Synthetic Lubrication Grease							
Mouting Position			Any Directions							
Protection Class			IP 65							
Service lifetime	L_n	h	20,000(Continuous Operation)							
Weight	m	kg	30.5							
		lb _m	67.24							

SPL205 1-stage

		1-stage									
Ratio	i		3	4	5	6	7	8	9	10	
Nominal Output Torque		Nm	600	1050	1000	800	800	800	710	710	
		in.lb	5310	9293	8851	7081	7081	7081	6284	6284	
Emergency Stop Torque	T_{2Max}	Nm	1200	2100	2000	1600	1600	1600	1420	1420	
		in.lb	10621	18586	17701	14161	14161	14161	12568	12568	
Maximum Acceleration Torque	T_{2B}	Nm	1080	1890	1800	1440	1440	1440	1278	1278	
		in.lb	9559	16728	15931	12745	12745	12745	11311	11311	
Maximum Torque	T_{2a}	Nm	1200	2100	2000	1600	1600	1600	1420	1420	
		in.lb	10621	18586	17701	14161	14161	14161	12568	12568	
Permitted Average Input Speed	n_{1N}	rpm	2000								
Maximum Input Speed	n_{1Max}	rpm	4000								
Mean No Load Running Torque	T_{012}	Nm	3.5	3.3	3.15	3	3	3	3	3	
		in.lb	30.98	29.21	27.88	26.55	26.55	26.55	26.55	26.55	
Maximum Torsional Backlash	j_i	arcmin	≤ 8								
Torsional Rigidity	C_{21}	Nm/arcmin	120	120	120	120	120	120	120	120	
		in.lb/arcmin	1062.08	1062.08	1062.08	1062.08	1062.08	1062.08	1062.08	1062.08	
Maximum Radial Load	F_{2AMax}	N	12000								
		lb _r	2697.6								
Maximum Axial Load	F_{2OMax}	N	6800								
		lb _a	1528.6								
Max. Tilting Moment	M_{2OMax}	Nm	1280								
		in.lb	11328.90								
Mass Moment of Inertia	j_1	kgcm ²	28.980	23.670	22.750	22.480	22.480	22.590	22.590	22.550	
Operating Noise Level	L_{pA}	dB(A)	< 70								
Efficiency at Full loading	η	%	97								
Operating Temperature		°C	- 25 to +90								
		F	-13 to +194								
Lubrication			Synthetic Lubrication Grease								
Mouting Position			Any Directions								
Protection Class			IP 65								
Service lifetime	L_n	h	20,000(Continuous Operation)								
Weight	m	kg	31								
		lb _m	68.34								

SPL205 2-stages

			2-stages							
Ratio	i		12	15	16	20	25	32	40	64
Nominal Output Torque		Nm	650	650	800	1000	1000	1050	1000	800
		in.lb	5753	5753	7081	8851	8851	9293	8851	7081
Emergency Stop Torque	T_{2Max}	Nm	1300	1300	1600	2000	2000	2100	2000	1600
		in.lb	11506	11506	14161	17701	17701	18586	17701	14161
Maximum Acceleration Torque	T_{2a}	Nm	1170	1170	1440	1800	1800	1890	1800	1440
		in.lb	10355	10355	12745	15931	15931	16728	15931	12745
Maximum Torque	T_{2a}	Nm	1300	1300	1600	2000	2000	2100	2000	1600
		in.lb	11506	11506	14161	17701	17701	18586	17701	14161
Permitted Average Input Speed	n_{1N}	rpm	2000							
Maximum Input Speed	n_{1Max}	rpm	4000							
Mean No Load Running Torque	T_{s12}	Nm	2.45	2.3	2.45	2.3	2.3	2.2	2.2	2.2
		in.lb	21.68	20.36	21.68	20.36	20.36	19.47	19.47	19.47
Maximum Torsional Backlash	j_i	arcmin	≤ 10							
Torsional Rigidity	C_{121}	Nm/arcmin	120	120	120	120	120	120	120	120
		in.lb/arcmin	1062.08	1062.08	1062.08	1062.08	1062.08	1062.08	1062.08	1062.08
Maximum Radial Load	F_{2AMax}	N	12000							
		lb _f	2697.6							
Maximum Axial Load	F_{2CMMax}	N	6800							
		lb _f	1528.6							
Max. Tilting Moment	M_{2AMMax}	Nm	1280							
		in.lb	11328.90							
Mass Moment of Inertia	j_i	kgcm ²	18.980	16.980	7.540	7.420	7.540	7.140	7.140	7.540
Operating Noise Level	L_{pA}	dB(A)	< 70							
Efficiency at Full loading	η	%	95							
Operating Temperature		°C	- 25 to +90							
		F	-13 to +194							
Lubrication			Synthetic Lubrication Grease							
Mouting Position			Any Directions							
Protection Class			IP 65							
Service lifetime	L_h	h	20,000(Continuous Operation)							
Weight	m	kg	39							
		lb _m	85.98							

SPL205 3-stages

		3-stages								
Ratio	i		80	100	125	160	200	256	320	512
Nominal Output Torque		Nm	1000	1000	1000	1000	1000	1000	1000	800
		in.lb	8851	8851	8851	8851	8851	8851	8851	7081
Emergency Stop Torque	T_{2Max}	Nm	2000	2000	2000	2000	2000	2000	2000	1600
		in.lb	17701	17701	17701	17701	17701	17701	17701	14161
Maximum Acceleration Torque	T_{2B}	Nm	1800	1800	1800	1800	1800	1800	1800	1440
		in.lb	15931	15931	15931	15931	15931	15931	15931	12745
Maximum Torque	T_{2a}	Nm	2000	2000	2000	2000	2000	2000	2000	1600
		in.lb	17701	17701	17701	17701	17701	17701	17701	14161
Permitted Average Input Speed	n_{1N}	rpm	2000							
Maximum Input Speed	n_{1Max}	rpm	4000							
Mean No Load Running Torque	T_{012}	Nm	2.3	2.3	2.3	2.2	2.2	2.2	2.2	2.2
		in.lb	20.36	20.36	20.36	19.47	19.47	19.47	19.47	19.47
Maximum Torsional Backlash	j_i	arcmin	≤ 12							
Torsional Rigidity	C_{21}	Nm/arcmin	120	120	120	120	120	120	120	120
		in.lb/arcmin	1062.08	1062.08	1062.08	1062.08	1062.08	1062.08	1062.08	1062.08
Maximum Radial Load	F_{2AMax}	N	12000							
		lb _r	2697.6							
Maximum Axial Load	F_{2OMax}	N	6800							
		lb _a	1528.6							
Max. Tilting Moment	M_{2KMax}	Nm	1280							
		in.lb	11328.90							
Mass Moment of Inertia	j_1	kgcm ²	7.540	7.420	7.420	7.140	7.140	7.140	7.140	7.140
Operating Noise Level	L_{pA}	dB(A)	< 70							
Efficiency at Full loading	η	%	93							
Operating Temperature		°C	- 25 to +90							
		F	-13 to +194							
Lubrication			Synthetic Lubrication Grease							
Mouting Position			Any Directions							
Protection Class			IP 65							
Service lifetime	L_n	h	20,000(Continuous Operation)							
Weight	m	kg	48							
		lb _m	105.82							

SPL235 1-stage

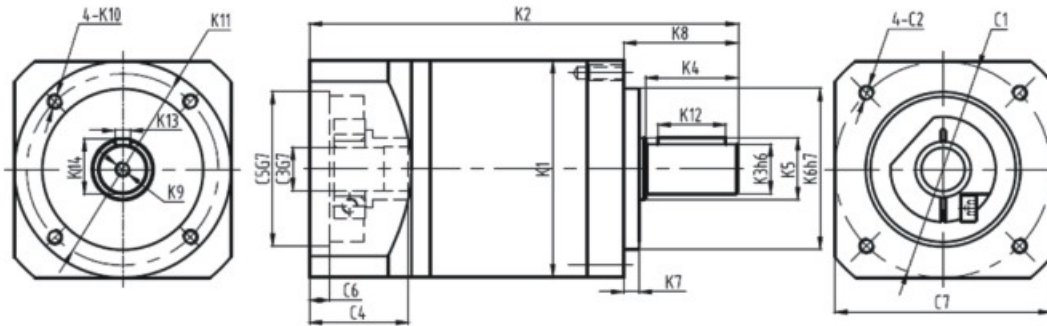
			1-stage							
Ratio	i		3	4	5	6	7	8	9	10
Nominal Output Torque		Nm	1000	1600	1850	1650	1550	1350	1300	1300
		in.lb	8851	14161	16374	14604	13719	11948	11506	11506
Emergency Stop Torque	T_{2Max}	Nm	2000	3200	3700	3300	3100	2700	2600	2600
		in.lb	17701	28322	32748	29207	27437	23897	23012	23012
Maximum Acceleration Torque	T_{2a}	Nm	1800	2880	3330	2970	2790	2430	2340	2340
		in.lb	15931	25490	29473	26287	24693	21507	20711	20711
Maximum Torque	T_{2a}	Nm	2000	3200	3700	3300	3100	2700	2600	2600
		in.lb	17701	28322	32748	29207	27437	23897	23012	23012
Permitted Average Input Speed	n_{1N}	rpm	1500							
Maximum Input Speed	n_{1Max}	rpm	3000							
Mean No Load Running Torque	T_{s12}	Nm	5.2	5	4.85	4.67	4.67	4.67	4.67	4.67
		in.lb	46.02	44.25	42.93	41.33	41.33	41.33	41.33	41.33
Maximum Torsional Backlash	j_i	arcmin	≤ 8							
Torsional Rigidity	C_{t21}	Nm/arcmin	200	200	200	200	200	200	200	200
		in.lb/arcmin	1770.14	1770.14	1770.14	1770.14	1770.14	1770.14	1770.14	1770.14
Maximum Radial Load	F_{2aMax}	N	14000							
		lb _r	3147.2							
Maximum Axial Load	F_{2cMax}	N	7800							
		lb _r	1753.4							
Max. Tilting Moment	M_{2dMax}	Nm	2350							
		in.lb	20799.15							
Mass Moment of Inertia	j_i	kgcm ²	69.610	54.370	53.270	50.840	50.840	50.840	50.840	50.560
Operating Noise Level	L_{pA}	dB(A)	< 72							
Efficiency at Full loading	η	%	97							
Operating Temperature		°C	- 25 to +90							
		F	-13 to +194							
Lubrication			Synthetic Lubrication Grease							
Mouting Position			Any Directions							
Protection Class			IP 65							
Service lifetime	L_h	h	20,000(Continuous Operation)							
Weight	m	kg	53							
		lb _m	116.84							

SPL235 2-stages

		2-stages									
Ratio	i		12	15	16	20	25	32	40	64	
Nominal Output Torque		Nm	1000	1000	1100	1850	1850	1800	1850	1350	
		in.lb	8851	8851	9736	16374	16374	15931	16374	11948	
Emergency Stop Torque	T_{2Max}	Nm	2000	2000	2200	3700	3700	3600	3700	2700	
		in.lb	17701	17701	19472	32748	32748	31863	32748	23897	
Maximum Acceleration Torque	T_{2B}	Nm	1800	1800	1980	3330	3330	3240	3330	2430	
		in.lb	15931	15931	17524	29473	29473	28676	29473	21507	
Maximum Torque	T_{2a}	Nm	2000	2000	2200	3700	3700	3600	3700	2700	
		in.lb	17701	17701	19472	32748	32748	31863	32748	23897	
Permitted Average Input Speed	n_{1N}	rpm	1500								
Maximum Input Speed	n_{1Max}	rpm	3000								
Mean No Load Running Torque	T_{012}	Nm	3.3	3.15	3.3	3.15	3.15	3	3	3	
		in.lb	29.21	27.88	29.21	27.88	27.88	26.55	26.55	26.55	
Maximum Torsional Backlash	j_i	arcmin	≤ 10								
Torsional Rigidity	C_{21}	Nm/arcmin	200	200	200	200	200	200	200	200	
		in.lb/arcmin	1770.14	1770.14	1770.14	1770.14	1770.14	1770.14	1770.14	1770.14	
Maximum Radial Load	F_{2AMax}	N	14000								
		lb _f	3147.2								
Maximum Axial Load	F_{2OMax}	N	7800								
		lb _f	1753.4								
Max. Tilting Moment	M_{2KMax}	Nm	2350								
		in.lb	20799.15								
Mass Moment of Inertia	j_1	kgcm ²	59.610	48.610	23.670	22.750	22.750	22.590	22.590	22.590	
Operating Noise Level	L_{pA}	dB(A)	< 72								
Efficiency at Full loading	η	%	95								
Operating Temperature		°C	- 25 to +90								
		F	-13 to +194								
Lubrication			Synthetic Lubrication Grease								
Mouting Position			Any Directions								
Protection Class			IP 65								
Service lifetime	L_n	h	20,000(Continuous Operation)								
Weight	m	kg	66								
		lb _m	145.50								

SPL235 3-stages

			3-stages							
Ratio	i		80	100	125	160	200	256	320	512
Nominal Output Torque		Nm	1850	1850	1850	1850	1850	1850	1850	1350
		in.lb	16374	16374	16374	16374	16374	16374	16374	11948
Emergency Stop Torque	T_{2Max}	Nm	3700	3700	3700	3700	3700	3700	3700	2700
		in.lb	32748	32748	32748	32748	32748	32748	32748	23897
Maximum Acceleration Torque	T_{2a}	Nm	3330	3330	3330	3330	3330	3330	3330	2430
		in.lb	29473	29473	29473	29473	29473	29473	29473	21507
Maximum Torque	T_{2s}	Nm	3700	3700	3700	3700	3700	3700	3700	2700
		in.lb	32748	32748	32748	32748	32748	32748	32748	23897
Permitted Average Input Speed	n_{1N}	rpm	1500							
Maximum Input Speed	n_{1Max}	rpm	3000							
Mean No Load Running Torque	T_{s12}	Nm	2.3	2.3	2.3	2.2	2.2	2.2	2.2	2.2
		in.lb	20.36	20.36	20.36	19.47	19.47	19.47	19.47	19.47
Maximum Torsional Backlash	j_i	arcmin	≤ 12							
Torsional Rigidity	C_{121}	Nm/arcmin	200	200	200	200	200	200	200	200
		in.lb/arcmin	1770.14	1770.14	1770.14	1770.14	1770.14	1770.14	1770.14	1770.14
Maximum Radial Load	F_{2AMax}	N	14000							
		lb _r	3147.2							
Maximum Axial Load	F_{2CMMax}	N	7800							
		lb _r	1753.4							
Max. Tilting Moment	M_{2AMMax}	Nm	2350							
		in.lb	20799.15							
Mass Moment of Inertia	j_i	kgcm ²	22.750	22.590	22.750	22.750	22.750	22.750	22.750	22.590
Operating Noise Level	L_{pA}	dB(A)	< 72							
Efficiency at Full loading	η	%	93							
Operating Temperature		°C	- 25 to +90							
		F	-13 to +194							
Lubrication			Synthetic Lubrication Grease							
Mouting Position			Any Directions							
Protection Class			IP 65							
Service lifetime	L_n	h	20,000(Continuous Operation)							
Weight	m	kg	75							
		lb _m	165.35							

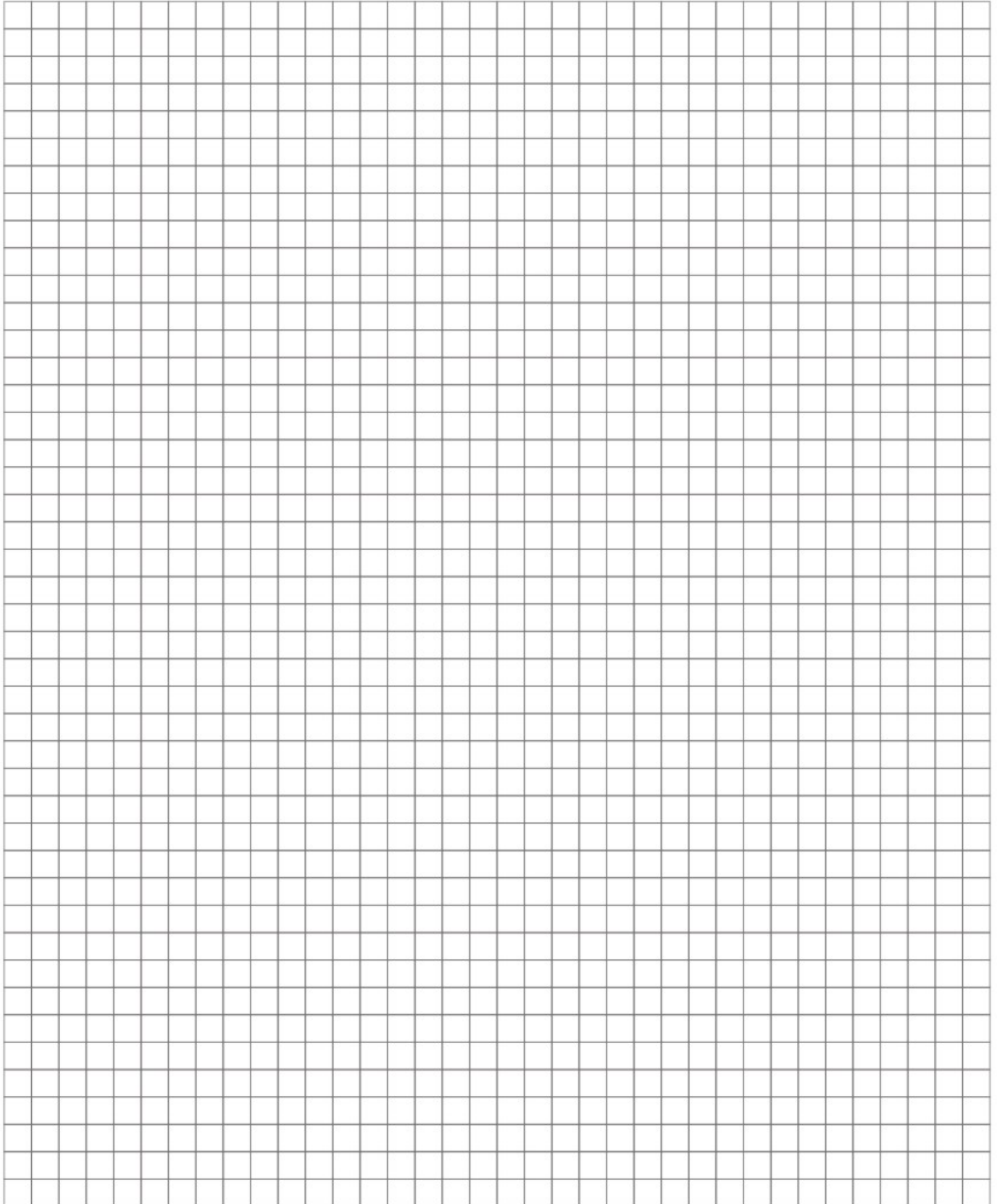


Model	SPL040			SPL060			SPL070			SPL080			SPL090			SPL120			SPL160			SPL205			SPL235					
Stage	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3
K1	Φ40			Φ60			Φ70			Φ80			Φ89			Φ115.5			Φ160			Φ205			Φ235					
	Φ1.575			Φ2.36			Φ2.76			Φ3.15			Φ3.5			Φ4.55			Φ6.3			Φ8.07			Φ9.25					
K2	88.8	101.8	113.8	116.4	132	147.5	122	145.7	169.4	147	169	191	149	180.3	211.6	198.5	233.5	268.5	275.5	336.5	356	288	348	409	357.5	402	462	357.5	402	462
	3.5	4	4.48	4.58	5.2	5.81	4.8	5.74	6.67	5.79	6.65	7.52	5.87	7.1	8.33	7.81	9.19	10.57	10.85	13.25	14.02	11.34	13.7	16.1	14.07	15.83	18.19	14.07	15.83	18.19
K3	Φ10			Φ14			Φ14			Φ20			Φ20			Φ25			Φ40			Φ55			Φ75					
	Φ0.39			Φ0.55			Φ0.55			Φ0.79			Φ0.79			Φ0.98			Φ1.57			Φ2.17			Φ2.95					
K4	23			30			30			36			36			50			80			82			105					
	0.91			1.18			1.18			1.42			1.42			1.97			3.15			3.23			4.14					
K5	Φ12			Φ17			Φ17			Φ25			Φ25			Φ35			Φ50			Φ60			Φ85					
	Φ0.47			Φ0.67			Φ0.67			Φ0.98			Φ0.98			Φ1.38			Φ1.97			Φ2.36			Φ3.35					
K6	Φ26			Φ40			Φ40			Φ60			Φ60			Φ80			Φ130			Φ160			Φ180					
	Φ1.02			Φ1.57			Φ1.57			Φ2.36			Φ2.36			Φ3.15			Φ5.12			Φ6.3			Φ7.09					
K7	2			3			3			3			3			4			5			15			30					
	0.08			0.12			0.12			0.12			0.12			0.16			0.2			0.59			1.18					
K8	26			35			35			40			40			55			87			105			138					
	1.02			1.38			1.38			1.57			1.57			2.17			3.43			4.13			5.43					
K9	M3X9			M5X12			M5X12			M6X16			M6X16			M10X26			M12X25			M20X40			M20X40					
K10	M4X6			M5X8			M5X12			M6X15			M6X15			M10X20			M12X25			M12X20			M16X28					
K11	Φ34			Φ52			Φ52			Φ70			Φ70			Φ100			Φ145			Φ184			Φ210					
	Φ1.34			Φ2.05			Φ2.05			Φ2.76			Φ2.76			Φ3.94			Φ5.71			Φ7.24			Φ8.27					
K12	16			22			22			28			28			40			70			70			90					
	0.63			0.87			0.87			1.1			1.1			1.57			2.76			2.76			3.54					
K13	3			5			5			6			6			8			12			16			20					
	0.12			0.2			0.2			0.24			0.24			0.31			0.47			0.63			0.79					
K14	11.2			16			16			22.5			22.5			28			43			59			79.5					
	0.44			0.63			0.63			0.89			0.89			1.1			1.69			2.32			3.13					
C1	Φ46			Φ70			Φ70			Φ90			Φ90			Φ145			Φ200	Φ145	Φ215	Φ200	Φ235	Φ215	Φ200	Φ235	Φ215	Φ200		
	Φ1.81			Φ2.76			Φ2.76			Φ3.54			Φ3.54			Φ5.71			Φ7.87	Φ5.71	Φ8.46	Φ7.87	Φ9.25	Φ8.46	Φ7.87	Φ9.25	Φ8.46	Φ7.87		
C2	M4X10			M5X12			M5X12			M6X15			M6X15			M8X20			M12X25	M8X20	M12X25	M12X25	M12X25	M12X25	M12X25	M12X25	M12X25	M12X25		
C3	Φ8			Φ14			Φ14			Φ19			Φ19			Φ24			Φ35	Φ24	Φ42	Φ35	Φ55	Φ42	Φ35	Φ55	Φ42	Φ35		
	Φ0.31			Φ0.55			Φ0.55			Φ0.75			Φ0.75			Φ0.94			Φ1.38	Φ0.94	Φ1.65	Φ1.38	Φ2.17	Φ1.65	Φ1.38	Φ2.17	Φ1.65	Φ1.38		
C4	26.1			31.5			32.1			41.6			41.6			56.5			82	61.3	82.5	82	115.5	82.5	82	115.5	82.5	82		
	1.03			1.24			1.26			1.64			1.64			2.22			3.23	2.41	3.25	3.23	4.55	3.25	3.23	4.55	3.25	3.23		
C5	Φ30			Φ50			Φ50			Φ70			Φ70			Φ110			Φ114.3	Φ110	Φ180	Φ114.3	Φ200	Φ180	Φ114.3	Φ200	Φ180	Φ114.3		
	Φ1.18			Φ1.97			Φ1.97			Φ2.76			Φ2.76			Φ4.33			Φ4.5	Φ4.33	Φ7.09	Φ4.5	Φ7.87	Φ7.09	Φ4.5	Φ7.87	Φ7.09	Φ4.5		
C6	6			6.5			6.5			6.5			6.5			8			8	6.5	8	8	8	8	8	8	8	8	8	
	0.24			0.26			0.26			0.26			0.26			0.31			0.31	0.26	0.31	0.31	0.31	0.31	0.31	0.31	0.31	0.31	0.31	
C7	45			60			70			80			89			120			175	120	190	175	220	190	175	220	190	175		
	1.77			2.36			2.76			3.15			3.5			4.72			6.89	4.72	7.48	6.89	8.66	7.48	6.89	8.66	7.48	6.89		

The dimensions modified as per the applied motor flanges.

You can get the specific gearbox drawing solution by KDP(Kofon Design Programme) on line from our website: www.kofon-motion.com

Technical Memo

A large grid of graph paper, consisting of 20 columns and 30 rows of small squares, intended for technical drawing or calculations.