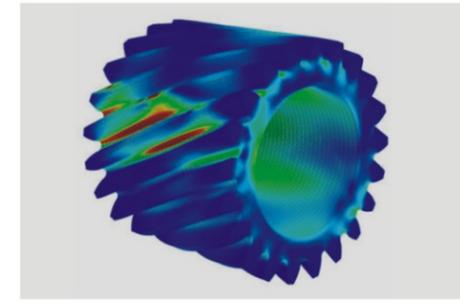




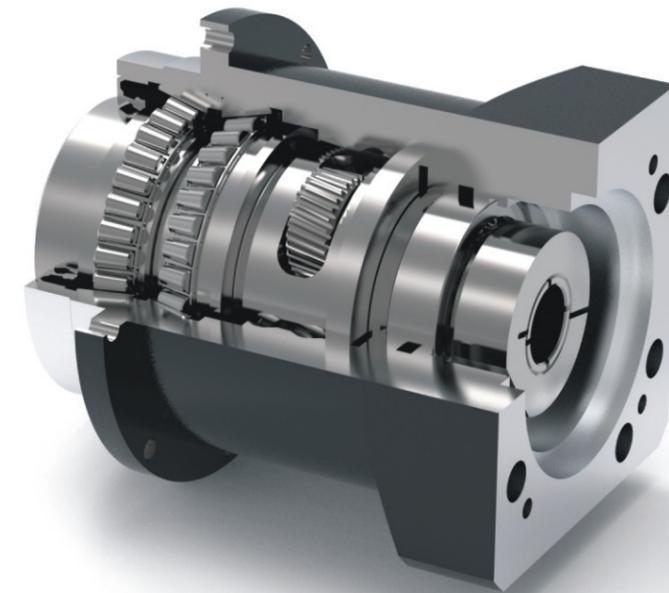
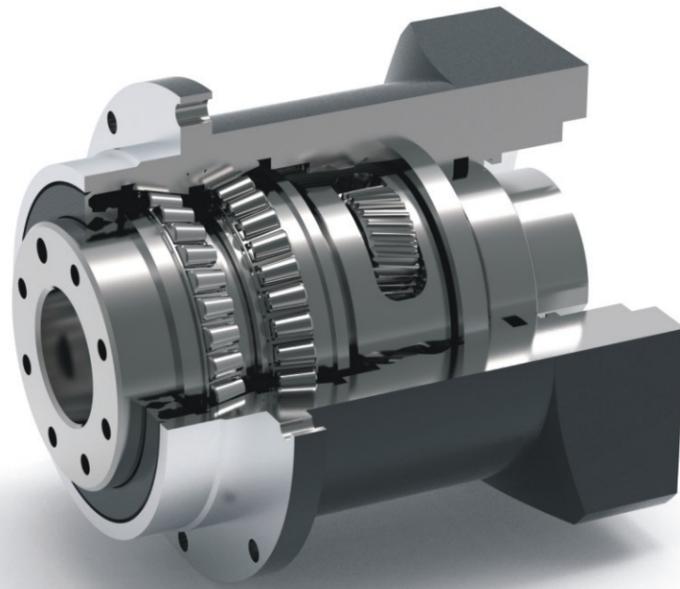
Helical Gear System Technology

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. Integrated housing engineering with super skiving gearing tooling craft.



Super 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.



Master CageSpindle Planetary Carrier

The patented Master CageSpindle integrated planetary carrier support planetary gearbox to increase constructional strength running stability and rigidity significantly. Synthetic grease lubrication allows maintenance free for gearbox whole service life.



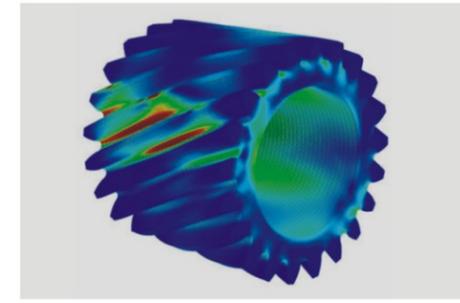
Dynamic Balance Clamping and Sealing System

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.



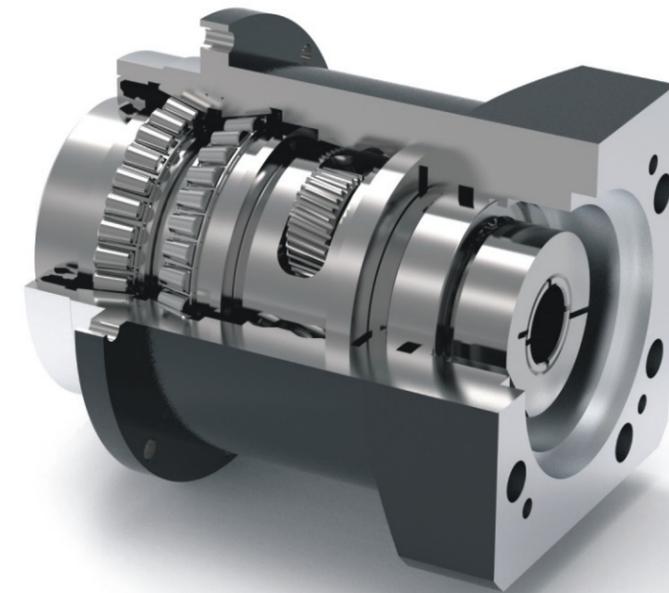
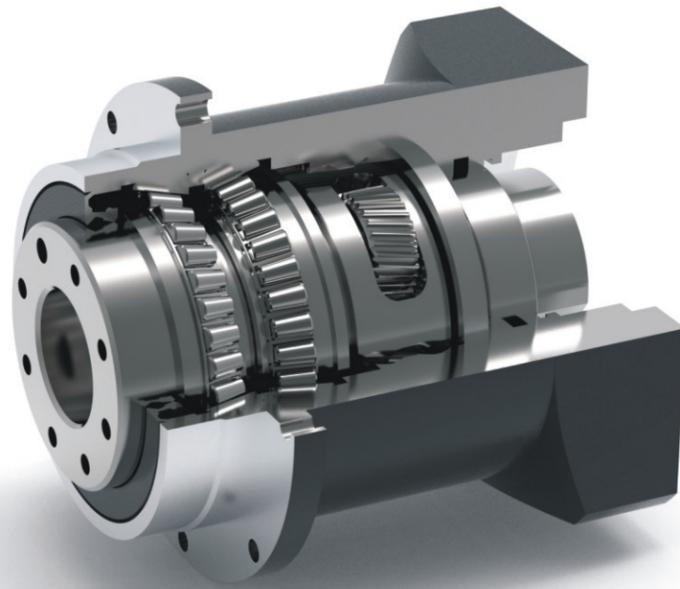
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Dynamic Balance Clamping and Sealing System

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.

KPH050 1-stage

		1-stage								
Ratio	i		4	5	6	7	8	9	10	
Nominal Output Torque		Nm	21	21	20	18	18	14	14	
		in.lb	186	186	177	159	159	124	124	
Emergency Stop Torque	T_{2Not}	Nm	63	63	60	54	54	42	42	
		in.lb	558	558	531	478	478	372	372	
Maximum Acceleration Torque	T_{2B}	Nm	37.8	37.8	36	32.4	32.4	25.2	25.2	
		in.lb	335	335	319	287	287	223	223	
Maximum Torque	T_{2a}	Nm	42	42	40	36	36	28	28	
		in.lb	372	372	354	319	319	248	248	
Permitted Average Input Speed	n_{1N}	rpm	4000							
Maximum Input Speed	n_{1Max}	rpm	8000							
Mean No Load Running Torque	T_{012}	Nm	0.15	0.14	0.12	0.12	0.12	0.12	0.11	
		in.lb	1.33	1.24	1.06	1.06	1.06	1.06	0.97	
Standard Backlash P1	j_i	arcmin	≤6							
Reduced Low Backlash P0	j_i	arcmin	≤4							
Torsional Rigidity	C_{21}	Nm/arcmin	7							
		in.lb/arcmin	61.95							
Maximum Radial Load	F_{2AMax}	N	700							
		lb _r	157							
Maximum Axial Load	F_{2OMax}	N	450							
		lb _r	101							
Max. Tilting Moment	M_{2KMax}	Nm	28							
		in.lb	248							
Mass Moment of Inertia	j_i	kgcm ²	0.022	0.019	0.017	0.017	0.017	0.017	0.017	
Operating Noise Level	L_{PA}	dB(A)	< 56							
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			IP65							
Service lifetime	L_n	h	S5 Cycle Operation: >30,000 (S1 Continuous Operation: >15,000 hrs)							
Weight	m	kg	1							
		lb _m	1.54							

KPH050 2-stage

		2-stage														
Ratio	i		16	20	25	30	35	40	45	50	60	70	80	90	100	
Nominal Output Torque		Nm	21	21	21	21	21	21	21	21	20	18	18	14	14	
		in.lb	186	186	186	186	186	186	186	186	186	177	159	159	124	124
Emergency Stop Torque	T_{2Not}	Nm	63	63	63	63	63	63	63	63	60	54	54	42	42	
		in.lb	558	558	558	558	558	558	558	558	531	478	478	372	372	
Maximum Acceleration Torque	T_{2B}	Nm	37.8	37.8	37.8	37.8	37.8	37.8	37.8	37.8	36	32.4	32.4	25.2	25.2	
		in.lb	335	335	335	335	335	335	335	335	335	319	287	287	223	223
Maximum Torque	T_{2a}	Nm	42	42	42	42	42	42	42	42	40	36	36	28	28	
		in.lb	372	372	372	372	372	372	372	372	372	354	319	319	248	248
Permitted Average Input Speed	n_{1N}	rpm	4000													
Maximum Input Speed	n_{1Max}	rpm	8000													
Mean No Load Running Torque	T_{012}	Nm	0.14	0.14	0.14	0.14	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.11	0.11	
		in.lb	1.24	1.24	1.24	1.24	1.06	1.06	1.06	1.06	1.06	1.06	1.06	0.97	0.97	
Standard Backlash P1	j_i	arcmin	≤8													
Reduced Low Backlash P0	j_i	arcmin	≤6													
Torsional Rigidity	C_{21}	Nm/arcmin	7													
		in.lb/arcmin	61.95													
Maximum Radial Load	F_{2AMax}	N	700													
		lb _r	157													
Maximum Axial Load	F_{2OMax}	N	450													
		lb _r	101													
Max. Tilting Moment	M_{2KMax}	Nm	28													
		in.lb	248													
Mass Moment of Inertia	j_i	kgcm ²	0.019	0.019	0.019	0.017	0.017	0.017	0.017	0.017	0.017	0.017	0.017	0.017	0.017	
Operating Noise Level	L_{PA}	dB(A)	< 56													
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			IP65													
Service lifetime	L_n	h	S5 Cycle Operation: >30,000 (S1 Continuous Operation: >15,000 hrs)													
Weight	m	kg	1.1													
		lb _m	2.2													

KPH050 1-stage

		1-stage								
Ratio	i		4	5	6	7	8	9	10	
Nominal Output Torque		Nm	21	21	20	18	18	14	14	
		in.lb	186	186	177	159	159	124	124	
Emergency Stop Torque	T_{2Not}	Nm	63	63	60	54	54	42	42	
		in.lb	558	558	531	478	478	372	372	
Maximum Acceleration Torque	T_{2B}	Nm	37.8	37.8	36	32.4	32.4	25.2	25.2	
		in.lb	335	335	319	287	287	223	223	
Maximum Torque	T_{2a}	Nm	42	42	40	36	36	28	28	
		in.lb	372	372	354	319	319	248	248	
Permitted Average Input Speed	n_{1N}	rpm	4000							
Maximum Input Speed	n_{1Max}	rpm	8000							
Mean No Load Running Torque	T_{012}	Nm	0.15	0.14	0.12	0.12	0.12	0.12	0.11	
		in.lb	1.33	1.24	1.06	1.06	1.06	1.06	0.97	
Standard Backlash P1	j_i	arcmin	≤6							
Reduced Low Backlash P0	j_i	arcmin	≤4							
Torsional Rigidity	C_{21}	Nm/arcmin	7							
		in.lb/arcmin	61.95							
Maximum Radial Load	F_{2AMax}	N	700							
		lb _r	157							
Maximum Axial Load	F_{2OMax}	N	450							
		lb _r	101							
Max. Tilting Moment	M_{2KMax}	Nm	28							
		in.lb	248							
Mass Moment of Inertia	j_i	kgcm ²	0.022	0.019	0.017	0.017	0.017	0.017	0.017	
Operating Noise Level	L_{PA}	dB(A)	< 56							
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			IP65							
Service lifetime	L_n	h	S5 Cycle Operation: >30,000 (S1 Continuous Operation: >15,000 hrs)							
Weight	m	kg	1							
		lb _m	1.54							

KPH050 2-stage

		2-stage														
Ratio	i		16	20	25	30	35	40	45	50	60	70	80	90	100	
Nominal Output Torque		Nm	21	21	21	21	21	21	21	21	20	18	18	14	14	
		in.lb	186	186	186	186	186	186	186	186	186	177	159	159	124	124
Emergency Stop Torque	T_{2Not}	Nm	63	63	63	63	63	63	63	63	60	54	54	42	42	
		in.lb	558	558	558	558	558	558	558	558	558	531	478	478	372	372
Maximum Acceleration Torque	T_{2B}	Nm	37.8	37.8	37.8	37.8	37.8	37.8	37.8	37.8	36	32.4	32.4	25.2	25.2	
		in.lb	335	335	335	335	335	335	335	335	335	319	287	287	223	223
Maximum Torque	T_{2a}	Nm	42	42	42	42	42	42	42	42	40	36	36	28	28	
		in.lb	372	372	372	372	372	372	372	372	372	354	319	319	248	248
Permitted Average Input Speed	n_{1N}	rpm	4000													
Maximum Input Speed	n_{1Max}	rpm	8000													
Mean No Load Running Torque	T_{012}	Nm	0.14	0.14	0.14	0.14	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.11	0.11	
		in.lb	1.24	1.24	1.24	1.24	1.06	1.06	1.06	1.06	1.06	1.06	1.06	0.97	0.97	
Standard Backlash P1	j_i	arcmin	≤8													
Reduced Low Backlash P0	j_i	arcmin	≤6													
Torsional Rigidity	C_{21}	Nm/arcmin	7													
		in.lb/arcmin	61.95													
Maximum Radial Load	F_{2AMax}	N	700													
		lb _r	157													
Maximum Axial Load	F_{2OMax}	N	450													
		lb _r	101													
Max. Tilting Moment	M_{2KMax}	Nm	28													
		in.lb	248													
Mass Moment of Inertia	j_i	kgcm ²	0.019	0.019	0.019	0.017	0.017	0.017	0.017	0.017	0.017	0.017	0.017	0.017	0.017	
Operating Noise Level	L_{PA}	dB(A)	< 56													
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			IP65													
Service lifetime	L_n	h	S5 Cycle Operation: >30,000 (S1 Continuous Operation: >15,000 hrs)													
Weight	m	kg	1.1													
		lb _m	2.2													

KPH070 1-stage

		1-stage								
Ratio	i		4	5	6	7	8	9	10	
Nominal Output Torque		Nm	52	55	50	50	45	42	42	
		in.lb	460	487	443	443	398	372	372	
Emergency Stop Torque	T_{2Not}	Nm	156	165	150	150	135	126	126	
		in.lb	1381	1460	1328	1328	1195	1115	1115	
Maximum Acceleration Torque	T_{2B}	Nm	93.6	99	90	90	81	75.6	75.6	
		in.lb	828	876	797	797	717	669	669	
Maximum Torque	T_{2a}	Nm	104	110	100	100	90	84	84	
		in.lb	920	974	885	885	797	743	743	
Permitted Average Input Speed	n_{1N}	rpm	3000							
Maximum Input Speed	n_{1Max}	rpm	6000							
Mean No Load Running Torque	T_{012}	Nm	0.3	0.27	0.25	0.25	0.25	0.25	0.25	
		in.lb	2.66	2.39	2.21	2.21	2.21	2.21	2.21	
Standard Backlash P1	j_i	arcmin	≤5							
Reduced Low Backlash P0	j_i	arcmin	≤3							
Ultra Low Backlash PU	j_i	arcmin	≤1							
Torsional Rigidity	C_{121}	Nm/arcmin	14							
		in.lb/arcmin	123.91							
Maximum Radial Load	F_{2AMax}	N	2500							
		lb _r	562							
Maximum Axial Load	F_{2OMax}	N	2000							
		lb _r	450							
Max. Tilting Moment	M_{2KMax}	Nm	80							
		in.lb	708							
Mass Moment of Inertia	j_i	kgcm ²	0.140	0.130	0.130	0.130	0.130	0.130	0.130	
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_h	h	S5 Cycle Operation: >30,000 (S1 Continuous Operation: >15,000 hrs)							
Weight	m	kg	1.4							
		lb _m	3.1							

KPH070 2-stage

		2-stage														
Ratio	i		16	20	25	30	35	40	45	50	60	70	80	90	100	
Nominal Output Torque		Nm	52	52	55	55	55	55	55	55	50	50	45	42	42	
		in.lb	460	460	487	487	487	487	487	487	487	443	443	398	372	372
Emergency Stop Torque	T_{2Not}	Nm	156	156	165	165	165	165	165	165	150	150	135	126	126	
		in.lb	1381	1381	1460	1460	1460	1460	1460	1460	1460	1328	1328	1195	1115	1115
Maximum Acceleration Torque	T_{2B}	Nm	93.6	93.6	99	99	99	99	99	99	90	90	81	75.6	75.6	
		in.lb	828	828	876	876	876	876	876	876	876	797	797	717	669	669
Maximum Torque	T_{2a}	Nm	104	104	110	110	110	110	110	110	100	100	90	84	84	
		in.lb	920	920	974	974	974	974	974	974	974	885	885	797	743	743
Permitted Average Input Speed	n_{1N}	rpm	3000													
Maximum Input Speed	n_{1Max}	rpm	6000													
Mean No Load Running Torque	T_{012}	Nm	0.27	0.27	0.27	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25
		in.lb	2.39	2.39	2.39	2.21	2.21	2.21	2.21	2.21	2.21	2.21	2.21	2.21	2.21	2.21
Standard Backlash P1	j_i	arcmin	≤7													
Reduced Low Backlash P0	j_i	arcmin	≤5													
Ultra Low Backlash PU	j_i	arcmin	≤3													
Torsional Rigidity	C_{121}	Nm/arcmin	14													
		in.lb/arcmin	123.91													
Maximum Radial Load	F_{2AMax}	N	2500													
		lb _r	562													
Maximum Axial Load	F_{2OMax}	N	2000													
		lb _r	450													
Max. Tilting Moment	M_{2KMax}	Nm	80													
		in.lb	708													
Mass Moment of Inertia	j_i	kgcm ²	0.124	0.075	0.075	0.064	0.064	0.064	0.064	0.064	0.064	0.064	0.064	0.075	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_h	h	S5 Cycle Operation: >30,000 (S1 Continuous Operation: >15,000 hrs)													
Weight	m	kg	1.6													
		lb _m	3.5													

KPH070 1-stage

		1-stage								
Ratio	i		4	5	6	7	8	9	10	
Nominal Output Torque		Nm	52	55	50	50	45	42	42	
		in.lb	460	487	443	443	398	372	372	
Emergency Stop Torque	T_{2Not}	Nm	156	165	150	150	135	126	126	
		in.lb	1381	1460	1328	1328	1195	1115	1115	
Maximum Acceleration Torque	T_{2B}	Nm	93.6	99	90	90	81	75.6	75.6	
		in.lb	828	876	797	797	717	669	669	
Maximum Torque	T_{2a}	Nm	104	110	100	100	90	84	84	
		in.lb	920	974	885	885	797	743	743	
Permitted Average Input Speed	n_{1N}	rpm	3000							
Maximum Input Speed	n_{1Max}	rpm	6000							
Mean No Load Running Torque	T_{012}	Nm	0.3	0.27	0.25	0.25	0.25	0.25	0.25	
		in.lb	2.66	2.39	2.21	2.21	2.21	2.21	2.21	
Standard Backlash P1	j_i	arcmin	≤5							
Reduced Low Backlash P0	j_i	arcmin	≤3							
Ultra Low Backlash PU	j_i	arcmin	≤1							
Torsional Rigidity	C_{121}	Nm/arcmin	14							
		in.lb/arcmin	123.91							
Maximum Radial Load	F_{2AMax}	N	2500							
		lb _r	562							
Maximum Axial Load	F_{2OMax}	N	2000							
		lb _r	450							
Max. Tilting Moment	M_{2KMax}	Nm	80							
		in.lb	708							
Mass Moment of Inertia	j_i	kgcm ²	0.140	0.130	0.130	0.130	0.130	0.130	0.130	
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_h	h	S5 Cycle Operation: >30,000 (S1 Continuous Operation: >15,000 hrs)							
Weight	m	kg	1.4							
		lb _m	3.1							

KPH070 2-stage

		2-stage														
Ratio	i		16	20	25	30	35	40	45	50	60	70	80	90	100	
Nominal Output Torque		Nm	52	52	55	55	55	55	55	55	50	50	45	42	42	
		in.lb	460	460	487	487	487	487	487	487	487	443	443	398	372	372
Emergency Stop Torque	T_{2Not}	Nm	156	156	165	165	165	165	165	165	150	150	135	126	126	
		in.lb	1381	1381	1460	1460	1460	1460	1460	1460	1460	1328	1328	1195	1115	1115
Maximum Acceleration Torque	T_{2B}	Nm	93.6	93.6	99	99	99	99	99	99	90	90	81	75.6	75.6	
		in.lb	828	828	876	876	876	876	876	876	876	797	797	717	669	669
Maximum Torque	T_{2a}	Nm	104	104	110	110	110	110	110	110	100	100	90	84	84	
		in.lb	920	920	974	974	974	974	974	974	974	885	885	797	743	743
Permitted Average Input Speed	n_{1N}	rpm	3000													
Maximum Input Speed	n_{1Max}	rpm	6000													
Mean No Load Running Torque	T_{012}	Nm	0.27	0.27	0.27	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25
		in.lb	2.39	2.39	2.39	2.21	2.21	2.21	2.21	2.21	2.21	2.21	2.21	2.21	2.21	2.21
Standard Backlash P1	j_i	arcmin	≤7													
Reduced Low Backlash P0	j_i	arcmin	≤5													
Ultra Low Backlash PU	j_i	arcmin	≤3													
Torsional Rigidity	C_{121}	Nm/arcmin	14													
		in.lb/arcmin	123.91													
Maximum Radial Load	F_{2AMax}	N	2500													
		lb _r	562													
Maximum Axial Load	F_{2OMax}	N	2000													
		lb _r	450													
Max. Tilting Moment	M_{2KMax}	Nm	80													
		in.lb	708													
Mass Moment of Inertia	j_i	kgcm ²	0.124	0.075	0.075	0.064	0.064	0.064	0.064	0.064	0.064	0.064	0.064	0.075	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_h	h	S5 Cycle Operation: >30,000 (S1 Continuous Operation: >15,000 hrs)													
Weight	m	kg	1.6													
		lb _m	3.5													

KPH090 1-stage

		1-stage								
Ratio	i		4	5	6	7	8	9	10	
Nominal Output Torque		Nm	145	155	145	135	115	105	105	
		in.lb	1283	1372	1283	1195	1018	929	929	
Emergency Stop Torque	T_{2Not}	Nm	435	465	435	405	345	315	315	
		in.lb	3850	4116	3850	3585	3053	2788	2788	
Maximum Acceleration Torque	T_{2B}	Nm	261	279	261	243	207	189	189	
		in.lb	2310	2469	2310	2151	1832	1673	1673	
Maximum Torque	T_{2a}	Nm	290	310	290	270	230	210	210	
		in.lb	2567	2744	2567	2390	2036	1859	1859	
Permitted Average Input Speed	n_{1N}	rpm	3000							
Maximum Input Speed	n_{1Max}	rpm	6000							
Mean No Load Running Torque	T_{012}	Nm	0.46	0.41	0.39	0.35	0.35	0.35	0.35	
		in.lb	4.07	3.63	3.45	3.10	3.10	3.10	3.10	
Standard Backlash P1	j_i	arcmin	≤5							
Reduced Low Backlash P0	j_i	arcmin	≤3							
Ultra Low Backlash PU	j_i	arcmin	≤1							
Torsional Rigidity	C_{121}	Nm/arcmin	35							
		in.lb/arcmin	309.77							
Maximum Radial Load	F_{2AMax}	N	4500							
		lb _r	1012							
Maximum Axial Load	F_{2OMax}	N	3500							
		lb _r	787							
Max. Tilting Moment	M_{2KMax}	Nm	228							
		in.lb	2018							
Mass Moment of Inertia	j_1	kgcm ²	0.48	0.47	0.47	0.47	0.45	0.44	0.44	
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_h	h	S5 Cycle Operation: >30,000 (S1 Continuous Operation: >15,000 hrs)							
Weight	m	kg	3.3							
		lb _m	7.3							

KPH090 2-stage

		2-stage														
Ratio	i		16	20	25	30	35	40	45	50	60	70	80	90	100	
Nominal Output Torque		Nm	145	145	155	155	155	155	155	155	145	135	115	105	105	
		in.lb	1283	1283	1372	1372	1372	1372	1372	1372	1372	1283	1195	1018	929	929
Emergency Stop Torque	T_{2Not}	Nm	435	435	465	465	465	465	465	465	435	405	345	315	315	
		in.lb	3850	3850	4116	4116	4116	4116	4116	4116	4116	3850	3585	3053	2788	2788
Maximum Acceleration Torque	T_{2B}	Nm	261	261	279	279	279	279	279	279	261	243	207	189	189	
		in.lb	2310	2310	2469	2469	2469	2469	2469	2469	2469	2310	2151	1832	1673	1673
Maximum Torque	T_{2a}	Nm	290	290	310	310	310	310	310	310	290	270	230	210	210	
		in.lb	2567	2567	2744	2744	2744	2744	2744	2744	2744	2567	2390	2036	1859	1859
Permitted Average Input Speed	n_{1N}	rpm	3000													
Maximum Input Speed	n_{1Max}	rpm	6000													
Mean No Load Running Torque	T_{012}	Nm	0.41	0.41	0.41	0.35	0.35	0.35	0.35	0.35	0.35	0.35	0.35	0.35	0.35	0.35
		in.lb	3.63	3.63	3.63	3.10	3.10	3.10	3.10	3.10	3.10	3.10	3.10	3.10	3.10	3.10
Standard Backlash P1	j_i	arcmin	≤7													
Reduced Low Backlash P0	j_i	arcmin	≤5													
Ultra Low Backlash PU	j_i	arcmin	≤3													
Torsional Rigidity	C_{121}	Nm/arcmin	35													
		in.lb/arcmin	309.77													
Maximum Radial Load	F_{2AMax}	N	4500													
		lb _r	1012													
Maximum Axial Load	F_{2OMax}	N	3500													
		lb _r	787													
Max. Tilting Moment	M_{2KMax}	Nm	228													
		in.lb	2018													
Mass Moment of Inertia	j_1	kgcm ²	0.44	0.44	0.44	0.39	0.39	0.39	0.39	0.39	0.39	0.39	0.44	0.44	0.44	
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_h	h	S5 Cycle Operation: >30,000 (S1 Continuous Operation: >15,000 hrs)													
Weight	m	kg	4.5													
		lb _m	9.9													

KPH090 1-stage

		1-stage								
Ratio	i		4	5	6	7	8	9	10	
Nominal Output Torque		Nm	145	155	145	135	115	105	105	
		in.lb	1283	1372	1283	1195	1018	929	929	
Emergency Stop Torque	T_{2Not}	Nm	435	465	435	405	345	315	315	
		in.lb	3850	4116	3850	3585	3053	2788	2788	
Maximum Acceleration Torque	T_{2B}	Nm	261	279	261	243	207	189	189	
		in.lb	2310	2469	2310	2151	1832	1673	1673	
Maximum Torque	T_{2a}	Nm	290	310	290	270	230	210	210	
		in.lb	2567	2744	2567	2390	2036	1859	1859	
Permitted Average Input Speed	n_{1N}	rpm	3000							
Maximum Input Speed	n_{1Max}	rpm	6000							
Mean No Load Running Torque	T_{012}	Nm	0.46	0.41	0.39	0.35	0.35	0.35	0.35	
		in.lb	4.07	3.63	3.45	3.10	3.10	3.10	3.10	
Standard Backlash P1	j_i	arcmin	≤5							
Reduced Low Backlash P0	j_i	arcmin	≤3							
Ultra Low Backlash PU	j_i	arcmin	≤1							
Torsional Rigidity	C_{121}	Nm/arcmin	35							
		in.lb/arcmin	309.77							
Maximum Radial Load	F_{2AMax}	N	4500							
		lb _r	1012							
Maximum Axial Load	F_{2OMax}	N	3500							
		lb _r	787							
Max. Tilting Moment	M_{2KMax}	Nm	228							
		in.lb	2018							
Mass Moment of Inertia	j_1	kgcm ²	0.48	0.47	0.47	0.47	0.45	0.44	0.44	
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_h	h	S5 Cycle Operation: >30,000 (S1 Continuous Operation: >15,000 hrs)							
Weight	m	kg	3.3							
		lb _m	7.3							

KPH090 2-stage

		2-stage														
Ratio	i		16	20	25	30	35	40	45	50	60	70	80	90	100	
Nominal Output Torque		Nm	145	145	155	155	155	155	155	155	145	135	115	105	105	
		in.lb	1283	1283	1372	1372	1372	1372	1372	1372	1372	1283	1195	1018	929	929
Emergency Stop Torque	T_{2Not}	Nm	435	435	465	465	465	465	465	465	435	405	345	315	315	
		in.lb	3850	3850	4116	4116	4116	4116	4116	4116	4116	3850	3585	3053	2788	2788
Maximum Acceleration Torque	T_{2B}	Nm	261	261	279	279	279	279	279	279	261	243	207	189	189	
		in.lb	2310	2310	2469	2469	2469	2469	2469	2469	2469	2310	2151	1832	1673	1673
Maximum Torque	T_{2a}	Nm	290	290	310	310	310	310	310	310	290	270	230	210	210	
		in.lb	2567	2567	2744	2744	2744	2744	2744	2744	2744	2567	2390	2036	1859	1859
Permitted Average Input Speed	n_{1N}	rpm	3000													
Maximum Input Speed	n_{1Max}	rpm	6000													
Mean No Load Running Torque	T_{012}	Nm	0.41	0.41	0.41	0.35	0.35	0.35	0.35	0.35	0.35	0.35	0.35	0.35	0.35	0.35
		in.lb	3.63	3.63	3.63	3.10	3.10	3.10	3.10	3.10	3.10	3.10	3.10	3.10	3.10	3.10
Standard Backlash P1	j_i	arcmin	≤7													
Reduced Low Backlash P0	j_i	arcmin	≤5													
Ultra Low Backlash PU	j_i	arcmin	≤3													
Torsional Rigidity	C_{121}	Nm/arcmin	35													
		in.lb/arcmin	309.77													
Maximum Radial Load	F_{2AMax}	N	4500													
		lb _r	1012													
Maximum Axial Load	F_{2OMax}	N	3500													
		lb _r	787													
Max. Tilting Moment	M_{2KMax}	Nm	228													
		in.lb	2018													
Mass Moment of Inertia	j_1	kgcm ²	0.44	0.44	0.44	0.39	0.39	0.39	0.39	0.39	0.39	0.39	0.44	0.44	0.44	
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_h	h	S5 Cycle Operation: >30,000 (S1 Continuous Operation: >15,000 hrs)													
Weight	m	kg	4.5													
		lb _m	9.9													

KPH120 1-stage

		1-stage								
Ratio	i		4	5	6	7	8	9	10	
Nominal Output Torque		Nm	300	320	300	290	255	220	220	
		in.lb	2655	2832	2655	2567	2257	1947	1947	
Emergency Stop Torque	T_{2Not}	Nm	900	960	900	870	765	660	660	
		in.lb	7966	8497	7966	7700	6771	5841	5841	
Maximum Acceleration Torque	T_{2B}	Nm	540	576	540	522	459	396	396	
		in.lb	4779	5098	4779	4620	4062	3505	3505	
Maximum Torque	T_{2a}	Nm	600	640	600	580	510	440	440	
		in.lb	5310	5664	5310	5133	4514	3894	3894	
Permitted Average Input Speed	n_{1N}	rpm	3000							
Maximum Input Speed	n_{1Max}	rpm	6000							
Mean No Load Running Torque	T_{012}	Nm	1.05	0.95	0.91	0.88	0.88	0.88	0.88	
		in.lb	9.29	8.41	8.05	7.79	7.79	7.79	7.79	
Standard Backlash P1	j_i	arcmin	≤5							
Reduced Low Backlash P0	j_i	arcmin	≤3							
Ultra Low Backlash PU	j_i	arcmin	≤1							
Torsional Rigidity	C_{121}	Nm/arcmin	90							
		in.lb/arcmin	796.56							
Maximum Radial Load	F_{2AMax}	N	7800							
		lb _r	1753							
Maximum Axial Load	F_{2OMax}	N	6000							
		lb _r	1349							
Max. Tilting Moment	M_{2KMax}	Nm	450							
		in.lb	3983							
Mass Moment of Inertia	j_1	kgcm ²	2.74	2.71	2.71	2.62	2.62	2.62	2.57	
Operating Noise Level	L_{PA}	dB(A)	< 63							
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	S5 Cycle Operation: >30,000 (S1 Continuous Operation: >15,000 hrs)							
Weight	m	kg	5.5							
		lb _m	12.1							

KPH120 2-stage

		2-stage														
Ratio	i		16	20	25	30	35	40	45	50	60	70	80	90	100	
Nominal Output Torque		Nm	300	300	320	320	320	320	320	320	300	290	255	220	220	
		in.lb	2655	2655	2832	2832	2832	2832	2832	2832	2832	2655	2567	2257	1947	1947
Emergency Stop Torque	T_{2Not}	Nm	900	900	960	960	960	960	960	960	900	870	765	660	660	
		in.lb	7966	7966	8497	8497	8497	8497	8497	8497	8497	7966	7700	6771	5841	5841
Maximum Acceleration Torque	T_{2B}	Nm	540	540	576	576	576	576	576	576	540	522	459	396	396	
		in.lb	4779	4779	5098	5098	5098	5098	5098	5098	5098	4779	4620	4062	3505	3505
Maximum Torque	T_{2a}	Nm	600	600	640	640	640	640	640	640	600	580	510	440	440	
		in.lb	5310	5310	5664	5664	5664	5664	5664	5664	5664	5310	5133	4514	3894	3894
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	0.95	0.95	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
		in.lb	8.41	8.41	8.41	7.79	7.79	7.79	7.79	7.79	7.79	7.79	7.79	7.79	7.79	7.79
Standard Backlash P1	j_i	arcmin	≤7													
Reduced Low Backlash P0	j_i	arcmin	≤5													
Ultra Low Backlash PU	j_i	arcmin	≤3													
Torsional Rigidity	C_{121}	Nm/arcmin	90													
		in.lb/arcmin	796.56													
Maximum Radial Load	F_{2AMax}	N	7800													
		lb _r	1753													
Maximum Axial Load	F_{2OMax}	N	6000													
		lb _r	1349													
Max. Tilting Moment	M_{2KMax}	Nm	450													
		in.lb	3983													
Mass Moment of Inertia	j_1	kgcm ²	2.58	1.5	1.49	1.3	1.3	1.3	1.3	1.3	1.3	1.3	0.44	0.44	0.44	0.44
Operating Noise Level	L_{PA}	dB(A)	< 63													
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	S5 Cycle Operation: >30,000 (S1 Continuous Operation: >15,000 hrs)													
Weight	m	kg	8													
		lb _m	17.6													

KPH120 1-stage

		1-stage								
Ratio	i		4	5	6	7	8	9	10	
Nominal Output Torque		Nm	300	320	300	290	255	220	220	
		in.lb	2655	2832	2655	2567	2257	1947	1947	
Emergency Stop Torque	T_{2Not}	Nm	900	960	900	870	765	660	660	
		in.lb	7966	8497	7966	7700	6771	5841	5841	
Maximum Acceleration Torque	T_{2B}	Nm	540	576	540	522	459	396	396	
		in.lb	4779	5098	4779	4620	4062	3505	3505	
Maximum Torque	T_{2a}	Nm	600	640	600	580	510	440	440	
		in.lb	5310	5664	5310	5133	4514	3894	3894	
Permitted Average Input Speed	n_{1N}	rpm	3000							
Maximum Input Speed	n_{1Max}	rpm	6000							
Mean No Load Running Torque	T_{012}	Nm	1.05	0.95	0.91	0.88	0.88	0.88	0.88	
		in.lb	9.29	8.41	8.05	7.79	7.79	7.79	7.79	
Standard Backlash P1	j_i	arcmin	≤5							
Reduced Low Backlash P0	j_i	arcmin	≤3							
Ultra Low Backlash PU	j_i	arcmin	≤1							
Torsional Rigidity	C_{121}	Nm/arcmin	90							
		in.lb/arcmin	796.56							
Maximum Radial Load	F_{2AMax}	N	7800							
		lb _r	1753							
Maximum Axial Load	F_{2OMax}	N	6000							
		lb _r	1349							
Max. Tilting Moment	M_{2KMax}	Nm	450							
		in.lb	3983							
Mass Moment of Inertia	j_i	kgcm ²	2.74	2.71	2.71	2.62	2.62	2.62	2.57	
Operating Noise Level	L_{PA}	dB(A)	< 63							
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	S5 Cycle Operation: >30,000 (S1 Continuous Operation: >15,000 hrs)							
Weight	m	kg	5.5							
		lb _m	12.1							

KPH120 2-stage

		2-stage														
Ratio	i		16	20	25	30	35	40	45	50	60	70	80	90	100	
Nominal Output Torque		Nm	300	300	320	320	320	320	320	320	300	290	255	220	220	
		in.lb	2655	2655	2832	2832	2832	2832	2832	2832	2832	2655	2567	2257	1947	1947
Emergency Stop Torque	T_{2Not}	Nm	900	900	960	960	960	960	960	960	900	870	765	660	660	
		in.lb	7966	7966	8497	8497	8497	8497	8497	8497	8497	7966	7700	6771	5841	5841
Maximum Acceleration Torque	T_{2B}	Nm	540	540	576	576	576	576	576	576	540	522	459	396	396	
		in.lb	4779	4779	5098	5098	5098	5098	5098	5098	5098	4779	4620	4062	3505	3505
Maximum Torque	T_{2a}	Nm	600	600	640	640	640	640	640	640	600	580	510	440	440	
		in.lb	5310	5310	5664	5664	5664	5664	5664	5664	5664	5310	5133	4514	3894	3894
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	0.95	0.95	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
		in.lb	8.41	8.41	8.41	7.79	7.79	7.79	7.79	7.79	7.79	7.79	7.79	7.79	7.79	7.79
Standard Backlash P1	j_i	arcmin	≤7													
Reduced Low Backlash P0	j_i	arcmin	≤5													
Ultra Low Backlash PU	j_i	arcmin	≤3													
Torsional Rigidity	C_{121}	Nm/arcmin	90													
		in.lb/arcmin	796.56													
Maximum Radial Load	F_{2AMax}	N	7800													
		lb _r	1753													
Maximum Axial Load	F_{2OMax}	N	6000													
		lb _r	1349													
Max. Tilting Moment	M_{2KMax}	Nm	450													
		in.lb	3983													
Mass Moment of Inertia	j_i	kgcm ²	2.58	1.5	1.49	1.3	1.3	1.3	1.3	1.3	1.3	1.3	0.44	0.44	0.44	0.44
Operating Noise Level	L_{PA}	dB(A)	< 63													
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	S5 Cycle Operation: >30,000 (S1 Continuous Operation: >15,000 hrs)													
Weight	m	kg	8													
		lb _m	17.6													

KPH160 1-stage

		1-stage								
Ratio	i		4	5	6	7	8	9	10	
Nominal Output Torque		Nm	550	650	610	540	510	440	440	
		in.lb	4868	5753	5399	4779	4514	3894	3894	
Emergency Stop Torque	T_{2Not}	Nm	1650	1950	1830	1620	1530	1320	1320	
		in.lb	14604	17259	16197	14338	13542	11683	11683	
Maximum Acceleration Torque	T_{2B}	Nm	990	1170	1098	972	918	792	792	
		in.lb	8762	10355	9718	8603	8125	7010	7010	
Maximum Torque	T_{2a}	Nm	1100	1300	1220	1080	1020	880	880	
		in.lb	9736	11506	10798	9559	9028	7789	7789	
Permitted Average Input Speed	n_{1N}	rpm	3000							
Maximum Input Speed	n_{1Max}	rpm	6000							
Mean No Load Running Torque	T_{012}	Nm	2.6	2.5	2.4	2.4	2.4	2.4	2.4	
		in.lb	23.01	22.13	21.24	21.24	21.24	21.24	21.24	
Standard Backlash P1	j_i	arcmin	≤5							
Reduced Low Backlash P0	j_i	arcmin	≤3							
Ultra Low Backlash PU	j_i	arcmin	≤1							
Torsional Rigidity	C_{121}	Nm/arcmin	205							
		in.lb/arcmin	1814.39							
Maximum Radial Load	F_{2AMax}	N	12000							
		lb _r	2698							
Maximum Axial Load	F_{2OMax}	N	10000							
		lb _r	2248							
Max. Tilting Moment	M_{2KMax}	Nm	1012							
		in.lb	8957							
Mass Moment of Inertia	j_i	kgcm ²	7.54	7.42	7.42	7.25	7.14	7.14	7.14	
Operating Noise Level	L_{PA}	dB(A)	< 65							
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	S5 Cycle Operation: >30,000 (S1 Continuous Operation: >15,000 hrs)							
Weight	m	kg	20							
		lb _m	44.0							

KPH160 2-stage

		2-stage														
Ratio	i		16	20	25	30	35	40	45	50	60	70	80	90	100	
Nominal Output Torque		Nm	550	550	650	650	650	650	650	650	610	540	510	440	440	
		in.lb	4868	4868	5753	5753	5753	5753	5753	5753	5753	5399	4779	4514	3894	3894
Emergency Stop Torque	T_{2Not}	Nm	1650	1650	1950	1950	1950	1950	1950	1950	1830	1620	1530	1320	1320	
		in.lb	14604	14604	17259	17259	17259	17259	17259	17259	17259	16197	14338	13542	11683	11683
Maximum Acceleration Torque	T_{2B}	Nm	990	990	1170	1170	1170	1170	1170	1170	1098	972	918	792	792	
		in.lb	8762	8762	10355	10355	10355	10355	10355	10355	10355	9718	8603	8125	7010	7010
Maximum Torque	T_{2a}	Nm	1100	1100	1300	1300	1300	1300	1300	1300	1220	1080	1020	880	880	
		in.lb	9736	9736	11506	11506	11506	11506	11506	11506	11506	10798	9559	9028	7789	7789
Permitted Average Input Speed	n_{1N}	rpm	3000													
Maximum Input Speed	n_{1Max}	rpm	6000													
Mean No Load Running Torque	T_{012}	Nm	2.6	2.6	2.6	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	
		in.lb	23.01	23.01	23.01	22.13	22.13	22.13	22.13	22.13	22.13	22.13	22.13	22.13	22.13	
Standard Backlash P1	j_i	arcmin	≤7													
Reduced Low Backlash P0	j_i	arcmin	≤5													
Ultra Low Backlash PU	j_i	arcmin	≤3													
Torsional Rigidity	C_{121}	Nm/arcmin	205													
		in.lb/arcmin	1814.39													
Maximum Radial Load	F_{2AMax}	N	12000													
		lb _r	2698													
Maximum Axial Load	F_{2OMax}	N	10000													
		lb _r	2248													
Max. Tilting Moment	M_{2KMax}	Nm	1012													
		in.lb	8957													
Mass Moment of Inertia	j_i	kgcm ²	12.35	6.65	5.81	5.36	5.36	4.08	5.36	4.08	7.4	7.4	7.4	7.3	7.3	
Operating Noise Level	L_{PA}	dB(A)	< 65													
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	S5 Cycle Operation: >30,000 (S1 Continuous Operation: >15,000 hrs)													
Weight	m	kg	25													
		lb _m	55													

KPH160 1-stage

		1-stage								
Ratio	i		4	5	6	7	8	9	10	
Nominal Output Torque		Nm	550	650	610	540	510	440	440	
		in.lb	4868	5753	5399	4779	4514	3894	3894	
Emergency Stop Torque	T_{2Not}	Nm	1650	1950	1830	1620	1530	1320	1320	
		in.lb	14604	17259	16197	14338	13542	11683	11683	
Maximum Acceleration Torque	T_{2B}	Nm	990	1170	1098	972	918	792	792	
		in.lb	8762	10355	9718	8603	8125	7010	7010	
Maximum Torque	T_{2a}	Nm	1100	1300	1220	1080	1020	880	880	
		in.lb	9736	11506	10798	9559	9028	7789	7789	
Permitted Average Input Speed	n_{1N}	rpm	3000							
Maximum Input Speed	n_{1Max}	rpm	6000							
Mean No Load Running Torque	T_{012}	Nm	2.6	2.5	2.4	2.4	2.4	2.4	2.4	
		in.lb	23.01	22.13	21.24	21.24	21.24	21.24	21.24	
Standard Backlash P1	j_i	arcmin	≤5							
Reduced Low Backlash P0	j_i	arcmin	≤3							
Ultra Low Backlash PU	j_i	arcmin	≤1							
Torsional Rigidity	C_{121}	Nm/arcmin	205							
		in.lb/arcmin	1814.39							
Maximum Radial Load	F_{2AMax}	N	12000							
		lb _r	2698							
Maximum Axial Load	F_{2OMax}	N	10000							
		lb _r	2248							
Max. Tilting Moment	M_{2KMax}	Nm	1012							
		in.lb	8957							
Mass Moment of Inertia	j_1	kgcm ²	7.54	7.42	7.42	7.25	7.14	7.14	7.14	
Operating Noise Level	L_{PA}	dB(A)	< 65							
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	S5 Cycle Operation: >30,000 (S1 Continuous Operation: >15,000 hrs)							
Weight	m	kg	20							
		lb _m	44.0							

KPH160 2-stage

		2-stage														
Ratio	i		16	20	25	30	35	40	45	50	60	70	80	90	100	
Nominal Output Torque		Nm	550	550	650	650	650	650	650	650	610	540	510	440	440	
		in.lb	4868	4868	5753	5753	5753	5753	5753	5753	5753	5399	4779	4514	3894	3894
Emergency Stop Torque	T_{2Not}	Nm	1650	1650	1950	1950	1950	1950	1950	1950	1830	1620	1530	1320	1320	
		in.lb	14604	14604	17259	17259	17259	17259	17259	17259	17259	16197	14338	13542	11683	11683
Maximum Acceleration Torque	T_{2B}	Nm	990	990	1170	1170	1170	1170	1170	1170	1098	972	918	792	792	
		in.lb	8762	8762	10355	10355	10355	10355	10355	10355	10355	9718	8603	8125	7010	7010
Maximum Torque	T_{2a}	Nm	1100	1100	1300	1300	1300	1300	1300	1300	1220	1080	1020	880	880	
		in.lb	9736	9736	11506	11506	11506	11506	11506	11506	11506	10798	9559	9028	7789	7789
Permitted Average Input Speed	n_{1N}	rpm	3000													
Maximum Input Speed	n_{1Max}	rpm	6000													
Mean No Load Running Torque	T_{012}	Nm	2.6	2.6	2.6	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	
		in.lb	23.01	23.01	23.01	22.13	22.13	22.13	22.13	22.13	22.13	22.13	22.13	22.13	22.13	
Standard Backlash P1	j_i	arcmin	≤7													
Reduced Low Backlash P0	j_i	arcmin	≤5													
Ultra Low Backlash PU	j_i	arcmin	≤3													
Torsional Rigidity	C_{121}	Nm/arcmin	205													
		in.lb/arcmin	1814.39													
Maximum Radial Load	F_{2AMax}	N	12000													
		lb _r	2698													
Maximum Axial Load	F_{2OMax}	N	10000													
		lb _r	2248													
Max. Tilting Moment	M_{2KMax}	Nm	1012													
		in.lb	8957													
Mass Moment of Inertia	j_1	kgcm ²	12.35	6.65	5.81	5.36	5.36	4.08	5.36	4.08	7.4	7.4	7.4	7.3	7.3	
Operating Noise Level	L_{PA}	dB(A)	< 65													
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	S5 Cycle Operation: >30,000 (S1 Continuous Operation: >15,000 hrs)													
Weight	m	kg	25													
		lb _m	55													

KPH205 1-stage

		1-stage								
Ratio	i		4	5	6	7	8	9	10	
Nominal Output Torque		Nm	1250	1200	1000	1000	1000	910	910	
		in.lb	11063	10621	8851	8851	8851	8054	8054	
Emergency Stop Torque	T_{2Not}	Nm	3750	3600	3000	3000	3000	2730	2730	
		in.lb	33190	31863	26552	26552	26552	24162	24162	
Maximum Acceleration Torque	T_{2B}	Nm	2250	2160	1800	1800	1800	1638	1638	
		in.lb	19914	19118	15931	15931	15931	14497	14497	
Maximum Torque	T_{2a}	Nm	2500	2400	2000	2000	2000	1820	1820	
		in.lb	22127	21242	17701	17701	17701	16108	16108	
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	3.4	3.2	3.2	3.2	3.2	3.2	
		in.lb	30.98	30.09	28.32	28.32	28.32	28.32	28.32	
Standard Backlash P1	j_i	arcmin	≤5							
Reduced Low Backlash P0	j_i	arcmin	≤3							
Ultra Low Backlash PU	j_i	arcmin	≤1							
Torsional Rigidity	C_{121}	Nm/arcmin	560							
		in.lb/arcmin	4956.39							
Maximum Radial Load	F_{2AMax}	N	18000							
		lb _r	4046							
Maximum Axial Load	F_{2OMax}	N	15000							
		lb _r	3372							
Max. Tilting Moment	M_{2KMax}	Nm	2050							
		in.lb	18144							
Mass Moment of Inertia	j_i	kgcm ²	23.67	22.75	22.75	22.48	22.59	22.59	22.55	
Operating Noise Level	L_{PA}	dB(A)	< 67							
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	S5 Cycle Operation: >30,000 (S1 Continuous Operation: >15,000 hrs)							
Weight	m	kg	31							
		lb _m	68.2							

KPH205 2-stage

		2-stage														
Ratio	i		16	20	25	30	35	40	45	50	60	70	80	90	100	
Nominal Output Torque		Nm	1250	1250	1200	1200	1200	1200	1200	1200	1000	1000	1000	910	910	
		in.lb	11063	11063	10621	10621	10621	10621	10621	10621	10621	8851	8851	8851	8054	8054
Emergency Stop Torque	T_{2Not}	Nm	3750	3750	3600	3600	3600	3600	3600	3600	3000	3000	3000	2730	2730	
		in.lb	33190	33190	31863	31863	31863	31863	31863	31863	31863	26552	26552	26552	24162	24162
Maximum Acceleration Torque	T_{2B}	Nm	2250	2250	2160	2160	2160	2160	2160	2160	1800	1800	1800	1638	1638	
		in.lb	19914	19914	19118	19118	19118	19118	19118	19118	19118	15931	15931	15931	14497	14497
Maximum Torque	T_{2a}	Nm	2500	2500	2400	2400	2400	2400	2400	2400	2000	2000	2000	1820	1820	
		in.lb	22127	22127	21242	21242	21242	21242	21242	21242	21242	17701	17701	17701	16108	16108
Permitted Average Input Speed	n_{1N}	rpm	2000													
Maximum Input Speed	n_{1Max}	rpm	4000													
Mean No Load Running Torque	T_{012}	Nm	2.5	2.5	2.5	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	
		in.lb	22.13	22.13	22.13	21.24	21.24	21.24	21.24	21.24	21.24	21.24	21.24	21.24	21.24	
Standard Backlash P1	j_i	arcmin	≤7													
Reduced Low Backlash P0	j_i	arcmin	≤5													
Ultra Low Backlash PU	j_i	arcmin	≤3													
Torsional Rigidity	C_{121}	Nm/arcmin	560													
		in.lb/arcmin	4956.39													
Maximum Radial Load	F_{2AMax}	N	18000													
		lb _r	4046													
Maximum Axial Load	F_{2OMax}	N	15000													
		lb _r	3372													
Max. Tilting Moment	M_{2KMax}	Nm	2050													
		in.lb	18144													
Mass Moment of Inertia	j_i	kgcm ²	12.3	7.42	7.54	7.14	7.14	7.14	7.14	7.14	7.54	7.54	7.54	7.42	7.42	
Operating Noise Level	L_{PA}	dB(A)	< 67													
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	S5 Cycle Operation: >30,000 (S1 Continuous Operation: >15,000 hrs)													
Weight	m	kg	39													
		lb _m	85.8													

KPH205 1-stage

		1-stage								
Ratio	i		4	5	6	7	8	9	10	
Nominal Output Torque		Nm	1250	1200	1000	1000	1000	910	910	
		in.lb	11063	10621	8851	8851	8851	8054	8054	
Emergency Stop Torque	T_{2Not}	Nm	3750	3600	3000	3000	3000	2730	2730	
		in.lb	33190	31863	26552	26552	26552	24162	24162	
Maximum Acceleration Torque	T_{2B}	Nm	2250	2160	1800	1800	1800	1638	1638	
		in.lb	19914	19118	15931	15931	15931	14497	14497	
Maximum Torque	T_{2a}	Nm	2500	2400	2000	2000	2000	1820	1820	
		in.lb	22127	21242	17701	17701	17701	16108	16108	
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	3.4	3.2	3.2	3.2	3.2	3.2	
		in.lb	30.98	30.09	28.32	28.32	28.32	28.32	28.32	
Standard Backlash P1	j_i	arcmin	≤5							
Reduced Low Backlash P0	j_i	arcmin	≤3							
Ultra Low Backlash PU	j_i	arcmin	≤1							
Torsional Rigidity	C_{121}	Nm/arcmin	560							
		in.lb/arcmin	4956.39							
Maximum Radial Load	F_{2AMax}	N	18000							
		lb _r	4046							
Maximum Axial Load	F_{2OMax}	N	15000							
		lb _r	3372							
Max. Tilting Moment	M_{2KMax}	Nm	2050							
		in.lb	18144							
Mass Moment of Inertia	j_i	kgcm ²	23.67	22.75	22.75	22.48	22.59	22.59	22.55	
Operating Noise Level	L_{PA}	dB(A)	< 67							
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	S5 Cycle Operation: >30,000 (S1 Continuous Operation: >15,000 hrs)							
Weight	m	kg	31							
		lb _m	68.2							

KPH205 2-stage

		2-stage														
Ratio	i		16	20	25	30	35	40	45	50	60	70	80	90	100	
Nominal Output Torque		Nm	1250	1250	1200	1200	1200	1200	1200	1200	1000	1000	1000	910	910	
		in.lb	11063	11063	10621	10621	10621	10621	10621	10621	10621	8851	8851	8851	8054	8054
Emergency Stop Torque	T_{2Not}	Nm	3750	3750	3600	3600	3600	3600	3600	3600	3000	3000	3000	2730	2730	
		in.lb	33190	33190	31863	31863	31863	31863	31863	31863	31863	26552	26552	26552	24162	24162
Maximum Acceleration Torque	T_{2B}	Nm	2250	2250	2160	2160	2160	2160	2160	2160	1800	1800	1800	1638	1638	
		in.lb	19914	19914	19118	19118	19118	19118	19118	19118	19118	15931	15931	15931	14497	14497
Maximum Torque	T_{2a}	Nm	2500	2500	2400	2400	2400	2400	2400	2400	2000	2000	2000	1820	1820	
		in.lb	22127	22127	21242	21242	21242	21242	21242	21242	21242	17701	17701	17701	16108	16108
Permitted Average Input Speed	n_{1N}	rpm	2000													
Maximum Input Speed	n_{1Max}	rpm	4000													
Mean No Load Running Torque	T_{012}	Nm	2.5	2.5	2.5	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	
		in.lb	22.13	22.13	22.13	21.24	21.24	21.24	21.24	21.24	21.24	21.24	21.24	21.24	21.24	
Standard Backlash P1	j_i	arcmin	≤7													
Reduced Low Backlash P0	j_i	arcmin	≤5													
Ultra Low Backlash PU	j_i	arcmin	≤3													
Torsional Rigidity	C_{121}	Nm/arcmin	560													
		in.lb/arcmin	4956.39													
Maximum Radial Load	F_{2AMax}	N	18000													
		lb _r	4046													
Maximum Axial Load	F_{2OMax}	N	15000													
		lb _r	3372													
Max. Tilting Moment	M_{2KMax}	Nm	2050													
		in.lb	18144													
Mass Moment of Inertia	j_i	kgcm ²	12.3	7.42	7.54	7.14	7.14	7.14	7.14	7.14	7.54	7.54	7.54	7.42	7.42	
Operating Noise Level	L_{PA}	dB(A)	< 67													
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	S5 Cycle Operation: >30,000 (S1 Continuous Operation: >15,000 hrs)													
Weight	m	kg	39													
		lb _m	85.8													

KPH255 1-stage

		1-stage								
Ratio	i		4	5	6	7	8	9	10	
Nominal Output Torque		Nm	1800	2050	1850	1750	1550	1500	1500	
		in.lb	15931	18144	16374	15489	13719	13276	13276	
Emergency Stop Torque	T_{2Not}	Nm	5400	6150	5550	5250	4650	4500	4500	
		in.lb	47794	54432	49121	46466	41156	39828	39828	
Maximum Acceleration Torque	T_{2B}	Nm	3240	3690	3330	3150	2790	2700	2700	
		in.lb	28676	32659	29473	27880	24693	23897	23897	
Maximum Torque	T_{2a}	Nm	3600	4100	3700	3500	3100	3000	3000	
		in.lb	31863	36288	32748	30977	27437	26552	26552	
Permitted Average Input Speed	n_{1N}	rpm	2000							
Maximum Input Speed	n_{1Max}	rpm	4000							
Mean No Load Running Torque	T_{012}	Nm	5.5	5.25	5.1	5.1	5.1	5.1	5.1	
		in.lb	48.68	46.47	45.14	45.14	45.14	45.14	45.14	
Standard Backlash P1	j_i	arcmin	≤5							
Reduced Low Backlash P0	j_i	arcmin	≤3							
Ultra Low Backlash PU	j_i	arcmin	≤1							
Torsional Rigidity	C_{121}	Nm/arcmin	1130							
		in.lb/arcmin	10001.29							
Maximum Radial Load	F_{2AMax}	N	45000							
		lb _r	10116							
Maximum Axial Load	F_{2OMax}	N	22500							
		lb _r	5058							
Max. Tilting Moment	M_{2KMax}	Nm	6085							
		in.lb	53857							
Mass Moment of Inertia	j_1	kgcm ²	37.37	33.27	30.27	27.84	25.84	24.84	23.56	
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_h	h	S5 Cycle Operation: >30,000 (S1 Continuous Operation: >15,000 hrs)							
Weight	m	kg	70							
		lb _m	154							

KPH255 2-stage

		2-stage														
Ratio	i		16	20	25	30	35	40	45	50	60	70	80	90	100	
Nominal Output Torque		Nm	1800	1800	2050	2050	2050	2050	2050	2050	1850	1750	1550	1500	1500	
		in.lb	15930	15930	18143	18143	18143	18143	18143	18143	16373	15488	13718	13275	13275	
Emergency Stop Torque	T_{2Not}	Nm	5400	5400	6150	6150	6150	6150	6150	6150	5550	5250	4650	4500	4500	
		in.lb	47790	47790	54428	54428	54428	54428	54428	54428	49118	46463	41153	39825	39825	
Maximum Acceleration Torque	T_{2B}	Nm	3240	3240	3690	3690	3690	3690	3690	3690	3330	3150	2790	2700	2700	
		in.lb	28674	28674	32657	32657	32657	32657	32657	32657	29471	27878	24692	23895	23895	
Maximum Torque	T_{2a}	Nm	3600	3600	4100	4100	4100	4100	4100	4100	3700	3500	3100	3000	3000	
		in.lb	31860	31860	36285	36285	36285	36285	36285	36285	32745	30975	27435	26550	26550	
Permitted Average Input Speed	n_{1N}	rpm	2000													
Maximum Input Speed	n_{1Max}	rpm	4000													
Mean No Load Running Torque	T_{012}	Nm	3.4	3.4	3.4	3.2	3.2	3.2	3.2	3.2	3.2	3.2	3.2	3.2	3.2	
		in.lb	30.09	30.09	30.09	28.32	28.32	28.32	28.32	28.32	28.32	28.32	28.32	28.32	28.32	
Standard Backlash P1	j_i	arcmin	≤7													
Reduced Low Backlash P0	j_i	arcmin	≤5													
Ultra Low Backlash PU	j_i	arcmin	≤3													
Torsional Rigidity	C_{121}	Nm/arcmin	1130													
		in.lb/arcmin	10001.29													
Maximum Radial Load	F_{2AMax}	N	45000													
		lb _r	10116													
Maximum Axial Load	F_{2OMax}	N	22500													
		lb _r	5058													
Max. Tilting Moment	M_{2KMax}	Nm	6085													
		in.lb	53857													
Mass Moment of Inertia	j_1	kgcm ²	28.92	13.75	7.54	6.59	6.59	6.59	6.59	6.59	6.59	6.59	6.59	6.59	6.59	
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	S5 Cycle Operation: >30,000 (S1 Continuous Operation: >15,000 hrs)													
Weight	m	kg	80													
		lb _m	176													

KPH255 1-stage

		1-stage							
Ratio	i		4	5	6	7	8	9	10
Nominal Output Torque		Nm	1800	2050	1850	1750	1550	1500	1500
		in.lb	15931	18144	16374	15489	13719	13276	13276
Emergency Stop Torque	T_{2Not}	Nm	5400	6150	5550	5250	4650	4500	4500
		in.lb	47794	54432	49121	46466	41156	39828	39828
Maximum Acceleration Torque	T_{2B}	Nm	3240	3690	3330	3150	2790	2700	2700
		in.lb	28676	32659	29473	27880	24693	23897	23897
Maximum Torque	T_{2a}	Nm	3600	4100	3700	3500	3100	3000	3000
		in.lb	31863	36288	32748	30977	27437	26552	26552
Permitted Average Input Speed	n_{1N}	rpm	2000						
Maximum Input Speed	n_{1Max}	rpm	4000						
Mean No Load Running Torque	T_{012}	Nm	5.5	5.25	5.1	5.1	5.1	5.1	5.1
		in.lb	48.68	46.47	45.14	45.14	45.14	45.14	45.14
Standard Backlash P1	j_i	arcmin	≤5						
Reduced Low Backlash P0	j_i	arcmin	≤3						
Ultra Low Backlash PU	j_i	arcmin	≤1						
Torsional Rigidity	C_{121}	Nm/arcmin	1130						
		in.lb/arcmin	10001.29						
Maximum Radial Load	F_{2AMax}	N	45000						
		lb _r	10116						
Maximum Axial Load	F_{2OMax}	N	22500						
		lb _r	5058						
Max. Tilting Moment	M_{2KMax}	Nm	6085						
		in.lb	53857						
Mass Moment of Inertia	j_i	kgcm ²	37.37	33.27	30.27	27.84	25.84	24.84	23.56
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_h	h	S5 Cycle Operation: >30,000 (S1 Continuous Operation: >15,000 hrs)						
Weight	m	kg	70						
		lb _m	154						

KPH255 2-stage

		2-stage														
Ratio	i		16	20	25	30	35	40	45	50	60	70	80	90	100	
Nominal Output Torque		Nm	1800	1800	2050	2050	2050	2050	2050	2050	1850	1750	1550	1500	1500	
		in.lb	15930	15930	18143	18143	18143	18143	18143	18143	16373	15488	13718	13275	13275	
Emergency Stop Torque	T_{2Not}	Nm	5400	5400	6150	6150	6150	6150	6150	6150	5550	5250	4650	4500	4500	
		in.lb	47790	47790	54428	54428	54428	54428	54428	54428	49118	46463	41153	39825	39825	
Maximum Acceleration Torque	T_{2B}	Nm	3240	3240	3690	3690	3690	3690	3690	3690	3330	3150	2790	2700	2700	
		in.lb	28674	28674	32657	32657	32657	32657	32657	32657	29471	27878	24692	23895	23895	
Maximum Torque	T_{2a}	Nm	3600	3600	4100	4100	4100	4100	4100	4100	3700	3500	3100	3000	3000	
		in.lb	31860	31860	36285	36285	36285	36285	36285	36285	32745	30975	27435	26550	26550	
Permitted Average Input Speed	n_{1N}	rpm	2000													
Maximum Input Speed	n_{1Max}	rpm	4000													
Mean No Load Running Torque	T_{012}	Nm	3.4	3.4	3.4	3.2	3.2	3.2	3.2	3.2	3.2	3.2	3.2	3.2	3.2	
		in.lb	30.09	30.09	30.09	28.32	28.32	28.32	28.32	28.32	28.32	28.32	28.32	28.32	28.32	
Standard Backlash P1	j_i	arcmin	≤7													
Reduced Low Backlash P0	j_i	arcmin	≤5													
Ultra Low Backlash PU	j_i	arcmin	≤3													
Torsional Rigidity	C_{121}	Nm/arcmin	1130													
		in.lb/arcmin	10001.29													
Maximum Radial Load	F_{2AMax}	N	45000													
		lb _r	10116													
Maximum Axial Load	F_{2OMax}	N	22500													
		lb _r	5058													
Max. Tilting Moment	M_{2KMax}	Nm	6085													
		in.lb	53857													
Mass Moment of Inertia	j_i	kgcm ²	28.92	13.75	7.54	6.59	6.59	6.59	6.59	6.59	6.59	6.59	6.59	6.59	6.59	
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	S5 Cycle Operation: >30,000 (S1 Continuous Operation: >15,000 hrs)													
Weight	m	kg	80													
		lb _m	176													

