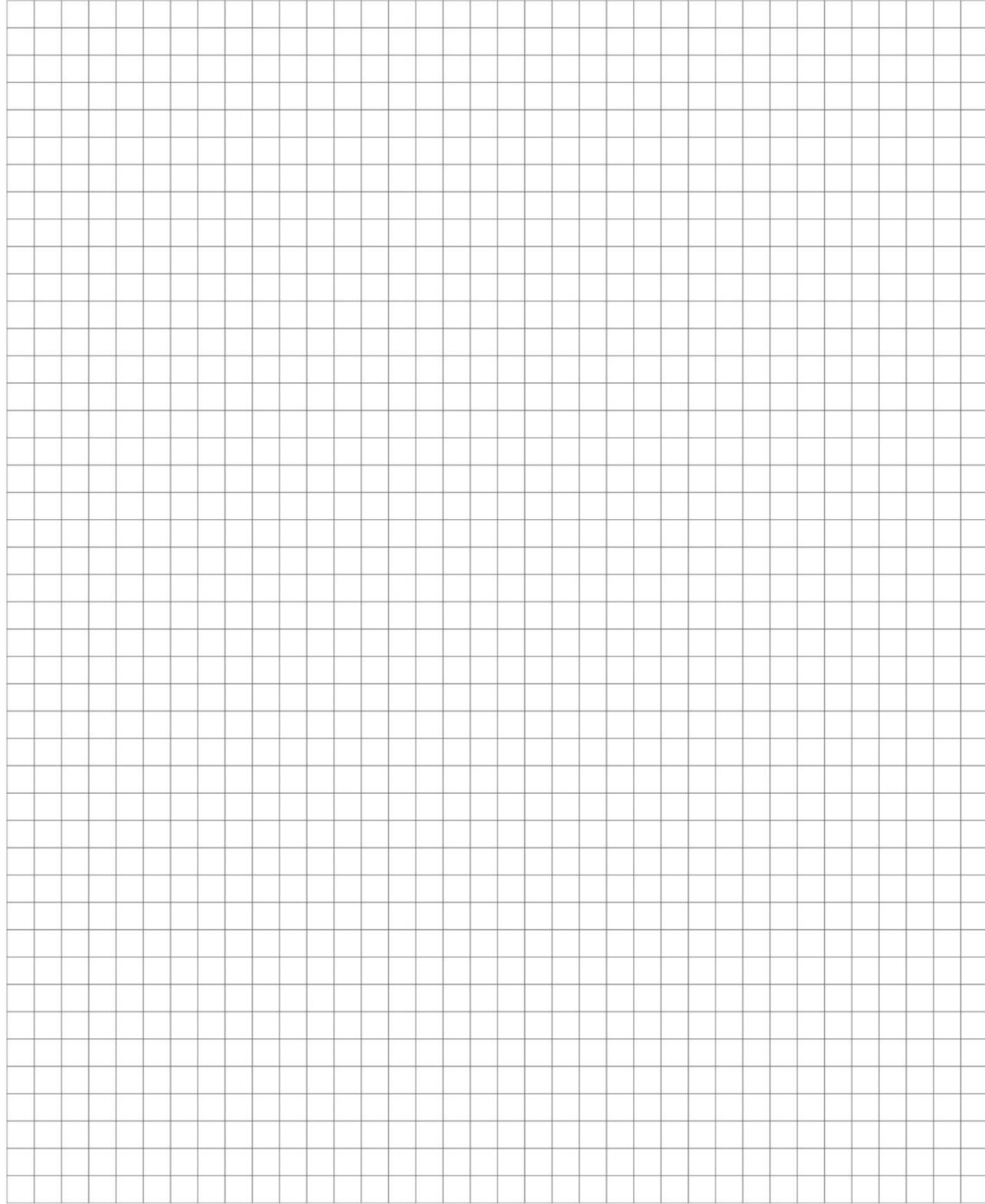


Technical Memo



# KPG

Powerful. High Precision. Reliable

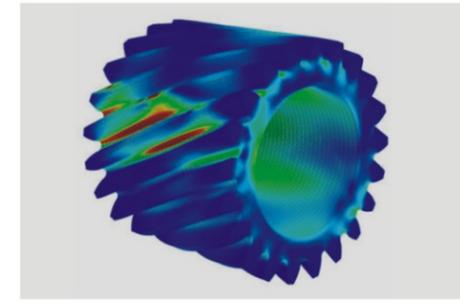
- ▶ Servo Planetary Gearbox  
Advanced Gearbox Solution





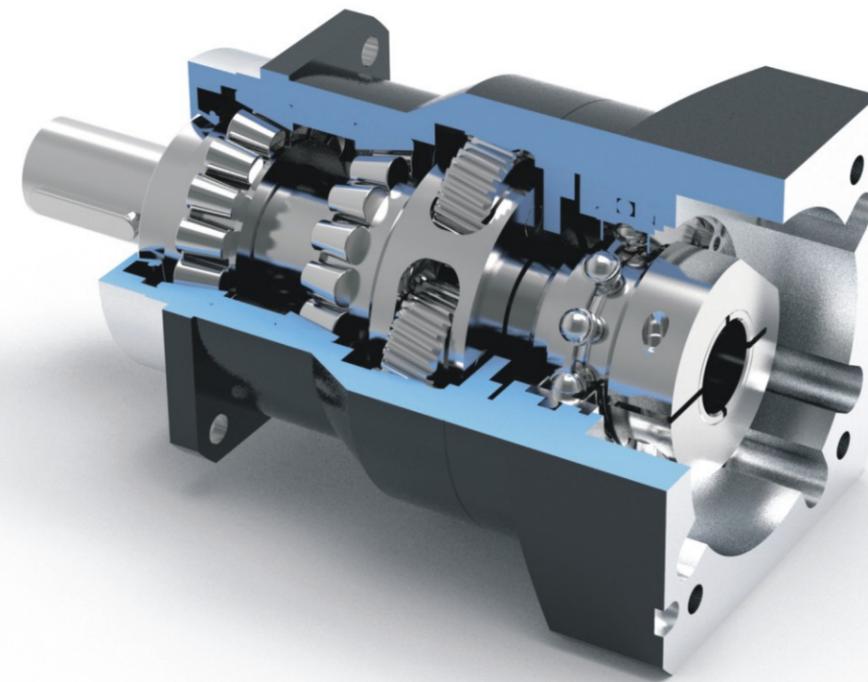
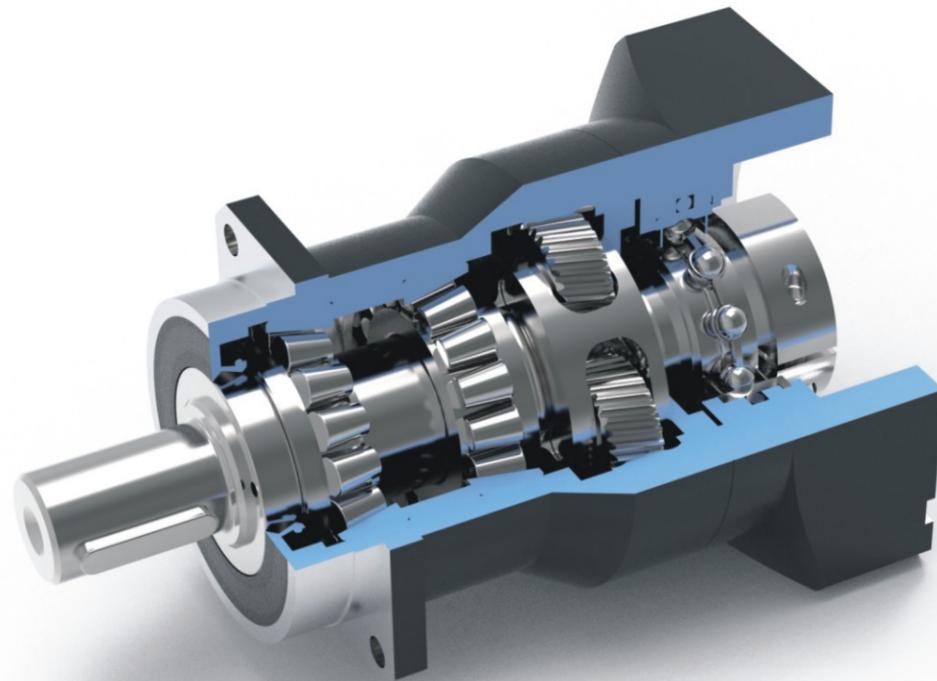
**Helical Gear System Technology**

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. 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.



KPG Series Servo Planetary Gearbox

KPG Series Servo Planetary Gearbox



**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.



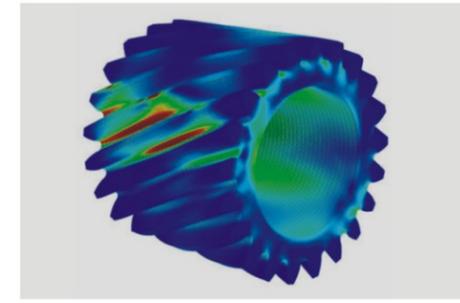
**Dynamic Balance Clamping and Sealing System**

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.



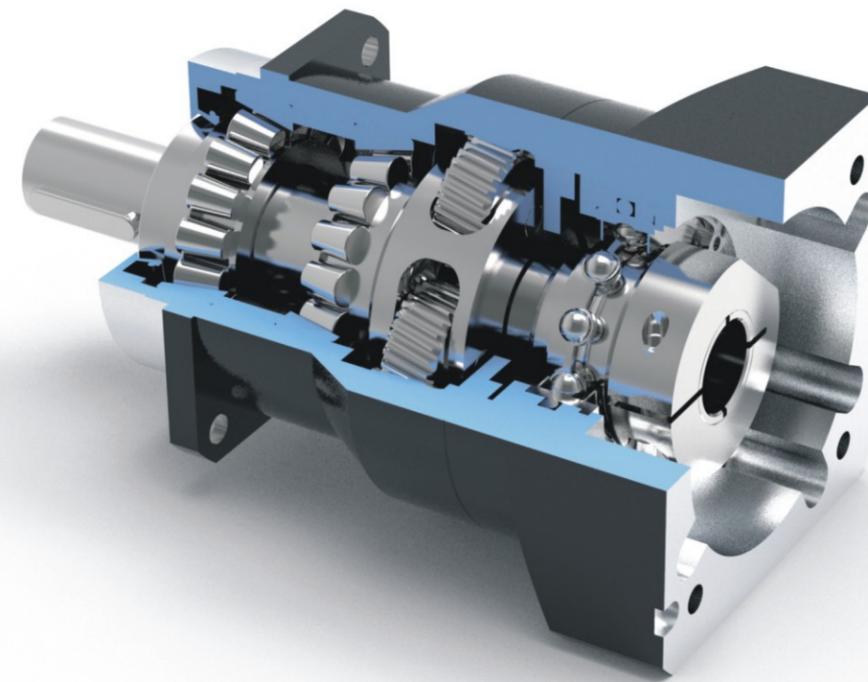
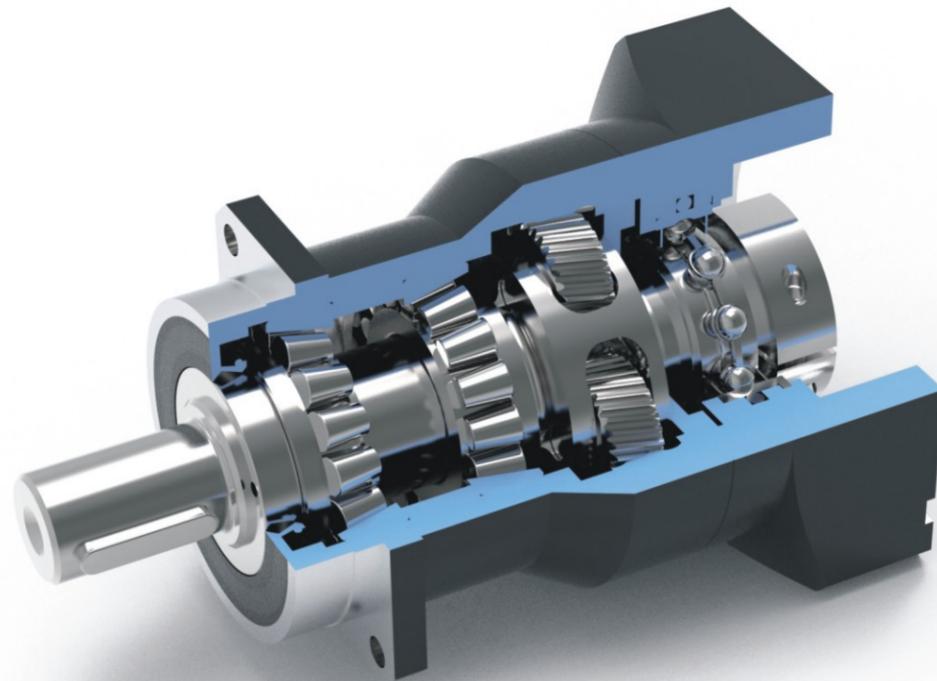
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**Dynamic Balance Clamping and Sealing System**

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KPG070 1-stage

		1-stage									
Ratio	i		3	4	5	6	7	8	9	10	
Nominal Output Torque		Nm	46	52	55	50	50	45	42	42	
		in.lb	407	460	487	443	443	398	372	372	
Emergency Stop Torque	$T_{2Not}$	Nm	138	156	165	150	150	135	126	126	
		in.lb	3603	4073	4308	3917	3917	3525	3290	3290	
Maximum Acceleration Torque	$T_{2B}$	Nm	82.8	93.6	99	90	90	81	75.6	75.6	
		in.lb	733	828	876	797	797	717	669	669	
Maximum Torque	$T_{2a}$	Nm	92	104	110	100	100	90	84	84	
		in.lb	814	920	974	885	885	797	743	743	
Permitted Average Input Speed	$n_{1N}$	rpm	4000								
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	0.25	
		in.lb	2.66	2.39	2.21	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	7								
		in.lb/arcmin	61.95								
Maximum Radial Load	$F_{2AMax}$	N	4300								
		lb <sub>r</sub>	967								
Maximum Axial Load	$F_{2OMax}$	N	3900								
		lb <sub>r</sub>	877								
Max. Tilting Moment	$M_{2KMax}$	Nm	227								
		in.lb	2009								
Mass Moment of Inertia	$j_1$	kgcm <sup>2</sup>	0.160	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	$\eta$	%	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	1.6								
		lb <sub>m</sub>	3.5								

KPG070 2-stage

		2-stage														
Ratio	i		15	20	25	30	35	40	45	50	60	70	80	90	100	
Nominal Output Torque		Nm	46	52	55	55	55	55	55	55	50	50	45	42	42	
		in.lb	407	460	487	487	487	487	487	487	487	443	443	398	372	372
Emergency Stop Torque	$T_{2Not}$	Nm	138	156	165	165	165	165	165	165	150	150	135	126	126	
		in.lb	1221	1381	1460	1460	1460	1460	1460	1460	1460	1328	1328	1195	1115	1115
Maximum Acceleration Torque	$T_{2B}$	Nm	82.8	93.6	99	99	99	99	99	99	90	90	81	75.6	75.6	
		in.lb	733	828	876	876	876	876	876	876	876	797	797	717	669	669
Maximum Torque	$T_{2a}$	Nm	92	104	110	110	110	110	110	110	100	100	90	84	84	
		in.lb	814	920	974	974	974	974	974	974	974	885	885	797	743	743
Permitted Average Input Speed	$n_{1N}$	rpm	4000													
Maximum Input Speed	$n_{1Max}$	rpm	6000													
Mean No Load Running Torque	$T_{012}$	Nm	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	2.21	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	7													
		in.lb/arcmin	61.95													
Maximum Radial Load	$F_{2AMax}$	N	4300													
		lb <sub>r</sub>	967													
Maximum Axial Load	$F_{2OMax}$	N	3900													
		lb <sub>r</sub>	877													
Max. Tilting Moment	$M_{2KMax}$	Nm	227													
		in.lb	2009													
Mass Moment of Inertia	$j_1$	kgcm <sup>2</sup>	0.127	0.075	0.064	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	$\eta$	%	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	1.9													
		lb <sub>m</sub>	4.2													

KPG070 1-stage

		1-stage									
Ratio	i		3	4	5	6	7	8	9	10	
Nominal Output Torque		Nm	46	52	55	50	50	45	42	42	
		in.lb	407	460	487	443	443	398	372	372	
Emergency Stop Torque	$T_{2Not}$	Nm	138	156	165	150	150	135	126	126	
		in.lb	3603	4073	4308	3917	3917	3525	3290	3290	
Maximum Acceleration Torque	$T_{2B}$	Nm	82.8	93.6	99	90	90	81	75.6	75.6	
		in.lb	733	828	876	797	797	717	669	669	
Maximum Torque	$T_{2a}$	Nm	92	104	110	100	100	90	84	84	
		in.lb	814	920	974	885	885	797	743	743	
Permitted Average Input Speed	$n_{1N}$	rpm	4000								
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	0.25	
		in.lb	2.66	2.39	2.21	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	7								
		in.lb/arcmin	61.95								
Maximum Radial Load	$F_{2AMax}$	N	4300								
		lb <sub>r</sub>	967								
Maximum Axial Load	$F_{2OMax}$	N	3900								
		lb <sub>r</sub>	877								
Max. Tilting Moment	$M_{2KMax}$	Nm	227								
		in.lb	2009								
Mass Moment of Inertia	$j_1$	kgcm <sup>2</sup>	0.160	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	$\eta$	%	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	1.6								
		lb <sub>m</sub>	3.5								

KPG070 2-stage

		2-stage														
Ratio	i		15	20	25	30	35	40	45	50	60	70	80	90	100	
Nominal Output Torque		Nm	46	52	55	55	55	55	55	55	50	50	45	42	42	
		in.lb	407	460	487	487	487	487	487	487	443	443	398	372	372	
Emergency Stop Torque	$T_{2Not}$	Nm	138	156	165	165	165	165	165	165	150	150	135	126	126	
		in.lb	1221	1381	1460	1460	1460	1460	1460	1460	1328	1328	1195	1115	1115	
Maximum Acceleration Torque	$T_{2B}$	Nm	82.8	93.6	99	99	99	99	99	99	90	90	81	75.6	75.6	
		in.lb	733	828	876	876	876	876	876	876	797	797	717	669	669	
Maximum Torque	$T_{2a}$	Nm	92	104	110	110	110	110	110	110	100	100	90	84	84	
		in.lb	814	920	974	974	974	974	974	974	885	885	797	743	743	
Permitted Average Input Speed	$n_{1N}$	rpm	4000													
Maximum Input Speed	$n_{1Max}$	rpm	6000													
Mean No Load Running Torque	$T_{012}$	Nm	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	2.21	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	7													
		in.lb/arcmin	61.95													
Maximum Radial Load	$F_{2AMax}$	N	4300													
		lb <sub>r</sub>	967													
Maximum Axial Load	$F_{2OMax}$	N	3900													
		lb <sub>r</sub>	877													
Max. Tilting Moment	$M_{2KMax}$	Nm	227													
		in.lb	2009													
Mass Moment of Inertia	$j_1$	kgcm <sup>2</sup>	0.127	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	$\eta$	%	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	1.9													
		lb <sub>m</sub>	4.2													

KPG090 1-stage

		1-stage									
Ratio	i		3	4	5	6	7	8	9	10	
Nominal Output Torque		Nm	125	145	155	145	135	115	105	105	
		in.lb	1106	1283	1372	1283	1195	1018	929	929	
Emergency Stop Torque	$T_{2Not}$	Nm	375	435	465	435	405	345	315	315	
		in.lb	3319	3850	4116	3850	3585	3053	2788	2788	
Maximum Acceleration Torque	$T_{2a}$	Nm	225	261	279	261	243	207	189	189	
		in.lb	1991	2310	2469	2310	2151	1832	1673	1673	
Maximum Torque	$T_{2a}$	Nm	250	290	310	290	270	230	210	210	
		in.lb	2213	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	0.35	
		in.lb	4.07	3.63	3.45	3.10	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	14								
		in.lb/arcmin	123.91								
Maximum Radial Load	$F_{2AMax}$	N	7000								
		lb <sub>r</sub>	1574								
Maximum Axial Load	$F_{2OMax}$	N	6300								
		lb <sub>r</sub>	1416								
Max. Tilting Moment	$M_{2KMax}$	Nm	440								
		in.lb	3894								
Mass Moment of Inertia	$j_1$	kgcm <sup>2</sup>	0.61	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	$\eta$	%	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	3.5								
		lb <sub>m</sub>	7.3								

KPG090 2-stage

		2-stage														
Ratio	i		15	20	25	30	35	40	45	50	60	70	80	90	100	
Nominal Output Torque		Nm	125	145	155	155	155	155	155	155	145	135	115	105	105	
		in.lb	1106	1283	1372	1372	1372	1372	1372	1372	1283	1195	1018	929	929	
Emergency Stop Torque	$T_{2Not}$	Nm	375	435	465	465	465	465	465	465	435	405	345	315	315	
		in.lb	3319	3850	4116	4116	4116	4116	4116	4116	3850	3585	3053	2788	2788	
Maximum Acceleration Torque	$T_{2a}$	Nm	225	261	279	279	279	279	279	279	261	243	207	189	189	
		in.lb	1991	2310	2469	2469	2469	2469	2469	2469	2310	2151	1832	1673	1673	
Maximum Torque	$T_{2a}$	Nm	250	290	310	310	310	310	310	310	290	270	230	210	210	
		in.lb	2213	2567	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	0.35	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	3.10	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	14													
		in.lb/arcmin	123.91													
Maximum Radial Load	$F_{2AMax}$	N	7000													
		lb <sub>r</sub>	1574													
Maximum Axial Load	$F_{2OMax}$	N	6300													
		lb <sub>r</sub>	1416													
Max. Tilting Moment	$M_{2KMax}$	Nm	440													
		in.lb	3894													
Mass Moment of Inertia	$j_1$	kgcm <sup>2</sup>	0.440	0.440	0.390	0.39	0.39	0.390	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	$\eta$	%	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	3.8													
		lb <sub>m</sub>	9.9													

KPG090 1-stage

		1-stage									
Ratio	i		3	4	5	6	7	8	9	10	
Nominal Output Torque		Nm	125	145	155	145	135	115	105	105	
		in.lb	1106	1283	1372	1283	1195	1018	929	929	
Emergency Stop Torque	$T_{2Not}$	Nm	375	435	465	435	405	345	315	315	
		in.lb	3319	3850	4116	3850	3585	3053	2788	2788	
Maximum Acceleration Torque	$T_{2a}$	Nm	225	261	279	261	243	207	189	189	
		in.lb	1991	2310	2469	2310	2151	1832	1673	1673	
Maximum Torque	$T_{2a}$	Nm	250	290	310	290	270	230	210	210	
		in.lb	2213	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	0.35	
		in.lb	4.07	3.63	3.45	3.10	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	14								
		in.lb/arcmin	123.91								
Maximum Radial Load	$F_{2AMax}$	N	7000								
		lb <sub>r</sub>	1574								
Maximum Axial Load	$F_{2OMax}$	N	6300								
		lb <sub>r</sub>	1416								
Max. Tilting Moment	$M_{2KMax}$	Nm	440								
		in.lb	3894								
Mass Moment of Inertia	$j_1$	kgcm <sup>2</sup>	0.61	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	$\eta$	%	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	3.5								
		lb <sub>m</sub>	7.3								

KPG090 2-stage

		2-stage														
Ratio	i		15	20	25	30	35	40	45	50	60	70	80	90	100	
Nominal Output Torque		Nm	125	145	155	155	155	155	155	155	145	135	115	105	105	
		in.lb	1106	1283	1372	1372	1372	1372	1372	1372	1283	1195	1018	929	929	
Emergency Stop Torque	$T_{2Not}$	Nm	375	435	465	465	465	465	465	465	435	405	345	315	315	
		in.lb	3319	3850	4116	4116	4116	4116	4116	4116	3850	3585	3053	2788	2788	
Maximum Acceleration Torque	$T_{2a}$	Nm	225	261	279	279	279	279	279	279	261	243	207	189	189	
		in.lb	1991	2310	2469	2469	2469	2469	2469	2469	2310	2151	1832	1673	1673	
Maximum Torque	$T_{2a}$	Nm	250	290	310	310	310	310	310	310	290	270	230	210	210	
		in.lb	2213	2567	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	0.35	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	3.10	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	14													
		in.lb/arcmin	123.91													
Maximum Radial Load	$F_{2AMax}$	N	7000													
		lb <sub>r</sub>	1574													
Maximum Axial Load	$F_{2OMax}$	N	6300													
		lb <sub>r</sub>	1416													
Max. Tilting Moment	$M_{2KMax}$	Nm	440													
		in.lb	3894													
Mass Moment of Inertia	$j_1$	kgcm <sup>2</sup>	0.440	0.440	0.390	0.39	0.39	0.390	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	$\eta$	%	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	3.8													
		lb <sub>m</sub>	9.9													

KPG120 1-stage

		1-stage									
Ratio	i		3	4	5	6	7	8	9	10	
Nominal Output Torque		Nm	210	300	320	300	290	255	220	220	
		in.lb	1859	2655	2832	2655	2567	2257	1947	1947	
Emergency Stop Torque	$T_{2Not}$	Nm	630	900	960	900	870	765	660	660	
		in.lb	5576	7966	8497	7966	7700	6771	5841	5841	
Maximum Acceleration Torque	$T_{2B}$	Nm	378	540	576	540	522	459	396	396	
		in.lb	3346	4779	5098	4779	4620	4062	3505	3505	
Maximum Torque	$T_{2a}$	Nm	420	600	640	600	580	510	440	440	
		in.lb	3717	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	0.88	
		in.lb	9.29	8.41	8.05	7.79	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	26								
		in.lb/arcmin	230.12								
Maximum Radial Load	$F_{2AMax}$	N	10000								
		lb <sub>r</sub>	2248								
Maximum Axial Load	$F_{2OMax}$	N	9000								
		lb <sub>r</sub>	2023								
Max. Tilting Moment	$M_{2KMax}$	Nm	843								
		in.lb	7461								
Mass Moment of Inertia	$j_1$	kgcm <sup>2</sup>	3.25	2.74	2.71	2.62	2.62	2.62	2.62	2.57	
Operating Noise Level	$L_{PA}$	dB(A)	< 63								
Efficiency at Full loading	$\eta$	%	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	8.1								
		lb <sub>m</sub>	17.8								

KPG120 2-stage

		2-stage														
Ratio	i		15	20	25	30	35	40	45	50	60	70	80	90	100	
Nominal Output Torque		Nm	210	300	320	320	320	320	320	320	300	290	255	220	220	
		in.lb	1859	2655	2832	2832	2832	2832	2832	2832	2832	2655	2567	2257	1947	1947
Emergency Stop Torque	$T_{2Not}$	Nm	630	900	960	960	960	960	960	960	900	870	765	660	660	
		in.lb	5576	7966	8497	8497	8497	8497	8497	8497	8497	7966	7700	6771	5841	5841
Maximum Acceleration Torque	$T_{2B}$	Nm	378	540	576	576	576	576	576	576	540	522	459	396	396	
		in.lb	3346	4779	5098	5098	5098	5098	5098	5098	5098	4779	4620	4062	3505	3505
Maximum Torque	$T_{2a}$	Nm	420	600	640	640	640	640	640	640	600	580	510	440	440	
		in.lb	3717	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	0.88	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	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	26													
		in.lb/arcmin	230.12													
Maximum Radial Load	$F_{2AMax}$	N	10000													
		lb <sub>r</sub>	2248													
Maximum Axial Load	$F_{2OMax}$	N	9000													
		lb <sub>r</sub>	2023													
Max. Tilting Moment	$M_{2KMax}$	Nm	843													
		in.lb	7461													
Mass Moment of Inertia	$j_1$	kgcm <sup>2</sup>	2.580	1.500	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.49	1.49	1.45	1.45	
Operating Noise Level	$L_{PA}$	dB(A)	< 63													
Efficiency at Full loading	$\eta$	%	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	12													
		lb <sub>m</sub>	26.4													

KPG120 1-stage

		1-stage									
Ratio	i		3	4	5	6	7	8	9	10	
Nominal Output Torque		Nm	210	300	320	300	290	255	220	220	
		in.lb	1859	2655	2832	2655	2567	2257	1947	1947	
Emergency Stop Torque	$T_{2Not}$	Nm	630	900	960	900	870	765	660	660	
		in.lb	5576	7966	8497	7966	7700	6771	5841	5841	
Maximum Acceleration Torque	$T_{2B}$	Nm	378	540	576	540	522	459	396	396	
		in.lb	3346	4779	5098	4779	4620	4062	3505	3505	
Maximum Torque	$T_{2a}$	Nm	420	600	640	600	580	510	440	440	
		in.lb	3717	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	0.88	
		in.lb	9.29	8.41	8.05	7.79	7.79	7.79	7.79	7.79	
Standard Backlash P1	$j_1$	arcmin	≤5								
Reduced Low Backlash P0	$j_1$	arcmin	≤3								
Ultra Low Backlash PU	$j_1$	arcmin	≤1								
Torsional Rigidity	$C_{121}$	Nm/arcmin	26								
		in.lb/arcmin	230.12								
Maximum Radial Load	$F_{2AMax}$	N	10000								
		lb <sub>r</sub>	2248								
Maximum Axial Load	$F_{2OMax}$	N	9000								
		lb <sub>r</sub>	2023								
Max. Tilting Moment	$M_{2KMax}$	Nm	843								
		in.lb	7461								
Mass Moment of Inertia	$j_1$	kgcm <sup>2</sup>	3.25	2.74	2.71	2.62	2.62	2.62	2.62	2.57	
Operating Noise Level	$L_{PA}$	dB(A)	< 63								
Efficiency at Full loading	$\eta$	%	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	8.1								
		lb <sub>m</sub>	17.8								

KPG120 2-stage

		2-stage														
Ratio	i		15	20	25	30	35	40	45	50	60	70	80	90	100	
Nominal Output Torque		Nm	210	300	320	320	320	320	320	320	300	290	255	220	220	
		in.lb	1859	2655	2832	2832	2832	2832	2832	2832	2832	2655	2567	2257	1947	1947
Emergency Stop Torque	$T_{2Not}$	Nm	630	900	960	960	960	960	960	960	900	870	765	660	660	
		in.lb	5576	7966	8497	8497	8497	8497	8497	8497	8497	7966	7700	6771	5841	5841
Maximum Acceleration Torque	$T_{2B}$	Nm	378	540	576	576	576	576	576	576	540	522	459	396	396	
		in.lb	3346	4779	5098	5098	5098	5098	5098	5098	5098	4779	4620	4062	3505	3505
Maximum Torque	$T_{2a}$	Nm	420	600	640	640	640	640	640	640	600	580	510	440	440	
		in.lb	3717	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	0.88	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	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	$j_1$	arcmin	≤7													
Reduced Low Backlash P0	$j_1$	arcmin	≤5													
Ultra Low Backlash PU	$j_1$	arcmin	≤3													
Torsional Rigidity	$C_{121}$	Nm/arcmin	26													
		in.lb/arcmin	230.12													
Maximum Radial Load	$F_{2AMax}$	N	10000													
		lb <sub>r</sub>	2248													
Maximum Axial Load	$F_{2OMax}$	N	9000													
		lb <sub>r</sub>	2023													
Max. Tilting Moment	$M_{2KMax}$	Nm	843													
		in.lb	7461													
Mass Moment of Inertia	$j_1$	kgcm <sup>2</sup>	2.580	1.500	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.49	1.49	1.45	1.45	
Operating Noise Level	$L_{PA}$	dB(A)	< 63													
Efficiency at Full loading	$\eta$	%	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	12													
		lb <sub>m</sub>	26.4													

KPG160 1-stage

		1-stage									
Ratio	i		3	4	5	6	7	8	9	10	
Nominal Output Torque		Nm	350	550	650	610	540	510	440	440	
		in.lb	3098	4868	5753	5399	4779	4514	3894	3894	
Emergency Stop Torque	$T_{2Not}$	Nm	1050	1650	1950	1830	1620	1530	1320	1320	
		in.lb	9293	14604	17259	16197	14338	13542	11683	11683	
Maximum Acceleration Torque	$T_{2B}$	Nm	630	990	1170	1098	972	918	792	792	
		in.lb	5576	8762	10355	9718	8603	8125	7010	7010	
Maximum Torque	$T_{2a}$	Nm	700	1100	1300	1220	1080	1020	880	880	
		in.lb	6195	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	2.4	
		in.lb	23.01	22.13	21.24	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	52								
		in.lb/arcmin	460.24								
Maximum Radial Load	$F_{2AMax}$	N	19000								
		lb <sub>r</sub>	4271								
Maximum Axial Load	$F_{2OMax}$	N	17000								
		lb <sub>r</sub>	3822								
Max. Tilting Moment	$M_{2KMax}$	Nm	2222								
		in.lb	19666								
Mass Moment of Inertia	$j_1$	kgcm <sup>2</sup>	12.31	7.54	7.42	7.25	7.25	7.14	7.14	7.14	
Operating Noise Level	$L_{PA}$	dB(A)	< 65								
Efficiency at Full loading	$\eta$	%	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	15.5								
		lb <sub>m</sub>	34.1								

KPG160 2-stage

		2-stage														
Ratio	i		15	20	25	30	35	40	45	50	60	70	80	90	100	
Nominal Output Torque		Nm	350	550	650	650	650	650	650	650	610	540	510	440	440	
		in.lb	3098	4868	5753	5753	5753	5753	5753	5753	5753	5399	4779	4514	3894	3894
Emergency Stop Torque	$T_{2Not}$	Nm	1050	1650	1950	1950	1950	1950	1950	1950	1830	1620	1530	1320	1320	
		in.lb	9293	14604	17259	17259	17259	17259	17259	17259	17259	16197	14338	13542	11683	11683
Maximum Acceleration Torque	$T_{2B}$	Nm	630	990	1170	1170	1170	1170	1170	1170	1098	972	918	792	792	
		in.lb	5576	8762	10355	10355	10355	10355	10355	10355	10355	9718	8603	8125	7010	7010
Maximum Torque	$T_{2a}$	Nm	700	1100	1300	1300	1300	1300	1300	1300	1220	1080	1020	880	880	
		in.lb	6195	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	2.5	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	22.13	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	52													
		in.lb/arcmin	460.24													
Maximum Radial Load	$F_{2AMax}$	N	19000													
		lb <sub>r</sub>	4271													
Maximum Axial Load	$F_{2OMax}$	N	17000													
		lb <sub>r</sub>	3822													
Max. Tilting Moment	$M_{2KMax}$	Nm	2222													
		in.lb	19666													
Mass Moment of Inertia	$j_1$	kgcm <sup>2</sup>	12.350	6.650	4.08	4.08	4.08	5.360	4.08	5.36	4.08	4.08	7.4	7.3	7.3	
Operating Noise Level	$L_{PA}$	dB(A)	< 65													
Efficiency at Full loading	$\eta$	%	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	28													
		lb <sub>m</sub>	61.6													

KPG Series Servo Planetary Gearbox

KPG Series Servo Planetary Gearbox

KPG160 1-stage

		1-stage									
Ratio	i		3	4	5	6	7	8	9	10	
Nominal Output Torque		Nm	350	550	650	610	540	510	440	440	
		in.lb	3098	4868	5753	5399	4779	4514	3894	3894	
Emergency Stop Torque	$T_{2Not}$	Nm	1050	1650	1950	1830	1620	1530	1320	1320	
		in.lb	9293	14604	17259	16197	14338	13542	11683	11683	
Maximum Acceleration Torque	$T_{2B}$	Nm	630	990	1170	1098	972	918	792	792	
		in.lb	5576	8762	10355	9718	8603	8125	7010	7010	
Maximum Torque	$T_{2a}$	Nm	700	1100	1300	1220	1080	1020	880	880	
		in.lb	6195	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	2.4	
		in.lb	23.01	22.13	21.24	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	52								
		in.lb/arcmin	460.24								
Maximum Radial Load	$F_{2AMax}$	N	19000								
		lb <sub>r</sub>	4271								
Maximum Axial Load	$F_{2OMax}$	N	17000								
		lb <sub>r</sub>	3822								
Max. Tilting Moment	$M_{2KMax}$	Nm	2222								
		in.lb	19666								
Mass Moment of Inertia	$j_1$	kgcm <sup>2</sup>	12.31	7.54	7.42	7.25	7.25	7.14	7.14	7.14	
Operating Noise Level	$L_{PA}$	dB(A)	< 65								
Efficiency at Full loading	$\eta$	%	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	15.5								
		lb <sub>m</sub>	34.1								

KPG160 2-stage

		2-stage														
Ratio	i		15	20	25	30	35	40	45	50	60	70	80	90	100	
Nominal Output Torque		Nm	350	550	650	650	650	650	650	650	610	540	510	440	440	
		in.lb	3098	4868	5753	5753	5753	5753	5753	5753	5753	5399	4779	4514	3894	3894
Emergency Stop Torque	$T_{2Not}$	Nm	1050	1650	1950	1950	1950	1950	1950	1950	1830	1620	1530	1320	1320	
		in.lb	9293	14604	17259	17259	17259	17259	17259	17259	17259	16197	14338	13542	11683	11683
Maximum Acceleration Torque	$T_{2B}$	Nm	630	990	1170	1170	1170	1170	1170	1170	1098	972	918	792	792	
		in.lb	5576	8762	10355	10355	10355	10355	10355	10355	10355	9718	8603	8125	7010	7010
Maximum Torque	$T_{2a}$	Nm	700	1100	1300	1300	1300	1300	1300	1300	1220	1080	1020	880	880	
		in.lb	6195	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	2.5	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	22.13	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	52													
		in.lb/arcmin	460.24													
Maximum Radial Load	$F_{2AMax}$	N	19000													
		lb <sub>r</sub>	4271													
Maximum Axial Load	$F_{2OMax}$	N	17000													
		lb <sub>r</sub>	3822													
Max. Tilting Moment	$M_{2KMax}$	Nm	2222													
		in.lb	19666													
Mass Moment of Inertia	$j_1$	kgcm <sup>2</sup>	12.350	6.650	4.08	4.08	4.08	5.360	4.08	5.36	4.08	4.08	7.4	7.3	7.3	
Operating Noise Level	$L_{PA}$	dB(A)	< 65													
Efficiency at Full loading	$\eta$	%	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	28													
		lb <sub>m</sub>	61.6													

KPG Series Servo Planetary Gearbox

KPG Series Servo Planetary Gearbox

KPG205 1-stage

		1-stage									
Ratio	i		3	4	5	6	7	8	9	10	
Nominal Output Torque		Nm	1250	1200	1000	1000	1000	1000	910	910	
		in.lb	11063	10621	8851	8851	8851	8851	8054	8054	
Emergency Stop Torque	$T_{2Not}$	Nm	3750	3600	3000	3000	3000	3000	2730	2730	
		in.lb	33190	31863	26552	26552	26552	26552	24162	24162	
Maximum Acceleration Torque	$T_{2B}$	Nm	2250	2160	1800	1800	1800	1800	1638	1638	
		in.lb	19914	19118	15931	15931	15931	15931	14497	14497	
Maximum Torque	$T_{2a}$	Nm	2500	2400	2000	2000	2000	2000	1820	1820	
		in.lb	22127	21242	17701	17701	17701	17701	16108	16108	
Permitted Average Input Speed	$n_{1N}$	rpm	2500								
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	3.2	
		in.lb	30.98	30.09	28.32	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	138								
		in.lb/arcmin	1221.40								
Maximum Radial Load	$F_{2AMax}$	N	24000								
		lb <sub>r</sub>	5395								
Maximum Axial Load	$F_{2OMax}$	N	22000								
		lb <sub>r</sub>	4946								
Max. Tilting Moment	$M_{2KMax}$	Nm	2907								
		in.lb	25729								
Mass Moment of Inertia	$j_1$	kgcm <sup>2</sup>	28.98	23.67	22.75	22.48	22.48	22.59	22.59	22.55	
Operating Noise Level	$L_{PA}$	dB(A)	< 67								
Efficiency at Full loading	$\eta$	%	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	39								
		lb <sub>m</sub>	85.8								

KPG205 2-stage

		2-stage														
Ratio	i		15	20	25	30	35	40	45	50	60	70	80	90	100	
Nominal Output Torque		Nm	1250	1200	1000	1000	1000	1000	1000	1000	1000	1000	1000	910	910	
		in.lb	11063	10621	8851	8851	8851	8851	8851	8851	8851	8851	8851	8054	8054	
Emergency Stop Torque	$T_{2Not}$	Nm	3750	3600	3000	3000	3000	3000	3000	3000	3000	3000	3000	2730	2730	
		in.lb	33190	31863	26552	26552	26552	26552	26552	26552	26552	26552	26552	24162	24162	
Maximum Acceleration Torque	$T_{2B}$	Nm	2250	2160	1800	1800	1800	1800	1800	1800	1800	1800	1800	1638	1638	
		in.lb	19914	19118	15931	15931	15931	15931	15931	15931	15931	15931	15931	14497	14497	
Maximum Torque	$T_{2a}$	Nm	2500	2400	2000	2000	2000	2000	2000	2000	2000	2000	2000	1820	1820	
		in.lb	22127	21242	17701	17701	17701	17701	17701	17701	17701	17701	17701	16108	16108	
Permitted Average Input Speed	$n_{1N}$	rpm	2500													
Maximum Input Speed	$n_{1Max}$	rpm	4000													
Mean No Load Running Torque	$T_{012}$	Nm	2.5	2.5	2.4	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	21.24	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	138													
		in.lb/arcmin	1221.40													
Maximum Radial Load	$F_{2AMax}$	N	24000													
		lb <sub>r</sub>	5395													
Maximum Axial Load	$F_{2OMax}$	N	22000													
		lb <sub>r</sub>	4946													
Max. Tilting Moment	$M_{2KMax}$	Nm	2907													
		in.lb	25729													
Mass Moment of Inertia	$j_1$	kgcm <sup>2</sup>	12.350	7.420	7.14	7.14	7.14	7.140	7.14	7.14	7.14	7.14	7.54	7.42	7.42	
Operating Noise Level	$L_{PA}$	dB(A)	< 67													
Efficiency at Full loading	$\eta$	%	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	40													
		lb <sub>m</sub>	88													

KPG205 1-stage

		1-stage									
Ratio	i		3	4	5	6	7	8	9	10	
Nominal Output Torque		Nm	1250	1200	1000	1000	1000	1000	910	910	
		in.lb	11063	10621	8851	8851	8851	8851	8054	8054	
Emergency Stop Torque	$T_{2Not}$	Nm	3750	3600	3000	3000	3000	3000	2730	2730	
		in.lb	33190	31863	26552	26552	26552	26552	24162	24162	
Maximum Acceleration Torque	$T_{2B}$	Nm	2250	2160	1800	1800	1800	1800	1638	1638	
		in.lb	19914	19118	15931	15931	15931	15931	14497	14497	
Maximum Torque	$T_{2a}$	Nm	2500	2400	2000	2000	2000	2000	1820	1820	
		in.lb	22127	21242	17701	17701	17701	17701	16108	16108	
Permitted Average Input Speed	$n_{1N}$	rpm	2500								
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	3.2	
		in.lb	30.98	30.09	28.32	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	138								
		in.lb/arcmin	1221.40								
Maximum Radial Load	$F_{2AMax}$	N	24000								
		lb <sub>r</sub>	5395								
Maximum Axial Load	$F_{2OMax}$	N	22000								
		lb <sub>r</sub>	4946								
Max. Tilting Moment	$M_{2KMax}$	Nm	2907								
		in.lb	25729								
Mass Moment of Inertia	$j_1$	kgcm <sup>2</sup>	28.98	23.67	22.75	22.48	22.48	22.59	22.59	22.55	
Operating Noise Level	$L_{PA}$	dB(A)	< 67								
Efficiency at Full loading	$\eta$	%	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	39								
		lb <sub>m</sub>	85.8								

KPG205 2-stage

		2-stage														
Ratio	i		15	20	25	30	35	40	45	50	60	70	80	90	100	
Nominal Output Torque		Nm	1250	1200	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	910	910
		in.lb	11063	10621	8851	8851	8851	8851	8851	8851	8851	8851	8851	8851	8054	8054
Emergency Stop Torque	$T_{2Not}$	Nm	3750	3600	3000	3000	3000	3000	3000	3000	3000	3000	3000	3000	2730	2730
		in.lb	33190	31863	26552	26552	26552	26552	26552	26552	26552	26552	26552	26552	24162	24162
Maximum Acceleration Torque	$T_{2B}$	Nm	2250	2160	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1638	1638
		in.lb	19914	19118	15931	15931	15931	15931	15931	15931	15931	15931	15931	15931	14497	14497
Maximum Torque	$T_{2a}$	Nm	2500	2400	2000	2000	2000	2000	2000	2000	2000	2000	2000	2000	1820	1820
		in.lb	22127	21242	17701	17701	17701	17701	17701	17701	17701	17701	17701	17701	16108	16108
Permitted Average Input Speed	$n_{1N}$	rpm	2500													
Maximum Input Speed	$n_{1Max}$	rpm	4000													
Mean No Load Running Torque	$T_{012}$	Nm	2.5	2.5	2.4	2.4	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	21.24	21.24	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	138													
		in.lb/arcmin	1221.40													
Maximum Radial Load	$F_{2AMax}$	N	24000													
		lb <sub>r</sub>	5395													
Maximum Axial Load	$F_{2OMax}$	N	22000													
		lb <sub>r</sub>	4946													
Max. Tilting Moment	$M_{2KMax}$	Nm	2907													
		in.lb	25729													
Mass Moment of Inertia	$j_1$	kgcm <sup>2</sup>	12.350	7.420	7.14	7.14	7.14	7.140	7.14	7.14	7.14	7.14	7.54	7.42	7.42	
Operating Noise Level	$L_{PA}$	dB(A)	< 67													
Efficiency at Full loading	$\eta$	%	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	40													
		lb <sub>m</sub>	88													





