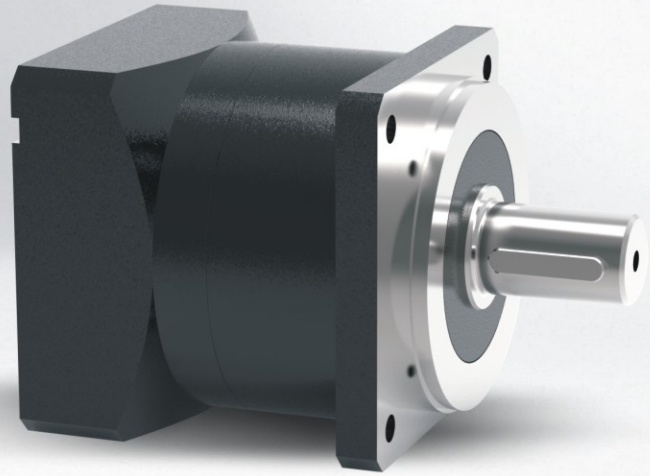
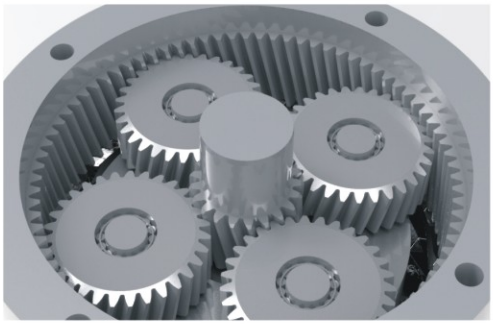
KPLF-B

Powerful. High Precision. Reliable

- Servo Planetary Gearbox

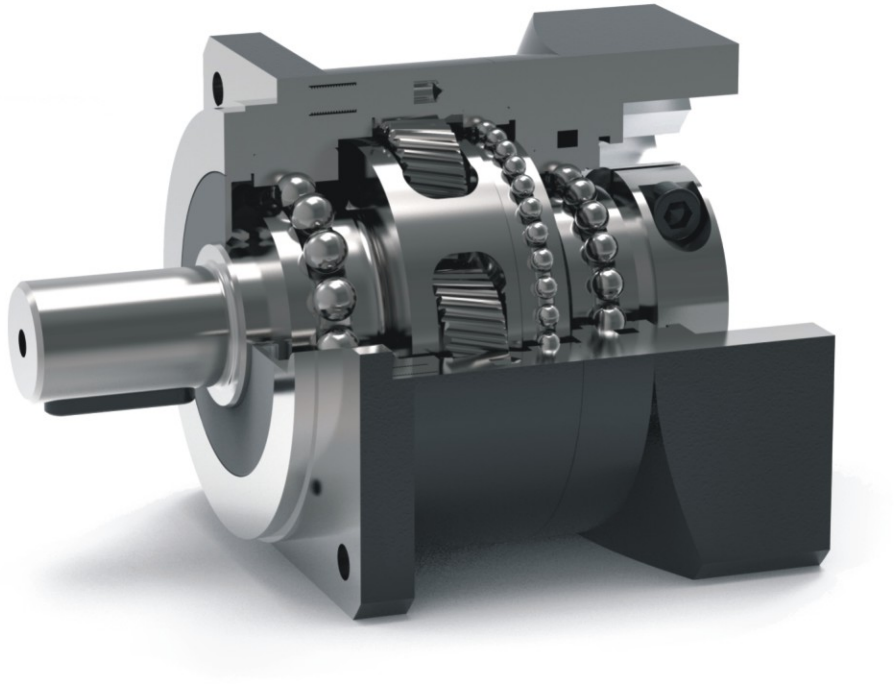
Advanced Gearbox Solution





Helical Gear System Technology

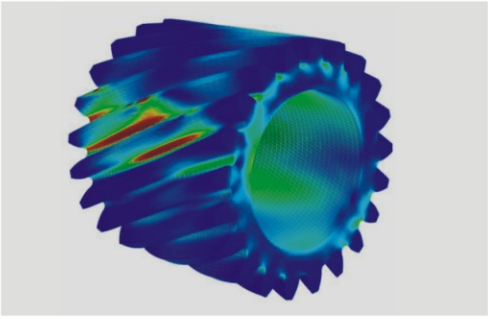
Thanks to the tooth to tooth compact ratio more than 60%.The helical gearing and full needle bearing bring the benefits including higher torque capacity, smooth and lower noise running, decreased backlash and higher efficiency. Integrated housing engineering with super skiving gearing tooling craft.





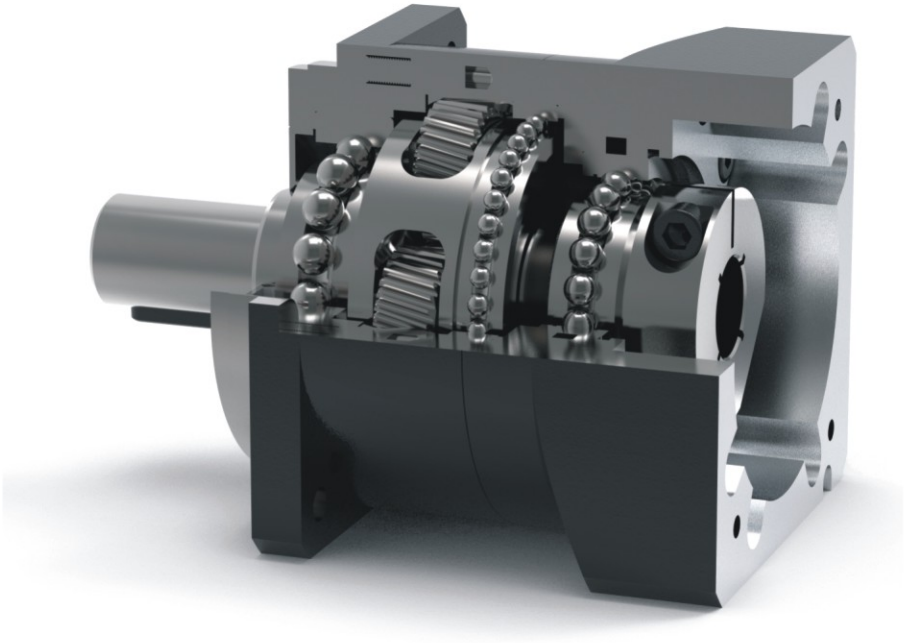
Master CageSpindle Planetary Carrier

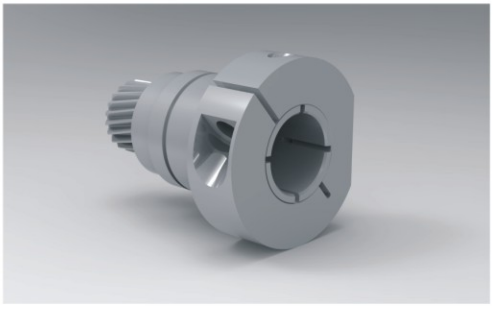
The patented Master CageSpindle integrated planetary carrier support planetary gearbox to increase constructional strength running stability and rigidity significantly. Synthetic grease lubrication allows maintenance free for gearbox whole service life.



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.





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.

Order Instructions

Order Code:

KPLF-B — 120 — 02 — 015 — S1 — P0 — Servo Motor

KPLF-B

Gearbox Series: KPLF-B

120

Gearbox Size

02

Gearbox Stage

015

Gearbox Ratio

S1

S1: Output shaft with key
S2: Output shaft without key

P0

Gearbox Precision

Servo Motor

Motor Manufacturer and model

Technical Memo

KPLF-B050 1-stage

			1-stage							
Ratio	i		3	4	5	6	7	8	9	10
Nominal Output Torque		Nm	20	21	21	20	19	17	15	15
		in.lb	177	186	186	177	168	159	124	124
Emergency Stop Torque	T_{2Not}	*Nm*	60	63	63	60	57	54	42	42
		in.lb	531	558	558	531	504	478	372	372
Maximum Acceleration Torque	T_{2B}	*Nm*	36	37.8	37.8	36	34.2	32.4	25.2	25.2
		in.lb	319	335	335	319	303	287	223	223
Maximum Torque	T_{2a}	*Nm*	40	42	42	40	38	36	28	28
		in.lb	354	372	372	354	336	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*	0.11	0.1	0.09	0.09	0.08	0.08	0.08	0.08
		in.lb	0.97	0.89	0.80	0.80	0.71	0.71	0.71	0.71
Standard Backlash P1	j_t	arcmin	⩽ 6							
Reduced Low Backlash P0	j_t	arcmin	⩽ 4							
Torsional Rigidity	C_{t21}	*Nm/arcmin*	2.7–3							
		in.lb/arcmin	23.90–26.55							
Maximum Radial Load	F_{2AMax}	*N*	770							
		lb_f	173							
Maximum Axial Load	F_{2QMax}	*N*	380							
		lb_f	85							
Max. Tilting Moment	M_{2KMax}	*Nm*	17.65							
		in.lb	156.21							
Mass Moment of Inertia	j_1	$kgcm^2$	0.031	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		℃	−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	0.6							
		lb_m	1.3							

KPLF-B050 2-stage

			2-stage														
Ratio	i		12	15	16	20	25	30	35	40	45	50	60	64	80	90	100
Nominal Output Torque		Nm	20	20	21	21	21	21	21	21	21	21	20	17	17	15	15
		in.lb	177	177	186	186	186	177	186	186	186	186	177	159	159	124	124
Emergency Stop Torque	T_{2Not}	*Nm*	60	60	63	63	63	60	63	63	63	63	60	54	54	42	42
		in.lb	531	531	558	558	558	531	558	558	558	558	531	478	478	372	372
Maximum Acceleration Torque	T_{2B}	*Nm*	36	36	37.8	37.8	37.8	36	37.8	37.8	37.8	37.8	36	32.4	32.4	25.2	25.2
		in.lb	319	319	335	335	335	319	335	335	335	335	319	287	287	223	223
Maximum Torque	T_{2a}	*Nm*	40	40	42	42	42	40	42	42	42	42	40	36	36	28	28
		in.lb	354	354	372	372	372	354	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*	0.1	0.1	0.1	0.1	0.1	0.09	0.09	0.09	0.09	0.09	0.08	0.08	0.08	0.08	0.08
		in.lb	0.89	0.89	0.89	0.89	0.89	0.80	0.80	0.80	0.80	0.80	0.71	0.71	0.71	0.71	0.71
Standard Backlash P1	j_t	arcmin	⩽ 8														
Reduced Low Backlash P0	j_t	arcmin	⩽ 6														
Torsional Rigidity	C_{t21}	*Nm/arcmin*	2.8–3														
		in.lb/arcmin	24.78–26.55														
Maximum Radial Load	F_{2AMax}	*N*	770														
		lb_f	173														
Maximum Axial Load	F_{2QMax}	*N*	380														
		lb_f	85														
Max. Tilting Moment	M_{2KMax}	*Nm*	17.65														
		in.lb	156.21														
Mass Moment of Inertia	j_1	$kgcm^2$	0.029	0.027	0.022	0.019	0.017	0.016	0.016	0.016	0.016	0.016	0.016	0.016	0.016	0.016	0.016
Operating Noise Level	L_{PA}	dB(A)	< 56														
Efficiency at Full loading	η	%	95														
Operating Temperature		℃	−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	0.9														
		lb_m	2														

KPLF-B070 1-stage

			1-stage							
Ratio	i		3	4	5	6	7	8	9	10
Nominal Output Torque		Nm	56	52	52	48	48	43	43	43
		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	1221	1381	1460	1328	1328	1195	1115	1115
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*	3000							
Maximum Input Speed	n_{1Max}	*rpm*	6000							
Mean No Load Running Torque	T_{012}	*Nm*	0.24	0.2	0.17	0.15	0.15	0.15	0.15	0.15
		in.lb	2.12	1.77	1.50	1.33	1.33	1.33	1.33	1.33
Standard Backlash P1	j_t	arcmin	⩽ 5							
Reduced Low Backlash P0	j_t	arcmin	⩽ 3							
Ultra Low Backlash PU	j_t	arcmin	⩽ 1							
Torsional Rigidity	C_{t21}	*Nm/arcmin*	6.5−7							
		in.lb/arcmin	57.53−61.95							
Maximum Radial Load	F_{2AMax}	*N*	1500							
		lb_f	337							
Maximum Axial Load	F_{2QMax}	*N*	760							
		lb_f	171							
Max. Tilting Moment	M_{2KMax}	*Nm*	28							
		in.lb	247.82							
Mass Moment of Inertia	j_1	$kgcm^2$	0.16	0.14	0.13	0.13	0.13	0.13	0.13	0.13
Operating Noise Level	L_{PA}	dB(A)	< 58							
Efficiency at Full loading	η	%	97							
Operating Temperature		℃	−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							

KPLF-B070 2-stage

			2-stage															
Ratio	i		12	15	16	20	25	30	32	35	40	45	50	60	64	80	90	100
Nominal Output Torque		Nm	56	56	52	52	52	52	52	52	52	52	52	48	43	43	43	43
		in.lb	496	443	460	487	487	407	460	487	487	487	487	443	398	398	372	372
Emergency Stop Torque	T_{2Not}	*Nm*	168	150	156	165	165	138	156	165	165	165	165	150	135	135	126	126
		in.lb	1487	1328	1381	1460	1460	1221	1381	1460	1460	1460	1460	1328	1195	1195	1115	1115
Maximum Acceleration Torque	T_{2B}	*Nm*	100.8	90	93.6	99	99	82.8	93.6	99	99	99	99	90	81	81	75.6	75.6
		in.lb	892	797	828	876	876	733	828	876	876	876	876	797	717	717	669	669
Maximum Torque	T_{2a}	*Nm*	112	100	104	110	110	92	104	110	110	110	110	100	90	90	84	84
		in.lb	991	885	920	974	974	814	920	974	974	974	974	885	797	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*	0.2	0.17	0.2	0.17	0.17	0.15	0.2	0.15	0.15	0.15	0.17	0.15	0.15	0.15	0.15	0.15
		in.lb	1.77	1.50	1.77	1.50	1.50	1.33	1.77	1.33	1.33	1.33	1.50	1.33	1.33	1.33	1.33	1.33
Standard Backlash P1	j_t	arcmin	⩽ 7															
Reduced Low Backlash P0	j_t	arcmin	⩽ 5															
Ultra Low Backlash PU	j_t	arcmin	⩽ 3															
Torsional Rigidity	C_{t21}	*Nm/arcmin*	6.6−7															
		in.lb/arcmin	58.41−61.95															
Maximum Radial Load	F_{2AMax}	*N*	1500															
		lb_f	337															
Maximum Axial Load	F_{2QMax}	*N*	760															
		lb_f	171															
Max. Tilting Moment	M_{2KMax}	*Nm*	28															
		in.lb	247.82															
Mass Moment of Inertia	j_1	$kgcm^2$	0.127	0.124	0.12	0.075	0.075	0.064	0.064	0.064	0.064	0.064	0.064	0.064	0.075	0.064	0.064	0.064
Operating Noise Level	L_{PA}	dB(A)	< 58															
Efficiency at Full loading	η	%	95															
Operating Temperature		℃	−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															

KPLF-B090 1-stage

			1-stage							
Ratio	i		3	4	5	6	7	8	9	10
Nominal Output Torque		Nm	160	158	158	150	145	142	142	142
		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_{2B}	*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*	0.38	0.36	0.31	0.29	0.25	0.25	0.25	0.25
		in.lb	3.36	3.19	2.74	2.57	2.21	2.21	2.21	2.21
Standard Backlash P1	j_t	arcmin	⩽ 5							
Reduced Low Backlash P0	j_t	arcmin	⩽ 3							
Ultra Low Backlash PU	j_t	arcmin	⩽ 1							
Torsional Rigidity	C_{t21}	*Nm/arcmin*	12–14							
		in.lb/arcmin	106.21–123.91							
Maximum Radial Load	F_{2AMax}	*N*	3200							
		lb_f	719							
Maximum Axial Load	F_{2QMax}	*N*	1600							
		lb_f	360							
Max. Tilting Moment	M_{2KMax}	*Nm*	142.4							
		in.lb	1260.34							
Mass Moment of Inertia	j_1	$kgcm^2$	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	η	%	97							
Operating Temperature		℃	−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							

KPLF-B090 2-stage

			2-stage															
Ratio	i		12	15	16	20	25	30	32	35	40	45	50	60	64	80	90	100
Nominal Output Torque		Nm	160	160	158	158	158	158	158	158	158	158	158	150	142	142	142	142
		in.lb	1106	1106	1283	1283	1372	1106	1283	1372	1372	1372	1372	1283	1018	1018	929	929
Emergency Stop Torque	T_{2Not}	*Nm*	375	375	435	435	465	375	435	465	465	465	465	435	345	345	315	315
		in.lb	3319	3319	3850	3850	4116	3319	3850	4116	4116	4116	4116	3850	3053	3053	2788	2788
Maximum Acceleration Torque	T_{2B}	*Nm*	225	225	261	261	279	225	261	279	279	279	279	261	207	207	189	189
		in.lb	1991	1991	2310	2310	2469	1991	2310	2469	2469	2469	2469	2310	1832	1832	1673	1673
Maximum Torque	T_{2a}	*Nm*	250	250	290	290	310	250	290	310	310	310	310	290	230	230	210	210
		in.lb	2213	2213	2567	2567	2744	2213	2567	2744	2744	2744	2744	2567	2036	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*	0.36	0.31	0.36	0.31	0.31	0.31	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25
		in.lb	3.19	2.74	3.19	2.74	2.74	2.74	2.21	2.21	2.21	2.21	2.21	2.21	2.21	2.21	2.21	2.21
Standard Backlash P1	j_t	arcmin	⩽ 7															
Reduced Low Backlash P0	j_t	arcmin	⩽ 5															
Ultra Low Backlash PU	j_t	arcmin	⩽ 3															
Torsional Rigidity	C_{t21}	*Nm/arcmin*	13−14															
		in.lb/arcmin	115.06−123.91															
Maximum Radial Load	F_{2AMax}	*N*	3200															
		lb_f	719															
Maximum Axial Load	F_{2QMax}	*N*	1600															
		lb_f	360															
Max. Tilting Moment	M_{2KMax}	*Nm*	142.4															
		in.lb	1260.34															
Mass Moment of Inertia	j_1	$kgcm^2$	0.44	0.44	0.43	0.44	0.44	0.39	0.39	0.39	0.39	0.39	0.39	0.39	0.39	0.39	0.39	0.39
Operating Noise Level	L_{PA}	dB(A)	< 60															
Efficiency at Full loading	η	%	95															
Operating Temperature		℃	−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															

KPLF-B120 1-stage

			1-stage							
Ratio	i		3	4	5	6	7	8	9	10
Nominal Output Torque		Nm	335	330	330	310	305	295	295	295
		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	0.95	0.85	0.81	0.78	0.78	0.78	0.78
		in.lb	8.85	8.41	7.52	7.17	6.90	6.90	6.90	6.90
Standard Backlash P1	j_t	arcmin	⩽ 5							
Reduced Low Backlash P0	j_t	arcmin	⩽ 3							
Ultra Low Backlash PU	j_t	arcmin	⩽ 1							
Torsional Rigidity	C_{t21}	*Nm/arcmin*	22–26							
		in.lb/arcmin	194.72–230.12							
Maximum Radial Load	F_{2AMax}	*N*	6700							
		lb_f	1506							
Maximum Axial Load	F_{2QMax}	*N*	3300							
		lb_f	742							
Max. Tilting Moment	M_{2KMax}	*Nm*	406.2							
		in.lb	3595.15							
Mass Moment of Inertia	j_1	$kgcm^2$	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	η	%	97							
Operating Temperature		℃	−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							

KPLF-B120 2-stage

			2-stage															
Ratio	i		12	15	16	20	25	30	32	35	40	45	50	60	64	80	90	100
Nominal Output Torque		Nm	335	335	330	330	330	330	330	330	330	330	330	310	295	295	295	295
		in.lb	2744	2744	2655	2655	2832	1859	2699	2832	2832	2832	2832	2655	2257	2257	1947	1947
Emergency Stop Torque	T_{2Not}	*Nm*	930	930	900	900	960	630	915	960	960	960	960	900	765	765	660	660
		in.lb	8231	8231	7966	7966	8497	5576	8098	8497	8497	8497	8497	7966	6771	6771	5841	5841
Maximum Acceleration Torque	T_{2B}	*Nm*	558	558	540	540	576	378	549	576	576	576	576	540	459	459	396	396
		in.lb	4939	4939	4779	4779	5098	3346	4859	5098	5098	5098	5098	4779	4062	4062	3505	3505
Maximum Torque	T_{2a}	*Nm*	620	620	600	600	640	420	610	640	640	640	640	600	510	510	440	440
		in.lb	5487	5487	5310	5310	5664	3717	5399	5664	5664	5664	5664	5310	4514	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	0.85	0.95	0.85	0.85	0.81	0.78	0.78	0.78	0.78	0.78	0.81	0.78	0.78	0.78	0.78
		in.lb	8.41	7.52	8.41	7.52	7.52	7.17	6.90	6.90	6.90	6.90	6.90	7.17	6.90	6.90	6.90	6.90
Standard Backlash P1	j_t	arcmin	⩽ 7															
Reduced Low Backlash P0	j_t	arcmin	⩽ 5															
Ultra Low Backlash PU	j_t	arcmin	⩽ 3															
Torsional Rigidity	C_{t21}	*Nm/arcmin*	23−26															
		in.lb/arcmin	203.57−230.12															
Maximum Radial Load	F_{2AMax}	*N*	6700															
		lb_f	1506															
Maximum Axial Load	F_{2QMax}	*N*	3300															
		lb_f	742															
Max. Tilting Moment	M_{2KMax}	*Nm*	406.2															
		in.lb	3595.15															
Mass Moment of Inertia	j_1	$kgcm^2$	2.56	2.58	1.75	1.5	1.49	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.5	1.3	1.3	1.3
Operating Noise Level	L_{PA}	dB(A)	< 63															
Efficiency at Full loading	η	%	95															
Operating Temperature		℃	−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															

KPLF-B160 1-stage

			1-stage							
Ratio	i		3	4	5	6	7	8	9	10
Nominal Output Torque		Nm	630	620	620	600	575	550	550	550
		in.lb	3983	4868	5753	5399	4779	4514	3894	3894
Emergency Stop Torque	T_{2Not}	*Nm*	1350	1650	1950	1830	1620	1530	1320	1320
		in.lb	11948	14604	17259	16197	14338	13542	11683	11683
Maximum Acceleration Torque	T_{2B}	*Nm*	810	990	1170	1098	972	918	792	792
		in.lb	7169	8762	10355	9718	8603	8125	7010	7010
Maximum Torque	T_{2a}	*Nm*	900	1100	1300	1220	1080	1020	880	880
		in.lb	7966	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*	2.55	2.45	2.3	2.2	2.2	2.2	2.2	2.2
		in.lb	22.57	21.68	20.36	19.47	19.47	19.47	19.47	19.47
Standard Backlash P1	j_t	arcmin	⩽ 5							
Reduced Low Backlash P0	j_t	arcmin	⩽ 3							
Ultra Low Backlash PU	j_t	arcmin	⩽ 1							
Torsional Rigidity	C_{t21}	*Nm/arcmin*	45–52							
		in.lb/arcmin	398.28–460.24							
Maximum Radial Load	F_{2AMax}	*N*	9600							
		lb$_f$	2158							
Maximum Axial Load	F_{2QMax}	*N*	4800							
		lb$_f$	1079							
Max. Tilting Moment	M_{2KMax}	*Nm*	830.4							
		in.lb	7349.62							
Mass Moment of Inertia	j_t	kgcm^2	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	η	%	97							
Operating Temperature		℃	−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$_m$	44.1							

KPLF-B160 2-stage

			2-stage															
Ratio	i		12	15	16	20	25	30	32	35	40	45	50	60	64	80	90	100
Nominal Output Torque		Nm	630	630	620	620	620	620	620	620	620	620	620	600	550	550	550	550
		in.lb	4425	4425	4868	5753	5753	3983	4868	5753	4868	5753	5753	5399	4514	4514	3894	3894
Emergency Stop Torque	T_{2Not}	*Nm*	1500	1500	1650	1950	1950	1350	1650	1950	1650	1950	1950	1830	1530	1530	1320	1320
		in.lb	13276	13276	14604	17259	17259	11948	14604	17259	14604	17259	17259	16197	13542	13542	11683	11683
Maximum Acceleration Torque	T_{2B}	*Nm*	900	900	990	1170	1170	810	990	1170	990	1170	1170	1098	918	918	792	792
		in.lb	7966	7966	8762	10355	10355	7169	8762	10355	8762	10355	10355	9718	8125	8125	7010	7010
Maximum Torque	T_{2a}	*Nm*	1000	1000	1100	1300	1300	900	1100	1300	1100	1300	1300	1220	1020	1020	880	880
		in.lb	8851	8851	9736	11506	11506	7966	9736	11506	9736	11506	11506	10798	9028	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*	2.45	2.3	2.45	2.3	2.3	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2
		in.lb	21.68	20.36	21.68	20.36	20.36	19.47	19.47	19.47	19.47	19.47	19.47	19.47	19.47	19.47	19.47	19.47
Standard Backlash P1	j_t	arcmin	⩽ 7															
Reduced Low Backlash P0	j_t	arcmin	⩽ 5															
Ultra Low Backlash PU	j_t	arcmin	⩽ 3															
Torsional Rigidity	C_{t21}	*Nm/arcmin*	45–52															
		in.lb/arcmin	398.28–460.24															
Maximum Radial Load	F_{2AMax}	*N*	9600															
		lb_f	2158															
Maximum Axial Load	F_{2QMax}	*N*	4800															
		lb_f	1079															
Max. Tilting Moment	M_{2KMax}	*Nm*	830.4															
		in.lb	7349.62															
Mass Moment of Inertia	j_1	$kgcm^2$	12.35	12.35	7.47	6.65	5.81	6.34	6.34	5.36	4.08	5.36	4.08	7.40	7.50	7.40	7.40	7.40
Operating Noise Level	L_{PA}	dB(A)	< 65															
Efficiency at Full loading	η	%	95															
Operating Temperature		℃	−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	55.1															

KPLF-B205 1-stage

			1-stage							
Ratio	i		3	4	5	6	7	8	9	10
Nominal Output Torque		Nm	1220	1170	1170	1100	1100	1060	1060	1060
		in.lb	5753	11063	10621	8851	8851	8851	8054	8054
Emergency Stop Torque	T_{2Not}	*Nm*	1950	3750	3600	3000	3000	3000	2730	2730
		in.lb	17259	33190	31863	26552	26552	26552	24162	24162
Maximum Acceleration Torque	T_{2B}	*Nm*	1170	2250	2160	1800	1800	1800	1638	1638
		in.lb	10355	19914	19118	15931	15931	15931	14497	14497
Maximum Torque	T_{2a}	*Nm*	1300	2500	2400	2000	2000	2000	1820	1820
		in.lb	11506	22127	21242	17701	17701	17701	16108	16108
Permitted Average Input Speed	n_{1N}	*rpm*	3000							
Maximum Input Speed	n_{1Max}	*rpm*	4000							
Mean No Load Running Torque	T_{012}	*Nm*	3.5	3.3	3.15	3	3	3	3	3
		in.lb	30.98	29.21	27.88	26.55	26.55	26.55	26.55	26.55
Standard Backlash P1	j_t	arcmin	⩽ 5							
Reduced Low Backlash P0	j_t	arcmin	⩽ 3							
Ultra Low Backlash PU	j_t	arcmin	⩽ 1							
Torsional Rigidity	C_{t21}	*Nm/arcmin*	120–138							
		in.lb/arcmin	1062.08–1221.40							
Maximum Radial Load	F_{2AMax}	*N*	14000							
		lb_f	3147							
Maximum Axial Load	F_{2QMax}	*N*	7000							
		lb_f	1574							
Max. Tilting Moment	M_{2KMax}	*Nm*	1386							
		in.lb	12267.07							
Mass Moment of Inertia	j_1	$kgcm^2$	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	η	%	97							
Operating Temperature		℃	−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	68.3							

KPLF-B205 2-stage

			2-stage															
Ratio	i		12	15	16	20	25	30	32	35	40	45	50	60	64	80	90	100
Nominal Output Torque		Nm	1220	1220	1170	1170	1170	1170	1170	1170	1170	1170	1170	1100	1060	1060	1060	1060
		in.lb	5753	7523	11063	10621	10621	5753	11063	10621	10621	10621	10621	8851	8851	8851	8054	8054
Emergency Stop Torque	T_{2Not}	*Nm*	1950	2550	3750	3600	3600	1950	3750	3600	3600	3600	3600	3000	3000	3000	2730	2730
		in.lb	17259	22569	33190	31863	31863	17259	33190	31863	31863	31863	31863	26552	26552	26552	24162	24162
Maximum Acceleration Torque	T_{2B}	*Nm*	1170	1530	2250	2160	2160	1170	2250	2160	2160	2160	2160	1800	1800	1800	1638	1638
		in.lb	10355	13542	19914	19118	19118	10355	19914	19118	19118	19118	19118	15931	15931	15931	14497	14497
Maximum Torque	T_{2a}	*Nm*	1300	1700	2500	2400	2400	1300	2500	2400	2400	2400	2400	2000	2000	2000	1820	1820
		in.lb	11506	15046	22127	21242	21242	11506	22127	21242	21242	21242	21242	17701	17701	17701	16108	16108
Permitted Average Input Speed	n_{1N}	*rpm*	3000															
Maximum Input Speed	n_{1Max}	*rpm*	4000															
Mean No Load Running Torque	T_{012}	*Nm*	2.45	2.3	2.45	2.3	2.3	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2
		in.lb	21.68	20.36	21.68	20.36	20.36	19.47	19.47	19.47	19.47	19.47	19.47	19.47	19.47	19.47	19.47	19.47
Standard Backlash P1	j_t	arcmin	⩽ 7															
Reduced Low Backlash P0	j_t	arcmin	⩽ 5															
Ultra Low Backlash PU	j_t	arcmin	⩽ 3															
Torsional Rigidity	C_{t21}	*Nm/arcmin*	125–138															
		in.lb/arcmin	1106.34–1221.40															
Maximum Radial Load	F_{2AMax}	*N*	14000															
		lb_f	3147															
Maximum Axial Load	F_{2QMax}	*N*	7000															
		lb_f	1574															
Max. Tilting Moment	M_{2KMax}	*Nm*	1386															
		in.lb	12267.07															
Mass Moment of Inertia	j_1	$kgcm^2$	12.35	12.30	7.54	7.42	7.54	7.14	7.14	7.14	7.14	7.14	7.14	7.14	7.14	7.14	7.14	7.14
Operating Noise Level	L_{PA}	dB(A)	< 67															
Efficiency at Full loading	η	%	95															
Operating Temperature		℃	−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	86															

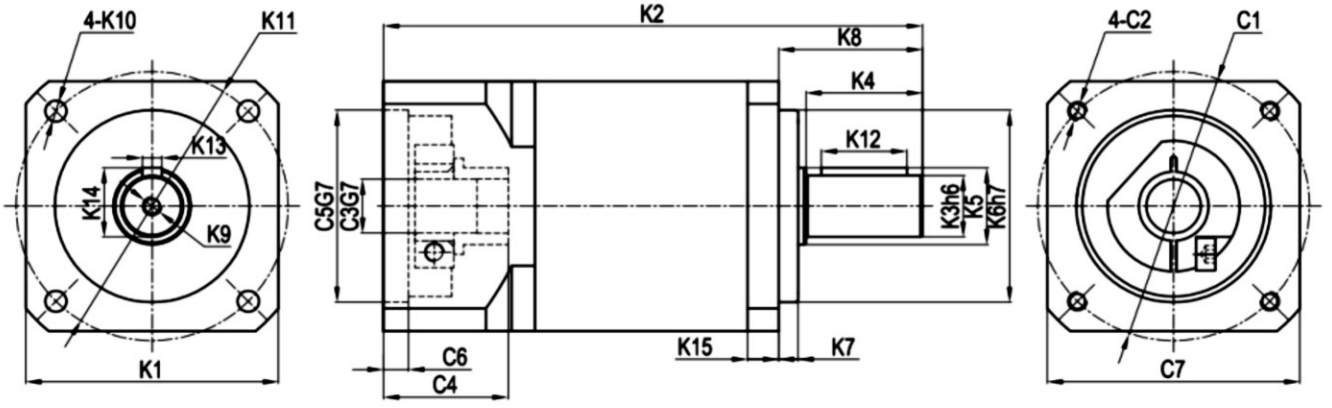
KPLF-B235 1-stage

			1-stage							
Ratio	i		3	4	5	6	7	8	9	10
Nominal Output Torque		Nm	2050	2000	2000	1900	1900	1800	1800	1800
		in.lb	10621	15931	18144	16374	15489	13719	13276	13276
Emergency Stop Torque	T_{2Not}	*Nm*	3600	5400	6150	5550	5250	4650	4500	4500
		in.lb	31863	47794	54432	49121	46466	41156	39828	39828
Maximum Acceleration Torque	T_{2B}	*Nm*	2160	3240	3690	3330	3150	2790	2700	2700
		in.lb	19118	28676	32659	29473	27880	24693	23897	23897
Maximum Torque	T_{2a}	*Nm*	2400	3600	4100	3700	3500	3100	3000	3000
		in.lb	21242	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*	5.2	5	4.85	4.67	4.67	4.67	4.67	4.67
		in.lb	46.02	44.25	42.93	41.33	41.33	41.33	41.33	41.33
Standard Backlash P1	j_t	arcmin	⩽ 5							
Reduced Low Backlash P0	j_t	arcmin	⩽ 3							
Ultra Low Backlash PU	j_t	arcmin	⩽ 1							
Torsional Rigidity	C_{t21}	*Nm/arcmin*	200–220							
		in.lb/arcmin	1770.14–1947.15							
Maximum Radial Load	F_{2AMax}	*N*	16000							
		lb_f	3597							
Maximum Axial Load	F_{2QMax}	*N*	8000							
		lb_f	1798							
Max. Tilting Moment	M_{2KMax}	*Nm*	1936							
		in.lb	17134.96							
Mass Moment of Inertia	j_1	$kgcm^2$	69.61	54.37	53.27	50.84	50.84	50.84	50.84	50.56
Operating Noise Level	L_{PA}	dB(A)	< 70							
Efficiency at Full loading	η	%	97							
Operating Temperature		℃	−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	53							
		lb_m	117							

KPLF-B235 2-stage

			2-stage															
Ratio	i		12	15	16	20	25	30	32	35	40	45	50	60	64	80	90	100
Nominal Output Torque		Nm	2050	2000	2000	2000	2000	2000	2000	2000	2000	2000	2000	1900	1800	1800	1800	1800
		in.lb	10621	10621	15931	18144	18144	10621	15931	18144	18144	18144	18144	16374	13719	13719	13276	13276
Emergency Stop Torque	T_{2Not}	*Nm*	3600	3600	5400	6150	6150	3600	5400	6150	6150	6150	6150	5550	4650	4650	4500	4500
		in.lb	31863	31863	47794	54432	54432	31863	47794	54432	54432	54432	54432	49121	41156	41156	39828	39828
Maximum Acceleration Torque	T_{2B}	*Nm*	2160	2160	3240	3690	3690	2160	3240	3690	3690	3690	3690	3330	2790	2790	2700	2700
		in.lb	19118	19118	28676	32659	32659	19118	28676	32659	32659	32659	32659	29473	24693	24693	23897	23897
Maximum Torque	T_{2a}	*Nm*	2400	2400	3600	4100	4100	2400	3600	4100	4100	4100	4100	3700	3100	3100	3000	3000
		in.lb	21242	21242	31863	36288	36288	21242	31863	36288	36288	36288	36288	32748	27437	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*	3.3	3.15	3.3	3.15	3.15	3	3	3	3	3	3	3	3	3	3	3
		in.lb	29.21	27.88	29.21	27.88	27.88	26.55	26.55	26.55	26.55	26.55	26.55	26.55	26.55	26.55	26.55	26.55
Standard Backlash P1	j_t	arcmin	⩽ 7															
Reduced Low Backlash P0	j_t	arcmin	⩽ 5															
Ultra Low Backlash PU	j_t	arcmin	⩽ 3															
Torsional Rigidity	C_{t21}	*Nm/arcmin*	205–220															
		in.lb/arcmin	1814.39–1947.15															
Maximum Radial Load	F_{2AMax}	*N*	16000															
		lb_f	3597															
Maximum Axial Load	F_{2QMax}	*N*	8000															
		lb_f	1798															
Max. Tilting Moment	M_{2KMax}	*Nm*	1936															
		in.lb	17134.96															
Mass Moment of Inertia	j_1	$kgcm^2$	28.98	28.92	23.67	22.75	22.75	22.59	22.59	22.59	22.59	22.59	22.59	22.59	22.59	22.59	22.59	22.59
Operating Noise Level	L_{PA}	dB(A)	< 70															
Efficiency at Full loading	η	%	95															
Operating Temperature		℃	−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	66															
		lb_m	145.5															

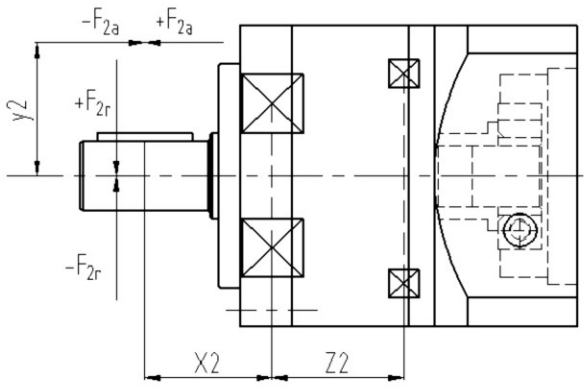
KPLF-B Dimensions



Model	KPLF-B050		KPLF-B070		KPLF-B090		KPLF-B120		KPLF-B160		KPLF-B205		KPLF-B235	
Stage	1	2	1	2	1	2	1	2	1	2	1	2	1	2
K1	52		70		89		120		175		210		240	
	2.047		2.756		3.504		4.724		6.890		8.268		9.449	
K2	88.5	103.5	115	138.7	138	169.3	198	239.8	275.5	336.5	288	348	357.5	402
	3.484	4.075	4.528	5.461	5.433	6.665	7.795	9.441	10.846	13.248	11.339	13.701	14.075	15.827
K3	12		16		22		32		40		55		75	
	0.472		0.630		0.866		1.260		1.575		2.165		2.953	
K4	23		30		36		50		80		82		105	
	0.906		1.181		1.417		1.969		3.150		3.228		4.134	
K5	15		20		30		40		50		60		85	
	0.591		0.787		1.181		1.575		1.969		2.362		3.346	
K6	40		50		80		110		130		180		235	
	1.575		1.969		3.150		4.331		5.118		7.087		9.252	
K7	4		5		10		12		15		20		30	
	0.157		0.197		0.394		0.472		0.591		0.787		1.181	
K8	28		37		48		65		97		105		126	
	1.102		1.457		1.890		2.559		3.819		4.134		4.961	
K9	M3X9		M5X12		M6X16		M10X22		M12X25		M20X40		M20X40	
K10	4.5		5.5		6.5		9		11		13		17	
	0.177		0.217		0.256		0.354		0.433		0.512		0.669	
K11	60		85		100		130		185		230		275	
	2.362		3.346		3.937		5.118		7.283		9.055		10.827	
K12	16		22		28		40		70		70		90	
	0.630		0.866		1.102		1.575		2.756		2.756		3.543	
K13	4		5		6		10		12		16		20	
	0.157		0.197		0.236		0.394		0.472		0.630		0.787	
K14	13.5		18		24.5		35		43		59		79.5	
	0.531		0.709		0.965		1.378		1.693		2.323		3.130	
K15	5		8		10		14		15		18		18	
	0.197		0.315		0.394		0.551		0.591		0.709		0.709	
C1	46		70		90		145		200		215	200	235	215
	1.811		2.756		3.543		5.709		7.874		8.465	7.874	9.252	8.465
C2	M4X10		M5X12		M6X15		M8X20		M12X25		M12X25	M12X25	M12X25	M12X25
C3	8		14		19		24		35		42	35	55	42
	0.315		0.551		0.748		0.945		1.378		1.654	1.378	2.165	1.654
C4	26.1		32.1		41.6		61.3		82		82.5	82	115.5	82.5
	1.028		1.264		1.638		2.413		3.228		3.248	3.228	4.547	3.248
C5	30		50		70		110		114.3		180	114.3	200	180
	1.181		1.969		2.756		4.331		4.500		7.087	4.500	7.874	7.087
C6	5		6.5		6.5		8		8		8	8	8	8
	0.197		0.256		0.256		0.315		0.315		0.315	0.315	0.315	0.315
C7	50		70		89		120		175		190	175	220	190
	1.969		2.756		3.504		4.724		6.890		7.480	6.890	8.661	7.480

The dimensions modified as per the applied motor flanges.
You can get the specific gearbox drawing solution by KDP(Kofon Design Programme) on line from our website: www.kofon-motion.com

KPLF-B Titling moment



$$M_{2kb}=[F_{2a}xy_2+F_{2rb}x(X_2+Z_2)]/1000$$

KPLF-B	050	070	090	120	160	205	235
Z2[mm]	8.2	30.5	33.5	45	66.5	72.5	83.5
M_{2Kb}	19	90	214	603	1275	2013	2676

Technical Memo

Technical Memo