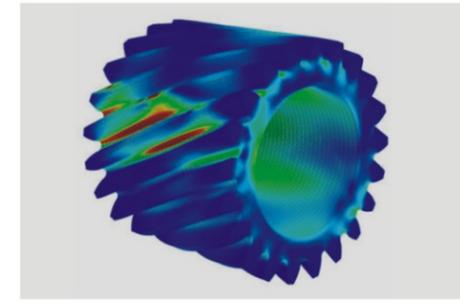






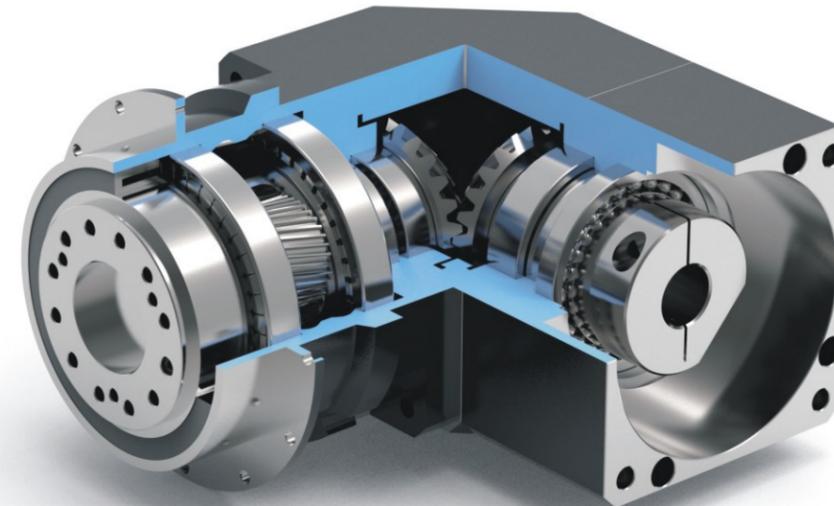
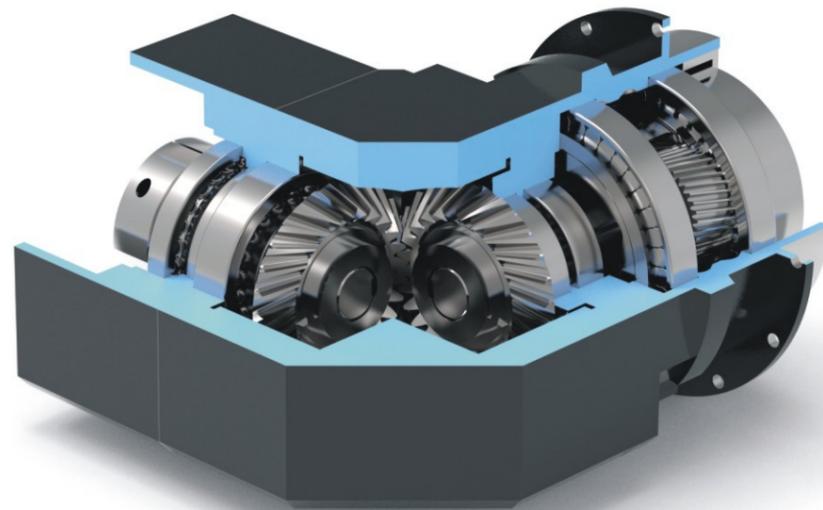
**Helical Gear System Technology**

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.



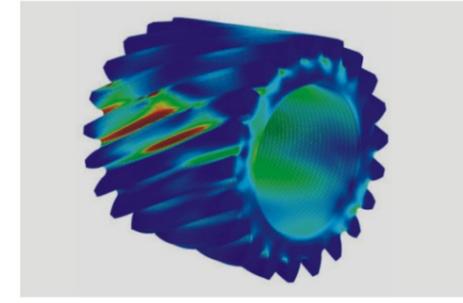
**Dynamic Balance Clamping and Sealing System**

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.



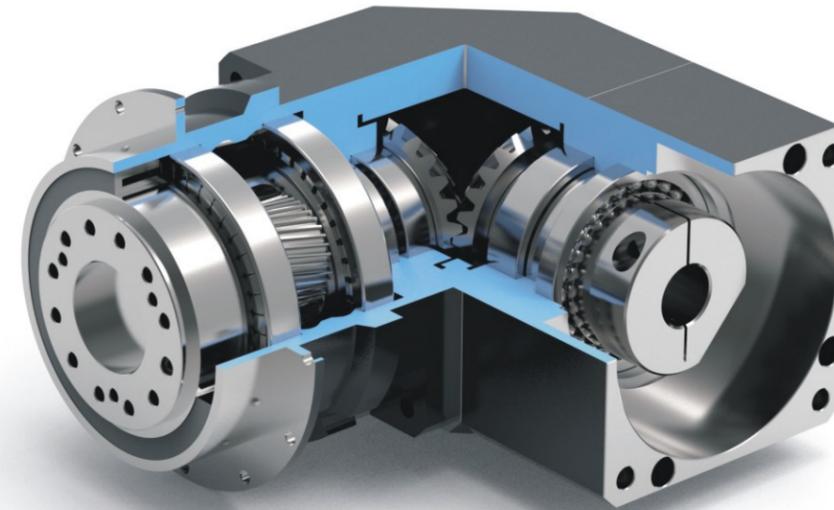
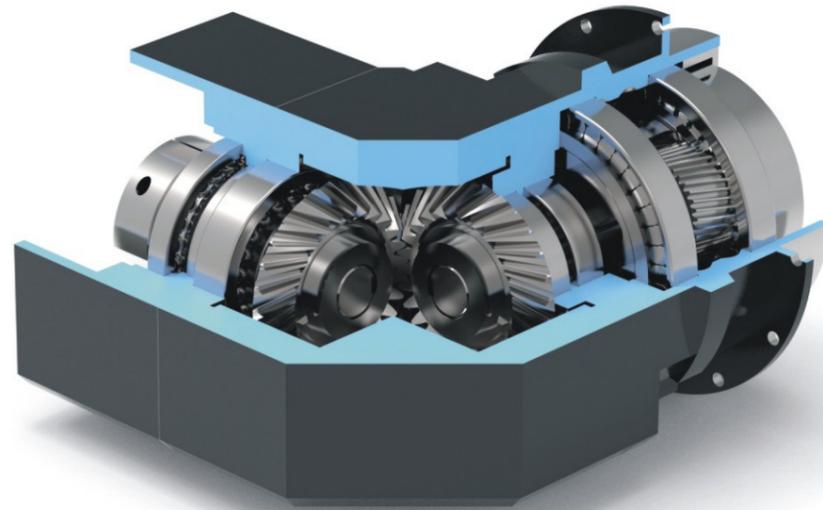
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For the gearbox input dynamic balance clamping design with perfect concentricity to decrease backlash and increase gearbox operation stability. The ultra sealing system offers grease leakage protection and support gearbox to reach IP65.





**KVH070 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	94	99	90	90	81	76	76	
		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	0.35	0.32	0.3	0.3	0.3	0.3	0.3	
		in.lb	3.10	2.83	2.66	2.66	2.66	2.66	2.66	
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	14							
		in.lb/arcmin	123.91							
Maximum Radial Load	$F_{2AMax}$	N	2500							
		lb <sub>r</sub>	562							
Maximum Axial Load	$F_{2OMax}$	N	2000							
		lb <sub>r</sub>	450							
Max. Tilting Moment	$M_{2KMax}$	Nm	80							
		in.lb	708							
Mass Moment of Inertia	$j_1$	kgcm <sup>2</sup>	0.093	0.078	0.07	0.069	0.065	0.065	0.065	
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	2.3							
		lb <sub>m</sub>	5.07							

**KVH070 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	0.32	0.32	0.32	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	
		in.lb	2.83	2.83	2.83	2.66	2.66	2.66	2.66	2.66	2.66	2.66	2.66	2.66	2.66	
Standard Backlash P1	$j_1$	arcmin	≤9													
Reduced Low Backlash P0	$j_1$	arcmin	≤7													
Ultra Low Backlash PU	$j_1$	arcmin	≤5													
Torsional Rigidity	$C_{121}$	Nm/arcmin	14													
		in.lb/arcmin	123.91													
Maximum Radial Load	$F_{2AMax}$	N	2500													
		lb <sub>r</sub>	562													
Maximum Axial Load	$F_{2OMax}$	N	2000													
		lb <sub>r</sub>	450													
Max. Tilting Moment	$M_{2KMax}$	Nm	80													
		in.lb	708													
Mass Moment of Inertia	$j_1$	kgcm <sup>2</sup>	0.075	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)	<63													
Efficiency at Full loading	$\eta$	%	93													
Operating Temperature		°C	-25 to +90													
		F	-13 to +194													
Lubrication			Synthetic Lubrication Grease													
Mouting Position			Any Directions													
Protection Class			IP 65													
Service lifetime	$L_h$	h	S5 Cycle Operation: >30,000 (S1 Continuous Operation: >15,000 hrs)													
Weight	$m$	kg	2.8													
		lb <sub>m</sub>	6.17													

**KVH070 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	94	99	90	90	81	76	76	
		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	0.35	0.32	0.3	0.3	0.3	0.3	0.3	
		in.lb	3.10	2.83	2.66	2.66	2.66	2.66	2.66	
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	14							
		in.lb/arcmin	123.91							
Maximum Radial Load	$F_{2AMax}$	N	2500							
		lb <sub>r</sub>	562							
Maximum Axial Load	$F_{2OMax}$	N	2000							
		lb <sub>r</sub>	450							
Max. Tilting Moment	$M_{2KMax}$	Nm	80							
		in.lb	708							
Mass Moment of Inertia	$j_1$	kgcm <sup>2</sup>	0.093	0.078	0.07	0.069	0.065	0.065	0.065	
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	2.3							
		lb <sub>m</sub>	5.07							

**KVH070 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	0.32	0.32	0.32	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	
		in.lb	2.83	2.83	2.83	2.66	2.66	2.66	2.66	2.66	2.66	2.66	2.66	2.66	2.66	
Standard Backlash P1	$j_1$	arcmin	≤9													
Reduced Low Backlash P0	$j_1$	arcmin	≤7													
Ultra Low Backlash PU	$j_1$	arcmin	≤5													
Torsional Rigidity	$C_{121}$	Nm/arcmin	14													
		in.lb/arcmin	123.91													
Maximum Radial Load	$F_{2AMax}$	N	2500													
		lb <sub>r</sub>	562													
Maximum Axial Load	$F_{2OMax}$	N	2000													
		lb <sub>r</sub>	450													
Max. Tilting Moment	$M_{2KMax}$	Nm	80													
		in.lb	708													
Mass Moment of Inertia	$j_1$	kgcm <sup>2</sup>	0.075	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)	<63													
Efficiency at Full loading	$\eta$	%	93													
Operating Temperature		°C	-25 to +90													
		F	-13 to +194													
Lubrication			Synthetic Lubrication Grease													
Mouting Position			Any Directions													
Protection Class			IP 65													
Service lifetime	$L_h$	h	S5 Cycle Operation: >30,000 (S1 Continuous Operation: >15,000 hrs)													
Weight	$m$	kg	2.8													
		lb <sub>m</sub>	6.17													

**KVH090 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	$T_{2a}$	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	0.51	0.46	0.44	0.85	0.85	0.85	0.85	
		in.lb	4.51	4.07	3.89	7.52	7.52	7.52	7.52	
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 <sub>r</sub>	1012							
Maximum Axial Load	$F_{2OMax}$	N	3500							
		lb <sub>r</sub>	787							
Max. Tilting Moment	$M_{2KMax}$	Nm	228							
		in.lb	2018							
Mass Moment of Inertia	$j_1$	kgcm <sup>2</sup>	0.52	0.45	0.42	0.40	0.39	0.39	0.39	
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	5.4							
		lb <sub>m</sub>	119.05							

**KVH090 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	$T_{2a}$	Nm	261	261	279	279	279	279	279	279	261	165	165	151	151	
		in.lb	2310	2310	2469	2469	2469	2469	2469	2469	2469	2310	1460	1460	1336	1336
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	0.46	0.46	0.46	0.44	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4
		in.lb	4.07	4.07	4.07	3.89	3.54	3.54	3.54	3.54	3.54	3.54	3.54	3.54	3.54	3.54
Standard Backlash P1	$j_i$	arcmin	≤9													
Reduced Low Backlash P0	$j_i$	arcmin	≤7													
Ultra Low Backlash PU	$j_i$	arcmin	≤5													
Torsional Rigidity	$C_{121}$	Nm/arcmin	35													
		in.lb/arcmin	309.77													
Maximum Radial Load	$F_{2AMax}$	N	4500													
		lb <sub>r</sub>	1012													
Maximum Axial Load	$F_{2OMax}$	N	3500													
		lb <sub>r</sub>	787													
Max. Tilting Moment	$M_{2KMax}$	Nm	228													
		in.lb	2018													
Mass Moment of Inertia	$j_1$	kgcm <sup>2</sup>	0.44	0.44	0.44	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)	< 65													
Efficiency at Full loading	$\eta$	%	93													
Operating Temperature		°C	-25 to +90													
		F	-13 to +194													
Lubrication			Synthetic Lubrication Grease													
Mouting Position			Any Directions													
Protection Class			IP 65													
Service lifetime	$L_h$	h	S5 Cycle Operation: >30,000 (S1 Continuous Operation: >15,000 hrs)													
Weight	$m$	kg	6.8													
		lb <sub>m</sub>	14.99													

**KVH090 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	$T_{2a}$	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	0.51	0.46	0.44	0.85	0.85	0.85	0.85	
		in.lb	4.51	4.07	3.89	7.52	7.52	7.52	7.52	
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 <sub>r</sub>	1012							
Maximum Axial Load	$F_{2OMax}$	N	3500							
		lb <sub>r</sub>	787							
Max. Tilting Moment	$M_{2KMax}$	Nm	228							
		in.lb	2018							
Mass Moment of Inertia	$j_1$	kgcm <sup>2</sup>	0.52	0.45	0.42	0.40	0.39	0.39	0.39	
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	5.4							
		lb <sub>m</sub>	119.05							

**KVH090 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	$T_{2a}$	Nm	261	261	279	279	279	279	279	279	261	165	165	151	151	
		in.lb	2310	2310	2469	2469	2469	2469	2469	2469	2469	2310	1460	1460	1336	1336
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	0.46	0.46	0.46	0.44	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4
		in.lb	4.07	4.07	4.07	3.89	3.54	3.54	3.54	3.54	3.54	3.54	3.54	3.54	3.54	3.54
Standard Backlash P1	$j_i$	arcmin	≤9													
Reduced Low Backlash P0	$j_i$	arcmin	≤7													
Ultra Low Backlash PU	$j_i$	arcmin	≤5													
Torsional Rigidity	$C_{121}$	Nm/arcmin	35													
		in.lb/arcmin	309.77													
Maximum Radial Load	$F_{2AMax}$	N	4500													
		lb <sub>r</sub>	1012													
Maximum Axial Load	$F_{2OMax}$	N	3500													
		lb <sub>r</sub>	787													
Max. Tilting Moment	$M_{2KMax}$	Nm	228													
		in.lb	2018													
Mass Moment of Inertia	$j_1$	kgcm <sup>2</sup>	0.44	0.44	0.44	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)	< 65													
Efficiency at Full loading	$\eta$	%	93													
Operating Temperature		°C	-25 to +90													
		F	-13 to +194													
Lubrication			Synthetic Lubrication Grease													
Mouting Position			Any Directions													
Protection Class			IP 65													
Service lifetime	$L_h$	h	S5 Cycle Operation: >30,000 (S1 Continuous Operation: >15,000 hrs)													
Weight	$m$	kg	6.8													
		lb <sub>m</sub>	14.99													

**KVH120 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	$T_{2a}$	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	1.25	1.15	1.11	1.08	1.08	1.08	1.08	
		in.lb	11.06	10.18	9.82	9.56	9.56	9.56	9.56	
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 <sub>r</sub>	1753							
Maximum Axial Load	$F_{2OMax}$	N	6000							
		lb <sub>r</sub>	1349							
Max. Tilting Moment	$M_{2KMax}$	Nm	450							
		in.lb	3983							
Mass Moment of Inertia	$j_1$	kgcm <sup>2</sup>	2.74	2.71	2.71	2.62	2.62	2.62	2.57	
Operating Noise Level	$L_{PA}$	dB(A)	< 68							
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	20							
		lb <sub>m</sub>	44.09							

**KVH120 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	612	765	660	660	
		in.lb	7966	7966	8497	8497	8497	8497	8497	8497	8497	7966	5417	6771	5841	5841
Maximum Acceleration Torque	$T_{2a}$	Nm	540	540	576	576	576	576	576	576	540	367	459	396	396	
		in.lb	4779	4779	5098	5098	5098	5098	5098	5098	5098	4779	3248	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	1.15	1.15	1.15	1.08	1.08	1.08	1.08	1.08	1.08	1.08	1.08	1.08	1.08	1.08
		in.lb	10.18	10.18	10.18	9.56	9.56	9.56	9.56	9.56	9.56	9.56	9.56	9.56	9.56	9.56
Standard Backlash P1	$j_i$	arcmin	≤9													
Reduced Low Backlash P0	$j_i$	arcmin	≤7													
Ultra Low Backlash PU	$j_i$	arcmin	≤5													
Torsional Rigidity	$C_{121}$	Nm/arcmin	90													
		in.lb/arcmin	796.56													
Maximum Radial Load	$F_{2AMax}$	N	7800													
		lb <sub>r</sub>	1753													
Maximum Axial Load	$F_{2OMax}$	N	6000													
		lb <sub>r</sub>	1349													
Max. Tilting Moment	$M_{2KMax}$	Nm	450													
		in.lb	3983													
Mass Moment of Inertia	$j_1$	kgcm <sup>2</sup>	1.5	1.5	1.49	1.3	1.3	1.3	1.3	1.3	1.3	1.5	1.49	1.49	1.45	
Operating Noise Level	$L_{PA}$	dB(A)	< 68													
Efficiency at Full loading	$\eta$	%	93													
Operating Temperature		°C	-25 to +90													
		F	-13 to +194													
Lubrication			Synthetic Lubrication Grease													
Mouting Position			Any Directions													
Protection Class			IP 65													
Service lifetime	$L_h$	h	S5 Cycle Operation: >30,000 (S1 Continuous Operation: >15,000 hrs)													
Weight	$m$	kg	28.8													
		lb <sub>m</sub>	63.49													

**KVH120 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	$T_{2a}$	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	1.25	1.15	1.11	1.08	1.08	1.08	1.08	
		in.lb	11.06	10.18	9.82	9.56	9.56	9.56	9.56	
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 <sub>r</sub>	1753							
Maximum Axial Load	$F_{2OMax}$	N	6000							
		lb <sub>r</sub>	1349							
Max. Tilting Moment	$M_{2KMax}$	Nm	450							
		in.lb	3983							
Mass Moment of Inertia	$j_i$	kgcm <sup>2</sup>	2.74	2.71	2.71	2.62	2.62	2.62	2.57	
Operating Noise Level	$L_{PA}$	dB(A)	< 68							
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	20							
		lb <sub>m</sub>	44.09							

**KVH120 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	612	765	660	660	
		in.lb	7966	7966	8497	8497	8497	8497	8497	8497	8497	7966	5417	6771	5841	5841
Maximum Acceleration Torque	$T_{2a}$	Nm	540	540	576	576	576	576	576	576	540	367	459	396	396	
		in.lb	4779	4779	5098	5098	5098	5098	5098	5098	5098	4779	3248	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	1.15	1.15	1.15	1.08	1.08	1.08	1.08	1.08	1.08	1.08	1.08	1.08	1.08	1.08
		in.lb	10.18	10.18	10.18	9.56	9.56	9.56	9.56	9.56	9.56	9.56	9.56	9.56	9.56	9.56
Standard Backlash P1	$j_i$	arcmin	≤9													
Reduced Low Backlash P0	$j_i$	arcmin	≤7													
Ultra Low Backlash PU	$j_i$	arcmin	≤5													
Torsional Rigidity	$C_{121}$	Nm/arcmin	90													
		in.lb/arcmin	796.56													
Maximum Radial Load	$F_{2AMax}$	N	7800													
		lb <sub>r</sub>	1753													
Maximum Axial Load	$F_{2OMax}$	N	6000													
		lb <sub>r</sub>	1349													
Max. Tilting Moment	$M_{2KMax}$	Nm	450													
		in.lb	3983													
Mass Moment of Inertia	$j_i$	kgcm <sup>2</sup>	1.5	1.5	1.49	1.3	1.3	1.3	1.3	1.3	1.3	1.5	1.49	1.49	1.45	
Operating Noise Level	$L_{PA}$	dB(A)	< 68													
Efficiency at Full loading	$\eta$	%	93													
Operating Temperature		°C	-25 to +90													
		F	-13 to +194													
Lubrication			Synthetic Lubrication Grease													
Mouting Position			Any Directions													
Protection Class			IP 65													
Service lifetime	$L_h$	h	S5 Cycle Operation: >30,000 (S1 Continuous Operation: >15,000 hrs)													
Weight	$m$	kg	28.8													
		lb <sub>m</sub>	63.49													

**KVH160 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	3	2.9	2.8	2.8	2.8	2.8	2.8	
		in.lb	26.55	25.67	24.78	24.78	24.78	24.78	24.78	
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 <sub>r</sub>	2697.60							
Maximum Axial Load	$F_{2OMax}$	N	10000							
		lb <sub>r</sub>	2248.00							
Max. Tilting Moment	$M_{2KMax}$	Nm	1012							
		in.lb	8957							
Mass Moment of Inertia	$j_1$	kgcm <sup>2</sup>	7.54	7.42	7.42	7.25	7.14	7.14	7.14	
Operating Noise Level	$L_{PA}$	dB(A)	< 70							
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	26							
		lb <sub>m</sub>	57.32							

**KVH160 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	3	3	3	2.9	2.9	2.9	2.9	2.9	2.9	2.9	2.9	2.9	2.9	2.9
		in.lb	26.55	26.55	26.55	25.67	25.67	25.67	25.67	25.67	25.67	25.67	25.67	25.67	25.67	25.67
Standard Backlash P1	$j_i$	arcmin	≤9													
Reduced Low Backlash P0	$j_i$	arcmin	≤7													
Ultra Low Backlash PU	$j_i$	arcmin	≤5													
Torsional Rigidity	$C_{121}$	Nm/arcmin	205													
		in.lb/arcmin	1814.39													
Maximum Radial Load	$F_{2AMax}$	N	12000													
		lb <sub>r</sub>	2697.6													
Maximum Axial Load	$F_{2OMax}$	N	10000													
		lb <sub>r</sub>	2248													
Max. Tilting Moment	$M_{2KMax}$	Nm	1012													
		in.lb	8957													
Mass Moment of Inertia	$j_1$	kgcm <sup>2</sup>	6.65	6.65	5.81	6.34	5.36	4.08	5.36	4.08	7.4	7.5	7.4	7.4	7.3	
Operating Noise Level	$L_{PA}$	dB(A)	< 70													
Efficiency at Full loading	$\eta$	%	93													
Operating Temperature		°C	-25 to +90													
		F	-13 to +194													
Lubrication			Synthetic Lubrication Grease													
Mouting Position			Any Directions													
Protection Class			IP 65													
Service lifetime	$L_h$	h	S5 Cycle Operation: >30,000 (S1 Continuous Operation: >15,000 hrs)													
Weight	$m$	kg	31													
		lb <sub>m</sub>	68.34													

**KVH160 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	$T_{2a}$	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	3	2.9	2.8	2.8	2.8	2.8	2.8	
		in.lb	26.55	25.67	24.78	24.78	24.78	24.78	24.78	
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 <sub>r</sub>	2697.60							
Maximum Axial Load	$F_{2OMax}$	N	10000							
		lb <sub>r</sub>	2248.00							
Max. Tilting Moment	$M_{2KMax}$	Nm	1012							
		in.lb	8957							
Mass Moment of Inertia	$j_1$	kgcm <sup>2</sup>	7.54	7.42	7.42	7.25	7.14	7.14	7.14	
Operating Noise Level	$L_{PA}$	dB(A)	< 70							
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	26							
		lb <sub>m</sub>	57.32							

**KVH160 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	$T_{2a}$	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	3	3	3	2.9	2.9	2.9	2.9	2.9	2.9	2.9	2.9	2.9	2.9	2.9
		in.lb	26.55	26.55	26.55	25.67	25.67	25.67	25.67	25.67	25.67	25.67	25.67	25.67	25.67	25.67
Standard Backlash P1	$j_i$	arcmin	≤9													
Reduced Low Backlash P0	$j_i$	arcmin	≤7													
Ultra Low Backlash PU	$j_i$	arcmin	≤5													
Torsional Rigidity	$C_{121}$	Nm/arcmin	205													
		in.lb/arcmin	1814.39													
Maximum Radial Load	$F_{2AMax}$	N	12000													
		lb <sub>r</sub>	2697.6													
Maximum Axial Load	$F_{2OMax}$	N	10000													
		lb <sub>r</sub>	2248													
Max. Tilting Moment	$M_{2KMax}$	Nm	1012													
		in.lb	8957													
Mass Moment of Inertia	$j_1$	kgcm <sup>2</sup>	6.65	6.65	5.81	6.34	5.36	4.08	5.36	4.08	7.4	7.5	7.4	7.4	7.3	
Operating Noise Level	$L_{PA}$	dB(A)	< 70													
Efficiency at Full loading	$\eta$	%	93													
Operating Temperature		°C	-25 to +90													
		F	-13 to +194													
Lubrication			Synthetic Lubrication Grease													
Mouting Position			Any Directions													
Protection Class			IP 65													
Service lifetime	$L_h$	h	S5 Cycle Operation: >30,000 (S1 Continuous Operation: >15,000 hrs)													
Weight	$m$	kg	31													
		lb <sub>m</sub>	68.34													

**KVH205 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	3.9	3.8	3.6	3.6	3.6	3.6	3.6	
		in.lb	34.52	33.63	31.86	31.86	31.86	31.86	31.86	
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 <sub>r</sub>	4046							
Maximum Axial Load	$F_{2OMax}$	N	15000							
		lb <sub>r</sub>	3372							
Max. Tilting Moment	$M_{2KMax}$	Nm	2050							
		in.lb	18144							
Mass Moment of Inertia	$j_1$	kgcm <sup>2</sup>	23.67	22.75	22.75	22.48	22.59	22.59	22.55	
Operating Noise Level	$L_{PA}$	dB(A)	< 72							
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	41							
		lb <sub>m</sub>	90.39							

**KVH205 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	2.9	2.9	2.9	2.8	2.8	2.8	2.8	2.8	2.8	2.8	2.8	2.8	2.8	2.8
		in.lb	25.67	25.67	25.67	24.78	24.78	24.78	24.78	24.78	24.78	24.78	24.78	24.78	24.78	24.78
Standard Backlash P1	$j_i$	arcmin	≤9													
Reduced Low Backlash P0	$j_i$	arcmin	≤7													
Ultra Low Backlash PU	$j_i$	arcmin	≤5													
Torsional Rigidity	$C_{121}$	Nm/arcmin	560													
		in.lb/arcmin	4956.39													
Maximum Radial Load	$F_{2AMax}$	N	18000													
		lb <sub>r</sub>	4046.4													
Maximum Axial Load	$F_{2OMax}$	N	15000													
		lb <sub>r</sub>	3372													
Max. Tilting Moment	$M_{2KMax}$	Nm	2050													
		in.lb	18144													
Mass Moment of Inertia	$j_1$	kgcm <sup>2</sup>	7.42	7.42	7.54	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)	< 72													
Efficiency at Full loading	$\eta$	%	93													
Operating Temperature		°C	-25 to +90													
		F	-13 to +194													
Lubrication			Synthetic Lubrication Grease													
Mouting Position			Any Directions													
Protection Class			IP 65													
Service lifetime	$L_h$	h	S5 Cycle Operation: >30,000 (S1 Continuous Operation: >15,000 hrs)													
Weight	$m$	kg	49													
		lb <sub>m</sub>	108.03													

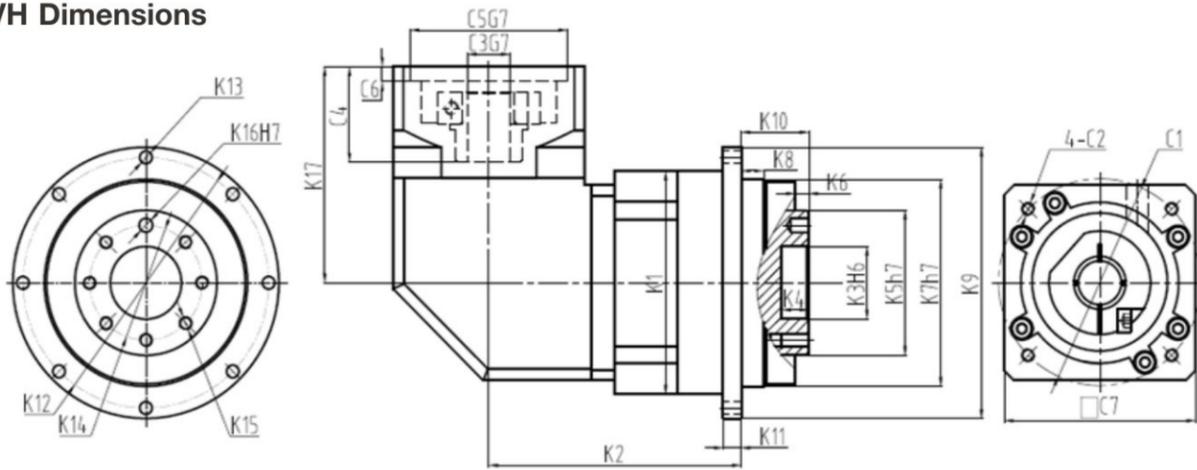
**KVH205 1-stage**

		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	3.9	3.8	3.6	3.6	3.6	3.6	3.6	
		in.lb	34.52	33.63	31.86	31.86	31.86	31.86	31.86	
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 <sub>r</sub>	4046							
Maximum Axial Load	$F_{2OMax}$	N	15000							
		lb <sub>r</sub>	3372							
Max. Tilting Moment	$M_{2KMax}$	Nm	2050							
		in.lb	18144							
Mass Moment of Inertia	$j_1$	kgcm <sup>2</sup>	23.67	22.75	22.75	22.48	22.59	22.59	22.55	
Operating Noise Level	$L_{PA}$	dB(A)	< 72							
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	41							
		lb <sub>m</sub>	90.39							

**KVH205 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	2.9	2.9	2.9	2.8	2.8	2.8	2.8	2.8	2.8	2.8	2.8	2.8	2.8	2.8
		in.lb	25.67	25.67	25.67	24.78	24.78	24.78	24.78	24.78	24.78	24.78	24.78	24.78	24.78	24.78
Standard Backlash P1	$j_i$	arcmin	≤9													
Reduced Low Backlash P0	$j_i$	arcmin	≤7													
Ultra Low Backlash PU	$j_i$	arcmin	≤5													
Torsional Rigidity	$C_{121}$	Nm/arcmin	560													
		in.lb/arcmin	4956.39													
Maximum Radial Load	$F_{2AMax}$	N	18000													
		lb <sub>r</sub>	4046.4													
Maximum Axial Load	$F_{2OMax}$	N	15000													
		lb <sub>r</sub>	3372													
Max. Tilting Moment	$M_{2KMax}$	Nm	2050													
		in.lb	18144													
Mass Moment of Inertia	$j_1$	kgcm <sup>2</sup>	7.42	7.42	7.54	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)	< 72													
Efficiency at Full loading	$\eta$	%	93													
Operating Temperature		°C	-25 to +90													
		F	-13 to +194													
Lubrication			Synthetic Lubrication Grease													
Mouting Position			Any Directions													
Protection Class			IP 65													
Service lifetime	$L_h$	h	S5 Cycle Operation: >30,000 (S1 Continuous Operation: >15,000 hrs)													
Weight	$m$	kg	49													
		lb <sub>m</sub>	108.03													

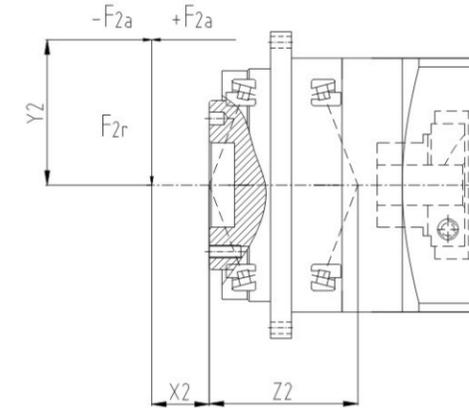
**KVH Dimensions**



Model	KVH070		KVH090		KVH120		KVH160		KVH205	
Stage	1	2	1	2	1	2	1	2	1	2
K1	φ70		φ97		φ120		φ160		φ210	
K2	83.5	107.5	111.9	133.7	135.2	177	166.5	227.5	198	249.5
K3	φ20		31.5		40		50		80	
K4	8		12		12		12		22.5	
K5	φ40		φ63		φ80		φ100		φ160	
K6	3		6		6		6		6	
K7	φ64		φ90		φ110		φ140		φ200	
K8	7		10		10		14.6		15	
K9	φ86		φ118		φ145		φ179		φ247	
K10	19.5		30		29		38		56	
K11	5		8		10		10		112	
K12	φ79		φ109		φ135		φ168		φ233	
K13	8-φ4.5		8-φ5.5		8-φ5.5		12-φ6.6		12-φ9	
K14	φ31.5		φ50		φ63		φ80		φ125	
K15	7-M5X8		7-M6X12		11-M6X15		11-M8X18		11-M10X17	
K16	φ5X6		φ6X7		φ6X7		φ8X8		φ10X10	
K17	82.5		94		140		169		169	
C1	φ70		φ90		φ145		φ200		φ200	
C2	M5X12		M6X15		M8X20		M12X25		M12X25	
C3	φ14		φ19		φ24		φ35		φ35	
C4	32.1		41.6		61.3		82		82	
C5	φ50		φ70		φ110		φ114.3		φ114.3	
C6	6.5		6.5		8		8		8	
C7	65		85		120		175		175	

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](http://www.kofon-motion.com)

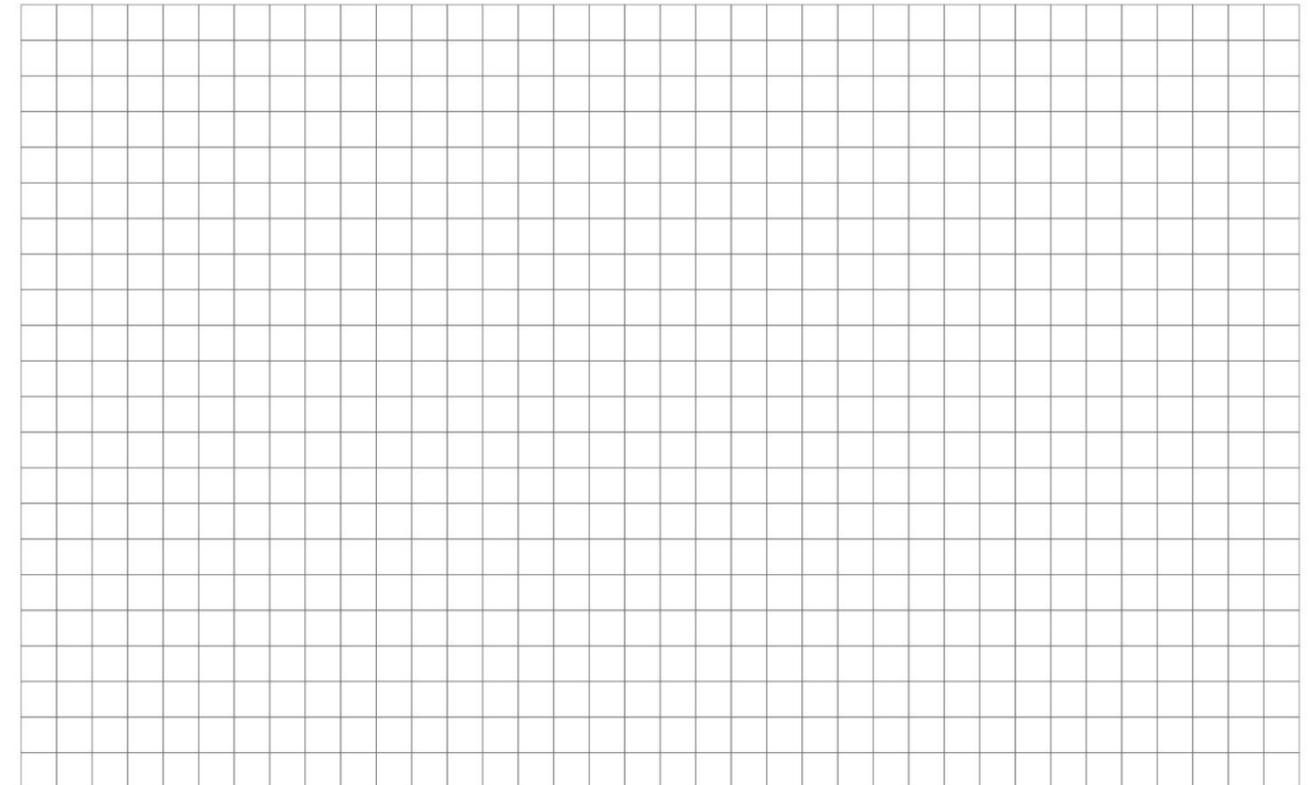
**KVH Titing moment**



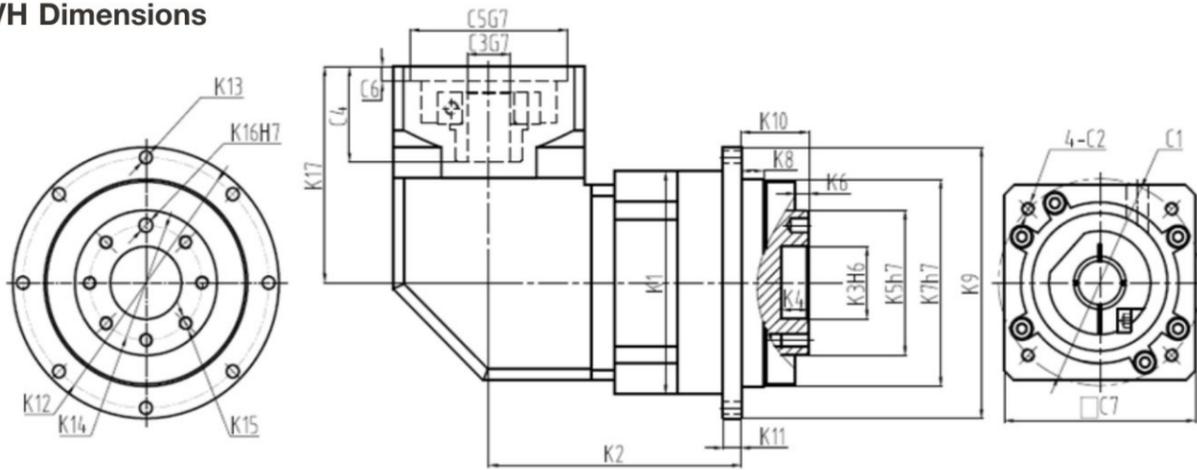
$$M_{2kb} = \frac{2 \cdot F_{2a} \cdot y_2 + F_{2rb} \cdot (x_2 + Z_2)}{1000}$$

KVH	050	070	090	120	160	205	255
Z2[mm]	40.5	32.136	50.6	57.7	84.37	113.9	135.22
M <sub>2kb</sub>	28	80	228	450	1012	2050	6085

**Technical Memo**



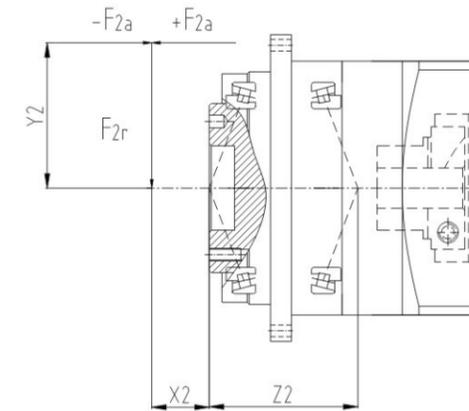
**KVH Dimensions**



Model	KVH070		KVH090		KVH120		KVH160		KVH205	
Stage	1	2	1	2	1	2	1	2	1	2
K1	φ70		φ97		φ120		φ160		φ210	
K2	83.5	107.5	111.9	133.7	135.2	177	166.5	227.5	198	249.5
K3	φ20		31.5		40		50		80	
K4	8		12		12		12		22.5	
K5	φ40		φ63		φ80		φ100		φ160	
K6	3		6		6		6		6	
K7	φ64		φ90		φ110		φ140		φ200	
K8	7		10		10		14.6		15	
K9	φ86		φ118		φ145		φ179		φ247	
K10	19.5		30		29		38		56	
K11	5		8		10		10		112	
K12	φ79		φ109		φ135		φ168		φ233	
K13	8-φ4.5		8-φ5.5		8-φ5.5		12-φ6.6		12-φ9	
K14	φ31.5		φ50		φ63		φ80		φ125	
K15	7-M5X8		7-M6X12		11-M6X15		11-M8X18		11-M10X17	
K16	φ5X6		φ6X7		φ6X7		φ8X8		φ10X10	
K17	82.5		94		140		169		169	
C1	φ70		φ90		φ145		φ200		φ200	
C2	M5X12		M6X15		M8X20		M12X25		M12X25	
C3	φ14		φ19		φ24		φ35		φ35	
C4	32.1		41.6		61.3		82		82	
C5	φ50		φ70		φ110		φ114.3		φ114.3	
C6	6.5		6.5		8		8		8	
C7	65		85		120		175		175	

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](http://www.kofon-motion.com)

**KVH Titing moment**



$$M_{2kb} = \frac{2 \cdot F_{2a} \cdot y_2 + F_{2rb} \cdot (x_2 + Z_2)}{1000}$$

KVH	050	070	090	120	160	205	255
Z2[mm]	40.5	32.136	50.6	57.7	84.37	113.9	135.22
M <sub>2kb</sub>	28	80	228	450	1012	2050	6085

**Technical Memo**

