SANGALLI SERVOMOTORI

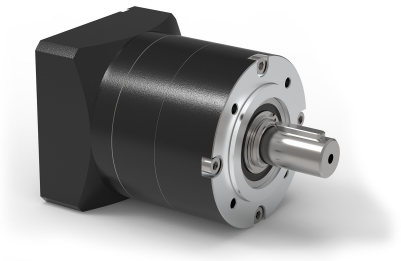
Precision Planetary Gearboxes

Advanced Gearbox Solution

INDEX
PLANETARY GEARBOX

SANGALLI SERVOMOTORI

SPL Series

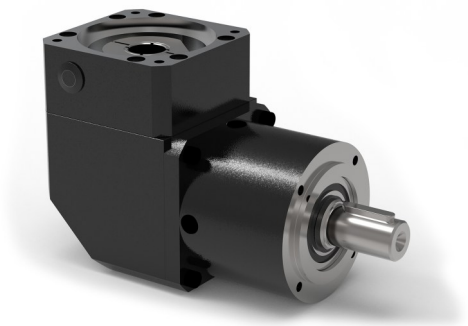


KPG Series

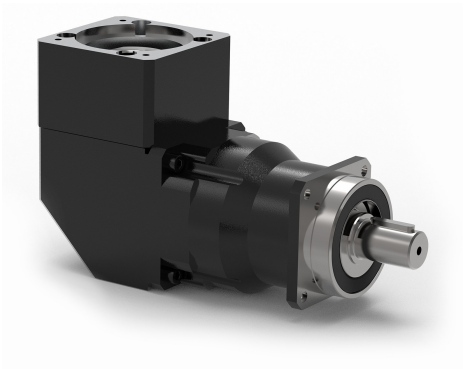
STANDARD PRECISION GEARBOX

HIGH PRECISION GEARBOX

SVL Series



KVG Series



STANDARD PRECISION GEARBOX 90°

HIGH PRECISION GEARBOX 90°

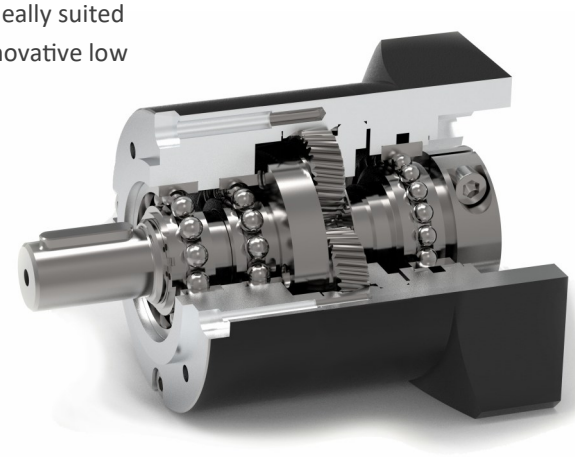
SPL Series

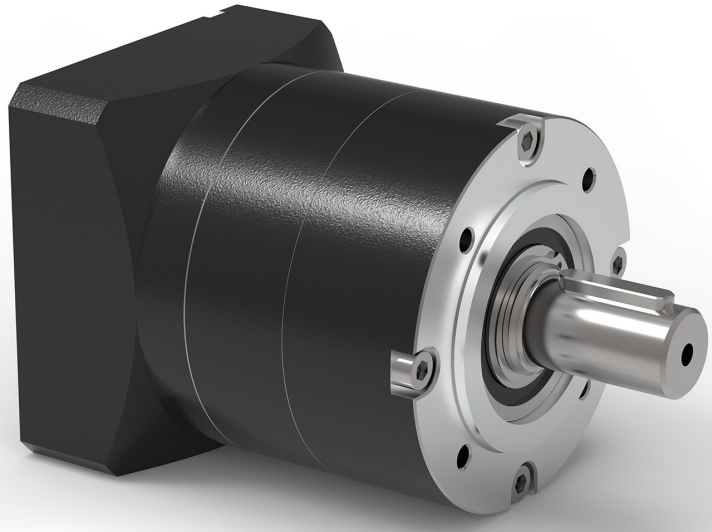
Standard Precision Gearbox

SPL is our highly successful high precision gearbox series

The SPL is our super value gearbox option with an unequalled price-to-performance level. Boasting an exceptionally lightweight yet incredibly robust design, this unit is ideally suited to handle even the most demanding production environments, thanks to its innovative low -friction bearing system and optimized lubrication.

Quite simply, a high-performance powerhouse offered at a compelling and consumer-friendly price point.





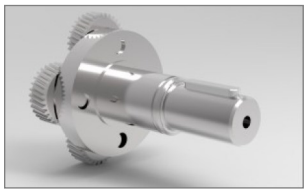
Key Features:

Economy Series,
Coaxial gearbox configuration,
Helical gear system,
Low-friction deep groove ball bearings,
Round-style output flange,
Expansive gear ratio range spanning i=3 up to i=512,
Uni-directional rotation,
Powerful cantilever planetary carrier

Helical Gear System Technology

Thanks to the tooth to tooth compact ratio more than 60%.

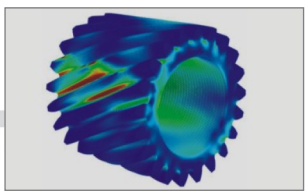
The helical gearing and full needle bearing bring the benefits including higher torque capacity, smooth and lower noise running, decreased backlash and higher efficiency.



The Powerful Cantilever Planetary Carrier

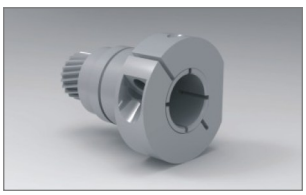
The powerful cantilever planetary carrier provide great mechanical support for planetary gears, thus the complete gearbox can reach high level stability.

Synthetic grease lubrication allows maintenance free for gearbox whole service life.



Gear Grinding and Heat Treatment Technology

The global leading gear grinding technology brings the great improvement lor 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 damping design with perfect concentricity to decrease backlash and increase gearbox operation stability.
The ultra sealing system offers grease leakage protection and support gearbox to reach IP65.

SPL040 1-stage

			1-stage						
Ratio	i		3	4	5	7	8	9	10
Nominal Output Torque	T_{2N}	*Nm*	13	17	17	—	12	—	—
Emergency Stop Torque	T_{2STOP}	*Nm*	26	34	34	—	24	—	—
Maximum Accelleration Torque	T_{2ACC}	*Nm*	23.4	30.6	30.6	—	21.6	—	—
Maximum Torque	T_{2MAX}	*Nm*	26	34	34	—	24	—	—
Permitted Average Input Speed	N_{1N}	*rpm*	4000						
Maximum Input Speed	N_{1MAX}	*rpm*	8000						
Mean No Load Running Torque	T_{1NL}	*Nm*	0.022	0.019	0.017	—	0.017	—	—
Maximum Torsional Backlash	j_t	*arcmin*	≤ 12						
Torsional Rigidity	c_g	*Nm/arcmin*	0.7	0.7	0.7	0.7	0.7	0.7	0.7
Maximum Radial Load	F_r	*N*	385						
Maximum Axial Load	F_a	*N*	250						
Max. Tilting Moment	M_k	*Nm*	30						
Mass Moment of Inertia	J_1	*kgcm²*	0.031	0.022	0.019	—	0.017	—	—
Weight	m_G	*kg*	0.4						

SPL040 2-stage

			2-stage							
Ratio	i		12	15	16	20	25	32	40	64
Nominal Output Torque	T_{2N}	*Nm*	16	16	16	17	17	17	17	13
Emergency Stop Torque	T_{2STOP}	*Nm*	32	32	32	34	34	34	34	26
Maximum Accelleration Torque	T_{2ACC}	*Nm*	28.8	28.8	28.8	30.6	30.6	30.6	30.6	23.4
Maximum Torque	T_{2MAX}	*Nm*	32	32	32	34	34	34	34	26
Permitted Average Input Speed	N_{1N}	*rpm*	4000							
Maximum Input Speed	N_{1MAX}	*rpm*	8000							
Mean No Load Running Torque	T_{1NL}	*Nm*	0.019	0.017	0.019	0.017	0.017	0.017	0.017	0.017
Maximum Torsional Backlash	j_t	*arcmin*	≤ 15							
Torsional Rigidity	c_g	*Nm/arcmin*	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7
Maximum Radial Load	F_r	*N*	385							
Maximum Axial Load	F_a	*N*	250							
Max. Tilting Moment	M_k	*Nm*	30							
Mass Moment of Inertia	J_1	*kgcm²*	0.031	0.029	0.023	0.022	0.019	0.019	0.017	0.016
Weight	m_G	*kg*	0.5							

SPL040 3-stage

			3-stage							
Ratio	i		80	100	125	160	200	256	320	512
Nominal Output Torque	T_{2N}	*Nm*	17	17	17	17	17	17	17	13
Emergency Stop Torque	T_{2STOP}	*Nm*	34	34	34	34	34	34	34	26
Maximum Accelleration Torque	T_{2ACC}	*Nm*	30.6	30.6	30.6	30.6	30.6	30.6	30.6	23.4
Maximum Torque	T_{2MAX}	*Nm*	34	34	34	34	34	34	34	26
Permitted Average Input Speed	N_{1N}	*rpm*	4000							
Maximum Input Speed	N_{1MAX}	*rpm*	8000							
Mean No Load Running Torque	T_{1NL}	*Nm*	0.017	0.017	0.017	0.017	0.017	0.017	0.017	0.017
Maximum Torsional Backlash	j_t	*arcmin*	≤ 17							
Torsional Rigidity	c_g	*Nm/arcmin*	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7
Maximum Radial Load	F_r	*N*	385							
Maximum Axial Load	F_a	*N*	250							
Max. Tilting Moment	M_k	*Nm*	30							
Mass Moment of Inertia	J_1	*kgcm²*	0.029	0.019	0.019	0.029	0.016	0.016	0.016	0.016
Weight	m_G	*kg*	0.6							

SPL060 1-stage

1-stage									
Ratio	i		3	4	5	7	8	9	10
Nominal Output Torque	T_{2N}	*Nm*	28	36	37	37	32	30	25
Emergency Stop Torque	T_{2STOP}	*Nm*	56	72	74	74	64	60	50
Maximum Accelleration Torque	T_{2ACC}	*Nm*	50.4	64.8	66.6	66.6	57.6	54	45
Maximum Torque	T_{2MAX}	*Nm*	56	72	74	74	64	60	50
Permitted Average Input Speed	N_{1N}	*rpm*	4000						
Maximum Input Speed	N_{1MAX}	*rpm*	6000						
Mean No Load Running Torque	T_{1NL}	*Nm*	0.24	0.2	0.17	0.15	0.15	0.15	0.15
Maximum Torsional Backlash	j_t	*arcmin*	≤ 8						
Torsional Rigidity	c_g	*Nm/arcmin*	2.5	2.5	2.5	2.5	2.5	2.5	2.5
Maximum Radial Load	F_r	*N*	430						
Maximum Axial Load	F_a	*N*	320						
Max. Tilting Moment	M_k	*Nm*	80						
Mass Moment of Inertia	J_1	*kgcm²*	0.135	0.093	0.078	0.069	0.065	0.065	0.65
Weight	m_G	*kg*	1						

SPL060 2-stage

2-stage									
Ratio	i		12	15	16	20	25	32	40	64
Nominal Output Torque	T_{2N}	*Nm*	30	31	42	42	42	42	42	33
Emergency Stop Torque	T_{2STOP}	*Nm*	60	62	84	84	84	84	84	66
Maximum Accelleration Torque	T_{2ACC}	*Nm*	54	55.8	75.6	75.6	75.6	75.6	75.6	59.4
Maximum Torque	T_{2MAX}	*Nm*	60	62	84	84	84	84	84	66
Permitted Average Input Speed	N_{1N}	*rpm*	4000							
Maximum Input Speed	N_{1MAX}	*rpm*	6000							
Mean No Load Running Torque	T_{1NL}	*Nm*	0.2	0.17	0.2	0.17	0.17	0.15	0.15	0.15
Maximum Torsional Backlash	j_t	*arcmin*	≤ 10							
Torsional Rigidity	c_g	*Nm/arcmin*	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5
Maximum Radial Load	F_r	*N*	430							
Maximum Axial Load	F_a	*N*	320							
Max. Tilting Moment	M_k	*Nm*	80							
Mass Moment of Inertia	J_1	*kgcm²*	0.105	0.095	0.088	0.075	0.075	0.064	0.064	0.064
Weight	m_G	*kg*	1.2							

SPL060 3-stage

			3-stage							
Ratio	i		80	100	125	160	200	256	320	512
Nominal Output Torque	T_{2N}	*Nm*	42	42	42	42	42	42	42	33
Emergency Stop Torque	T_{2STOP}	*Nm*	84	84	84	84	84	84	84	66
Maximum Accelleration Torque	T_{2ACC}	*Nm*	75.6	75.6	75.6	75.6	75.6	75.6	75.6	59.4
Maximum Torque	T_{2MAX}	*Nm*	84	84	84	84	84	84	84	66
Permitted Average Input Speed	N_{1N}	*rpm*	4000							
Maximum Input Speed	N_{1MAX}	*rpm*	6000							
Mean No Load Running Torque	T_{1NL}	*Nm*	0.17	0.17	0.17	0.15	0.15	0.15	0.15	0.15
Maximum Torsional Backlash	j_t	*arcmin*	≤ 12							
Torsional Rigidity	c_g	*Nm/arcmin*	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5
Maximum Radial Load	F_r	*N*	430							
Maximum Axial Load	F_a	*N*	320							
Max. Tilting Moment	M_k	*Nm*	80							
Mass Moment of Inertia	J_1	*kgcm²*	0.075	0.064	0.064	0.064	0.064	0.064	0.064	0.064
Weight	m_G	*kg*	1.4							

SPL080 1-stage

1-stage									
Ratio	i		3	4	5	7	8	9	10
Nominal Output Torque	T_{2N}	*Nm*	75	90	95	82	80	78	65
Emergency Stop Torque	T_{2STOP}	*Nm*	150	180	190	164	160	156	130
Maximum Accelleration Torque	T_{2ACC}	*Nm*	135	162	171	147.6	144	140.4	117
Maximum Torque	T_{2MAX}	*Nm*	150	180	190	164	160	156	130
Permitted Average Input Speed	N_{1N}	*rpm*	3000						
Maximum Input Speed	N_{1MAX}	*rpm*	6000						
Mean No Load Running Torque	T_{1NL}	*Nm*	0.38	0.36	0.31	0.25	0.25	0.25	0.25
Maximum Torsional Backlash	j_t	*arcmin*	≤ 8						
Torsional Rigidity	c_g	*Nm/arcmin*	4	4	4	4	4	4	4
Maximum Radial Load	F_r	*N*	640						
Maximum Axial Load	F_a	*N*	420						
Max. Tilting Moment	M_k	*Nm*	200						
Mass Moment of Inertia	J_1	*kgcm²*	0.770	0.520	0.450	0.400	0.390	0.390	0.390
Weight	m_G	*kg*	2						

SPL080 2-stage

2-stage										
Ratio	i		12	15	16	20	25	32	40	64
Nominal Output Torque	T_{2N}	*Nm*	80	90	90	90	90	90	90	80
Emergency Stop Torque	T_{2STOP}	*Nm*	160	180	180	180	180	180	180	160
Maximum Accelleration Torque	T_{2ACC}	*Nm*	144	162	162	162	162	162	162	144
Maximum Torque	T_{2MAX}	*Nm*	160	180	180	180	180	180	180	160
Permitted Average Input Speed	N_{1N}	*rpm*	3000							
Maximum Input Speed	N_{1MAX}	*rpm*	6000							
Mean No Load Running Torque	T_{1NL}	*Nm*	0.36	0.31	0.36	0.31	0.31	0.25	0.25	0.25
Maximum Torsional Backlash	j_t	*arcmin*	≤ 10							
Torsional Rigidity	c_g	*Nm/arcmin*	4	4	4	4	4	4	4	4
Maximum Radial Load	F_r	*N*	640							
Maximum Axial Load	F_a	*N*	420							
Max. Tilting Moment	M_k	*Nm*	200							
Mass Moment of Inertia	J_1	*kgcm²*	0.670	0.510	0.500	0.440	0.440	0.390	0.390	0.39
Weight	m_G	*kg*	2.8							

SPL080 3-stage

			3-stage							
Ratio	i		80	100	125	160	200	256	320	512
Nominal Output Torque	T_{2N}	*Nm*	95	95	95	95	95	95	95	82
Emergency Stop Torque	T_{2STOP}	*Nm*	190	190	190	190	190	190	190	164
Maximum Accelleration Torque	T_{2ACC}	*Nm*	171	171	171	171	171	171	171	147.6
Maximum Torque	T_{2MAX}	*Nm*	190	190	190	190	190	190	190	164
Permitted Average Input Speed	N_{1N}	*rpm*	3000							
Maximum Input Speed	N_{1MAX}	*rpm*	6000							
Mean No Load Running Torque	T_{1NL}	*Nm*	0.31	0.31	0.31	0.25	0.25	0.25	0.25	0.25
Maximum Torsional Backlash	j_t	*arcmin*	≤ 12							
Torsional Rigidity	c_g	*Nm/arcmin*	4	4	4	4	4	4	4	4
Maximum Radial Load	F_r	*N*	640							
Maximum Axial Load	F_a	*N*	420							
Max. Tilting Moment	M_k	*Nm*	200							
Mass Moment of Inertia	J_1	*kgcm²*	0.500	0.440	0.700	0.390	0.390	0.390	0.390	0.390
Weight	m_G	*kg*	3.5							

SPL120 1-stage

1-stage									
Ratio	i		3	4	5	7	8	9	10
Nominal Output Torque	T_{2N}	*Nm*	190	240	245	235	210	200	196
Emergency Stop Torque	T_{2STOP}	*Nm*	380	480	490	470	420	400	392
Maximum Accelleration Torque	T_{2ACC}	*Nm*	342	432	441	423	378	360	352.8
Maximum Torque	T_{2MAX}	*Nm*	380	480	490	470	420	400	392
Permitted Average Input Speed	N_{1N}	*rpm*	3000						
Maximum Input Speed	N_{1MAX}	*rpm*	6000						
Mean No Load Running Torque	T_{1NL}	*Nm*	1	0.95	0.85	0.78	0.78	0.78	0.78
Maximum Torsional Backlash	j_t	*arcmin*	≤ 8						
Torsional Rigidity	c_g	*Nm/arcmin*	10	10	10	10	10	10	10
Maximum Radial Load	F_r	*N*	2070						
Maximum Axial Load	F_a	*N*	970						
Max. Tilting Moment	M_k	*Nm*	400						
Mass Moment of Inertia	J_1	*kgcm²*	2.630	1.790	1.530	1.400	1.320	1.320	1.320
Weight	m_G	*kg*	6.5						

SPL120 2-stage

2-stage									
Ratio	i		12	15	16	20	25	32	40	64
Nominal Output Torque	T_{2N}	*Nm*	210	210	220	230	255	255	250	210
Emergency Stop Torque	T_{2STOP}	*Nm*	420	420	440	460	510	510	500	420
Maximum Accelleration Torque	T_{2ACC}	*Nm*	378	378	396	414	459	459	450	378
Maximum Torque	T_{2MAX}	*Nm*	420	420	440	460	510	510	500	420
Permitted Average Input Speed	N_{1N}	*rpm*	3000							
Maximum Input Speed	N_{1MAX}	*rpm*	6000							
Mean No Load Running Torque	T_{1NL}	*Nm*	0.95	0.85	0.95	0.85	0.85	0.78	0.78	0.78
Maximum Torsional Backlash	j_t	*arcmin*	≤ 10							
Torsional Rigidity	c_g	*Nm/arcmin*	10	10	10	10	10	10	10	10
Maximum Radial Load	F_r	*N*	2070							
Maximum Axial Load	F_a	*N*	970							
Max. Tilting Moment	M_k	*Nm*	400							
Mass Moment of Inertia	J_1	*kgcm²*	1.630	1.670	1.750	1.530	1.490	1.320	1.320	1.320
Weight	m_G	*kg*	9.5							

SPL120 3-stage

			3-stage							
Ratio	i		80	100	125	160	200	256	320	512
Nominal Output Torque	T_{2N}	*Nm*	255	255	255	255	255	255	255	210
Emergency Stop Torque	T_{2STOP}	*Nm*	510	510	510	510	510	510	510	420
Maximum Accelleration Torque	T_{2ACC}	*Nm*	459	459	459	459	459	459	459	378
Maximum Torque	T_{2MAX}	*Nm*	510	510	510	510	510	510	510	420
Permitted Average Input Speed	N_{1N}	*rpm*	3000							
Maximum Input Speed	N_{1MAX}	*rpm*	6000							
Mean No Load Running Torque	T_{1NL}	*Nm*	0.85	0.85	0.85	0.78	0.78	0.78	0.78	0.78
Maximum Torsional Backlash	j_t	*arcmin*	≤ 12							
Torsional Rigidity	c_g	*Nm/arcmin*	10	10	10	10	10	10	10	10
Maximum Radial Load	F_r	*N*	2070							
Maximum Axial Load	F_a	*N*	970							
Max. Tilting Moment	M_k	*Nm*	400							
Mass Moment of Inertia	J_1	*kgcm²*	1.530	1.490	2.570	1.300	1.300	1.300	1.300	1.300
Weight	m_G	*kg*	11							

SPL160 1-stage

1-stage									
Ratio	i		3	4	5	7	8	9	10
Nominal Output Torque	T_{2N}	*Nm*	440	544	585	480	450	415	400
Emergency Stop Torque	T_{2STOP}	*Nm*	880	1088	1170	960	900	830	800
Maximum Accelleration Torque	T_{2ACC}	*Nm*	792	979.2	1053	864	810	747	720
Maximum Torque	T_{2MAX}	*Nm*	880	1088	1170	960	900	830	800
Permitted Average Input Speed	N_{1N}	*rpm*	3000						
Maximum Input Speed	N_{1MAX}	*rpm*	6000						
Mean No Load Running Torque	T_{1NL}	*Nm*	2.55	2.45	2.3	2.2	2.2	2.2	2.2
Maximum Torsional Backlash	j_t	*arcmin*	≤ 8						
Torsional Rigidity	c_g	*Nm/arcmin*	28.7	28.7	28.7	28.7	28.7	28.7	28.7
Maximum Radial Load	F_r	*N*	7300						
Maximum Axial Load	F_a	*N*	6400						
Max. Tilting Moment	M_k	*Nm*	850						
Mass Moment of Inertia	J_1	*kgcm²*	12.100	7.750	6.000	5.100	3.740	3.620	3.620
Weight	m_G	*kg*	15.5						

SPL160 2-stage

2-stage										
Ratio	i		12	15	16	20	25	32	40	64
Nominal Output Torque	T_{2N}	*Nm*	450	450	450	564	608	608	608	450
Emergency Stop Torque	T_{2STOP}	*Nm*	900	900	900	1128	1216	1216	1216	900
Maximum Accelleration Torque	T_{2ACC}	*Nm*	810	810	810	1015.2	1094.4	1094.4	1094.4	810
Maximum Torque	T_{2MAX}	*Nm*	900	900	900	1128	1216	1216	1216	900
Permitted Average Input Speed	N_{1N}	*rpm*	3000							
Maximum Input Speed	N_{1MAX}	*rpm*	6000							
Mean No Load Running Torque	T_{1NL}	*Nm*	2.45	2.3	2.45	2.3	2.3	2.2	2.2	2.2
Maximum Torsional Backlash	j_t	*arcmin*	≤ 10							
Torsional Rigidity	c_g	*Nm/arcmin*	28.7	28.7	28.7	28.7	28.7	28.7	28.7	28.7
Maximum Radial Load	F_r	*N*	7300							
Maximum Axial Load	F_a	*N*	6400							
Max. Tilting Moment	M_k	*Nm*	850							
Mass Moment of Inertia	J_1	*kgcm²*	10.100	8.100	7.470	6.650	5.810	6.340	5.360	4.080
Weight	m_G	*kg*	28							

SPL160 3-stage

			3-stage							
Ratio	i		80	100	125	160	200	256	320	512
Nominal Output Torque	T_{2N}	*Nm*	580	580	580	580	608	608	580	450
Emergency Stop Torque	T_{2STOP}	*Nm*	1160	1160	1160	1160	1216	1216	1160	900
Maximum Accelleration Torque	T_{2ACC}	*Nm*	1044	1044	1044	1044	1094.4	1094.4	1044	810
Maximum Torque	T_{2MAX}	*Nm*	1160	1160	1160	1160	1216	1216	1160	900
Permitted Average Input Speed	N_{1N}	*rpm*	3000							
Maximum Input Speed	N_{1MAX}	*rpm*	6000							
Mean No Load Running Torque	T_{1NL}	*Nm*	2.3	2.3	2.3	2.2	2.2	2.2	2.2	2.2
Maximum Torsional Backlash	j_t	*arcmin*	≤ 12							
Torsional Rigidity	c_g	*Nm/arcmin*	28.7	28.7	28.7	28.7	28.7	28.7	28.7	28.7
Maximum Radial Load	F_r	*N*	7300							
Maximum Axial Load	F_a	*N*	6400							
Max. Tilting Moment	M_k	*Nm*	850							
Mass Moment of Inertia	J_1	*kgcm²*	7.400	7.300	7.300	6.500	6.500	6.500	6.500	6.500
Weight	m_G	*kg*	30.5							

SPL205 1-stage

1-stage									
Ratio	i		3	4	5	7	8	9	10
Nominal Output Torque	T_{2N}	*Nm*	600	1050	1000	800	800	710	710
Emergency Stop Torque	T_{2STOP}	*Nm*	1200	2100	2000	1600	1600	1420	1420
Maximum Accelleration Torque	T_{2ACC}	*Nm*	1080	1890	1800	1440	1440	1278	1278
Maximum Torque	T_{2MAX}	*Nm*	1200	2100	2000	1600	1600	1420	1420
Permitted Average Input Speed	N_{1N}	*rpm*	2000						
Maximum Input Speed	N_{1MAX}	*rpm*	4000						
Mean No Load Running Torque	T_{1NL}	*Nm*	3.5	3.3	3.15	3	3	3	3
Maximum Torsional Backlash	j_t	*arcmin*	≤ 8						
Torsional Rigidity	c_g	*Nm/arcmin*	120	120	120	120	120	120	120
Maximum Radial Load	F_r	*N*	12000						
Maximum Axial Load	F_a	*N*	6800						
Max. Tilting Moment	M_k	*Nm*	1280						
Mass Moment of Inertia	J_1	*kgcm²*	28.980	23.670	22.750	22.480	22.590	22.590	22.550
Weight	m_G	*kg*	31						

SPL205 2-stage

2-stage										
Ratio	i		12	15	16	20	25	32	40	64
Nominal Output Torque	T_{2N}	*Nm*	650	650	800	1000	1000	1050	1000	800
Emergency Stop Torque	T_{2STOP}	*Nm*	1300	1300	1600	2000	2000	2100	2000	1600
Maximum Accelleration Torque	T_{2ACC}	*Nm*	1170	1170	1440	1800	1800	1890	1800	1440
Maximum Torque	T_{2MAX}	*Nm*	1300	1300	1600	2000	2000	2100	2000	1600
Permitted Average Input Speed	N_{1N}	*rpm*	2000							
Maximum Input Speed	N_{1MAX}	*rpm*	4000							
Mean No Load Running Torque	T_{1NL}	*Nm*	2.45	2.3	2.45	2.3	2.3	2.2	2.2	2.2
Maximum Torsional Backlash	j_t	*arcmin*	≤ 10							
Torsional Rigidity	c_g	*Nm/arcmin*	120	120	120	120	120	120	120	120
Maximum Radial Load	F_r	*N*	12000							
Maximum Axial Load	F_a	*N*	6800							
Max. Tilting Moment	M_k	*Nm*	1280							
Mass Moment of Inertia	J_1	*kgcm²*	18.980	16.980	7.540	7.420	7.540	7.140	7.140	7.540
Weight	m_G	*kg*	39							

SPL205 3-stage

			3-stage							
Ratio	i		80	100	125	160	200	256	320	512
Nominal Output Torque	T_{2N}	*Nm*	1000	1000	1000	1000	1000	1000	1000	800
Emergency Stop Torque	T_{2STOP}	*Nm*	2000	2000	2000	2000	2000	2000	2000	1600
Maximum Accelleration Torque	T_{2ACC}	*Nm*	1800	1800	1800	1800	1800	1800	1800	1440
Maximum Torque	T_{2MAX}	*Nm*	2000	2000	2000	2000	2000	2000	2000	1600
Permitted Average Input Speed	N_{1N}	*rpm*	2000							
Maximum Input Speed	N_{1MAX}	*rpm*	4000							
Mean No Load Running Torque	T_{1NL}	*Nm*	2.3	2.3	2.3	2.2	2.2	2.2	2.2	2.2
Maximum Torsional Backlash	j_t	*arcmin*	≤ 12							
Torsional Rigidity	c_g	*Nm/arcmin*	120	120	120	120	120	120	120	120
Maximum Radial Load	F_r	*N*	12000							
Maximum Axial Load	F_a	*N*	6800							
Max. Tilting Moment	M_k	*Nm*	1280							
Mass Moment of Inertia	J_1	*kgcm²*	7.540	7.420	7.420	7.140	7.140	7.140	7.140	7.140
Weight	m_G	*kg*	48							

SPL235 1-stage

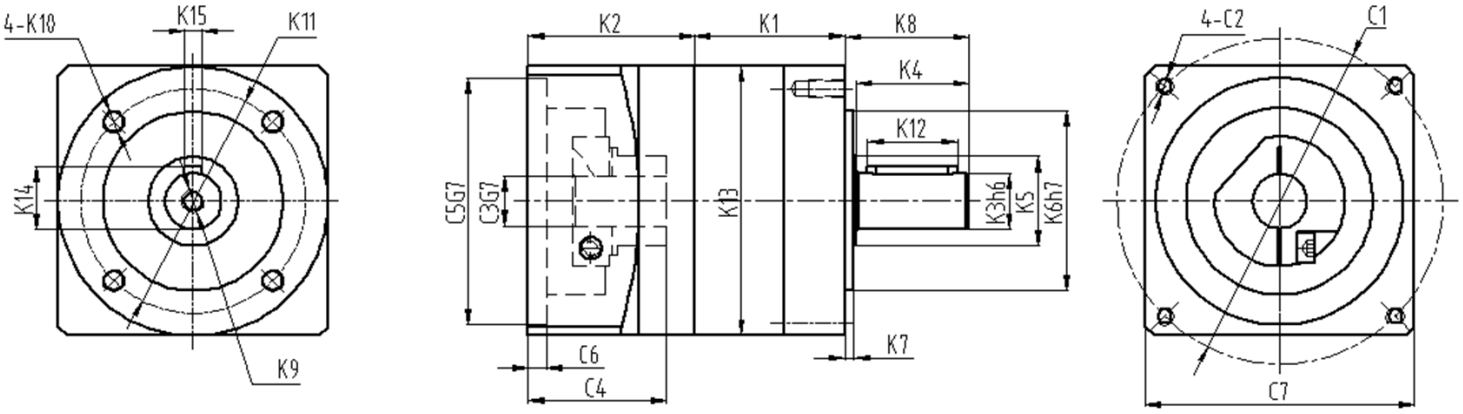
1-stage									
Ratio	i		3	4	5	7	8	9	10
Nominal Output Torque	T_{2N}	*Nm*	1000	1600	1850	1550	1350	1300	1300
Emergency Stop Torque	T_{2STOP}	*Nm*	2000	3200	3700	3100	2700	2600	2600
Maximum Accelleration Torque	T_{2ACC}	*Nm*	1800	2880	3330	2790	2430	2340	2340
Maximum Torque	T_{2MAX}	*Nm*	2000	3200	3700	3100	2700	2600	2600
Permitted Average Input Speed	N_{1N}	*rpm*	1500						
Maximum Input Speed	N_{1MAX}	*rpm*	3000						
Mean No Load Running Torque	T_{1NL}	*Nm*	5.2	5	4.85	4.67	4.67	4.67	4.67
Maximum Torsional Backlash	j_t	*arcmin*	≤ 8						
Torsional Rigidity	c_g	*Nm/arcmin*	200	200	200	200	200	200	200
Maximum Radial Load	F_r	*N*	14000						
Maximum Axial Load	F_a	*N*	7800						
Max. Tilting Moment	M_k	*Nm*	2350						
Mass Moment of Inertia	J_1	*kgcm²*	69.610	54.370	53.270	50.840	50.840	50.840	50.560
Weight	m_G	*kg*	53						

SPL235 2-stage

2-stage										
Ratio	i		12	15	16	20	25	32	40	64
Nominal Output Torque	T_{2N}	*Nm*	1000	1000	1100	1850	1850	1800	1850	1350
Emergency Stop Torque	T_{2STOP}	*Nm*	2000	2000	2200	3700	3700	3600	3700	2700
Maximum Accelleration Torque	T_{2ACC}	*Nm*	1800	1800	1980	3330	3330	3240	3330	2430
Maximum Torque	T_{2MAX}	*Nm*	2000	2000	2200	3700	3700	3600	3700	2700
Permitted Average Input Speed	N_{1N}	*rpm*	1500							
Maximum Input Speed	N_{1MAX}	*rpm*	3000							
Mean No Load Running Torque	T_{1NL}	*Nm*	3.3	3.15	3.3	3.15	3.15	3	3	3
Maximum Torsional Backlash	j_t	*arcmin*	≤ 10							
Torsional Rigidity	c_g	*Nm/arcmin*	200	200	200	200	200	200	200	200
Maximum Radial Load	F_r	*N*	14000							
Maximum Axial Load	F_a	*N*	7800							
Max. Tilting Moment	M_k	*Nm*	2350							
Mass Moment of Inertia	J_1	*kgcm²*	59.610	48.610	23.670	22.750	22.750	22.590	22.590	22.590
Weight	m_G	*kg*	66							

SPL235 3-stage

			3-stage							
Ratio	i		80	100	125	160	200	256	320	512
Nominal Output Torque	T_{2N}	*Nm*	1850	1850	1850	1850	1850	1850	1850	1350
Emergency Stop Torque	T_{2STOP}	*Nm*	3700	3700	3700	3700	3700	3700	3700	2700
Maximum Accelleration Torque	T_{2ACC}	*Nm*	3330	3330	3330	3330	3330	3330	3330	2430
Maximum Torque	T_{2MAX}	*Nm*	3700	3700	3700	3700	3700	3700	3700	2700
Permitted Average Input Speed	N_{1N}	*rpm*	1500							
Maximum Input Speed	N_{1MAX}	*rpm*	3000							
Mean No Load Running Torque	T_{1NL}	*Nm*	2.3	2.3	2.3	2.2	2.2	2.2	2.2	2.2
Maximum Torsional Backlash	j_t	*arcmin*	≤ 12							
Torsional Rigidity	c_g	*Nm/arcmin*	200	200	200	200	200	200	200	200
Maximum Radial Load	F_r	*N*	14000							
Maximum Axial Load	F_a	*N*	7800							
Max. Tilting Moment	M_k	*Nm*	2350							
Mass Moment of Inertia	J_1	*kgcm²*	22.750	22.590	22.750	22.750	22.750	22.750	22.750	22.590
Weight	m_G	*kg*	75							



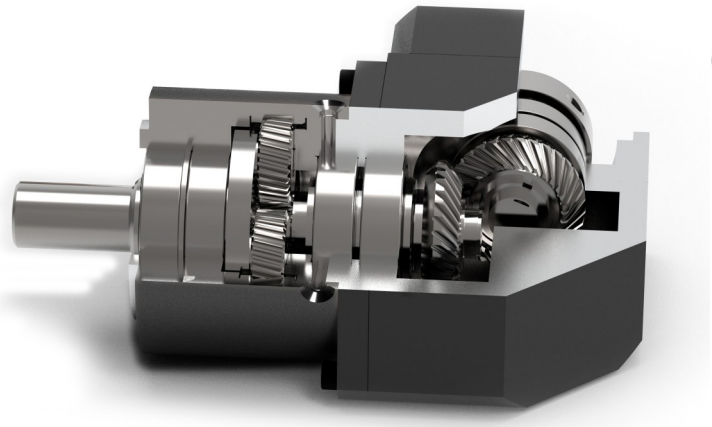
Model	SPL040			SPL060			SPL080			SPL120			SPL160			SPL205			SPL235		
Stage	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3
K1	38,5	51,5	63,5	50,9	66,5	82	70	92	114	67	108,8	150,6	87,5	148,5	209,5	89	142	203	101	170	223
K3	Φ10			Φ14			Φ20			Φ25			Φ40			Φ55			Φ75		
K4	23			30			36			50			80			82			105		
K5	Φ12			Φ17			Φ25			Φ40			Φ50			Φ60			Φ85		
K6	Φ26			Φ40			Φ60			Φ80			Φ130			Φ160			Φ180		
K7	2			3			3			4			5			15			30		
K8	26			35			40			55			87			105			138		
K9	M3X8			M5X12			M6X16			M10X22			M12X25			M20X40			M20X40		
K10	M4X6			M5X10			M6X12			M10X20			M12X20			M12X22			M16X25		
K11	Φ34			Φ52			Φ70			Φ100			Φ145			Φ184			Φ210		
K12	16			22			28			40			70			70			90		
K13	Φ40			Φ60			Φ80			Φ120			Φ160			Φ205			Φ235		
K14	11,2			16			22,5			28			43			59			79,5		
K15	3			5			6			8			12			16			20		

Gearbox Size	40	60			80			
Motor Series	DSM5.0	DSM5.2	DSM7.3	DSM5.3	DSM5.2	DSM7.3	DSM5.3	DSM5.4
C1	Φ46	Φ63	Φ90	Φ100	Φ70	Φ90	Φ100	Φ130
C2	M4X10	M5X12	M6x15	M6x15	M5x12	M6x15	M6x15	M8X20
C3	Φ8	Φ11	Φ14	Φ14	Φ14	Φ14	Φ14	Φ19
C4	26,1	31,5	31,5	31,5	41,6	41,6	41,6	51,6
C5	Φ30	Φ40	Φ70	Φ80	Φ50	Φ70	Φ80	Φ110
C6	6	6,5	6,5	6,5	6,5	6,5	6,5	6,5
C7	45	60	85	85	80	80	90	120
K2	24,3	24,3	30,5	30,5	30,5	37	37	37

Gearbox Size	120				160			205			235	
Motor Series	DSM7.3	DSM5.3	DSM5.4	DSM5.5	DSM5.4	DSM5.5	DSM5.6	DSM5.5	DSM5.6	DSM5.7	DSM5.6	DSM5.7
C1	Φ90	Φ100	Φ130	Φ165	Φ130	Φ165	Φ215	Φ165	Φ215	Φ300	Φ215	Φ300
C2	M6x15	M6x15	M8X20	M10x22	M8X20	M10x22	M12X25	M10x22	M12X25	M16X25	M12X25	M16X25
C3	Φ19	Φ19	Φ19	Φ24	Φ24	Φ24	Φ38	Φ32	Φ38	Φ48	Φ38	Φ48
C4	51,3	51,3	51,3	61,3	67	67	82	77	82	87	116	116
C5	Φ70	Φ80	Φ110	Φ130	Φ110	Φ130	Φ180	Φ130	Φ180	Φ250	Φ180	Φ250
C6	8	8	8	8	8	8	8	8	8	8	8	8
C7	120	120	120	142	Φ162	175	190	175	190	260	190	260
K2	64	64	64	74	86	86	101	89	94	99	118,5	118,5

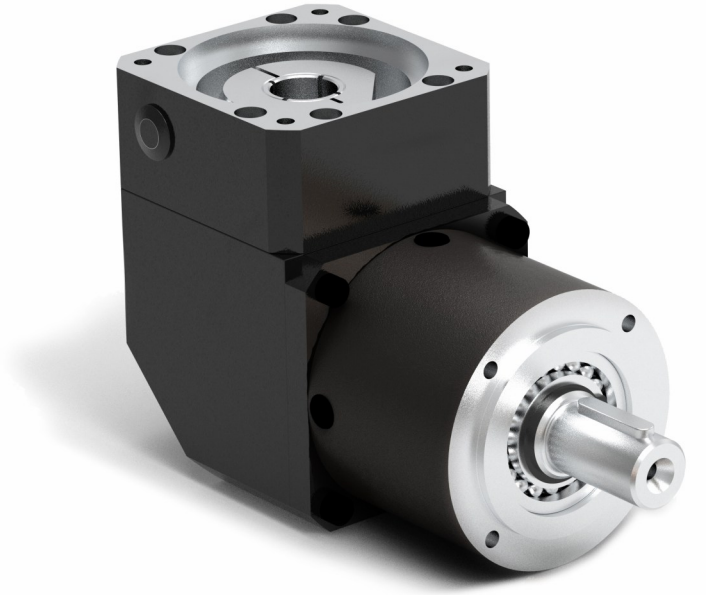
SVL Series

Standard Precision Gearbox - 90°



SVL is our highly successful high precision gearbox 90° series

The SVL consistently delivers the benefits of the Economy line.
With its compact yet robust design, it is ideally tailored for dynamic systems with multiple axes.
Our right-angle gearbox is lubricated for its entire lifespan, effortless to install, and delivers an unparalleled balance between price and performance.



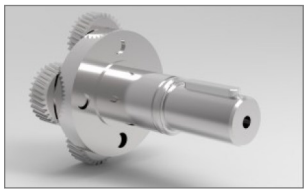
Key Features

Economy Line,
Right-angle gearbox,
Helical gear system,
Bevel gear in a right-angle configuration,
Low-friction deep groove ball bearings,
Circular output flange,
Wide range of high gear ratios from i=3 to i=512,
Bidirectional rotation capability,
Planetary carrier designed in a disc format

Helical Gear System Technology

Thanks to the tooth to tooth compact ratio more than 60%.

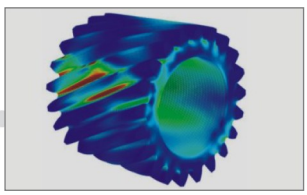
The helical gearing and full needle bearing bring the benefits including higher torque capacity, smooth and lower noise running, decreased backlash and higher efficiency.



The Powerful Cantilever Planetary Carrier

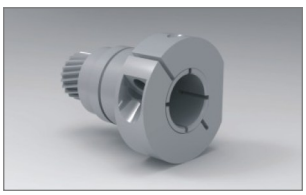
The powerful cantilever planetary carrier provide great mechanical support for planetary gears, thus the complete gearbox can reach high level stability.

Synthetic grease lubrication allows maintenance free for gearbox whole service life.



Gear Grinding and Heat Treatment Technology

The global leading gear grinding technology brings the great improvement lor 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 damping 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.

SVL060 1-stage

1-stage									
Ratio	i		3	4	5	7	8	9	10
Nominal Output Torque	T_{2N}	*Nm*	28	36	37	37	32	30	25
Emergency Stop Torque	T_{2STOP}	*Nm*	56	72	74	74	64	60	50
Maximum Accelleration Torque	T_{2ACC}	*Nm*	50.4	64.8	66.6	66.6	57.6	54	45
Maximum Torque	T_{2MAX}	*Nm*	56	72	74	74	64	60	50
Permitted Average Input Speed	N_{1N}	*rpm*	4000						
Maximum Input Speed	N_{1MAX}	*rpm*	6000						
Mean No Load Running Torque	T_{1NL}	*Nm*	0.24	0.2	0.17	0.15	0.15	0.15	0.15
Maximum Torsional Backlash	j_t	*arcmin*	≤ 10						
Torsional Rigidity	c_g	*Nm/arcmin*	2.5	2.5	2.5	2.5	2.5	2.5	2.5
Maximum Radial Load	F_r	*N*	430						
Maximum Axial Load	F_a	*N*	320						
Max. Tilting Moment	M_k	*Nm*	80						
Mass Moment of Inertia	J_1	*kgcm²*	0.135	0.093	0.078	0.069	0.065	0.065	0.065
Weight	m_G	*kg*	2.3						

SVL060 2-stage

2-stage										
Ratio	i		12	15	16	20	25	32	40	64
Nominal Output Torque	T_{2N}	*Nm*	30	31	42	42	42	42	42	33
Emergency Stop Torque	T_{2STOP}	*Nm*	60	62	84	84	84	84	84	66
Maximum Accelleration Torque	T_{2ACC}	*Nm*	54	55.8	75.6	75.6	75.6	75.6	75.6	59.4
Maximum Torque	T_{2MAX}	*Nm*	60	62	84	84	84	84	84	66
Permitted Average Input Speed	N_{1N}	*rpm*	4000							
Maximum Input Speed	N_{1MAX}	*rpm*	6000							
Mean No Load Running Torque	T_{1NL}	*Nm*	0.2	0.17	0.2	0.17	0.17	0.15	0.15	0.15
Maximum Torsional Backlash	j_t	*arcmin*	≤ 12							
Torsional Rigidity	c_g	*Nm/arcmin*	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5
Maximum Radial Load	F_r	*N*	430							
Maximum Axial Load	F_a	*N*	320							
Max. Tilting Moment	M_k	*Nm*	80							
Mass Moment of Inertia	J_1	*kgcm²*	0.105	0.095	0.088	0.075	0.075	0.064	0.064	0.064
Weight	m_G	*kg*	2.8							

SVL060 3-stage

			3-stage							
Ratio	i		80	100	125	160	200	256	320	512
Nominal Output Torque	T_{2N}	*Nm*	42	42	42	42	42	42	42	33
Emergency Stop Torque	T_{2STOP}	*Nm*	84	84	84	84	84	84	84	66
Maximum Accelleration Torque	T_{2ACC}	*Nm*	75.6	75.6	75.6	75.6	75.6	75.6	75.6	59.4
Maximum Torque	T_{2MAX}	*Nm*	84	84	84	84	84	84	84	66
Permitted Average Input Speed	N_{1N}	*rpm*	4000							
Maximum Input Speed	N_{1MAX}	*rpm*	6000							
Mean No Load Running Torque	T_{1NL}	*Nm*	0.17	0.17	0.17	0.15	0.15	0.15	0.15	0.15
Maximum Torsional Backlash	j_t	*arcmin*	≤ 15							
Torsional Rigidity	c_g	*Nm/arcmin*	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5
Maximum Radial Load	F_r	*N*	430							
Maximum Axial Load	F_a	*N*	320							
Max. Tilting Moment	M_k	*Nm*	80							
Mass Moment of Inertia	J_1	*kgcm²*	0.075	0.064	0.064	0.064	0.064	0.064	0.064	0.064
Weight	m_G	*kg*	3.4							

SVL080 1-stage

1-stage									
Ratio	i		3	4	5	7	8	9	10
Nominal Output Torque	T_{2N}	*Nm*	75	90	95	82	80	78	65
Emergency Stop Torque	T_{2STOP}	*Nm*	150	180	190	164	160	156	130
Maximum Accelleration Torque	T_{2ACC}	*Nm*	135	162	171	147.6	144	140.4	117
Maximum Torque	T_{2MAX}	*Nm*	150	180	190	164	160	156	130
Permitted Average Input Speed	N_{1N}	*rpm*	3000						
Maximum Input Speed	N_{1MAX}	*rpm*	6000						
Mean No Load Running Torque	T_{1NL}	*Nm*	0.38	0.36	0.31	0.25	0.25	0.25	0.25
Maximum Torsional Backlash	j_t	*arcmin*	≤ 10						
Torsional Rigidity	c_g	*Nm/arcmin*	4	4	4	4	4	4	4
Maximum Radial Load	F_r	*N*	640						
Maximum Axial Load	F_a	*N*	420						
Max. Tilting Moment	M_k	*Nm*	200						
Mass Moment of Inertia	J_1	*kgcm²*	0.770	0.520	0.450	0.400	0.390	0.390	0.390
Weight	m_G	*kg*	5.4						

SVL080 2-stage

2-stage										
Ratio	i		12	15	16	20	25	32	40	64
Nominal Output Torque	T_{2N}	*Nm*	80	90	90	90	90	90	90	80
Emergency Stop Torque	T_{2STOP}	*Nm*	160	180	180	180	180	180	180	160
Maximum Accelleration Torque	T_{2ACC}	*Nm*	144	162	162	162	162	162	162	144
Maximum Torque	T_{2MAX}	*Nm*	160	180	180	180	180	180	180	160
Permitted Average Input Speed	N_{1N}	*rpm*	3000							
Maximum Input Speed	N_{1MAX}	*rpm*	6000							
Mean No Load Running Torque	T_{1NL}	*Nm*	0.36	0.31	0.36	0.31	0.31	0.25	0.25	0.25
Maximum Torsional Backlash	j_t	*arcmin*	≤ 12							
Torsional Rigidity	c_g	*Nm/arcmin*	4	4	4	4	4	4	4	4
Maximum Radial Load	F_r	*N*	640							
Maximum Axial Load	F_a	*N*	420							
Max. Tilting Moment	M_k	*Nm*	200							
Mass Moment of Inertia	J_1	*kgcm²*	0.670	0.510	0.500	0.440	0.440	0.390	0.390	0.39
Weight	m_G	*kg*	6.8							

SVL080 3-stage

			3-stage							
Ratio	i		80	100	125	160	200	256	320	512
Nominal Output Torque	T_{2N}	*Nm*	95	95	95	95	95	95	95	82
Emergency Stop Torque	T_{2STOP}	*Nm*	190	190	190	190	190	190	190	164
Maximum Accelleration Torque	T_{2ACC}	*Nm*	171	171	171	171	171	171	171	147.6
Maximum Torque	T_{2MAX}	*Nm*	190	190	190	190	190	190	190	164
Permitted Average Input Speed	N_{1N}	*rpm*	3000							
Maximum Input Speed	N_{1MAX}	*rpm*	6000							
Mean No Load Running Torque	T_{1NL}	*Nm*	0.31	0.31	0.31	0.25	0.25	0.25	0.25	0.25
Maximum Torsional Backlash	j_t	*arcmin*	≤ 15							
Torsional Rigidity	c_g	*Nm/arcmin*	4	4	4	4	4	4	4	4
Maximum Radial Load	F_r	*N*	640							
Maximum Axial Load	F_a	*N*	420							
Max. Tilting Moment	M_k	*Nm*	200							
Mass Moment of Inertia	J_1	*kgcm²*	0.500	0.440	0.700	0.390	0.390	0.390	0.390	0.390
Weight	m_G	*kg*	8							

SVL120 1-stage

1-stage									
Ratio	i		3	4	5	7	8	9	10
Nominal Output Torque	T_{2N}	*Nm*	190	240	245	235	210	200	196
Emergency Stop Torque	T_{2STOP}	*Nm*	380	480	490	470	420	400	392
Maximum Accelleration Torque	T_{2ACC}	*Nm*	342	432	441	423	378	360	352.8
Maximum Torque	T_{2MAX}	*Nm*	380	480	490	470	420	400	392
Permitted Average Input Speed	N_{1N}	*rpm*	3000						
Maximum Input Speed	N_{1MAX}	*rpm*	6000						
Mean No Load Running Torque	T_{1NL}	*Nm*	1	0.95	0.85	0.78	0.78	0.78	0.78
Maximum Torsional Backlash	j_t	*arcmin*	*≤ 10*						
Torsional Rigidity	c_g	*Nm/arcmin*	10	10	10	10	10	10	10
Maximum Radial Load	F_r	*N*	2070						
Maximum Axial Load	F_a	*N*	970						
Max. Tilting Moment	M_k	*Nm*	400						
Mass Moment of Inertia	J_1	*kgcm²*	2.630	1.790	1.530	1.400	1.320	1.320	1.320
Weight	m_G	*kg*	12						

SVL120 2-stage

2-stage										
Ratio	i		12	15	16	20	25	32	40	64
Nominal Output Torque	T_{2N}	*Nm*	210	210	220	230	255	255	250	210
Emergency Stop Torque	T_{2STOP}	*Nm*	420	420	440	460	510	510	500	420
Maximum Accelleration Torque	T_{2ACC}	*Nm*	378	378	396	414	459	459	450	378
Maximum Torque	T_{2MAX}	*Nm*	420	420	440	460	510	510	500	420
Permitted Average Input Speed	N_{1N}	*rpm*	3000							
Maximum Input Speed	N_{1MAX}	*rpm*	6000							
Mean No Load Running Torque	T_{1NL}	*Nm*	0.95	0.85	0.95	0.85	0.85	0.78	0.78	0.78
Maximum Torsional Backlash	j_t	*arcmin*	*≤ 12*							
Torsional Rigidity	c_g	*Nm/arcmin*	10	10	10	10	10	10	10	10
Maximum Radial Load	F_r	*N*	2070							
Maximum Axial Load	F_a	*N*	970							
Max. Tilting Moment	M_k	*Nm*	400							
Mass Moment of Inertia	J_1	*kgcm²*	1.630	1.670	1.750	1.530	1.490	1.320	1.320	1.320
Weight	m_G	*kg*	15							

SVL120 3-stage

			3-stage							
Ratio	i		80	100	125	160	200	256	320	512
Nominal Output Torque	T_{2N}	*Nm*	255	255	255	255	255	255	255	210
Emergency Stop Torque	T_{2STOP}	*Nm*	510	510	510	510	510	510	510	420
Maximum Accelleration Torque	T_{2ACC}	*Nm*	459	459	459	459	459	459	459	378
Maximum Torque	T_{2MAX}	*Nm*	510	510	510	510	510	510	510	420
Permitted Average Input Speed	N_{1N}	*rpm*	3000							
Maximum Input Speed	N_{1MAX}	*rpm*	6000							
Mean No Load Running Torque	T_{1NL}	*Nm*	0.85	0.85	0.85	0.78	0.78	0.78	0.78	0.78
Maximum Torsional Backlash	j_t	*arcmin*	≤ 15							
Torsional Rigidity	c_g	*Nm/arcmin*	10	10	10	10	10	10	10	10
Maximum Radial Load	F_r	*N*	2070							
Maximum Axial Load	F_a	*N*	970							
Max. Tilting Moment	M_k	*Nm*	400							
Mass Moment of Inertia	J_1	*kgcm²*	1.530	1.490	2.570	1.300	1.300	1.300	1.300	1.300
Weight	m_G	*kg*	18							

SVL160 1-stage

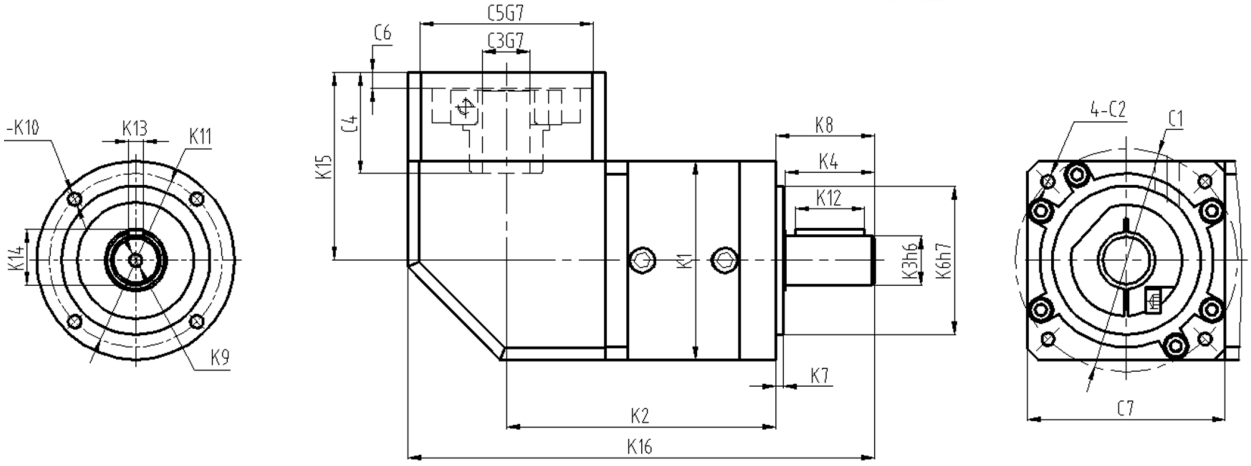
1-stage									
Ratio	i		3	4	5	7	8	9	10
Nominal Output Torque	T_{2N}	*Nm*	440	544	585	480	450	415	400
Emergency Stop Torque	T_{2STOP}	*Nm*	880	1088	1170	960	900	830	800
Maximum Accelleration Torque	T_{2ACC}	*Nm*	792	979.2	1053	864	810	747	720
Maximum Torque	T_{2MAX}	*Nm*	880	1088	1170	960	900	830	800
Permitted Average Input Speed	N_{1N}	*rpm*	3000						
Maximum Input Speed	N_{1MAX}	*rpm*	6000						
Mean No Load Running Torque	T_{1NL}	*Nm*	2.55	2.45	2.3	2.2	2.2	2.2	2.2
Maximum Torsional Backlash	j_t	*arcmin*	≤ 10						
Torsional Rigidity	c_g	*Nm/arcmin*	28.7	28.7	28.7	28.7	28.7	28.7	28.7
Maximum Radial Load	F_r	*N*	7300						
Maximum Axial Load	F_a	*N*	6400						
Max. Tilting Moment	M_k	*Nm*	850						
Mass Moment of Inertia	J_1	*kgcm²*	12.100	7.750	6.000	5.100	3.740	3.620	3.620
Weight	m_G	*kg*	23						

SVL160 2-stage

2-stage										
Ratio	i		12	15	16	20	25	32	40	64
Nominal Output Torque	T_{2N}	*Nm*	450	450	450	564	608	608	608	450
Emergency Stop Torque	T_{2STOP}	*Nm*	900	900	900	1128	1216	1216	1216	900
Maximum Accelleration Torque	T_{2ACC}	*Nm*	810	810	810	1015.2	1094.4	1094.4	1094.4	810
Maximum Torque	T_{2MAX}	*Nm*	900	900	900	1128	1216	1216	1216	900
Permitted Average Input Speed	N_{1N}	*rpm*	3000							
Maximum Input Speed	N_{1MAX}	*rpm*	6000							
Mean No Load Running Torque	T_{1NL}	*Nm*	2.45	2.3	2.45	2.3	2.3	2.2	2.2	2.2
Maximum Torsional Backlash	j_t	*arcmin*	≤ 12							
Torsional Rigidity	c_g	*Nm/arcmin*	28.7	28.7	28.7	28.7	28.7	28.7	28.7	28.7
Maximum Radial Load	F_r	*N*	7300							
Maximum Axial Load	F_a	*N*	6400							
Max. Tilting Moment	M_k	*Nm*	850							
Mass Moment of Inertia	J_1	*kgcm²*	10.100	8.100	7.470	6.650	5.810	6.340	5.360	4.080
Weight	m_G	*kg*	31							

SVL160 3-stage

			3-stage							
Ratio	i		80	100	125	160	200	256	320	512
Nominal Output Torque	T_{2N}	*Nm*	580	580	580	580	608	608	580	450
Emergency Stop Torque	T_{2STOP}	*Nm*	1160	1160	1160	1160	1216	1216	1160	900
Maximum Accelleration Torque	T_{2ACC}	*Nm*	1044	1044	1044	1044	1094.4	1094.4	1044	810
Maximum Torque	T_{2MAX}	*Nm*	1160	1160	1160	1160	1216	1216	1160	900
Permitted Average Input Speed	N_{1N}	*rpm*	3000							
Maximum Input Speed	N_{1MAX}	*rpm*	6000							
Mean No Load Running Torque	T_{1NL}	*Nm*	2.3	2.3	2.3	2.2	2.2	2.2	2.2	2.2
Maximum Torsional Backlash	j_t	*arcmin*	≤ 15							
Torsional Rigidity	c_g	*Nm/arcmin*	28.7	28.7	28.7	28.7	28.7	28.7	28.7	28.7
Maximum Radial Load	F_r	*N*	7300							
Maximum Axial Load	F_a	*N*	6400							
Max. Tilting Moment	M_k	*Nm*	850							
Mass Moment of Inertia	J_1	*kgcm²*	7.400	7.300	7.300	6.500	6.500	6.500	6.500	6.500
Weight	m_G	*kg*	40							



Model	SVL060			SVL080			SVL120			SVL160		
Stage	1	2	3	1	2	3	1	2	3	1	2	3
K1	Φ60			Φ80			Φ120			Φ160		
K2	86,9	102,5	118	109	131	163	154	195,8	237,6	187	197	258
K3	Φ14			Φ20			Φ32			Φ40		
K4	30			36			50			80		
K5	Φ17			Φ25			Φ40			Φ50		
K6	Φ40			Φ60			Φ90			Φ130		
K7	3			3			12			5		
K8	35			40			65			87		
K9	M5X12			M6X16			M10X22			M12X25		
K10	M5X10			M6X12			M8X15			M12X20		
K11	Φ52			Φ70			Φ108			Φ145		
K12	22			28			40			70		
K13	5			6			10			12		
K14	16			22,5			35			43		
K15	89,5			76			140			249		
K16	151,9			243			274			400		

Gearbox Size	60			80			
Motor Series	DSM5.2	DSM7.3	DSM5.3	DSM5.2	DSM7.3	DSM5.3	DSM5.4
C1	Φ63	Φ90	Φ100	Φ70	Φ90	Φ100	Φ130
C2	M5X12	M6x15	M6x15	M5x12	M6x15	M6x15	M8X20
C3	Φ11	Φ14	Φ14	Φ14	Φ14	Φ14	Φ19
C4	32,1	32,1	42,1	41,6	41,6	41,6	51,6
C5	Φ40	Φ70	Φ80	Φ50	Φ70	Φ80	Φ110
C6	6,5	6,5	6,5	6,5	6,5	6,5	6,5
C7	65	65	85	85	85	85	120

Gearbox Size	120			160			
Motor Series	DSM7.3	DSM5.3	DSM5.4	DSM5.5	DSM5.4	DSM5.5	DSM5.6
C1	Φ90	Φ100	Φ130	Φ165	Φ130	Φ165	Φ215
C2	M6x15	M6x15	M8X20	M10x22	M8X20	M10x22	M12X25
C3	Φ19	Φ19	Φ19	Φ24	Φ24	Φ24	Φ38
C4	51,3	51,3	51,3	61,3	51,3	67	82
C5	Φ70	Φ80	Φ110	Φ130	Φ110	Φ130	Φ180
C6	8	8	8	8	8	8	8
C7	120	120	120	142	120	142	190

KPG Series
High Precision Gearbox

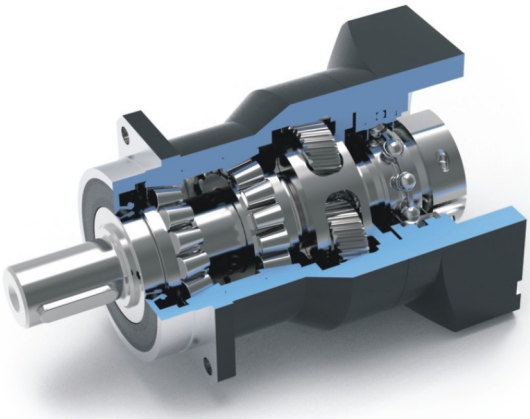
SANGALLI SERVOMOTORI

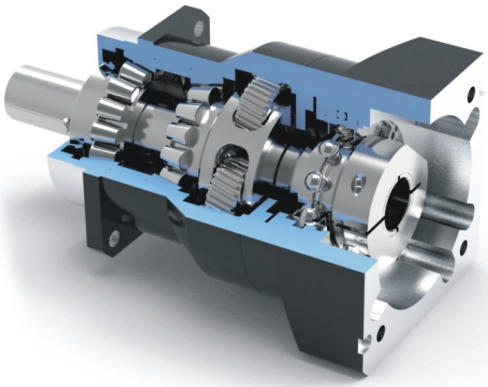
KPG is our highly successful high precision gearbox series

Our high-precision straight-tooth planetary gearbox is engineered to deliver exceptional power and torque.
The KPG model incorporates preloaded tapered roller bearings, while the precision engineered seal ensures optimal performance, even in environments exposed to dust and water spray.

Key features:

Precision Line,
Coaxial gearbox,
Helical gear configuration,
Preloaded tapered roller bearings,
Rotary shaft seal,
Square-shaped output flange,
Extended centering collar,
Bidirectional rotation capability,
Planetary carrier designed with a cage structure.



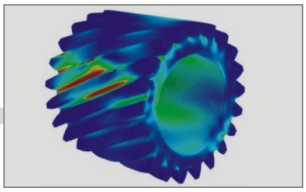


Master Cage Spindle Planetary Carrier

The patented Master CageSpindle integrated planetary carrier support planetary gearbox to increase constructional strength running stability and rigidity significantly. Synthetic greaselubrication allows maintenance free tor gearbox whole service lite.

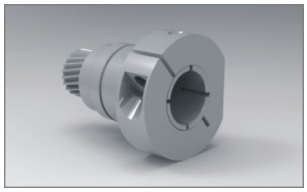
Super Gear Grinding and Heat Treatment Technology

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.



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.



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.

KPG070 1-stage

			1-stage						
Ratio	i		3	4	5	7	8	9	10
Nominal Output Torque	T_{2N}	*Nm*	46	52	55	50	45	42	42
Emergency Stop Torque	T_{2STOP}	*Nm*	138	156	165	150	135	126	126
Maximum Accelleration Torque	T_{2ACC}	*Nm*	82.8	93.6	99	90	81	75.6	75.6
Maximum Torque	T_{2MAX}	*Nm*	92	104	110	100	90	84	84
Permitted Average Input Speed	N_{1N}	*rpm*	4000						
Maximum Input Speed	N_{1MAX}	*rpm*	6000						
Mean No Load Running Torque	T_{1NL}	*Nm*	0.3	0.27	0.25	0.25	0.25	0.25	0.25
Backlash Options: P1/P0/PU	j_t	*arcmin*	≤ 5 / ≤ 3 / ≤ 1						
Torsional Rigidity	c_g	*Nm/arcmin*	6.5-7						
Maximum Radial Load	F_r	*N*	4300						
Maximum Axial Load	F_a	*N*	3900						
Max. Tilting Moment	M_k	*Nm*	577.5						
Mass Moment of Inertia	J_1	*kgcm²*	0.160	0.140	0.130	0.130	0.130	0.130	0.130
Weight	m_G	*kg*	1.6						

KPG070 2-stage

			2-stage								
Ratio	i		12	15	16	20	24	32	40	64	100
Nominal Output Torque	T_{2N}	*Nm*	56	56	52	55	55	52	55	36	33
Emergency Stop Torque	T_{2STOP}	*Nm*	168	168	156	165	165	156	165	108	99
Maximum Accelleration Torque	T_{2ACC}	*Nm*	100.8	100.8	93.6	99	99	93.6	99	64.8	59.4
Maximum Torque	T_{2MAX}	*Nm*	112	112	104	110	110	104	110	72	66
Permitted Average Input Speed	N_{1N}	*rpm*	4000								
Maximum Input Speed	N_{1MAX}	*rpm*	6000								
Mean No Load Running Torque	T_{1NL}	*Nm*	0.3	0.27	0.3	0.27	0.27	0.3	0.25	0.25	0.25
Backlash Options: P1/P0/PU	j_t	*arcmin*	≤ 7 / ≤ 5 / ≤ 3								
Torsional Rigidity	c_g	*Nm/arcmin*	6.6-7								
Maximum Radial Load	F_r	*N*	4300								
Maximum Axial Load	F_a	*N*	3900								
Max. Tilting Moment	M_k	*Nm*	577.5								
Mass Moment of Inertia	J_1	*kgcm²*	0.127	0.127	0.120	0.075	0.075	0.064	0.064	0.075	0.064
Weight	m_G	*kg*	1.9								

KPG090 1-stage

1-stage									
Ratio	i		3	4	5	7	8	9	10
Nominal Output Torque	T_{2N}	*Nm*	125	145	155	135	115	105	105
Emergency Stop Torque	T_{2STOP}	*Nm*	375	435	465	405	345	315	315
Maximum Accelleration Torque	T_{2ACC}	*Nm*	225	261	279	243	207	189	189
Maximum Torque	T_{2MAX}	*Nm*	250	290	310	270	230	210	210
Permitted Average Input Speed	N_{1N}	*rpm*	3000						
Maximum Input Speed	N_{1MAX}	*rpm*	6000						
Mean No Load Running Torque	T_{1NL}	*Nm*	0.46	0.41	0.39	0.35	0.35	0.35	0.35
Backlash Options: P1/P0/PU	j_t	*arcmin*	≤ 5 / ≤ 3 / ≤ 1						
Torsional Rigidity	c_g	*Nm/arcmin*	12-14						
Maximum Radial Load	F_r	*N*	7000						
Maximum Axial Load	F_a	*N*	6300						
Max. Tilting Moment	M_k	*Nm*	700						
Mass Moment of Inertia	J_1	*kgcm²*	0.61	0.48	0.47	0.47	0.45	0.44	0.44
Weight	m_G	*kg*	3.5						

KPG090 2-stage

2-stage											
Ratio	i		12	15	16	20	24	32	40	64	100
Nominal Output Torque	T_{2N}	*Nm*	125	125	145	145	155	145	155	92	84
Emergency Stop Torque	T_{2STOP}	*Nm*	375	375	435	435	465	435	465	276	252
Maximum Accelleration Torque	T_{2ACC}	*Nm*	225	225	261	261	279	261	279	165.6	151.2
Maximum Torque	T_{2MAX}	*Nm*	250	250	290	290	310	290	310	184	168
Permitted Average Input Speed	N_{1N}	*rpm*	3000								
Maximum Input Speed	N_{1MAX}	*rpm*	6000								
Mean No Load Running Torque	T_{1NL}	*Nm*	0.46	0.41	0.46	0.41	0.41	0.35	0.35	0.35	0.35
Backlash Options: P1/P0/PU	j_t	*arcmin*	≤ 7 / ≤ 5 / ≤ 3								
Torsional Rigidity	c_g	*Nm/arcmin*	13-14								
Maximum Radial Load	F_r	*N*	7000								
Maximum Axial Load	F_a	*N*	6300								
Max. Tilting Moment	M_k	*Nm*	700								
Mass Moment of Inertia	J_1	*kgcm²*	0.44	0.44	0.43	0.44	0.44	0.39	0.39	0.39	0.44
Weight	m_G	*kg*	3.8								

KPG120 1-stage

1-stage									
Ratio	i		3	4	5	7	8	9	10
Nominal Output Torque	T_{2N}	*Nm*	210	300	320	290	255	220	220
Emergency Stop Torque	T_{2STOP}	*Nm*	630	900	960	870	765	660	660
Maximum Accelleration Torque	T_{2ACC}	*Nm*	378	540	576	522	459	396	396
Maximum Torque	T_{2MAX}	*Nm*	420	600	640	580	510	440	440
Permitted Average Input Speed	N_{1N}	*rpm*	3000						
Maximum Input Speed	N_{1MAX}	*rpm*	6000						
Mean No Load Running Torque	T_{1NL}	*Nm*	1.05	0.95	0.91	0.88	0.88	0.88	0.88
Backlash Options: P1/P0/PU	j_t	*arcmin*	≤ 5 / ≤ 3 / ≤ 1						
Torsional Rigidity	c_g	*Nm/arcmin*	22-26						
Maximum Radial Load	F_r	*N*	10000						
Maximum Axial Load	F_a	*N*	9000						
Max. Tilting Moment	M_k	*Nm*	938						
Mass Moment of Inertia	J_1	*kgcm²*	3.25	2.74	2.71	2.62	2.62	2.62	2.57
Weight	m_G	*kg*	8.1						

KPG120 2-stage

2-stage											
Ratio	i		12	15	16	20	24	32	40	64	100
Nominal Output Torque	T_{2N}	*Nm*	210	310	300	300	320	305	320	204	176
Emergency Stop Torque	T_{2STOP}	*Nm*	630	930	900	900	960	915	960	612	528
Maximum Accelleration Torque	T_{2ACC}	*Nm*	378	558	540	540	576	549	576	367.2	316.8
Maximum Torque	T_{2MAX}	*Nm*	420	620	600	600	640	610	640	408	352
Permitted Average Input Speed	N_{1N}	*rpm*	3000								
Maximum Input Speed	N_{1MAX}	*rpm*	6000								
Mean No Load Running Torque	T_{1NL}	*Nm*	1.05	0.95	1.05	0.95	0.95	0.88	0.88	0.88	0.88
Backlash Options: P1/P0/PU	j_t	*arcmin*	≤ 7 / ≤ 5 / ≤ 3								
Torsional Rigidity	c_g	*Nm/arcmin*	23-26								
Maximum Radial Load	F_r	*N*	10000								
Maximum Axial Load	F_a	*N*	9000								
Max. Tilting Moment	M_k	*Nm*	938								
Mass Moment of Inertia	J_1	*kgcm²*	2.56	2.58	1.75	1.5	1.49	1.3	1.3	1.5	1.45
Weight	m_G	*kg*	9								

KPG160 1-stage

1-stage									
Ratio	i		3	4	5	7	8	9	10
Nominal Output Torque	T_{2N}	*Nm*	350	550	650	540	510	440	440
Emergency Stop Torque	T_{2STOP}	*Nm*	1050	1650	1950	1620	1530	1320	1320
Maximum Accelleration Torque	T_{2ACC}	*Nm*	630	990	1170	972	918	792	792
Maximum Torque	T_{2MAX}	*Nm*	700	1100	1300	1080	1020	880	880
Permitted Average Input Speed	N_{1N}	*rpm*	3000						
Maximum Input Speed	N_{1MAX}	*rpm*	6000						
Mean No Load Running Torque	T_{1NL}	*Nm*	2.6	2.5	2.4	2.4	2.4	2.4	2.4
Backlash Options: P1/P0/PU	j_t	*arcmin*	≤ 5 / ≤ 3 / ≤ 1						
Torsional Rigidity	c_g	*Nm/arcmin*	45-52						
Maximum Radial Load	F_r	*N*	19000						
Maximum Axial Load	F_a	*N*	17000						
Max. Tilting Moment	M_k	*Nm*	1243.2						
Mass Moment of Inertia	J_1	*kgcm²*	12.31	7.54	7.42	7.25	7.14	7.14	7.14
Weight	m_G	*kg*	15.5						

KPG160 2-stage

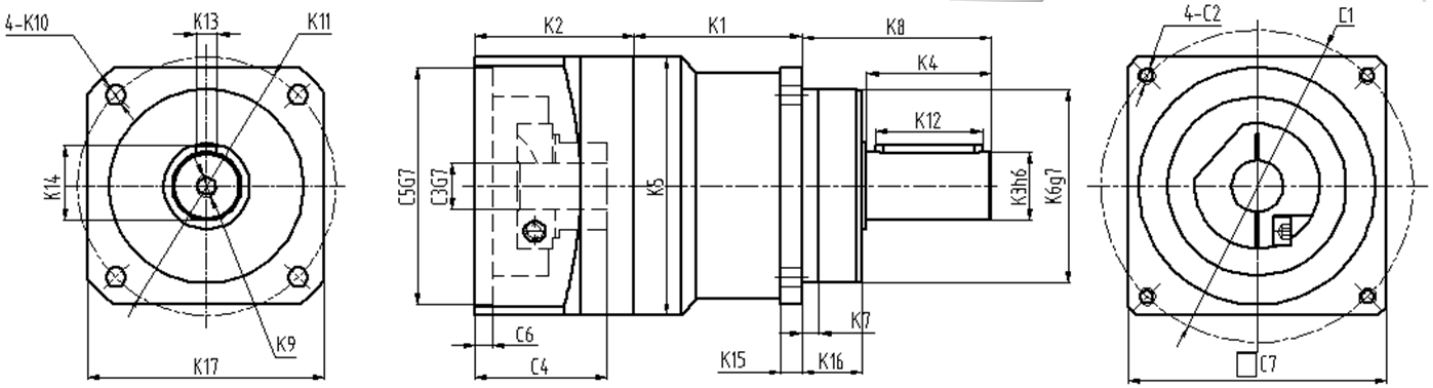
2-stage										
Ratio	i		12	15	16	20	24	32	40	63	100
Nominal Output Torque	T_{2N}	*Nm*	500	500	550	650	650	550	550	510	352
Emergency Stop Torque	T_{2STOP}	*Nm*	1500	1500	1650	1950	1950	1650	1650	1530	1056
Maximum Accelleration Torque	T_{2ACC}	*Nm*	900	900	990	1170	1170	990	990	918	633.6
Maximum Torque	T_{2MAX}	*Nm*	1000	1000	1100	1300	1300	1100	1100	1020	704
Permitted Average Input Speed	N_{1N}	*rpm*	3000								
Maximum Input Speed	N_{1MAX}	*rpm*	6000								
Mean No Load Running Torque	T_{1NL}	*Nm*	2.6	2.5	2.6	2.5	2.5	2.4	2.4	2.4	2.4
Backlash Options: P1/P0/PU	j_t	*arcmin*	≤ 7 / ≤ 5 / ≤ 3								
Torsional Rigidity	c_g	*Nm/arcmin*	45-52								
Maximum Radial Load	F_r	*N*	19000								
Maximum Axial Load	F_a	*N*	17000								
Max. Tilting Moment	M_k	*Nm*	1243.2								
Mass Moment of Inertia	J_1	*kgcm²*	12.35	12.35	7.47	6.65	5.81	6.34	4.08	7.5	7.3
Weight	m_G	*kg*	28								

KPG205 1-stage

1-stage									
Ratio	i		3	4	5	7	8	9	10
Nominal Output Torque	T_{2N}	*Nm*	1250	1200	1000	1000	1000	910	910
Emergency Stop Torque	T_{2STOP}	*Nm*	3750	3600	3000	3000	3000	2730	2730
Maximum Accelleration Torque	T_{2ACC}	*Nm*	2250	2160	1800	1800	1800	1638	1638
Maximum Torque	T_{2MAX}	*Nm*	2500	2400	2000	2000	2000	1820	1820
Permitted Average Input Speed	N_{1N}	*rpm*	2500						
Maximum Input Speed	N_{1MAX}	*rpm*	4000						
Mean No Load Running Torque	T_{1NL}	*Nm*	3.5	3.4	3.2	3.2	3.2	3.2	3.2
Backlash Options: P1/P0/PU	j_t	*arcmin*	≤ 5 / ≤ 3 / ≤ 1						
Torsional Rigidity	c_g	*Nm/arcmin*	120-138						
Maximum Radial Load	F_r	*N*	24000						
Maximum Axial Load	F_a	*N*	22000						
Max. Tilting Moment	M_k	*Nm*	1365						
Mass Moment of Inertia	J_1	*kgcm²*	28.98	23.67	22.75	22.48	22.59	22.59	22.55
Weight	m_G	*kg*	39						

KPG205 2-stage

2-stage											
Ratio	i		12	15	16	20	24	32	40	63	100
Nominal Output Torque	T_{2N}	*Nm*	650	650	1250	1200	1200	1250	1200	1000	728
Emergency Stop Torque	T_{2STOP}	*Nm*	1950	1950	3750	3600	3600	3750	3600	3000	2184
Maximum Accelleration Torque	T_{2ACC}	*Nm*	1170	1170	2250	2160	2160	2250	2160	1800	1310.4
Maximum Torque	T_{2MAX}	*Nm*	1300	1300	2500	2400	2400	2500	2400	2000	1456
Permitted Average Input Speed	N_{1N}	*rpm*	2500								
Maximum Input Speed	N_{1MAX}	*rpm*	4000								
Mean No Load Running Torque	T_{1NL}	*Nm*	2.6	2.5	2.6	2.5	2.5	2.4	2.4	2.4	2.4
Backlash Options: P1/P0/PU	j_t	*arcmin*	≤ 7 / ≤ 5 / ≤ 3								
Torsional Rigidity	c_g	*Nm/arcmin*	125-138								
Maximum Radial Load	F_r	*N*	24000								
Maximum Axial Load	F_a	*N*	22000								
Max. Tilting Moment	M_k	*Nm*	1365								
Mass Moment of Inertia	J_1	*kgcm²*	12.35	12.35	7.54	7.42	7.54	7.14	7.14	7.54	7.42
Weight	m_G	*kg*	40								



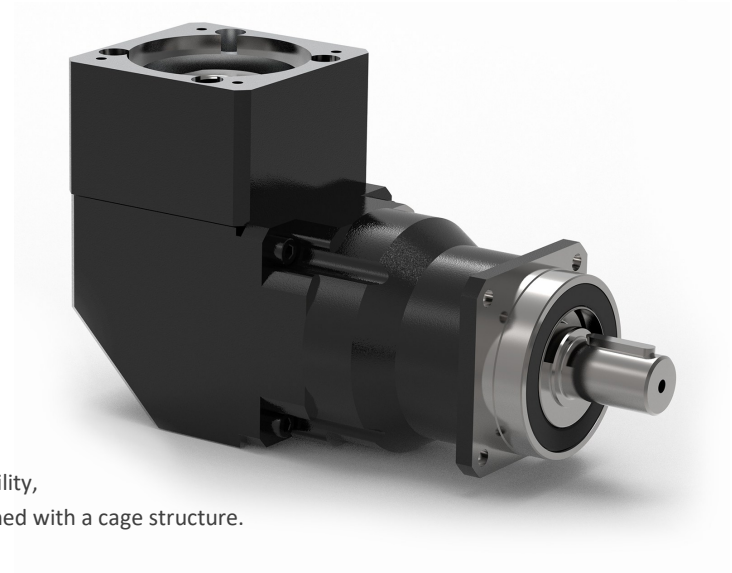
Model	KPG070		KPG090		KPG120		KPG160		KPG205	
Stage	1	2	1	2	1	2	1	2	1	2
K1	58	81,7	70,5	101,8	78	119,8	91	152	129	182
K3	Φ16	Φ16	Φ22	Φ22	Φ32	Φ32	Φ40	Φ40	Φ55	Φ55
K4	28	28	36	36	58	58	82	82	82	82
K5	Φ70	Φ70	Φ90	Φ90	Φ120	Φ120	Φ160	Φ160	Φ205	Φ205
K6	Φ60	Φ60	Φ70	Φ70	Φ90	Φ90	Φ130	Φ130	Φ160	Φ160
K7	5	5	6	6	8	8	10	10	10	10
K8	48	48	56	56	88	88	112	112	112	112
K9	M5X12	M5X12	M6X16	M6X16	M10X22	M10X22	M12X25	M12X25	M20X40	M20X40
K10	Φ5.5	Φ5.5	Φ6.5	Φ6.5	Φ9	Φ9	Φ11	Φ11	Φ13	Φ13
K11	68	68	Φ85	Φ85	Φ120	Φ120	Φ165	Φ165	Φ215	Φ215
K12	22	22	28	28	50	50	70	70	70	70
K13	5	5	6	6	10	10	12	12	16	16
K14	18	18	24,5	24,5	35	35	43	43	59	59
K15	6	6	7	7	10	10	12	12	15	15
K16	19	19	18	18	28	28	27	27	27	27
K17	62	62	75	75	105	105	140	140	180	180

Gearbox Size	70			90			
Motor Series	DSM5.2	DSM7.3	DSM5.3	DSM5.2	DSM7.3	DSM5.3	DSM5.4
C1	Φ63	Φ90	Φ100	Φ70	Φ90	Φ100	Φ130
C2	M5X12	M6x15	M6x15	M5x12	M6x15	M6x15	M8X20
C3	Φ11	Φ14	Φ14	Φ14	Φ14	Φ14	Φ19
C4	32,1	32,1	42,1	41,6	41,6	41,6	51,6
C5	Φ40	Φ70	Φ80	Φ50	Φ70	Φ80	Φ110
C6	6,5	6,5	6,5	6,5	6,5	6,5	6,5
C7	70	70	85	89	89	89	120
K2	39	39	49	48,5	48,5	48,5	58,4

Gearbox Size	120				160			205		
Motor Series	DSM7.3	DSM5.3	DSM5.4	DSM5.5	DSM5.4	DSM5.5	DSM5.6	DSM5.5	DSM5.6	DSM5.7
C1	Φ90	Φ100	Φ130	Φ165	Φ130	Φ165	Φ215	Φ165	Φ215	Φ300
C2	M6x15	M6x15	M8X20	M10x22	M8X20	M10x22	M12X25	M10x22	M12X25	M16X25
C3	Φ19	Φ19	Φ19	Φ24	Φ24	Φ24	Φ38	Φ32	Φ38	Φ48
C4	51,3	51,3	51,3	61,3	67	67	82	67	82	117
C5	Φ70	Φ80	Φ110	Φ130	Φ110	Φ130	Φ180	Φ130	Φ180	Φ250
C6	8	8	8	8	8	8	8	8	8	8
C7	120	120	120	142	Φ162	175	190	175	190	260
K2	64	64	64	74	86	86	101	86	101	129

KVG Series

High Precision Gearbox - 90°

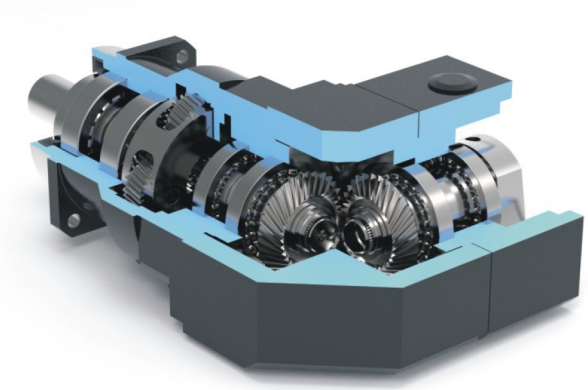


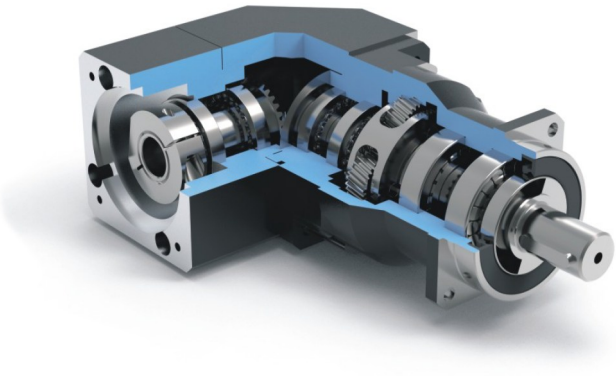
KVG is our highly successful high precision gearbox series

Thanks to its bevel gearing, our KVG ensures impeccable synchronization. By minimizing vibrations, it operates with remarkable smoothness, precision, and quietness.
This right-angle precision gearbox is lubricated for its entire lifespan and can be mounted in various configurations.

Key features:

Precision Line,
Right-angle gearbox,
Helical gear,
Bevel gear right angle stage,
Preloaded tapered roller bearings,
Rotary shaft seal,
Square-shaped output flange,
Extended centering collar,
Opposite-direction rotation capability,
Two-stage planetary carrier designed with a cage structure.

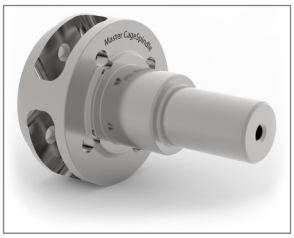




Helical Gear System Technology

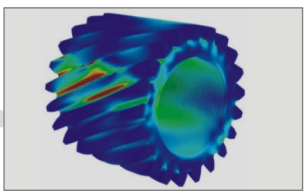
Thanks to the tooth to tooth compact ratio more than 60%.

The helical gearing and full needle bearing bring the benefits including higher torque capacity, smooth and lower noise running, decreased backlash and higher efficiency.



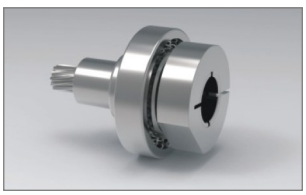
Master CageSpindle Planetary Carrier

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 tor gearbox whole service lite.



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.

KVG070 1-stage

			1-stage							
Ratio	i		3	4	5	6	7	8	9	10
Nominal Output Torque	T_{2N}	*Nm*	46	52	55	50	50	45	42	42
Emergency Stop Torque	T_{2STOP}	*Nm*	138	156	165	150	150	135	126	126
Maximum Accelleration Torque	T_{2ACC}	*Nm*	83	94	99	90	90	81	76	76
Maximum Torque	T_{2MAX}	*Nm*	92	104	110	110	100	90	84	84
Permitted Average Input Speed	N_{1N}	*rpm*	3000							
Maximum Input Speed	N_{1MAX}	*rpm*	6000							
Mean No Load Running Torque	T_{1NL}	*Nm*	0.3	0.3	0.25	0.23	0.23	0.23	0.23	0.23
Maximum Torsional Backlash	j_t	*arcmin*	≤ 7 / ≤ 5 / ≤ 3							
Torsional Rigidity	c_g	*Nm/arcmin*	6.5-7							
Maximum Radial Load	F_r	*N*	4300							
Maximum Axial Load	F_a	*N*	3900							
Max. Tilting Moment	M_k	*Nm*	577.5							
Mass Moment of Inertia	J_1	*kgcm²*	0.16	0.093	0.078	0.07	0.069	0.065	0.065	0.065
Weight	m_G	*kg*	4.6							

KVG070 2-stage

			2-stage								
Ratio	i		12	15	16	20	25	32	40	64	100
Nominal Output Torque	T_{2N}	*Nm*	46	50	52	55	55	52	55	36	33
Emergency Stop Torque	T_{2STOP}	*Nm*	138	150	156	165	165	156	165	108	99
Maximum Accelleration Torque	T_{2ACC}	*Nm*	83	90	94	99	99	94	99	65	59
Maximum Torque	T_{2MAX}	*Nm*	92	100	104	110	110	104	110	72	66
Permitted Average Input Speed	N_{1N}	*rpm*	3000								
Maximum Input Speed	N_{1MAX}	*rpm*	6000								
Mean No Load Running Torque	T_{1NL}	*Nm*	0.3	0.26	0.3	0.26	0.23	0.23	0.23	0.23	0.23
Maximum Torsional Backlash	j_t	*arcmin*	≤ 9 / ≤ 7 / ≤ 5								
Torsional Rigidity	c_g	*Nm/arcmin*	6.6-7								
Maximum Radial Load	F_r	*N*	4300								
Maximum Axial Load	F_a	*N*	3900								
Max. Tilting Moment	M_k	*Nm*	577.5								
Mass Moment of Inertia	J_1	*kgcm²*	0.105	0.088	0.088	0.075	0.075	0.064	0.064	0.064	0.064
Weight	m_G	*kg*	7								

KVG090 1-stage

1-stage										
Ratio	i		3	4	5	6	7	8	9	10
Nominal Output Torque	T_{2N}	*Nm*	125	145	155	145	135	115	105	105
Emergency Stop Torque	T_{2STOP}	*Nm*	375	435	465	435	405	345	315	315
Maximum Accelleration Torque	T_{2ACC}	*Nm*	225	261	279	261	243	207	189	189
Maximum Torque	T_{2MAX}	*Nm*	250	290	310	290	270	230	210	210
Permitted Average Input Speed	N_{1N}	*rpm*	3000							
Maximum Input Speed	N_{1MAX}	*rpm*	6000							
Mean No Load Running Torque	T_{1NL}	*Nm*	0.57	0.54	0.46	0.44	0.38	0.38	0.38	0.38
Maximum Torsional Backlash	j_t	*arcmin*	≤ 7 / ≤ 5 / ≤ 3							
Torsional Rigidity	c_g	*Nm/arcmin*	12-14							
Maximum Radial Load	F_r	*N*	7000							
Maximum Axial Load	F_a	*N*	6300							
Max. Tilting Moment	M_k	*Nm*	700							
Mass Moment of Inertia	J_1	*kgcm²*	0.61	0.52	0.45	0.42	0.40	0.39	0.39	0.39
Weight	m_G	*kg*	7.4							

KVG090 2-stage

2-stage										
Ratio	i		12	15	16	20	25	32	40	64	100
Nominal Output Torque	T_{2N}	*Nm*	125	125	145	145	155	145	155	92	84
Emergency Stop Torque	T_{2STOP}	*Nm*	375	375	435	435	465	435	465	276	252
Maximum Accelleration Torque	T_{2ACC}	*Nm*	225	225	261	261	279	261	279	165	151
Maximum Torque	T_{2MAX}	*Nm*	250	250	290	290	310	310	310	184	168
Permitted Average Input Speed	N_{1N}	*rpm*	3000								
Maximum Input Speed	N_{1MAX}	*rpm*	6000								
Mean No Load Running Torque	T_{1NL}	*Nm*	0.54	0.47	0.54	0.47	0.47	0.38	0.38	0.38	0.38
Maximum Torsional Backlash	j_t	*arcmin*	≤ 9 / ≤ 7 / ≤ 5								
Torsional Rigidity	c_g	*Nm/arcmin*	13-14								
Maximum Radial Load	F_r	*N*	7000								
Maximum Axial Load	F_a	*N*	6300								
Max. Tilting Moment	M_k	*Nm*	700								
Mass Moment of Inertia	J_1	*kgcm²*	0.67	0.5	0.5	0.44	0.44	0.39	0.39	0.39	0.39
Weight	m_G	*kg*	9.8								

KVG120 1-stage

1-stage										
Ratio	i		3	4	5	6	7	8	9	10
Nominal Output Torque	T_{2N}	*Nm*	210	300	320	300	290	255	220	220
Emergency Stop Torque	T_{2STOP}	*Nm*	630	900	960	900	870	765	660	660
Maximum Accelleration Torque	T_{2ACC}	*Nm*	378	540	576	540	522	459	396	396
Maximum Torque	T_{2MAX}	*Nm*	420	600	640	600	580	510	440	440
Permitted Average Input Speed	N_{1N}	*rpm*	3000							
Maximum Input Speed	N_{1MAX}	*rpm*	6000							
Mean No Load Running Torque	T_{1NL}	*Nm*	1.5	1.43	1.28	1.22	1.17	1.17	1.17	1.17
Maximum Torsional Backlash	j_t	*arcmin*	≤ 7 / ≤ 5 / ≤ 3							
Torsional Rigidity	c_g	*Nm/arcmin*	22-26							
Maximum Radial Load	F_r	*N*	10000							
Maximum Axial Load	F_a	*N*	9000							
Max. Tilting Moment	M_k	*Nm*	938							
Mass Moment of Inertia	J_1	*kgcm²*	3.25	2.74	2.71	2.71	2.71	2.62	2.62	2.57
Weight	m_G	*kg*	12.1							

KVG120 2-stage

2-stage										
Ratio	i		12	15	16	20	25	32	40	64	100
Nominal Output Torque	T_{2N}	*Nm*	210	300	300	300	320	305	320	204	176
Emergency Stop Torque	T_{2STOP}	*Nm*	630	900	900	900	960	915	960	612	528
Maximum Accelleration Torque	T_{2ACC}	*Nm*	378	540	540	540	576	549	576	367	317
Maximum Torque	T_{2MAX}	*Nm*	420	600	600	600	640	610	640	408	352
Permitted Average Input Speed	N_{1N}	*rpm*	3000								
Maximum Input Speed	N_{1MAX}	*rpm*	6000								
Mean No Load Running Torque	T_{1NL}	*Nm*	1.43	1.28	1.43	1.28	1.28	1.17	1.17	1.17	1.17
Maximum Torsional Backlash	j_t	*arcmin*	≤ 9 / ≤ 7 / ≤ 5								
Torsional Rigidity	c_g	*Nm/arcmin*	23-26								
Maximum Radial Load	F_r	*N*	10000								
Maximum Axial Load	F_a	*N*	9000								
Max. Tilting Moment	M_k	*Nm*	938								
Mass Moment of Inertia	J_1	*kgcm²*	2.56	2.58	1.75	1.5	1.49	1.3	1.3	1.5	1.45
Weight	m_G	*kg*	14								

KVG160 1-stage

1-stage										
Ratio	i		3	4	5	6	7	8	9	10
Nominal Output Torque	T_{2N}	*Nm*	350	550	650	610	540	510	440	440
Emergency Stop Torque	T_{2STOP}	*Nm*	1050	1650	1950	1830	1620	1530	1320	1320
Maximum Accelleration Torque	T_{2ACC}	*Nm*	630	990	1170	1098	972	918	792	792
Maximum Torque	T_{2MAX}	*Nm*	700	1100	1300	1220	1080	1020	880	880
Permitted Average Input Speed	N_{1N}	*rpm*	3000							
Maximum Input Speed	N_{1MAX}	*rpm*	6000							
Mean No Load Running Torque	T_{1NL}	*Nm*	3.83	3.68	3.45	3.30	3.30	3.30	3.30	3.30
Maximum Torsional Backlash	j_t	*arcmin*	≤ 7 / ≤ 5 / ≤ 3							
Torsional Rigidity	c_g	*Nm/arcmin*	45-52							
Maximum Radial Load	F_r	*N*	19000							
Maximum Axial Load	F_a	*N*	17000							
Max. Tilting Moment	M_k	*Nm*	1243.2							
Mass Moment of Inertia	J_1	*kgcm²*	12.31	7.54	7.42	7.42	7.25	7.14	7.14	7.14
Weight	m_G	*kg*	25							

KVG160 2-stage

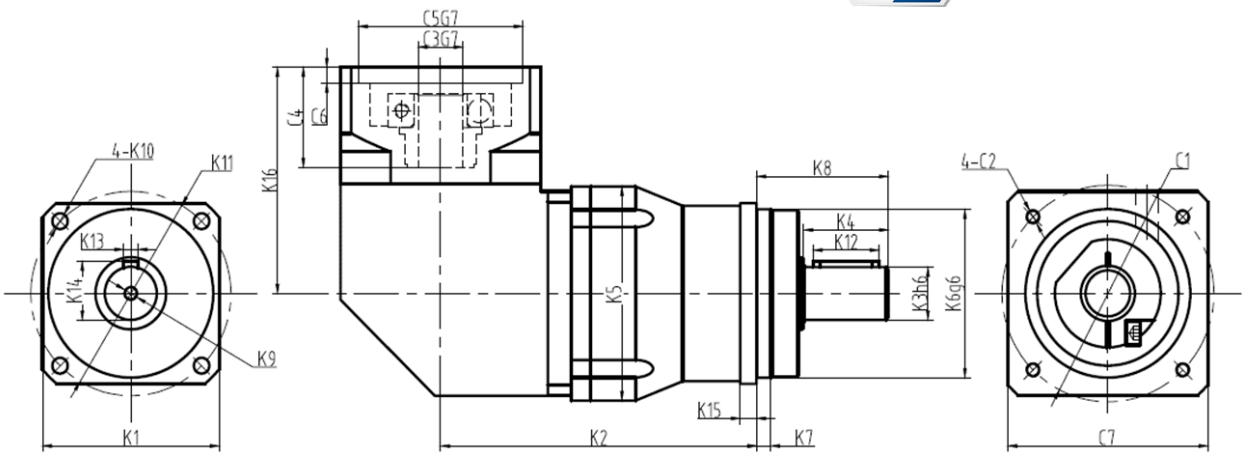
2-stage										
Ratio	i		12	15	16	20	25	32	40	64	100
Nominal Output Torque	T_{2N}	*Nm*	350	500	550	650	650	550	550	408	352
Emergency Stop Torque	T_{2STOP}	*Nm*	1050	1500	1650	1950	1950	1650	1650	1224	1056
Maximum Accelleration Torque	T_{2ACC}	*Nm*	630	900	990	1170	1170	990	990	734	634
Maximum Torque	T_{2MAX}	*Nm*	700	1000	1100	1300	1300	1100	1100	816	704
Permitted Average Input Speed	N_{1N}	*rpm*	3000								
Maximum Input Speed	N_{1MAX}	*rpm*	6000								
Mean No Load Running Torque	T_{1NL}	*Nm*	3.68	3.45	3.45	3.45	3.45	3.30	3.30	3.30	3.30
Maximum Torsional Backlash	j_t	*arcmin*	≤ 9 / ≤ 7 / ≤ 5								
Torsional Rigidity	c_g	*Nm/arcmin*	45-52								
Maximum Radial Load	F_r	*N*	19000								
Maximum Axial Load	F_a	*N*	17000								
Max. Tilting Moment	M_k	*Nm*	1243.2								
Mass Moment of Inertia	J_1	*kgcm²*	12.35	12.35	7.47	6.65	5.81	6.34	4.08	7.50	7.30
Weight	m_G	*kg*	30								

KVG205 1-stage

1-stage										
Ratio	i		3	4	5	6	7	8	9	10
Nominal Output Torque	T_{2N}	*Nm*	650	1250	1200	1000	1000	1000	910	910
Emergency Stop Torque	T_{2STOP}	*Nm*	1950	3750	3600	3000	3000	3000	2730	2730
Maximum Accelleration Torque	T_{2ACC}	*Nm*	1170	2250	2160	1800	1800	1800	1638	1638
Maximum Torque	T_{2MAX}	*Nm*	1300	2500	2400	2000	2000	2000	1820	1820
Permitted Average Input Speed	N_{1N}	*rpm*	2500							
Maximum Input Speed	N_{1MAX}	*rpm*	4000							
Mean No Load Running Torque	T_{1NL}	*Nm*	5.25	4.95	4.73	4.50	4.50	4.50	4.50	4.50
Maximum Torsional Backlash	j_t	*arcmin*	≤ 7 / ≤ 5 / ≤ 3							
Torsional Rigidity	c_g	*Nm/arcmin*	120-138							
Maximum Radial Load	F_r	*N*	24000							
Maximum Axial Load	F_a	*N*	22000							
Max. Tilting Moment	M_k	*Nm*	1365							
Mass Moment of Inertia	J_1	*kgcm²*	28.98	23.67	22.75	22.75	22.48	22.59	22.59	22.55
Weight	m_G	*kg*	49							

KVG205 2-stage

2-stage										
Ratio	i		12	15	16	20	25	32	40	64	100
Nominal Output Torque	T_{2N}	*Nm*	650	850	1250	1250	1200	1250	1200	800	728
Emergency Stop Torque	T_{2STOP}	*Nm*	1950	2550	3750	3750	3600	3750	3600	2400	2184
Maximum Accelleration Torque	T_{2ACC}	*Nm*	1170	1530	2250	2250	2160	2250	2160	1440	1310.4
Maximum Torque	T_{2MAX}	*Nm*	1300	1700	2500	2500	2400	2500	2400	1600	1456
Permitted Average Input Speed	N_{1N}	*rpm*	2500								
Maximum Input Speed	N_{1MAX}	*rpm*	4000								
Mean No Load Running Torque	T_{1NL}	*Nm*	3.68	3.45	3.45	3.45	3.45	3.30	3.30	3.30	3.30
Maximum Torsional Backlash	j_t	*arcmin*	≤ 9 / ≤ 7 / ≤ 5								
Torsional Rigidity	c_g	*Nm/arcmin*	120-138								
Maximum Radial Load	F_r	*N*	24000								
Maximum Axial Load	F_a	*N*	22000								
Max. Tilting Moment	M_k	*Nm*	1365								
Mass Moment of Inertia	J_1	*kgcm²*	12.35	12.35	7.54	7.42	7.54	7.14	7.14	7.14	7.14
Weight	m_G	*kg*	55								

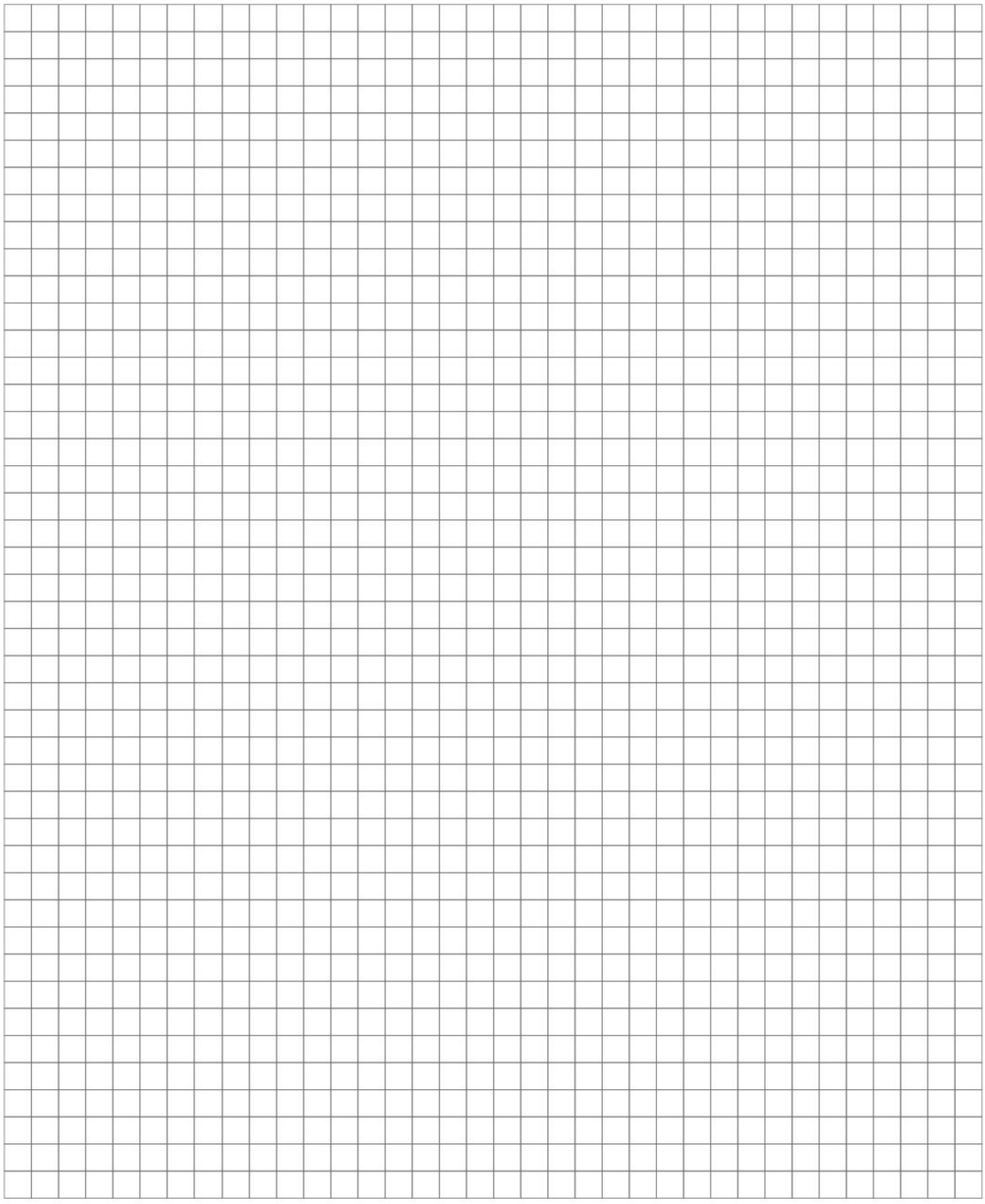


Model	KVG070		KVG090		KVG120		KVG160		KVG205	
Stage	1	2	1	2	1	2	1	2	1	2
K1	Φ60		Φ75		Φ105		Φ140		Φ180	
K2	112	135,7	134,2	165,5	173	214,8	200,5	261,5	244,5	291,5
K3	Φ16		Φ22		Φ32		Φ40		Φ55	
K4	28		36		58		82		82	
K5	Φ70		Φ90		Φ120		Φ160		Φ205	
K6	Φ60		Φ70		Φ90		Φ130		Φ160	
K7	5		6		8		10		12	
K8	48		56		88		112		112	
K9	M5X12		M6X16		M10X22		M12X25		M20X40	
K10	Φ5.5		Φ6.5		Φ9		Φ114.3		Φ13	
K11	Φ68		Φ85		Φ120		Φ165		Φ215	
K12	22		32		50		65		65	
K13	5		6		10		12		16	
K14	18		24,5		35		43		59	
K15[1]	6		7		10		12		15	
K16	82,5		94		130		169		169	

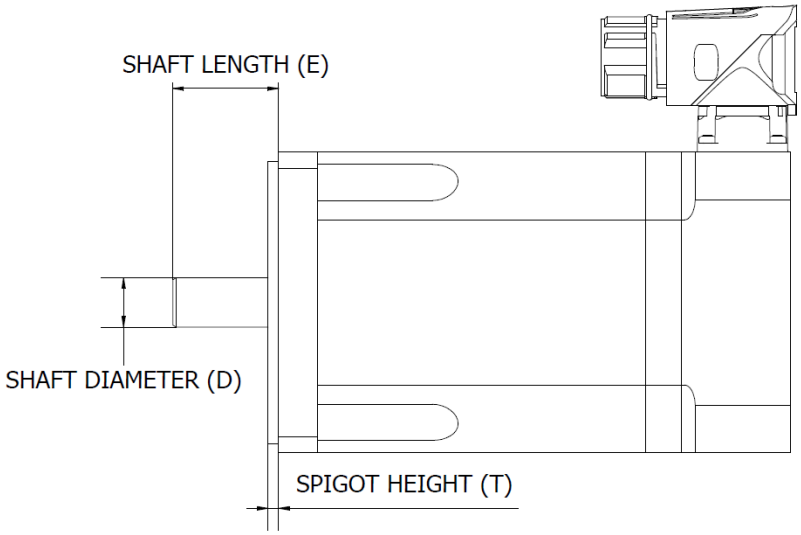
Gearbox Size	70			90			
Motor Series	DSM5.2	DSM7.3	DSM5.3	DSM5.2	DSM7.3	DSM5.3	DSM5.4
C1	Φ63	Φ90	Φ100	Φ70	Φ90	Φ100	Φ130
C2	M5X12	M6x15	M6x15	M5x12	M6x15	M6x15	M8X20
C3	Φ11	Φ14	Φ14	Φ14	Φ14	Φ14	Φ19
C4	32,1	32,1	42,1	41,6	41,6	41,6	51,6
C5	Φ40	Φ70	Φ80	Φ50	Φ70	Φ80	Φ110
C6	6,5	6,5	6,5	6,5	6,5	6,5	6,5
C7	70	70	85	89	89	89	120

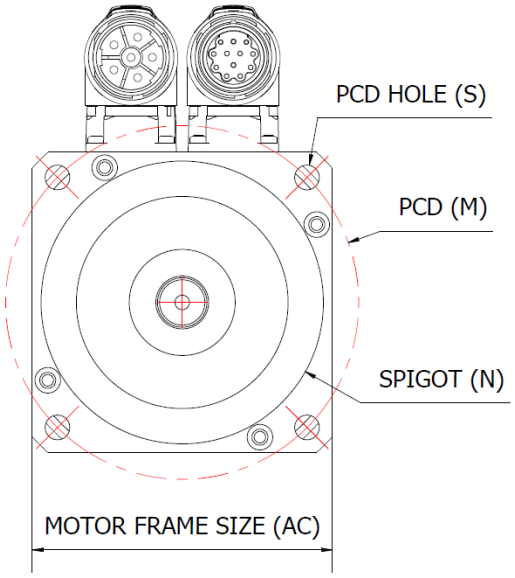
Gearbox Size	120				160			205		
Motor Series	DSM7.3	DSM5.3	DSM5.4	DSM5.5	DSM5.4	DSM5.5	DSM5.6	DSM5.5	DSM5.6	DSM5.7
C1	Φ90	Φ100	Φ130	Φ165	Φ130	Φ165	Φ215	Φ165	Φ215	Φ300
C2	M6x15	M6x15	M8X20	M10x22	M8X20	M10x22	M12X25	M10x22	M12X25	M16X25
C3	Φ19	Φ19	Φ19	Φ24	Φ24	Φ24	Φ38	Φ32	Φ38	Φ48
C4	51,3	51,3	51,3	61,3	67	67	82	67	82	117
C5	Φ70	Φ80	Φ110	Φ130	Φ110	Φ130	Φ180	Φ130	Φ180	Φ250
C6	8	8	8	8	8	8	8	8	8	8
C7	120	120	120	142	Φ162	175	190	175	190	260

Technical Memo



Configuration table





Motor Series	Shaft		Flange						SPL/SVL Suitable Sizes	KPG/KVG Suitable Sizes
	D	E	AC	N	M	T	S	MEC		
DSM5.0	8	25	40	30	46	2,5	4,3	-	40-60	70
DSM5.2	11	23	60	40	63	2,5	5,8	-	60	70
	14	30	60	50	70	3	5,5	-	80	90
DSM5.3	14	30	85	80	100	3	7	56B5	60-80	70-90
	19	40	85	80	100	3	7	56B5	120	120
DSM5.4	19	40	115	110	130	3,5	9	71B5	80-120	90-120
	24	50	115	110	130	3,5	9	71B5	160	160
DSM5.5	24	50	142	130	165	3,5	11	90B5	120-160	120-160
	32	58	142	130	165	3,5	11	90B5	205	205
DSM5.6	38	80	190	180	215	4	14	112B5	160-205	160-205
DSM5.7	48	82	260	250	300	5	18	160B5	205-235	205-235
DSM7.3	14	30	80	70	90	3	7	-	60-80	70-90
	19	40	80	70	90	3	7	-	120	120

For ALL Series

Order code example

KPG - 120 - 02 - 015 - S1 - P0 - 19x40—110/130/M8

1	2	3	4	5	6	7	8
Series	Size	Stages	Ratio	Output Shaft	Precision	Input Shaft	Flange
KPG	**120**	**02**	**015**	**S1**	**P0**	**19x40**	**110/130/M8**

1 Gearbox Series

SPL – Standard Precision
SVL – Standard Precision 90°
KPG – High Precision
KVG – High Precision 90°

2 Gearbox Sizes

From 40 to 235 (check detailed tables for each series)

3 Gearbox stages

From 1 to 3 (check detailed tables for each series)

4 Gearbox Ratio

Up to 512 (check detailed tables for each series)

5 Output Shaft

S1 – with Key

6 Gearbox Precision

P1 – Standard Backlash for KPG & KVG only
P0 – Reduced Backlash for KPG & KVG only
PU – Ultra Low Backlash for KPG & KVG only
P2 – Standard Backlash for SPL & SVL only

7 Input Shaft

Diamater x Length of the motor shaft
(check available motor combinations)

8 Gearbox Adaption Flange

Spigot/PCD/PCD threads dimensions

Gearbox	Nominal output torque	Backlash	Bearing load	Protection class	Running noise	Input speeds	Torsional stiffness	Wide range of ratios
SPL	●●○○	●●○○	●○○○	●●○○	●○○○	●●●●	●●○○	●●●●
SVL	●○○○	●○○○	●○○○	●●○○	●○○○	●●●○	●○○○	●●●●
KPG	●●●●	●●●●	●●●○	●●●○	●●○○	●●○○	●●●○	●●●○
KVG	●●●○	●●●●	●●●○	●●●○	●●●○	●○○○	●●○○	●●○○

Technical details across the all range			
Operating Noise Level	L	*dB(A)*	< 6x
Efficiency at Full loading	η	*%*	9x
Operating Temperature		*°C*	-25 to +90
Lubrification			Syntetic Lubrification Grease
Mouting Position			Any Direction
Protection Class			IP 65
Service lifetime	Ln	*h*	S5 Cycle Operation: 30,000 hrs (S1 continuos operation: 15,000 hrs)

SANGALLI SERVOMOTORI S.r.l.

Soggetta a direzione e coordinamento di ESAUTOMOTION SPA

Via Federico Rossi, 5 - 20900 - Monza (Mb) ITALY

WWW.SANGALLISERVOMOTORI.IT