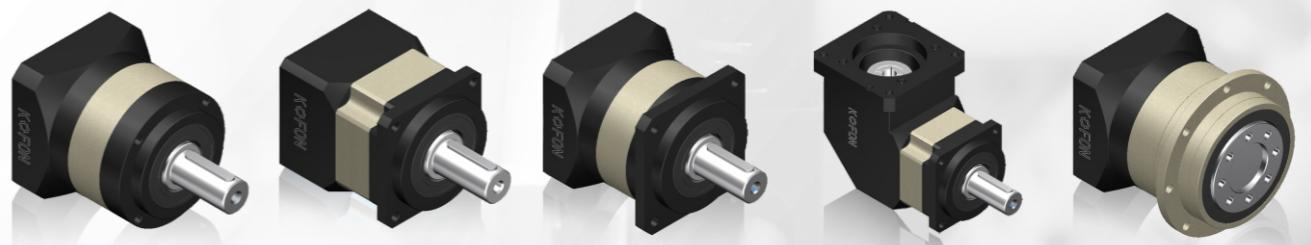


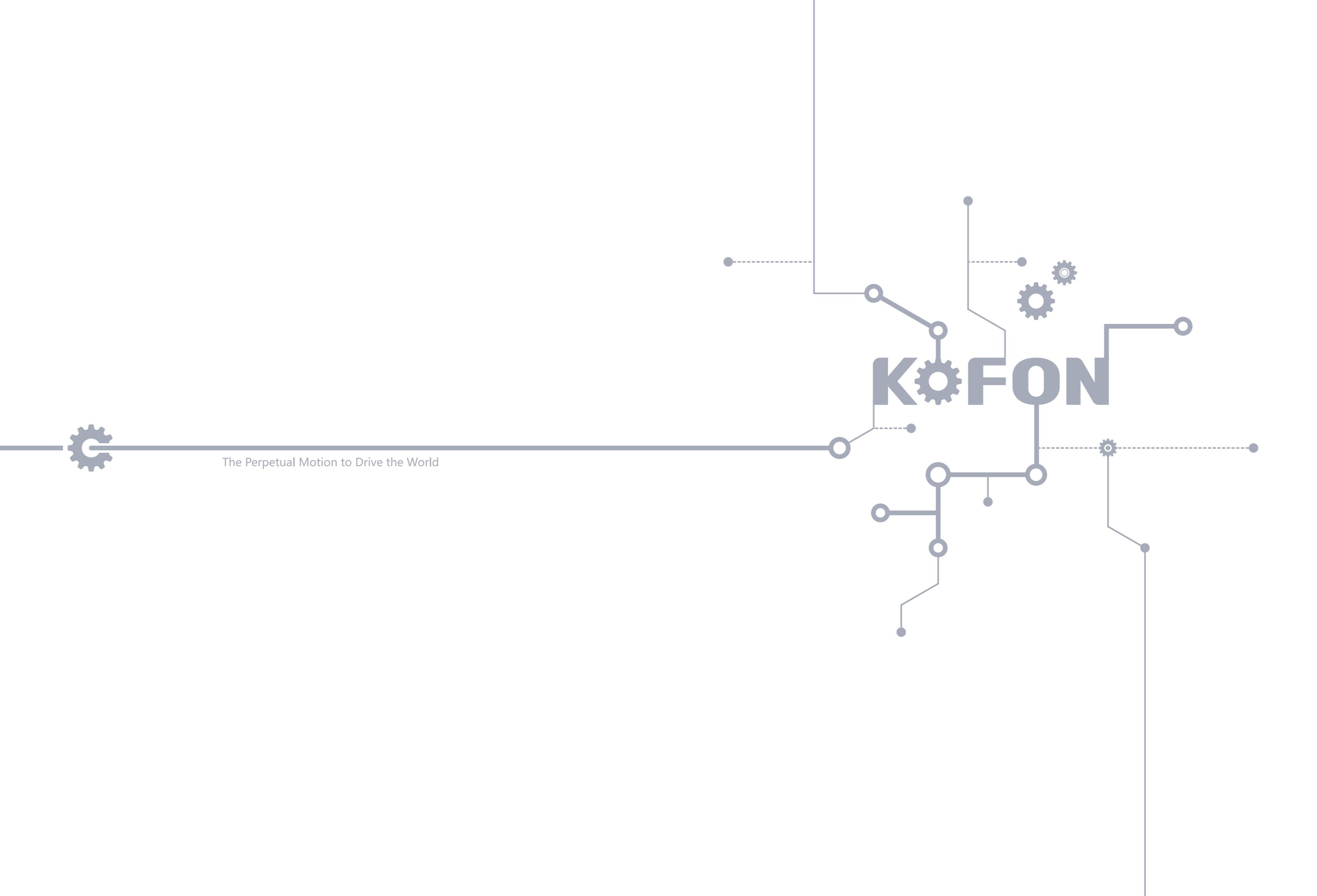
KOFON MOTION

Add: No.9 Zhongliang Avenue, Huanggang City, Hubei Province 438000, P.R. China
Tel: +86 713 8585919 Fax: +86 713 8585911
Email: info@kofon-motion.com Web: www.kofon-motion.com

KOFON MOTION



HIGH PRECISION PLANETARY GEARBOX



KOFON

The Perpetual Motion to Drive the World

Promise with Strength, Precision and Stability.



The philosophy of our business and work for over 20 years.

We make the servo gearbox engineering process quite simple by our professional understanding of various terminal applications.

We achieve the high level of the modular gearbox system, the custom solutions could be worked as per customer needs. Also we keep the machining and heat treatment constantly improved.



We could offer highly reliable custom servo gearbox solutions with innovative and mature technology.

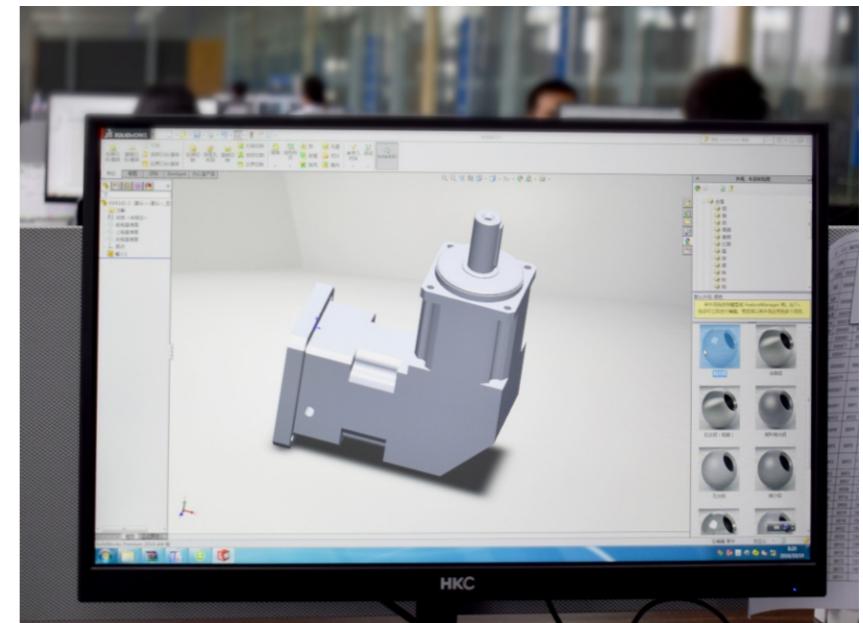
Please contact us if any question about our products and services. We will be dedicated to provide the best solution for customers worldwide.

Product with Innovation and Technology



Our servo gearbox products can meet various complicated requirements for all sectors from machinery automation projects.

The highly qualified engineering team could support you the mostly professional custom gearbox solutions at the first time.



Our high level gearbox product quality, technical support and service highly appreciated worldwide. Our R&D center located in Germany and China. All essential parts of the respected high level products are made in Germany and whole assembly in China.

We offer professional training and guide for all professional training and guide for all personnel and our team stay highly qualified and efficient.



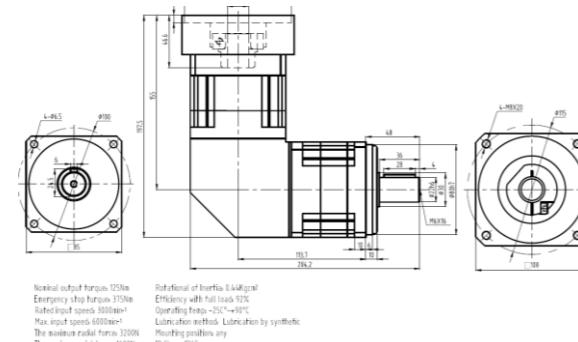
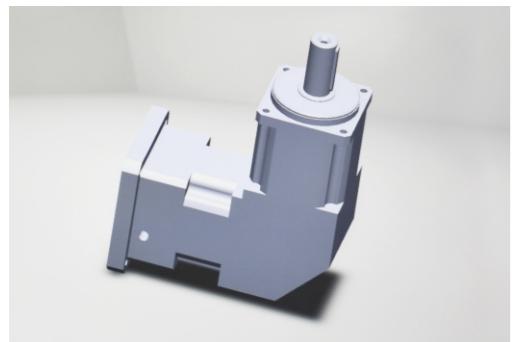
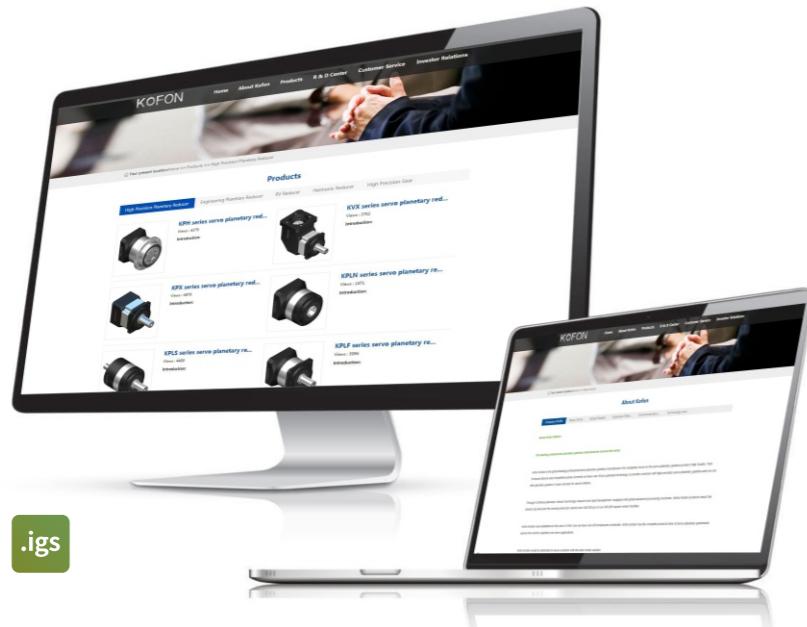
Benefit with Gearbox Selection Programme (KSP)



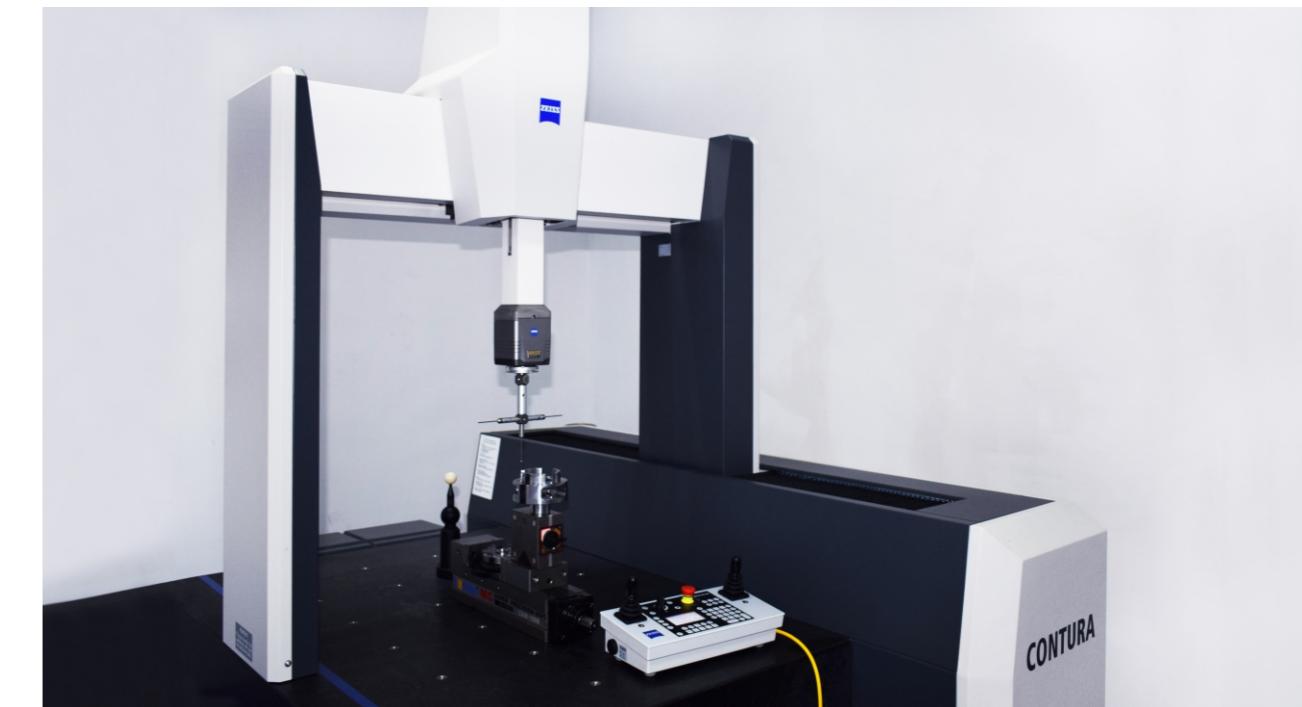
The Kofon Selection Programme (KSP) support you to realize the optimal portfolio of servo motor and gearbox by few steps.

KSP makes it available to get access to almost motors in the market and huge numbers of applications like pinions, spindles, belts, conveyors, rotary tables, slider cranks and winders.

The selection system software could be available to download free and use off-line with huge data base. Access of drawing in the format pdf, dwg (2D) and step (3D).



Perfection with All Details in Quality Control



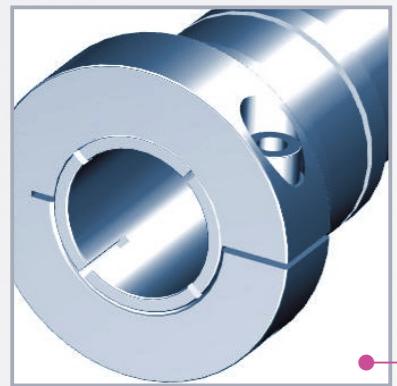
Kofon wins high appreciate from customer worldwide for decades with our innovative products, we respect each details in the whole process of manufacturing.

Our management strictly comply with ISO9001:2008. All part and products can be traced effectively.

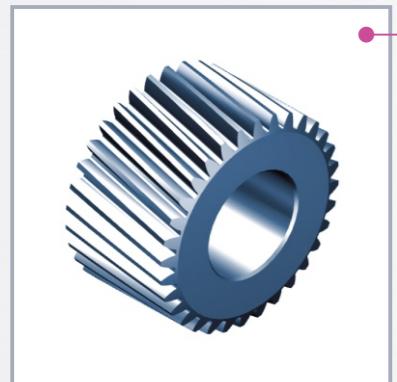
Perfection with all details, this is our promise for all our products.



Product Features

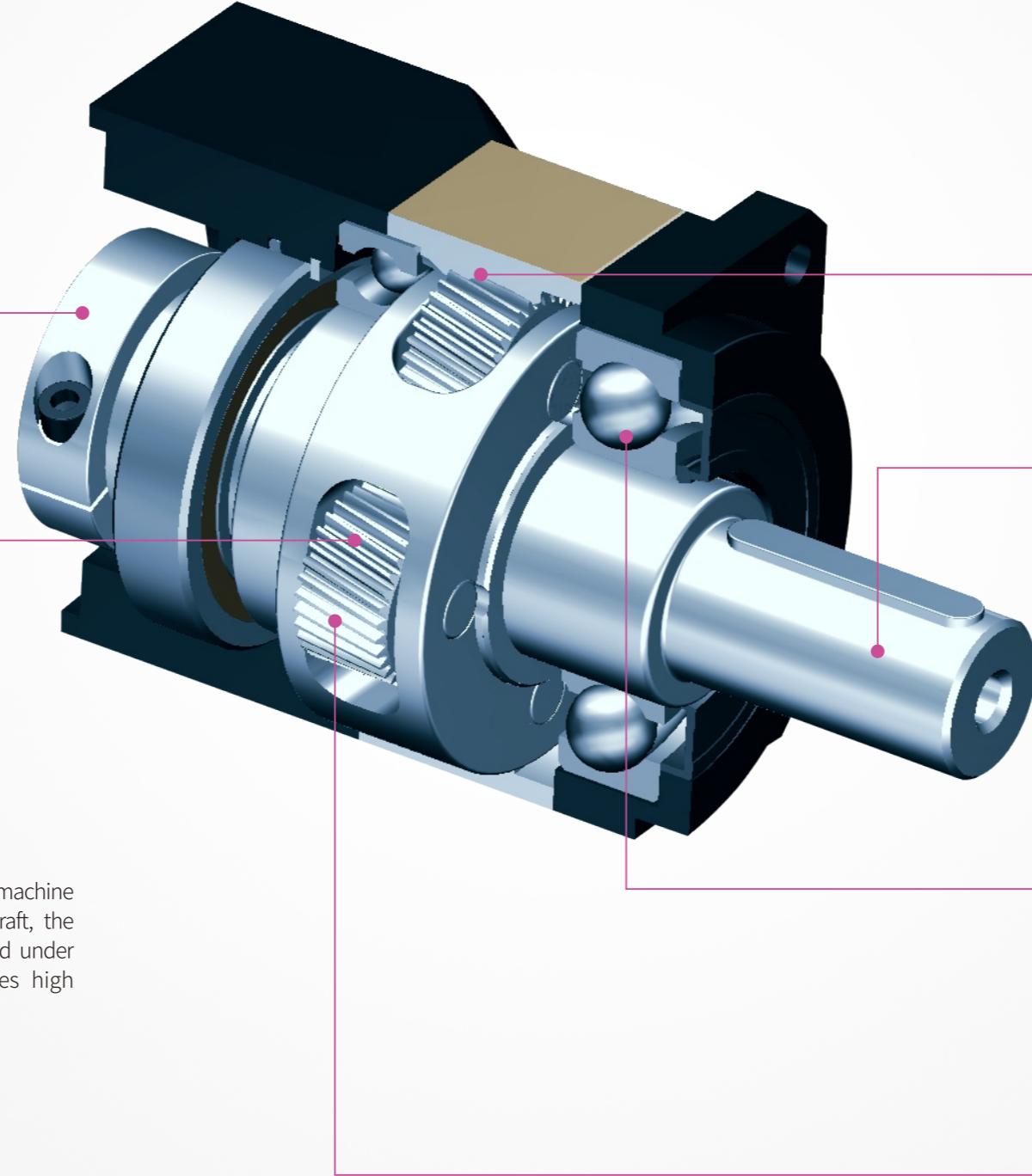


Drum locking mechanism design to ensure the stability of concentricity and power transmission of zero clearance under the high input speed.

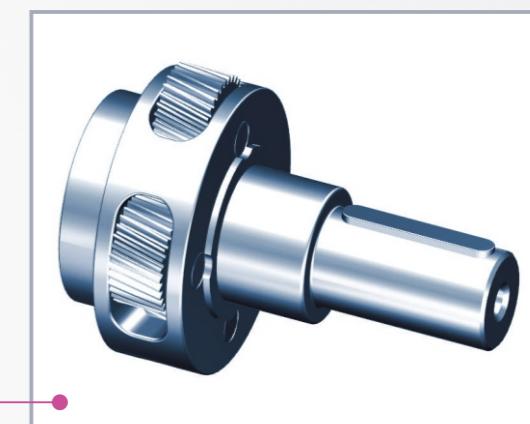


Choosing low-carbon alloy forged steel as the raw material of the gear, the hardness can reach HRC60 by deepen harden of carburizing heat treatment to ensure gear strength and lifetime.

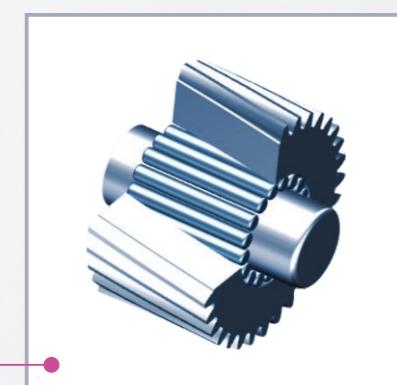
Using synthetic lubricating grease and the IP65 protection grade seal design, it can not leak and no need to maintain.



Adopts helical gear design and top class high precision gear grinding craft to increase high gear meshing, ensuring gearbox high precision and ultra low noise.

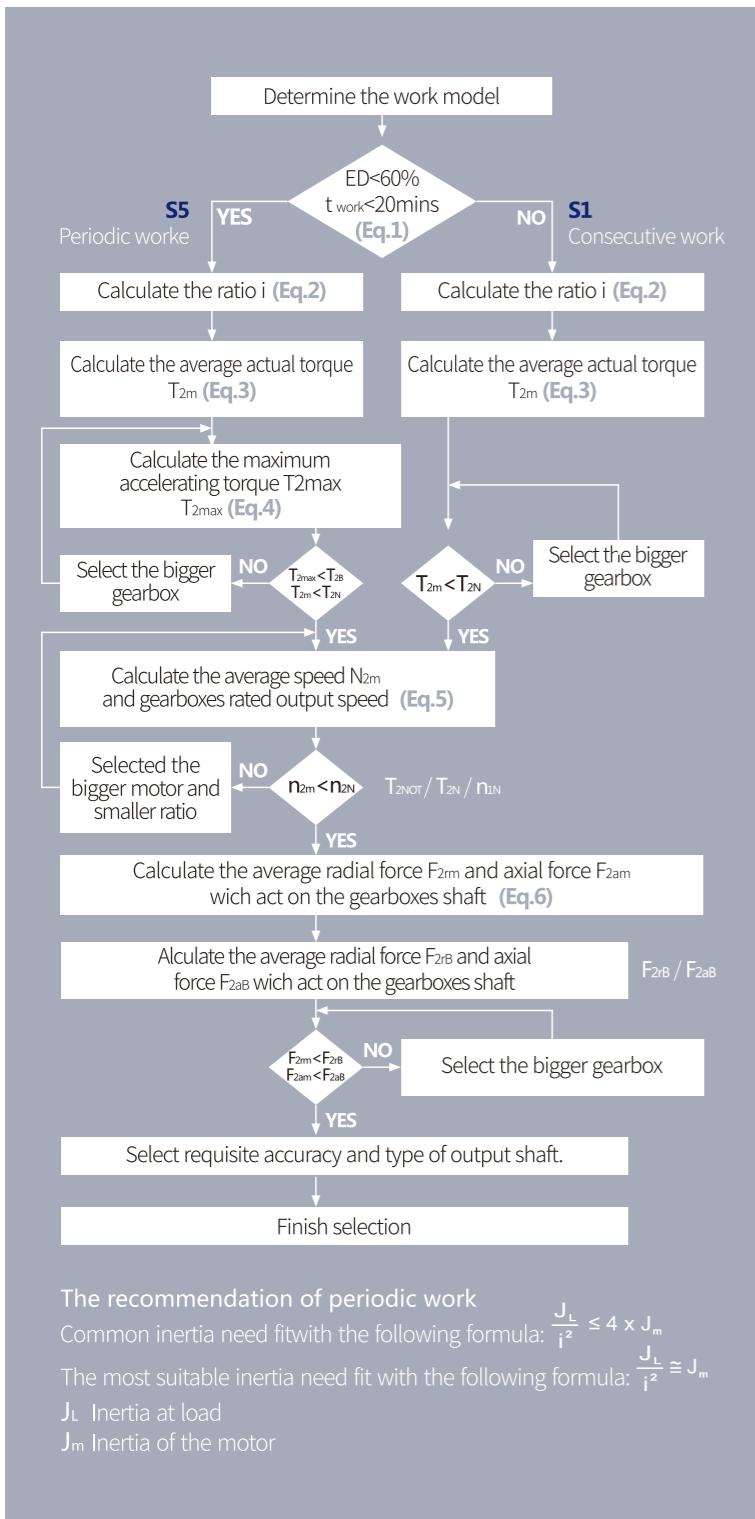


With integrated design of caged planet carrier and output shaft to realize high rigidity and high precision.

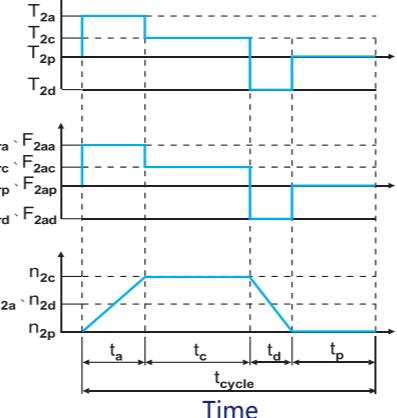


With the design of heavy series bearings to withstand the huge radial and axial force.

Gearbox Selection



Work model



$$1. ED = \frac{t_a + t_c + t_d}{t_{cycle}} \times 100\%, t_{work} = t_a + t_c + t_d$$

Explanation:
a: accelerated c: constant
d: deceleration p: stop

$$2. i \approx \frac{n_m}{n_{work}}$$

n_m Output speed of motor
 n_{work} Actual speed on work (Eq.2)

$$3. T_{2m} = 3 \sqrt{\frac{n_{2a} \times t_a \times T_{2a}^3 + n_{2c} \times t_c \times T_{2c}^3 + n_{2d} \times t_d \times T_{2d}^3}{n_{2a} \times t_a + n_{2c} \times t_c + n_{2d} \times t_d}}$$

$$4. T_{2max} = T_{mB} \times i \times k_A \times \eta$$

k_A Coefficient at load

k_A	Periodic times/hour
1.0	0~1,000
1.1	1,000~1,500
1.3	1,500~2,000
1.6	2,000~3,000
1.8	3,000~5,000

$$5. n_{2a} = n_{2d} = \frac{1}{2} \times n_{2c}$$

$$n_{2m} = \frac{n_{2a} \times t_a + n_{2c} \times t_c + n_{2d} \times t_d}{t_a + t_c + t_d}$$

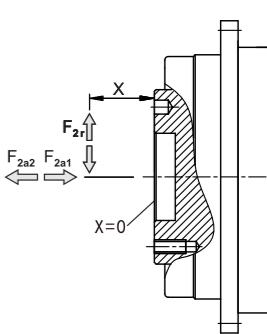
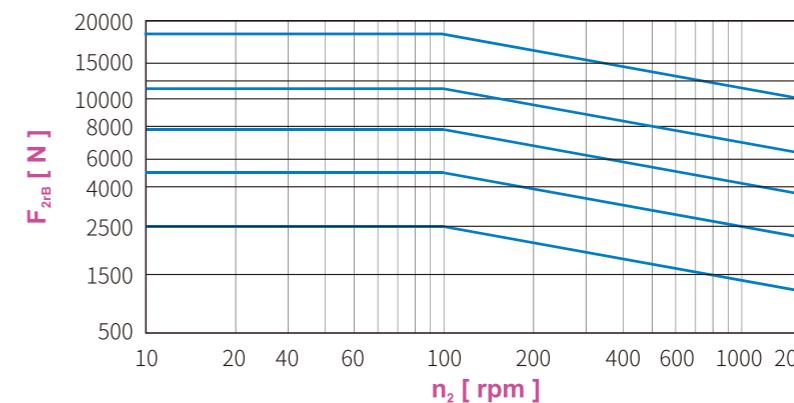
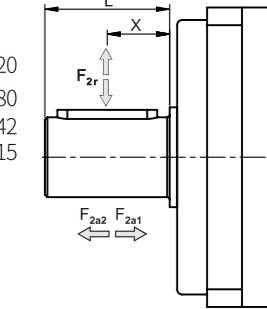
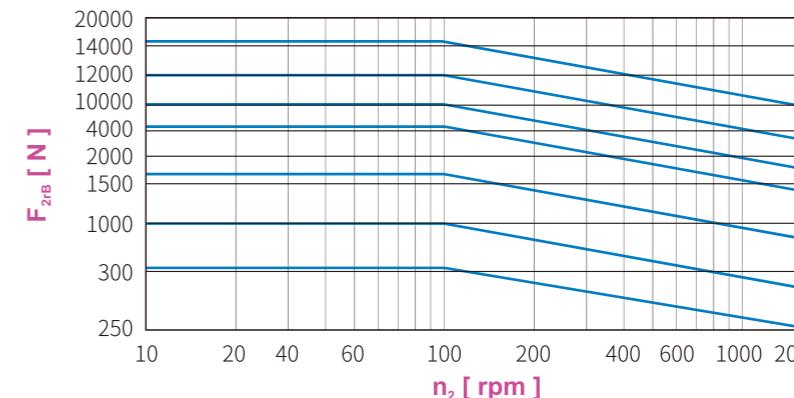
$$n_{2N} = \frac{n_{IN}}{i}$$

$$6. F_{2m} = 3 \sqrt{\frac{n_{2a} \times t_a \times F_{2ra}^3 + n_{2c} \times t_c \times F_{2rc}^3 + n_{2d} \times t_d \times F_{2rd}^3}{n_{2a} \times t_a + n_{2c} \times t_c + n_{2d} \times t_d}}$$

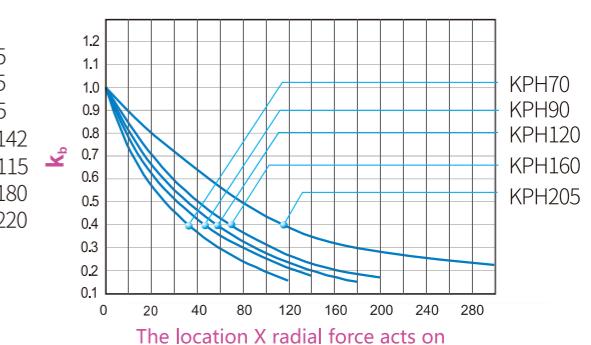
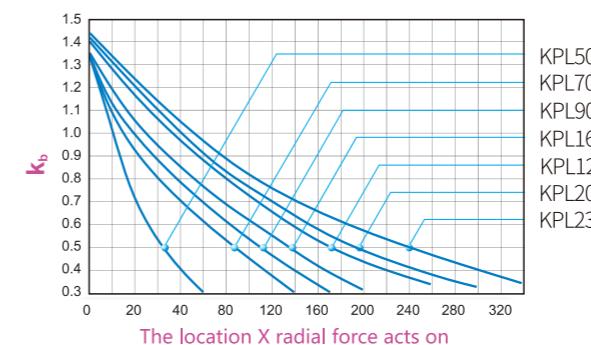
$$F_{2am} = 3 \sqrt{\frac{n_{2a} \times t_a \times F_{2aa}^3 + n_{2c} \times t_c \times F_{2ac}^3 + n_{2d} \times t_d \times F_{2ad}^3}{n_{2a} \times t_a + n_{2c} \times t_c + n_{2d} \times t_d}}$$

Permissible Radial Force and Axial Force of Gearbox Output Shaft

Please consult the left picture to find the right permissible radial force F_{2rB} , when gearbox with 20000hr, using life works at different output speed on the condition that radial force F_{2r} acts on the middle of the output shaft, $X=1/2L$ (KPH series $X=0$).



The gearbox permissible radial force is bigger when radial force is closer to gearbox ($X < 1/2L$) on the condition that radial force F_{2r} is not at the middle of the shaft. Under the same condition you can consult the left picture to find the locational coefficient at load K_b by the specification of gearbox and the location X radial force acts on.



Description:

The KPL, KPLH, KPLS, KPLF, KVX radial force and axial force coefficient of speed and position with the KPL, KPX.

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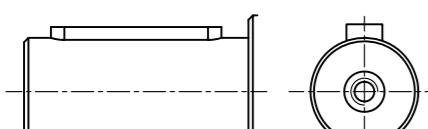


Ordering Instructions

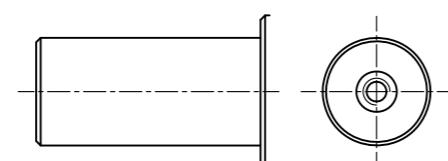


KPX	S	D	-	115	-	100	-	S1	-	LB	-	Motor Model
												Motor model, not specified for the standard size
												Low backlash, not specified for the standard side gap
												Motor adapter, not specified for the standard size
												Single stage:3/4/5/7/8/9/10 Ratio Double stage:12/16/20/25/32(35)/40(45)/50(49)/64(63) Three stage:60/80/100/125/160(140)/200(180)/256(252)/320(315)/512(504)
												Model:45/65/85/115/142/180/220
												With the base form, not specified for the form without the base
												'S' for shaft input, 'N' for hole output, not specified for the hole input, shaft output
Product series: KPX, KVX												

KPL	S	-	120	-	100	-	S1	-	LB	-	Motor Model
											Motor model, not specified for the standard size
											Low backlash, not specified for the standard side gap
											Shaft output form of the S1: Smooth Output Shaft , not specified for the keyed shaft
											Single stage:3/4/5/7/8/9/10 Ratio Double stage:12/16/20/25/32(35)/40(45)/50(49)/64(63) Three stage:60/80/100/125/160(140)/200(180)/256(252)/320(315)/512(504)
											Model:50/70/90/120/160/205/235
											'S' for shaft input, 'N' for hole output, not specified for the hole input, shaft output
Product series: KPL, KPLF, KPH											



Shaft with key



Smooth Output Shaft

The selection of examples: KPZN-115-16-S1-LB-ABB-8M1230

If you can't find a suitable adapter, please provide the motor manufacturers and specifications.

If in doubt, please contact customer service.



KPL Series Servo Planetary Gearbox Product Highlight

- High precision: backlash <3 arc-min.
- Processing by ultra precision machine and advanced gear grinding craft, the gear precision can be controlled under ISO4 to ensure the gearbox's high precision and efficiency.
- Choosing low-carbon alloy forged steel as the raw material of the gear, the hardness can reach HRC60 by deepen harden of carburizing heat treatment to ensure gear strength and lifetime.
- With integrated design of caged planet carrier and output shaft to realize high rigidity and high precision.
- Planet-gear bearings use full needle roller bearing cage to increase gearbox output torque and rigidity.
- Can be connected with any servo motor around the world.
- No grease leakage and maintenance free by using synthetic lubricating grease and IP65 protection design.



KPL Series Servo Planetary Gearbox Technical Data

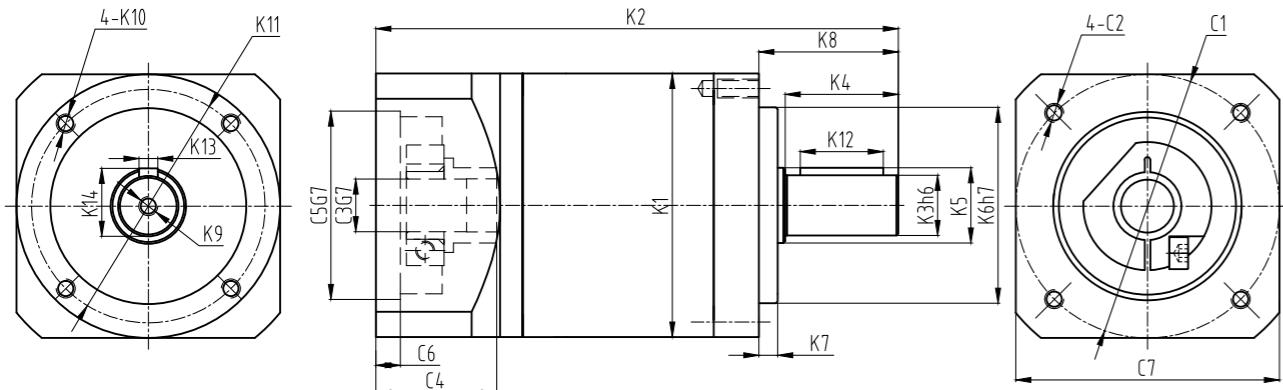
Model		KPL050	KPL070	KPL090	KPL120	KPL160	KPL205	KPL235	Ratio	Stage
Rated Output Torque	Nm	20	56	125	210	350	650	1200	3	1
		21	52	145	300	550	1250	1800	4	
		21	55	155	320	650	1200	2050	5	
		20*	50*	145*	300*	610*	1000*	1850*	6	
		19	50*	135	290*	540	1000	1750*	7	
		18*	45	115	255	510*	1000*	1550	8	
		14	42	105*	220*	440	910	1500*	9	
		14	42	105	220	440	910	1500	10	
		20	56	125	310	500	650	1200	12	2
		21	52	145	300	550	1250	1800	16	
		21	55	145	300	650	1200	2050	20	
		21	55	155	320	650	1200	2050	25	
		-	52	145	305	550*	1250*	1800*	32	
		21	55*	155	320*	650	1200	2050	35	
		-	55	155	320	550*	1200*	2050*	40	
		21	55*	155	320*	650	1200	2050	45	
		21	55	155	320	650	1200	2050	50	
		18/63	45	115	255	510/63	1000/63	1550	64	
		21	52	155	320	650	1200	2050	80	3
		21	52	155	320	650	1200	2050	100	
		21	52	155	320	650	1200	2050	125	
		21/140	52	155	320	650	1200/140	2050/140	160	
		21/180	52	155	320	650	1200/180	2050/180	200	
		21/252	52	155	320	650/224	1200/252	2050/252	256	
		21/315	52	155	320	650/280	1200/315	2050/315	320	
		18/441	45	115	255	510/504	1000/441	1550/504	512	
Emergency Stop Torque	Nm	Triple rated output torque								
Max Radial Force	N	770	1500	3200	6700	9600	14000	16000		
Max Axial Force	N	380	760	1600	3300	4800	7000	8000		
Full Loading Efficiency	%	97								1
		95								2
		93								3
Average lifetime	h	20000								
Weight	kg	0.6	1.4	3.3	5.5	20	31	53		1
		0.9	1.6	4.5	8	25	39	66		2
		1.1	1.8	5.5	10	30	48	75		3

The subscript "1" in the output speed of 100RPM, in the center of the output shaft position (L/2)
permissible radial force and axial force.
Note: with "*" is not commonly used speed ratio, in the table there are 2 groups of digital representation of the torque corresponding to the actual speed ratio.
The maximum acceleration torque is equal to 180% of the rated torque.

Model		KPL050	KPL070	KPL090	KPL120	KPL160	KPL205	KPL235	Ratio	Stage
Rotational Inertia	kgcm ²	0.031	0.16	0.61	3.25	12.31	28.98	69.61	3	1
		0.022	0.14	0.48	2.74	7.54	23.67	54.37	4	
		0.019	0.13	0.47	2.71	7.42	22.75	53.27	5	
		0.017	0.13	0.47	2.62	7.25	22.48	50.84	6	
		0.017	0.13	0.47	2.62	7.25	22.48	50.84	7	
		0.017	0.13	0.45	2.62	7.14	22.59	50.84	8	
		0.017	0.13	0.44	2.62	7.14	22.59	50.84	9	
		0.017	0.13	0.44	2.57	7.14	22.55	50.56	10	
		0.029	0.127	0.44	2.56	12.35	12.35	28.98	12	2
		0.022	0.12	0.43	1.75	7.47	7.54	23.67	16	
Backlash	arcmin	0.019	0.075	0.44	1.5	6.65	7.42	22.75	20	
		0.017	0.075	0.44	1.49	5.81	7.54	22.75	25	
		--	0.064	0.39	1.3	6.34	7.14	22.59	32	
		0.016	0.064	0.39	1.3	5.36	7.14	22.59	35	
		--	0.064	0.39	1.3	4.08	7.14	22.59	40	
		0.016	0.064	0.39	1.3	5.36	7.14	22.59	45	
		0.016	0.064	0.39	1.3	4.08	7.14	22.59	50	
		0.016	0.075	0.39	1.5	7.5	7.54	22.59	64	
		0.019	0.075	0.44	1.49	7.4	7.54	22.75	80	3
		0.019	0.064	0.44	1.45	7.3	7.42	22.59	100	
Torsional Rigidity	Nm/arcmin	0.019	0.064	0.44	1.3	7.3	7.42	22.75	125	
		0.016	0.064	0.39	1.3	6.5	7.14	22.75	160	
		0.016	0.064	0.39	1.3	6.2	7.14	22.75	200	
		0.016	0.064	0.39	1.3	5.7	7.14	22.75	256	
		0.016	0.064	0.39	1.3	5.4	7.14	22.75	320	
		0.016	0.064	0.39	1.3	5.4	7.14	22.59	512	
		--	≤3	≤3	≤3	≤3	≤3	≤3	High Precision	1
		≤6	≤6	≤6	≤6	≤6	≤6	≤6	Standard Precision	
Noise	dB(A)	--	≤5	≤5	≤5	≤5	≤5	≤5	High Precision	2
		≤8	≤8	≤8	≤8	≤8	≤8	≤8	Standard Precision	
		--	≤7	≤7	≤7	≤7	≤7	≤7	High Precision	3



KPL Series Servo Planetary Gearbox Standard Size



Model	KPL050			KPL070			KPL090			KPL120			KPL160			KPL205			KPL235		
Stage	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3
K1	$\phi 50$			$\phi 70$			$\phi 89$			$\phi 120$			$\phi 160$			$\phi 205$			$\phi 235$		
K2	88.5	103.5	118.8	115	138.7	162.4	138	169.3	200.6	198	239.8	248	275.5	336.5	356	288	348	409	358	402	462
K3	$\phi 12$			$\phi 16$			$\phi 22$			$\phi 32$			$\phi 40$			$\phi 55$			$\phi 75$		
K4	23			30			36			50			80			82			105		
K5	$\phi 15$			$\phi 20$			$\phi 30$			$\phi 40$			$\phi 55$			$\phi 60$			$\phi 85$		
K6	$\phi 35$			$\phi 52$			$\phi 68$			$\phi 90$			$\phi 130$			$\phi 160$			$\phi 180$		
K7	4			5			10			12			15			15			18		
K8	28			37			48			65			97			100			126		
K9	M3X9			M5X12			M6X16			M10X22			M12X25			M20X40			M20X40		
K10	M4X10			M5X11			M6X15			M8X19			M12X20			M12X22			M16X28		
K11	$\phi 44$			$\phi 62$			$\phi 80$			$\phi 108$			$\phi 148$			$\phi 184$			$\phi 210$		
K12	16			22			28			40			70			70			90		
K13	4			5			6			10			12			16			20		
K14	13.5			18			24.5			35			43			59			79.5		
C1	$\phi 46$			$\phi 70$			$\phi 90$			$\phi 145$			$\phi 90$			$\phi 200$			$\phi 145$		
C2	M4X10			M5X12			M6X15			M8X20			M6X15			M12X25			M8X20		
C3	$\phi 8$			$\phi 14$			$\phi 19$			$\phi 24$			$\phi 19$			$\phi 35$			$\phi 24$		
C4	26.1			32.1			41.6			61.3			41.6			82			61.3		
C5	$\phi 30$			$\phi 50$			$\phi 70$			$\phi 110$			$\phi 70$			$\phi 114.3$			$\phi 110$		
C6	5			6.5			6.5			8			6.5			8			8		
C7	50			70			89			120			89			175			120		
	175			190			190			175			220			190			175		



KPLF

KPLF
KPLS
KPLN
KPX
KVX
KPH
Installation and Maintenance



KPLF Series Servo Planetary Gearbox Technical Data

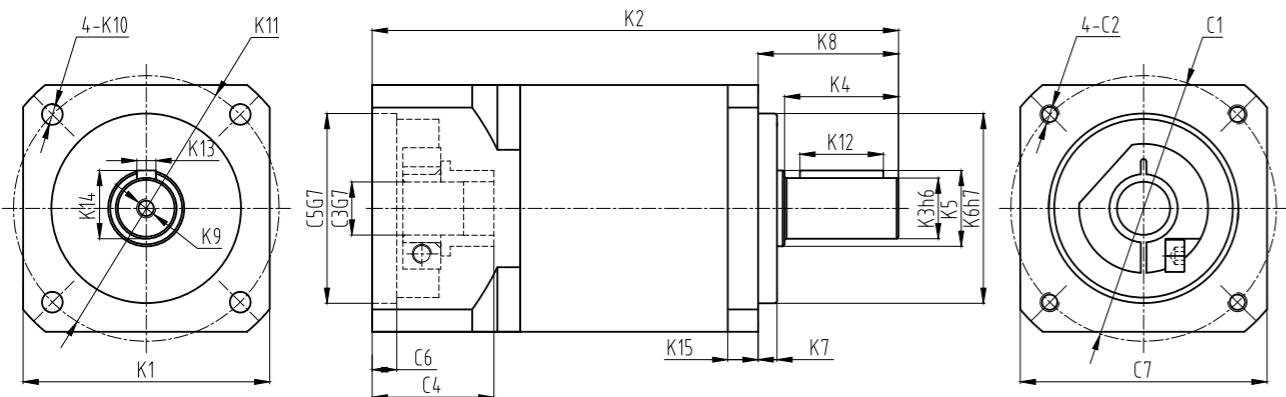
Model		KPLF050	KPLF070	KPLF090	KPLF120	KPLF160	KPLF205	KPLF235	Ratio	Stage
Rated Output Torque	Nm	20	56	125	210	350	650	1200	3	1
		21	52	145	300	550	1250	1800	4	
		21	55	155	320	650	1200	2050	5	
		20*	50*	145*	300*	610*	1000*	1850*	6	
		19	50*	135	290*	540	1000	1750*	7	
		18*	45	115	255	510*	1000*	1550	8	
		14	42	105*	220*	440	910	1500*	9	
		14	42	105	220	440	910	1500	10	
		20	56	125	310	500	650	1200	12	2
		21	52	145	300	550	1250	1800	16	
		21	55	145	300	650	1200	2050	20	
		21	55	155	320	650	1200	2050	25	
		-	52	145	305	550*	1250*	1800*	32	
		21	55*	155	320*	650	1200	2050	35	
		-	55	155	320	550*	1200*	2050*	40	
		21	55*	155	320*	650	1200	2050	45	
		21	55	155	320	650	1200	2050	50	3
		18/63	45	115	255	510/63	1000/63	1550	64	
		21	52	155	320	650	1200	2050	80	
		21	52	155	320	650	1200	2050	100	
		21	52	155	320	650	1200	2050	125	
		21/140	52	155	320	650	1200/140	2050/140	160	
		21/180	52	155	320	650	1200/180	2050/180	200	
		21/252	52	155	320	650/224	1200/252	2050/252	256	
		21/315	52	155	320	650/280	1200/315	2050/315	320	
		18/441	45	115	255	510/504	1000/441	1550/504	512	
Emergency Stop Torque	Nm	Triple rated output torque								
Max Radial Force	N	770	1500	3200	6700	9600	14000	16000		
Max Axial Force	N	380	760	1600	3300	4800	7000	8000		
Full Loading Efficiency	%	97								1
		95								2
		93								3
Average lifetime	h	20000								
Weight	kg	0.6	1.4	3.3	5.5	20	31	53		1
		0.9	1.6	4.5	8	25	39	66		2
		1.1	1.8	5.5	10	30	48	75		3

The subscript "1" in the output speed of 100RPM, in the center of the output shaft position (L/2)
permissible radial force and axial force.
Note: with "*" is not commonly used speed ratio, in the table there are 2 groups of digital representation of the torque corresponding to the actual speed ratio.
The maximum acceleration torque is equal to 180% of the rated torque.

Model		KPLF050	KPLF070	KPLF090	KPLF120	KPLF160	KPLF205	KPLF235	Ratio	Stage
Rotational Inertia	kgcm²	0.031	0.16	0.61	3.25	12.31	28.98	69.61	3	1
		0.022	0.14	0.48	2.74	7.54	23.67	54.37	4	
		0.019	0.13	0.47	2.71	7.42	22.75	53.27	5	
		0.017	0.13	0.47	2.62	7.25	22.48	50.84	6	
		0.017	0.13	0.47	2.62	7.25	22.48	50.84	7	
		0.017	0.13	0.45	2.62	7.14	22.59	50.84	8	
		0.017	0.13	0.44	2.62	7.14	22.59	50.84	9	
		0.017	0.13	0.44	2.57	7.14	22.55	50.56	10	
		0.029	0.127	0.44	2.56	12.35	12.35	28.98	12	2
		0.022	0.12	0.43	1.75	7.47	7.54	23.67	16	
Backlash	arcmin	0.019	0.075	0.44	1.5	6.65	7.42	22.75	20	
		0.017	0.075	0.44	1.49	5.81	7.54	22.75	25	
		--	0.064	0.39	1.3	6.34	7.14	22.59	32	
		0.016	0.064	0.39	1.3	5.36	7.14	22.59	35	
		--	0.064	0.39	1.3	4.08	7.14	22.59	40	
		0.016	0.064	0.39	1.3	5.36	7.14	22.59	45	
		0.016	0.064	0.39	1.3	4.08	7.14	22.59	50	
		0.016	0.075	0.39	1.5	7.5	7.54	22.59	64	
		0.019	0.075	0.44	1.49	7.4	7.54	22.75	80	3
		0.019	0.064	0.44	1.45	7.3	7.42	22.59	100	
Torsional Rigidity	Nm/arcmin	0.019	0.064	0.44	1.3	7.3	7.42	22.75	125	
		0.016	0.064	0.39	1.3	6.5	7.14	22.75	160	
		0.016	0.064	0.39	1.3	6.2	7.14	22.75	200	
		0.016	0.064	0.39	1.3	5.7	7.14	22.75	256	
		0.016	0.064	0.39	1.3	5.4	7.14	22.75	320	
		0.016	0.064	0.39	1.3	5.4	7.14	22.59	512	
		--	≤3	≤3	≤3	≤3	≤3	≤3	High Precision	1
		≤6	≤6	≤6	≤6	≤6	≤6	≤6	Standard Precision	
Noise	dB(A)	--	≤5	≤5	≤5	≤5	≤5	≤5	High Precision	2
		≤8	≤8	≤8	≤8	≤8	≤8	≤8	Standard Precision	
		--	≤7	≤7	≤7	≤7	≤7	≤7	High Precision	



KPLF Series Servo Planetary Gearbox Standard Size



KPLS



KPLS Series Servo Planetary Gearbox Product Highlight

- High precision: backlash <3 arc-min.
 - Processing by ultra precision machine and advanced gear grinding craft, the gear precision can be controlled under ISO4 to ensure the gearbox's high precision and efficiency.
 - Choosing low-carbon alloy forged steel as the raw material of the gear, the hardness can reach HRC60 by deep carburizing heat treatment to ensure gear strength and lifetime.
 - With integrated design of caged planet carrier and output shaft to realize high rigidity and high precision.
 - Planet-gear bearings use full needle roller bearing cage to increase gearbox output torque and rigidity.
 - Can be connected with any servo motor around the world.
 - No grease leakage and maintenance free by using synthetic lubricating grease and IP65 protection design.



KPLS Series Servo Planetary Gearbox Technical Data

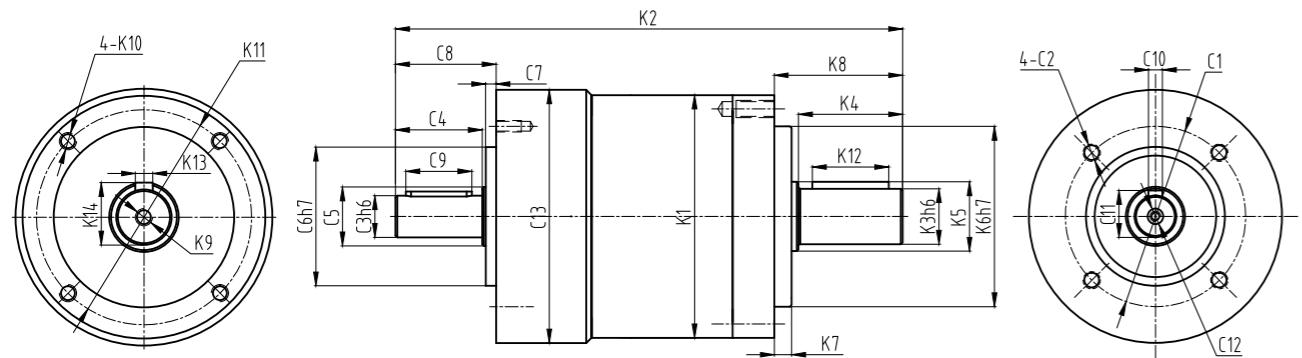
Model		KPLS050	KPLS070	KPLS090	KPLS120	KPLS160	KPLS205	KPLS235	Ratio	Stage
Rated Output Torque	Nm	20	56	125	210	350	650	1200	3	1
		21	52	145	300	550	1250	1800	4	
		21	55	155	320	650	1200	2050	5	
		20*	50*	145*	300*	610*	1000*	1850*	6	
		19	50*	135	290*	540	1000	1750*	7	
		18*	45	115	255	510*	1000*	1550	8	
		14	42	105*	220*	440	910	1500*	9	
		14	42	105	220	440	910	1500	10	
		20	56	125	310	500	650	1200	12	2
		21	52	145	300	550	1250	1800	16	
		21	55	145	300	650	1200	2050	20	
		21	55	155	320	650	1200	2050	25	
		--	52	145	305	550*	1250*	1800*	32	
		21	55*	155	320*	650	1200	2050	35	
		--	55	155	320	550*	1200*	2050*	40	
		21	55*	155	320*	650	1200	2050	45	
		21	55	155	320	650	1200	2050	50	3
		18/63	45	115	255	510/63	1000/63	1550	64	
		21	52	155	320	650	1200	2050	80	
		21	52	155	320	650	1200	2050	100	
		21	52	155	320	650	1200	2050	125	
		21/140	52	155	320	650	1200/140	2050/140	160	
		21/180	52	155	320	650	1200/180	2050/180	200	
		21/252	52	155	320	650/224	1200/252	2050/252	256	
		21/315	52	155	320	650/280	1200/315	2050/315	320	
		18/441	45	115	255	510/504	1000/441	1550/504	512	
Emergency Stop Torque	Nm	Triple rated output torque								
Max Radial Force	N	770	1500	3200	6700	9600	14000	16000		
Max Axial Force	N	380	760	1600	3300	4800	7000	8000		
Full Loading Efficiency	%	97								1
		95								2
		93								3
Average lifetime	h	20000								
Weight	kg	0.7	1.6	3.6	6	21	33	52		1
		1	1.8	4.8	8.5	26	41	68		2
		1.2	2	5.8	10.5	31	51	77		3

The subscript "1" in the output speed of 100RPM, in the center of the output shaft position (L/2)
permissible radial force and axial force.
Note: with "*" is not commonly used speed ratio, in the table there are 2 groups of digital representation of the torque corresponding to the actual speed ratio.
The maximum acceleration torque is equal to 180% of the rated torque.

Model		KPLS050	KPLS070	KPLS090	KPLS120	KPLS160	KPLS205	KPLS235	Ratio	Stage
Rotational Inertia	kgcm ²	0.031	0.16	0.61	3.25	12.31	28.98	69.61	3	1
		0.022	0.14	0.48	2.74	7.54	23.67	54.37	4	
		0.019	0.13	0.47	2.71	7.42	22.75	53.27	5	
		0.017	0.13	0.47	2.62	7.25	22.48	50.84	6	
		0.017	0.13	0.47	2.62	7.25	22.48	50.84	7	
		0.017	0.13	0.45	2.62	7.14	22.59	50.84	8	
		0.017	0.13	0.44	2.62	7.14	22.59	50.84	9	
		0.017	0.13	0.44	2.57	7.14	22.55	50.56	10	
		0.029	0.127	0.44	2.56	12.35	12.35	28.98	12	2
		0.022	0.12	0.43	1.75	7.47	7.54	23.67	16	
		0.019	0.075	0.44	1.5	6.65	7.42	22.75	20	
		0.017	0.075	0.44	1.49	5.81	7.54	22.75	25	
		--	0.064	0.39	1.3	6.34	7.14	22.59	32	
		0.016	0.064	0.39	1.3	5.36	7.14	22.59	35	
		--	0.064	0.39	1.3	4.08	7.14	22.59	40	
		0.016	0.064	0.39	1.3	5.36	7.14	22.59	45	
		0.016	0.064	0.39	1.3	4.08	7.14	22.59	50	
		0.016	0.075	0.39	1.5	7.5	7.54	22.59	64	3
		0.019	0.075	0.44	1.49	7.4	7.54	22.75	80	
		0.019	0.064	0.44	1.45	7.3	7.42	22.59	100	
		0.019	0.064	0.44	1.3	7.3	7.42	22.75	125	
		0.016	0.064	0.39	1.3	6.5	7.14	22.75	160	
		0.016	0.064	0.39	1.3	6.2	7.14	22.75	200	
		0.016	0.064	0.39	1.3	5.7	7.14	22.75	256	
		0.016	0.064	0.39	1.3	5.4	7.14	22.75	320	
		0.016	0.064	0.39	1.3	5.4	7.14	22.59	512	
Backlash	arcmin	--	≤3	≤3	≤3	≤3	≤3	≤3	High Precision	1
		≤6	≤6	≤6	≤6	≤6	≤6	≤6	Standard Precision	
		--	≤5	≤5	≤5	≤5	≤5	≤5	High Precision	2
		≤8	≤8	≤8	≤8	≤8	≤8	≤8	Standard Precision	
		--	≤7	≤7	≤7	≤7	≤7	≤7	High Precision	3
		≤12	≤10	≤10	≤10	≤10	≤10			



KPLS Series Servo Planetary Gearbox Standard Size



Model	KPLS70			KPLS90			KPLS120			KPLS160			KPLS205		
Stage	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3
K1	$\phi 70$			$\phi 89$			$\phi 120$			$\phi 160$			$\phi 205$		
K2	132.5	156.2	180	152.7	184	215.3	217	258.8	262.7	294	355	375	335	366.5	427.5
K3	$\phi 16$			$\phi 22$			$\phi 32$			$\phi 40$			$\phi 55$		
K4	30			36			50			80			82		
K5	$\phi 20$			$\phi 30$			$\phi 40$			$\phi 55$			$\phi 60$		
K6	$\phi 52$			$\phi 68$			$\phi 90$			$\phi 130$			$\phi 160$		
K7	5			10			12			15			15		
K8	37			48			65			97			100		
K9	M5X12			M6X16			M10X22			M12X25			M20X40		
K10	M5X11			M6X15			M8X19			M12X20			M12X22		
K11	$\phi 62$			$\phi 80$			$\phi 108$			$\phi 148$			$\phi 184$		
K12	22			28			40			70			70		
K13	5			6			10			12			16		
K14	18			24.5			35			43			59		
C1	$\phi 52$			$\phi 70$			$\phi 100$			$\phi 70$			$\phi 145$		
C2	M5X11			M6X15			M10X20			M6X15			M12X20		
C3	$\phi 12$			$\phi 16$			$\phi 22$			$\phi 16$			$\phi 35$		
C4	25			26			40			26			57		
C5	$\phi 17$			25			$\phi 35$			25			$\phi 50$		
C6	$\phi 40$			60			$\phi 80$			60			$\phi 130$		
C7	3			3			4			3			5		
C8	29			30			45			30			65		
C9	18			20			30			20			45		
C10	4			5			6			5			10		
C11	13.5			18			24.5			18			38		
C12	M4X8			M5X10			M10X22			M5X10			M12X25		
C13	$\phi 73$			$\phi 92$			$\phi 123$			$\phi 92$			$\phi 162$		

KPLN



KPLN Series Servo Planetary Gearbox Product Highlight

- High precision: backlash <3 arc-min.
- Processing by ultra precision machine and advanced gear grinding craft, the gear precision can be controlled under ISO4 to ensure the gearbox's high precision and efficiency.
- Choosing low-carbon alloy forged steel as the raw material of the gear, the hardness can reach HRC60 by deepen harden of carburizing heat treatment to ensure gear strength and lifetime.
- With integrated design of caged planet carrier and output shaft to realize high rigidity and high precision.
- Planet-gear bearings use full needle roller bearing cage to increase gearbox output torque and rigidity.
- Can be connected with any servo motor around the world.
- No grease leakage and maintenance free by using synthetic lubricating grease and IP65 protection design.



KPLN Series Servo Planetary Gearbox Technical Data

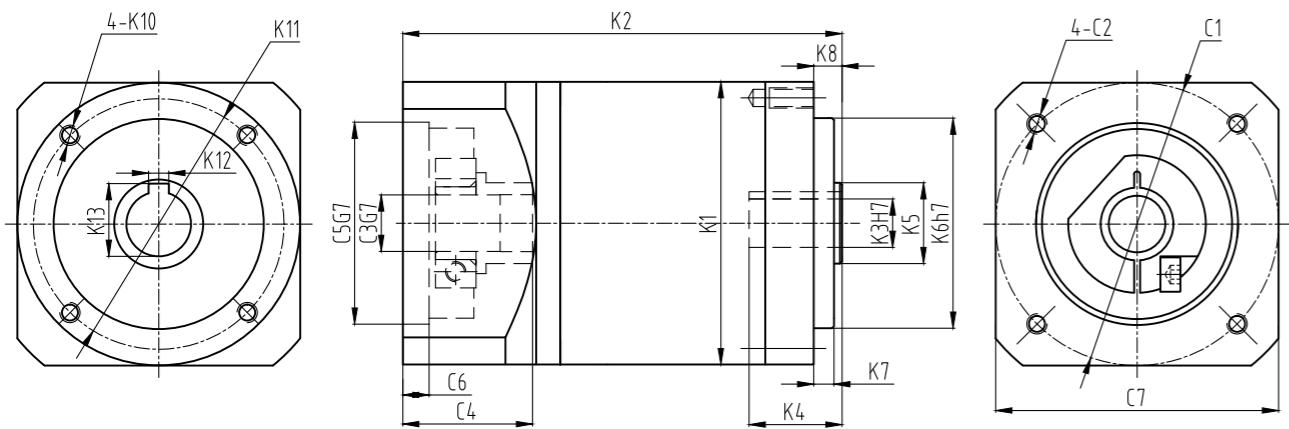
Model		KPLN050	KPLN070	KPLN090	KPLN120	KPLN160	KPLN205	KPLN235	Ratio	Stage
Rated Output Torque	Nm	20	56	125	210	350	650	1200	3	1
		21	52	145	300	550	1250	1800	4	
		21	55	155	320	650	1200	2050	5	
		20*	50*	145*	300*	610*	1000*	1850*	6	
		19	50*	135	290*	540	1000	1750*	7	
		18*	45	115	255	510*	1000*	1550	8	
		14	42	105*	220*	440	910	1500*	9	
		14	42	105	220	440	910	1500	10	
		20	56	125	310	500	650	1200	12	2
		21	52	145	300	550	1250	1800	16	
		21	55	145	300	650	1200	2050	20	
		21	55	155	320	650	1200	2050	25	
		-	52	145	305	550*	1250*	1800*	32	
		21	55*	155	320*	650	1200	2050	35	
		-	55	155	320	550*	1200*	2050*	40	
		21	55*	155	320*	650	1200	2050	45	
		21	55	155	320	650	1200	2050	50	3
		18/63	45	115	255	510/63	1000/63	1550	64	
		21	52	155	320	650	1200	2050	80	
		21	52	155	320	650	1200	2050	100	
		21	52	155	320	650	1200	2050	125	
		21/140	52	155	320	650	1200/140	2050/140	160	
		21/180	52	155	320	650	1200/180	2050/180	200	
		21/252	52	155	320	650/224	1200/252	2050/252	256	
		21/315	52	155	320	650/280	1200/315	2050/315	320	
		18/441	45	115	255	510/504	1000/441	1550/504	512	
Emergency Stop Torque	Nm	Triple rated output torque								
Max Radial Force	N	770	1500	3200	6700	9600	14000	16000		
Max Axial Force	N	380	760	1600	3300	4800	7000	8000		
Full Loading Efficiency	%	97								1
		95								2
		93								3
Average lifetime	h	20000								
Weight	kg	0.5	1.3	3.1	5.1	19	30	51		1
		0.8	1.5	4.2	7.5	24	38	64		2
		1	1.7	5.3	9.5	29	47	72		3

The subscript "1" in the output speed of 100RPM, in the center of the output shaft position (L/2)
permissible radial force and axial force.
Note: with "*" is not commonly used speed ratio, in the table there are 2 groups of digital representation of the torque corresponding to the actual speed ratio.
The maximum acceleration torque is equal to 180% of the rated torque.

Model		KPLN050	KPLN070	KPLN090	KPLN120	KPLN160	KPLN205	KPLN235	Ratio	Stage
Rotational Inertia	kgcm²	0.031	0.16	0.61	3.25	12.31	28.98	69.61	3	1
		0.022	0.14	0.48	2.74	7.54	23.67	54.37	4	
		0.019	0.13	0.47	2.71	7.42	22.75	53.27	5	
		0.017	0.13	0.47	2.62	7.25	22.48	50.84	6	
		0.017	0.13	0.47	2.62	7.25	22.48	50.84	7	
		0.017	0.13	0.45	2.62	7.14	22.59	50.84	8	2
		0.017	0.13	0.44	2.62	7.14	22.59	50.84	9	
		0.017	0.13	0.44	2.57	7.14	22.55	50.56	10	
		0.029	0.127	0.44	2.56	12.35	12.35	28.98	12	3
		0.022	0.12	0.43	1.75	7.47	7.54	23.67	16	
Backlash	arcmin	0.019	0.075	0.44	1.5	6.65	7.42	22.75	20	
		0.017	0.075	0.44	1.49	5.81	7.54	22.75	25	
		--	0.064	0.39	1.3	6.34	7.14	22.59	32	
		0.016	0.064	0.39	1.3	5.36	7.14	22.59	35	
		--	0.064	0.39	1.3	4.08	7.14	22.59	40	
		0.016	0.064	0.39	1.3	5.36	7.14	22.59	45	
		0.016	0.064	0.39	1.3	4.08	7.14	22.59	50	
		0.016	0.075	0.39	1.5	7.5	7.54	22.59	64	
		0.019	0.075	0.44	1.49	7.4	7.54	22.75	80	1
		0.019	0.064	0.44	1.45	7.3	7.42	22.59	100	
Torsional Rigidity	Nm/arcmin	0.019	0.064	0.44	1.3	7.3	7.42	22.75	125	
		0.016	0.064	0.39	1.3	6.5	7.14	22.75	160	
		0.016	0.064	0.39	1.3	6.2	7.14	22.75	200	
		0.016	0.064	0.39	1.3	5.7	7.14	22.75	256	
		0.016	0.064	0.39	1.3	5.4	7.14	22.75	320	
		0.016	0.064	0.39	1.3	5.4	7.14	22.59	512	
		--	≤3	≤3	≤3	≤3	≤3	≤3	High Precision	2
		≤6	≤6	≤6	≤6	≤6	≤6	≤6	Standard Precision	
		--	≤5	≤5	≤5	≤5	≤5	≤5	High Precision	
Noise	dB(A)	≤8	≤8	≤8	≤8	≤8	≤8	≤8	Standard Precision	3
		--	≤7	≤7	≤7	≤7	≤7	≤7	High	

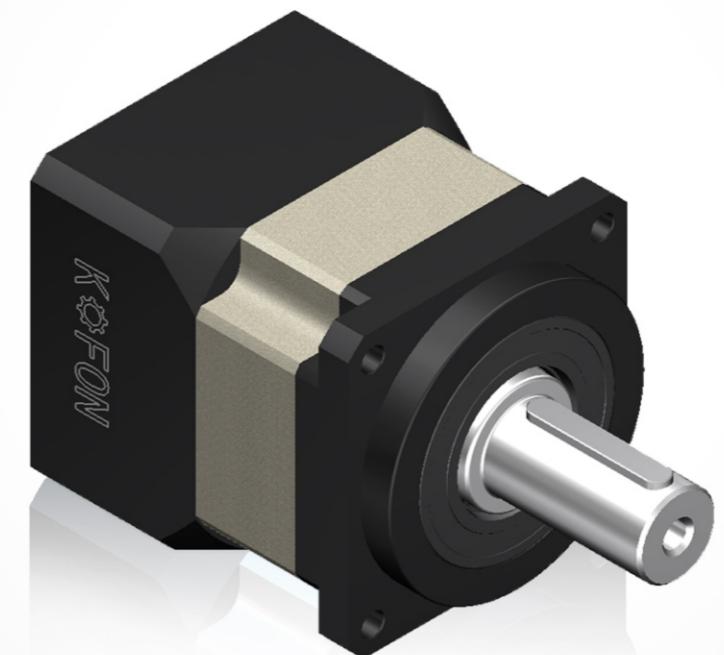


KPLN Series Servo Planetary Gearbox Standard Size



Model	KPLN70			KPLN90			KPLN120			KPLN160			KPLN205		
Stage	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3
K1	$\phi 70$			$\phi 89$			$\phi 120$			$\phi 160$			$\phi 205$		
K2	85	108.7	132.4	102	133.3	164.6	148	189.8	198	195.5	256.5	276	208	268	327
K3	$\phi 12$			$\phi 18$			$\phi 25$			$\phi 38$			M2XZ24XP30XH6		
K4	23			25			36			45			48		
K5	$\phi 20$			$\phi 30$			$\phi 40$			$\phi 55$			$\phi 60$		
K6	$\phi 52$			$\phi 68$			$\phi 90$			$\phi 130$			$\phi 160$		
K7	5			10			12			15			15		
K8	7			12			15			17			20		
K10	M5X11			M6X15			M8X19			M12X20			M12X22		
K11	$\phi 62$			$\phi 80$			$\phi 108$			$\phi 148$			$\phi 184$		
K12	4			6			8			10			GB/T3478.1		
K13	13.8			20.8			28.3			41.3			GB/T3478.1		
C1	$\phi 70$			$\phi 90$			$\phi 145$			$\phi 200$			$\phi 145$		
C2	M5X12			M6X15			M8X20			M6X15			M12X25		
C3	$\phi 14$			$\phi 19$			$\phi 24$			$\phi 19$			$\phi 35$		
C4	32.1			41.6			61.3			41.6			82		
C5	50			70			110			70			114.3		
C6	6.5			6.5			8			6.5			8		
C7	70			89			120			89			175		

KPX



KPX Series Servo Planetary Gearbox Product Highlight

- High precision: backlash <3 arc-min.
- Processing by ultra precision machine and advanced gear grinding craft, the gear precision can be controlled under ISO4 to ensure the gearbox's high precision and efficiency.
- Choosing low-carbon alloy forged steel as the raw material of the gear, the hardness can reach HRC60 by deepen harden of carburizing heat treatment to ensure gear strength and lifetime.
- With integrated design of caged planet carrier and output shaft to realize high rigidity and high precision.
- Planet-gear bearings use full needle roller bearing cage to increase gearbox output torque and rigidity.
- Can be connected with any servo motor around the world.
- No grease leakage and maintenance free by using synthetic lubricating grease and IP65 protection design.



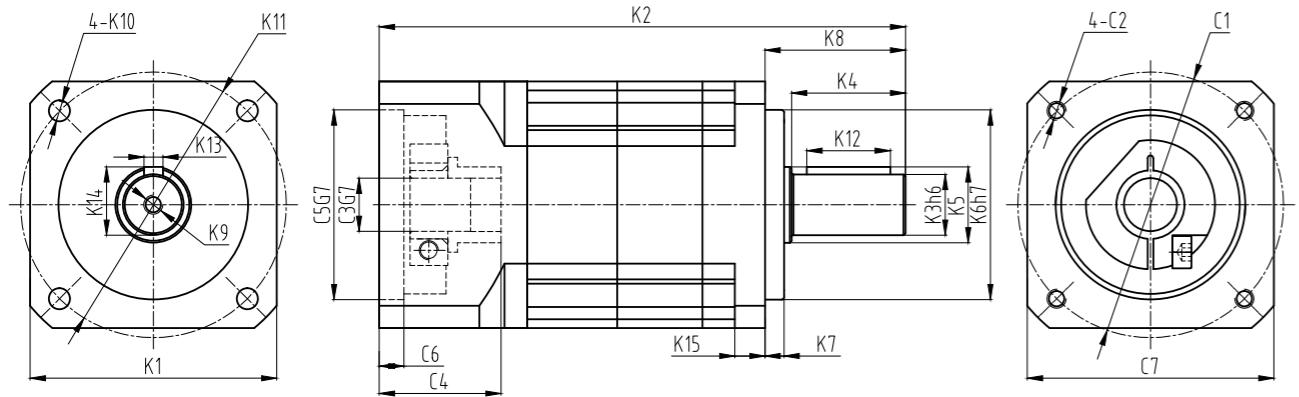
KPX Series Servo Planetary Gearbox Technical Data

Model		KPX045	KPX065	KPX085	KPX115	KPX142	KPX180	KPX220	Ratio	Stage
Rated Output Torque	Nm	20	56	125	210	350	650	1200	3	1
		21	52	145	300	550	1250	1800	4	
		21	55	155	320	650	1200	2050	5	
		20*	50*	145*	300*	610*	1000*	1850*	6	
		19	50*	135	290*	540	1000	1750*	7	
		18*	45	115	255	510*	1000*	1550	8	
		14	42	105*	220*	440	910	1500*	9	
		14	42	105	220	440	910	1500	10	
		20	56	125	310	500	650	1200	12	
		21	52	145	300	550	1250	1800	16	
		21	55	145	300	650	1200	2050	20	
		21	55	155	320	650	1200	2050	25	
		-	52	145	305	550*	1250*	1800*	32	
		21	55*	155	320*	650	1200	2050	35	
		-	55	155	320	550*	1200*	2050*	40	
		21	55*	155	320*	650	1200	2050	45	
		21	55	155	320	650	1200	2050	50	
		18/63	45	115	255	510/63	1000/63	1550	64	
		21	52	155	320	650	1200	2050	80	2
		21	52	155	320	650	1200	2050	100	
		21	52	155	320	650	1200	2050	125	
		21/140	52	155	320	650	1200/140	2050/140	160	
		21/180	52	155	320	650	1200/180	2050/180	200	
		21/252	52	155	320	650/224	1200/252	2050/252	256	
		21/315	52	155	320	650/280	1200/315	2050/315	320	
		18/441	45	115	255	510/504	1000/441	1550/504	512	
Emergency Stop Torque	Nm	Triple rated output torque								
Max Radial Force	N	770	1500	3200	6700	9600	14000	16000		
Max Axial Force	N	380	760	1600	3300	4800	7000	8000		
Full Loading Efficiency	%	97								1
		95								2
		93								3
Average lifetime	h	20000								
Weight	kg	0.6	1.4	3.3	5.5	20	31	53		1
		0.9	1.6	4.5	8	25	39	66		2
		1.1	1.8	5.5	10	30	48	75		3

The subscript "1" in the output speed of 100RPM, in the center of the output shaft position (L/2)
permissible radial force and axial force.
Note: with "*" is not commonly used speed ratio, in the table there are 2 groups of digital representation of the torque corresponding to the actual speed ratio.
The maximum acceleration torque is equal to 180% of the rated torque.

Model		KPX045	KPX065	KPX085	KPX115	KPX142	KPX180	KPX220	Ratio	Stage
Rotational Inertia	kgcm ²	0.031	0.16	0.61	3.25	12.31	28.98	69.61	3	1
		0.022	0.14	0.48	2.74	7.54	23.67	54.37	4	
		0.019	0.13	0.47	2.71	7.42	22.75	53.27	5	
		0.017	0.13	0.47	2.62	7.25	22.48	50.84	6	
		0.017	0.13	0.47	2.62	7.25	22.48	50.84	7	
		0.017	0.13	0.45	2.62	7.14	22.59	50.84	8	
		0.017	0.13	0.44	2.62	7.14	22.59	50.84	9	
		0.017	0.13	0.44	2.57	7.141	22.55	50.56	10	
		0.029	0.127	0.44	2.56	2.35	12.35	28.98	12	2
		0.022	0.12	0.43	1.75	7.47	7.54	23.67	16	
Backlash	arcmin	0.019	0.075	0.44	1.5	6.65	7.42	22.75	20	
		0.017	0.075	0.44	1.49	5.81	7.54	22.75	25	
		-	0.064	0.39	1.3	6.34	7.14	22.59	32	
		0.016	0.064	0.39	1.3	5.36	7.14	22.59	35	
		-	0.064	0.39	1.3	4.08	7.14	22.59	40	
		0.016	0.064	0.39	1.3	5.36	7.14	22.59	45	
		0.016	0.064	0.39	1.3	4.08	7.14	22.59	50	
		0.016	0.075	0.39	1.5	7.5	7.54	22.59	64	
		0.019	0.075	0.44	1.49	7.4	7.54	22.75	80	3
		0.019	0.064	0.44	1.45	7.3	7.42	22.59	100	
Torsional Rigidity	Nm/arcmin	0.019	0.064	0.44	1.3	7.3	7.42	22.75	125	
		0.016	0.064	0.39	1.3	6.5	7.14	22.75	160	
		0.016	0.064	0.39	1.3	6.2	7.14	22.75	200	
		0.016	0.064	0.39	1.3	5.7	7.14	22.75	256	
		0.016	0.064	0.39	1.3	5.4	7.14	22.75	320	
		0.016	0.064	0.39	1.3	5.4	7.14	22.59	512	
		-	≤3	≤3	≤3	≤3	≤3	≤3	High Precision	1
		≤6	≤6	≤6	≤6	≤6	≤6	≤6	Standard Precision	
Noise	dB(A)	-	≤5	≤5	≤5	≤5	≤5	≤5	High Precision	2
		≤8	≤8	≤8	≤8	≤8	≤8	≤8	Standard Precision	
		-	≤7	≤7	≤7	≤7	≤7	≤7	High Precision	3

KPX Series Servo Planetary Gearbox Standard Size



Model	KPx45			KPx65			KPx85			KPx115			KPx142			KPx180			KPx220		
Stage	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3
K1	45			65			85			110			142			180			220		
K2	88.5	103.5	118.8	115	138.7	162.4	138	169.3	200.6	198	239.8	248	275.5	336.5	356	288	348	409	358	402	462
K3	φ12			φ16			φ22			φ32			φ40			φ55			φ75		
K4	23			30			36			50			80			82			105		
K5	φ15			φ20			φ30			φ40			φ55			φ60			φ85		
K6	φ35			φ50			φ80			φ110			φ130			φ160			φ180		
K7	4			5			10			12			15			20			30		
K8	28			37			48			65			97			105			138		
K9	M3X9			M5X12			M6X16			M10X22			M12X25			M20X40			M20X40		
K10	M4X10			φ5.5			φ6.5			φ9			φ11			φ13			φ17		
K11	50			70			100			130			165			215			250		
K12	16			22			28			40			70			70			90		
K13	4			5			6			10			12			16			20		
K14	13.5			18			24.5			35			43			59			79.5		
K15	-			8			10			14			15			20			20		
C1	46			70			90			φ145		φ90	φ200		φ145	φ215	φ200		φ235	φ215	φ200
C2	M4X10			M5X12			M6X15			M8X20		M6X15	M12X25		M8X20	M12X25	M12X25		M12X25	M12X25	M12X25
C3	8			14			19			φ24		φ19	φ35		φ24	φ42	φ35		φ55	φ42	φ35
C4	26.1			32.1			41.6			61.3		41.6	82		61.3	82.5	82		116	82.5	82
C5	30			50			70			φ110		φ70	φ114.3		φ110	φ180	φ114.3		φ200	φ180	φ114.3
C6	5			6.5			6.5			8		6.5	8		8	8	8		8	8	8
C7	45			65			85			120		85	175		120	190	175		220	190	175

KPX45 installation Angle of the "1" is different from other models, reverse screw connection.



KVX Series Servo Planetary Gearbox Product Highlight

- High precision: backlash <3 arc-min.
 - Processing by ultra precision machine and advanced gear grinding craft, the gear precision can be controlled under ISO4 to ensure the gearbox's high precision and efficiency.
 - Choosing low-carbon alloy forged steel as the raw material of the gear, the hardness can reach HRC60 by deep carburizing heat treatment to ensure gear strength and lifetime.
 - With integrated design of caged planet carrier and output shaft to realize high rigidity and high precision.
 - Planet-gear bearings use full needle roller bearing cage to increase gearbox output torque and rigidity.
 - Can be connected with any servo motor around the world.
 - No grease leakage and maintenance free by using synthetic lubricating grease and IP65 protection design.



KVX Series Servo Planetary Gearbox Technical Data

Model		KVX065	KVX085	KVX115	KVX142	KVX180	KVX220	Ratio	Stage
Rated Output Torque	Nm	56	125	210	350	650	1200	3	1
		52	145	300	550	1250	1800	4	
		55	155	320	650	1200	2050	5	
		50*	145*	300*	610*	1000*	1850*	6	
		50*	135	290*	540	1000	1750*	7	
		45	115	255	510*	1000*	1550	8	
		42	105*	220*	440	910	1500*	9	
		42	105	220	440	910	1500	10	
		56	125	310	500	650	1200	12	2
		52	145	300	550	1250	1800	16	
		55	145	300	650	1200	2050	20	
		55	155	320	650	1200	2050	25	
		52	145	305	550*	1250*	1800*	32	
		55*	155	320*	650	1200	2050	35	
		55	155	320	550*	1200*	2050*	40	
		55*	155	320*	650	1200	2050	45	
		55	155	320	650	1200	2050	50	3
		45	115	255	510/63	1000/63	1550	64	
		52	155	320	650	1200	2050	80	
		52	155	320	650	1200	2050	100	
		52	155	320	650	1200	2050	125	
		52	155	320	650	1200/140	2050/140	160	
		52	155	320	650	1200/180	2050/180	200	
		52	155	320	650/224	1200/252	2050/252	256	
		52	155	320	650/280	1200/315	2050/315	320	
		45	115	255	510/504	1000/441	1550/504	512	
Emergency Stop Torque	Nm	Triple rated output torque							
Max Radial Force	N	1500	3200	6700	9600	14000	16000		
Max Axial Force	N	760	1600	3300	4800	7000	8000		
Full Loading Efficiency	%	95						1	
		92						2	
		89						3	
Average lifetime	h	20000							
Weight	kg	2.2	5.3	8.5	26	41	68		1
		2.4	6.5	12	31	49	78		2
		3.6	7.5	15	35	54	90		3

The subscript "1" in the output speed of 100RPM, in the center of the output shaft position (L/2) permissible radial force and axial force.

Note: with "*" is not commonly used speed ratio, in the table there are 2 groups of digital representation of the torque corresponding to the actual speed ratio.

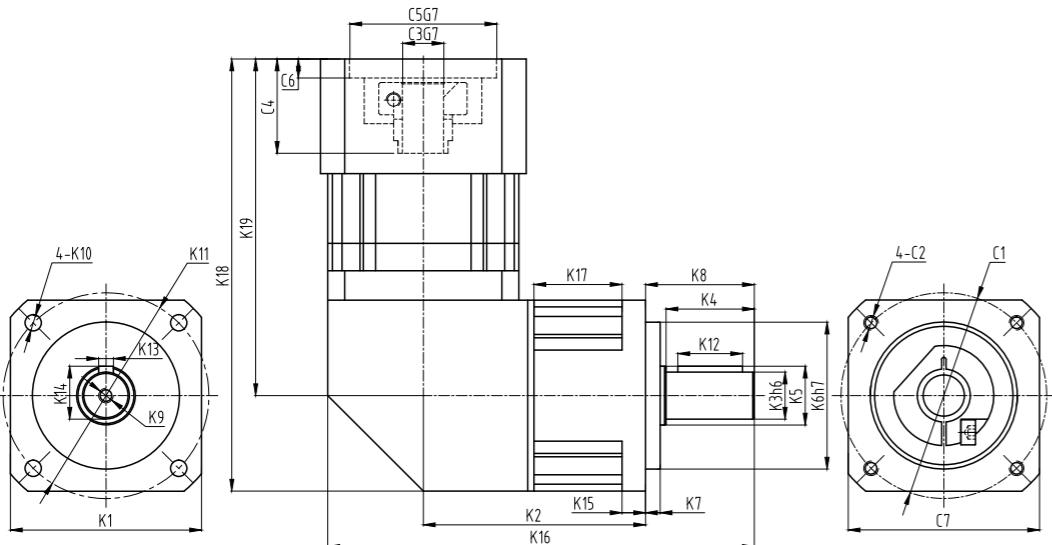
The maximum acceleration torque is equal to 180% of the rated torque.

Model		KVX065	KVX085	KVX115	KVX142	KVX180	KVX220	Ratio	Stage
Rotational Inertia	kgcm ²	0.16	0.61	3.25	12.31	28.98	69.61	3	1
		0.14	0.48	2.74	7.54	23.67	54.37	4	
		0.13	0.47	2.71	7.42	22.75	53.27	5	
		0.13	0.47	2.71	7.42	22.75	53.27	6	
		0.13	0.47	2.62	7.25	22.48	50.84	7	
		0.13	0.45	2.62	7.14	22.59	50.84	8	
		0.13	0.44	2.62	7.14	22.59	50.84	9	
		0.13	0.44	2.57	7.14	22.55	50.56	10	
		0.127	0.44	2.56	12.35	12.35	28.98	12	2
		0.12	0.43	1.75	7.47	7.54	23.67	16	
		0.075	0.44	1.5	6.65	7.42	22.75	20	
		0.075	0.44	1.49	5.81	7.54	22.75	25	
		0.064	0.39	1.3	6.34	7.14	22.59	32	
		0.064	0.39	1.3	5.36	7.14	22.59	35	
		0.064	0.39	1.3	4.08	7.14	22.59	40	
		0.064	0.39	1.3	5.36	7.14	22.59	45	
		0.064	0.39	1.3	4.08	7.14	22.59	50	
		0.075	0.39	1.5	7.5	7.54	22.59	64	3
		0.075	0.44	1.49	7.4	7.54	22.75	80	
		0.064	0.44	1.45	7.3	7.42	22.59	100	
		0.064	0.44	1.3	7.3	7.42	22.75	125	
		0.064	0.39	1.3	6.5	7.14	22.75	160	
		0.064	0.39	1.3	6.2	7.14	22.75	200	
		0.064	0.39	1.3	5.7	7.14	22.75	256	
		0.064	0.39	1.3	5.4	7.14	22.75	320	
		0.064	0.39	1.3	5.4	7.14	22.59	512	
Backlash	arcmin	≤5	≤5	≤5	≤5	≤5	≤5	High Precision	1
		≤8	≤8	≤8	≤8	≤8	≤8	Standard Precision	
		≤7	≤7	≤7	≤7	≤7	≤7	High Precision	2
		≤10	≤10	≤10	≤10	≤10	≤10	Standard Precision	
		≤9	≤9	≤9	≤9	≤9	≤9	High Precision	3
		≤12	≤12	≤12	≤12	≤12	≤12	Standard Precision	
Torsional Rigidity	Nm/arcmin	6	12	23	45	130	200		
Noise	dB(A)	63	65	68	70	72	75		
Max Input Speed	min ⁻¹	6000	6000	6000	6000	3000	3000		
Rated Input Speed	min ⁻¹	3000	3000	3000	3000	1500	1500		

The subscript "1" the environment temperature is 20°C.
The subscript "2" sound in n1<3000min⁻¹, measured at 1 m.



KVX Series Servo Planetary Gearbox Standard Size



Model	KVX65			KVX85			KVX115			KVX142			KVX180			KVX220		
Stage	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3
K1	65			85			110			142			180			220		
K2	75.5	93	116.7	95	113.7	145	119.5	154	195.8	141	202	263	202	234	266.5	241	285.5	315
K3	φ16			φ22			φ32			φ40			φ55			φ75		
K4	30			36			50			80			82			105		
K5	φ20			φ25			φ40			φ55			φ60			φ85		
K6	φ50			φ80			φ110			φ130			φ160			φ180		
K7	5			10			12			15			20			30		
K8	37			48			65			97			105			138		
K9	M5X12			M6X16			M10X22			M12X26			M20X40			M20X40		
K10	φ5.5			φ6.5			φ9			φ11			φ13			φ17		
K11	φ70			φ100			φ130			φ165			φ215			φ250		
K12	22			28			40			70			70			90		
K13	5			6			10			12			16			20		
K14	18			24.5			35			43			59			79.5		
K15	8			10			14			15			20			20		
K16	145	162.5	186.2	185.5	204.2	235.5	239.5	274	315.8	309	370	418.5	273	302.5	350.5	320	356.5	382.5
K17	30	31	54.7	37.5	46.2	77.5	42.5	63	104.8	55	101	149.5	62.5	62.5	62.5	81	81	81
K18	114.5			150			194			246.5			170	145	220	170	145	
K19	147			192.5			249			317.5			260	234	300	241	215	
C1	φ70			φ90			φ145			φ200			φ215	φ200	φ235	φ215	φ200	
C2	M5X12			M6X15			M8X20			M12X12			M12X25	M12X25	M12X25	M12X25	M12X25	
C3	φ14			φ19			φ24			φ35			φ42	φ35	φ55	φ42	φ35	
C4	32.1			41.3			61.3			81.3			82.5	81.3	116	82.5	81.3	
C5	φ50			φ70			φ110			φ114.3			φ180	φ114.3	φ200	φ180	φ114.3	
C6	6.5			6.5			8			6.5			8	8	82	8	8	
C7	65			85			120			175			190	175	20	190	175	

KPH



KPH Series Servo Planetary Gearbox Product Highlight

- High precision: backlash <3 arc-min.
- Processing by ultra precision machine and advanced gear grinding craft, the gear precision can be controlled under ISO4 to ensure the gearbox's high precision and efficiency.
- Choosing low-carbon alloy forged steel as the raw material of the gear, the hardness can reach HRC60 by deepen harden of carburizing heat treatment to ensure gear strength and lifetime.
- With integrated design of caged planet carrier and output shaft to realize high rigidity and high precision.
- Planet-gear bearings use full needle roller bearing cage to increase gearbox output torque and rigidity.
- Can be connected with any servo motor around the world.
- No grease leakage and maintenance free by using synthetic lubricating grease and IP65 protection design.



KPH Series Servo Planetary Gearbox Technical Data

Model		KPH070	KPH090	KPH120	KPH160	KPH205	Ratio	Stage
Rated Output Torque	Nm	52	145	300	550	1250	4	1
		55	155	320	650	1200	5	
		50*	145*	300*	610*	1000*	6	
		50*	135	290*	540	1000	7	
		45	115	255	510*	1000*	8	
		42	105*	220*	440	910	9	
		42	105	220	440	910	10	
		56	125	310	500	650	12	
		52	145	300	550	1250	16	2
		55	145	300	650	1200	20	
		55	155	320	650	1200	25	
		52	145	305	550*	1250*	32	
		55*	155	320*	650	1200	35	
		55	155	320	550*	1200*	40	
		55*	155	320*	650	1200	45	
		55	155	320	650	1200	50	
		45	115	255	510/63	1000/63	64	
		52	155	320	650	1200	80	3
		52	155	320	650	1200	100	
		52	155	320	650	1200	125	
		52	155	320	650	1200/140	160	
		52	155	320	650	1200/180	200	
		52	155	320	650/224	1200/252	256	
		52	155	320	650/280	1200/315	320	
		45	115	255	510/504	1000/441	512	
Emergency Stop Torque	Nm	Triple rated output torque						
Max Radial Force	N	2500	4500	7800	12000	18000		
Max Axial Force	N	2000	3500	6000	10000	15000		
Full Loading Efficiency	%	97						1
		95						2
		93						3
Average lifetime	h	20000						
Weight	kg	1.4	3.3	5.5	20	31	53	1
		1.6	4.5	8	25	39	66	2
		1.8	5.5	10	30	48	75	3

The subscript "1" in the output speed of 100RPM, in the center of the output shaft position (L/2) permissible radial force and axial force.

Note: with "*" is not commonly used speed ratio, in the table there are 2 groups of digital representation of the torque corresponding to the actual speed ratio.

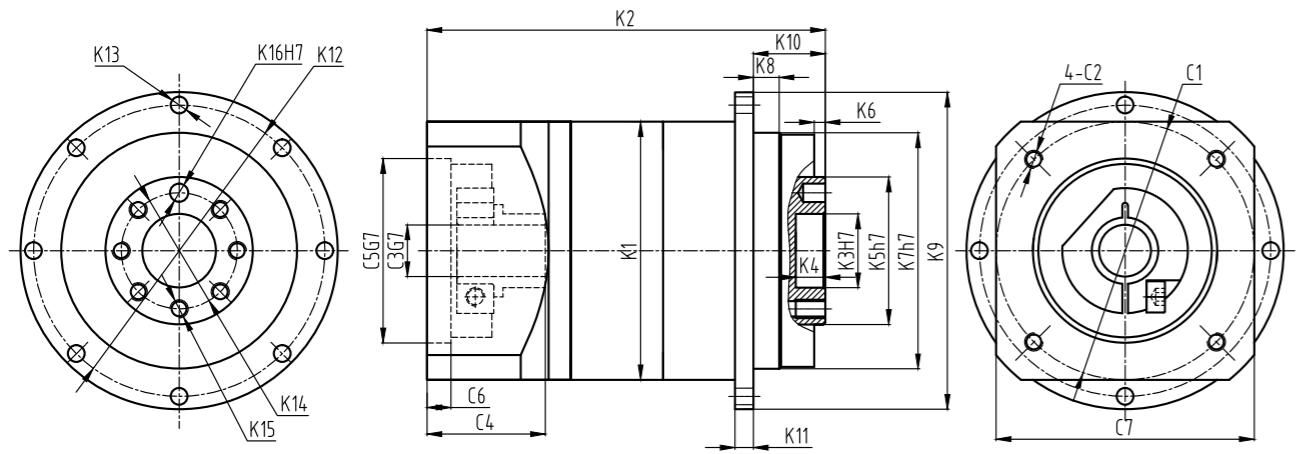
The maximum acceleration torque is equal to 180% of the rated torque.

Model		KPH070	KPH090	KPH120	KPH160	KPH205	Ratio	Stage
Rotational Inertia	kgcm ²	0.14	0.48	2.74	7.54	23.67	4	1
		0.13	0.47	2.71	7.42	22.75	5	
		0.13	0.47	2.71	7.42	22.75	6	
		0.13	0.47	2.62	7.25	22.48	7	
		0.13	0.45	2.62	7.14	22.59	8	
		0.13	0.44	2.62	7.14	22.59	9	
		0.13	0.44	2.57	7.14	22.55	10	
		0.127	0.44	2.56	12.35	12.35	12	
		0.12	0.43	1.75	7.47	7.54	16	2
		0.075	0.44	1.5	6.65	7.42	20	
		0.075	0.44	1.49	5.81	7.54	25	
		0.064	0.39	1.3	6.34	7.14	32	
		0.064	0.39	1.3	5.36	7.14	35	
		0.064	0.39	1.3	4.08	7.14	40	
		0.064	0.39	1.3	5.36	7.14	45	
		0.064	0.39	1.3	4.08	7.14	50	
		0.075	0.39	1.5	7.5	7.54	64	
		0.075	0.44	1.49	7.4	7.54	80	3
		0.064	0.44	1.45	7.3	7.42	100	
		0.064	0.44	1.3	7.3	7.42	125	
		0.064	0.39	1.3	6.5	7.14	160	
		0.064	0.39	1.3	6.2	7.14	200	
		0.064	0.39	1.3	5.7	7.14	256	
		0.064	0.39	1.3	5.4	7.14	320	
		0.064	0.39	1.3	5.4	7.14	512	
Backlash	arcmin	≤3	≤3	≤3	≤3	≤3	High Precision	1
		≤6	≤6	≤6	≤6	≤6	Standard Precision	
		≤5	≤5	≤5	≤5	≤5	High Precision	2
		≤8	≤8	≤8	≤8	≤8	Standard Precision	
		≤7	≤7	≤7	≤7	≤7	High Precision	3
		≤10	≤10	≤10	≤10	≤10	Standard Precision	
Torsional Rigidity	Nm/arcmin	7	14	25	50	140		
Noise	dB(A)	58	60	63	65	67		
Max Input Speed	min ⁻¹	6000	6000	6000	6000	4000		
Rated Input Speed	min ⁻¹	3000	3000	3000	3000	2000		

The subscript "1" the environment temperature is 20°C.
The subscript "2" sound in n1<3000min⁻¹, measured at 1 m.



KPH Series Servo Planetary Gearbox Standard Size



Model	KPH070			KPH090			KPH120			KPH160			KPH205		
Stage	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3
K1	$\phi 70$			$\phi 97$			$\phi 120$			$\phi 160$			$\phi 210$		
K2	108	131.7	155.4	137.2	168.5	199.8	177	218.8	227	232.7	293.7	380.2	211	310	371
K3	$\phi 20$			31.5			40			50			80		
K4	8			12			12			12			22.5		
K5	$\phi 40$			$\phi 63$			$\phi 80$			$\phi 100$			$\phi 160$		
K6	3			6			6			6			6		
K7	$\phi 64$			$\phi 90$			$\phi 110$			$\phi 140$			$\phi 200$		
K8	7			10			10			14.6			15		
K9	$\phi 86$			$\phi 118$			$\phi 145$			$\phi 179$			$\phi 247$		
K10	19.5			30			29			38			56		
K11	5			8			10			10			12		
K12	$\phi 79$			$\phi 109$			$\phi 135$			$\phi 168$			$\phi 233$		
K13	8- $\phi 4.5$			8- $\phi 5.5$			8- $\phi 5.5$			12- $\phi 6.6$			12- $\phi 9$		
K14	$\phi 31.5$			$\phi 50$			$\phi 63$			$\phi 80$			$\phi 125$		
K15	7-M5X8			7-M6X12			11-M6X15			11-M8X18			11-M10X17		
K16	$\phi 5X6$			$\phi 6X7$			$\phi 6X7$			$\phi 8X8$			$\phi 10X10$		
C1	$\phi 70$			90			$\phi 145$			90			$\phi 200$		
C2	M5X12			M6X15			M8X20			M6X15			M12X25		
C3	$\phi 14$			$\phi 19$			$\phi 24$			$\phi 19$			$\phi 35$		
C4	32.1			41.6			61.3			41.6			82		
C5	$\phi 50$			$\phi 70$			$\phi 110$			$\phi 70$			$\phi 114.3$		
C6	6.5			6.5			8			6.5			8		
C7	70			97			120			89			175		

The Angle of the "1" version there are differences between the threaded hole layout of different specification, the actual provide drawings shall prevail.

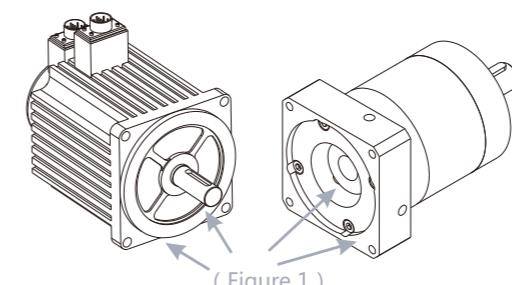
Installation Instruction



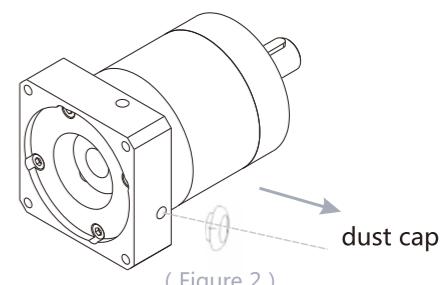
The Connection to the Prime Engine

Step1. Before installation confirm the motor and gearboxes are intact, and strictly check whether the size of the various parts of the motor and gearboxes connected match, mainly refers to the size of the spigot of the motor and gearboxes norch size and fit tolerance.

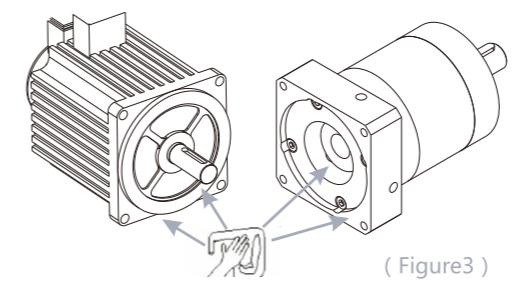
Step 2. Remove the dust cover on the technological bores of the gearboxes flange outer. Adjust input shaft elastic clamping device so that the fastening bolt is aligned with the technological bore. Insert hex wrench to loosen the fastening bolts. This step is suitable for tube clip-locking mechanism coupling.



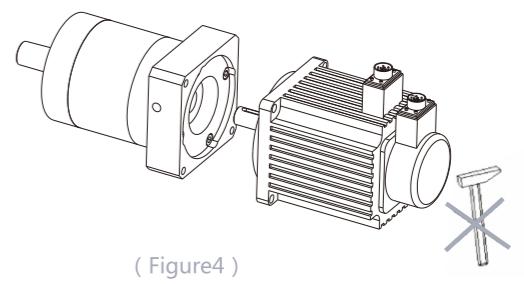
(Figure 1)



dust cap



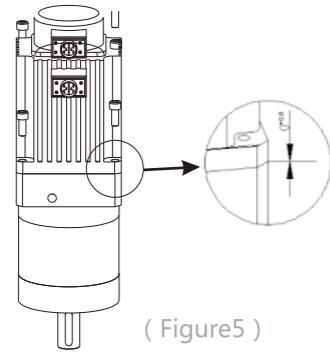
(Figure3)



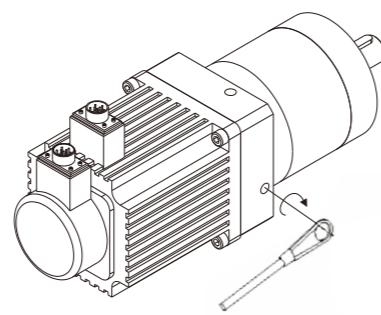
(Figure4)

Step3. Then wipe the anti-rust oil on the motor output shaft, the positioning spigot and gearboxes coupling parts with gasoline or zinc sodium water. Its purpose is to ensure that the coupling tightness and operation flexibility, and to prevent unnecessary wear. Naturally connect the motor and gearboxes, ensure that the concentricity of the gear output shaft and the motor of the input shaft is the same, and both the outside of the flange parallel. If the concentricity is inconsistency, will cause broken motor shaft and gearboxes gear wear, further, when installed, do not hit with a hammer and other objects, to prevent axial force is so large that damage the bearing of gear.

Step 4. Before connecting the motor and gearboxes, please machine of decelerate of motor bearing and azimuth alignment as far as possible, in order to ensure uniform force, please spin on mounting bolts in the any angular position, but do , spin on the other two on the angular position of the mounting bolts and then tighten the four mounting bolts one by one. Finally, tighten the bolts, all fastening bolts are required to use torque wrench fixed torsional moment data indicated to fix and check.



(Figure5)



(Figure6)

(Table 1)

	Product Model	KPL50/KPX45	KPL70/KPX65	KPL90/KPX85	KPL120/KPX115	KPL160/KPX142	KPX180/KPX220
Tightening Torque	TA (Nm)	4.5	9	9	15	36	81
Bolt Size	Sw (mm)	M4	M5	M5	M6	M8	M10

■ The Connection of the Work Machine

When the installation of the working machine, we should attach importance to the transmission center axis aligned, and the error should not be greater than the amount of coupling the use of compensation. Aligning well can extend the service life and to obtain the desired transmission efficiency, when install transmission parts on the output shaft, not allowed to tap with a hammer, usually use the internal threads of the assembly fixture and shaft end, using bolts pressed into the drive member. Failure to do so may cause damage of the internal parts of the reducer, best not to use steel fixed coupling, because class coupling improper installation will cause unnecessary applied load, and resulting in early bearing damage, serve or even cause the output shaft fracture.

■ The Gearboxes Fixing

Gearboxes should be securely mounted on a stable foundation or bearing , and the cooling air circulation flowing.unstable fondation will cause vibration and noise during operation, and promote the bearing and gear damage. When the drive couplings with protrusion or gear and sprocket, you should consider the installation of protective devices,after installation, you should have a in -order comprehensive check of the accuracy of the installation location and the reliability of fastenerss clamping. The machine should be flexible rotationafter installation. The operation should be smooth without shock, vibration. Noise and oil leakage phenomenon. Abnormor should be immediately removed. If the ambient temperature istoohigh or too low, the gradess of grease need to be changed.

Maintenance Instructions



Gearboxes oil quality should be checked regularly during use, timely replacement of for impurities or deterioration grease required.

Under normal circumstances, gearboxes for long-term continuous work, should be replaced with new grease in accordance with the running 20000 hours or every other year. Intermittent gearboxes should be checked the grease before re-operation. Relubrication can be completely by professional manufacturers. Teh re-lubrication intervals and quantities should be decided according to the functioning. If the old grease can not be completely removed, accordingly limit the number of grease to avoid lubrication, if re-lubrication cycle interval is longer, recommended to completely replace ann the grease.grease dosage is preferably 1/3 of the internal space, if the input speed is low may be appropriate to increase. But can not exceed a maximum of 1/2 of the internal space.

The output of the rotary part(tc) use skeleton oil seal, the seals replacement generally based on whether the grease leaks. Gearboxes for intermittent use, also should be check the seal before re-operation, determine whether there is necessary for replacement of seals, the seals can be replaced only need to remove the seal seat.

At work when the temperature rise of the oil temperature exceeds90°C orproduce abnormal phenomena such as noise, stop using it and check the cause. The fault must be removed before they are allowed to continue operation.

Operation and inspection should be carefully recorded. The above provisions should be strictly enforced.

MEMO

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