

PKPH Series ---

Servo Planetary Gearbox



Processed and manufactured by the high precision German engineered gear grinding craft, the PKPH is one of the best servo planetary gearbox in the world.

Product Key Features

- ▶ High precision: backlash <math>< 3 \text{ arc-min}</math>.
- ▶ Processing by ultra precision machine and advanced gear grinding craft, the gear precision can be controlled under ISO4 to ensure the gearboxes 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 gearboxes output torque and rigidity.
- ▶ Can be connected with any servo motor around the world.
- ▶ No grease leakage and miantenance free by using synthetic lubricating grease and IP65 protection design.

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Servo Planetary Gearbox Technical Data

Model		PKPH070	PKPH090	PKPH120	PKPH160	PKPH205	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	2
		52	145	300	550	1250	16	
		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	3
		55	155	320	650	1200	50	
		45	115	255	510/63	1000/63	64	
		52	155	320	650	1200	80	
		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	3		
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 ¹	N	2500	4500	7800	12000	18000		
Max Axial Force ¹	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.

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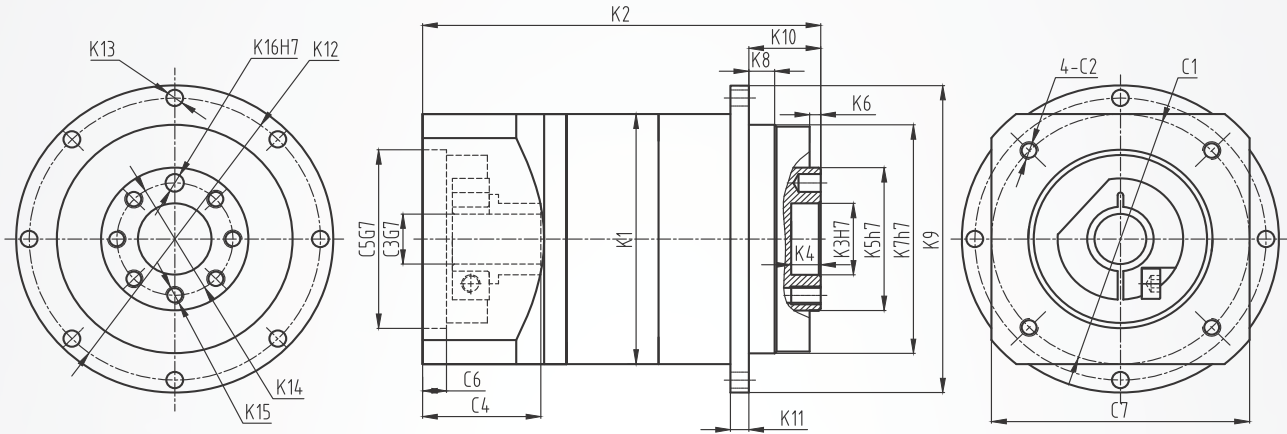
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Model		PKPH070	PKPH090	PKPH120	PKPH160	PKPH205	Ratio	Stage
Rotational Inertia	kgcm ²	0.14	0.48	2.74	7.54	23.67	4	1
		0.13	0.47	2.71	7.42	22.75	5	
		0.13	0.47	2.71	7.42	22.75	6	
		0.13	0.47	2.62	7.25	22.48	7	
		0.13	0.45	2.62	7.14	22.59	8	
		0.13	0.44	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	3
		0.075	0.44	1.49	7.4	7.54	80	
		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 ²	dB(A)	58	60	63	65	67		
Max Input Speed ¹	min ⁻¹	6000	6000	6000	6000	4000		
Rated Input Speed ¹	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.

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Servo Planetary Gearbox Standard Size



Model	PKPH070			PKPH090			PKPH120			PKPH160			PKPH205		
Stage	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3
K1	φ70			φ97			φ120			φ160			φ210		
K2	108	131.7	155.4	137.2	168.5	199.8	177	218.8	227	232.7	293.7	380.2	235	297	358
K3	φ20			31.5			40			50			80		
K4	8			12			12			12			22.5		
K5	φ40			φ63			φ80			φ100			φ160		
K6	3			6			6			6			6		
K7	φ64			φ90			φ110			φ140			φ200		
K8	7			10			10			14.6			15		
K9	φ86			φ118			φ145			φ179			φ247		
K10	19.5			30			29			38			56		
K11	5			8			10			10			12		
K12	φ79			φ109			φ135			φ168			φ233		
K13	8-φ4.5			8-φ5.5			8-φ5.5			12-φ6.6			12-φ9		
K14	φ31.5			φ50			φ63			φ80			φ125		
K15 ¹	7-M5X8			7-M6X12			11-M6X15			11-M8X18			11-M10X17		
K16	φ5X6			φ6X7			φ6X7			φ8X8			φ10X10		
C1	φ70			φ90			φ145		φ90	φ200		φ145	φ215		φ200
C2	M5X12			M6X15			M8X20		M6X15	M12X25		M8X20	M12X25		M12X25
C3	φ14			φ19			φ24		φ19	φ35		φ24	φ42		φ35
C4	32.1			41.6			61.3		41.6	82		61.3	82.5		82
C5	φ50			φ70			φ110		φ70	φ114.3		φ110	φ180		φ114.3
C6	6.5			6.5			8		6.5	8		8	8		8
C7	70			97			120		89	175		120	190		175

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