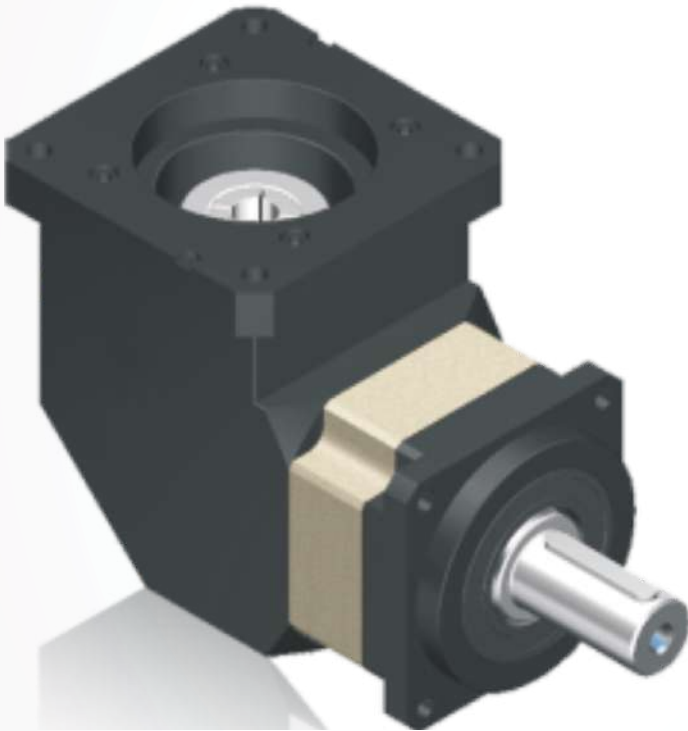


## PKVX Series ---

### Servo Planetary Gearbox



Processed and manufactured by the high precision German engineered gear grinding craft, the PKVX 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.

# PKVX Series

## Servo Planetary Gearbox Technical Data

Model		PKVX065	PKVX085	PKVX115	PKVX142	PKVX180	PKVX220	Ratio	Stage
Rated Output Torque	Nm	46	125	210	450	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	
		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	
		45	115	255	510/63	1000/63	1550	64	3
		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 <sup>1</sup>	N	1500	3200	6700	9600	14000	16000		
Max Axial Force <sup>1</sup>	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.

# PKVX Series

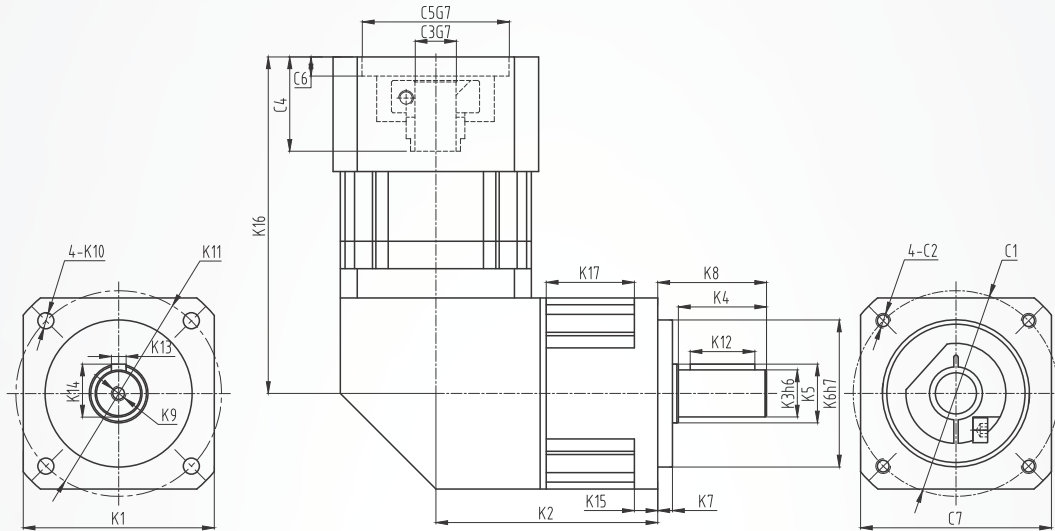
## Servo Planetary Gearbox Technical Data

Model		PKVX065	PKVX085	PKVX115	PKVX142	PKVX180	PKVX220	Ratio	Stage	
Rotational Inertia	kgcm <sup>2</sup>	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		
		0.075	0.44	1.49	7.4	7.54	22.75	80	3	
		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 <sup>2</sup>	dB(A)	63	65	68	70	72	75			
Max Input Speed <sup>1</sup>	min <sup>-1</sup>	6000	6000	6000	6000	3000	3000			
Rated Input Speed <sup>1</sup>	min <sup>-1</sup>	3000	3000	3000	3000	1500	1500			

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

# PKVX Series

## Servo Planetary Gearbox Standard Size



Model	PKVX065			PKVX085			PKVX115			PKVX142			PKVX180			PKVX220		
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			φ50			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			25		
K16	114.5			150			194			246.5			170	145		220	170	145
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	76	76	76
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	