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# PLANETARY GEARHEADS

*Low Starting Torque **K** Series*



100%

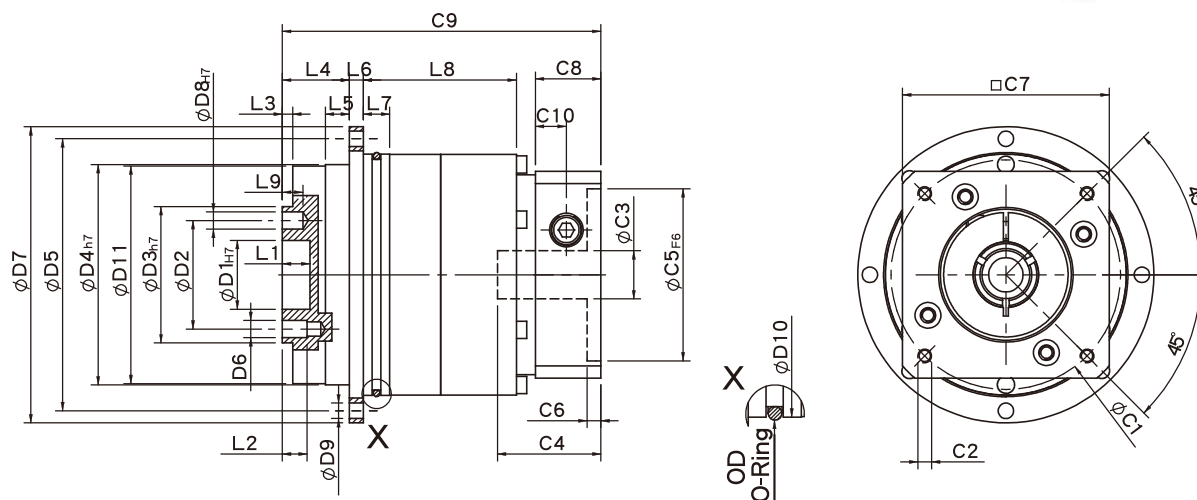
Made in Taiwan

[www.sesamemotor.com](http://www.sesamemotor.com)



Registration Number: 8550921716 Registration Number: 38C09550

## PHFK Single Stage Dimensions



## Specifications

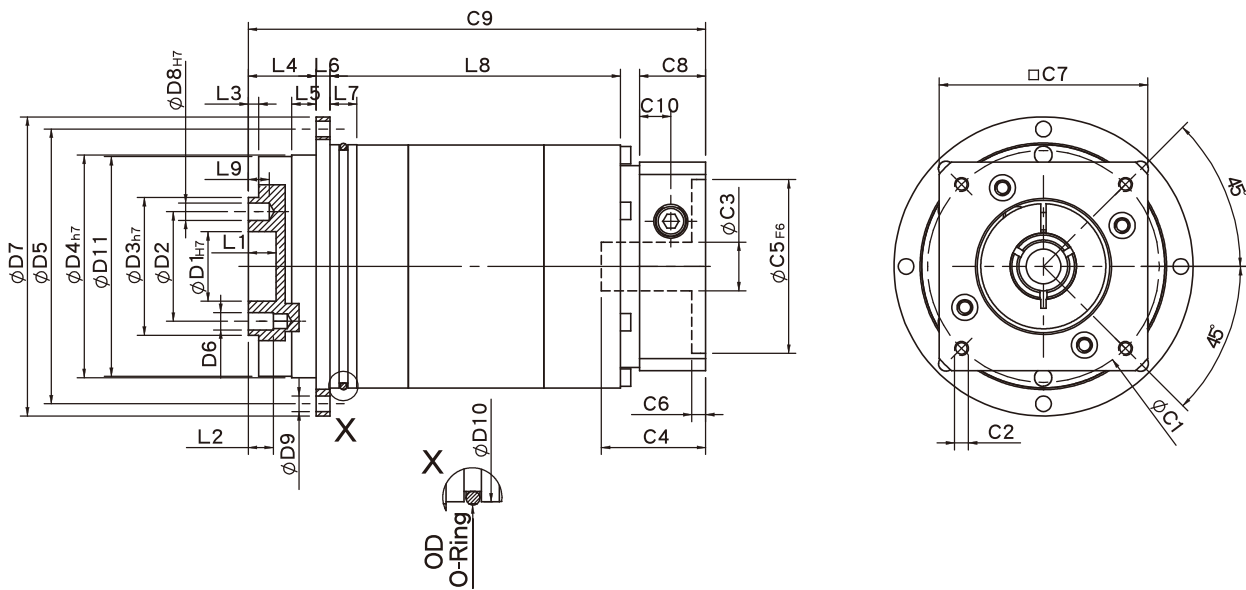
Unit:mm

Dimensions	PHFK42	PHFK60	PHFK90	PHFK115	PHFK142	PHFK200
D1 <sub>H7</sub>	12	20	31.5	40	50	80
D2	20	31.5	50	63	80	125
D3 <sub>H7</sub>	28	40	63	80	100	160
D4 <sub>H7</sub>	47	64	90	110	140	200
D5	67	79	109	135	168	233
D6	M3x0.5P	M5x0.8P	M6x1.0P	M6x1.0P	M8x1.25P	M10x1.5P
D7	72	86	118	145	179	247
D8 <sub>H7</sub>	3	5	6	6	8	10
D9	3.4	4.5	5.5	5.5	6.6	9
D10	60	70	95	120	152	212
D11	46.2	63.2	89.2	109.2	139.2	199.2
L1	4	8	12	12	12	12
L2	6	7.2	12	13.5	16	22.5
L3	3	3	6	6	6	8
L4	19.5	19.5	30	29	38	50
L5	7	7	10	10	14.6	15
L6	4	4	7	8	10	12
L7	5	7.7	8	10	12	17
L8	25	37.5	36.5	54.5	65	92
L9	4	6	7	7	7	10
C1 <sup>2</sup>	46	70	90	115	145	200
C2 <sup>2</sup>	M4x0.7P	M5x0.8P	M6x1.0P	M8x1.25P	M8x1.25P	M12x1.75P
C3 <sup>2</sup>	≤8/≤11	≤14/≤19	≤19/≤24	≤24/≤32/≤38	≤35/≤38	≤50
C4 <sup>2</sup>	28.1	36.5	41.2	51.1	69.7	81
C5 <sup>2</sup> <sub>F6</sub>	30	50	70	95	110	114.3
C6 <sup>2</sup>	4	4	6.7	6	8.5	6
C7 <sup>2</sup>	42	60	90	115	140	180
C8 <sup>2</sup>	16.5	19	25.5	30	38	40
C9 <sup>2</sup>	74.8	92.5	107	131.5	171.5	215
C10 <sup>2</sup>	7.4	9	11.3	13.9	17.8	21
OD	56x2	66x2	90x3	110x3	145x3	200x5

★ C1~C9 are motor specific dimensions(metric std shown ), Size may vary according to motor flange.

★ Specification subject to change without notice.

## PHFK Double Stage Dimensions-1



## Specifications

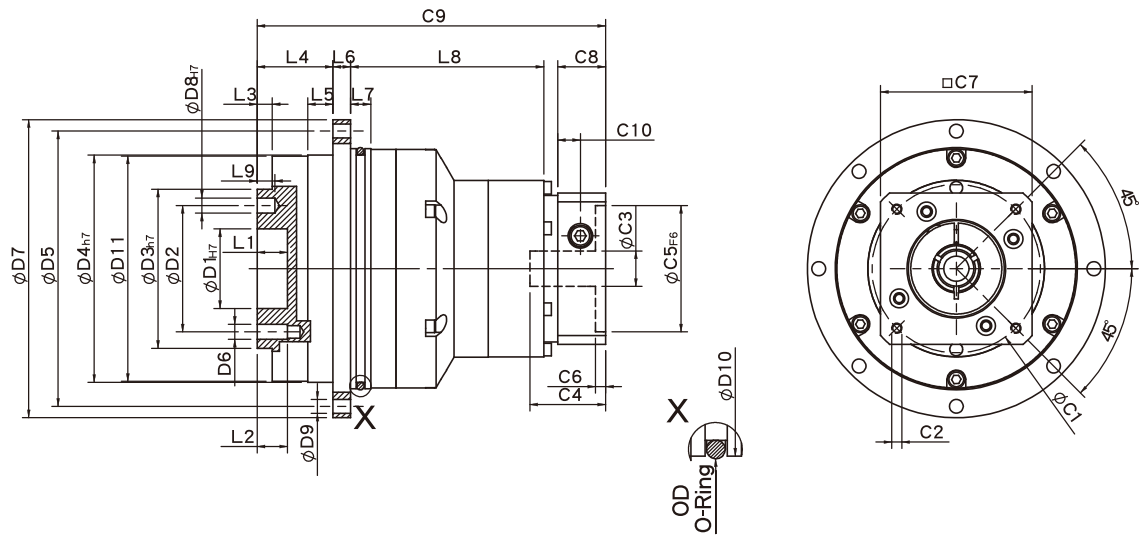
Unit:mm

Dimensions	PHFK42	PHFK60	PHFK90
D1 <sub>H7</sub>	12	20	31.5
D2	20	31.5	50
D3 <sub>H7</sub>	28	40	63
D4 <sub>H7</sub>	47	64	90
D5	67	79	109
D6	M3x0.5P	M5x0.8P	M6x1.0P
D7	72	86	118
D8 <sub>H7</sub>	3	5	6
D9	3.4	4.5	5.5
D10	60	70	95
D11	46.2	63.2	89.2
L1	4	8	12
L2	6	7.2	12
L3	3	3	6
L4	19.5	19.5	30
L5	7	7	10
L6	4	4	7
L7	5	7.7	8
L8	54.5	72.5	81.5
L9	4	6	7
C1 <sup>2</sup>	46	70	90
C2 <sup>2</sup>	M4x0.7P	M5x0.8P	M6x1.0P
C3 <sup>2</sup>	≤8/≤11	≤14/≤19	≤19/≤24
C4 <sup>2</sup>	28.1	36.4	41.2
C5 <sup>2</sup> <sub>F6</sub>	30	50	70
C6 <sup>2</sup>	4	4	6.7
C7 <sup>2</sup>	42	60	90
C8 <sup>2</sup>	16.5	19	25.5
C9 <sup>2</sup>	102.5	127.5	151.1
C10 <sup>2</sup>	7.4	9	11.3
OD	56x2	66x2	90x3

\* C1~C9 are motor specific dimensions(metric std shown ), Size may vary according to motor flange.

\* Specification subject to change without notice.

## PHFK Double Stage Dimensions-2



## Specifications

Unit:mm

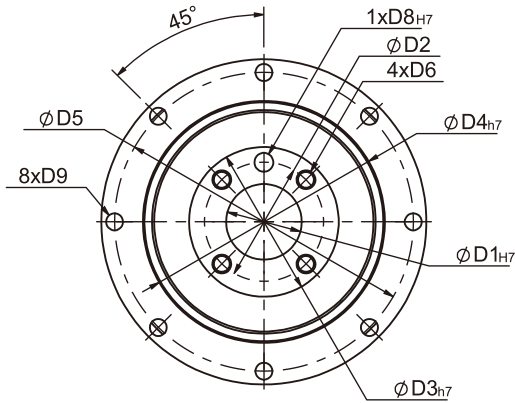
Dimensions	PHFK60T	PHFK90T	PHFK115T	PHFK142T	PHFK200T
D1 <sub>H7</sub>	20	31.5	40	50	80
D2	31.5	50	63	80	125
D3 <sub>h7</sub>	40	63	80	100	160
D4 <sub>h7</sub>	64	90	110	140	200
D5	79	109	135	168	233
D6	M5x0.8P	M6x1.0P	M6x1.0P	M8x1.25P	M10x1.5P
D7	86	118	145	179	247
D8 <sub>H7</sub>	5	6	6	8	10
D9	4.5	5.5	5.5	6.6	9
D10	70	95	120	152	212
D11	63.2	89.2	109.2	139.2	199.2
L1	8	12	12	12	12
L2	7.2	12	13.5	16	22.5
L3	3	6	6	6	8
L4	19.5	30	29	38	50
L5	7	10	10	14.6	15
L6	4	7	8	10	12
L7	7.7	8	10	12	17
L8	65.2	69.5	93.5	110	161.7
L9	6	7	7	7	10
C1 <sup>2</sup>	46	70	90	115	145
C2 <sup>2</sup>	M4x0.7P	M5x0.8P	M6x1.0P	M8x1.25P	M8x1.25P
C3 <sup>2</sup>	≤8/≤11	≤14/≤19	≤19/≤24	≤24/≤32/≤38	≤35/≤38
C4 <sup>2</sup>	28.1	36.5	41.2	51.1	69.7
C5 <sup>2</sup> <sub>F6</sub>	30	50	70	95	110
C6 <sup>2</sup>	4	4	6.7	6	8.5
C7 <sup>2</sup>	42	60	90	115	140
C8 <sup>2</sup>	16.5	19	25.5	30	38
C9 <sup>2</sup>	113.2	138	163.1	198	281
C10 <sup>2</sup>	7.4	9	11.3	13.9	17.8
OD	66x2	90x3	110x3	145x3	200x5

★ C1~C9 are motor specific dimensions(metric std shown ), Size may vary according to motor flange.

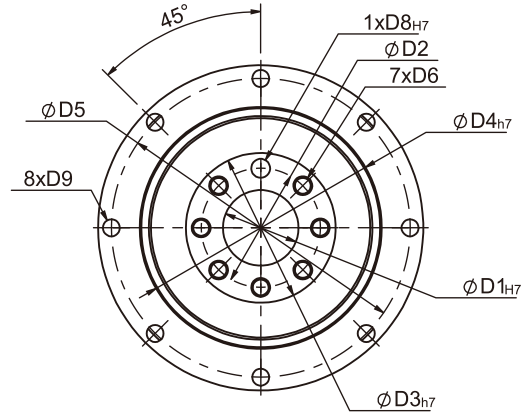
★ Specification subject to change without notice.

## PHFK Flange Dimensions

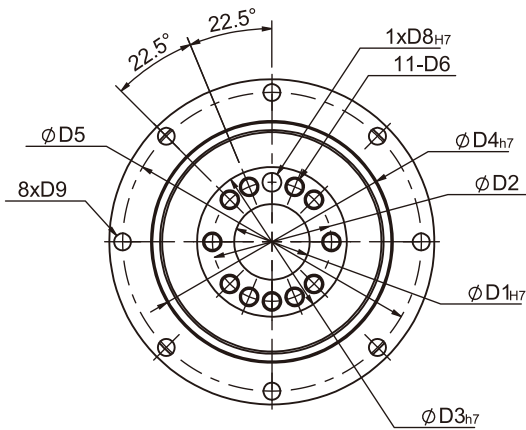
### PHFK42



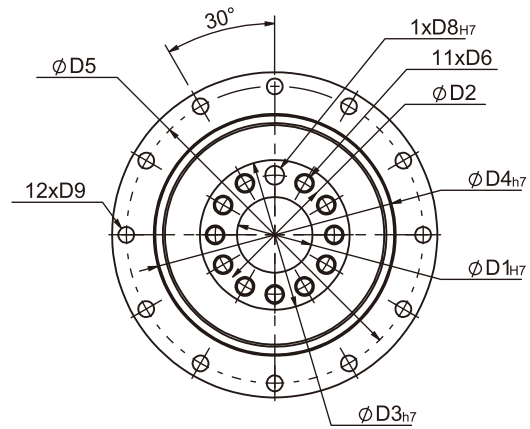
### PHFK60 PHFK90



### PHFK115



### PHFK142 PHFK200



## Specifications

Unit:mm

Dimensions	PHFK42	PHFK60	PHFK90	PHFK115	PHFK142	PHFK200
D1 H7	12	20	31.5	40	50	80
D2	20	31.5	50	63	80	125
D3 h7	28	40	63	80	100	160
D4 h7	47	64	90	110	140	200
D5	67	79	109	135	168	233
D6	M3x0.5P	M5x0.8P	M6x1.0P	M6x1.0P	M8x1.25P	M10x1.5P
D8 H7	3	5	6	6	8	10
D9	3.4	4.5	5.5	5.5	6.6	9

★ Specification subject to change without notice.

## PHFK Specifications Table

Specifications		Stage	Ratio	PHFK42	PHFK60	PHFK90	PHFK115	PHFK142	PHFK200	
Nominal Output Torque $T_{2N}$	N • m	1	3	-	40	105	180	340	580	
			4	16	43	110	240	500	1100	
			5	17	50	130	290	600	1200	
			7	14	44	125	270	530	1100	
			10	11	37	95	220	430	900	
		Stage	Ratio	PHFK42	PHFK60(T)	PHFK90(T)	PHFK115T	PHFK142T	PHFK200T	
		2	15	-	40	105	180	600	1200	
			20	16	43	110	240	600	1200	
			25	17	50	130	290	600	1200	
			30	17	50	130	290	600	1200	
			35	17	50	130	290	600	1200	
			40	17	50	130	290	600	1200	
			50	17	50	130	290	600	1200	
		70	14	44	125	270	530	1100		
100	11	37	95	220	430	900				
Emergency Stop Torque $T_{2NOT}$	N • m		3.0 times of Nominal Output Torque (* Max. Output Torque $T_{2B}$ = 60% of Emergency Stop Torque)							
Starting Torque	N • m	1	3-10	0.05	0.09	0.3	0.6	1.6	4.2	
		2	12-100	0.05	0.09	0.25	0.3	0.55	1.4	
Nominal Input Speed $n_{1N}$	rpm	1,2	3-100	5000	5000	4000	4000	3000	3000	
Max. Input Speed $n_{1max}$	rpm	1,2	3-100	10000	10000	8000	8000	6000	5000	
Micro Backlash P0	arcmin	1	3-10	≤ 2	≤ 2	≤ 2	≤ 1	≤ 1	≤ 1	
		2	12-100	≤ 4	≤ 4	≤ 4	≤ 3	≤ 3	≤ 3	
Precision Backlash P1	arcmin	1	3-10	≤ 4	≤ 4	≤ 4	≤ 3	≤ 3	≤ 3	
		2	12-100	≤ 6	≤ 6	≤ 6	≤ 5	≤ 5	≤ 5	
Standard Backlash P2	arcmin	1	3-10	≤ 6	≤ 6	≤ 6	≤ 5	≤ 5	≤ 5	
		2	12-100	≤ 8	≤ 8	≤ 8	≤ 7	≤ 7	≤ 7	
Torsional Rigidity	N • m / arcmin	1,2	3-100	6	12	30	80	150	450	
Max. Bending Moment $M_{2kB}^{-1}$	N • m	1,2	3-100	37	110	250	435	1170	2360	
Max. Axial Load $F_{2aB}^{-1}$	N	1,2	3-100	870	1200	2500	3380	8000	10050	
Operating Temp.	°C		3-100	-10 °C ~ +90 °C						
Service Life	hr		3-100	30,000 (15,000/ Continuous operation)						
Efficiency	%	1	3-10	≥ 97%						
		2	12-100	≥ 94%						
Weight	kg	1	3-10	0.7	1.5	3.3	6.2	13.6	32.1	
		2	12-100	1.1	2.3/1.8	6.0/4.1	8.1	17.9	38.6	
Mounting Position	-	1,2	3-100	Any direction						
Noise Level <sup>2</sup>	dB(A)/1m	1,2	3-100	56	58	60	63	65	67	
Protection Class	-	1,2	3-100	IP54						
Lubrication	-	1,2	3-100	Synthetic Lubricant						
Inertia(J1)										
Stage	Ratio	unit		PHFK42	PHFK60	PHFK90	PHFK115	PHFK142	PHFK200	
1	3	Kg • cm <sup>2</sup>		-	0.19	0.72	2.35	9.05	29.80	
	4			0.02	0.18	0.67	1.66	7.17	25.86	
	5			0.02	0.17	0.65	1.50	6.52	23.63	
	7			0.02	0.14	0.60	1.45	6.17	22.92	
	10			0.02	0.14	0.58	1.41	6.10	22.73	
Stage	Ratio			PHFK42	PHFK60(T)	PHFK90(T)	PHFK115T	PHFK142T	PHFK200T	
2	15/20/25			0.02	0.17(0.02)	0.65(0.17)	0.65	1.50	6.52	
	30/35/40			0.02	0.14(0.02)	0.60(0.14)	0.60	1.45	6.17	
	50/70/100			0.02	0.14(0.02)	0.58(0.14)	0.58	1.41	6.10	

\* 1. Applied to the output shaft center @100rpm.

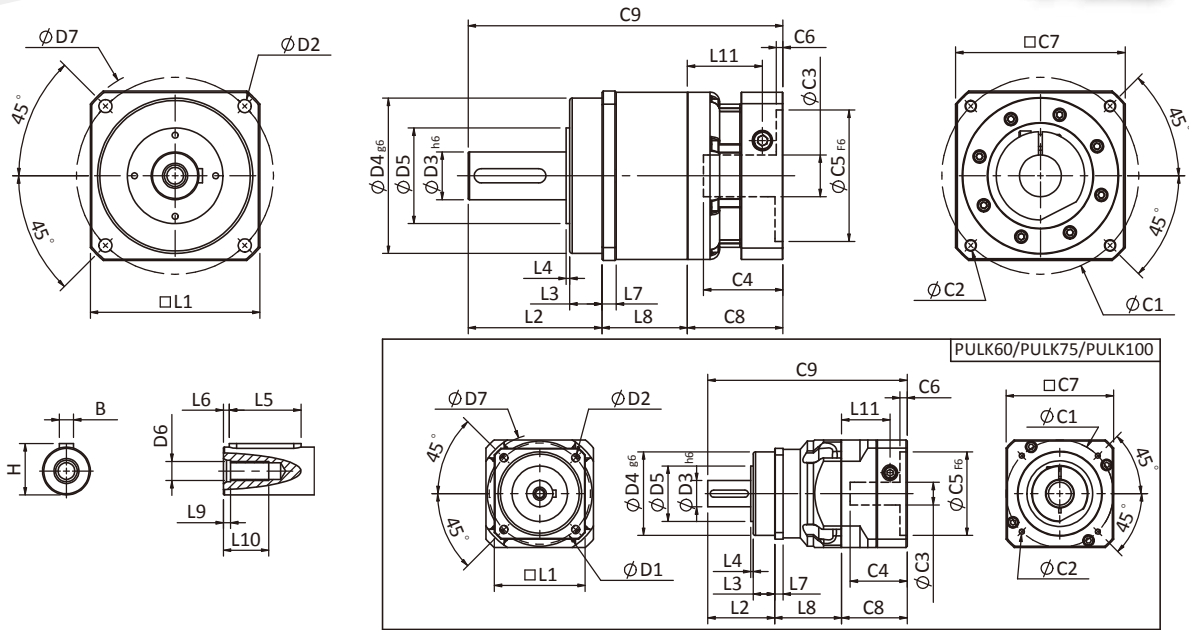
\* 2. Measured at 3000 rpm with no load. These values are measured by gearbox with ratio = 10 (1-stage) or ratio = 100 (2-stage) at nominal input speed or 3000 rpm (if nominal input speed is higher than 3000 rpm) with no load.

※ The above figures/specifications are subject to change without prior notice.

Products due to human error, natural disasters or other factors lead to poor or damaged will not be covered under warranty



## PULK Single Stage Dimensions



## Specifications

Unit:mm

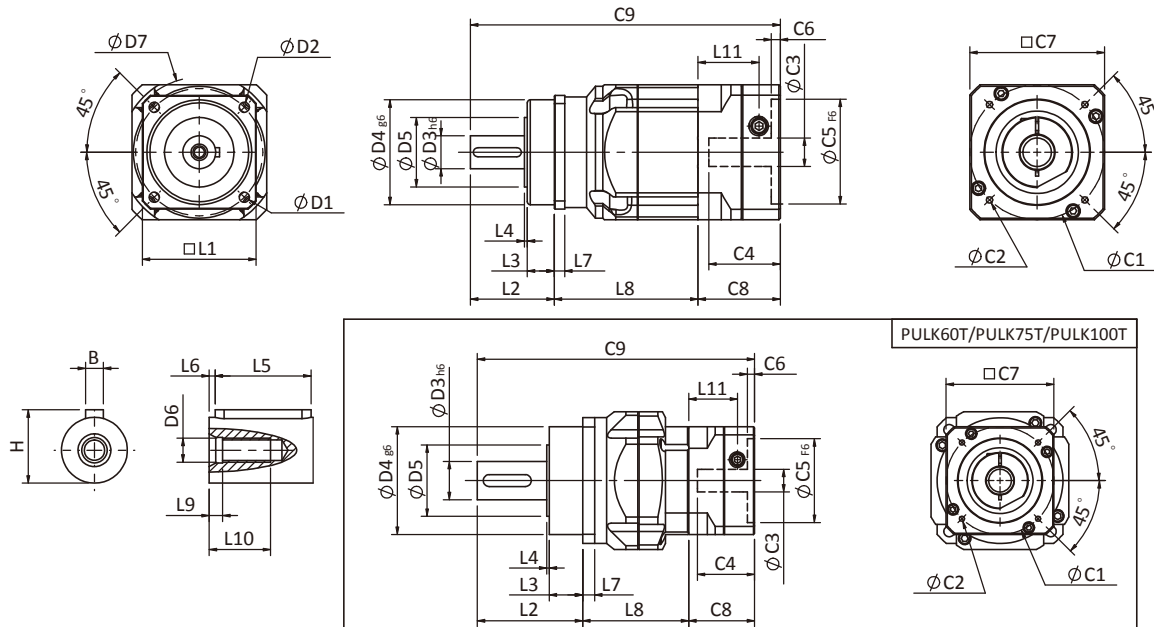
Dimensions	PULK60	PULK75	PULK100	PULK140	PULK180
D1	68	85	120	165	215
D2	5.5	6.8	9	11	13
D3 <sub>h6</sub>	16	22	32	40	55
D4 <sub>g6</sub>	60	70	90	130	160
D5	34.4	46.4	59.6	79.2	94.5
D6	M5x0.8P	M8x1.25P	M12x1.75P	M16x2.0P	M20x2.5P
D7	80	100	138	186	239
L1	62	76	105	142	180
L2	48.5	56	88	112	112
L3	18.5	18	28	27	27
L4	1.5	2	2	3	3
L5	25	32	40	60	70
L6	2	2	5	5	6
L7	6	7	10	12	15
L8	32.5	56	46	71.5	92
L9	4	4.5	6	6	8
L10	16.5	20.5	30	38	48
L11	35.5	40.5	41.8	62.8	74
C1 <sup>2</sup>	70	90	115	165	200
C2 <sup>2</sup>	M5x0.8P	M6x1P	M8x1.25P	M10x1.5P	M12x1.75P
C3 <sup>2</sup>	≤14/≤19	≤19/≤24	≤24/≤32/≤38	≤35/≤38	≤50
C4 <sup>2</sup>	37	47.8	51	66.5	81
C5 <sup>2</sup> <sub>F6</sub>	50	70	95	130	114.3
C6 <sup>2</sup>	4	6	6	5.5	6
C7 <sup>2</sup>	60	90	115	140	180
C8 <sup>2</sup>	46	55	58	80	93
C9 <sup>2</sup>	138.5	167	192	263.5	297
B	5	6	10	12	16
H	18	24.5	35	43	59

★ C1~C9 are motor specific dimensions(metric std shown ), Size may vary according to the motor flange chosen.

★ Specification subject to change without notice.



## PULK Double Stage Dimensions-1



## Specifications

Unit:mm

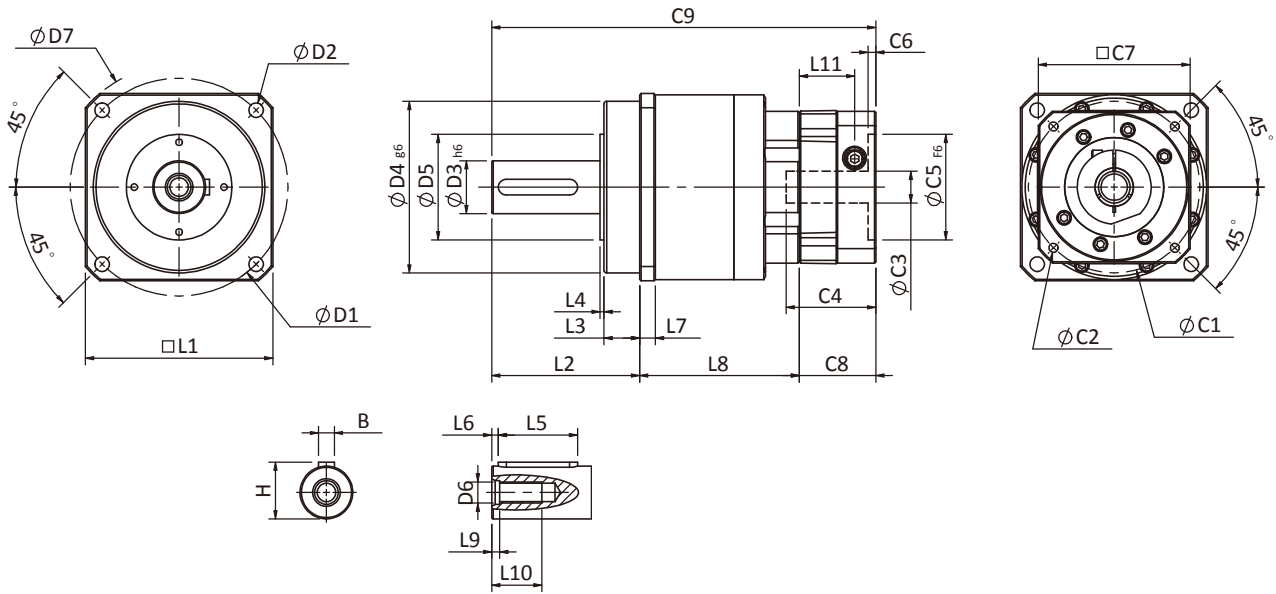
Dimensions	PULK60	PULK60T	PULK75	PULK75T	PULK100T
D1		68		85	120
D2		5.5		6.8	9
D3 <sub>h6</sub>		16		22	32
D4 <sub>g6</sub>		60		70	90
D5		34.4		46.4	59.6
D6		M5x0.8P		M8x1.25P	M12x1.75P
D7		80		100	138
L1		62		76	105
L2		48.5		56	88
L3		18.5		18	28
L4		1.5		2	2
L5		25		32	40
L6		2		2	5
L7		6		7	10
L8	65.5	61	96	88.5	88.5
L9		4		4.5	6
L10		16.5		20.5	30
L11	35.5	29	40.5	35.5	40.5
C1 <sup>2</sup>	70	46	90	70	90
C2 <sup>2</sup>	M5x0.8P	M4x0.7P	M6x1.0P	M5x0.8P	M6x1.0P
C3 <sup>2</sup>	≤14/≤19	≤8/≤11	≤19/≤24	≤14/≤19	≤19/≤24
C4 <sup>2</sup>	37	27	47.8	37	47.8
C5 <sup>2</sup> <sub>F6</sub>	50	30	70	50	70
C6 <sup>2</sup>	4	4	6	4	6
C7 <sup>2</sup>	60	42.6	90	60	90
C8 <sup>2</sup>	46	38.5	55	46	55
C9 <sup>2</sup>	160	148	207	190.5	231.5
B		5		6	10
H		18		24.5	35

\* C1~C9 are motor specific dimensions(metric std shown ), Size may vary according to the motor flange chosen.

\* Specification subject to change without notice.



## PULK Double Stage Dimensions-2



## Specifications

Unit:mm

Dimensions	PULK140T	PULK180T
D1	165	215
D2	11	13
D3 <sub>h6</sub>	40	55
D4 <sub>g6</sub>	130	160
D5	79.2	94.5
D6	M16x2.0P	M20x2.5P
D7	186	239
L1	142	180
L2	112	112
L3	27	27
L4	3	3
L5	60	70
L6	5	6
L7	12	15
L8	121	160.2
L9	6	8
L10	38	48
L11	41.8	72.6
C1 <sup>2</sup>	130	130
C2 <sup>2</sup>	M8x1.25P	M8x1.25P
C3 <sup>2</sup>	≤ 24/ ≤ 32/ ≤ 38	≤ 35/ ≤ 38
C4 <sup>2</sup>	51	66.7
C5 <sup>2</sup> <sub>F6</sub>	110	110
C6 <sup>2</sup>	6	5.5
C7 <sup>2</sup>	115	140
C8 <sup>2</sup>	58	89.8
C9 <sup>2</sup>	291	362
B	12	16
H	43	59

★ C1~C9 are motor specific dimensions(metric std shown ), Size may vary according to the motor flange chosen.

★ Specification subject to change without notice.

# PLANETARY GEARHEADS

## PULK Specifications Table

Specifications	Stage	Ratio	PULK60	PULK75	PULK100	PULK140	PULK180	
Nominal Output Torque $T_{2N}$	1	3	53	145	180	340	580	
		4	55	150	240	500	1100	
		5	54	140	290	600	1200	
		6	46	135	280	560	1100	
		7	44	125	270	530	1100	
		8	41	110	240	480	1000	
		9	37	95	220	430	900	
		10	37	95	220	430	900	
		2	15	53	145	180	520	580
			20	55	150	240	600	1100
	25		54	140	290	600	1200	
	30		54	140	290	600	1200	
	35		54	140	290	600	1200	
	40		54	140	290	600	1200	
	45		54	140	290	600	1200	
	50		54	140	290	600	1200	
	60		46	135	280	560	1200	
	70		44	125	270	530	1100	
	80	41	110	240	480	1000		
90	37	95	220	430	900			
100	37	95	220	430	900			
Emergency Stop Torque $T_{2NOT}$	N • m		3.0 times of Nominal Output Torque (* Max. Output Torque $T_{2B}$ = 60% of Emergency Stop Torque)					
Starting Torque	N • m	1	3-10	0.12	0.4	0.75	2.0	5.0
		2	12-100	0.12	0.35	0.4	0.8	1.8
Nominal Input Speed $n_{1N}$	rpm	1,2	3-100	4000	3500	3000	2500	2500
Max. Input Speed $n_{1max}$	rpm	1,2	3-100	6000	6000	5000	4500	4500
Micro Backlash P0	arcmin	1	3-10	≤ 2	≤ 2	≤ 1	≤ 1	≤ 1
		2	12-100	≤ 4	≤ 4	≤ 3	≤ 3	≤ 3
Precision Backlash P1	arcmin	1	3-10	≤ 4	≤ 4	≤ 3	≤ 3	≤ 3
		2	12-100	≤ 6	≤ 6	≤ 5	≤ 5	≤ 5
Standard Backlash P2	arcmin	1	3-10	≤ 6	≤ 6	≤ 5	≤ 5	≤ 5
		2	12-100	≤ 8	≤ 8	≤ 7	≤ 7	≤ 7
Torsional Rigidity	N • m / arcmin	1,2	3-100	7	14	25	50	150
Max. Radial Load $F_{2rB}^1$	N	1,2	3-100	1800	4800	6950	11000	21000
Max. Axial Load $F_{2aB}^1$	N	1,2	3-100	1400	2950	4200	8500	13000
Operating Temp.	°C		3-100	-10 °C ~ +90 °C				
Service Life	hr		3-100	30,000 (15,000/ Continuous operation)				
Efficiency	%	1	3-10	≥ 97%				
		2	12-100	≥ 94%				
Weight	kg	1	3-10	1.5	3.5	6.6	14.5	30.8
		2	12-100	2.0/1.7	5.2/4.0	8.1	17.5	37
Mounting Position	-	1,2	3-100	Any direction				
Noise Level <sup>2</sup>	dBA/1m	1,2	3-100	58	60	63	65	67
Protection Class	-	1,2	3-100	IP54				
Lubrication	-	1,2	3-100	Synthetic Lubricant				
Inertia(J1)								
Stage	Ratio	unit	PULK60	PULK75	PULK100	PULK140	PULK180	
1	3	Kg • cm <sup>2</sup>	0.23	0.97	2.35	10.00	30.50	
	4		0.18	0.67	1.66	7.17	25.86	
	5		0.17	0.65	1.50	6.52	23.63	
	6/7/8		0.14	0.60	1.45	6.17	22.92	
	9/10		0.14	0.58	1.41	6.10	22.73	
Stage	Ratio		PULK60(T)	PULK75(T)	PULK100T	PULK140T	PULK180T	
2	15/20/25		0.17(0.02)	0.65(0.17)	0.65	1.50	6.52	
	25/30/35/40		0.14(0.02)	0.60(0.14)	0.60	1.45	6.17	
	45/50/60/70/80/90/100		0.14(0.02)	0.58(0.14)	0.58	1.41	6.10	

\* 1. Applied to the output shaft center @100rpm.

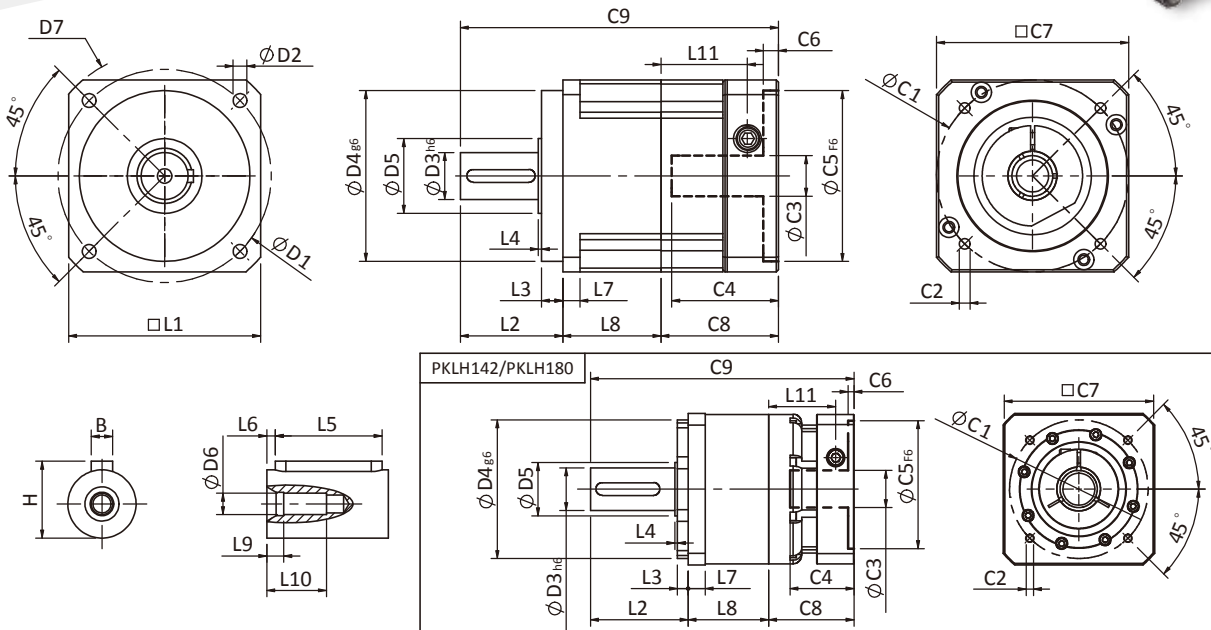
\* 2. Measured at 3000 rpm with no load. These values are measured by gearbox with ratio = 10 (1-stage) or ratio = 100 (2-stage) at nominal input speed or 3000 rpm (if nominal input speed is higher than 3000 rpm) with no load.

※ The above figures/specifications are subject to change without prior notice.

Products due to human error, natural disasters or other factors lead to poor or damaged, will not be covered under warranty.



## PKLH Single Stage Dimensions



## Specifications

Unit:mm

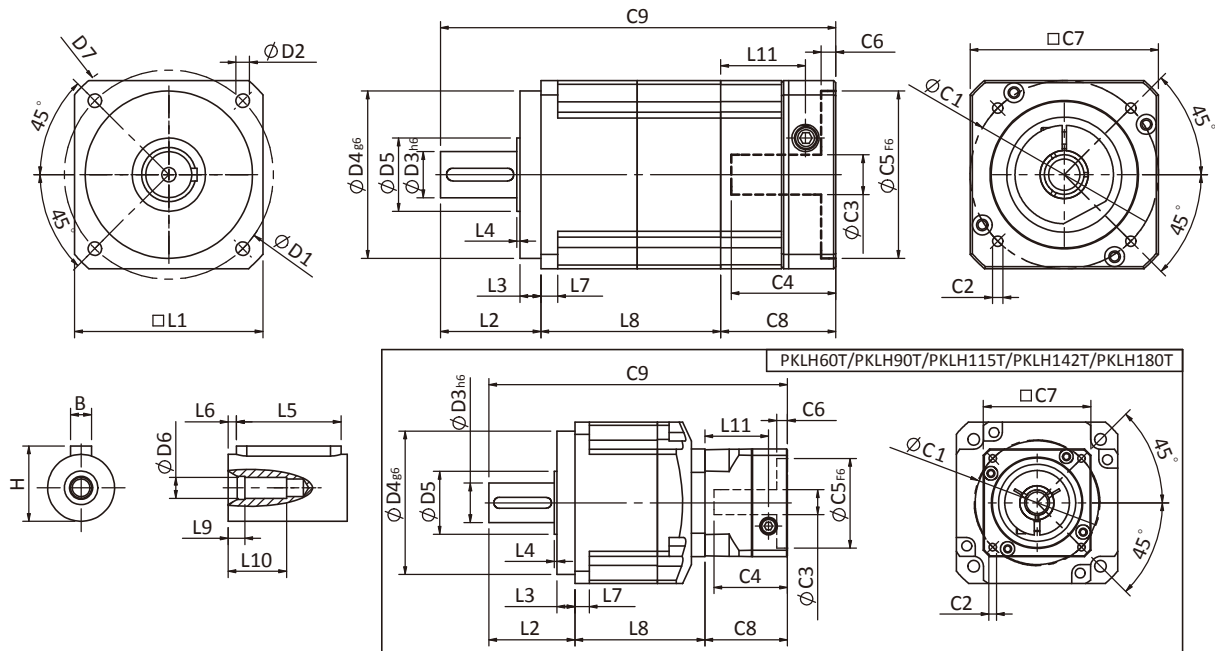
Dimensions	PKLH42	PKLH60	PKLH90	PKLH115	PKLH142	PKLH180
D1	50	70	100	130	165	215
D2	3.4	5.5	6.5	8.5	10.5	13
D3 <sub>h6</sub>	13	16	22	32	40	55
D4 <sub>g6</sub>	35	50	80	110	130	160
D5	15	25	35	45	50	70
D6	M4x0.7P	M5x0.8P	M8x1.25P	M12x1.75P	M16x2.0P	M20x2.5P
D7	56	80	118	148	186	239
L1	42.6	60	90	115	142	182
L2	26	37	48	63	91.5	100.5
L3	5.5	7	10	10	10	16
L4	1	1.5	1.5	3.5	2.5	2.5
L5	15	25	32	40	60	70
L6	2	2	3	5	5	6
L7	4	6	8	11	16	20
L8	28.3	37	46	57	75.5	94
L9	4	4	4.5	6	6	8
L10	14	16.5	20.5	30	38	48
L11	29	35.5	40.5	53.8	62.8	69.5
C1 <sup>2</sup>	46	70	90	115	145	200
C2 <sup>2</sup>	M4x0.7P	M5x0.8P	M6x1.0P	M8x1.25P	M8x1.25P	M12x1.75P
C3 <sup>2</sup>	≤8/≤14	≤14/≤19	≤19/≤24	≤24/≤32/≤38	≅ 35/≅ 38	≅ 50
C4 <sup>2</sup>	27	37	41	56.3	66.5	82
C5 <sup>2</sup> <sub>F6</sub>	30	50	70	95	110	114.3
C6 <sup>2</sup>	4	4	6	10	5.5	10
C7 <sup>2</sup>	42.6	60	90	115	140	180
C8 <sup>2</sup>	38.5	46	55	75	80	95
C9 <sup>2</sup>	92.8	120	149	195	247	289.5
B	5	5	6	10	12	16
H	15	18	24.5	35	43	59

★ C1~C9 are motor specific dimensions(metric std shown ), Size may vary according to motor flange.

★ Specification subject to change without notice.

# PLANETARY GEARHEADS

## PKLH Double Stage Dimensions



## Specifications

Unit:mm

Dimensions	PKLH42	PKLH60	PKLH60T	PKLH90	PKLH90T	PKLH115T	PKLH142T	PKLH180T
D1	50	70		100		130	165	215
D2	3.4	5.5		6.5		8.5	10.5	13
D3 h6	13	16		22		32	40	55
D4 g6	35	50		80		110	130	160
D5	15	25		35		45	50	70
D6	M4x0.7P	M5x0.8P		M8x1.25P		M12x1.75P	M16x2.0P	M20x2.5P
D7	56	80		118		148	186	239
L1	42.6	60		90		115	142	182
L2	26	37		48		63	91.5	100.5
L3	5.5	7		10		10	10	16
L4	1	1.5		1.5		3.5	2.5	2.5
L5	15	25		32		40	60	70
L6	2	2		3		5	5	6
L7	4	6		8		11	16	20
L8	55.3	70	65.5	90	78.5	99.5	127.5	166
L9	4	4		4.5		6	6	8
L10	14	16.5		20.5		30	38	48
L11	29	35.5	29	40.5	35.5	40.5	41.8	62.8
C1 <sup>2</sup>	46	70	46	90	70	90	115	145
C2 <sup>2</sup>	M4x0.7P	M5x0.8P	M4x0.7P	M6x1.0P	M5x0.8P	M6x1.0P	M8x1.25P	M8x1.25P
C3 <sup>2</sup>	≤8/≤14	≤14/≤19	≤8/≤14	≤19/≤24	≤14/≤19	≤19/≤24	≤24/≤32/≤38	≤35
C4 <sup>2</sup>	27	37	27	41	37	41	56	66.5
C5 <sup>2</sup> F6	30	50	30	70	50	70	95	110
C6 <sup>2</sup>	4	4	4	6	4	6	10	5.5
C7 <sup>2</sup>	42.6	60	42.6	90	60	90	115	140
C8 <sup>2</sup>	38.5	46	38.5	55	46	55	63	80
C9 <sup>2</sup>	119.8	153	141	193	172.5	217.5	282	346.5
B	5	5		6		10	12	16
H	15	18		24.5		35	43	59

\* C1~C9 are motor specific dimensions(metric std shown ), Size may vary according to motor flange.

\* Specification subject to change without notice.

## PKLH Specifications Table

Specifications		Stage	Ratio	PKLH42	PKLH60	PKLH90	PKLH115	PKLH142	PKLH180
Nominal Output Torque $T_{2N}$	N • m	1	3	19	53	145	290	520	950
			4	20	55	150	300	550	1000
			5	17	54	140	290	600	1050
			6	15	46	135	280	560	1000
			7	14	44	125	270	530	960
			8	12	41	110	240	480	900
			9	11	37	95	220	430	800
		10	11	37	95	220	430	800	
		Stage	Ratio	PKLH-42	PKLH-60 / PKLH-60T	PKLH-90 / PKLH-90T	PKLH-115T	PKLH-142T	PKLH-180T
		2	15	19	53	145	290	520	950
			20	20	55	150	300	550	1000
			25	17	54	140	290	600	1050
			30	17	54	140	290	600	1050
			35	17	54	140	290	600	1050
			40	17	54	140	290	600	1050
			45	17	54	140	290	600	1050
			50	17	54	140	290	600	1050
			60	15	46	135	280	560	1000
			70	14	44	125	270	530	960
80	12	41	110	240	480	900			
90	11	37	95	220	430	800			
100	11	37	95	220	430	800			
Emergency Stop Torque $T_{2NOT}$	N • m			3.0 times of Nominal Output Torque (*Max. Output Torque $T_{2B}$ = 60% of Emergency Stop Torque)					
Starting Torque	N • m	1	3-10	0.05	0.1	0.35	0.7	1.8	4.5
		2	12-100	0.05	0.1	0.3	0.35	0.6	1.5
Nominal Input Speed $\mathbf{N}_{1N}$	rpm	1,2	3-100	4000	4000	3000	3000	2500	2500
Max. Input Speed $\mathbf{N}_{1max}$	rpm	1,2	3-100	8000	8000	6000	6000	5000	4000
Micro Backlash $P_0$	arcmin	1	3-10	≤ 4	≤ 4	≤ 4	≤ 3	≤ 3	≤ 3
		2	12-100	≤ 6	≤ 6	≤ 6	≤ 5	≤ 5	≤ 5
Precision Backlash $P_1$	arcmin	1	3-10	≤ 6	≤ 6	≤ 6	≤ 5	≤ 5	≤ 5
		2	12-100	≤ 8	≤ 8	≤ 8	≤ 7	≤ 7	≤ 7
Standard Backlash $P_2$	arcmin	1	3-10	≤ 8	≤ 8	≤ 8	≤ 7	≤ 7	≤ 7
		2	12-100	≤ 10	≤ 10	≤ 10	≤ 9	≤ 9	≤ 9
Torsional Rigidity	N • m /arcmin	1,2	3-100	2.5	6	12	23	50	145
Max. Radial Load $F_{2RB}^{-1}$	N	1,2	3-100	640	1260	2230	4300	7140	11050
Max. Axial Load $F_{2aB}^{-1}$	N	1,2	3-100	410	600	1500	3310	4670	6460
Operating Temp.	°C		3-100	-10 °C ~ +90 °C					
Service Life	hr		3-100	20,000 (10,000/ Continuous operation)					
Efficiency	%	1	3-10	≥ 97%					
		2	12-100	≥ 94%					
Weight	kg	1	3-10	0.6	1.3	3.5	7.8	16.1	27
		2	12-100	0.9	2.0/1.6	5.6/3.9	9.5	19	34
Mounting Position	-	1,2	3-100	Any direction					
Noise Level <sup>2</sup>	dB(A)/1m	1,2	3-100	58	60	63	65	67	68
Protection Class	-	1,2	3-100	IP54					
Lubrication	-	1,2	3-100	Synthetic Lubricant					
Inertia (J1)									
Stage	Ratio	unit		PKLH42	PKLH60	PKLH90	PKLH115	PKLH142	PKLH180
1	3	Kg • cm <sup>2</sup>		0.03	0.23	0.97	2.35	10.00	30.50
	4			0.02	0.18	0.67	1.66	7.17	25.86
	5			0.02	0.17	0.65	1.50	6.52	23.63
	6/7/8			0.02	0.14	0.60	1.45	6.17	22.92
	9/10			0.02	0.14	0.58	1.41	6.10	22.73
Stage	Ratio			PKLH42	PKLH60(T)	PKLH90(T)	PKLH115T	PKLH142T	PKLH180T
2	15/20/25			0.02	0.17(0.02)	0.65(0.17)	0.65	1.50	6.52
	30/35/40			0.02	0.14(0.02)	0.60(0.14)	0.60	1.45	6.17
	45/50/60/70/80/90/100			0.02	0.14(0.02)	0.58(0.14)	0.58	1.41	6.10

\* 1. Applied to the output shaft center @100rpm.

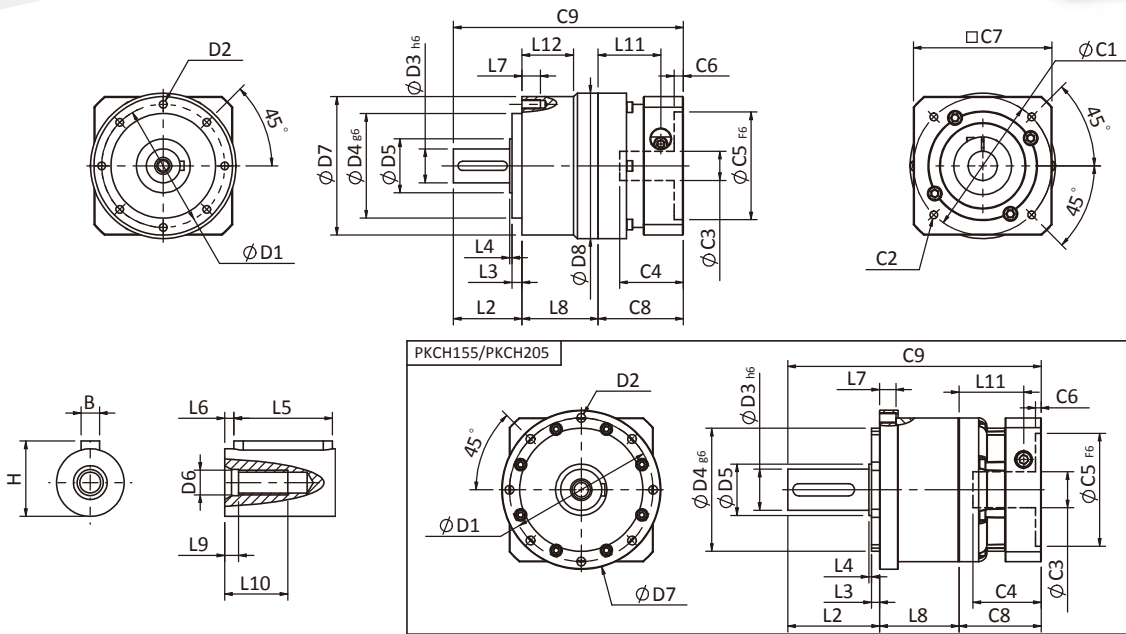
\* 2. Measured at 3000 rpm with no load. These values are measured by gearbox with ratio = 10 (1-stage) or ratio = 100 (2-stage) at nominal input speed or 3000 rpm (if nominal input speed is higher than 3000 rpm) with no load.

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## PKCH Single Stage Dimensions



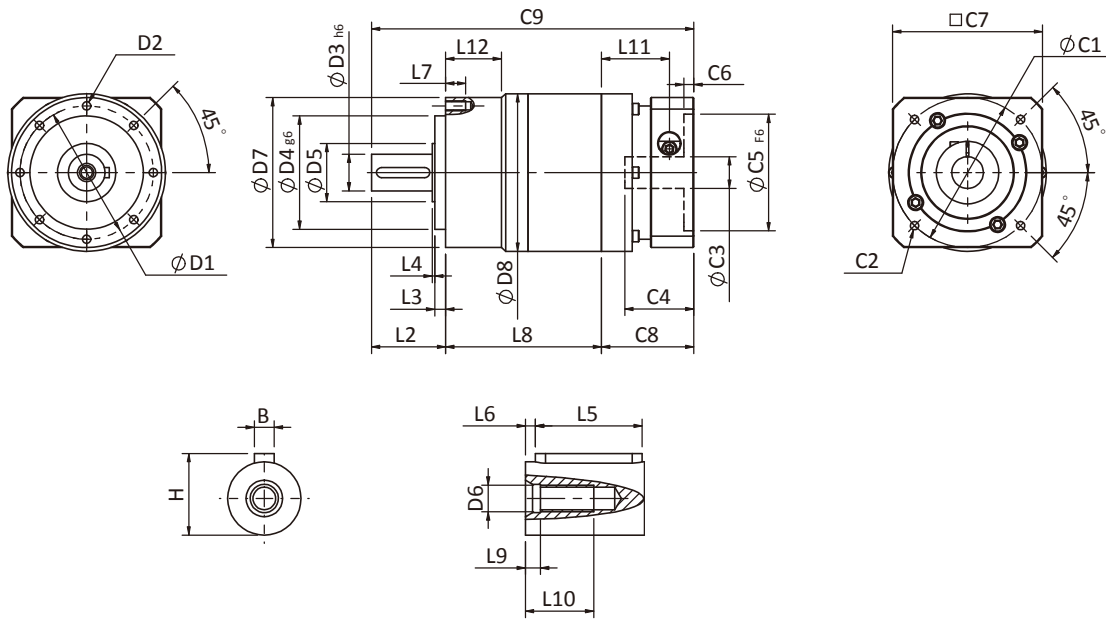
## Specifications

Unit:mm

Dimensions	PKCH50	PKCH70	PKCH90	PKCH120	PKCH155	PKCH205
D1	44	62	80	108	140	184
D2	M4x0.7P	M5x0.8P	M6x1.0P	M8x1.25P	M10x1.5P	M12x1.75P
D3 <sub>h6</sub>	12	16	22	32	40	55
D4 <sub>g6</sub>	35	52	68	90	120	160
D5	15	25	35	45	50	70
D6	M4x0.7P	M5x0.8P	M8x1.25P	M12x1.75P	M16x2.0P	M20x2.5P
D7	50	70	90	120	155	205
D8	-	-	94.5	-	-	-
L2	24.5	36	44.5	60	89.5	96.5
L3	4	6	6.5	7	8	12
L4	1	1.5	1.5	3.5	2.5	2.5
L5	15	25	32	40	60	70
L6	2	2	3	5	5	6
L7	8	10	12	16	16	20
L8	29.8	38	49.5	60	77.5	98
L9	4	4	4.5	6	6	8
L10	12	16.5	20.5	30	38	48
L11	29	35.4	40.7	53.7	63	69.5
L12	-	-	33.5	-	-	-
C1 <sup>2</sup>	46	70	90	115	145	200
C2 <sup>2</sup>	M4x0.7P	M5x0.8P	M6x1.0P	M8x1.25P	M8x1.25P	M12x1.75P
C3 <sup>2</sup>	≤8/≤11	≤14/≤19	≤19/≤24	≤24/≤32/≤38	≤35/≤38	≤50
C4 <sup>2</sup>	26.5	37.6	41.4	51.3	66.5	77
C5 <sup>2</sup> <sub>F6</sub>	30	50	70	95	110	114.3
C6 <sup>2</sup>	4.1	4.5	6	6	5.5	6
C7 <sup>2</sup>	42	60	90	115	140	180
C8 <sup>2</sup>	38.1	46.5	55.4	70	80	90
C9 <sup>2</sup>	92.4	120.5	149.4	190	247	284.5
B	4	5	6	10	12	16
H	13.5	18	24.5	35	43	59

★ C1~C9 are motor specific dimensions(metric std shown ), Size may vary according to the motor flange chosen.  
★ Specification subject to change without notice.

## PKCH Double Stage Dimensions-1



## Specifications

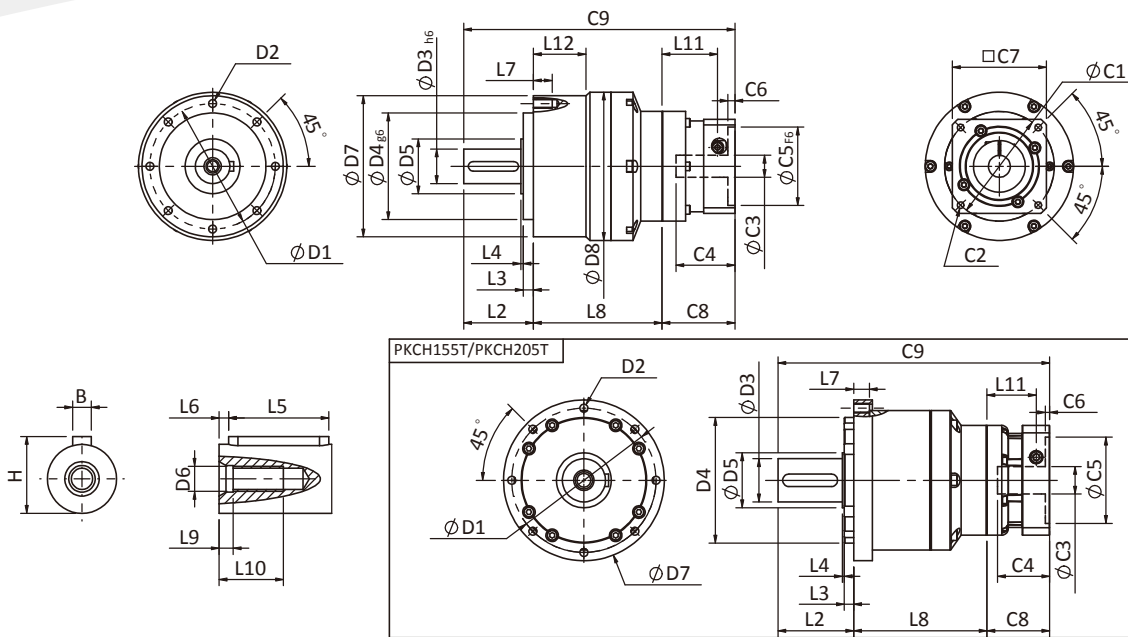
Unit:mm

Dimensions	PKCH50	PKCH70	PKCH90
D1	44	62	80
D2	M4x0.7P	M5x0.8P	M6x1.0P
D3 <sub>h6</sub>	12	16	22
D4 <sub>g6</sub>	35	52	68
D5	15	25	35
D6	M4x0.7P	M5x0.8P	M8x1.25P
D7	50	70	90
D8	-	-	94.5
L2	24.5	36	44.5
L3	4	6	6.5
L4	1	1.5	1.5
L5	15	25	32
L6	2	2	3
L7	8	10	12
L8	56.8	71	93.5
L9	4	4	4.5
L10	12	16.5	20.5
L11	29	35.4	40.7
L12	-	-	33.5
C1 <sup>2</sup>	46	70	90
C2 <sup>2</sup>	M4x0.7P	M5x0.8P	M6x1.0P
C3 <sup>2</sup>	≤8/≤11	≤14/≤19	≤19/≤24
C4 <sup>2</sup>	26.5	37.6	41.4
C5 <sup>2</sup> <sub>F6</sub>	30	50	70
C6 <sup>2</sup>	4.1	4.5	6
C7 <sup>2</sup>	42	60	90
C8 <sup>2</sup>	38.1	46.5	55.4
C9 <sup>2</sup>	119.4	153.5	193.4
B	4	5	6
H	13.5	18	24.5

\* C1~C9 are motor specific dimensions(metric std shown ),Size may vary according to the motor flange chosen.  
 \* Specification subject to change without notice.



## PKCH Double Stage Dimensions-2



## Specifications

Unit:mm

Dimensions	PKCH70T	PKCH90T	PKCH120T	PKCH155T	PKCH205T
D1	62	80	108	140	184
D2	M5x0.8P	M6x1.0P	M8x1.25P	M10x1.5P	M12x1.75P
D3 <sub>h6</sub>	16	22	32	40	55
D4 <sub>g6</sub>	52	68	90	120	160
D5	25	35	45	50	70
D6	M5x0.8P	M8x1.25P	M12x1.75P	M16x2.0P	M20x2.5P
D7	70	90	120	155	205
D8	-	94.5	-	-	-
L2	36	44.5	60	89.5	96.5
L3	6	6.5	7	8	12
L4	1.5	1.5	3.5	2.5	2.5
L5	25	32	40	60	70
L6	2	3	5	5	6
L7	10	12	16	16	20
L8	66.5	82	102.5	129.5	170
L9	4	4.5	6	6	8
L10	16.5	20.5	30	38	48
L11	29	35.4	40.7	53.7	63
L12	-	33.5	-	-	-
C1 <sup>2</sup>	46	70	90	115	145
C2 <sup>2</sup>	M4x0.7P	M5x0.8P	M6x1.0P	M8x1.25P	M8x1.25P
C3 <sup>2</sup>	≤8/≤11	≤14/≤19	≤19/≤24	≤24/≤32/≤38	≤35/≤38
C4 <sup>2</sup>	26.5	37.6	41.4	51.3	66.5
C5 <sup>2</sup> <sub>F6</sub>	30	50	70	95	110
C6 <sup>2</sup>	4.1	4.5	6	6	5.5
C7 <sup>2</sup>	42	60	90	115	140
C8 <sup>2</sup>	38.1	46.5	55.4	70	80
C9 <sup>2</sup>	140.6	173	217.9	289	346.5
B	5	6	10	12	16
H	18	24.5	35	43	59

★ C1~C9 are motor specific dimensions(metric std shown ), Size may vary according to the motor flange chosen.  
★ Specification subject to change without notice.

## PKCH Specifications Table

Specifications		Stage	Ratio	PKCH50	PKCH70	PKCH90	PKCH120	PKCH155	PKCH205
Nominal Output Torque $T_{2N}$	N • m	1	3	19	53	145	290	520	950
			4	20	55	150	300	550	1000
			5	17	54	140	290	600	1050
			6	15	46	135	280	560	1000
			7	14	44	125	270	530	960
			8	12	41	110	240	480	900
			9	11	37	95	220	430	800
		10	11	37	95	220	430	800	
		Stage	Ratio	PKCH50	PKCH-70(T)	PKCH-90(T)	PKCH-120T	PKCH155T	PKCH205T
		2	15	19	53	145	290	520	950
			20	20	55	150	300	550	1000
			25	17	54	140	290	600	1050
			30	17	54	140	290	600	1050
			35	17	54	140	290	600	1050
			40	17	54	140	290	600	1050
			45	17	54	140	290	600	1050
			50	17	54	140	290	600	1050
			60	15	46	135	280	560	1000
			70	14	44	125	270	530	960
80	12		41	110	240	480	900		
90	11		37	95	220	430	800		
100	11	37	95	220	430	800			
Emergency Stop Torque $T_{2NOT}$	N • m	3.0 times of Nominal Output Torque (*Max. Output Torque $T_{2B}$ =60% of Emergency Stop Torque)							
Starting Torque	N • m	1	3-10	0.05	0.1	0.35	0.7	1.8	4.5
		2	12-100	0.05	0.1	0.3	0.35	0.6	1.5
Nominal Input Speed $n_{1N}$	rpm	1,2	3-100	4000	4000	3000	3000	2500	2500
Max. Input Speed $n_{1max}$	rpm	1,2	3-100	8000	8000	6000	6000	5000	4000
Micro Backlash $P_0$	arcmin	1	3-10	≤ 4	≤ 4	≤ 4	≤ 3	≤ 3	≤ 3
		2	12-100	≤ 6	≤ 6	≤ 6	≤ 5	≤ 5	≤ 5
Precision Backlash $P_1$	arcmin	1	3-10	≤ 6	≤ 6	≤ 6	≤ 5	≤ 5	≤ 5
		2	12-100	≤ 8	≤ 8	≤ 8	≤ 7	≤ 7	≤ 7
Standard Backlash $P_2$	arcmin	1	3-10	≤ 8	≤ 8	≤ 8	≤ 7	≤ 7	≤ 7
		2	12-100	≤ 10	≤ 10	≤ 10	≤ 9	≤ 9	≤ 9
Torsional Rigidity	N • m /arcmin	1,2	3-100	2.5	6	12	23	50	145
Max. Radial Load $F_{2rB}^{-1}$	N	1,2	3-100	640	1260	2230	4300	7140	11050
Max. Axial Load $F_{2aB}^{-1}$	N	1,2	3-100	410	600	1500	3310	4670	6460
Operating Temp.	°C	-10 °C ~ +90 °C							
Service Life	hr	3-100 20,000 (10,000/Continuous operation)							
Efficiency	%	1	3-10	≥ 97%					
		2	12-100	≥ 94%					
Weight	kg	1	3-10	0.6	1.3	3.5	7.8	16.1	27
		2	12-100	0.9	2.0/1.6	5.6/3.9	9.5	19	34
Mounting Position	-	1,2	3-100	Any direction					
Noise Level <sup>2</sup>	dB(A)/1m	1,2	3-100	58	60	63	65	67	68
Protection Class	-	1,2	3-100	IP54					
Lubrication	-	1,2	3-100	Synthetic Lubricant					
Inertia(J1)									
Stage	Ratio	unit		PKCH50	PKCH70	PKCH90	PKCH120	PKCH155	PKCH205
1	3	Kg • cm <sup>2</sup>		0.03	0.23	0.97	2.35	10.00	30.50
	4			0.02	0.18	0.67	1.66	7.17	25.86
	5			0.02	0.17	0.65	1.50	6.52	23.63
	6/7/8			0.02	0.14	0.60	1.45	6.17	22.92
	9/10			0.02	0.14	0.58	1.41	6.10	22.73
Stage	Ratio			PKCH50	PKCH-70(T)	PKCH-90(T)	PKCH-120T	PKCH155T	PKCH205T
2	15/20/25			0.02	0.17(0.02)	0.65(0.17)	0.65	1.50	6.52
	30/35/40			0.02	0.14(0.02)	0.60(0.14)	0.60	1.45	6.17
	45/50/60/70/80/90/100			0.02	0.14(0.02)	0.58(0.14)	0.58	1.41	6.10

\* 1. Applied to the output shaft center @100rpm.

\* 2. Measured at 3000 rpm with no load. These values are measured by gearbox with ratio = 10 (1-stage) or ratio = 100 (2-stage) at nominal input speed or 3000 rpm (if nominal input speed is higher than 3000 rpm) with no load.

※ The above figures/specifications are subject to change without prior notice.

Products due to human error, natural disasters or other factors lead to poor or damaged, will not be covered under warranty.



599, Sec 1, Hemu Rd., Shengang, Taichung,  
42953, Taiwan  
TEL : +886-4-2561-0011  
FAX : +886-4-2562-7766  
www.sesamemotor.com  
info@sesamemotor.com.tw  
Skype Phone : sesame\_motor

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# PLANETARY GEARHEADS

*Low Starting Torque K Series*

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