

PUA

The PUA series of output shaft in-line helical gearbox provide a wide range of performance levels to high positioning accuracy and motion control applications, particularly when high radial loading is required. Frame sizes 60-140 mm with the best level of backlash < 1 arc-min. Maximum radial load capacity up to 11380N (PUA-140), and axial load capacity up to 8830N. The PUA is specially well suited to work with pinion and rack for linear operation. Commonly adapted in metal cutting machines, wood processing equipment, machine centers and highly dynamic motion control systems. The reinforced model PUL series are available with extra high radial loading performance.

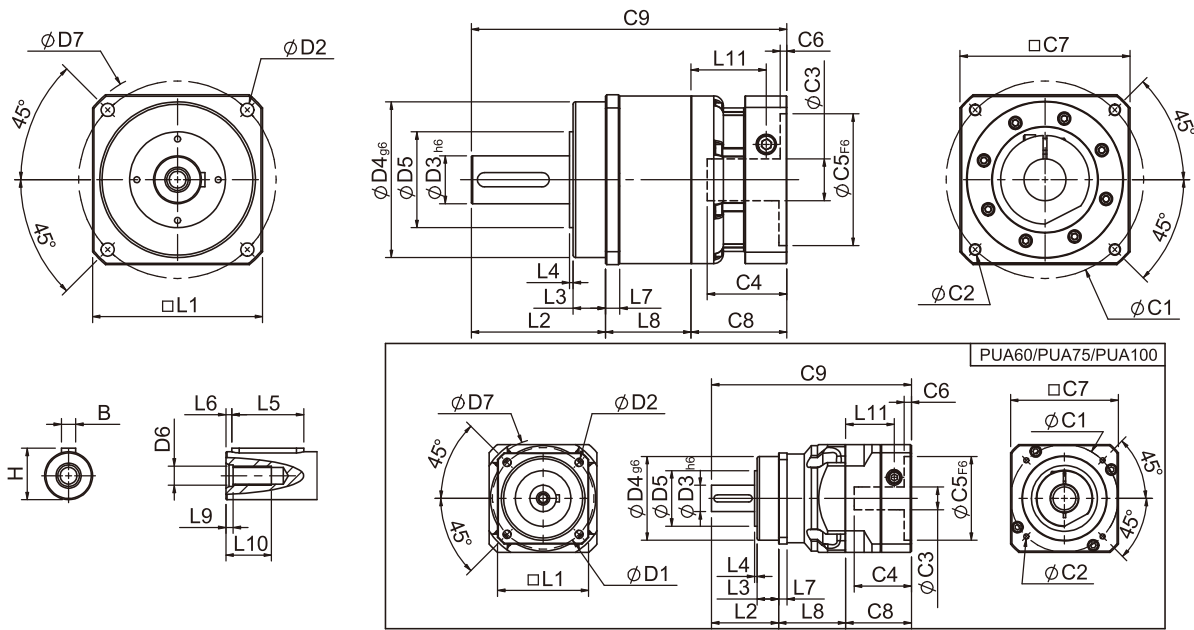


Frame Size (mm)	60, 75, 100, 140
Ratio	3:1 - 100 : 1
Nominal Input Speed (rpm)	2,500 - 4,000
Max Input Speed (rpm)	4,500 - 6,000
Backlash (arc-min)	1 Stage : 1 - 6 2 Stages : 3 - 8
Noise Level (dBA / 1m)	58 - 65

Features

- ▶ 3 levels of backlash, 4 frame sizes from 60-140 mm.
- ▶ Premium and precision gear design, ratios from 3:1-100:1.
- ▶ One-piece planet carrier/output shaft, high rigidity and radial load capacity.
- ▶ Radial load capacity as high as 11380 N, and axial capacities up to 8830 N.
- ▶ Hardened and ground gearing, high wear resistance and impact toughness.
- ▶ One-piece ring gear/housing, high precision and torque output.
- ▶ Planets with full needle bearing support.
- ▶ IP65 enclosure and synthetic lubricant, maintenance-free service life.

PUA Single Stage Dimensions



Specifications

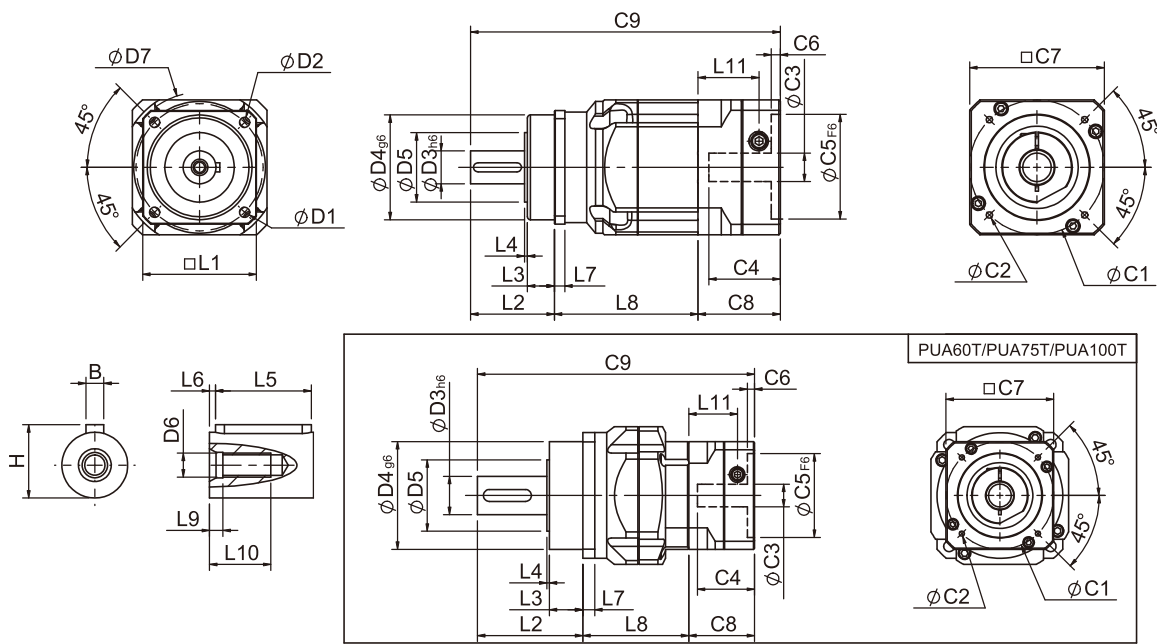
Unit:mm

Dimensions	PUA60	PUA75	PUA100	PUA140
D1	68	85	120	165
D2	5.5	6.8	9	11
D3 _{h6}	16	22	32	40
D4 _{g6}	60	70	90	130
D5	34.4	46.4	59.6	79.2
D6	M5x0.8P	M8x1.25P	M12x1.75P	M16x2.0P
D7	80	100	138	186
L1	62	76	105	142
L2	48.5	56	88	112
L3	18.5	18	28	27
L4	1.5	2	2	3
L5	25	32	40	60
L6	2	2	5	5
L7	6	7	10	12
L8	32.5	56	46	71.5
L9	4	4.5	6	6
L10	16.5	20.5	30	38
L11	35.5	40.5	41.8	62.8
C1 ²	70	90	115	165
C2 ²	M5x0.8P	M6x1P	M8x1.25P	M10x1.5P
C3 ²	≤14/≤19	≤19/≤24	≤24/≤32/≤38	≤35/≤38
C4 ²	37	47.8	51	66.5
C5 ² _{F6}	50	70	95	130
C6 ²	4	6	6	5.5
C7 ²	60	90	115	140
C8 ²	46	55	58	80
C9 ²	127	167	192	263.5
B	5	6	10	12
H	18	24.5	35	43

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

★ Specification subject to change without notice.

PUA Double Stage Dimensions-1



Specifications

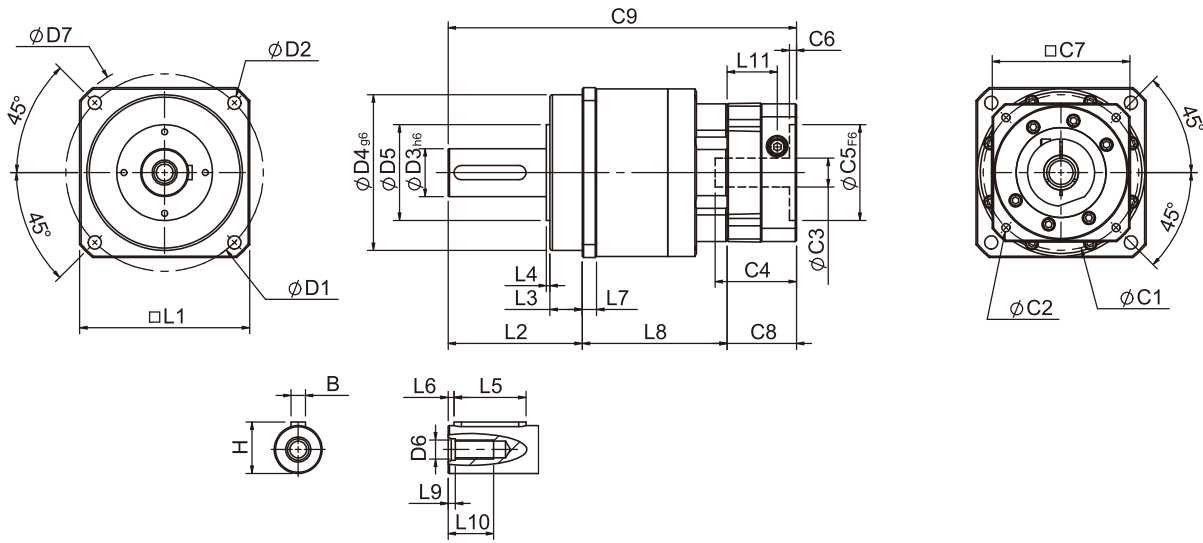
Unit:mm

Dimensions	PUA60	PUA60T	PUA75	PUA75T	PUA100T
D1		68		85	120
D2		5.5		6.8	9
D3 _{h6}		16		22	32
D4 _{g6}		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 ²	70	46	90	70	90
C2 ²	M5x0.8P	M4x0.7P	M6x1P	M5x0.8P	M6x1P
C3 ²	≤14/≤19	≤8/≤14	≤19/≤24	≤14/≤19	≤19/≤24
C4 ²	37	27	47.8	37	47.8
C5 ^{2F6}	50	30	70	50	70
C6 ²	4	4	6	4	6
C7 ²	60	42.6	90	60	90
C8 ²	46	38.5	55	46	55
C9 ²	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 motor flange.

* Specification subject to change without notice.

PUA Double Stage Dimensions-2



Specifications

Unit:mm

Dimensions	PUA140T	-	-
D1	165	-	-
D2	11	-	-
D3 _{h6}	40	-	-
D4 _{g6}	130	-	-
D5	79.2	-	-
D6	M16x2.0P	-	-
D7	186	-	-
L1	142	-	-
L2	112	-	-
L3	27	-	-
L4	3	-	-
L5	60	-	-
L6	5	-	-
L7	12	-	-
L8	121	-	-
L9	6	-	-
L10	38	-	-
L11	41.8	-	-
C1 ²	130	-	-
C2 ²	M8x1.25P	-	-
C3 ²	≤24/≤32/≤38	-	-
C4 ²	51	-	-
C5 ^{2F6}	110	-	-
C6 ²	6	-	-
C7 ²	115	-	-
C8 ²	58	-	-
C9 ²	291	-	-
B	12	-	-
H	43	-	-

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

★ Specification subject to change without notice.

PUA Specifications

Specifications		Stage	Ratio	PUA60	PUA-75	PUA-100	PUA-140
Nominal Output Torque T_{2N}	N•m	1	3	53	145	180	340
			4	55	150	240	500
			5	54	140	290	600
			6	46	135	280	560
			7	44	125	270	530
			8	41	110	240	480
			9	37	95	220	430
		10	37	95	220	430	
		Stage	Ratio	PUA-60/ PUA-60T	PUA-75/ PUA-75T	PUA-100T	PUA-140T
		2	15	53	145	180	520
			20	55	150	240	600
			25	54	140	290	600
			30	54	140	290	600
			35	54	140	290	600
			40	54	140	290	600
			45	54	140	290	600
			50	54	140	290	600
			60	46	135	280	560
			70	44	125	270	530
80	41		110	240	480		
90	37		95	220	430		
100	37	95	220	430			
Emergency Stop Torque T_{2NOT}	N•m	(3.0 times of Nominal Output Torque) (*Max. Output Torque T_{2e} =60% of Emergency Stop Torque)					
Nominal Input Speed n_{1N}	rpm	1,2	3-100	4000	3500	3000	2500
Max. Input Speed n_{1max}	rpm	1,2	3-100	6000	6000	5000	4500
Micro Backlash P0	arcmin	1	3-10	≤ 2	≤ 2	≤ 1	≤ 1
		2	12-100	≤ 4	≤ 4	≤ 3	≤ 3
Precision Backlash P1	arcmin	1	3-10	≤ 4	≤ 4	≤ 3	≤ 3
		2	12-100	≤ 6	≤ 6	≤ 5	≤ 5
Standard Backlash P2	arcmin	1	3-10	≤ 6	≤ 6	≤ 5	≤ 5
		2	12-100	≤ 8	≤ 8	≤ 7	≤ 7
Torsional Rigidity	N•m/ arcmin	1,2	3-100	7	14	25	50
Max. Radial Load F_{2rB}^{-1}	N	1,2	3-100	1900	5000	7410	11380
Max. Axial Load F_{2aB}^{-1}	N	1,2	3-100	1500	3080	4500	8830
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
		2	12-100	2.0/1.7	5.2/4.0	8.1	17.5
Mounting Position	-	1,2	3-100	Any Direction			
Noise Level ²	dBA/1m	1,2	3-100	58	60	63	65
Protection Class	-	1,2	3-100	IP65			
Lubrication	-	1,2	3-100	Synthetic Lubricant			
Inertia (J1)							
Stage	Ratio	unit		PUA60	PUA-75	PUA-100	PUA-140
1	3	kg•cm ²		0.23	0.97	2.35	10.00
	4			0.18	0.67	1.66	7.17
	5			0.17	0.65	1.50	6.52
	6/7/8			0.14	0.60	1.45	6.17
	9/10			0.14	0.58	1.41	6.10
Stage	Ratio			PUA60(T)	PUA75(T)	PUA100T	PUA140T
2	15/20			0.17(0.02)	0.65(0.17)	0.65	2.35
	25/30/35/40			0.14(0.02)	0.60(0.14)	0.60	1.45
	45/50/60/70/80/90/100			0.14(0.02)	0.58(0.14)	0.58	1.41

* 1. Applied to the output shaft center at 100 rpm.

* 2. Environment noise level 30 dB; distance 1m; measured under free loading with input speed 3000 rpm; ratio = 10 (1-stage) or ratio = 100 (2-stage).

※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.

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