

PAC

General Speed Reduction Applications

Standard Planetary Gearboxes

Features a round mounting flange and a caged standard class planetary gear design.

Compact in-line housing available in sizes up to 120 mm.

Performance Benefits:

- Offers an economic alternative for torque capacity.
- Designed for quiet performance.
- High accuracy with backlash as low as <6 arc-min.



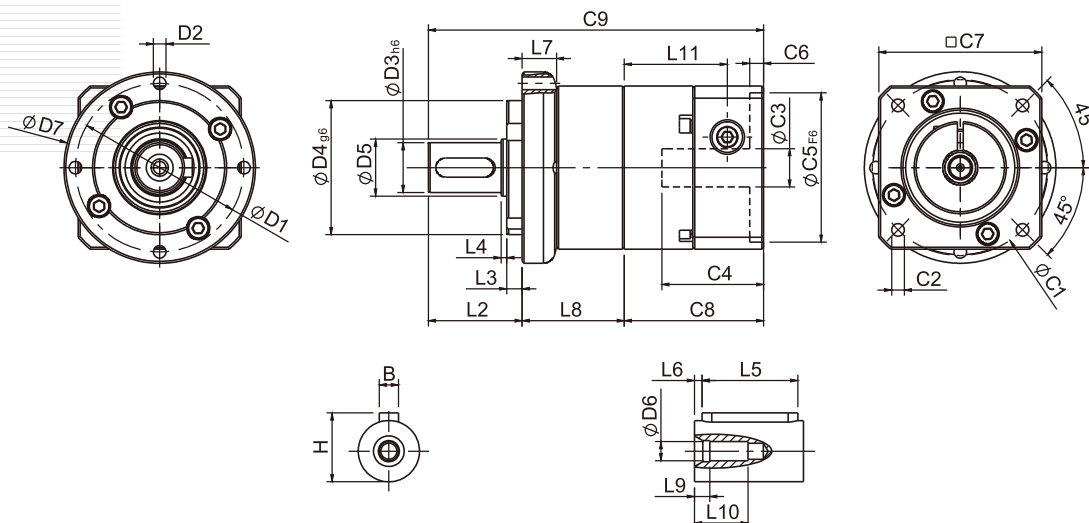
PAC

Frame Size (mm)	50, 70, 90, 120
Ratio	3 : 1 - 100 : 1
Nominal Input Speed (rpm)	2,500 - 4,000
Max Input Speed (rpm)	5,000 - 8,000
Backlash (arc-min)	1 Stage : 6 - 9 2 Stages : 8 - 12
Noise Level (dBA / 1m)	61 - 67

Features

- ▶ In-line Configuration.
- ▶ Output shaft, 12 mm through 32 mm diameter.
- ▶ Torque Capacity Range: 8 Nm through 260 Nm.
- ▶ Caged Planet Carrier: with standard planet gear set.
- ▶ High performance, efficiencies and low acoustics.
- ▶ Wide Range of Ratios: 6 single stage, 12 two stage ratios.
- ▶ Output Bearings deliver radial load capacity as high as 4200 N, and axial capacities up to 2600 N.
- ▶ Square Servo and Step Motor input: accommodates 40 mm through 130 mm, with optional sizes available.

PAC Single Stage Dimensions



Specifications

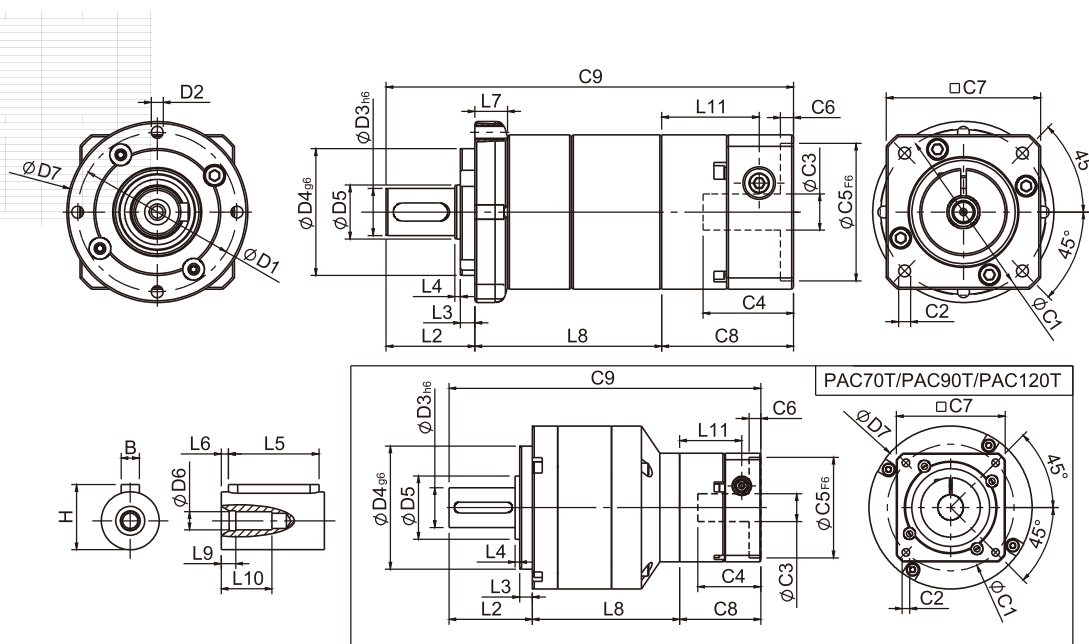
Unit:mm

Dimensions	PAC50	PAC70	PAC90	PAC120
D1	44	62	80	108
D2	M4x0.7P	M5x0.8P	M6x1.0P	M8x1.25P
D3 _{h6}	12	16	22	32
D4 _{g6}	35	52	68	90
D5	15	20	35	45
D6	M4x0.7P	M5x0.8P	M8x1.25P	M12x1.75P
D7	50	70	90	120
L2	24.5	36	46	60
L3	4	6	7	7
L4	1.5	1.5	2.5	2
L5	15	25	32	40
L6	2	2	3	5
L7	8.8	13.3	14	15
L8	26.5	37.3	43.8	65.3
L9	4	4	4.5	6
L10	12	16.5	20.5	30
L11	26.9	34.3	41.2	51.5
C1 ²	46	70	90	145
C2 ²	M4x0.7P	M5x0.8P	M6x1.0P	M8x1.25P
C3 ²	≤8/≤11	≤14/≤19	≤19/≤24/≤28	≤24/≤32/≤38
C4 ²	26.5	33.5	41	51.5
C5 ² _{F6}	30	50	70	40
C6 ²	4	4	6	6
C7 ²	42.6	60	90	130
C8 ²	36.4	44.8	55.8	68
C9 ²	87.4	118.1	145.6	193.3
B	4	5	6	10
H	13.5	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.

PAC Double Stage Dimensions-1



Specifications

Unit:mm

Dimensions	PAC50	PAC70	PAC70T	PAC90	PAC90T	PAC120T
D1	44	62		80		108
D2	M4x0.7P	M5x0.8P		M6x1.0P		M8x1.25P
D3 _{h6}	12	16		22		32
D4 _{g6}	35	52		68		90
D5	15	20		35		45
D6	M4x0.7P	M5x0.8P		M8x1.25P		M12x1.75P
D7	50	70		90		120
L2	24.5	36		46		60
L3	4	6		7		7
L4	1.5	1.5		2.5		2
L5	15	25		32		40
L6	2	2		3		5
L7	8.8	13.3		14		15
L8	51.4	68	63.6	84.8	74.3	103.4
L9	4	4		4.5		6
L10	14	16.5		20.5		30
L11	26.9	34.3	26.6	41.5	34.3	41.5
C1 ²	46	70	46	90	70	90
C2 ²	M4x0.7P	M5x0.8P	M4x0.7P	M6x1.0P	M5x0.8P	M8x1.25P
C3 ²	≤8/≤11	≤14/≤19	≤8/≤11	≤19/≤24/≤28	≤14/≤19	≤19/≤24/≤28
C4 ²	26.5	33.5	26.5	41	33.5	41
C5 ² _{F6}	30	50	30	70	50	70
C6 ²	4	4	4	6	4	6
C7 ²	42.6	60	42.6	90	60	90
C8 ²	36.4	44.8	36.4	55.8	44.8	55.8
C9 ²	112.3	148.8	136	186.6	165.1	219.2
B	4	5		6		10
H	13.5	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.

PAC Specifications

Specifications		Stage	Ratio	PAC-50	PAC-70	PAC-90	PAC-120
Nominal Output Torque T _{2N}	N•m	1	3	9	28	85	210
			4	10	32	80	240
			5	11	35	95	260
			7	10	28	85	220
			9	8	23	75	210
			10	8	21	65	190
		Stage	Ratio	PAC-50	PAC-70/ 70T	PAC-90/ 90T	PAC-120T
		2	15	11	34	90	230
			20	10	32	80	240
			25	11	35	95	260
			30	-	-	-	260
			35	11	35	95	260
			40	-	-	-	260
			45	11	35	95	260
			49	10	-	-	-
			50	-	35	95	260
			63	10	-	-	-
			70	-	28	85	220
			100	8	21	65	190
Emergency Stop Torque T _{2NOT}	N•m		(3.0 times of Nominal Output Torque) (*Max. Output Torque T _{2B} =60% of Emergency Stop Torque)				
Nominal Input Speed n _{1N}	rpm	1,2	3-100	4000	4000	3000	2500
Max. Input Speed n _{1max}	rpm	1,2	3-100	8000	6000	6000	5000
Standard Backlash P2	arcmin	1 2	3-10 15-100	≤ 9 ≤ 12	≤ 8 ≤ 10	≤ 7 ≤ 9	≤ 6 ≤ 8
Torsional Rigidity	N•m /arcmin	1,2	3-100	1.5	4.0	8.5	17
Max. Radial Load F _{2rB} ¹	N	1,2	3-100	760	1250	2030	4200
Max. Axial Load F _{2aB} ¹	N	1,2	3-100	410	700	1200	2600
Operating Temp.	°C		3-100	-10°C~ +90 °C			
Service Life	hr		3-100	20,000 (10,000 Continuous operation)			
Efficiency	%	1 2	3-10 15-100	≥ 95% ≥ 90%			
Weight	kg	1 2	3-10 15-100	0.6 0.8	1.3 1.8(1.6)	3.2 4.8(3.7)	7.5 9.2
Mounting Position	-	1,2	3-100	Any Direction			
Noise Level ²	dBA/1m	1,2	3-100	61	63	66	67
Protection Class	-	1,2	3-100	IP65			
Lubrication	-	1,2	3-100	Synthetic Lubricant			
Inertia (J1)							
Stage	Ratio	unit	PAC-50(ψ8)	PAC-70(ψ14)	PAC-90(ψ19)	PAC-120(ψ24)	
1	3	Kg · cm ²	0.04	0.23	0.77	2.30	
	4		0.03	0.21	0.67	1.92	
	5		0.03	0.21	0.61	1.71	
	7		0.03	0.21	0.60	1.65	
	9/10		0.03	0.21	0.60	1.63	
Stage	Ratio		PAC-50(ψ8)	PAC-70(ψ14)/ 70T(ψ8)	PAC-90(ψ19)/ 90T(ψ14)	PAC-120T (ψ19)	
2	15/20/25		0.03	0.21(0.03)	0.61(0.21)	0.61	
	30/35/49		0.03	0.21(0.03)	0.60(0.21)	0.60	
	40/45/50/63/70/100		0.03	0.21(0.03)	0.60(0.21)	0.60	

* 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.