

PAN

Standard Series Planetary Gearboxes



Equipped with a NEMA output flange and a metric shaft.

Designed as easy drop-ins for most industry standards.

Performance Benefits:

- Offers exceptional torque ratings and capacity.
- High accuracy with a best backlash of <6 arc-minutes.

Versatility:

- Available in single to three stages.
- Ratios ranging from 3:1 up to 1000:1.
- Includes adapters for all servo and stepper motors.

Ideal for various servo and stepper motion control applications.

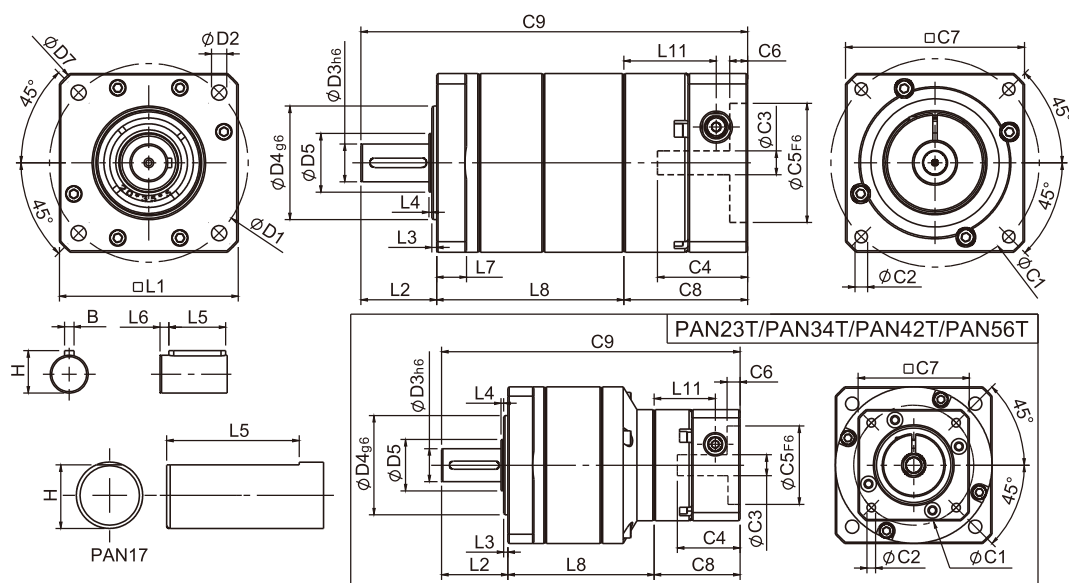
PAN

Frame Size (mm)	17, 23, 34, 42, 56
Ratio	3:1-1000:1
Nominal Input Speed (rpm)	2,500 - 4,000
Max Input Speed (rpm)	5,000 - 6,000
Backlash (arc-min)	1 Stage: 6 - 9 2 Stages: 8 - 12 3 Stages: 12 - 15
Noise Level (dBA / 1m)	60 - 67

Features

- ▶ NEMA spec motor bracket
- ▶ Torque capacity range: 8 Nm through 215 Nm.
- ▶ Caged planet carrier: with standard planet gear set
- ▶ High performance, efficiencies and low acoustics.
- ▶ Wide range of ratios up to 1000:1.
- ▶ Output bearings deliver radial load capacity as high as 4760 N, and axial capacities up to 2630 N.

PAN Double Stage Dimensions



Specifications

Unit:mm

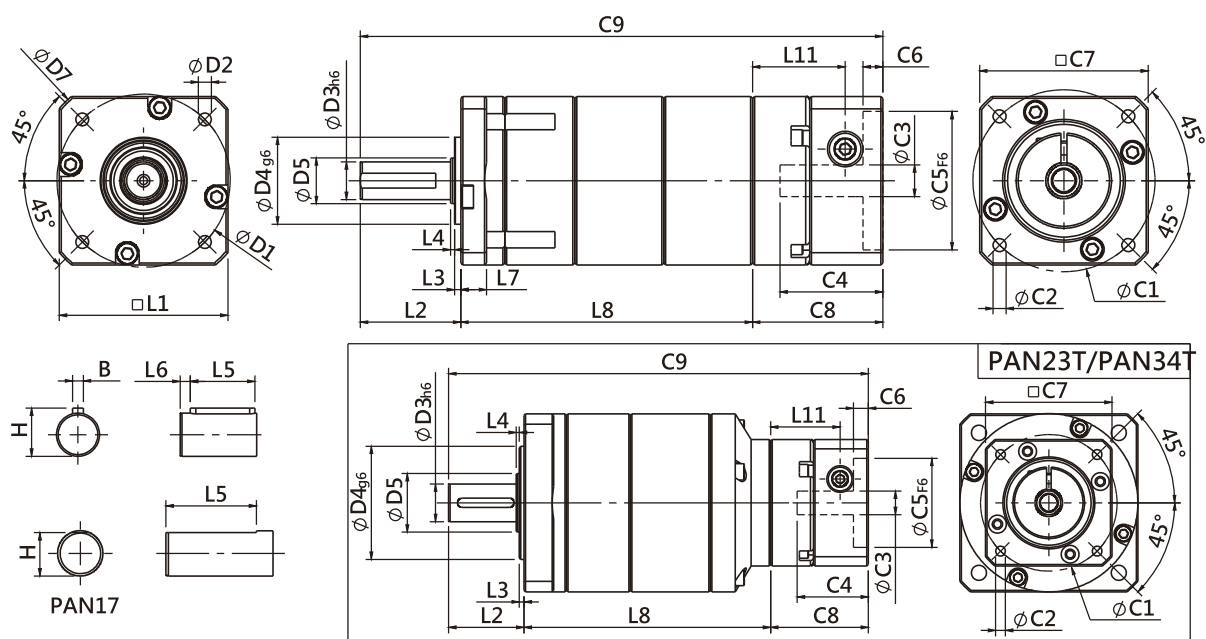
Dimensions	PAN17	PAN23	PAN23T	PAN34	PAN34T	PAN42T	PAN56T
D1	43.8	66.67		98.425		125.73	177.8
D2	3.25	5.1		5.6		7.1	10.2
D3 _{h6}	9.525	12.7		19.05		25	25
D4 _{g6}	21.97	38.1		73.025		55.55	114.3
D5	12	20		35		32	-
D7	56	80		118		148	195
L1	42.6 (44) ¹	60		90		115	145
L2	25.4	25.4		31.75		42	41
L3	1.6	1.6		1.7		2.4	4
L4	1	1		1		2	-
L5	19.05	19.05		25.4		32	32
L6	-	3		3		4	4
L7	6.5	10		12		19	20
L8	51.25	62.8	56.1	77.3	72.8	105.5	106.5
L11	23.4	31	23.4	37.3	31	37.3	37.3
C1 ²	46	70	46	90	70	90	90
C2 ²	M4x0.7P	M5x0.8P	M4x0.7P	M6x1.0P	M5x0.8P	M6x1.0P	M6x1.0P
C3 ²	≤8/≤11	≤14/≤19	≤8/≤11	≤19/≤24/≤28	≤14/≤19	≤19/≤24/≤28	≤19/≤24/≤28
C4 ²	26.5	33.5	26.5	41	33.5	41	41
C5 ^{2F6}	30	50	30	70	50	70	70
C6 ²	4	4	4	6	4	6	6
C7 ²	42.6	60	42.6	90	60	90	90
C8 ²	32.9	41.5	32.9	51.5	41.5	51.5	51.5
C9 ²	109.55	129.7	114.4	160.55	146.05	199	199
B	-	3.175		4.763		8	8
H	9.14	14.1		21.1		28	28

★ L1=44 when gear ratio is 100.

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

★ Specification subject to change without notice.

PAN Triple Stage Dimensions



Specifications

Unit:mm

Dimensions	PAN17	PAN23T	PAN34T
D1	43.8	66.67	98.425
D2	3.25	5.1	5.6
D3 _{h6}	9.525	12.7	19.05
D4 _{g6}	21.97	38.1	73.025
D5	12	20	35
D7	56	80	118
L1	42.6 (44)	60	90
L2	25.4	25.4	31.75
L3	1.6	1.6	1.7
L4	1	1	1
L5	19.05	19.05	25.4
L6	-	3	3
L7	6.5	10	12
L8	73.7	83.1	106.6
L11	23.4	23.4	31
C1 ²	46	46	70
C2 ²	M4x0.7P	M4x0.7P	M5x0.8P
C3 ²	≤8/≤11	≤8/≤11	≤14/≤19
C4 ²	26.5	26.5	33.5
C5 ² F ₆	30	30	50
C6 ²	4	4	4
C7 ²	42.6	42.6	60
C8 ²	32.9	32.9	41.5
C9 ²	132	141.4	179.85
B	-	3.175	4.763
H	9.14	14.1	21.1

★ L1=44 when gear ratio is 1000.

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

★ Specification subject to change without notice.

PAN Specifications

Specifications		Stage		Ratio	PAN17	PAN23	PAN34	PAN42	PAN56	
Nominal Output Torque T_{2N}	N•m	1		3	9	28	85	200	200	
				4	10	32	80	215	215	
					5	11	35	95	215	215
					7	10	28	85	200	200
					9	8	23	75	195	195
					10	8	21	65	180	180
			Stage		Ratio	PAN17	PAN23/ PAN23T	PAN34/ PAN34T	PAN42T	PAN56T
		2		15	11	35/24	95/68	168	168	
				20	11	35/31	95/95	215	215	
				25	11	35/30	95/95	215	215	
				35	11	35/28	95/95	215	215	
				45	11	35/27	95/92	215	215	
				50	(Ratio 49) : 10	35/27	95/82	205	205	
				70	(Ratio 63) : 10	28/28	85/85	200	200	
				90	(Ratio 81) : 8	23/23	75/75	195	195	
				100	8	21/21	65/65	180	180	
			Stage		Ratio	PAN17	PAN23T	PAN34T	PAN42T	PAN56T
		3		125	11	35	95	215	215	
				175	11	35	95	215	215	
				225	11	35	95	215	215	
				245	11	35	95	215	215	
				315	11	35	95	215	215	
				405	11	35	95	215	215	
				567	10	28	85	200	200	
				729	8	23	75	195	195	
				1000	8	21	65	180	180	
Emergency Stop Torque T_{2NOT}	N•m	(2.5 times of Nominal Output Torque) (*Max. Output Torque T_{2B} =60% of Emergency Stop Torque)								
Nominal Input Speed n_{1N}	rpm	1,2,3	3-1000	4000	4000	3000	2500	2500		
Max. Input Speed n_{1max}	rpm	1,2,3	3-1000	6000	6000	6000	5000	5000		
Standard Backlash P2	arcmin	1	3-10	≤ 9	≤ 8	≤ 7	≤ 6	≤ 6		
		2	15-100	≤ 12	≤ 10	≤ 9	≤ 8	≤ 8		
		3	125-1000	≤ 15	≤ 12	≤ 12	≤ 12	≤ 12		
Torsional Rigidity	N•m /arcmin	1,2,3	3-1000	1.2	3.5	8.5	17	17		
Max. Radial Load F_{2rB}^{-1}	N	1,2,3	3-1000	580	960	2160	4760	4760		
Max. Axial Load F_{2aB}^{-1}	N	1,2,3	3-1000	410	430	1100	2630	2630		
Operating Temp.	°C	1,2,3	3-1000	-10°C ~ +90°C						
Service Life	hr	1,2,3	3-1000	20,000(10,000 Continuous operation)						
Efficiency	%	1	3-10	≥ 95%						
		2	15-100	≥ 90%						
		3	125-1000	≥ 85%						
Weight	kg	1	3-10	0.5	1.1	2.8	6.3	6.6		
		2	15-100	0.7	1.5/1.3	4.2/3.1	7.9	8.2		
		3	125-1000	0.8	1.7	4.5	9.3	9.6		
Mounting Position	-	1,2,3	3-1000	Any Direction						
Noise Level ²	dBA/1m	1,2,3	3-1000	60	63	66	67	67		
Protection Class	-	1,2,3	3-1000	IP65						
Lubrication	-	1,2,3	3-1000	Synthetic Lubricant						
Inertia (J1)										
Stage	Ratio		unit	PAN17(φ8)	PAN23(φ14)	PAN34(φ19)	PAN42(φ24)	PAN56(φ24)		
1	3		kg•cm ²	0.04	0.23	0.77	2.30	2.30		
	4			0.03	0.21	0.67	1.92	1.92		
	5~10			0.03	0.21	0.61	1.71	1.71		
Stage	Ratio			PAN17(φ8)	PAN23(φ14)/ PAN23T(φ8)	PAN34(φ19)/ PAN34T(φ14)	PAN42T(φ19)	PAN56T(φ24)		
2	15			0.04	0.23 (0.04)	0.77 (0.23)	0.77	0.77		
	Other Ratios			0.03	0.21 (0.03)	0.67 (0.21)	0.61	0.61		
Stage	Ratio			PAN17(φ8)	PAN23T(φ8)	PAN34T(φ14)	PAN42T(φ19)	PAN56T(φ24)		
3	All Ratios			0.03	0.03	0.21	0.61	0.61		
* 1. Applied to the output shaft center at 100 rpm.										
* 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.