PAN

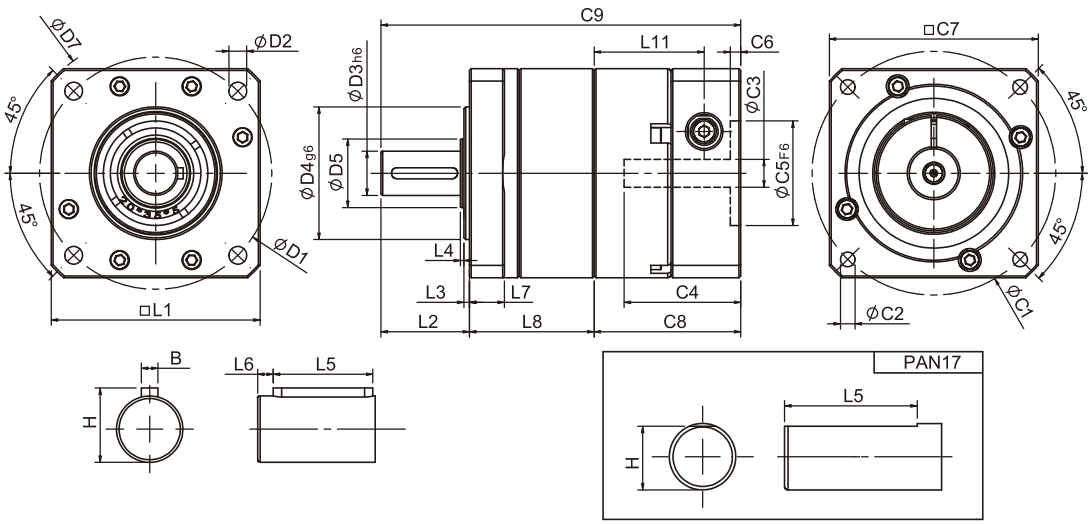
The PAN Standard Series gearboxes are equipped with a NEMA output flange with metric shaft, to offer exceptional torque ratings and capacity for many of present servo and stepper motion control applications. The gearboxes are drop-ins for most industry standards and available from single to three stages with ratios 3:1 up to 1000:1, the best backlash of <6 arc-minutes. Adapters for all servo and stepper motors.

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 Single Stage Dimensions



Specifications

Unit:mm

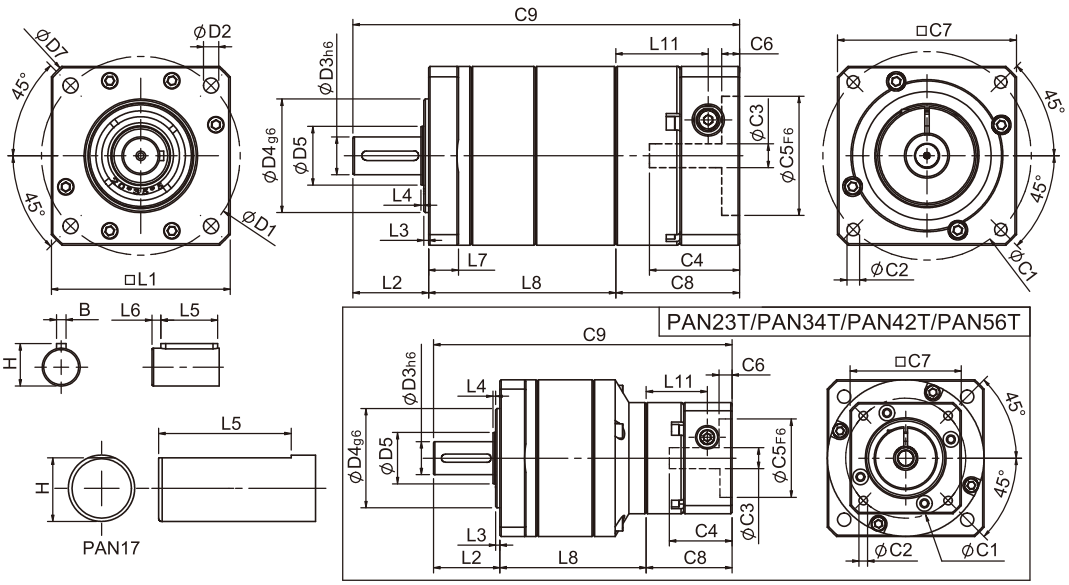
Dimensions	PAN17	PAN23	PAN34	PAN42	PAN56
D1	43.8	66.67	98.425	125.73	177.8
D2	3.25	5.1	5.6	7.1	10.2
$D3_{h6}$	9.525	12.7	19.05	25	25
$D4_{g6}$	21.97	38.1	73.025	55.55	114.3
D5	12	20	35	32	-
D7	56	80	118	148	195
L1	42.6 (44) [1]	60	90	115	145
L2	25.4	25.4	31.75	42	41
L3	1.6	1.6	1.7	2.4	4
L4	1	1	1	2	-
L5	19.05	19.05	25.4	32	32
L6	-	3	3	4	4
L7	6.5	10	12	19	20
L8	28.8	35.8	43.5	67.4	68.4
L11	26.9	31.6	37.3	51.8	51.8
C1 [2]	46	70	90	145	145
C2 [2]	M4x0.7P	M5x0.8P	M6x1.0P	M8x1.25P	M8x1.25P
C3 [2]	≦8/≦11	≦14/≦19	≦19/≦24/≦28	≦24/≦32/≦38	≦24/≦32/≦38
C4 [2]	26.5	33.5	41	51.5	51.5
$C5^{2}{}_{F6}$	30	50	70	110	110
C6 [2]	4	4	6	6	6
C7 [2]	42.6	60	90	130	130
C8 [2]	36.4	42.1	51.5	68	68
C9 [2]	90.6	103.3	126.75	177.4	177.4
B	-	3.175	4.763	8	8
H	9.14	14.1	21.1	28	28

★ L1=44 when gear ratio is 10.

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

★ Specification subject to change without notice.

PAN Double Stage Dimensions



Specifications

Unit:mm

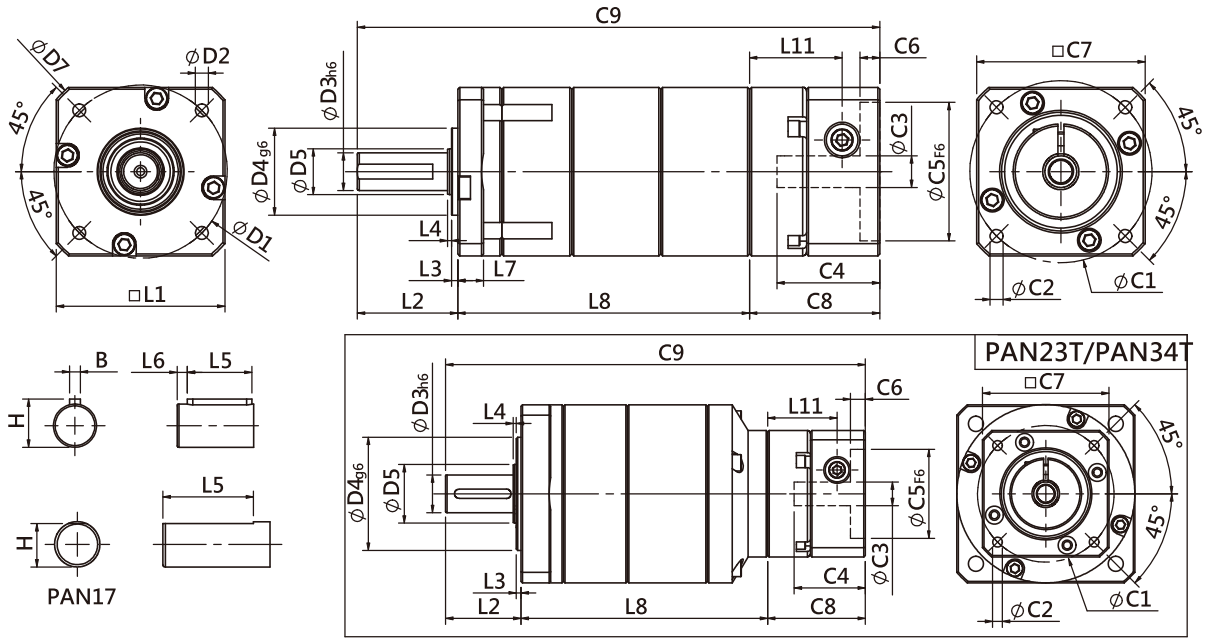
Dimensions	PAN17	PAN23	PAN23T	PAN34	PAN34T	PAN42T	PAN56T
D1	43.8	66.67		98.425		125.73	177.8
D2	3.25	5.1		5.6		7.1	10.2
$D3_{h6}$	9.525	12.7		19.05		25	25
$D4_{g6}$	21.97	38.1		73.025		55.55	114.3
D5	12	20		35		32	-
D7	56	80		118		148	195
L1	42.6 (44)[1]	60		90		115	145
L2	25.4	25.4		31.75		42	41
L3	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
$C5^{2}{}_{F6}$	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
$C5^{2}{}_{F6}$	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 2 3	3-10 15-100 125-1000	≦9 ≦12 ≦15	≦8 ≦10 ≦12	≦7 ≦9 ≦12	≦6 ≦8 ≦12	≦6 ≦8 ≦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 2 3	3-10 15-100 125-1000	≧95% ≧90% ≧85%				
Weight	kg	1 2 3	3-10 15-100 125-1000	0.5 0.7 0.8	1.1 1.5/1.3 1.7	2.8 4.2/3.1 4.5	6.3 7.9 9.3	6.6 8.2 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•cm²	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.