PA Series
Specifications

PA Series Dimension

Gearbox Performance

Model No.		Stages	Ratio[1]	PA042	PA060	PA090	PA115	PA142
Nominal Output Torque T_{2N}	Nm	1	3	14	39	104	215	423
			4	12	31	85	176	364
			5	14	39	104	215	423
			7	12	33	91	195	358
			10	9	26	65	150	293
		2	15	14	39	104	215	423
			16	12	31	85	176	364
			20	12	31	85	176	364
			25	14	39	104	215	423
			30	14	39	104	215	423
			35	12	33	91	195	358
			40	12	31	85	176	364
			50	14	39	104	215	423
			70	12	33	91	195	358
			100	9	26	65	150	293
Emergency Stop Torque T_{2NOT}[2]	Nm	1,2	3~100	3 times of Nominal Output Torque				
Nominal Input Speed n_{1N}	rpm	1,2	3~100	4,500	4,000	3,600	3,000	2,500
Max. Input Speed n_{1B}	rpm	1,2	3~100	8,000	6,000	6,000	4,800	3,600
Backlash*	arcmin	1	3~10	≤ 8	≤ 8	≤ 6	≤ 6	≤ 6
		2	15~100	≤ 10	≤ 10	≤ 8	≤ 8	≤ 8
Torsional Rigidity	Nm/arcmin	1,2	3~100	2	4.4	13.5	35.6	64
Max. Radial Load F_{2rB}[3]	N	1,2	3~100	820	690	1,740	4,440	6,600
Max. Axial Load F_{2aB}[3]	N	1,2	3~100	410	345	870	2,220	3,300
Service Life	hr	1,2	3~100	20,000*				
Efficiency η	%	1	3~10	≥ 97%				
		2	15~100	≥ 94%				
Weight	kg	1	3~10	0.8	1.6	3.5	9.0	17.9
		2	15~100	1.6	2.4	4.8	12.0	23.6
Operating Temp	°C	1,2	3~100	0^0C~+90^0C				
Lubrication		1,2	3~100	Synthetics grease				
Degree of Gearbox Protection		1,2	3~100	IP64				
Mounting Position		1,2	3~100	all directions				
Noise Level (n_1=3000rpm , No Load)	dB(A)	1,2	3~100	≤ 68	≤ 70	≤ 72	≤ 74	≤ 75

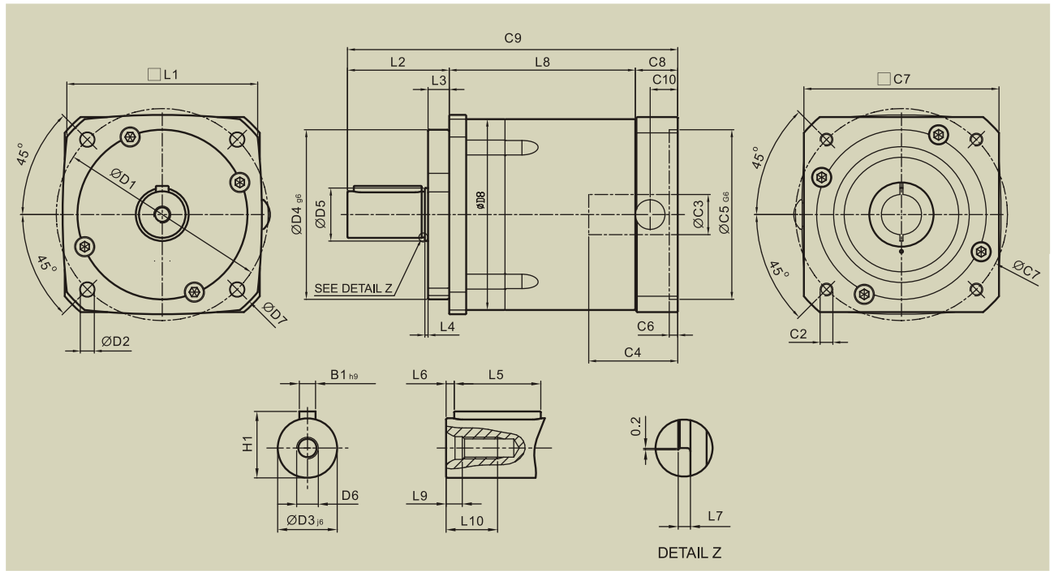
Gearbox Inertia

Model No.		Stages	Ratio[1]	PA042	PA060	PA090	PA115	PA142
Mass Moments of Inertia J_1	kg.cm²	1	3	0.15	0.53	3.00	10.69	31.86
			4	0.15	0.51	2.83	10.08	29.82
			5	0.15	0.50	2.80	9.96	29.43
			7	0.15	0.50	2.79	9.91	29.26
			10	0.15	0.50	2.79	9.89	29.20
		2	15	0.15	0.50	2.80	9.96	29.43
			16	0.15	0.51	2.83	10.08	29.82
			20	0.15	0.50	2.80	9.96	29.43
			25	0.15	0.50	2.80	9.96	29.43
			30	0.15	0.50	2.80	9.96	29.43
			35	0.15	0.50	2.80	9.96	29.43
			40	0.15	0.50	2.79	9.89	29.20
			50	0.15	0.50	2.79	9.89	29.20
			70	0.15	0.50	2.79	9.89	29.20
			100	0.15	0.50	2.79	9.89	29.20

1. Ratio ($i=N_{in}/N_{out}$)
2. T_{2B} = 60% of T_{2NOT}
3. Applied to the output shaft center @ 100 rpm

*S1 service life 10,000 hrs

*Backlash is measured at 2% of Nominal Output Torque T_{2N}



[unit: mm]

Dimension		PA042	PA060	PA090	PA115	PA142
D1		50	70	100	130	165
D2		3.4	5.5	6.6	9	11
D3 j6		13	16	22	32	40
D4 g6		35	50	80	110	130
D5		17	17	25	50	65
D6		M4X0.7P	M5X0.8P	M8X1.25P	M12X1.75P	M16X2P
D8		50	70	90	120	155
L1		42	60	90	115	142
L2		26	37	48	65	97
L3		5.5	7	10	12	15
L4		2	1.5	1.5	2	3
L5		16	25	32	40	63
L6		2	2	3	5	5
L7		1	1	1.5	2	2
L8	1-stage	53.5	65	88	124	141.5
	2-stage	78	98	127.5	177	202
L9		4.5	4.8	7.2	10	12
L10		10	12.5	19	28	36
C1[4]		46	70	100	130	165
C2[4]		M4X0.7P	M5X0.8P	M6X1P	M8X1.25P	M10X1.5P
C3[4]		≤ 12	≤ 16	≤ 24	≤ 32	≤ 38
C4[4]		30	34	40	50	60
C5[4] G6		30	50	80	110	130
C6[4]		3.5	8	4	5	6
C7[4]		52	72	92	122	157
C8[4]		21.5	21.5	20	24	31
C9[4]	1-stage	101	123.5	156	213	269.5
	2-stage	125.5	156.5	195.5	266	330
C10[4]		14.5	15.5	13	16	21
B1 h9		5	5	6	10	12
H1		15	18	24.5	35	43

4. C1~C10 are motor specific dimensions (metric std shown). Refer to Apexdyna.com and Design Tool to view your specific motor mounting system.