

High Precision Planetary Reducer

Model No.		Unit	Ratio	62	75	100	142	180
Rated Output Torque (Nominal output torque)	T_{2N}	Nm	3	59	165	216	625	1,206
			4	51	146	208	555	1,069
			5	48	155	333	618	1,189
			6	45	150	315	583	1,118
			7	45	142	309	573	1,108
			8	43	141	305	553	1,070
			9	44	140	293	516	993
			10	43	136	294	549	1,059
			12	45	150	315	583	1,118
			14	45	142	309	573	1,108
			16	43	141	305	553	1,070
18	44	140	293	516	993			
20	43	138	294	549	1,059			
Max. Acceleration Torque	T_{2B}	Nm	3 ~ 20	1.8 Times of Rated Output Torque				
Max. Output Torque Emergency Stop Torque	T_{2NOT}	Nm	3 ~ 20	3 Times of Rated Output Torque				
Rated Input Speed	n_{1N}	rpm	3 ~ 20	3,000	3,000	3,000	3,000	3,000
Max. Input Speed	n_{1B}	rpm	3 ~ 20	6,000	6,000	6,000	5,000	4,000
Backlash Ps		arcmin	3 ~ 20	-	≤ 2	≤ 2	≤ 2	≤ 2
Backlash P0		arcmin	3 ~ 20	≤ 4	≤ 4	≤ 4	≤ 4	≤ 4
Backlash P1		arcmin	3 ~ 20	≤ 6	≤ 6	≤ 6	≤ 6	≤ 6
Backlash P2		arcmin	3 ~ 20	≤ 8	≤ 8	≤ 8	≤ 8	≤ 8
Torsional Rigidity		Nm/arcmin	3 ~ 20	8	15	27	60	150
Max. Radial Force	F_{2rB}	N	3 ~ 20	2,240	4,150	8,760	12,750	17,860
Max. Axial Force	F_{2aB}	N	3 ~ 20	1,920	3,780	7,500	10,840	15,180
Service Life	L_H	hr	3 ~ 20	S5 Cycle Operation: >30,000 (S1 Continuous Operation: >15,000 hrs)				
Efficiency	η	%	3 ~ 20	≥ 95%				
Operating Temperature		°C	3 ~ 20	- 25° C ~ + 90° C				
Lubrication			3 ~ 20	Synthetic Grease				
Protection Class			3 ~ 20	IP65				
Mounting Position			3 ~ 20	Any				
Noise Level		dB	3 ~ 20	≤ 68	≤ 70	≤ 72	≤ 74	≤ 76
Weight ±3%		Kg	3 ~ 20	2.7	7.5	10.9	25.6	57.9

■ Mass Moments of Inertia (kg.cm²)

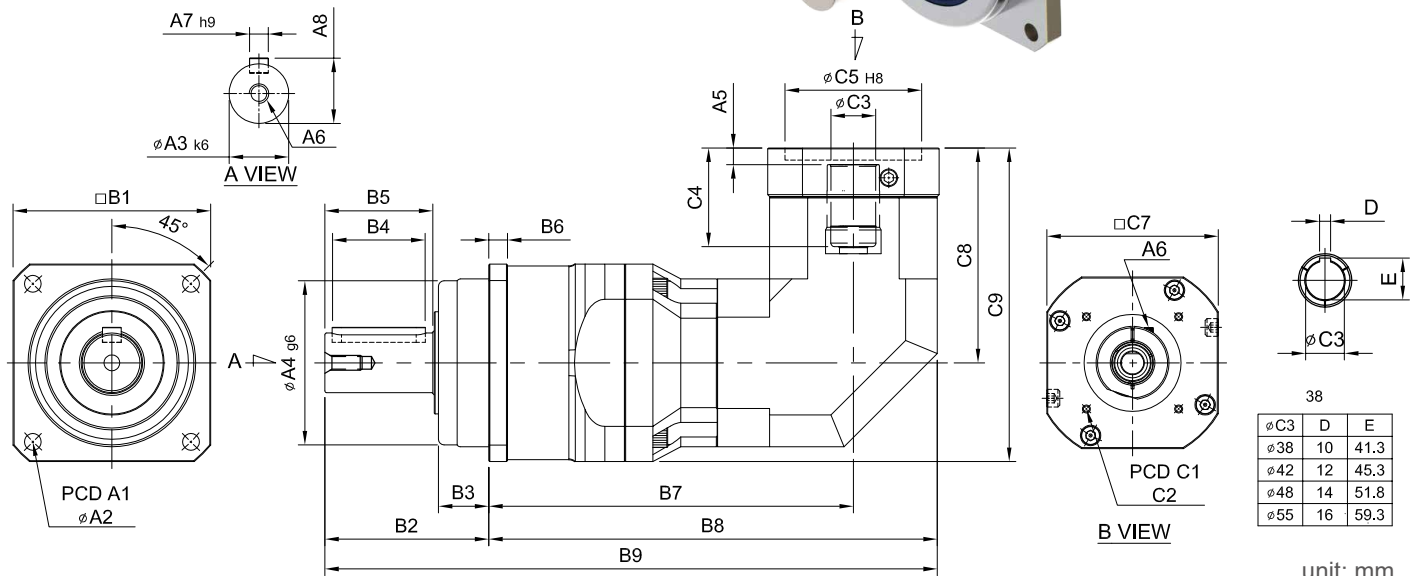
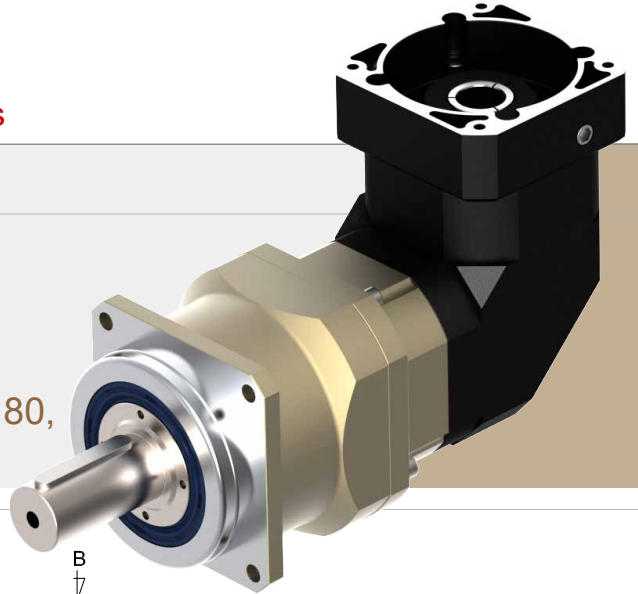
Ratio	62	75	100	142	180
3	0.30	2.11	6.42	18.36	57.65
4	0.28	2.02	5.61	18.02	56.17
5	0.26	2.01	5.42	17.21	55.05
6	0.24	2.00	5.33	16.50	53.44
7	0.24	1.97	5.09	15.85	51.10
8	0.24	1.94	5.06	14.94	49.03
9	0.24	1.94	5.04	14.61	48.08
10	0.24	1.94	5.02	14.02	41.33
12	0.22	1.94	4.98	13.86	41.12
14	0.22	1.94	4.95	13.53	40.50
16	0.21	1.92	4.91	13.03	40.11
18	0.21	1.91	4.87	12.57	39.73
20	0.20	1.88	4.75	12.11	38.65

SERVOBOX Planetary Reducers

MODEL : SFL

2-Stage

RATIO : 15, 20, 25, 30, 35, 40, 50, 60, 70, 80, 90, 100, 120, 140, 160, 180, 200



unit: mm

Model Code	62	75	100	142	180
A1	68	85	120	165	215
A2	5.5	6.8	9	11	13
A3	16	22	32	40	55
A4	60	70	90	130	160
A5	6	6	9	10	10
A6	M5 x P0.8	M8 x P1.25	M10 x P1.5	M12 x P1.75	M14 x P2.0
A7	5	6	10	12	16
A8	18	24.5	35	43	59
B1	62	76	106	142	180
B2	48	56	88	112	112
B3	18	18	27	27	26
B4	20	32	50	70	70
B5	28	36	58	82	82
B6	6	7	10	12	15
B7	123	148.3	195.6	240	280
B8	145	179.3	240.6	300	351
B9	193	235.3	328.6	412	463
C1	46 · 60 · 63	70 · 75 · 90	90 · 110 · 115 · 145	115 · 145 · 165	145 · 165 · 215
C2	M3 · M4 · M5	M4 · M5 · M6	M5 · M6 · M8 · M10	M6 · M8 · M10	M8 · M10 · M12
C3	8 · 9 · 11	11 · 14 · 16 · 19	16 · 19 · 22 · 24	24 · 28 · 32 · 35	28 · 32 · 35 · 38
C4	27	33.5 · 41.5	53	67	85
C5	30 · 40 · 50	50 · 60 · 70	70 · 80 · 95 · 110	95 · 110 · 130	110 · 130 · 180
C6	M4 x P0.7	M5 x P0.8	M6 x P1.0	M8 x P1.25	M10 x P1.5
C7	46 · 55	64 · 70 · 80	92 · 110 · 130	122 · 130 · 150	146 · 150 · 190
C8	61	77 · 85	115.3	141	165.7
C9	92	117 · 125	168.3	212	255.7



High Precision Planetary Reducer

Model No.	Unit	Ratio	62	75	100	142	180	
Rated Output Torque (Nominal output torque)	T_{2N}	Nm	15	59	165	216	625	1,206
			20	51	146	208	555	1,069
			25	48	155	333	618	1,189
			30	45	150	315	583	1,118
			35	45	142	309	573	1,108
			40	43	141	305	553	1,070
			50	48	155	333	618	1,189
			60	45	150	315	583	1,118
			70	45	142	309	573	1,108
			80	43	141	305	553	1,070
			90	44	140	293	516	993
			100	43	136	294	549	1,059
			120	45	150	315	583	1,118
			140	45	142	309	573	1,108
			160	43	141	305	553	1,070
			180	44	140	293	516	993
200	51	146	208	555	1,069			
Max. Acceleration Torque	T_{2B}	Nm	1.8 Times of Rated Output Torque					
Max. Output Torque Emergency Stop Torque	T_{2NOT}	Nm	3 Times of Rated Output Torque					
Rated Input Speed	n_{1N}	rpm	15 ~ 200	3,000	3,000	3,000	3,000	3,000
Max. Input Speed	n_{1B}	rpm	15 ~ 200	6,000	6,000	5,000	5,000	4,000
Backlash Ps		arcmin	15 ~ 200	-	-	≤ 4	≤ 4	≤ 4
Backlash P0		arcmin	15 ~ 200	≤ 7	≤ 7	≤ 7	≤ 7	≤ 7
Backlash P1		arcmin	15 ~ 200	≤ 9	≤ 9	≤ 9	≤ 9	≤ 9
Backlash P2		arcmin	15 ~ 200	≤ 12	≤ 12	≤ 12	≤ 12	≤ 12
Torsional Rigidity		Nm/arcmin	15 ~ 200	8	15	27	60	150
Max. Radial Force	F_{2rB}	N	15 ~ 200	2,240	4,150	8,760	12,750	17,860
Max. Axial Force	F_{2aB}	N	15 ~ 200	1,920	3,780	7,500	10,840	15,180
Service Life	L_H	hr	15 ~ 200	S5 Cycle Operation: >30,000 (S1 Continuous Operation: >15,000 hrs)				
Efficiency	η	%	15 ~ 200	≥ 92%				
Operating Temperature		°C	15 ~ 200	- 25° C ~ + 90° C				
Lubrication			15 ~ 200	Synthetic Grease				
Protection Class			15 ~ 200	IP65				
Mounting Position			15 ~ 200	Any				
Noise Level		dB	15 ~ 200	≤ 68	≤ 70	≤ 72	≤ 74	≤ 76
Weight ±3%		Kg	15 ~ 200	2.93	4.8	11.38	21.5	46.47

■ Mass Moments of Inertia (kg.cm²)

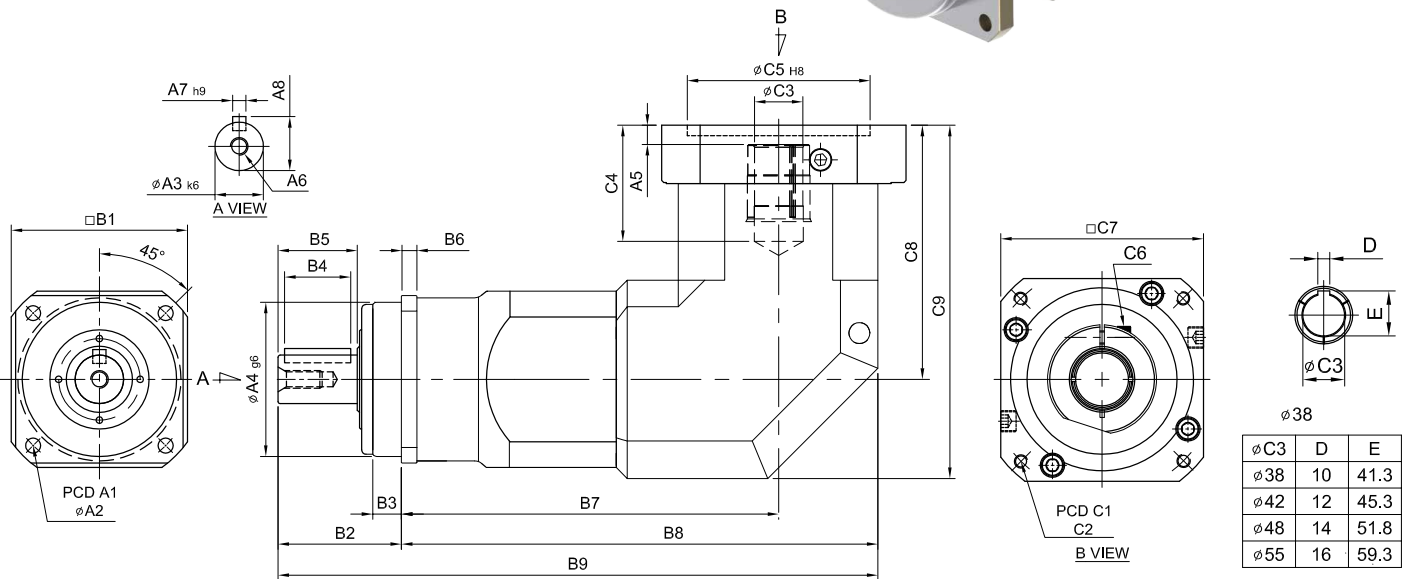
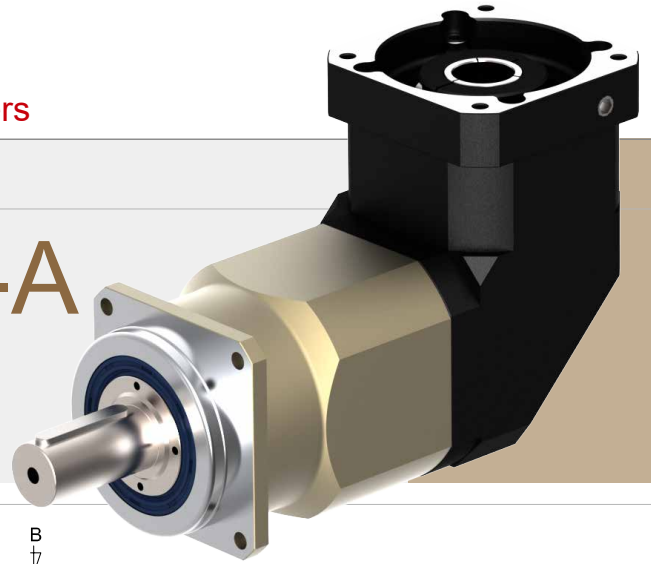
Ratio	62	75	100	142	180
15	0.09	0.34	2.20	6.85	26.2
20	0.09	0.34	2.20	6.85	26.2
25	0.09	0.34	2.20	6.85	23.1
30	0.09	0.34	2.20	6.85	23.1
35	0.09	0.34	2.20	6.85	23.1
40	0.09	0.34	2.20	6.85	23.1
50	0.09	0.34	2.20	6.85	23.1
60	0.09	0.34	2.20	6.85	23.1
70	0.09	0.34	2.20	6.85	23.1
80	0.09	0.34	2.20	6.85	23.1
90	0.09	0.34	2.20	6.85	23.1
100	0.09	0.34	2.20	6.85	23.1
120	0.03	0.30	1.86	6.20	21.2
140	0.03	0.30	1.86	6.20	21.2
160	0.03	0.30	1.86	6.20	21.2
180	0.03	0.30	1.86	6.20	21.2
200	0.03	0.30	1.86	6.20	21.2

SERVOBOX Planetary Reducers

MODEL : SFL-A

2-Stage

RATIO : 15, 20, 25, 30, 35, 40, 50, 60,
70, 80, 100, 140, 200



unit: mm

Model Code	62A	75A	100A	142A	180A
A1	68	85	120	165	215
A2	5.5	6.8	9	11	13
A3	16	22	32	40	55
A4	60	70	90	130	160
A5	6	9	10	10	12.5 · 14.5
A6	M5 x P0.8	M8 x P1.25	M10 x P1.5	M12 x P1.75	M14 x P2.0
A7	5	6	10	12	16
A8	18	24.5	35	43	59
B1	62	76	106	142	180
B2	48	56	88	112	112
B3	18	18	27	27	26
B4	20	32	50	70	70
B5	28	36	58	82	82
B6	6	7	10	12	15
B7	130.8	173.9	206	258	335.1
B8	161.8	218.9	266	329	425.1
B9	209.8	274.9	354	441	537.1
C1	70 · 75 · 90	90 · 110 · 115 · 145	115 · 145 · 165	145 · 165 · 215	200 · 215 · 265
C2	M4 · M5 · M6	M5 · M6 · M8	M6 · M8 · M10	M8 · M10 · M12	M10 · M12 · M16
C3	14 · 19	19 · 22 · 24	24 · 28 · 32	28 · 32 · 35	38 · 42 · 48 · 55
C4	33.5 · 41.5	53 · 67.5	67 · 77	85	117 · 119
C5	50 · 60 · 70	70 · 80 · 95 · 110	95 · 110 · 130	110 · 130 · 180	114.3 · 180 · 230
C6	M5 x P0.8	M6 x P1.0	M8 x P1.25	M10 x P1.5	M10 x P1.5
C7	64 · 70 · 80	92 · 110 · 130	122 · 130 · 150	146 · 150 · 190	182 · 200 · 250
C8	77 · 85	115.3	141	165.7	235 · 237
C9	108 · 116	160.3	201	236.7	325 · 327

High Precision Planetary Reducer

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Rated Output Torque (Nominal output torque)	T_{2N}	Nm	15	59	165	216	625	1,206
			20	51	146	208	555	1,069
			25	48	155	333	618	1,189
			30	45	150	315	583	1,118
			35	45	142	309	573	1,108
			40	43	141	305	555	1,070
			50	48	155	333	618	1,189
			60	45	150	315	583	1,118
			70	45	142	309	573	1,108
			80	43	141	305	553	1,070
			100	43	136	294	549	1,059
			140	45	142	309	573	1,108
200	51	146	208	555	1,069			
Max. Acceleration Torque	T_{2B}	Nm	15 ~ 200	1.8 Times of Rated Output Torque				
Max. Output Torque Emergency Stop Torque	T_{2NOT}	Nm	15 ~ 200	3 Times of Rated Output Torque				
Rated Input Speed	n_{1N}	rpm	15 ~ 200	3,000	3,000	3,000	3,000	3,000
Max. Input Speed	n_{1B}	rpm	15 ~ 200	6,000	6,000	5,000	5,000	4,000
Backlash Ps		arcmin	15 ~ 200	-	≤ 4	≤ 4	≤ 4	≤ 4
Backlash P0		arcmin	15 ~ 200	≤ 7	≤ 7	≤ 7	≤ 7	≤ 7
Backlash P1		arcmin	15 ~ 200	≤ 9	≤ 9	≤ 9	≤ 9	≤ 9
Backlash P2		arcmin	15 ~ 200	≤ 12	≤ 12	≤ 12	≤ 12	≤ 12
Torsional Rigidity		Nm/arcmin	15 ~ 200	8	15	27	60	150
Max. Radial Force	F_{2rB}	N	15 ~ 200	2,240	4,150	8,760	12,750	17,860
Max. Axial Force	F_{2aB}	N	15 ~ 200	1,920	3,780	7,500	10,840	15,180
Service Life	L_H	hr	15 ~ 200	S5 Cycle Operation: >30,000 (S1 Continuous Operation: >15,000 hrs)				
Efficiency	η	%	15 ~ 200	≥ 92%				
Operating Temperature		°C	15 ~ 200	- 25° C ~ + 90° C				
Lubrication			15 ~ 200	Synthetic Grease				
Protection Class			15 ~ 200	IP65				
Mounting Position			15 ~ 200	Any				
Noise Level		dB	15 ~ 200	≤ 68	≤ 70	≤ 72	≤ 74	≤ 76
Weight ±3%		Kg	15 ~ 200	3.5	11.1	16.8	29.9	66.1

■ Mass Moments of Inertia (kg.cm²)

Ratio	62A	75A	100A	142A	180A
15	0.15	0.60	3.21	9.18	28.82
20	0.14	0.51	2.80	7.51	23.56
25	0.13	0.45	2.71	7.40	23.24
30	0.12	0.43	2.66	7.32	22.91
35	0.12	0.42	2.54	7.15	22.40
40	0.14	0.51	2.80	7.51	23.56
50	0.13	0.45	2.71	7.40	23.24
60	0.12	0.43	2.66	7.32	22.91
70	0.12	0.42	2.54	7.15	22.40
80	0.14	0.51	2.80	7.51	23.56
100	0.13	0.45	2.71	7.40	23.24
140	0.12	0.42	2.54	7.15	22.40
200	0.11	0.41	2.48	7.02	22.14