

SP series

HIGH PRECISION

PLANETARY REDUCER



Helical Gear

** compatible model with Wittenstein Alpha series*

Reducer Performance Information

	Unit	Stage	Ratio	60	75	100	115	140	160	180	210	240
Rated Output Torque T_{2N}	Nm	L1	3	17	47	120	168	200	380	530	1100	1500
			4	26	75	180	283	360	580	750	1500	2500
			5	26	75	175	280	360	580	750	1500	2500
			7	26	75	170	278	360	580	750	1400	2300
			10	17	52	120	168	220	505	750	1000	1700
		L2	16	26	75	180	283	360	580	750	1500	2500
			20	26	75	180	283	360	580	750	1500	2500
			25	26	75	175	280	360	580	750	1500	2500
			28	26	75	180	283	360	580	750	1500	2500
			35	26	75	175	280	360	580	750	1500	2500
			40	26	75	180	283	360	580	750	1500	2500
			50	26	75	175	280	360	580	750	1500	2500
			70	26	75	170	278	360	580	750	1400	2300
			100	17	52	120	168	220	505	750	1000	1700
Max. Input Speed n_{1B}	rpm	L1/L2	3~100	6,000	6,000	4,500	4,000	4,000	3,200	3,500	2,500	2,500
Rated Input Speed n_{1N}	rpm	L1	3~10	3,300	2,900	2,500	2,300	2,100	1,500	1,500	1,200	1,000
		L2	16~100	4,400	3,500	3,100	3,000	2,900	2,900	2,700	2,500	2,300
Backlash P0	arcmin	L1	3~10	≤ 3								
		L2	16~100	≤ 5								
Backlash P1	arcmin	L1	3~10	≤ 5								
		L2	16~100	≤ 7								
Backlash P2	arcmin	L1	3~10	≤ 7								
		L2	16~100	≤ 9								
Max. Acceleration Torque T_{2B}	Nm	L1/L2	3~100	1.5 Times of nominal output torque								
Max. Output(Emergency Stop)Torque T_{2NOT}	Nm	L1/L2	3~100	3 Times of nominal output torque								
Torsional Rigidity	Nm/arcmin	L1/L2	3~100	3.5	10	31	25	53	145	175	400	500
Max. Radial Force F_{2rB}	N	L1/L2	3~100	2800	4200	6600	6700	9900	14500	15400	21000	30000
Max. Axial Force F_{2aB}	N	L1/L2	3~100	2400	3350	5650	3350	9870	7250	14150	30000	33000
Service Life	hr	L1/L2	3~100	20000								
Operation Temperature	°C	L1/L2	3~100	-10°C ~ 90°C								
Efficiency η	%	L1	3~10	≥ 97								
		L2	16~100	≥ 94								
Lubrication		L1/L2	3~100	Synthetic Lubrication Grease								
Noise Level	dB	L1	3~10	≤ 58	≤ 60	≤ 64	≤ 65	≤ 65	≤ 67	≤ 67	≤ 67	≤ 67
		L2	16~100	≤ 58	≤ 60	≤ 64	≤ 65	≤ 65	≤ 67	≤ 67	≤ 67	≤ 67
Protection Class	IP	L1/L2	3~100	65								
Mounting Position		L1/L2	3~100	Any direction								
Weight	kg	L1	3~10	1.9	3.9	7.7	13.1	17.2	26.9	34	56	77
		L2	16~100	2	3.6	7.9	13.3	17	28	36.4	53	76

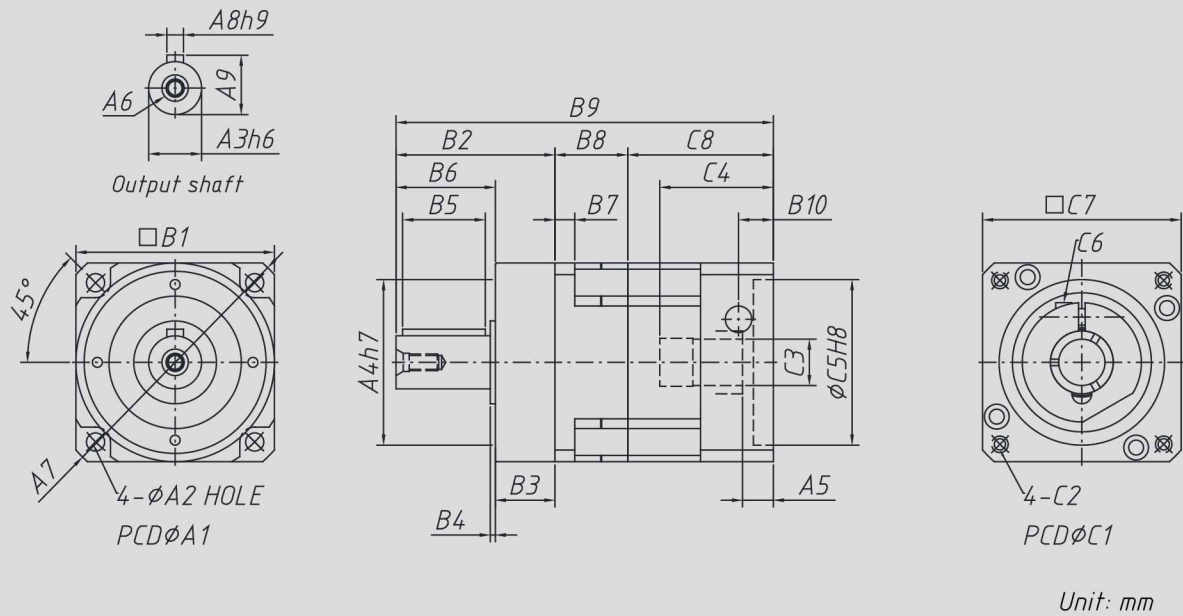
Reducer Moment of inertia

	Unit	Stage	Ratio	60	75	100	115	140	160	180	210	240
Moment of inertia J_1	kg.cm ²	L1	3	0.61	2.4	11.1	21.3	29.5	28.98	58.2	139	260.2
			4	0.55	2.15	10.1	19.3	26.7	23.67	41.2	94.3	198.2
			5	0.52	2.05	9.68	18.5	25.6	23.29	35.3	76.9	163
			7	0.5	1.96	9.36	17.8	24.7	22.48	29.6	61.5	84.4
			10	0.49	1.91	9.14	17.5	24.2	22.51	26.5	53.1	70.8
		L2	16	0.17	0.55	2.18	6.55	10.3	7.42	28.1	34.5	39.2
			20	0.16	0.53	2.07	6.21	9.77	7.42	26.6	31.5	34.6
			25	0.16	0.52	2.05	6.18	9.73	7.42	26.3	30.8	33.2
			28	0.16	0.5	1.97	5.97	9.41	7.42	25.2	30	30.5
			35	0.16	0.5	1.96	5.95	9.39	7.42	25.1	29.7	29.7
			40	0.15	0.49	1.92	5.81	9.16	7.42	24.4	28.5	28.2
			50	0.15	0.49	1.91	5.8	9.15	7.03	24.3	28.3	27.9
			70	0.15	0.49	1.91	5.8	9.14	7.03	24.3	28.1	27.6
			100	0.15	0.49	1.91	5.8	9.14	7.03	24.3	28	27.5

MODEL : SP SERIES

1-Stage (Ratio:3~10)

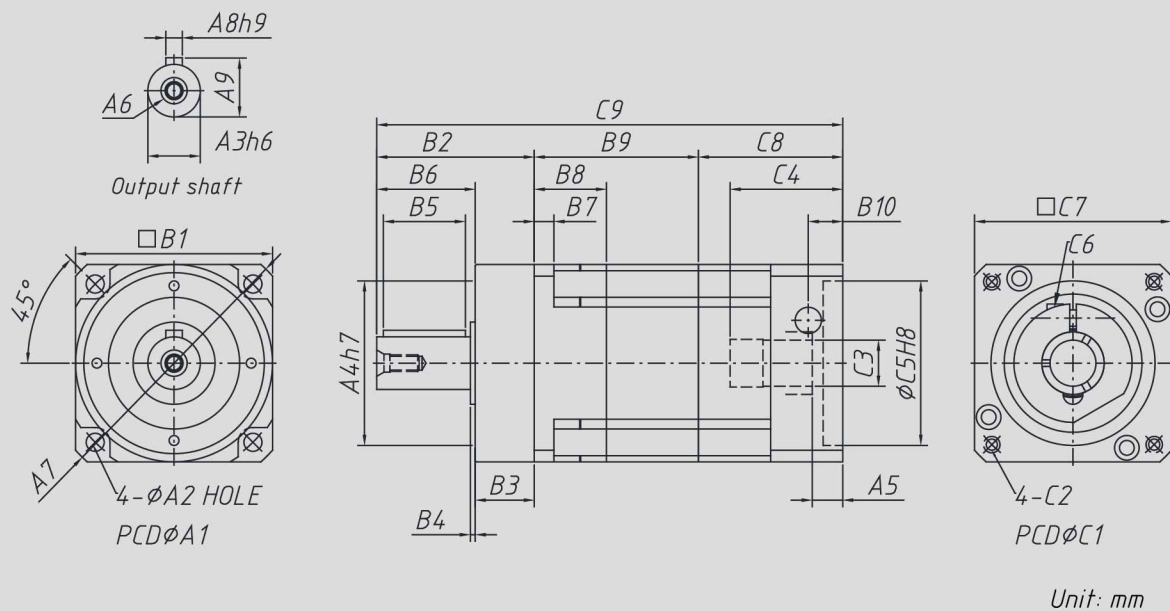
SP



Code	Model	60	75	100	115	140	160	180	210	240
A1		68	85	120	130	165	190	215	250	290
A2		5.5	6.5	9	8.5	10.5	13	13.5	17	17
A3		16	22	32	35	40	50	55	75	85
A4		60	70	90	110	130	145	160	180	200
A5		6	6	7.5	22.5	11	11	12	35	35
A6		M5×P0.8	M8×P1.25	M12×P1.75	M12×P1.75	M16×P2.0	M16×P2.0	M20×P2.5	M20×P2.5	M20×P2.5
A7		80	95	135	148	185	215	240	292	320
A8		5	5	10	10	12	14	16	20	22
A9		18	24	35	38	43	53.5	59	79.5	90
B1		60	76	100	115	142	160	180	220	240
B2		48	56	88	100	112	112	112	143	170
B3		18	18.5	28.5	28	27	27	27.5	23	25
B4		1.5	1.5	1.5	2	3	0	2.5	15	15
B5		25	30	50	60	70	70	70	90	125
B6		30	37.5	59.5	72	85	85	84.5	120	145
B7		6	7	10	10	12	13.5	15	17	20
B8		22	21.5	24.5	38	60	60	80	104.4	102.4
B9		114	130.5	159.5	209	254	254	292	391.4	416.4
B10		13.5	13.5	14	15、30、40	23	23	27.5、72.5	45	45
C1		70	70	90	145	165	165	200	265	265
C2		M5×P0.8	M5×P0.8	M6×P1.0	M8×P1.25	M10×P1.5	M10×P1.5	M12×P1.75	M14×P2.0	M14×P2.0
C3		14、19	14、19	19、24	24、38	35、42	35、42	42	55	55
C4		34	34	43	67.5	68	68	72.5	121	121
C5		50	50	70	110	130	130	114.3	230	230
C6		M5×P0.8	M5×P0.8	M6、M5	M8×P1.25	M10×P1.5	M10×P1.5	M12×P1.75	M12×P1.75	M12×P1.75
C7		60	60	90	130	142	142	180	250	250
C8		44	44	47	71	82	82	100	144	144

MODEL : SP SERIES

2-Stage (Ratio:15~100)



Model Code	60	75	100	115	140	160	180	210	240
A1	68	85	120	130	165	190	215	250	290
A2	5.5	6.5	9	8.5	10.5	13	13.5	17	17
A3	16	22	32	35	40	50	55	75	85
A4	60	70	90	110	130	145	160	180	200
A5	6	6	7.5	22.5	11	11	12	35	35
A6	M5xP0.8	M8xP1.25	M12xP1.75	M12xP1.75	M16xP2.0	M16xP2.0	M20xP2.5	M20xP2.5	M20xP2.5
A7	80	95	135	148	185	215	240	292	320
A8	5	5	10	10	12	14	16	20	22
A9	18	24	35	38	43	53.5	59	79.5	90
B1	60	76	100	115	142	160	180	220	240
B2	48	56	88	100	112	112	112	143	170
B3	18	18.5	28.5	28	27	27	27.5	23	25
B4	1.5	1.5	1.5	2	3	0	2.5	15	15
B5	25	30	50	60	70	70	70	90	125
B6	30	37.5	59.5	72	85	85	84.5	120	145
B7	6	7	10	10	12	13.5	15	17	20
B8	22	21.5	24.5	38	60	60	80	104.4	102.4
B9	50	49.5	64.5	86	121	121	170	218.4	218.4
B10	13.5	13.5	14	15、30、40	23	23	27.5、72.5	45	45
C1	70	70	90	145	165	165	200	265	265
C2	M5xP0.8	M5xP0.8	M6xP1.0	M8xP1.25	M10xP1.5	M10xP1.5	M12xP1.75	M14xP2.0	M14xP2.0
C3	14、19	14、19	19、24	24、38	35、42	35、42	42	55	55
C4	34	34	43	67.5	68	68	72.5	121	121
C5	50	50	70	110	130	130	114.3	230	230
C6	M5xP0.8	M5xP0.8	M6、M5	M8xP1.25	M10xP1.5	M10xP1.5	M12xP1.75	M12xP1.75	M12xP1.75
C7	60	60	90	130	142	142	180	250	250
C8	44	44	47	71	82	82	100	144	144
C9	142	158.5	199.5	257	315	315	382	505.4	530.4