

SP series High Precision Planetary Reducer



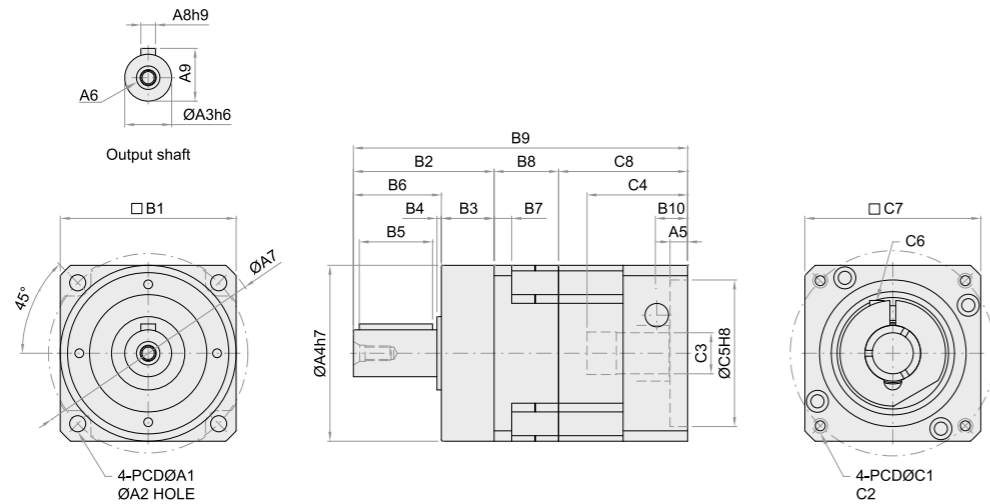
減速機性能資料 REDUCER PERFORMANCE INFORMATION

規格 Model NO.	符號 Symbol	單位 Unit	節數 Stage	減速比 Ratio	60	75	100	115	140	160	180	210	240
額定輸出力矩 Rated Output Torque	T _{2N}	Nm	L1	3	57	160	213	439	600	938	1,200	1,950	2,677
				4	48	144	204	411	549	856	1,060	1,700	2,462
				5	45	153	330	513	610	895	1,182	1,892	2,538
				7	43	139	300	500	571	763	1,104	1,799	2,493
			L2	10	41	133	290	484	540	720	1,050	1,653	2,355
				15	57	143	300	431	630	922	1,220	1,980	2,668
				20	47	128	271	405	560	848	1,085	1,695	2,440
				25	48	155	298	508	610	890	1,174	1,880	2,520
				28	44	131	280	495	578	750	1,100	1,776	2,500
				35	44	127	276	492	568	751	1,098	1,800	2,480
				40	40	120	263	520	550	780	1,070	1,600	2,368
				50	45	139	299	510	620	718	1,193	1,948	2,522
				70	44	127	276	479	568	755	1,098	1,792	2,483
				100	40	118	264	492	550	710	1,081	1,650	2,340
最大輸入轉速 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
額定輸入轉速 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
超精密背隙 P0 Backlash P0	-	arcmin	L1	3~10	≤3								
			L2	16~100	≤5								
精密背隙 P1 Backlash P1	-	arcmin	L1	3~10	≤5								
			L2	16~100	≤7								
精密背隙 P2 Backlash P2	-	arcmin	L1	3~10	≤7								
			L2	16~100	≤9								
最大加速扭矩 Max. Acceleration Torque	T _{2B}	Nm	L1 / L2	3~100	1.5倍額定輸出力矩 / 1.5 Times of nominal output torque								
最大輸出(急停)扭矩 Max. Output(Emergency Stop) Torque	T _{2NOT}	Nm	L1 / L2	3~100	3倍額定輸出力矩 / 3 Times of nominal output torque								
扭轉剛性 Torsional Rigidity	-	Nm/arcmin	L1 / L2	3~100	3.5	10	31	25	53	145	175	400	500
容許徑向力 Max. Radial Force	F _{2rB}	N	L1 / L2	3~100	2,800	4,200	6,600	6,700	9,900	14,500	15,400	21,000	30,000
容許軸向力 Max. Axial Force	F _{2aB}	N	L1 / L2	3~100	2,400	3,350	5,650	3,350	9,870	7,250	14,150	30,000	33,000
使用壽命 Service Life	hr	hr	L1 / L2	3~100	S5週期運轉 > 20,000 ; (S1連續運轉 > 10,000 hrs) S5 Cycle Operation ; > 20,000 (S1 Continuous Operation ; > 10,000 hrs)								
使用溫度 Operation Temperature	-	°C	L1 / L2	3~100	-10°C ~ 90°C								
效率 Efficiency	η	%	L1	3~10	≤97								
			L2	16~100	≤94								
潤滑 Lubrication	-	-	L1 / L2	3~100	合成潤滑油脂 / Synthetic Lubrication Grease								
噪音值 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
防護等級 Protection Class	-	IP	L1 / L2	3~100	IP 65								
安裝方向 Mounting Position	-	-	L1 / L2	3~100	任意方向 / Any Direction								
重量 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

減速機轉動慣量 REDUCER MOMENT OF INERTIA

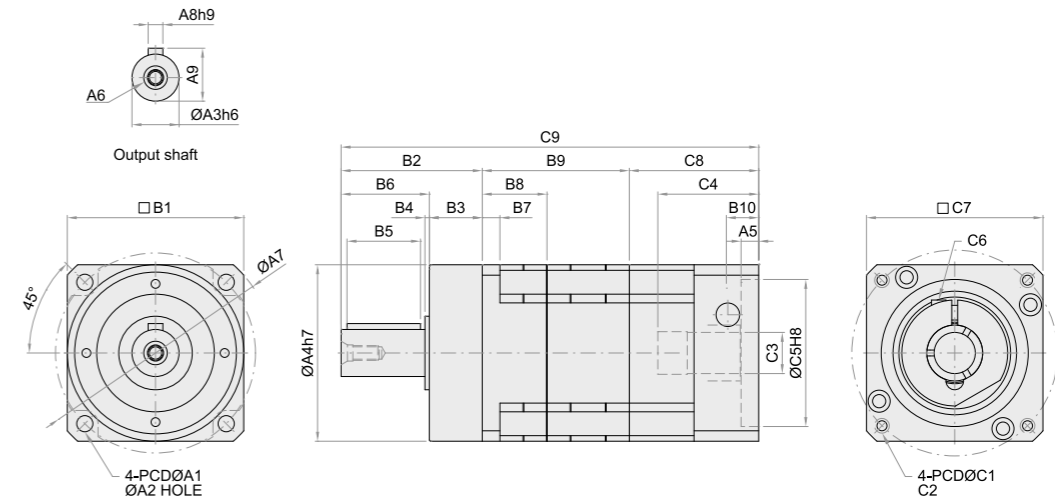
規格 Model NO.	符號 Symbol	單位 Unit	節數 Stage	減速比 Ratio	60	75	100	115	140	160	180	210	240
轉動慣量 Moment of Inertia	J ₁	kg.cm ²	L1	3	57	160	213	439	600	938	1200	1950	2677
				4	48	144	204	411	549	856	1060	1700	2462
				5	45	153	330	513	610	895	1182	1892	2538
				7	43	139	300	500	571	763	1104	1799	2493
			L2	10	41	133	290	484	540	720	1050	1653	2355
				15	57	143	300	431	630	922	1220	1980	2668
				20	47	128	271	405	560	848	1085	1695	2440
				25	48	155	298	508	610	890	1174	1880	2520
				28	44	131	280	495	578	750	1100	1776	2500
				35	44	127	276	492	568	751	1098	1800	2480
				40	40	120	263	520	550	780	1070	1600	2368
				50	45	139	299	510	620	718	1193	1948	2522
				70	44	127	276	479	568	755	1098	1792	2483
				100	40	118	264	492	550	710	1081	1650	2340

MODEL: SP SERIES L1-Stage (Ratio: 3~10)



Model	Code	60	75	100	115	140	160	180
A1		68	85	120	130	165	190	215
A2		5.5	6.5	9	8.5	10.5	13	13.5
A3		16	22	32	35	40	50	55
A4		60	70	90	110	130	145	160
A5		6	6	6	7	7	7	8
A6		M5 x P0.8	M8 x P1.25	M12 x P1.75	M12 x P1.75	M16 x P2.0	M16 x P2.0	M20 x P2.5
A7		80	95	135	148	185	215	240
A8		5	6	10	10	12	14	16
A9		18	24.5	35	38	43	53.5	59
B1		60	76	100	115	142	160	180
B2		48	56	88	100	112	112	112
B3		18	18.5	28.5	28	27	27	27.5
B4		1.5	1.5	1.5	2	3	2.75	2.5
B5		25	30	50	60	70	70	70
B6		30	37.5	59.5	72	85	85	84.5
B7		6	7	10	10	12	13.5	15
B8		22	21.5	24.5	38	60	66	80
B9		114	121.5	159.5	209	255	282.5	292
B10		10.5	10.5	14	30	38	48	27.5
C1		70	70	90	145	165	200	200
C2		M5 x P0.8	M5 x P0.8	M6 x P1.0	M8 x P1.25	M10 x P1.5	M12 x P1.75	M12 x P1.75
C3		14 19	14 19	19 24	24 35	35 42	35 42	42
C4		34.3	34.3	43	68.2	68.1	79.1	81.5
C5		50	50	70	110	130	114.3	114.3
C6		M5 x P0.8	M5 x P0.8	M6 M5	M8 x P1.25	M10 x P1.5	M12 x P1.75	M12 x P1.75
C7		60	60	90	130	142	180	180
C8		44	44	47	71	82	104.5	100
C9		142	149.5	199.5	257	315	353.5	382

MODEL: SP SERIES L2-Stage (Ratio: 16~100)



Model	Code	60	75	100	115	140	160	180
A1		68	85	120	130	165	190	215
A2		5.5	6.5	9	8.5	10.5	13	13.5
A3		16	22	32	35	40	50	55
A4		60	70	90	110	130	145	160
A5		6	6	6	7	7	7	8
A6		M5 x P0.8	M8 x P1.25	M12 x P1.75	M12 x P1.75	M16 x P2.0	M16 x P2.0	M20 x P2.5
A7		80	95	135	148	185	215	240
A8		5	6	10	10	12	14	16
A9		18	24.5	35	38	43	53.5	59
B1		60	76	100	115	142	160	180
B2		48	56	88	100	112	112	112
B3		18	18.5	28.5	28	27	27	27.5
B4		1.5	1.5	1.5	2	3	2.75	2.5
B5		25	30	50	60	70	70	70
B6		30	37.5	59.5	72	85	85	84.5
B7		6	7	10	10	12	13.5	15
B8		22	21.5	24.5	38	60	66	80
B9		50	49.5	64.5	86	121	137	170
B10		10.5	10.5	14	30	38	48	27.5
C1		70	70	90	145	165	200	200
C2		M5 x P0.8	M5 x P0.8	M6 x P1.0	M8 x P1.25	M10 x P1.5	M12 x P1.75	M12 x P1.75
C3		14 19	14 19	19 24	24 35	35 42	35 42	42
C4		34.3	34.3	43	68.2	68.1	79.1	81.5
C5		50	50	70	110	130	114.3	114.3
C6		M5 x P0.8	M5 x P0.8	M6 M5	M8 x P1.25	M10 x P1.5	M12 x P1.75	M12 x P1.75
C7		60	60	90	130	142	180	180
C8		44	44	47	71	82	104.5	100
C9		142	149.5	199.5	257	315	353.5	382