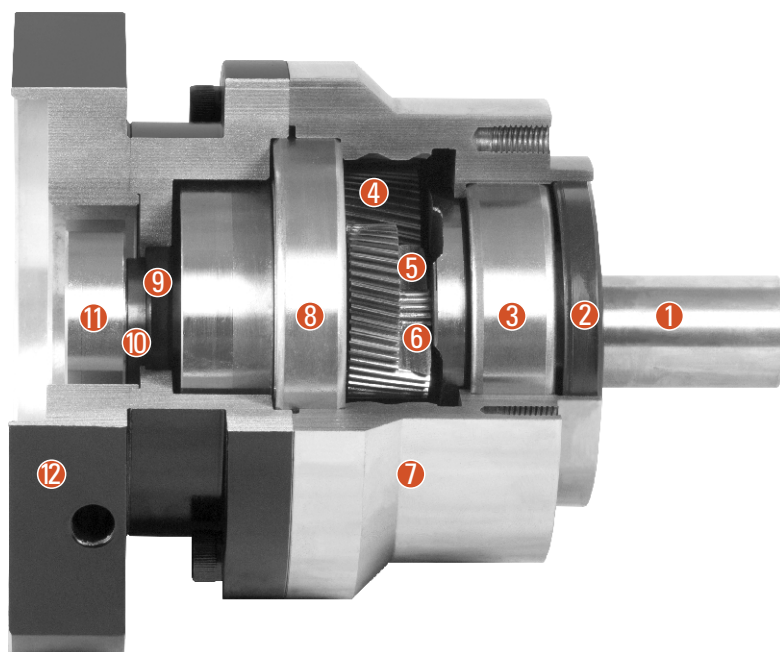


SE SERIES GEARBOX

Sectional View



- ① Output shaft
- ② Oil seal
- ③ Output shaft front bearing
- ④ Planetary gear
- ⑤ Solar wheel
- ⑥ Full needle bearing
- ⑦ Front cover
- ⑧ Output shaft rear bearing
- ⑨ Oil seal
- ⑩ Coupling
- ⑪ Lock ring
- ⑫ Rear cover

Type and Model Number

SE Reducers				Servo Motor			
090	SE	20	()	(S1)	-	750	<input type="text"/>
①	②	③	④	⑤	⑥	⑦	
① Gearbox frame size: 090 (See P10)							
② Gearbox series code: ZE							
③ Gear Ratio: 20 (See P10)							
④ Precision (See P10) Standard type P2 (Omission), precision type P1, high precision type P0 Precision (Output shaft load is $\pm 5\%$ of allowable output torque)							
⑤ Input shaft type S1: Locking with locking ring (Omission) (Can be used regardless whether the motor has a keyway, but "D" type is not applicable) S2: Locking with keyway (Input shaft with key) A: Other adapters (Please contact our company)							
⑥ Applicable servo motor power (W)							
⑦ Servo motor model							

PRODUCT SPECIFICATIONS

Reducer Performance Data

Specifications	Node Number	Reduction Ratio	050SE	070SE	090SE	120SE	155SE	205SE	235SE	
Rated Output Torque T_{2N}	Nm	1	3	-	55	130	208	342	588	1140
			4	19	50	140	290	542	1050	1700
			5	22	60	160	330	650	1200	2000
			6	20	55	150	310	600	1100	1900
			7	19	50	140	300	550	1100	1800
			8	17	45	120	260	500	1000	1600
			9	14	40	100	230	450	900	1500
			10	14	40	100	230	450	900	1500
			15	-	55	130	208	342	588	1140
			20	19	50	140	290	542	1050	1700
	25	22	60	160	330	650	1200	2000		
	30	20	55	150	310	600	1100	1900		
	35	19	50	140	300	550	1100	1800		
	40	17	45	120	260	500	1000	1600		
	45	14	40	100	230	450	900	1500		
	50	22	60	160	330	650	1200	2000		
	60	20	55	150	310	600	1100	1900		
	70	19	50	140	300	550	1100	1800		
	80	17	45	120	260	500	1000	1600		
	90	14	40	100	230	450	900	1500		
100	14	40	100	230	450	900	1500			
Emergency Stop Torque T_{2NOT}^2	Nm	1,2	3 Times of Output Rated Torque							
Rated Input Speed n_{1N}	rpm	1,2	3000							
Rated Input Speed n_{1B}	rpm	1,2	6000							
Super Precision Backlash P0	arcmin	1	3~10							
		2	15~100							
Precision Backlash P1	arcmin	1	3~10							
		2	15~100							
Standard Backlash P2	arcmin	1	3~10							
		2	15~100							
Torsional Stiffness	Nm/arcmin	1,2	3~100							
Allowable Radial Force F_{2R}^3	N	1,2	3~100							
Allowable Axial Force F_{2AB}^3	N	1,2	3~100							
Service Life	hr	1,2	3~100							
Efficiency η	%	1	20000*							
		2	3~10							
Weight	Kg	1	≥97%							
		2	15~100							
Operating Temperature	°C	1,2	-10°C~+90°C							
Lubrication		1,2	Synthetic Lubricating Grease							
Protection Class		1,2	IP65							
Mounting Position		1,2	Any Direction							
Noise Level at 1m Distance ($n_1=3000$ rpm, No Load)	dB(A)	1,2	3~100							

Moment of Inertia of The Reducer

Specifications	Node Number	Reduction Ratio	050SE	070SE	090SE	120SE	155SE	205SE	235SE	
Moment Of Inertia J_1	Kg-cm ²	1	3	-	0.16	0.61	3.25	9.21	28.98	69.61
			4	0.03	0.14	0.48	2.74	7.54	23.67	54.37
			5	0.03	0.13	0.47	2.71	7.42	23.29	53.27
			6	0.03	0.13	0.45	2.65	7.25	22.75	51.72
			7	0.03	0.13	0.45	2.62	7.14	22.48	50.97
			8	0.03	0.13	0.44	2.58	7.07	22.59	50.84
			9	0.03	0.13	0.44	2.57	7.04	22.53	50.63
			10	0.03	0.13	0.44	2.57	7.03	22.51	50.56
			15	-	0.03	0.13	0.47	2.71	7.42	23.29
			20	0.03	0.03	0.13	0.47	2.71	7.42	23.29
	25	0.03	0.03	0.13	0.47	2.71	7.42	23.29		
	30	0.03	0.03	0.13	0.47	2.71	7.42	23.29		
	35	0.03	0.03	0.13	0.47	2.71	7.42	23.29		
	40	0.03	0.03	0.13	0.47	2.71	7.42	23.29		
	45	0.03	0.03	0.13	0.47	2.71	7.42	23.29		
	50	0.03	0.03	0.13	0.44	2.57	7.03	22.51		
	60	0.03	0.03	0.13	0.44	2.57	7.03	22.51		
	70	0.03	0.03	0.13	0.44	2.57	7.03	22.51		
	80	0.03	0.03	0.13	0.44	2.57	7.03	22.51		
	90	0.03	0.03	0.13	0.44	2.57	7.03	22.51		
100	0.03	0.03	0.13	0.44	2.57	7.03	22.51			

1.Gear ratio($i=N_1/N_{out}$)

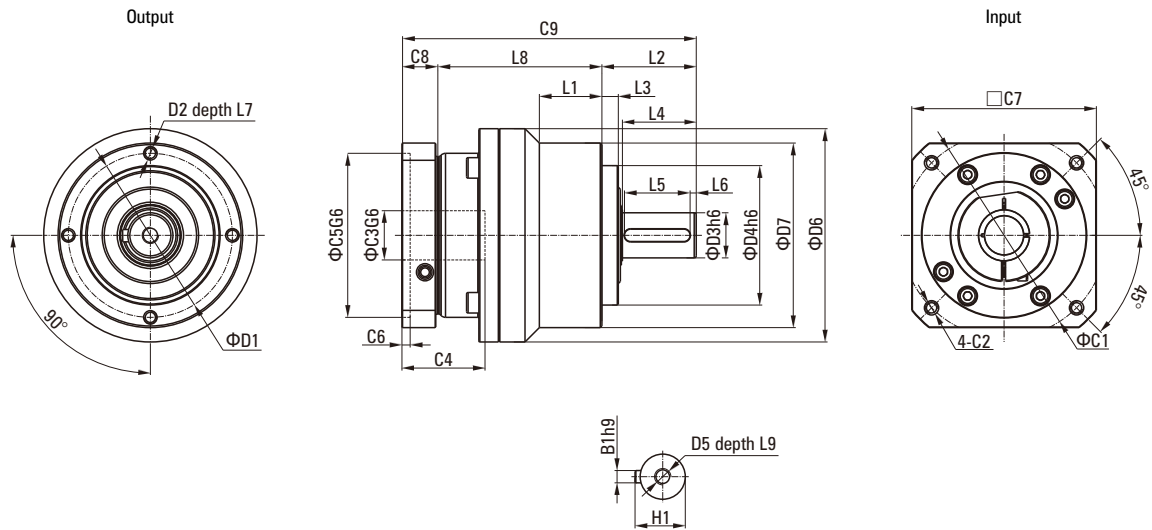
2.Maximum acceleration torque $T_{2B}=60\%$ of T_{2NOT}

3.When the output speed is 100rpm, it will act on the central position of the output shaft.

*Continuous operation, service life is 10000hrs

DIMENSIONS (SINGLE STAGE, REDUCTION RATIO $i=3\sim 10$)

Dimensional Drawing



Dimensional Table

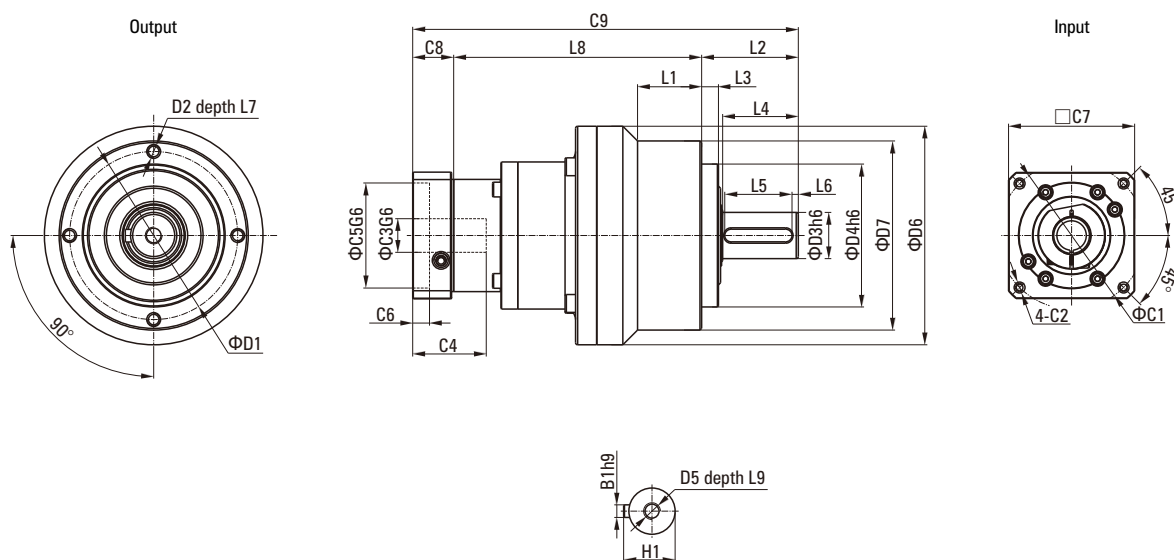
Unit: mm

Size	050SE	070SE	090SE	120SE	155SE	205SE
D1	44	62	80	108	140	184
D2	M5×0.7P	M5×0.8P	M6×1P	M8×1.25P	M10×1.5P	M12×1.75P
D3 ^{h6}	12	16	22	32	40	55
D4 ^{g6}	35	52	68	90	120	160
D5	M4×0.7P	M5×0.8P	M8×1.25P	M12×1.75P	M16×2P	M20×2.5P
D6	53	70	104	130	162	205
D7	50	70	90	120	155	205
L1	-	-	31.5	36	50	-
L2	24.5	36	46	70	97	100
L3	4	6	8	17	15	15
L4	1	28	36	51	79	82
L5	14	25	32	40	70	70
L6	2	2	3	5	4	6
L7	8	10	12	16	20	22
L8	47	66.5	80	96.5	119.5	154
L9	4.5	12.5	19	28	36	42
C1	10	70	100	130	165	215
C2	M4×0.7P	M5×0.8P	M6×1P	M8×1.25P	M10×1.5P	M12×1.75P
C3	*≤11/≤12	*≤14/≤16	≤19/≤24	≤32	≤35/≤38	≤42/≤48
C4	30	35	40.5	51	60	85
C5 ^{g6}	30	50	80	110	130	180
C6	3.5	8	4	5	6	6
C7	48	60	90	115	142	190
C8	19.5	19.5	17.5	20	22.5	29
C9	91	117	143.5	186.5	239	288
B1 ^{h9}	4	5	6	10	12	16
H1	14	18	24.5	35	43	59

*070SE 5,10 Reduction ratio provides C3≤16 to choose from.

DIMENSIONS (TWO STAGE, REDUCTION RATIO $i=15\sim 100$)

Dimensional Drawing



Dimensional Table

Unit: mm

Size	050SE	070SE	090SE	120SE	155SE	205SE
D1	44	62	80	108	140	184
D2	M4×0.7P	M5×0.8P	M6×1P	M8×1.25P	M10×1.5P	M12×1.75P
D3 ^{h6}	12	16	22	32	40	55
D4 ^{g6}	35	52	68	90	120	160
D5	M4×0.7P	M5×0.8P	M8×1.25P	M12×1.75P	M16×2P	M20×2.5P
D6	53	70	104	130	162	205
D7	50	70	90	120	155	205
L1	-	-	31.5	36	50	-
L2	24.5	36	46	70	97	100
L3	4	6.5	8	17	15	15
L4	1	1	36	51	79	82
L5	14	25	32	40	63	70
L6	2	2	3	5	5	6
L7	8	10	12	16	20	22
L8	74	87.8	118	138	169.5	207.5
L9	4.5	4.8	19	28	36	42
C1	46	46	70	100	130	165
C2	M4×0.7P	M4×0.7P	M5×0.8P	M6×1P	M8×1.25P	M10×1.5P
C3	≤11/≤12	≤11/≤12	≤14/≤15.875/≤16	≤19/≤24	≤32	≤35/≤38
C4	30	30	35	40.5	50	60
C5 ^{g6}	30	30	50	80	110	130
C6	3.5	3.5	8	4	5	6
C7	48	48	60	90	115	142
C8	19.5	19.5	19.5	17.5	12.5	22.5
C9	118	143	183.5	225.5	283.5	335
B1 ^{h9}	4	5	6	10	12	16
H1	14	18	24.5	35	43	59