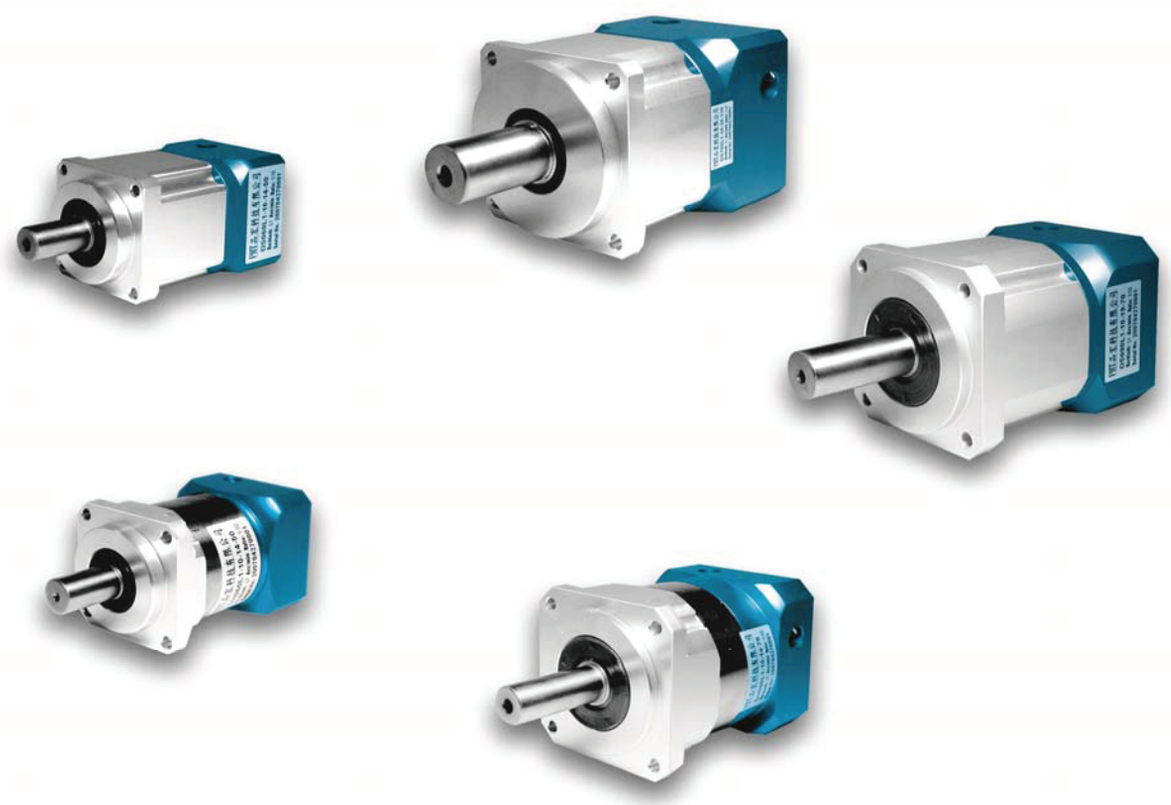
ALTEK motion

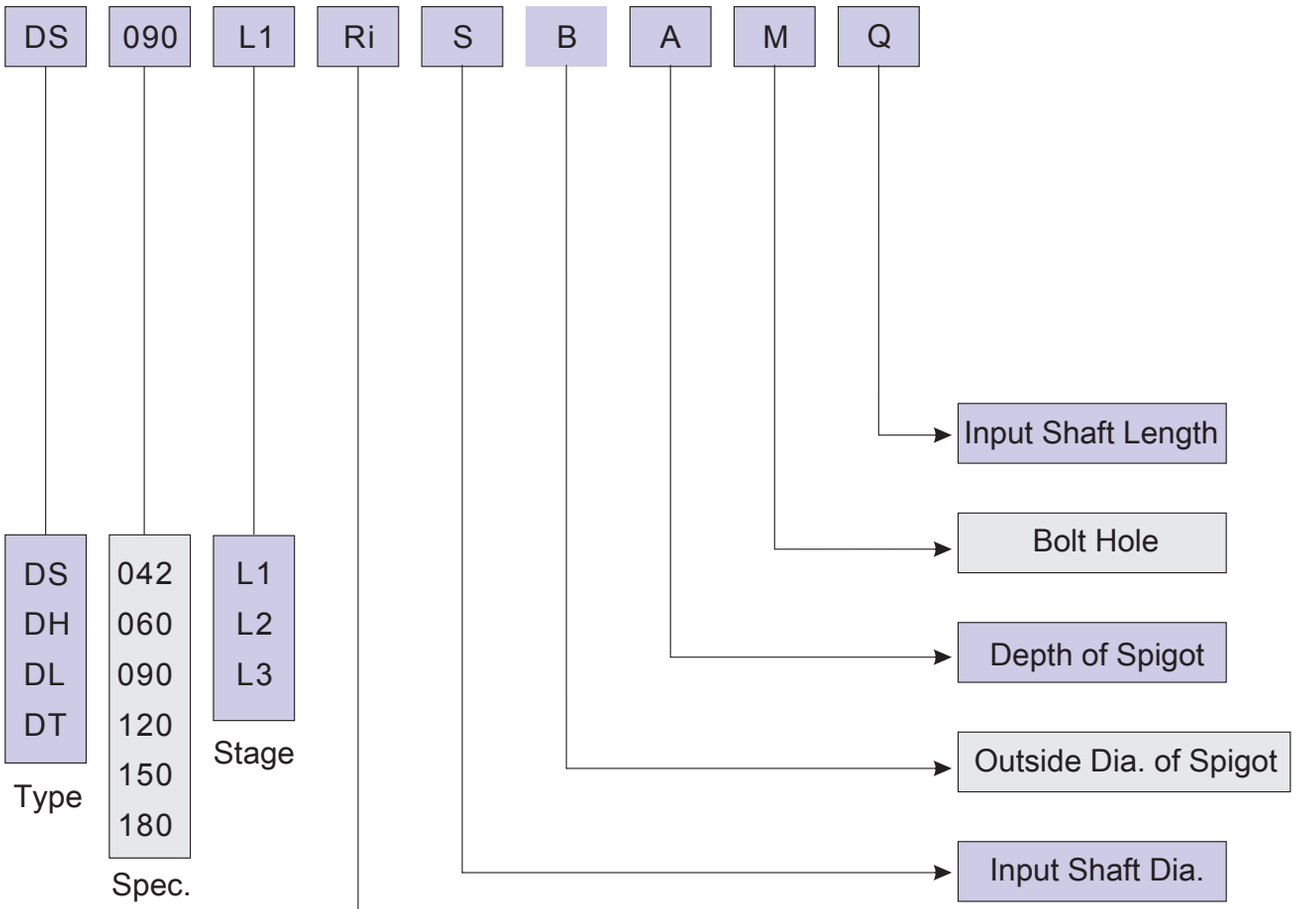
Planetary Gearboxes

PHT a manufacturer in Taiwan for 26 years of precision servo dedicated reducer's for machinery automation providing high-quality and performance products.



specification

Reduction Ratio = RPM of Servomoter / RPM of Gear Reducer Output



Stage	Reduction Ratio
L1	3、4、5、7、10
L2	9、12、15、16、20、25、28、30、40、49、50、70、100
L3	36、45、60、75、80、150、200、300、400、500、700、1000

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cross reference of servomoter and reduction ration

Capacity \ Reduction Ratio		1/3	1/4	1/5	1/7	1/9	1/10	1/15	1/20	1/25	1/30	1/35	1/40	1/50	1/70	1/100
100w	DH042	●		●												
	DS060	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
200w	DS060	●	●	●	●	●	●	●	●	●	●	●	●	●	●	
	DS090	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
400w	DS060	●	●	●	●	●	●	●	●	●	●	●	●			
	DS090	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
500w	DS090	●	●	●	●	●	●	●	●	●	●					
	DS120	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
750w	DS090	●	●	●	●	●	●	●	●	●	●	●				
	DS120	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
1kw	DS120	●	●	●	●	●	●	●	●	●	●	●	●	●		
	DS150	●	●	●	●		●	●	●	●	●	●	●	●	●	●
1.5kw	DS120	●	●	●	●	●	●	●	●	●	●					
	DS150	●	●	●	●	●	●	●	●	●	●	●	●	●	●	
	DS180	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
2kw	DS150	●	●	●	●	●	●	●	●	●	●	●	●	●		
	DS180	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
3.5kw	DS150	●	●	●	●	●	●	●	●	●	●					
	DS180	●	●	●	●		●	●	●	●	●	●	●	●	●	
5.0kw	DS150	●	●	●	●		●	●	●							
	DS180	●	●	●	●		●	●	●	●	●	●	●	●		
7.0kw	DS180	●	●	●	●		●									
	DS180	●	●	●	●		●	●	●	●	●					
11.0kw	DS180	●	●	●	●		●	●	●							

CHOOSE AN APPLICABLE REDUCTION RATIO

$$\text{Reduction Ration} = \frac{\text{RPM of Servomoter}}{\text{RPM of Gear Reducer Output}}$$

Calculation of Required Torque

The Life Time of Gear Reducer Depens on Calculation of Required Torque, also Please Notice Peak Torque Happened in Acceleration or Decelerating Should be Less Than the Maximum Load Torque of Gear Reducer.

Calculation Formula for RReference

$$TP = ((GD_L^2 + GD_a^2 + GD_M^2 \times N / (375 \times t \pm T_L) / R$$

TP	Min. Torque Required at Moment of Starting, that Gear Reducer Should Bear Against Peak Torque at Moment.
GD_M^2	Rotary Inertia of Motor Rotor.
GD_L^2	The Rotary Inertia of Load Reflected Motor Rotor.
GD_a^2	Rotary Inertia of Gear Reducer Reflected to Motor Rotor.
R	Total Reduction Ration. $R: \frac{\text{RPM motor}}{\text{RPM load}}$
T_L	The Static Torque of Load Reflected to Motor Rotor. $TL = \frac{\text{T load}}{(\text{R x EFF})}$ EFF= efficiency
t	The Time Required in Accelerate / Decelerate.
N	Motor Rotor Speed RPM.
+	Accelerating.
-	Decelerating.

INSTALLATION

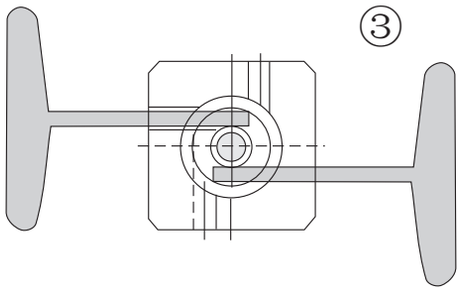
1, Install the Shaft of Motor into the Input of Gear Reducer;
2, Tighten the Connection between motor and Gear Reducer;
3, Tighten averagely the Both Sides by Screwdriver;

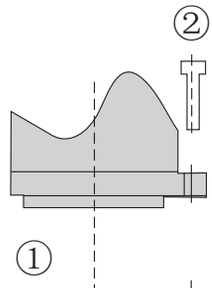
Screw Type	M3	M4	M5	M6	M8	M10	M12
Tighten(NM)	1.0	2.25	4.5	7.05	18.6	35.75	64.0

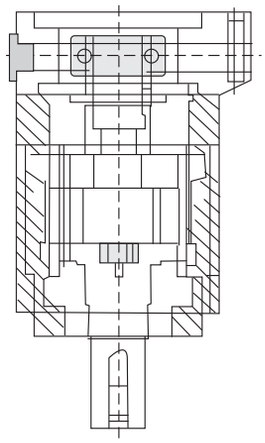
4, Tighten averagely the Both Sides by Torsion trigger;

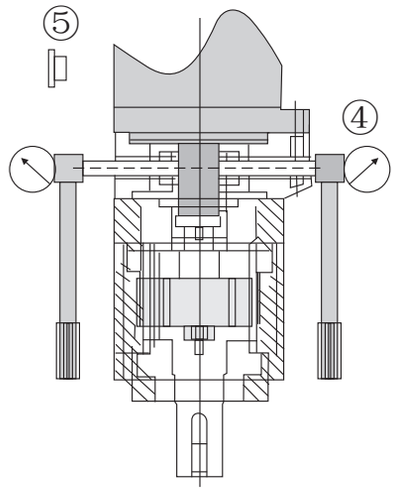
Screw Type	M3	M4	M5	M6	M8	M10	M12
Tighten(NM)	2.0	4.5	9.0	15.3	37.2	73.5	128

5, Then, Put Anti-Dust Cover inside the Bolt Hole of Gear Reducer.









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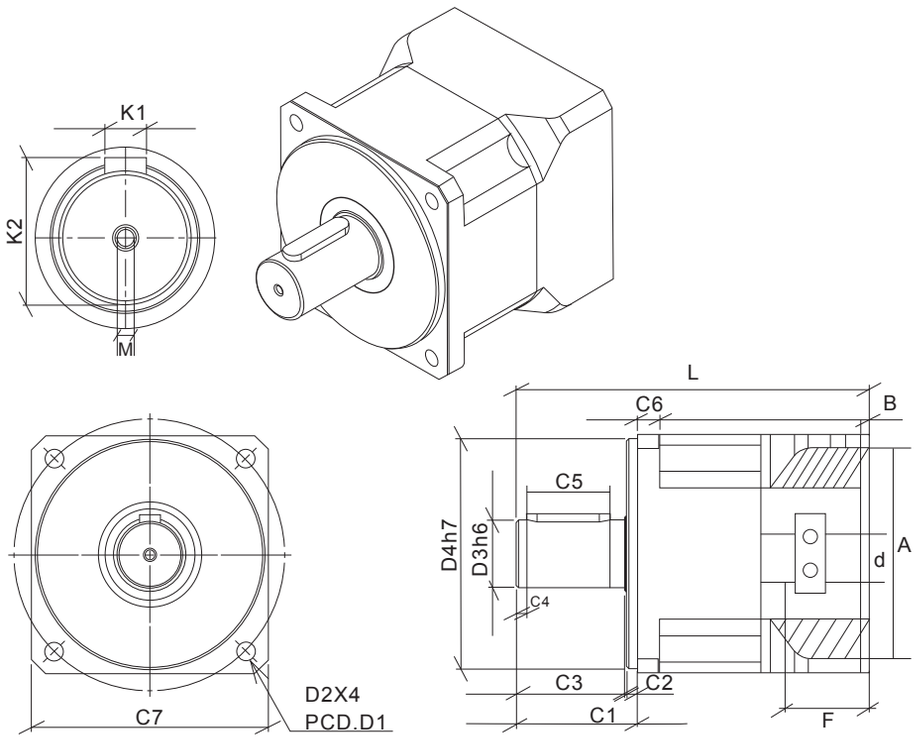
DS SERIES



Spec.		DS060	DS070	DS090	DS120	DS150	DS180
D1		70	75	105	130	165	215
D2		5	5.5	6.8	9	11	13
※D3		16(12～16)	16(12～16)	20(16～22)	32(24～35)	42(38～45)	55(50～60)
D4		50	60	80	110	130	160
C1		35	33	54.5	58	72	107
C2		7	5	6	5	4	10
C3		27	27	48.5	51	67	83
C4		3	3	5	5	5	6
C5		20	20	25	40	45	180
C6		10	10	12	11	15	70
C7		60	68	94	114	142	25
L	L1 (1stage)	125	125	168	170	261	332
	L2 (2stage)	147	147	195.5	198	313	414
M		M5*0.8P×12	M5 * 0.8P×12	M6 * P1.5×12	M8 * P1.25×27	M12*1.75P×32	M14*1.75P×40
K1		5	5	6	10	12	14
K2		18	18	22.5	35.1	45	58.5
d		≤14	≤14	≤24	≤28	≤42	≤55
△A		30～50	30～60	50～80	55～110	95～130	95～155
B		3.5	6	8	5	10	10
△F		≤30	≤30	≤40	≤56	≤85	≤95

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TECHNICAL INFO. OF DS SERIES

Specifiation			DS060	DS070	DS090	DS120	DS150	DS180
Instantaneous Max. Output Torque	Reduction Ratio							
	3 / 9 / 10 / 30		132	144	504	780	1428	2961
	4 / 15 / 16 / 20 / 40		162	180	564	918	1680	3840
	7 / 28 / 35 / 70		138	156	528	855	1560	3555
(Nm)	5 / 50		144	168	540	876	1608	3744
Specified Output Torque	3 / 9 / 10 / 30		44	48	168	260	476	987
	4 / 16 / 20 / 28 / 40		54	60	188	306	560	1280
	7 / 28 / 35 / 70		46	52	176	285	520	1185
(Nm)	5 / 50		48	56	180	292	536	1248
Reduction Ratio	1 Stage		3 / 4 / 5 / 7 / 10					
	2 Stage		*9 / 12 / 15 / 16 / 20 / 21 / 25 / 28 / 30 / 35 / 40 / 49 / 50 / 70 / 100*					
Fixed Input Rotational Speed	3 / 4 / 5		3300	3300	2600	2300	2200	1500
	7 / 10		4000	4000	2900	2700	2700	2400
	12 ~ 40		4400	4400	3200	3000	3000	2800
	50		4800	4800	3600	3300	3200	3000
(rpm)	70 ~ 100		5500	5500	4200	3900	3500	3200
Radial Load Force (N)	3 ~ 100		2600	2600	6000	7500	9000	14000
Axial Load Force (N)	3 ~ 100		2300	2300	5400	6700	9000	14000
Backlash (arcmin)	3 ~ 10		≤5	≤5	≤5	≤5	≤5	≤5
	12 ~ 100		≤8	≤8	≤8	≤8	≤8	≤8
Torsional Rigidity (Nm/arcmin)	3 ~ 100		6.5	7	14	27	48	115
Allowable Radial Force	N	L1,L2	1,400	1,400	6,200	7,500	14,000	22,000
Allowable Axial Force	N	L1,L2	800	800	5,200	3,225	12,000	20,000
Full Load Efficiency (%)	3 ~ 10		≥97					
	12 ~ 100		≥94					
Life Time (h)	3 ~ 100		20000					
Weight (kg)	3 ~ 10		1.1	1.3	3.2	4.6	13	36
	12 ~ 100		1.4	1.6	4.2	5.8	17	45.2
Noise (dB)			65	65	64	64	64	64
Application Temperature Scope (℃)			(-15℃ ~ +90℃)					
Protection Rank			IP64					
Lubricating Oil			Synthetic Lubricant - ISO VG220					
Moment of Inertia (kg.cm)	Stage	Reduction Ratio						
	1	3	0.42	0.42	0.78	2.38	19.8	48.7
		4	0.3	0.3	0.6	2	17	45
		5	0.29	0.29	0.59	2	17	46.5
		7	0.28	0.28	0.73	2	16.8	45.5
		10	0.35	0.35	0.75	2.3	19	48
	2	9	0.42	0.42	0.78	2.38	19.8	19.8
		12	0.3	0.3	0.73	2.1	17	19
		16	0.3	0.3	0.6	2.1	17	17
		20	0.3	0.3	0.6	2.1	16.8	17
		25	0.29	0.29	0.75	2.1	17	17
		28	0.3	0.3	0.75	2.1	19	17
		35	0.3	0.3	0.73	2.38	19	19
		40	0.35	0.35	0.78	2.38	19	19
		50	0.35	0.35	0.78	2.38	19	19
		70	0.35	0.35	0.78	2.38	19	19
		100	0.35	0.35	0.78	2.38	19.8	19.8