High Precision Flange Output Right Angle Planetary Gearbox

EVT

- 1. Quiet operation

  Helical gears are used to achieve smooth and quiet operation.
- 2. High precision

  The backlash is less than 3 arcmin and the positioning is accurate.
- 3. High rigidity & torque The use of integral ball bearings greatly improves the rigidity and torque.
- 4. Methods of flange and connector

  It can be installed on any motor in the world.
- 5. No grease leakage

  The use of grease with high viscosity which is not easy to separate effectively prevents the grease leakage.
- 6. Convenient maintenance

  No need to replace the grease in the product life period, and the installation is more convenient.

Model Selection of Speed Reducers

EVT Type

| EVT090 | – | 10 | – | S1 | – | P1 | / | Motor |

Reducer Model

EVT047, EVT064, EVT090

EVT110, EVT140, EVT200

EVT255

Output Shaft Keyway

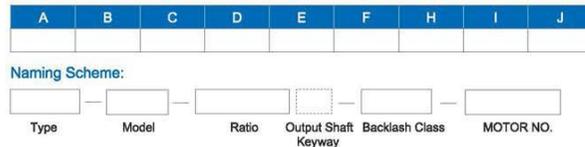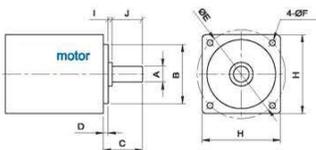S2: Standard (Keyway)

Motor Model

Servo

Nema

Ratio

1–stage: 3, 4, 5, 6, 7, 8, 9, 10

2–stage: 12, 15, 16, 20, 25, 28, 30, 35, 40, 50, 70, 80, 100

Backlash Grade

P0: High precision backlash

P1: Precision backlash

P2: Standard backlash

The gearbox matching motor needs to be confirmed with following dimensions :

A	B	C	D	E	F	H	I	J

Naming Scheme:

Type — Model — Ratio — Output Shaft Keyway — Backlash Class — MOTOR NO.

EVT Reducer Specifications

Specs	Unit	Stage	Ratio	EVT047	EVT064	EVT090	EVT110	EVT140	EVT200	EVT255
Rated Output Torque / T2N	Nm	1	4	19	50	133	278	555	1050	1700
			5	22	60	160	330	650	1200	2000
			7	19	50	140	300	550	1100	1800
			10	14	40	100	230	450	900	1500
		2	20	19	50	133	278	555	1050	1700
			25	22	60	160	330	650	1200	2000
			35	19	50	140	300	550	1100	1800
			40	19	45	120	260	500	1000	1600
			50	22	60	160	330	650	1200	2000
			70	19	50	140	300	550	1100	1800
			100	14	40	100	230	450	900	1500
Max.Output Torque / T_{2NOT}[1]	Nm	1,2	4~100	3Times of Nominal Output Torque						
Rated Input Speed / n_{1N}	rpm	1,2	4~100	5000	5000	4000	4000	3000	3000	2000
Max.Input Speed / n_{1B}	rpm	1,2	4~100	10000	10000	8000	8000	6000	6000	4000
Micro Backlash P0	arcmin	1	4~10	≤2	≤2	≤2	≤2	≤2	≤2	≤2
		2	12~100	≤4	≤4	≤4	≤4	≤4	≤4	≤4
Precision Backlash P1	arcmin	1	4~10	≤4	≤4	≤4	≤4	≤4	≤4	≤4
		2	20~100	≤6	≤6	≤6	≤6	≤6	≤6	≤6
Standard Backlash P2	arcmin	1	4~10	≤6	≤6	≤6	≤6	≤6	≤6	≤6
		2	20~100	≤8	≤8	≤8	≤8	≤8	≤8	≤8
Torsional Rigidity	Nm/arcmin	1,2	4~100	8	13	30	80	150	450	1010
Max.Radial Force / F_{2B}[2]	N	1,2	4~100	43	125	235	430	1300	3064	5900
Max.Axial Force / F_{2a1B}[2]	N	1,2	4~100	990	1050	2850	2990	10590	16660	29430
Service Life	hr	1,2	4~100	22000h						
Efficiency / η	%	1	4~10	≥97%						
		2	20~100	≥94%						
Weight	kg	1	4~10	0.7	1.3	3.2	5.8	12.3	33	57.9
		2	20~100	1	1.5	4.1	7.6	16.8	38	72.6
Operating Temperature	℃	1,2	4~100	(−15℃ ~ +90℃)						
Lubrication		1,2	4~100	(Synthetic Grease)						
Protection Class		1,2	4~100	IP65						
Mounting Position		1,2	4~100	(Any Direction)						
Noise Level (n1=3000rpm, No load)	dB(A)	1,2	4~100	≤58	≤59	≤62	≤65	≤68	≤69	≤70

Reducer Rotary Inertia

Specs	Unit	Stage	Ratio	EVT047	EVT064	EVT090	EVT110	EVT140	EVT200	EVT255
Moment of Inertia	kg.cm²	1	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
			7	0.03	0.13	0.45	2.62	7.14	22.48	50.97
			10	0.03	0.13	0.44	2.57	7.03	22.51	50.56
		2	20–40	0.03	0.03	0.13	0.47	2.71	7.42	23.29
			50–100	0.03	0.03	0.13	0.44	2.57	7.03	22.51

1. Ratio (i=Nin/Nout) .   2. 2.The Max. acceleration torque T2B=60% of T2NOT.

3. When output speed is 100rpm, acting on the output shaft center position *Continuous operation, service life is 15000hrs.
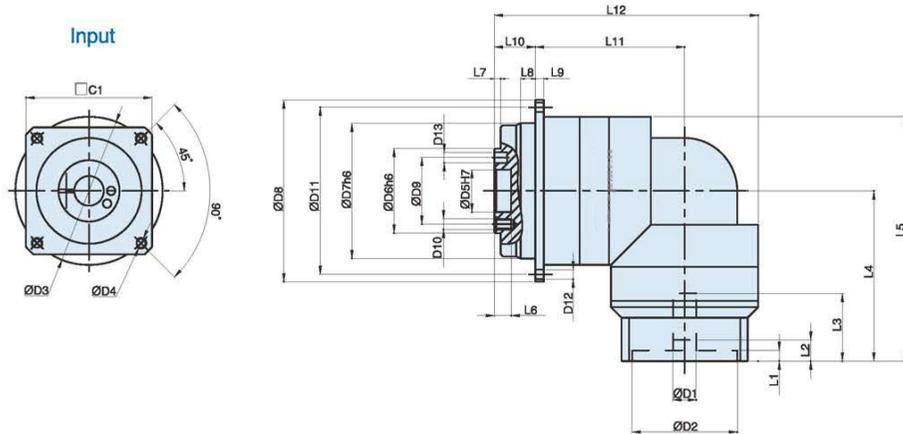
MODEL：EVT

1-Stage

Ratio：3, 4, 5, 6, 7, 8, 9, 10

Input

Unit:mm

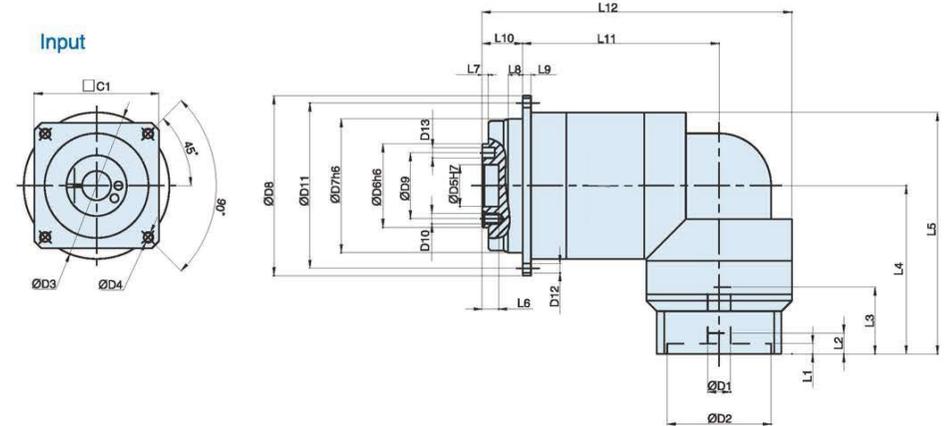| Size	EVT047-L1	EVT064-L1	EVT090-L1	EVT110-L1	EVT140-L1	EVT200-L1	EVT255-L1
D1	≤11/≤12	11(11~14)	19(19~24)	24(22~32)	32(24~35)	≤48	≤55
D2	30	50	70(70~110)	110(110~130)	110(110~114.3)	85	116
D3	46	70	90(90~145)	145(145~165)	145(145~200)	215	235
D4	M4	M4	M8	M8~M10	M8~M12	M12	M12
D5	12	20	31.5	40	50	80	100
D6	28	40	63	80	100	160	180
D7	47	64	90	110	140	200	255
D8	72	86	118	145	179	247	300
D9	20	31.5	50	63	80	125	140
D10	4-M3	7-M5x深度(D)8	8-M6x深度(D)12	11-M6x深度(D)12	11-M8x深度(D)17	11-M10x深度(D)20	12-M16x深度(D)25
D11	67	79	109	135	168	233	280
D12	8-Ø3.4	8-Ø4.5	8-Ø5.5	8-Ø5.5	12-Ø6.6	12-Ø9	16-Ø13.5
D13	Ø3	Ø5x深度(D)8	Ø6x深度(D)7	Ø6x深度(D)7	Ø8x深度(D)7	Ø10x深度(D)10	Ø12x深度(D)10
L1	3.5	5	12	10	8	6	6
L2	8	10	13	19	17	20	24
L3	30	32	42~47	57~60	67~77	85	116
L4	74	80.5	107~112	134~147.5	166.5~167	213.5	268.5
L5	104	115.5	152~157	195~208.5	217.5~241.5	316	398.5
L6	6.5	8	12	13	12	22.5	30.5
L7	3	3	6	6	6	8	12
L8	7	7	10	11	15	15	20
L9	4	4	7	8	10	12	18
L10	19.5	19.5	25	29	38	50	66
L11	60	71	102	130	142.5	189	216
L12	107.5	125.5	172	220	255.5	334.5	392
C1	48	60	90(90~130)	130~160	130(130~220)	190	220

MODEL：EVT

2-Stage

Ratio：12, 15, 16, 20, 25, 28, 30, 35
40, 50, 70, 80, 100

Input

Unit:mm

Size	EVT47-L2	EVT064-L2	EVT090-L2	EVT110-L2	EVT140-L2	EVT200-L2	EVT255-L2
D1	≤11/≤12	11(11~14)	19(19~24)	24(22~32)	32(24~35)	≤48	≤55
D2	30	50	70(70~110)	110(110~130)	110(110~114.3)	85	116
D3	46	70	90(90~145)	145(145~165)	145(145~200)	215	235
D4	M4	M4	M8	M8~M10	M8~M12	M12	M12
D5	12	20	31.5	40	50	80	100
D6	28	40	63	80	100	160	180
D7	47	64	90	110	140	200	255
D8	72	86	118	145	179	247	300
D9	20	31.5	50	63	80	125	140
D10	4-M3	7-M5x深度(D)8	8-M6x深度(D)12	11-M6x深度(D)12	11-M8x深度(D)17	11-M10x深度(D)20	12-M16x深度(D)25
D11	67	79	109	135	168	233	280
D12	8-Ø3.4	8-Ø4.5	8-Ø5.5	8-Ø5.5	12-Ø6.6	12-Ø9	16-Ø13.5
D13	Ø3	Ø5x深度(D)8	Ø6x深度(D)7	Ø6x深度(D)7	Ø8x深度(D)7	Ø10x深度(D)10	Ø12x深度(D)10
L1	3.5	5	12	10	8	6	6
L2	8	10	13	19	17	20	24
L3	30	32	42~47	57~60	67~77	85	116
L4	74	80.5	107~112	134~147.5	166.5~167	213.5	268.5
L5	103	115.5	152~157	195~208.5	217.5~241.5	269.5	340
L6	4	8	12	13	12	22.5	30.5
L7	3	3	6	6	6	8	12
L8	7	7	10	11	15	15	20
L9	4	4	7	8	10	12	18
L10	19.5	19.5	30	29	38	50	66
L11	79	94.5	117	163.5	187	243	270
L12	122	149	187	253.5	300	382	403
C1	48	60	90(90~130)	130~160	130(130~220)	190	220