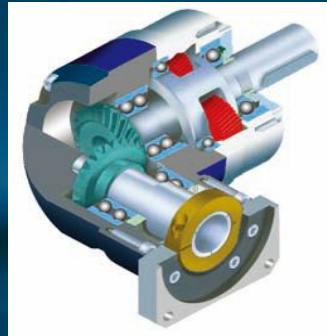


EER Series: How to Order

Ordering Instruction

EER Series: High Precision High Speed Gearboxes



RATIO 3:1-100:1

OUTPUT TORQUE UP to 2000Nm

BACKLASH UP to 4arc min

AVAILABLE SIZES 50-235

MODEL KEY

MODEL	EE	EER
SIZE	060	050\070\090\120\155 \205\235
RATIO	32	SINGLE: 03\04\05\06 \08\10 DOUBLE: 09\12\15 \16\18\20\24\25\30 \32\36\40 48\64\100
BACKLASH	P2	Ultra Precision: P0 Precision: P1 Standard: P2
INSTALLATION TYPE	Z2	Axis: Z1 Single Key: Z2 Spline Key: Z3 Light Hole: K1 Single Hole: K2 Spline Hole: K3 Customized: T
CONNECTION TYPE	OP2	Axis Connect: OP1 Motor Connect: OP2

How to Order

1. Choose dimension and ratio
2. Select model
3. Choose motor model and installation type

EER Series Performance Parameters

Specification		Stage	Ratio	EER050	EER070	EER090	EER120	EER155	EER205	EER235	
Rated Output Torque T_{2N}	Nm	1	3	9	36	90	195	342	588	1,140	
			4	12	48	120	260	520	1,040	1,680	
			5	15	60	150	325	650	1,200	2,000	
			6	18	55	150	310	600	1,100	1,900	
			7	19	50	140	300	550	1,100	1,800	
			8	17	45	120	260	500	1,000	1,600	
			9	14	40	100	230	450	900	1,500	
			10	14	40	100	230	450	900	1,500	
		14	-	42	140	300	550	1,100	1,800		
		20	-	40	100	230	450	900	1,500		
		2	15	14	-	-	-	-	-	-	-
			20	14	-	-	-	-	-	-	-
			25	15	60	150	325	650	1,200	2,000	
			30	20	55	150	310	600	1,100	1,900	
			35	19	50	140	300	550	1,100	1,800	
			40	17	45	120	260	500	1,000	1,600	
			45	14	40	100	230	450	900	1,500	
			50	14	60	100	230	650	1,200	2,000	
			60	20	55	150	310	600	1,100	1,900	
			70	19	50	140	300	550	1,100	1,800	
80	17		45	120	260	500	1,000	1,600			
90	14		40	100	230	450	900	1,500			
100	14	40	100	230	450	900	1,500				
120	-	-	150	310	600	1,100	1,900				
140	-	-	140	300	550	1,100	1,800				
160	-	-	120	260	550	1,000	1,600				
180	-	-	100	230	450	900	1,500				
200	-	-	100	230	450	900	1,500				
Emergency Stop Torque T_{2NOT}^3	Nm	1,2	3~200	3x Rated Output Torque							
Rated Input Speed n_{1N}	rpm	1,2	3~200	5,000	5,000	4,000	4,000	3,000	3,000	2,000	
Max Input Speed n_{1B}	rpm	1,2	3~200	10,000	10,000	8,000	8,000	6,000	6,000	4,000	
Standard Backlash	arcmin	1	3~20	≤10	≤10	≤10	≤10	≤10	≤10	≤10	
		2	25~200	≤14	≤14	≤14	≤14	≤14	≤14	≤14	
Torsional Rigidity	Nm/arcmin	1,2	3~200	3	7	14	25	50	145	225	
Permissible radial force F_{2rB}^2	N	1,2	3~200	780	1,377	2,985	6,100	8,460	13,050	8,700	
Permissible axial force F_{2a1B}^2	N	1,2	3~200	350	630	1,300	2,400	4,000	6,200	4,800	
Permissible axial force F_{2a2B}^2	N	1,2	3~200	390	765	1,625	3,350	4,700	7,250	18,000	
Use Life	hr	1,2	3~200	20,000*							
Efficiency η	%	1	3~20	≥95%							
		2	25~200	≥92%							
Weight	kg	1	3~20	1.0	2.1	5.8	11.2	22.4	46.8	78.0	
		2	25~200	1.3	2.0	4.6	11.1	21.8	43.7	81.9	
Temperature	°C	1,2	3~200	-10°C~+90°C							
Lubricating		1,2	3~200	Synthetic Lubricants (NYOGEL 792D)							
Protection class		1,2	3~200	IP65							
Install Direction		1,2	3~200	Any Direction							
Noise ($n_1=3000$ rpm, w/o load)	dB(A)	1,2	3~200	≤61	≤63	≤65	≤68	≤70	≤72	≤74	

Gearbox Moment of inertia

Specification		Stage	Ratio	EER050	EER070	EER090	EER120	EER155	EER205	EER235
Inertia J_1	kg · cm ²	1	3~10	0.09	0.35	2.25	6.84	23.4	68.9	135.4
			14	-	0.07	1.87	6.25	21.8	65.6	119.8
			20	-	0.07	1.87	6.25	21.8	65.6	119.8
		2	15	0.09	-	-	-	-	-	-
			20	0.09	-	-	-	-	-	-
			25~100	0.09	0.09	0.35	2.25	6.84	23.4	68.9
120~200	-	-	0.31	1.87	6.25	21.8	65.6			

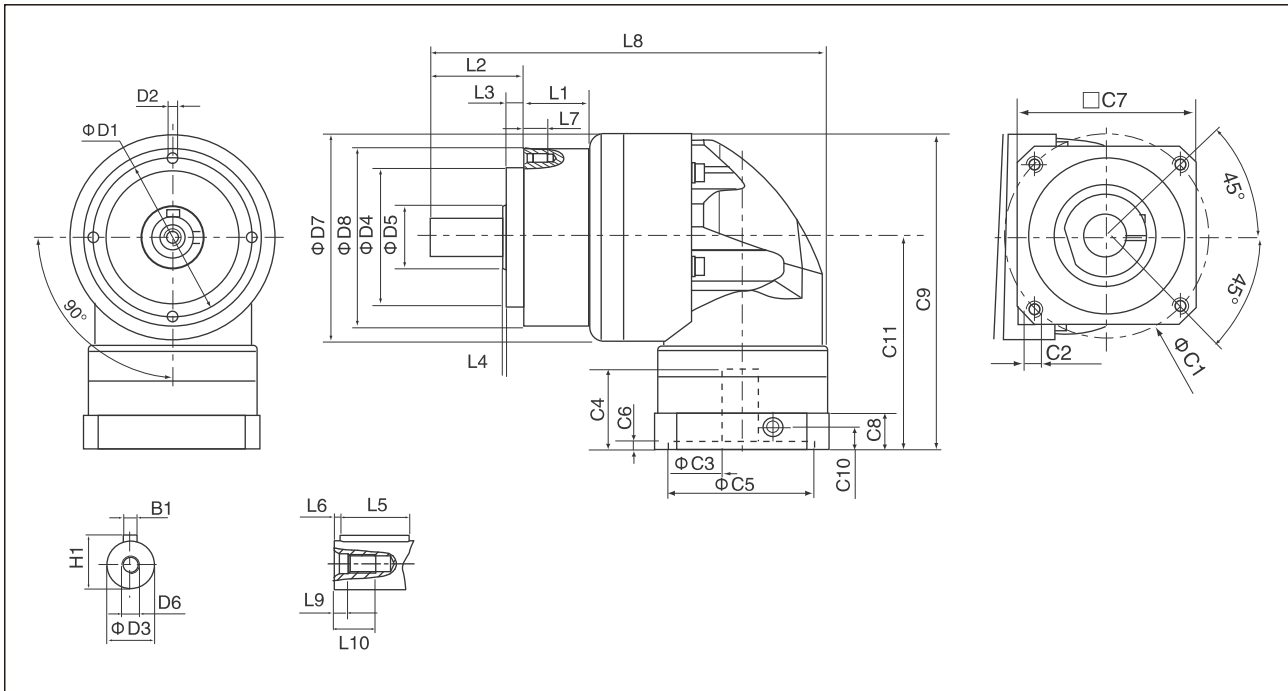
1. Ratio ($i=N_{in}/N_{out}$) 2. Output Speed at 100 rpm, act on the center of output axis.

3. Max acceleration torque $T_{2B}=60\%$ of T_{2NOT} *Use life up to 10,000 hours with continuous operation.

EER Series Performance Specifications

Dimensions

L1=Stage 1 Ratio i=3~20



[Unit: mm]

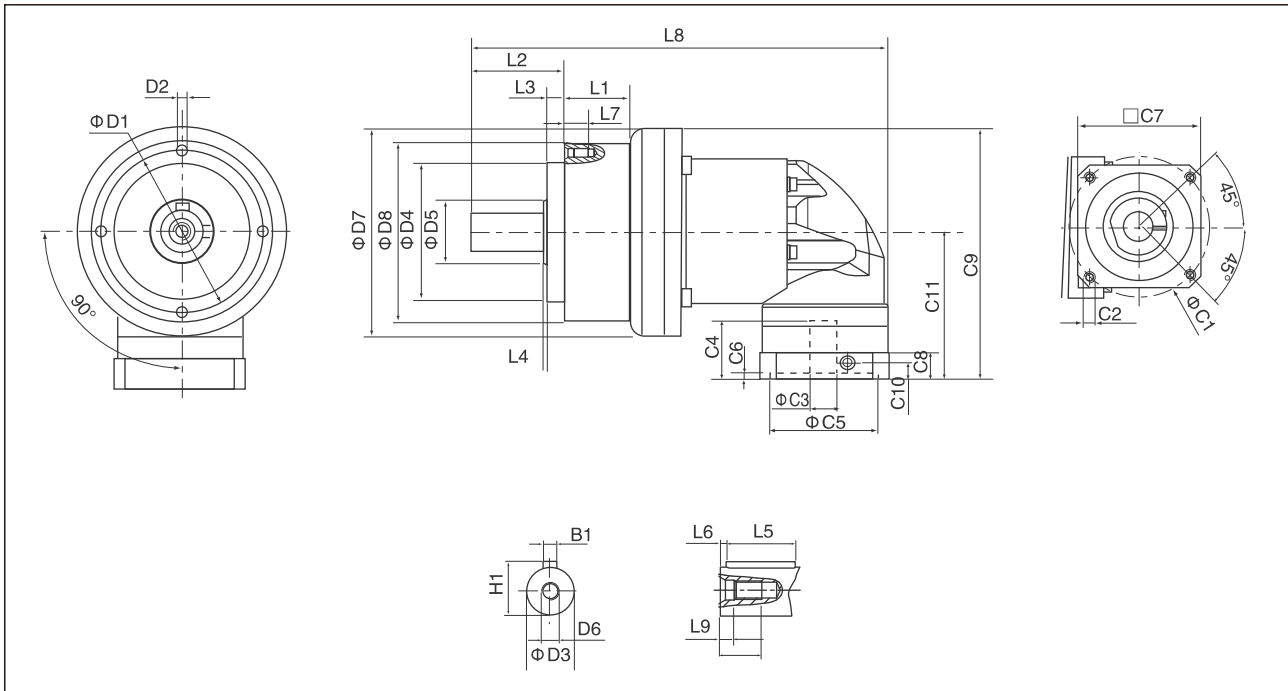
Size	EER050	EER070	EER090	EER120	EER155	EER205	EER235
D1	44	62	80	108	140	184	210
D2	M4 x 0.7P	M5 x 0.8P	M6 x 1P	M8 x 1.25P	M10 x 1.5P	M12 x 1.75P	M16 x 2P
D3 _{j6}	12	16	22	32	40	55	75
D4 _{h6}	35	52	68	90	120	160	180
D5	22	22	30	40	75	95	115
D6	M4 x 0.7P	M5 x 0.8P	M8 x 1.25P	M12 x 1.75P	M16 x 2P	M20 x 2.5P	M20 x 2.5P
D7	53	70	104	130	162	205	260
D8	50	70	90	120	155	205	235
L1	--	--	33.5	38	50	--	70
L2	24.5	36	46	70	97	100	126
L3	4	6.5	8.5	17.5	15	15	18
L4	1	1	1	1.5	3	3	3
L5	14	25	32	40	63	70	90
L6	2	2	3	5	5	6	7
L7	8	10	12	16	20	22	28
L8	47	146	201	252	324.5	379.5	461.5
L9	4.5	4.8	7.2	10	12	15	15
L10	10	12.5	19	28	36	42	42
C1 ⁴	46	70	100	130	165	215	235
C2 ⁴	M4 x 0.7P	M5 x 0.8P	M6 x 1P	M8 x 1.25P	M10 x 1.5P	M12 x 1.75P	M12 x 1.75P
C3 ⁴	≤11	*≤14 / ≤16	≤19 / ≤24	≤32	≤38	≤48	≤55
C4 ⁴	30	34	40	50	60	85	116
C5 ⁴ _{G6}	30	50	80	110	130	180	200
C6 ⁴	3.5	8	4	5	6	6	6
C7 ⁴	48	60	90	115	142	190	220
C8 ⁴	19.5	19	17	19.5	22.5	29	63
C9 ⁴	100.5	116.5	159.5	199	245.5	316	398.5
C10 ⁴	13.25	13.5	10.75	13	15	20.75	53.5
C11 ⁴	74	81.5	107.5	134	164.5	213.5	268.5
B1 _{h9}	4	5	6	10	12	16	20
H1	14	18	24.5	35	43	59	79.5

4. C1~C10 are metric standard motor plate sizes.

EER Series Performance Specifications

Dimensions

L2=Stage 2 Ratio i=25~200

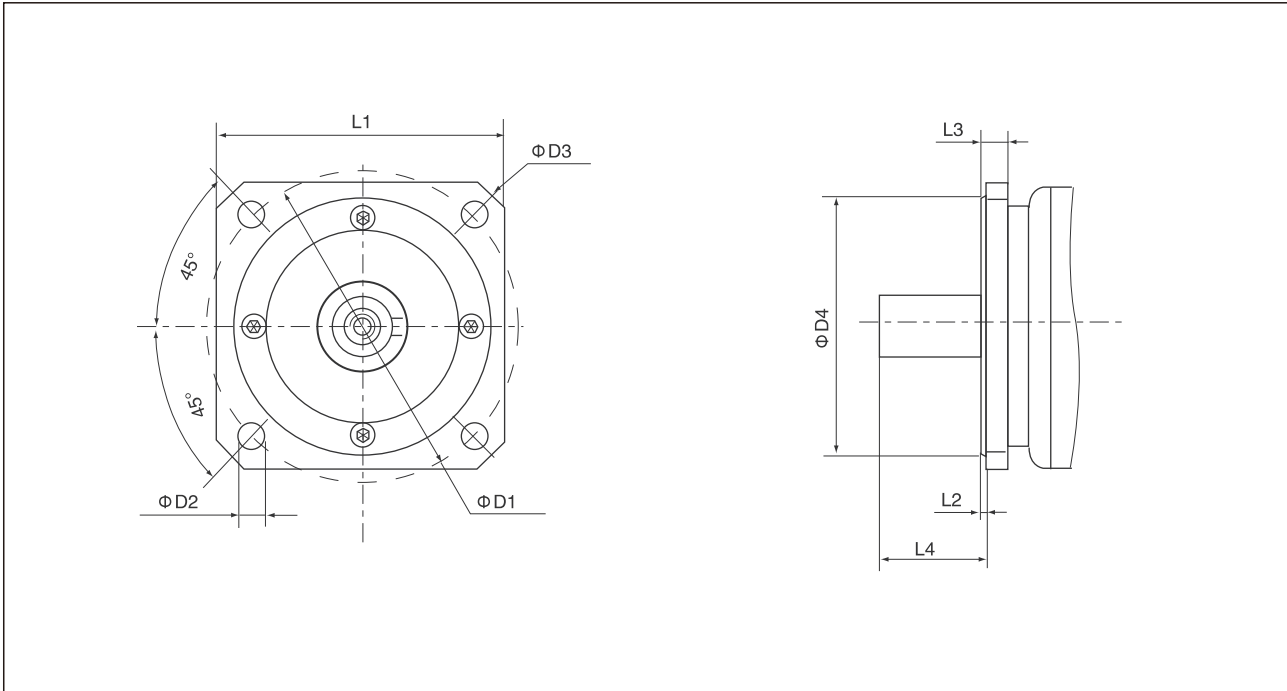


[Unit: mm]

Size	EER050	EER070	EER090	EER120	EER155	EER205	EER235
D1	44	62	80	108	140	184	210
D2	M4 x 0.7P	M5 x 0.8P	M6 x 1P	M8 x 1.25P	M10 x 1.5P	M12 x 1.75P	M16 x 2P
D3 _{j6}	12	16	22	32	40	55	75
D4 _{h6}	35	52	68	90	120	160	180
D5	22	22	30	40	75	95	115
D6	M4 x 0.7P	M5 x 0.8P	M8 x 1.25P	M12 x 1.75P	M16 x 2P	M20 x 2.5P	M20 x 2.5P
D7	53	70	104	130	162	205	260
D8	50	70	90	120	155	205	235
L1	--	--	33.5	38	50	--	70
L2	24.5	36	46	70	97	100	126
L3	4	6.5	8.5	17.5	15	15	18
L4	1	1	1	1.5	3	3	3
L5	14	25	32	40	63	70	90
L6	2	2	3	5	5	6	7
L7	8	10	12	16	20	22	28
L8	142.5	167.5	207.5	283	358	422.5	506.5
L9	4.5	4.8	7.2	10	12	15	15
L10	10	12.5	19	28	36	42	42
C1 ⁵	46	46	70	100	130	165	215
C2 ⁵	M4 x 0.7P	M4 x 0.7P	M5 x 0.8P	M6 x 1P	M8 x 1.25P	M10 x 1.5P	M12 x 1.75P
C3 ⁵	≤ 11	≤ 11 / ≤ 12	≤ 14 / ≤ 15.875 / ≤ 16	≤ 19 / ≤ 24	≤ 32	≤ 38	≤ 48
C4 ⁵	30	30	34	40	50	60	85
C5 ⁵ _{G6}	30	30	50	80	110	130	180
C6 ⁵	3.5	3.5	8	4	5	6	6
C7 ⁵	48	48	60	90	115	142	190
C8 ⁵	19.5	19.5	19	17	19.5	22.5	29
C9 ⁵	100.5	109	133.5	172.5	215	267	343.5
C10 ⁵	13.25	13.25	13.5	10.75	13	15	20.75
C11 ⁵	74	74	81.5	107.5	134	164.5	213.5
B1 _{h9}	4	5	6	10	12	16	20
H1	14	18	24.5	35	43	59	79.5

5. C1~C10 are metric standard motor plate sizes.

Front Plate Accessories



[Unit: mm]

Size	D1	D2	D3	D4	L1	L2	L3	L4
EE050(IE050)-NEMA23	66.675	6	77	38.1(38.15)	57.2	2	8	18.5
EE050(IE050)-PX60	70	5.6	80.5	50	60	2.5	8.5	18.5
EE070(IE070)-Metric	90	5.6	106	50	80	3	11	28
EE070(IE070)-NEMA34	98.425	5.6	115	73.08	86	2.5	8	30.5
EE070(IE070)-DT90/PX90	100	6.6	120	80	90	3	8	31
EE090(AE090)-IEC 63D5 B5	115	9	140	95	105	3	10.5	38.5
EE090-NEMA34	98.425	5.5	122	73.025	92	2.5	12.5	36
EE090-DT90/PX90	100	6.5	122	80	92	2.5	12.5	36
EE090(IE090)-NEMA42	125.73	7	144	55.58	107	4	14.5	35.5
EE120-NEMA42	125.73	7.1	170	55.499	127	1.5	21.5	50
EE120(IE120)-NEMA56	149.225	6.6	170	114.3	127	3	17.5	55.5
EE155(IE155)-B5	175	11	196	130	160	5	20	82
EE205(IE205)-B5	230	13	277	180	210	5	23	82
EE235(IE235)-B5	275	17	317	235	240	5	23	108