

AER series

Overview



- Special design for continuous (S1) or cyclic (S5) duty operation
- Stainless steel housing, aluminum black anodized right angle housing and motor adapter flange
- Stainless steel output shaft with key
- Helical gear design
- Nominal torques:
 - T_{2N} : 9 Nm – 2000 Nm
- Ratios
 - 1-stage : 3 / 4 / 5 / 6 / 7 / 8 / 9 / 10 / 14 / 20
 - 2-stage : 15 / 20 / 25 / 30 / 35 / 40 / 45 / 50 / 60 / 70 / 80 / 90 / 100 / 120 / 140 / 160 / 180 / 200
 - * Only the AER050, 2-stage offers 15 and 20 option.
- Low backlash
 - 1-stage : ≤ 10 arcmin
 - 2-stage : ≤ 14 arcmin
- High efficiency
 - 1-stage : $\geq 95\%$
 - 2-stage : $\geq 92\%$
- Easy mount
- Low noise
- Compact structure
- Sizes available: AER050 / AER070 / AER090 / AER120 / AER155 / AER205 / AER235

Specifications

Model No.		Stage	Ratio ¹	AER050	AER070	AER090	AER120	AER155	AER205	AER235	
Nominal 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	3 times of nominal output torque T _{2N}						
Nominal 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	
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	
Max. Radial Load F _{2rB} 2	N	1,2	3~200	702	1,377	2,985	6,100	8,460	13,050	8,700	
Max. Axial Load	F _{2a1B} 2	N	1,2	3~200	350	630	1,300	2,400	4,000	6,200	4,800
	F _{2a2B} 2	N	1,2	3~200	390	765	1,625	3,350	4,700	7,250	18,000
Service Life	hr	1,2	3~200	20,000 *							
Efficiency	%	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	
Operating Temperature	°C	1,2	3~200	-10°C~+90°C							
Lubrication		1,2	3~200	synthetic gear grease (NYOGEL 792D)							
Degree of Gearbox Protection		1,2	3~200	IP65							
Mounting Position		1,2	3~200	all directions							
Noise Level (n ₁ =3000 rpm, No Load)	dB(A)	1,2	3~200	≤ 61	≤ 63	≤ 65	≤ 68	≤ 70	≤ 72	≤ 74	

1. Ratio (i=N in / N out)
2. Applied to the output shaft center @ 100 rpm
3. Maximum acceleration torque T_{2B} = 60% van T_{2NOT}

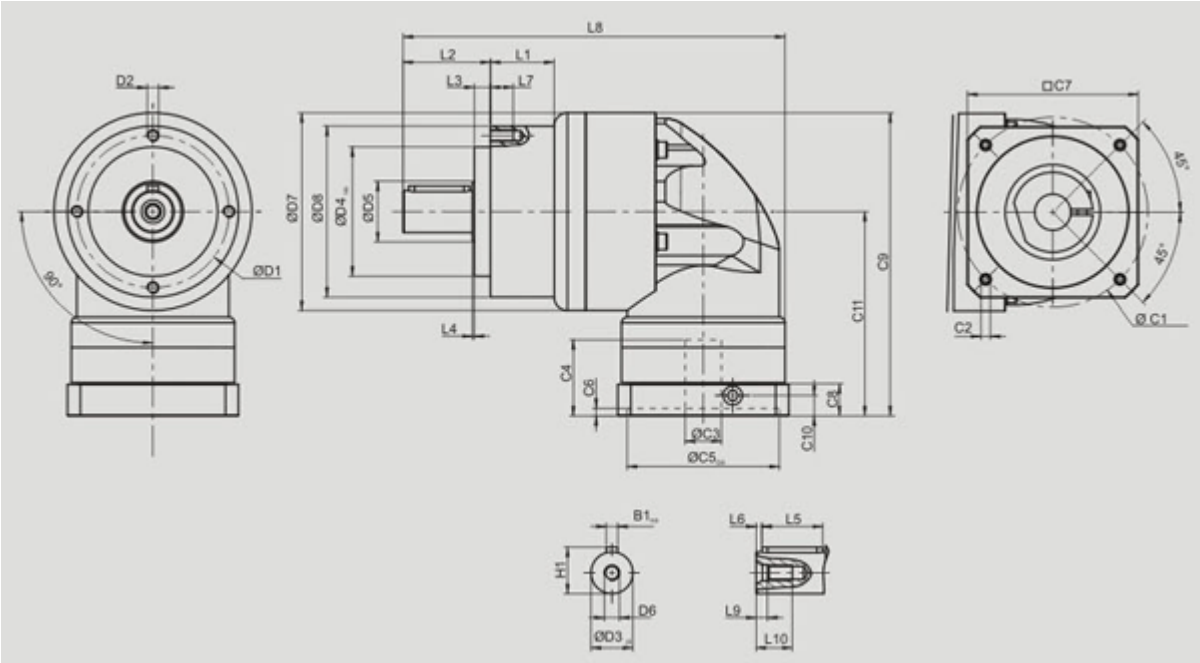
* S1 service life 10,000 hrs.

Inertia

Model No.		Stage	Ratio ¹	AER050	AER070	AER090	AER120	AER155	AER205	AER235
Massa Moment of 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

Sizes

AER series 1-stage, ratio i = 3~20



	AER050	AER070	AER090	AER120	AER155	AER205	AER235
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	115.5	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 ³	46	70	100	130	165	215	235
C2 ³	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 ³	≤11	≤14 / ≤16	≤19 / ≤24	≤32	≤38	≤48	≤55
C4 ³	30	34	40	50	60	85	116
C5 ³ _{G6}	30	50	80	110	130	180	200
C6 ³	3.5	8	4	5	6	6	6
C7 ³	48	60	90	115	142	190	220
C8 ³	19.5	19	17	19.5	22.5	29	63
C9 ³	100.5	116.5	159.5	199	245.5	316	398.5
C10 ³	13.25	13.5	10.75	13	15	20.75	53.5
C11 ³	74	81.5	107.5	134	164.5	213.5	268.5
B1 _{h9}	4	5	6	10	12	16	20

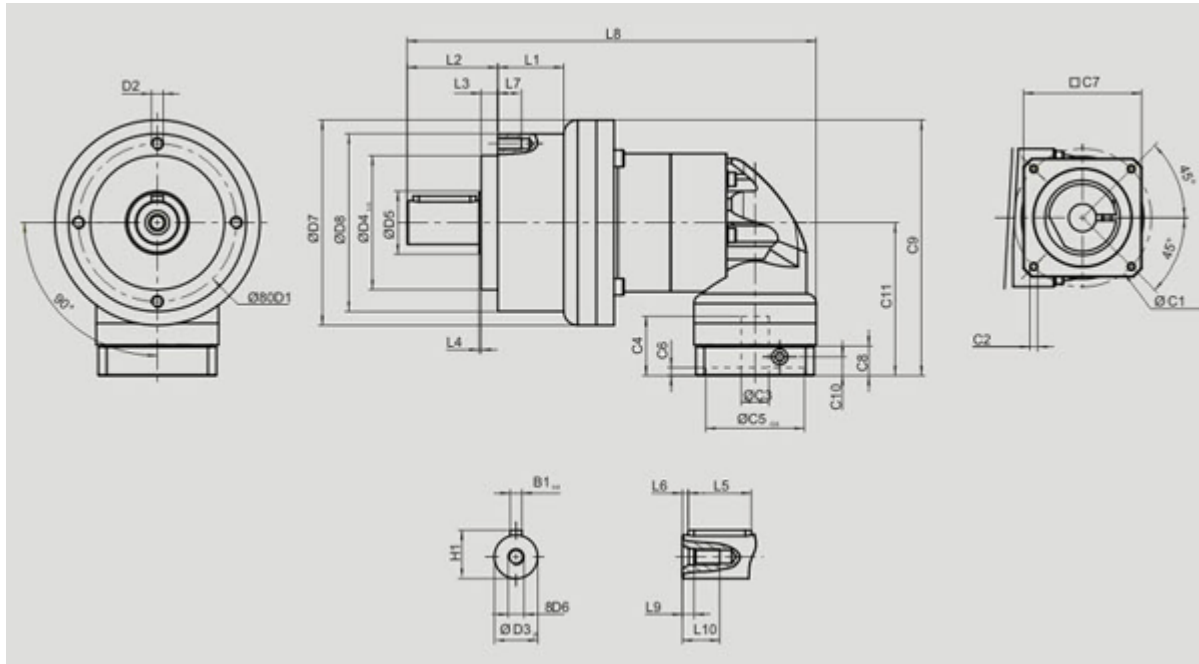
H1	14	18	24.5	35	43	59	79.5
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3. C1~C10 are motor specific dimensions.

* AER070M1 offers C3 ≤16 option.

* AER090M1 offers C3 ≤24 option.

AER series 2-stage, ratio i = 25 ~ 200



	AER050	AER070	AER090	AER120	AER155	AER205	AER235
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 ⁴	46	46	70	100	130	165	215
C2 ⁴	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 ⁴	≤11	≤11 / ≤12	≤14 / ≤15.875 / ≤16	≤19 / ≤24	≤32	≤38	≤48
C4 ⁴	30	30	34	40	50	60	85

C5 ⁴ _{G6}	30	30	50	80	110	130	180
C6 ⁴	3.5	3.5	8	4	5	6	6
C7 ⁴	48	48	60	90	115	142	190
C8 ⁴	19.5	19.5	19	17	19.5	22.5	29
C9 ⁴	100.5	109	133.5	172.5	215	267	343.5
C10 ⁴	13.25	13.25	13.5	10.75	13	15	20.75
C11 ⁴	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

4. C1~C10 are motor specific dimensions.

* AER070M1 offers C3 ≤12 option.

* AER090M1 offers C3 ≤16 option.

* AER090M2 offers C3 ≤15.875 option.

* AER120M1 offers C3 ≤24 option.