

AES series



Overview

- Special design for continuous (S1) or cyclic (S5) duty operation
- Stainless steel round housing and motor adapter flange
- Stainless steel output shaft, with key
- Standard equipped with Food Grade lubricant
- Helical gear technology
- Nominal torques:
 - T_{2N} : 14 Nm – 2000 Nm
- Ratios
 - 1-stage : 3 / 4 / 5 / 6 / 7 / 8 / 9 / 10
 - 2-stage : 15 / 20 / 25 / 30 / 35 / 40 / 45 / 50 / 60 / 70 / 80 / 90 / 100
- Low backlash
 - 1-stage : ≤ 8 arcmin
 - 2-stage : ≤ 12 arcmin
- High efficiency
 - 1-stage : $\geq 97\%$
 - 2-stage : $\geq 94\%$
- Easy mount
- Low noise
- Compact structure
- Sizes available: AE050S / AE070S / AE090S / AE120S / AE155S

Specifications

Model No.	Stage	Ratio ¹	AE050	SAE070	SAE090	SAE120	SAE155		
Nominal Output Torque T_{2N}	1	3	20	55	130	208	342		
		4	19	50	140	290	542		
		5	22	60	160	330	650		
		6	20	55	150	310	600		
		7	19	50	140	300	550		
		8	17	45	120	260	500		
		9	14	40	100	230	450		
		10	14	40	100	230	450		
		2	15	20	55	130	208	342	
	20		19	50	140	290	542		
	25		22	60	160	330	650		
	30		20	55	150	310	600		
	35		19	50	140	300	550		
	40		17	45	120	260	500		
	45		14	40	100	230	450		
	50		22	60	160	330	650		
	60		20	55	150	310	600		
	70		19	50	140	300	550		
80	17		45	120	260	500			
90	14	40	100	230	450				
100	14	40	100	230	450				
Max. Torque	Nm	1,2	3~100	60% of Emergency Torque T_{2NOT}					
Emergency Stop Torque T_{2NOT}^3	Nm	1,2	3~100	3 times of nominal output torque					
No Load Torque ²	Nm	1	3~10	0,33	0,44	0,77	1,98	2,53	
		2	15~1000	17	0,17	0,28	0,55	1,43	
Nominal Input Speed N_{1N}	rpm	1,2	3~100	5,000	5,000	4,000	4,000	3,000	
Max. Input Speed N_{1B}	rpm	1,2	3~100	10,000	10,000	8,000	8,000	6,000	
Backlash	arcmin	1	3~10	≤ 8	≤ 8	≤ 8	≤ 8	≤ 8	
		2	15~100	≤ 12	≤ 12	≤ 12	≤ 12	≤ 12	
Torsional Rigidity	Nm/arcmin	1,2	3~100	3	7	14	25	50	
Max. Radial load F_{2rB}^4	N	1,2	3~100	702	1,377	2,985	6,100	8,460	
Max. Axiale load	F_{2a1B}^4	N	1,2	3~100	350	630	1,300	2,400	4,000
	F_{2a2B}^4	N	1,2	3~100	390	765	1,625	3,350	4,700
Service Life ⁴	hr	1,2	3~100	20,000					

Efficiency	%	1	3~10	≥ 97 %				
		2	15~100	≥ 94 %				
Weight	kg	1	3~10	0.6	1.4	3.3	6.9	13
		2	15~100	0.9	1.6	4.7	8.7	17
Operating Temperature	°C	1,2	3~100	-10°C ~+ 90°C				
Lubrication		1,2	3~100	Food Grade				
Degree of Gearbox Protection		1,2	3~100	IP67				
Mounting Position		1,2	3~100	all directions				
Noise Level ⁵ (n _i =3000 rpm, No Load)	dB(A)	1,2	3~100	≤ 56	≤ 58	≤ 60	≤ 63	≤ 65

1. Ratio ($i = n_{in} / n_{out}$)

2. Measured at ratio 10 of 100, 20°C environmental temperature and 3000 rpm input speed

3. Applied to the output shaft center @ 100 rpm

4. S1 service life 10,000 hrs.

5. These values are measured by gearbox with ratio 10:1 (1-stage) or 100:1 (2-stage) at 3.000 rpm no loading
By less smaller than 10, the noise value would be 3~5 dB higher.

Inertia

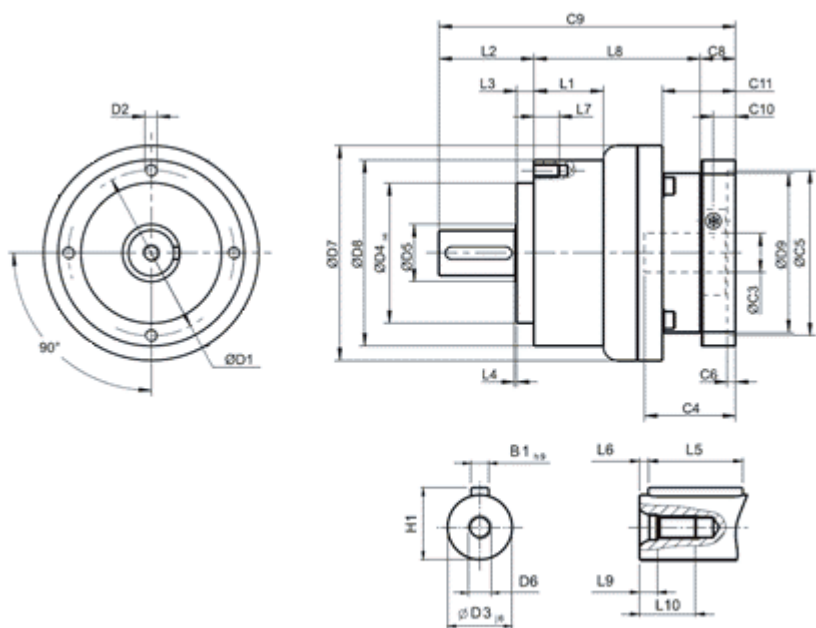
Model No.	Stage	Ratio ¹	AE050	AE070	AE090	AE120	AE155	
1	3	0.03	0.16	0.61	3.25	9.21		
	4	0.03	0.14	0.48	2.74	7.54		
	5	0.03	0.13	0.47	2.71	7.42		
	6	0.03	0.13	0.45	2.65	7.25		
	7	0.03	0.13	0.45	2.62	7.14		
	8	0.03	0.13	0.44	2.58	7.07		
	9	0.03	0.13	0.44	2.57	7.04		
	10	0.03	0.13	0.44	2.57	7.03		
	2	15	0.03	0.03	0.13	0.47	2.71	
		20	0.03	0.03	0.13	0.47	2.71	
25		0.03	0.03	0.13	0.47	2.71		
30		0.03	0.03	0.13	0.47	2.71		
35		0.03	0.03	0.13	0.47	2.71		
40		0.03	0.03	0.13	0.47	2.71		
45		0.03	0.03	0.13	0.47	2.71		
50		0.03	0.03	0.13	0.44	2.57		
60		0.03	0.03	0.13	0.44	2.57		
70		0.03	0.03	0.13	0.44	2.57		
80	0.03	0.03	0.13	0.44	2.57			
90	0.03	0.03	0.13	0.44	2.57			
100	0.03	0.03	0.13	0.44	2.57			

Massa
Moment
of inertia J_i $\text{kg}\cdot\text{cm}^2$

1. Ratio ($i = n_{in} / n_{out}$)

Sizes

AE series 1-stage, ratio $i = 3 \sim 10$

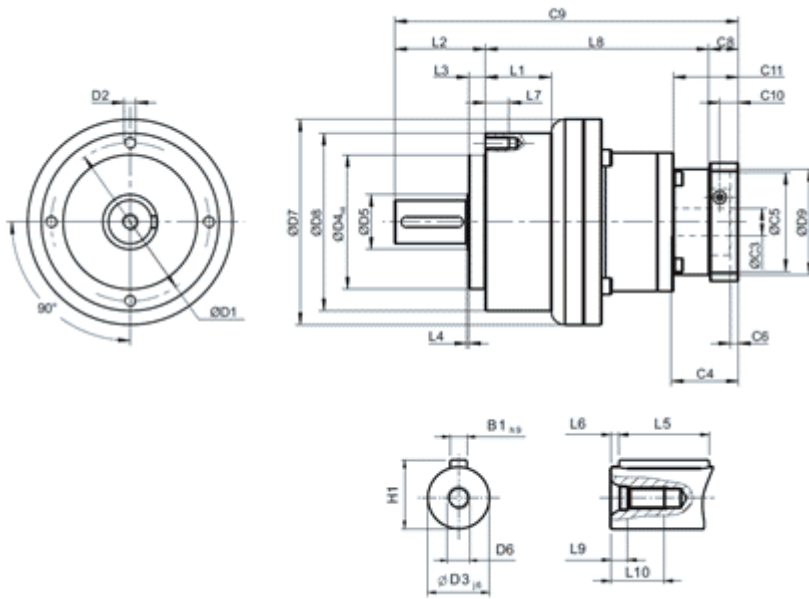


	AE050S	AE070S	AE090S	AE120S	AE155S
D1	44	62	80	108	140
D2	M4 X 0.7P	M5 X 0.8P	M6 X 1P	M8 X 1.25P	M10 X 1.5P
D3 _{j6}	12	16	22	32	40
D4 _{h6}	35	52	68	90	120
D5	22	22	30	40	75
D6	M4 X 0.7P	M5 X 0.8P	M8 X 1.25P	M12 X 1.75P	M16 X 2P
D7	53	70	104	130	162
D8	50	70	90	120	155
D9	45,5	53,4	77	102	125
L1	--	--	33,5	38	50
L2	24,5	36	46	70	97
L3	4	6,5	8,5	17,5	15
L4	1	1	1	1,5	2
L5	14	25	32	40	63
L6	2	2	3	5	5
L7	8	10	12	16	20
L8	47	62	80,5	97	119,5
L9	4,5	4,8	7,2	10	112
L10	10	12,5	19	28	36
C3 ¹	≤11	≤14 / ≤16	≤19 / ≤24	≤32	≤38
B1 _{h9}	4	5	6	10	12
H1	14	18	24,5	35	43

1. C1~C10 are motor specific dimensions.

2. AE050S ratio 5:1 and 10:1 offers C3 ≤ 12mm option; AE070S ratio 5:1 and 10:1 offers C3 ≤ 16mm option; AE090S ratio 5:1 and 10:1 offers C3 ≤ 24mm option

AES series 2-stage, ratio $i = 15 \sim 100$



	AE050S	AE070S	AE090S	AE120S	AE155S
D1	44	62	80	108	140
D2	M4 X 0.7P	M5 X 0.8P	M6 X 1P	M8 X 1.25P	M10 X 1.5P
D3 _{j6}	12	16	22	32	40
D4 _{h6}	35	52	68	90	120
D5	22	22	30	40	75
D6	M4 X 0.7P	M5 X 0.8P	M8 X 1.25P	M12 X 1.75P	M16 X 2P
D7	53	70	104	130	162
D8	50	70	90	120	155
D9	45,5	45,5	53,4	77	102
L1	--	--	33,5	38	50
L2	24,5	36	46	70	97
L3	4	6,5	8,5	17,5	15
L4	1	1	1	1,5	3
L5	14	25	32	40	63
L6	2	2	3	5	5
L7	8	10	12	16	20
L8	74	87,5	113,5	138,5	176
L9	4,5	4,8	7,2	10	12
L10	10	12,5	19	28	36
C3 ¹	≤11	≤11 / ≤12	≤14 / ≤15,875 / ≤16	≤19 / ≤24	≤32
B1 _{h9}	4	5	6	10	12
H1	14	18	24,5	35	43

1. C1~C10 are motor specific dimensions.

2. AE050S ratio 5:1 and 10:1 offers C3 ≤ 12mm option; AE070S ratio 5:1 and 10:1 offers C3 ≤ 12mm option; AE090S ratio 5:1 and 10:1 offers C3 ≤ 15,875mm en ? 16mm optie; AE120S offers C3 ≤ 24mm option