

# AD Series

## Specifications

### Gearbox Performance

Model No.	Stage	Ratio <sup>1</sup>	AD047	AD064	AD090	AD110	AD140	AD200	AD255		
Nominal Output Torque $T_{2N}$	Nm	1	4	19	48	130	270	560	1,100	1,700	
			5	22	60	160	330	650	1,200	2,000	
			7	19	50	140	300	550	1,100	1,800	
			10	14	40	100	230	450	900	1,500	
		2	20	19	48	130	270	560	1,100	1,700	
			25	22	60	160	330	650	1,200	2,000	
			35	19	50	140	300	550	1,100	1,800	
			40	19	48	130	270	560	1,100	1,700	
			50	22	60	160	330	650	1,200	2,000	
	70		19	50	140	300	550	1,100	1,800		
	100		14	40	100	230	450	900	1,500		
	16		19	48	130	270	560	1,100	1,700		
	21		22	60	160	330	650	1,200	2,000		
	31	19	50	140	300	550	1,100	1,800			
	61	19	50	140	300	550	1,100	1,800			
	91	14	40	100	230	450	900	1,500			
	Emergency Stop Torque $T_{2NOT}$ <sup>2</sup>	Nm	1,2	4~100	3 times of Nominal Output Torque						
	Nominal Input Speed $n_{1N}$	rpm	1,2	4~100	5,000	5,000	4,000	4,000	3,000	3,000	2,000
Max. Input Speed $n_{1B}$	rpm	1,2	4~100	10,000	10,000	8,000	8,000	6,000	6,000	4,000	
Micro Backlash <b>P0</b>	arcmin	1	4~10	-	-	≤1	≤1	≤1	≤1	≤1	
		2	20~100	-	-	-	≤3	≤3	≤3	≤3	
Reduced Backlash <b>P1</b>	arcmin	1	4~10	≤3	≤3	≤3	≤3	≤3	≤3	≤3	
		2	20~100	≤5	≤5	≤5	≤5	≤5	≤5	≤5	
Standard Backlash <b>P2</b>	arcmin	1	4~10	≤5	≤5	≤5	≤5	≤5	≤5	≤5	
		2	20~100	≤7	≤7	≤7	≤7	≤7	≤7	≤7	
Torsional Rigidity	Nm/arcmin	1,2	4~100	7	13	31	82	151	440	1,006	
Max. Bending moment $M_{2KB}$ <sup>3</sup>	Nm	1,2	4~100	42.5	125	235	430	1,300	3,064	5,900	
Max. Axial Load $F_{2aB}$ <sup>3</sup>	N	1,2	4~100	990	1,050	2,850	2,990	10,590	16,660	29,430	
Service Life	hr	1,2	4~100	30,000*							
Efficiency $\eta$	%	1	4~10	≥97%							
		2	20~100	≥94%							
Weight	kg	1	4~10	0.7	1.2	3.0	5.6	11.9	31.6	56.1	
		2	20~100	1.0	1.6	3.7	7.3	15.9	36.9	70.4	
			16~91	1.0	1.4	3.5	6.5	15.5	34.2	67.2	
Operating Temp	°C	1,2	4~100	-10°C~90°C							
Lubrication				Synthetic lubrication oils							
Degree of Gearbox Protection		1,2	4~100	IP65							
Mounting Position		1,2	4~100	all directions							
Noise Level ( $n_1=3000$ rpm, No Load)	dB(A)	1,2	4~100	≤56	≤58	≤60	≤63	≤65	≤67	≤70	

### Gearbox Inertia

Model No.	Stage	Ratio <sup>1</sup>	AD047	AD064	AD090	AD110	AD140	AD200	AD255	
Mass Moments of Inertia $J_1$	kg · cm <sup>2</sup>	1	4	0.03	0.14	0.51	2.87	7.54	25.03	58.31
			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	0.03	0.03	0.13	0.47	2.71	7.42	23.29
			25	0.03	0.03	0.13	0.47	2.71	7.42	23.29
			35	0.03	0.03	0.13	0.47	2.71	7.42	23.29
			40	0.03	0.03	0.13	0.44	2.57	7.03	22.51
			50	0.03	0.03	0.13	0.44	2.57	7.03	22.51
	70		0.03	0.03	0.13	0.44	2.57	7.03	22.51	
	100		0.03	0.03	0.13	0.44	2.57	7.03	22.51	
	16		0.03	0.03	0.13	0.47	2.71	7.42	23.29	
	21		0.03	0.03	0.13	0.47	2.71	7.42	23.29	
	31	0.03	0.03	0.13	0.44	2.57	7.03	22.51		
	61	0.03	0.03	0.13	0.44	2.57	7.03	22.51		
	91	0.03	0.03	0.13	0.44	2.57	7.03	22.51		

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

2.  $T_{2B} = 60\%$  of  $T_{2NOT}$

3. Applied to the output shaft center @ 100 rpm

★ S1 service life 15,000 hrs (Consult us)