



Specification

Gearbox Performance

Model No.	Stage	Ratio ¹	AB042	AB060	AB060A	AB090	AB090A	AB115	AB142	AB180	AB220	
Nominal Output Torque T_{2N}	1	3	20	55	-	130	-	208	342	588	1,140	
		4	19	50	-	140	-	290	542	1,050	1,700	
		5	22	60	-	160	-	330	650	1,200	2,000	
		6	20	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	
		2	15	20	55	55	130	130	208	342	588	1,140
			20	19	50	50	140	140	290	542	1,050	1,700
	25		22	60	60	160	160	330	650	1,200	2,000	
	30		20	55	55	150	150	310	600	1,100	1,900	
	35		19	50	50	140	140	300	550	1,100	1,800	
	40		17	45	45	120	120	260	500	1,000	1,600	
	45		14	40	40	100	100	230	450	900	1,500	
	50		22	60	60	160	160	330	650	1,200	2,000	
	60		20	55	55	150	150	310	600	1,100	1,900	
	70		19	50	50	140	140	300	550	1,100	1,800	
	80	17	45	45	120	120	260	500	1,000	1,600		
	90	14	40	40	100	100	230	450	900	1,500		
100	14	40	40	100	100	230	450	900	1,500			
Emergency Stop Torque T_{2NOT}^3	Nm	1,2	3~100	3 times of Nominal Output Torque								
Nominal Input Speed N_{1N}	rpm	1,2	3~100	5,000	5,000	5,000	4,000	4,000	4,000	3,000	3,000	2,000
Max. Input Speed N_{1B}	rpm	1,2	3~100	10,000	10,000	10,000	8,000	8,000	8,000	6,000	6,000	4,000
Micro Backlash P_0	arcmin	1	3~10	-	-	-	≤ 1	≤ 1	≤ 1	≤ 1	≤ 1	≤ 1
		2	15~100	-	-	-	-	-	≤ 3	≤ 3	≤ 3	≤ 3
Reduced Backlash P_1	arcmin	1	3~10	≤ 3	≤ 3	≤ 3	≤ 3	≤ 3	≤ 3	≤ 3	≤ 3	≤ 3
		2	15~100	≤ 5	≤ 5	≤ 5	≤ 5	≤ 5	≤ 5	≤ 5	≤ 5	≤ 5
Standard Backlash P_2	arcmin	1	3~10	≤ 5	≤ 5	≤ 5	≤ 5	≤ 5	≤ 5	≤ 5	≤ 5	≤ 5
		2	15~100	≤ 7	≤ 7	≤ 7	≤ 7	≤ 7	≤ 7	≤ 7	≤ 7	≤ 7
Torsional Rigidity	Nm/arcmin	1,2	3~100	3	7	7	14	14	25	50	145	225
Max. Radial Load F_{2rB}^2	N	1,2	3~100	780	1,530	1,530	3,250	3,250	6,700	9,400	14,500	50,000
Max. Axial Load F_{2a1B}^2	N	1,2	3~100	350	630	630	1,300	1,300	3,000	4,000	6,200	35,000
Max. Axial Load F_{2a2B}^2	N	1,2	3~100	390	765	765	1,625	1,625	3,350	4,700	7,250	25,000
Service Life	hr	1,2	3~100	20,000 *								
Efficiency η	%	1	3~10	≥ 97 %								
		2	15~100	≥ 94 %								

Weight	kg	1	3~10	0.5	1.3	-	3.7	-	7.8	14.5	29	48
		2	15~100	0.8	1.5	1.9	4.1	5.3	9	17.5	33	60
Operating Temp	°C	1,2	3~100	-10°C ~+ 90°C								
Lubrication		1,2	3~100	synthetic gear grease (NYOGEL 792D)								
Degree of Gearbox Protection		1,2	3~100	IP65								
Mounting Position		1,2	3~100	all directions								
Noise Level (n ₁ =3000 rpm, No Load)	dB(A)	1,2	3~100	≤ 56	≤ 58	≤ 60	≤ 60	≤ 63	≤ 63	≤ 65	≤ 67	≤ 70

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

2. Applied to the output shaft center @ 100 rpm

3. Max. acceleration torque $T_{2B} = 60\%$ of T_{2NOT}

*S1 service life 10,000 hrs.

Gearbox Inertia

Model No.	Stage	Ratio	AB042	AB060	AB060A	AB090	AB090A	AB115	AB142	AB180	
Mass Moments of inertia J ₁	1	3	0.03	0.16	-	0.61	-	3.25	9.21	28.98	
		4	0.03	0.14	-	0.48	-	2.74	7.54	23.67	
		5	0.03	0.13	-	0.47	-	2.71	7.42	23.29	
		6	0.03	0.13	-	0.45	-	2.65	7.25	22.75	
		7	0.03	0.13	-	0.45	-	2.62	7.14	22.48	
		8	0.03	0.13	-	0.44	-	2.58	7.07	22.59	
		9	0.03	0.13	-	0.44	-	2.57	7.04	22.53	
		10	0.03	0.13	-	0.44	-	2.57	7.03	22.51	
		2	15	0.03	0.03	0.13	0.13	0.47	0.47	2.71	7.42
			20	0.03	0.03	0.13	0.13	0.47	0.47	2.71	7.42
	25		0.03	0.03	0.13	0.13	0.47	0.47	2.71	7.42	
	30		0.03	0.03	0.13	0.13	0.47	0.47	2.71	7.42	
	35		0.03	0.03	0.13	0.13	0.47	0.47	2.71	7.42	
	40		0.03	0.03	0.13	0.13	0.47	0.47	2.71	7.42	
	45		0.03	0.03	0.13	0.13	0.47	0.47	2.71	7.42	
	50		0.03	0.03	0.13	0.13	0.44	0.44	2.57	7.03	
	60		0.03	0.03	0.13	0.13	0.44	0.44	2.57	7.03	
	70		0.03	0.03	0.13	0.13	0.44	0.44	2.57	7.03	
	80	0.03	0.03	0.13	0.13	0.44	0.44	2.57	7.03		
	90	0.03	0.03	0.13	0.13	0.44	0.44	2.57	7.03		
100	0.03	0.03	0.13	0.13	0.44	0.44	2.57	7.03			