

Specifications / AB Series

Gearbox Performance

Model No.	Stage	Ratio ^A	AB042	AB060	AB060A	AB090	AB090A	AB115	AB115A	AB142	AB142A	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	12	19	50	50	140	140	290	290	542	542	1,050	1,700
			15	20	55	55	130	130	208	208	342	342	588	1,140
	16		19	50	50	140	140	290	290	542	542	1,050	1,700	
	20		19	50	50	140	140	290	290	542	542	1,050	1,700	
	25		22	60	60	160	160	330	330	650	650	1,200	2,000	
	28		19	50	50	140	140	300	300	550	550	1,100	1,800	
	30		20	55	55	150	150	310	310	600	600	1,100	1,900	
	32		17	45	45	120	120	260	260	500	500	1,000	1,600	
	35		19	50	50	140	140	300	300	550	550	1,100	1,800	
	40		17	45	45	120	120	260	260	500	500	1,000	1,600	
	45	14	40	40	100	100	230	230	450	450	900	1,500		
	50	22	60	60	160	160	330	330	650	650	1,200	2,000		
60	20	55	55	150	150	310	310	600	600	1,100	1,900			
70	19	50	50	140	140	300	300	550	550	1,100	1,800			
80	17	45	45	120	120	260	260	500	500	1,000	1,600			
90	14	40	40	100	100	230	230	450	450	900	1,500			
100	14	40	40	100	100	230	230	450	450	900	1,500			
Emergency Stop Torque T_{2NOT} ^B	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	4,000	3,000	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	8,000	6,000	6,000	6,000	4,000
Micro Backlash P0	arcmin	1	3~10	–	–	–	≤1	–	≤1	–	≤1	–	≤1	≤1
		2	12~100	–	–	–	–	–	≤3	≤3	≤3	≤3	≤3	≤3
Reduced Backlash P1	arcmin	1	3~10	≤3	≤3	–	≤3	–	≤3	–	≤3	–	≤3	≤3
		2	12~100	≤5	≤5	≤5	≤5	≤5	≤5	≤5	≤5	≤5	≤5	≤5
Standard Backlash P2	arcmin	1	3~10	≤5	≤5	–	≤5	–	≤5	–	≤5	–	≤5	≤5
		2	12~100	≤7	≤7	≤7	≤7	≤7	≤7	≤7	≤7	≤7	≤7	≤7
Torsional Rigidity	Nm/arcmin	1,2	3~100	3	7	7	14	14	25	25	50	50	145	225
Max. Radial Load F_{2B}^C	N	1,2	3~100	780	1,530	1,530	3,250	3,250	6,700	6,700	9,400	9,400	14,500	50,000
Max. Axial Load F_{2aB}^C	N	1,2	3~100	390	765	765	1,625	1,625	3,350	3,350	4,700	4,700	7,250	25,000
Service Life ^D	hr	1,2	3~100	20,000										
Efficiency η	%	1	3~10	≥97%										
		2	12~100	≥94%										
Weight	kg	1	3~10	0.6	1.3	–	3.7	–	7.8	–	14.5	–	29	48
		2	12~100	0.8	1.5	1.9	4.1	5.3	9	11.4	17.5	20.7	33	60
Operating Temp	°C	1,2	3~100	-10°C~90°C										
Lubrication		1,2	3~100	Synthetic lubrication oils										
Degree of Gearbox Protection		1,2	3~100	IP65										
Mounting Position		1,2	3~100	all directions										
Noise ($n_1=3000$ rpm, $i=10$, No load) ^E	dB(A)	1,2	3~100	≤56	≤58	≤60	≤60	≤63	≤63	≤65	≤65	≤67	≤67	≤70

A. Ratio ($i=N_{in}/N_{out}$)B. Max. acceleration torque T_{2B} = 60% of T_{2NOT}

C. Applied to the output shaft center at 100 rpm

D. For continuous operation, the service life time is less than 10,000 hrs

E. These values are measured by gearbox with ratio = 10 (1-stage) or ratio = 100 (2-stage) at 3,000 rpm no loading.

By lower ratio and/or higher RPM, the noise level could be 3 to 5 dB higher

Ordering Code

Gearbox Inertia

Model No.	Stage	Ratio	AB042	AB060	AB060A	AB090	AB090A	AB115	AB115A	AB142	AB142A	AB180	AB220	
Mass Moments of Inertia J ₁	1	3	0.03	0.16	-	0.61	-	3.25	-	9.21	-	28.98	69.61	
		4	0.03	0.14	-	0.48	-	2.74	-	7.54	-	23.67	54.37	
		5	0.03	0.13	-	0.47	-	2.71	-	7.42	-	23.29	53.27	
		6	0.03	0.13	-	0.45	-	2.65	-	7.25	-	22.75	51.72	
		7	0.03	0.13	-	0.45	-	2.62	-	7.14	-	22.48	50.97	
		8	0.03	0.13	-	0.44	-	2.58	-	7.07	-	22.59	50.84	
		9	0.03	0.13	-	0.44	-	2.57	-	7.04	-	22.53	50.63	
		10	0.03	0.13	-	0.44	-	2.57	-	7.03	-	22.51	50.56	
		12	0.03	0.03	0.16	0.16	0.61	0.61	3.25	3.25	9.21	9.21	28.98	69.61
		15	0.03	0.03	0.13	0.13	0.47	0.47	2.71	2.71	7.42	7.42	23.29	53.27
	16	0.03	0.03	0.14	0.14	0.48	0.48	2.74	2.74	7.54	7.54	23.67	54.37	
	20	0.03	0.03	0.13	0.13	0.47	0.47	2.71	2.71	7.42	7.42	23.29	53.27	
	25	0.03	0.03	0.13	0.13	0.47	0.47	2.71	2.71	7.42	7.42	23.29	53.27	
	28	0.03	0.03	0.14	0.14	0.48	0.48	2.74	2.74	7.54	7.54	23.67	54.37	
	30	0.03	0.03	0.13	0.13	0.47	0.47	2.71	2.71	7.42	7.42	23.29	53.27	
	32	0.03	0.03	0.14	0.14	0.48	0.48	2.74	2.74	7.54	7.54	23.67	54.37	
	35	0.03	0.03	0.13	0.13	0.47	0.47	2.71	2.71	7.42	7.42	23.29	53.27	
	40	0.03	0.03	0.13	0.13	0.47	0.47	2.71	2.71	7.42	7.42	23.29	53.27	
	45	0.03	0.03	0.13	0.13	0.47	0.47	2.71	2.71	7.42	7.42	23.29	53.27	
	50	0.03	0.03	0.13	0.13	0.44	0.44	2.57	2.57	7.03	7.03	22.51	50.56	
60	0.03	0.03	0.13	0.13	0.44	0.44	2.57	2.57	7.03	7.03	22.51	50.56		
70	0.03	0.03	0.13	0.13	0.44	0.44	2.57	2.57	7.03	7.03	22.51	50.56		
80	0.03	0.03	0.13	0.13	0.44	0.44	2.57	2.57	7.03	7.03	22.51	50.56		
90	0.03	0.03	0.13	0.13	0.44	0.44	2.57	2.57	7.03	7.03	22.51	50.56		
100	0.03	0.03	0.13	0.13	0.44	0.44	2.57	2.57	7.03	7.03	22.51	50.56		