

# Specifications / ABR Series

## Gearbox Performance

Model No.		Stage	Ratio <sup>(1)</sup>	ABR042	ABR060	ABR060A	ABR090	ABR090A	ABR115	ABR115A	ABR142	ABR142A	ABR180	ABR220	
Nominal Output Torque T <sub>2N</sub>	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	60	-	150	-	325	-	650	-	1,200	2,000	
			12	-	55	-	150	-	310	-	600	-	1,100	1,900	
			14	-	42	-	140	-	300	-	550	-	1,100	1,800	
		16	-	45	-	120	-	260	-	500	-	1,000	1,600		
		20	-	40	-	100	-	230	-	450	-	900	1,500		
		12	12	-	-	-	-	-	-	-	-	-	-	-	-
		15	14	-	-	-	-	-	-	-	-	-	-	-	-
		16	15	-	-	-	-	-	-	-	-	-	-	-	-
		20	14	-	-	-	-	-	-	-	-	-	-	-	-
		25	15	60	60	150	150	325	325	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		
		48	-	-	55	150	150	310	310	600	600	1,100	1,900		
		50	14	60	60	150	150	325	325	650	650	1,200	2,000		
		60	20	55	55	150	150	310	310	600	600	1,100	1,900		
		64	-	-	45	120	120	260	260	500	500	1,000	1,600		
		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	60	150	150	325	325	650	650	1,200	2,000		
		120	-	-	55	150	150	310	310	600	600	1,100	1,900		
140	-	-	50	140	140	300	300	550	550	1,100	1,800				
160	-	-	45	120	120	260	260	500	500	1,000	1,600				
180	-	-	40	100	100	230	230	450	450	900	1,500				
200	-	-	40	100	100	230	230	450	450	900	1,500				
Emergency Stop Torque T <sub>2B</sub> <sup>(2)</sup>	Nm	1,2	3~200	3 times of Nominal Output Torque											
Nominal Input Speed n <sub>1N</sub>	rpm	1,2	3~200	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 <sub>1B</sub>	rpm	1,2	3~200	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	3~20	-	-	-	≤2	-	≤2	-	≤2	-	≤2	≤2	
		2	12~200	-	-	-	≤4	≤4	≤4	≤4	≤4	≤4	≤4	≤4	
Reduced Backlash P1	arcmin	1	3~20	≤4	≤4	-	≤4	-	≤4	-	≤4	-	≤4	≤4	
		2	12~200	≤7	≤7	≤7	≤7	≤7	≤7	≤7	≤7	≤7	≤7	≤7	
Standard Backlash P2	arcmin	1	3~20	≤6	≤6	-	≤6	-	≤6	-	≤6	-	≤6	≤6	
		2	12~200	≤9	≤9	≤9	≤9	≤9	≤9	≤9	≤9	≤9	≤9	≤9	
Torsional Rigidity	Nm/arcmin	1,2	3~200	3	7	7	14	14	25	25	50	50	145	225	
Max. Radial Load F <sub>2B</sub> <sup>(3)</sup>	N	1,2	3~200	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 <sub>2AB</sub> <sup>(3)</sup>	N	1,2	3~200	390	765	765	1,625	1,625	3,350	3,350	4,700	4,700	7,250	25,000	
Max. Tilting Moment M <sub>2K</sub>	Nm	1,2	3~200	25	70	70	200	200	550	550	990	990	1,760	7,630	
Efficiency η	%	1	3~20	≥95%											
		2	12~200	≥92%											
Weight	kg	1	3~20	0.9	2.1	-	6.4	-	12.1	-	23	-	44.5	77	
		2	12~200	1.2	1.8	2.7	4.8	7.9	11.5	15.9	21.5	29.6	41.5	75	
Operating Temp	°C	1,2	3~200	-10°C~+90°C											
Lubrication		1,2	3~200	Synthetic lubrication oils											
Degree of Gearbox Protection		1,2	3~200	IP65											
Mounting Position		1,2	3~200	all directions											
Noise <sup>(4)</sup>	dB(A)	1,2	3~200	≤61	≤63	≤65	≤65	≤68	≤68	≤70	≤70	≤72	≤72	≤74	

(1) Ratio (i = N<sub>in</sub> / N<sub>out</sub>)

(2) Max. acceleration torque T<sub>2B</sub> = 60% of T<sub>2NOT</sub>

(3) Applied to the output shaft center at 100 rpm

(4) The dB values are measured by gearbox with ratio 10 (1-stage) or ratio 100 (2-stage), no loading at 3,000 RPM or at the respective Nominal Input Speed by bigger model size.

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

## Gearbox Inertia

Model No.		Stage	Ratio	ABR042	ABR060	ABR060A	ABR090	ABR090A	ABR115	ABR115A	ABR142	ABR142A	ABR180	ABR220	
Mass Moments of Inertia J,	kg · cm <sup>2</sup>	1	3~10	0.09	0.35	-	2.25	-	6.84	-	23.4	-	68.9	135.4	
			12~20	-	0.31	-	1.87	-	6.25	-	21.8	-	65.6	119.8	
		2	12~20	0.09	-	-	-	-	-	-	-	-	-	-	-
			25~90	0.09	0.09	0.35	0.35	2.25	2.25	6.84	6.84	23.4	23.4	68.9	
			48, 64	-	-	0.31	0.31	1.87	1.87	6.25	6.25	21.8	21.8	65.6	
			100~200	-	-	0.31	0.31	1.87	1.87	6.25	6.25	21.8	21.8	65.6	