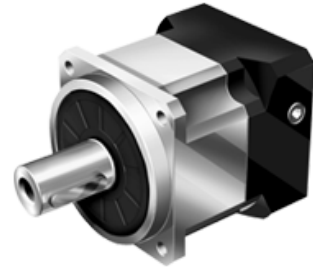


AB series

Overview



- Special design for continuous(S1) or cyclic(S5) duty operation
- Stainless steel housing, aluminum black anodized motor adapter flange
- Stainless steel output shaft with or without key
- Helical gear design
- Output torque:
 - 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 : ≤ 1 arcmin / ≤ 3 arcmin / ≤ 5 arcmin
 - 2-stage : ≤ 3 arcmin / ≤ 5 arcmin / ≤ 7 arcmin
- High Efficiency
 - 1-stage : $\geq 97\%$
 - 2-stage : $\geq 94\%$
- Easy mount
- Low noise
- Compact structure
- Sizes available: AB042 / AB060 / AB060A / AB090 / AB090A / AB115 / AB142 / AB180 / AB220

Specifications

Model No.		Stage	Ratio ¹	AB042	AB060	AB060A	AB090	AB090A	AB115	AB142	AB180	AB220
Nominal Output Torque T _{2N}	Nm	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 torque T _{2N}								
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. Output 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 P0	arcmin	1	3~10	-	-	-	≤ 1	≤ 1	≤ 1	≤ 1	≤ 1	≤ 1
		2	15~100	-	-	-	-	-	≤ 3	≤ 3	≤ 3	≤ 3
Reduced Backlash P1	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 P2	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	55,000
Max. Axial Load	F _{2a1B} ²	N	1,2	3~100	350	630	630	1,300	3,000	4,000	6,200	35,000
	F _{2a2B} ²	N	1,2	3~100	390	765	765	1,625	3,350	4,700	7,250	25,000
Service Life	hr	1,2	3~100	20,000 *								
Efficiency	%	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 Temperature	°C	1,2	3~100	-10°C~+90°C								
Lubrication		1,2	3~100	synthetisch tandwiel smeermiddel (NYOGEL 792D)								
Degree of Gearbox Protection		1,2	3~100	IP65								
Mounting Position		1,2	3~100	alle richtingen								
Noise Level (n ₁ =3000 rpm,NoLoad)	dB(A)	1,2	3~100	≤ 56	≤ 58	≤ 58	≤ 60	≤ 60	≤ 63	≤ 65	≤ 67	≤ 70

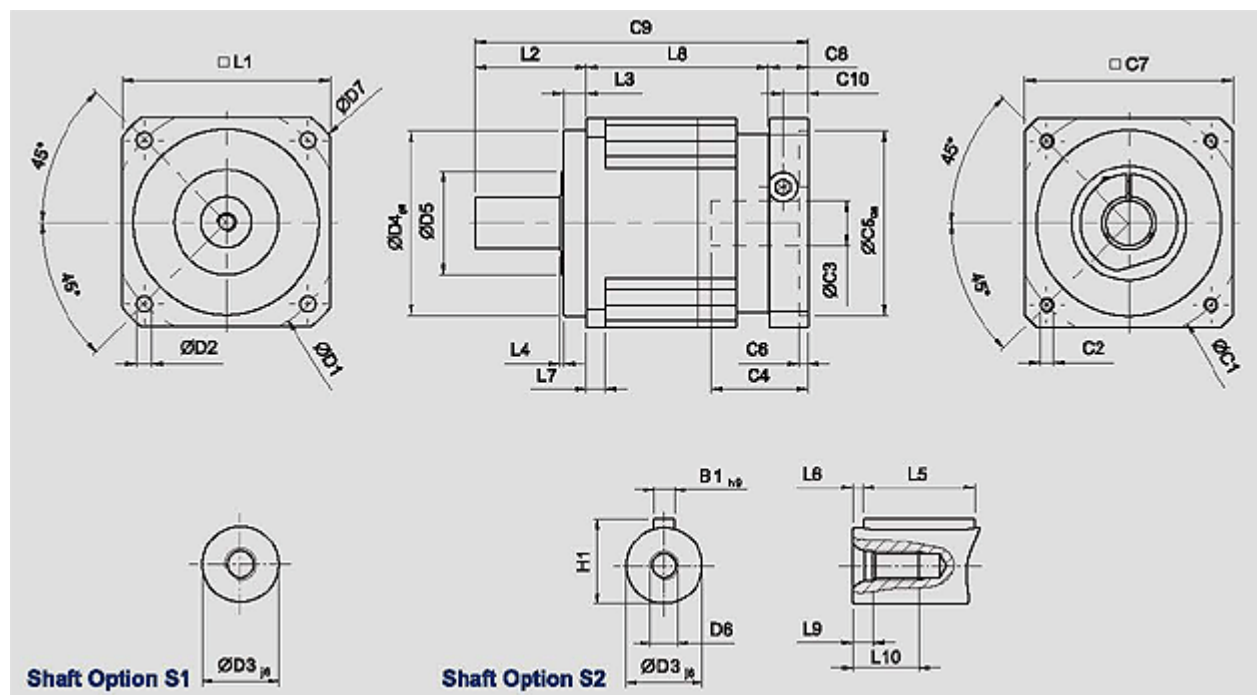
1. Ratio (i=N in / N out)
2. Applied to the output shaft center @ 100 rpm
3. Max. Acceleration Torque T_{2B} = 60% of T_{2NOT}
- * S1 service life 10.000 uur.

Inertia

Model No.	Stage	Ratio ¹	AB042	AB060	AB060A	AB090	AB090A	AB115	AB142	AB180	AB220
Mass moments of inertia J _i	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
	2	15	0.03	0.03	0.13	0.13	0.47	0.47	2.71	7.42	23.29
		20	0.03	0.03	0.13	0.13	0.47	0.47	2.71	7.42	23.29
		25	0.03	0.03	0.13	0.13	0.47	0.47	2.71	7.42	23.29
		30	0.03	0.03	0.13	0.13	0.47	0.47	2.71	7.42	23.29
		35	0.03	0.03	0.13	0.13	0.47	0.47	2.71	7.42	23.29
		40	0.03	0.03	0.13	0.13	0.47	0.47	2.71	7.42	23.29
		45	0.03	0.03	0.13	0.13	0.47	0.47	2.71	7.42	23.29
		50	0.03	0.03	0.13	0.13	0.44	0.44	2.57	7.03	22.51
		60	0.03	0.03	0.13	0.13	0.44	0.44	2.57	7.03	22.51
		70	0.03	0.03	0.13	0.13	0.44	0.44	2.57	7.03	22.51
		80	0.03	0.03	0.13	0.13	0.44	0.44	2.57	7.03	22.51
		90	0.03	0.03	0.13	0.13	0.44	0.44	2.57	7.03	22.51
		100	0.03	0.03	0.13	0.13	0.44	0.44	2.57	7.03	22.51

Sizes

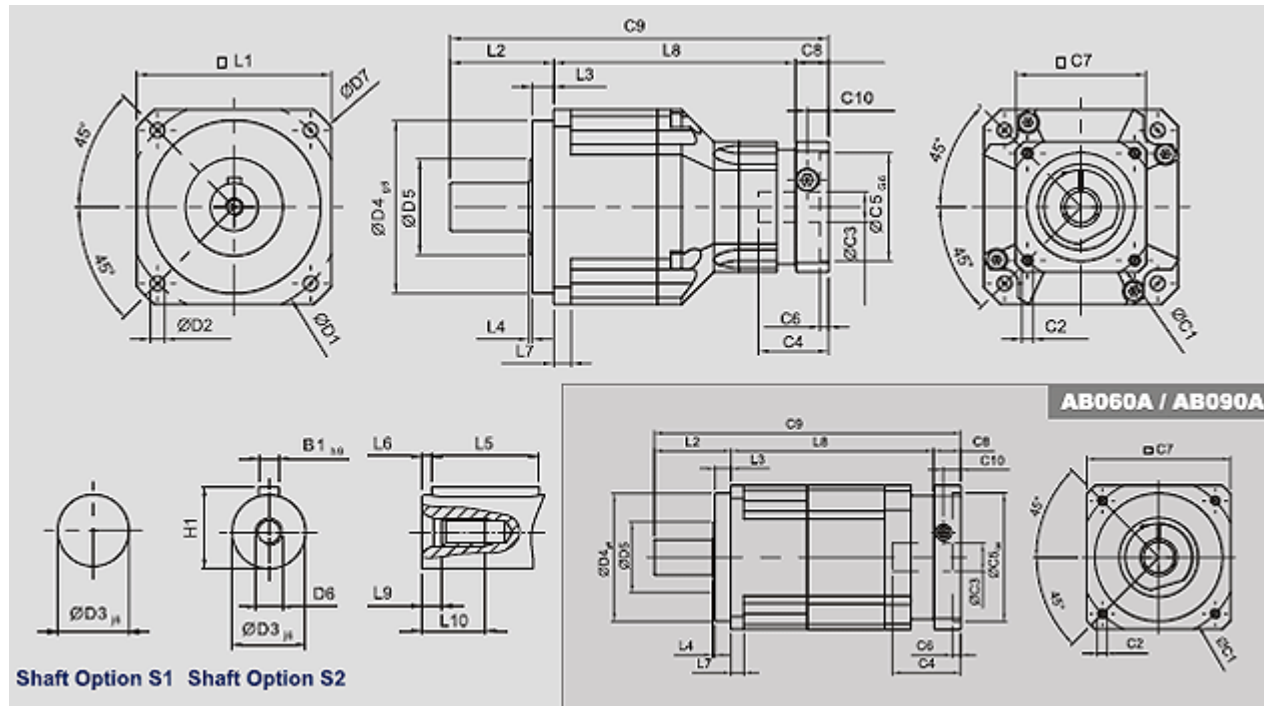
AB series 1-stage, ratio $i = 3 \sim 10$



	AB042	AB060	AB090	AB115	AB142	AB180	AB220
D1	50	70	100	130	165	215	250
D2	3.4	5.5	6.6	9	11	13	17
D3 _{j6}	13	16	22	32	40	55	75
D4 _{g6}	35	50	80	110	130	160	180
D5	22	45	60	80	75	95	115
D6	M4 X 0.7P	M5 X 0.8P	M8 X 1.25P	M12 X 1.75P	M16 X 2P	M20 X 2.5P	M20 X 2.5P
D7	56	80	116	152	185	240	292
L1	42	60	90	115	142	180	220
L2	26	37	48	65	97	105	138
L3	5.5	7	10	12	15	20	30
L4	1	1.5	1.5	2	3	3	3
L5	16	25	32	40	63	70	90
L6	2	2	3	5	5	6	7
L7	4	6	8	10	12	15	20
L8	31	61	78.5	102	119.5	154	163.5
L9	4.5	4.8	7.2	10	12	15	15
L10	10	12.5	19	28	36	42	42
C1 ³	46	70	100	130	165	215	235
C2 ³	M4 X 0.7P	M5 X 0.8P	M6 X 1P	M8 X 1.25P	M10 X 1.5P	M12 X 1.75P	M12 X 1.75P
C3 ³	≤ 11	*≤ 14 / ≤ 16	≤ 19 / ≤ 24	≤ 32	≤ 38	≤ 48	≤ 55
C4 ³	25	34	40	50	60	85	116
C5 ³ _{G6}	30	50	80	110	130	180	200
C6 ³	3.5	8	4	5	6	6	6
C7 ³	42	60	90	115	142	190	220
C8 ³	29.5	19	17	19.5	22.5	29	63
C9 ³	86.5	117	143.5	186.5	239	288	364.5
C10 ³	8.75	13.5	10.75	13	15	20.75	53
B1 _{h9}	5	5	6	10	12	16	20
H1	15	18	24.5	35	43	59	79.5

3. C1~C10 are motor specific dimensions.
 * AB060M1 ratio 5,10 offers C3 =16 option.
 * AB90M1 offers C3 =24 option.

AB series 2-stage, ratio i- 15~100



	AB042	AB060	AB060A	AB090	AB090A	AB115	AB142	AB180	AB220
D1	50	70		100		130	165	215	250
D2	3.4	5.5		6.6		9	11	13	17
D3 _{j6}	13	16		22		32	40	55	75
D4 _{g6}	35	50		80		110	130	160	180
D5	22	45		65		95	75	95	115
D6	M4 X 0.7P	M5 X 0.8P		M8 X 1.25P		M12 X 1.75P	M16 X 2P	M20 X 2.5P	M20 X 2.5P
D7	56	80		116		152	185	240	292
L1	42	60		90		115	142	180	220
L2	26	37		48		65	97	105	138
L3	5.5	7		10		12	15	20	30
L4	1	1.5		1.5		2	3	3	3
L5	16	25		32		40	63	70	90
L6	2	2		3		5	5	6	7
L7	4	6		8		10	12	15	20
L8	58.5	72	98	111.5	126.5	143.5	176	209.5	248
L9	4.5	4.8		7.2		10	12	15	15
L10	10	12.5		19		28	36	42	42
C1 ⁴	46	46	70	70	100	100	130	165	215
C2 ⁴	M4 X 0.7P	M4 X 0.7P	M5 X 0.8P	M5 X 0.8P	M6 X 1P	M6 X 1P	M8 X 1.25P	M10 X 1.5P	M12 X 1.75P
C3 ⁴	≤ 11	*≤ 11 / ≤ 12	≤ 14 / ≤ 16	* ≤ 14 / ≤ 15.875 / ≤ 16	≤ 19 / ≤ 24	≤ 19 / ≤ 24	≤ 32	≤ 38	≤ 48
C4 ⁴	25	25	34	34	40	40	50	60	85
C5 ⁴ _{G6}	30	30	50	50	80	80	110	130	180
C6 ⁴	3.5	3.5	8	8	4	4	5	6	6
C7 ⁴	42	42	60	60	90	90	115	142	190
C8 ⁴	29.5	29.5	19	19	17	17	19.5	22.5	29
C9 ⁴	114	138.5	154	178.5	191.5	225.5	292.5	337	415

C10 ⁴	8.75	8.75	13.5	13.5	10.75	10.75	13	15	20.75
B1 _{h9}	5	5		6		10	12	16	20
H1	15	18		24.5		35	43	59	79.5

4. C1~C10 are motor specific dimensions.

- * AB060M1 ratio 15~50 offers C3 =12 option.
- * AB060AM1 offers C3 =16 option.
- * AB090M1 ratio 15~50 offers C3 =16 option.
- * AB090M2 ratio 15~50 offers C3 =15.875 option.
- * AB090AM1 offers C3 =24 option.
- * AB115M1 offers C3 =24 option.