

Brushless Torque Motors

HT Series High Torque Brushless Torque Motors

High Torque Density, Sinusoidal BEMF, Frameless

Allied Motion's **HT (High Torque) series of frameless brushless torque motors** are available in nine diameters from 19.3 mm (0.76 in) up to 127 mm (5 in). Each frame series is available in up to six stack lengths, enabling designers to choose from a number of performances in each series.

Continuous stall torque ratings range from 0.007 Nm (1.0 oz-in) up to 9 Nm (1277 oz-in). Winding voltage is 24 V and 100 V for the largest two frame sizes. Integral Hall effect commutation sensors are provided as standard, and require no setup on the part of the user.

The standard HT series motors are especially well suited for direct integration into applications that demand high power density motors with minimum size, weight, and inertia. Non-standard models of the HT series are also available in stator diameters up to 239 mm (9.42 in).

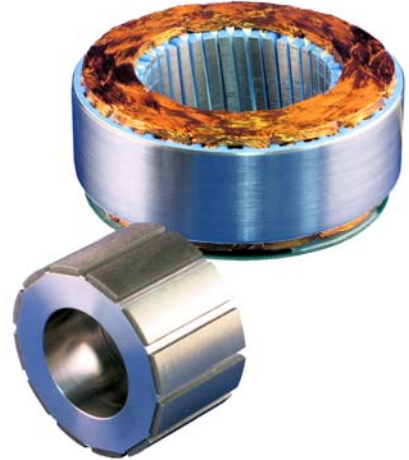
Typical applications for the HT series are semiconductor manufacturing equipment, medical systems, including life support, robotic systems, laser sighting and control, and cryogenic cooling pumps, to name a few.

Features & Benefits

- Frameless high torque-to-inertia motors with continuous stall torque rating up to 9 Nm (1277 oz-in)
- Frame diameters from 19.3 mm (0.76 in) to 127mm (5 in)
- Continuous power ratings from 7 W up to 665 W
- Class F (155 °C) winding insulation temperature rating
- Rare-earth neodymium iron boron magnets as standard
- Integral hall-effect commutation sensors as standard

Options

- Samarium Cobalt magnets for very high temperature environments.
- Available non-standard designs with stator diameter up to 239 mm (9.42 in)
- Alternate winding voltages
- Housed versions with feedback (encoder or resolver)
- Custom design versions



- High torque density frameless brushless motors
- Continuous stall torque from 0.007 Nm (1.0 oz-in) through 9 Nm (1277 oz-in)
- Continuous power ratings from 7 W through 665 W.

SPECIFICATIONS SUMMARY

Model	Units	HT0080x	HT0100x	HT0150x	HT0200x	HT0230x	HT0250x	HT0300x	HT0380x	HT0500x
Rated Power	W	7 - 13	11 - 26	31 - 71	48 - 97	56 - 129	59 - 167	89 - 291	170 - 383	271 - 665
Stall Torque (continuous)	oz-in	1.1 - 3.0	3.4 - 12.7	7.5 - 36.2	17.9 - 93.2	35.9 - 175.8	30.6 - 174.8	57.3 - 317.9	111.8 - 653.8	226 - 1277
	Nm	0.008 - 0.021	0.024 - 0.09	0.053 - 0.256	0.127 - 0.658	0.254 - 1.242	0.216 - 1.235	0.405 - 2.245	0.789 - 4.617	1.60 - 9.02
No-load Speed	RPM	10891 - 18298	4796 - 8510	2713 - 6897	1429 - 3948	618 - 1904	847 - 1954	797 - 1857	545 - 1568	419 - 1424
Winding Voltage	VDC	24							100	

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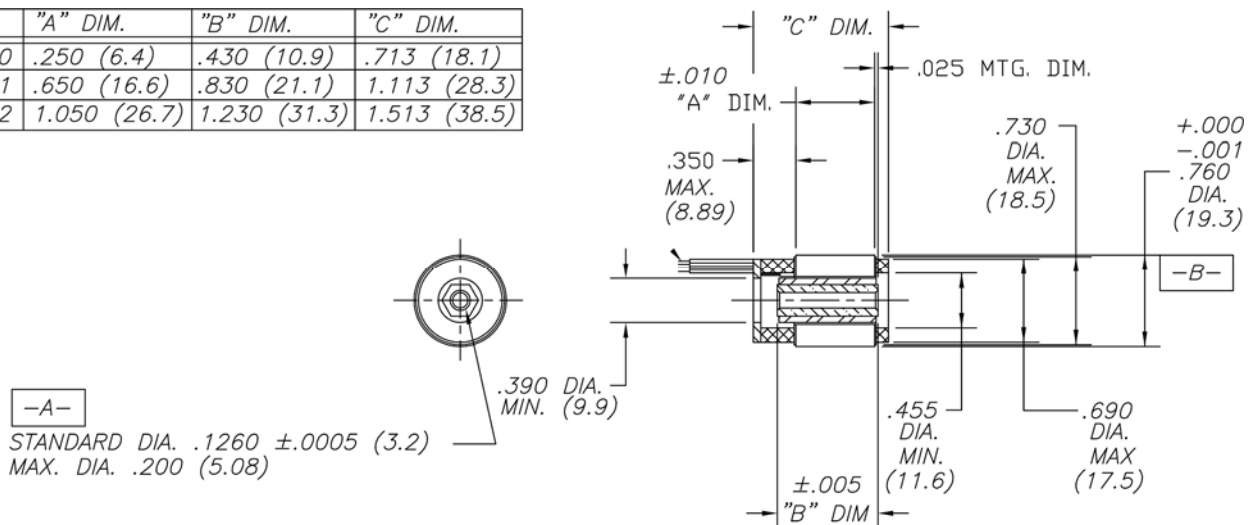
SPECIFICATIONS

Model No.		HT00800-A00	HT00801-A00	HT00802-A00
Stall Torque (continuous) ⁽¹⁾	oz-in	1.0	2.1	3.0
	Nm	0.008	0.015	0.021
Demag. Torque (±25%)	oz-in	11	27	34
	Nm	0.07	0.19	0.24
Rated Power ⁽¹⁾	W	7	11	13
Motor Constant	oz-in/√W	0.65	1.09	1.44
	Nm/√W	0.005	0.008	0.010
Elect. Time Constant	ms	0.10	0.1	0.20
Mech. Time Constant	ms	2.3	1.5	1.4
Thermal Resistance	°C/W	21.1	17.1	14.6
Cogging Torque (max.)	oz-in	0.200	0.600	1.100
	Nm	0.0014	0.0042	0.0078
Rotor Inertia	oz-in-s ²	7.0E-6	1.4E-5	2.1E-5
	kg-m ²	4.95E-8	9.69E-8	1.5E-7
Weight	oz	0.5	1.1	1.6
	kg	0.01	0.03	0.04
Poles	-		6	
Winding Code	-		A	
Winding Voltage	V		24	
Peak Torque	oz-in	5	12	16
	Nm	0.033	0.086	0.110
Peak Current	A	2.7	6.0	5.6
Torque Constant (±10%)	oz-in/A	1.7	2.0	2.8
	Nm/A	0.012	0.014	0.02
No-Load Speed	RPM	18298	15105	10891
	rad/s	1916	1581	1141
Back EMF Constant (±10%)	V/kRPM	1.26	1.49	2.07
	V/rad/s	0.012	0.014	0.02
Resistance (ph-ph, ±12%)	Ohms	6.88	3.42	3.82
Inductance (ph-ph, ±30%)	mH	0.62	0.51	0.65

(1) Motor mounted to a 38 mm sq. x 6.35 mm (1.5 in. sq x 0.25 in.) thick aluminum plate and ambient temperature of 20 °C

DIMENSIONS

MODEL	"A" DIM.	"B" DIM.	"C" DIM.
HT00800	.250 (6.4)	.430 (10.9)	.713 (18.1)
HT00801	.650 (16.6)	.830 (21.1)	1.113 (28.3)
HT00802	1.050 (26.7)	1.230 (31.3)	1.513 (38.5)



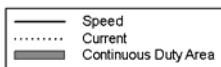
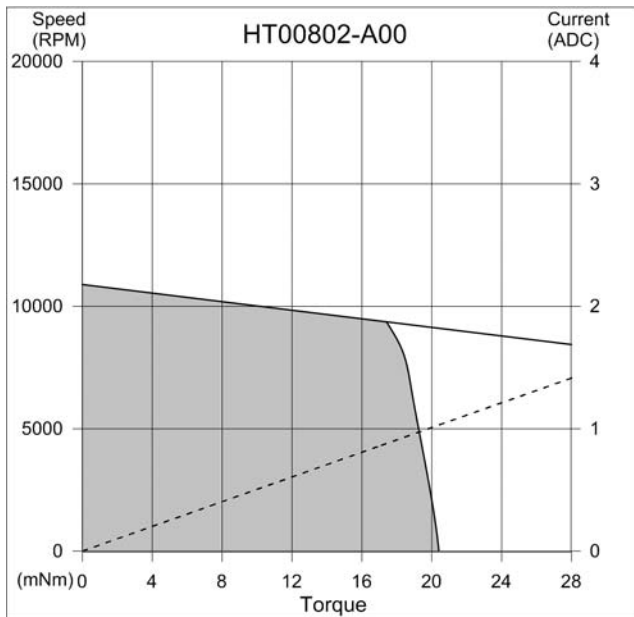
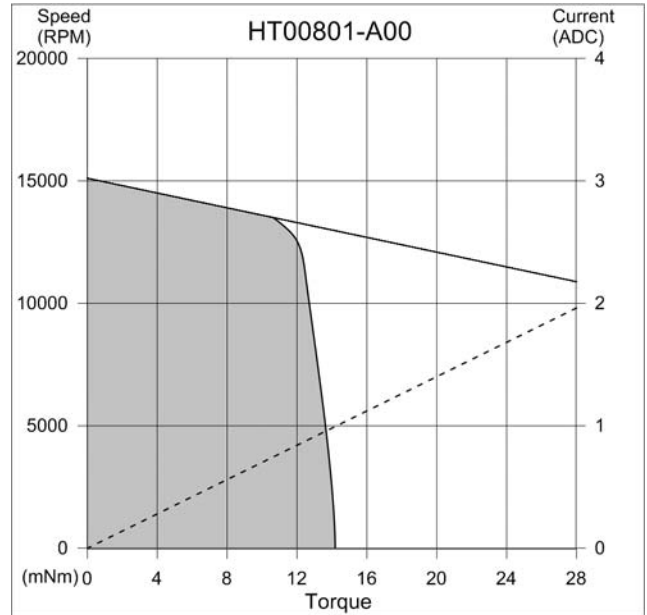
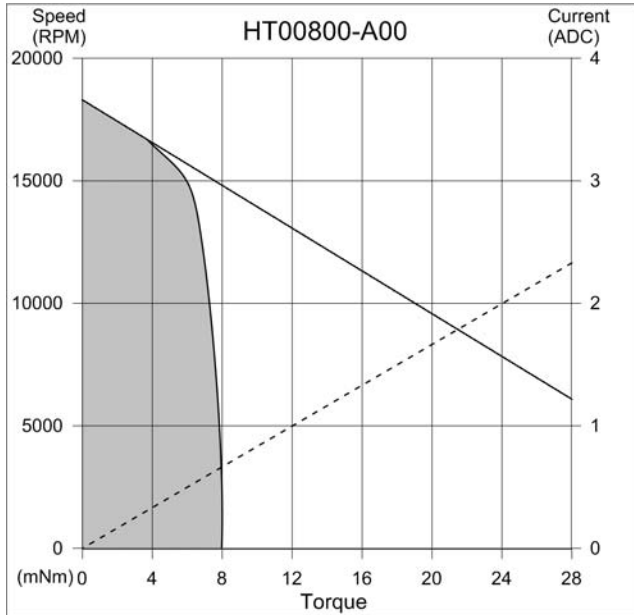
in (mm)



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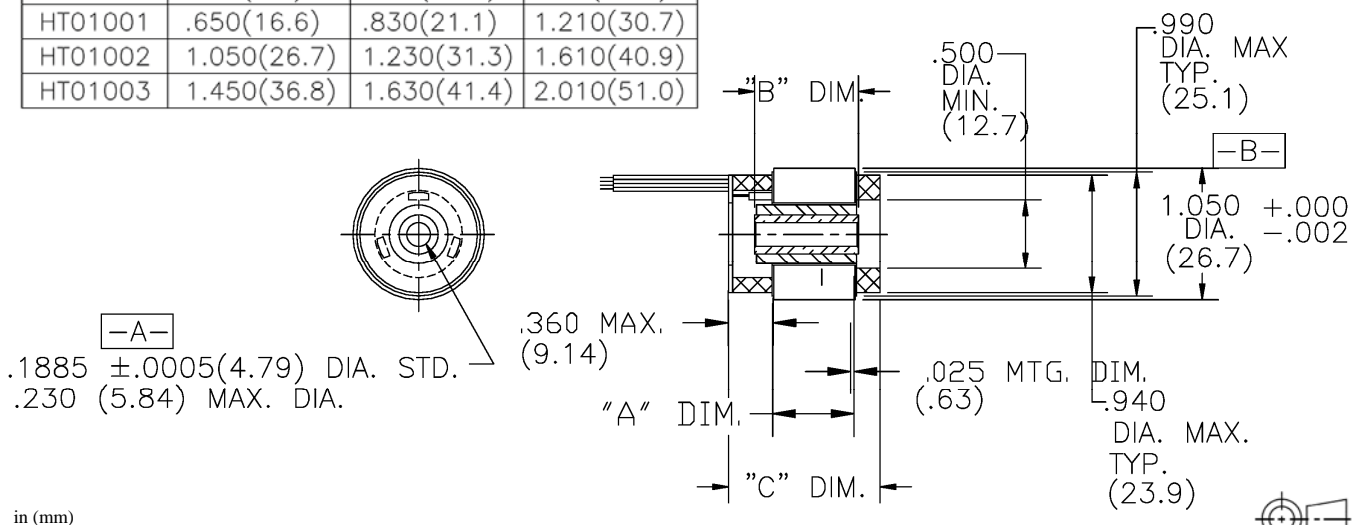
SPECIFICATIONS

Model No.		HT01000-A00	HT01001-A00	HT01002-A00	HT01003-A00
Stall Torque (continuous) ⁽¹⁾	oz-in	3.4	6.3	10.3	12.7
	Nm	0.024	0.044	0.073	0.09
Demag. Torque (±25%)	oz-in	35	75	117	159
	Nm	0.24	0.53	0.83	1.12
Rated Power ⁽¹⁾	W	11	17	22	26
Motor Constant	oz-in/√W	1.37	2.48	3.70	4.48
	Nm/√W	0.010	0.018	0.026	0.032
Elect. Time Constant	ms	0.2	0.3	0.3	0.4
Mech. Time Constant	ms	1.3	0.8	0.6	0.5
Thermal Resistance	°C/W	10.88	9.32	8.22	7.4
Cogging Torque (max.)	oz-in	0.400	0.600	0.700	0.820
	Nm	0.0028	0.0042	0.0049	0.0058
Rotor Inertia	oz-in-s ²	1.8E-5	3.8E-5	5.9E-5	7.7E-5
	kg-m ²	1.3E-7	2.7E-7	4.1E-7	5.4E-7
Weight	oz	1.0	2.1	3.2	4.3
	kg	0.03	0.06	0.09	0.12
Poles	-	6			
Winding Code	-	A			
Winding Voltage	V	24			
Peak Torque	oz-in	13	31	56	75
	Nm	0.09	0.22	0.40	0.53
Peak Current	A	3.6	6.5	9.6	11.7
Torque Constant (±10%)	oz-in/A	3.6	4.8	5.8	6.4
	Nm/A	0.025	0.034	0.041	0.045
No-Load Speed	RPM	8510	6379	5462	4796
	rad/s	891	668	551	502
Back EMF Constant (±10%)	V/kRPM	2.64	3.51	4.32	4.74
	V/rad/s	0.025	0.034	0.041	0.045
Resistance (ph-ph, ±12%)	Ohms	6.76	3.67	2.50	2.05
Inductance (ph-ph, ±30%)	mH	1.21	0.98	0.85	0.80

(1) Motor mounted to a 51 mm sq. x 6.35 mm (2.0 in. sq x 0.25 in.) thick aluminum plate and ambient temperature of 20 °C

DIMENSIONS

MODEL	"A " DIM.	"B " DIM.	"C " DIM.
HT01000	.250(6.4)	.430(10.9)	.810(20.6)
HT01001	.650(16.6)	.830(21.1)	1.210(30.7)
HT01002	1.050(26.7)	1.230(31.3)	1.610(40.9)
HT01003	1.450(36.8)	1.630(41.4)	2.010(51.0)

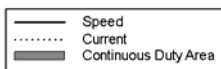
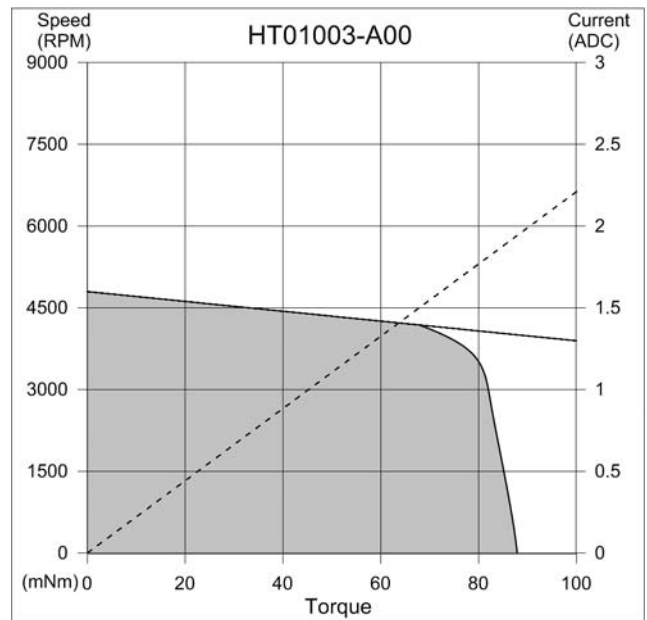
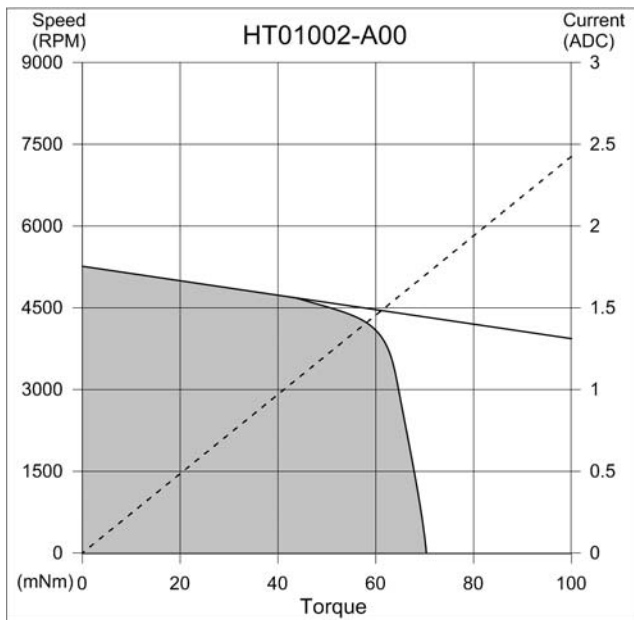
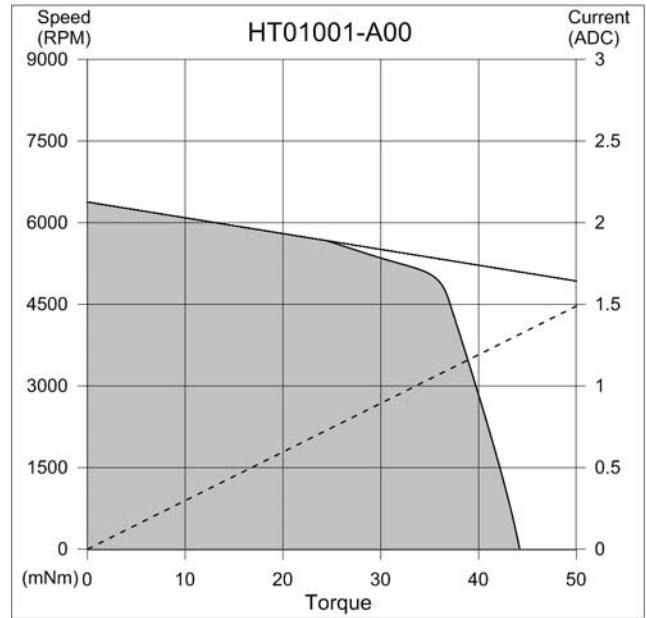
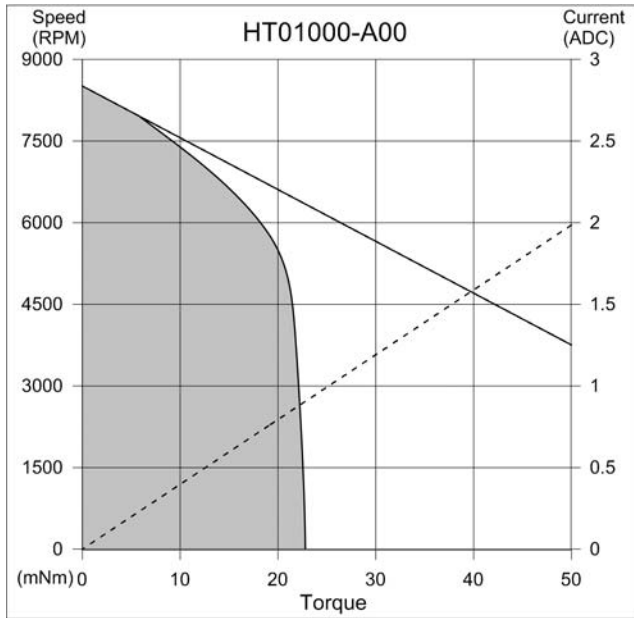


in (mm)

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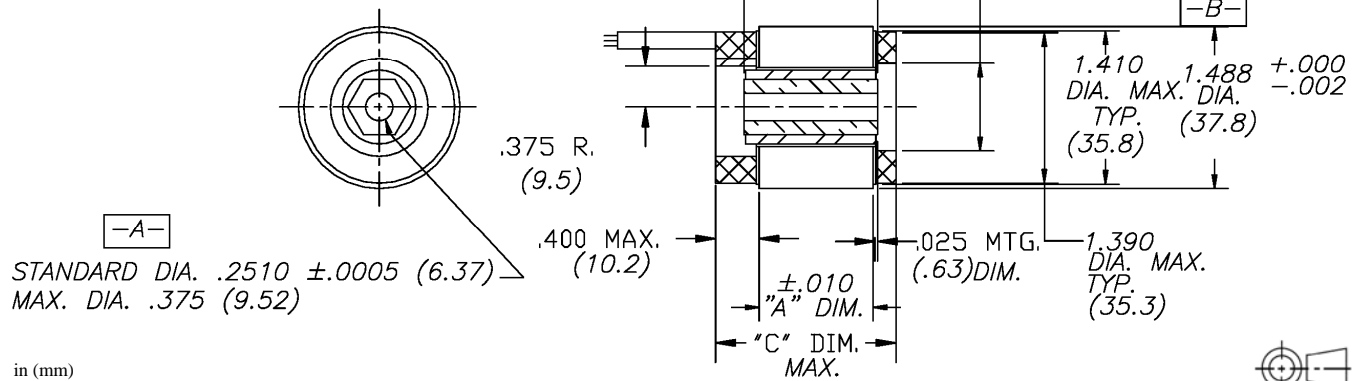
SPECIFICATIONS

Model No.		HT01500-A00	HT01501-A00	HT01502-A00	HT01503-A00	HT01504-A00	HT01505-A00
Stall Torque (continuous) ⁽¹⁾	oz-in	7.5	13.5	19.9	25.9	31.1	36.2
	Nm	0.053	0.096	0.141	0.183	0.22	0.256
Demag Torque (±25%)	oz-in	83	166	254	358	428	506
	Nm	0.58	1.17	1.79	2.52	3.02	3.57
Rated Power ⁽¹⁾	W	31	44	55	63	67	71
Motor Constant	oz-in/√W	2.48	4.17	5.82	7.20	8.48	9.39
	Nm/√W	0.018	0.029	0.041	0.051	0.060	0.066
Elect. Time Constant	ms	0.3	0.5	0.6	0.5	0.7	0.6
Mech. Time Constant	ms	1.8	1.2	0.9	0.9	0.8	0.8
Thermal Resistance	°C/W	6.6	6.0	5.4	4.9	4.7	4.4
Cogging Torque (max.)	oz-in	0.700	1.200	1.800	2.500	3.200	3.900
	Nm	0.005	0.009	0.013	0.018	0.023	0.028
Rotor Inertia	oz-in-s ²	8.2E-5	1.5E-4	2.3E-4	3.4E-4	4.1E-4	5.0E-4
	kg-m ²	5.8E-7	1.1E-6	1.6E-6	2.4E-6	2.9E-6	3.5E-6
Weight	oz	2.2	4.4	6.3	8.4	10.9	13.0
	kg	0.06	0.12	0.18	0.24	0.31	0.37
Poles	-	6					
Winding Code	-	A					
Winding Voltage	V	24					
Peak Torque	oz-in	32	59	92	130	159	184
	Nm	0.23	0.415	0.646	0.92	1.12	1.30
Peak Current	A	7.0	8.3	10.3	13.6	14.6	16.1
Torque Constant (±10%)	oz-in/A	4.6	7.1	8.9	9.6	10.9	11.5
	Nm/A	0.032	0.050	0.063	0.067	0.077	0.081
No-Load Speed	RPM	6897	4440	3534	3235	2845	2713
	rad/s	715	424	285	328	246	284
Back EMF Constant (±10%)	V/kRPM	3.4	5.25	6.56	7.07	8.04	8.49
	V/rad/s	0.032	0.050	0.063	0.067	0.077	0.081
Resistance (ph-ph, ±12%)	Ohms	3.42	2.90	2.33	1.76	1.64	1.49
Inductance (ph-ph, ±30%)	mH	1.04	1.38	1.36	0.96	1.21	0.97

(1) Motor mounted to a 81 mm sq. x 6.35 mm (3.2 in. sq x 0.25 in.) thick aluminum plate and ambient temperature of 20 °C

DIMENSIONS

MODEL	"A" DIM.	"B" DIM.	"C" DIM.
HT01500	.250 (6.4)	.430 (10.9)	.860 (21.9)
HT01501	.650 (16.6)	.830 (21.1)	1.260 (32.0)
HT01502	1.050 (26.7)	1.230 (31.3)	1.660 (42.2)
HT01503	1.450 (36.9)	1.630 (41.4)	2.060 (52.4)
HT01504	1.850 (47.0)	2.030 (51.6)	2.460 (62.5)
HT01505	2.250 (57.2)	2.430 (61.8)	2.860 (72.6)

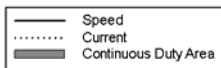
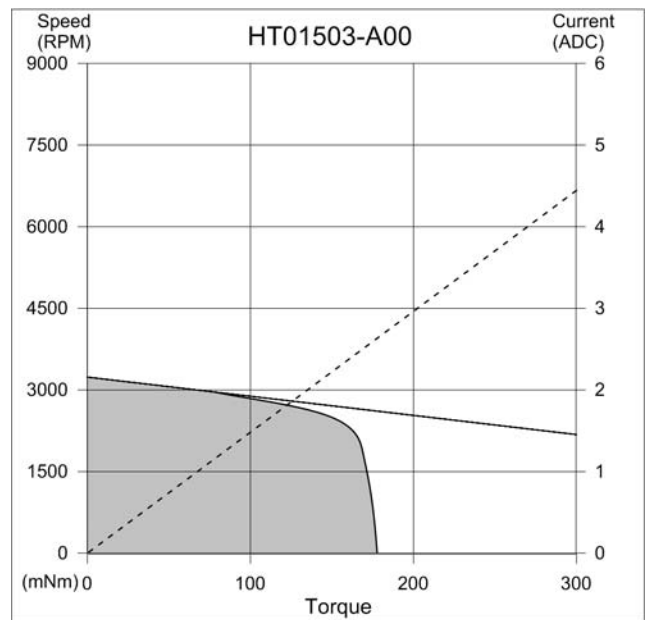
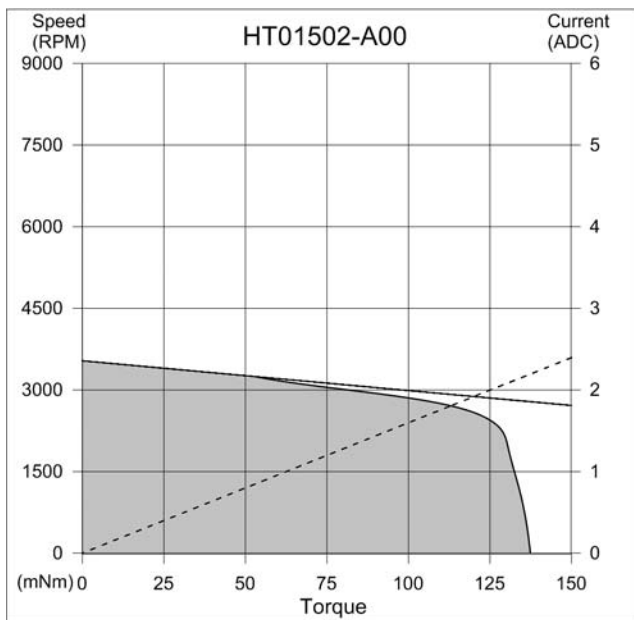
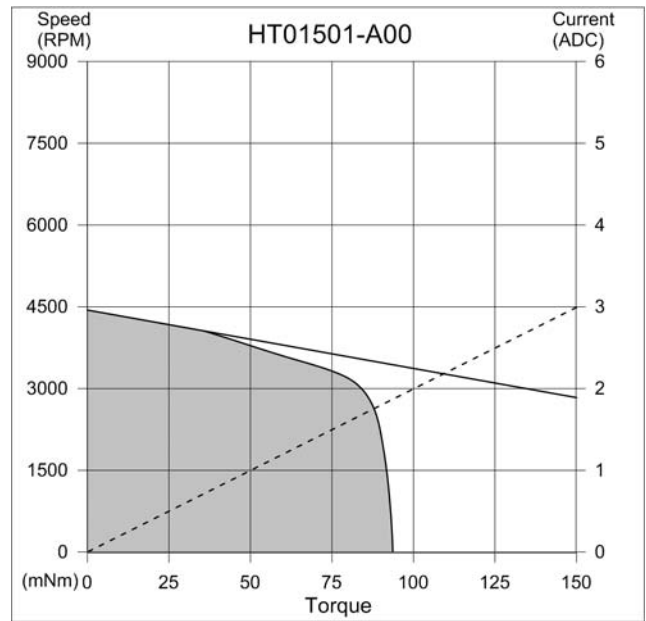
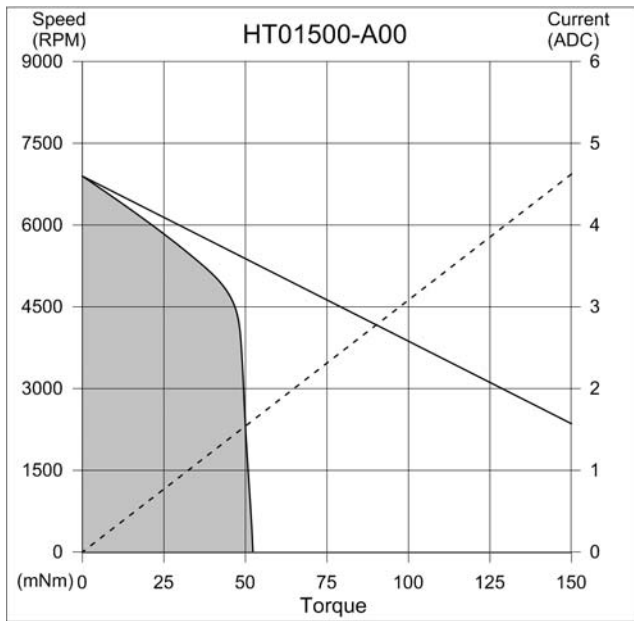


in (mm)

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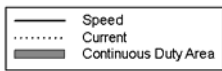
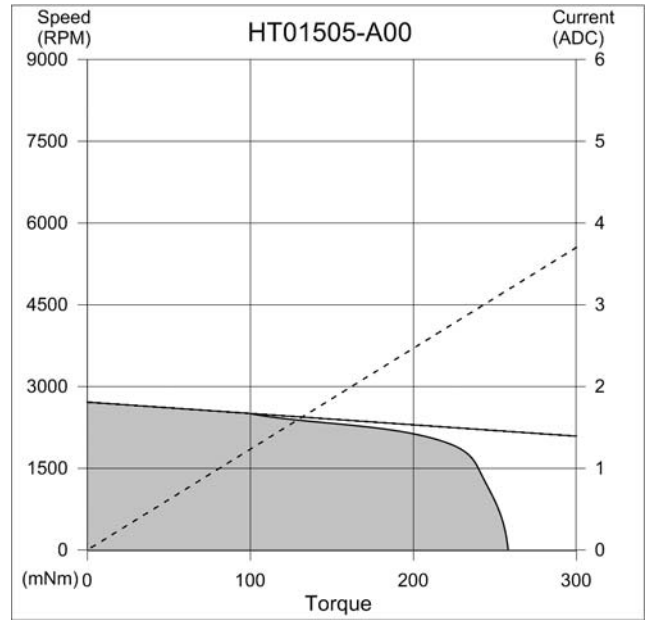
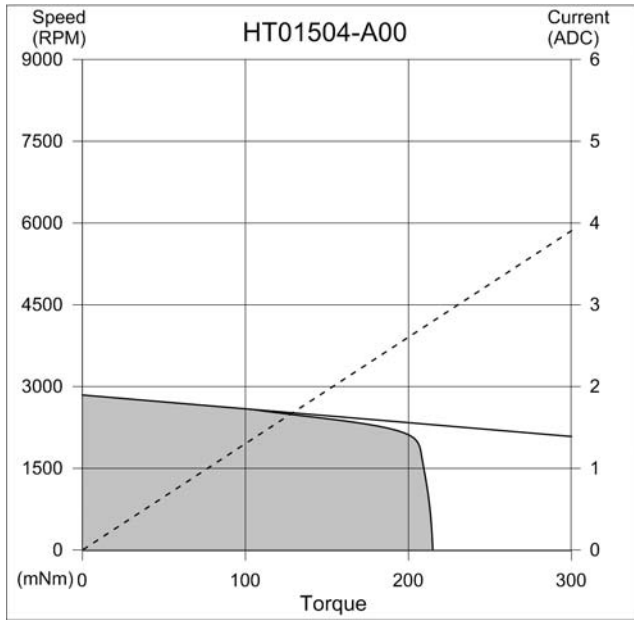
PERFORMANCE



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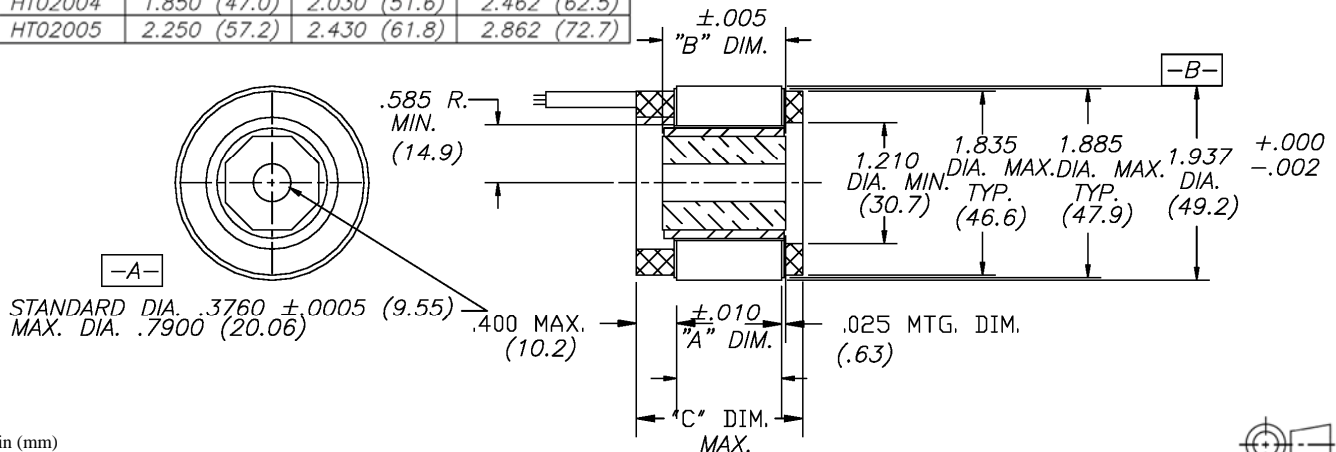
SPECIFICATIONS

Model No.		HT02000-A00	HT02001-A00	HT02002-A00	HT02003-A00	HT02004-A00	HT02005-A00
Stall Torque (continuous) ⁽¹⁾	oz-in	17.9	36.3	52.9	68.6	77.4	93.2
	Nm	0.127	0.257	0.374	0.485	0.547	0.658
Demag Torque (±25%)	oz-in	188	448	702	886	1077	1278
	Nm	1.33	3.16	4.95	6.25	7.60	9.02
Rated Power ⁽¹⁾	W	48	63	73	82	94	97
Motor Constant	oz-in/√W	4.67	9.16	13.19	16.56	17.96	20.79
	Nm/√W	0.033	0.065	0.093	0.117	0.127	0.147
Elect. Time Constant	ms	0.3	0.5	0.7	0.9	0.8	0.9
Mech. Time Constant	ms	3.9	2.2	1.5	1.2	1.3	1.3
Thermal Resistance	°C/W	4.84	4.4	4.1	3.8	3.5	3.3
Cogging Torque (max.)	oz-in	1.100	2.200	2.400	2.900	3.200	3.900
	Nm	0.008	0.016	0.017	0.020	0.023	0.028
Rotor Inertia	oz-in-s ²	6.3E-4	1.4E-3	1.9E-3	2.5E-3	3.3E-3	4.0E-3
	kg-m ²	4.4E-6	1.0E-5	1.3E-5	1.8E-5	2.4E-5	2.8E-5
Weight	oz	4.0	7.8	11.3	15.3	18.5	22.6
	kg	0.11	0.22	0.32	0.43	0.52	0.64
Poles	-	8					
Winding Code	-	A					
Winding Voltage	V	24					
Peak Torque	oz-in	67	161	213	359	379	454
	Nm	0.47	1.13	1.50	2.54	2.67	3.21
Peak Current	A	8.6	12.8	14.4	19.9	18.5	19.9
Torque Constant (±10%)	oz-in/A	7.8	12.5	14.8	18.1	20.4	22.9
	Nm/A	0.055	0.089	0.104	0.128	0.144	0.161
No-Load Speed	RPM	3948	2618	2195	1771	1506	1429
	rad/s	413	272	211	175	153	155
BEMF Constant (±10%)	V/kRPM	5.78	9.27	10.92	13.38	15.12	16.91
	V/rad/s	0.055	0.089	0.104	0.128	0.144	0.161
Terminal Resistance (±12%)	Ohms	2.80	1.87	1.25	1.19	1.30	1.21
Terminal Inductance (±30%)	mH	0.92	1.03	0.94	1.06	1.05	1.12

(1) Motor mounted to a 89 mm sq. x 6.35 mm (3.5 in. sq x 0.25 in.) thick aluminum plate and ambient temperature of 20 °C

DIMENSIONS

MODEL	"A" DIM.	"B" DIM.	"C" DIM.
HT02000	.250 (6.4)	.430 (10.9)	.862 (21.9)
HT02001	.650 (16.6)	.830 (21.1)	1.262 (32.1)
HT02002	1.050 (26.7)	1.230 (31.3)	1.662 (42.2)
HT02003	1.450 (36.9)	1.630 (41.4)	2.062 (52.4)
HT02004	1.850 (47.0)	2.030 (51.6)	2.462 (62.5)
HT02005	2.250 (57.2)	2.430 (61.8)	2.862 (72.7)

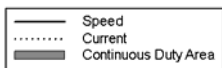
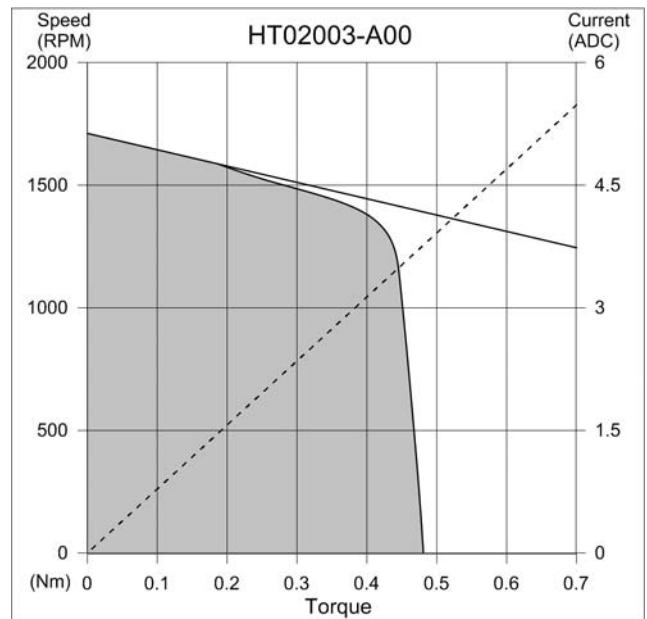
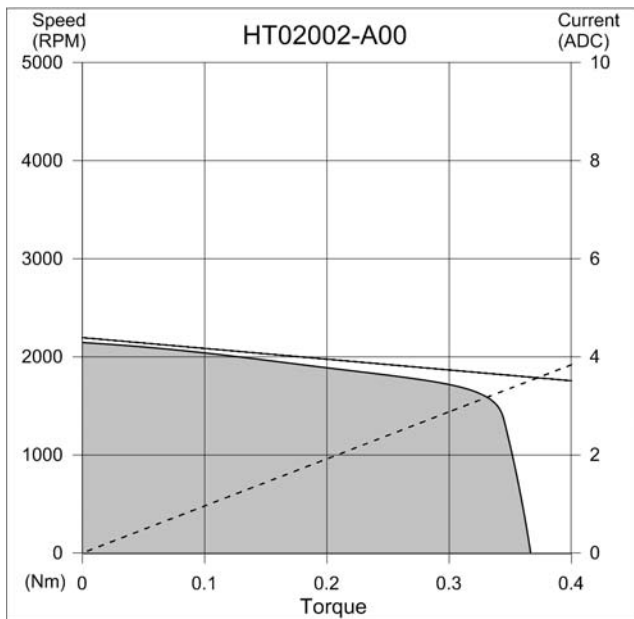
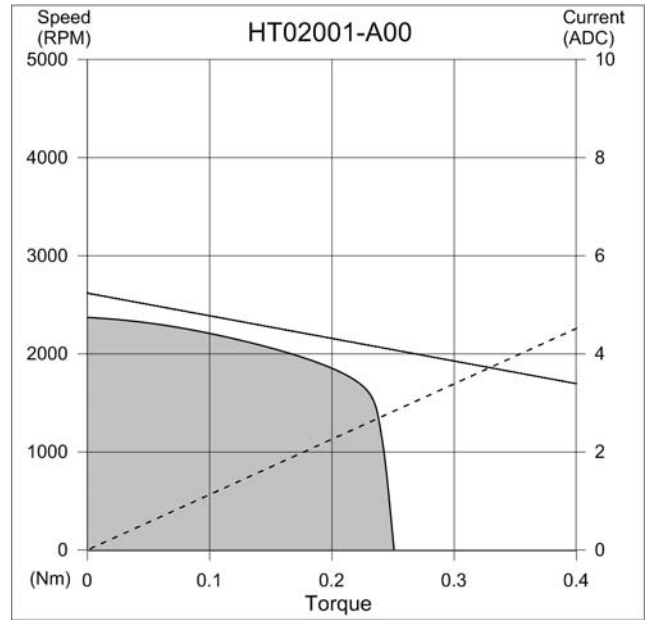
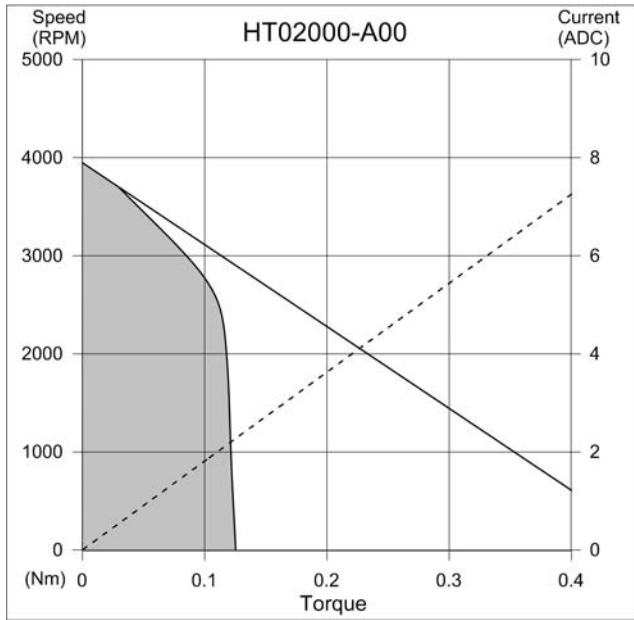


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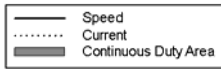
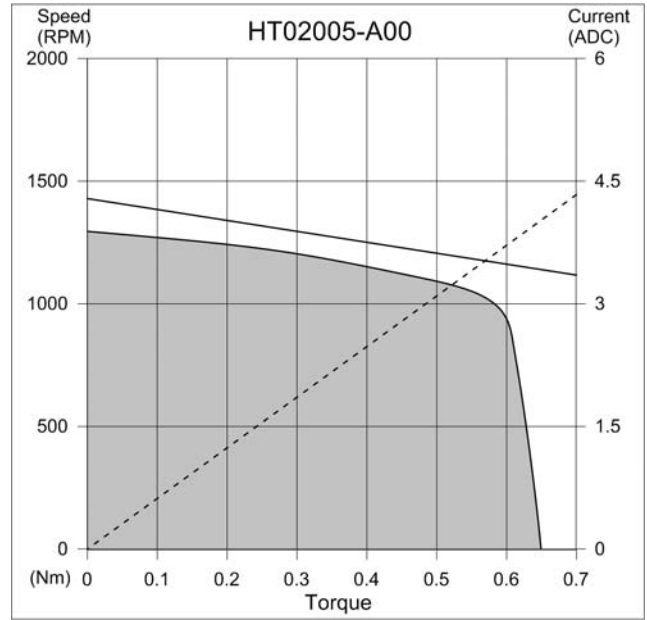
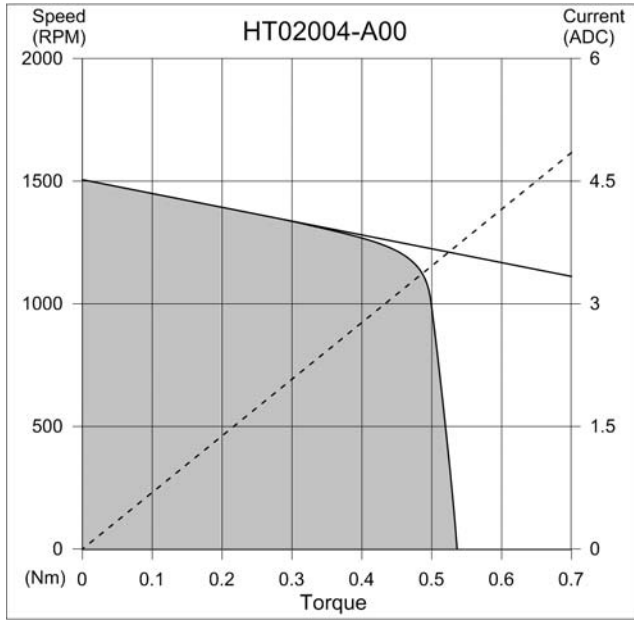
PERFORMANCE



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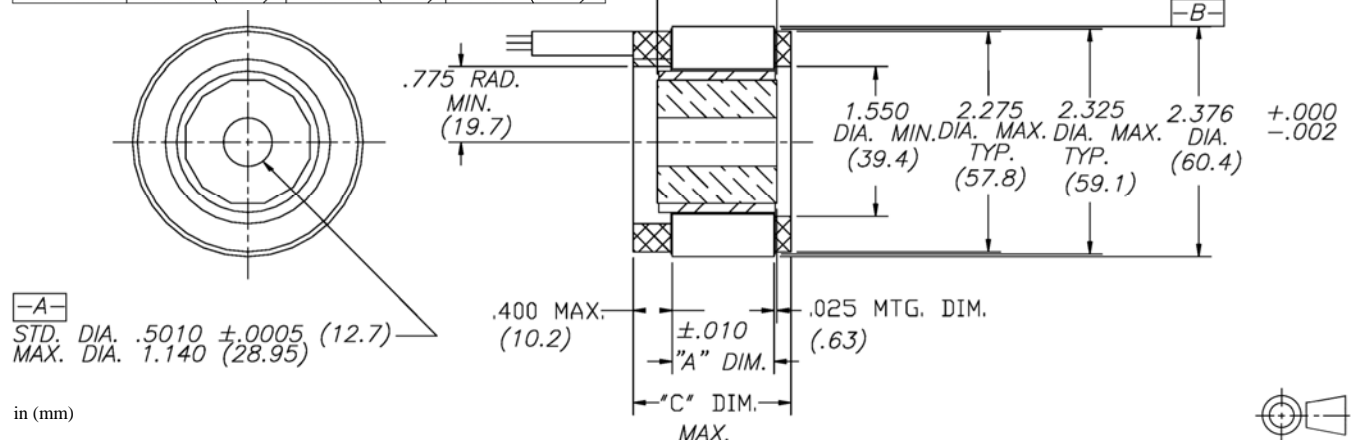
SPECIFICATIONS

Model No.		HT02300-A00	HT02301-A00	HT02302-A00	HT02303-A00	HT02304-A00	HT02305-A00
Stall Torque (continuous) ⁽¹⁾	oz-in	35.9	72.7	100.3	124.8	164.6	175.8
	Nm	0.254	0.513	0.708	0.882	1.162	1.242
Demag Torque (±25%)	oz-in	329	675	1035	1298	1561	1838
	Nm	2.32	4.76	7.31	9.16	11.0	12.9
Rated Power ⁽¹⁾	W	56	81	97	111	123	129
Motor Constant	oz-in/√W	8.17	15.69	21.13	25.11	32.00	33.57
	Nm/√W	0.058	0.111	0.149	0.177	0.226	0.237
Elect. Time Constant	ms	0.4	0.6	0.7	0.7	1.0	0.9
Mech. Time Constant	ms	3.9	2.1	1.7	1.6	1.2	1.4
Thermal Resistance	°C/W	3.7	3.3	3.1	2.8	2.6	2.5
Cogging Torque (max.)	oz-in	1.900	2.800	3.800	5.000	6.100	7.300
	Nm	0.013	0.020	0.027	0.035	0.043	0.052
Rotor Inertia	oz-in-s ²	1.9E-3	3.9E-3	5.9E-3	7.8E-3	9.8E-2	1.2E-2
	kg-m ²	1.4E-5	2.8E-5	4.1E-5	5.5E-5	6.9E-5	8.3E-5
Weight	oz	6.0	11.6	17.0	22.2	28.6	33.8
	kg	0.17	0.33	0.48	0.63	0.81	0.96
Poles	-	12					
Winding Code	-	A					
Winding Voltage	V	24					
Peak Torque	oz-in	99	208	309	370	495	540
	Nm	0.70	1.47	2.18	2.62	3.50	3.81
Peak Current	A	6.2	7.3	8.9	9.1	10.0	10.8
Torque Constant (±10%)	oz-in/A	16.1	28.4	34.7	40.8	49.6	50.1
	Nm/A	0.114	0.20	0.245	0.288	0.350	0.354
No-Load Speed	RPM	1904	1056	859	729	600	618
	rad/s	202	111	90	76	63	65
BEMF Constant (±10%)	V/kRPM	11.92	20.97	25.63	30.19	36.69	37.05
	V/rad/s	0.114	0.20	0.245	0.288	0.350	0.354
Terminal Resistance (±12%)	Ohms	3.89	3.27	2.69	2.65	2.40	2.23
Terminal Inductance (±30%)	mH	1.46	1.97	1.95	1.83	2.31	1.99

(1) Motor mounted to a 102 mm sq. x 6.35 mm (4.0 in. sq x 0.25 in.) thick aluminum plate and ambient temperature of 20 °C

DIMENSIONS

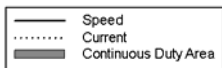
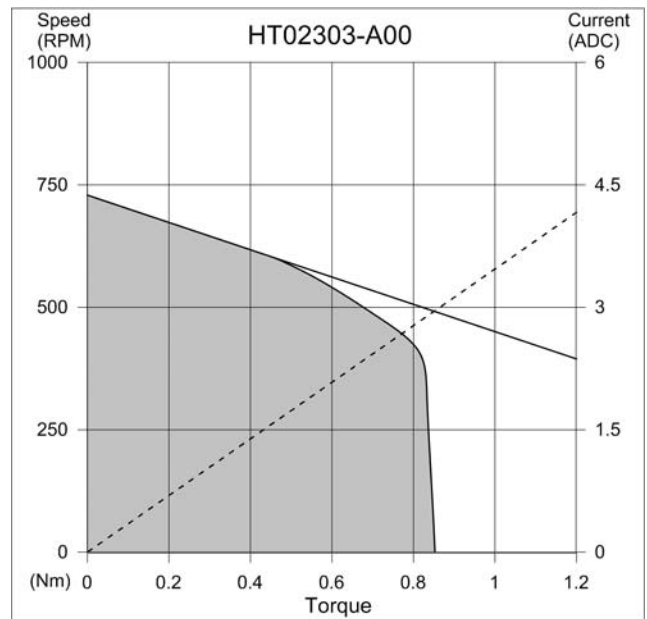
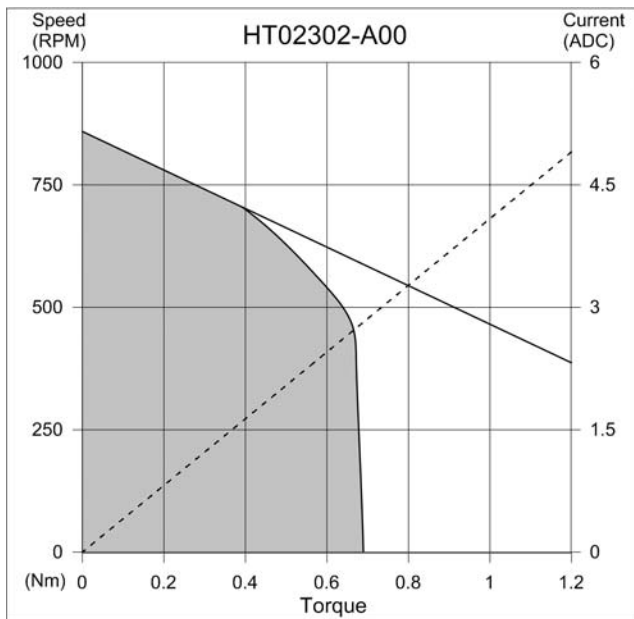
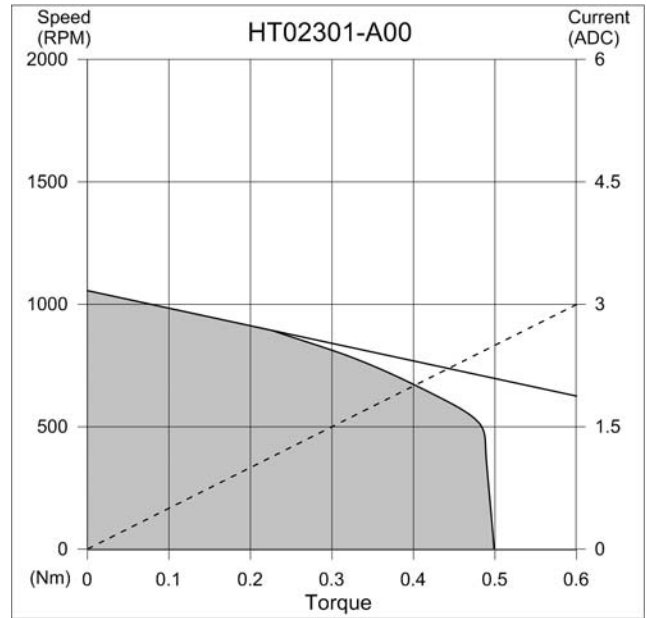
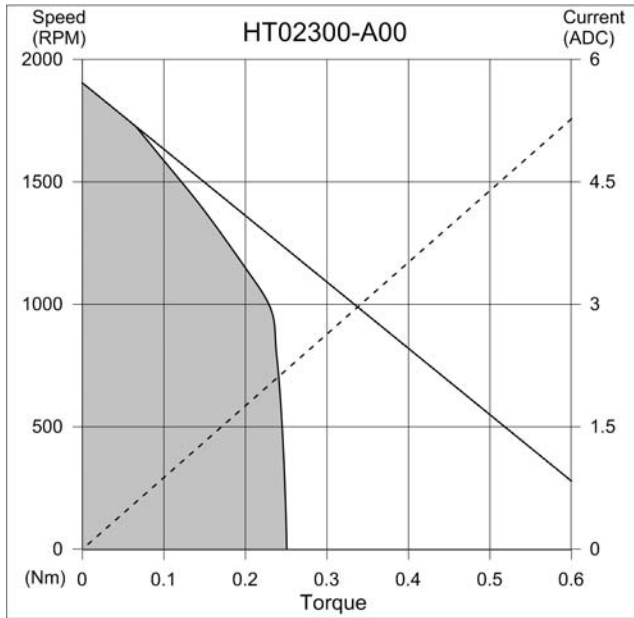
MODEL	"A" DIM.	"B" DIM.	"C" DIM.
HT02300	.250 (6.4)	.430 (10.9)	.824 (20.9)
HT02301	.650 (16.6)	.830 (21.1)	1.224 (31.1)
HT02302	1.050 (26.7)	1.230 (31.3)	1.624 (41.3)
HT02303	1.450 (36.9)	1.630 (41.4)	2.024 (51.4)
HT02304	1.850 (47.0)	2.030 (51.6)	2.424 (61.6)
HT02305	2.250 (57.2)	2.430 (61.8)	2.824 (71.7)



Brushless Torque Motors

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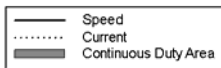
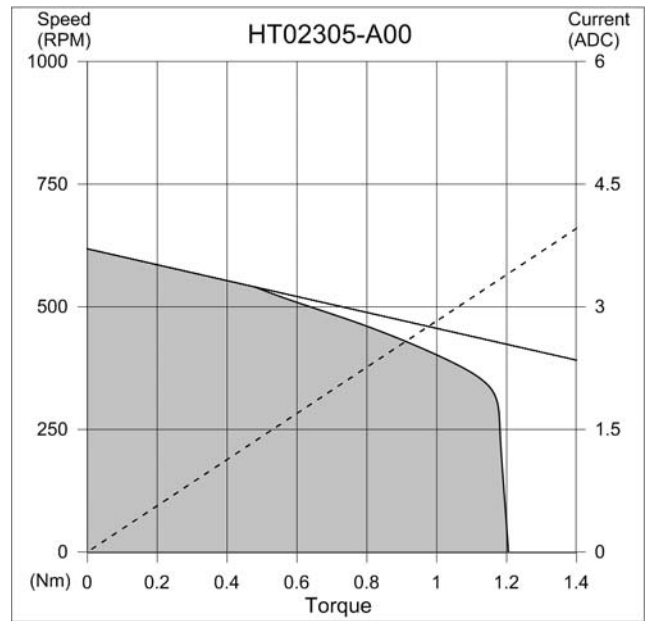
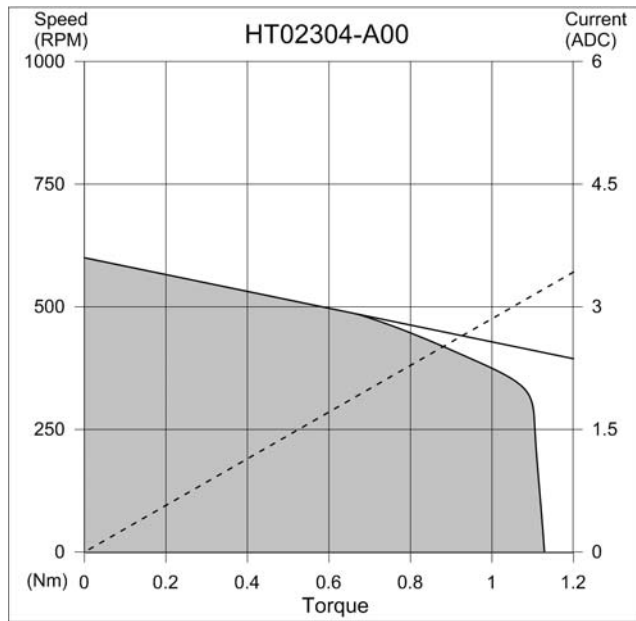
PERFORMANCE



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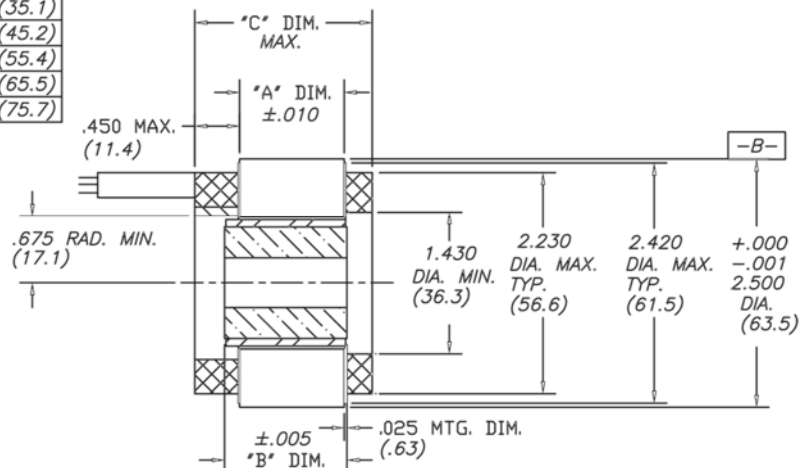
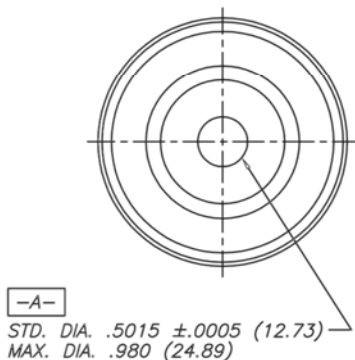
SPECIFICATIONS

Model No.		HT02500-A00	HT02501-A00	HT02502-A00	HT02503-A00	HT02504-A00	HT02505-A00
Stall Torque (continuous) ⁽¹⁾	oz-in	30.6	62.6	90.1	120.1	147.5	174.8
	Nm	0.216	0.442	0.636	0.848	1.041	1.235
Demag Torque (±25%)	oz-in	152	331	509	693	876	1058
	Nm	1.07	2.34	3.60	4.90	6.19	7.48
Rated Power ⁽¹⁾	W	59	92	111	134	152	167
Motor Constant	oz-in/√W	7.17	14.03	19.19	24.16	29.62	32.77
	Nm/√W	0.051	0.099	0.136	0.171	0.209	0.231
Elect. Time Constant	ms	0.5	0.8	1.0	1.2	1.3	1.3
Mech. Time Constant	ms	3.2	1.7	1.3	1.2	1.0	1.0
Thermal Resistance	°C/W	3.64	3.24	2.91	2.6	2.42	2.23
Cogging Torque (max.)	oz-in	2.00	2.60	3.00	3.50	3.90	4.20
	Nm	0.014	0.018	0.021	0.25	0.28	0.30
Rotor Inertia	oz-in-s ²	1.2E-3	2.5E-3	3.6E-3	4.8E-3	6.0E-3	7.9E-3
	kg-m ²	8.7E-6	1.7E-5	2.5E-5	3.4E-5	4.2E-5	5.6E-5
Weight	oz	6.8	13.4	19.8	26.3	32.9	39.8
	kg	0.19	0.38	0.56	0.75	0.93	1.13
Poles	-	8					
Winding Code	-	A					
Winding Voltage	V	24					
Peak Torque	oz-in	78	210	330	469	596	705
	Nm	0.55	1.48	2.33	3.31	4.21	4.98
Peak Current	A	5.0	9.4	12.3	15.7	16.9	19.3
Torque Constant(±10%)	oz-in/A	15.7	22.5	26.8	29.9	35.3	36.5
	Nm/A	0.111	0.159	0.189	0.211	0.25	0.258
No-Load Speed	RPM	1954	1378	1157	1083	920	847
	rad/s	205	144	121	113	96	89
BEMF Constant (±10%)	V/kRPM	11.65	16.61	19.78	22.08	26.13	27.02
	V/rad/s	0.111	0.159	0.189	0.211	0.25	0.258
Terminal Resistance (±12%)	Ohms	4.82	2.57	1.94	1.53	1.42	1.24
Terminal Inductance (±30%)	mH	2.53	2.11	1.95	1.79	1.83	1.65

(1) Motor mounted to a 89 mm sq. x 6.35 mm (3.5 in. sq x 0.25 in.) thick aluminum plate and ambient temperature of 20 °C

DIMENSIONS

MODEL	"A" " DIM.	"B" " DIM.	"C" " DIM.
HT02500	.250(6.4)	.430(10.9)	.980 (24.9)
HT02501	.650(16.6)	.830(21.1)	1.380 (35.1)
HT02502	1.050(26.7)	1.230(31.3)	1.780 (45.2)
HT02503	1.450(36.9)	1.630(41.4)	2.180 (55.4)
HT02504	1.850(47.0)	2.030(51.6)	2.580 (65.5)
HT02505	2.250(57.2)	2.430(61.8)	2.980 (75.7)



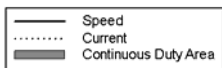
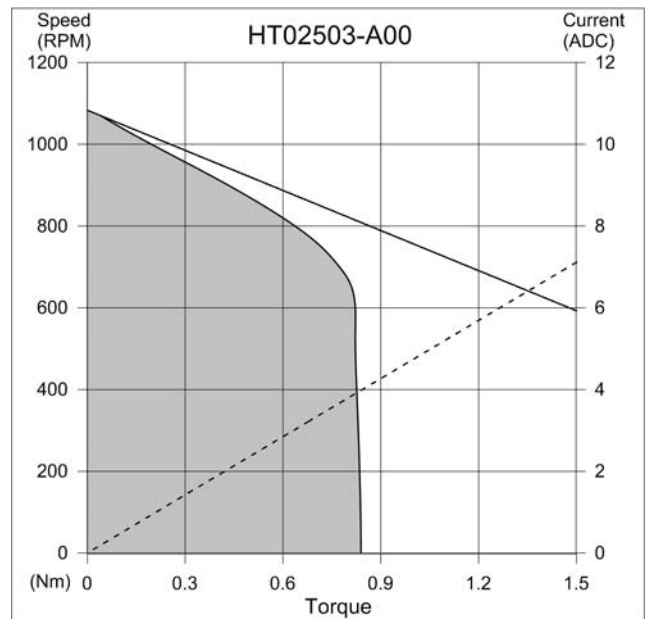
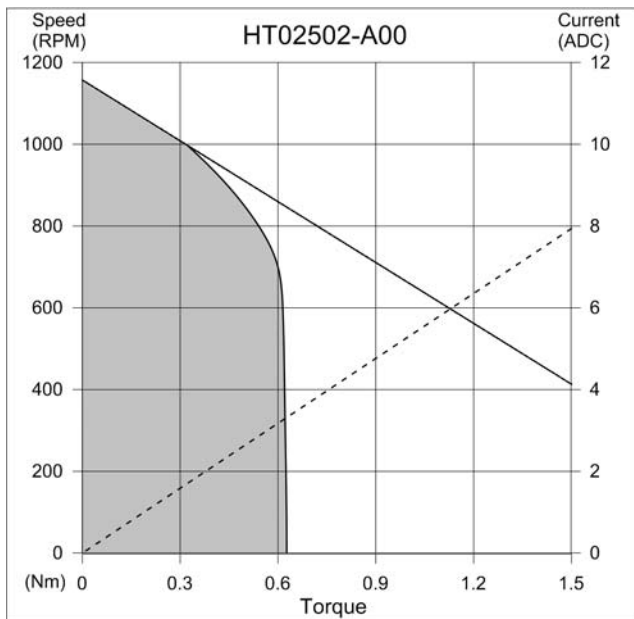
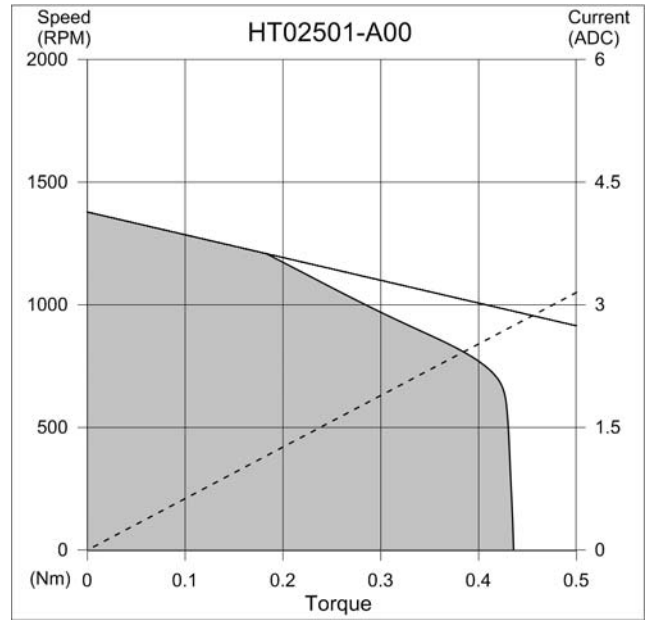
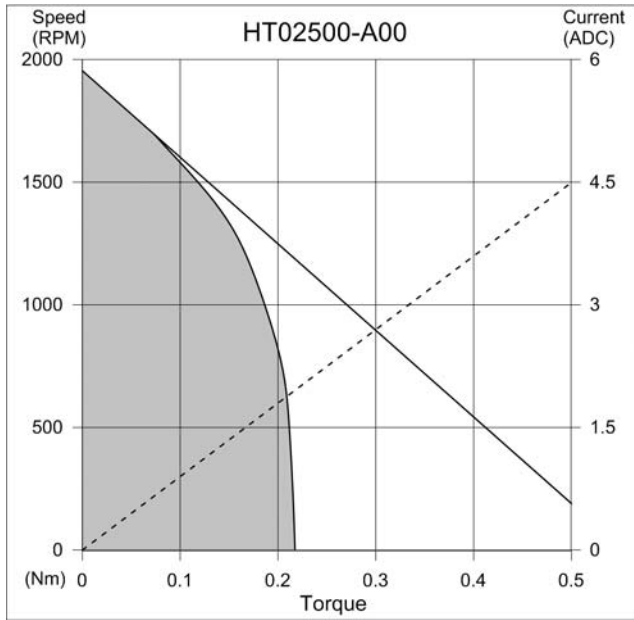
in (mm)



Brushless Torque Motors

HT Series High Torque Frameless Brushless Torque Motors

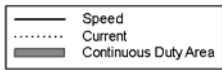
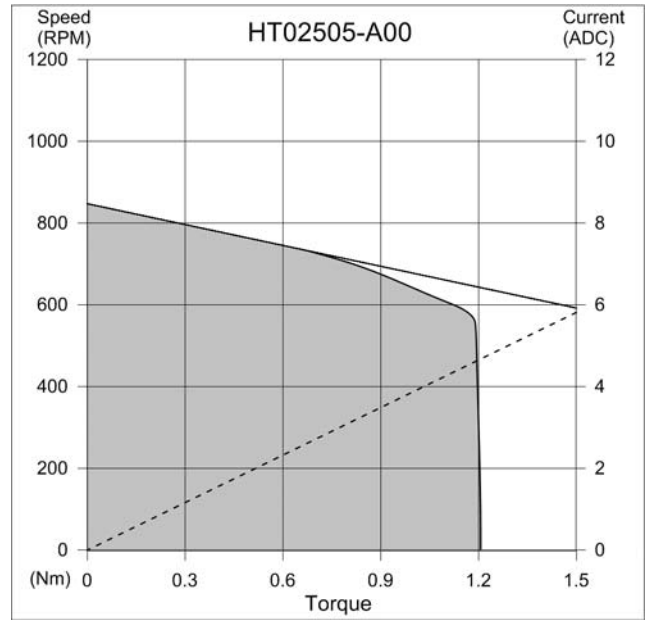
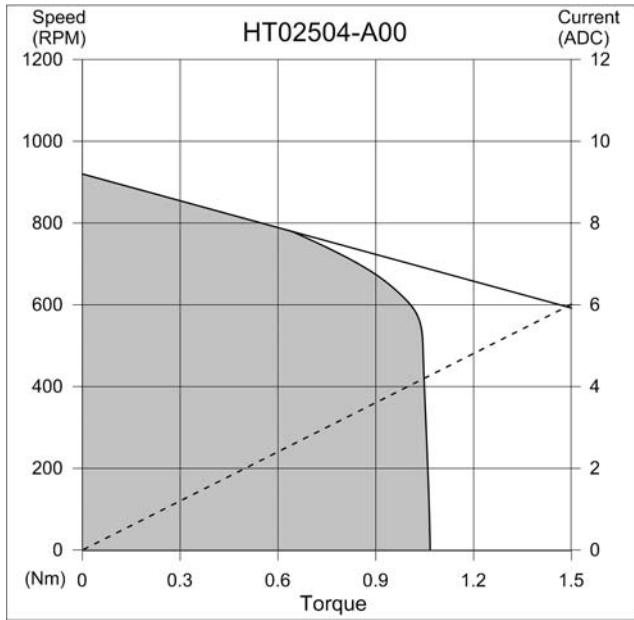
PERFORMANCE



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Brushless Torque Motors

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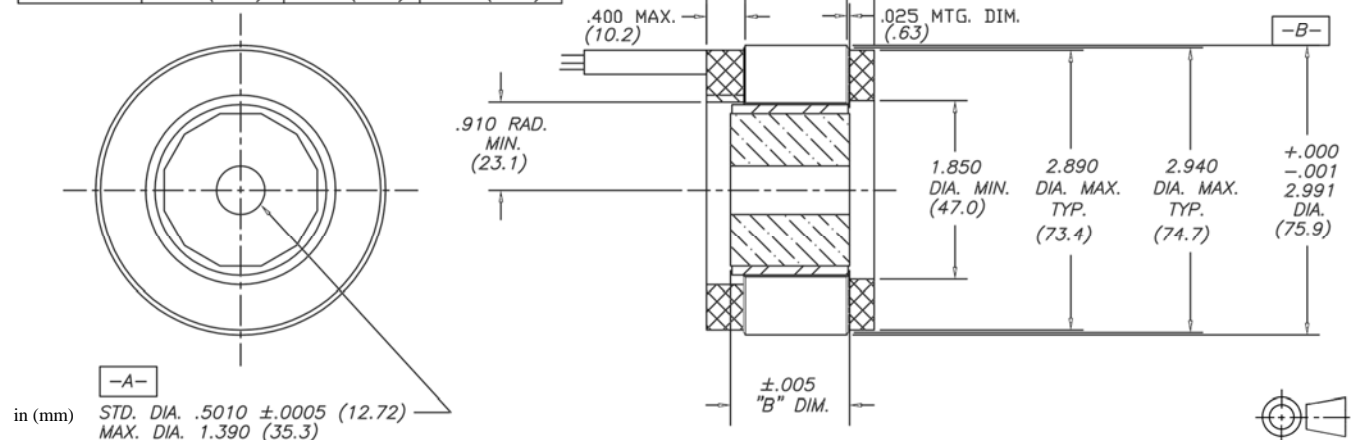
SPECIFICATIONS

Model No.		HT03000-A00	HT03001-A00	HT03002-A00	HT03003-A00	HT03004-A00	HT03005-A00
Stall Torque (continuous) ⁽¹⁾	oz-in	57.3	124.3	177.6	249.5	286.4	317.9
	Nm	0.405	0.877	1.254	1.762	2.022	2.245
Demag Torque (±25%)	oz-in	292	618	975	1287	1703	2583
	Nm	2.06	4.36	6.88	9.08	12.0	18.2
Rated Power ⁽¹⁾	W	89	130	157	189	200	291
Motor Constant	oz-in/√W	11.52	24.41	33.31	44.58	49.18	52.56
	Nm/√W	0.081	0.172	0.234	0.315	0.347	0.371
Elect. Time Constant	ms	0.6	1.0	1.2	1.6	1.4	1.5
Mech. Time Constant	ms	4.3	2.0	1.6	1.2	1.2	1.3
Thermal Resistance	°C/W	2.89	2.62	2.34	2.14	1.97	1.82
Cogging Torque (max.)	oz-in	2.80	4.20	5.90	8.10	10.40	12.80
	Nm	0.020	0.030	0.042	0.057	0.073	0.090
Rotor Inertia	oz-in-s ²	4.3E-3	8.6E-2	1.3E-2	1.7E-2	2.2E-2	2.6E-2
	kg-m ²	3.0E-5	6.1E-5	9.1E-5	1.2E-4	1.5E-4	1.8E-4
Weight	oz	10.0	19.5	28.6	39.1	47.4	56.7
	kg	0.28	0.55	0.81	1.11	1.34	1.61
Poles	-	12					
Winding Code	-	A					
Winding Voltage	V	24					
Peak Torque	oz-in	184	390	610	818	1053	1190
	Nm	1.30	2.76	4.31	5.77	7.43	8.40
Peak Current	A	11.0	10.6	14.1	14.0	19.1	30.7
Torque Constant (±10%)	oz-in/A	16.7	36.7	43.2	58.4	55.1	38.8
	Nm/A	0.118	0.259	0.305	0.412	0.389	0.274
No-Load Speed	RPM	1857	844	716	530	561	797
	rad/s	194	88	75	56	59	83
BEMF Constant (±10%)	V/kRPM	12.32	27.10	31.96	43.15	40.77	28.69
	V/rad/s	0.118	0.259	0.305	0.412	0.389	0.274
Terminal Resistance (±12%)	Ohms	2.09	2.25	1.70	1.71	1.26	0.55
Terminal Inductance (±30%)	mH	1.17	2.31	1.96	2.79	1.78	0.81

(1) Motor mounted to a 114 mm sq. x 6.35 mm (4.5 in. sq x 0.25 in.) thick aluminum plate and ambient temperature of 20 °C

DIMENSIONS

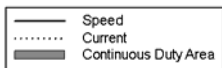
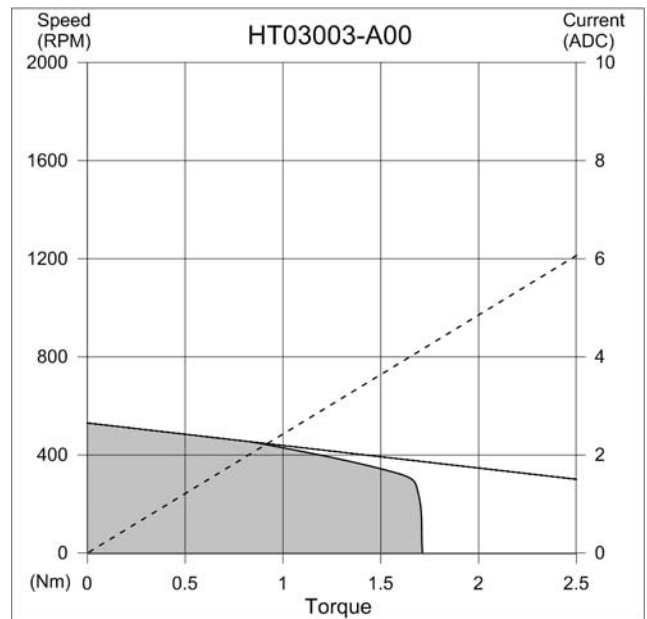
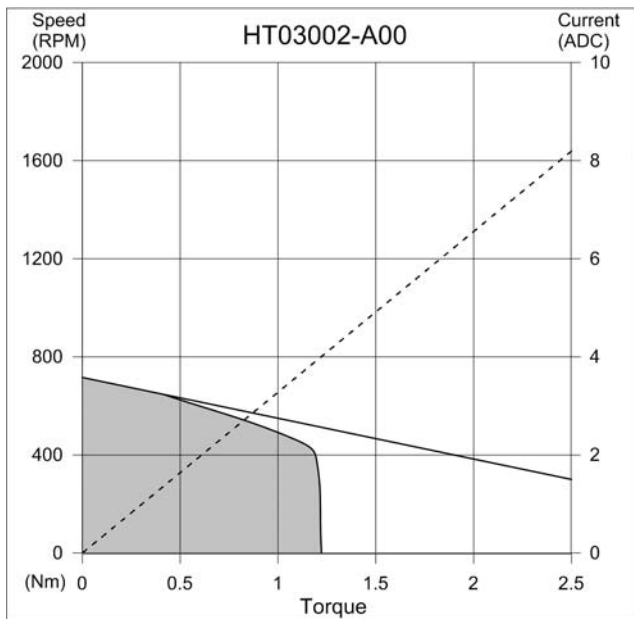
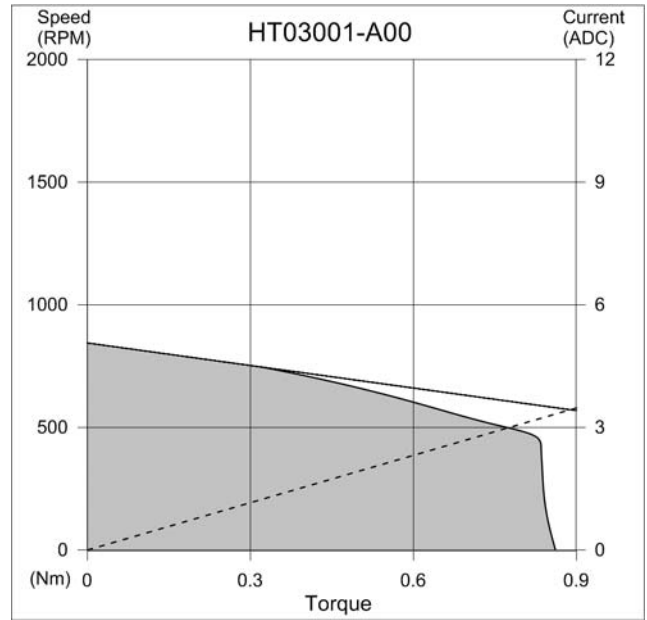
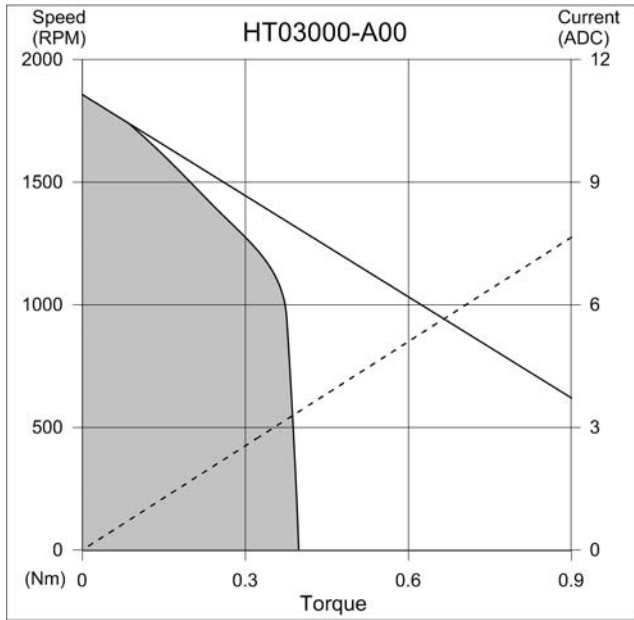
MODEL	"A" DIM.	"B" DIM.	"C" DIM.
HT03000	.250(6.4)	.430(10.9)	.931(23.6)
HT03001	.650(16.6)	.830(21.1)	1.331(33.8)
HT03002	1.050(26.7)	1.230(31.3)	1.731(44.0)
HT03003	1.450(36.9)	1.630(41.4)	2.131(54.1)
HT03004	1.850(47.0)	2.030(51.6)	2.531(64.3)
HT03005	2.250(57.2)	2.430(61.8)	2.931(74.4)



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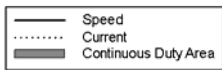
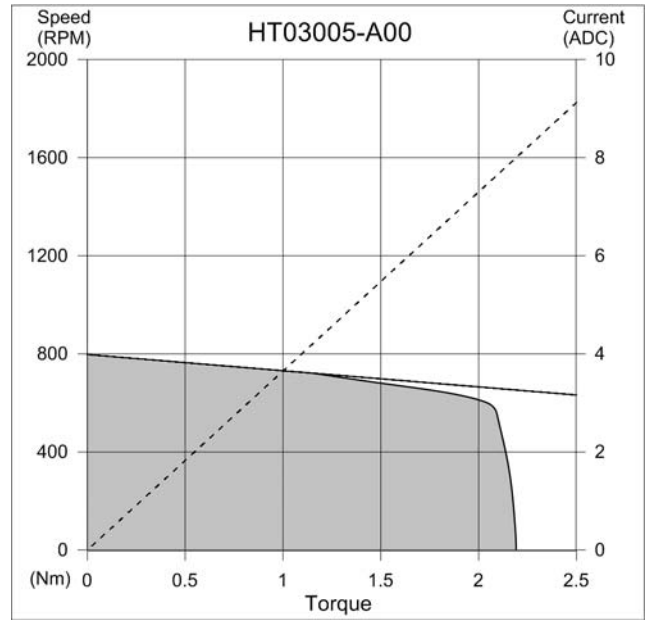
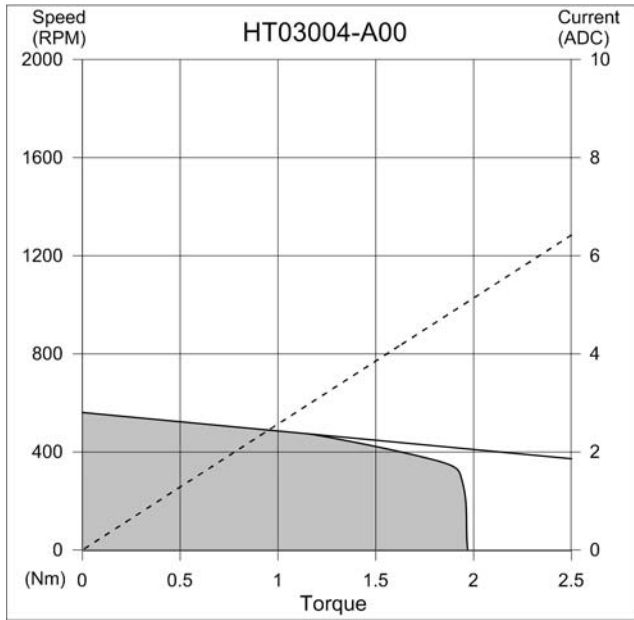
PERFORMANCE



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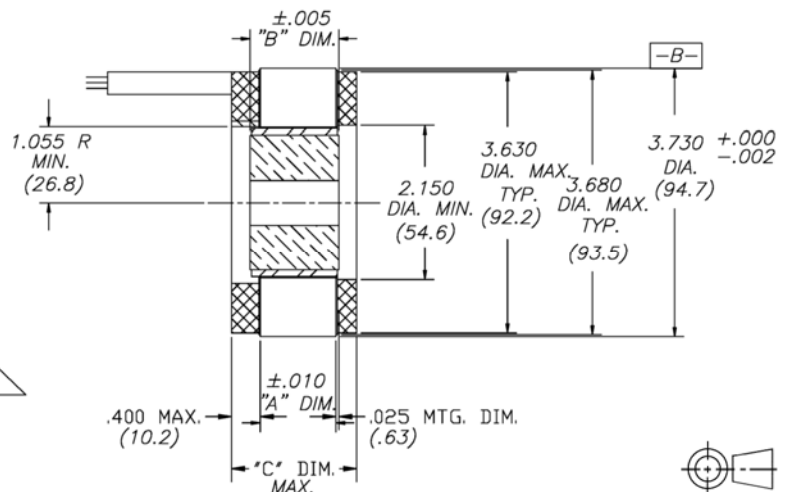
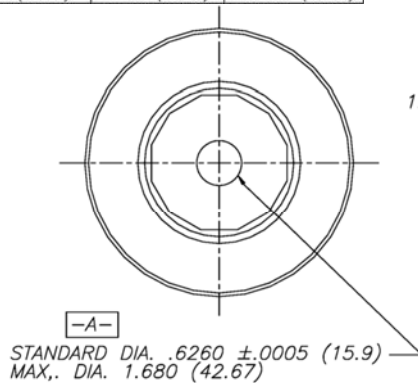
SPECIFICATIONS

Model No.		HT03800-A00	HT03801-A00	HT03802-A00	HT03803-A00	HT03804-A00	HT03805-A00
Stall Torque (continuous) ⁽¹⁾	oz-in	111.8	223.2	329.5	378	532.8	653.8
	Nm	0.789	1.576	2.327	2.67	3.762	4.617
Demag Torque (±25%)	oz-in	674	1681	2392	3477	4279	5132
	Nm	4.7	11.8	16.9	24.5	30.2	36.2
Rated Power ⁽¹⁾	W	170	241	276	312	349	383
Motor Constant	oz-in/√W	17.84	34.33	49.06	62.31	74.46	87.59
	Nm/√W	0.126	0.242	0.346	0.440	0.526	0.619
Elect. Time Constant	ms	1.0	1.9	2.4	2.9	3.4	3.8
Mech. Time Constant	ms	3.4	1.8	1.3	1.1	1.0	0.8
Thermal Resistance	°C/W	1.8	1.6	1.5	1.4	1.3	1.2
Cogging Torque (max.)	oz-in	2.90	6.10	8.10	10.90	13.90	16.50
	Nm	0.020	0.043	0.057	0.077	0.098	0.117
Rotor Inertia	oz-in-s ²	8.0E-3	1.6E-2	2.4E-2	3.2E-2	4.0E-2	4.7E-2
	kg-m ²	5.6E-5	1.1E-4	1.7E-4	2.2E-4	2.8E-4	3.3E-4
Weight	oz	17.4	31.2	44.6	56.2	73.3	89.9
	kg	0.49	0.88	1.27	1.59	2.08	2.55
Poles	-	12					
Winding Code	-	A					
Winding Voltage	V	100					
Peak Torque	oz-in	156	434	941	1554	1683	1827
	Nm	1.10	3.07	6.64	11.0	11.9	12.9
Peak Current	A	1.9	3.5	5.5	8.1	7.6	7.7
Torque Constant (±10%)	oz-in/A	82	125	172	191	221	237
	Nm/A	0.58	0.88	1.21	1.35	1.56	1.67
No-Load Speed	RPM	1568	1031	752	674	583	545
	rad/s	162	104	79	73	61	58
BEMF Constant (±10%)	V/kRPM	60.56	92.33	126.9	141.5	163.6	175.0
	V/rad/s	0.58	0.88	1.21	1.35	1.56	1.67
Terminal Resistance (±12%)	Ohms	21.08	13.23	12.24	9.44	8.83	7.30
Terminal Inductance (±30%)	mH	21.03	25.30	29.39	26.99	29.96	27.40

(1) Motor mounted to a 178 mm sq. x 6.35 mm (7.0 in. sq x 0.25 in.) thick aluminum plate and ambient temperature of 20 °C

DIMENSIONS

MODEL	"A" DIM.	"B" DIM.	"C" DIM.
HT03800	.250(6.4)	.430(10.9)	1.013 (25.7)
HT03801	.650(16.6)	.830(21.1)	1.413 (35.9)
HT03802	1.050(26.7)	1.230(31.3)	1.813 (46.1)
HT03803	1.450(36.9)	1.630(41.4)	2.213 (56.2)
HT03804	1.850(47.0)	2.030(51.6)	2.613 (66.4)
HT03805	2.250(57.2)	2.430(61.8)	3.013 (76.5)

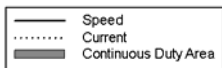
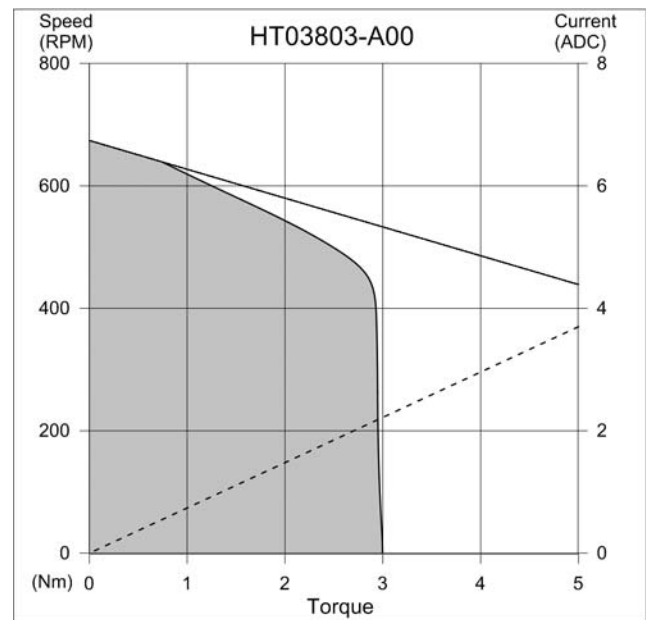
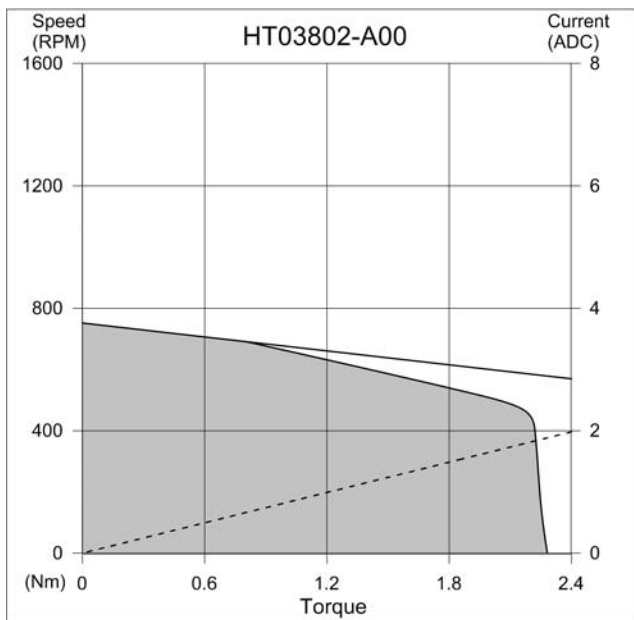
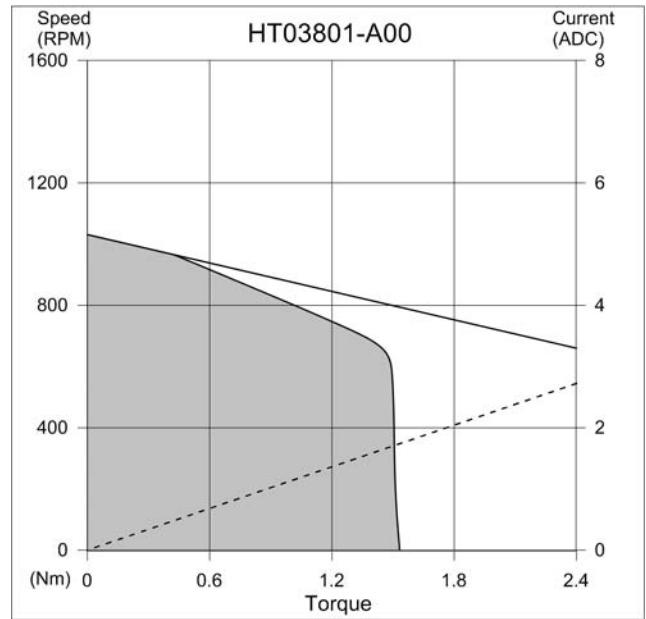
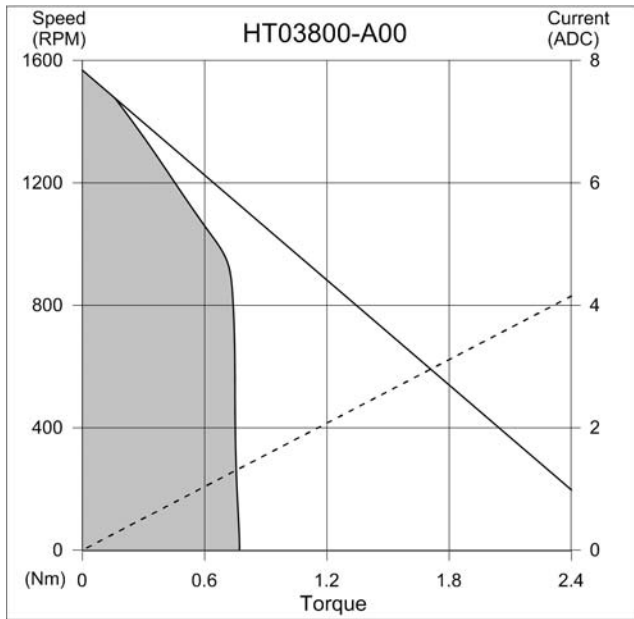


in (mm)

Brushless Torque Motors

HT Series High Torque Frameless Brushless Torque Motors

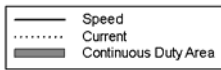
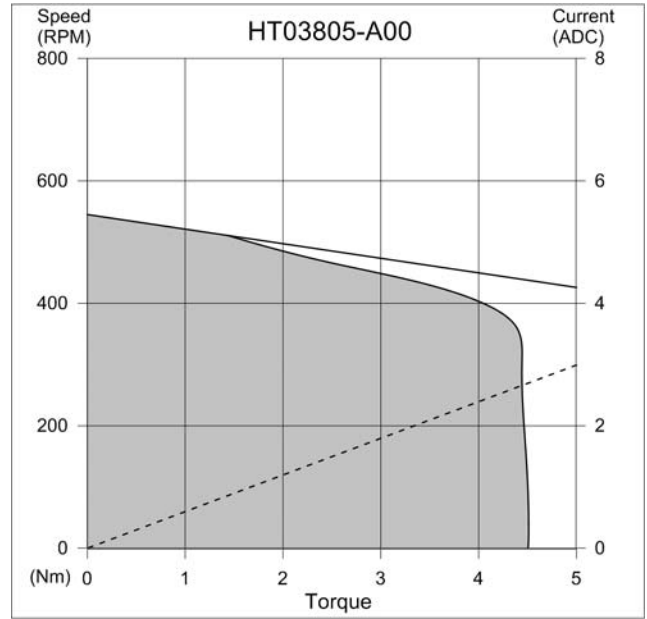
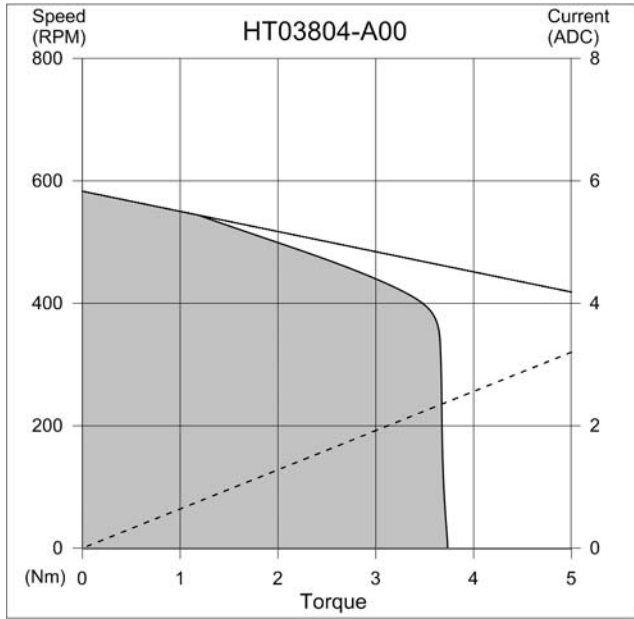
PERFORMANCE



Brushless Torque Motors

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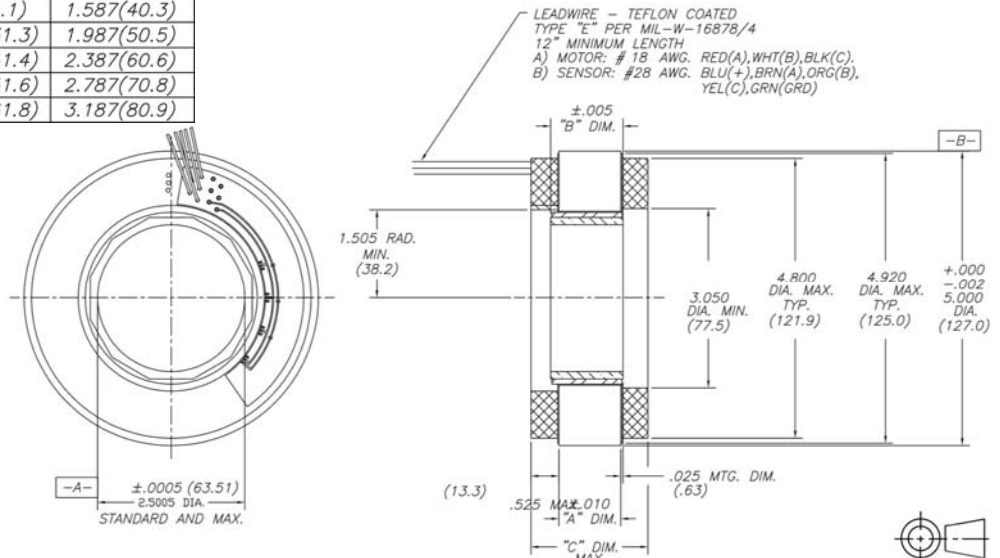
SPECIFICATIONS

Model No.		HT05000-A00	HT05001-A00	HT05002-A00	HT05003-A00	HT05004-A00	HT05005-A00
Stall Torque (continuous) ⁽¹⁾	oz-in	226.4	495	664	8.95	1104	1277
	Nm	1.60	3.50	4.69	6.32	7.80	9.02
Demag Torque (±25%)	oz-in	1313	3019	4405	5760	7156	8651
	Nm	9.2	21.3	31.1	40.6	50.5	61.0
Rated Power ⁽¹⁾	W	271	380	464	498	591	665
Motor Constant	oz-in/√W	30.33	65.10	85.23	109.05	128.2	140.72
	Nm/√W	0.214	0.460	0.602	0.770	0.905	0.994
Elect. Time Constant	ms	2.0	3.4	4.1	4.7	5.5	5.7
Mech. Time Constant	ms	2.2	1.0	0.7	0.7	0.6	0.6
Thermal Resistance	°C/W	1.3	1.2	1.1	1.0	0.9	0.8
Cogging Torque (max.)	oz-in	5.50	13.40	19.10	23.70	29.60	36.20
	Nm	0.039	0.095	0.135	0.167	0.209	0.256
Rotor Inertia	oz-in-s ²	1.5E-2	3.0E-2	4.0E-2	5.9E-2	7.4E-2	8.9E-2
	kg-m ²	1.0E-4	2.1E-4	2.8E-4	4.2E-4	5.2E-4	6.3E-4
Weight	oz	27.2	45.1	63.0	78.7	99.4	118.6
	kg	0.77	1.28	1.79	2.23	2.82	3.36
Poles	-	12					
Winding Code	-	A					
Winding Voltage	V	100					
Peak Torque	oz-in	686	1440	2463	3084	3619	3989
	Nm	4.8	10.2	17.4	21.8	25.6	28.2
Peak Current	A	7.5	8.5	11.3	11.5	12.3	12.9
Torque Constant (±10%)	oz-in/A	91	170	219	267	294	309
	Nm/A	0.64	1.20	1.54	1.89	2.08	2.18
No-Load Speed	RPM	1424	763	593	485	440	419
	rad/s	149	81	66	52	46	44
BEMF Constant (±10%)	V/kRPM	67.3	125.7	161.7	197.7	217.7	228.7
	V/rad/s	0.64	1.20	1.54	1.89	2.08	2.18
Terminal Resistance (±12%)	Ohms	8.99	6.82	6.58	6.01	5.28	4.83
Terminal Inductance (±30%)	mH	18.22	23.42	27.18	28.47	28.97	27.56

(1) Motor mounted to a 305 mm sq. x 6.35 mm (12.0 in. sq x 0.25 in.) thick aluminum plate and ambient temperature of 20 °C

DIMENSIONS

MODEL	"A" DIM.	"B" DIM.	"C" DIM.
HT05000	.250(6.4)	.430(10.9)	1.187(30.2)
HT05001	.650(16.6)	.830(21.1)	1.587(40.3)
HT05002	1.050(26.7)	1.230(31.3)	1.987(50.5)
HT05003	1.450(36.9)	1.630(41.4)	2.387(60.6)
HT05004	1.850(47.0)	2.030(51.6)	2.787(70.8)
HT05005	2.250(57.2)	2.430(61.8)	3.187(80.9)

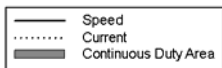
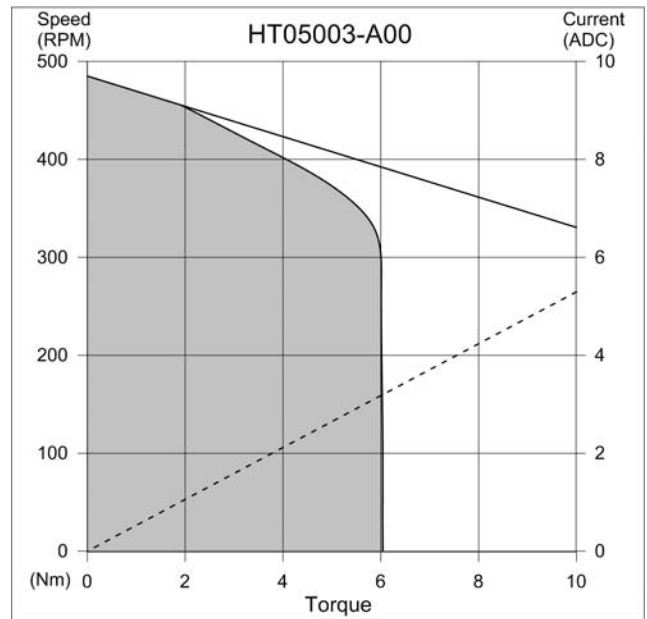
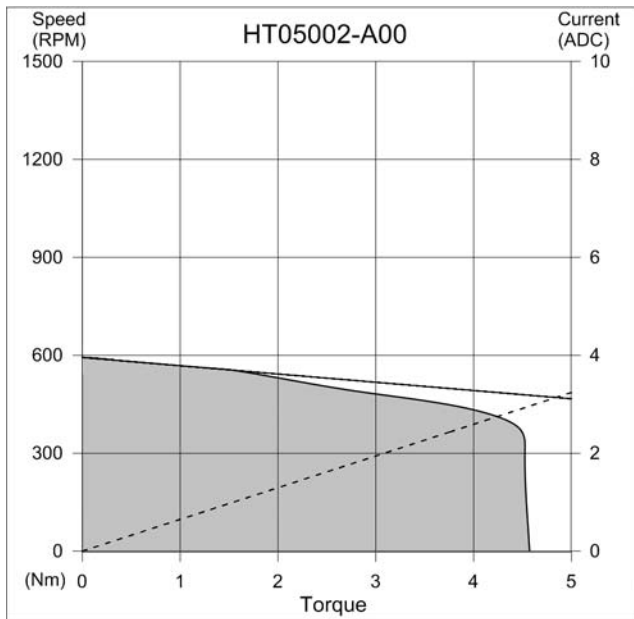
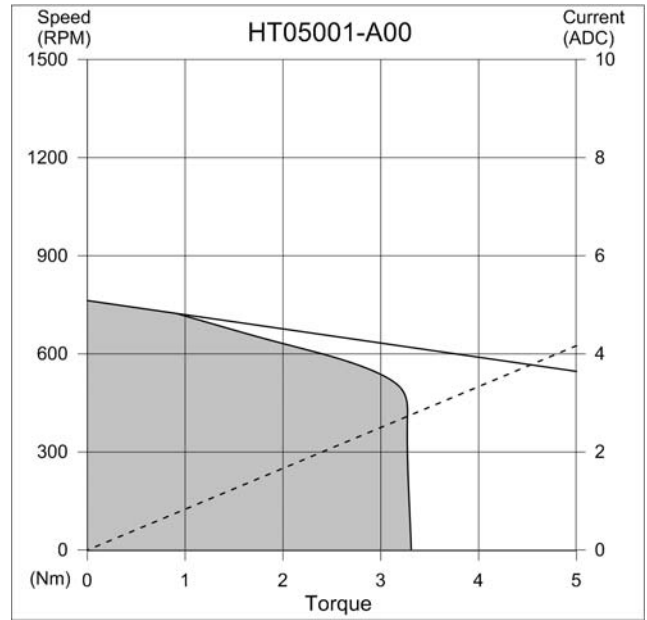
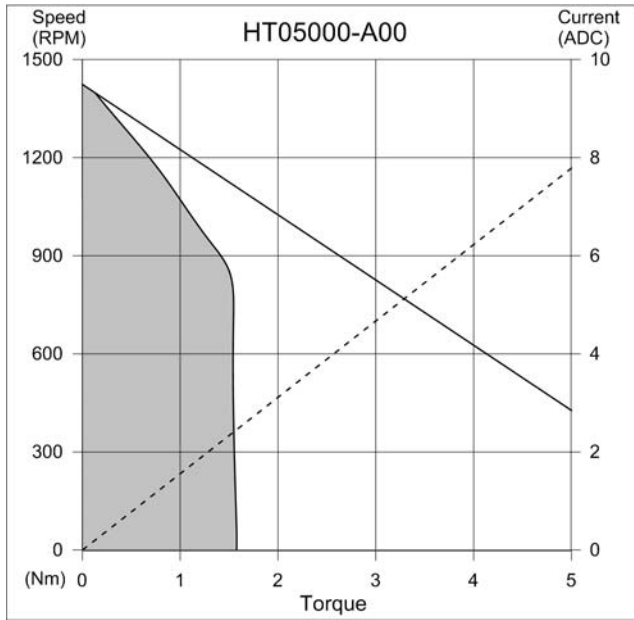


in (mm)

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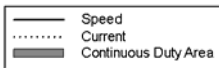
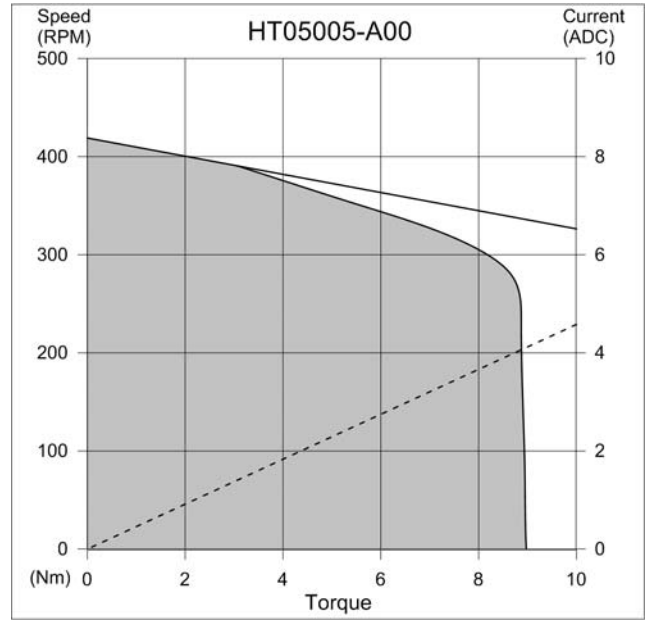
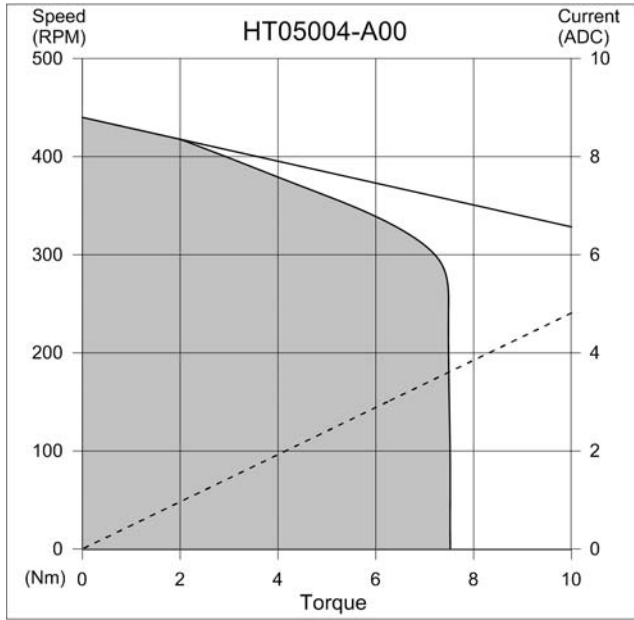
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MODEL NUMBERING

HT01000 - A00

