

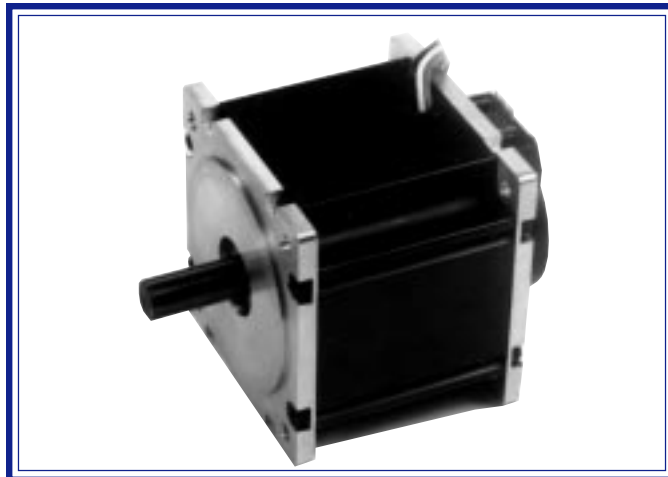
Quantum Series

Brushless DC Motors

Size 17, 23, 34 and 56
Brushless Servo Motors



Frameless and Housed



Engineering Guide

Hathaway
Emoteq Corp

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Quantum Series Brushless DC Motors

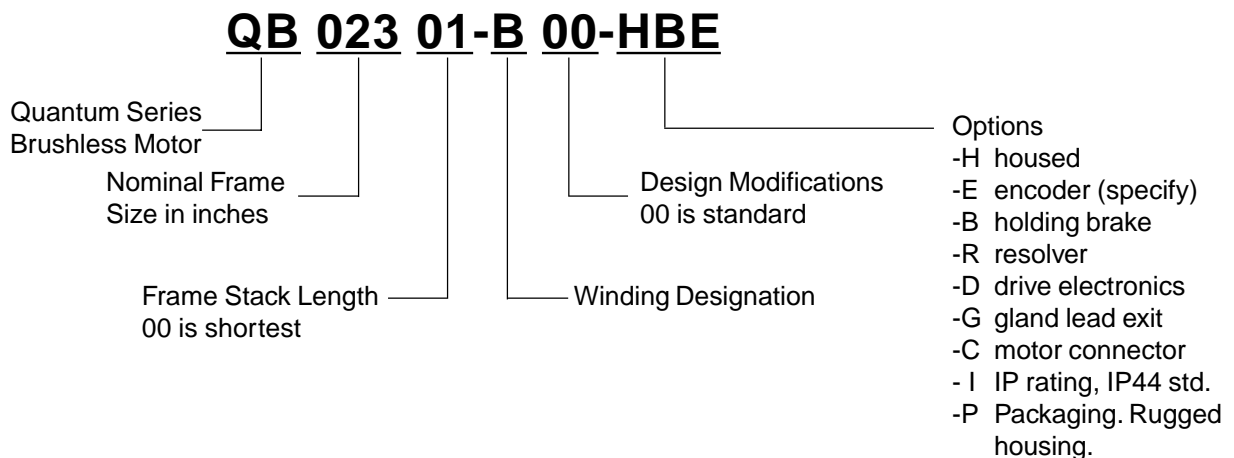
Selection Guide

Quantum Series Selection Guide

Model	Cont. Stall Torque		Max Rated Torque		±Max Cont Power		Housed Diameter		Housing Length		Frameless Diameter		Frameless Length	
	oz.in.	Nm	oz.in.	Nm	Watt	@RPM	in.	mm	in.	mm	in.	mm	in.	mm
QB01700	11.5	0.08	92	0.65	68	12500	1.64	41.7	2.125	54.0	1.410	35.81	1.34	34.0
QB01701	21.5	0.15	169	1.19	113	10000	1.64	41.7	2.625	66.7	1.410	35.81	1.84	46.7
QB01702	33.5	0.23	264	1.87	167	10000	1.64	41.7	3.125	79.4	1.410	35.81	2.34	59.4
QB01703	43.5	0.30	341	2.41	211	10000	1.64	41.7	3.625	92.1	1.410	35.81	2.84	72.1
QB02300	51.0	0.36	558	3.9	202	8000	2.30	58.4	2.800	71.1	2.180	55.37	1.64	41.6
QB02301	96.0	0.68	1117	7.9	311	7000	2.30	58.4	3.550	90.1	2.180	55.37	2.39	60.7
QB02302	138	0.98	1676	11.8	411	6000	2.30	58.4	4.300	109.2	2.180	55.37	3.14	79.7
QB02303	182	1.28	2212	15.6	528	6000	2.30	58.4	5.050	128.2	2.180	55.37	3.89	98.8
QB03400	115	0.81	761	5.3	410	7000	3.42	86.9	3.01	76.5	3.200	81.28	1.64	41.6
QB03401	222	1.57	1538	10.8	607	6000	3.42	86.9	3.76	95.5	3.200	81.28	2.39	60.7
QB03402	328	2.32	2307	16.2	846	5000	3.42	86.9	4.51	114.6	3.200	81.28	3.14	79.7
QB03403	429	3.03	2961	20.9	1072	5000	3.42	86.9	5.26	133.6	3.200	81.28	3.89	98.8
	ft.lb.	Nm	ft.lb.	Nm	Watt	@RPM	in.	mm	in.	mm	in.	mm	in.	mm
QB05600	3.17	4.29	22.3	30.3	1282	4000	5.60	142.2	4.84	123.0	5.000	127.00	2.47	62.7
QB05601	5.92	8.03	43.7	57.2	1920	3000	5.60	142.2	5.84	148.3	5.000	127.00	3.47	88.1
QB05602	8.19	11.1	62.8	85.1	2471	3000	5.60	142.2	6.84	173.7	5.000	127.00	4.47	113.5
QB05603	10.4	14.1	83.7	113.5	2875	3000	5.60	142.2	7.84	199.0	5.000	127.00	5.47	138.9

‡ The maximum continuous output power may not be available on all versions due to winding constraints. QS versions can attain higher output power levels. Please see page 18 for speed-torque curves.

Quantum Series Model Numbering



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Quantum Series Brushless DC Motors

Product Description

Applications

Quantum Motors find application in a wide range of systems demanding compact, highly dynamic, and clean operating motors such as:

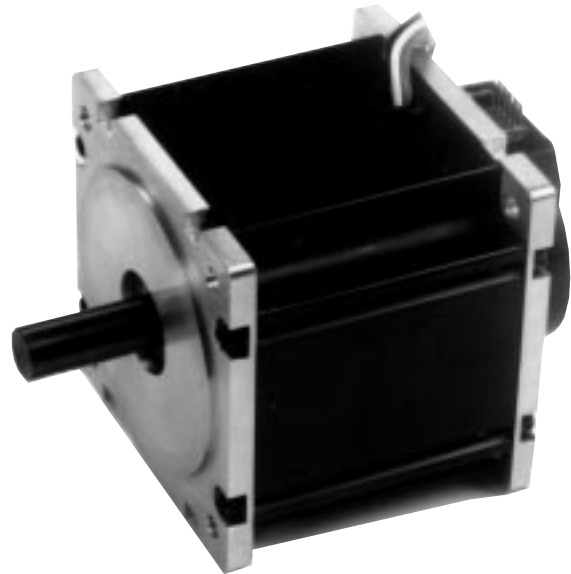
- Semiconductor manufacturing equipment and other clean room applications
- Disk drive media processing systems
- High reliability pumps and control systems including medical applications
- Coordinate measuring machines
- Large capacity tape and disk storage and retrieval systems
- Precision grinding/machining systems for contact and eye glasses lenses
- Electronics pick and place automated assembly systems
- Machine tool axis drives

Quantum Series Brushless DC Motors

Quantum Series motors are designed for operation in highly dynamic velocity or position servo systems where compact size and low weight are system requirements. Quantum motors have been electro-mechanically optimized for high output torques, low cogging torque, and minimal cost through advanced engineering and a commitment to high volume production methods and extensive parts tooling.



Frameless Quantum Motor QB03400



QB03400 housed motor with encoder

Quantum Series Features

- Cont. stall torques 10 oz.in. to 10.4 ft.lb. (0.07 to 2.61 Nm)
- High torque to size and inertia ratios
- Housed frame sizes 17, 23, 34 and 56 frame sizes
- NEMA standard flange mounting
- Provision for foot mounting is integral to the housing
- Frameless versions available for tight integration into systems eliminating coupling torsional problems and resulting in a short axial length
- Both housed or frameless configurations with integrated Hall Effects sensors for commutation
- Winding and mechanical changes easily undertaken
- Wide range of mechanical options including brakes, resolvers, encoders, connections, and IP Rated sealing
- Stainless steel shafts standard on housed motors with long life bearings
- Rugged housing design that can easily be sealed to operate in tough application environments
- Coated magnets for corrosion protection
- Hall effect sensors with separate trigger magnets are spaced away from stator coils for greater electrical noise and heat immunity
- Quantum motors are compatible with six step (trapezoidal) or sine wave commutation
- Private labeling is available to qualified OEMs and resellers
- An extensive range of drive electronic solutions can be provided

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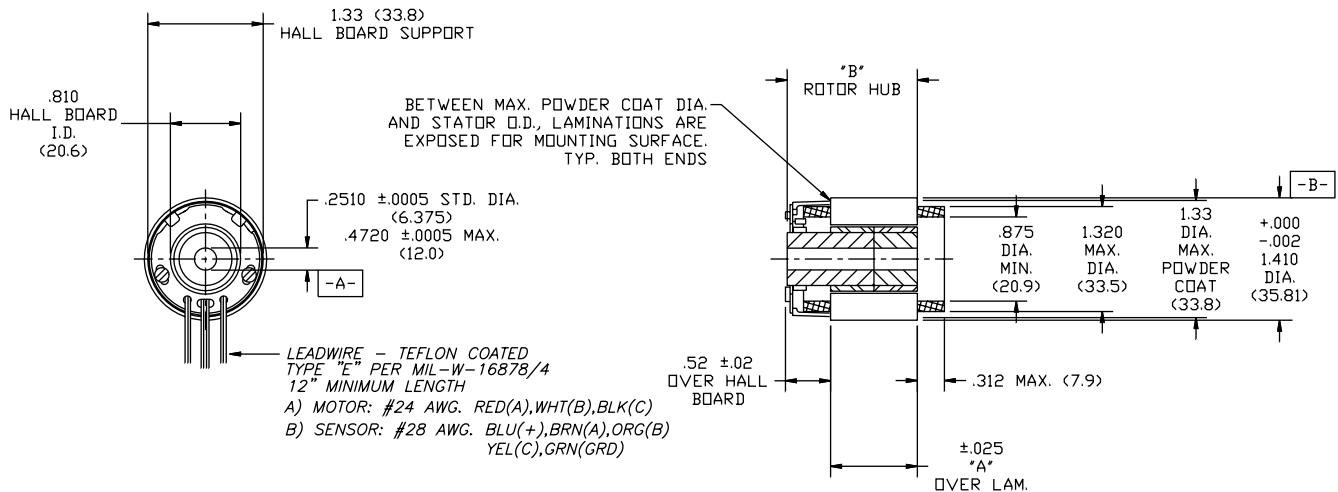
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Quantum Series

Size 17

Brushless DC Motors

Frameless Motor

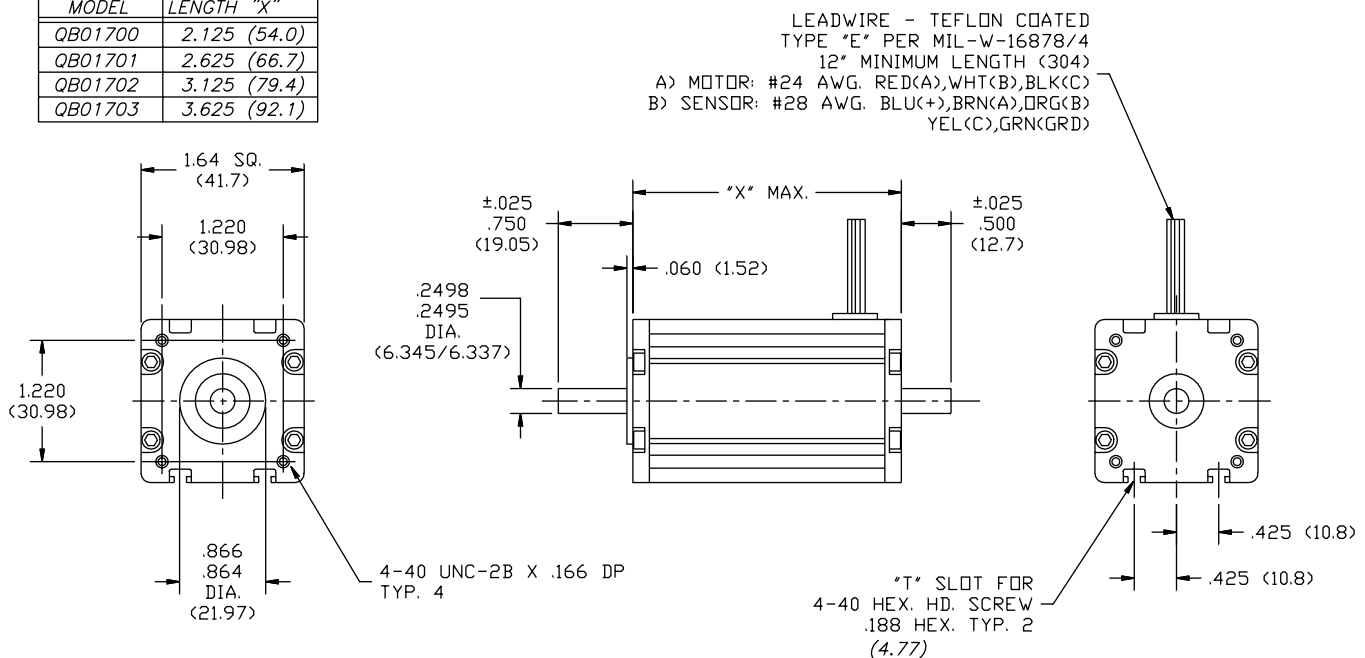


- MOTOR SUPPLIED AS TWO SEPARATE COMPONENTS, ROTOR ASSEMBLY AND STATOR ASSEMBLY.
- DIAMETERS "A" AND "B" TO BE CONCENTRIC WITHIN .002 WHEN MOUNTED.
- STD. HUB LENGTH IS 1.000" LG. .500" HUBS ARE PROVIDED FOR CUSTOMER STACKING BEYOND 1.000".

MODEL NO.	"A" STATOR	"B" ROTOR
QB01700	.500 (12.70)	1.000 (25.40)
QB01701	1.000 (25.40)	1.500 (38.10)
QB01702	1.500 (38.10)	2.000 (50.80)
QB01703	2.000 (50.80)	2.500 (63.5)

Housed Motor

MODEL	LENGTH "X"
QB01700	2.125 (54.0)
QB01701	2.625 (66.7)
QB01702	3.125 (79.4)
QB01703	3.625 (92.1)



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