

# DBE-2000-1ES Matrix Series Specifications

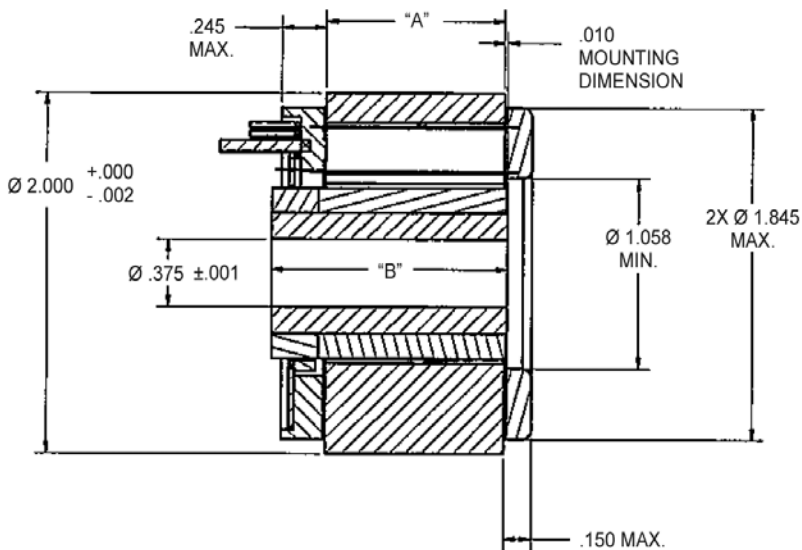
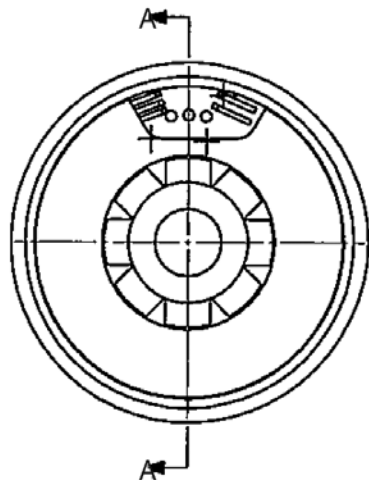
## DBE-2000-1ES SERIES SPECIFICATIONS @ 25°C

Part Number		DBE-2000-A-1ES	DBE-2000-B-1ES	DBE-2000-C-1ES	DBE-2000-D-1ES	DBE-2000-E-1ES	DBE-2000-F-1ES	DBE-2000-G-1ES	DBE-2000-H-1ES
<b>Size Constants</b>	<b>Units</b>								
Peak Torque, $T_p$	oz-in	43	75	100	126	192	256	315	377
Motor Constant, $K_M$	oz-in/ $\sqrt{W}$	5.93	9.16	11.1	12.8	17.1	20.6	23.2	25.8
Number of Poles		8	8	8	8	8	8	8	8
Number of Phases		3	3	3	3	3	3	3	3
Weight	oz (nom)	4.6	7.6	10.1	13	18	23	28	34
Motor Inertia, $J_M$	oz-in-s <sup>2</sup>	4.41E-04	6.59E-04	8.81E-04	1.10E-03	1.54E-03	1.98E-03	2.41E-03	2.85E-03
Friction Torque, $T_f$	oz-in	1.0	2.0	3.0	4.00	6.0	8.0	10	12
Electrical Time Constant, $\tau_E$	ms	0.48	0.74	0.92	1.0	1.2	1.3	1.4	1.4
Mechanical Time Constant, $\tau_M$	ms	1.77	1.11	1.02	0.949	0.741	0.660	0.638	0.606
*Temperature Rise, TPR*	°C/W	11.0	8.4	6.8	5.8	4.4	3.6	3.0	2.6
Sensors		Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
<b>Winding Constants</b>	<b>Units</b>								
**Torque Sensitivity, $K_T$	oz-in/amp ± 10%	8.60	15.0	20	25.2	38.5	51.3	62.9	75.5
Back EMF, $K_E$	V per rad/s ± 10%	0.0607	0.106	0.141	0.178	0.272	0.362	0.444	0.533
Terminal Resistance, $R_M$	ohms ± 10%	2.10	2.68	3.27	3.87	5.04	6.21	7.38	8.55
Terminal Inductance, $L_M$	mH ± 30%	1.0	2.0	3.0	4.0	6.0	8.0	10	12
Voltage, Stalled at Peak Torque, $V_p$	volts	10.5	13.4	16.4	19.3	25.2	31.0	36.9	42.8
Amps at Peak Torque, $I_p$	amps	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00

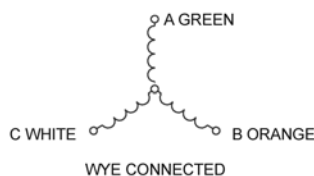
\*TPR as listed on the data sheets, is for an un-mounted condition unless otherwise noted. Mounted TPR values are often 50% or less than the un-mounted TPR. For air flow, the TPR may be less than 25% the un-mounted amount and for fluid cooling it may be 10% or less. Many factors affect the TPR value and its change relative to the mounting or external cooling applied. Consult the factory for an more accurate estimate of the motor's TPR.

\*\*Stack lengths from 0.10 to 4.00 inches (2.54 to 101.6 mm) with  $K_T$  to 4.49 N.m/amp

### DBE-2000-1ES Series Typical Outline Drawing



Dimensions are in inches



Dimensions and tolerances are in accordance with ASME Y14.5 - 1994

Modular	"A"	"B"
	inches	inches
DBE-2000-A-1ES	.250	.540
DBE-2000-B-1ES	.500	.805
DBE-2000-C-1ES	.750	1.065
DBE-2000-D-1ES	1.000	1.330
DBE-2000-E-1ES	1.500	1.860
DBE-2000-F-1ES	2.000	2.385
DBE-2000-G-1ES	2.500	2.915
DBE-2000-H-1ES	3.000	3.440