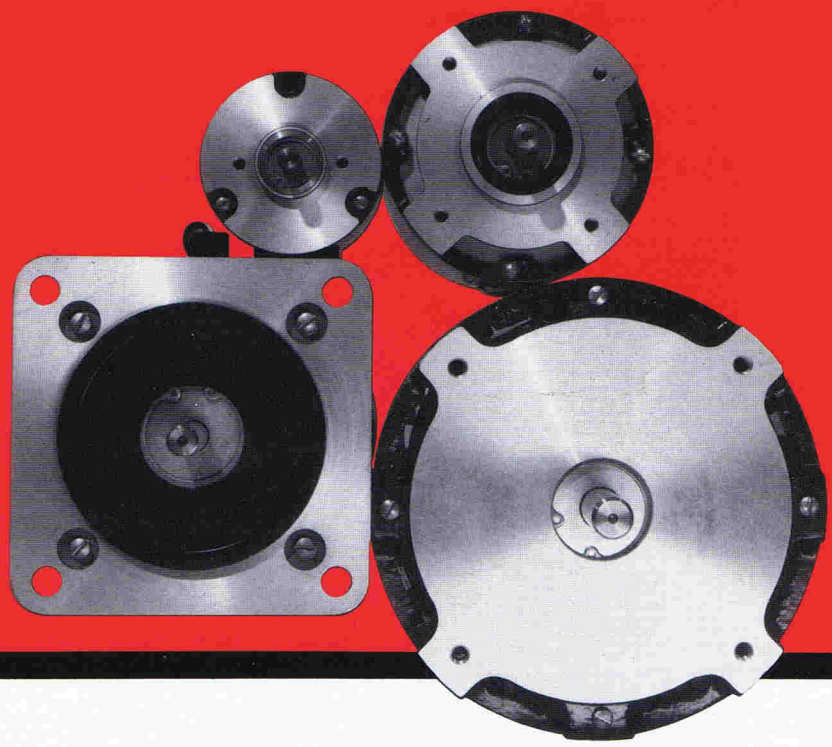
ELINCO

HIGH PERFORMANCE, BRUSHLESS, DC MOTORS

For speed control, extreme efficiency, or just plain long, trouble-free life.

Series
2300
3400
4400
5800



DESIGNED WITH SLOT-FREE STATOR WINDINGS FOR MAXIMUM EFFICIENCY AND ULTRA SMOOTH OPERATION.

Brushless DC Motors

The opposite of conventional dc motors, electronically controlled brushless dc motors have a permanent magnet rotor and the field windings are housed in the stator. Transistors commutate dc current to the stator. There are no brushes or commutator bars to spark or wear.

A rotating electromagnetic field is induced by sequentially energizing the stator windings. The field rotation is started, stopped, speeded up, slowed down or reversed, controlled by the electronics. The permanent magnet rotor follows the field. Torque is directly proportional to armature current: RPM, to voltage.

Advantages

- **High thermal efficiency**
- **Non-cogging**
- **Extremely low inductance**
- **Superior torque-to-inertia ratios**
- **Extremely long life without brush and commutator wear**
- **Non-arcing, suitable for hazardous environments**
- **Low magnet noise levels (RFI, EMI)**
- **Excellent speed control**
- **Low weight-to-HP ratio**
- **Higher torque in smaller packages**
- **Quiet operation**
- **Wide voltage and torque ranges**
- **Constant or variable speeds**

ELINCO

BRUSHLESS DC MOTORS

Elinco stands at the forefront of brushless dc motor design with units of unsurpassed efficiency which combine a slot free winding with a unique rotor construction. Elinco's patent pending winding technique insures performance that cannot be duplicated anywhere.

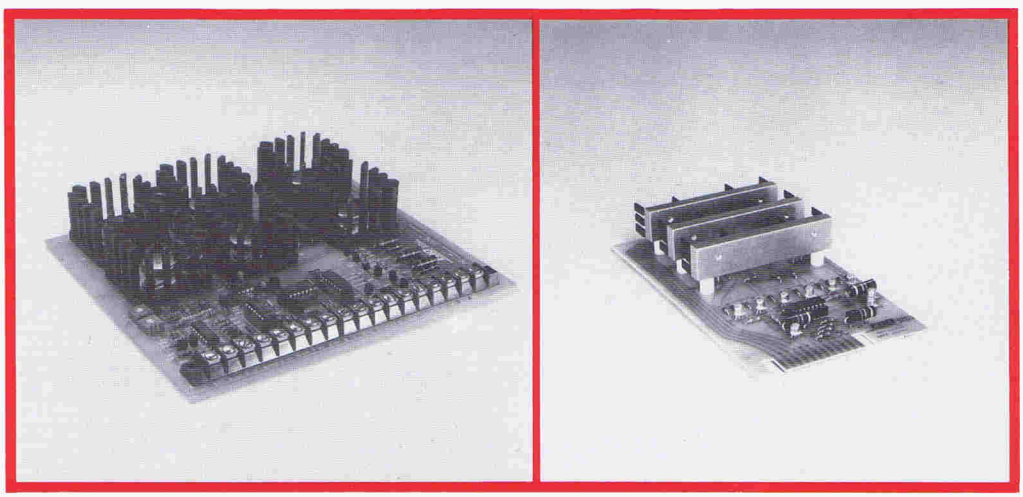
The unique (patent pending) stator winding technique on slot-free stators produces low inductive, more efficient motors. The uniform, symmetrical windings on slot-free stators assure smooth, non-cogging operation. Reduced winding inductance reduces wattage losses in the control electronics, permitting newer, less expensive but just as effective control circuits. This also permits smaller size motors with greater power output, even in continuous duty operation.

TYPICAL APPLICATIONS

- **Disk and tape drives**
- **Robotics**
- **Machine tool drives**
- **Business machines**
- **Blowers and fans**
- **Printers and copiers**
- **Medical equipment**
- **Pumps**
- **Control equipment**
- **Materials handling equipment**
- **Computer peripherals**

Electronic Control Circuits

Open or closed loop electronic control boards are available for Elinco 3-phase brushless dc motors. Other winding options are also available.



CLOSED LOOP electronic controls are available for all frame size motors.

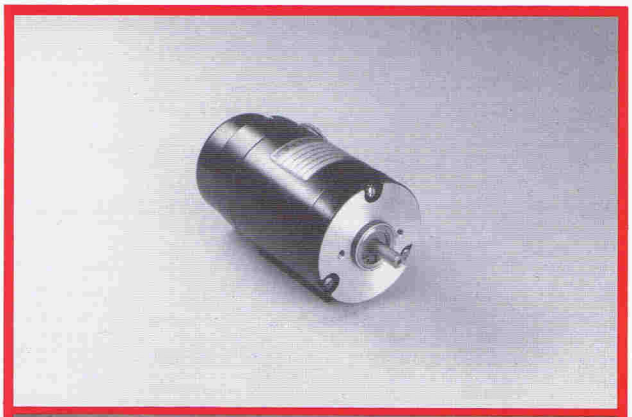
OPEN LOOP controls to suit individual applications are also available for all frame sizes.

2300, 3400, 4400 and 5800 SERIES BRUSHLESS DC MOTORS

All frame size motors are available with open or closed loop electronic controls and in optional mounting configurations shown.

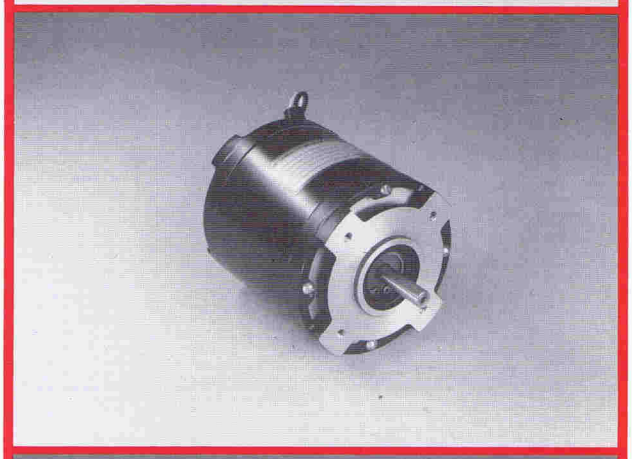
2300 SERIES

(Base Mounting)



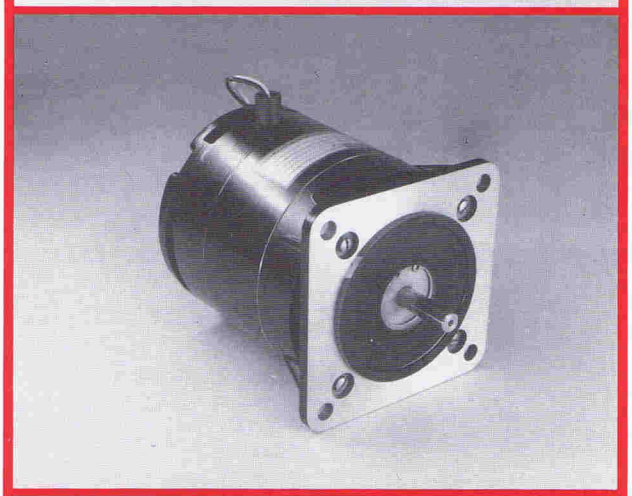
3400 SERIES

(Pilot Mounting)



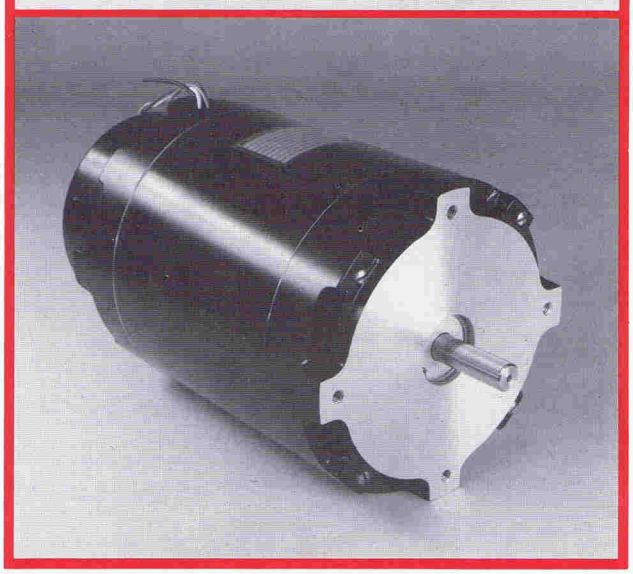
4400 SERIES

(Flange Mounting)



5800 SERIES

(Face Mounting)



2300 SERIES 48 VOLTS / 3600 RPM

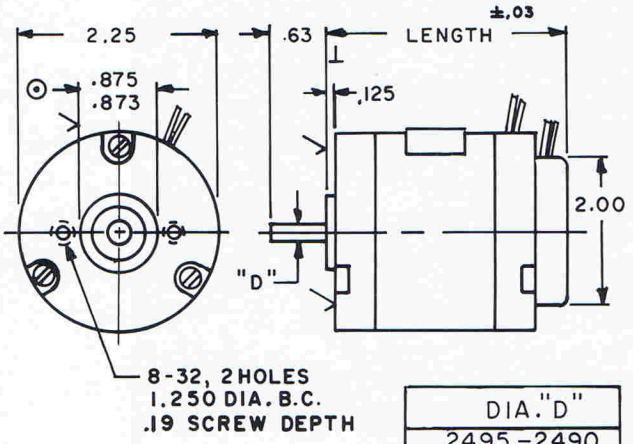
TORQUE CONSTANT (KT) = 15 IN OZ/AMP

VOLTAGE CONSTANT (KV) = 11 VOLTS/1000 RPM

FRAME TYPE	RATED TORQUE IN-OZ*	HP	RATED AMPS	NO LOAD RPM	LENGTH	BASE LOCATION "B"
2309	5	1/60	0.4	5600	3.58	1.19
2318	14	1/20	1.1	5600	4.45	2.06

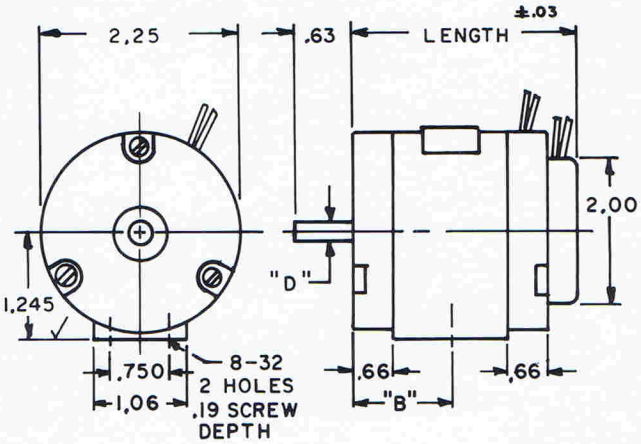
*Torque ratings are for ceramic rotors. Rare earth rotors more than double the ceramic ratings.

FRAME DIMENSIONS



DIA. "D"
.2495-.2490
.3125-.3120

FACE MOUNTING



BASE MOUNTING

SPECIFICATIONS

In addition to the outputs, sizes, mounting packages and electronic controls represented by these specifications, Elinco engineers are equipped to modify standard units or produce special designs to meet your exacting requirements. (See rear cover.)

3400 SERIES 48 VOLTS / 3600 RPM

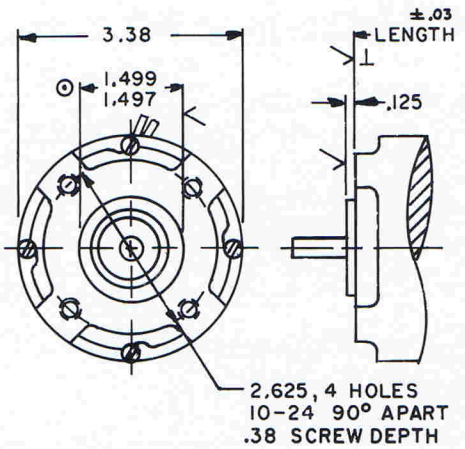
TORQUE CONSTANT (KT) = 13 IN OZ/AMP

VOLTAGE CONSTANT (KV) = 9.2 VOLTS/1000 RPM

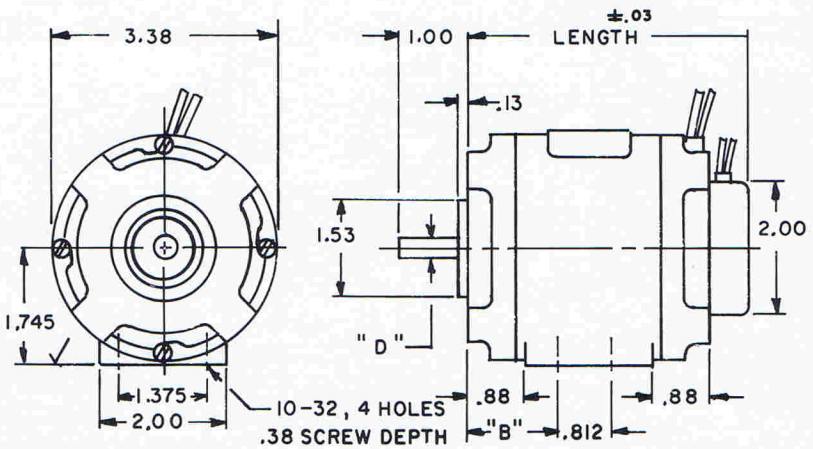
FRAME TYPE	RATED TORQUE IN-OZ*	HP	RATED AMPS	NO LOAD RPM	OPEN FRAME LENGTH	LENGTH CLOSED FRAME	BASE LOCATION "B"
3413	28	1/10	2.2	4700	5.00	4.70	1.50
3419	35	1/8	2.8	4700	5.65	5.32	1.50
3430	70	1/4	5.6	4700	6.77	6.44	1.75

*Torque ratings are for ceramic rotors. Rare earth rotors more than double the ceramic ratings.

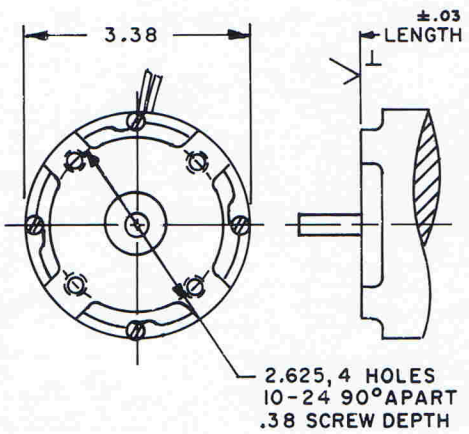
FRAME DIMENSIONS



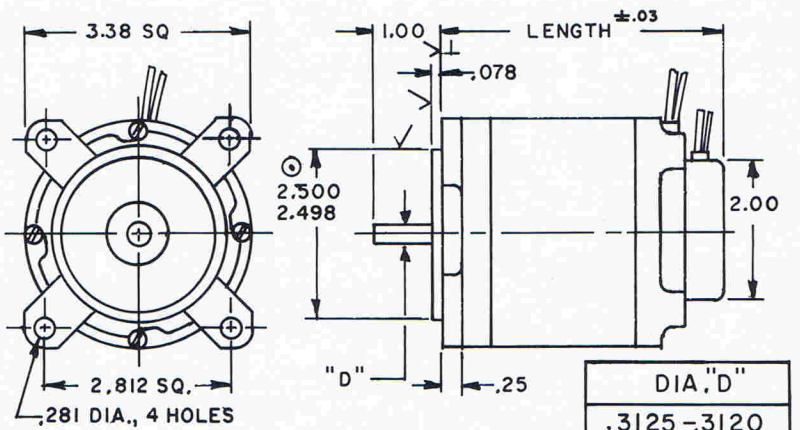
PILOT MOUNTING



BASE MOUNTING



FACE MOUNTING



DIA."D"
.3125-.3120
.3750-.3745
.5000-.4995

FLANGE MOUNTING

4400 SERIES 48 VOLTS / 3600 RPM

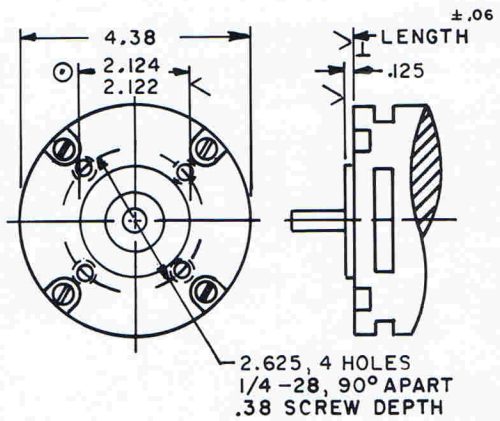
TORQUE CONSTANT (KT) = 12.5 IN OZ/AMP

VOLTAGE CONSTANT (KV) = 9.2 VOLTS/1000 RPM

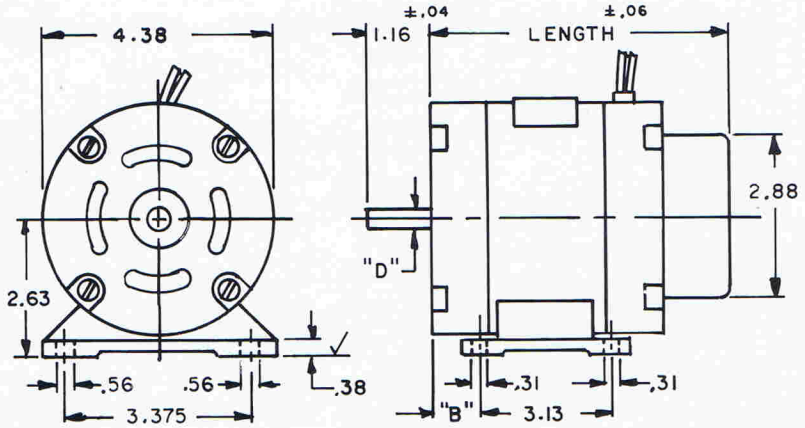
FRAME TYPE	RATED TORQUE IN-OZ*	HP	RATED AMPS	NO LOAD RPM	OPEN FRAME LENGTH	LENGTH CLOSED FRAME	BASE LOCATION "B"
4425	140	1/2	11.0	5200	8.24	7.24	1.25
4439	210	3/4	17.0	5200	9.49	8.49	2.50
4450	280	1	22.0	5200	10.68	9.68	2.50

*Torque ratings are for ceramic rotors. Rare earth rotors more than double the ceramic ratings.

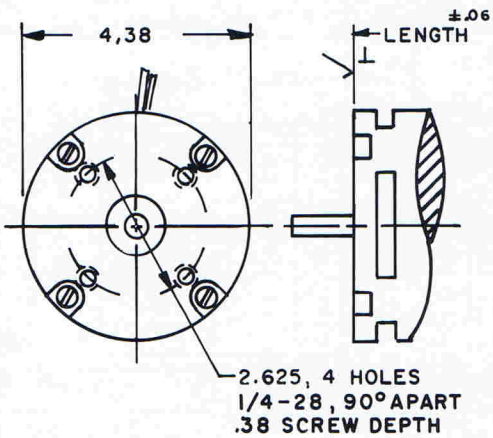
FRAME DIMENSIONS



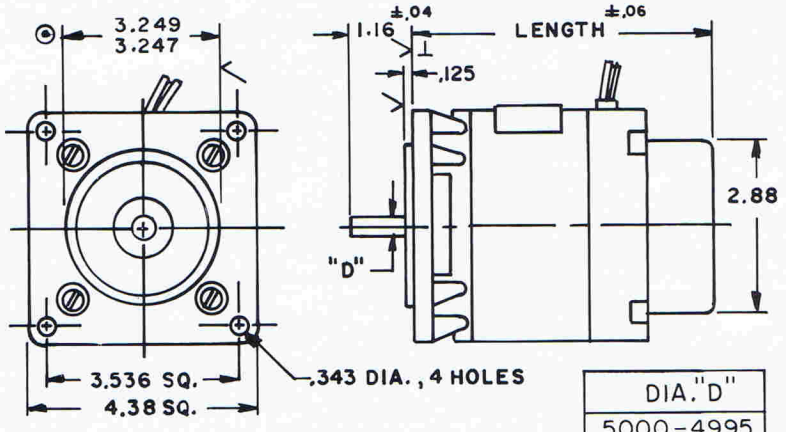
PILOT MOUNTING



BASE MOUNTING



FACE MOUNTING



DIA."D"
.5000-.4995
.6250-.6245

FLANGE MOUNTING

5800 SERIES 90 VOLTS / 3600 RPM

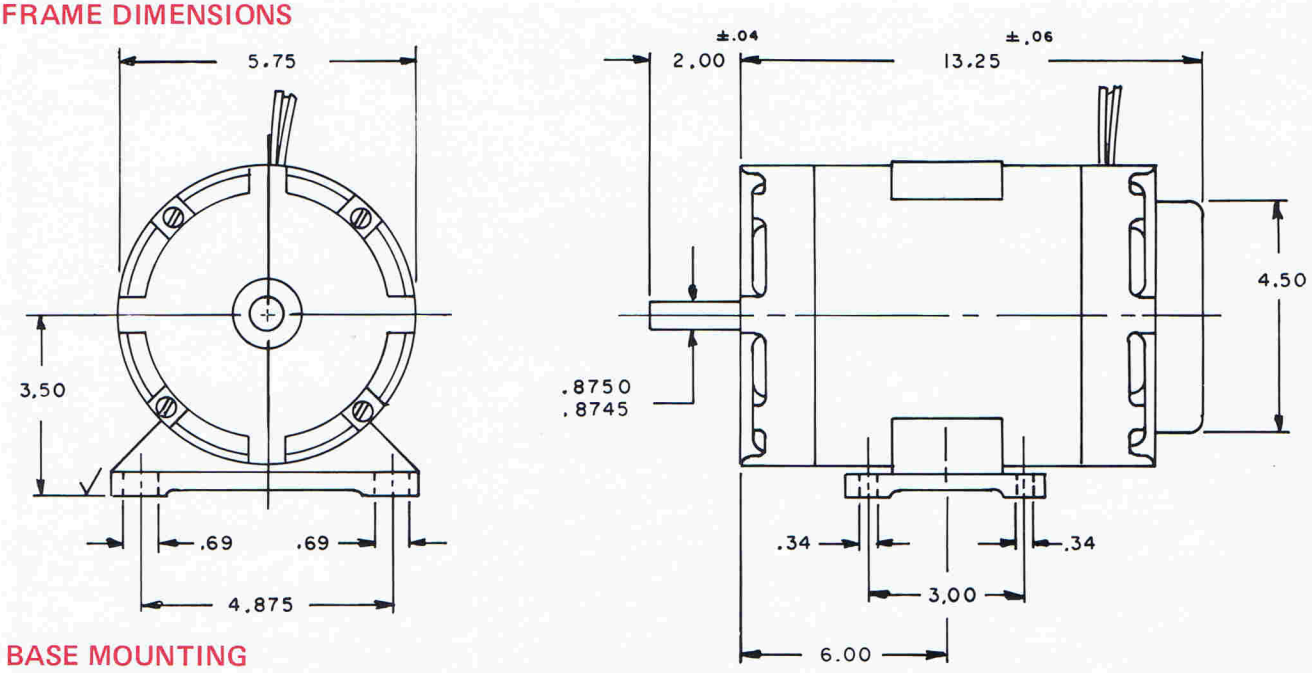
TORQUE CONSTANT (KT) = 27 IN OZ/AMP

VOLTAGE CONSTANT (KV) = 20.2 VOLTS/1000

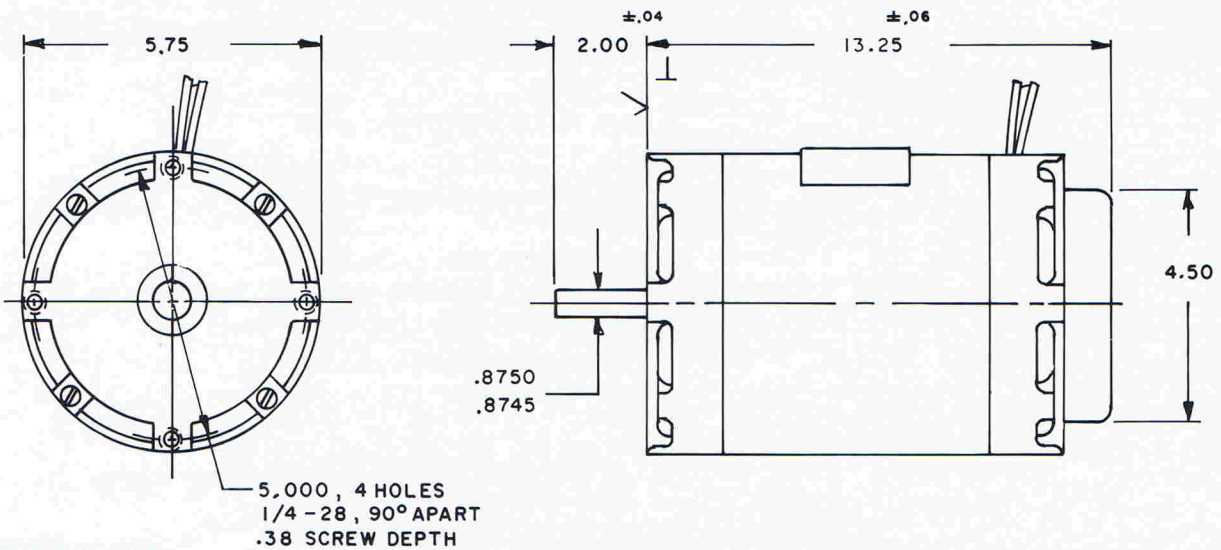
FRAME TYPE	RATED TORQUE IN-OZ*	HP	RATED AMPS	NO LOAD RPM	LENGTH	BASE LOCATION "B"
5853	560	2	20	5200	13.25	6.00

*Torque ratings are for ceramic rotors. Rare earth rotors more than double the ceramic ratings.

FRAME DIMENSIONS



BASE MOUNTING



FACE MOUNTING

BRUSHLESS DC MOTORS FOR INDIVIDUAL REQUIREMENTS

In addition to the motor specifications indicated, other combinations of voltage, speed, torque and length are available.

Each Brushless DC Motor may be ordered with or without solid state electronic control circuitry. Electronics may be open or closed loop systems and may be engineered to accommodate individual requirements.

Encoders are available, as well as electronic tachometers.

The ELINCO Engineering Staff welcomes your inquiry. Since 1926, Elinco has been adapting standard units and developing new characteristics to meet individual requirements.

ELINCO DIVISION/ EDO CORPORATION

Established in 1926 to design and manufacture fractional horsepower motors for special applications, Elinco has been in the forefront of electric motor development for over half a century.

Recent advances in brushless dc motor design include electronic speed control, ceramic and rare earth rotors for greater output in smaller frames, and patents pending on techniques for winding slotless stators uniformly and symetrically for non-cogging, much more efficient operation.

ELINCO PRODUCTS

Elinco products include the following fractional standard and special units.

BRUSHLESS DC MOTORS
TORQUE MOTORS
INDUCTION MOTORS
HYSTERISIS SYNCHRONOUS MOTORS
RELUCTANCE SYNCHRONOUS MOTORS
POLARIZED SYNCHRONOUS MOTORS
SELF-SYNCHRONOUS MOTORS
AC GENERATORS
DC GENERATORS
SERIES MOTORS
SHUNT MOTORS
UNIVERSAL MOTORS
CERAMIC MAGNET MOTORS
PERMANENT MAGNET MOTORS
SERVO MOTORS
GEAR MOTORS

FURTHER INFORMATION

For further information on standard or special units, or for name of your nearest Elinco Representative, phone, wire or write:

203-847-5861 / TELEX 96-5945
Fred J. Drake, Marketing Manager
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272 Main Avenue, Norwalk, CT 06851

EDO CORPORATION / ELINCO Division

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