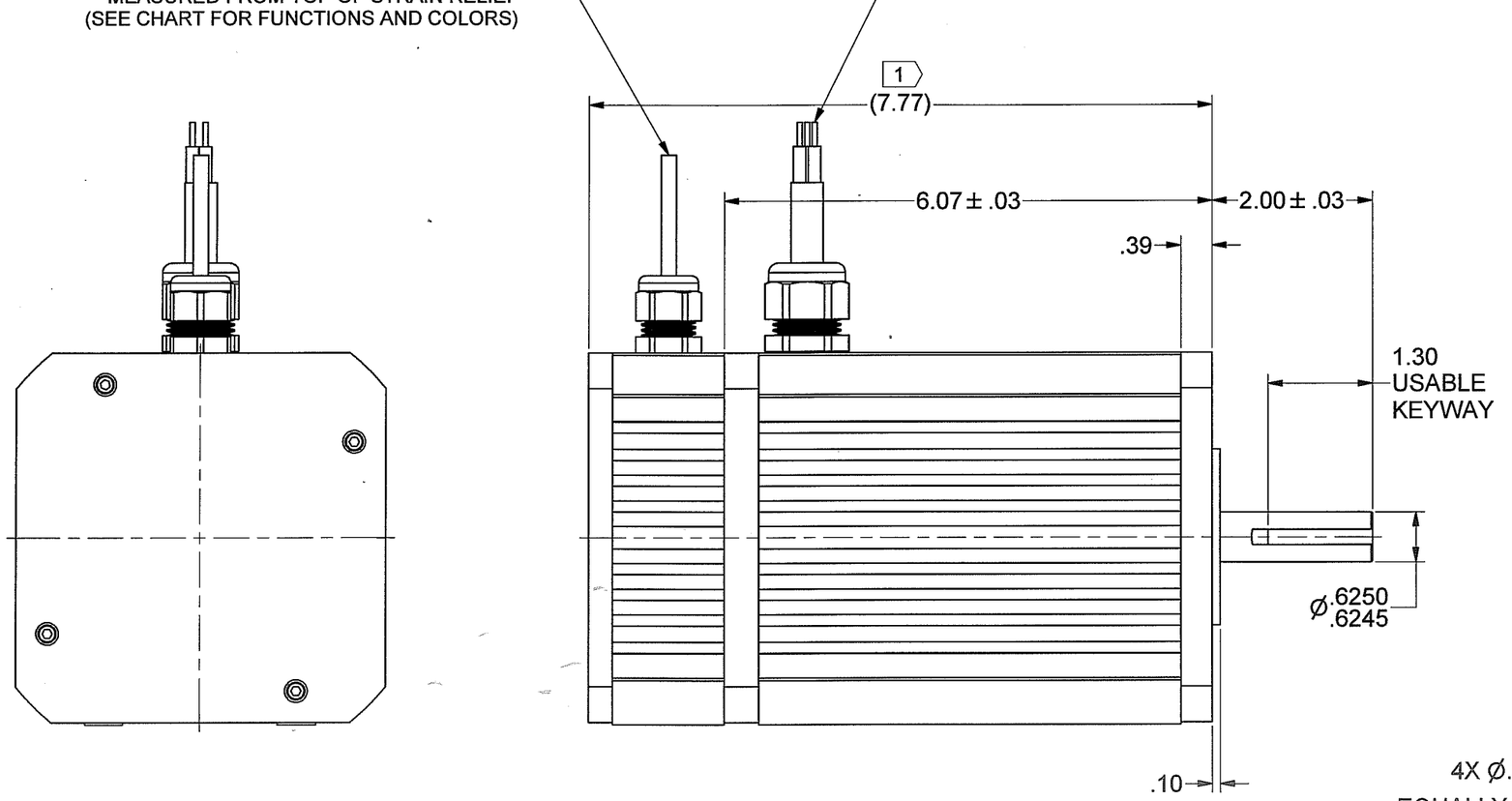
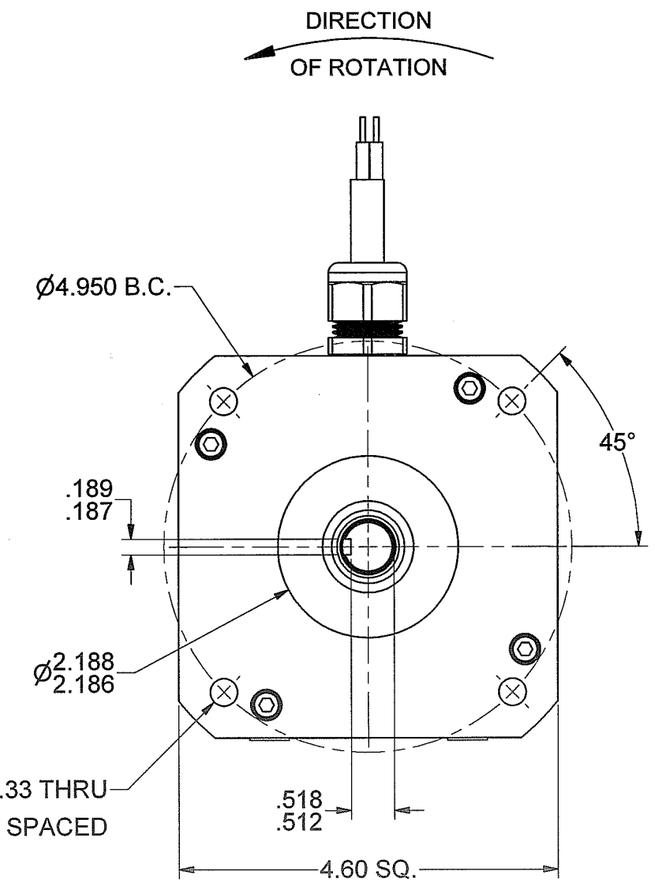
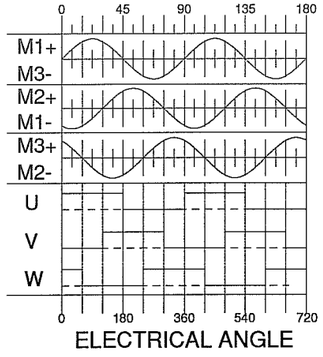
REVISION				
REV	DESCRIPTION	DATE	BY	APPROVED
A	PROTOTYPE	-	-	-





ROTATION ANGLE
CCW SHAFT END



ENCODER WIRING - 28 AWG	
COLOR CODE	FUNCTION
RED	Vcc Inc +5V
BLACK	GND Inc
BLUE	A
BLUE / BLACK	A'
GREEN	B
GREEN / BLACK	B'
VIOLET	Z
VIOLET / BLACK	Z'
BROWN	U
BROWN / BLACK	U'
GRAY	V
GRAY / BLACK	V'
WHITE	W
WHITE / BLACK	W'
DRAIN	BARE

MOTOR LEADS - 12 AWG	
M1	RED
M2	BLACK
M3	WHITE

MOTOR SPECIFICATIONS:

TORQUE CONSTANT (Kt) = 36.8 ± 10% OZ-IN/AMP
VOLTAGE CONSTANT (Ke) = 27.2 ± 10% VOLTS/KRPM

NOTES:

1.) X IDENTIFIES INSPECTION DIMENSIONS.

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES & [mm]
TOLERANCES ON: ANGLES = ± 1/2° X.XX [X.X] = ± .01 [0.25] X.XXX [X.XX] = ± .005 [0.12]
125

THIRD ANGLE PROJECTION
DO NOT SCALE DRAWING

SIGNATURES		DATE
DRAWN	SLC	8/22/2019
CHECKED		8/22/19
ENG APPR.		
MFG APPR.		8/22/19
Q.A.		

MATERIAL: -
SPEC:
FINISH: NONE
SPEC:

UNLESS OTHERWISE SPECIFIED REMOVE ALL BURRS & SHARP EDGES, COUNTERSINK TAPPED HOLES TO BODY SIZE FILLETS: .03 MAX. / EXTERNAL CORNERS: .015 MAX.

Magmotor™

TITLE: FINAL ASSEMBLY, BFA42-2E-300FE

SIZE	NUMBER	REV
D	730420100	A

SCALE: - | WEIGHT: - LB. | SHEET 1 OF 3

10 Coppage Drive
Worcester, MA 01603
10/29/2019

MOTOR PERFORMANCE / SPECIFICATIONS

Attn.:

Final Product No.: **BFA 42 2E 300 FE**

Customer:

RFQ 730420100

Phone/Fax:

By: JC

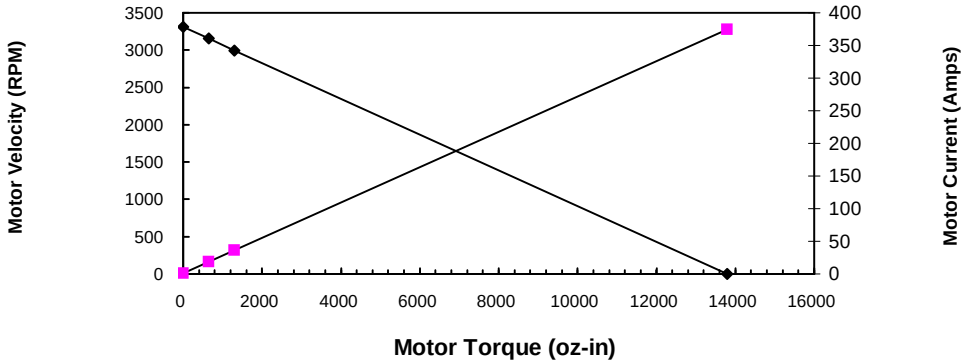
Date: 8/15/2019

This is a calculation data sheet X

SPECS	C/S	Frame	PM	- Winding -	Stack	Options	Gear Ratio
MODEL #	**BFA**	**42**		**2E**	**300**	**FE**	**1**

V in =*	**90**	Vdc	Input Voltage		**eff = 0.9**
Ke =*	**27.2**	V/krpm	Voltage Constant		
Kt =	36.8	oz-in/A	Torque Constant		
Rt =*	**0.24**	Ohms(@20°C)	Terminal Resistance+Amplifier		
Io=*	**0.69**	Amps	No load current		
I as =	375.0	Amps	Stall Current (reference only)		
T gs =	13794	oz-in	Stall Torque (reference only @ V in)		
I 1 =	**18.4**	**Amps**	**Current @ Torque-1**		
T 1 =*	**650**	**oz-in**	**Torque-1**	**585.0 oz-in**	**36.6 in-lb**
T 2 =*	**1300**	**oz-in**	**Torque-2**	**1170.0 oz-in**	**73.1 in-lb**
I 2 =	36.0	Amps	Current @ Torque-2		
RPM nl =	3309	RPM	No Load Velocity		3308.8 rpm
RPM r =	**3153**	**RPM**	**RPM @ T1**		**3152.9 rpm**
RPM p=	**2997**	**RPM**	**RPM @ T2**		**2997.0 rpm**
R ah =	0.31	Ohms(@105°C)	Term. Resistance Hot		
T gsh =	10544	oz-in	Stall Torque Hot		
I ash =	286.6	Amps	Stall Current Hot		
R th =*	**0.31**	℃/W	Thermal Resistance		
Tr =	**42**	**℃** **Without cooling air**	**Temperature Rise (above ambient)**		
Nm/A=	0.26		Torque Constant		
Lb in/A=	2.30		Torque Constant		
Km=	75.1	Kt//r	Motor Constant		

Torque Curve



Calculation data

Voltage	Torque	RPM	Amp	Efficiency	Watts out
90	0	3309	0.7	0	0
90	**650**	**3153**	**18.4**	**0.91734**	**1515.8225**
90	1300	2997	36.0	0.88868	2881.7289
90	13794	0	375.0	0	0