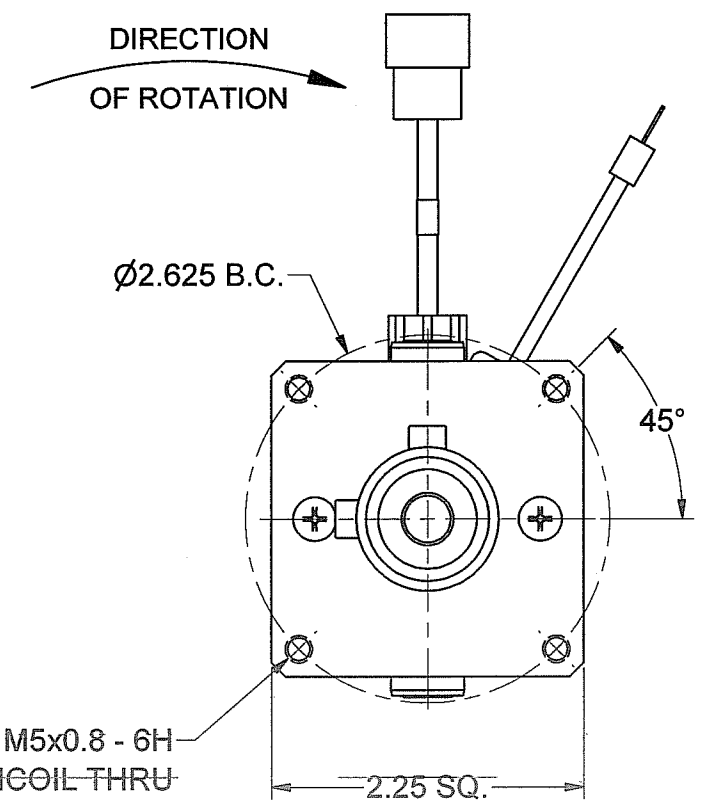
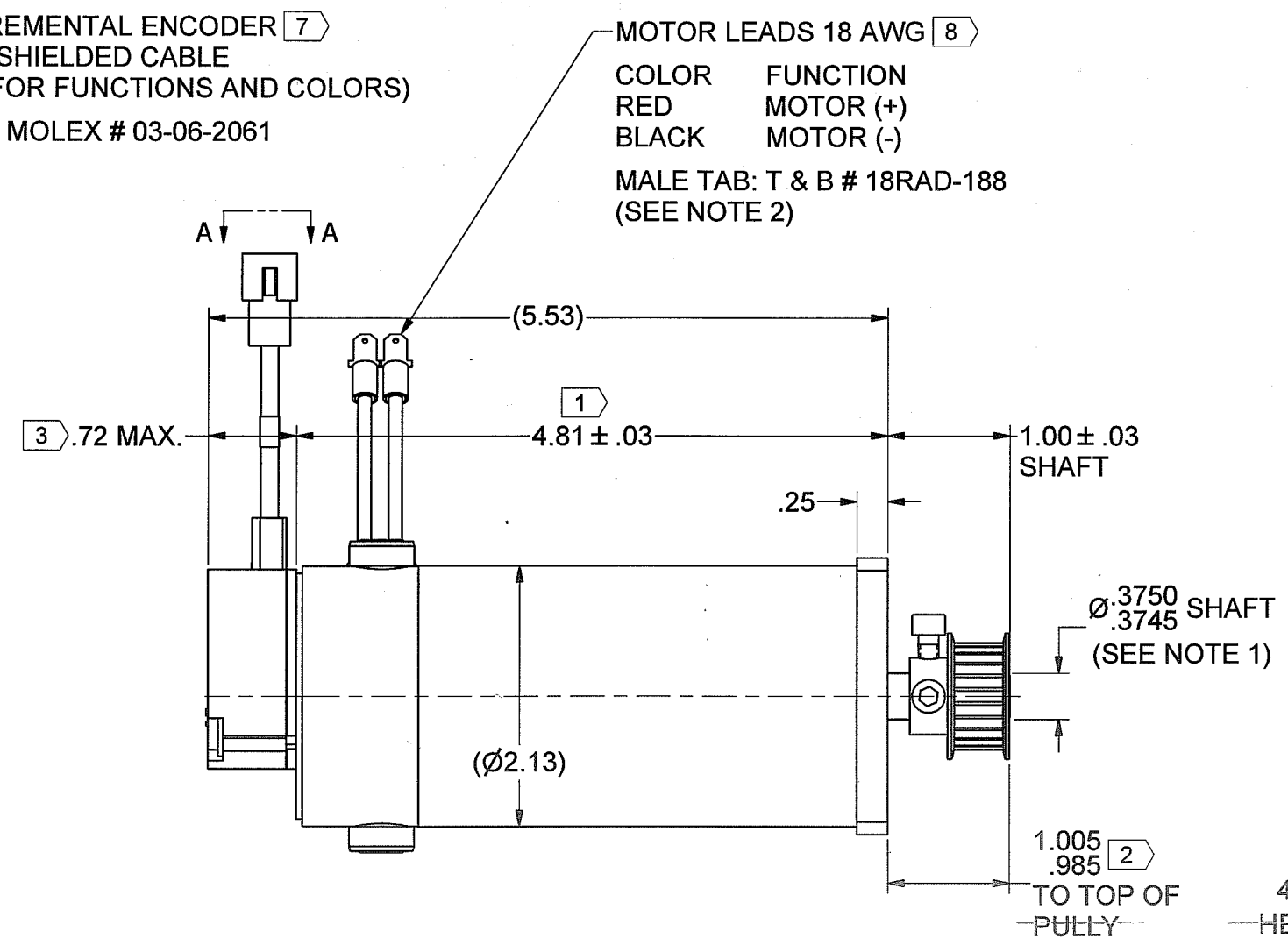
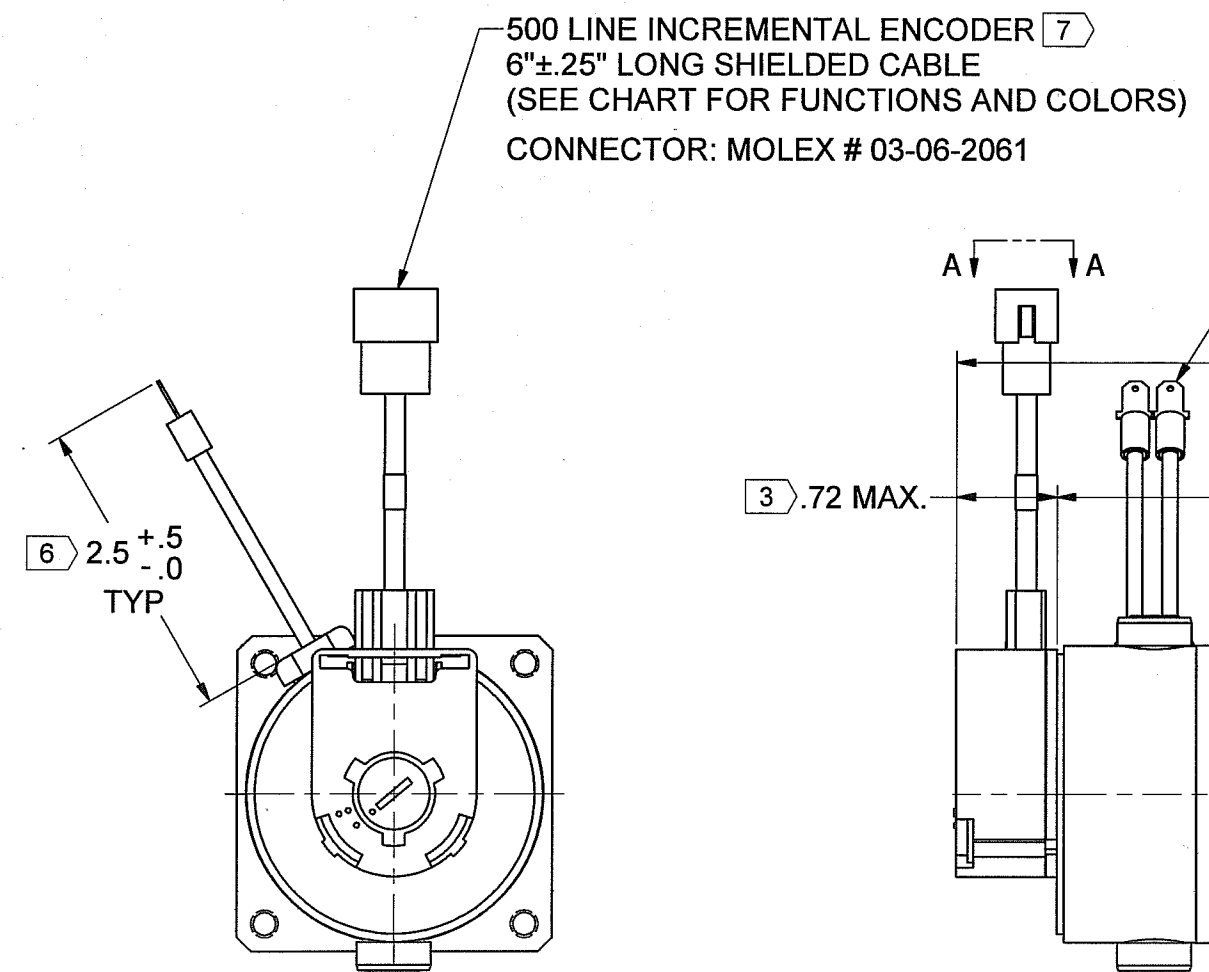


REVISION				
REV	DESCRIPTION	DATE	BY	APPROVED
2	RELEASED DRAWING BY MAGMOTOR FORMAT, ECO099-0010	4/1/99	-	-
3	CHANGE OF MOTOR LENGTH FROM 5.03 TO 5.62±.03, ECO00-0062	6/22/00	-	-
4	REF NUMBERS DELETED. PULLEY SCREWS ADDED, ECO 00-0071	7/13/00	-	-
5	ADDED SERIAL NUMBER EXAMPLE ECO M04-0032	12/17/04	BJH	-
6	ITEM 020 WAS 210170132, MODEL NUMBER WAS C21-F-175FE, ECO M05-0002	1/19/05	RAL	-



**MOTOR SPECIFICATIONS:**

TORQUE CONSTANT (Kt) = 11.0 ± 10% OZ-IN/AMP - SPECIAL  
 VOLTAGE CONSTANT (Ke) = 8.1 ± 10% VOLTS/KRPM - SPECIAL

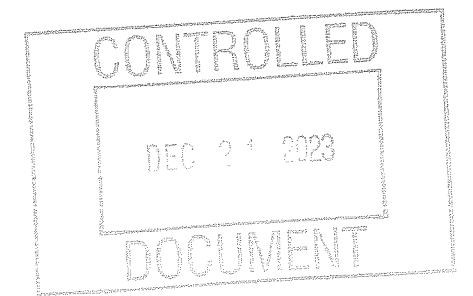
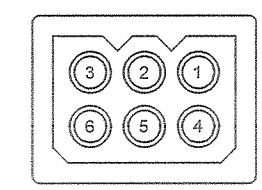
**NOTES:**

- 1.) SHAFT RUNOUT SHALL NOT EXCEED 0.001" T.I.R.
- 2.) MOTOR ROTATION IS CLOCKWISE WHEN VIEWED FROM OUTPUT SHAFT WITH POSITIVE VOLTAGE APPLIED TO RED LEAD.
- 3.) X IDENTIFIES INSPECTION DIMENSIONS.

\* DETERMINED WHEN LABEL IS PRINTED

5 **Magmotor Technologies Inc.**  
 10 Coppage Drive, Worcester, MA 01603

Part:	720102821 REV *
Cust:	21232
Serial:	*



LABEL DETAIL  
 PUT LABEL IN STANDARD LOCATION

4 ENCODER CONNECTOR - MOLEX # 03-06-2061

FUNCTION	COLOR	PIN
A OUTPUT	YELLOW	1
+V, 5 VOLT SUPPLY	RED	2
GROUND	BLACK	3
B OUTPUT	BLUE	4

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES & (mm)		THIRD ANGLE PROJECTION DO NOT SCALE DRAWING		THE INFORMATION CONTAINED IN THIS DRAWING IS THE SOLE PROPERTY OF MAGMOTOR TECHNOLOGIES. ANY REPRODUCTION OR DISCLOSURE OF THE INFORMATION CONTAINED THEREIN IN PART OR AS A WHOLE WITHOUT THE WRITTEN PERMISSION FROM MAGMOTOR TECHNOLOGIES IS PROHIBITED.		<b>Magmotor</b>	
TOLERANCES ON: ANGLES = ± 1/2° X.XX [X.X] = ± .01 [0.25] X.XXX [X.XX] = ± .005 [0.12]	125 ✓	SIGNATURES	DATE	TITLE			
		DRAWN BZ	4/1/1999	FINAL ASSEMBLY, C21-E-230FE			
		CHECKED <i>M</i>	12/21/23				
		ENG APPR.					
		MFG APPR. <i>BT</i>	12/21/23				
		Q.A.					
		UNLESS OTHERWISE SPECIFIED REMOVE ALL BURRS & SHARP EDGES. COUNTERSINK TAPPED HOLES TO BODY SIZE. FILLETS: .03 MAX. / EXTERNAL CORNERS: .015 MAX.		SIZE	NUMBER	REV	
				D	720102821	6	
				SCALE: -	WEIGHT: - LB.	SHEET 1 OF 3	



10 Coppage Drive  
Worcester, MA 01603  
1/2/2024

**MOTOR PERFORMANCE / SPECIFICATIONS**

**Attn.:**

Final Product No.: **C21-E-230FE**

Customer:

RFQ 720102821

Phone/Fax:

By: BT

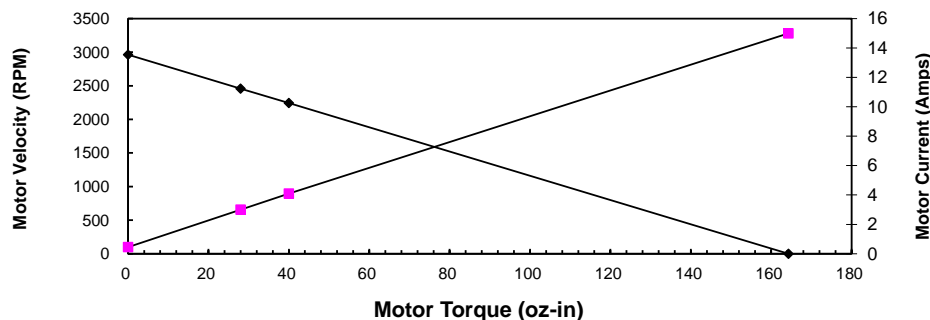
Date: 10/10/2023

This is a calculation data sheet

SPECS	C/S	Frame	PM	Winding	-	Stack	Options	Gear Ratio
MODEL #	<b>C</b>	<b>21</b>	-	<b>E</b>	-	<b>230</b>	<b>FE</b>	

V in =*	<b>24</b> Vdc		Input Voltage	Eff = 0.9
Ke =*	<b>8.10</b> V/krpm		Voltage Constant	
Kt =	11.0 oz-in/A		Torque Constant	
Rt =*	<b>1.60</b> Ohms(@20° C)		Terminal Resistance+Amplifier	
Io =*	<b>0.45</b> Amps		No load current	
I as =	15.0 Amps		Stall Current (reference only)	
T gs =	164 oz-in		Stall Torque (reference only @ V in)	
I 1 =	3.0 Amps		Current @ Torque-1	
I 2 =	4.1 Amps		Current @ Torque-2	
T 1 =*	<b>28</b> oz-in		Torque-1	
T 2 =*	<b>40</b> oz-in		Torque-2	
RPM nl =	2963 RPM		No Load Velocity	
RPM r =	2458 RPM		RPM @ T1	
RPM p =	2242 RPM		RPM @ T2	
R ah =	2.09 Ohms(@105° C)		Term. Resistance Hot	
T gsh =	126 oz-in		Stall Torque Hot	
I ash =	11.5 Amps		Stall Current Hot	
R th =*	<b>4.4</b> °C/W		Thermal Resistance	
Tr =	<b>93</b> °C	Without cooling air	Temperature Rise @ T1 (above ambient)	
Tr =	<b>141</b> °C	Without cooling air	Temperature Rise @ T2 (above ambient)	
Nm/A =	0.08		Torque Constant	
Lb in/A =	0.68		Torque Constant	
Km =	8.7 Kt/r		Motor Constant	

**Torque Curve**



**Calculation data**

Voltage	Torque	RPM	Amp	Efficiency	Watts out
24	0	2963	0.5	0	0
24	28	2458	3.0	0.70561645	50.906691
24	40	2242	4.1	0.673759	66.321938
24	164	0	15.0	0	0