

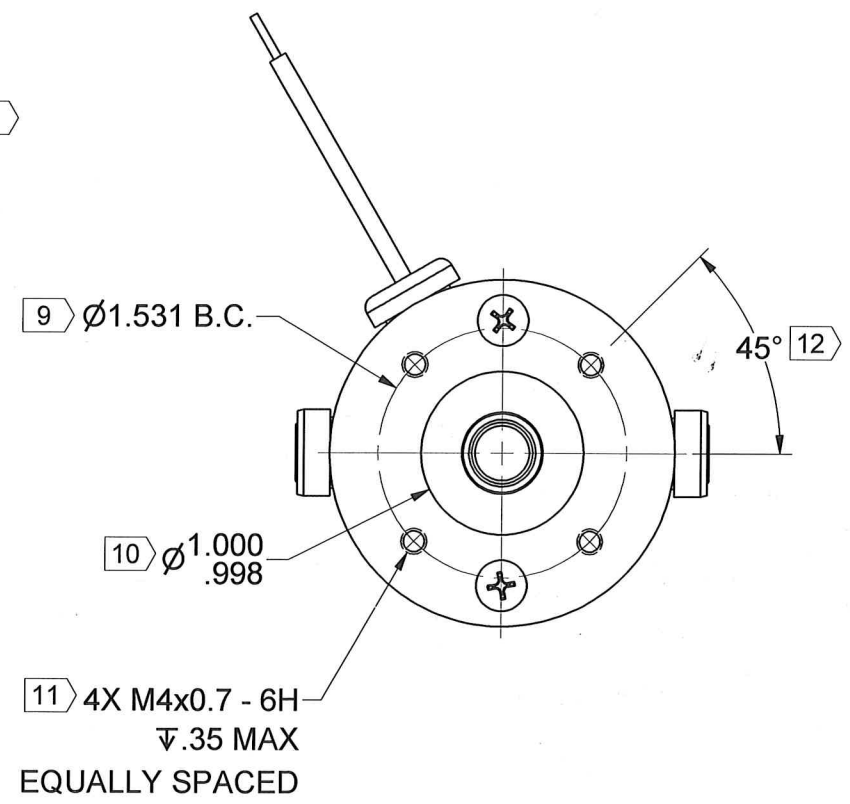
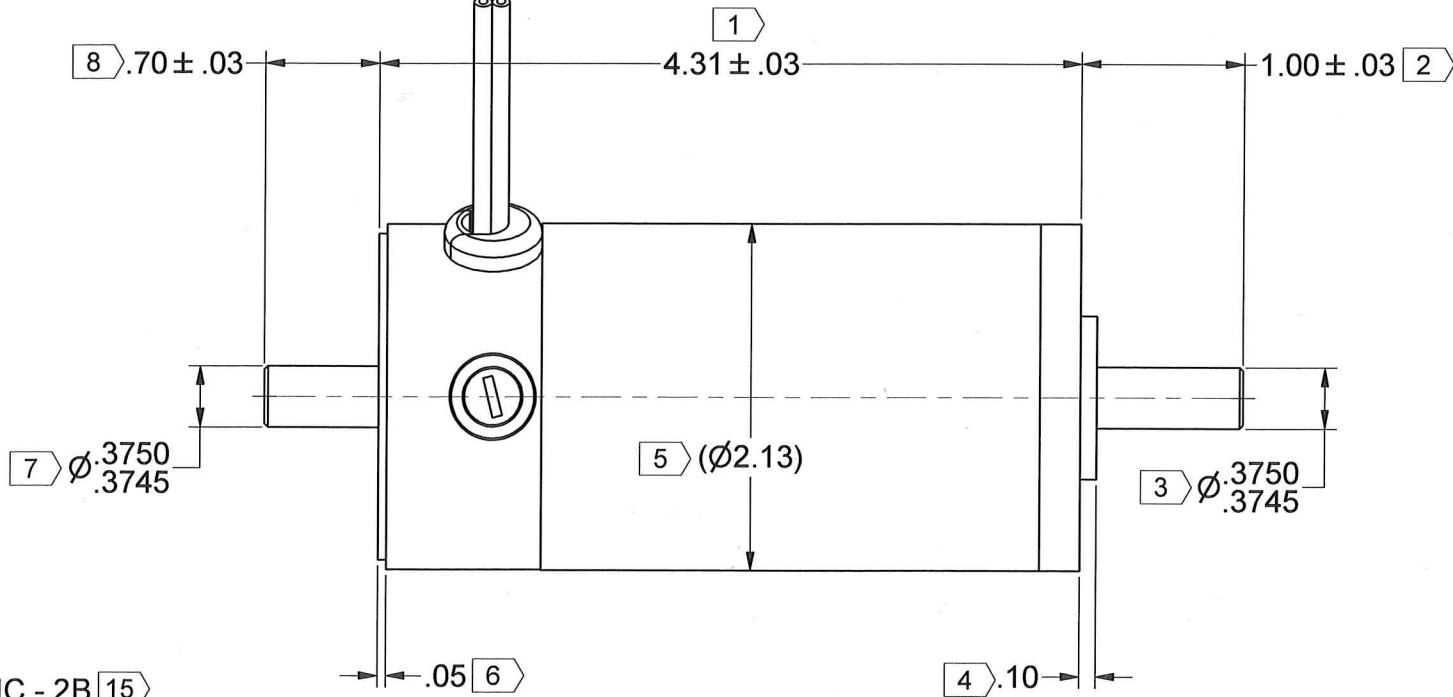
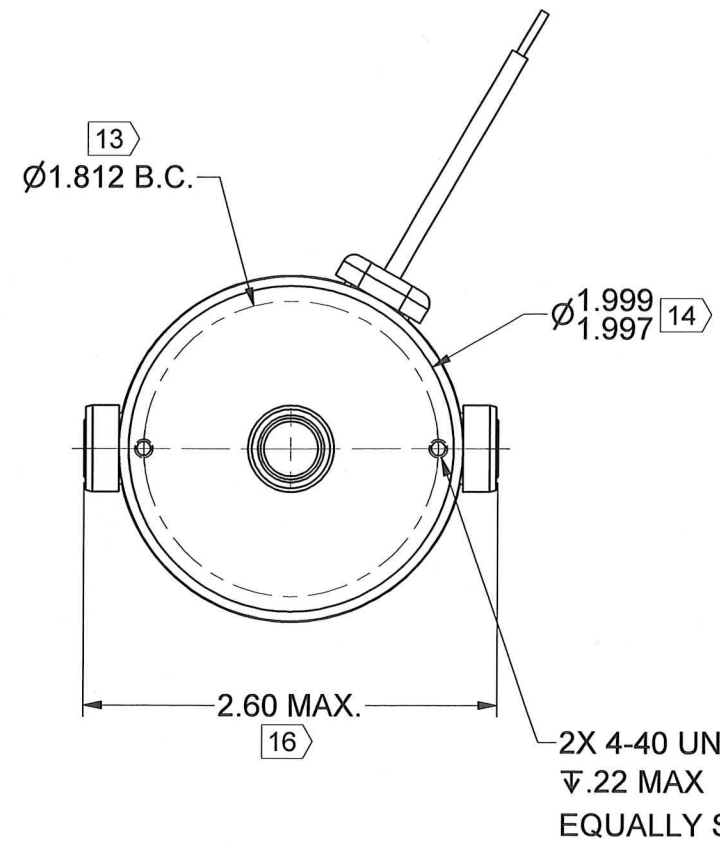
REV		REVISION		DATE	BY	APPROVED
A	PROTOTYPE					

17 MOTOR LEADS 18 AWG  
13"±1" LONG

COLOR	FUNCTION
RED	MOTOR (+)
BLACK	MOTOR (-)

STRIP BACK LEADS .3"±.1"

DIRECTION  
OF ROTATION



**MOTOR SPECIFICATIONS:**

TORQUE CONSTANT (Kt) = 12.2 ± 10% OZ-IN/AMP - SPECIAL  
VOLTAGE CONSTANT (Ke) = 9.0 ± 10% VOLTS/KRPM - SPECIAL

**NOTES:**

- MOTOR ROTATION IS CLOCKWISE WHEN VIEWED FROM OUTPUT SHAFT WITH POSITIVE VOLTAGE APPLIED TO RED LEAD.
- SCREW PENETRATION NOT TO EXCEED SPECIFIED THREAD DEPTH.
- X IDENTIFIES INSPECTION DIMENSIONS.

**CONTROLLED**  
APR 23 2024  
**DOCUMENT**

<small>UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES &amp; [mm]</small> <small>TOLERANCES ON:</small> <small>ANGLES = ± 1/2°</small> <small>X.XX [X.X] = ± .01 [0.25]</small> <small>X.XXX [X.XXX] = ± .005 [0.12]</small>	 <small>THIRD ANGLE PROJECTION</small> <small>DO NOT SCALE DRAWING</small>	<small>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.</small>			
		<small>SIGNATURES</small> <small>DATE</small> <small>TITLE</small>	<small>SIGNATURES</small> <small>DATE</small> <small>TITLE</small>		<small>SIZE</small> <small>NUMBER</small>
<small>MATERIAL</small> <small>SPEC</small> <small>FINISH</small> <small>NONE</small> <small>SPEC</small>	<small>DRAWN</small> BJJ <small>CHECKED</small> <i>BJH</i> <small>ENG APPR.</small> <small>MFG APPR.</small> <i>RT</i> <small>Q.A.</small>	<small>DATE</small> 7/26/2006 4/23/24 4/23/24	<small>TITLE</small> MOTOR ASSEMBLY, C21-F-175X	<small>SIZE</small> D <small>NUMBER</small> 500210300 <small>SCALE</small> - <small>WEIGHT</small> - LB.	<small>REV</small> A SHEET 1 OF 3



10 Coppage Drive  
Worcester, MA 01603  
5/1/2024

**MOTOR PERFORMANCE / SPECIFICATIONS**

**Attn.:**

Final Product No.: **500210300**

Customer:

RFQ C21-F-175X

Phone/Fax:

By: BT

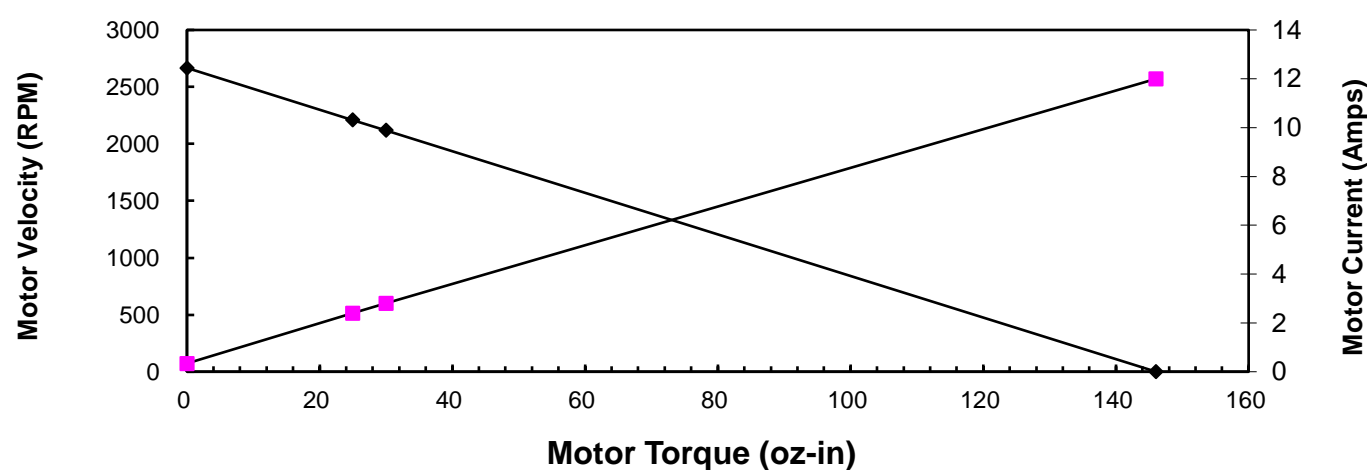
Date: 4/23/2024

This is a calculation data sheet

SPECS	C/S	Frame	PM	-	Winding	-	Stack	Options	Gear Ratio
MODEL #	<b>C</b>	<b>21</b>		-	<b>F</b>	-	<b>175</b>	<b>X</b>	<b>1.00</b>

V in =*	<b>24</b> Vdc								Input Voltage	Eff = 0.9
Ke =*	<b>9.00</b> V/krpm								Voltage Constant	
Kt =	12.2 oz-in/A								Torque Constant	
Rt =*	<b>2.00</b> Ohms(@20° C)								Terminal Resistance+Amplifier	
Io =*	<b>0.34</b> Amps								No load current	
I as =	12.0 Amps								Stall Current (reference only)	
T gs =	146 oz-in								Stall Torque (reference only @ V in)	
I 1 =	2.4 Amps								Current @ Torque-1	
I 2 =	2.8 Amps								Current @ Torque-2	
T 1 =*	<b>25</b> oz-in								Torque-1	22.5 oz-in 1.4 in-lb
T 2 =*	<b>30</b> oz-in								Torque-2	27.0 oz-in 1.7 in-lb
RPM nl =	2667 RPM								No Load Velocity	2666.7 rpm
RPM r =	2210 RPM								RPM @ T1	<b>2210.2 rpm</b>
RPM p =	2119 RPM								RPM @ T2	2118.9 rpm
R ah =	2.62 Ohms(@105° C)								Term. Resistance Hot	
T gsh =	112 oz-in								Stall Torque Hot	
I ash =	9.2 Amps								Stall Current Hot	
R th =*	<b>4.9</b> °C/W								Thermal Resistance	
Tr =	<b>81</b> °C	Without cooling air							Temperature Rise @ T1 (above ambient)	
Tr =	<b>99</b> °C	Without cooling air							Temperature Rise @ T2 (above ambient)	
Nm/A =	0.09								Torque Constant	
Lb in/A =	0.76								Torque Constant	
Km =	8.6	Kt/r							Motor Constant	

**Torque Curve**



**Calculation data**

Voltage	Torque	RPM	Amp	Efficiency	Watts out
24	0	2667	0.3	0	0
24	25	2210	2.4	0.711332244	40.869651
24	30	2119	2.8	0.69848636	47.017978
24	146	0	12.0	0	0