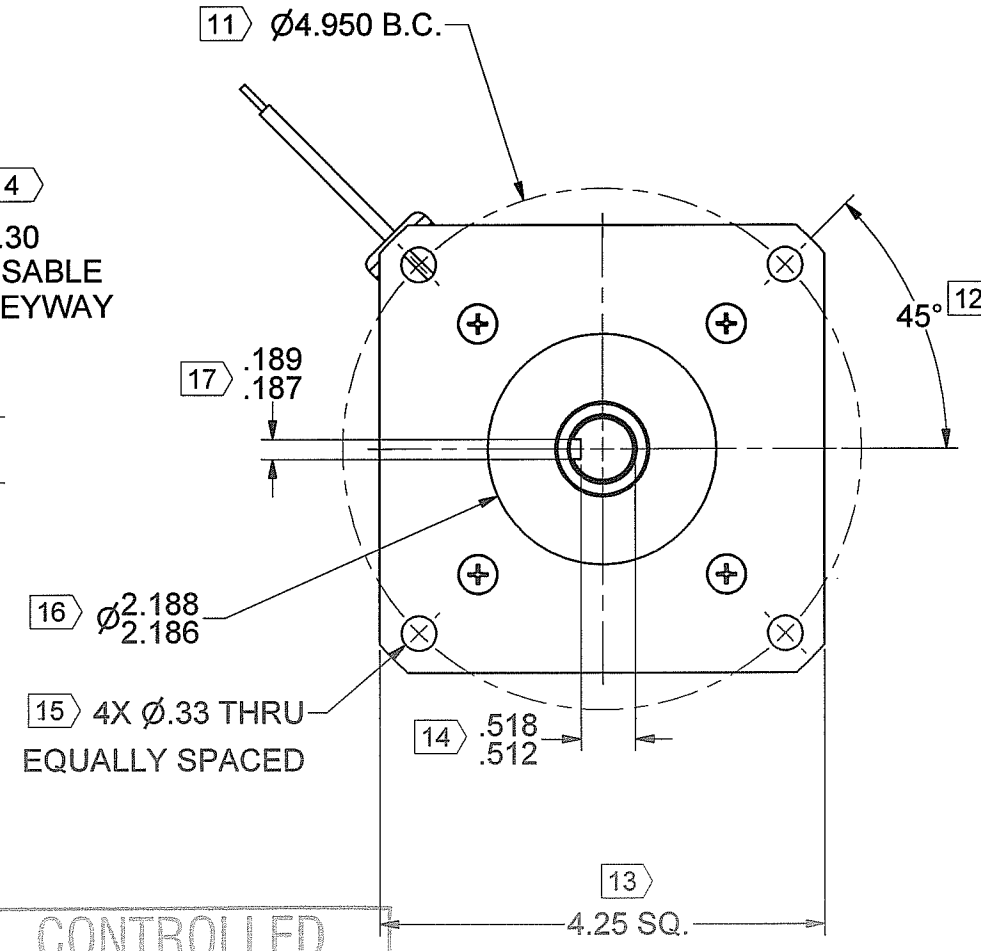
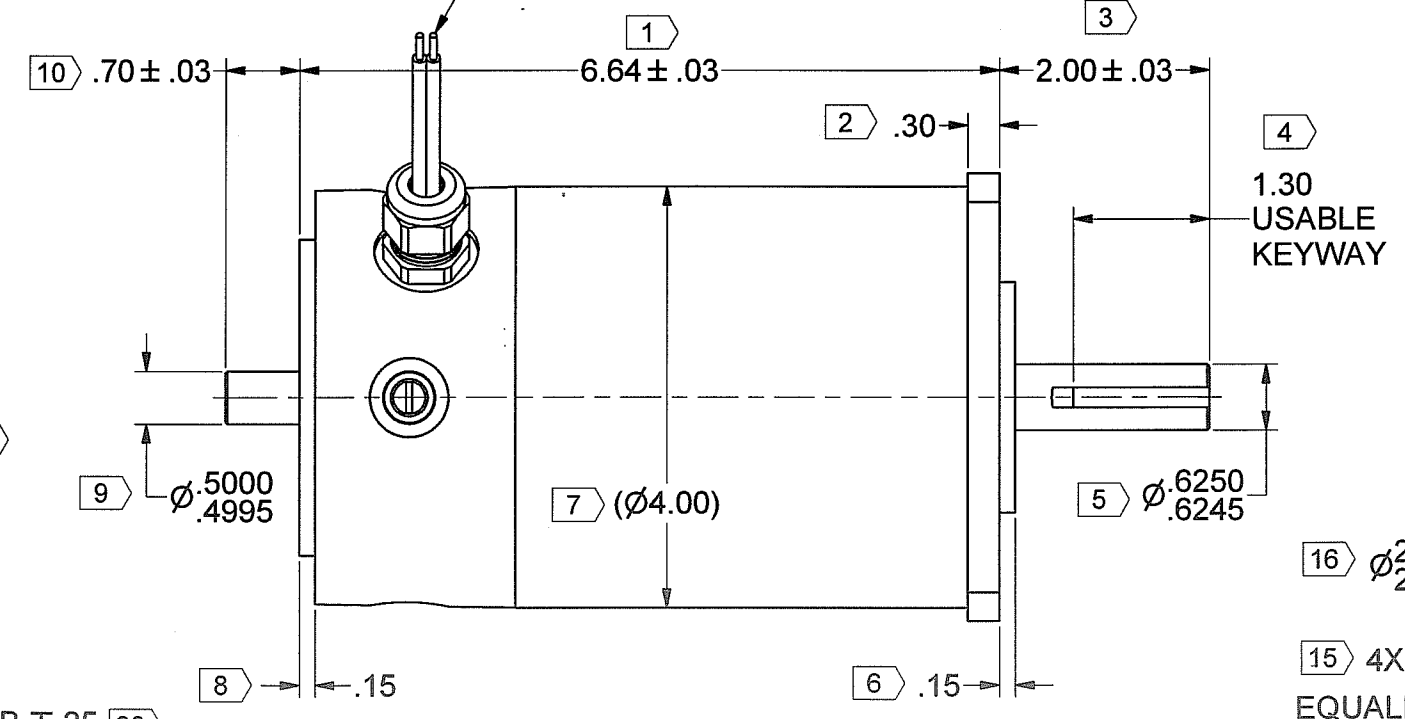
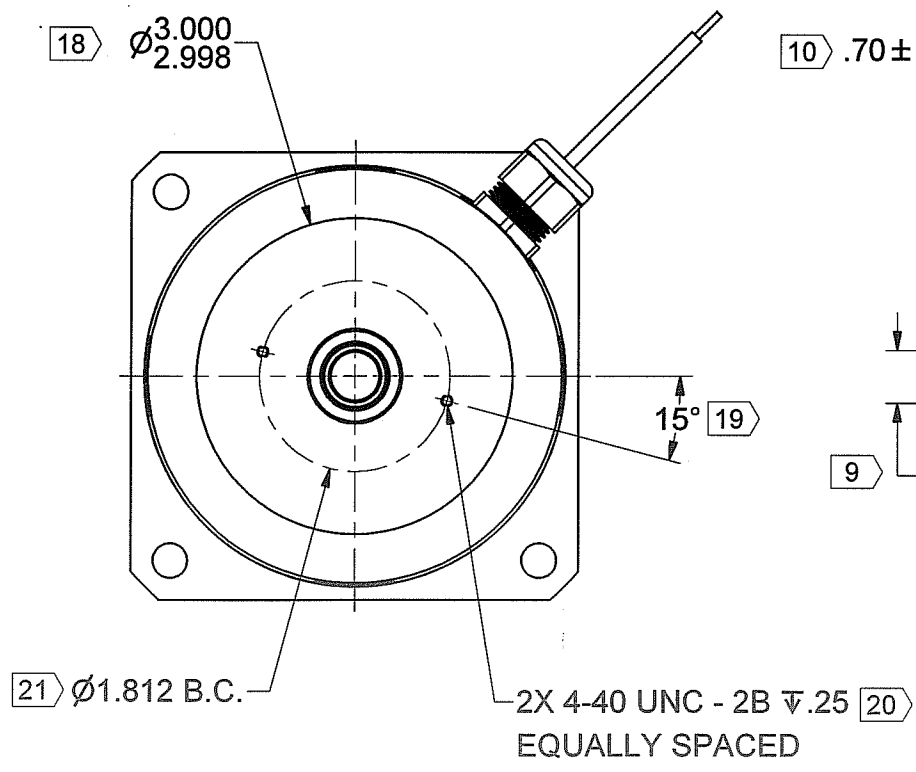


| REV | DESCRIPTION | REVISION | DATE | BY | APPROVED |
|-----|-------------|----------|------|----|----------|
| A   | PROTOTYPE   |          |      |    |          |

22) MOTOR LEADS 14 AWG  
13"±1" LONG  
COLOR FUNCTION  
RED MOTOR (+)  
BLACK MOTOR (-)  
STRIP BACK LEADS .3"±.1"

DIRECTION  
OF ROTATION



**MOTOR SPECIFICATIONS:**

TORQUE CONSTANT (Kt) = 19.6 ± 10% OZ-IN/AMP  
VOLTAGE CONSTANT (Ke) = 14.5 ± 10% VOLTS/KRPM

**NOTES:**

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

CONTROLLED  
JUN 2 2022  
DOCUMENT

|  |   |  |                   |               |          |                             |
|--|---|--|-------------------|---------------|----------|-----------------------------|
| <small>UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES &amp; [mm]</small><br><small>TOLERANCES ON:</small><br><small>ANGLES = ± 1/2°</small><br><small>X.XX [X.X] = ± .01 [0.25]</small><br><small>X.XXX [X.XXX] = ± .005 [0.12]</small> | <br><small>THIRD ANGLE PROJECTION</small><br><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> |                   |               |          |                             |
|  |   |  | SIGNATURES        |               | DATE     | TITLE                       |
|  |   |  | DRAWN CGW         |               | 6/1/2022 | MOTOR ASSEMBLY, C40-Z-300FX |
|  |   |  | CHECKED <i>JH</i> |               | 6/2/22   |                             |
| MATERIAL   | ENG APPR. <i>RM</i>   | 6/2/22   |                   |               |          |                             |
| SPEC   | MFG APPR. <i>RT</i>   | 6/2/22   |                   |               |          |                             |
| FINISH   | Q.A.  |  |                   |               |          |                             |
| NONE   | <small>UNLESS OTHERWISE SPECIFIED REMOVE ALL BURRS &amp; SHARP EDGES. COUNTERSINK TAPPED HOLES TO BODY SIZE FILLETS: .05 MAX. / EXTERNAL CORNERS: .015 MAX.</small> |  | SIZE              | NUMBER        |          |                             |
| SPEC   |   |  | D                 | 500400259     |          |                             |
|  |   |  | SCALE: -          | WEIGHT: - LB. |          |                             |
|  |   |  |                   | SHEET 1 OF 3  |          |                             |



10 Coppage Drive  
Worcester, MA 01603  
8/10/2022

**MOTOR PERFORMANCE / SPECIFICATIONS**

**Attn.:**

Final Product No.: **C40-Z-300FX**

Customer:

RFQ 500400259

Phone/Fax:

By: MM

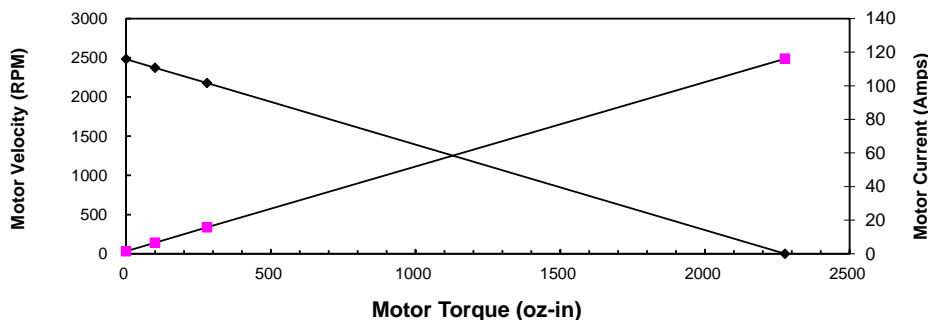
Date: 8/10/2022

This is a calculation data sheet

| SPECS   | C/S      | Frame     | PM | Winding  | - | Stack      | Options   | Gear Ratio |
|---------|----------|-----------|----|----------|---|------------|-----------|------------|
| MODEL # | <b>C</b> | <b>40</b> | -  | <b>Z</b> | - | <b>300</b> | <b>FX</b> |            |

|           |                          |                     |                                       |           |
|-----------|--------------------------|---------------------|---------------------------------------|-----------|
| V in =*   | <b>36</b> Vdc            |                     | Input Voltage                         | Eff = 0.9 |
| Ke =*     | <b>14.5</b> V/krpm       |                     | Voltage Constant                      |           |
| Kt =      | 19.6 oz-in/A             |                     | Torque Constant                       |           |
| Rt =*     | <b>0.31</b> Ohms(@20° C) |                     | Terminal Resistance+Amplifier         |           |
| Io =*     | <b>1.5</b> Amps          |                     | No load current                       |           |
| I as =    | 116.1 Amps               |                     | Stall Current (reference only)        |           |
| T gs =    | 2277 oz-in               |                     | Stall Torque (reference only @ V in)  |           |
| I 1 =     | 6.6 Amps                 |                     | Current @ Torque-1                    |           |
| I 2 =     | 15.8 Amps                |                     | Current @ Torque-2                    |           |
| T 1 =*    | <b>100</b> oz-in         |                     | Torque-1                              |           |
| T 2 =*    | <b>280</b> oz-in         |                     | Torque-2                              |           |
| RPM nl =  | 2483 RPM                 |                     | No Load Velocity                      |           |
| RPM r =   | 2374 RPM                 |                     | RPM @ T1                              |           |
| RPM p =   | 2177 RPM                 |                     | RPM @ T2                              |           |
| R ah =    | 0.41 Ohms(@105° C)       |                     | Term. Resistance Hot                  |           |
| T gsh =   | 1741 oz-in               |                     | Stall Torque Hot                      |           |
| I ash =   | 88.8 Amps                |                     | Stall Current Hot                     |           |
| R th =*   | <b>1.3</b> °C/W          |                     | Thermal Resistance                    |           |
| Tr =      | <b>81</b> °C             | Without cooling air | Temperature Rise @ T1 (above ambient) |           |
| Tr =      | <b>152</b> °C            | Without cooling air | Temperature Rise @ T2 (above ambient) |           |
| Nm/A =    | 0.14                     |                     | Torque Constant                       |           |
| Lb in/A = | 1.23                     |                     | Torque Constant                       |           |
| Km =      | 35.2                     | Kt/r                | Motor Constant                        |           |

**Torque Curve**



**Calculation data**

| Voltage | Torque | RPM  | Amp   | Efficiency  | Watts out |
|---------|--------|------|-------|-------------|-----------|
| 36      | 0      | 2483 | 1.5   | 0           | 0         |
| 36      | 100    | 2374 | 6.6   | 0.73899687  | 175.57212 |
| 36      | 280    | 2177 | 15.8  | 0.793903534 | 450.95999 |
| 36      | 2277   | 0    | 116.1 | 0           | 0         |