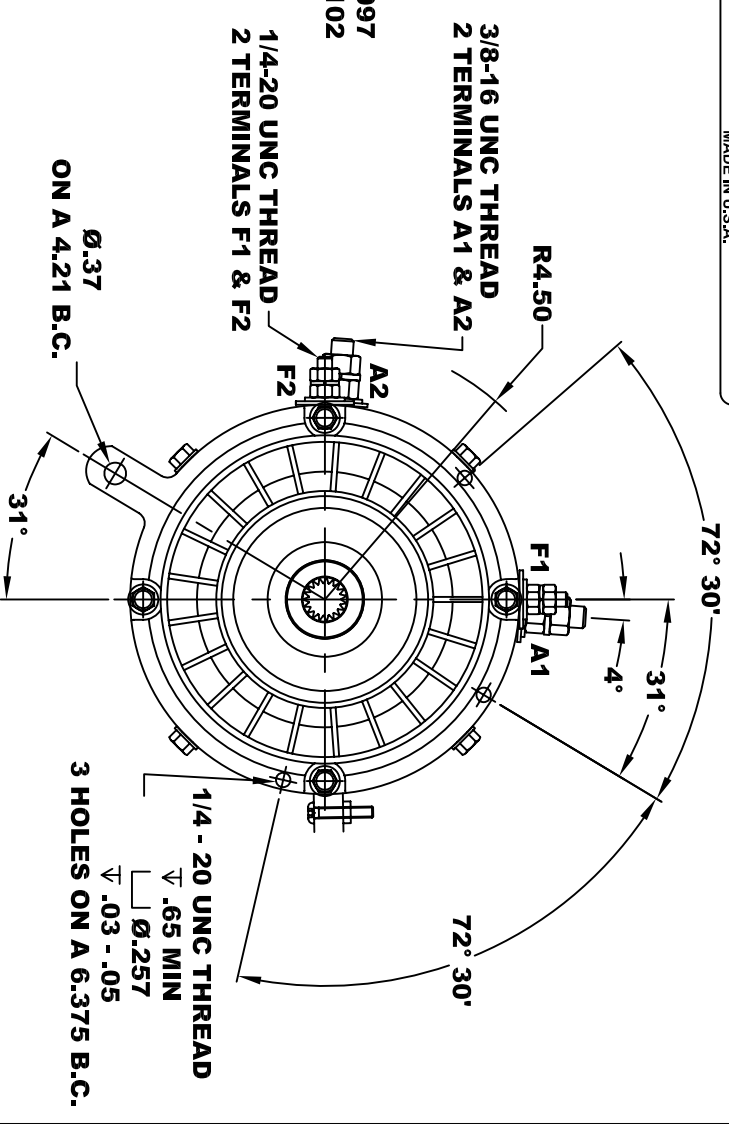
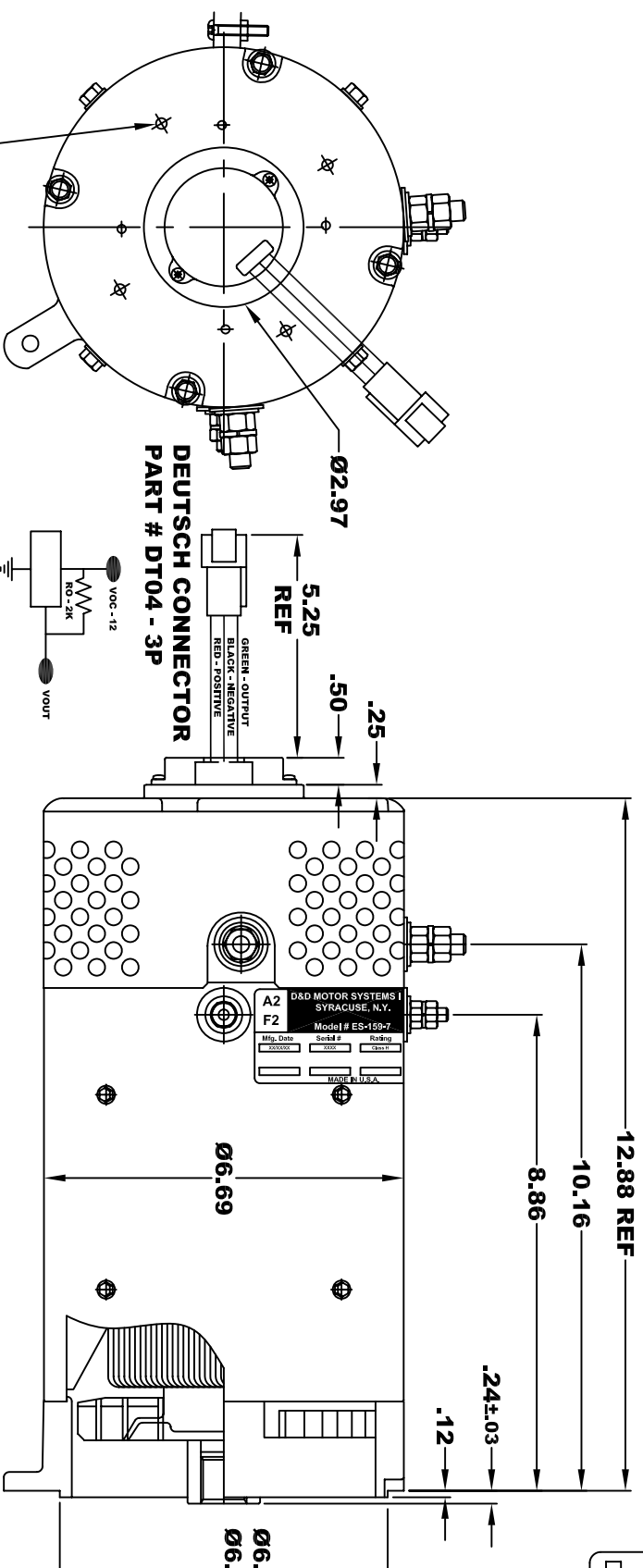


**TORQUE SPECIFICATION FOR  
POWER CABLE SECURING TOP NUTS**  
3/8-16 UNC (A1 / A2) - 140 IN / LBS MAX  
1/4-20 UNC (F1 / F2) - 50 IN / LBS MAX

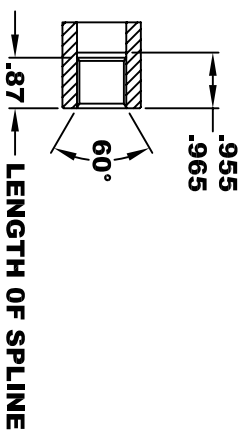
<b>D&amp;D MOTOR SYSTEMS INC.</b>		<b>A1</b>	
SYRACUSE N.Y.		<b>F1</b>	
<b>A2</b>	<b>F2</b>	Model # ES-159-7	Rating
Mfg. Date	Serial #	CLASS H	Voltage
XXXXXX	XXXX	XX	
MADE IN U.S.A.			



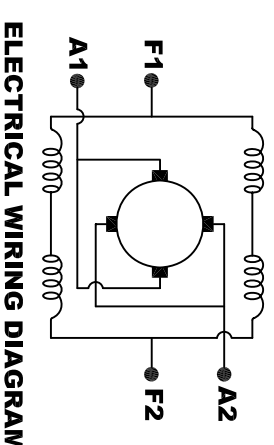
**ELECTRICAL SPECIFICATION:**  
-4.5V TO 24V OPERATING VOLTAGE  
-20°C TO 85°C OPERATING TEMPERATURE  
-CURRENT SINKING UP TO 25mA  
-AN EXTERNAL OUTPUT PULL UP RESISTOR IS REQUIRED  
-SENSOR IS DESIGNED TO OPERATE WITH 4 N/S POLEPAIRS  
AND THE HOUSING, INCLUDING ANY RUNOUT  
SHOULD NOT EXCEED .030 INCHES

**INTERNAL INVOLUTE SPLINE SPECIFICATION  
CLASS 5 FILET ROOT SIDE FIT (PER A.N.S.I. B92.1)**

NO. OF TEETH	19
SPLINE PITCH	24 / 48
PRESSURE ANGLE	45°
BASE Ø	.5597 REF
PITCH Ø	.7916 REF
MAJOR Ø	.850 - .859
FORM Ø	.835
MINOR Ø	.767 - .772
CIRCULAR SPACE WIDTH	.0764
EFFECTIVE SPACE WIDTH	.0738
MAX. DIMENSION BETWEEN TWO PINS	.6714
PIN Ø	.0800
SPLINE HARDNESS TO BE R/C	26-34



**MOTOR WEIGHT XX LBS**  
**CLASS "H" INSULATION**  
**PERFORMANCE SPEC: 7**



**MOTOR WIRING CONNECTIONS:**  
**CW ROTATION DRIVE END**  
CONNECT A1 & F1 TO ONE BATTERY TERMINAL  
CONNECT A2 & F2 TO OTHER BATTERY TERMINAL  
**CCW ROTATION DRIVE END**  
SWITCH F1 & F2 CONNECTIONS

**D & D MOTOR SYSTEMS INC**

**MOTOR OUTLINE**

THIS PRINT IS THE PROPERTY OF D&D MOTOR SYSTEMS INC.  
DO NOT SCALE  
WORK TO DIMENSIONS  
TOLERANCES UNLESS OTHERWISE SPECIFIED ARE AS FOLLOWS  
.XX \_\_\_\_\_ .01  
.XXX \_\_\_\_\_ .005  
.XX ROUGH CASTING \_\_\_\_\_ .03  
HOLES \_\_\_\_\_ -.001 / +.006  
ANGLES \_\_\_\_\_ 0°30"

SIZE	DRAWN DATE	RELEASE DATE	DWG NO. / PART NO.	REV
B	1-31-13		ES-159-7	
SCALE	STF	DRAWN BY	MJG	REV DATE