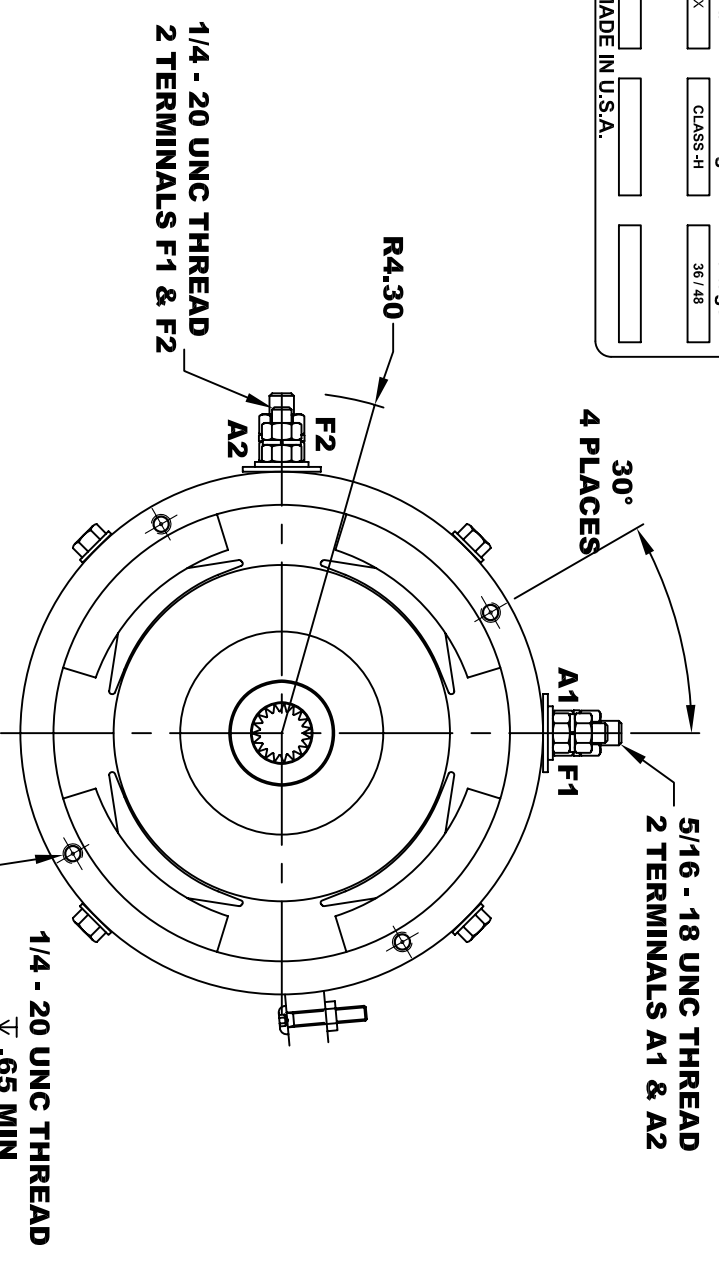


<b>D&amp;D MOTOR SYSTEMS INC.</b>			
<b>SYRACUSE N.Y.</b>			
<b>A2</b>	<b>F2</b>	<b>A1</b>	<b>F1</b>
Model # ES-63E-49			
Mfg. Date	Serial #	Rating	Voltage
XXXXXX	XXXX	CLASS-H	36 / 48
MADE IN U.S.A.			

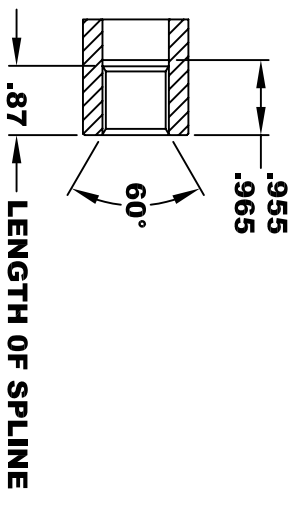
**TORQUE SPECIFICATION FOR  
POWER CABLE SECURING TOP NUTS**  
5/16-18 UNC (A1 / A2) - 110 IN / LBS MAX  
1/4-20 UNC (F1 / F2) - 50 IN / LBS MAX



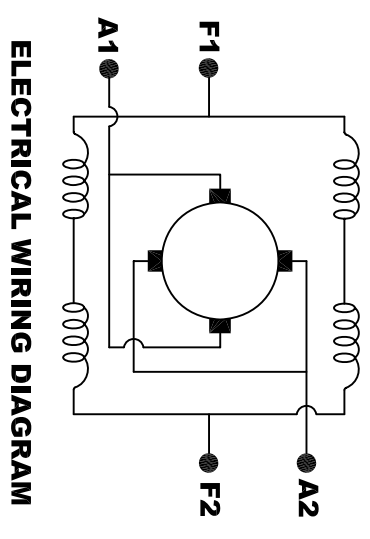
- SPEED SENSOR ELECTRICAL SPECIFICATION:**
- 4.5V TO 24V OPERATING VOLTAGE
  - 20°C TO 85°C OPERATING TEMPERATURE
  - CURRENT SINKING UP TO 25mA
  - AN EXTERNAL OUTPUT PULL UP RESISTOR IS REQUIRED
  - SENSOR IS DESIGNED TO OPERATE WITH 4 N/S POLEPAIRS
  - THE OPERATIONAL DISTANCE BETWEEN THE MAGNET AND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

**INTERNAL INVOLUTE SPLINE SPECIFICATION  
CLASS 5 FILLET 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: 57 LBS**  
**CLASS "H" INSULATION**  
**PERFORMANCE SPEC: 49**



**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

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"

**D & D MOTOR SYSTEMS INC**

# MOTOR OUTLINE

SIZE	DRAWN DATE	RELEASE DATE	DWG NO. / PART NO.	REV
B	3-14-16		ES-63E-49	
SCALE	STF	DRAWN BY	MJG	REV DATE