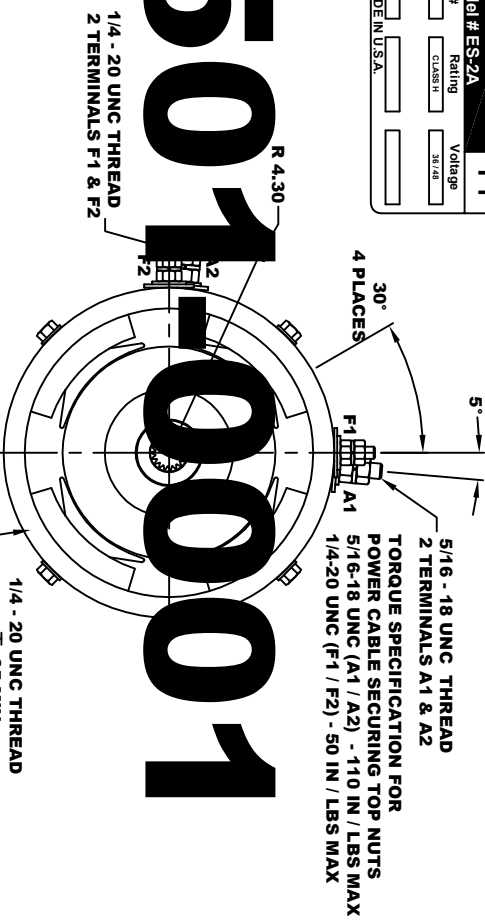


<b>A2</b>		<b>A1</b>	
<b>F2</b>		<b>F1</b>	
<b>D&amp;D MOTOR SYSTEMS INC.</b> SYRACUSE N.Y.			
<b>Model # ES-2A</b>			
Mfg. Date	Serial #	Rating	Voltage
XXXXXX	XXXX	CLASS 'H'	30/48
MADE IN U.S.A.			

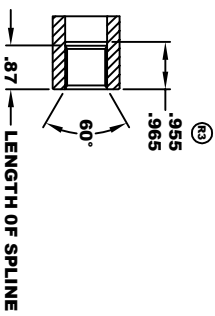


# USED 170-501-0001

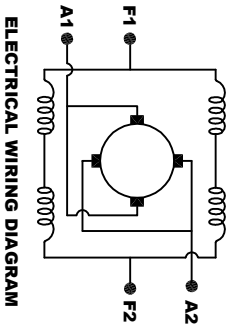
**ELECTRICAL SPECIFICATION:**  
 -4.5V TO 24V OPERATING VOLTAGE  
 -20°C TO 85°C OPERATING TEMPERATURE  
 -CURRENT SINKING UP TO 25mA  
 -AN EXTERNAL OUTPUT PULL UP RESISTOR IS REQUIRED  
 -SENSOR IS DESIGNED TO OPERATE WITH 4 N/S POLEPAIRS  
 THE OPERATIONAL DISTANCE BETWEEN THE MAGNET  
 AND THE HOUSING, INCLUDING .030 INCHES  
 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: 46 LBS**  
 CLASS "H" INSULATION  
 PERFORMANCE SPEC: 5



**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°

<b>D &amp; D MOTOR SYSTEMS INC</b>			
<b>MOTOR OUTLINE</b>			
SIZE	DRAWN DATE	RELEASE DATE	DWG NO. / PART NO.
B	1-17-02	ES-2A	REV R4
SCALE	STF	DRAWN BY	REV DATE
		MJG	4-26-13