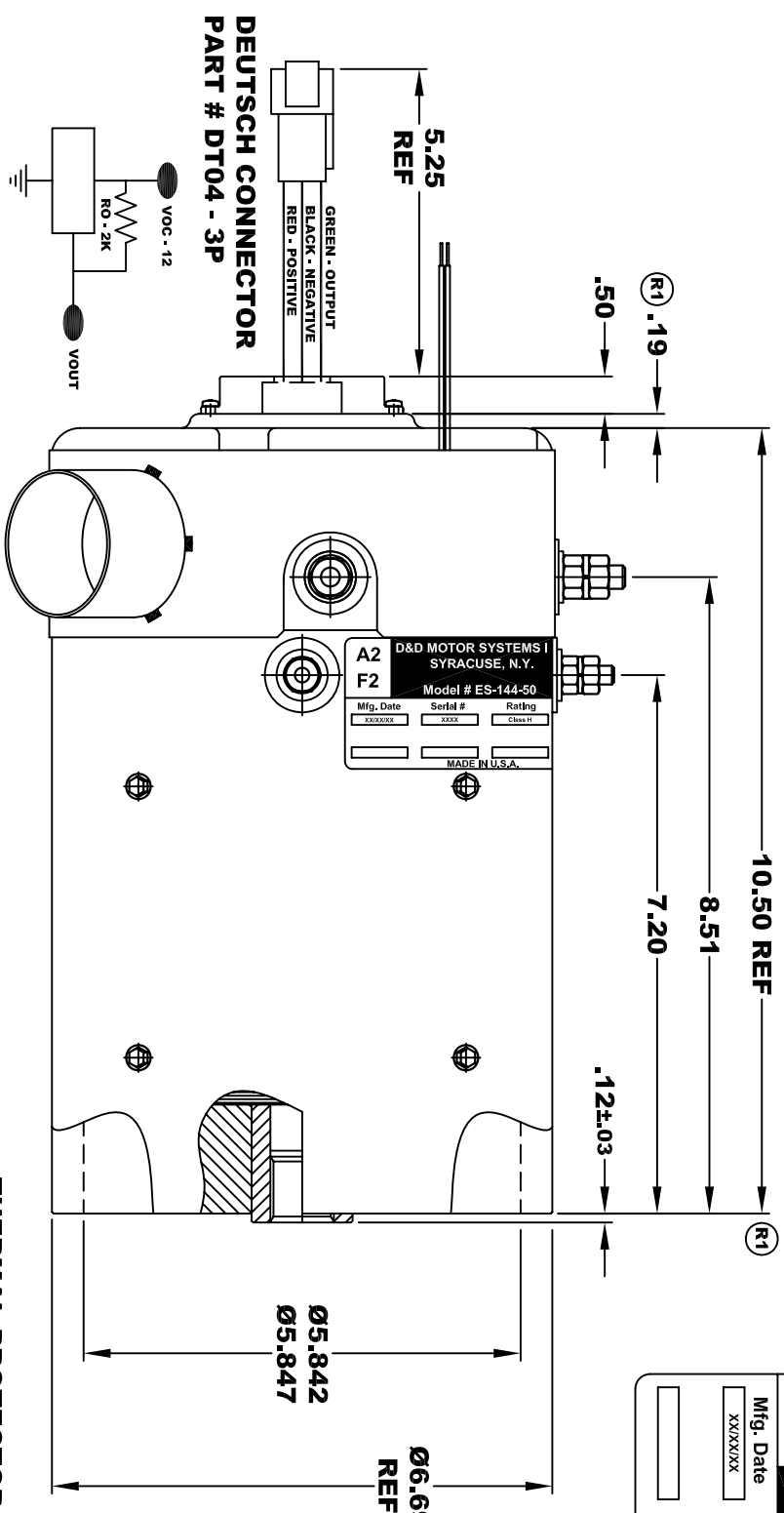


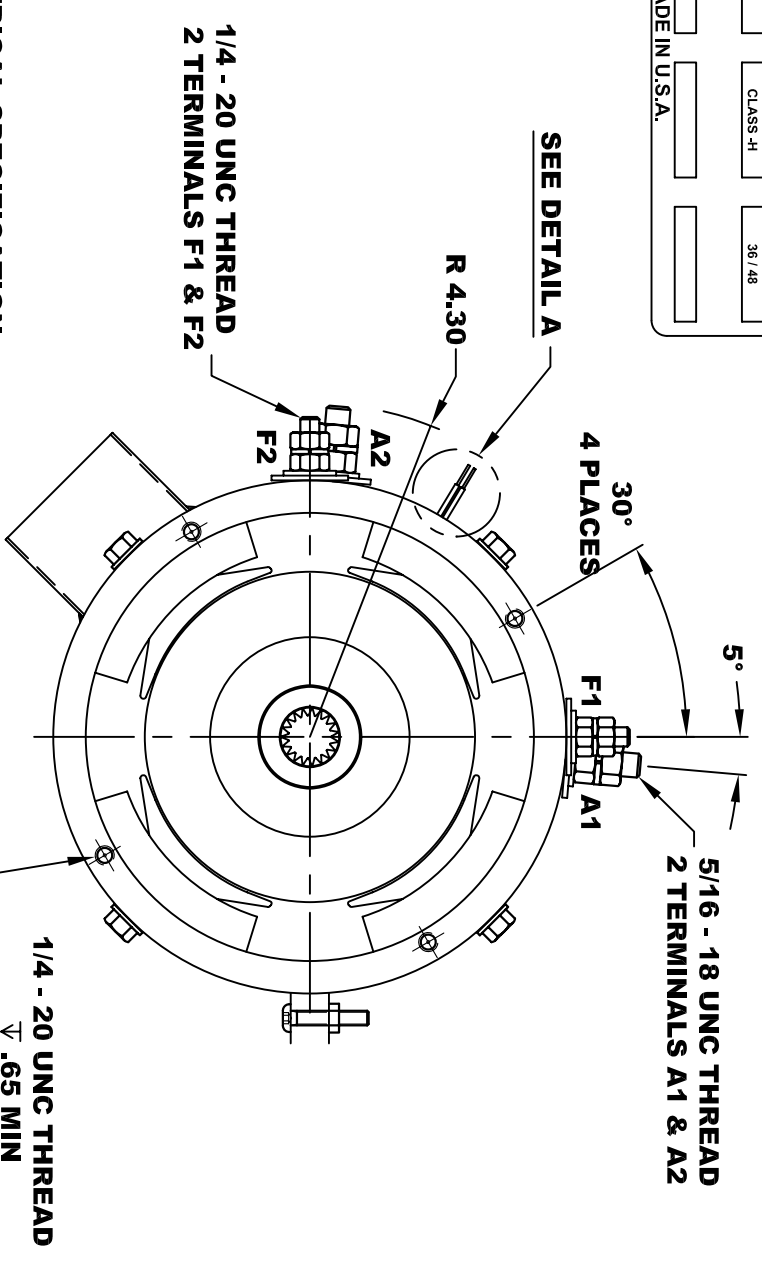
D&D MOTOR SYSTEMS INC.			
SYRACUSE N.Y.			
Model # ES-144-50			
A2	F2	A1	F1
Mfg. Date	Serial #	Rating	Voltage
XXXXXX	XXXX	CLASS-H	36 / 48
MADE IN U.S.A.			

**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



THERMAL PROTECTOR ELECTRICAL SPECIFICATION:
MAX. DC OPERATING VOLTAGE: 60 VOLTS
120° C NORMALLY OPEN SWITCH

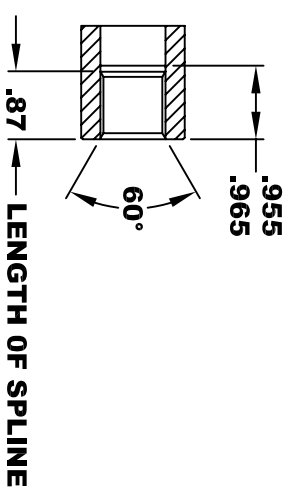
DETAIL A



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

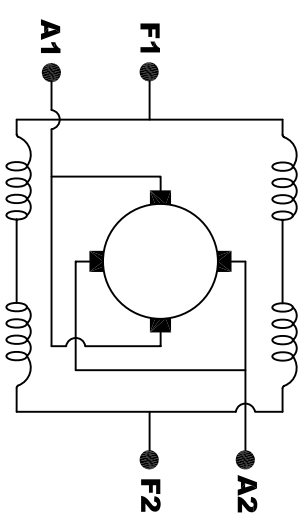
**INTERNAL INVOLUTE SPLINE SPECIFICATION
CLASS 5 FILLET ROOT SIDE FIT (PER A.N.S.I. B92.1)**

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: 50

ELECTRICAL WIRING DIAGRAM



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	6-30-09		ES-144-50	R1
SCALE	STF	DRAWN BY	MJG	REV DATE
				2-29-16