REVISIONS				
ZONE	LTR	DESCRIPTION	DATE	APPROVED
	A	ECP 5063, NOR 80488	2/14/97	DE JOM COB
	B	ECP 5250, NOR 83351	950926	SK

NOTES:

1. **DRAWING IS IN ACCORDANCE WITH MIL-STD-100**

2. DESIGN CHARACTERISTICS:

(M101)

a. MOTOR TYPE: REVERSABLE D.C. MOTOR, TOTALLY ENCLOSED WITH SEALED BALL BEARINGS. INSULATION TO WITHSTAND 200°C.

b. CONFIGURATION: SPLIT SERIES.

c. VOLTAGE: 24VDC RATED, 18-30VDC OPERATING, NEGATIVE GROUND SYSTEM.

d. ROTATION: SPECIFIED SHAFT ROTATION IS AS VIEWED FROM THE MOTOR END OPPOSITE THE OUTPUT SHAFT.

e. REVERSAL: MOTOR SHALL NOT BE DAMAGED BY REVERSE PLUGGING.

f. TEMPERATURE: -25° TO +140°F OPERATING, -65° TO +165°F STORAGE.

g. DUTY CYCLE: 9 SECONDS ON, 1 SECOND OFF, FOR 120 SECONDS, OFF FOR 30 MINUTES, LOAD 300 INCH OZ. AT RATED VOLTAGE.

h. MOMENT OF INERTIA: 5.0 **MASS INCH POUND SQUARED MAX.**

i. WEIGHT: 23 POUNDS MAXIMUM.

j. SERVICE LIFE: 30,000 COMPLETE CYCLES PER NOTE 2g, ALLOWING (3) CYCLES OF BRUSH AND BEARING REPLACEMENTS AND COMMUTATOR RESURFACING.

k. HIGH TEMPERATURE: THE MOTOR SHALL EXHIBIT NO FAILURE OR DEGRADATION OF PERFORMANCE WHEN TESTED IN ACCORDANCE WITH MIL-STD-810, METHOD 501.2, PROCEDURE I.

l. LOW TEMPERATURE: THE MOTOR SHALL EXHIBIT NO FAILURE OR DEGRADATION OF PERFORMANCE WHEN TESTED IN ACCORDANCE WITH MIL-STD-810, METHOD 502.2, PROCEDURE I.

m. TEMPERATURE SHOCK: WHEN TESTED IN ACCORDANCE WITH MIL-STD-810, METHOD 503.2, **OVER THE STORAGE TEMPERATURE RANGE, THE** MOTOR SHALL EXHIBIT NO FAILURE OR DEGRADATION OR PERFORMANCE.

n. FUNGUS RESISTANCE: THE MOTOR SHALL OPERATE WITHOUT DEGRADATION OF PERFORMANCE AFTER EXPOSURE TO FUNGI FOR A PERIOD OF 60 DAYS IN ACCORDANCE WITH MIL-STD-810, METHOD 508.3.

o. SALT FOG: THE MOTOR SHALL EXHIBIT NO FAILURE OR DEGRADATION OF PERFORMANCE DURING AND AFTER EXPOSURE TO SALT FOG FOR A PERIOD OF 500 HOURS IN ACCORDANCE WITH MIL-STD-810, METHOD 509.2, PROCEDURE I. THE MOTOR SHALL BE MOUNTED ON A DRIVE MECHANISM WITH MATING CONNECTOR IN PLACE FOR THIS TEST.

p. SAND AND DUST: THE MOTOR SHALL OPERATE WITHOUT DEGRADATION OF PERFORMANCE DURING AND AFTER EXPOSURE TO SAND AND DUST IN ACCORDANCE WITH MIL-STD-810, METHOD 510.2, PROCEDURE I. THE MOTOR SHALL BE MOUNTED ON A DRIVE MECHANISM WITH THE MATING CONNECTOR IN PLACE FOR THIS TEST.

q. VIBRATION: THE MOTOR SHALL OPERATE DURING AND AFTER EXPOSURE TO VIBRATION LEVELS PER MIL-STD-810, METHOD 514.3, PROCEDURE I.

r. EMI SUPPRESION: MOTOR TO MEET THE REQUIREMENTS OF MIL-STD-461, CLASS C1, GROUP 1.

S. SHAFT END PLAY SHALL NOT EXCEED .006.

3. ACCEPTANCE CRITERIA:

(M102)

a. SUBMERSION: THERE SHALL BE NO EVIDENCE OF LEAKS OR SEEPAGE AFTER SUBMERSION IN 1 FOOT OF WATER AT AMBIENT TEMPERATURE WHEN PRESSURIZED TO 6.5-8 PSI FOR 1 MINUTE EXCEPT AT SHAFT SEAL. SHAFT SEAL LEAKAGE SHALL NOT EXCEED FIFTEEN (15) BUBBLES DURING THE ONE (1) MINUTE SUBMERGENCE TEST.

b. ALL CONTACTS TO BE INSTALLED INTO CONNECTOR. ALL NONWIRED CONTACTS IN CONNECTOR TO HAVE 96906-MS27488-16 SEALING PLUGS INSTALLED.

NOMINAL CHARACTERISTICS			
CONDITIONS		PARAMETERS	
APPLIED VOLTAGE (VDC)	LOAD TORQUE (IN-OZ)	SHAFT SPEED (RPM)	MOTOR CURRENT (A) MAX
24	300	2730±270	48
24	200	3000 MIN	40

ELECTRICAL CONNECTION			
DIRECTION	VOLTAGE AT CONNECTOR PIN		
	A	C	E
CW	POS	GND	——
CCW	——	GND	POS

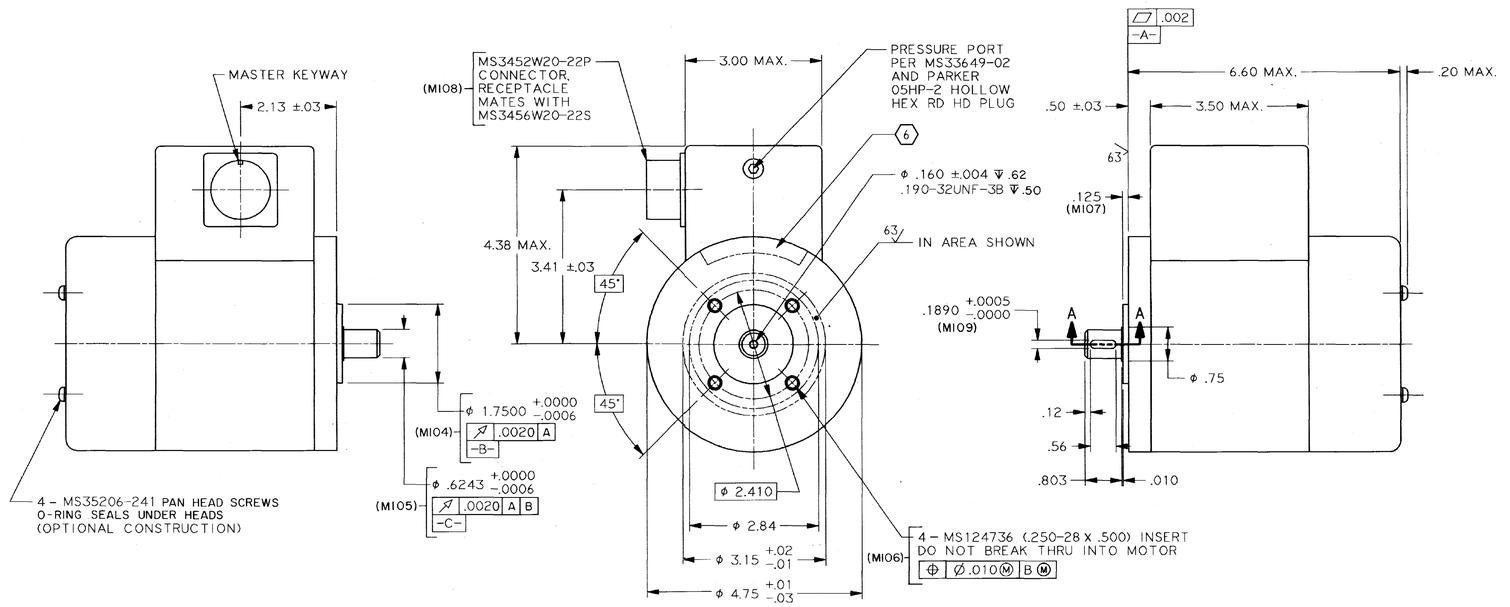
4. CERTIFICATION CRITERIA:

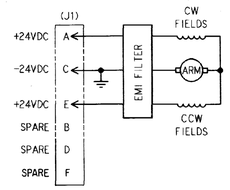
(M103)

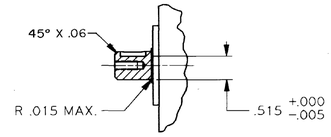
a. FINISH: CHEMICAL FILM PER MIL-C-5541 **FOR ALUMINUM ALLOYS, CADMIUM PLATE PER QQ-P-416, TYPE II, CLASS 2 FOR STEEL, PASSIVATE PER QQ-P-35 FOR CORROSION RESISTANT STEEL.**

b. SHAFT MATERIAL: STEEL, CORROSION RESISTANT TYPE 303 CONDITION ANNEALED PER ASTM A582.

c. DISSIMILAR METALS: PROTECTION IN ACCORDANCE WITH MIL-STD-171, PARAGRAPH 4.7 SHALL BE PROVIDED.







SECTION A-A

5. ONLY THE ITEM DESCRIBED ON THIS DRAWING WHEN PROCURED FROM THE VENDOR(S) LISTED HEREON IS APPROVED BY THE NAVAL SEA SYSTEMS COMMAND FOR USE IN THE APPLICATION(S) SPECIFIED HEREON. A SUBSTITUTE ITEM SHALL NOT BE USED WITHOUT PRIOR TESTING AND APPROVAL BY NAVSEA.

IDENTIFICATION OF THE APPROVED SOURCE(S) HEREON IS NOT TO BE CONSTRUED AS A GUARANTEE OF PRESENT OR CONTINUED AVAILABILITY AS A SOURCE OF SUPPLY FOR THE ITEM DESCRIBED ON THIS DRAWING.

APPROVED SOURCE(S) OF SUPPLY		
VENDOR	CAGE CODE	VENDORS ITEM IDENT. NO.
ELECTRO-MECH. INC. 2600 S. CUSTER WICHITA, KS 67217-1324	54395	48-9-2 (REV C)

⑥ APPLY PART NUMBER AND SERIAL NUMBER BY METAL STAMP IN APPROXIMATE AREA SHOWN .12 HIGH CHARACTERS IN ACCORDANCE WITH MIL-STD-130: 53711-6288939 AND SERIAL NUMBER.

7. QUALITY ASSURANCE REQUIREMENTS (QAR):

A. GENERAL QAR 2589142 APPLIES.

B. CLASSIFICATION OF CHARACTERISTICS:
MAJOR AQL 2.5 %
M101 THRU M109

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6289572	UGWS	UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES ON ANGLES ±2° DECIMALS .XX ± .01 .XXX ± .005	CONTRACT NO. N00024-86-C-2024 FSCM 12237 CADILLAC GAGE CO 2560 GROESBECK WARREN, MICH 48089	SOURCE CONTROL DRAWING NAVAL SEA SYSTEMS COMMAND WASHINGTON D.C. 20362	
NEXT ASSY	USED ON	MATERIAL ——	APPROVED		
APPLICATION		MAT'L INSP —— WELD INSP —— MRP INSP ——	PREPARED C. ZAGACKI 87-03-09	MOTOR, D.C.	
		APPROVED BY NAVSEA	CHECKED J. FRANKLIN 87-04-13		
			ENGINEER E. CAMPBELL 87-04-13		
			ACCEPTED BY NAVSEA (SIGNATURE DOES NOT DENOTE APPROVAL)	SIZE K	FSCM NO. 53711
			CODE ONLY IF IDENTIFYING DOES NOT PRODUCT OF MANUFACTURER AND ITEM)	SCALE 1/1	DRAWING NO. 6288939
				UNIT WT. —— LB	SHEET 1 OF 1

DWG NO.	SHT	REV
6288939	1	B

39670