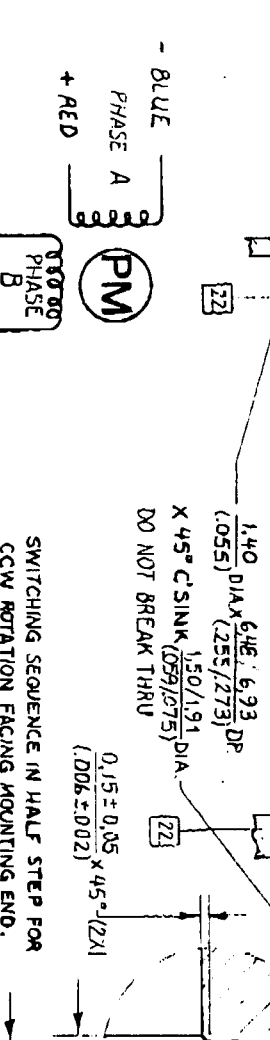
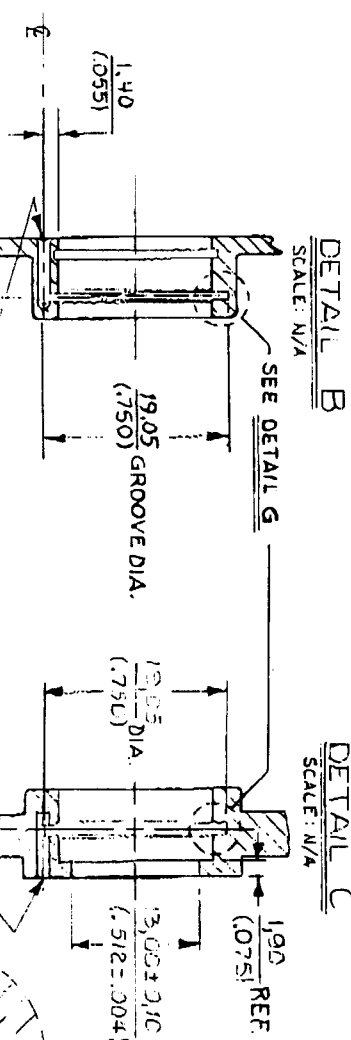


11/23/83

SPECIFICATIONS:	2 PHASE BIPOLAR	ROTOR INERTIA:	20 G-CM <sup>2</sup> (.28 MOISSI NOM.)
STEPS PER REVOLUTION:	200 (400 HALF STEPS)	HOLDING TORQUE:	79.1 ± 10.8 G-CM (17.1 ± 2.3 IN-OZ)
STEP ANGLE:	1.8° (0.9° PER HALF STEP)	DETENT TORQUE:	36 G-CM (1.5 OZ-IN) NOM.
STEP TO STEP ACCURACY (NOTES 1, 2):	± 6% (HALF STEP)	PULL OUT TORQUE:	345 ± 72 G-CM (4.9 ± 1.0 IN-OZ) MIN.
POSITIONAL ACCURACY (NOTES 1, 3):	± 6% (HALF STEP)	BEARINGS:	A151 52/100 STEEL DR. EA. DIV. 20
DC PHASE RESISTANCE:	28 Ω ± 10% AT 25°C	INSULATION CLASS:	B MIN.
PHASE INDUCTANCE:	25 ± 4 mH @ 1 KHZ	AMBIENT TEMP. RANGE:	4 TO 50 °C (OPERATING)
PHASE VOLTAGE:	6.0 VDC	WEIGHT:	.28 KG (10 OZ) NOMINAL
PHASE CURRENT:	.220 A (CONT.)	STORAGE TEMP. RANGE:	-40 TO 60 °C
SHAFT RUNOUT:	SEE SHEET 1 THR. MAX. MEASURED	HYSTeresis:	BETWEEN +20% & 7.0% OF HALF STEP
1.27 (.050) FROM OUTPUT SHAFT END.		STEP POSITION REPEATABILITY:	± 1% OF HALF STEP.
RADIAL PLAY: NOTE III	0.013 (.0005) MAX. BEFORE R.T.V. IS USED.	RELATIVE HUMIDITY:	8 TO 80%
END PLAY: NOTE I (LOAD APPLIED TO END OF OUTPUT SHAFT. SEE SHEET 1)			



STEP	BLUE PHASE	RED PHASE	WHITE PHASE	YELLOW PHASE
0	-	+	+	-
1	+	-	+	-
2	+	-	-	+
3	-	+	-	+
4	-	+	+	-

STEP	YEL 1	WHT 2	BLU 3	RED 4
0	-	+	-	+
1	-	+	OFF	OFF
2	OFF	OFF	+	+
3	OFF	OFF	+	+
4	+	+	+	+
5	+	+	OFF	OFF
6	+	+	+	+
7	OFF	OFF	+	+
8	-	+	-	+

DWG	RDE	11-11-83	SCALE:	2 to 1
CHKD	MJK	11-16-83		
APVD	JK	12-6-84		
APVD		54/104-001		
		REV. A		
		54/104-001		
		REV. PH185		
HEAT TREAT				
TITLE				
MOTOR OUTLINE				
DWG. NO. 5017-935				
SHEET 2 OF 2				

5017-935

- NOTES:
1. MEASUREMENTS MADE AT RATED CURRENT EACH PHASE.
  2. BETWEEN ANY TWO ADJACENT STEP POSITIONS.
  3. MAXIMUM ERROR IN 360°.
  4. HI POT AC: 500V/1 MINUTE BETWEEN LEAD & FRAME.
  5. LEADS: 4 AWG 26 .7 STRAND MIN. UL AND CSA APPROVED. PVC INSULATION.
  6. INSULATION RESISTANCE: 100 MΩ MIN. AT 500 VDC BETWEEN WINDING & FRAME.
  7. MOTOR IS TO BE DRIVEN BIPOLAR.
  8. USE 5T-425 DRIVER WITH 12 VDC POWER SUPPLY.
  9. END BELLS, SWIRLED IRON C 10 6.2 GM/CC (.224 LB/IN<sup>3</sup>) DENSITY.
  10. SHAFT MOVEMENT TO BE 0.0025 (0.001) TO 0.025 (1.001) INDIRECTION SHOWN WITH 1.36 KG (3.18 LB) LOAD. SHAFT MUST RETURN TO WITHIN 0.005 (0.002) OF ORIGINAL POSITION WHEN LOAD IS REMOVED.
  11. THE NET DISPLACEMENT OF THE SHAFT SHALL BE ≤ 0.0015 (0.00065) AFTER APPLYING & REMOVING A 1.36 KG (3.18 LB) LOAD AT POINTS [1] 180° APART.
  12. DO NOT BREAK THRU OR SEAL INSIDE.
  13. SHAFT: RB80 MIN. A151 303 STAINLESS STEEL.
  14. MAX DIAGONAL - REAR END BEVEL - FRONT OPTIONAL (2X)
  15. AT 300 HALF SPS. 12 V POWER SUPPLY, 20Ω SERIES RESISTOR. USE HALF STEP SEQUENCE.
  16. USE GENRAD 1657 DIGIBRIDGE OR EQUIVALENT.
  17. SWINGOUT GR-103 (BLACK) BLACK OXIDE TREATED W/ CASTROL DW-924 DEMATERING AGENT.
  18. 2 (TWO) PHASES ON AT RATED CURRENT, EACH PHASE FULL STEP.
  19. ALL EXTERIOR SURFACES SHALL BE FREE OF NON-DRY OIL OR GREASE. ANY CONTAMINANTS ON THESE SURFACES MUST BE REMOVABLE BY PRESSURIZED AIR.
  20. BEACON 325 WITH 20% FILL. ABC 3, SHIELDED, BALLS.
  21. LABEL TO INCLUDE AMP PIN AND REV. LEVEL.
  22. CENTERLINE OF GROOVE SHALL BE LOCATED AT CENTER OF BEARINGS WIDTH ± 0.5 (0.02) PROVIDING BEARING FLAT DIMENSION ≥ 3.56 (1.40).
  23. O.D. OF BEARING TO BE FREE OF LOOSE PARTICLES, GREASE, DIRT OR OTHER CONTAMINATION FOR R.T.V. PROCESS.
  24. PARTS SHALL BE PACKAGED SUCH THAT A 1.07 (4.2) DROP TO A HARD SURFACE WILL NOT CAUSE ANY DAMAGE EITHER FUNCTIONAL OR COSMETIC.
  25. THE FOLLOWING CONDITIONS MUST BE WITHSTOOD FOR TWO (2) WEEKS WITHOUT FORMATION OF VISIBLE RUST OR CORROSION ON ANY EXTERNAL PARTS. AMBIENT TEMP.: 60°C. RELATIVE HUMIDITY: 80%.
  26. FLATNESS - FRONT FACE OF THE MOTOR SHALL BE FLAT WITHIN 50 μm (.002 IN) WHEN CLAIMED TO A FLAT SURFACE WITH 2 MOUNTING SCREWS AT 115 N·m (10 N·ft) TORQUE.

DWG NO.	DESCRIPTION	DATE	REV
1767	SEE BCON	12-6-84	B
1533		11-21-82	A
1533		11-11-83	

APPROVED MOTOR MANUFACTURER, INC.  
 80015 VALLEY, CA 95008

MATERIAL NOTES: 9, 13.

FINISH SEE NOTE 17 OR ENGINEER APPROVED EQUIVALENT.

