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# REQUIREMENTS:

## 1. GENERAL:

- INTERPRET DRAWING IN ACCORDANCE WITH THE STANDARDS PRESCRIBED BY MIL-D-70327.
- UNITS SHALL CONFORM TO THE REQUIREMENTS OF MIL-C-15305 TYPE LT4K, GRADE 1, CLASS B AS MODIFIED BY THE REQUIREMENTS OF THIS DRAWING.
- SUPPLIER SHALL CONFORM TO THE QUALITY ASSURANCE PROVISIONS CONTAINED IN ND 1015404, CLASS 2.
- UNITS SHALL BE CAPABLE OF MEETING THE QUALIFICATION REQUIREMENTS OF ND 1002060 EXCEPT THAT IMMERSION PER MIL-C-15305 SHALL BE METHOD A (NO SALT).
- UNITS SHALL BE PERMANENTLY AND LEGIBLY MARKED, PER ND 1002019, WITH THE INDUCTANCE VALUE RANGE, DC RESISTANCE, AND NASA PART NUMBER (DRAWING NUMBER AND REVISION LETTER).
- PREPARATION FOR DELIVERY SHALL BE IN ACCORDANCE WITH ND 1002215, CLASS I, CODE 1.

- MARKING OF SHIPPING CONTAINERS SHALL CONFORM TO THE MARKING OF UNIT AND INTERMEDIATE PACKAGES AND THE METHODS OF MARKING AS SPECIFIED IN ND 1002215.

## 2. ACCEPTANCE AND INSPECTION: (100% UNLESS OTHERWISE SPECIFIED)

### A. MECHANICAL PROPERTIES:

- DIMENSIONS: AS DELINEATED HEREIN.
- LEAD MATERIAL: WELDABLE, GOLD PLATED IRON-NICKEL ALLOY (DUMET) PER ND 1015401. MATERIAL SHALL BE CERTIFIED WITH EACH SHIPMENT. THE EXPOSED PORTION OF THE LEADS SHALL BE FREE OF SOLDER.
- TORQUE:
  - STARTING: 0.1 IN OZ MINIMUM
  - PREVAILING: 2.5 IN OZ MAXIMUM
  - MAXIMUM TORQUE: UNIT SHALL BE CAPABLE OF WITHSTANDING 3.5 IN OZ MAX. WITH THE TUNING SLUG AT EITHER STOP. UTMOST CARE SHOULD BE USED NOT TO EXCEED THIS LIMIT.

### B. ELECTRICAL CHARACTERISTICS:

- INDUCTANCE TUNING RANGE: FROM 8 MICROHENRIES TO 15 MICROHENRIES AT 2.0 MEGACYCLES  $\pm 1\%$  USING A BJONTON 260A Q METER (OR EQUIVALENT) WITH A 420 PF OR 790 PF  $\pm 5\%$  ARCO ELECTRONICS DUN-MICA CAPACITOR (OR EQUIVALENT) IN PARALLEL WITH THE COIL. 420 PF AT 15 MH AND 790 PF AT 8 MH.
- Q-FACTOR: 30 MIN AT 8 MICROHENRIES AND 50 MIN AT 15 MICROHENRIES USING THE SAME EQUIPMENT SPECIFIED IN PARAGRAPH 2.B.(1).
- DC RESISTANCE: 1.9 OHMS MAX.
- RESONANT FREQUENCY: 15 MEGACYCLES MINIMUM.
- INDUCTANCE - TEMP COEF:  $\pm 150$  PPM/C° FROM 0°C TO +70°C. TEST ONE (1) SAMPLE PER LOT
- TEST VOLTAGE: 100 VRMS BETWEEN WINDING AND THE TUNING SLUG WHEN IN THE MAXIMUM INDUCTANCE POSITION.
- DISTRIBUTED CAPACITANCE: (TWO (2) FREQUENCY METHOD)
  - 8 PICO FARADS  $\pm 5\%$  AT 15 MICROHENRIES
  - 7.3 PICO FARADS  $\pm 5\%$  AT 11 MICROHENRIES
  - 7.2 PICO FARADS  $\pm 5\%$  AT 8 MICROHENRIES

PROCURE ONLY FROM APPROVED SOURCES LISTED IN ND 1002034 FOR THIS DRAWING.

## C. VENDOR SUPPLIED DATA: EACH SHIPMENT SHALL BE ACCOMPANIED BY THE FOLLOWING DATA:

- CERTIFICATE OF COMPLIANCE TO ND 1015404.
- CERTIFICATE OF COMPLIANCE WITH LEAD MATERIAL.
- CERTIFICATE OF COMPLIANCE WITH SPECIAL CONDITIONING.
- TEST DATA FROM SPECIAL CONDITIONING.

## 3. DESIGN:

- OPERATING LIFE: 2000 HOURS MINIMUM AT MAXIMUM CURRENT AND TEMPERATURE RATINGS. THE ADJUSTMENT SCREW SHALL BE CAPABLE OF 100 CYCLES OF OPERATION. ONE CYCLE EQUALS ADJUSTMENT ALL THE WAY IN AND ALL THE WAY OUT.
- CONSTRUCTION: PLASTIC CASE WITH AN ALUMINUM (LEAD SCREW) TUNING SHAFT WHICH CONTROLS THE BONDED FERROUS SLUG. THE UNIT SHALL HAVE AN ADEQUATE "O" RING SEAL ON THE TUNING SHAFT TO PREVENT POTTING AND MOISTURE PENETRATION.
- OPERATING TEMPERATURE RANGE: 0°C TO +70°C.
- CURRENT RATING (MAXIMUM): 450 MILLIAMPERES. UNDER THIS CONDITION THE TEMPERATURE RISE WILL BE 35°C SO THE AMBIENT SHOULD NOT EXCEED 70°C.

- LEAD FATIGUE: EACH LEAD SHALL BE CAPABLE OF MEETING THE PULL AND BEND TEST, HOWEVER THE SAME LEAD SHALL NOT BE TESTED FOR BOTH. NO MECHANICAL DAMAGE OR LACK OF ELECTRICAL PERFORMANCE SHALL BE EVIDENCED AFTER THE TEST.

PULL TEST: AN AXIAL PULL OF FOUR (4) POUNDS MINIMUM.

BEND TEST (DISCARD TESTED UNITS): HOLD THE COMPONENT IN SUCH A MANNER THAT A TWO (2) POUND WEIGHT MAY BE SUSPENDED IN AN AXIAL DIRECTION FROM THE LEAD UNDER TEST. THE BEND CYCLE (ONE (1) CYCLE REQUIRED) SHALL BE ACCOMPLISHED BY MOVING THE BODY OF THE UNIT, WHILE IN THE SAME PLANE, THROUGH 90° IN ONE DIRECTION, THEN BACK 180° IN THE OPPOSITE DIRECTION AND BACK 90° TO THE ORIGINAL POSITION.

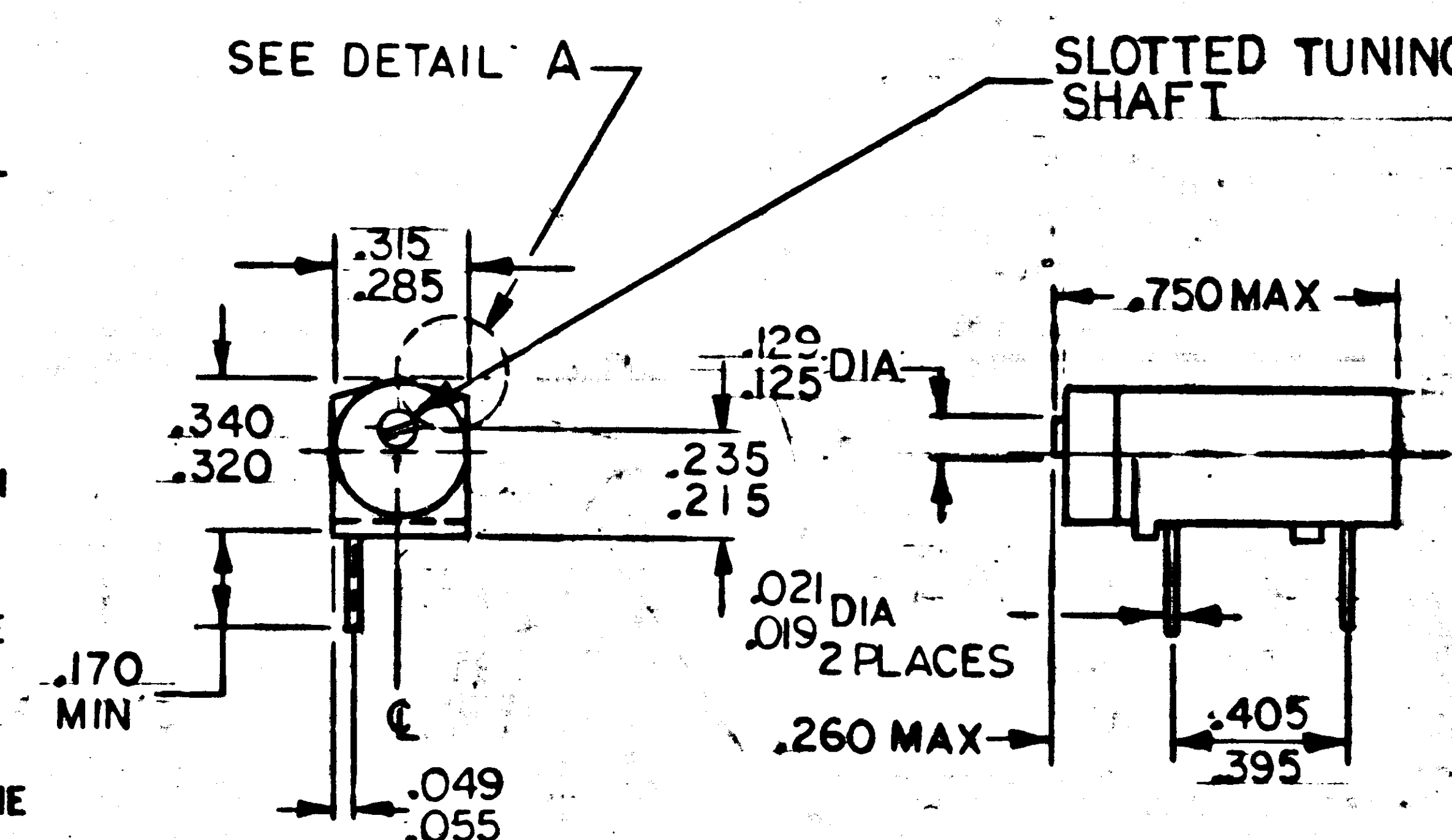
## 4. SPECIAL CONDITIONING: EACH LOT SHALL BE TEMPERATURE CYCLED BY THE VENDOR AND TEST DATA SUPPLIED WITH EACH SHIPMENT.

STEP 1 MEASURE AND RECORD THE INDUCTANCE AND Q AT THE MID RANGE VALUE.

STEP 2 PERFORM SIX (6) CYCLES OF 125°C FOR 30 MIN, 25°C FOR 15 MIN, -55°C FOR 30 MIN. AFTER THE 6TH CYCLE PERFORM AN ADDITIONAL 125°C FOR 30 MIN AND THEN WITHIN 2 MIN MEASURE INDUCTANCE AND Q. THE Q SHOULD BE WITHIN SPECIFIED LIMITS AND THE INDUCTANCE SHOULD BE WITHIN 10% OF THE ORIGINAL VALUE. PERFORM THE SEVENTH -55°C CYCLE AND WITHIN 1/2 HOUR THE INDUCTANCE SHOULD BE WITHIN 5% AND THE Q SHOULD BE WITHIN THE SPECIFIED LIMIT.

CAUTION SEE NOTE 2A(3)

REVISIONS					
SYM	ZONE	DESCRIPTION	DR	CHK	DATE
		INITIAL RELEASE CLASS A PER TDRR			5-26-65
A		REVISED PER TDRR 20880			7-20-65
B		REVISED PER TDRR 21863			9/15/65



DETAIL A

MASTER

QTY REQD	PART OR IDENTIFYING NO.	MATERIAL OR NOTES	NOMENCLATURE OR DESCRIPTION	FIND NO.
LIST OF MATERIALS				
MIT INSTRUMENTATION LAB CAMBRIDGE, MASS.		MANNED SPACECRAFT CENTER HOUSTON, TEXAS		
DRAWN <i>[Signature]</i> 10/26/65		COIL, VARIABLE		
CHECKED <i>[Signature]</i> 10/26/65		SPECIFICATION CONTROL DRAWING		
APPROVED <i>[Signature]</i> 10/26/65		CODE IDENT NO. 80230		
APPROVED MIT <i>[Signature]</i> 5/26/66		SIZE C		
APPROVED MSC <i>[Signature]</i> 5/26/66		DRAWING NO. 1006324		
DATE		SCALE NONE		SHEET 1 OF 1