

1.0 INITIAL SET-UP

- 1.1 ENSURE A SAFETY (RED) WARNING LIGHT IS PLACED AT THE FAR END OF THE UNIT BEING TESTED TO PREVENT CONTACT BY CASUAL OBSERVERS DURING TESTING.
- 1.2 THE UNIT BEING TESTED SHOULD BE INSULATED FROM GROUND IF POSSIBLE.
- 1.3 ENSURE ALL LEADS OF THE UNIT BEING TESTED ARE INSULATED FROM GROUND AND EACH OTHER. BEFORE CONNECTING THE HIPOT TESTER TO THE AC POWER SOURCE, ENSURE THAT THE FOLLOWING STEPS ARE ACCOMPLISHED:
 - A) THE MAIN POWER SWITCH IS TURNED TO THE 'OFF' POSITION.
 - B) TURN THE BYPASS/METERED SWITCH TO 'METERED'.
 - C) SET THE HI/LOW SWITCH TO THE 'LOW' POSITION.
 - D) TURN THE HIGH VOLTAGE ON/OFF SWITCH TO 'OFF'.
 - E) TURN MICROAMPERE CONTROL KNOB TO THE '20' SCALE OR TO THE SCALE SPECIFIED BY THE APPLICABLE TRAVELER OR VENDOR/REQUISITIONER DOCUMENTATION.
 - F) TURN THE VOLTAGE ADJUSTMENT CONTROL FULLY 'COUNTER-CLOCKWISE'.

2.0 TESTING PROCEDURE

- 2.1 CONNECT THE HIPOT TESTER TO THE AC POWER SOURCE.
- 2.2 CONNECT THE BLACK LEAD TO A SUITABLE GROUND OR THE SECOND NAMED CIRCUIT ELEMENT IN THE TEST SPECIFICATIONS (IF GROUND IS NOT SPECIFIED AS ONE OF THE CIRCUIT ELEMENTS).
- 2.3 CONNECT THE POWER LEAD (HIGH VOLTAGE/RED) TO THE FIRST NAMED CIRCUIT ELEMENT ON THE UNIT BEING TESTED.
- 2.4 TURN THE MAIN POWER SWITCH TO 'ON'. THE MICROAMPERE METER WILL SURGE AND RETURN TO ZERO.
- 2.5 TURN THE HIGH VOLTAGE SWITCH TO 'ON'.
- 2.6 PRIOR TO TURNING THE VOLTAGE KNOB 'CLOCKWISE', ADJUST THE HI/LOW SWITCH TO ENSURE THAT THE REQUIRED VOLTAGE WILL BE OBTAINED.

REV.	DESCRIPTION	DRAWN	DATE
		APPD.	DATE

UNLESS OTHERWISE SPECIFIED			ORIGINATOR	W. ISIMINGER	9/17/93
FRACTIONS	DECIMALS	ANGLES	DRAWN	L. SMITH	8/8/96
			CHECKED	<i>[Signature]</i>	8/8/96
1. BREAK ALL SHARP EDGES 1/64 MAX. 2. DONOT SCALE DWG. 3. DIMENSIONING IN ACCORD WITH ANSI Y14.5 STD's.			APPROVED	<i>[Signature]</i>	8/8/96
			USED ON	N/A	
<input checked="" type="checkbox"/> MAX. ALL MACHINED SURFACES			MATERIAL-	N/A	
 FERMI NATIONAL ACCELERATOR LABORATORY U.S. DEPARTMENT OF ENERGY					
TS/MAGNET DESIGN & FABRICATION ELECTRICAL INSPECTION PROCEDURE D.C. VOLTAGE HIPOT TEST					
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2.0 TESTING PROCEDURE (con't)

2.7 WHILE SLOWLY TURNING THE HIGH VOLTAGE KNOB 'CLOCKWISE' TO THE REQUIRED VOLTAGE, OBSERVE THE FOLLOWING PRECAUTIONS:

- A) WATCH THE MICROAMPERE METER WHILE INCREASING THE VOLTAGE TO ENSURE THAT THE MAXIMUM MICROAMPERE LEAKAGE FOR THE UNIT IS NOT EXCEEDED. (THIS IS USUALLY SPECIFIED AS 5 MICROAMPERES.)
- B) STOP INCREASING THE VOLTAGE IF THE MICROAMPERE MAXIMUM SPECIFIED FOR THE UNIT BEING TESTED IS REACHED. (THIS PREVENTS THE POSSIBILITY OF CREATING CARBON PATHS.)
- C) IF THE MICROAMPERE METER JUMPS TO FULL SCALE, IMMEDIATELY REDUCE THE VOLTAGE TO ZERO. SHORT THE UNIT BEING TESTED TO GROUND AND NOTIFY YOUR SUPERVISOR. RECORD THE EVENT WITH THE WORD "BREAKDOWN".
- D) RECORD THE VOLTAGE AND THE MICROAMPERE READINGS IN THE APPLICABLE TRAVELER OR VENDOR/REQUISITIONER DOCUMENTATION.
- E) IF THE VOLTAGE AND THE MICROAMPERE READINGS ARE NOT WITHIN THE SPECIFIED LIMITS, INITIATE A DISCREPANCY REPORT.

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3.0 POST TESTING PROCEDURE

3.1 AFTER TESTING EACH POSITION, USE THE FOLLOWING PROCEDURE TO SHORT (OR DISCHARGE) THE UNIT UNDER TEST:

- A) TURN THE VOLTAGE CONTROL KNOB TO 'ZERO'.
- B) TURN THE HIGH VOLTAGE SWITCH TO 'OFF'.
- C) ATTACH A JUMPER LEAD BETWEEN THE BLACK (GROUND-LEAD) ATTACH POINT AND THE RED (POWER-LEAD) ATTACH POINT.
- D) LEAVE THE JUMPER IN PLACE FOR AT LEAST THIRTY SECONDS.

3.2 UPON COMPLETION OF THE HIPOT TESTING OF ALL REQUIRED POSITIONS, DISCONNECT ALL LEADS AND PERFORM THE FOLLOWING STEPS:

- A) PLACE THE HIGH VOLTAGE SWITCH AND POWER SWITCH IN THE 'OFF' POSITION.
- B) CONNECT JUMPER LEADS FROM ALL PREVIOUSLY ENERGIZED COIL ELEMENTS TO A COMMON GROUND POINT. (THIS WILL DISCHARGE ALL THE COIL ELEMENTS.)
- C) LEAVE THE JUMPERS IN PLACE FOR TWO MINUTES BEFORE DISCONNECTING.

WARNING:

PREVIOUSLY DISCHARGED COIL ELEMENTS MAY HAVE BEEN RE-CHARGED BY CAPACITIVE COUPLING TO THE COIL ELEMENTS TESTED LATER IN THE TEST.

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