



# **OPERATING INSTRUCTIONS**

## **For GT Series Grounding Assembly Tester**

1. Make sure the current control knob is turned fully counter clockwise to zero.
2. Install the test studs into the threaded terminals provided on the sides of the tester.
3. Plug the power cord into any 115V AC outlets rated at 20 amperes or higher.
4. Measure the grounding jumper to the nearest foot. For lengths not shown on the chart, round to the nearest foot. For lengths no shown on the chart, round to the nearest length. For a more conservative test, always round down.
5. Clamp the grounding jumper to the test studs, making sure clamps are properly tightened. See diagrams for preferred cable configurations.
6. Turn the power switch to the "ON" position.
7. While observing the digital ammeter, slowly turn the current control knob clockwise until the current in the test cable reaches its rated ASTM value (based on the cable diameter) provided on the table.
8. Observe the voltage reading on the digital volt meter. Compare this reading to the voltage values in voltage drop table for the length and size of cable being tested.

9. If the voltage reading is equal to or less than that specified in the table, the grounding jumper passes the test.
10. Rotate the current control knob full counter clockwise to the zero position before removing clamps.
11. Grounding jumpers failing the test must be disassembled for inspection, cleaning, tightening, and/or terminal replacement. If the grounding jumper fails the retest after maintenance is performed, the grounding jumper should be removed from service and disposed of to prevent further use.
12. To insure maximum cooling of the power transformers, do not turn unit off between test(s).

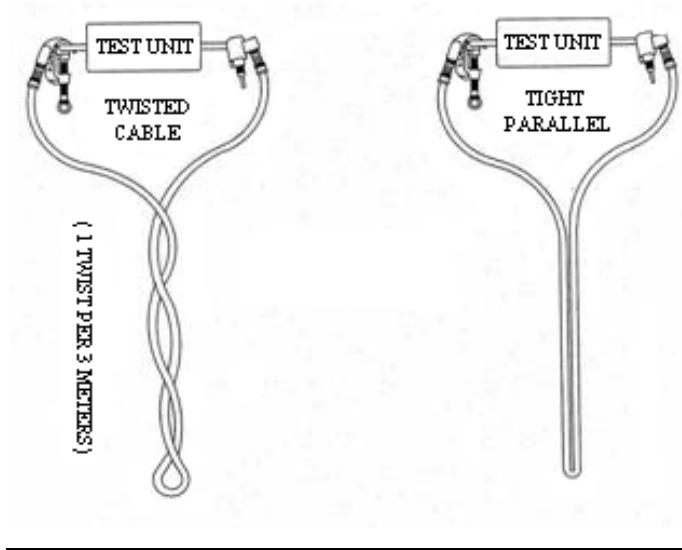
**IF THE DUTY CYCLE IS EXCEEDED, THE UNIT WILL AUTOMATICALLY SHUT DOWN AND WILL NOT RESTART UNTIL THE TRANSFORMERS COOL DOWN. CONSISTENTLY EXCEEDING THE DUTY CYCLE MAY RESULT IN DAMAGE TO THE GROUNDING ASSEMBLY TESTER.**

## **WARNING!**

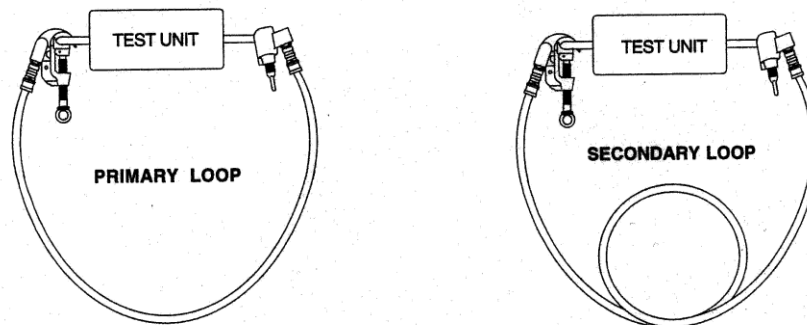
If the grounding jumper being tested has defects, the defective area can get hot in a matter of seconds and could cause burns if touched. The operator of the tester should wear proper hand protection when handling grounding jumpers during testing.

# Cable Configurations

## PREFERRED CONFIGURATIONS



## AVOID THESE CONFIGURATIONS



# Testing with Volt Meter Leads

## GT400HDXLVMA

1. Follow steps 1 thru 9 in the operating instructions to test the entire ground jumper assembly.
2. Plug the volt meter leads into the receptacles on the face plate of the unit.
3. Move the voltmeter toggle switch on the face plate toward the voltmeter leads.
4. From the bottom of the volt drop table find the C&F value for the cable gauge being tested, i.e. 2/0 cable = 0.051 volts.
5. With the volt meter leads, measure between the test electrode and the cable stranding just below the ferrule connector (requires puncturing the cable jacket/heat shrink).
6. If the voltage drop shown is equal to or less than the C&F value shown in the voltage drop chart, this C&F section passes the test.
7. Repeat step 5 on other C&F section.
8. For C&F sections that do not pass the test, disassemble for inspection, cleaning, tightening, and/or ferrule/clamp replacement.
9. Retest after maintenance or repairs are made.
10. If C&F section fails the retest after maintenance is performed, the grounding jumper should be removed from service and disposed of to prevent further use.



**Bierer & Associates Inc. has established guidelines for the maximum voltage drop allotted a grounding assembly tester based on ASTM F2209-43. It is up to each utility to review and determine if these guidelines follow their criteria for providing personal protection for their workers.**

ASTM F2249-03

**Cable Size and Applied Amperage**

GT600 only

Cable length (feet)	#2 165	1/0 250	2/0 300	4/0 400	250MCM 450
4.0	0.18	0.22	0.24	0.28	0.31
4.5	0.20	0.24	0.26	0.30	0.32
5.0	0.21	0.25	0.27	0.31	0.33
5.5	0.22	0.26	0.28	0.32	0.35
6.0	0.24	0.28	0.30	0.34	0.36
6.5	0.25	0.29	0.31	0.35	0.37
7.0	0.26	0.30	0.32	0.36	0.39
7.5	0.28	0.32	0.34	0.37	0.40
8.0	0.29	0.33	0.35	0.39	0.41
8.5	0.31	0.34	0.36	0.40	0.42
9.0	0.32	0.36	0.38	0.41	0.44
9.5	0.33	0.37	0.39	0.39	0.42
10	0.35	0.38	0.40	0.44	0.46
11	0.37	0.41	0.43	0.46	0.49
12	0.40	0.44	0.46	0.49	0.52
13	0.43	0.47	0.49	0.51	0.54
14	0.46	0.49	0.51	0.54	0.57
15	0.48	0.52	0.54	0.57	0.59
16	0.51	0.55	0.57	0.59	0.62
17	0.54	0.58	0.59	0.62	0.65
18	0.57	0.60	0.62	0.64	0.67
19	0.60	0.63	0.65	0.67	0.70
20	0.62	0.66	0.67	0.69	0.72
22	0.68	0.71	0.73	0.74	0.78
24	0.73	0.77	0.78	0.80	0.83
26	0.79	0.82	0.84	0.85	0.88
28	0.84	0.88	0.89	0.90	0.93
30	0.90	0.93	0.94	0.95	0.99
32	0.96	0.99	1.00	1.00	1.04
34	1.01	1.04	1.05	1.05	1.09
36	1.07	1.10	1.11	1.10	1.14
38	1.12	1.15	1.16	1.15	1.19
40	1.18	1.21	1.21	1.20	1.25
42	1.23	1.26	1.27	1.26	1.30
44	1.29	1.32	1.32	1.31	1.35

(Continued)

ASTM F2249-03	<u>Cable Size and Applied Amperage</u>				GT600 only
Cable length (feet)	#2 165	1/0 250	2/0 300	4/0 400	250MCM 450
46	1.34	1.37	1.38	1.36	1.40
48	1.40	1.43	1.43	1.41	1.45
GT400 50	1.46	1.48	1.48	1.46	1.51
55	1.59	1.62	1.62	1.59	1.64
GT400HD 60	1.73	1.76	1.75	1.72	1.77
65	1.87	1.89	1.89	1.84	1.90
70	2.01	2.03	2.03	1.97	2.03
75	2.15	2.17	2.16	2.10	2.16
80	2.29	2.31	2.30	2.23	2.29
85	2.43	2.44	2.43	2.36	2.42
90	2.57	2.58	2.57	2.48	2.55
95	2.71	2.72	2.70	2.61	2.68
GT400HDXL 100	2.85	2.86	2.84	2.74	2.81
*C&F	0.028	0.042	0.051	0.068	0.076
*Volt Drop/Ft	0.028	0.027	0.027	0.026	0.026

\*For use with optional voltmeter leads, C&F = clamp and ferrule

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