



**TSG-3 Test Leads/  
CM-450 Leads**

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Visit us at [www.TestEquipmentDepot.com](http://www.TestEquipmentDepot.com)

	<p><b>Read and understand</b> all of the instructions and safety information in this manual before operating or servicing this tool.</p>
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Register this product at [www.greenlee.com](http://www.greenlee.com)

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**Description**

These test leads are intended for use in applications that are compatible with the Measurement Category, voltage, and current ratings given in the "Specifications" section. They are intended for use with instruments having 4 mm shrouded jacks compliant with IEC/UL/CSA 61010 requirements.

**Safety**

Safety is essential in the use and maintenance of Greenlee tools and equipment. This instruction manual and any markings on the tool provide information for avoiding hazards and unsafe practices related to the use of this tool. Observe all of the safety information provided.

**Purpose of This Manual**

This instruction manual is intended to familiarize all personnel with the safe operation and maintenance procedures for the Greenlee TSG-3 and CM-450 Test Leads.

Keep this manual available to all personnel. Replacement manuals are available upon request at no charge at [www.greenlee.com](http://www.greenlee.com).

	<p><b>Do not discard this product or throw away!</b> For recycling information, go to <a href="http://www.greenlee.com">www.greenlee.com</a>.</p>
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All specifications are nominal and may change as design improvements occur. Greenlee Textron Inc. shall not be liable for damages resulting from misapplication or misuse of its products.

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**Important Safety Information**

	<b>WARNING</b>
	<p><b>Read and understand</b> this material before operating or servicing this equipment. Failure to understand how to safely operate this tool could result in an accident causing serious injury or death.</p>

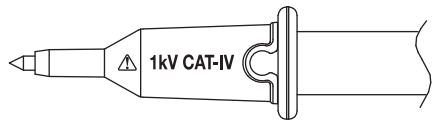
	<b>WARNING</b>
	<p>Electric shock hazard: Contact with live circuits could result in severe injury or death.</p>

	<b>WARNING</b>
<p>Electric shock and fire hazard:</p> <ul style="list-style-type: none"> <li>• Do not expose this unit to rain or moisture.</li> <li>• Do not use the unit if it is wet or damaged.</li> <li>• Use test leads or accessories that are appropriate for the application. See the category and voltage rating of the test lead or accessory.</li> <li>• Inspect the test leads or accessory before use. They must be clean and dry, and the insulation must be in good condition. Do not use the unit if the contrasting inner layer of insulation is visible.</li> <li>• Use this unit for the manufacturer's intended purpose only, as described in this manual. Any other use can impair the protection provided by the unit.</li> </ul> <p>Failure to observe these warnings could result in severe injury or death.</p>	

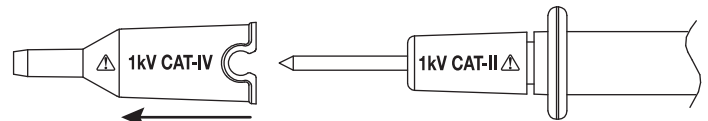
**KEEP THIS MANUAL**

*(continued on back side, column 1)*

Figure 1



Cap must be in place for measurement category III or IV applications.



Cap can be removed for measurement category I or II applications.

### Important Safety Information

#### ⚠ WARNING

Electric shock hazard:

- Do not apply more than the rated voltage between any two input terminals, or between any input terminal and earth ground.
- Do not contact the test lead tips or any uninsulated portion of the accessory.
- The test leads supplied with this product comply with IEC 61010-031:2008, UL 61010-031:2010 and CAN/CSA-C22.2 NO. 61010-031A-07—Amendment 1:2010. These safety standards limit the exposed length of the probe tip to 4 mm for measurement category III. These test leads include a cap that must be in place when used in measurement category III or IV applications. Refer to Fig. 1.

Failure to observe these warnings could result in severe injury or death.

#### ⚠ CAUTION

Electric shock hazard:

- Do not attempt to repair this unit. It contains no user-serviceable parts.
- Do not expose the unit to extremes in temperature or high humidity. Refer to "Specifications."

Failure to observe these precautions may result in injury and can damage the unit.

### Specifications

Measurement Category: Per UL 61010-031 and IEC 61010-031

With Caps: CAT IV 1000 V

Without Caps: CAT II 1000 V

Operating Conditions:

Temperature: -10 °C to 50 °C (14 °F to 122 °F)

Relative Humidity (non-condensing): 80% maximum for temperatures up to 31 °C (88 °F), decreasing linearly to 50% maximum at 50 °C (122 °F)

Altitude: 2000 m (6500') maximum

Indoor use only

Storage Conditions: -20 °C to 60 °C (-4 °F to 140 °F),

0% to 80% relative humidity (non-condensing)

Pollution Degree: 3

### Measurement Categories

These definitions were derived from the international safety standard for insulation coordination as it applies to measurement, control, and laboratory equipment. These measurement categories are explained in more detail by the International Electrotechnical Commission; refer to either of their publications: IEC 61010-1 or IEC 60664.

#### Measurement Category I

Signal level. Electronic and telecommunication equipment, or parts thereof. Some examples include transient-protected electronic circuits inside photocopiers and modems.

#### Measurement Category II

Local level. Appliances, portable equipment, and the circuits they are plugged into. Some examples include light fixtures, televisions, and long branch circuits.

#### Measurement Category III

Distribution level. Permanently installed machines and the circuits they are hard-wired to. Some examples include conveyor systems and the main circuit breaker panels of a building's electrical system.

#### Measurement Category IV

Primary supply level. Overhead lines and other cable systems. Some examples include cables, meters, transformers, and other exterior equipment owned by the power utility.

### Cleaning

Periodically wipe the leads with a damp cloth and mild detergent; do not use abrasives or solvents.

#### Lifetime Limited Warranty

Greenlee Textron Inc. warrants to the original purchaser of these goods for use that these products will be free from defects in workmanship and material for their useful life, excepting normal wear and abuse. This warranty is subject to the same terms and conditions contained in Greenlee Textron Inc.'s standard one-year limited warranty.

For all Test Instrument repairs, contact Customer Service at 800-435-0786 and request a Return Authorization.

For items not covered under warranty (such as items dropped, abused, etc.), a repair cost quote is available upon request.

For technical assistance: 800-435-0786