

Testing the Universal Motor...

Performing a few simple tests each time the tools are returned from service can more than pay for itself in reduced maintenance expense, and if done properly, insures the tool is electrically safe.

Visual

1. **Plug** - Insure ground pin is intact
2. **Cord** - Look for damage or cracks to the outer jacket.
3. **Strain Relief** - Verify strain relief is in place and functional.
4. **Labels** - Verify that all safety and performance labels are visible and readable.
5. **Attachments** - Note that the proper wrenches, chuck keys and similar attachments are provided.

Mechanical

1. **Guards** - Insure all safety guards are in place and in good condition.
2. **Brushes** - If the brushes are accessible, remove and verify they slide freely in their holders and that they are not less than one-half the original length.
3. **Cleaning** - Wipe off all oil, grease and dirt. Clean the vent holes so the motor can receive the cooling air it requires.

Electrical

The following tests can be performed on The Short Stop AC leakage current tester.

1. **Ground wire continuity** - On all metal-cased (not double-insulated) tools, verify that there is a quality electrical connection between the tool's case and the ground pin on the tool's plug.
2. **Short circuits** - If practical, test the tool for short circuits between the two current-carrying conductors and between these conductors and the metal case.
3. **Leakage current** - Verify that the leakage current from exposed metal parts of the tool to ground is one half milliamp or less.

Current Draw

With the tool free running, the current draw will normally be about one-half the name-plate rating. The exceptions will be those tools such as rotary hammers or electric breakers that drive a large gear train.

Excessive current draw by the tool indicates there is something stopping the armature from rotating freely. This might be a dry bearing, a bound gear or an electrical short in the motor. The result will be that the tool will overheat, shortening the insulation life and the life of the brushes, armature and switch.