THE STRENGTHS OF HOTRONIC'S FOOTWARMER POWER PLUS!

FOOTWARMER "m" SERIES SYSTEM CHECK

1. To perform System Check of complete FootWarmer "m" Series, ALL component parts of same FootWarmer MUST be available at same time. (2 Battery Packs, 1 Recharger, and 2 Heating Elements).

RECHARGER SELF-TEST

1. Plug Recharger into known, good, live, wall outlet using correct plug adapter (120V or 240V).
2. Recharger immediately performs Self-Test with brief Red LED followed by brief Green LED then LED Off.
3. Plug Recharger into outlet several times to confirm properly functioning Self-Test. Watch Recharger LEDs closely.
4. Does Recharger perform Self-Test properly?
5. ☐ Yes ☐ No ☐ Question

BATTERY PACK TEST OF ON / OFF PUSH BUTTONS

1. Before testing Battery Pack using Recharger, check *physical* function of ON and OFF Push Buttons. Testing *electronic* function of ON and OFF Buttons as well as Battery Pack LEDs occurs when Battery Pack is plugged onto Recharger. See BATTERY PACK TEST USING RECHARGER below.
2. To test ON Button for *physical* function only:
   a. Depress-and-release ON Button. (Battery Pack LED function is tested when Battery Pack is plugged onto Recharger.)
   b. Does ON Button *physically* function properly with a crisp "click" and feel, or does it feel stiff/gummy, or locked?
   c. ☐ Yes ☐ Stiff/Gummy ☐ Locked
3. To test OFF Button for *physical* function only:
   a. Depress-and-release OFF Button. (Battery Pack LED function is tested when Battery Pack is plugged onto Recharger.)
   b. Does OFF Button *physically* function properly with a crisp "click" and feel, or does it feel stiff/gummy, or locked?
   c. ☐ Yes ☐ Stiff/Gummy ☐ Locked

BATTERY PACK TEST USING RECHARGER

1. Plug known, good Recharger into known, good, live, wall outlet using correct plug adapter (120V or 240V).
2. Plug Battery Pack onto Recharger.
3. To test Battery Pack CELLS:
   a. Battery Pack MUST remain on Recharger during following test.
   b. Corresponding Recharger LED turns on Red *continuously* when Cells are functioning properly, have a charge, and are taking a charge.
   c. Corresponding Recharger LED *flashes* Red within 20 minutes when Cells are either incompatible with Recharger (Battery Pack models prior to "m" Series) or are not functioning properly ("m" Series Battery Pack).
   d. Do Battery Pack CELLS function properly?
   e. ☐ Yes ☐ No ☐ Question
4. To test Battery Pack SETTINGS:
   a. Battery Pack MUST be recharged minimally for 10 minutes uninterrupted prior to testing Battery Pack Settings. Otherwise test results may be highly inaccurate.
   b. Battery Pack MUST remain on Recharger during following test.
   c. Once minimum 10 minute recharge is reached, press-and-hold ON Button until Battery Pack Setting 1 LED turns On.
   d. Change Battery Pack Setting from 1 to 2 to 3 and to 4.
   e. Then change Battery Pack Setting from 4 to 3 to 2 to 1 and Off.
   f. Battery Pack is functioning properly when Battery Pack and all Settings turn On and Off properly.
   g. Do Battery Pack SETTINGS function properly?
   h. ☐ Yes ☐ No ☐ Question

BATTERY PACK TEST USING HEATING ELEMENT

1. Plug Battery Pack onto known, good Recharger.
2. Battery Pack MUST be recharged minimally for 10 minutes uninterrupted when using known, good, *uninstalled* Heating Element.
3. Battery Pack MUST be fully recharged per Operating Instructions when using known, good Heating Element *installed* on insole.
4. Plug known, good Heating Element into Battery Pack.
5. Turn Battery Pack onto Continuous Setting 4.
   a. To use "Continuous Setting 4", start at "Timed Setting 4", then press-and-hold ▶ until all LED lights blink simultaneously (~5.0 seconds).
6. When using FINGERTIPS to detect heat generated in Element:
   a. Wait minimally 15 minutes for Element to generate heat well above skin surface temperature. Otherwise, fingertips will fail as a heat sensing device.
   b. After 15 minutes, first use fingertips to detect ambient temperatures around circumference of Element when *installed* on insole.
   c. Then place fingertips in center of Element to detect heat generated above ambient conditions.
   d. When Element is *uninstalled*, fingertips may detect heat well within 15 minutes.
7. When using INFRARED THERMOMETER to detect heat generated in Element:
   a. Wait several minutes for Element to generate heat.
   b. After several minutes, first use thermometer to check ambient temperatures around circumference of Element when *installed* on insole.
   c. Then use thermometer in center of Element to detect heat generated above ambient conditions.
   d. When Element is *uninstalled*, InfraRed Thermometer may detect heat well within 15 minutes.
8. Does Battery Pack generate heat in Element?
9. ☐ Yes ☐ No ☐ Question
10. Note: Using fingertips is not an accurate or consistent method of detecting heat.
11. Note: Using InfraRed Thermometer is a more accurate and consistent method of detecting heat than fingertips. However, temperature readings are significantly impacted by surrounding materials and ambient temperatures. Temperature readings may or may not be representative of temperatures attained in standardized testing conditions used to determine published temperature ranges.

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BATTERY PACK TEST USING VOLTAGE METER

1. Plug Battery Pack onto known, good Recharger.
2. Battery Pack MUST be recharged minimally for 10 minutes uninterrupted before test using Voltage Meter.
3. Once minimum 10 minute recharge is reached, unplug Battery Pack from Recharger.
4. Then, when looking at front of Battery Pack and subsequently in Plug Hole, identify three (3) male contacts.
   a. The LEFT contact is "negative" (minus).
   b. The RIGHT contact is "positive" (plus).
   c. Ignore the CENTER contact for this test.
5. With Voltage Meter ready and Battery Pack Off, place "positive" lead on "positive" contact and "negative" lead on "negative" contact.
   a. Placing Voltage Meter leads at bottom of Battery Pack male contacts facilitates voltage reading.
6. Record Voltage Reading in chart row below designated for *Recharge Duration greater-than-or-equal-to 10 minutes*.
7. If important, record Voltage after *Recharge Duration greater-than-or-equal-to 3 hours* and *greater-than-or-equal-to 72 hours*.
8. Does Voltage Reading meet or exceed nominal Voltage as listed in the chart for Battery Pack model tested?
9. ☐ Yes ☐ No ☐ Question

Battery Pack Model →	m4	m3	Results
Nominal Voltage →	4.8 V	3.6 V	☑
Recharge Duration ↓	V Reading ↓	V Reading ↓	↓
> or = to 10 minutes	_____ V	_____ V	☐
> or = to 3 hours	_____ V	_____ V	☐
> or = to 72 hours	_____ V	_____ V	☐

BATTERY PACK TEST FOR DURATION

1. Fully recharge Battery Pack for 48 to 72 hours uninterrupted. (See Operating Instructions for Conditioning Charge.)
2. Once Conditioning Charge is complete, plug known, good Heating Element into Battery Pack.
3. Turn Battery Pack onto Continuous Setting 4.
   a. To use "Continuous Setting 4", start at "Timed Setting 4", then press-and-hold ▶ until all LED lights blink simultaneously (~5.0 seconds).
4. Battery Pack published duration range:
   a. For model m4 is 150 to 225 minutes.
   b. For model m3 is 120 to 180 minutes.
5. Set external timer for minimum duration of Battery Pack model being tested. (See following chart.)
6. When minimum duration is reached, check to confirm Battery Pack Continuous Setting 4 is still on and Element is still generating heat. Record results in chart below.
7. When minimum duration is reached, also set timer for first 15 minute interval.
8. When first 15 minute interval is reached, again check to confirm Battery Pack Continuous Setting 4 is still on. Record results.
9. Continue using subsequent 15 minute intervals until Continuous Setting 4 is no longer On.
10. Does Battery Pack duration fall within model's published duration range for Setting 4?
11. ☐ Yes ☐ No ☐ Question

Battery Pack Model →	m4	m3	Results
Published Duration Range →	150 to 225 minutes	120 to 180 minutes	☑
Minimum Duration →	150 minutes	120 minutes	☐
+15 minute interval	165	135	☐
+15 minute interval	180	150	☐
+15 minute interval	195	165	☐
+15 minute interval	210	180	☐
+15 minute interval	225	195	☐
+15 minute interval	240	210	☐

HEATING ELEMENT TEST USING BATTERY PACK

1. Plug Battery Pack onto known, good Recharger.
2. Battery Pack MUST be recharged minimally for 10 minutes uninterrupted when testing *uninstalled* Heating Element.
3. Battery Pack MUST be fully recharged per Operating Instructions when testing Heating Element *installed* on insole.
4. Plug Heating Element into known, good, appropriately charged Battery Pack.
5. Turn Battery Pack onto Continuous Setting 4.
   a. To use "Continuous Setting 4", start at "Timed Setting 4", then press-and-hold ▶ until all LED lights blink simultaneously (~5.0 seconds).
6. When using FINGERTIPS to detect heat generated in Element:
   a. Wait minimally 15 minutes for Element to generate heat well above skin surface temperature. Otherwise, fingertips will fail as a heat sensing device.
   b. After 15 minutes, first use fingertips to detect ambient temperatures around circumference of Element when *installed* on insole.
   c. Then place fingertips in center of Element to detect heat generated above ambient conditions.
   d. When Element is *uninstalled*, fingertips may detect heat well within 15 minutes.
7. When using INFRARED THERMOMETER to detect heat generated in Element:
   a. Wait several minutes for Element to generate heat.
   b. After several minutes, first use thermometer to check ambient temperatures around circumference of Element when *installed* on insole.
   c. Then use thermometer in center of Element to detect heat generated above ambient conditions.
   d. When Element is *uninstalled*, InfraRed Thermometer may detect heat well within 15 minutes.
8. Does Element generate heat?
9. ☐ Yes ☐ No ☐ Question
10. Note: Using fingertips is not an accurate or consistent method of detecting heat.
11. Note: Using InfraRed Thermometer is a more accurate and consistent method of detecting heat than fingertips. However, temperature readings are significantly impacted by surrounding materials and ambient temperatures. Temperature readings may or may not be representative of temperatures attained in standardized testing conditions used to determine published temperature ranges.