

On-Site Repair Guide for Warmup USDW Model Heaters

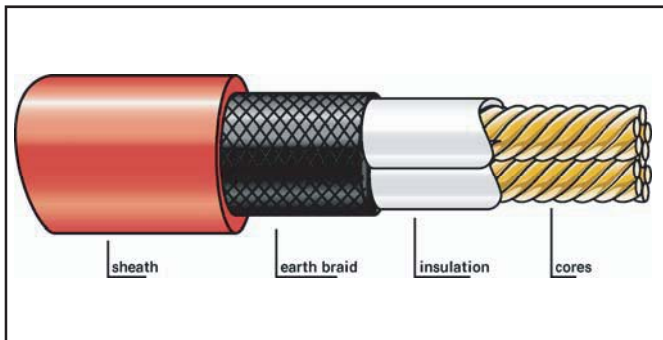
Warranty Disclaimer: This guide and the repair kit included have been provided by Warmup Inc to aid in the repair of a Warmup USDW system damaged on-site. Warmup cannot warranty the repair or guarantee the proper function of the heating system following a repair. Warmup recommends that all repair work be carried out by a qualified electrician and in accordance with the National Electrical Code (NEC). For further assistance, please contact Warmup on 888-927-6333.

CAUTION: Before commencing with the repair, ensure that the heating system has been completely disconnected from the power source.

Tools & Items Required for Repair

1. One Warmup Repair Kit consisting of:
 - 2 large pieces of heat shrink (black tube)
 - 6 small pieces of heat shrink (black tube)
 - 6 butt crimps
 - 1 length of red "bridge" wire
 (one repair kit is required for each break in the heating element)
2. Side cutters or scissors
3. Awl
4. Heat gun
5. Crimping tool
6. Razor blade or sharp Stanley knife
7. Multimeter

HEATING WIRE CONSTRUCTION



TESTING OF THE HEATER DURING & AFTER REPAIR

Testing should take place after steps 7, 12 & 14.

- Step 7: Test the wire resistance (approximate values);
- USDW300 (Grey wire) should read 40 ohms
 - USDW400 (Red wire) should read 30 ohms.
 - USDW600 (Orange/Black wire) should read 20 ohms.
 - USDW800 (Grey/Black wire) should read 15 ohms.

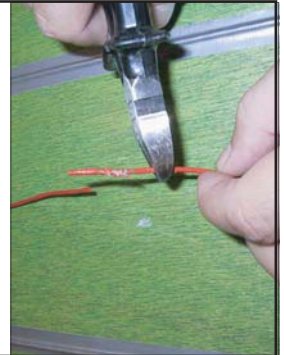
Step 12: Test for earth continuity

Step 14: Repeat both tests in steps 7 & 12

Do not tile if the heater does not pass all the above tests. There may be a problem with new joint or additional wire breaks. Contact Warmup on 888-927-6333 for further assistance.

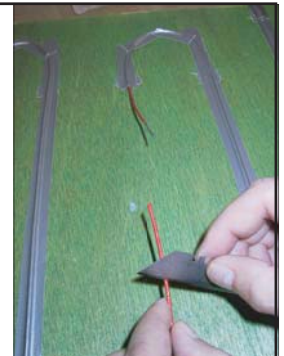
1

Use side cutters or scissors to remove any damaged heating wire.



2

Use the razor blade or Stanley knife to carefully remove approximately 2" of the outer sheath to expose the earth braid on both ends of the wire cut. (USDW300 - Grey sheath, USDW400 - Red sheath, USDW600 - Orange/Black sheath, USDW800 - Grey/Black sheath).



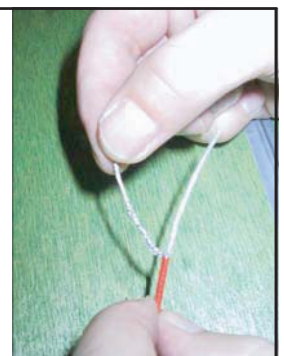
3

Unravel the earth braid on both ends of the wire cut using an awl.



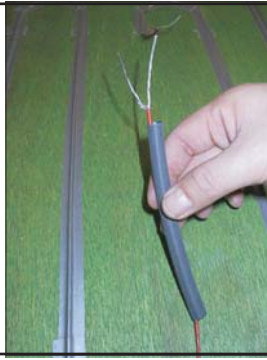
4

Twist the earth braid.



5

Slide one piece of the large black heat shrink over each end of the wire.



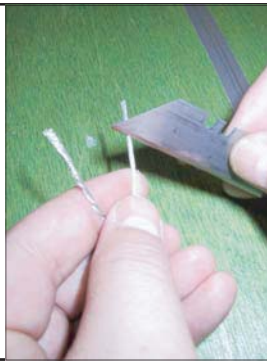
10

Slide the pieces of small heatshrink over the butt crimps so that any bare metal is covered. Shrink the heat shrink using a heat gun.



6

On both ends of the cut wire, use the razor blade or Stanley knife to very carefully strip off approximately 0.27" of the insulation covering the both the heater cores. It is critical not to damage the heating wire core.



11

Attach a butt crimp to either end of the earth braid using a crimping tool. Slide one small piece of heatshrink over both sections of exposed earth braid.



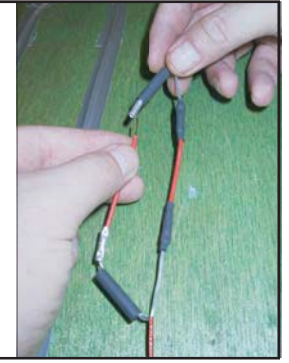
7

Attach a butt crimp to either end of the heater cores using a crimping tool. Test the heater for resistance using a multimeter.



12

Cut a section of the "bridge" wire provided in the repair kit to a length suitable to replace the wire removed from the heating element. Strip 0.4" from either end of this wire and fit these ends into the butt crimps located on the ends of the earth braid and crimp using the crimping tool. Test the earth braid for continuity using a multimeter.



8

Slide one piece of the small heat shrink over each end of the heating elements up to the earth braid.



13

Slide the pieces of small heatshrink over the butt crimps so that the entire crimp is covered. Shrink the heatshrink using a heat gun.



9

Cut a section of the "bridge" wire provided in the repair kit to a length suitable to replace the wire removed from the heating elements. Strip 0.4" from either end of this wire and fit these ends into the butt crimps located on the ends of the core wire and crimp using the crimping tool DO NOT CROSS THE WIRES.



14

Slide the large pieces of heatshrink over the small heatshrink and apply the heat gun. Do this for both ends of the wire. Allow the new joints to cool, test resistance and continuity of the heater and then tile as normal.

