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Transformer Hipot Test

This test is used to determine whether a resistance welding transformer is electrically stable to be used in production. It is a relatively quick and easy test which can be completed in as little as five minutes after being disconnected from main power and the secondary. (This assumes access to a hipot tester¹). With a setting of 2500-Volts on the hipot tester², following the test procedure will tell us if there is a short internally, usually an insulation breakdown, or if there is an open circuit in the secondary.

Testing Steps:

1. Disconnect the welding transformer from main power. L2 is usually going into the transformer, and the other leg is on H1 of the SCR. Secure both legs so they do not go to ground.
2. Disconnect the secondary from the weld transformer so that the secondary pads are open, and can be checked with the hipot tester. (If you do not disconnect the secondary, the test will not work).
3. Set transformer to Low tap setting (if there is a tap switch). You are now ready to begin the hipot test.

!Caution!

DO NOT TOUCH MACHINE OR TRANSFORMER WHEN DOING THIS TEST!

4. Touch one leg of the probes to one leg of the primary, and touch all of the secondary pads. (Polarity does not matter). If there is a short, the hipot tester will buzz and a failure indicator lamp will light. If this happens on ANY step of this procedure, the transformer is shorted and will need to be rebuilt or replaced.
5. Repeat step 4, checking the other legs of the transformer to the secondary.
6. Check both legs of the primary to ground. (A good spot for this is a bolt hold or the case of the transformer).
7. Check all of the secondary pads to ground.
8. **Repeat ALL of the above steps on ALL tap switch settings.**
9. The transformer passes the test if there is never any continuity between the coils and/or ground (which is to say, if the hipot tester never buzzes, the transformer is good).
10. If your transformer fails, there are many types of transformers that can be repaired. Please contact us for a quote!

¹ A **hipot tester** is an electronic device used to verify the electrical insulation in a device or other wired assembly that could subject someone to a shock if it failed. For testing resistance welding transformers, a hipot tester will need an adjustable voltage output with a range up to 3000-4000 Volts.

² Some transformer manufacturers test their new transformers at 4000-Volts