Subject: Tranformer testing???
Posted by jim denton on Fri, 21 May 2004 12:45:23 GMT
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My Sansui 500A receiver is suspect to having a bad transformer---I have evidence that it has leaked a thick waxy substance ---although it was working before a tube flared out---upon inspection under the chassis I found a "glob" (highly techincal term guys---hope I haven't gone over too many heads here!) of a waxy material -off white in color----can get another rec on e-bay for parts to replace this tranny---would like to see if it can be confirmed though as a way to start Jim

Subject: Re: Tranformer testing???
Posted by Wayne Parham on Sat, 22 May 2004 08:37:02 GMT
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You can test to see if any of the windings has opened up with an ohmmeter. The connectors to the primary winding(s) should show continuity and the connectors to the secondary windings should also show continuity, but the meter should show open between the primary and secondary. This won't tell you if windings have shorted, but it will tell you if they've opened up.The most likely failure mode of a power supply transformer is for it to open, so if there's continuity, I'd feel pretty comfortable powering it up. A technician might use a variac to apply power slowly, measuring the voltage output on the secondaries after verifying that the windings weren't open. A drastically low voltage condition indicates that windings are open. With the input power at say 1/4 line voltage, you'd expect the secondaries to all be at 1/4th their voltage rating and if that weren't the case, the transformer might be shorted. But like I say, the most common failure mode is open windings.

Subject: Re: Transformer testing???
Posted by metasonix on Tue, 25 May 2004 03:03:39 GMT
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>The most likely failure mode of a power supply transformer is for it to openNot always. In my experience, it is more common for eitherthe primary to open, OR to develop a partial or full short. And plate secondaries can go either way. I just recently saw 2 quite different plate transformers from different tube amps, develop dead shorts across theirhigh-voltage secondaries. (Both amps were Chinese made,sorry to say...)One way to help minimize this is simple: put a 2 ohm to 5 ohm10W resistor in series with the primary. It limits thehuge inrush current at turn-on, helping prevent internal arcing. Also a 100 ohm resistor in the plate winding, BEFORE THE RECTIFIER,can help protect the secondary. Two 50 ohm, one on either side, if it is a center-tapped winding with the CT grounded. Yes, even ifyou have tube rectifiers.These are simple and cheap things you can do, which mfrs.usually don't--to save a few dollars.

Subject: Re: Transformer testing???
Posted by Wayne Parham on Tue, 25 May 2004 07:07:41 GMT
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I can see how a power supply transformer used for step-up to generate high plate voltage might be vulnerable to short. Certainly flyback transformers are vulnerable to that condition, and take out the horizontal output when they do. But I do tend to find the most common failure mode as being opens especially with low voltage power supply transformers that step down to ten or twenty volts.