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 Author

Topic: **Metcal STSS-RM2 modification** (Read 2294 times)

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hpmaxim
Regular Contributor


 Posts: 59


 **Metcal STSS-RM2 modification**
 « on: November 01, 2015, 06:58:20 am »

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I have an RM2 (the older style with the grey silicone cable) wand that I'd like to use with an MX500. I know, that the MX500 needs a resistor in parallel to the coupling capacitor in the handpiece in order to recognize it as a functional wand. What I don't know is a) what size resistor, and b) how to physically get at the capacitor to put a resistor in parallel with it.

Can anyone provide any insight on either (or both)?

Also, what is the deal with the connector on the RM3E wand? It seems like its kind of collet like -- I find it virtually impossible to properly attach. Like you have to have the connector turned all the way counter clockwise, then you shove it on, turn it clockwise as far it goes, and then twist the cable in as much as possible. The connector just seems like way more of a PITA than the RM2 connector which works like a standard F connector -- very smoothly.

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BurningTantalum
Frequent Contributor


 Posts: 292
 Country: 


 **Re: Metcal STSS-RM2 modification**
 « Reply #1 on: November 01, 2015, 10:45:39 am »

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The handpiece isn't the easiest thing to dismantle, so it may be more convenient to fit a switch in the MX500 unit to over ride the 'check' that the unit does. If you intend to use only the RM2 with the unit then this would simply entail fitting the resistor on the PCB (minimal alterations).

I have pics of the dismantled RM2 but don't have access to them today. There have been posts here a while ago with pics.
Regards, BT

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GreyWoolfe

Super Contributor



Posts: 3211

Country:

NWOLF

**Re: Metcal STSS-RM2 modification**

« Reply #2 on: November 01, 2015, 01:45:32 pm »

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--Also, what is the deal with the connector on the RM3E wand? It seems like its kind of collet like -- I find it virtually impossible to properly attach. Like you have to have the connector turned all the way counter clockwise, then you shove it on, turn it clockwise as far it goes, and then twist the cable in as much as possible. The connector just seems like way more of a PITA than the RM2 connector which works like a standard F connector -- very smoothly.--

I would guess that it is designed that way so they aren't accidentally pulled off. Remember you really don't have a need to keep taking it on and off. I have the RM3E and Talon for mine plus a Hakko FX-951 on one side and a Yihua hot air unit on the other and I like the idea that I won't get tangled up in the cables with other stuff and pull it off. I have used push on F connectors in the past on cable TV and they were truly a PITA. IMHO, Metcal did it smart.

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That which doesn't kill you still requires a co-pay.

hpmaxim

Regular Contributor



Posts: 59

**Re: Metcal STSS-RM2 modification**

« Reply #3 on: November 01, 2015, 04:30:46 pm »

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Looking at the MX500 schematic, I'd tend to think the appropriate way to fool it would either be to add a 100uH inductor between out and ground or to short out C36 (possibly with a SPST switch -- although you'd want some way to access it (i.e. drill a hole in the case -- not sure that would be fun). A switch shorting between U2.1 and U2.8 might be another interesting option as that would not only disable the check but it would reset the latch -- which would mean you could change tips without shutting it off to reset it.

I don't see a way you could simply add a resistor since you don't want it in series (and it wouldn't even do any good because there is DC blocking cap in the wand), you could shunt it to ground, but unless its in the DC path (in which case, just short out C36), it'll shunt all the RF through it.

I'd still rather modify the wand just in terms of a "cleanliness" thing, I don't like the idea of losing functionality -- but maybe it doesn't matter.

As for the collet thing... GreyWoolfe, perhaps you've never used the RM2. the female barrel threads on just like any other RF connector. I've never had it pull off, it goes on easily, and tightly. The RM3E connector (and the DS1 tool, etc) push on, then you tighten the collet, but even then its not super tight, so you twist and twist and twist (and have to twist the whole cable) and it never gets as tight as the RM2 connector. It seems the collet doesn't tighten enough. If it did fully tighten, then I'd agree it might be a bit easier to use (sort of the difference between a quarter turn valve and a multi-turn), but the collet doesn't seem to tighten adequately. Just to let you know, I have an STSS-001, MX500, RM2, DS1, and I borrowed a friend's MX500 and RM3E. All the collet based connectors performed similarly on both MX500s, so I assume its a design based issue not my particular unit.

[Report to moderator](#) [Logged](#)**BurningTantalum**

Frequent Contributor



Posts: 292

Country:

**Re: Metcal STSS-RM2 modification**

« Reply #4 on: November 02, 2015, 03:16:53 am »

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Sorry Hpmaxim, I didn't have the schematic in front of me when I posted.

It really is quite fiddly to dismantle the wand, both RM2 and RM3E, believe me-I have both types and have repaired several.

Incidentally- my 3 RM3Es and my grey lead RM2 all have identical F-connectors on the leads.

I have attached a pic of the RM3 in bits, and the RM2 in bits. The RM2 shows the co-ax inner still attached and the break point from flexing.

The resistor looks like 2R2.

Regards, BT



MVC-315F.JPG (164.46 kB, 1024x768 - viewed 353 times.)



MVC-312F.JPG (196.13 kB, 1024x768 - viewed 361 times.)

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GreyWoolfe

Super Contributor



Posts: 3211

Country:

Re: Metcal STSS-RM2 modification

« Reply #5 on: November 03, 2015, 01:41:00 am »

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Quote from: hpmaxim on November 01, 2015, 04:30:46 pm

As for the collet thing... GreyWoolfe, perhaps you've never used the RM2. the female barrel threads on just like any other RF connector. I've never had it pull off, it goes on easily, and tightly. The RM3E connector (and the DS1 tool, etc) push on, then you tighten the collet, but even then its not super tight, so you twist and twist and twist (and have to twist the whole cable) and it never gets as tight as the RM2 connector. It seems the collet doesn't tighten enough. If it did fully tighten, then I'd agree it might be a bit easier to use (sort of the difference between a quarter turn valve and a multi-turn), but the collet doesn't seem to tighten adequately. Just to let you know, I have an STSS-001, MX500, RM2, DS1,

NWOLF



and I borrowed a friend's MX500 and RM3E. All the collet based connectors performed similarly on both MX500s, so I assume its a design based issue not my particular unit.

I finally got to look at my RM3E and Talon. Both collets tighten and loosen smoothly, no twisting of the cable and they are tight enough that with me really pulling on them, they don't budge. The Talon is used along with the MX-500 bought at a local surplus store. The RM3E I found NOS on eBay. Very interesting. I am fairly new to Metcal, I only have my MX-500 a couple of months. I have never had an opportunity to play with any other unit/wand. Maybe I got lucky, who knows. I have no doubt that a threaded connector will hold tighter. All I can say is that the RM3E and Talon on my unit are on tight and I have no interest in stressing either cables to see if I can pull them off, though if I were to break the cables, I would probably put on threaded barrel connectors.

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That which doesn't kill you still requires a co-pay.

hpmaxim

Regular Contributor



Posts: 59



Re: Metcal STSS-RM2 modification

« **Reply #6 on:** November 03, 2015, 02:45:08 am »

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My RM2 doesn't have a collet. It's a standard threaded connection and you turn it until it bottoms out. With the RM3E you twist the collet fully counterclockwise, shove it on until it bottoms out and then twist the collet fully clockwise until it stops. At that point its sometimes tight, and sometimes not tight. You may have to turn the whole cable more to tighten it.

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