

Re: Stuck VCR tape, DVD not reading

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- *From:* "Arfa Daily" <arfa.daily@xxxxxxxxxxxx>
 - *Date:* Fri, 24 Aug 2007 09:06:48 GMT
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"Art" <scimethod2000@xxxxxxxxxx> wrote in message
news:1187927156.859875.312770@xx

On Aug 23, 6:42 pm, "Arfa Daily" <arfa.da...@xxxxxxxxxxxx> wrote:

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news:1187902602.365664.322840@xx

I've got a Toshiba SD-V392SU DVC/VCR player, and there's a tape stuck inside. It won't play, and when you hit "eject", the little "VCR spool" icon flashes, indicating that there's no tape inside. So, there ya go: it won't eject or play since it thinks there's no tape inside to play or eject. Upon opening the cabinet up, I easily found the little motor that appears to eject the tape. Trouble is, it is a worm drive setup, and the nylon gear is too small and too slippery to turn by hand. Taking out the chassis that holds the tape doesn't appear feasible (a screw that holds it in is only accessible by taking out the tape), and even if it could be taken out, doesn't appear to be a step toward solving the problem.

So, I gotta actuate the motor. The motor has 2 easily accessible terminal that have been soldered to. They are labeled "+" and "-",

Re: Stuck VCR tape, DVD not reading

indicating the motor is a DC motor. If I hook up an external DC voltage to the terminals, what voltage should I try? More importantly, will damage result if the voltage is applied without unsoldering the motor's terminals? If I hook up my supply by following the "+" and "-" terminals' markings, will that eject the tape or suck the tape in harder? Finally, if this is unwise, I might be able to take out the motor. If so, then eliminating the worm drive gear should allow the rest of the accessible gear train to turn smoothly by hand...right? Will this allow me to take out the tape?

Suppose I get the tape out. Now what? What makes the VCR think there's no tape inside?

Consider next the DVD portion of the player. Tray works, it spins the disc, but it won't read DVD's or CD's. Is fixing this feasible, or is there likely some tiny internal problem not fixable?

Art

Try 6v on the motor, but disconnect it first, as you may do damage to the driver IC if you don't. If you only use a lowish voltage like this, it is unlikely that you will cause a problem if your first connection attempt causes it to 'suck' rather than 'blow'. You just can't tell which way round to connect it to get eject. The normal running voltage is probably closer to 12v, but 6v should be enough to get it going. As far as the DVD player goes, it is unusual for one to fail to play either a CD or DVD, and unless there is a common cause for both the VCR and DVD problems, which seems on the face

Re: Stuck VCR tape, DVD not reading

of it fairly unlikely, as the DVD at least does all the right things, albeit not finishing up actually reading the disc, then it is likely that the laser is faulty, and it won't be cost effective to repair. Did the DVD and VCR problems occur at the same time, or was there some common external problem such as a storm or sudden power outage prior to the faults appearing ? It's just possible that there is a supply rail missing or noisy, which is shared by both the VCR and DVD, and it is this which is leading to the problems. Once I had got the tape out – or maybe even before trying to – I would measure and 'scope all of the power supply rails, just to make sure that they are good voltage-wise, and 'clean'

Arfa

Thanks for the advice. I haven't tried it yet, but I'll get to it this weekend. I don't recall exactly if the problems occurred together, but am inclined to believe that wasn't the case. Unfortunately, I have no scope at home (just at work) so I can't check the rails for cleanliness, just able to do a bare-bones DVM check. How likely is a blown rail, though, considering all of the other functions (remote sensor, channel tuning/picture is fine, all panel lights okay, etc., sorry I didn't mention this in the OP)?

BTW, I was startled to see the vastly different construction techniques used in the DVD board vs. the VCR/TV board. The DVD board uses SMT, but the VCR/TV board uses what frankly appears to be not so much a printed circuit board as old-fashioned point-to-point wiring and thru-hole components. From above, the board has components and a silk screen image for component labeling, but no traces. It does, however, have tons of holes in which bare wires poke up from below, travel across a short distance, and then go down another hole. What's this all about? My technical skills involve a lot of improvisation (I work in a lab, and am not involved in production), so I'm actually sort of used to this. But how the hell does it pay for a company (producing a product in volume) to do this sort of thing? Any ideas?

Art

When dealing with any kind of 'obscure' problem, where a set of circumstances or symptoms don't seem to really fit a 'typical' fault scenario – and yours qualifies on this score as it has two problems, which on the face of it are unrelated, and one of them is a bit 'odd' anyway – then the power supply is always the first port of call, as it is usually common to all sections of a multi-function item like a DVD/VCR/(TV?) combi.

Re: Stuck VCR tape, DVD not reading

It would not necessarily be a 'blown' rail that you would be looking for, as in a rail being missing. Rather, one that read low on a DVM compared to what it should. You would then check with a 'scope to see how clean that rail was. The reason for this is that the smoothing caps on the output rails of a switch mode power supply, which all of these items use now, are very stressed due to the high frequency of the ripple currents that they have to shunt. There are special caps designed for use in these PSUs, but they tend to be more expensive than bog standard electrolytics, so many manufacturers will just use the cheap ones, as they will (usually) last out the warranty, before they start to fail by going progressively higher and higher ESR. As they fail, the switching noise and general hash on the rail that they are smoothing, will get worse and worse, and the average voltage level of the rail will drop, until you get to the point where something important like the system control micro can no longer operate correctly, and the oddball fault symptoms start.

The difference in construction techniques indicates only that Tosh did not design – or maybe even build – this item. Instead, it has been cobbled together on the 'Lego brick' principle, where a TV chassis has been bought in from say Vestel in Turkey, a VCR deck and circuitry has been got in from Orion, and a DVD section, maybe by Tosh, but equally possibly from one of the other big Japos, and then have all been put together in a single case to make the product you have. Indeed, it might all have been put together by the Ying Tong Lucky Strike Consumer Electronics Manufacturing Company in Korea or some such, and then just 'badged' Toshiba ...

As far as seeing lots of wire links on the board, this is of no consequence at all, as they are all put in by automatic insertion machines anyway, so they are just treated by the machine as any other component – a resistor, say. Sometimes, lots of wire links just indicates that a single board is used in many configurations for many different (Lego brick constructed) products, but equally, it can indicate scruffy design done either totally manually, or with old software that does not have a good rip up and retry autorouter. It is also a characteristic of single layer boards, where it is often more difficult (but by no means impossible) to eliminate track crosses.

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