Rubber Wheel Replacement on Data Drives

This fix for the little rubber wheel on the digital data drive comes from several messages on the AtariAge Coleco ADAM Forum.

I've heard more than a few people talk about having a Digital Data Drive that will run a tape all the way to the end, then start making a clunking noise, while never loading a program. The case for most is that the little rubber pinch roller wheel is missing. The aluminum hub is still present and spinnable, but the rubber outer wheel is gone. I've got one of these problem drives myself so I thought since it already doesn't work, I'm not too afraid of screwing it up. On a standard audio cassette deck this pinch roller is nothing more than a spinning wheel which the tape rides on. In the ADAM drives, this wheel is actually an encoder within the housing. Much like how the Steering Wheel Module and Roller Controller turn the pulses from a slotted disc into on-screen motion, this slotted disc must somehow use the pulses it counts to control where the tape starts and stops and the likes. So if there is no rubber wheel present for the moving tape to make contact with, which in turn would spin the encoder disc, the ADAM has no idea how far the tape has reeled and that's why it runs to the end. I measured the ID and OD of the rubber wheel on one of my good drives and I've got some replacement material on the way. With any luck this will be a fix for all of those non-functioning Digital Data drives you've all got lying around.

All right... for any of you who have an ADAM tape drive with the problem listed above, here's your fix. The only part you'll need is some rubber tubing that is 3/8" ID, and 1/2" OD. I used Viton as it will last a little longer than Buna or Latex, but it is definitely a little harder than the original (seems to work just fine in mine). Once you have your tubing (I got mine from McMaster Carr, I use them a lot for work) slice a bit off, 11/64" in length. Take apart your tape drive from the back. First the rear case (cord grip, and 4 screws). Then the outer RF shield and printed circuit boards (3-4 screws) and inner RF shield. On the bottom inside of the drive below the motors is a small square cover with 2 screws. Remove the screws, gently lift the cover slightly, and slide out the opto sensor (has 4 wires going into it). With the opto sensor pulled out, take the square cover off. Be cautious as there are 2 real small parts in here. One is a very small bushing (looks like a tiny silver washer), the other is a small axle (looks like a very small pin) that the encoder shaft spins on. Once these are removed, pull the encoder shaft and be careful with the encoder's disc. It is attached to the shaft, but is very thin and fairly delicate. Put 2-4 small drops of super glue onto the hub and slide the rubber tubing onto it so that the rear face is flush with the rear face of the hub. Once the glue is set, trim the front of the rubber if it sticks out farther than the front of the hub, by using a razor blade flat against the hub's face. Once done, re-assemble in the reverse order, minding the wiring routing so none get pinched, and bingo... a working tape drive. Such a simple fix.

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My Colecovision Expansion Pack #3 (Coleco Adam) data drive would quickly wind to the end resulting in a clicking noise.

I was wondering what that little metal wheel was doing so I dismantled the data drive and pulled out the little index wheel. The Index disc is very sensitive so I was really careful. I used a cotton-ear-stick to clean the disk. I measured the diameter of the metal wheel and it was exactly 10mm outer-diameter with the rubber attached should be 3/8 Zoll (from other post above) (I calculated about 13mm). So I went to the local Hardware store "Bauhaus" and in the Gas/Water Plumbing Installation Area I found a “Quetschverbinder” made of Rubber with exactly the right dimensions 10x13x4mm - 2 Pieces for 0,7 Euro.

I attached the Rubber to the Wheel put the Drive together and Voila! Buck Rogers was loading!!!!!