

TIVO DVR UPGRADE INSTRUCTIONS (#49)

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Instructions for TwinBreeze® Gen2 / DIRECTV R10 and similar architectures

Instructions are available online (in COLOR) at <http://www.weaknees.com>

A FEW WORDS OF CAUTION:

Upgrading a TiVo DVR presents a few physical hazards. As with most consumer electronics devices, components in the TiVo may still carry a lethal charge, even after disconnecting from your power supply. Be aware of this while working inside your TiVo. Allow sufficient time for discharging of components and avoid contact as much as possible with potential hazards. While we have done everything we can to provide accurate, easy-to-follow instructions, we cannot be responsible for any damage done to your TiVo or to yourself as a result of your upgrade. By opening your TiVo, you agree that neither weaKnees nor any of its members or affiliates is responsible in any way for any harm done. Please be VERY careful when upgrading. NEVER open the TiVo while the unit is plugged in and NEVER operate the TiVo if the lid is not securely fastened. PLEASE NOTE: Opening the TiVo voids the warranty.

IF YOU NEED TECHNICAL SUPPORT:

If you have purchased an upgrade kit that included one or two pre-configured hard drives: We are more than happy to answer any questions that you might have regarding your installation. We answer email very frequently, and can often be reached that way at night or even on weekends. We encourage you to try email first, but you are also free to call us any time if you have questions about your installation or these instructions.

If you have purchased a TwinBreeze Bracket package (without a pre-configured drive): These kits are designed for people who already know how to prepare a drive (or drives) for use in a TiVo. We unfortunately do not have the resources to teach our bracket customers how to upgrade their TiVos.

Required Tool (not included): Phillips-head screwdriver.

Kit includes all items shown below.

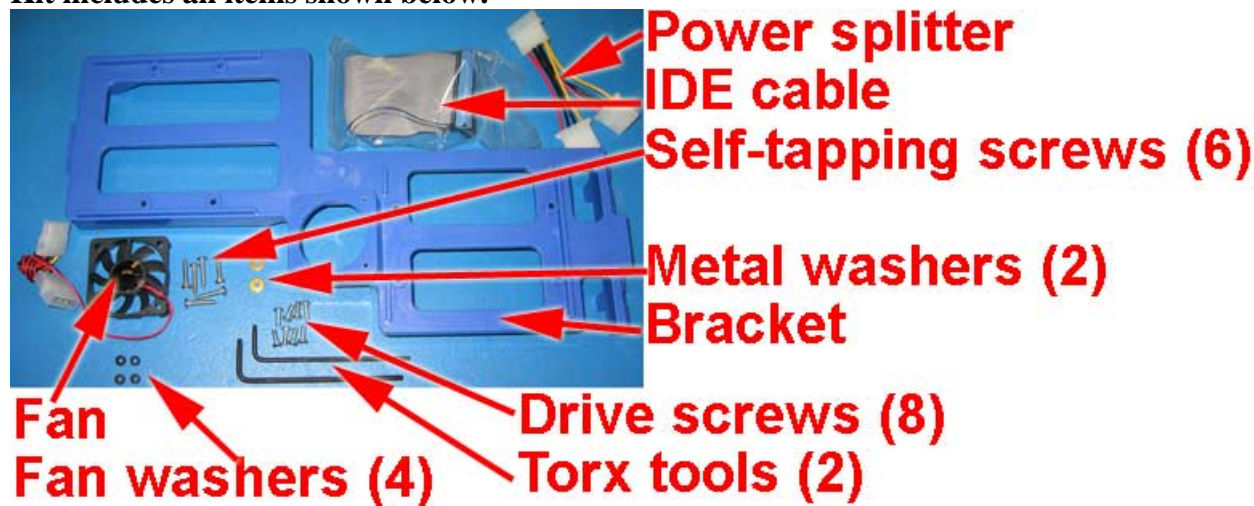


Figure 1

Not shown:

- (1) Set of printed instructions
- (1) Upgrade hard drive(s) (if applicable)

1. OVERVIEW

Upgrading your TiVo entails just five basic steps:

- (a) Open the TiVo (Section 2)
- (b) Remove the factory drive (Sections 3 through 5)
- (c) Install drives on the mounting bracket (Sections 6 through 9)
- (d) Install bracket and cables (Sections 10 and 11)
- (e) Close the TiVo (Section 12)

2. OPENING THE TIVO

Unplug the power cord from your electrical outlet and wait five minutes for the TiVo to discharge. Do not plug the TiVo back in until you are completely finished. Be very careful of static electricity, which can destroy your TiVo's internal parts. You should not perform this upgrade on carpet. You may want to label the wires that you remove from your TiVo so that you can easily locate where they belong.

Using the Torx T-10 (smaller of the two) L-key included with your kit, unscrew the five Torx screws on the back of your TiVo. The five screws are surrounded by gray from the top of the TiVo's case. See Figure 2.

Set aside (to be used again): Five TiVo lid screws.

Once the five screws are removed, remove the lid. Place your palms on the top side edges of the TiVo, toward the back and push toward the back of the TiVo (this occasionally requires a bit of patience). The cover should slide back and then up. Remove the cover from the TiVo. See Figure 3.

Set aside (to be used again): TiVo lid.



Figure 2 (above) Back view



Figure 3 (above) Top view

3. DISCONNECTING THE EXISTING DRIVE BAY

With the cover off, you will be able to see (a) one hard drive, (b) a gray IDE ribbon cable that runs from the greenish motherboard to the hard drive, (c) a multi-colored (red/black/yellow) power cable that runs from the power supply to the hard drive, and (d) two bracket screws that connect the hard drive and its bracket to the TiVo. See Figure 4. Note: Your TiVo's green motherboard might be slightly different than the one pictured; specifically, it may be larger and the IDE cable connector may be closer to the front of the unit.

Using your Torx T-10 screwdriver, unscrew and remove the two bracket screws that connect the hard drive bracket to the lower bracket (part of the bottom of the unit). These screws are located at the front-right of the TiVo. As you look down into the TiVo, you will see the two screw heads. See Figure 4.

Set aside (not reused): Two bracket screws.

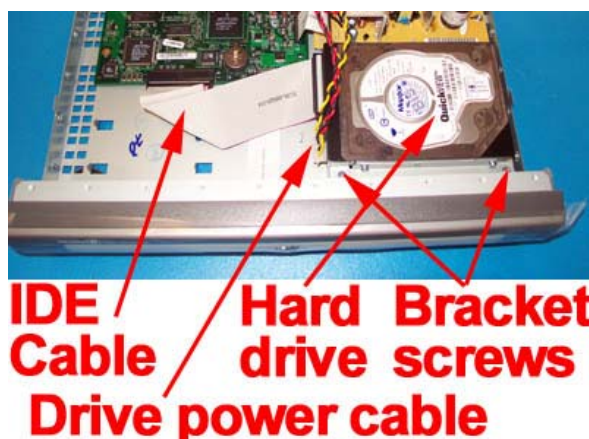


Figure 4. Front/top view

4. REMOVING THE POWER CABLE AND IDE RIBBON CABLE

Remove the IDE cable from the hard drive by pulling on the plastic connector. Then remove the drive power cable by pulling on the plastic connector. **As you pull the connectors out, be careful not to dislodge (even partially) the white ribbon cable shown in Figure 5. If this cable is dislodged even slightly and you power on your TiVo, you can cause permanent damage.** See Figure 5.

Next, remove the other end of the IDE cable from the TiVo by pulling it toward the front of the TiVo.

With both cables removed from the factory drive, slide the drive and bracket back slightly toward the back of the TiVo and then lift it out of the TiVo.

Set aside (not reused): One IDE cable.

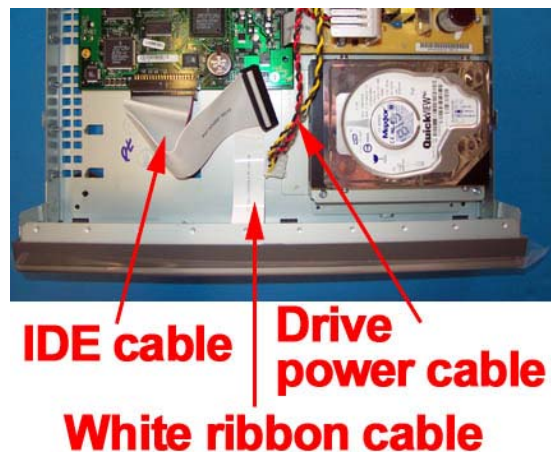


Figure 5 Front/top view

5. REMOVING THE EXISTING DRIVE

Once the hard drive and bracket are out of the TiVo, remove the IDE ribbon cable from the motherboard by lifting straight up and out.

Now, using the larger (T-15) Torx tool, unscrew the four Torx drive screws that connect the hard drive to the hard drive bracket. See Figure 6. You will not re-use these four screws or the metal drive bracket, but you should save the screws and bracket, together with the ribbon cable you removed.

Set aside (not reused): Four drive mounting screws; one IDE cable; one metal bracket

NOTE: Your factory drive might appear different than the one pictured in Figure 6.



Figure 6

6. SETTING THE JUMPER (ONLY APPLIES TO “ADD” KITS – “REPLACE” KIT INSTALLERS CAN SKIP TO STEP 7)

Pick up the factory hard drive and look at the hard drive with the label facing up and the empty power/IDE cable connectors facing you. Your TiVo’s hard drive has one or two small white or black plastic “jumper(s)” that are located between the IDE cable and the power cable connectors. Follow the steps below (depending on your drive manufacturer) to confirm that your factory drive is set to Master. **DO NOT MAKE ANY JUMPER CHANGES TO ANY DRIVE(S) THAT YOU RECEIVED IN YOUR UPGRADE KIT.**

If your TiVo’s original drive is a Quantum or Maxtor hard drive: If your drive has one jumper, then you will see a total of four pairs of pins (and, therefore, 4 possible vertical places for the jumper). Ignore the single pin located closest to the IDE cable connector. If your drive has two jumpers, then your drive has a total of 5 sets of two pins. See Figs 7 and 8.

In a one-jumper Quantum or Maxtor hard drive, the jumper should be moved to the furthest left-hand position (again, ignoring the single pin). Gently remove the jumper with the end of a paper clip or your fingernail and move it to the proper position. NOTE: the jumper must be vertical and must be carefully inserted so that the jumper fits inside the left-hand most pins. See Figure 7. In a two-jumper Maxtor hard drive, the jumper should be set properly, and should be in the shape of an “L” turned 90° clockwise. See Figure 8.

If your TiVo’s original drive is a Western Digital hard drive:

You will notice a total of five pairs of pins (and, therefore, 5 possible vertical places for the jumper). In a Western Digital hard drive, the jumper should be moved to the center position. Gently remove the jumper with the end of a paper clip or your fingernail and move it to the proper position. NOTE: the jumper must be vertical and must be carefully inserted so that the jumper fits inside center pins vertically. See Figure 9.



Quantum/Maxtor
Set as “Master”

Figure 7 (above)



Two-jumper Maxtor
Set as “Master”

Figure 8 (above)



Western Digital Performer
Set as “Master
with Slave Present”

Figure 9 (above)

7. CONNECTING THE BRACKET FAN

Your kit includes a small bracket fan. Look at the edges of the fan and locate the two airflow directional arrows printed in black on one side of the fan. Once you have located the arrows, insert a self-tapping screw into each fan hole, in the *opposite* direction of the airflow arrow. See Figure 10. (When installed on the bracket, the air flow should be moving from under the bracket up toward the lid of the TiVo.) Once you have the four screws through the fan holes, screw a small rubber washer onto the end of each screw. You need only turn each washer one or two turns. See Figure 10.



Figure 10 (above)

Place the fan on the bracket as shown in Figure 11. Screw in the four fan screws (through the fan and into the bracket) until they are tight; **do not overtighten**.

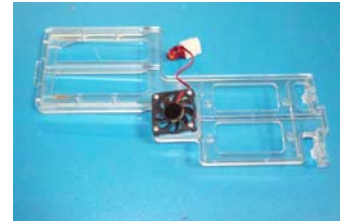


Figure 11(above)

8. CONNECTING THE HARD DRIVES TO THE DRIVE BRACKET

Using four of the hard drive screws included with your kit, screw your A/Master drive to the bracket (the screws connect to the drives from the underside of the bracket). In an "ADD" kit (in which you are retaining your factory drive), the A/Master drive will be the factory drive. Be sure to orient the drive as shown in Figure 12. The "A" drive should be connected near the bracket tab shown in Figure 12. In Figure 12, the IDE and power ports on the A drive are facing left. Do not overtighten the screws.

Next, connect your new upgrade drive (or "B" drive) to the drive bracket using the remaining four hard drive screws. Be sure to orient the drive on the bracket as shown in Figure 12. When the B/Slave drive is connected and screwed in properly, the back of the drive will hang off the end of the bracket. In Figure 12, the IDE and power ports on the B drive are facing up. Do not overtighten the screws.

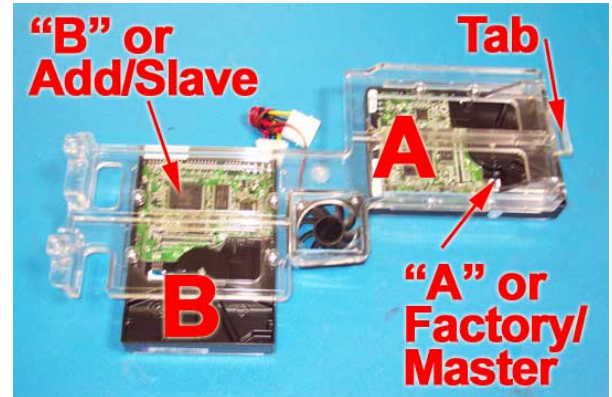


Figure 12

9. PREPARING THE CABLES

Once you have the drives and fan on the bracket, connect one end of the fan's power pass-through to the B/Slave drive (only one end will fit). Attach the other end to the power splitter cable included with your kit. Attach the other end of the power splitter to the A/Master drive. You should now have the fan cable and power cables running to each drive on the bracket. See Figure 13.

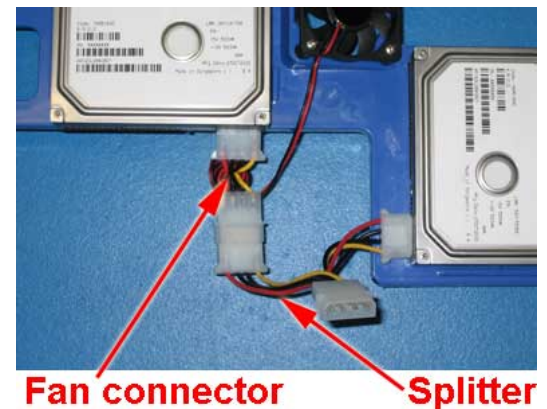


Figure 13

Take the IDE cable included with your kit and attach the BLUE connector to the motherboard. NOTE: Be careful to insert the cable in the proper direction – each connector on the cable has a notch that aligns to ensure it is not installed upside-down. See Figure 14. Drape the remainder of the cable over the front of the unit.

Move the TiVo's internal red/yellow/black power connector over the back side of the TiVo, as shown in Figure 14. You might have to flex or bend the power cable a bit to get it to stay in place.

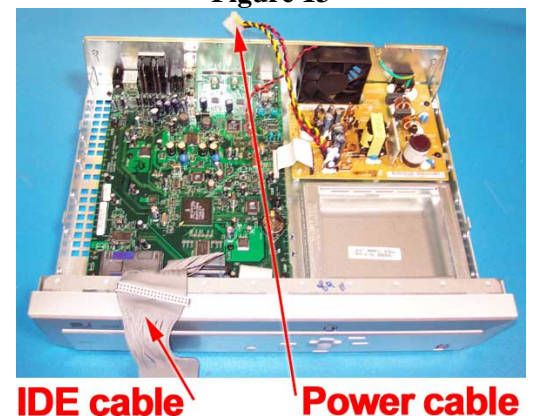


Figure 14

10. INSTALLING THE TWINBREEZE BRACKET INTO THE TIVO AND ATTACHING THE CABLES

From the front of the unit, hold the bracket in your left hand near the B/Slave drive (being careful not to touch the circuit board of the drive) and use your right hand to guide the bracket tab (located near the edge of the A drive) into the metal bracket base where the old drive bracket had been mounted. You should be able to gently lower the bracket into place with your left hand. You can gently move the white cable near the fan toward the power supply to keep it from obstructing airflow under the fan.

Once the bracket is down, connect the gray end of the IDE cable into the B/Slave drive. Make sure to line up the IDE connector so that the notch in the cable is facing up. Then, insert the black end of the IDE cable into the A/Master/Factory drive. With the fan connected, this is a tight fit. To insert the cable, start with the pins closer to the front of the TiVo, then rock the cable into the IDE port on the A drive. By rocking the cable in this way, you will be able to install the cable without hitting the side of the fan. Be sure that the cable is fully inserted and that the notch is facing up. See Figure 15.

Next, connect the open end of the power splitter to the TiVo's power connector. You can then tuck the cables under the front lip of the TiVo—but be careful not to dislodge the white panel ribbon cable. See Figure 16.

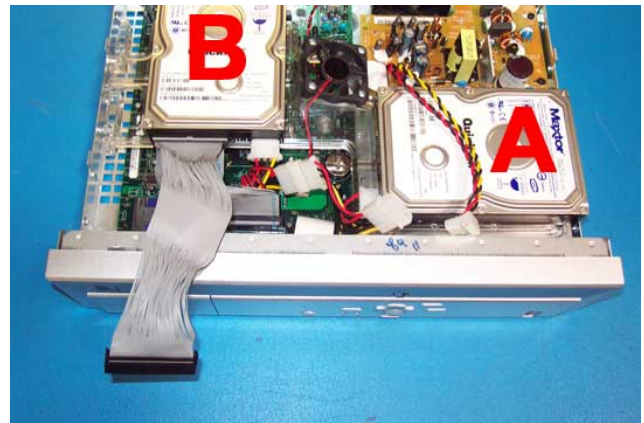


Figure 15 (above) Front/top view



Figure 16 (above) Front/top view

11. SECURING THE TWINBREEZE BRACKET TO THE BASE OF THE TIVO

Insert a metal washer onto each of the two remaining self-tapping screws. Use one hand to push the bracket down. Using your other hand, lift the left edge of the TiVo. Using Figure 17 as a guide, locate the pre-drilled holes in the bracket feet, which should be visible through the grates.

Be sure that the bracket mounts are aligned properly – counting from the gap between the sets of holes, you should be screwing into the fourth hole towards the back, and the third hole towards the front. If the bracket isn't sitting there, you may need to adjust its position a bit to get it there.

Once you have the bracket aligned, insert the self-tapping screws through correct hole in the bottom of the TiVo and into the pre-drilled holes in the bracket.

Gently tighten the screws in place. Do not overtighten.

Once you have secured the bracket using the two self-tapping screws, your TiVo should look like Figure 18.



Figure 17 (above) Bottom left side view



Figure 18 (above)

12. RE-ATTACHING THE TIVO LID

Place the TiVo lid back over the TiVo. Align the clips on each side of the lid so that they clip down on the sides of your TiVo. Slide the lid toward you while simultaneously pushing gently down on the top of the lid. See Figure 19. Once the lid is in place, reattach the five Torx screws. Plug in your TiVo and enjoy!

You can verify your new capacity by looking in the System Information screen of your TiVo. The System Information screen is located in the "Messages and Setup" menu. Once in the System Information screen, you will see "Variable up to XXX hours" (you may have to scroll down the page using the "channel down" button). This message gives you the maximum capacity of your unit, after the upgrade..



Figure 19

We thank you very much for your purchase and hope that you enjoy your newly-enhanced TiVo. Please [email us](#) with any comments, suggestions or complaints. If you found the upgrade easy to install (or even if you found it more difficult than you expected), we'd love to know. If you found our service to be excellent (or awful), we want to know that too. We're always looking to improve our products and services...the more we hear from you, the better. Thanks very much!