

TIVO DVR UPGRADE INSTRUCTIONS (#90-DT)

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Instructions for TwinBreeze® Gen4 / TCD649 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 it from power. 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.

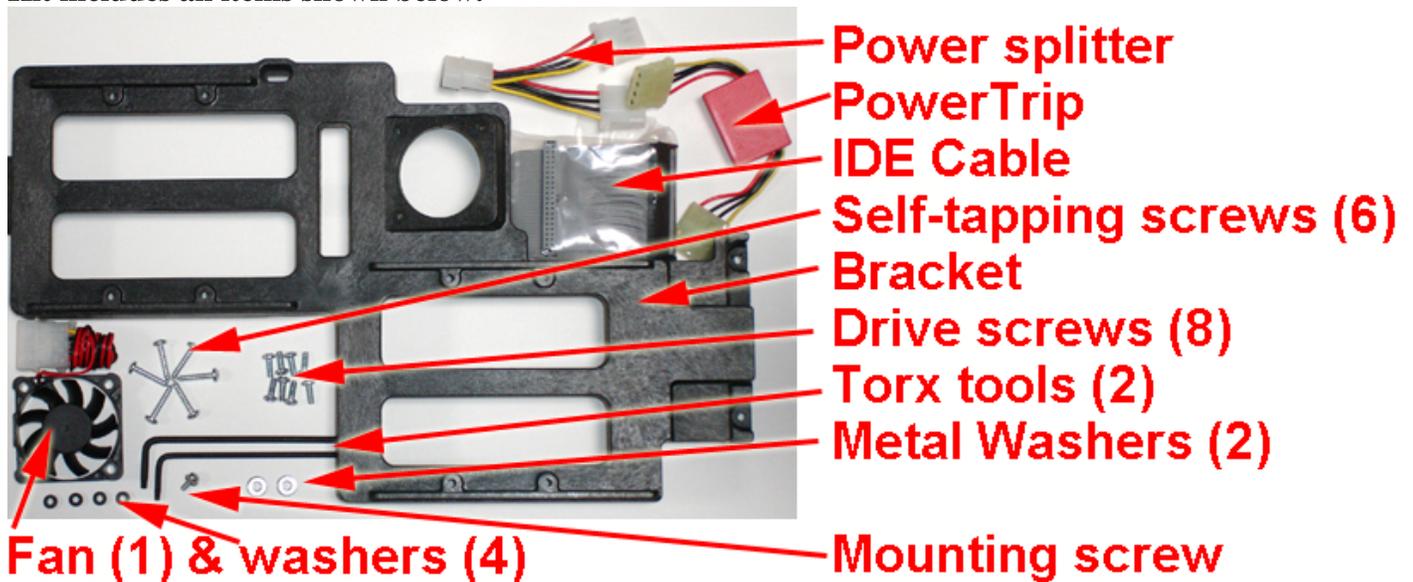


Figure 1 (above)

Not shown:

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

1. OVERVIEW

Upgrading your TiVo entails just five basic steps:

- Open the TiVo (Section 2)
- Remove the factory drive (Sections 3 through 5)
- Install drives on the mounting bracket and assemble parts (Sections 6 through 9)
- Install bracket and cables (Sections 10 through 13)
- Close the TiVo (Section 14)

2. OPENING THE TIVO

Unplug the power cord from the back of your TiVo 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 the back of your TiVo so that you can easily locate where they belong.

Using the Torx T10 (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 black 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, (d) a tuner cable running from the back of the unit to the tuner located toward the front of the motherboard, and (e) two bracket screws that connect the hard drive and its bracket to the TiVo. See Figure 4.

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.

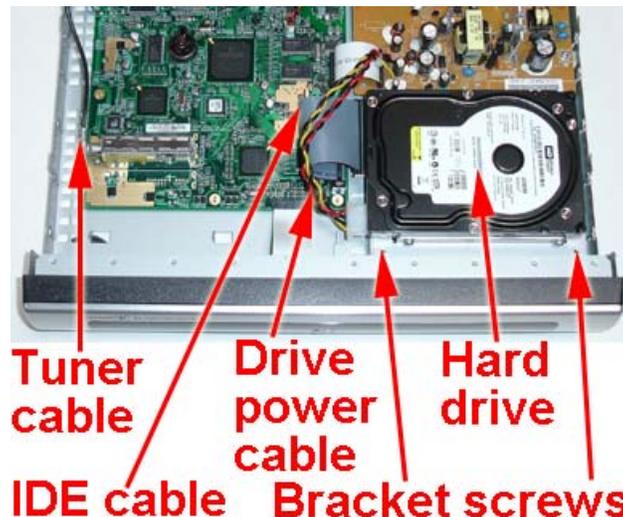


Figure 4 (above) Front/top view

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.

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.

Next, remove the other end of the IDE cable from the TiVo.

Set aside (not reused): One IDE cable.

Then, remove the tuner cable from the tuner by gently and slightly twisting the connector and pulling it away from the tuner. See Figure 4.

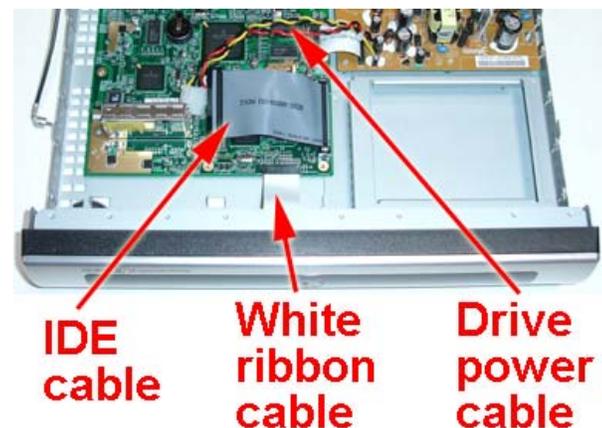


Figure 5 (above) Front/top view

5. REMOVING THE EXISTING DRIVE

Now, using the larger (T15) 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 IDE cable you removed.

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

NOTES: Your factory drive might appear different than the one pictured in Figure 6. If you have purchased a two-drive replacement kit, you will not re-use the factory drive, so it is not necessary to remove the drive from the bracket.



Figure 6 (above)

6. SETTING THE JUMPER (ONLY APPLIES TO “ADD” KITS – DUAL-DRIVE “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 small white or black plastic “jumper” that is located between the IDE cable and the power cable connectors.

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 7.



Figure 7 (above)

DO NOT MAKE ANY JUMPER CHANGES TO ANY DRIVE(S) THAT YOU RECEIVED IN YOUR UPGRADE KIT.

NOTE: If your factory drive is not a Western Digital, follow the instructions on the label to ensure that your drive is set to “Master.”

7. CONNECTING THE BRACKET FAN (OPTIONAL)

Your kit may include 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 8. (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 8.



Figure 8 (above)

Place the fan on the bracket as shown in Figure 9. Be sure that the fan is installed so that the cable is in the corner shown in Figure 9. Screw in the four fan screws (through the fan and into the bracket) until they are tight; **do not overtighten**.



Figure 9 (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 10. The IDE and power cable receptacles on the A/Master drive should face the middle of the bracket. Do not overtighten the screws.

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 10. The "B" drive should be connected near the bracket tab shown in Figure 10. The IDE and power ports should be facing the middle of the bracket. Do not overtighten the screws.

When both drives are installed, the IDE/power receptacles of both drives should be facing each other. See figures 11(a) and 11(b).

9. PREPARING THE CABLES

Once you have the drives and fan on the bracket, unwrap the fan cable from the connector. Then connect one end of the fan's power pass-through to the A/Master drive (only one end will fit). See Figure 11(a).

Then, wrap the excess cable around the red/yellow/black fan wire. See Figure 11(b).



Figure 11(a) (above)



Figure 11(b) (above)

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 12. Drape the remainder of the cable over the front of the unit.

Rest the TiVo's internal red/yellow/black power connector on the back of the TiVo, near the fan, as shown in the picture. You might have to flex or bend the power cable a bit to get it to stay in place. See Figure 12.

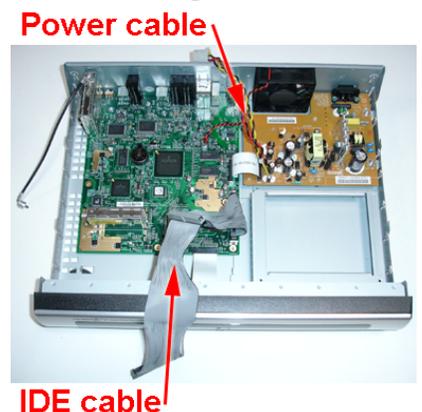


Figure 12 (above)

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 A/Master 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 B drive) into the center of the metal bracket base where the old drive bracket had been mounted. Be sure that the bracket tab is centered under the metal bracket. See Figure 13.

As you slide the bracket tab under the metal bracket, align the anchor screw hole (located next to the power connector of the B/Slave drive, see Figs. 15(a), 17) so that when you lower the TwinBreeze bracket down, the anchor screw hole is aligned with the screw hole in the metal bracket.



Figure 13 (above) Right side view

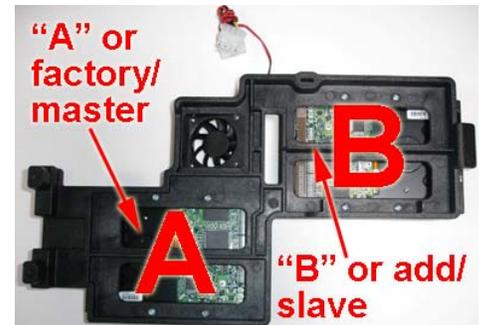


Figure 10 (above)

Once the bracket is aligned, you should be able to gently lower the bracket into place with your left hand. The bracket should be centered on the metal bracket, so that the anchor screw hole in the bracket is lowered over the screw hole in the metal bracket base.

As you lower the bracket down, thread the IDE cable into the rectangular hole between the fan and the B/slave drive. See Figure 14. Also, as you lower the bracket down, be sure that the bracket's anchor screw hole is aligned over the hole in the metal bracket.

As you lower the bracket, make sure that the tuner cable is out of the way.

NOTE: BE CAREFUL NOT TO DISLodge THE FRONT PANEL RIBBON CABLE. (See Figure 5.)

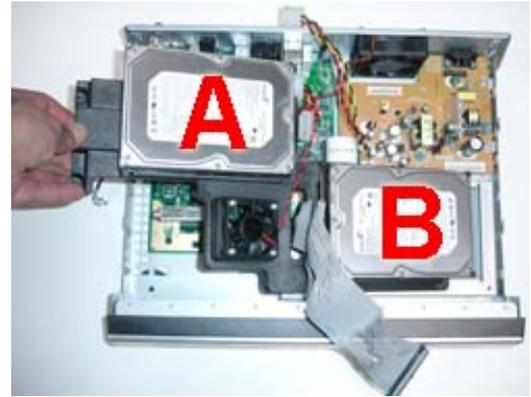


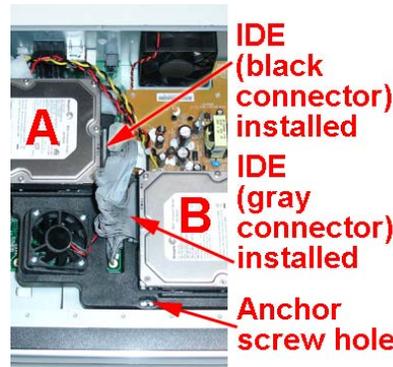
Figure 14 (above) Front/top view

11. CONNECTING THE REMAINING CABLES

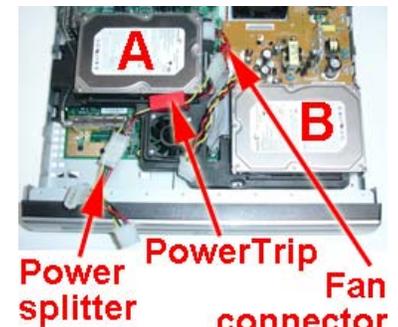
Position (but do not insert) the gray IDE connector directly in front of the B drive, between the drive and the fan. Make sure to line up the IDE connector so that the notch in the cable is facing up. Once the cable is aligned, insert it carefully into the IDE receptacle on the B drive. Be sure that the cable is fully inserted. See Figure 15(a).

Now connect the black connector into the Master/factory hard drive (or new "A" drive for dual-drive upgrades). Again, be sure that the notch in the IDE cable is facing up. Gently tuck the excess IDE cable into the rectangular hole between the B/slave drive and the fan.

Then, install the PowerTrip into the remaining open fan connector (which is connected to the A/Master drive). Install one end of the power splitter into the other end of the PowerTrip. See Figure 15(b).



**Figure 15(a) (above)
Front/top View**



**Figure 15(b) (above)
Front/top view**

Then connect the other end of the power splitter in to the B/slave drive.

Connect the TiVo's power cable into the power splitter cable.

When all of the cables are connected, do the following to ensure that the cables are well-positioned and will not prevent the lid from closing: (1) place the PowerTrip on its side, in between the fan and the A/Master drive; and (2) tuck the junction of the PowerTrip and power splitter under the corner of the fan, as shown in Figure 16.

Then connect the tuner cable back into the tuner. Push the connector firmly into place.



Figure 16 (above)

12. ANCHORING THE TWINBREEZE BRACKET

Look at the anchor screw hole and be sure that the hole in the TwinBreeze bracket is above the hole in the drive bracket. Also, look ahead to Step 13 below and be sure that the feet of the bracket are aligned over the square holes in the bottom of the TiVo. (As you look at the underside of the TiVo, be sure that you are holding the bracket and drives in place.)

Once the bracket is aligned, insert the bracket mounting screw into the bracket anchor screw hole, and use the T-10 torx key to tighten the screw. Do not overtighten. See Figure 17.



Anchor screw hole
Figure 17 (above)

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

Insert a metal washer onto each of the two remaining self-tapping screws. Turn the TiVo so that you are facing the left side of the unit (the side further away from the power supply). Use one hand to hold the bracket down. Using your other hand, lift the left edge of the TiVo. Using Figure 18 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.

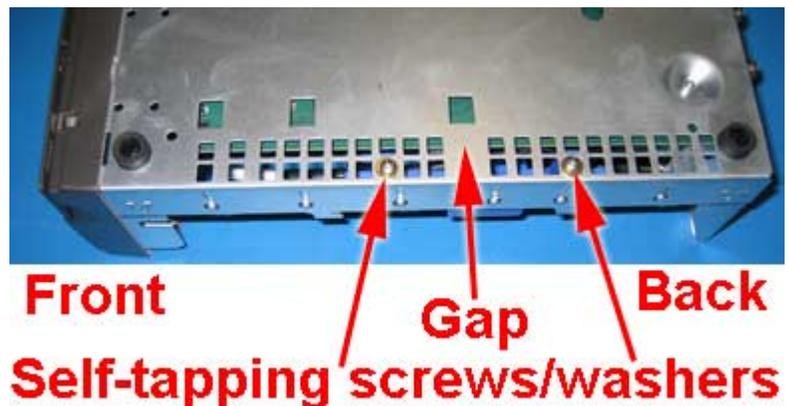


Figure 18 (above) Bottom left side view

14. 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 (above)

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!