



# Replacing Samsung HLM/HLN-DLP Television Color Wheel

Use this guide to replace the television color wheel of your Samsung HLM/HLN-DLP.

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## INTRODUCTION

The older model Samsung televisions are plagued with the problem where the bearings in this color wheels little motor go and starts to sound like a banshee, or at least what I imagine a screaming banshee to sound like. Anyway, it's pretty bad. Here is how to replace the television color wheel of your Samsung HLM/HLN-DLP.

### TOOLS:

- [Phillips #00 Screwdriver](#) (1)
- [Flathead 3/32" or 2.5 mm Screwdriver](#) (1)
- [Spudger](#) (1)
- [Compressed Air](#) (1)

## Step 1 — Color Wheel



- I've got one of the early models of the Samsung 43" DLP Television sets. We've been through a lot together, but it's just a fantastic picture. I love it.
- The Color Wheel is screaming like a banshee as i mentioned, so here is how to replace it.

## Step 2



- Purchase a Color Wheel: I found a few different places that carried this replacement part. The cheapest by far was Partstore.com who carries it just over \$100.
- Requirements List Below
- Philips screwdriver, not too small and at least 5 inches long. There's one screw that's a reach.
- Tiny (jeweler's) screwdriver. You may not need this. I needed it to get a connector off.
- Tweezers. I needed them to get to a few screws in tight places.
- Compressed air. I didn't have this, but I wish I did. It's dusty in there.
- Pen and paper. I took copious notes. If you do anything that I don't talk about here, you should write it down. I carefully documented every cable that I unplugged and every part I removed. Thank God I did that.
- 1-2 hours

## Step 3



- NOTES
- In this document, left and right are “stage-left” and “stage-right”, or the left and right sides of the set as you look at the back, facing your sofa.
- Almost all of the screws are identical. You can safely keep them all in the same cup, or pile on the table, or carpet, or wherever you store the screws.
- Don’t touch anything that looks like light will shine through it, like the projector lens or the colorwheel itself.
- DON’T rely on this document entirely. Pay close attention and take notes or digital pictures.
- If you were just watching your TV, your projector lamp will be HOT. Let it cool down.

## Step 4



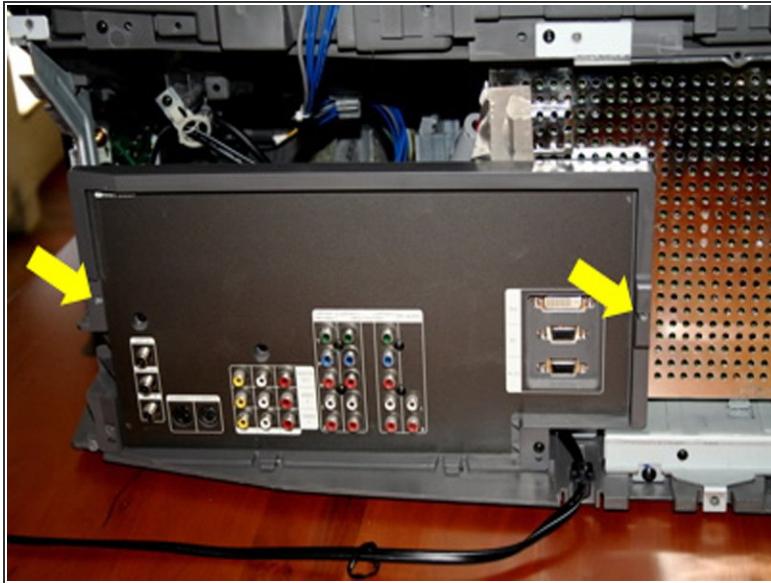
- Remove the back panel from the television set. The panel runs the entire width of the bottom rear of the set. There's no need to remove the access panel for the lamp. That'll come off with the panel. There are 14 screws.

## Step 5



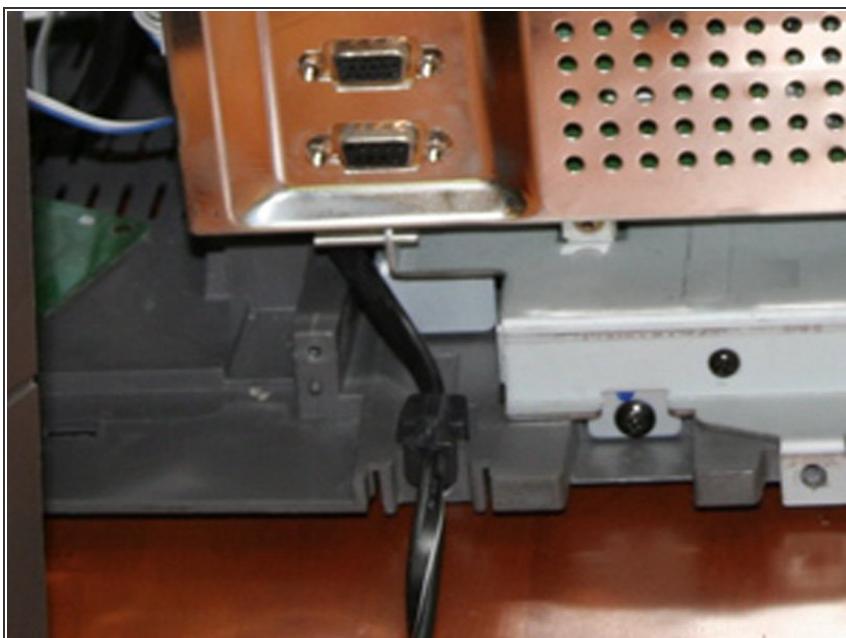
- Remove the projector lamp. This may be unnecessary, but (a) it lets you see your target (the color wheel) and (b) it just seems like the safe thing to do. It's easy. Just unscrew the two brass screws holding it in. It's on the right side of the TV. The screws won't come out, just pull them out with the whole unit by pulling on the handle and sliding it straight out. Carefully store it somewhere safe.

## Step 6



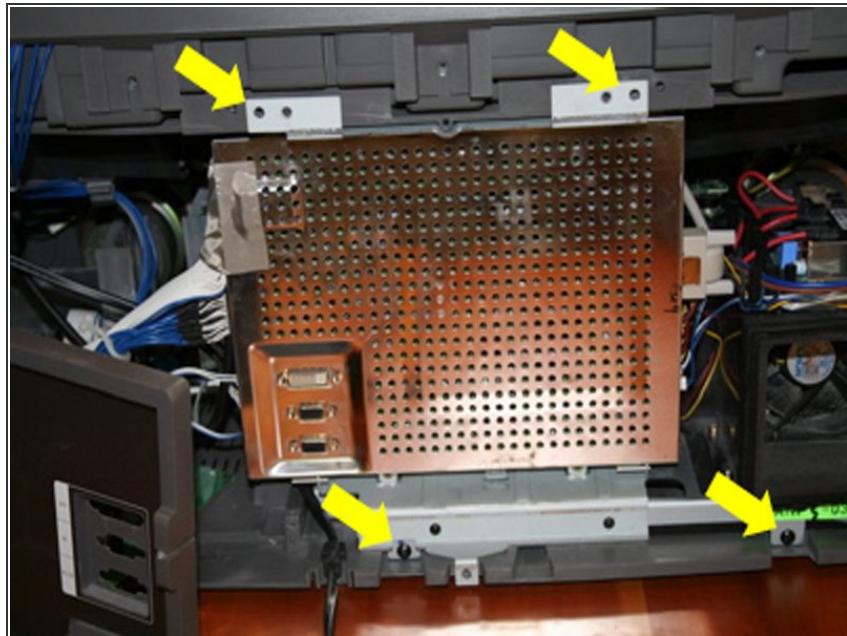
- Remove the panel on the left side by removing two screws holding it in place. Carefully slide it and the attached PC board out a few inches until cables stop you. You won't actually need to remove any cables from this board to get at the color wheel. (Of course I removed most of them the first time.)

## Step 7



- Carefully note how the power cable is positioned in the set, and the route it takes out the back. Once you have done that, pull the power cord out of its notch in the bottom of the case. It's blocking the next part that has to slide out.

## Step 8



- Remove the center panel. Remove the two screws in the bottom that have larger heads than the rest. You don't need to take off the regular sized screws that fasten the back panel to the base. They'll all slide out together. Remove the top two screws that hold the panel to the plastic case.
- Center panel. The two screws on the bottom have larger heads than the rest. Remember that these go here. There are two more screws on the bottom that hold the vertical panel to the base. No need to remove them. If you do, things get a bit floppy.

## Step 9



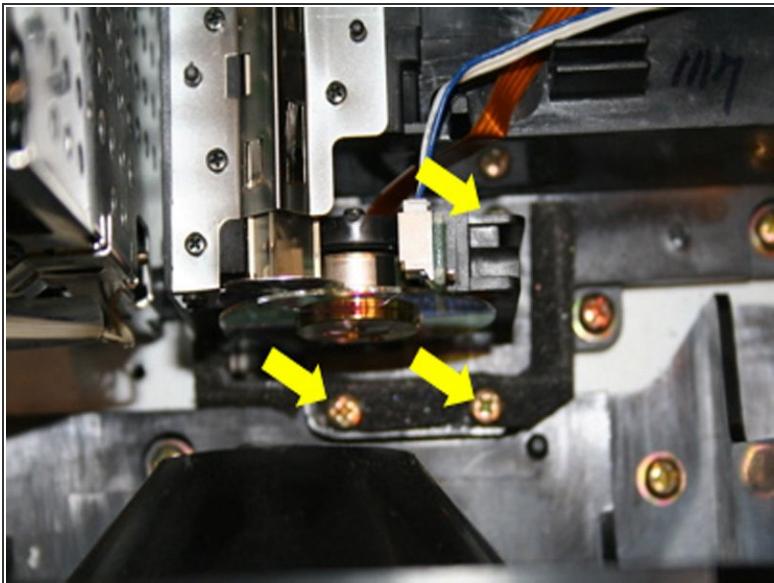
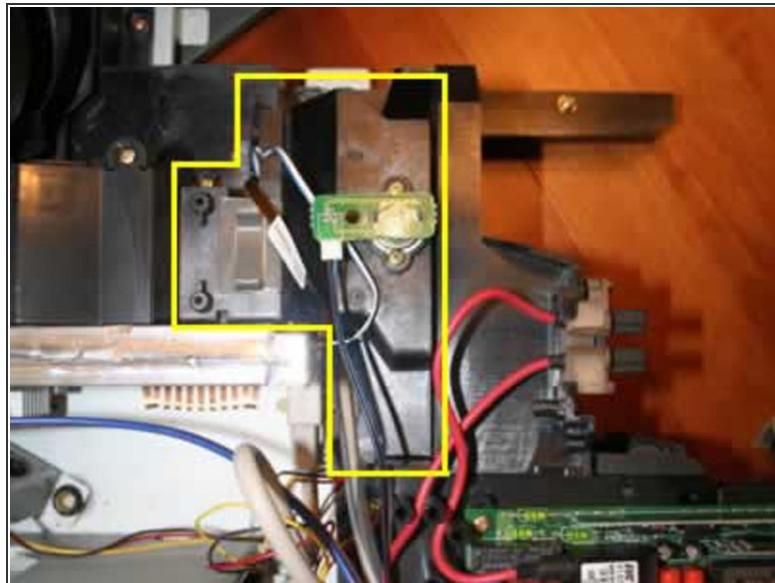
- Slide out the center unit slowly, just a few inches and take a peek inside as you do. It's a snug fit, so you'll need to ease out both the top and bottom at the same time. Some things to notice as you do this. Look at how the projector lens is fitted inside a foam sheath. You'll need to put that back later, so take a good look.
- There are a few cables on the left side restricting it. You'll need to unplug these:
- blue/brown two-wire power cable. You'll need to unplug this from the main set.
- blue/white cable connecting to the left side. Squeeze the plug to unlatch it and remove it from the center unit that you're removing.
- Sensor switch on the right side. Unscrew this from the tv case bracket.

## Step 10



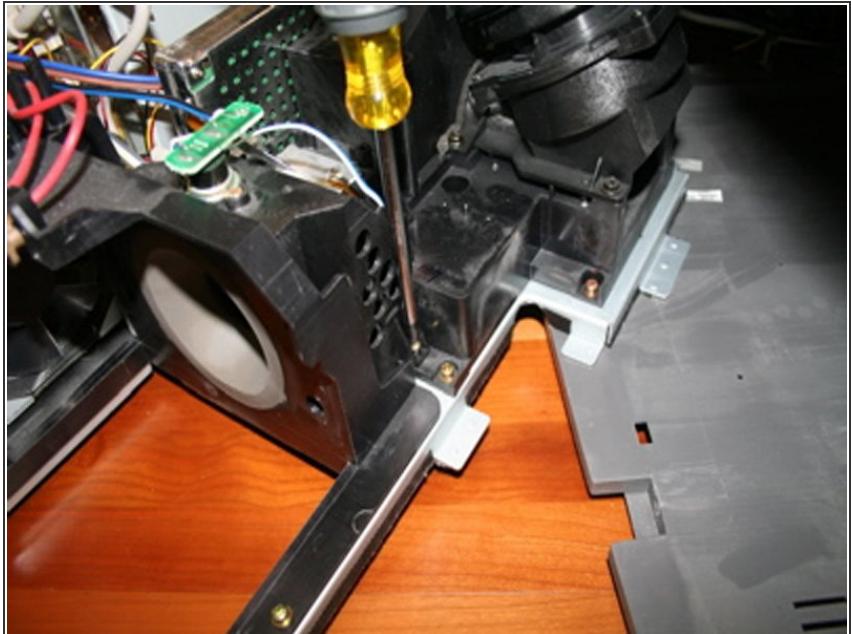
- Now you can slide the center panel and all the parts behind it out of the television. If you didn't remove any cables on the left panel, you'll have to swing everything over to the left to clear the television.
- Note: Steps 11-13 are removing the bad color wheel. I suggest doing these steps carefully, as if you were going to need to use this color wheel again. You never know if you may need to reverse what you've done.

## Step 11



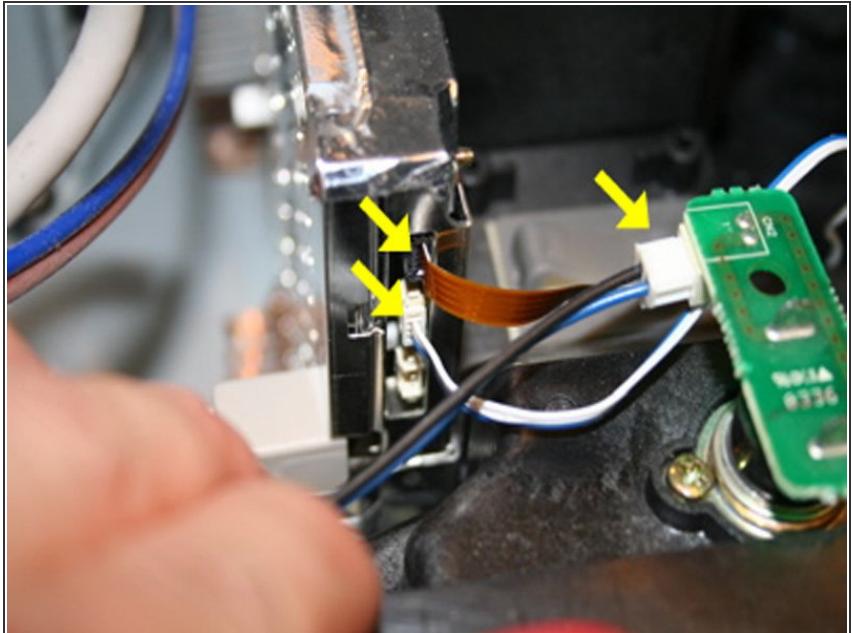
- Locate the color wheel cover. It's got a small green circuit board on top of it with a black/blue wires connected to it. Remove that plug. Also, and this is the trickiest part, remove the two cables coming from the color wheel. One is a copper-colored ribbon cable. That will just slide out easily. The other is a cable with two white and one blue wire. This one is tricky to remove, so you'll need to ease it out. I pried it out with a jeweler's screwdriver. DO NOT just pull on the wires.
- Note: A reader made the following excellent suggestion to avoid breaking the white connector on the end of the blue/white/white wire:
  - *Having replaced quite a few of these colorwheels as a Samsung service tech, I have found that you do not have to remove the blue/white wire from the DMD board (avoiding the risk of damage to the optical engine) There is enough slack in the wire to route it around the cover when removing it. You can then unplug the wire from the old colorwheel and plug it in the new one (the plastic tab will break off the old connector when you go to remove it, but it will still fit snugly on the new colorwheel) Using this method I have had no problems reusing the old connecting cable*

## Step 12



- Unscrew the color wheel cover. There are three screws holding it in place. One to the rear of the set, and two in front. The one to the rear is tucked way in, so I just unscrewed them and carefully left them in place and pulled them out with the cover. Slide the cover straight up, exposing the color wheel. As you do, note where the color wheel wires go — out the gap in the front.

## Step 13



- Remove the bad color wheel. The color wheel is held in place with three screws. Remove the screws and the color wheel. The color wheel may be stuck in place with the foam tape, but that'll give with a small tug. To remove the wheel cleanly, I lifted the front edge and slid it toward the front.

## Step 14



- Insert the new colorwheel. It can be tricky to do this without touching the wheel, or bumping the wheel into the case. (This is where you need the nerves of steel). Once you get the proper angle, it will slide into place. Don't force it — remember, this thing needs to spin at 9000 RPM, it's probably pretty sensitive. At first, I tried to put it in place with the screws already in the holes. This didn't allow me to slide it in properly. Lesson learned: put it in without the screws and then hold the screws in place with tweezers, if necessary.
- Put the color wheel cover back on with the wires out the space facing the front of the case. Make sure the wires reach their destinations, and screw in the cover. Three screws. Attach the three connectors. The metal contacts on the ribbon cable face the rear.
- Put all the guts back in place. Slide the center unit back in. Without touching the projector lens, open up the slice in the foam so it wraps around the projector lens, and slide it in the rest of the way. The center unit can only go in on it's track, so again, don't force anything. Connect the two wires you removed on the left side. They should only go in one way. Did I mention don't force anything? Screw the sensor switch onto the bracket on the right.
- Put the power cable in it's slot. Just the way you noted on the way out.
- Slide the left PC board and panel back in place. There are two screws that hold it in place that you screw in now, the rest hold on the access panel.
- Put the projector lamp back in place and screw it into place. I forgot to do this both times.
- Put the access panel back on and screw it in (14 screws)
- Plug in the television, say a prayer, and turn it on.

To reassemble your device, follow these instructions in reverse order.