

How to replace the color wheel in your Samsung HLR6167W DLP television.

(with 2 screws left over)



by unitool
<http://unitool.wordpress.com/>

You can do this.

I did it, and if I was able to do it, almost anyone should be able to replace the color wheel in their Samsung DLP. Special thanks to [Scott at Jangro](#), who led the way and inspired me to make a similar guide for the HLR6167W. Right up front, let me say that I had two screws left over when the operation was finished. I have no idea where they belong, and I spent a lot of time looking at the back of my tv trying to figure out where they go. On the upside, it seems that these two screws are completely unneeded, as my tv continues to perform flawlessly two weeks after my repair.

I'd like to echo Scotts advice, and suggest that you take a lot of pictures as you go along disconnecting cables and removing screws as you dismantle your television.

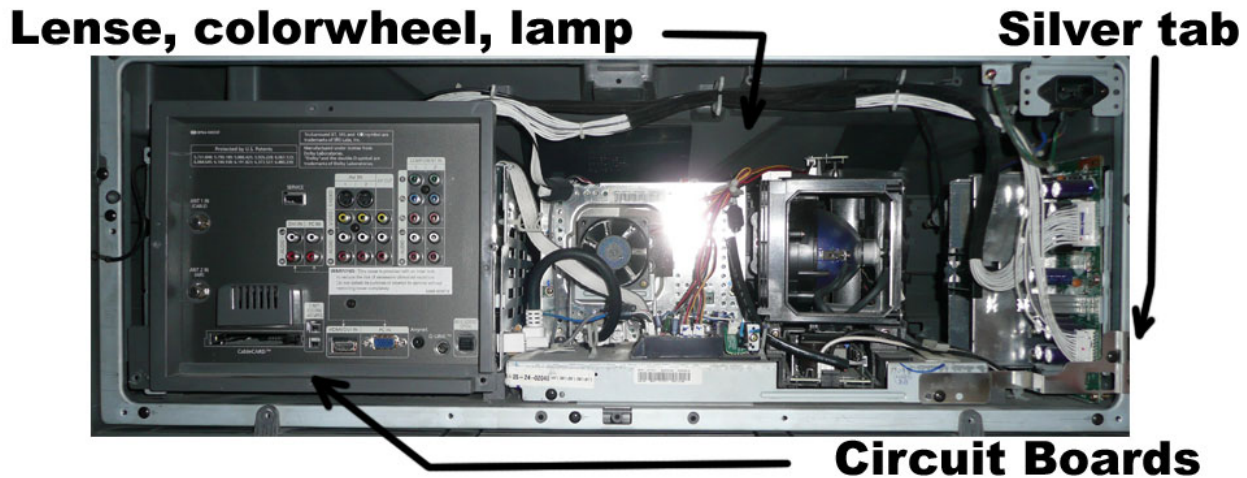
This is the most important thing to remember – do not touch, tear, bump, bend, scratch, scrape, nick, nudge or even breathe on your new color wheel – especially while you are installing it! It is very delicate and it spins at 9000 rpm, so any scratches, nicks, chips, etc. are pretty much a death sentence. Be careful! Don't worry, though – you can do it if you are careful and take your time to get the new color wheel in place without damaging it.

Apparently these color wheels are prone to failure in older Samsung DLP televisions, but lucky for us, these televisions are designed to make it very easy to replace the major parts, even if you have no idea what you are doing. It is too bad the parts fail, but it is nice that it is so easy to replace the parts on your own. So, uh...thanks, Samsung?

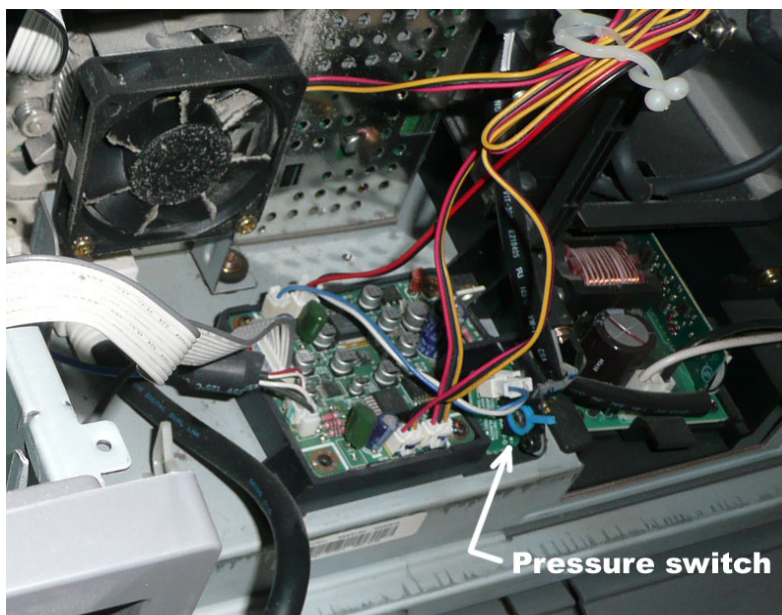
Is your color wheel broken? If you are watching tv and you hear something inside your set make a clunk, thump or thud and the picture goes screwy, chances are your color wheel just broke. Actually, "shattered" might be a better description of what can happen, as you can see below. As far as I can tell, there are only 3 moving parts inside the television – 2 fans and the color wheel. In my research I saw a lot of references to horrible high-pitched noises before the tv craps out, but that was not my experience. When I opened the color wheel cover, I found glitter.

I ordered my replacement from [Partstore](#), the same place Scott ordered his new color wheel. Obviously, it is important that you get the right part, in this case [# BP96-00674A](#)

First, remove all the screws holding the rear access panel in place. Once you have removed the rear cover, remove the little silver tab in the lower right corner and spend some time looking over the various cables you'll need to disconnect.



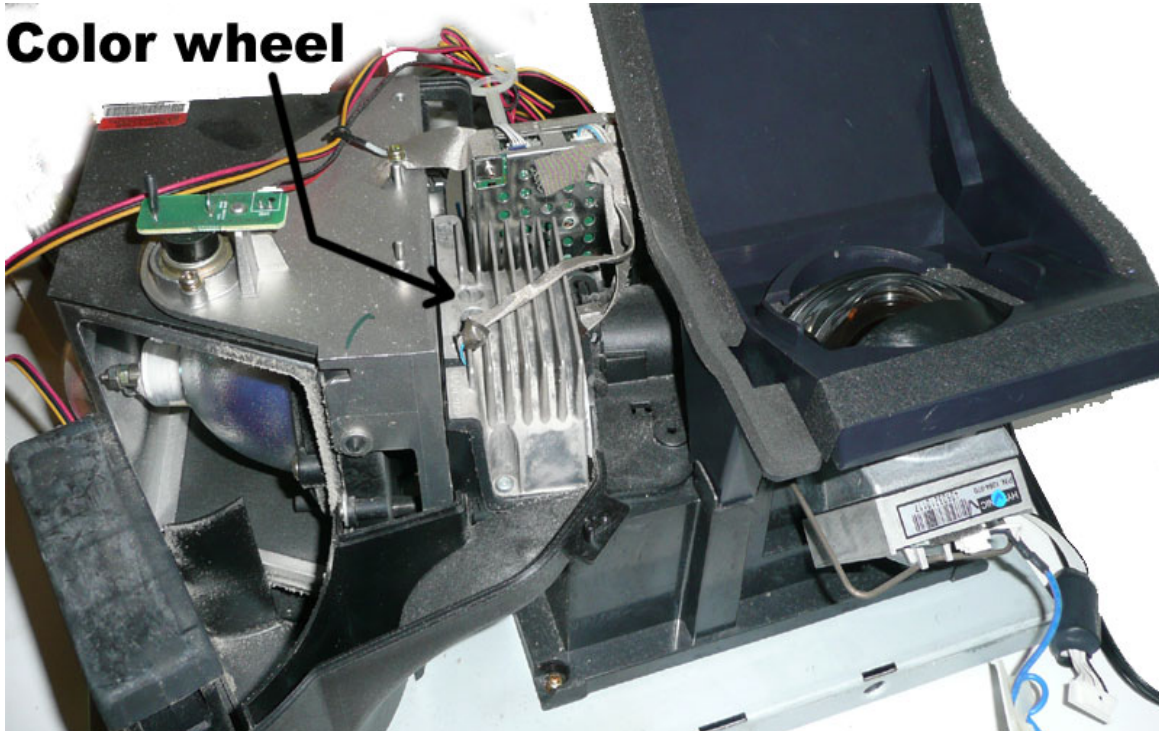
Take note of this little blue switch which will prevent your tv from starting if it thinks the access panel is not in place. Keep this in mind later when testing your tv and trying to figure out why it won't start.



Remove a few more screws here and there in order to free these two larger parts. The piece on the left contains a load of circuit boards and while you don't need to remove it, you will need to be able to slide it forward in order to disconnect a few cables as you are doing your thing. Both pieces should be easy to move when the screws are removed – at no point should you have to tug or force anything. If you find that you cannot remove a part, check again to see that you have disconnected all the necessary cables and screws.

I disconnected a cable here and a cable there and then I was able to remove the entire right-side assembly, which contains the lamp, color wheel, optics engine and lense. Pay attention to which cables you disconnect from where – again, I strongly recommend taking a lot of pictures for reference.

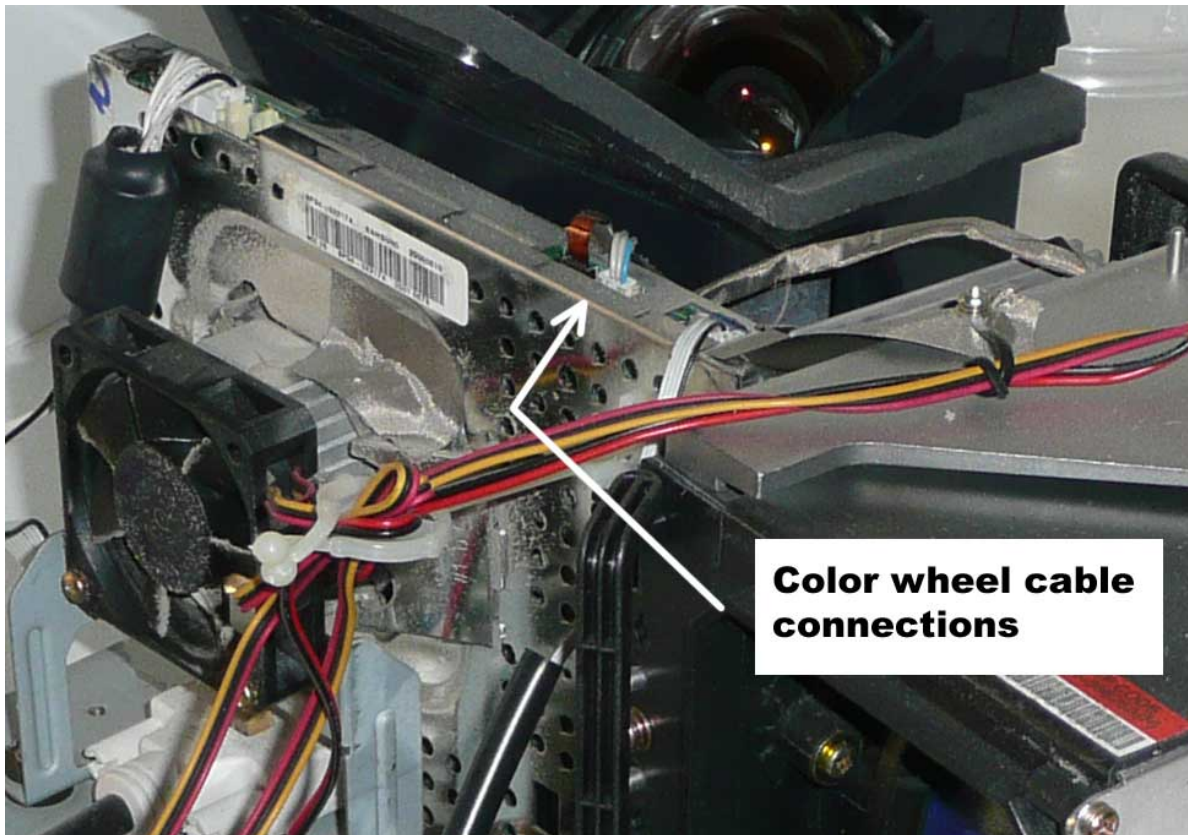
Handle with care and remove the entire assembly to a spot where you have room to tear it apart a little bit. Here is what it looks like when you have it removed from the tv and you have removed the top half of the fan cooling assembly. That's the lamp on the left and the color wheel in the middle, with the lense on the right with the optics engine behind the lense, encased in a sweet aluminum box.



The color wheel itself is very small – smaller than a DVD. The entire assembly is fairly small and it needs to fit into a tight space. You will need to remove the fan casing to access the color wheel – take care not to let the fan assembly fall apart, or at least note which way the fan is facing so that you can reassemble it correctly.

I think you can also remove the lense housing which might make it a *lot* easier to install the new color wheel. I didn't try it but I wish I had, because it space available makes it difficult to install the new color wheel without touching it against anything. It takes steady hands and nerves of steel, neither of which I possess. The problem is that the wheel itself sits in a very narrow space between two surfaces and it is critical that you do not touch the color wheel as you are installing it – you should not let it touch anything as you install it!

Remove the top half of the fan housing to access the two screws that hold the color wheel in place. The color wheel has two cables that connect to the sweet aluminum-clad circuit board. One of them is a weird thing I'd never seen before – a wire with no connector that slides (with some difficulty) into a slot on circuit board. It has a silver side and a brown side and it only works one way, so make sure you note the orientation of the cable when you disconnect it so that you can properly connect the new cable. The housing around the lense makes it more difficult to connect this cable than it should be.



Remove the two screws that hold the color wheel in place and gently work it free. The entire assembly has a rubber gasket that around it that makes things a little tricky, but it's no big deal. Remove the broken color wheel and set it aside for later. Take a look in the well that the wheel sits in – you might need to clean out broken color wheel bits before you can install the new part. Do not use compressed air to blow bits of colored glass everywhere.

Here is the hard part – installing the new wheel without damaging it. It fits into a narrow slot with metal on either side waiting to scratch your new color wheel. You can't see what you're doing, and you almost need a second person to help you – someone to tell you if you are on target. You might also want to remove the lense housing in order to make more room. I was afraid to remove the housing, but if I was to do this again I might reconsider, because I think removing the lense housing will also remove the scratching surface seen on the right in the photo below.



Color wheel housing interior shown much larger than life.

Here's how to replace the color wheel –

Find your broken color wheel and make sure it is clean – you need to use it to practice the installation before you try it with the real thing. Examine the color wheel housing and you will find a raised section on one side. That raised section matches a groove in the larger assembly that you can use as a guide to place the new color wheel into position. Unfortunately, the rubber seal complicates things by making it more difficult to get the wheel to drop into place.

Use the broken color wheel to practice seating the new color wheel until you learn how to seat it without forcing it into place. Due to the narrow space and the rubber seal, you will find that it is a good idea to practice with the broken part before you try it with the real thing. It is critical that you are able to seat the color wheel without forcing it – when it is in the right position and at the correct angle, it will fall into place.

I found it easiest to turn the assembly so that the lamp was closest to me, with the color wheel next and the lense assembly at the far end. This is a where a second person will be handy – they can tell you if you are about to scratch your new part.

Practice until you think you are ready for the real thing. Before you install the new color wheel, make sure you have correctly placed the rubber seal and that you have arranged the two cables correctly – they go under the rubber seal. The rubber seal itself connects to the metal housing via some ingenious hooks. Carefully install your new color wheel, connect the two cables to the circuit board, reassemble the fan housing and put it all back into the tv, making certain that you have reconnected all the cables, little silver things, etc. Because of the little blue switch, you need to reinstall the back cover of the tv before the tv will start.

Don't forget that it takes your tv a few minutes to get ready after plugging it in, so give it 5 minutes or so before you poweup.

That's it. I told you it was easy.