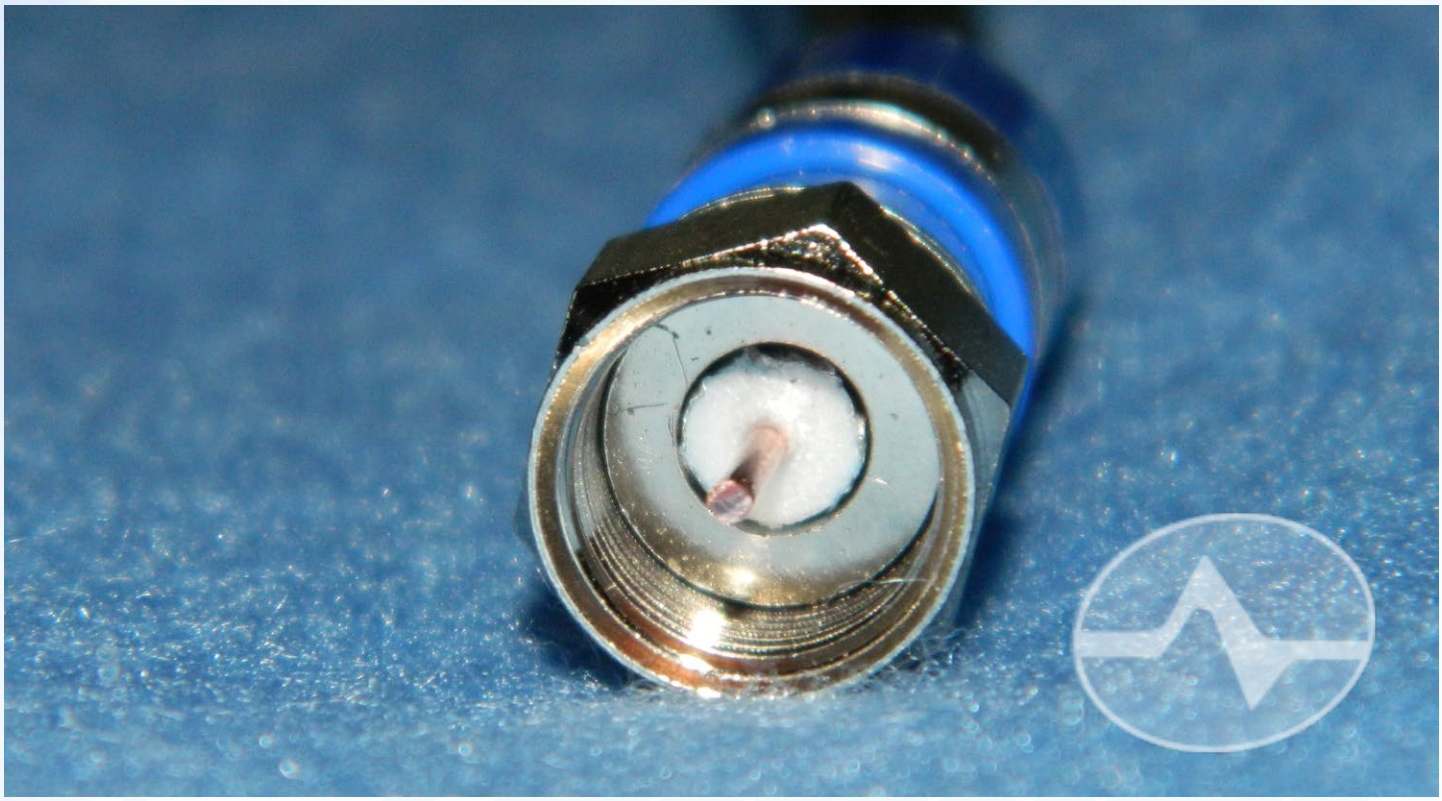
Solid Signal shows you...

HOW TO DO IT

Make RG6 Cables
The Solid Signal Way

SOLID SIGNAL

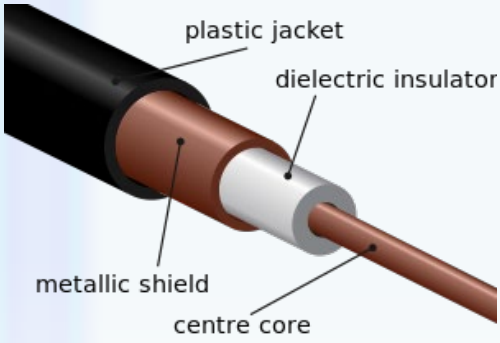


It's not that hard, but you have to pay attention.

Coaxial cables carry a lot more information than they used to. Rather than the 15-20 channels of the old local antenna days,a coaxial cable could carry 500 channels quite easily. A properly made coaxial cable has no problem with this, but a badly made one will get flaky and give you problems.

Buying pre-made cables from Solid Signal isn't a bad idea, but if you need a lot of cables you'll want to learn how to do it yourself. Luckly, Solid Signal has all the parts you'll need.

WHAT YOU'LL NEED



Solid Signal has everything you'll need to make quality RG6 cables, but first take a few moments to get familiar with the terms. Our **Cables 101** series will give you all the basic knowledge you'll need to follow along. Here's a graphic that will quickly show the names of the different parts of the cable.

You'll need cable and connectors of course:

Perfect Vision ULPVRG6SCBLK Single RG-6 Coax Cable - 1000 ft (Reel in a Box) - Black (ULPVRG6SCBLK) from Solid Signal or something similar. This is DIRECTV-approved double-shielded cable.

Digicon S-Series DS-6 RG-6 Connectors (Bag of 100) (DS6) from Solid Signal. These are the correct DIRECTV approved connectors.

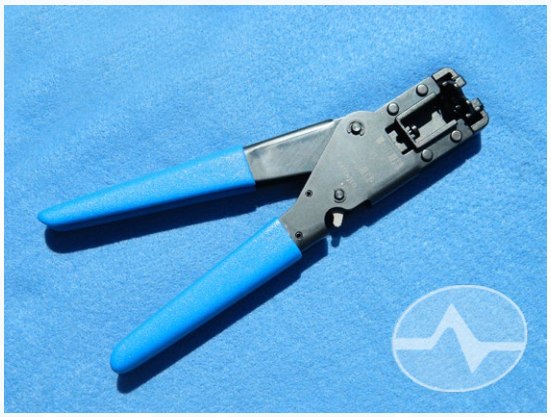
Solid Signal has created a prep kit that has all the tools a first-timer will need. These are quality tools that are good enough for professional use but are easy for amateurs as well. Here's what you'll get:

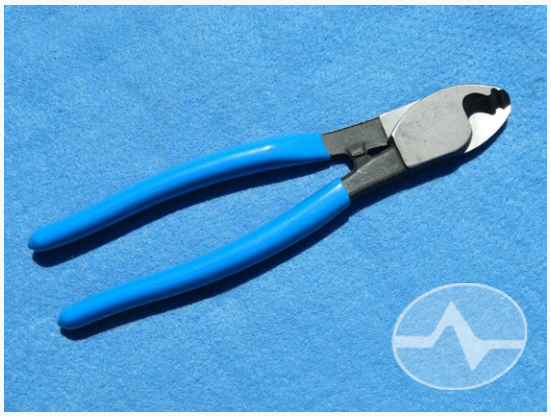
A PerfectVision Ratcheting Compression tool (top)

A PerfectVision Cable Prep tool (center)

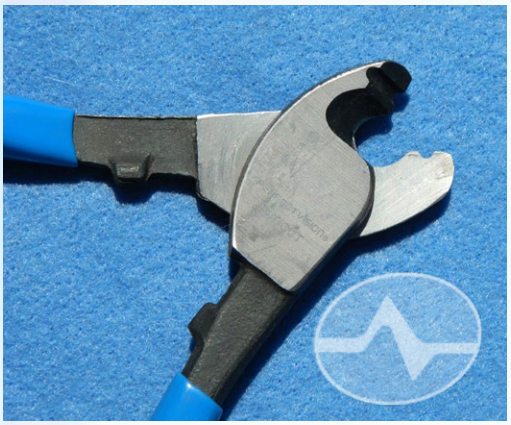
A PerfectVision 8" Coax cable cutter (bottom)

To test your cables you'll need a **multimeter,** an **F-connector barrel,** and a **terminator.** Solid Signal offers these but it's ok to use what you have laying around.





PREPARING THE CABLE



First cuts on the cable

Start by cutting a small length off the coaxial cable. If the cable has been sitting out for any period of time, the end could have gotten damaged, so it's a good idea to cut off 1/2" or so to make sure it's a clean cut. Use the cable cutter -- never use needlenose pliers or dykes. The cable cutter makes a curved cut that is much less stressful to the cable.

When the cable is cut, the dielectric will be slightly crimped in one dimension. Some people go through the extra step of trying to push or roll the cable back to being perfectly round. If you do this wrong, you'll damage the cable, and you'll be cutting off that part of the dielectric anyway.

Using the cable prep tool

The first thing to check is that the cable prep tool is set for the proper cable. This tool can be used for RG59, RG6, RG8, and custom thickness cables. It should come set for RG6, but here's how to check:

There is a black triangle at the outside of the tool that points to the setting you've used. It should point to "6" as you see here. It's a little confusing because another setting is "9" which, of course, is an upside down 6. If you hold the prep tool like you see in the picture, you'll see it's either a 6 or a 9. Here it's a 6.

If it's not a 6, gently push the orange plastic block out of the tool and rotate it, then put it back so it looks like the picture.

Open the cable prep tool by squeezing from the top and bottom until you can easily slide the cable into it. Line up the end of the cable with the edge of the tool. It's important not to put the cable too far in or out of the tool, it should be "just right," lined up with the edge of the tool.

Doing the twist

Put your finger into the ring in the cable tool, and while holding the cable with the other hand, spin the tool around the cable. You'll need to practice this several times until you get it right, because if you cut too far you'll need to start over and if you don't cut far enough it will be hard to get the cable ready for the next step.

PREPARING THE CABLE

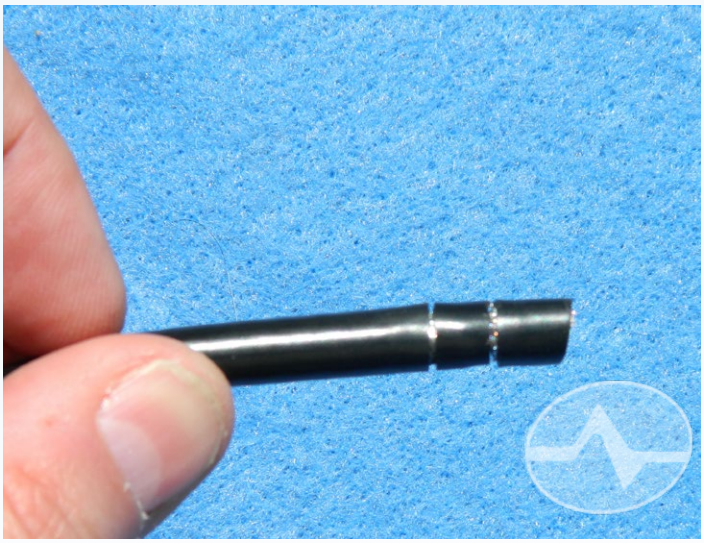
You should be able to feel the resistance as the tool cuts through the wire. If this is double-shielded cable you may only need to spin around once. Quad shield may take two or three times around.

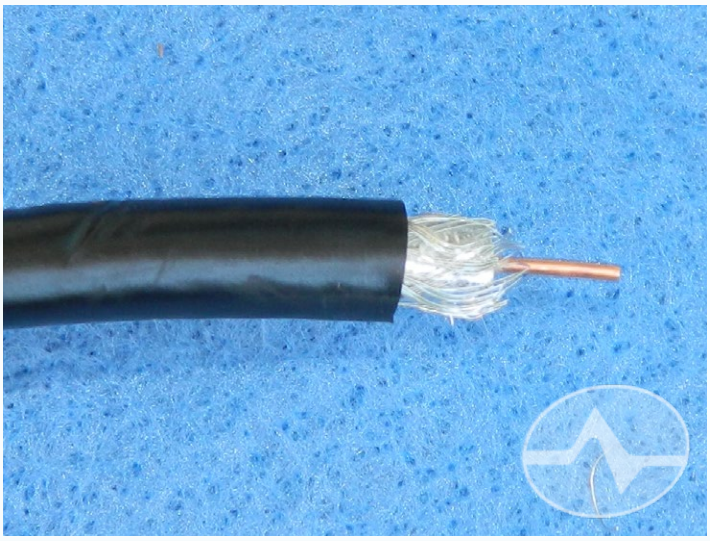
When you're done, you'll see something like this. The part on the very right should slide off easily to reveal bare wire. The part in the middle should slide off to show braided wire.

If this is quad shield cable, then one layer of foil and braid should also come off. If this is double shielded cable, only the rubber sheath should come off.

If you cut all the way down to the foil, you will have to start over again.

Practice this part several times and you will get used to spinning the tool just enough to make sure you cut what you want to cut and leave what you want to leave.

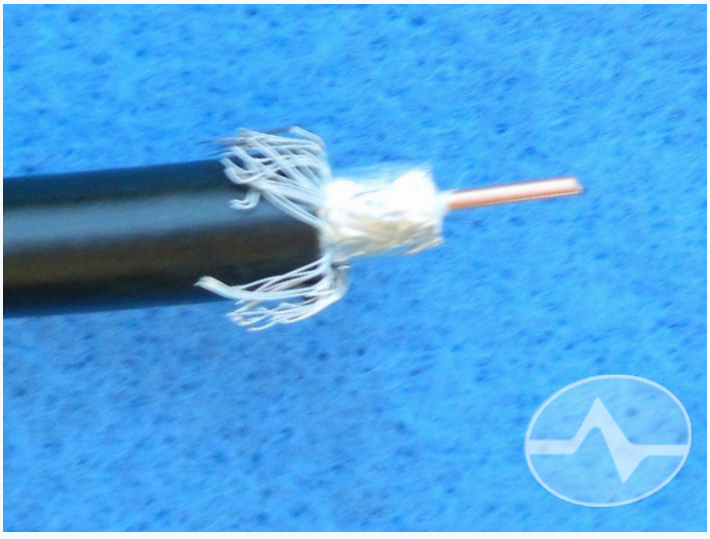




Folding the braid & checking the cable

The next step is critical. Slowly and carefully fold the braid down over the outer jacket. Be careful not to break any individual wires. When you are done, the wires should be as straight as possible but be gentle - it is better to have the wires less straight rather than breaking them off.

Now, look at the entire outside of the cable. The foil should be clean without any cuts, and you should not be able to see the dielectric through it. The center conductor should be clean and free of nicks, with no stray wires attached. The more time you spend inspecting the cable at this point, the more likely it will be that you will have a good clean connection when you are done.



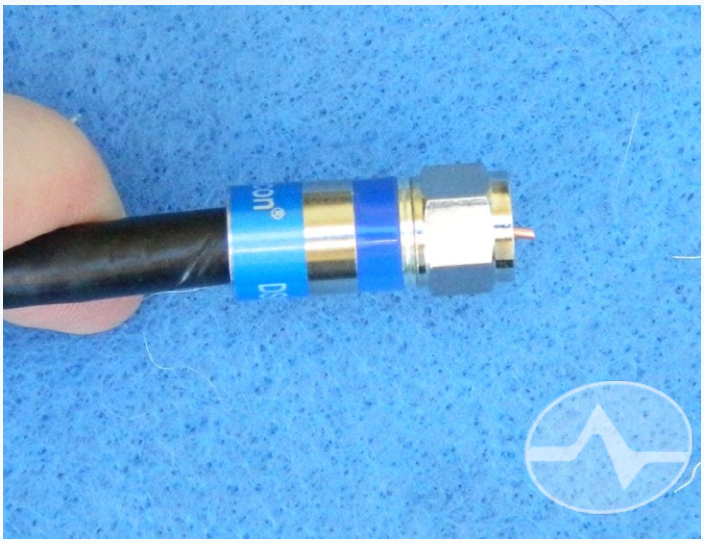
ATTACHING THE CONNECTOR

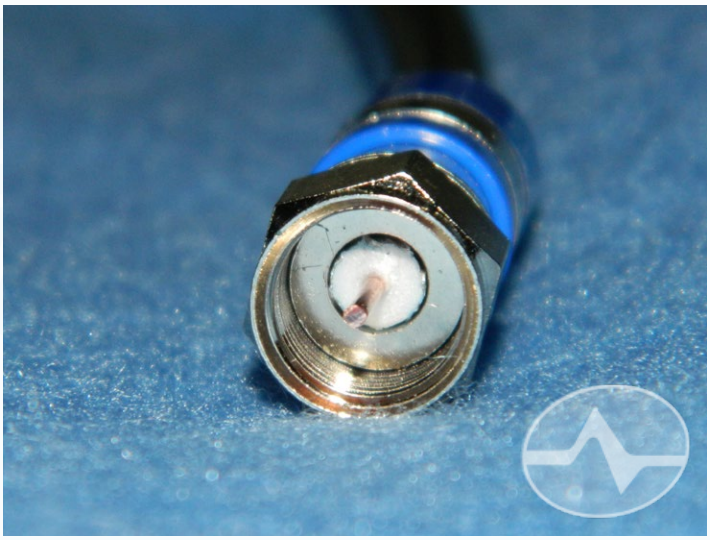
Attaching the compression connector

Slide the compression connector on slowly and carefully. You may need to guide it slightly so that the center conductor doesn't get stuck on the inside. If there is a plastic insert on the inside, it should slide out by itself as you push the connector on.

It's best not to twist the connector if possible, as excess twisting could detach the braided wire.

The dielectric should be exactly even with the inner edge of the connector and the center conductor should poke out past the connector just a tiny bit. Once again, look for stray bits of braid or nicks on the center conductor.

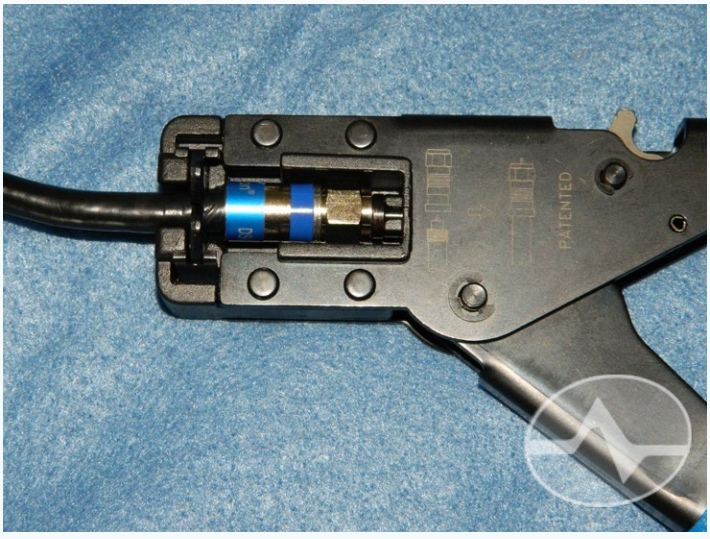




Using the compression tool

Feed the cable into the compression tool by putting the center conductor tip into the tool first then sliding the cable down into the tool until the jaws lock around it. Now slowly but firmly apply pressure to the tool until the connector is compressed all the way onto the cable. When it's done, take another look at it and see that the dielectric hasn't moved and make sure no stray bits of braid have come off.

Now for the hard part... testing.

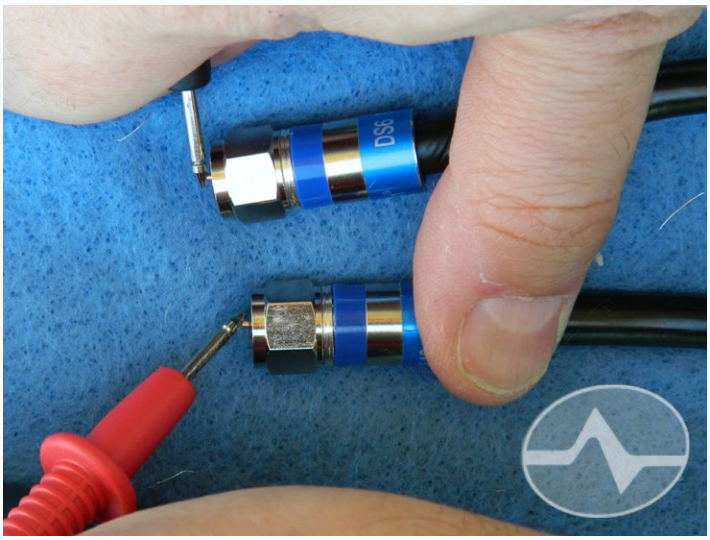


TESTING THE CABLE

Checking the continuity

Testing is absolutely critical. Every cable should be tested for continuity and resistance. Professionals use a fancy resistance tool but you can get the same results with an inexpensive multimeter, a barrel and a terminator.

The meter should be set up to measure resistance (Ω) and should be on the lowest setting, usually indicated by a speaker symbol or a zero.



First measure the center conductor. Touch the leads ONLY to the tips of the center conductors and make sure the needle on the meter goes all the way to the right.

Now do the same with the connectors. Make sure the leads are ONLY touching the outer connector.

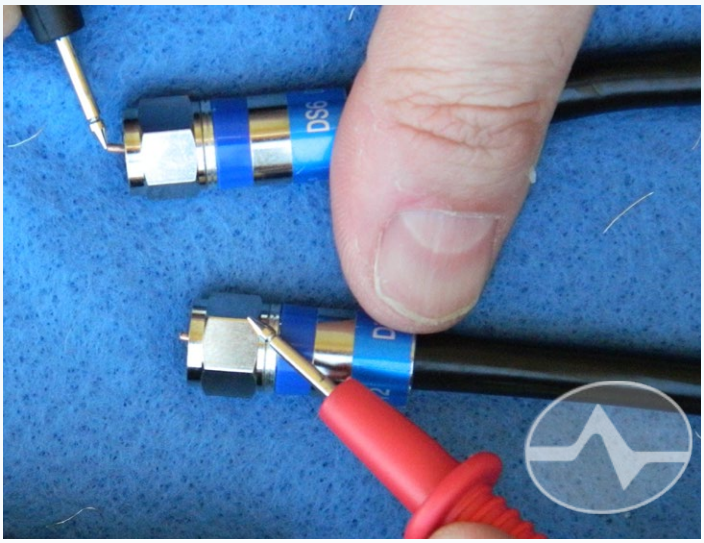
Now, test the connector on one side with the center conductor on the other. The needle should stay all the way to the left. If it moves at all, you have a defective cable. Do this for both connectors.

As a final step, touch one lead to the connector and one lead to the center conductor on each side of the cable. The meter should not move. Sure this is a lot of testing but it's worth it to know what you have before you go further.

TESTING THE CABLE

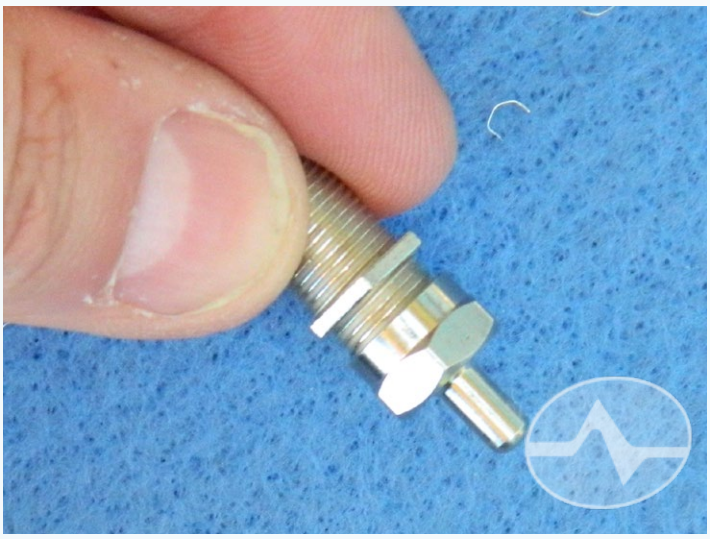
The last step: resistance testing

Now, set the meter to measure resistance (Ω) on the next lowest setting, which should be X10 or something similar. Take the terminator and touch one lead to the center and one lead to the outside. You'll see a display something like the image above. It doesn't really matter what the number is, just make note of it.



Connect the terminator the the barrel, then connect that to one end of the cable. Put that end down and pick up the other end of the cable. Touch one lead to the center conductor and one lead to the outer connector. The meter should read very similar to the way it read when you were testing the terminator. Unless this is a very long cable, the number should be an almost exact match. This is telling you that the cable isn't adding any more resistance to the line and is a good way to tell that there aren't any breaks in the line.

If you've done all these steps, you have a good cable! Congratulations! Don't worry if it takes you a few tries to get it right. There's a lot to it but once you've been doing it a while, it becomes second nature.



Click here for a video showing how it's done!

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