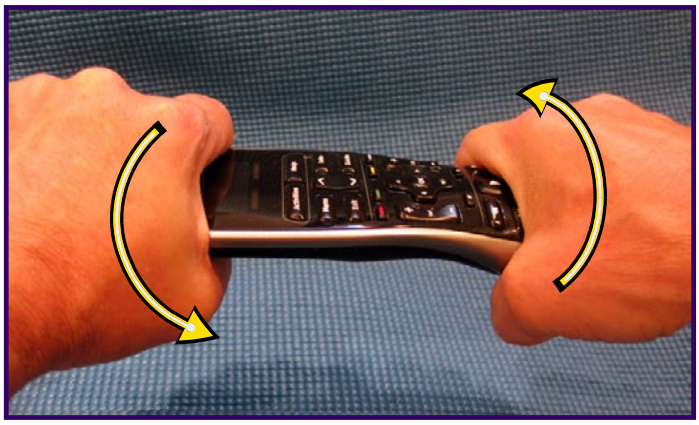
Recovering from a White Screen or No-Power-On Harmony 900

Diagnosing the Problem: "The Twist"

Sometimes, a white screen or NPO (no-power-on) Harmony 900 can be brought back to normal by re-applying the firmware while the remote is in Safe Mode. If you have not already tried this, then download the instructions that are on the Support Page on the website and give it a try. If you cannot get the remote into Safe Mode, or there is no change in behavior, there is likely a hardware fault on the board; marginal solder joints underneath one or more of the BGA components. BGA stands for 'Ball-Grid-Array' and is a type of surface-mount packaging where the connections are hidden under the chip. It is very difficult to detect and repair these kinds of poor joints. You can try this experiment, which is helpful in determining if the issue is related to poor BGA connections:

- Remove the battery, wait 30 seconds and insert the battery. Then, very quickly, before the remote has time to start the boot-sequence, gently twist it (like you were wringing out a towel), ***hold it in this position*** and watch to see if the LCD goes on and the Logitech splash screen appears.

- To do the 'twist', hold the remote in front of you in a horizontal position (like it was lying down) and twist the front of the remote towards you and the back of the remote away from you. ***The twist should be done gently but firmly and you should hold the remote in this position for at least 30 seconds*** or until the main Activity menu appears. If there is no change in the behavior, try the same thing again but twist in the opposite direction.



If the 'twist' results in a change of behavior, it usually is an indication of these faulty joints, most commonly underneath the processor (CPU), which is the largest chip on the board. Although this condition can sometimes be repaired by re-flowing the solder underneath the chip, this procedure is difficult, not always successful and generally not cost-effective to do.

PCB Stabilization

There is a procedure that we have had some success with here, that you can try at home. Since the PCB appears to operate normally when slightly bent (which is what the 'twist' is doing), a shim placed at the point where pressure can be continuously applied when the back cover is installed seems to do the trick. ***We don't know the longevity of this fix and it does not work on every 900 that exhibits these symptoms,*** but it may be worth a shot if it extends the life of your Harmony 900.

Here in the shop, we use a polycarbonate shim about ½” square and 3/16” thick and we more-or-less center it on the top of the CPU. This is the largest IC on the PCB (near the top left with the component-side of the board facing up). Sometimes, the position of this shim must be adjusted slightly left or right or top/bottom in order to change the behavior of the 900. In some instances, a larger shim (not thicker) is required and some of the back cover bridging needs to be removed.

In all instances though, it is important that all of the clamshell casing locking tabs are intact, especially the top-left. Often, this tab has been damaged or is missing due to a prior opening or impact and, without it, it can be difficult to get the front cover closed tightly enough to withstand the substantial force exerted by the shim. Some folks have had to resort to using epoxy or superglue at the top left to keep the cover closed.

You can use the Harmony One Disassembly Guide for guidance on opening the Harmony 900 and removing the back cover to expose the PCB. The back cover removal procedure is the same for both controllers. Then, you can experiment and see if shimming the board makes a difference in performance. If you prefer to have us take a crack at it, you can order the Harmony 900 PCB Stabilization Repair Service and send your remote in to us. Another option is to simply replace the unit and we have a couple of options for you there as well.

Quin at www.harmonyremoterepair.com

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