Repair Instructions

Instructions for Case Removal

The case is very sturdy once it's assembled, but the little tabs are delicate if they are bent. Be careful not to bend them too much.

If you need to remove the old case, use a very small screwdriver, ideally just narrower than the width of the snap tabs but very thin, One at a time, slide the screwdriver just above a tab, and use a combination "press in, press down" motion to unhook it and begin to push the case apart. Once all four hooks have been unsnapped slightly, you can pry the case apart.

With practice you can remove a case without damaging it. But usually a beginner will damage at least one of the tabs, and create plenty of scratches. **So having a replacement case is a good idea.**

The very first AltimeterOne case from 2009 was glued together. If you are removing one of those, go very slowly and use a hobby knife to gently break the glue bond which is frequently found between the bottom case and the PCB board. The snap case can be used to replace the glued case.

Instructions for Case Assembly

There are two halves to the case:

Top

Bottom

Lay the battery in the bottom case, with the colored, complicated part of the battery down and the wires away from the USB tray.

Cover the battery with the board, laying the USB tab in the USB tray of the bottom half. Make sure the board fits in its resting slots in the bottom of the case and that the battery wires are not poking out. This can take a little fiddling to get the wires right; there's not a lot of extra room in the case.

Line up the tabs in the top case with the slots in the bottom case. Make sure the button hole is lined up with the button, and that you don't have the top case flipped around facing the wrong way.

Snap the two halves together slowly, making sure the tabs are going into the slots, and not spreading out and missing.

Congratulations. You did it!

Place the altimeter in a USB port and make sure it charges correctly. Hopefully, you will see a red light that eventually turns green once the altimeter is recharged fully. If you see both a red AND a green light, you may have bent and broken one of the battery wires while you were replacing the case. If so, you will need to remove the case and re-solder the battery connections using a soldering iron.

INSTRUCTIONS FOR LCD SOLDERING

(THIS IS A BIT OF A TRICKY JOB)

1. Removing the old display is tough

Unless you have access to a broad soldering iron attachment that can heat all 13 pins of the display at once, you should remove them one at a time. First, use a fine angle cutter or toenail clippers to cut each lead right at the LCD. Discard the glass portion. Then you can heat and remove each lead one at a time. Be careful not to overheat the board and its components. You should try to remove all of the old solder using solder wick or a solder vacuum so that the new LCD can be inserted.

2. Important: Do Not Overheat the new LCD

The LCD is temperature-sensitive. When exposed to too much heat, it will temporarily turn black. After prolonged exposure, it may begin to acquire a permanent yellowish cast. Eventually it will turn black and stay black, and be ruined.

To prevent damage when soldering, only apply heat as briefly as possible. In production, we rest the display on a reusable ice pack as we solder it from the other side.

One technique is to use a blob of solder, apply it to the lead, let it be wicked into the pad, hold for just a couple of seconds, and remove.

You should alternate between leads that are far away from each other to allow heat to dissipate in each area of the display, rather than soldering two leads that are right next to each other.

3. Clip the new LCD leads to the right length before soldering

The metal leads of the display need to be shortened so that they will fit in the final altimeter case, but they need to be long enough to go through the PCB board and stick out about 3mm. If you solder and THEN clip them, you run the risk of "snapping" your solder joint due to the stress applied during clipping. The leads need to be clipped to within about 3mm of the PCB (which is twice the thickness of the PCB) in order to fit in the case with the battery.

4. Try not to bend the battery wires too much while the altimeter is apart

The battery wires are the most delicate part of the altimeter. If you bend them too much, the electrical connection will be broken and they will need to be re-soldered. You'll know this has happened if you see a red AND a green light during recharging.

Comments on these instructions? Let us know at support@jollylogic.com. Thanks!

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REPLACING THE **BATTERY**

Caution: Take great care not to touch the battery leads together, or to bridge the + and – connections with your soldering iron.

The battery includes embedded safety circuitry, but you should be aware that Lithium Polymer batteries are capable of generating significant current. Take extra care to not allow shorts to occur during repair.

1. Request a new battery from Jolly Logic

Only Lithium Polymer batteries that deliver an average of 3.6V and can be charged at 4.2V can be used, We recommend that you only use a battery that you get from Jolly Logic. They are tiny and we have them made especially for the products Jolly Logic sells.

2. Remove the old battery

Melt the solder and remove the leads. Pay attention to where the red lead goes (near the end of the board in all but the oldest AltimeterOnes).

3. Solder in the new battery

Make sure the new leads are twisted tight. Place a small ball of melted solder on the pad, heated by the soldering iron, Touch the wire to it, and you should be able to push the wire through the melted solder and the hole in the board. If you can't manage to put the wire through the hole, you can just solder it to the surface of the board. Just make sure the two leads don't touch and nothing sticks out too much to prevent the case from closing.

Try not to heat the board, and especially the LCD, too much.

Before you put the case on, you should test the altimeter. One way to test it is to rest the PCB board in the bottom half of the case so that you can plug the altimeter into a USB slot to see if you just see a red light (red + green = bad battery connections).

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