

**Motorola E815 / E816  
Disassembly / Assembly  
Guide**

**Ver. 1.1  
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## **Assembly**

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## Tools Needed



T-6 Torx screwdriver  
Small jeweler's slotted screwdriver  
Extra-Small jeweler's slotted screwdriver  
Small container to hold little parts



***ONLY NEEDED IF TAKING LCD HOUSING APART***

One Q-Tip or cotton swab  
Microfiber cleaning cloth

## Disassembly for Dummies



1) First, we need to power-off and take the battery out



2) Why it has to be so hard taking off the battery cover is beyond me!



3) Cover's off, now the battery



4) If it doesn't come out easily, use a small screwdriver on the top



5) Unscrew the antenna



6) Pull off the external antenna rubber plug

## Just a note



Just a note that this particular E815 was bought off Ebay as a parts/repair phone, and came with this crack on the side.

Please don't think that it **GOT** cracked from doing the disassembly/assembly procedures.



## Disassembly of keypad housing



1) Using a T-6 Torx screwdriver, unscrew a hinge screw, about half-way, so that it's loose, but still holding the LCD housing



2) Now unscrew the other hinge screw, also half-way



3) Flip open the upper housing and make sure the hinge screws are still seated, but loose



4) Take the small screwdriver, place as shown above, and push down and over the side



5) Should look like this after it's popped out



6) Next, place as shown, and spread apart

## Disassembly of keypad housing



7) Should look like this after popped out



8) Now for the other side, same as before, place as shown and push down and over the side



9) Should look similar to this



10) Same as other side, place and spread apart



11) Looks like this



12) Now the bottom, place and spread apart, but be careful of the connector port



## Disassembly of keypad housing



13) Pops off nicely



14) Now the other side



15) Simple so far, right?



16) Lift the keypad from the bottom



17) There are two little notches on the keypad housing that hold it securely under the hinge, you do **NOT** want to break these!



18) Slide off the keypad and you're ready for the next step



## Disassembly of lower speaker grill



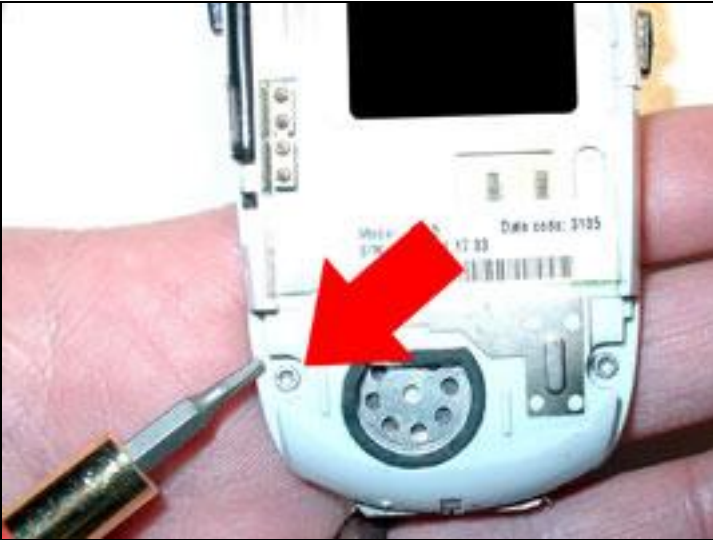
1) Not much to say here, just slide off towards the bottom



2) You can clean the dirt and grime with a can of air, if you want.

When I got my phone from Ebay, this speaker grill mesh was filthy!

## Steps to remove LCD housing



1) Using a T-6 Torx screwdriver, unscrew the screws holding the keyboard down. I say unscrew, because these little screws are kinda hard to actually remove. Remove them if you feel you might lose them



2) What it should look like from the side



3) Now the other side



4) Other screw, other view



5) I removed the keypad screws for this guide, just because I didn't want to lose them



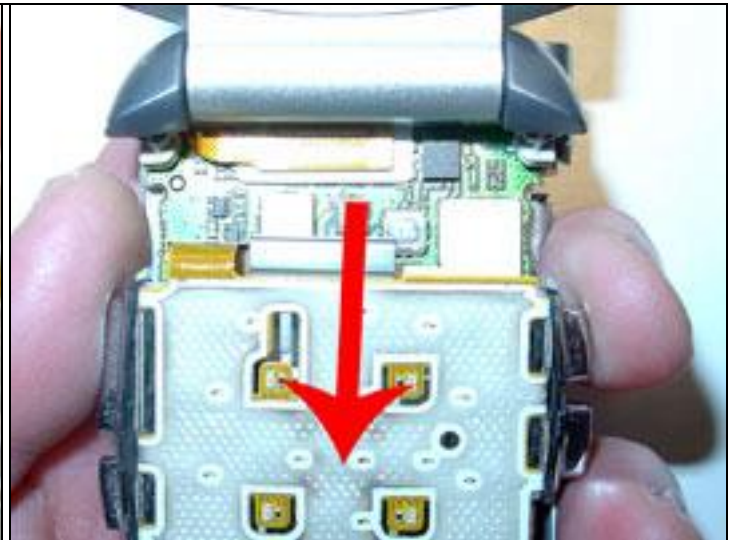
6) Lift the keyboard from the bottom



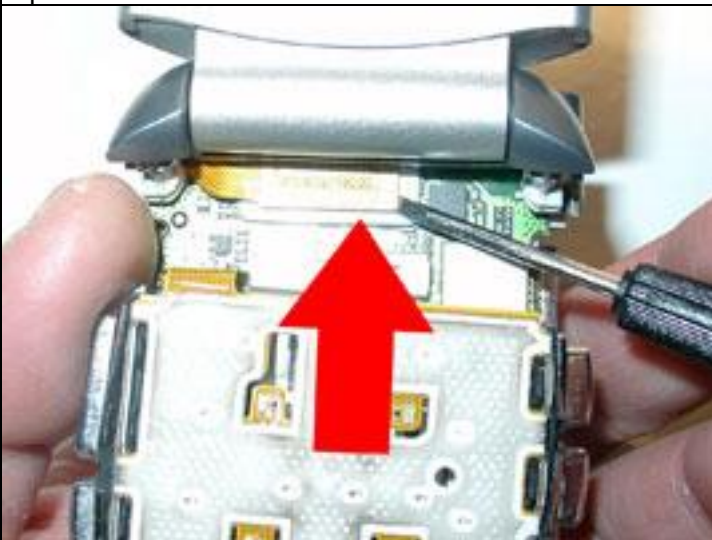
## Steps to remove LCD housing



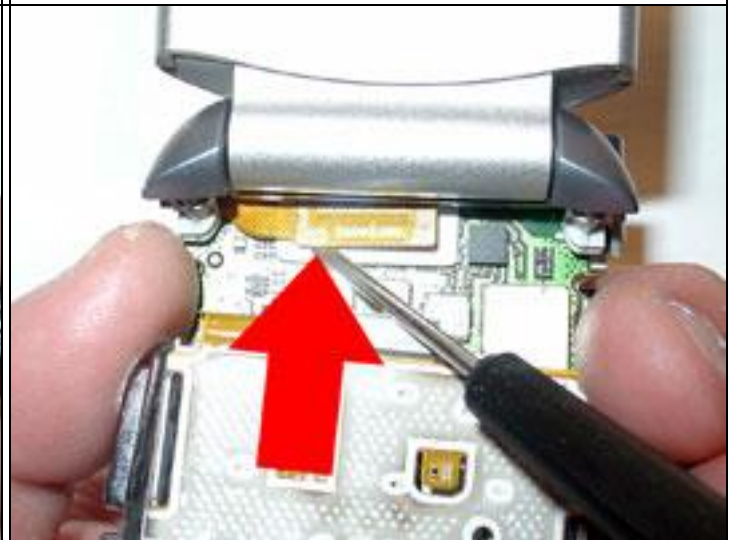
7) Lift the keyboard away from the PCB board at an angle. There are notches on each side that slide under a lip on the PCB board to hold it secure



8) Now pull the keyboard toward the bottom, so you can get to the flex cable



9) With a small screwdriver, carefully lift up the flex connector off the PCB board



10) No need to rush, just take your time and try not to put too much stress on the connector



11) With the flex cable out of the connector, go ahead and turn the phone around to the backside



12) Now you can remove the T-6 Torx hinge screws



## Steps to remove LCD housing



13) Also unscrew the other side

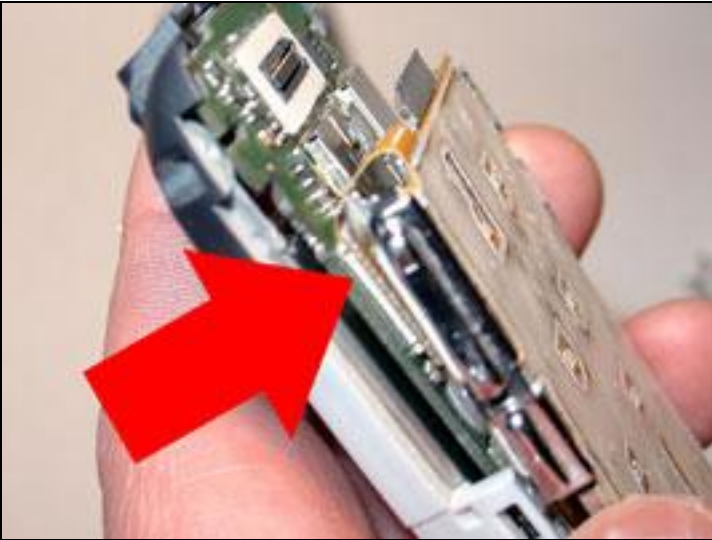


14) Remove the screws and put them in the container. You can't mix up the screws, there's only four. Two are fine-threaded machine screws for the keyboard, the hinge screws are coarse-threaded

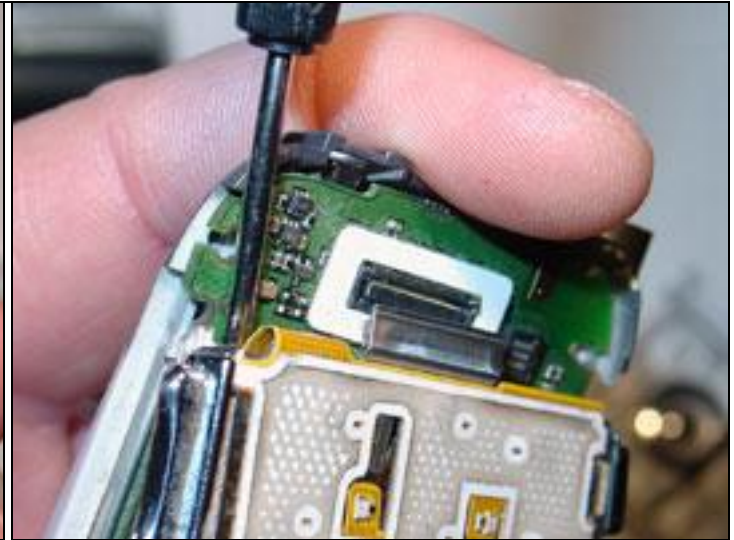


15) The upper LCD housing is now removed

## Removing the keyboard



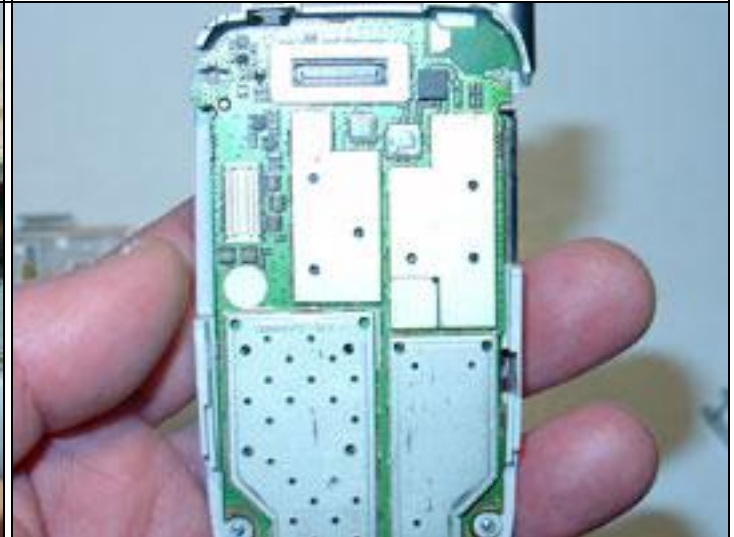
1) Using a small screwdriver, pry the connecting cable from the connector



2) As usual, take your time



3) Oh, and try not to hit anything on the PCB board



4) PCB board with keyboard removed

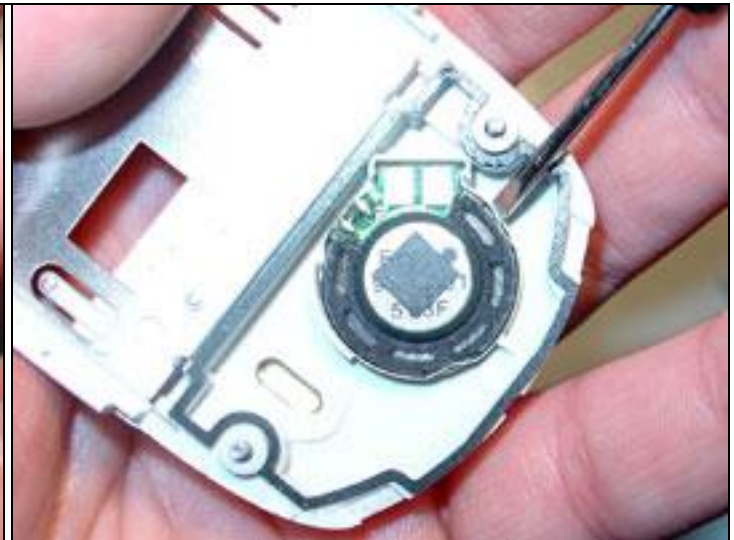


5) The PCB board will just come out, there's nothing holding it secure now. The PCB board and keyboard are what you want to give a high-content (95%+) alcohol bath if you have a water-damaged phone

## Removing the external speaker



1) Using a small screwdriver, slip it under the speaker and just pry up



2) It's only held in place by adhesive



3) Easily replaceable, if you can find the part



## Faceplate / LCD housing note



1) There are no screws used in the upper housing. Only adhesives, notches and clips



2) View from the front



3) I suggest buying a replacement kit, if you intend to dismantle the upper housing. The adhesive **WILL** get ruined, and while it will remain sticky, its effectiveness will be reduced.

The above kit contains all the parts needed to make your upper housing good as new. Also available without the Verizon logo as well. This is where I got mine:

[www.gsm4world.us/shop/motorola-e815-c-1\\_4.html](http://www.gsm4world.us/shop/motorola-e815-c-1_4.html)

## Faceplate removal



1) With the smallest screwdriver, start in a corner and slide under the LCD cover



2) Work your way around the edges. Take your time and go slowly. You don't want to scratch the LCD



3) Once all around, use the bigger screwdriver to start at the corner and slowly lift from the corner



4) Keep pulling up slowly, don't rush this part at all



5) Notice all the tacky adhesives. Now onto the faceplate



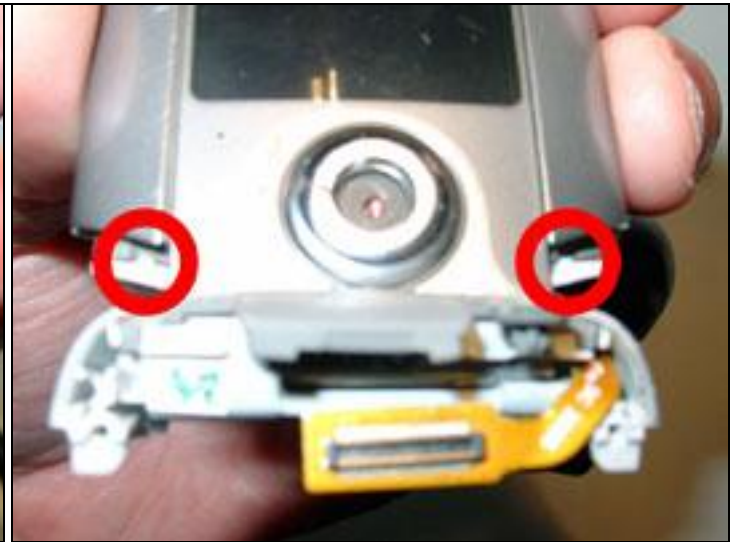
6) Insert the tiny screwdriver as shown and gently push up



## Faceplate removal



7) Now the other side as well



8) The reason we don't do this on the outer side, there are notches on each side, that fit into the hinge part



9) Gently pry apart the faceplate and pull off



10) Should slide off pretty easy. If it doesn't, it just means the adhesive from the LCD is sticking



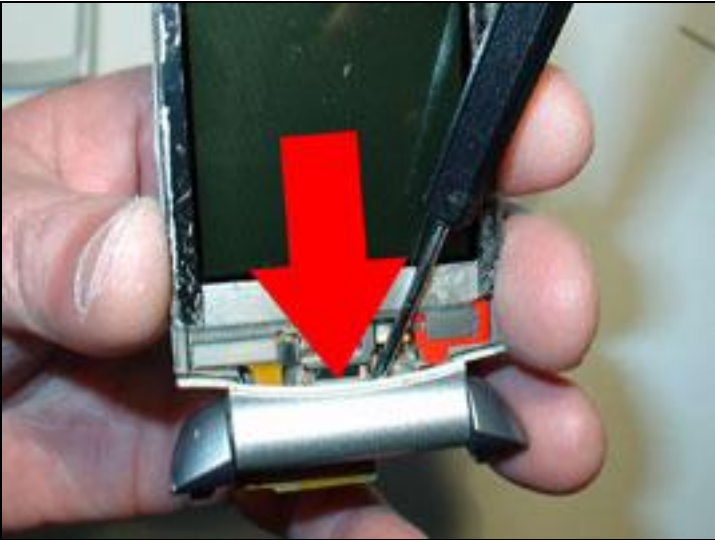
11) Now you can change your faceplate and re-assemble. If you plan to go ahead and disassemble the entire unit, please make sure you have lots of patience



12) Any parts you see that **STILL** need to be replaced? Keep going on with this guide



## Hinge removal



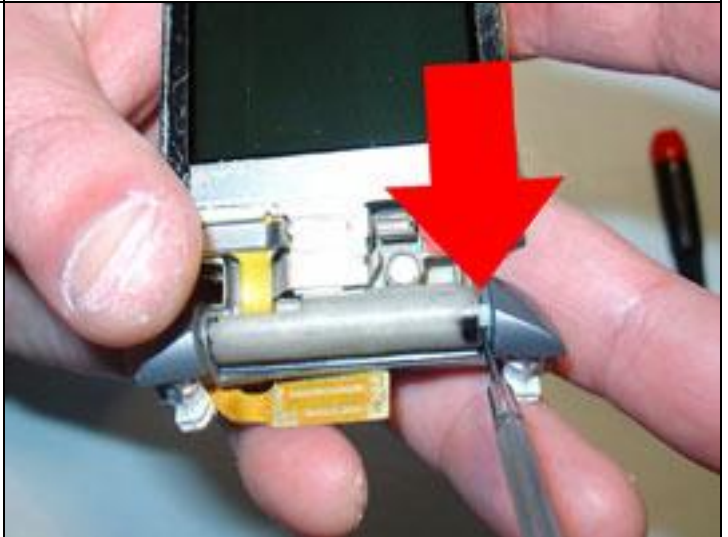
1) With the small screwdriver, place as shown and pull towards yourself



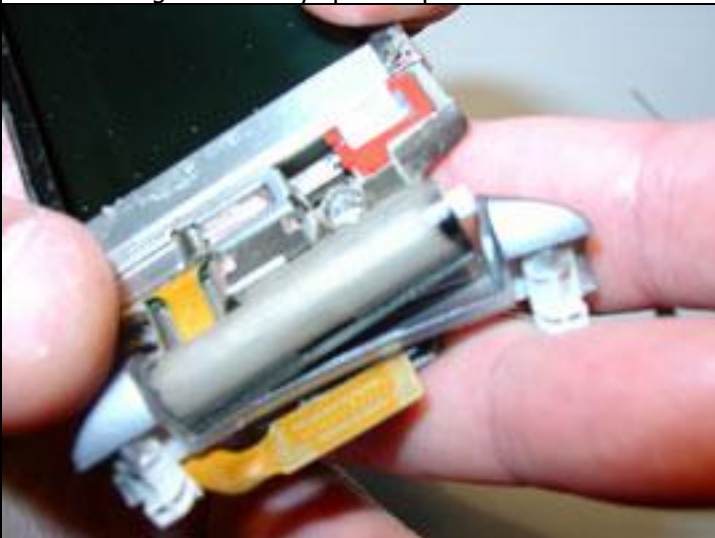
2) Simple little clip



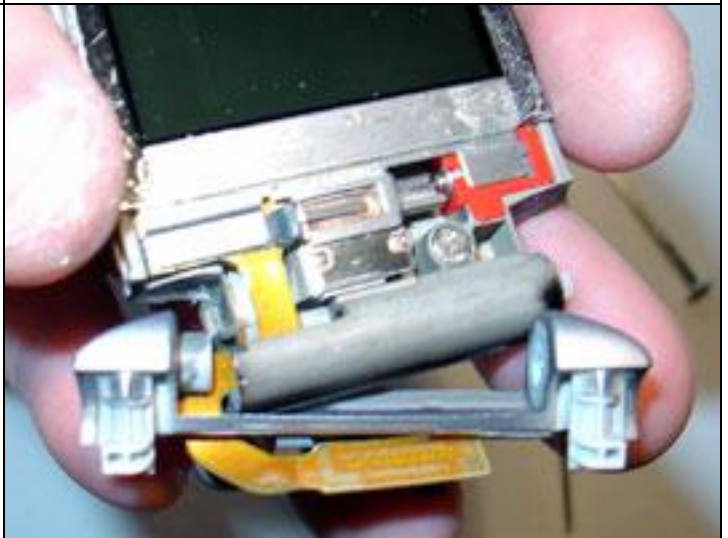
3) **OPPOSITE** the flex cable, insert the tiny screwdriver into the hinge and slowly spread apart



4) Spread the hinge and it should pop out



5) Pops off quite easily



6) Careful of the flex cable!!

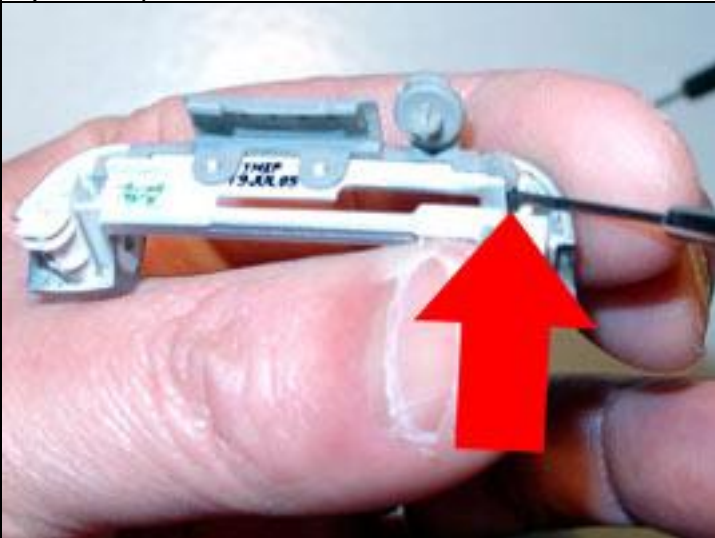
## Hinge removal



7) Carefully slide the flex cable end out



8) Need to change the rubber part? Go on



9) With the tiny screwdriver, place as shown and lift up



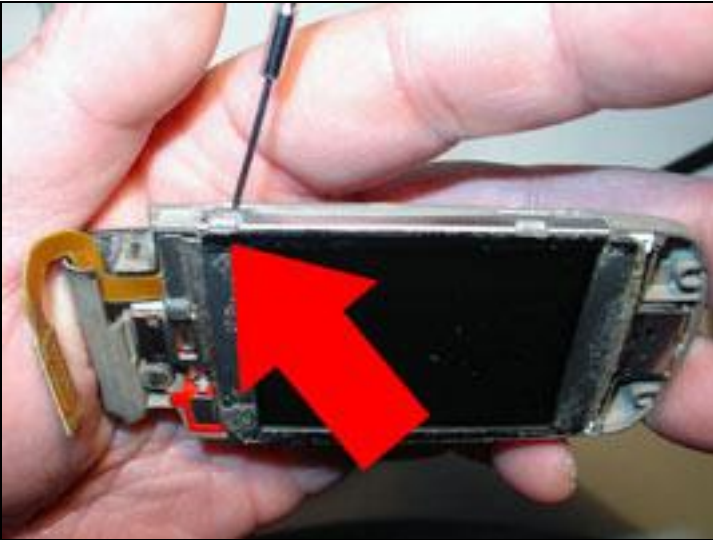
10) Gently pull off the rubber, carefully taking it off little plastic pins that secure it in the middle



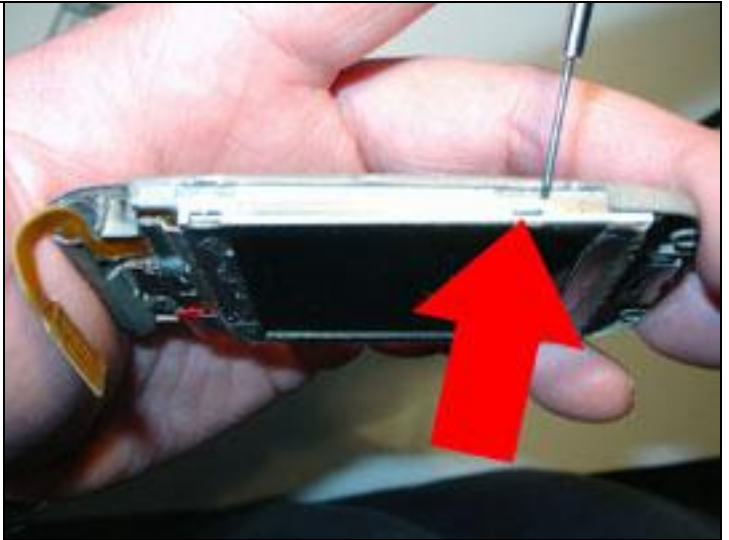
11) That was simple



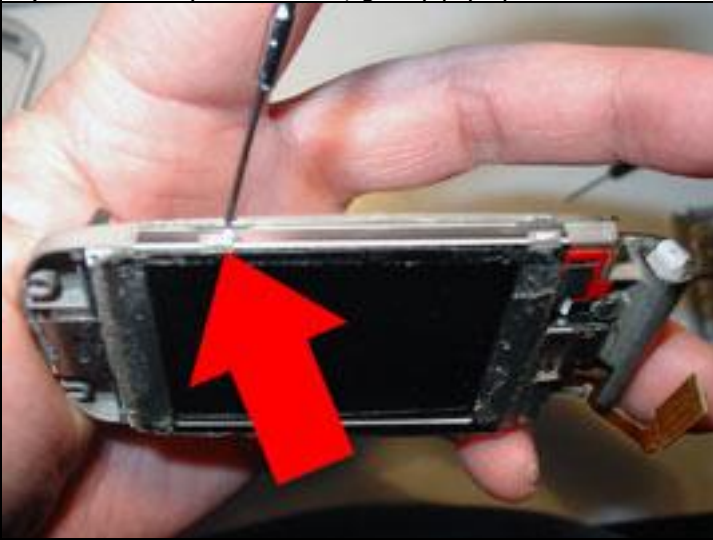
## LCD panel disassembly



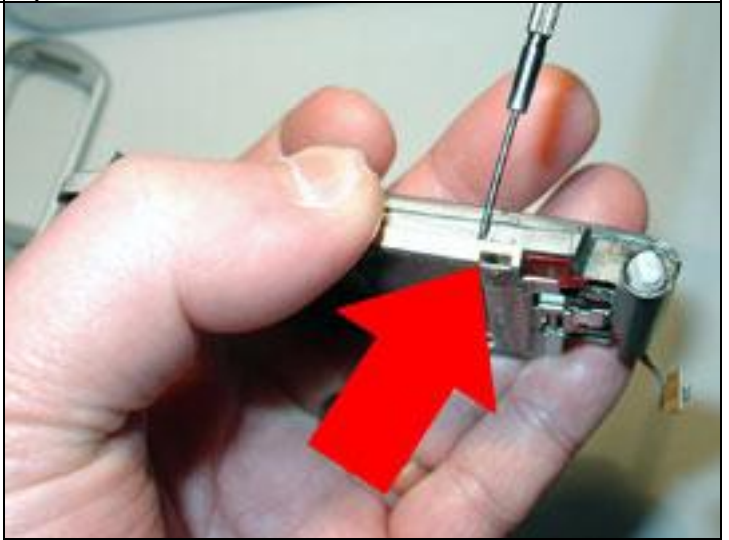
1) With the tiny screwdriver, gently pry up over the notch



2) Now the other one



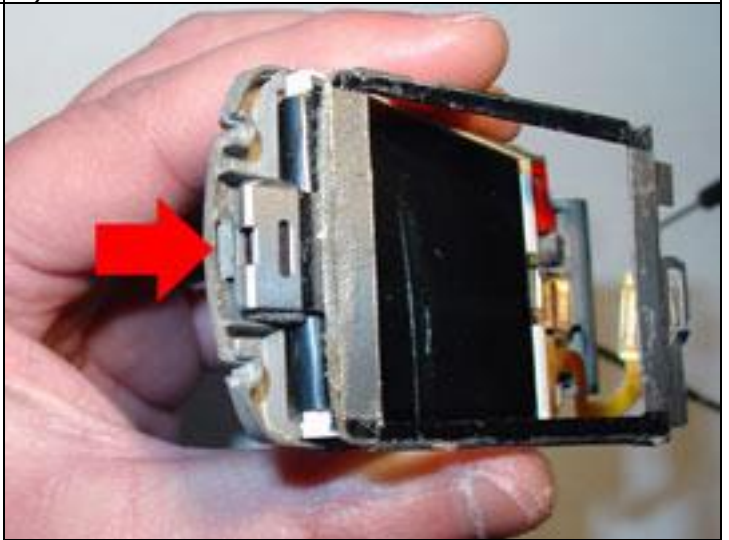
3) The other side



4) And the last notch



5) Carefully lift up from the bottom



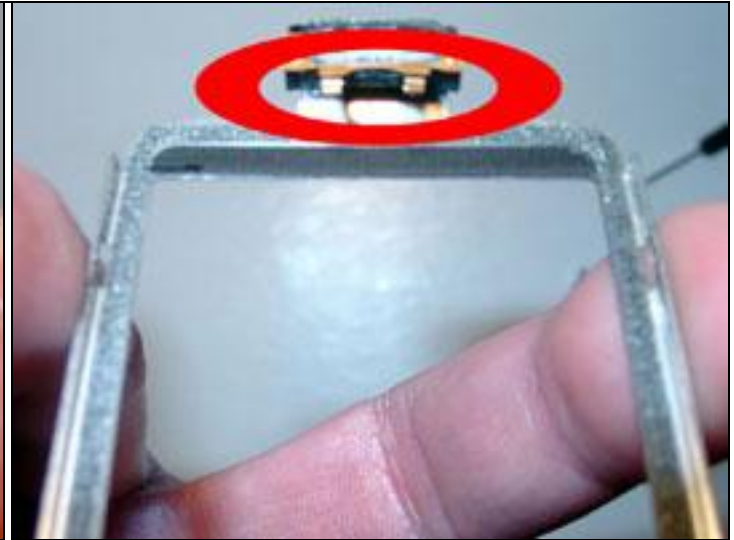
6) This frame and earpiece is held in place by a notch at the top. Just lift at an angle away from the LCD and up towards the top



## LCD panel disassembly



7) Notice the earpiece connectors that slide under the LCD panel. Pressure contacts are the only thing that make it work, reason why some phones' earpiece volume only work when pressing down on them



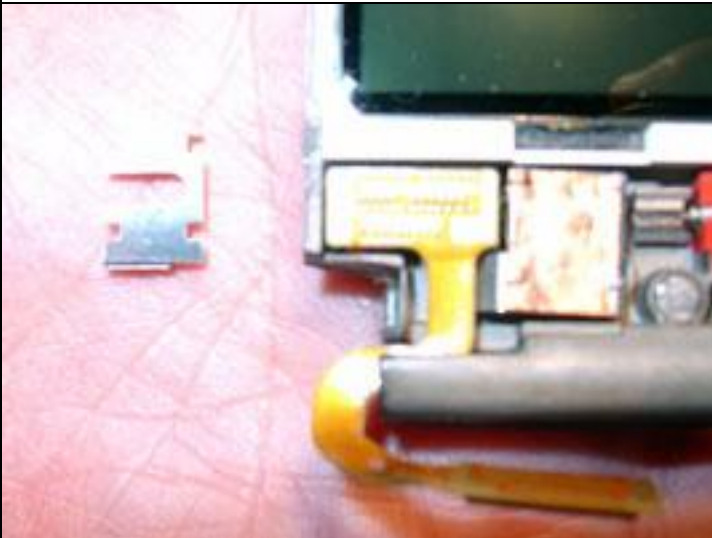
8) Be careful not to bend these contacts



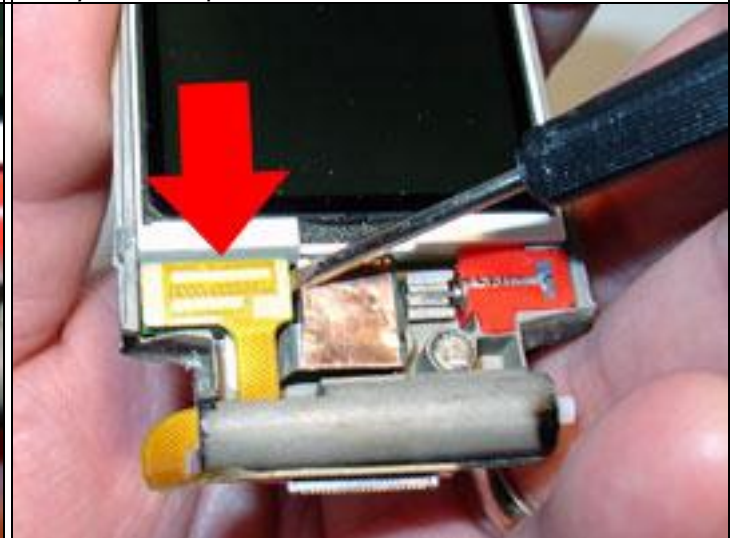
9) Now place the frame aside as we still have much tedious work to do



10) Slide the tiny screwdriver under this part and lift away from the phone



11) Remember how it goes in



12) Now for the flex cable removal

## LCD panel disassembly



13) The flex cable is also another component you may want to give an alcohol bath



14) Next, we have to remove the camera. You'll need a cotton swap for this step



15) Gently push the camera out from the front



16) Then remove the cotton swab



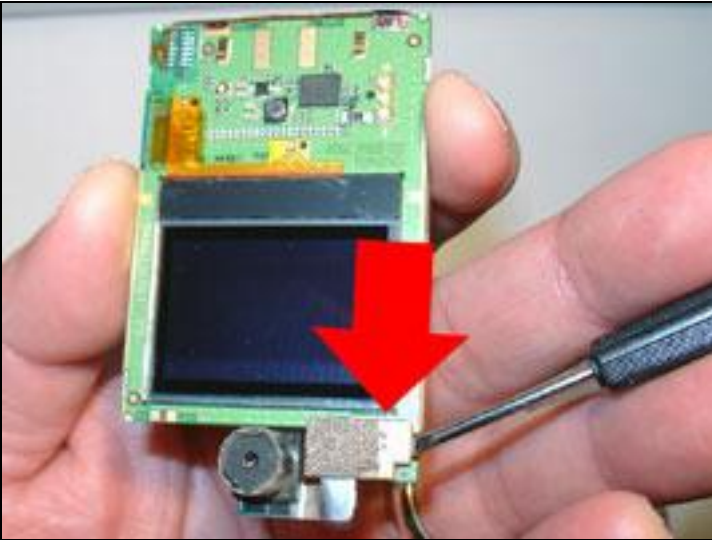
17) Carefully lift the entire LCD unit from the bottom



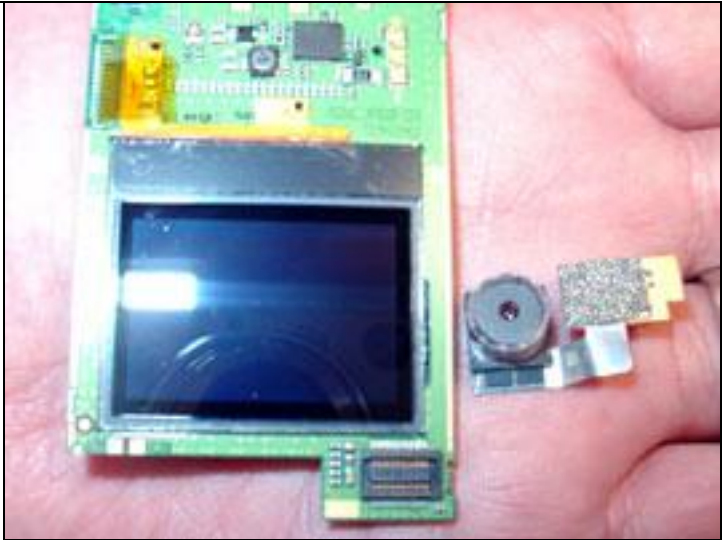
18) Take your time, there's no reason to rush



## LCD panel disassembly



19) Gently remove the camera from it's connector



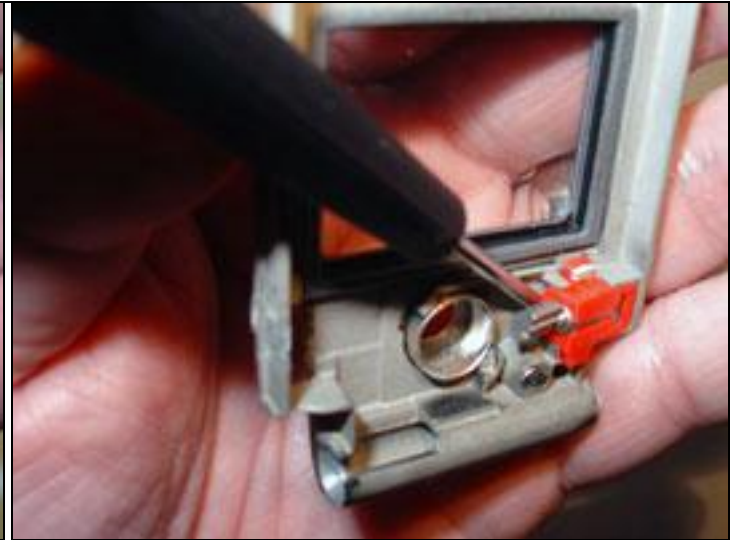
20) Good time to wipe off all the dirt and grime from the camera housing



## Vibration motivation



1) You don't NEED to remove the self-contained vibrate unit, unless you're going to replace it, or are just curious

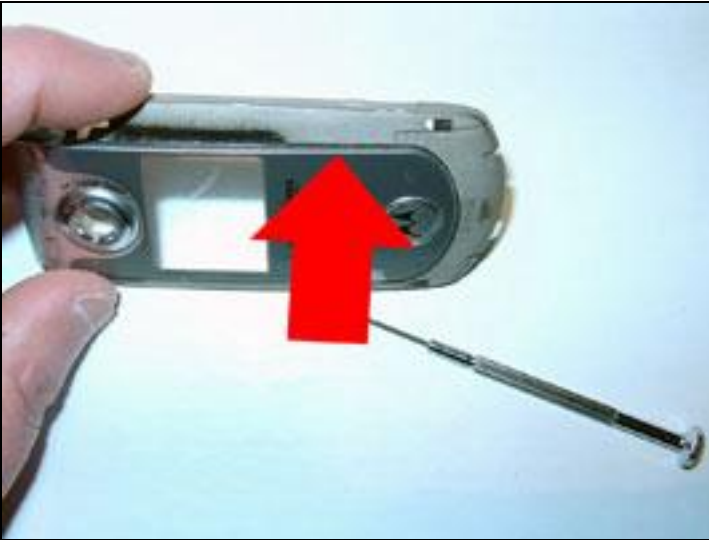


2) The unit is all rubberized, and pops out easily. The vibrate unit gets its power from contacts on the edge of the LCD panel



3) Simple to replace if needed

## Removing the outer LCD cover



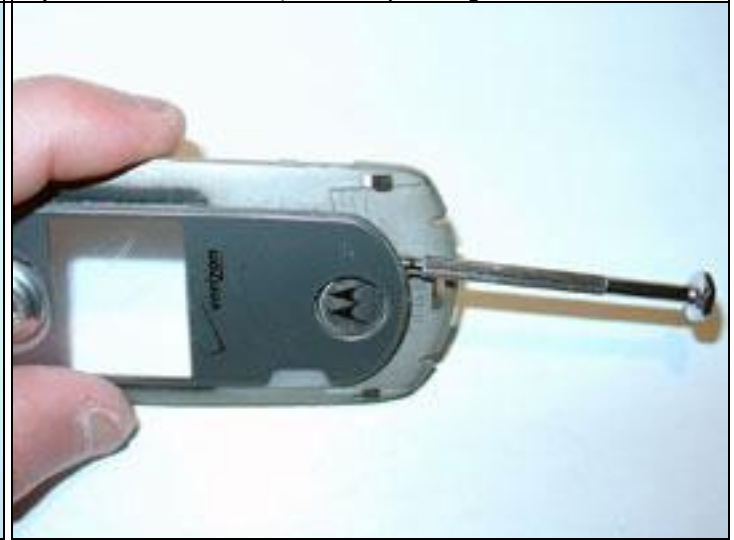
1) Start on an edge and work your way around



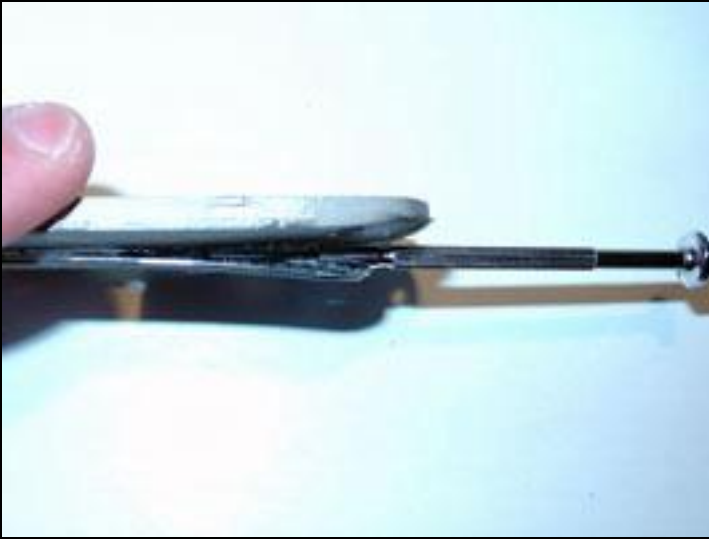
2) This is all adhesive, and very strong



3) Take your time and go deeper as you go around



4) If you rush, your cover may crack in half! Take your time!



5) When you get enough space to stick a bigger screwdriver in, you're on your way



6) Time-consuming, but it's worth it to **NOT** crack the thin plastic!

## Removing the outer LCD cover



7) Look at all the adhesive tape!



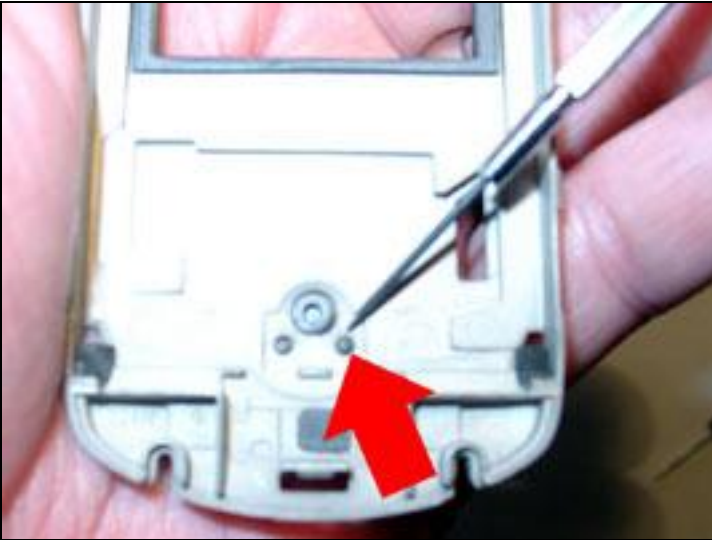
8) Ahhh, success!



9) Again, you want to use a replacement, because the adhesive will be ruined



## Nit-Picking



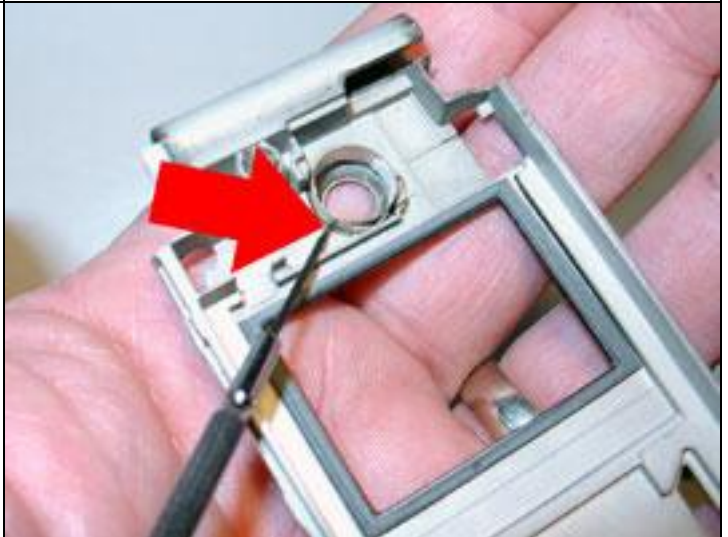
1) What?! You want to remove the Moto Logo? With a tiny screwdriver, just push in the little plastic pins



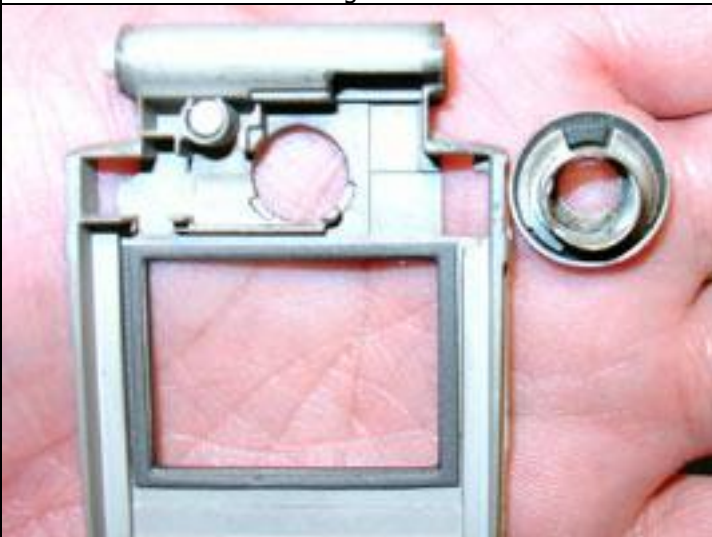
2) OK, done!



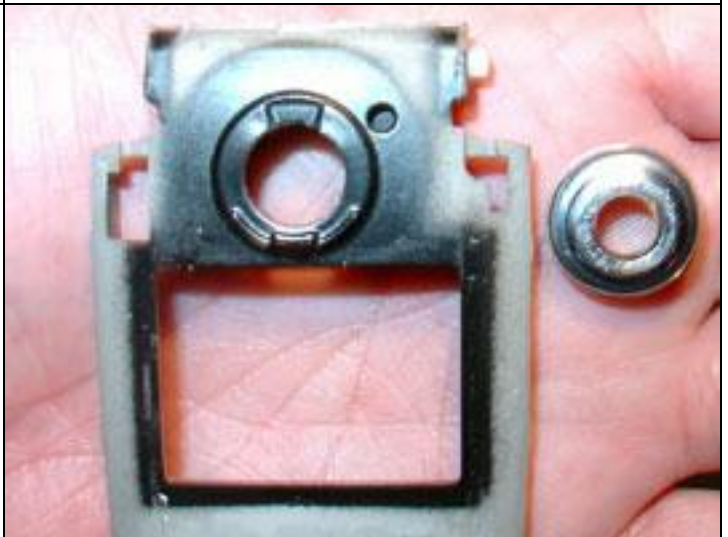
3) The camera housing too?! Push in the little metal clips with a tiny screwdriver. Notice the water-damage dots **INSIDE** the camera housing?



4) There are only two clips to push in



5) This is a lot of work if you just need to change your camera cover

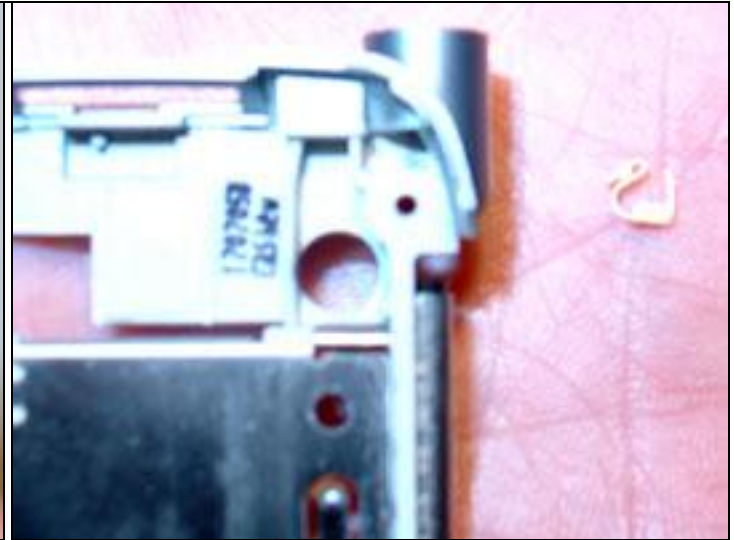


6) The disassembly is now complete!

# Extra pieces? WTF?!



1) Antenna clip. While clipped securely, you never know



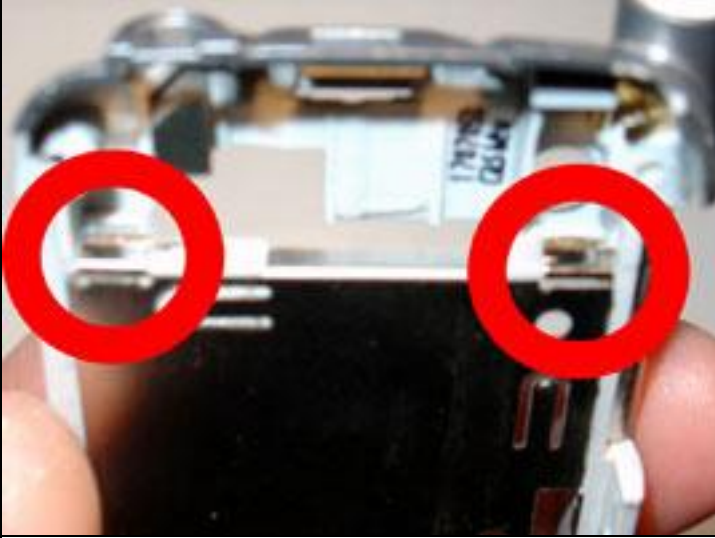
2) Side view



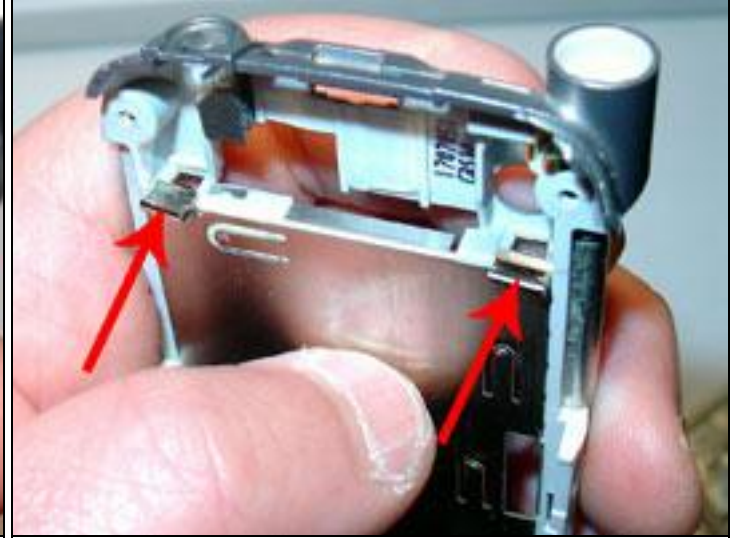
3) Just clip and slide back in



4) Battery clips hold the battery securely in place



5) These also may come out, or shift



6) Again, just clip and slide back in



## Tools needed



***ONLY NEEDED IF YOU TOOK LCD HOUSING APART  
AND NOT REPLACING PARTS***

Since the OEM adhesives would have been ruined, you need to use a non-hardening adhesive. I use this, which is very tacky when cured, and remains permanently flexible.

Do ***NOT*** use any type of super glue or hardening epoxies!



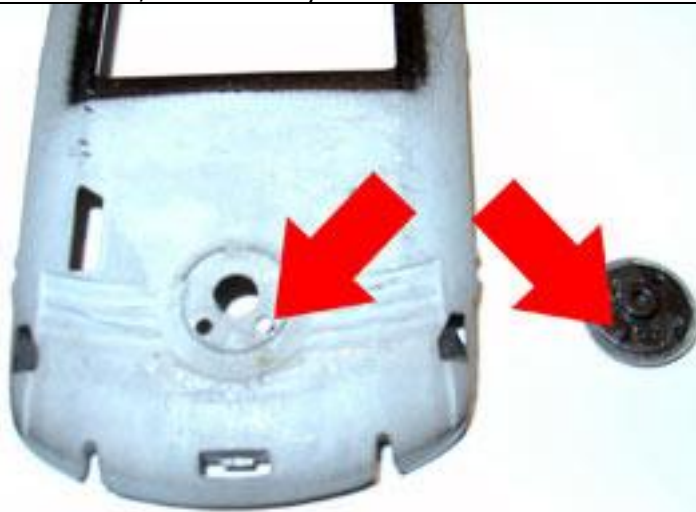
## Reverse Nit-Picking



1) Now we gotta put all those little crap pieces back that we were curious about. With a tiny screwdriver, you need to bend those metal clips along the camera housing. Remember, there are only two.



2) The camera housing only fits one way, with the bigger notch matching the top indentation. Push in hard, because the metal clips need to go over the inside edge



3) The Moto logo only goes in one way also. Match up the little plastic pins

## Sticking the outer LCD cover back on



1) See how badly the adhesive is now? While it will still stick back on, it may or may not need help with the aftermarket adhesive



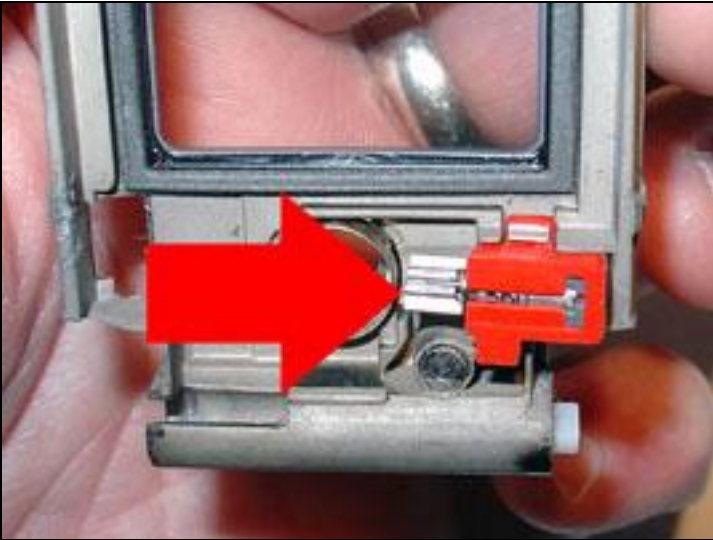
2) Match up the edge on the top of the phone, then press down over the camera cover and Moto logo



3) Looks good, but the replacement kit will make it look brand new!

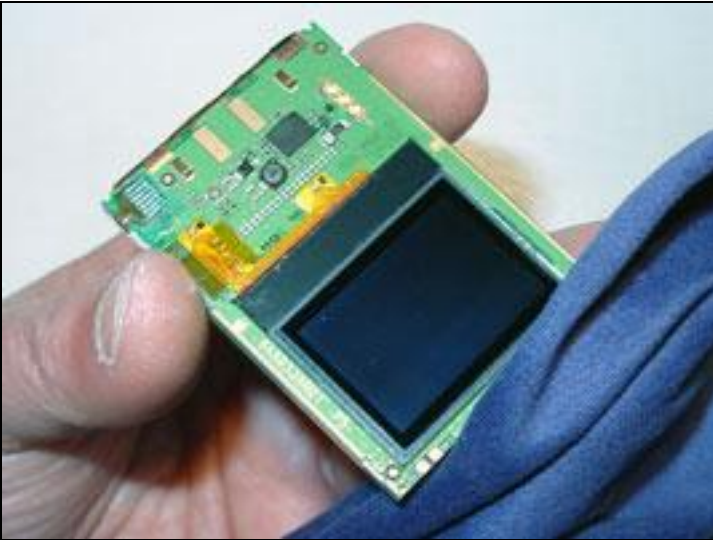


## Time to vibrate

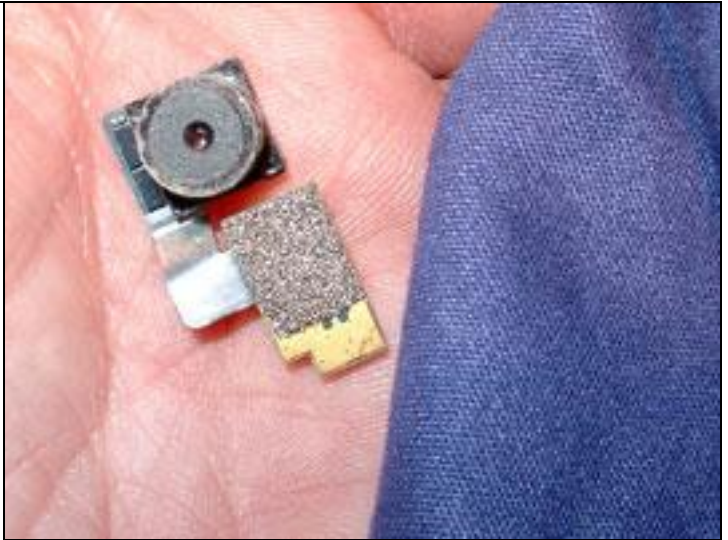


1) Don't forget the vibrate unit if you took it out. This is actually a second set of pics, because I forgot to put it back in, the first time!

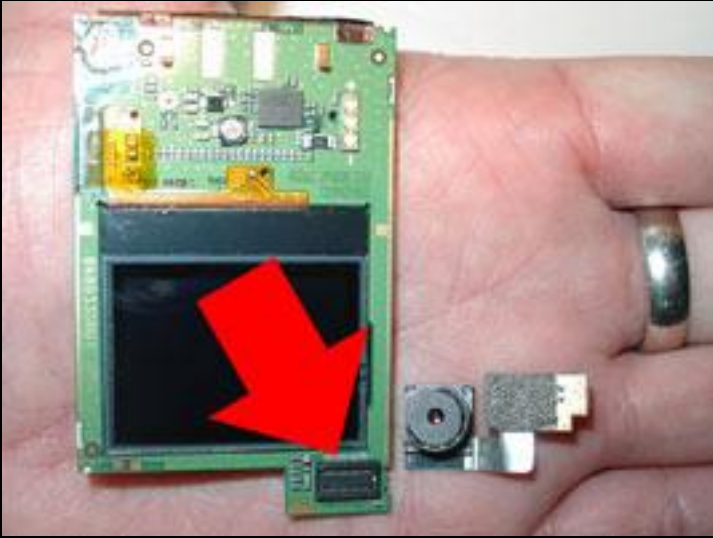
## LCD panel assembly



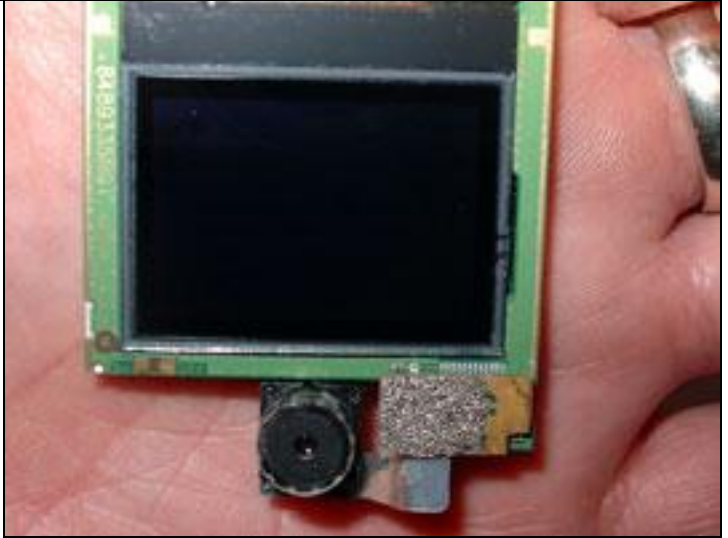
1) Use a micro-fiber cloth to clean the outer LCD panel



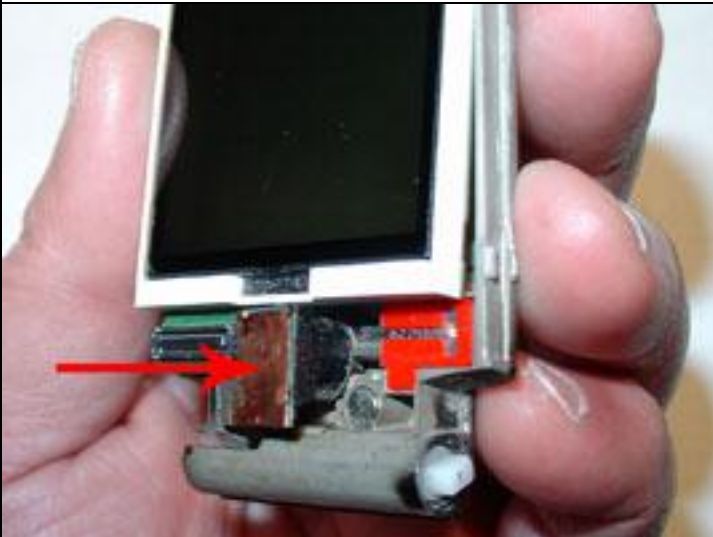
2) Do the same for the camera lens as well



3) Attach the camera back on its connector



4) Your camera will probably look cleaner, I didn't clean it at all



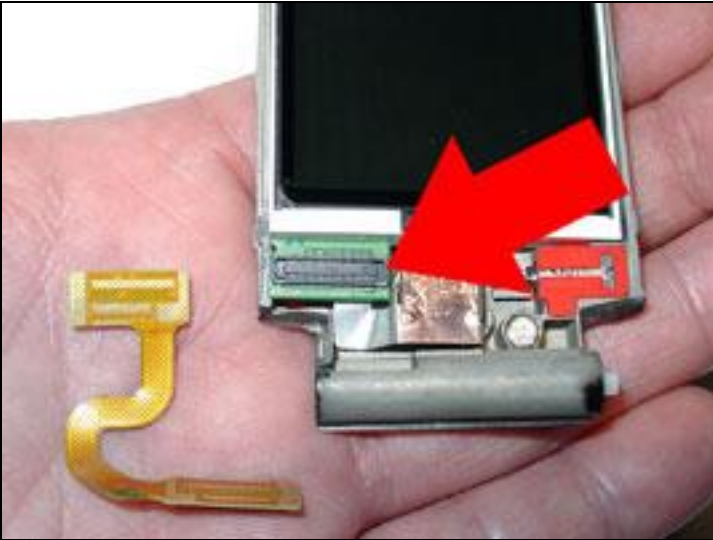
5) Now push the camera back in its hole



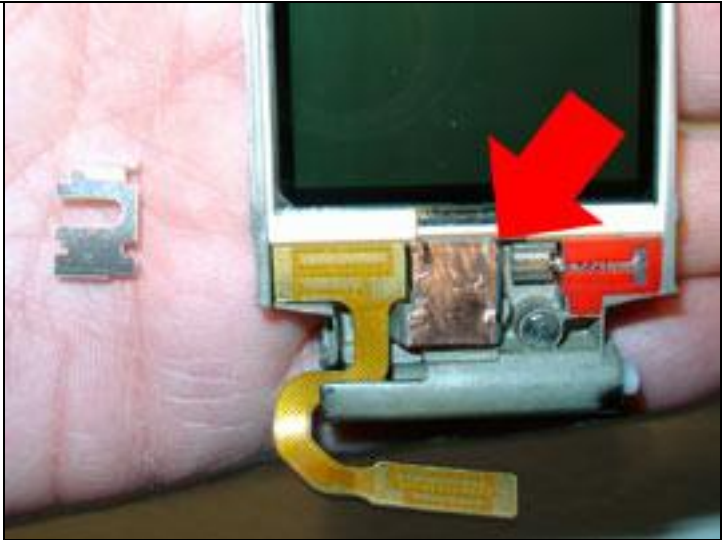
6) Clean the back of the camera's contacts



## LCD panel assembly



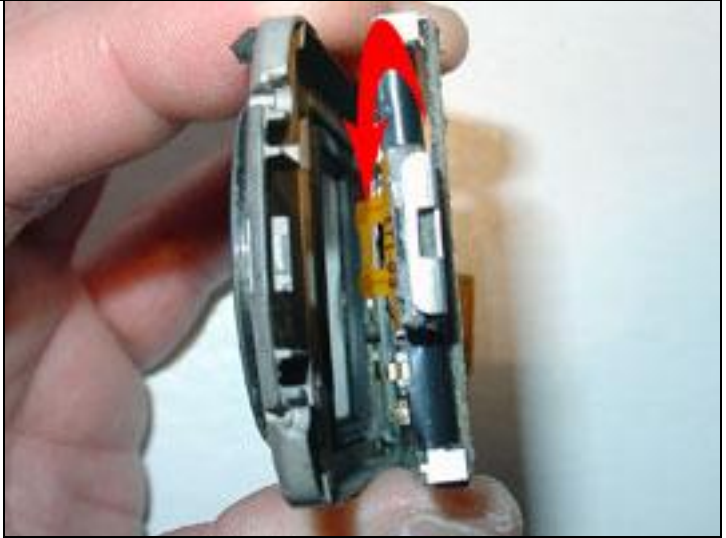
7) Time to connect the flex cable back on



8) Now put the clip back on over the camera back



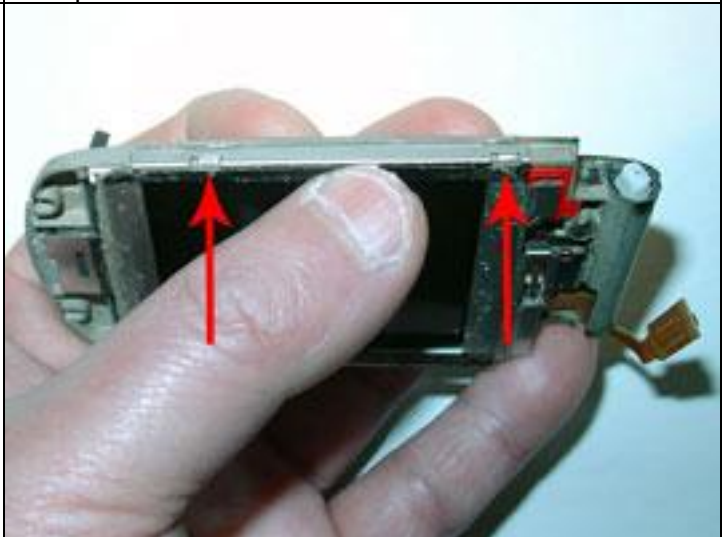
9) Now stick the LCD frame back on



10) Remember that the earpiece contacts go behind the LCD panel

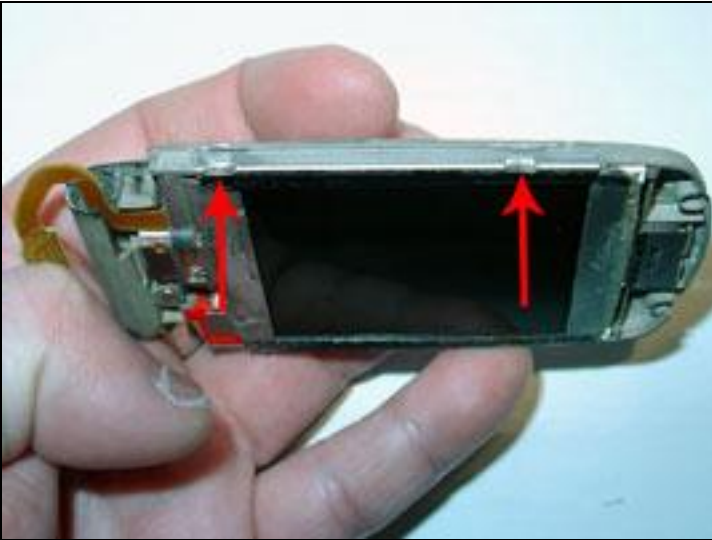


11) Match up the hole on top of the earpiece with the notch on top of the housing, then slide the entire LCD unit back into place



12) Time to snap those little notches on the frame back on

## LCD panel assembly



13) Two notches on each side, make sure they are tightly secured



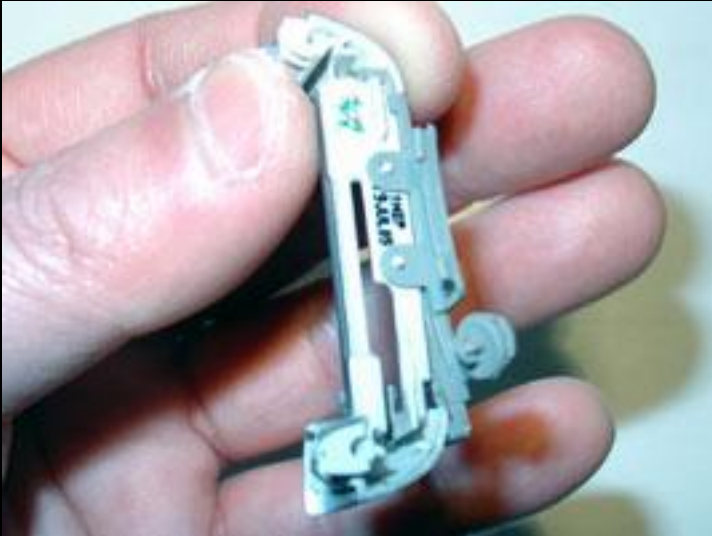
## Hinge assembly



1) Start by putting the rubber edge back in



2) Slowly slide the rubber cover back on the hinge



3) Clip the rubber holes onto the plastic clips as you go along



4) Just check to make sure that the rubber isn't folded anywhere along the length of the hinge



5) Stick the rubber end-block back in. Use a small screwdriver if you got fat fingers like me!

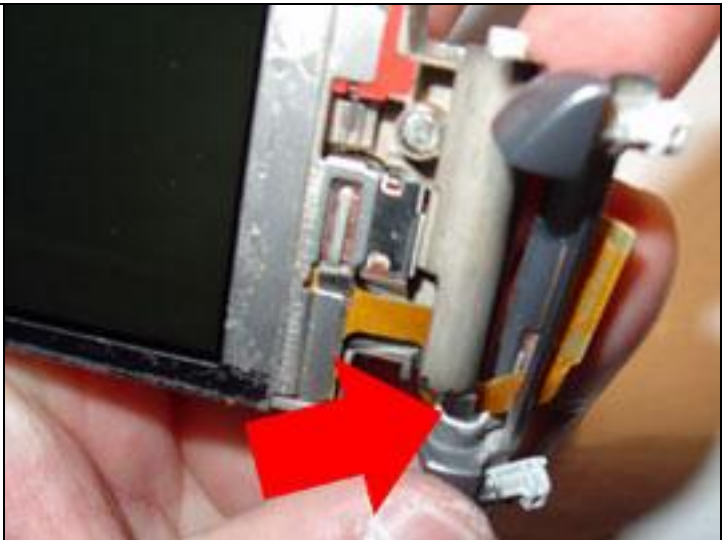


6) Now we have to stick the flex cable back through the hole in the hinge

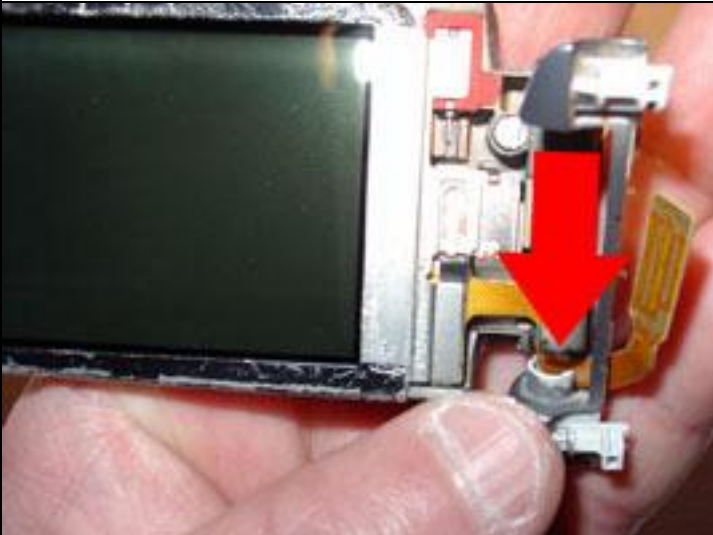
## Hinge assembly



7) Gently slide it through, you don't want to ruin the flex cable



8) Notice the notch on this side of the hinge? The flex cable corner fits into the hole and comes out the opening



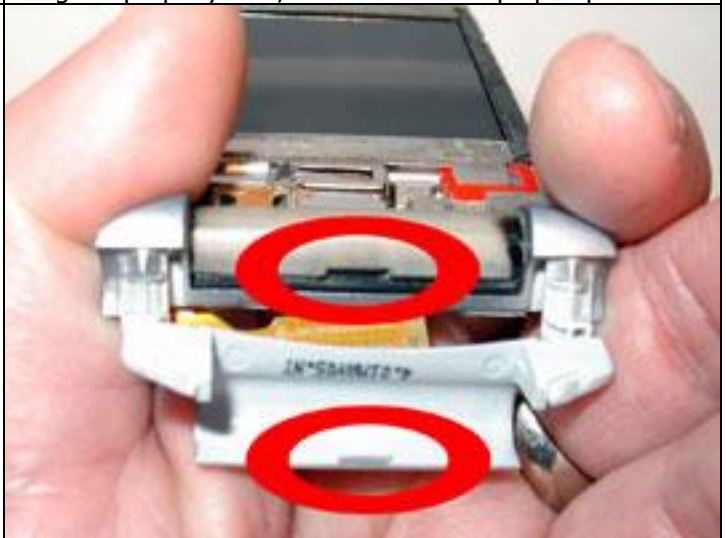
9) Once the flex cable is properly seated, slide the hinge in, making sure not to make any kinks



10) The right side of the hinge will just pop in. For the hinge to properly seat, it will be in the flip open position



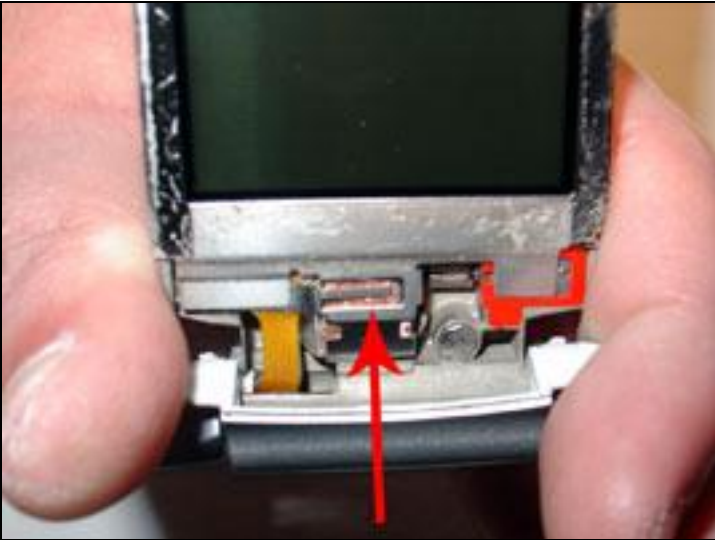
11) Once all is secure, feel good knowing that the flex cable is now safe again



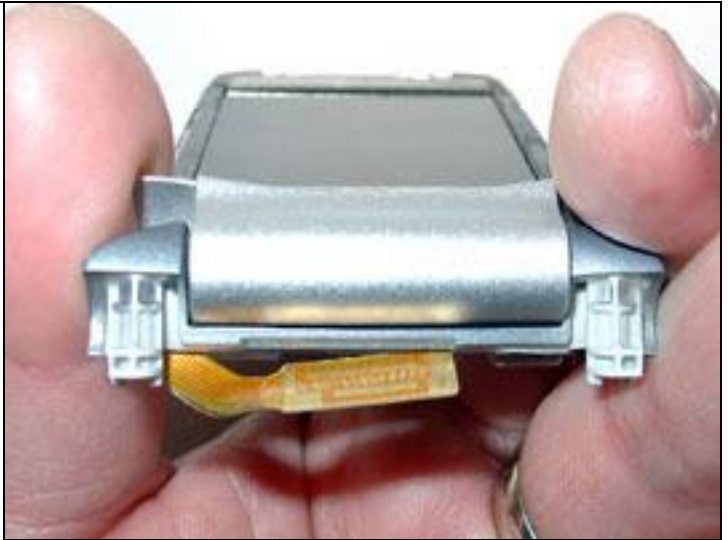
12) Notice the notch in the middle of the hinge and plastic cover? Yes, they match up!



## Hinge assembly



13) Carefully attach the plastic cover, notch first



14) Keep sliding the cover towards the LCD panel



15) Ready to put the faceplate back on?

## Faceplate assembly – Take One



1) If the front and back faceplate is still attached together, then putting it back on will be a piece of cake. Make sure to match up the notch holes on the outside of the faceplate to the notches from the hinge assembly



2) Slide the faceplate on the make sure you line up the notches first, until it seats well

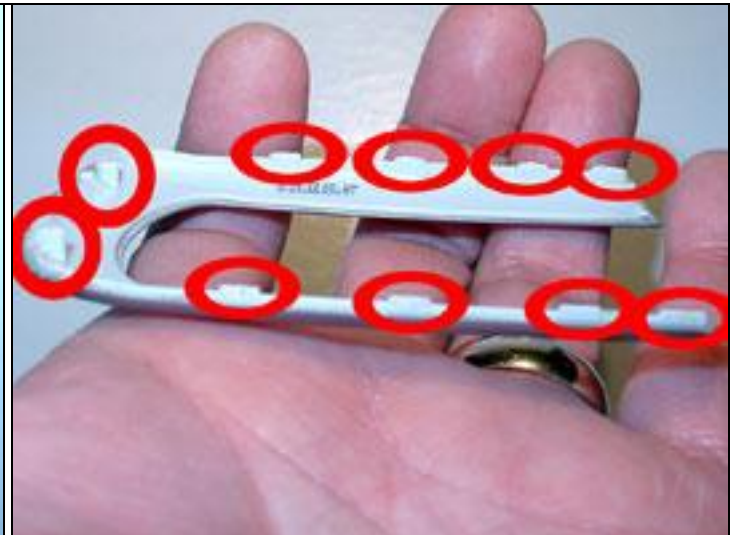


3) Easy-peasy, unless the it doesn't feel secure, in which case, a little added adhesive will help. See the next page

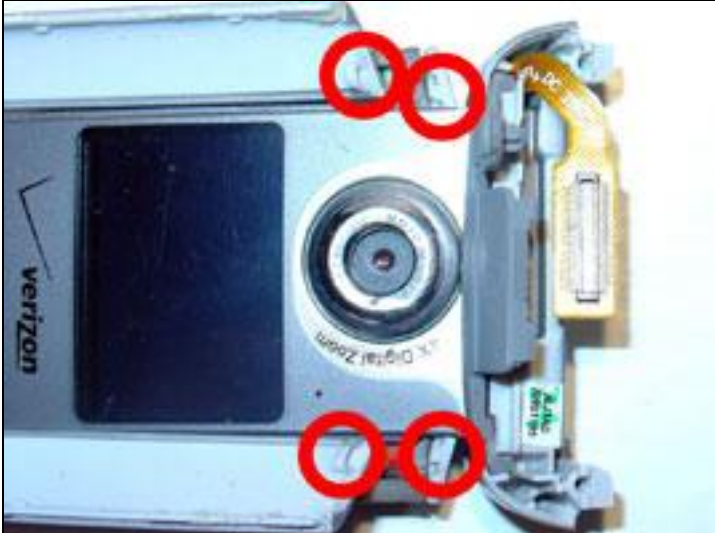
## Faceplate assembly – Take Two



1) If the front and back faceplate are not together, or just didn't feel secure, this is for you



2) Use a toothpick or small screwdriver to apply the adhesive on the points shown



3) Notice the notches and holes on the faceplate that keep it in place



4) Stick the notches in first, then place the outer housing down



5) Now place the inner housing on, and wipe off any excess adhesive with a cloth



6) I use rubber bands to hold the back and front together, until the adhesive cures. And of course, you'll want to put the LCD cover on first



## LCD screen cover assembly



1) Wipe the LCD screen with a micro-fiber cloth



2) Also clean the **INSIDE** of the LCD screen cover

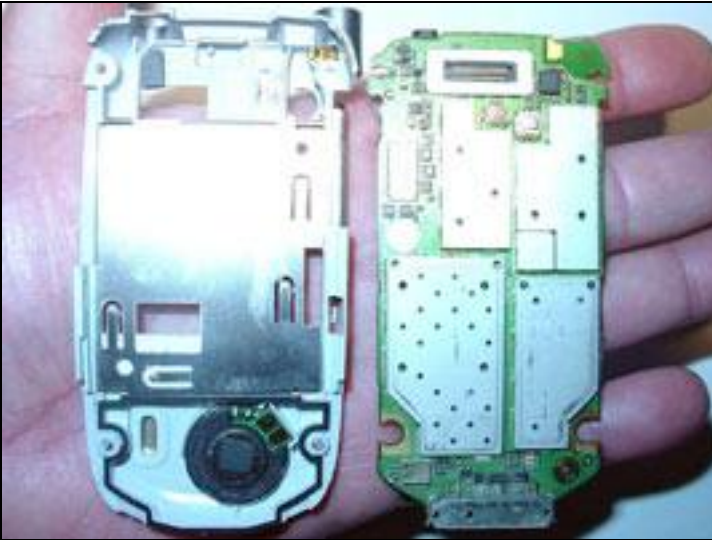


3) Carefully place the LCD screen cover over the existing adhesive, or the new one (remove the adhesive backing), if you bought the faceplate replacement kit



4) Using the micro-fiber cloth, press around the screen to secure the cover to the adhesive

## Assembling the keyboard and upper housing



1) Place the PCB board into the lower back housing



2) Gently attach the keyboard connector



3) Gently slide the keyboard down, so you can clearly see the flex cable connector



4) Attach the flex cable back into the connector. Either hold around the hinges tightly, or keep the upper housing level, so that the flex cable doesn't break



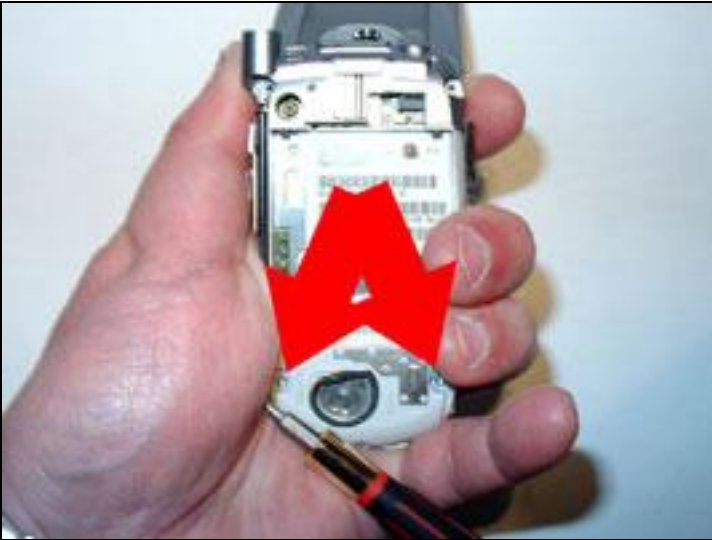
5) While holding the upper housing tightly by the sides, carefully slide the keyboard in at an angle. Remember, there are notches at the top sides of the keyboard



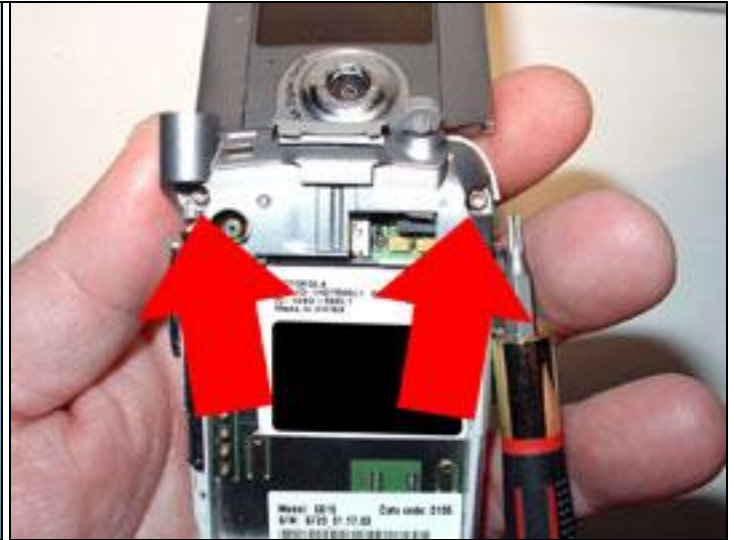
6) Once the notches are under the PCB board, the keyboard should feel securely in place



## Assembling the keyboard and upper housing

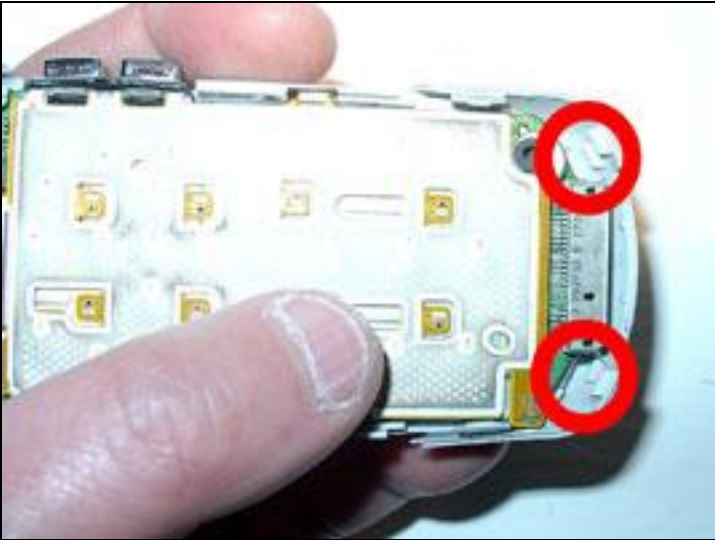


7) While still tightly grasping the upper housing, turn over the screw the two bottom T-6 Torx screws, into the keyboard



8) Now tighten half-way, the two T-6 Torx screws that secure the hinge. Tight enough to hold it in place, not all the way

## Assembly of lower speaker grill



1) Notice the notches. They go **ON TOP** of the PCB board



2) Carefully slide it on



## Assembly of keypad housing



1) Notice the notches. These are what keeps the keypad in place



2) Place the keypad on the housing, make sure the plastic tabs on the keypad go **UNDER** the notches on the housing



3) Done correctly, the keypad shouldn't come off by itself



4) Notice the notches on top of the housing that needs to go under the hinge assembly



5) Carefully push the keypad and housing down



6) Start snapping together from the bottom, one side at a time

## Assembly of keypad housing



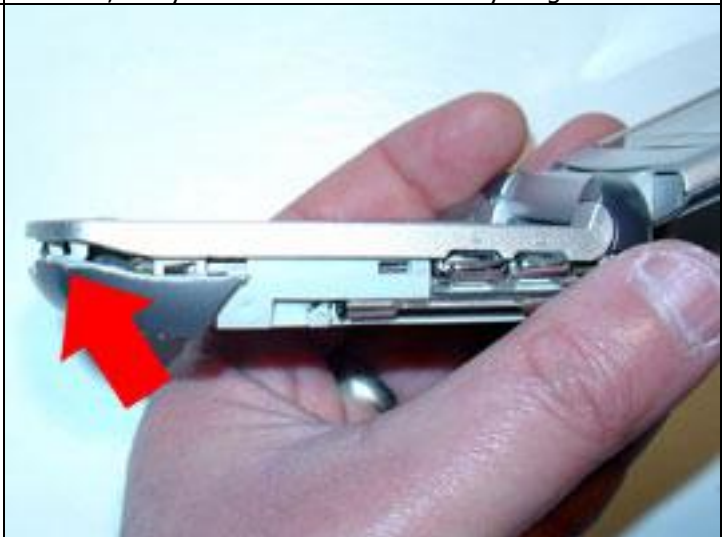
7) Three snaps here: bottom, lower and middle



8) Careful when you do the middle snaps. They are the hardest, but you don't want to break anything



9) One side down, now for the other



10) Same as the first side, bottom



11) Then lower



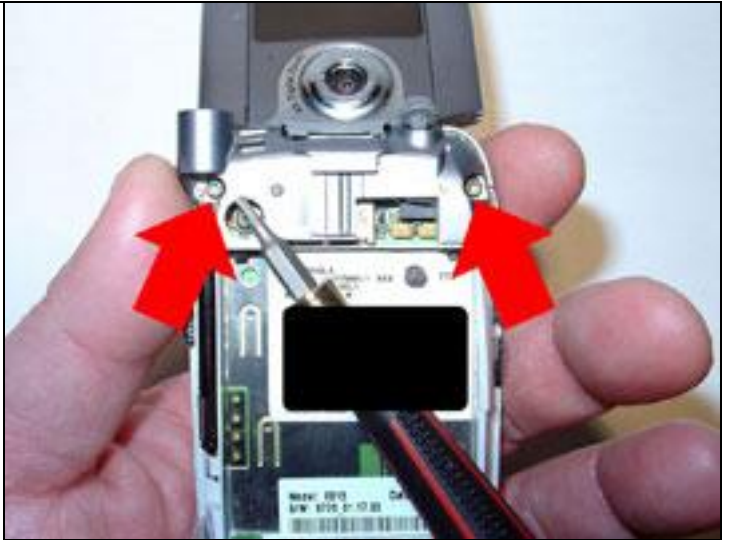
12) Then the hardest: the middle



## Assembly of keypad housing



13) Now that the keypad is back on, time to close it all up



14) You can now tighten the hinge screws



## The rest



1) External antenna rubber plug .. check



2) Screw in the antenna .. check



3) Stick the battery back in .. check



4) Slide the battery cover bottom in place .. check



5) Properly secure the battery cover .. check

# Hmmm, does it still work?



1) Power ON



2) Great signal strength



3) All better now!