



Working Instruction

Applicable for W902

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1 Introduction



1.1 Equipment

SPECIAL TOOLS

- NTZ 122 459 Torque screwdriver (or equivalent)
- NTZ 122 288 Bits (T6)
- NTZ 112 302/2 Front opening tool
- NTZ 122 521 Flex film assembly tool
- NTZ1121077 Camera Tool
- NTZ 112 590 Guitar Pick



STANDARD TOOLS

- Dentist hook
- ESD tweezers



ESD EQUIPMENT

Protect the phone from ESD damages whenever it has been opened by using:

- ESD-wristband
- ESD-gloves



LABEL EQUIPMENT

The following special equipment is required when replacing or installing a new label:

- Hot air flow solder station
- Zebra printer connected to computer



1.2 General Cautions

The following cautions are considered to be generic for all phone models and will not be repeated in the Disassembly, Replacements and Reassembly sections:

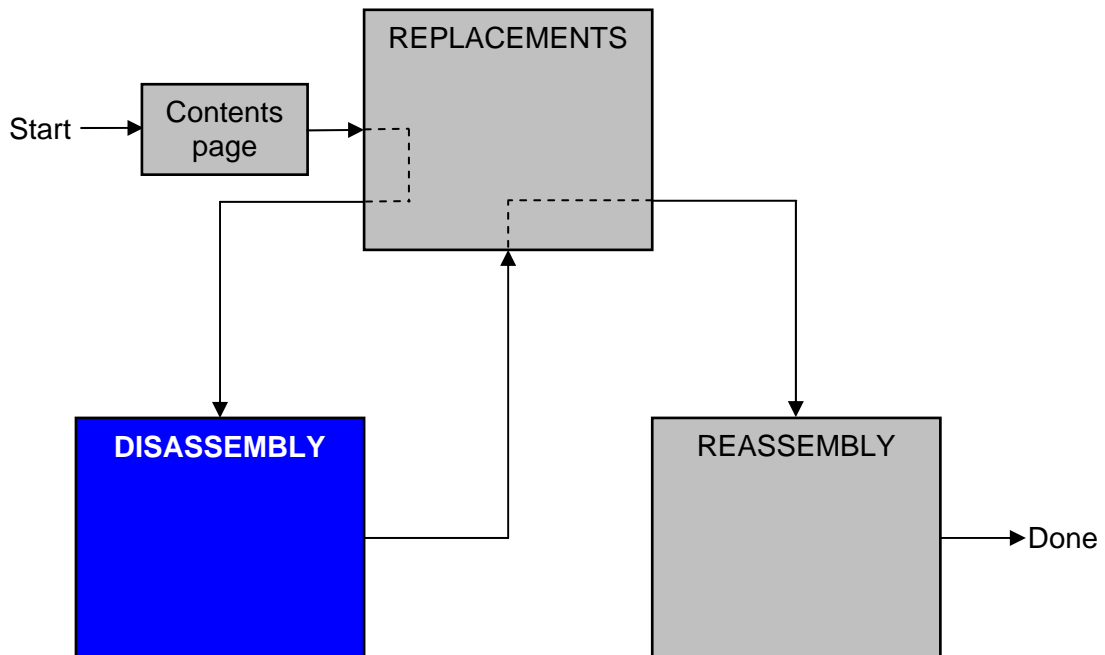
- **SWITCH OFF THE PHONE AND REMOVE ANY MEMORY STICK BEFORE THE START OF THE DISASSEMBLY!**
- **KEEP ALL CONTACT SURFACES CLEAN!**
- **BE CAREFUL WHEN USING TOOLS LIKE THE DENTIST HOOK, TWEEZERS, OPENING TOOLS, GUITAR PICK ETC. TO AVOID SCRATCHES OR DAMAGES TO THE EXTERIOR AND INTERIOR PARTS OF THE PHONE!**
- **BE CAREFUL NOT TO DAMAGE ANY CONTACT SPRINGS!**
- **REMEMBER TO REMOVE THE PROTECTION FOILS ON NEW PARTS SUCH AS THE FRONT COVER AND LCD!**
- **NEVER TOUCH THE DISPLAY GLASS!**
- **USE AIR BLOW EQUIPMENT TO KEEP THE FRONT WINDOW AND DISPLAY MODULE DUST FREE!**

1.3 Adhesives

Use a dentist hook and/or the tweezers to remove old adhesives.
Clean the surface with isopropyl alcohol before attaching new adhesives.

2 Disassembly

When you are going to replace a part being listed in *Replacements*, the instruction of that section usually begins by directing you to this *Disassembly* section with a specification of the instructions you have to carry out in order to disassemble the phone as far as needed before returning to *Replacements* for the actual replacement.



2.1 Overview

The disassembly is done in the following sequence:

1. Battery Cover Assembly (a)
Battery (b)
2. Co-Brand Label
3. Front Cover
4. Keyboard
5. Back Cover Assy
6. Speaker box + Vibrator
7. PBA
8. Carrier top Assembly
9. Carrier Metal Inner Assembly



2.1.1 Battery Cover Assembly & Battery

Unsnap the Battery Cover Assembly by pushing it upwards with your fingers.



and remove the Battery Cover Assembly.



Insert and press the Front Opening Tool down to release the Battery,



and remove the Battery.



2.1.2 Co-Brand Label

Use the Front Opening Tool to release and remove the Co-Brand Label.

THE CO-BRAND LABEL MUST BE SCRAPPED, CANNOT BE REUSED!



2.1.3 Front Cover

Use torx bit no. 6 to remove these two 1,6 x 6,1 screws.

THE TWO 1,6 x 6,1 SCREWS MUST BE SCRAPPED, CANNOT BE REUSED!



Use the Guitar Pick to unlatch the Front Cover, do not damage the microphone gasket behind of the Microphone port.



Work your way upwards on both sides



Insert the Guitar Pick as shown in picture to unlatch the front Cover at this side, Do not insert the pick in the camera key area.



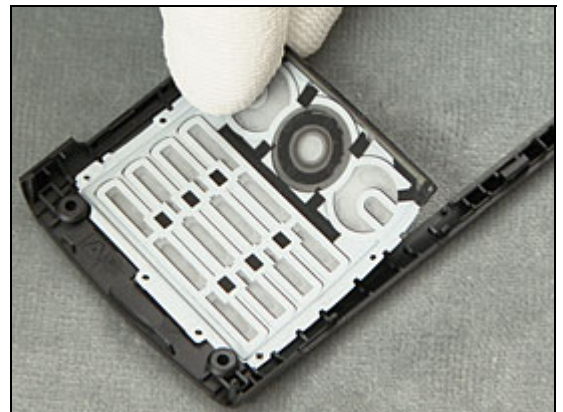
Front Cover Assy *continued*

It can be a little hard to lift up due to a double adhesive on the top side.



2.1.4 Keyboard

Turn the Front Cover around and lift off the keyboard with your fingers



2.1.5 Back Cover Assy

Use a Screwdriver to unsnap the metal latches on both sides of the Battery cavity.



Use the Guitar Pick to lift up the Cover. There is a double adhesive for the 5MPixel Camera.

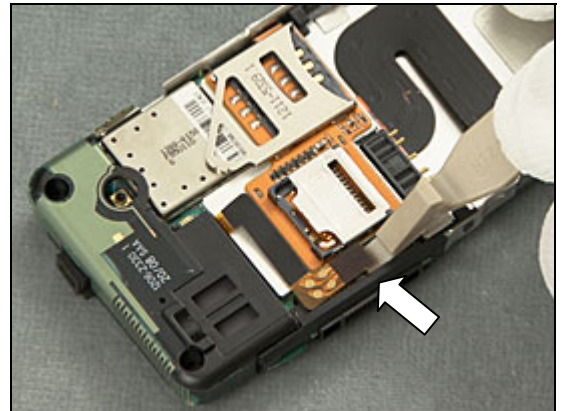


Use your fingers to lift up the cover

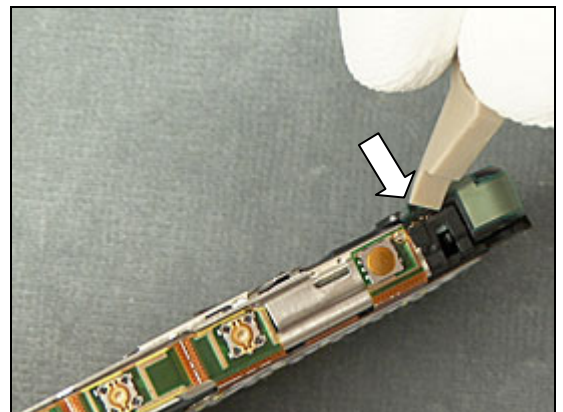


2.1.6 Loudspeaker box + vibrator

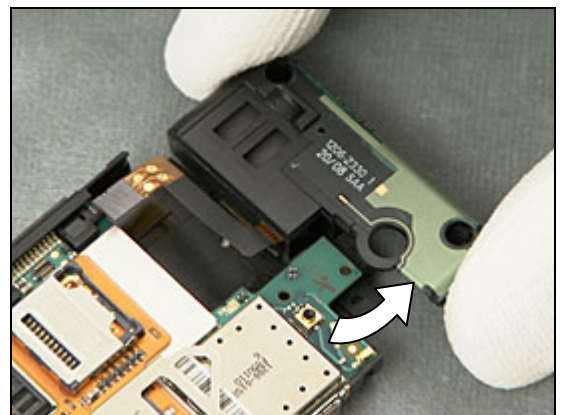
Use the Front Opening Tool to disconnect this BtB connector which is located on the PBA.



Use the Front Opening Tool to unsnap the Speaker box from the Carrier Metal Inner Assy

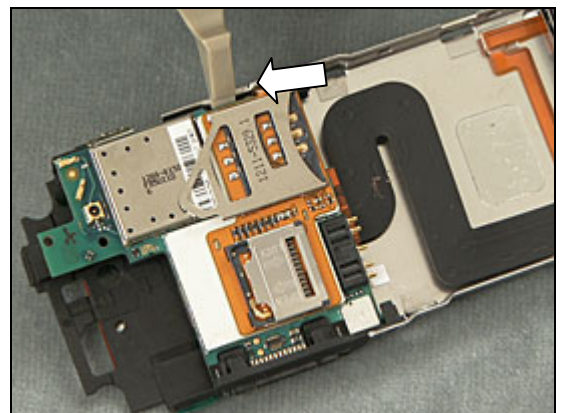


Remove the Speaker box + vibrator.



2.1.7 PBA

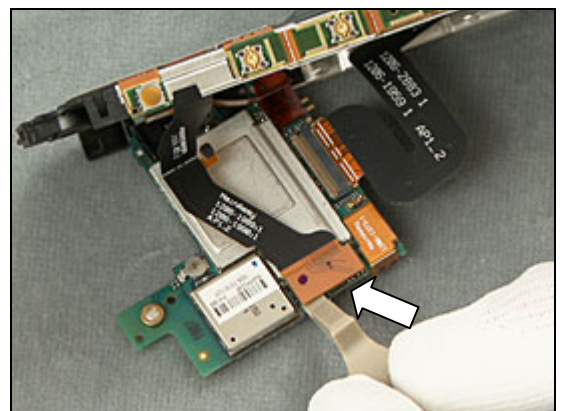
Use the Front Opening Tool to release the PBA from the Carrier Metal Inner Assy.



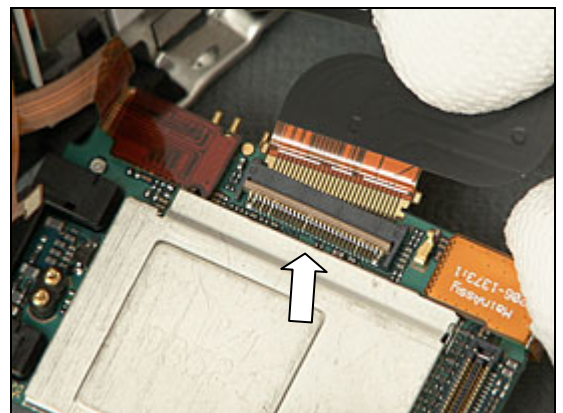
Use your fingers to lift out the PBA.



Use the Front Opening Tool to unsnap the three BtB connectors

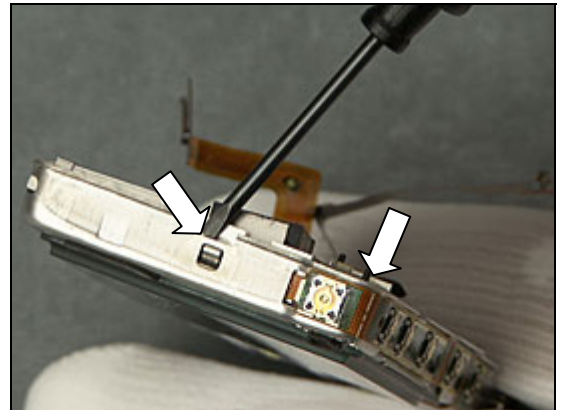


PBA continued

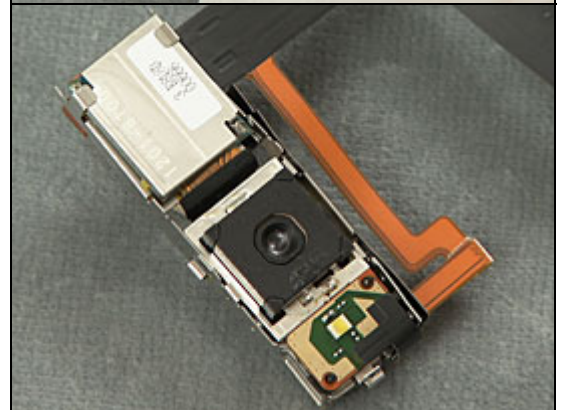
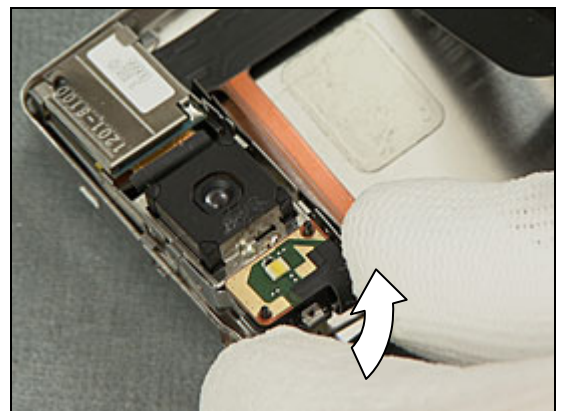


2.1.8 Carrier Top Assembly

Use the Screwdriver to unsnap the Carrier Top Assembly



Use your fingers to lift it out



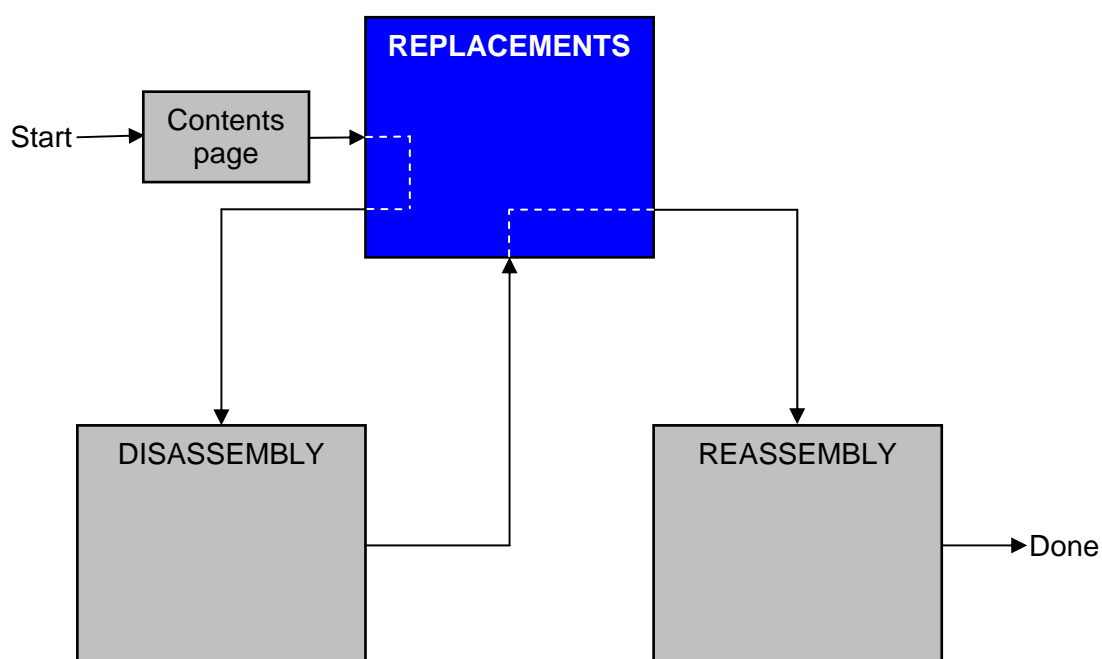
3 Replacements

Search for the part to be replaced on the Contents page and go to that instruction to be found in this *Replacements* section.

The instruction usually begins by directing you to the *Disassembly* section with a specification of the instructions you have to carry out in order to disassemble the phone as far as needed before the actual replacement.

Go back to this *Replacements* section and carry out the instruction.

The instruction usually ends by directing you to the *Reassembly* section with a specification of the instructions you have to carry out in order to reassemble the phone.



3.1 Battery Cover Assy & Battery

Follow the 2.1.1 Disassembly instructions!

Prepare the new Battery Cover Assembly and/or Battery.

Follow the 4.1.8 Reassembly instructions!

3.2 Co-Brand Label

Follow the 2.1.2 Disassembly instructions!

Prepare the new Co-Brand Label.

Follow the 4.1.7 Reassembly instructions!

3.3 Front Cover

Follow the 2.1.1 – 2.1.3 Disassembly instructions!

Prepare the new front Cover Assy.

Follow the 4.1.6 – 4.1.8 Reassembly instructions!

3.4 Keyboard

Follow the 2.1.1 – 2.1.4 Disassembly instructions!

Prepare the new Keyboard

Follow the 4.1.5 – 4.1.8 Reassembly instructions!

3.5 Back Cover Assy

Follow the 2.1.1 – 2.1.5 Disassembly instructions!

Prepare the new Back Cover assy.

Follow the 4.1.4 – 4.1.8 Reassembly instructions!

3.6 PBA

Follow the 2.1.1 – 2.1.7 Disassembly instructions!

Prepare the new PBA

Follow the 4.1.2 – 4.1.8 Reassembly instructions!

3.7 Carrier Top Assembly

Follow the Follow the 2.1.1 – 2.1.8 Disassembly instructions!

Prepare the new Carrier Top Assy.

Follow the 4.1.1 – 4.1.8 Reassembly instructions!

3.8 Loudspeaker Box + Vibrator

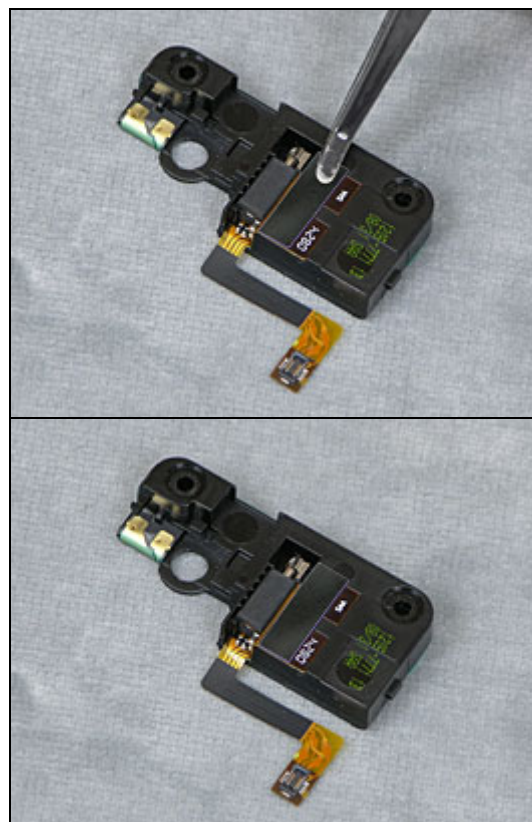
REMOVAL

Follow the 2.1.1 – 2.1.6 Disassembly instructions!

Prepare the new Loudspeaker Box + Vibrator and place the adhesive as picture shows.

INSTALLATION

Follow the 4.1.3 – 4.1.8 Reassembly instructions!



3.9 Carrier Metal Inner Assembly

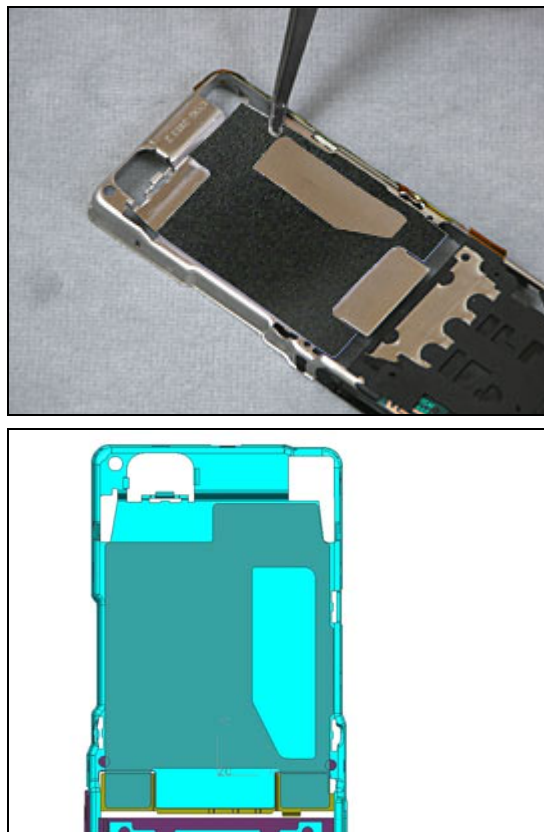
REMOVAL

Follow the 2.1.1 – 2.1.8 Disassembly instructions!

Prepare the new Carrier. If the Carrier is Rev 2 place the foil as the pictures shows.

INSTALLATION

Follow the 4.1.1 – 4.1.8 Reassembly instructions!



3.10 Battery Cover Grounding

REMOVAL

Follow the 2.1.1 – 2.1.3 Disassembly instructions!

Use a Dentist Hook to remove the Battery Cover Grounding



INSTALLATION

Use a pair of Tweezers to place the new Battery Cover Grounding

Follow the 4.1.6 – 4.1.8 Reassembly instructions!



3.11 Foil Adhesive Camera Window

REMOVAL

Follow the 2.1.1 – 2.1.5 Disassembly instructions!

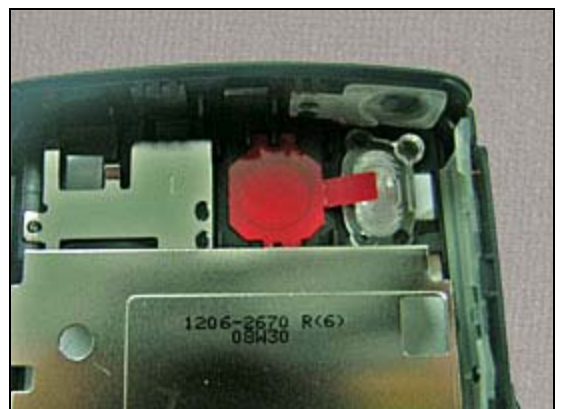
Use a Dentist Hook to remove the Adhesive



INSTALLATION

Use a pair of Tweezers to place the new Adhesive, use the guiding slots in the carrier to place it right.

Follow the 4.1.4 – 4.1.8 Reassembly instructions!



3.12 Antenna Main Flex

REMOVAL

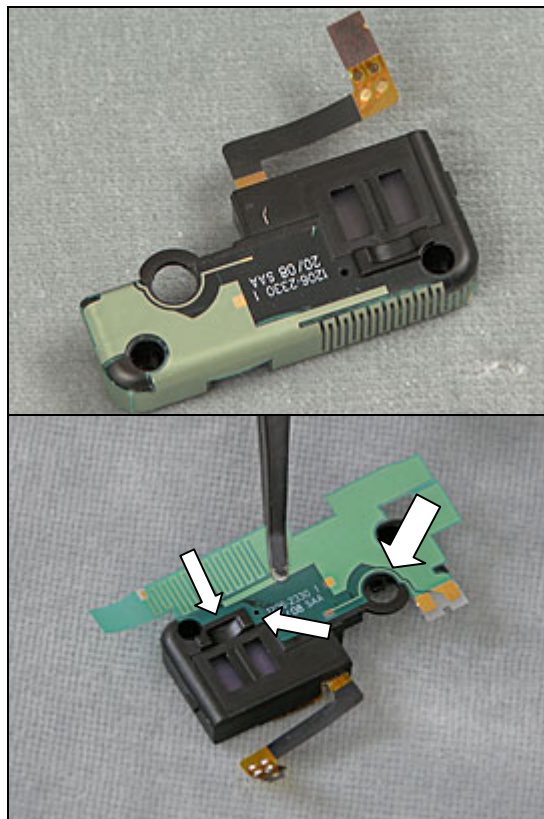
Follow the 2.1.1 – 2.1.6 Disassembly instructions!

Use a Dentist Hook to and your fingers remove the Antenna Flex

INSTALLATION

Use a pair of Tweezers to position the new Antenna on the Loudspeaker box. Use the guiding hole and the edges of the Loudspeaker box to position the antenna correctly.

Follow the 4.1.3 – 4.1.8 Reassembly instructions!

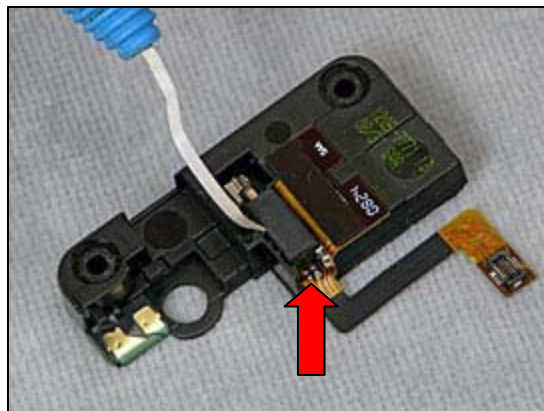


3.13 Vibrator

REMOVAL

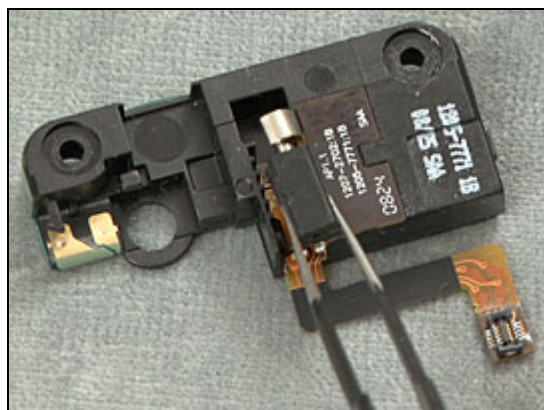
Follow the 2.1.1 – 2.1.6 Disassembly instructions!

Use a Dentist Hook to remove the Vibrator, try to lift it strait up to avoid damage the components on the flex.



INSTALLATION

Use a pair of Tweezers to position the new Vibrator in the Loudspeaker box. Use the back side of the Tweezers to press it in to place.



Follow the 4.1.3 – 4.1.8 Reassembly instructions!

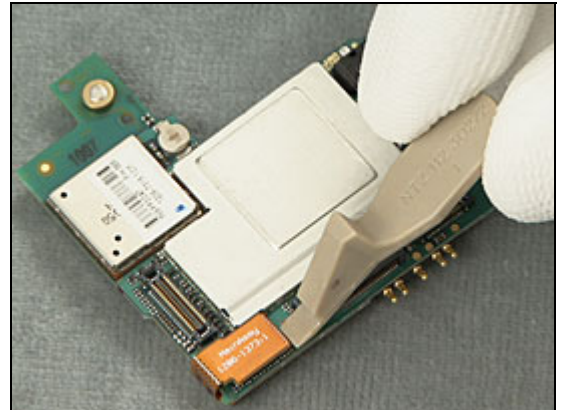


3.14 PBA Card Reader

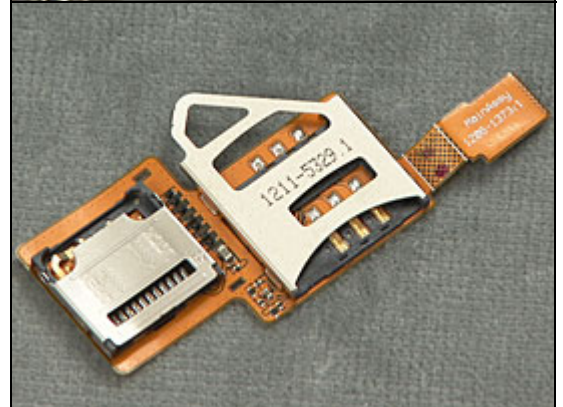
REMOVAL

Follow the 2.1.1 – 2.1.7 Disassembly instructions!

Use the Front Opening Tool to unsnap the BtB on the main PBA



Use the Front Opening Tool to separate the Card Reader from the Shield can Lid.



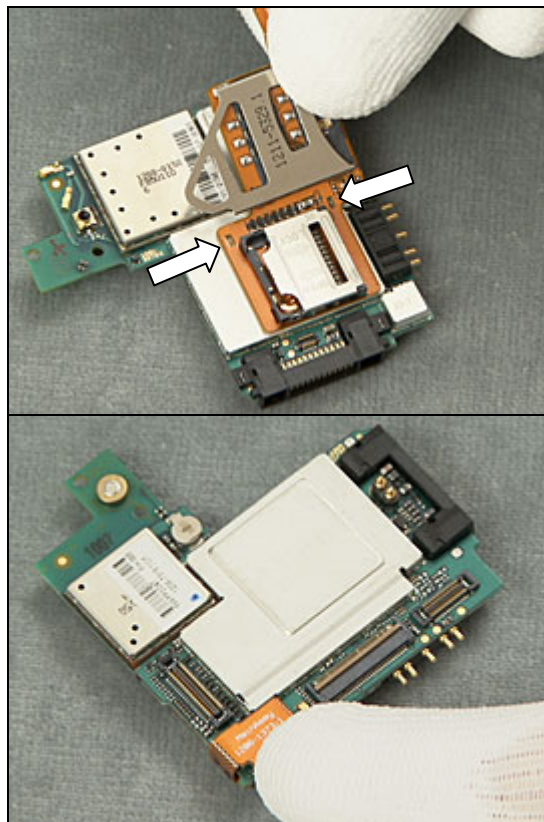
PBA Card Reader *continued*

INSTALLATION

Use your fingers to place the new card reader, use the guiding holes to place it correctly.

Use your fingers to connect the BtB to the main PBA

Follow the 4.1.2 – 4.1.8 Reassembly instructions!



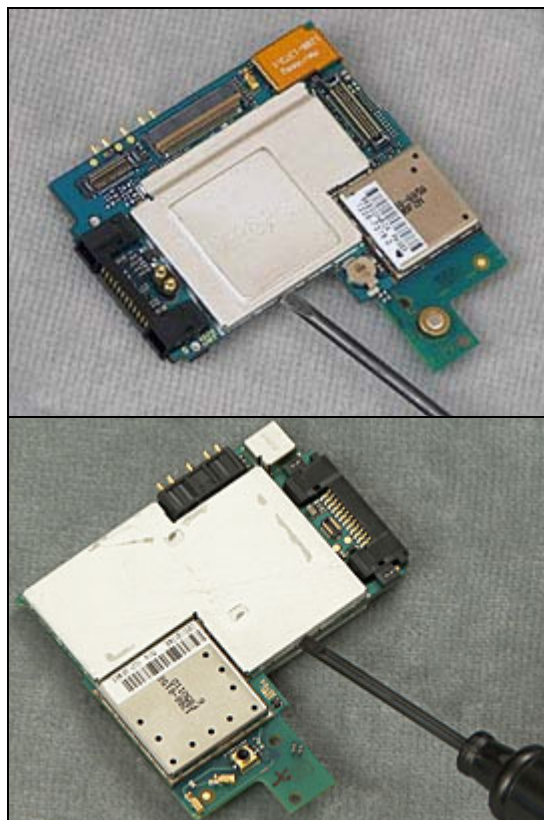
3.15 Shield Can Lids

REMOVAL

Follow the 2.1.1 – 2.1.7 Disassembly instructions!

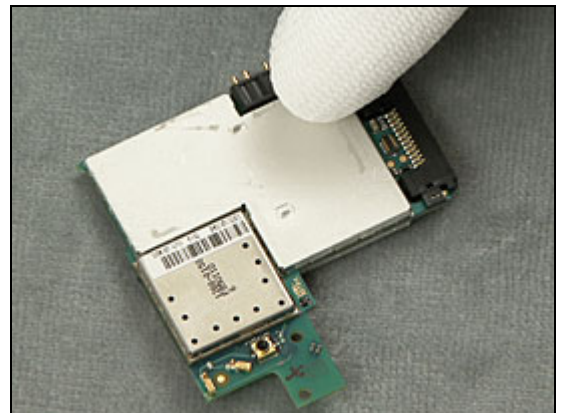
Use a small Screwdriver to unsnap the lids

THE SHIELD CAN LIDS BB 1 & 2 MUST BE SCRAPPED, CANNOT BE REUSED!



Shield Can Lids *continued*

Use your fingers to snap on the new lids, do not push on the middle of the lids.



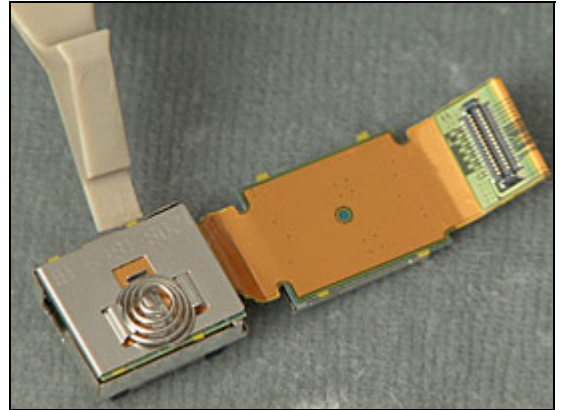
Follow the 4.1.2 – 4.1.8 Reassembly instructions!

3.16 Mcomp Spring Metal Camera Spring

REMOVAL

Follow the 2.1.1 – 2.1.8 Disassembly instructions and remove the Camera Module following the steps above!

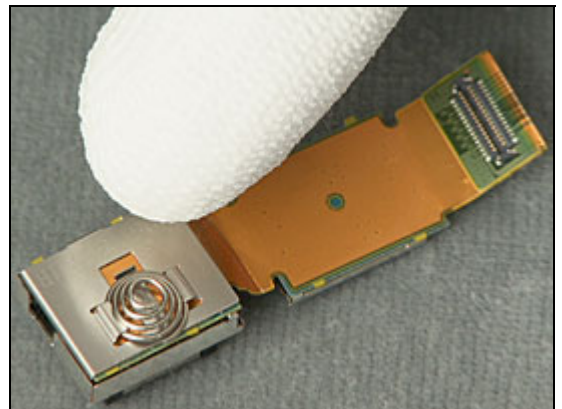
Use the Front Opening Tool to remove the Spring



INSTALLATION

Use your fingers to place the new Spring.

Follow the 4.1.1 – 4.1.8 Reassembly instructions!!

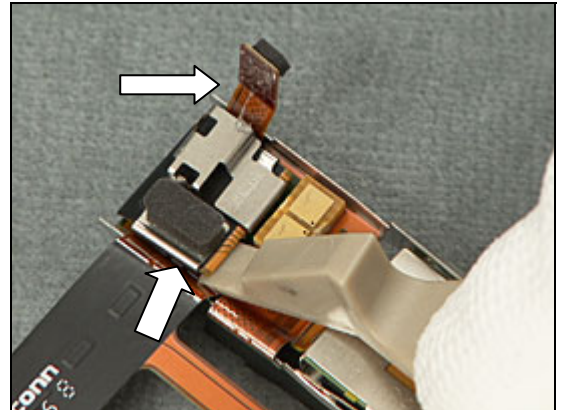


3.17 5MP Camera & Carrier Metal Light Sensor

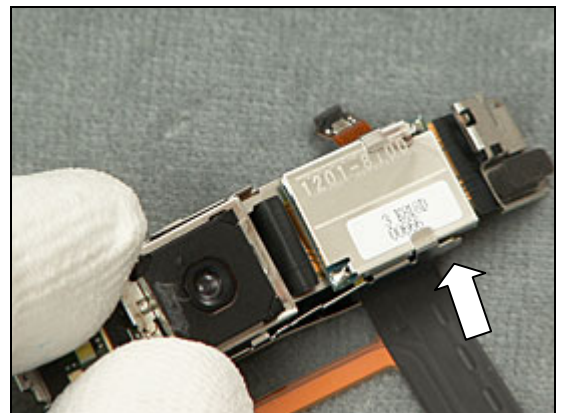
REMOVAL

Follow the 2.1.1 – 2.1.8 Disassembly instructions!

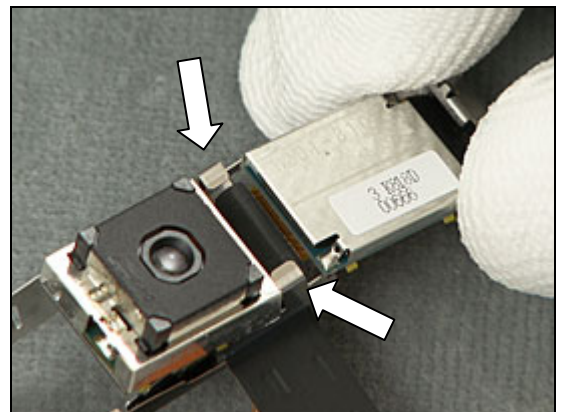
Turn the Carrier Top Assy upside/down lift up the light Sensor and disconnect the BtB connector by using the Front Open Tool.



Turn the Carrier around and gently lift up the Camera module.



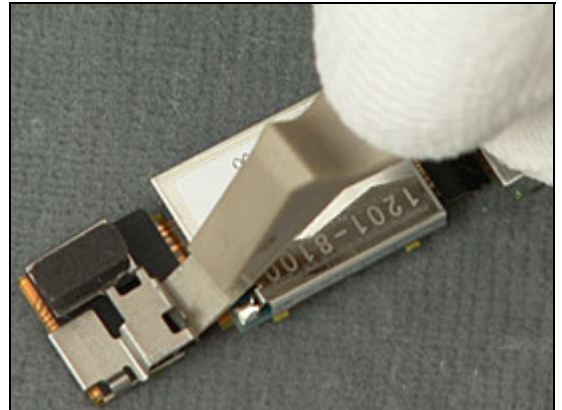
Pull the Camera module back so the flex part is by the hooks and lift out the Camera module.



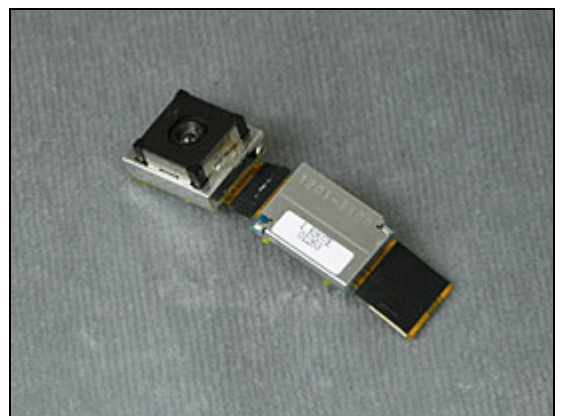
5MP Camera & Carrier Metal Light Sensor *continued*

THE 5MP CAMERA IS ATTACHED WITH GLUE!

Use the Front Opening Tool to separate the Metal light sensor from the Camera module.

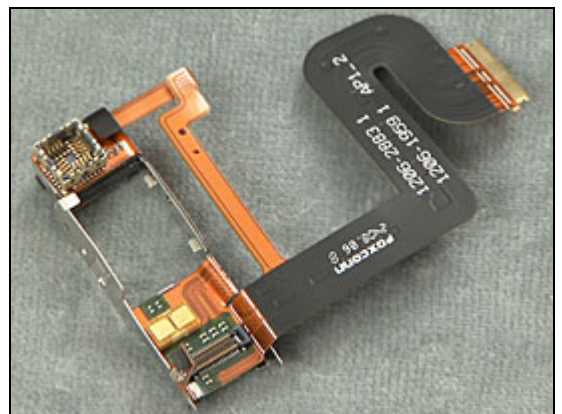


5MPixel Camera!



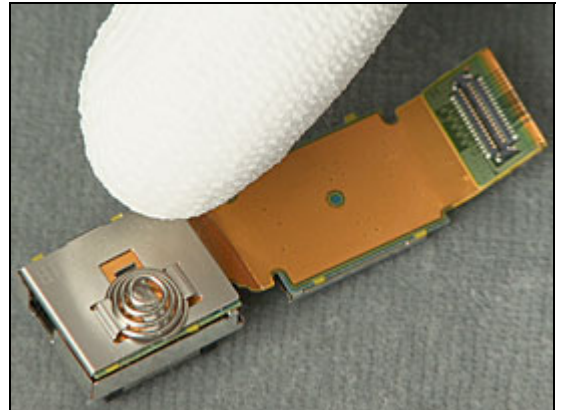
INSTALLATION

The Carrier Top Assembly should now look like this.



5MP Camera & Carrier Metal Light Sensor *continued*

Use your fingers to place a new metal MComp spring as in chapter 3.16



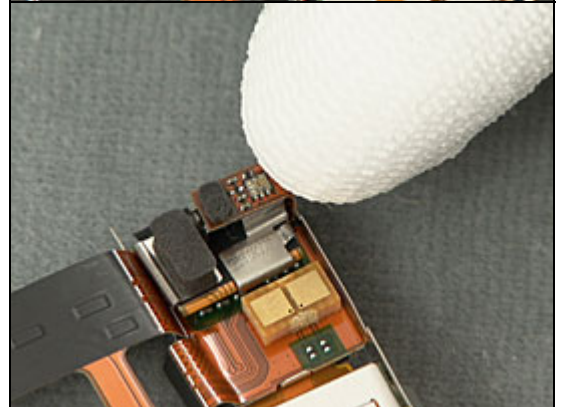
Slide in the Camera module in to the carrier.



Fold the Camera module flex and Connect these BtB connectors, then mount the Light Sensor Carrier



Attach the loose Light Sensor part on top of the BtB connector.



Follow the 4.1.1 – 4.1.8 Reassembly instructions!!

3.18 Qcif VGA Camera

REMOVAL

Follow the 2.1.1 – 2.1.8 Disassembly instructions!

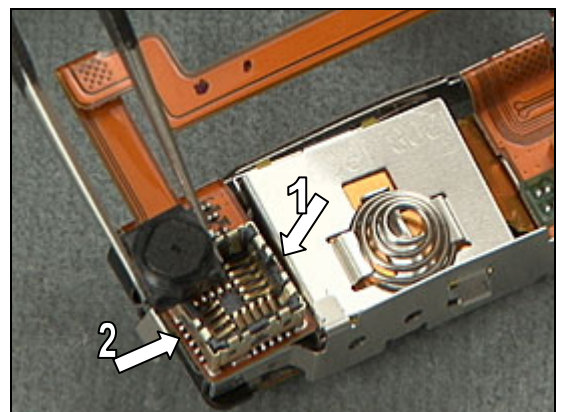
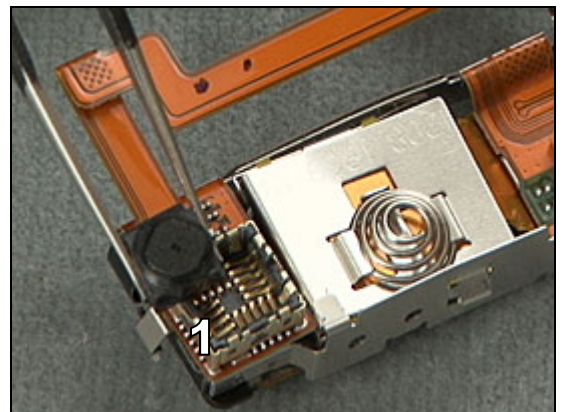
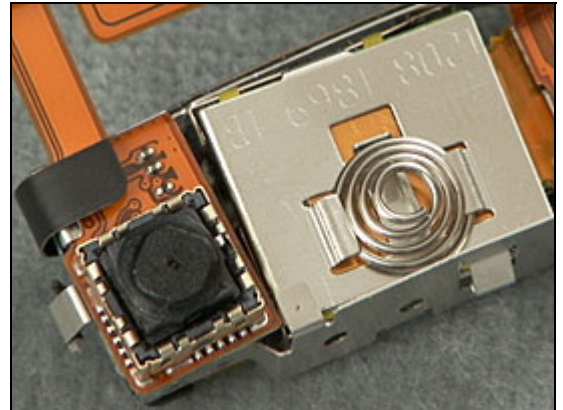
Turn the Top Rear Inner Panel Assy upside/down.

Insert the Camera Tool into the Camera Socket as far as it goes in order to release the Qcif VGA Camera from the Camera Socket.

Remove the Camera Tool and remove the Camera by lifting straight up using your fingers or the Tweezers.

INSTALLATION

Place the Camera into the Socket so that the Camera's guiding peg (1) coincides with the cavity (2) of the Socket. Press with your finger, without touching the lens, and make sure that the Camera has reached the bottom of the Socket. *Follow the 4.1.1 – 4.1.8 Reassembly instructions!*



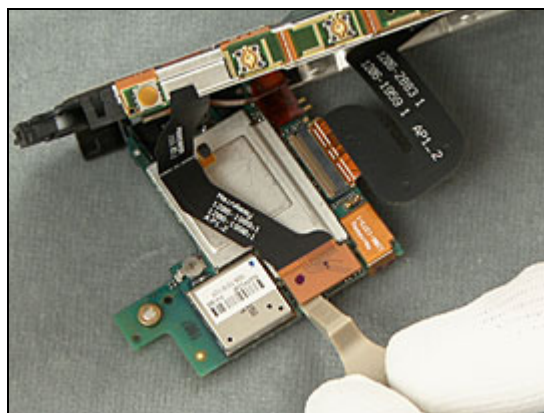
3.19 PBA Keyfoil Complete

REMOVAL

Follow the 2.1.1 – 2.1.7 Disassembly instructions!

Disconnect the Keyfoil from the main PBA with the Front Opening Tool.

THE KEYFOIL MUST BE SCRAPPED, CANNOT BE REUSED!

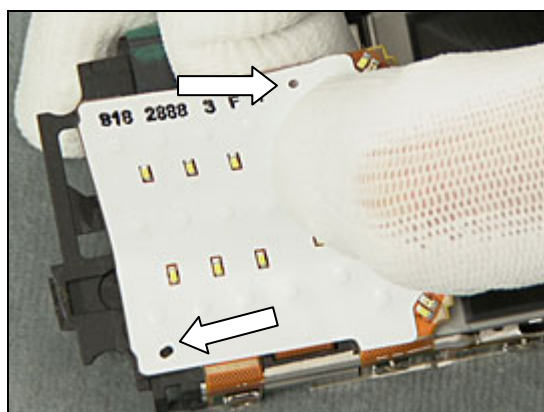


Use the Front Opening Tool to separate the Keyfoil from the Inner Carrier.

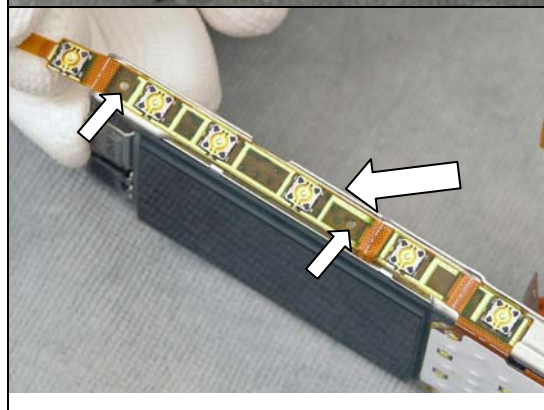


INSTALLATION

Use the guiding holes to position the new Keyfoil correctly with your fingers.



Use the flange and the guiding holes to place the foil correctly.



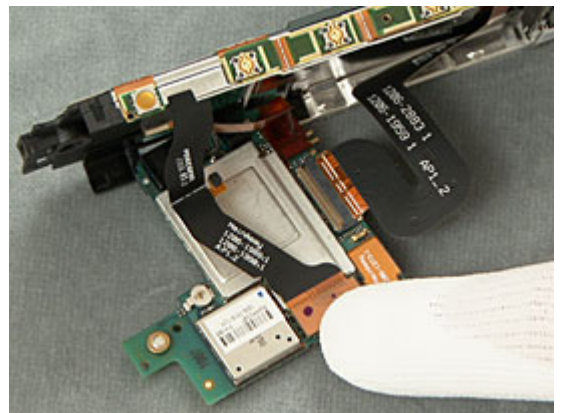
PBA Keyfoil Compleate *continued*

It should now automatically follow the flange around the corner as well



Reconnect the Keyfoil to the main PBA

Follow the 4.1.2 – 4.1.8 Reassembly instructions!

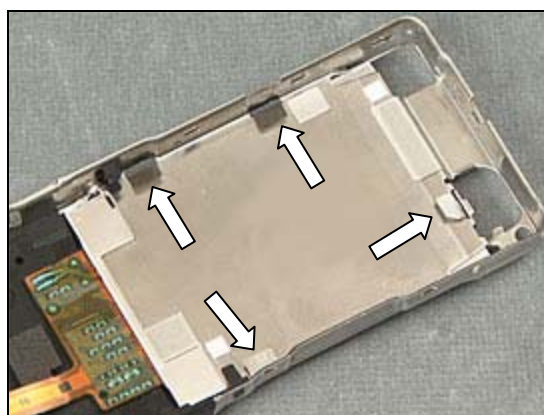


3.20 Display 2.2 TFT

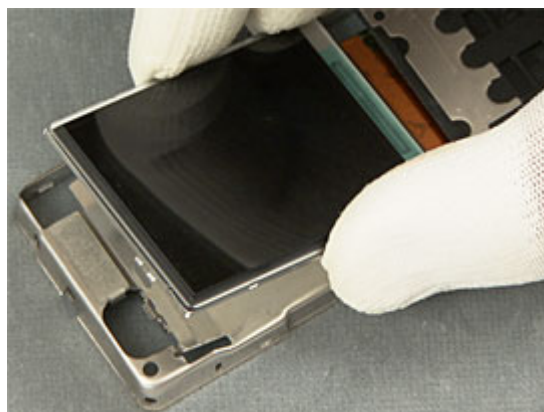
REMOVAL

Follow the 2.1.1 – 2.1.8 Disassembly instructions!

Use a small Screwdriver to lift up the 4 metal wings, then use your fingers to lift up the Display.

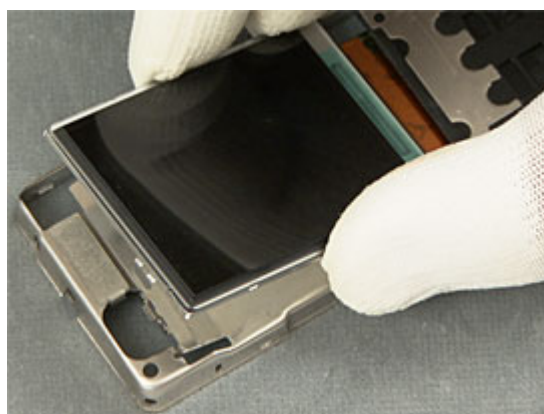


Turn the Frame around and lift out the Display



INSTALLATION

Put the new Display in with the wings in the slots



Display 2.2 TFT *continued*

Turn the Frame around and use the Guitar Pick to fold down the metal wings on the new Display

Follow the 4.1.1 – 4.1.8 Reassembly instructions!

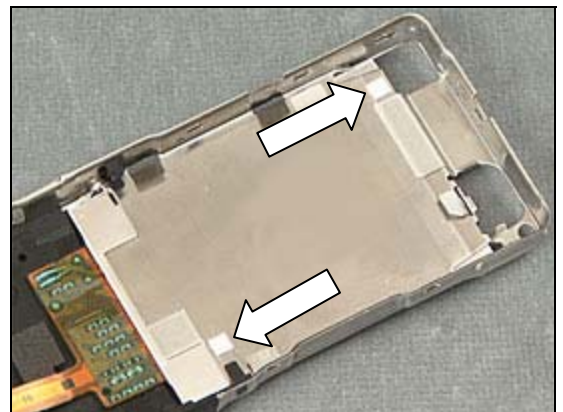


3.21 Liquid Intrusion Indicator

REMOVAL

Follow the 2.1.1 – 2.1.8 Disassembly instructions!

There are two Liquid Intrusion Indicators inside the phone as shown in these two pictures.



INSTALLATION

If there are traces of liquid intrusion (one or both indicators are red instead of white), abort any further repair actions and handle the phone in accordance with your local directives.

Follow the 4.1.1 – 4.1.8 Reassembly instructions!

3.22 Ant BT Flex

REMOVAL

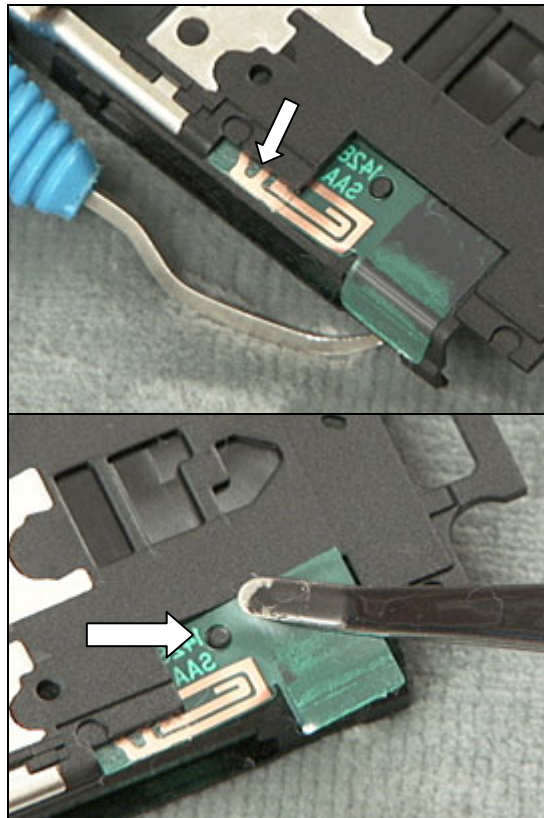
Follow the 2.1.1 – 2.1.8 Disassembly instructions!

Use the Dentist Hook to remove the Antenna.

INSTALLATION

Position the new Antenna carefully and then attach it to the Inner Frame, use the guiding pin for correct placement.

Follow the 4.1.1 – 4.1.8 Reassembly instructions!



3.23 Ear Speaker

REMOVAL

Follow the 2.1.1 – 4.1.8 Disassembly instructions!

Use the Front Opening Tool to release the Ear Speaker.



INSTALLATION

Use your fingers to place the new Ear Speaker, mind the connectors.

Follow the 4.1.1 –4.1.8 Reassembly instructions!



3.24 Gasket Ear Speaker

REMOVAL

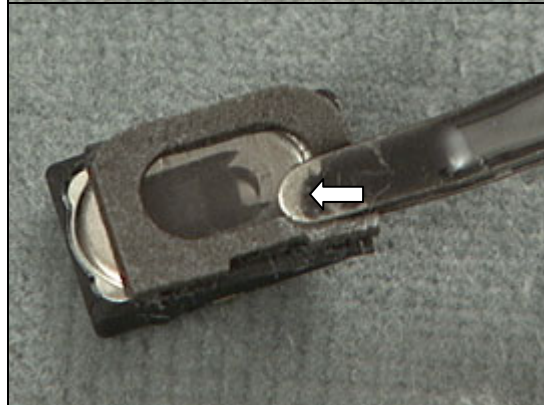
Follow the 2.1.1 – 2.1.5 Disassembly instructions!

Use The Dentist Hook to remove the Gasket



Use a pair of Tweezers to apply the new Gasket.

Follow the 4.1.4 –4.1.8 Reassembly instructions!



3.25 Core Unit Label

Follow the 2.1.1 Disassembly instructions!

- Read the old label and/or write the information into the "Label make" program before removal
- Note the position of the label before removal
- Heat up the label by using hot air, if needed
- Carefully remove the label without causing scratches
- If there still are residues, clean the surface with isopropyl alcohol



- Check that the proper label format is loaded in the Zebra printer
- Write a new label by using the program "Label make" and check that the printing is OK
- Take the new label and place it onto the frame as in the adjacent picture

ONE LABEL ONLY IS ALLOWED!

Follow the 4.1.12 Reassembly instructions!

3.26 Board Swap – replace swap board

Follow the 2.1.1 to 2.1.7 and 3.14 Disassembly instructions!

Replace swap board

Follow the 4.1.2 to 4.1.8 and 3.14 Reassembly instructions!

3.27 Board Swap – Change Label

CHANGE LABEL

Follow the instructions in the Generic Repair Manual – Build swap for change of label.

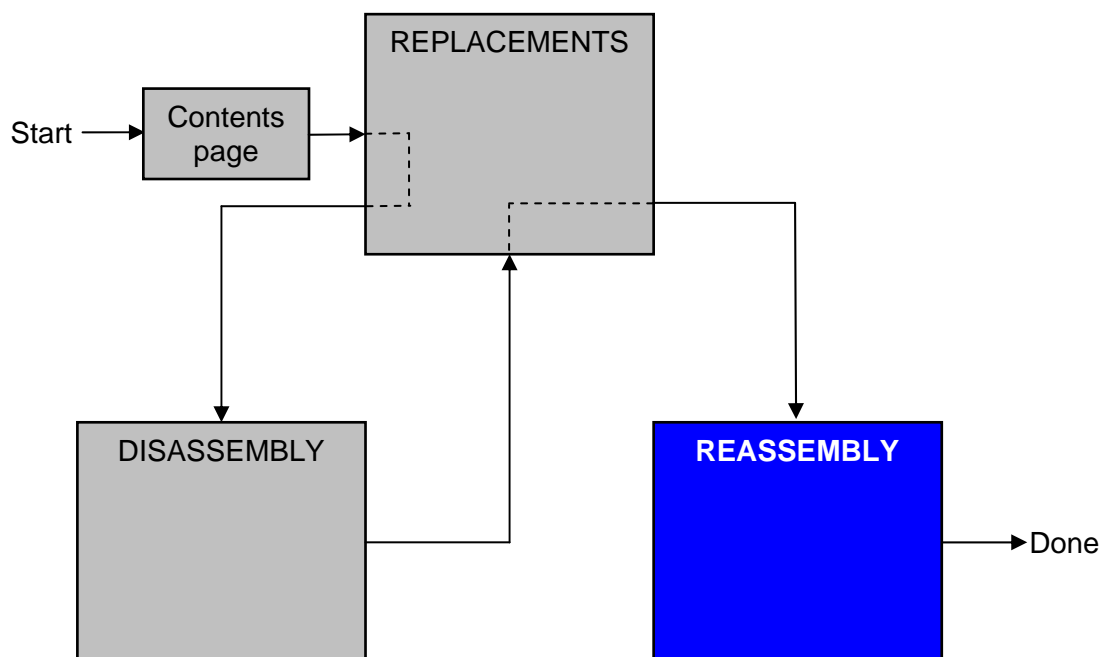
3.28 Board Swap – Customize Software

CUSTOMIZATION OF SOFTWARE

Follow the instructions in the Generic Repair Manual – Build swap for customization of the software

4 Reassembly

After replacing a part being listed in Replacements, the instruction of that section usually ends by directing you to this Reassembly section with a specification of the instructions you have to carry out in order to reassemble the phone.



4.1 Overview

The reassembly is done in the following sequence:

1. Carrier Metal Inner Assembly
2. Carrier top Assembly
3. PBA
4. Speaker box + Vibrator
5. Back Cover Assy
6. Keyboard
7. Front Cover
8. Co-Brand Label
9. Battery (a), Battery Cover Assembly (b)



4.1.1 Carrier Top Assembly

Use your fingers to place the Carrier



Snap it in to place in the Carrier Metal Inner assy



4.1.2 PBA

Connect the Display flex with your finger



Use the front Opening Tool to lock the latch for the Carrier Top Assy flex.



Connect the Keyboard flex with your finger

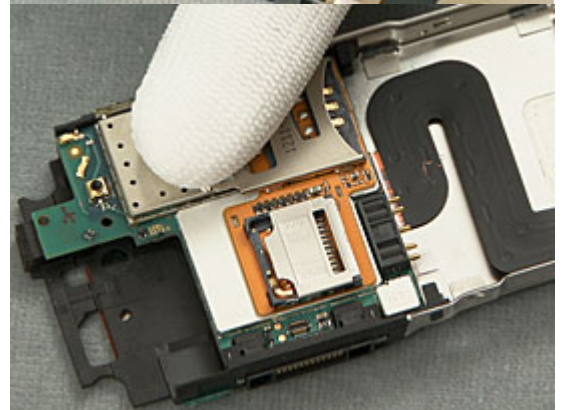


PBA *continued*

Slide in the PBA with I/O connector first

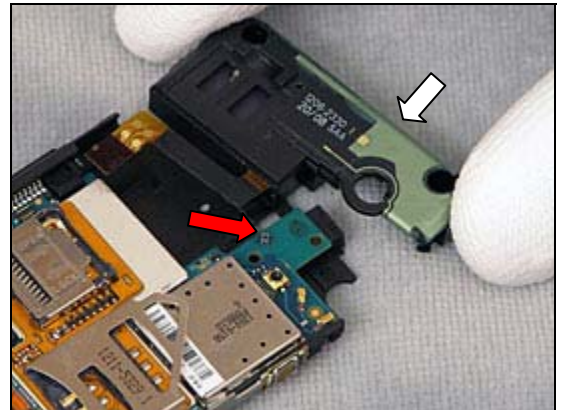


Snap in the PBA in the carrier using your fingers



4.1.3 Loudspeaker box + Vibrator

Use your fingers to slide in and snap on the Loudspeaker box + Vibrator, Do not damage the components on the PCB.

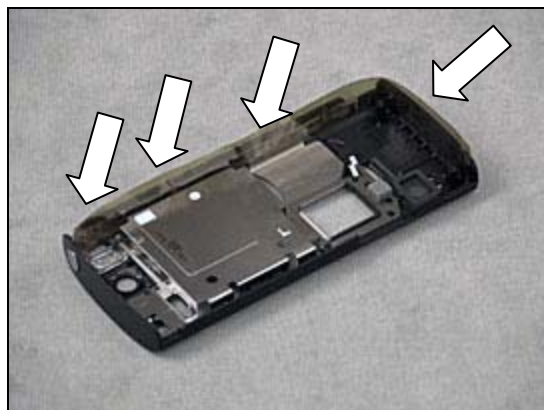


Use the Front Opening Tool to connect the BtB flex



4.1.4 Core Unit

Use a piece of double folded Heat resistant tape to cover the Side Keys and Microphone hole as shown.



Begin to slide in the Core Unit in the upper right corner of the Back Cover



Use the tape as help to slide down the Core Unit along the Side Keys.



Core Unit *continued*

Turn the phone around and snap in the sheet metal latches with your fingers.



remove the heat resistant tape



If the Core Unit is assembled correctly the microphone hole should be clear.



4.1.5 Keyboard

Use your fingers to press down the Keyboard inside the Front Cover Assy.



4.1.6 Front Cover

Use your fingers to snap on the front Cover Assy



Use torx bit no. 6 to draw these two 1,6 x 6,1 screws, to the torque of 15 Ncm



4.1.7 Co-Brand Label

Use your fingers to place the Co-Brand Label.



4.1.8 Battery and Cover Battery Assembly

Use your fingers to place the Battery



Use your fingers to place and snap in the Cover Battery



5 Revision History

Rev.	Date	Changes / Comments
1	2008-08-25	First release
2	2010-01-29	Added Board swap