



Working Instruction, Mechanical

Applicable for K510

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1 Introduction

K510



1.1 Equipment

SPECIAL TOOLS

- NTZ 122 459 Torque screwdriver (or equivalent) set to 17 Ncm+/- 6%
- NTZ 122 288/1 Torx bit no 6
- NTZ 112 1067R1 Camera removal tool
- NTZ 122 521 Flex film assembly tool
- NTZ 122 302/2 Front opening tool



STANDARD TOOLS

- Dentist hook
- Blunt pair of tweezers
- Guitar pick



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



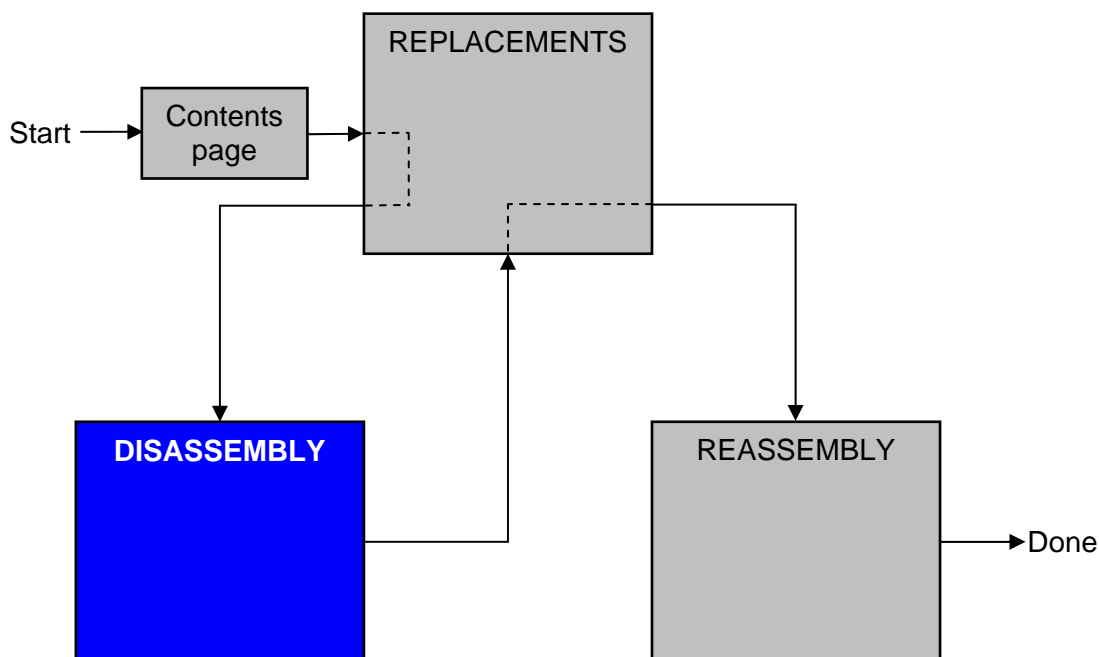
1.2 General cautions

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 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!**

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 (a) & Battery
2. Front Cover ass'y
3. PBA unit
4. Metal Frame ass'y
5. Keypad PWBA ass'y



2.1.1 Battery Cover & Battery

Press on the bottom of the Battery Cover and simultaneously push it upwards.



Lift the Battery Cover up and release it from the Frame Sub-Assembly.



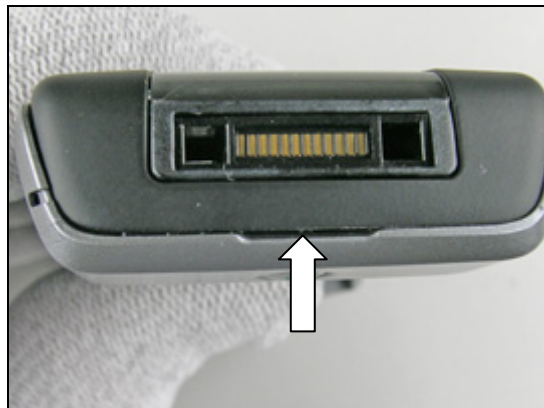
Release the Battery at the bottom.



2.1.2 Front Cover Assembly

Use your fingers and grab the Front Cover Assembly in the gap.

Unhook the Front Cover Assembly by gently bend the Front Cover Assembly outwards the System Connector.

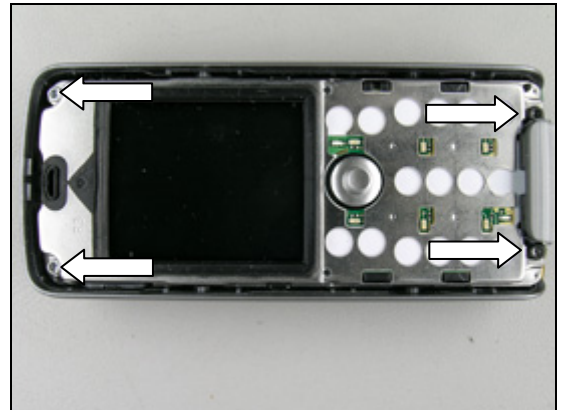


Grab the Front Cover Assy and carefully remove it from the Frame Sub-Assy.

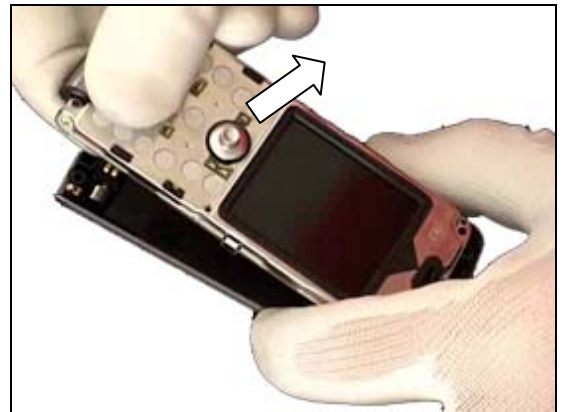


2.1.3 PBA Unit

Follow the Disassembly instructions of sections 2.1.2.
Use Torx T6 bits to remove the four screws.



Use your fingers to remove the PBA Unit.

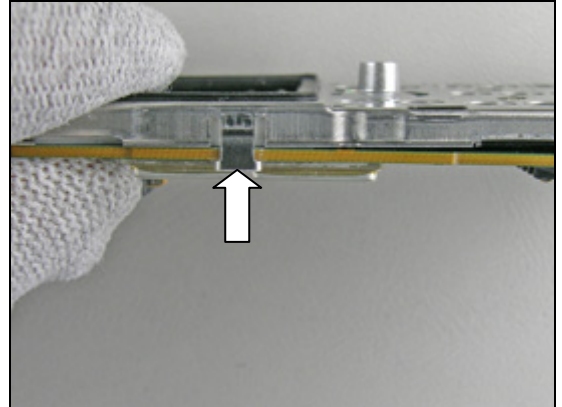


2.1.4 Metal Frame ass'y

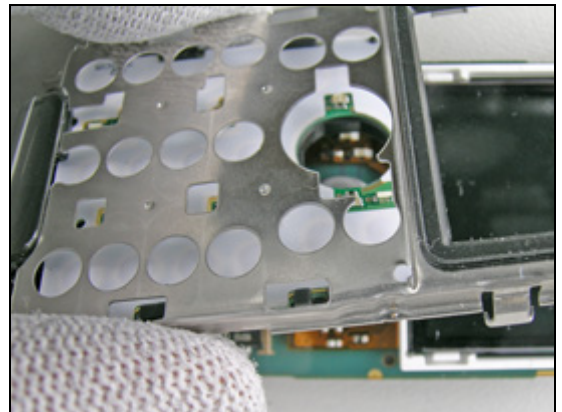
Follow the Disassembly instructions of sections 2.1.1-2.1.2.

THE METAL FRAME ASSEMBLY HAS SNAP HOOKS!

Use a front opening tool to unsnap the Metal Frame Assembly from the PCB.

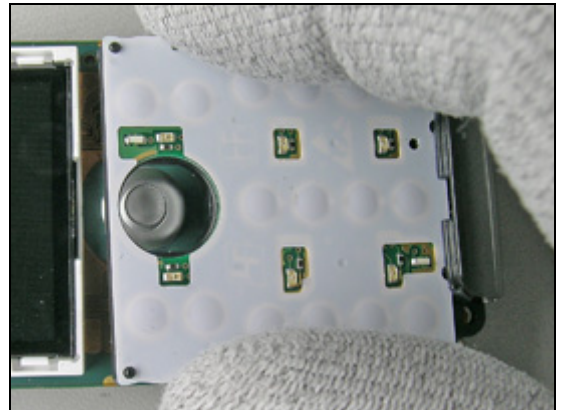


Grab the Metal at the top and carefully push it upwards and remove the Metal Frame Assembly.



2.1.5 Keypad PWBA ass'y

Follow the Disassembly instructions of sections 2.1.1-2.1.4.
Grab the UI Module Frame according to the picture and remove it.



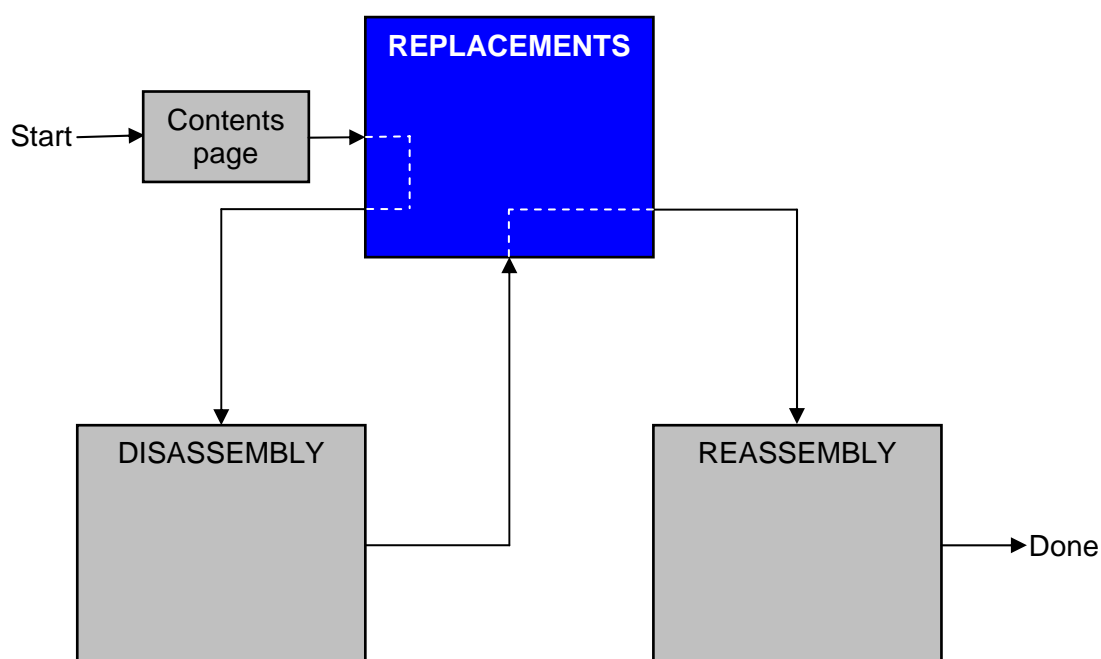
3 Replacements

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

Follow the 2.1.1 Disassembly instructions!

Prepare the new *battery cover*.

Follow the 4.1.5 Reassembly instructions!

3.2 Front Cover ass'y

Follow the 2.1.1 – 2.1.2 Disassembly instructions!

Prepare the new *front cover*.

Follow the 4.1.1 – 4.1.5 Reassembly instructions!

3.3 Metal Frame ass'y

Follow the 2.1.1 – 2.1.3 Disassembly instructions!

Prepare the new *metal frame*.

Follow the 4.1.2 – 4.1.5 Reassembly instructions!

3.4 Frame sub-ass'y

Follow the 2.1.1 – 2.1.3 Disassembly instructions!

Remove the parts as described in 3.15 – 3.25

Prepare the new *frame*.

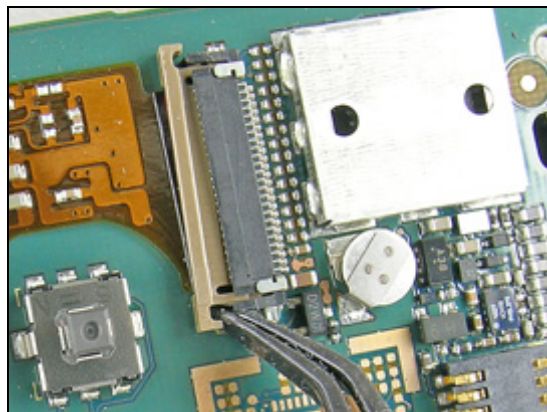
Install the parts as described in 3.15 – 3.25 & 3.29, 3.28, 3.30

Follow the 4.1.3 – 4.1.5 Reassembly instructions!

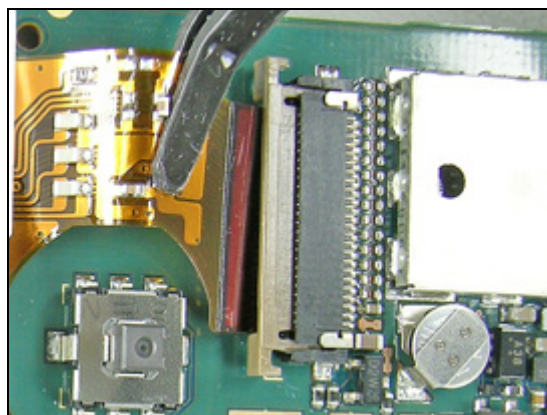
3.5 LCD Module

Follow the 2.1.1 – 2.1.5 Disassembly instructions!

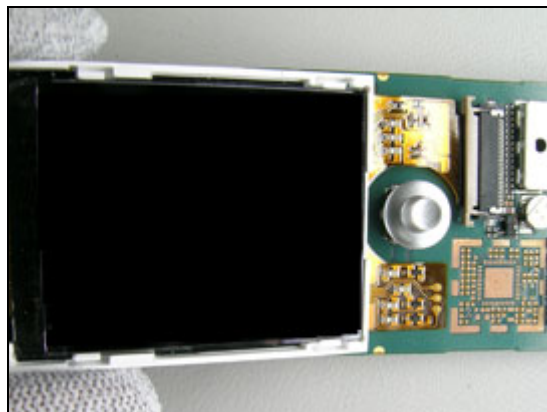
Use a flex film opening tool and carefully press the bar on the ZIF-connector straight backwards to open the ZIF-connector.



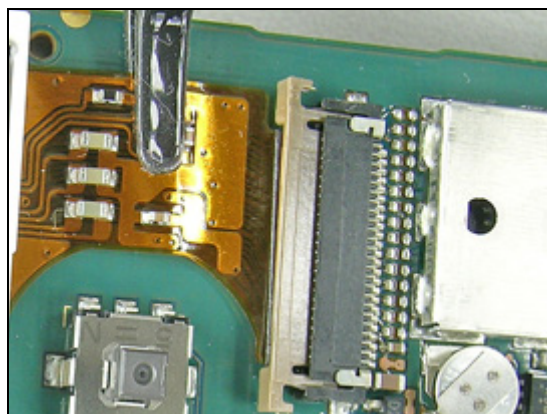
Use the flex film opening tool and remove the flex film.



Carefully lift up the LCD Display Module.

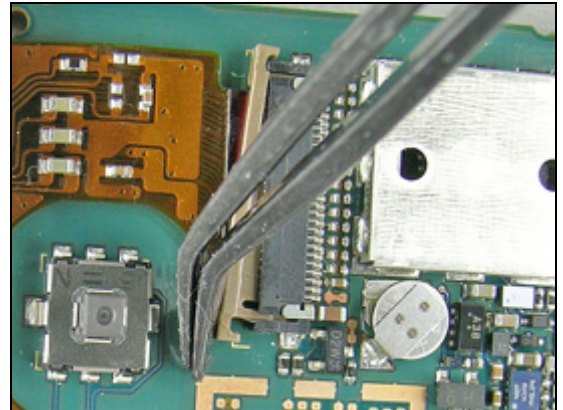


Use the flex film opening tool and assemble the flex film into the ZIF-connector.



LCD Module *continued*

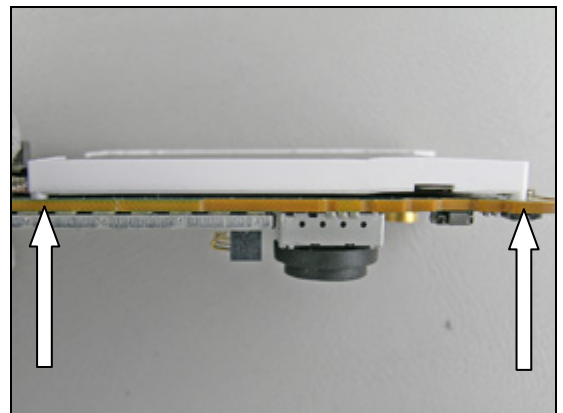
Use a flex film opening tool and carefully press the bar on the ZIF-connector towards to close the ZIF-connector.



THE LCD MODULE HAS GUIDING PINS!

Use the guiding pins to position the LCD Module on the PWB.

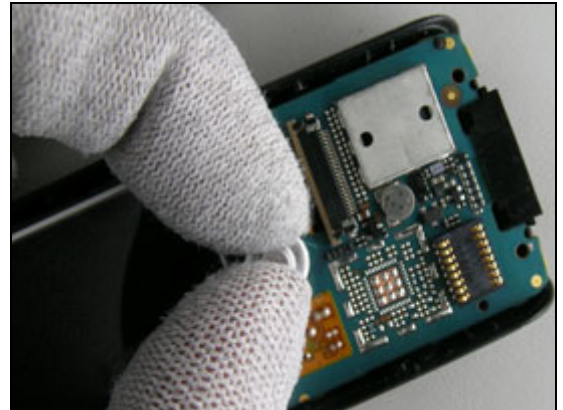
Follow the 4.1.1 – 4.1.5 Reassembly instructions!



3.6 Joystick Cap & Joystick Gasket

Follow the 2.1.1 – 2.1.5 Disassembly instructions!

Grab under the Joystick Cap and pull it off the Joystick Switch.



Use a dentist hook to remove the Gasket.

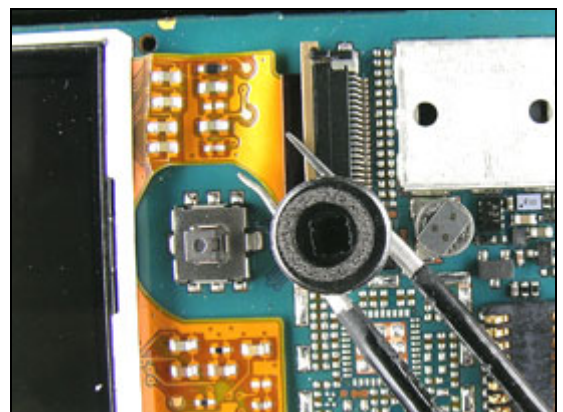


CLEAN THE JOYSTICK SURFACE WITH ISOPROPYL ALCOHOL!

Use a pair of tweezers to mount the new Joystick Gasket on the Joystick Cap.



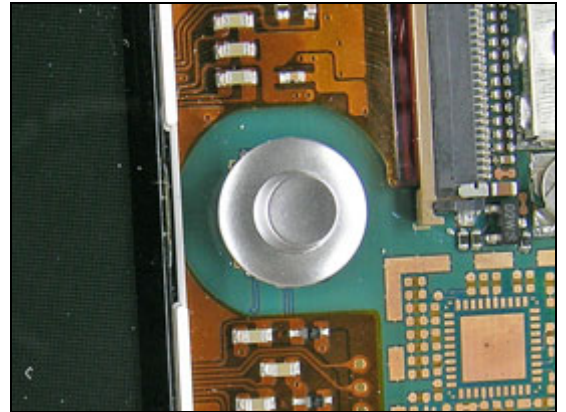
Observe the orientation of the Joystick Cap!



Joystick Cap & Joystick Gasket *continued*

Carefully press down the Joystick Gasket on the Joystick Switch.

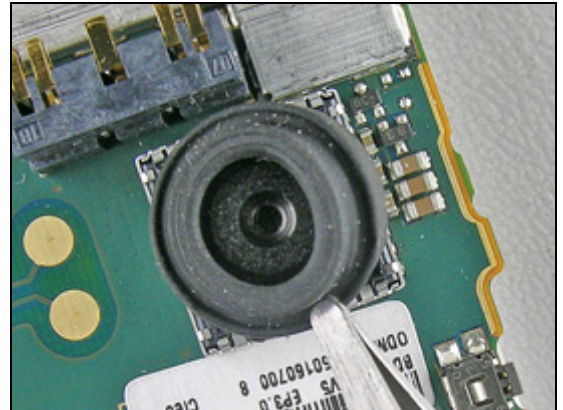
Follow the 4.1.1 – 4.1.5 Reassembly instructions!



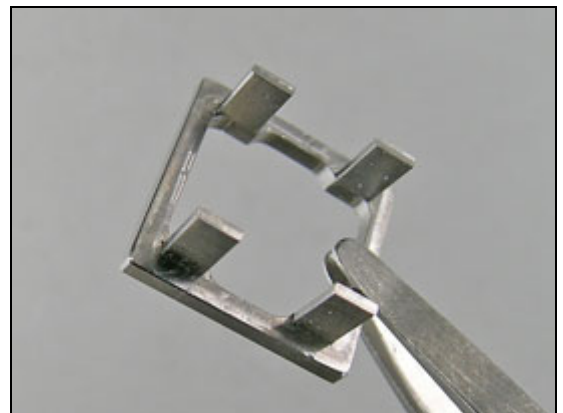
3.7 Camera Module 1.3 MP & Camera Gasket

Follow the 2.1.1 – 2.1.3 Disassembly instructions!

Use a pair of tweezers to remove the Camera Gasket.

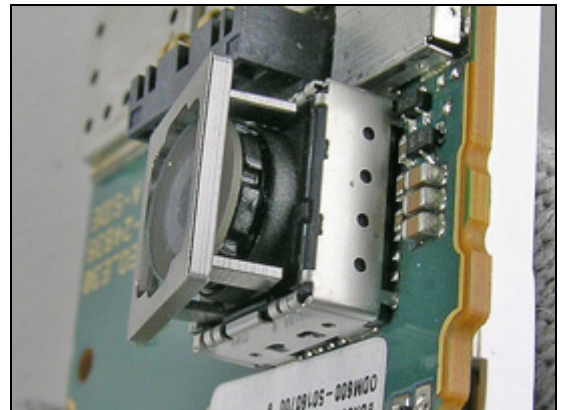


Note the pin orientation on the camera removal tool!



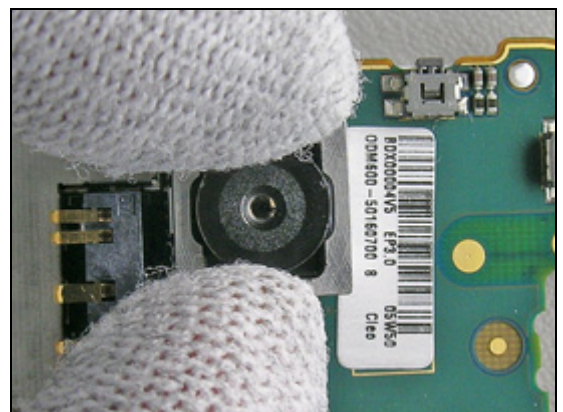
Note the orientation of the camera removal tool!

Position the camera removal tool over the Camera.



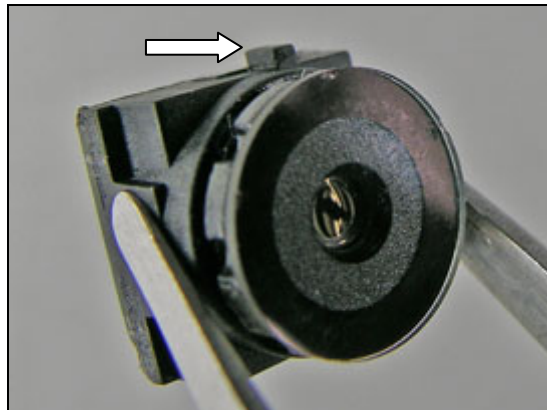
Use your fingers to press the camera removal tool down into the Camera Socket and lift the tool up.

Use your fingers to remove the Camera from the Camera Socket.

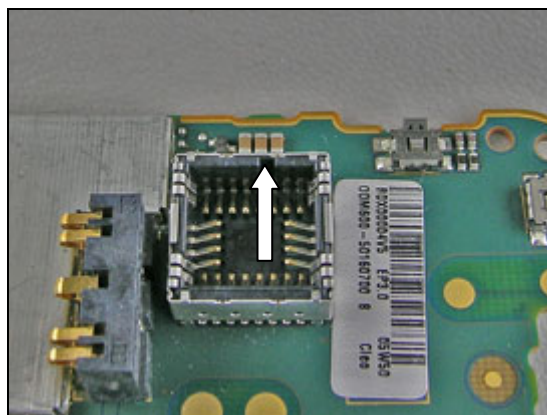


Camera Module 1.3 MP & Camera Gasket *continued*

The little knob on the camera shall correspond to the notch in the Camera Module Socket!



THE NOTCH IN THE CAMERA MODULE SOCKET!

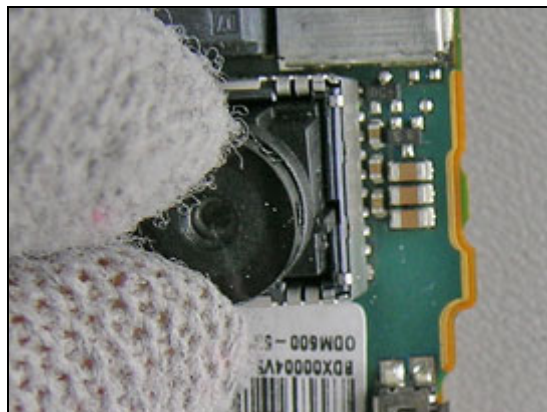


BE CAREFUL NOT TO TOUCH THE CAMERA LENS SURFACE!

Orientate the Camera tap so it corresponds to the notch in the Camera Module Socket.

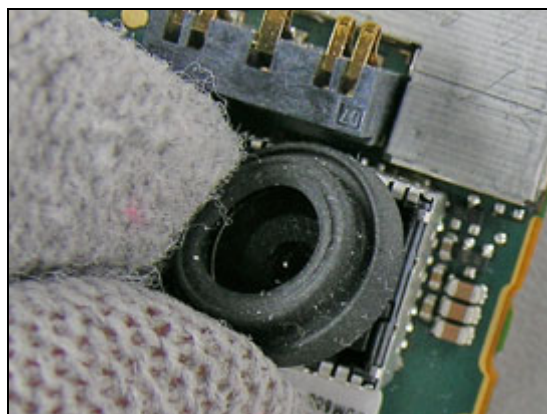
Use your fingers and carefully press the Camera Module into the Camera Socket.

MAKE SURE THAT THE CAMERA MODULE IS SECURED IN THE CAMERA MODULE SOCKET!



Use your fingers to assemble the Camera Gasket on the Camera.

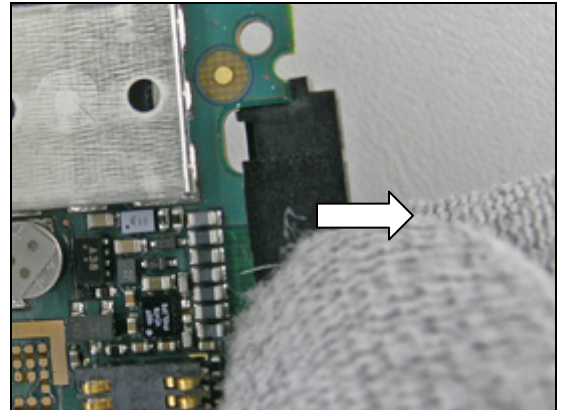
Follow the 4.1.3 – 4.1.5 Reassembly instructions!



3.8 System Connector

Follow the 2.1.1 – 2.1.3 Disassembly instructions!

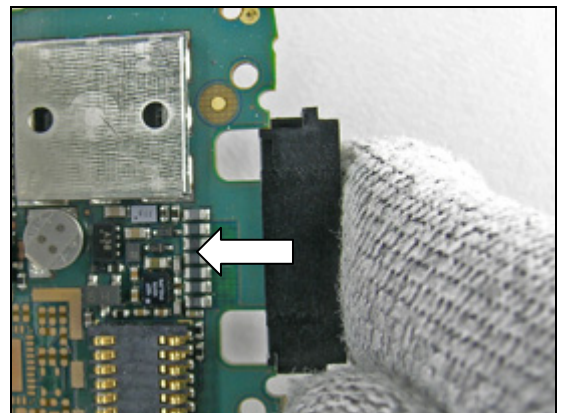
Use your fingers to remove the System Connector.



NOTE THE ORIENTATION OF THE SYSTEM CONNECTOR!

Use your fingers to assemble a System Connector.

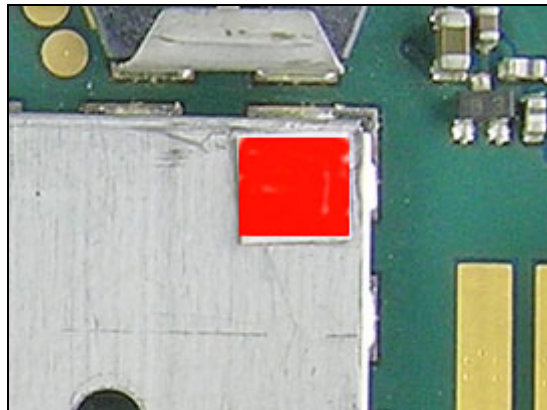
Follow the 4.1.3 – 4.1.5 Reassembly instructions!



3.9 Water Indicator

Follow the 2.1.1 – 2.1.3 Disassembly instructions!

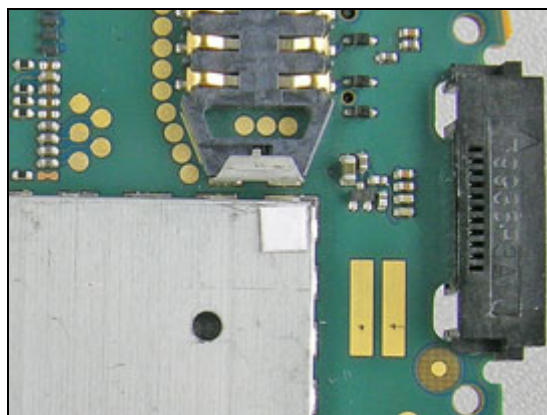
Use a dentist hook to remove the old Water Indicator.



ORIENTATION OF THE IR WINDOW!

Use a pair of tweezers to assemble a new Water Indicator.

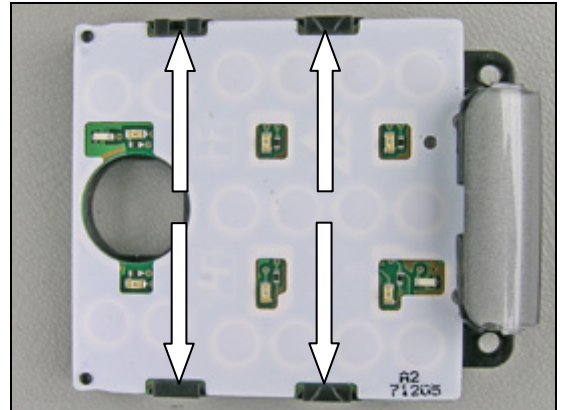
Follow the 4.1.3 – 4.1.5 Reassembly instructions!



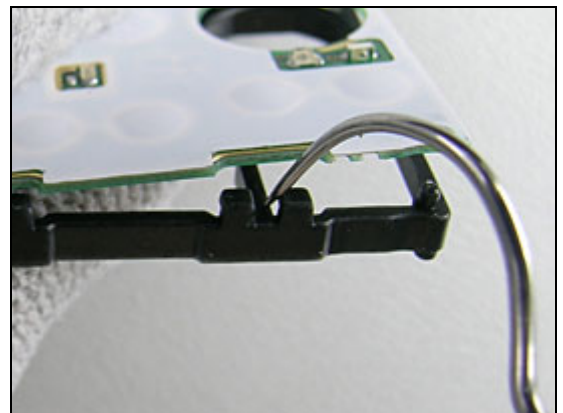
3.10 Dome Sheet ass'y & UI Module Frame

Follow the 2.1.1 – 2.1.5 Disassembly instructions!

The UI Module Frame has snap hooks!

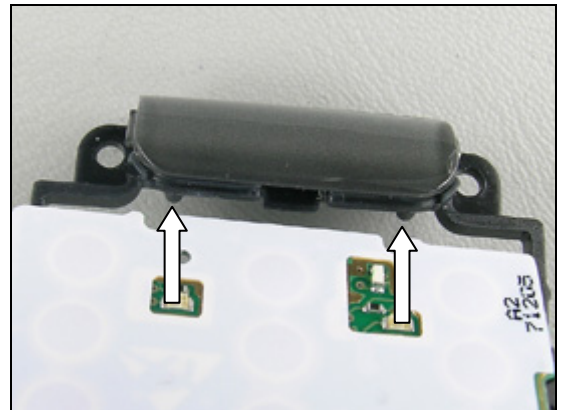


Use a dentist hook to release the Domesheet Assy from the UI Module Frame and simultaneously press under the Domesheet Assy.



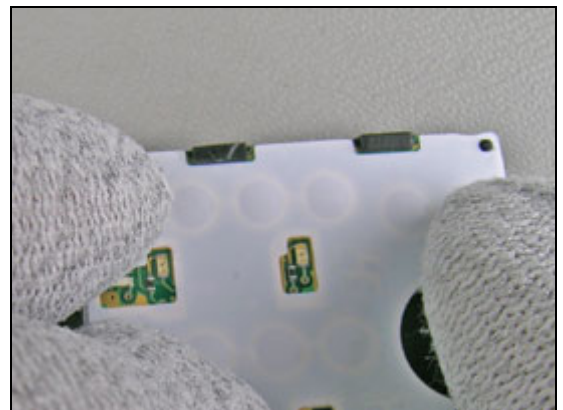
THE UI MODULE FRAME HAS GUIDING PINS!

Use the guiding pins to position the Domesheet Assy. on the UI Module Frame.



Press the Domesheet Assy carefully down to the UI Module Frame to snap the together.

Follow the 4.1.1 – 4.1.5 Reassembly instructions!



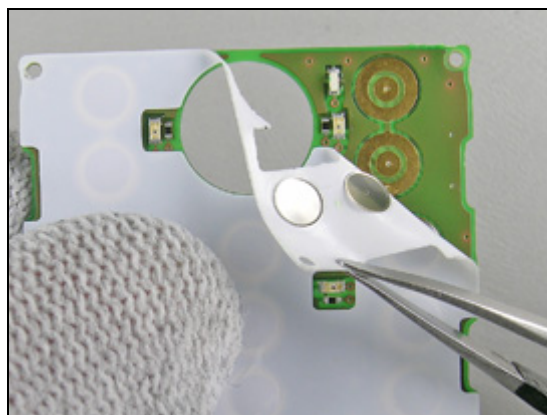
3.11 Dome Sheet ass'y

Follow the 2.1.5 – 2.1.5 Disassembly instructions!

Use a dentist hook to start removing the Domesheet Assembly from the PWB.



Use a pair of tweezers to continue the removal of the Domesheet from the PWB.



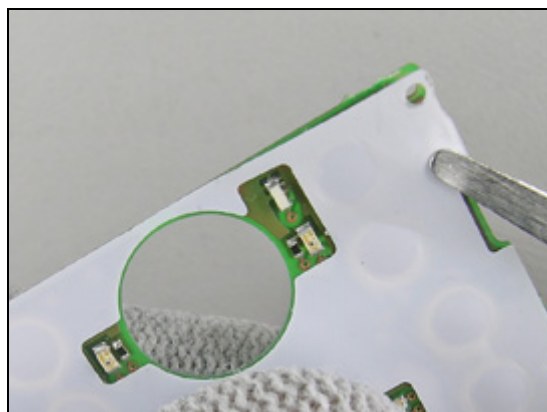
USE THE HACK NOTCH TO GUIDE THE DOMESHEET ASSY!

Assemble a new Domesheet . Start at the bottom.



Continue the assembling of the Domesheet Assy and end it at the top.

Follow the 4.1.1 – 4.1.5 Reassembly instructions!



3.12 Keypad

Follow the 2.1.2 Disassembly instructions!

Press on the top silver keys through the Front Frame and remove the Key Pad.



USE A NEW KEY PAD!

Position the Key Pad into the Front Cover.



Carefully press the rest of the Key Pad into the Front Cover.

Follow the 4.1.4 – 4.1.5 Reassembly instructions!



3.13 Audio Cover ass'y

Follow the 2.1.2 – 2.1.3 Disassembly instructions!

BE CAREFUL NOT TO DAMAGE THE POGO PINS!

Use a dentist hook and release the snap hook and at the same time press the Audio Cover Assy upwards.



The Frame Sub Assy has a hook!



BE CAREFUL WITH THE RECEIVER CONNECTIONS!

Place the hook on the Audio Cover Assy under the tap in the Frame Sub Assy.



Fold down the Audio Cover Assy.

Gently press on the Audio Cover Assy to snap fit them together.



Follow the 4.1.3 – 4.1.5 Reassembly instructions!

3.14 Pogo Pin

Follow the 2.1.2 – 2.1.3 Disassembly instructions and the disassembly part in 3.13!

Turn the Audio Cover Assembly up-side-down and hold your hand under it to collect the Pogo Pins.

If they do not fall out use the dentist hook to press them out of the hole.



Use the pair of tweezers to assemble the Pogo Pins in the corresponding holes.



Press the Pogo Pins in place. Make sure that it is in right position.

Follow the replacement part in 3.13 and the 4.1.3 – 4.1.4 Reassembly instructions!

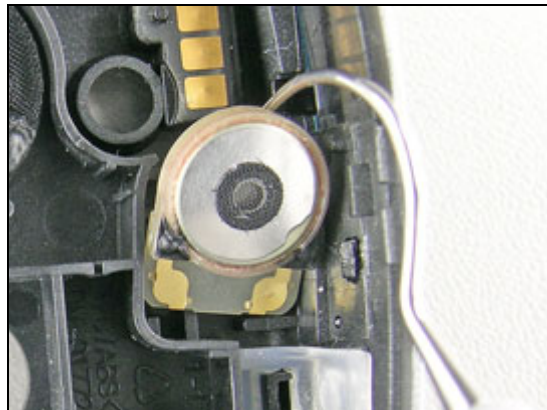


3.15 Receiver

Follow the 2.1.2 – 2.1.3 Disassembly instructions and the disassembly part in 3.13-3.14!

IF THE RECEIVER SHOULD BE REUSED BE CAREFUL WITH THE RECEIVER CONNECTORS!

Use the dentist hook to remove the Receiver.



BE CAREFUL NOT TO DAMAGE THE RECEIVER CONNECTORS DURING THIS PROCEDURE!

Use the pair of tweezers to assemble the Receiver.

Follow the replacement part in 3.14-3.13 and the 4.1.3 – 4.1.4 Reassembly instructions!

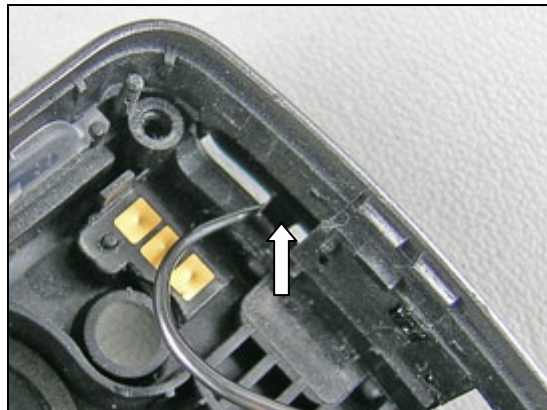


3.16 IR Window

Follow the 2.1.2 – 2.1.3 Disassembly instructions and the disassembly part in 3.13-3.14!

THE IR WINDOW HAS A SNAP HOOK!

Position a dentist hook on the IR Windows snap hook and press the IR Window out through the Frame Assy.



ORIENTATION OF THE IR WINDOW!

Use a pair of tweezers to position the IR Window.



Use your fingers and carefully fold down the IR Window and press to secure the snap fit.

Follow the replacement part in 3.14-3.13 and the 4.1.3 – 4.1.4 Reassembly instructions!



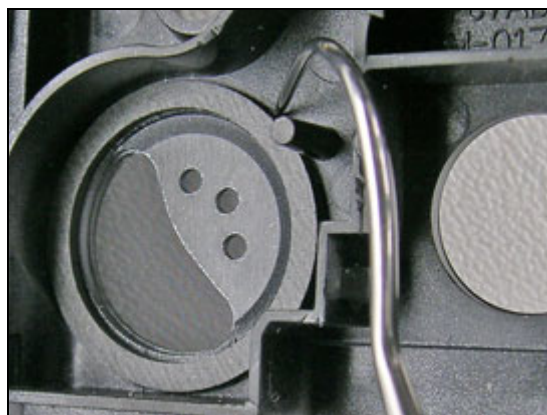
3.17 Speaker, Speaker Gasket & Speaker Dust Net

Follow the 2.1.2 – 2.1.3 Disassembly instructions and the disassembly part in 3.13-3.14!

Use the dentist hook to remove the Speaker.



Use the dentist hook to remove the Speaker Gasket.



Use the dentist hook to remove the Dust Net.



Clean the Speaker cavity with Isopropyl Alcohol.
Use the pair of tweezers to assemble the Dust Net.



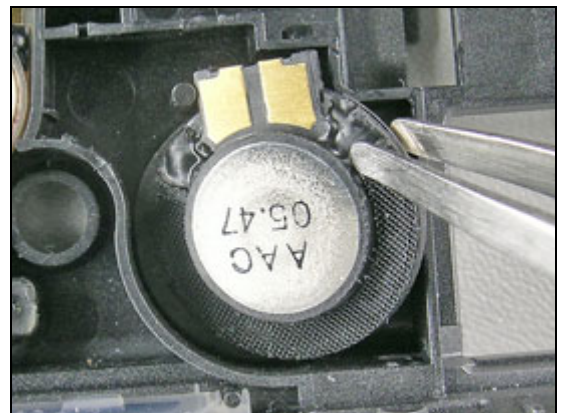
Speaker, Speaker Gasket & Speaker Dust Net *continued*

Clean the Speaker cavity with Isopropyl Alcohol.
Use the pair of tweezers to assemble the Speaker.



Use the pair of tweezers to assemble the Speaker.

Follow the replacement part in 3.14-3.13 and the 4.1.3 – 4.1.4 Reassembly instructions!

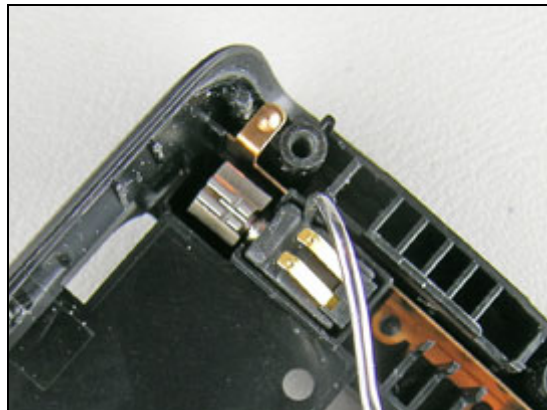


3.18 Vibrator

Follow the 2.1.2 – 2.1.3 Disassembly instructions!

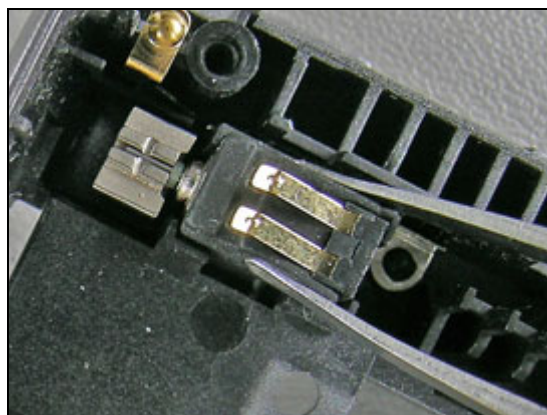
DO NOT LIFT THE VIBRATOR IN THE FLY WHEEL!

Use the dentist hook to carefully lift up the Vibrator.



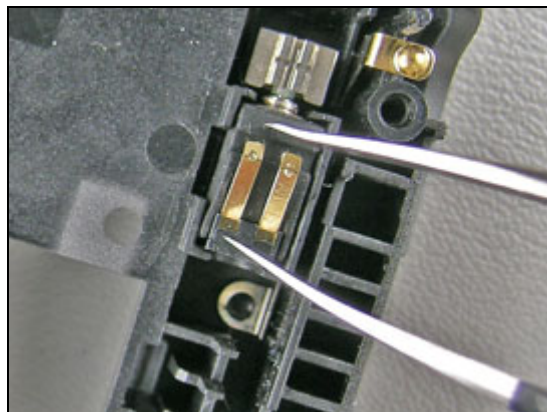
DO NOT PRESS ON THE CONNECTORS!

Use a pair of tweezers to assembly the Vibrator.



Press on the vibrator besides the connectors to secure the placement.

Follow the 4.1.3 – 4.1.5 Reassembly instructions!



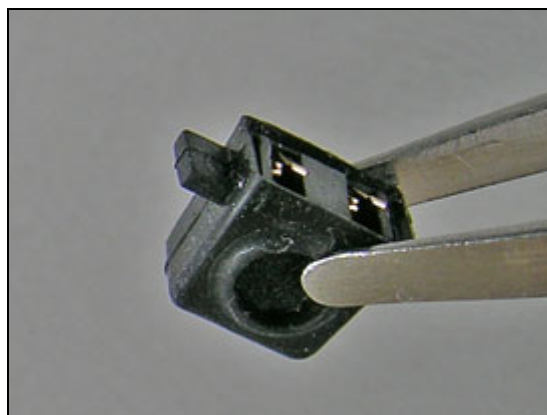
3.19 Microphone ass'y

Follow the 2.1.2 – 2.1.3 Disassembly instructions!

Use the dentist hook to carefully lose and lift up the Microphone Assy.



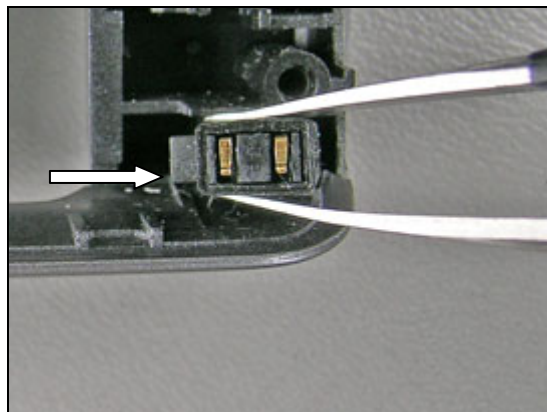
Use a pair of tweezers to assembly the Microphone Assy.
The knob of the Microphone Assy should be upwards.



*NOTE THE ORIENTATION OF THE MICROPHONE ASSY!
DO NOT PRESS ON THE CONNECTORS!*

Press on the Microphone Assy in the middle of the connectors to secure a good fit.

Follow the 4.1.3 – 4.1.5 Reassembly instructions!



3.20 Camera Key ass'y

Follow the 2.1.3 – 2.1.5 Disassembly instructions!

Use the dentist hook to unhook the Camera Key Assy from the Frame Assy.

Remove the Camera Key Assy.

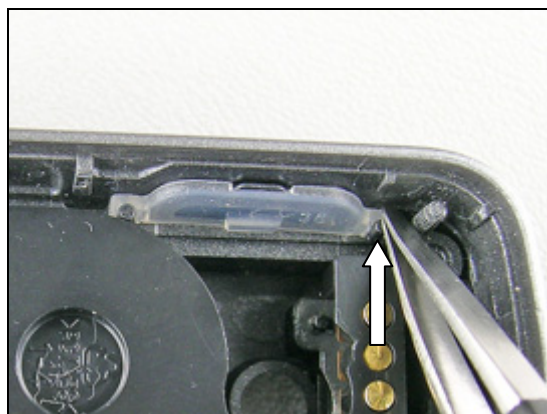
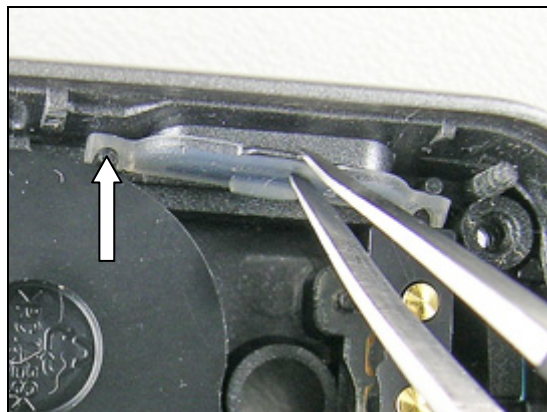
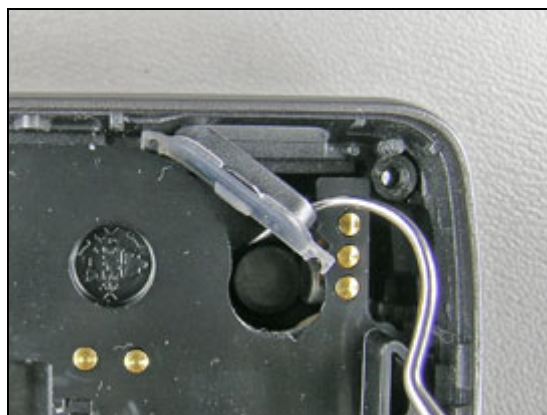
THE FRAME ASSY HAS GUIDING PINS!

Position the Camera Key Assy in the Frame Assy cavity.

THE FRAME ASSY HAS GUIDING PINS!

Attach the other side of the Camera Key Assy.

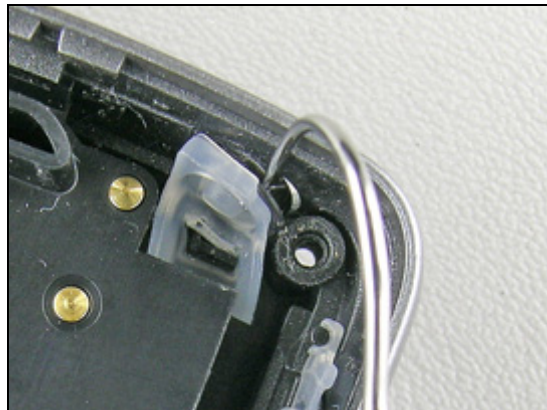
Follow the 4.1.3 – 4.1.5 Reassembly instructions!



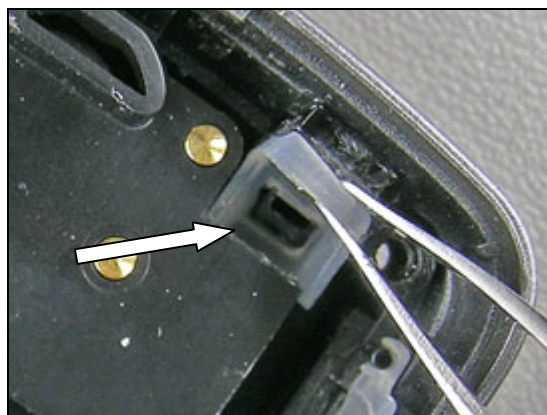
3.21 Power Key ass'y

Follow the 2.1.2 – 2.1.3 Disassembly instructions!

Use the dentist hook to remove the Power Key Assy.



Use the pair of tweezers to assemble the Power Key Assy.
Place the knob in the notch.



Use a pair of tweezers and push down the ear onto the notch.

Follow the 4.1.3 – 4.1.5 Reassembly instructions!



3.22 Operator Key ass'y

Follow the 2.1.2 – 2.1.3 Disassembly instructions!

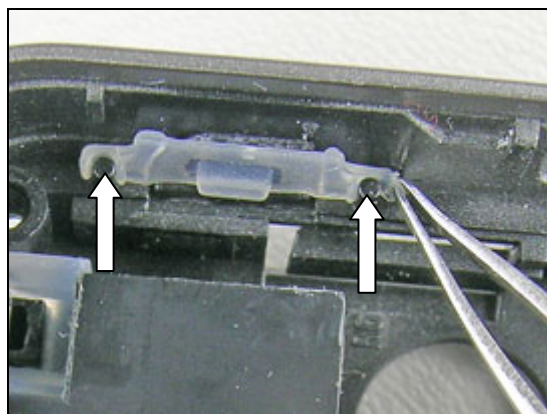
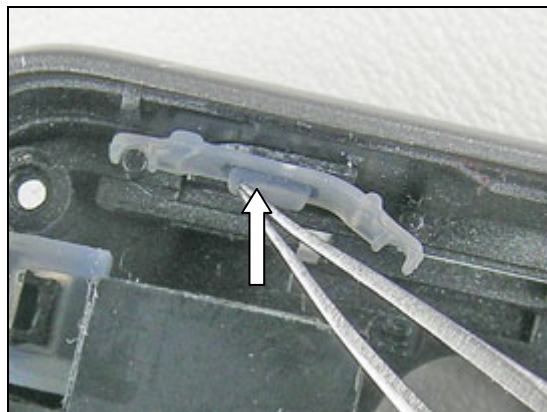
Use the dentist hook to unhook the Operator Key Assy from the Frame Assy.

Remove the Camera Key Assy.

Use the pair of tweezers to assemble the Operator Key Assy. Place the knob in the notch.

Place the two ears behind the pins.

Follow the 4.1.3 – 4.1.5 Reassembly instructions!



3.23 Operator Logo ass'y

Follow the 2.1.2 Disassembly instructions!

BE CAREFUL NOT TO DAMAGE THE PHONE DURING THIS PROCEDURE!

Position the dentist hook in the notch in the UI Module Frame and remove the Operator Logo Assy.



USE A NEW OPERATOR LOGO ASSY!

Mount the Operator Logo Assy on the UI Module Frame with your fingers and press a few seconds to secure a good fit.

Follow the 4.1.4 – 4.1.5 Reassembly instructions!



3.24 Operator Key Label

Remove the Operator Key Label very careful with the dentist hook.

Assemble a new Operator Key Label. Press on the label for a few seconds to secure a good fit.



3.25 RF Cap

Follow the 2.1.1 Disassembly instructions!

Use your fingers and push the RF inwards the Battery Cover and remove it.

Assemble a RF Cap with your fingers.

Follow the 4.1.4 – 4.1.5 Reassembly instructions!



3.26 Label

Follow the 2.x.x – 2.y.y 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.

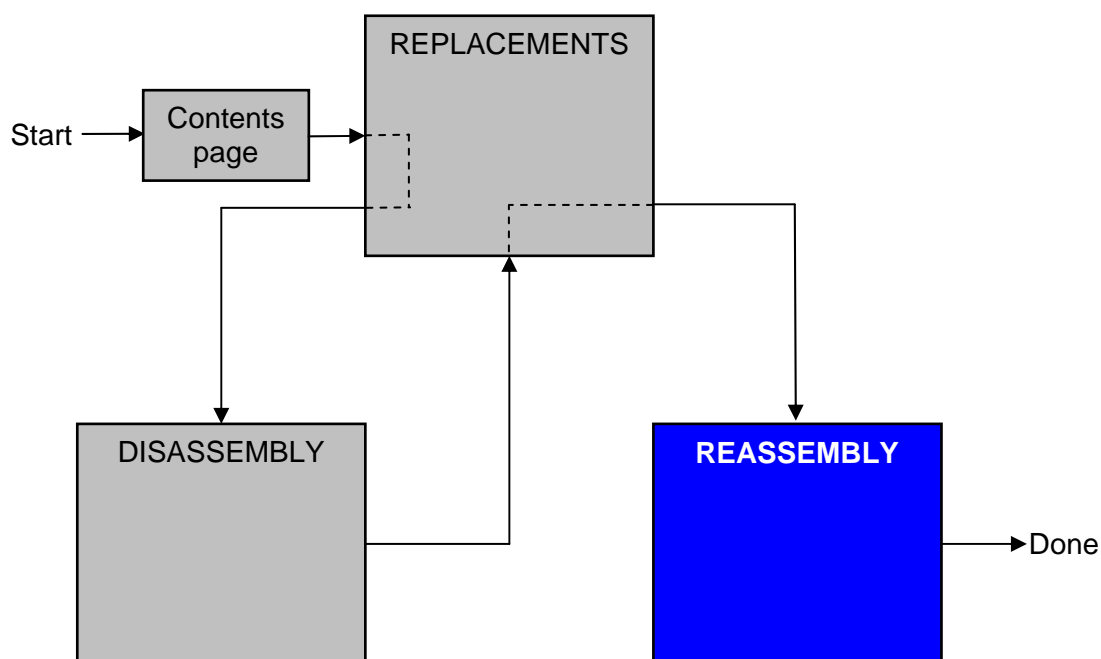
ONE LABEL ONLY IS ALLOWED!

Follow the 4.x.x – 4.y.y Reassembly instructions!



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:

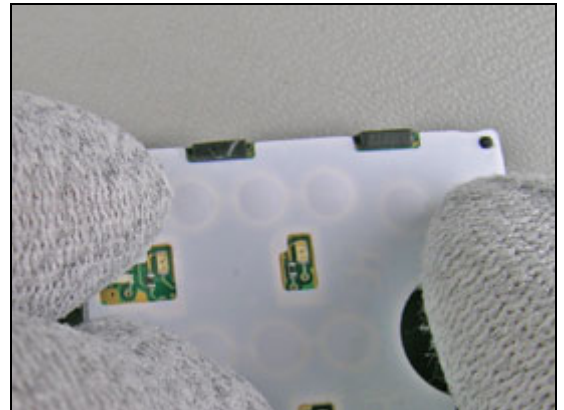
1. Keypad PWBA ass'y
2. Metal Frame ass'y
3. PBA unit
4. Front Cover ass'y
5. Battery (a) and Battery Cover (b).



4.1.1 Keypad PWBA ass'y

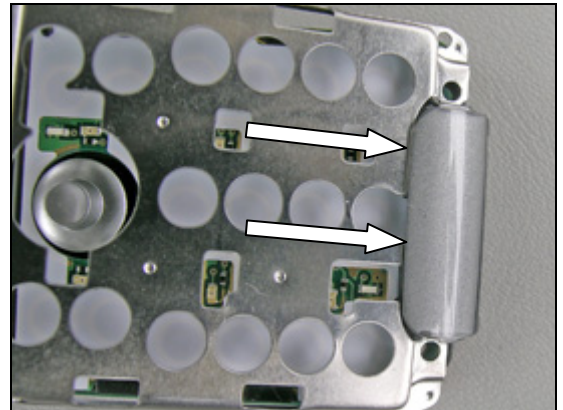
Press the Domesheet Assy carefully down to the UI Module Frame to snap the together.

Follow the Assembly instructions of sections 3.7, 3.4 and 3.2.

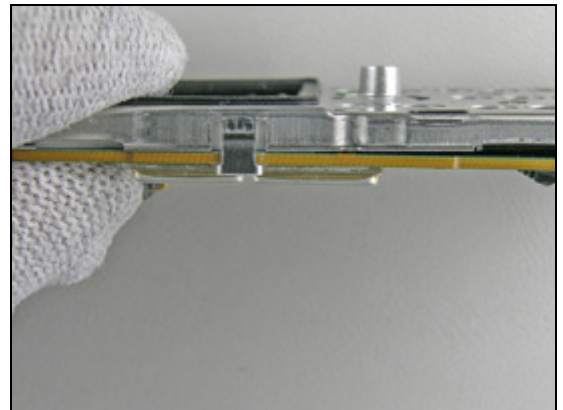


4.1.2 Metal Frame ass'y

Carefully slide the Metal Frame Assy under the Operator Logo Assy and place it.

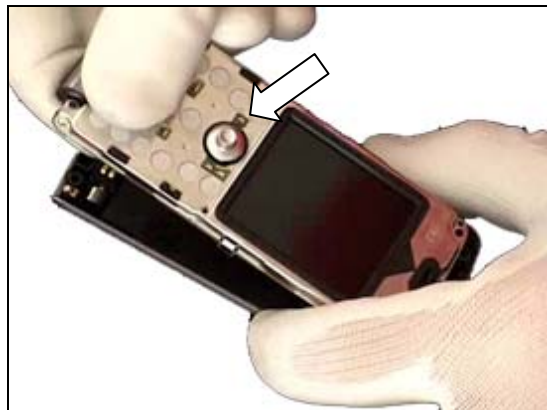


Press the Metal Frame Assembly together with the PWB Assy.



4.1.3 PBA Unit

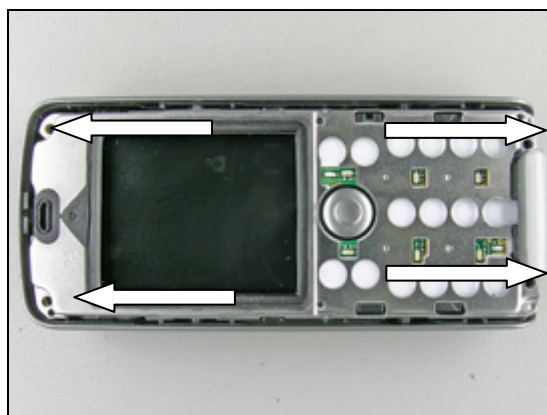
Use your fingers to position the PBA Unit.



USE NEW SCREWS!

Torx bit no. 6. Apply 17 Ncm of torque when tightening two new long screws at bottom and two new short screws at top of the phone.

Follow the Assembly instructions of sections 3.4 and 3.2.



4.1.4 Front Cover ass'y

Carefully place the Front Cover Assy on the top of the Frame Sub-Assy.



Press it in place. Start at the top and press down to the bottom. When finish there should be no gap between the Front Cover Assy and the Frame Sub-Assy



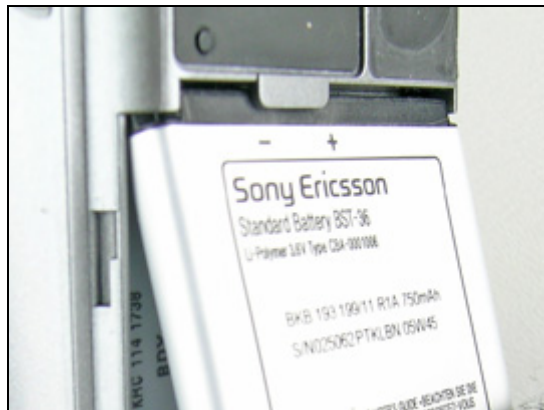
When finish there should be no gap between the Front Cover Assy and the Frame Sub-Assy

Follow the Assembly instructions of sections 3.2.

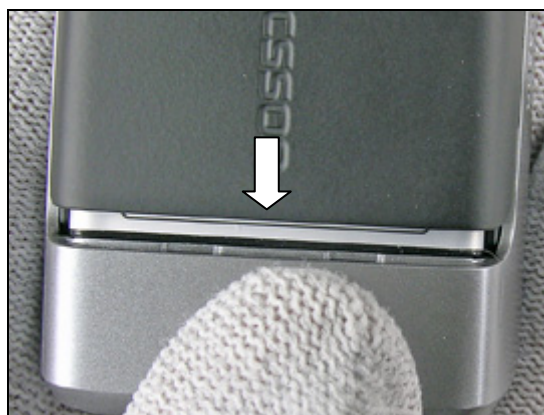


4.1.5 Battery & Battery Cover

Position the top of the battery towards the battery connector. Press the battery down in the battery cavity.



Place the battery cover on the B-cover. Press it down to secure it.



THERE SHOULD NOT BE ANY GAP BETWEEN THE BATTERY COVER AND THE FRAME!



5 Revision history

Rev.	Date	Changes / Comments
A	2006-05-05	First release
B	2006-05-10	Part number to Camera removal tool updated
C	2006-05-29	Instruction text updated