



# Working Instruction, Mechanical

Applicable for K200 and K220

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# 1 Introduction

## K200



## K220



## 1.1 Equipment

### SPECIAL TOOLS

- NTZ 122 459 Torque screwdriver (or equivalent)  
set to 15 Ncm+/- 6%
- NTZ 122 288 Torx bit no. 6
- NTZ 112 1070 Camera Module removal tool.
- NTZ 122 521 Flex film assembly tool
- NTZ 122 302/2 Front opening tool



### STANDARD TOOLS

- Dentist hook
- A pair of tweezers
- 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 KRH 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!***

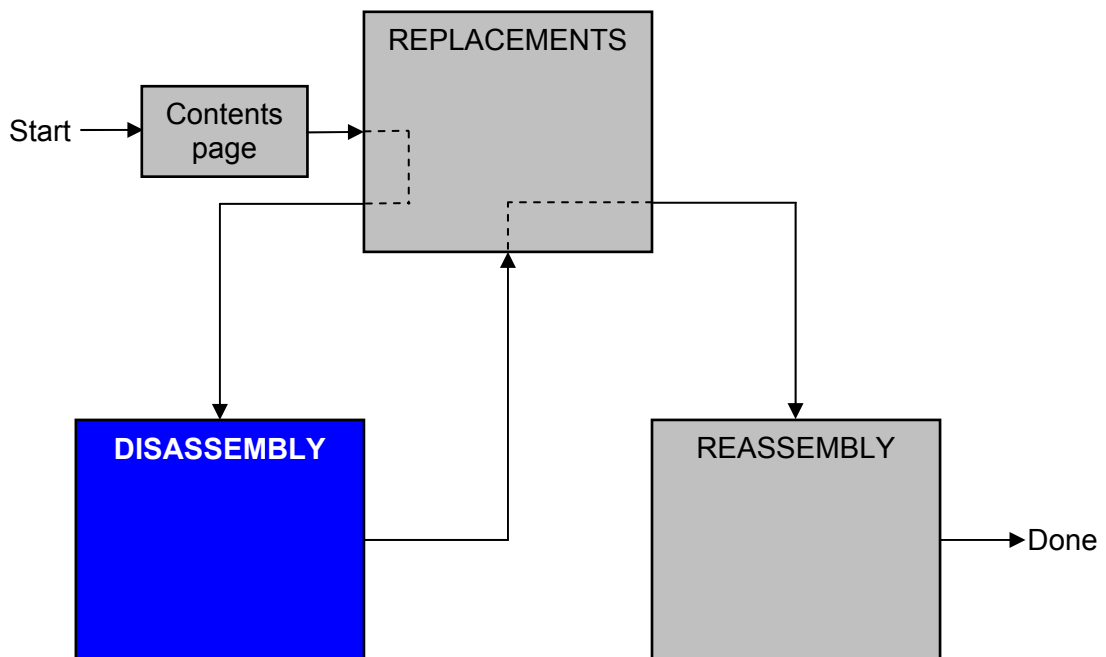
## 1.3 Adhesives

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 assy
2. Battery
3. Antenna cover assy
4. Front cover assy
5. Keypad assy
6. PBA
7. Rear cover assy





## Disassembly Instruction *continued*

### 2.1.1 Battery Cover assy & Battery

#### **TURN OFF THE PHONE.**

Remove the battery cover with your fingers. Slide off the battery cover in the direction of the arrow.



Remove the battery from the phone with your fingers by using the tab in the lower end of the battery, lift it up (1) and pull back (2)





## Disassembly Instruction *continued*

### 2.1.2 Antenna cover assy

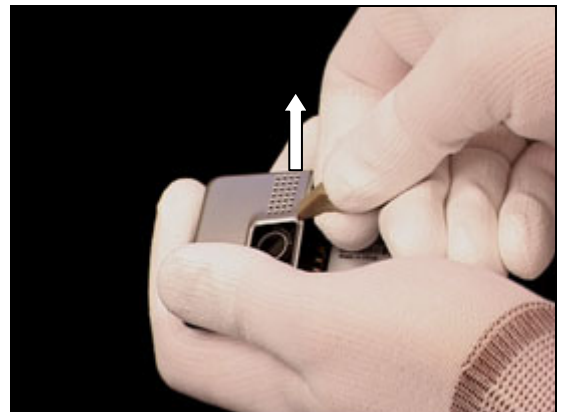
**BE CAREFUL NOT TO DAMAGE THE ANTENNA COVER OR REAR COVER WHEN REMOVING THE ANTENNA COVER.**

Use a front opening tool to carefully release the two snap hooks located on each side of the Antenna Cover.



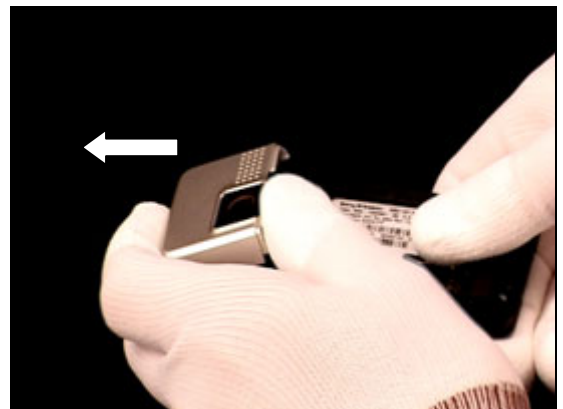
**BE CAREFULL NOT TO DAMAGE THE LOUDSPEAKER CLOTH OR CRACK THE PLASTIC WHEN REMOVING THE ANTENNA COVER.**

Carefully lift up the antenna cover with the front opening tool.



**BE CAREFULL NO TO DAMAGE THE ANTENNA FLEXFILM WHEN REMOVING THE ANTENNA COVER.**

Make sure the snap hooks are fully released and then slide the Antenna Cover in the direction of the arrow while slightly lifting it upwards as shown in the picture.



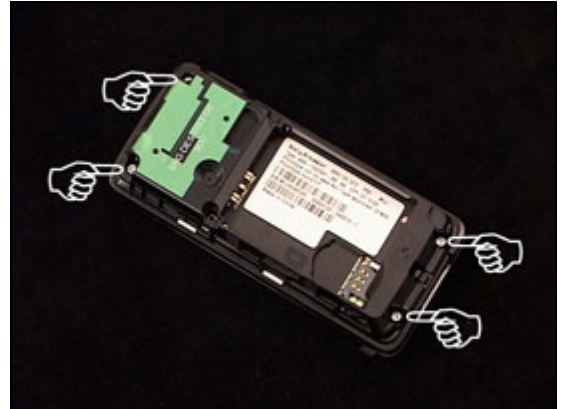




## Disassembly Instruction *continued*

### 2.1.3 Front cover Assy and Keypad

Use the Torque screwdriver to loosen the 4 screws.



**DO NOT USE A SCREWDRIVER OR OTHER SHARP TOOLS.  
IT MIGHT CAUSE DAMAGE TO THE PLASTIC OR OTHER  
COMPONENTS.**

Use the Guitar pick to release the Front Assy from the Rear cover Assy. Start by the System Connector.



Gently separate the front assy from the Rear cover assy.

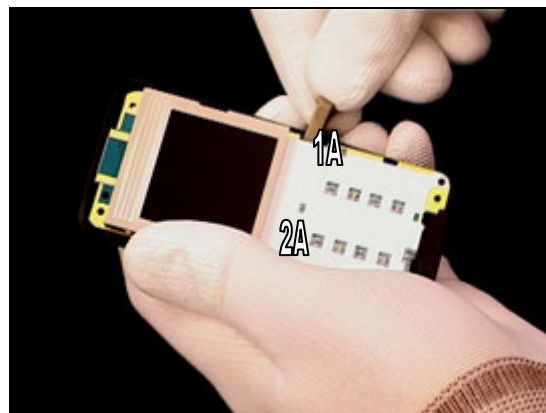




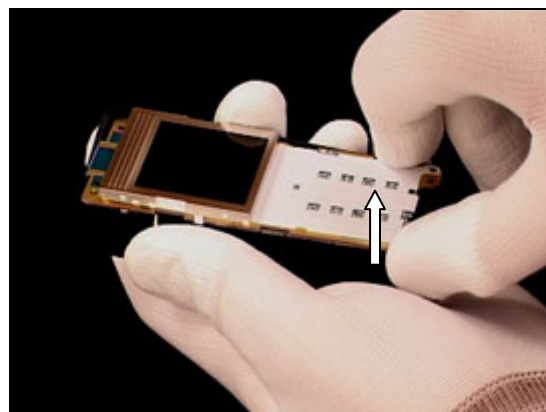
## Disassembly Instruction *continued*

### 2.1.4 PBA unit

The PBA is attached to the Rear cover with 2 snap hooks (1A, 2A). Use the Front Opening Tool to release the snap hooks holding the PBA.



Once the 2 hooks are released, you should be able to carefully lift the PBA, starting with the lower left side.





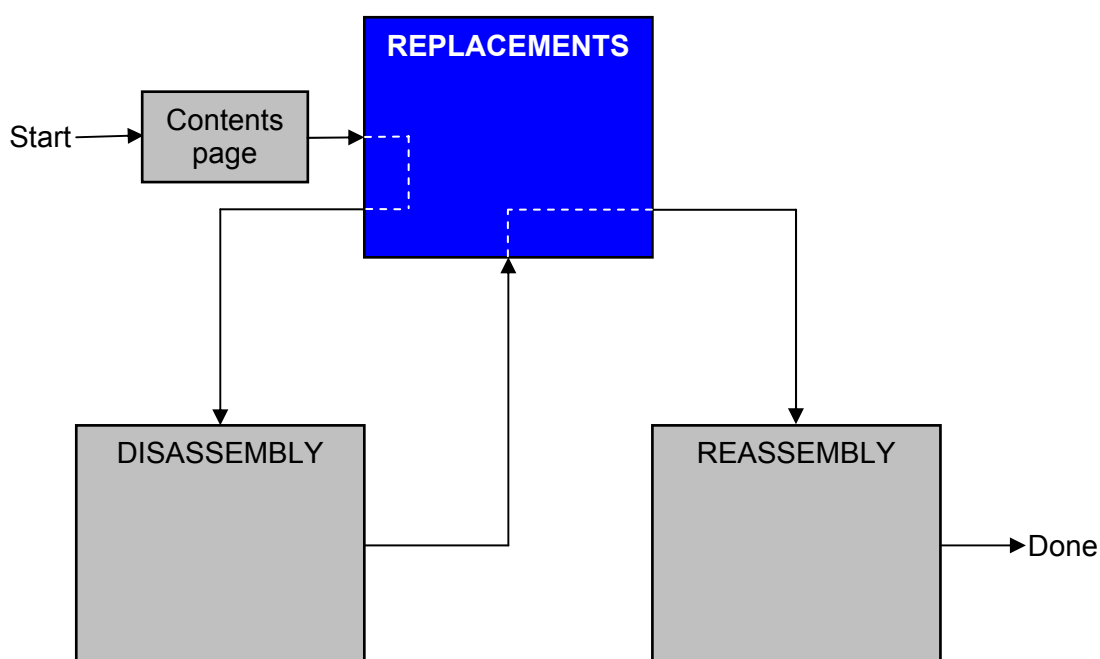
### 3 Replacements

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.





## Replacement Instruction *continued*

### 3.1 Battery cover assy

*Follow the 2.1.1 Disassembly instructions!*

Prepare the new *battery cover assy*.

*Follow the 4.1.4 Reassembly instructions!*

### 3.2 Antenna cover assy

*Follow the 2.1.1 – 2.1.2 Disassembly instructions!*

Instruction text

*Follow the 4.1.3 – 4.1.4 Reassembly instructions!*

### 3.3 Front cover assy

*Follow the 2.1.1 – 2.1.3 Disassembly instructions!*

Instruction text

*Follow the 4.1.2 – 4.1.4 Reassembly instructions!*

### 3.4 Keypad assy

*Follow the 2.1.1 – 2.1.4 Disassembly instructions!*

Instruction text

*Follow the 4.1.2 – 4.1.4 Reassembly instructions!*

### 3.5 Rear cover assy

*Follow the 2.1.1 – 2.1.4 Disassembly instructions!*

Instruction text

*Follow the 4.1.1 – 4.1.4 Reassembly instructions!*



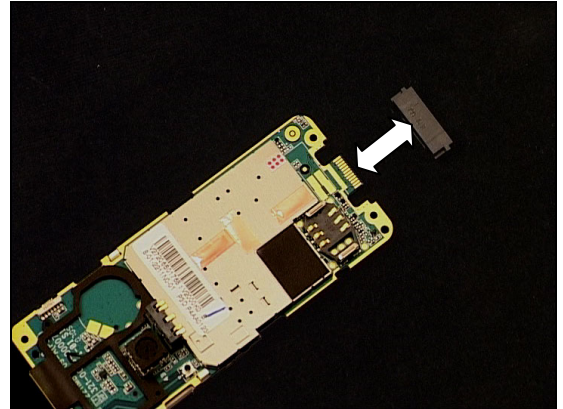
## Replacement Instruction *continued*

### 3.6 System connector

*Follow the 2.1.1 – 2.1.4 Disassembly instructions!*

1. Use your fingers to remove the system connector.
2. Use your fingers to mount the system connector.

*Follow the 4.1.1 – 4.1.4 Reassembly instructions!*

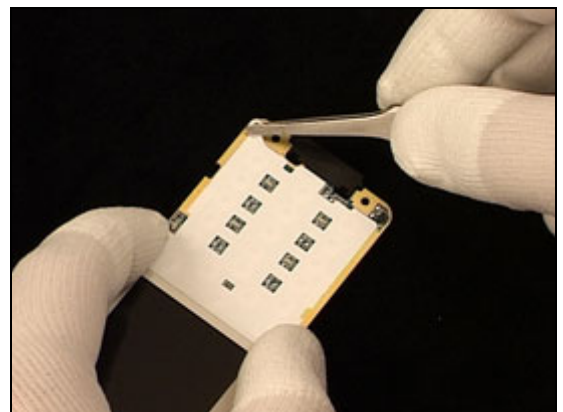


### 3.7 Dome Foil

*Follow the 2.1.1 – 2.1.4 Disassembly instructions!*

**DO NOT TOUCH THE KEYPAD DOME FOIL OR PCB.  
ALWAYS USE A PAIR OF TWEEZERS.**

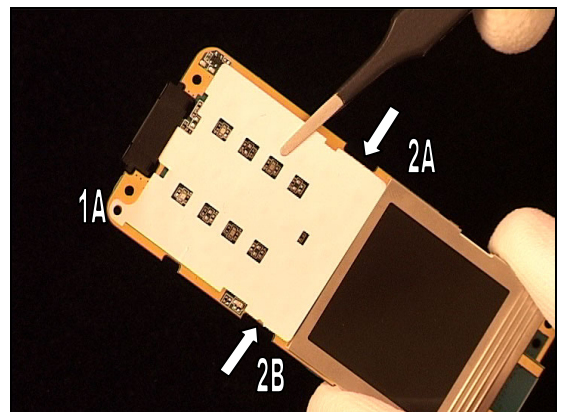
Remove the old Dome Foil with a pair of tweezers.



**IT'S IMPORTANT TO ALIGN THE KEYPAD DOME FOIL PROPERLY.**

Apply the new Dome Foil on the PBA using a pair of tweezers. Guide the Dome Foil according to the guide hole (1A) and guide line (2A-2B) on the PCB as shown in the picture.

Follow the 4.1.1 – 4.1.4 Reassembly instructions!

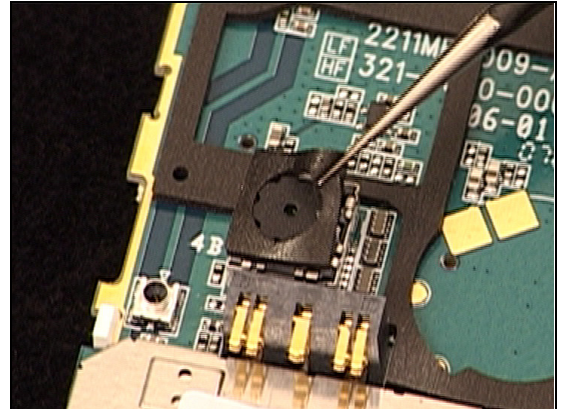


## Replacement Instruction *continued*

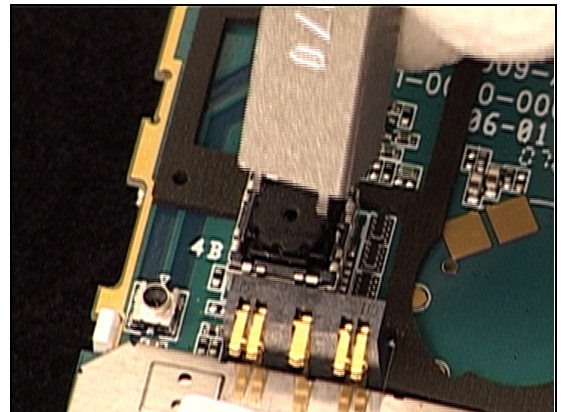
### 3.8 Camera Module and Camera gasket

*Follow the 2.1.1 – 2.1.4 Disassembly instructions!*

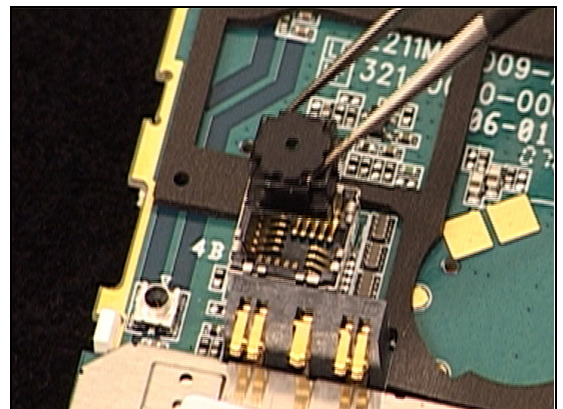
Remove the Camera gasket with a pair of tweezers.



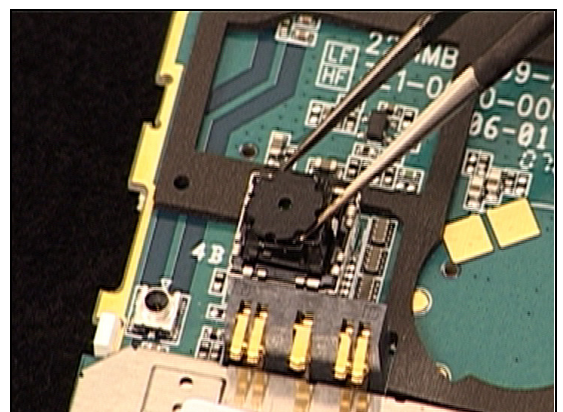
Use the Camera removal tool to remove the Camera Module. Press down the Camera removal tool to release the Camera Module.



Lift up the camera module with a pair of tweezers.



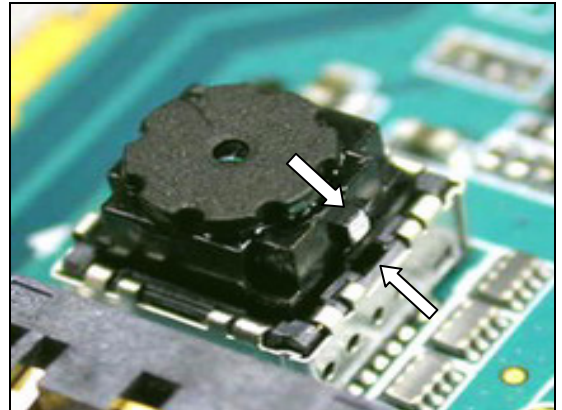
Mount a new camera module with a pair of tweezers.



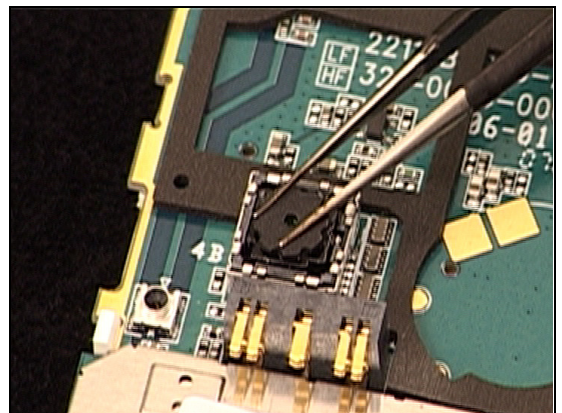


## Replacement Instruction *continued*

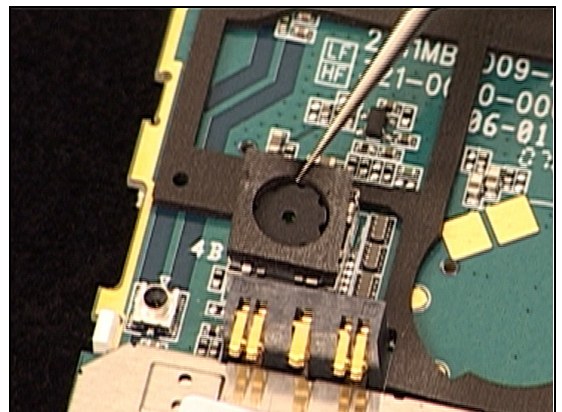
**NOTE THE ORIENTATION OF THE CAMERA MODULE.**  
**OBSERVE THE GUIDING PIN ON THE CAMERA MODULE AND THE CAVITY OF THE SOCKET.**



Push down the camera module. It's possible to hear a weak "click" sound from the snap hooks.



Mount a new Camera Module gasket with a pair of tweezers.



Follow the 4.1.1 – 4.1.4 Reassembly instructions!



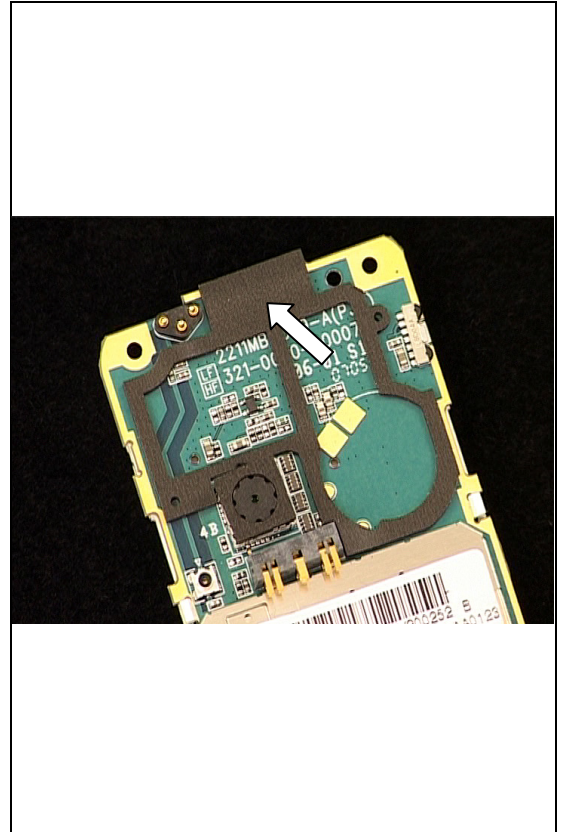
## Replacement Instruction *continued*

### 3.9 PCB sponge

*Follow the 2.1.1 – 2.1.4 Disassembly instructions!*

Remove the PCB sponge with a pair of tweezers.

Mount a new PCB sponge with a pair of tweezers.  
Follow the 4.1.1 – 4.1.4 Reassembly instructions!





## Replacement Instruction *continued*

### 3.10 Copper tape shield can lid

*Follow the 2.1.1 – 2.1.4 Disassembly instructions!*

Remove the Copper tape with a pair of tweezers.

Mount a new Copper tape with a pair of tweezers.

Follow the 4.1.1 – 4.1.4 Reassembly instructions!



## Replacement Instruction *continued*

### 3.11 Tape shield can lid black

*Follow the 2.1.1 – 2.1.4 Disassembly instructions!*

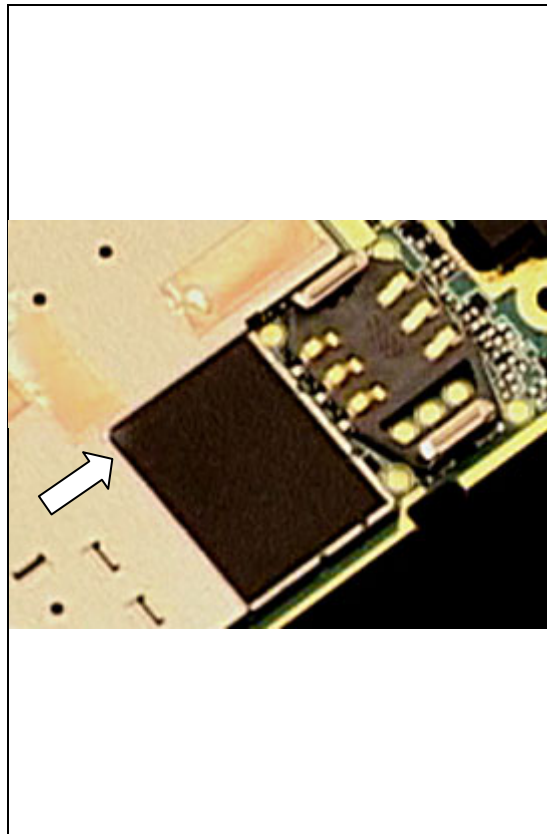
***BE CAREFULL NOT TO DAMAGE THE SHIELDCAN LID.***

Remove the “Tape shield can lid black” with a pair of tweezers or your fingers. Start in the corner.

If necessary clean with isopropyl alcohol.

Mount a new “Tape shield can lid black” with a pair of tweezers.

Follow the 4.1.1 – 4.1.4 Reassembly instructions!



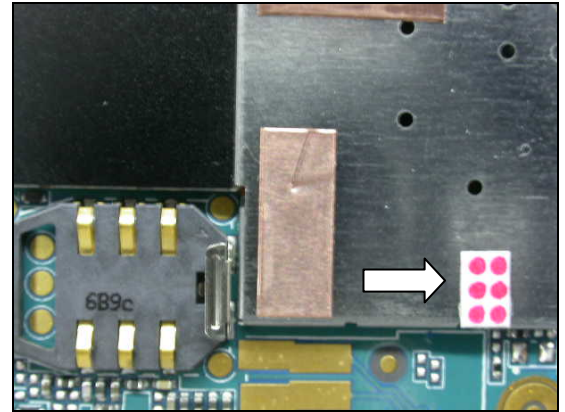
## Replacement Instruction *continued*

### 3.12 Liquid Intrusion Indicator

*Follow the 2.1.1 – 2.1.4 Disassembly instructions!*

1. Remove the old Liquid Intrusion Indicator with a pair of tweezers or your fingers.
2. Remove adhesive remains with isopropyl alcohol.
3. Apply the new Liquid Intrusion Indicator.

Follow the 4.1.1 – 4.1.4 Reassembly instructions!

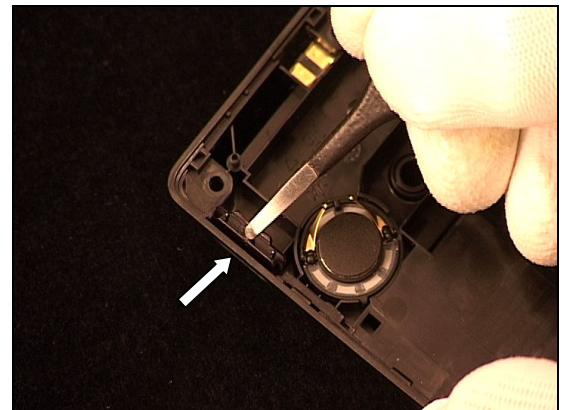


### 3.13 IrDa Window

*Follow the 2.1.1 – 2.1.4 Disassembly instructions!*

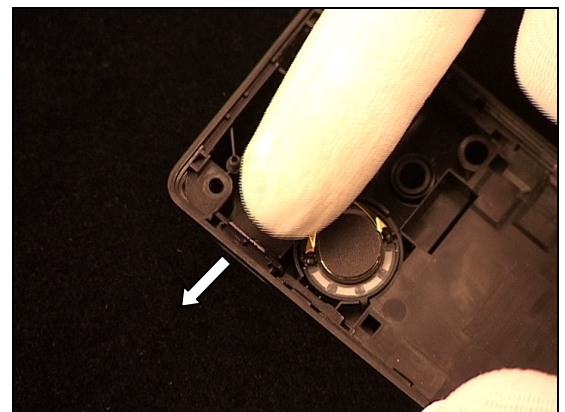
**NOTICE THE POSITION OF THE IRDA WINDOW BEFORE REMOVAL**

Overturn the IrDa window and continue to overturn to 90 degrees angle to release it.



Use a blunt pair of tweezers to position the new IrDa window, push with finger, and a “click” sound will be heard.

Follow the 4.1.1 – 4.1.4 Reassembly instructions!

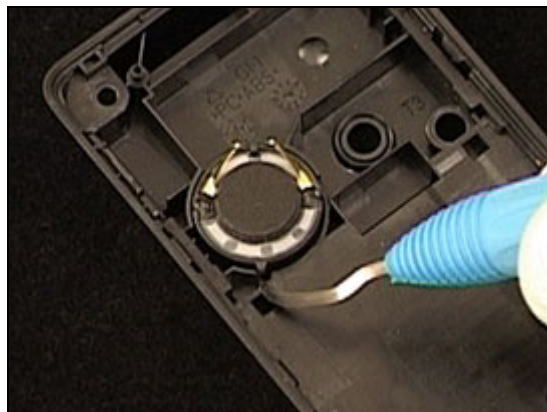


## Replacement Instruction *continued*

### 3.14 Loudspeaker

*Follow the 2.1.1 – 2.1.4 Disassembly instructions!*

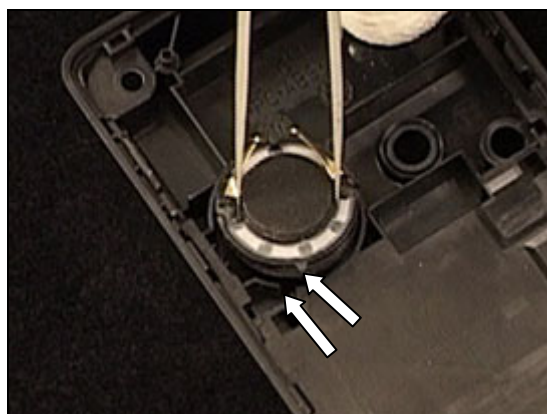
Remove the loudspeaker and remaining adhesive with a dentist tool.



***ALIGN THE LOUDSPEAKER GUIDINGPIN WITH THE CAVITY OF THE REAR COVER.***

Peel of the protection foil and mount a new loudspeaker with a pair of tweezers.

Follow the 4.1.1 – 4.1.4 Reassembly instructions!



## Replacement Instruction *continued*

### 3.15 Antenna Film

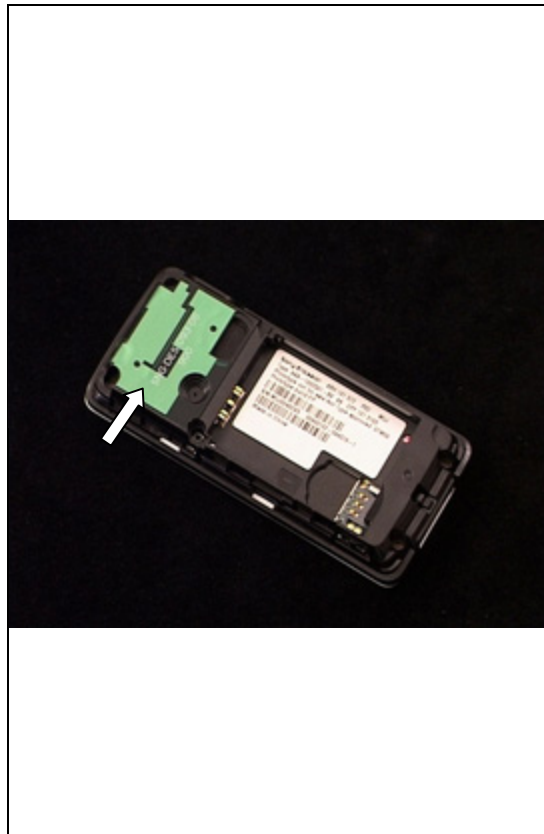
*Follow the 2.1.1 – 2.1.4 Disassembly instructions!*

Use a blunt pair of tweezers to remove the antenna film.

***PRECISELY ALIGN THE ANTENNA FILM.***

Use a blunt pair of tweezers to mount the antenna film.

Follow the 4.1.1 – 4.1.4 Reassembly instructions!

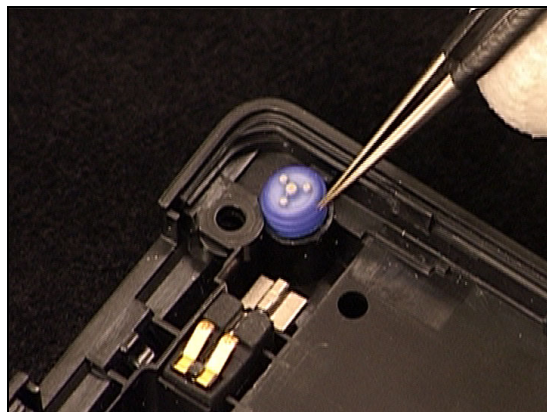


## Replacement Instruction *continued*

### 3.16 Microphone

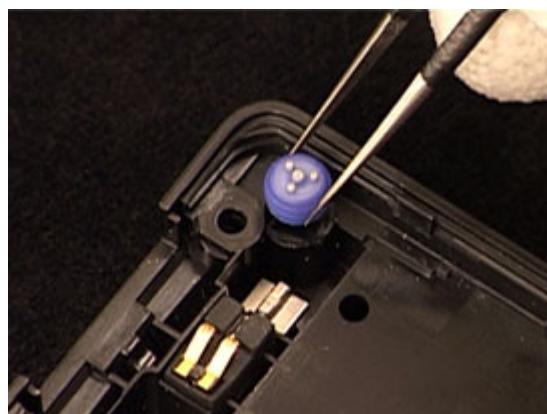
*Follow the 2.1.1 – 2.1.4 Disassembly instructions!*

Remove the microphone with a pair of tweezers.



Mount a new microphone with a pair of tweezers.

Follow the 4.1.1 – 4.1.4 Reassembly instructions!



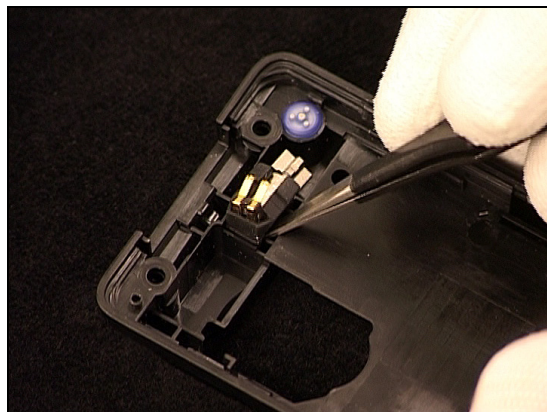


## Replacement Instruction *continued*

### 3.17 Vibrator

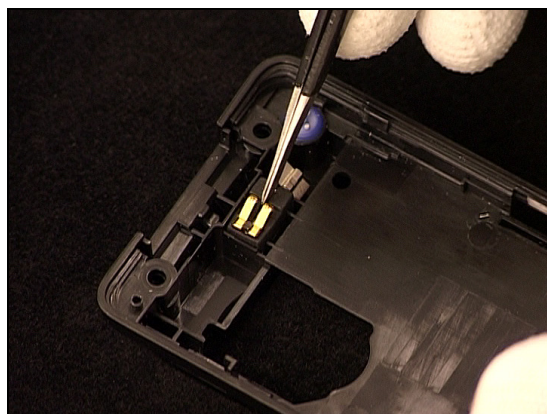
*Follow the 2.1.1 – 2.1.4 Disassembly instructions!*

Remove the vibrator with a blunt pair of tweezers.



***BE CAREFULL NOT TO DAMAGE THE CONNECTORS.***

Mount a new vibrator with a blunt pair of tweezers by pushing down in the middle.



Follow the 4.1.1 – 4.1.4 Reassembly instructions!



## 3.18 Earphone

*Follow the 2.1.1 – 2.1.3 Disassembly instructions!*

Remove the receiver with a dentist hook.

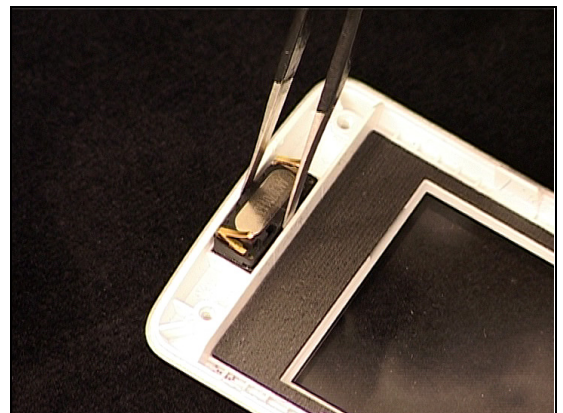
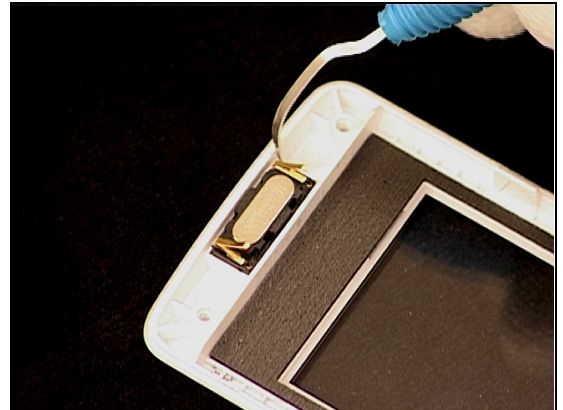
**MAKE SURE THAT THERE ARE NO RESIDUES OF ADHESIVE LEFT IN THE CAVITY**

**BE CAREFULL NOT TO DAMAGE THE SPRING CONNECTORS ON THE RECEIVER.**

**BE SURE THAT YOU MOUNT THE RECEIVER IN THE RIGHT DIRECTION.**

Mount a new receiver with a blunt pair of tweezers.

Follow the 4.1.1 – 4.1.3 Reassembly instructions!



## 3.19 KRH label

*Follow the 2.1.1 – 2.1.1 Disassembly instructions!*

Read the old KRH label and/or write the information into the “Label make” program before removal

Note the position of the KRH label before removal

Heat up the KRH label by using hot air, if needed.

Carefully remove the KRH label without causing scratches

If there still are residues, clean the surface with isopropyl alcohol

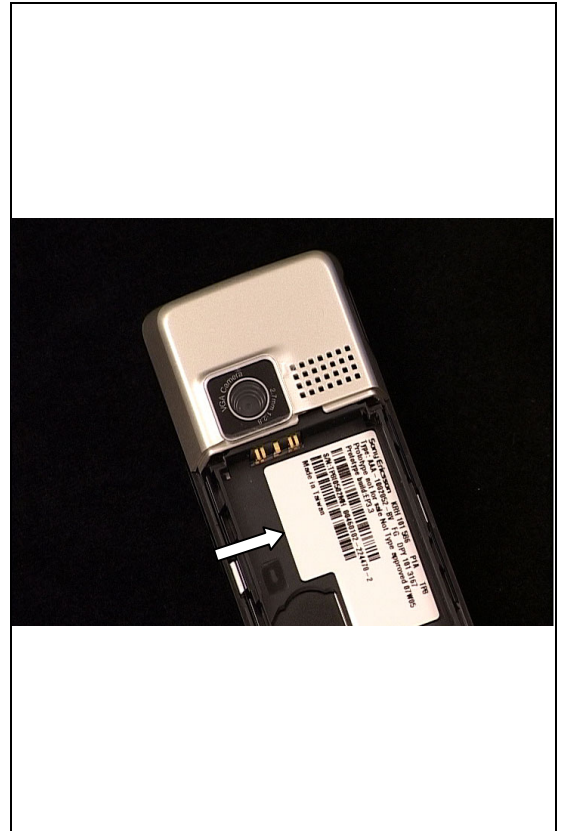
Check that the proper KRH label format is loaded in the Zebra printer.

Write a new KRH label by using the program “Label make” and check that the printing is OK.

Take the new KRH label and place it onto the frame as in the adjacent picture.

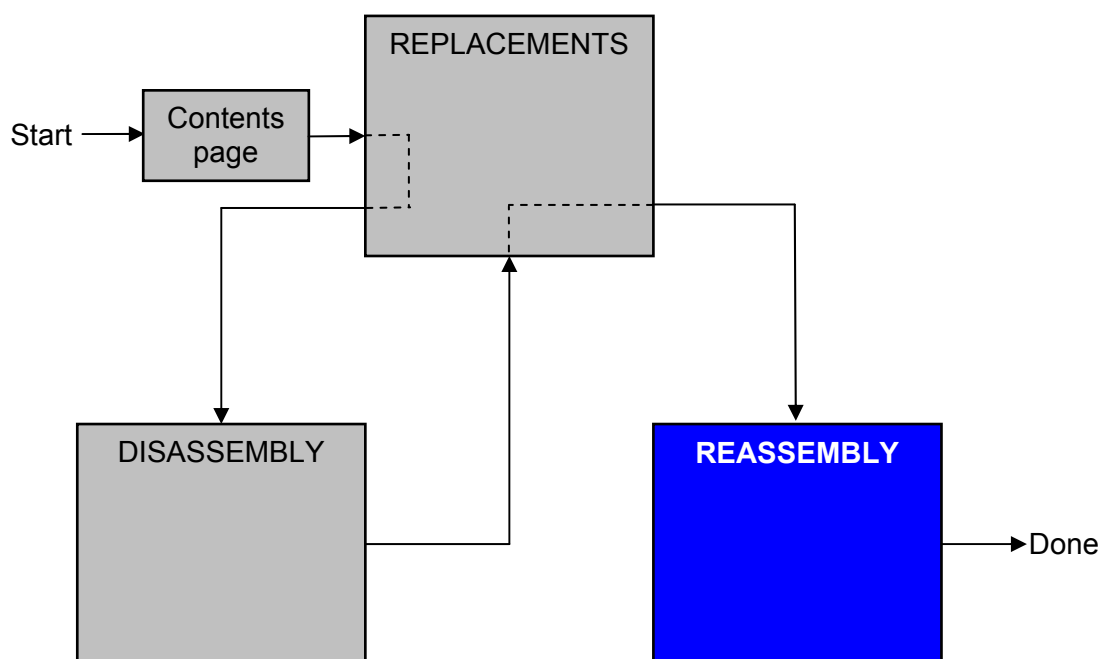
**ONE KRH LABEL ONLY IS ALLOWED!**

*Follow the 4.1.1 – 4.1.3 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. Rear cover assy
2. PBA
3. Keypad assy
4. Front assy
5. Antenna cover assy
6. Battery
7. Battery cover assy





## Reassembly Instruction *continued*

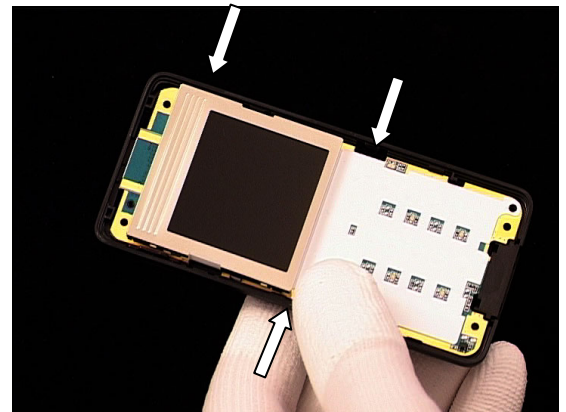
### 4.1.1 PBA unit

**MAKE SURE THE LOUDSPEAKER (1), VIBRATOR (2), MICROPHONE (3), IRDA WINDOW (4) AND ANTENNA FLEX FILM (5) ARE IN PLACE BEFORE YOU ASSEMBLE THE PBA.**



Place the PBA into the Rear cover Assy, start by putting the upper part of the PBA into the frame. Gently press down the PBA under the Snap hooks (the arrows in the picture shows where the Snap hooks are located).

Make sure it fits correctly.





## Reassembly Instruction *continued*

### 4.1.2 Front cover assy and keypad

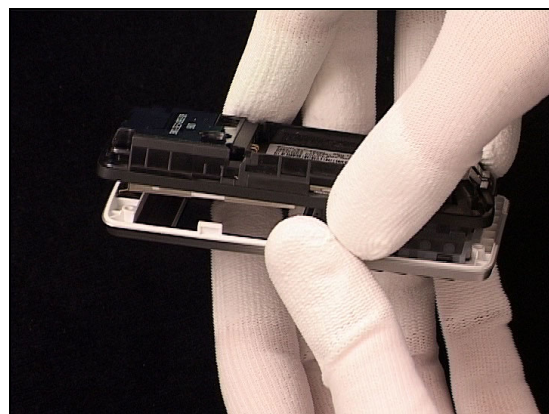
**MAKE SURE THAT THE FRONT ASSY GLASS IS CLEAN.  
USE AIR BLOW EQUIPMENT IF NECESSARY.**

**MAKE SURE THE RECEIVER (1), AND KEYPAD (2) ARE IN PLACE  
BEFORE YOU ASSEMBLE THE REAR COVER.**

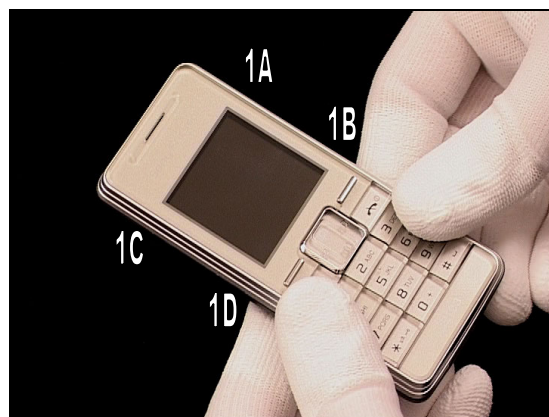


**MAKE SURE THAT THE KEYPAD IS CORRECTLY POSITIONED IN  
THE FRONT ASSY.**

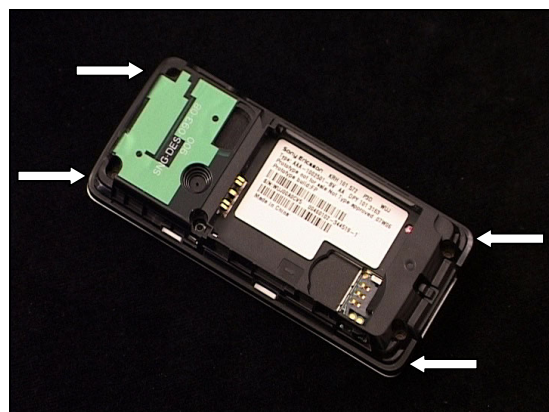
Place the Rear cover Assy over the Front Assy.



Press on all sides where front snap fit hooks are located (1A-1D). Click sounds will be heard when the snap hooks grips into the frame.



Tighten the four screws, according to the arrow indication.  
Use the Torque screwdriver, set to 15 Ncm  $\pm$  6%.





## Reassembly Instruction *continued*

### 4.1.3 Antenna cover assy

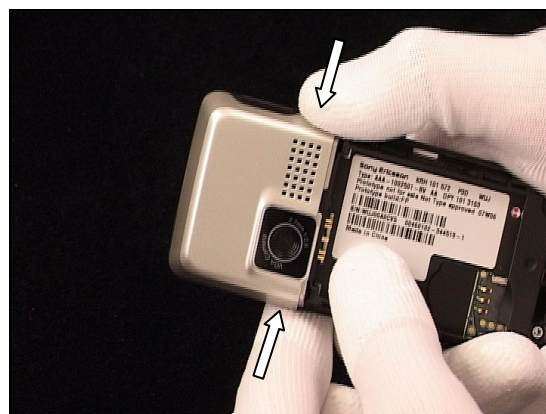
Position the Antenna Cover on the phone, according to the picture, by sliding it on in the direction of the arrow as shown in the picture.



Push the antenna cover into place.

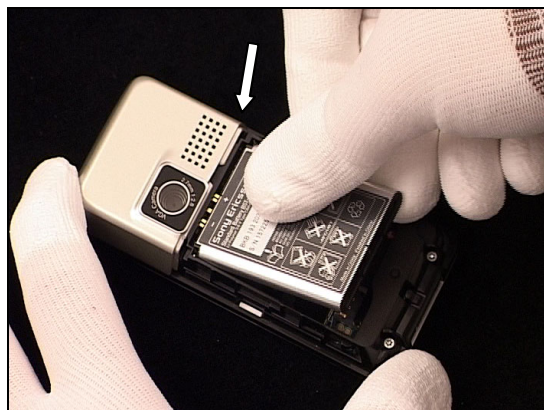


Press the on the sides of the Antenna Cover. Click sounds are heard when the two snap hooks, indicated by the arrow in the picture, fastens into the Rear cover.

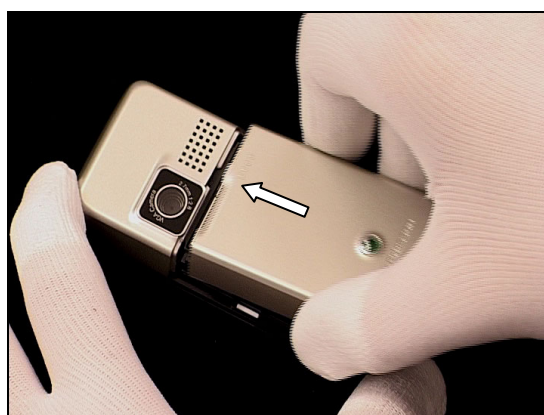


#### 4.1.4 Battery and battery cover assy

Place the battery into cavity. Start at battery connector area indicated by the arrow in the picture.



Slide on the Battery cover onto the phone.





## 5 Revision history

| Rev. | Date       | Changes / Comments |
|------|------------|--------------------|
| A    | 2007-04-30 | First release      |