



Working Instruction, Mechanical

Applicable for K320

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1 Introduction

K320



1.1 Equipment

SPECIAL TOOLS

- NTZ 122 459 Torque screwdriver (or equivalent) set to 17 Ncm+/- 6%
- NTZ 122 288 Torx bit no. 6
- NTZ 112 1070 Camera removal tool (NEW!)
- 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

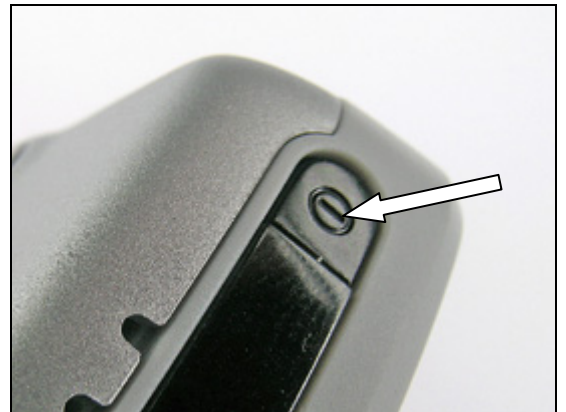


1.2 General cautions

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

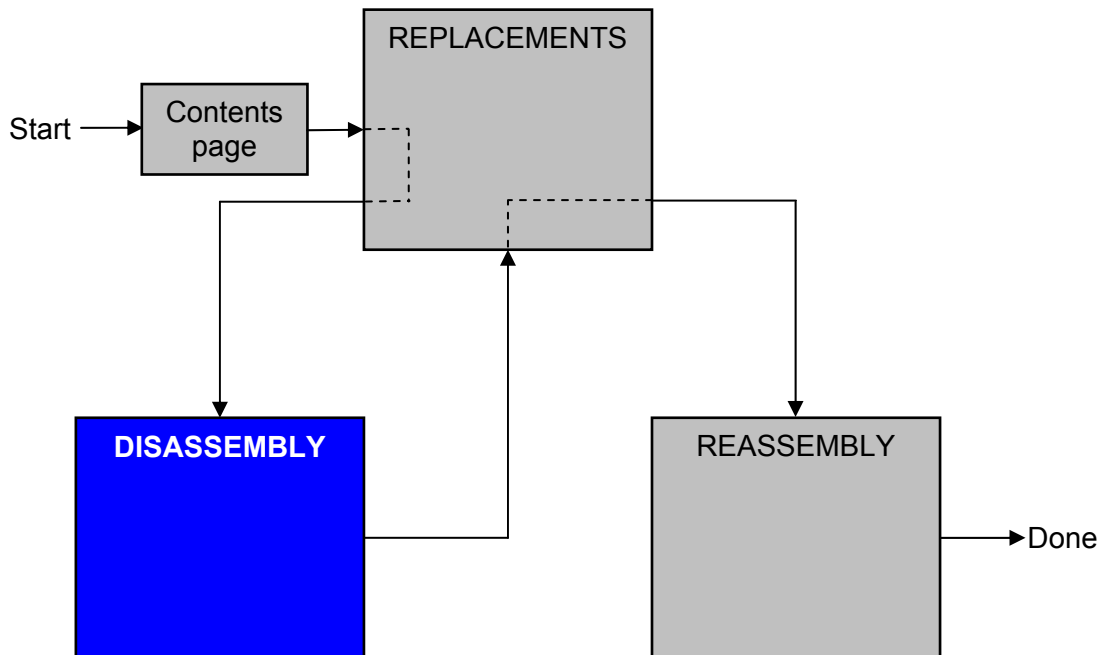
- **KEEP ALL CONTACT SURFACES CLEAN!**
- **BE CAREFUL WHEN USING TOOLS LIKE THE DENTIST HOOK, TWEEZERS, OPENING TOOLS, GUITAR PICK ETC. TO AVOID SCRATCHES OR DAMAGES TO THE EXTERIOR AND INTERIOR PARTS OF THE PHONE!**
- **BE CAREFUL NOT TO DAMAGE ANY CONTACT SPRINGS!**
- **REMEMBER TO REMOVE THE PROTECTION 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!**

Turn off the phone before the start of the disassembly.



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

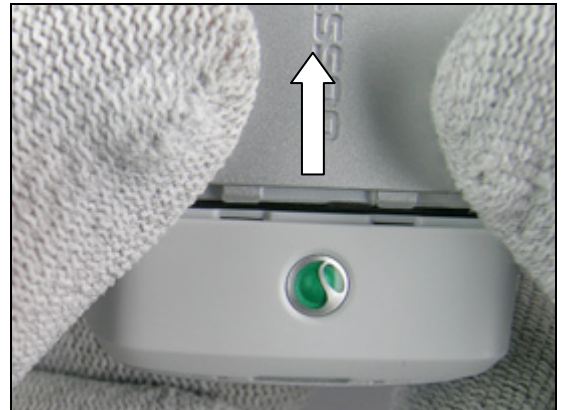
The disassembly is done in the following sequence:

1. Battery Cover (a) & Battery
2. Front Cover asm
3. PBA unit
4. Metal Frame asm
5. Keypad PWBA asm

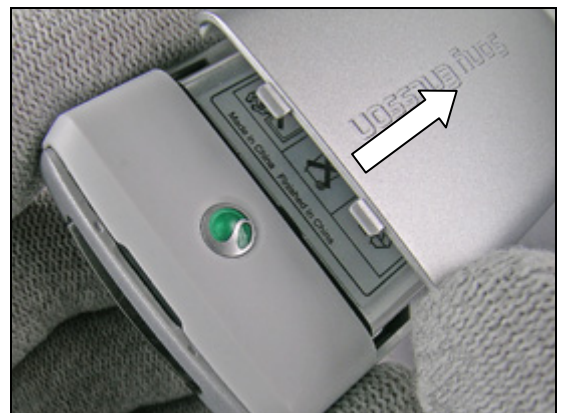


2.1.1 Battery Cover assy & Battery

Press on the bottom of the *battery cover* and simultaneously push it upwards.



Lift the *battery cover* up and release it from the *frame*.



Release the *battery* at the bottom and remove it.



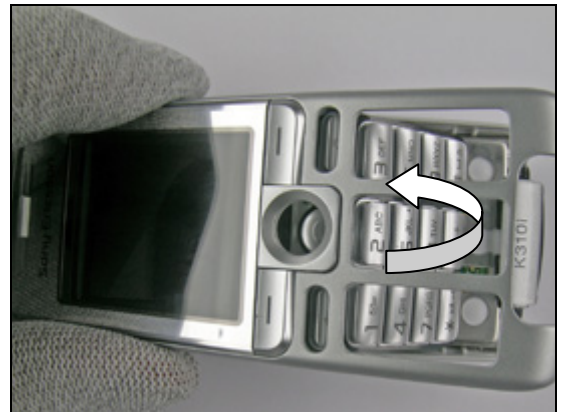
2.1.2 Front Cover assy

Position the front opening tool in the gap underneath the *system connector*.

Unhook the *front cover* by gently bending it out from the *system connector*.

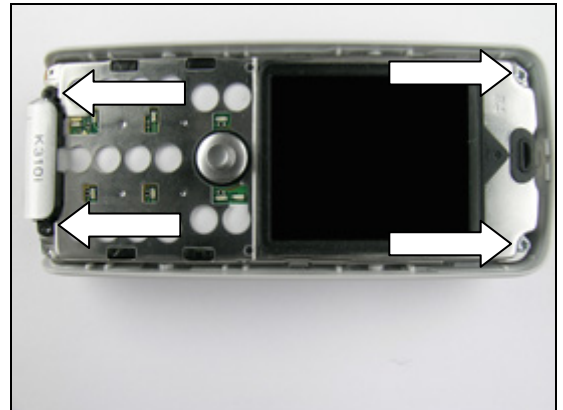


Grab the *front cover* and carefully remove it from the *frame*.



2.1.3 PBA Unit

Use torx bit no. 6 to remove the four screws.



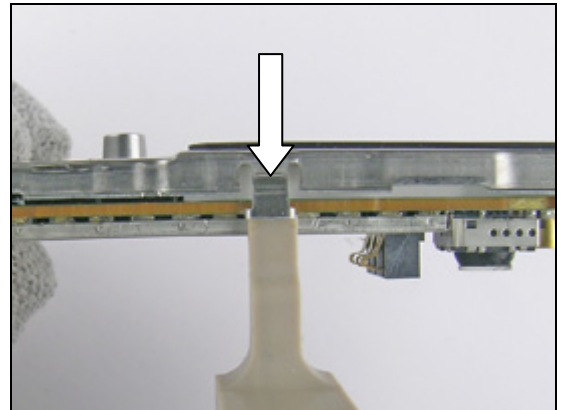
Lift and remove the *PBA unit* starting at the bottom of the phone.



2.1.4 Metal Frame assy

THE METAL FRAME HAS GOT TWO SNAP HOOKS!

Use the front opening tool to unsnap the *metal frame* from the PBA.

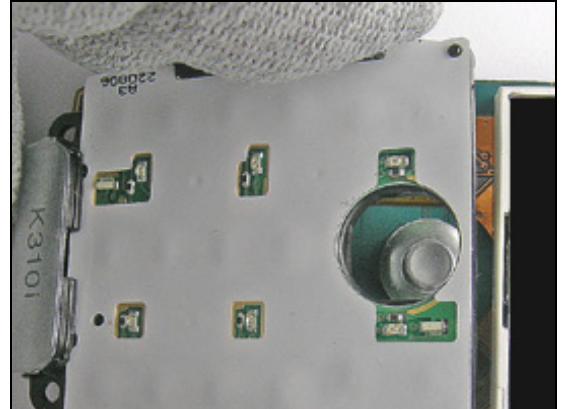


Grab the *metal frame* at the top and carefully lift it upwards to remove it.



2.1.5 Keypad PWB assy

Grab the *keypad PWB* and remove it.



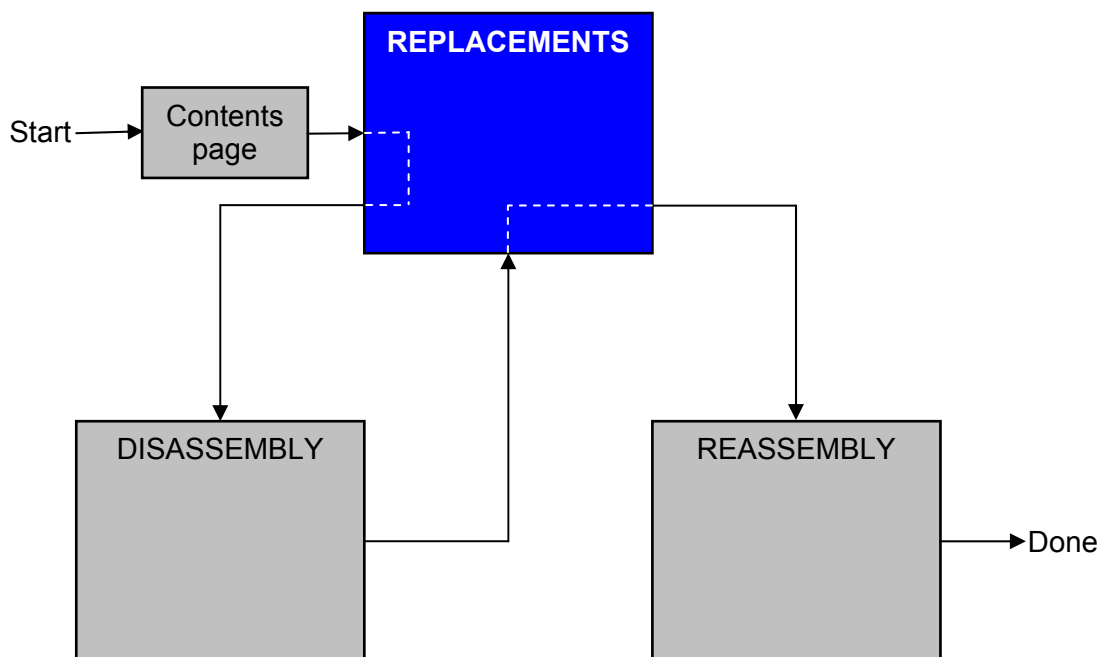
3 Replacements

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 assy

Follow the 2.1.1 – 2.1.2 Disassembly instructions!

Prepare the new *front cover*.

Follow the 4.1.4 – 4.1.5 Reassembly instructions!

3.3 Metal Frame assy

Follow the 2.1.1 – 2.1.4 Disassembly instructions!

Prepare the new *metal frame*.

Follow the 4.1.2 – 4.1.5 Reassembly instructions!

3.4 Frame sub- assy

Follow the 2.1.1 – 2.1.3 Disassembly instructions!

Follow the 3.13 & 3.15 – 3.22 Removal instructions!

Prepare the new *frame*.

Follow the 3.15 – 3.22, 3.13 & 3.25 Installation instructions!

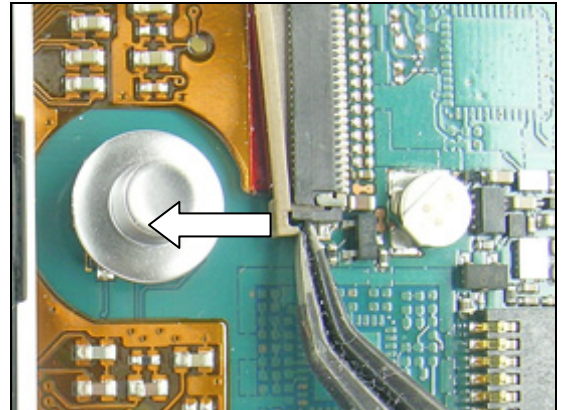
Follow the 4.1.3 – 4.1.5 Reassembly instructions!

3.5 LCD Module

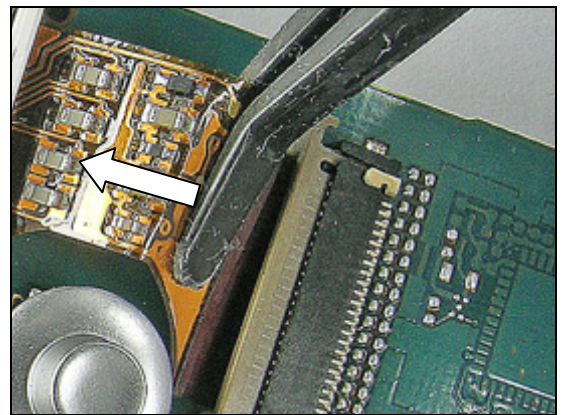
REMOVAL

Follow the 2.1.1 – 2.1.5 Disassembly instructions!

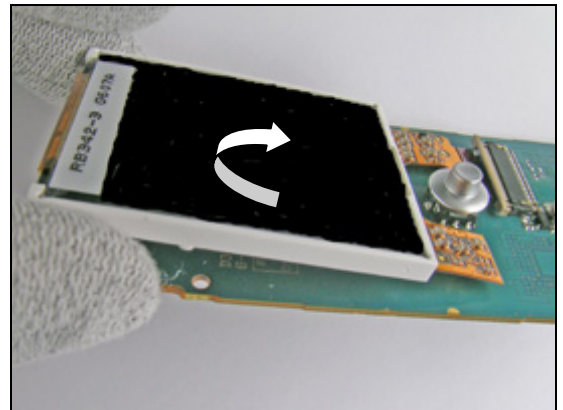
Use the flex film opening tool and carefully press the bar on the ZIF-connector straight backwards to open the ZIF-connector.



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

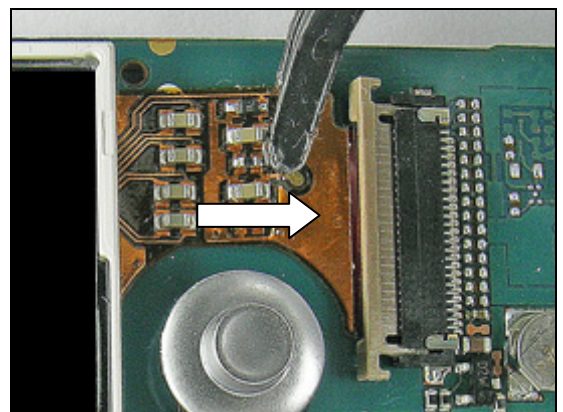


Carefully lift up the LCD module.



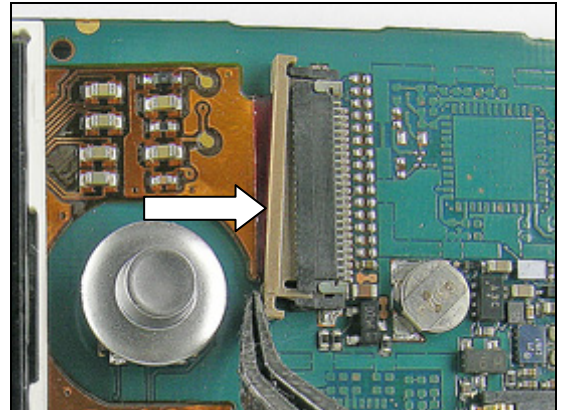
INSTALLATION

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



LCD Module *continued*

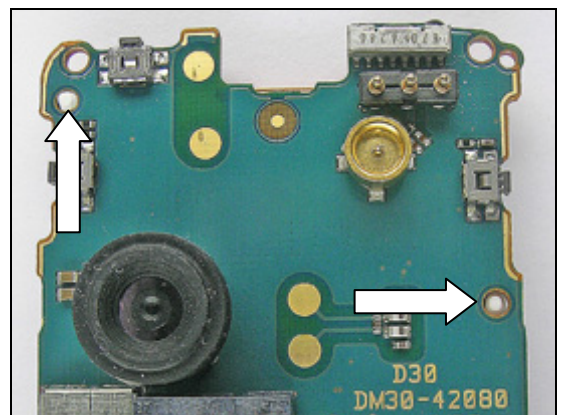
Use the flex film opening tool and carefully press the bar on the ZIF-connector towards the ZIF-connector to close it.



THE LCD MODULE HAS GUIDING PINS!

Use the guiding pins to position the *LCD module* on the PBA.

Follow the 4.1.1 – 4.1.5 Reassembly instructions!



3.6 Joystick Cap & Joystick Gasket

REMOVAL

Follow the 2.1.1 – 2.1.5 Disassembly instructions!

Grab underneath the *joystick cap* and pull it off the joystick switch.



Use a dentist hook to remove the *joystick gasket*.



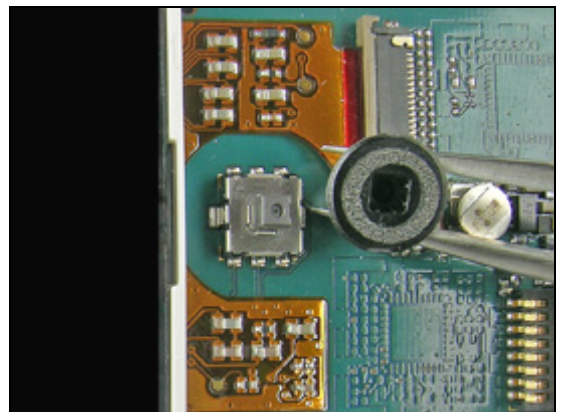
INSTALLATION

CLEAN THE JOYSTICK SURFACE WITH ISOPROPYL ALCOHOL!

Use the tweezers to mount the new *joystick gasket* on the *joystick cap*.



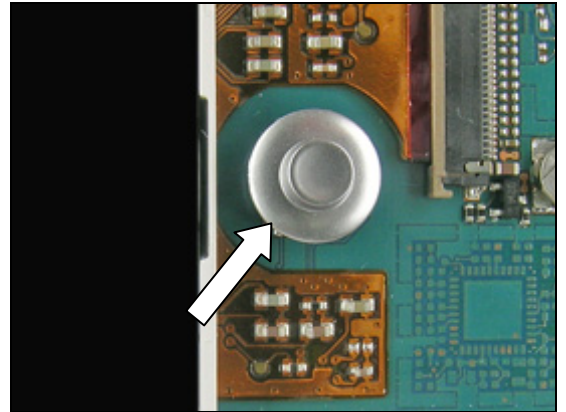
Note the orientation of the *joystick cap*!



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!

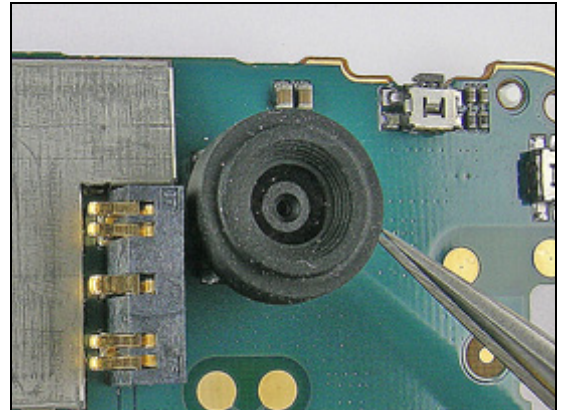


3.7 Camera Module VGA & Camera Gasket

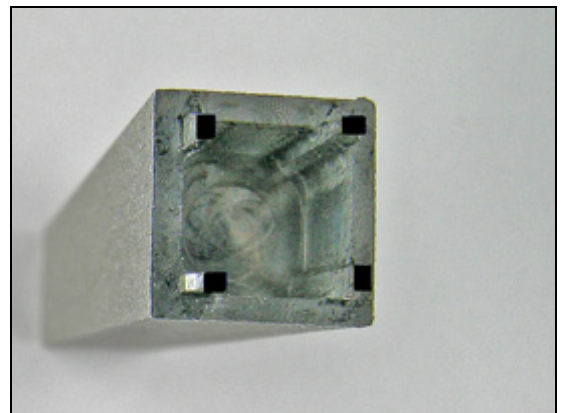
REMOVAL

Follow the 2.1.1 – 2.1.4 Disassembly instructions!

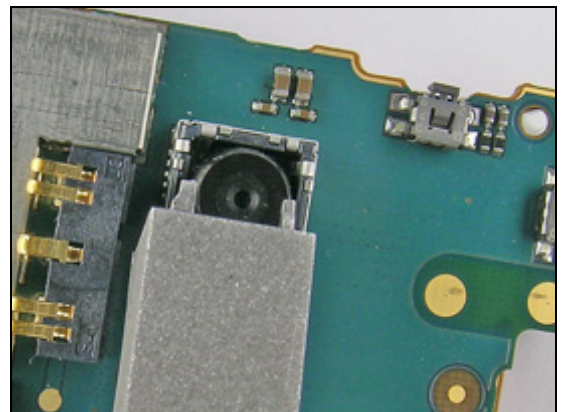
Use the tweezers to remove the *camera gasket*.



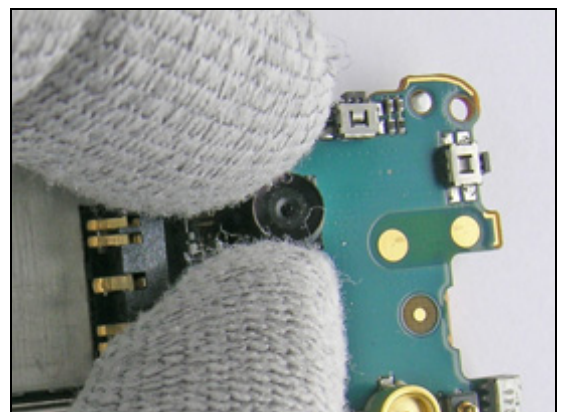
Note the pin orientation on the camera removal tool!



Position the camera removal tool over the *camera module*. Use your fingers and press the camera removal tool down into the socket and lift the tool up.



Use your fingers to remove the *camera module* from the socket.



Camera Module VGA & Camera Gasket *continued*

INSTALLATION

The little knob on the *camera module* must be placed ...

... into the notch in the socket!

BE CAREFUL NOT TO TOUCH THE CAMERA LENS SURFACE!

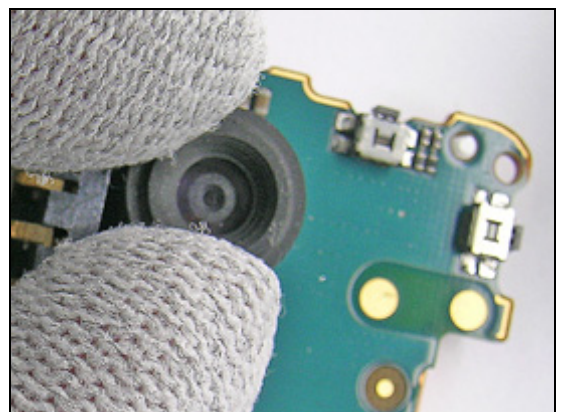
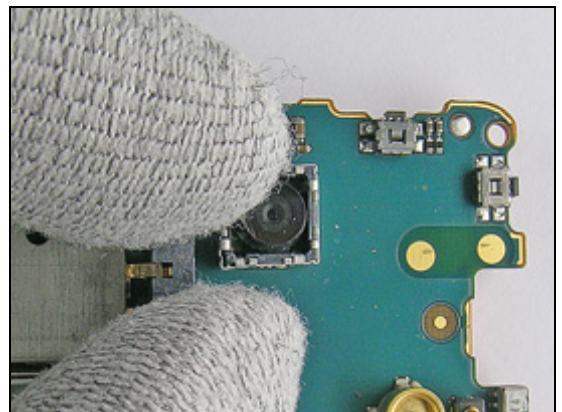
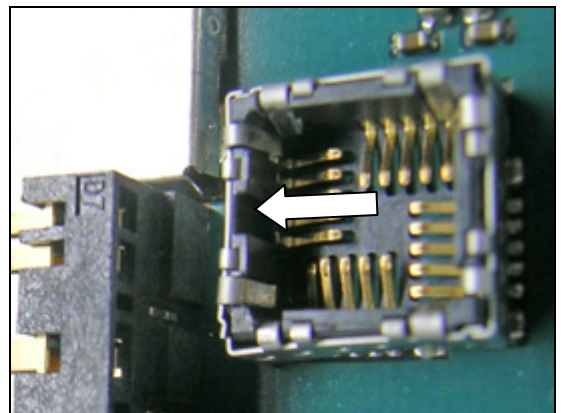
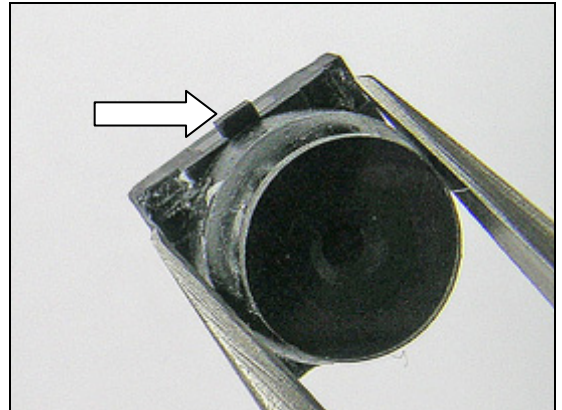
Orientate the camera tap so it corresponds to the notch in the socket.

Use your fingers and carefully press the *camera module* into the socket.

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

Use your fingers to attach the camera gasket on the camera module.

Follow the 4.1.2 – 4.1.5 Reassembly instructions!



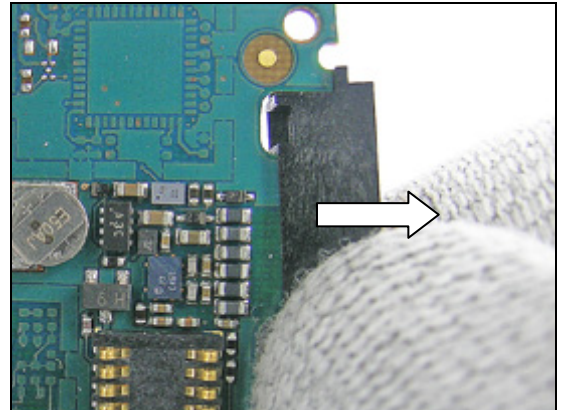


3.8 System Connector

REMOVAL

Follow the 2.1.1 – 2.1.5 Disassembly instructions!

Use your fingers to remove the *system connector*.

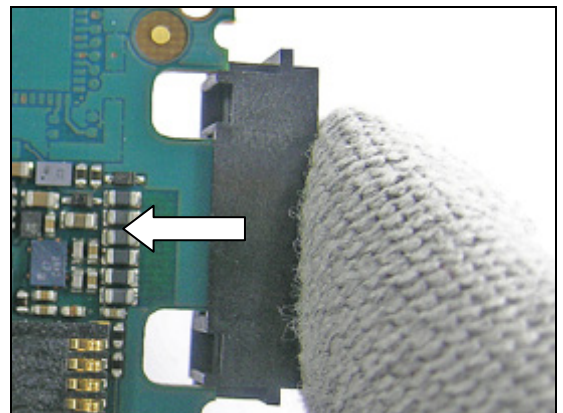


INSTALLATION

NOTE THE ORIENTATION OF THE SYSTEM CONNECTOR!

Use your fingers to mount the *system connector*.

Follow the 4.1.1 – 4.1.5 Reassembly instructions!



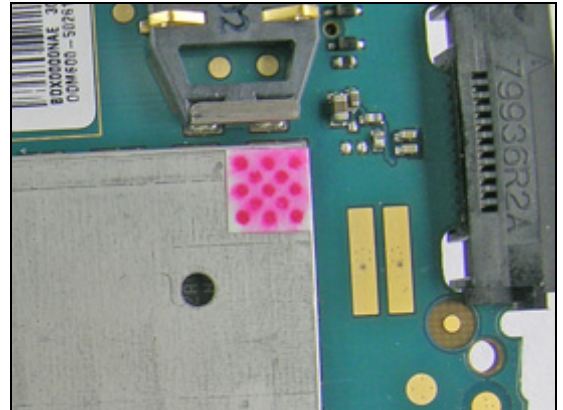


3.9 Liquid Intrusion Indicator

REMOVAL

Follow the 2.1.1 – 2.1.4 Disassembly instructions!

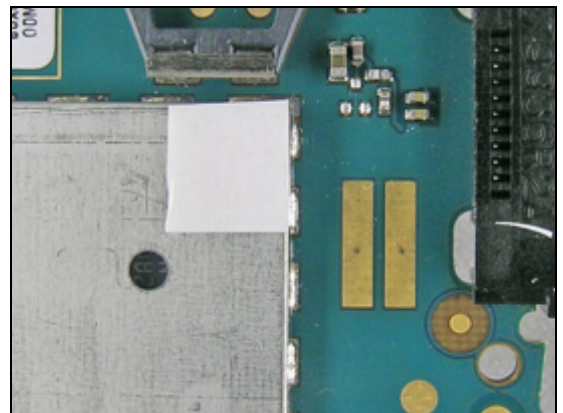
Use a dentist hook to remove the *liquid intrusion indicator*.



INSTALLATION

Use the tweezers to attach a new *liquid intrusion indicator*.

Follow the 4.1.2 – 4.1.5 Reassembly instructions!

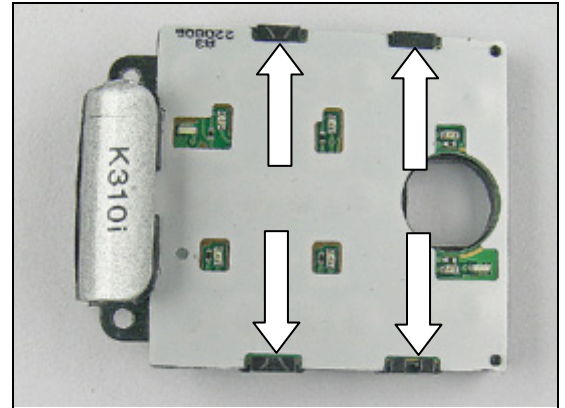


3.10 UI Module Frame

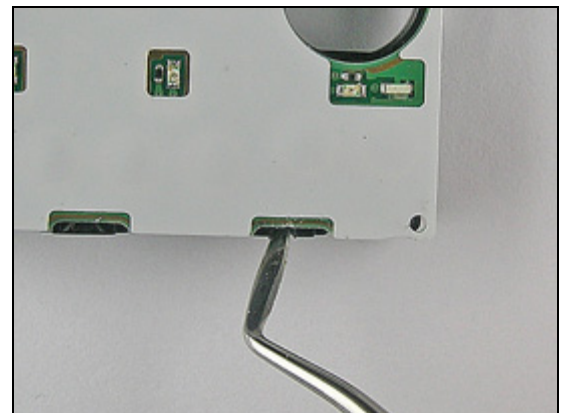
REMOVAL

Follow the 2.1.1 – 2.1.5 Disassembly instructions!

The *UI module frame* has got four snap hooks!



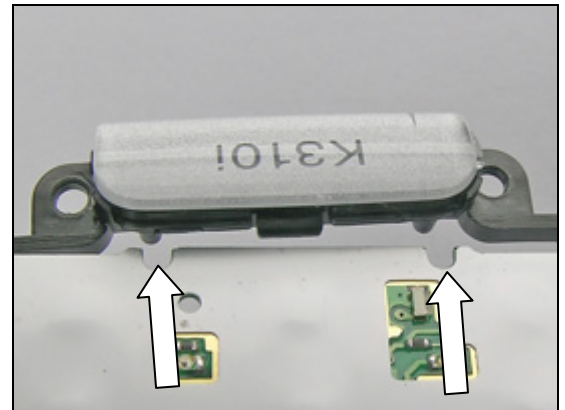
Use a dentist hook to release the *dome sheet* from the *UI module frame* and simultaneously press underneath the *dome sheet*.



INSTALLATION

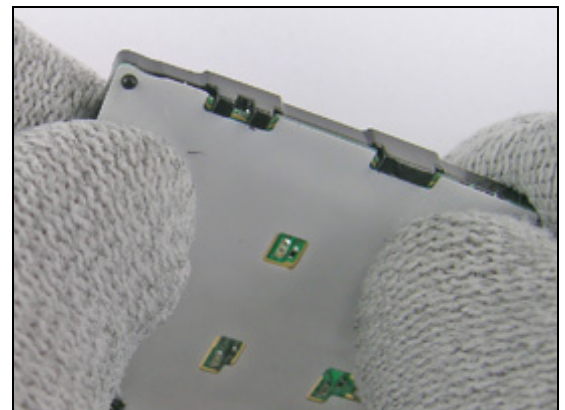
THE UI MODULE FRAME HAS GOT TWO GUIDING PINS!

Use the guiding pins to position the *dome sheet* on the *UI module frame*.



Press the *dome sheet* carefully down onto the *UI module frame* to snap the together.

Follow the 4.1.1 – 4.1.5 Reassembly instructions!



3.11 Dome Sheet assy

REMOVAL

*Follow the 2.1.1 – 2.1.5 Disassembly instructions!
Follow the 3.10 Removal instructions!*

Use a dentist hook to start removing the *dome sheet* from the PBA.

Use the tweezers to continue the removal of the *dome sheet*.

INSTALLATION

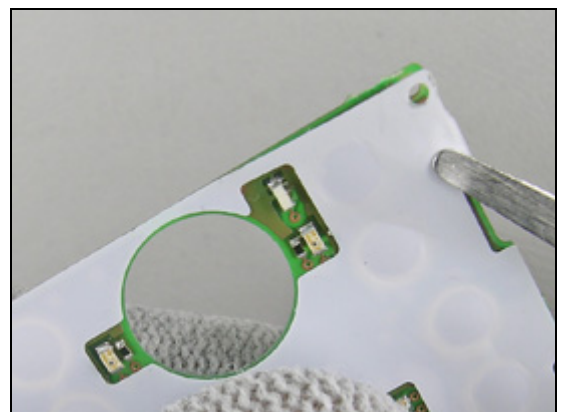
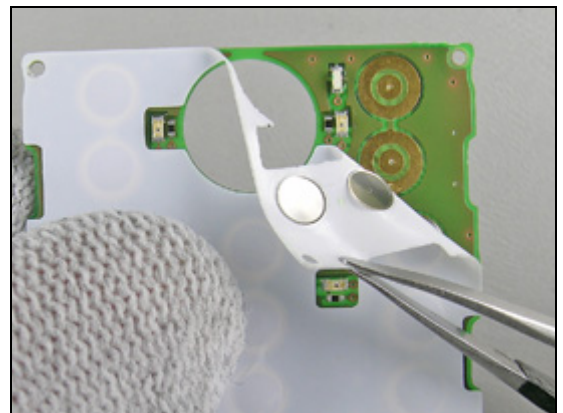
USE A NEW DOME SHEET!

USE THE HACK NOTCH TO GUIDE THE DOME SHEET!

Attach a new *dome sheet* by starting at the bottom.

Continue the attachment of the *dome sheet* and end it at the top.

*Follow the 3.10 Installation instructions!
Follow the 4.1.1 – 4.1.5 Reassembly instructions!*



3.12 Keypad assy

REMOVAL

Follow the 2.1.1 – 2.1.2 Disassembly instructions!

Press on the top silver keys through the *front cover* and remove the *keypad*.



INSTALLATION

Position the *keypad* into the *front cover*.



Carefully press to attach the *keypad* to the *front cover*.

Follow the 4.1.4 – 4.1.5 Reassembly instructions!



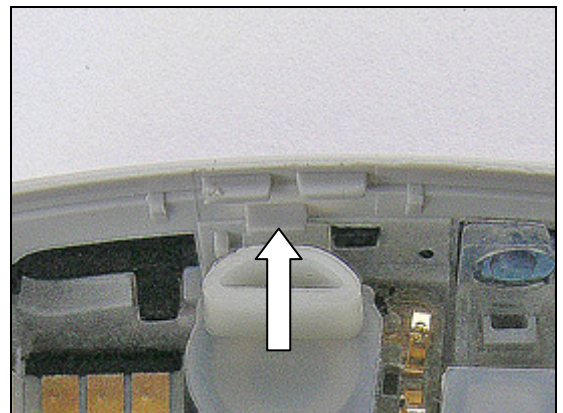
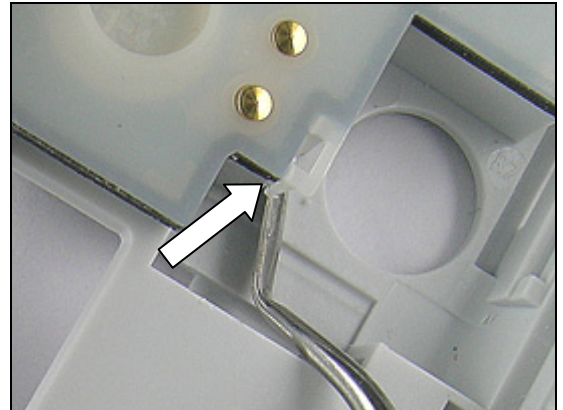
3.13 Audio Pipe assy

REMOVAL

Follow the 2.1.1 – 2.1.3 Disassembly instructions!

BE CAREFUL NOT TO DAMAGE THE POGO PINS!

Use the dentist hook to release the snap hook and at the same time press the *audio pipe* upwards.

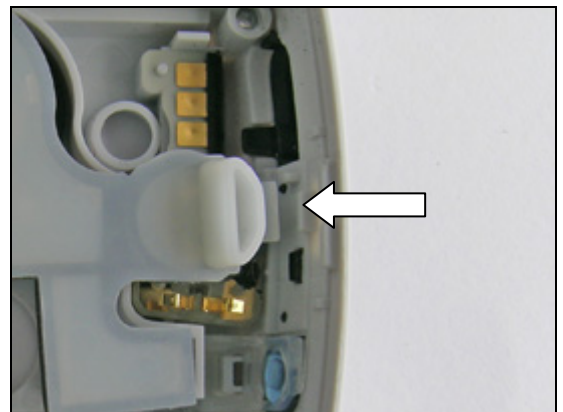


INSTALLATION

The *frame* has got one hook!

BE CAREFUL WITH THE RECEIVER CONNECTORS!

Place the hook on the *audio pipe* underneath the tap in the *frame*.



Position the *audio pipe* and gently press on it to snap fit them together.

Follow the 4.1.3 – 4.1.5 Reassembly instructions!



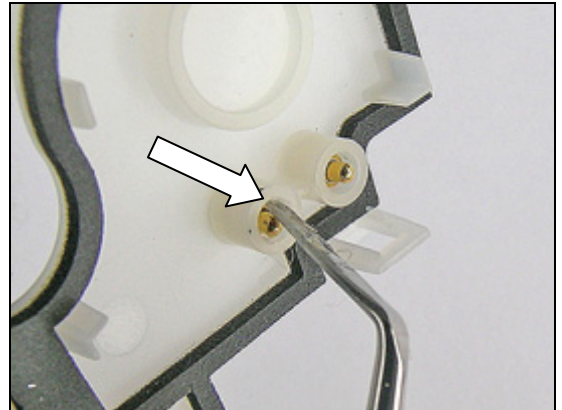
3.14 Pogo Pin

REMOVAL

Follow the 2.1.1 – 2.1.3 Disassembly instructions!
Follow the 3.13 Removal instructions!

Turn the *audio pipe* 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 their holes.



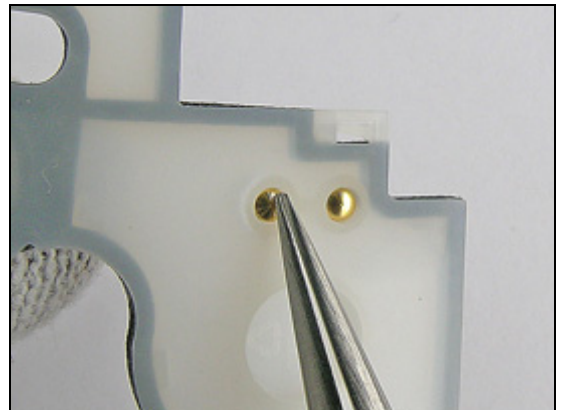
INSTALLATION

Use the tweezers to insert the *pogo pins* into their holes.



Press the *pogo pins* in place and make sure they are in the right positions.

Follow the 3.13 Installation instructions!
Follow the 4.1.3 – 4.1.5 Reassembly instructions!



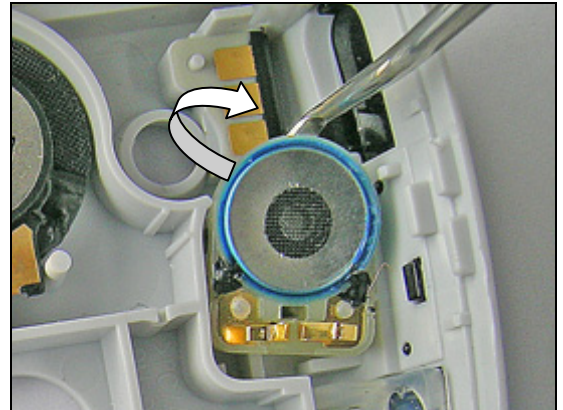
3.15 Receiver

REMOVAL

*Follow the 2.1.1 – 2.1.3 Disassembly instructions!
Follow the 3.13 Removal instructions!*

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

Use the dentist hook to remove the *receiver*.



INSTALLATION

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

Use the tweezers to mount the *receiver*.

*Follow the 3.13 Installation instructions!
Follow the 4.1.3 – 4.1.5 Reassembly instructions!*



3.16 IR Window

REMOVAL

Follow the 2.1.1 – 2.1.3 Disassembly instructions!
Follow the 3.13 Removal instructions!

THE IR WINDOW HAS GOT ONE SNAP HOOK!

Position the dentist hook on the *IR window's* snap hook and press it out through the *frame*.

Remove the *IR window* with your fingers.

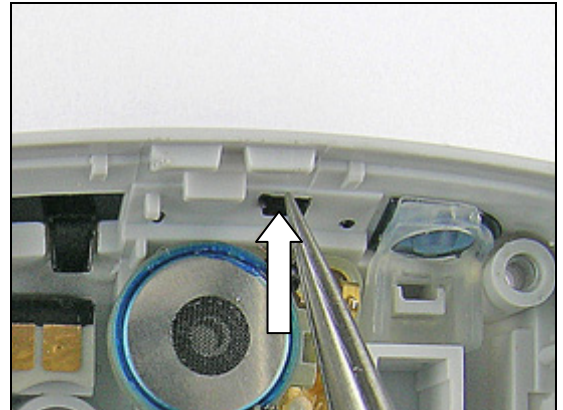
INSTALLATION

NOTE THE ORIENTATION OF THE IR WINDOW!

Use the tweezers to position the *IR window*.

Use your fingers to carefully press it into *frame* to secure the snap fit.

Follow the 3.13 Installation instructions!
Follow the 4.1.3 – 4.1.5 Reassembly instructions!



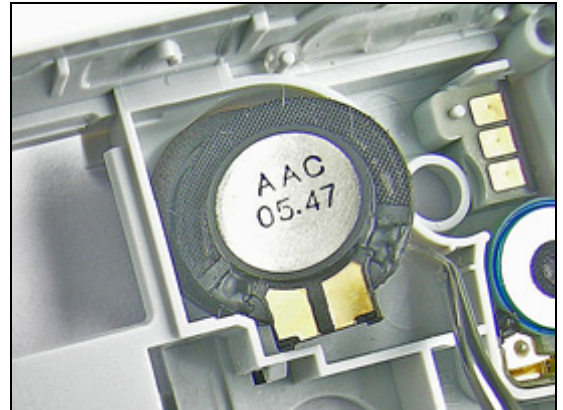


3.17 Speaker, Speaker Gasket & Speaker Dust Net

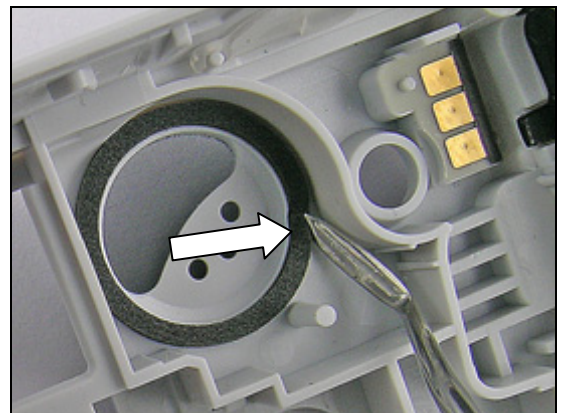
REMOVAL

Follow the 2.1.1 – 2.1.3 Disassembly instructions!
Follow the 3.13 Removal instructions!

Use the dentist hook to remove the *speaker*.



Use the dentist hook to remove the *speaker gasket*.

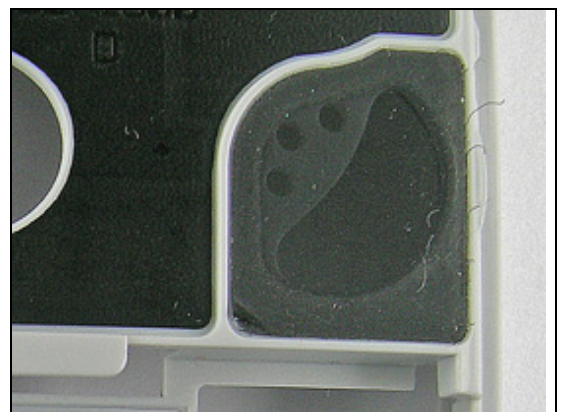


Use the dentist hook to remove the *dust net*.



INSTALLATION

Clean the surface with isopropyl alcohol.
Use the tweezers to attach the *dust net*.



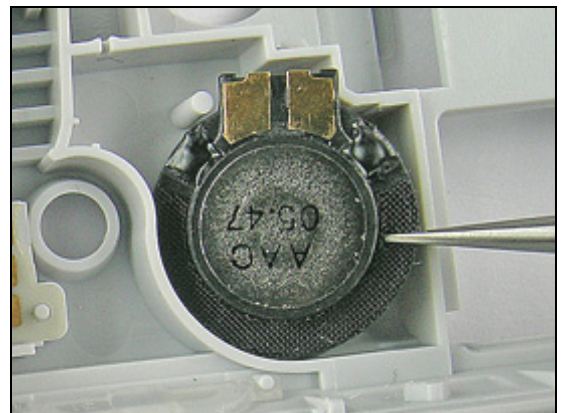
Speaker, Speaker Gasket & Speaker Dust Net *continued*

Clean the speaker cavity with isopropyl alcohol.
Use the tweezers to attach the *speaker gasket*.



Use the tweezers to install the *speaker*.

Follow the 3.13 Installation instructions!
Follow the 4.1.3 – 4.1.5 Reassembly instructions!



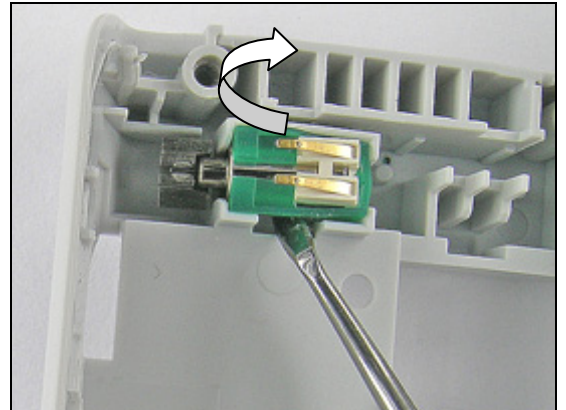
3.18 Vibrator

REMOVAL

Follow the 2.1.1 – 2.1.3 Disassembly instructions!

DO NOT LIFT THE VIBRATOR BY THE FLYWHEEL!

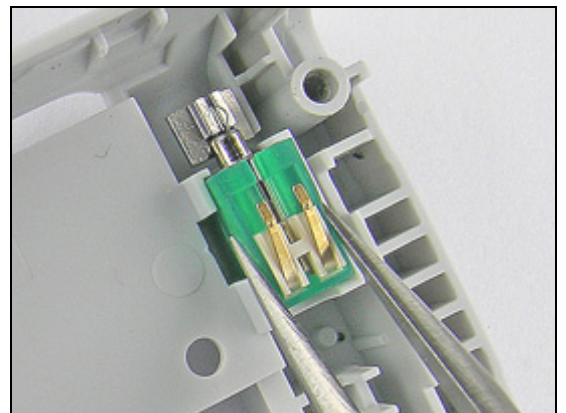
Use the dentist hook to carefully lift the *vibrator* straight up.



INSTALLATION

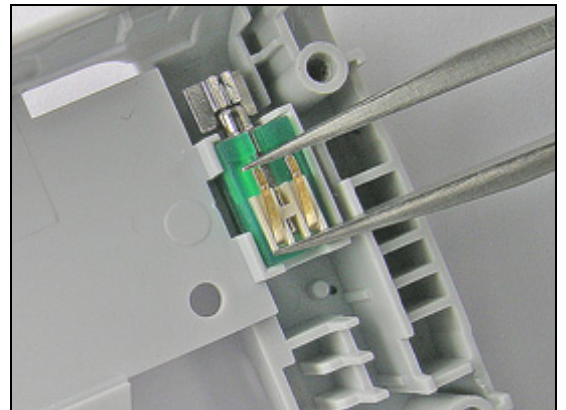
DO NOT PRESS ON THE CONNECTORS!

Use the tweezers to position the *vibrator*.



Press on the *vibrator* beside the connectors to secure the position.

Follow the 4.1.3 – 4.1.5 Reassembly instructions!





3.19 Microphone assy

REMOVAL

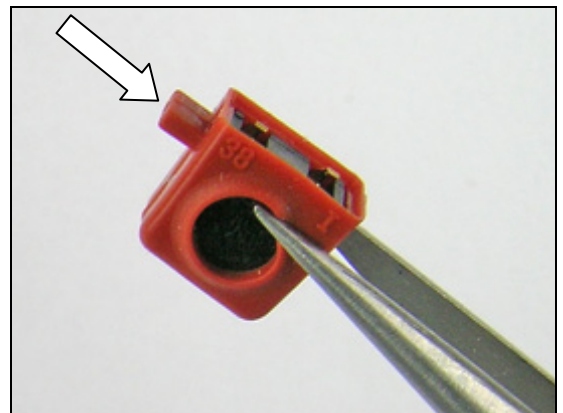
Follow the 2.1.1 – 2.1.3 Disassembly instructions!

Use the dentist hook to carefully release and lift up the *microphone*.



INSTALLATION

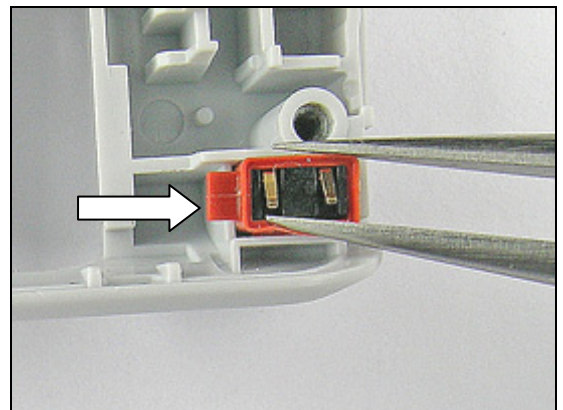
Use the tweezers to install the *microphone*.
The knob should be pointing upwards.



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

Press on the *microphone* in the middle, between the connectors, to secure a good fit.

Follow the 4.1.3 – 4.1.5 Reassembly instructions!



3.20 Camera Key assy

REMOVAL

Follow the 2.1.1 – 2.1.3 Disassembly instructions!

Use the dentist hook to unhook the *camera key* from the *frame*.

Remove the *camera key*.

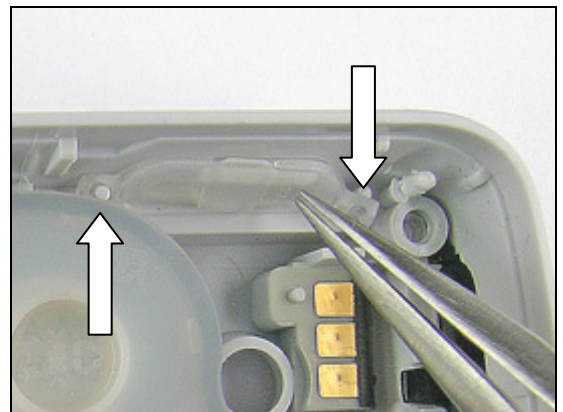
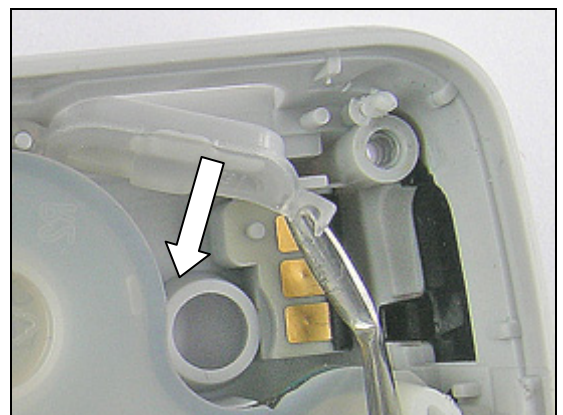
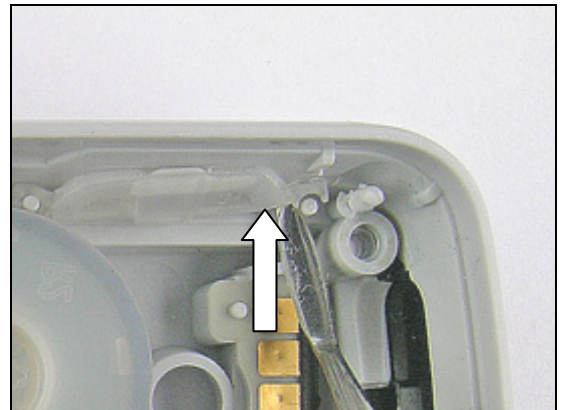
INSTALLATION

THE FRAME HAS GOT TWO GUIDING PINS!

Position the *camera key* in the *frame*.

Attach the *camera key* at both ends.

Follow the 4.1.3 – 4.1.5 Reassembly instructions!

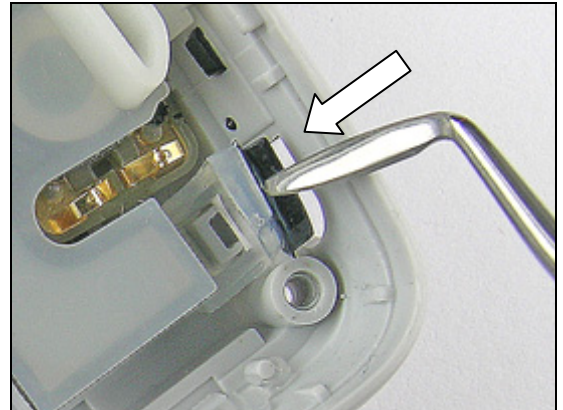


3.21 Power Key assy

REMOVAL

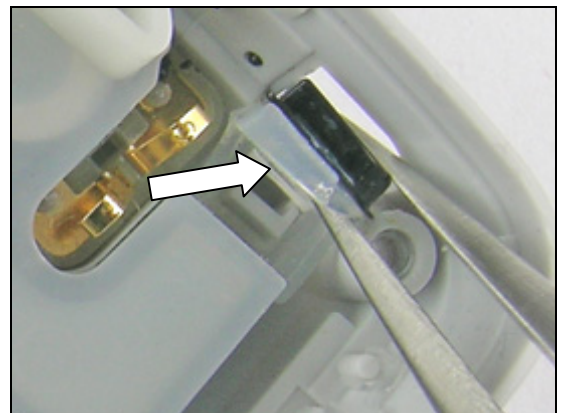
Follow the 2.1.1 – 2.1.3 Disassembly instructions!

Use the dentist hook to remove the *power key*.



INSTALLATION

Use the tweezers to attach the *power key* by placing the knob in the notch.



Use the tweezers to push down the ear onto the notch.

Follow the 4.1.3 – 4.1.5 Reassembly instructions!



3.22 Operator Key assy

REMOVAL

Follow the 2.1.1 – 2.1.3 Disassembly instructions!

Use the dentist hook to unhook the *operator key* from the frame.

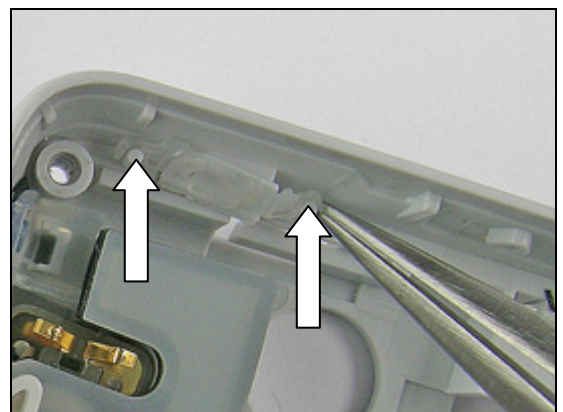
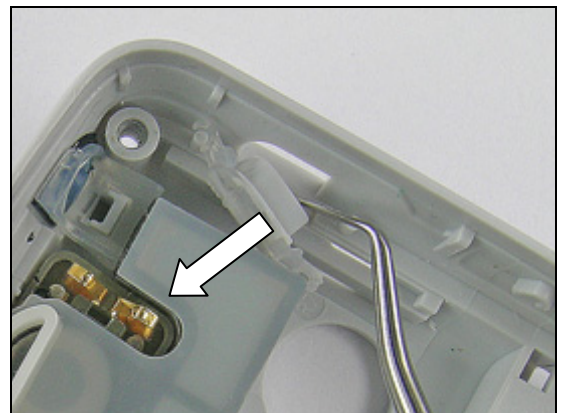
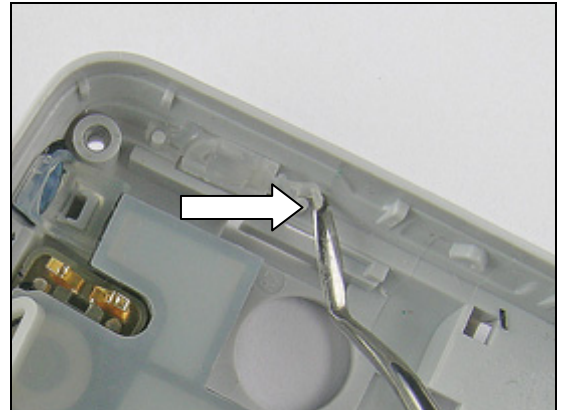
Remove the *operator key*.

INSTALLATION

Use the tweezers to attach the *operator key* by placing the knob in the notch.

Place the two ears behind the pins.

Follow the 4.1.3 – 4.1.5 Reassembly instructions!



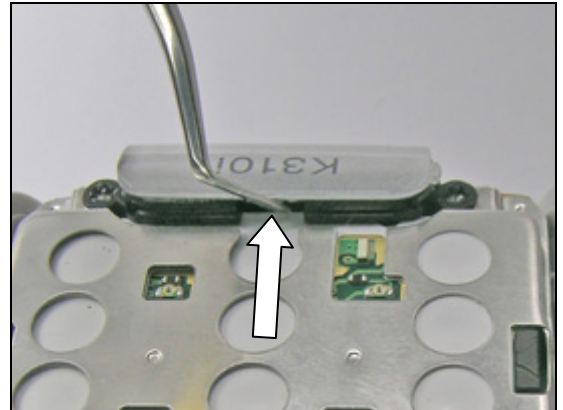
3.23 Operator Logo assy

REMOVAL

Follow the 2.1.1 – 2.1.5 Disassembly instructions!

BE CAREFUL NOT TO DAMAGE THE PHONE DURING THIS PROCEDURE!

Position the dentist hook in the notch of the *UI module frame* and remove the *operator logo*.



INSTALLATION

USE A NEW OPERATOR LOGO!

Place the *operator logo* on the *UI module frame* and press with your fingers a few seconds to secure a good attachment.

Follow the 4.1.1 – 4.1.5 Reassembly instructions!.



3.24 Operator Key Label

REMOVAL

Remove the *operator key label* with great care using the dentist hook.



INSTALLATION

Attach a new *operator key label* and press on it for a few seconds to secure a good attachment.



3.25 Label

REMOVAL

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

INSTALLATION

- 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

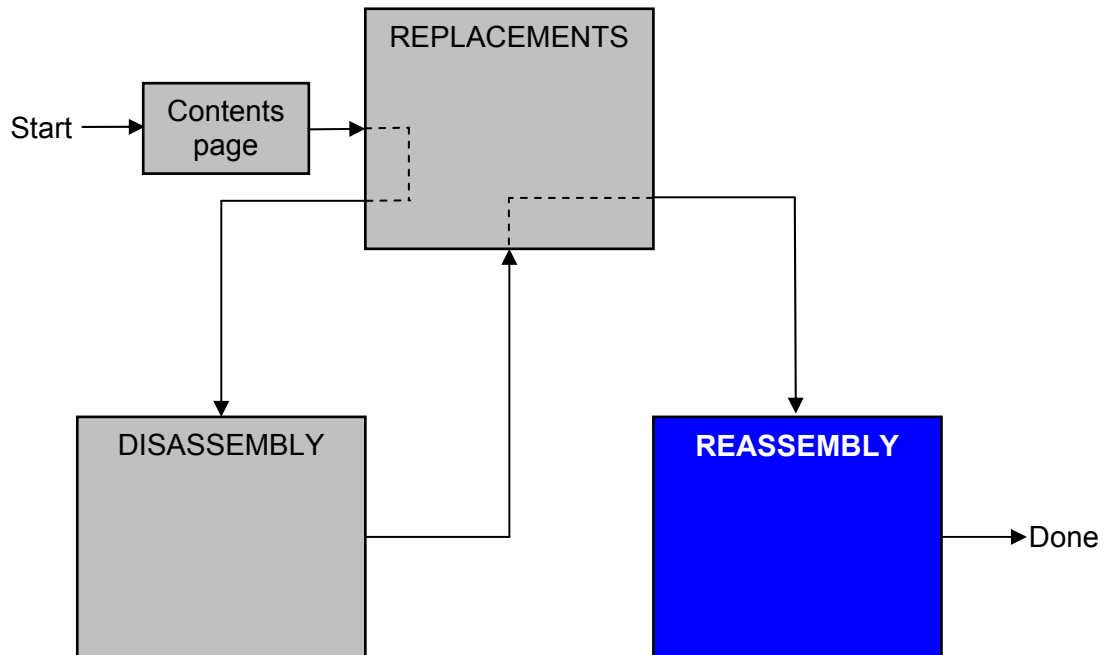
ONE LABEL ONLY IS ALLOWED!

Follow the 4.1.5 Reassembly instructions!



4 Reassembly

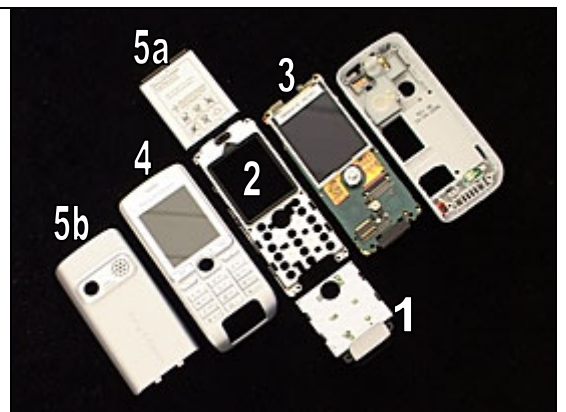
After replacing a part being listed in Replacements, the instruction of that section usually ends by directing you to this Reassembly section with a specification of the instructions you have to carry out in order to reassemble the phone.



4.1 Overview

The reassembly is done in the following sequence:

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



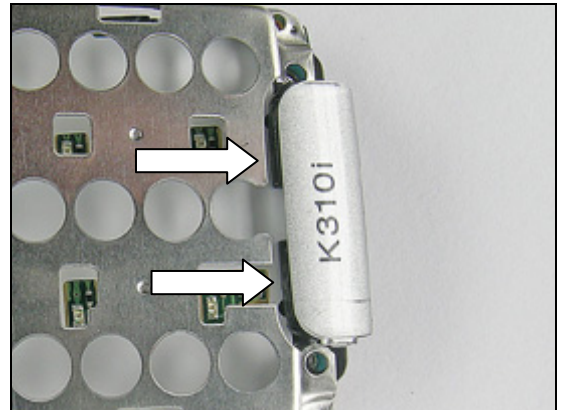
4.1.1 Keypad PWBA assy

Place and press the *keypad PWB* onto the PBA.

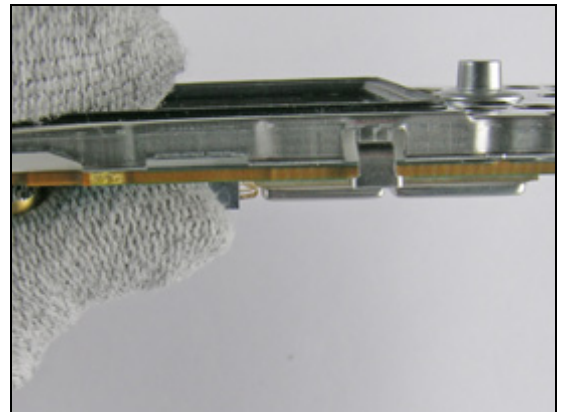


4.1.2 Metal Frame assy

Carefully slide the *metal frame* under the *operator logo*.

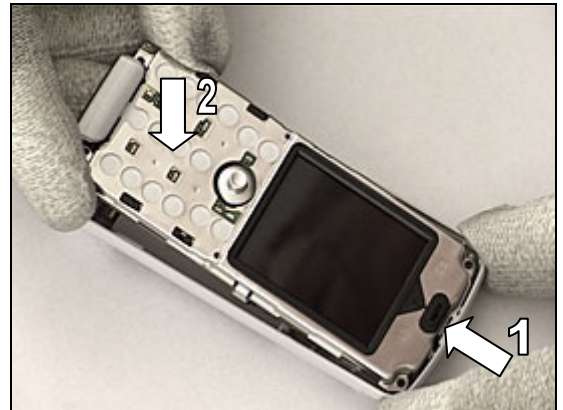


Press on the *metal frame* to secure it to the PBA.



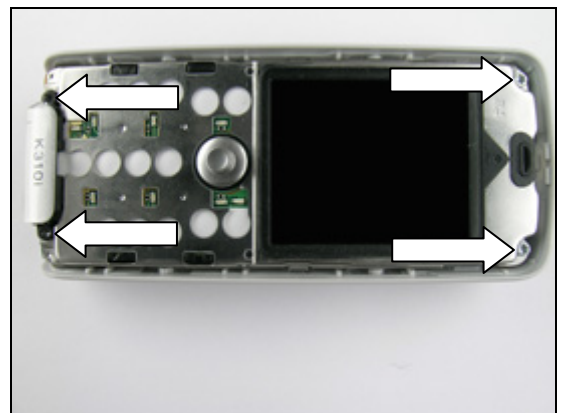
4.1.3 PBA Unit

Place the top of the *PBA unit* into the top of the *frame* (1) and then lower the bottom part (2) until the *PBA unit* rests on the inside of the *frame*.



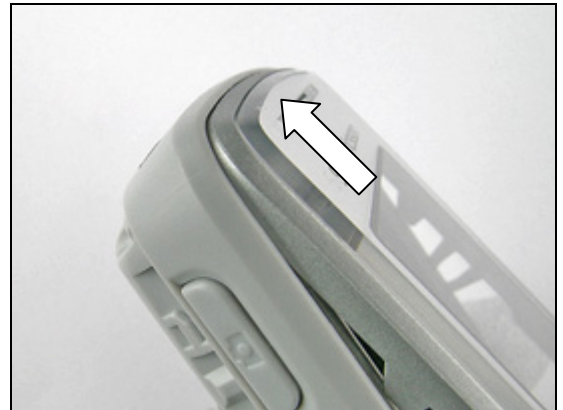
USE NEW SCREWS!

Apply **17 Ncm** when tightening two long screws at the bottom and two short screws at the top of the phone using torx bit no. 6.

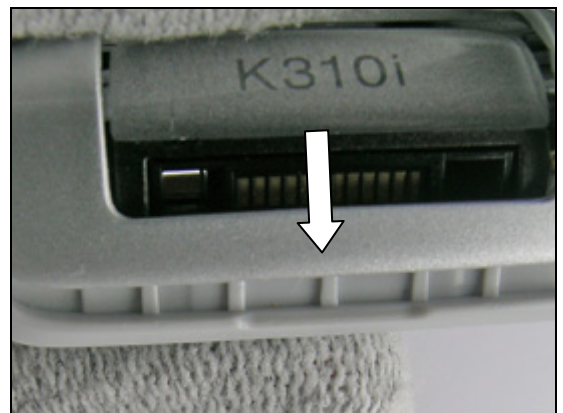


4.1.4 Front Cover assy

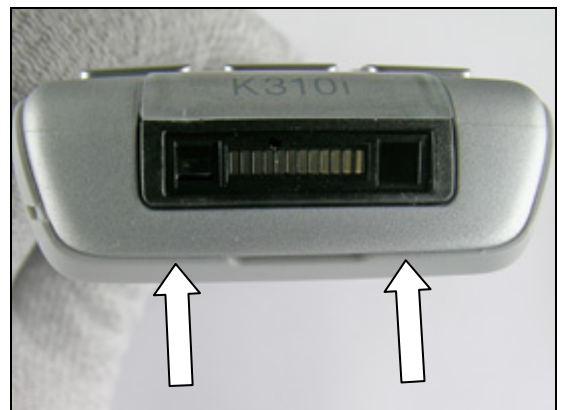
Carefully place the *front cover* at the top of the *frame*.



Start at the top and continue towards the bottom by pressing on the *front cover* to make it snap to the *frame*.

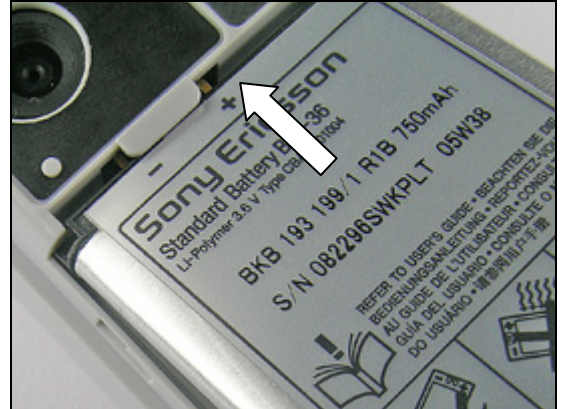


There should be no gaps between the *front cover* and the *frame*.

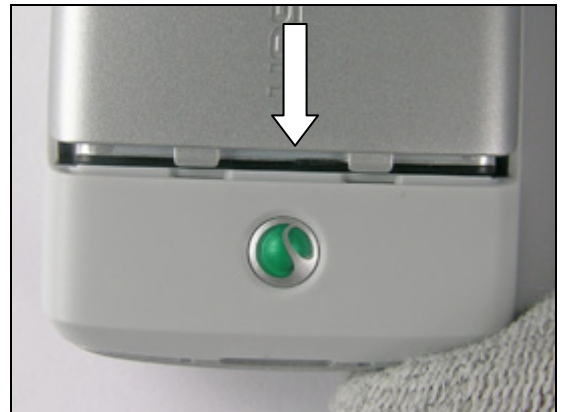


4.1.5 Battery & Battery Cover

Put the top of the *battery* against the battery connector. Press the *battery* down at the bottom of the battery compartment.



Place the *battery cover* on top of the *battery* and push towards the bottom of the phone to secure it.



There should be no gaps between the *battery cover* and the *frame*.





5 Revision history

| Rev. | Date | Changes / Comments |
|-------------|-------------|---------------------------|
| A | 2006-10-10 | First release |