

# Working Instruction, Mechanical

Applicable for J220 & J230

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# 1 Introduction

## J220



## J230



## 1.1 Equipment

### SPECIAL TOOLS

No new special tools are introduced

- NTZ 122 459 Torque screwdriver (or equivalent)
- NTZ 122 288 Torx bit no. 6
- NTZ 122 521 Flex film assembly tool
- NTZ 112 302/2 Front opening tool



### STANDARD TOOLS

Standard tools have to be locally purchased

- 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

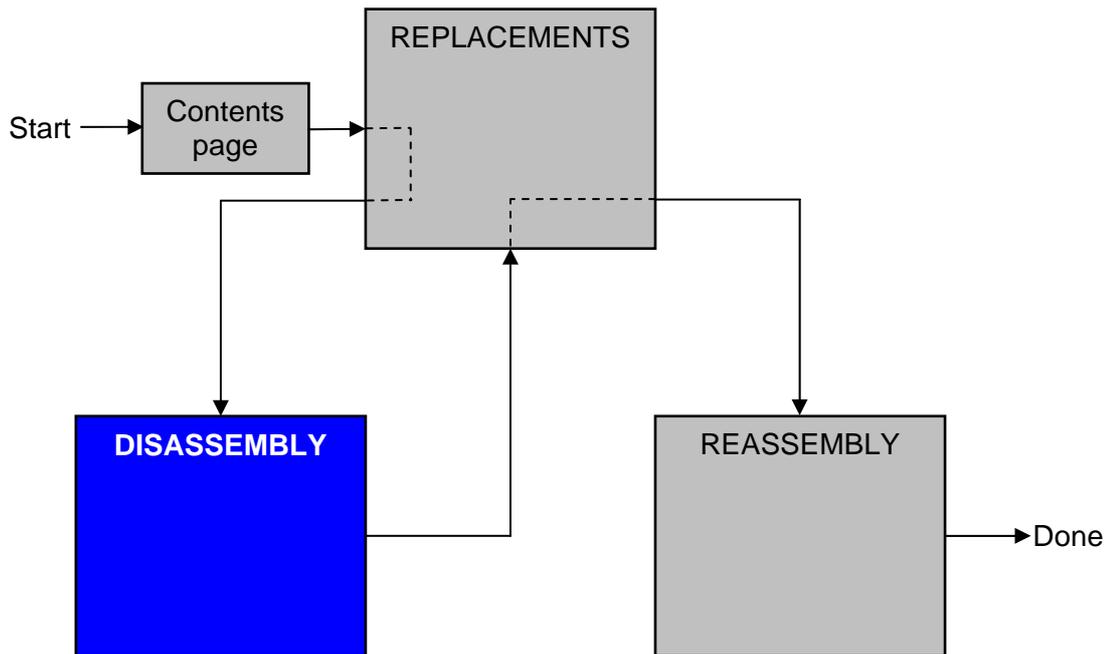


## 1.2 General cautions

- ***Switch off the phone before the disassembly is begun!***
- ***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 the 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 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 of the phone is done in the following sequence:

1. Rear Cover (a) and Battery (b)
2. Front Cover
3. Light Guide (a) and Metal Carrier (b)
4. PBA



## 2.1.1 Rear Cover & Battery

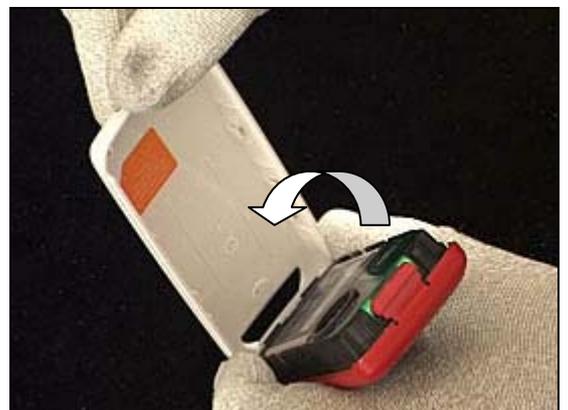
Press with your finger here ...



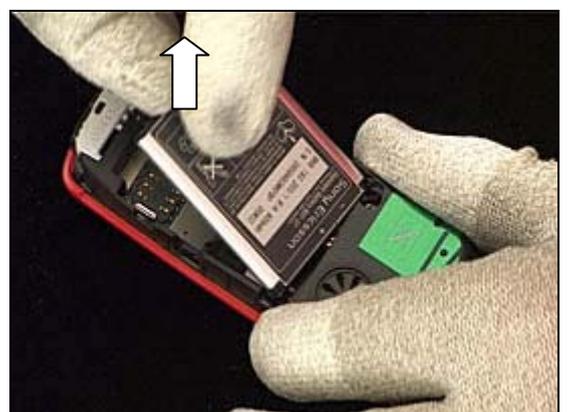
to separate the *rear cover* from the front cover ..



and open up to remove it.

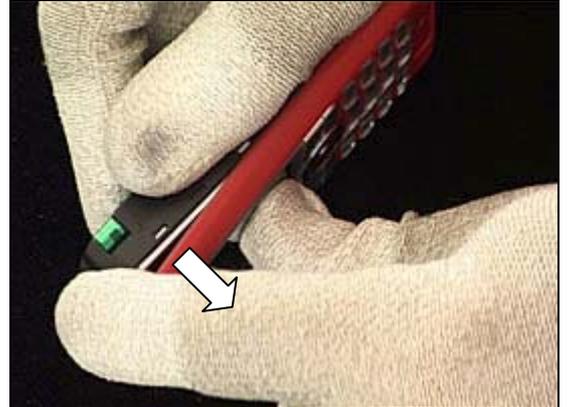


Grab the *battery* at the bottom and lift straight up to remove it.



## 2.1.2 Front Cover

Carefully bend the *front cover* away from the frame cabinet.



Do the same on the opposite side.



Unsnap the hook at the top of the *front cover* ...

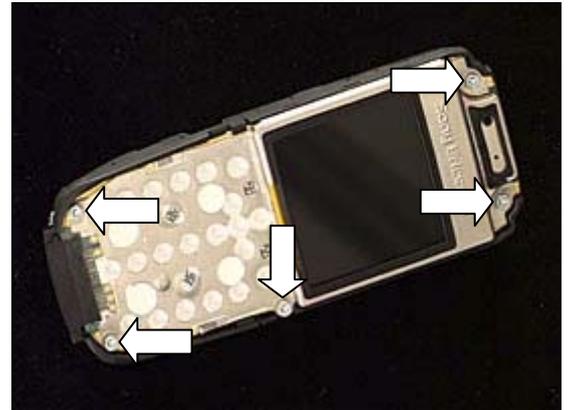


and open up to remove the *front cover*.

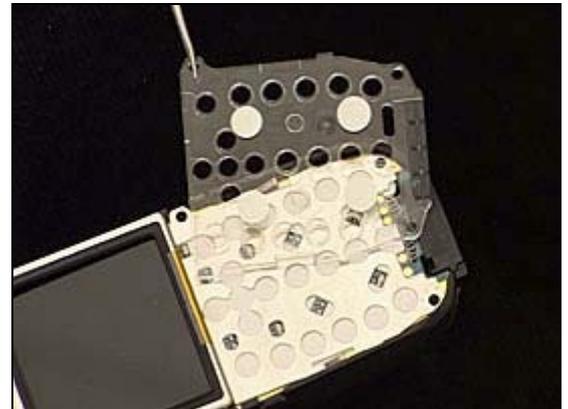


## 2.1.3 Light Guide & Metal Carrier

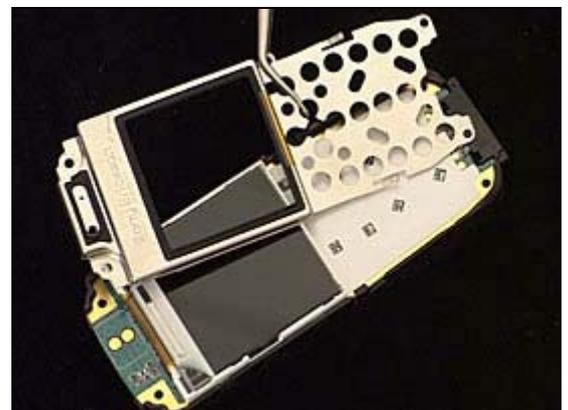
Remove the five screws by using torx bit no. 6 (T6).  
**THE SCREWS CANNOT BE REUSED!**



Remove the *light guide* ...

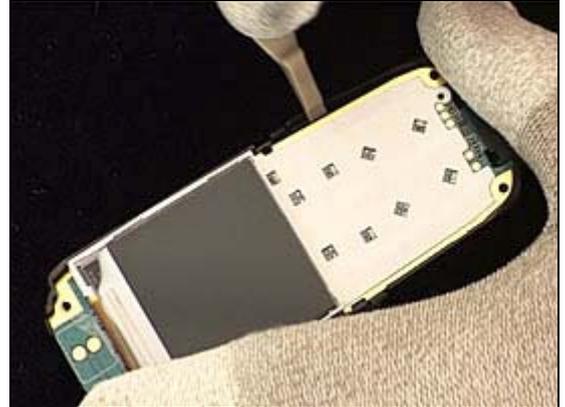


and the metal carrier.

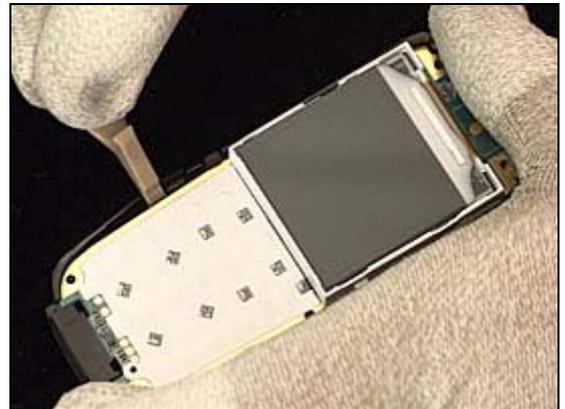


## 2.1.4 PBA

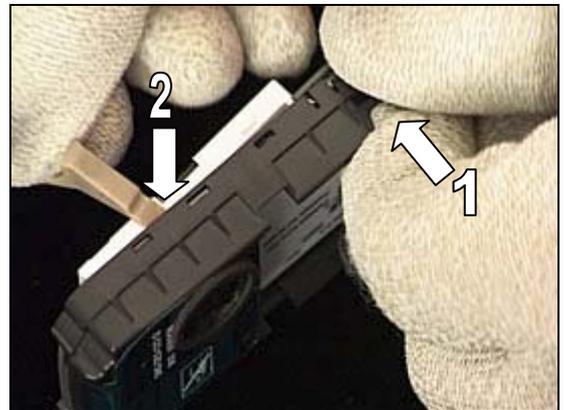
Unsnap the *PBA* from the frame cabinet by using the front opening tool in this position.



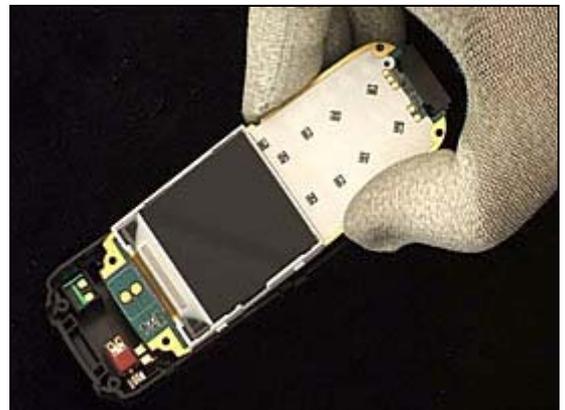
Do the same on the opposite side.



Press on the *PBA* through the opening of the frame cabinet (1) and simultaneously release the *PBA* with the front opening tool (2).



Remove the *PBA*.



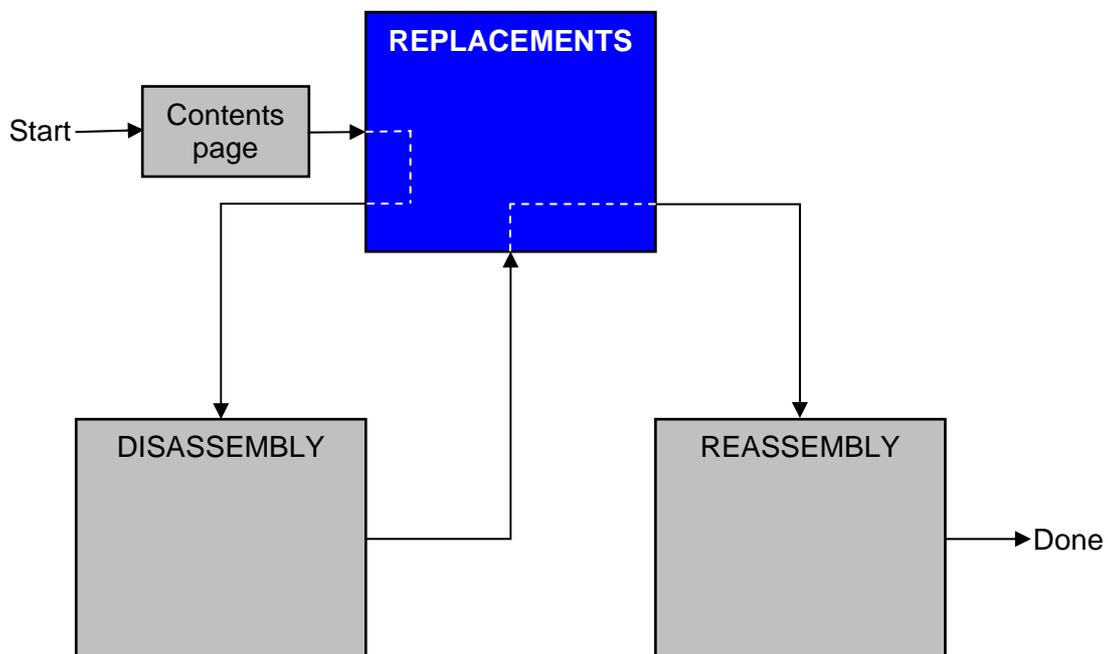
### 3 Replacements

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

Each instruction 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.

Each instruction 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 Rear Cover**

*Follow the 2.1.1 Disassembly instructions!*

Prepare the new *rear cover*.

*Follow the 4.1.4 Reassembly instructions!*

### **3.2 Front Cover**

*Follow the 2.1.1 – 2.1.2 Disassembly instructions!*

Remove the keypad as described in 3.16 *Keypad*.

Prepare the new *front cover*.

Attach a new name plate as described in 3.17 *Name Plate*.

Install the keypad as described in 3.16 *Keypad*.

*Follow the 4.1.3 – 4.1.4 Reassembly instructions!*

### **3.3 Light Guide**

*Follow the 2.1.1 – 2.1.3 Disassembly instructions!*

Prepare the new *light guide*.

*Follow the 4.1.2 – 4.1.4 Reassembly instructions!*

### **3.4 Metal Carrier**

*Follow the 2.1.1 – 2.1.3 Disassembly instructions!*

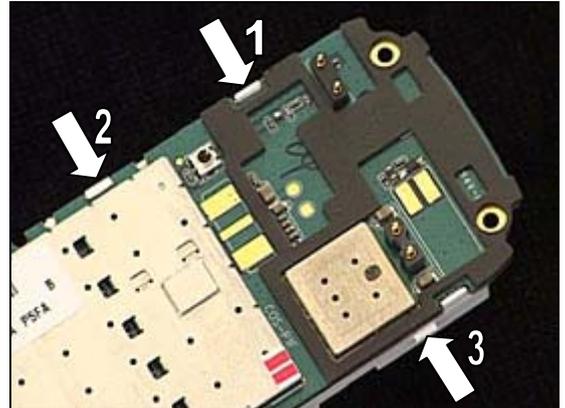
Prepare the new *metal carrier*.

*Follow the 4.1.2 – 4.1.4 Reassembly instructions!*

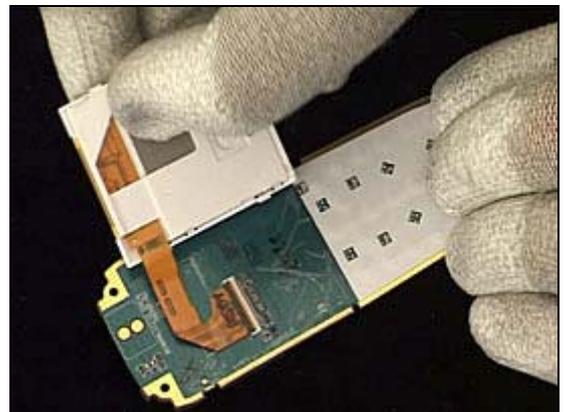
### 3.5 LCD

Follow the 2.1.1 – 2.1.4 Disassembly instructions!

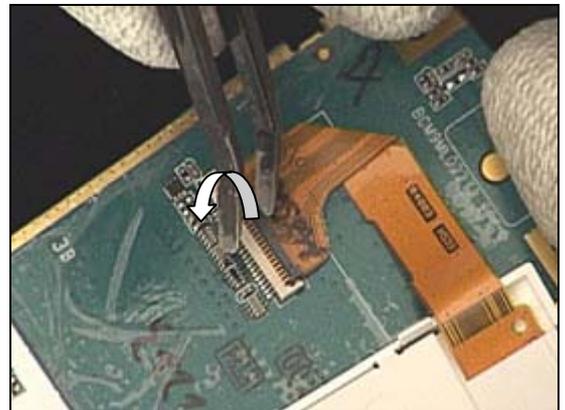
The *LCD* is snapped onto the PBA by three snap hooks. Unsnap hook no. 1 and then hook no. 2 with your fingers.



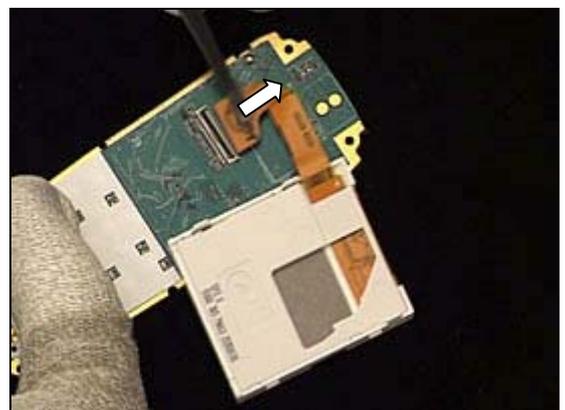
Turn the *LCD* to the right hand side.



Open up the black ZIF connector clamp ...

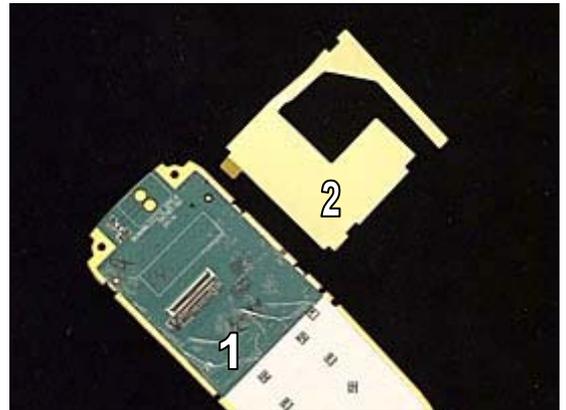


and pull the flex cable out of the ZIF connector by using the flex film assembly tool.

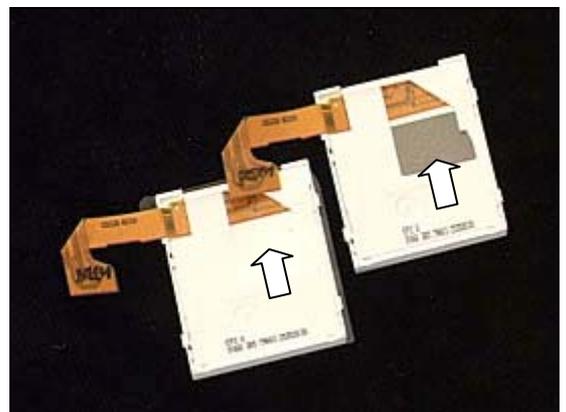


## LCD *continued*

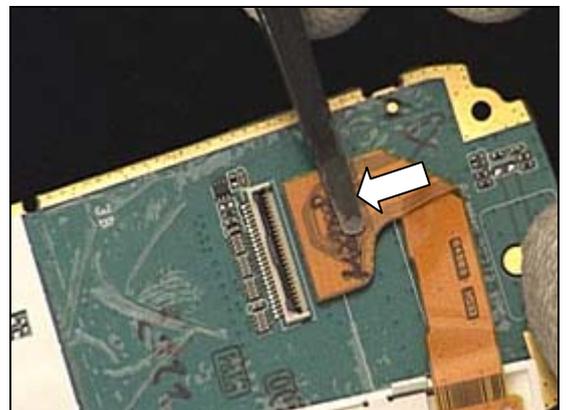
Remove the adhesive (1) from the PBA.  
Clean the PBA surface with isopropyl alcohol.  
Attach a new adhesive (2) to the PBA.



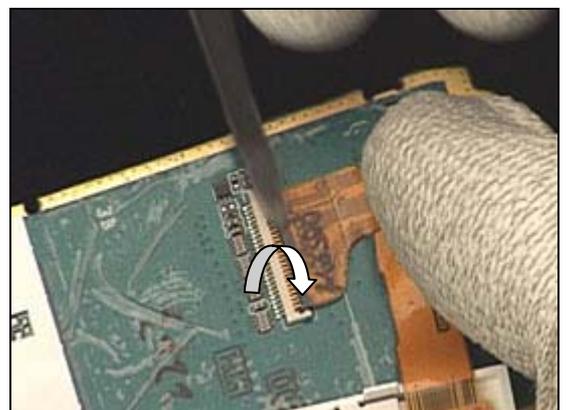
**THERE ARE TWO DIFFERENT VERSIONS OF LCD!**  
**USE THE LEFT ONE ( WHITE ) FOR THE 850 MHZ BAND!**  
**USE THE RIGHT ONE ( GREY ) FOR THE 900 MHZ BAND!**



Check that the black ZIF connector clamp still is open and then insert the flex film into the connector.

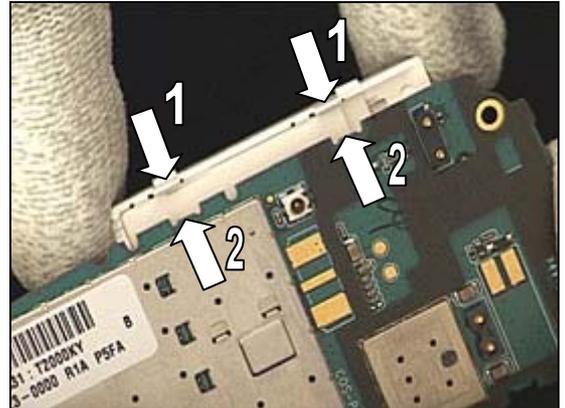


Secure the connection by turning and pressing the black clamp.

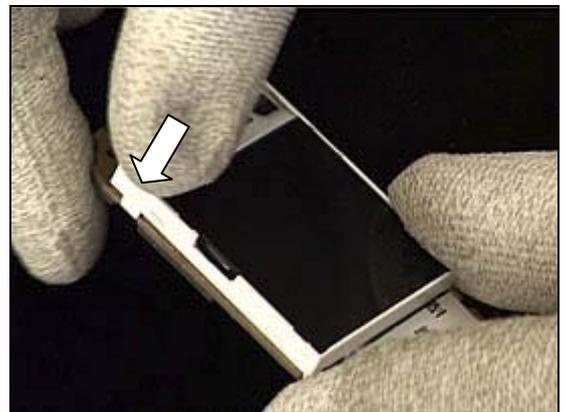


## LCD continued

Put the two snap hooks (1) on the right hand side of the LCD into the corresponding two notches (2) of the PBA.

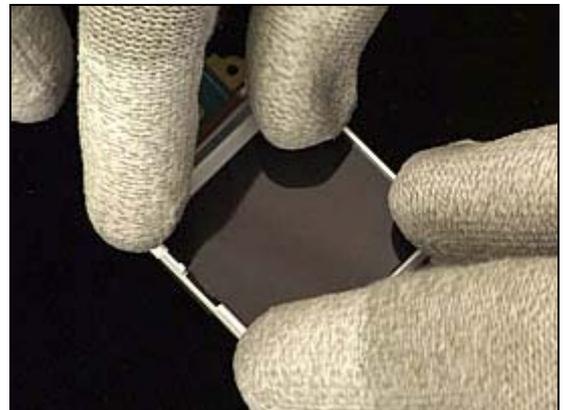


Press on the top left corner of the LCD to snap the third hook onto the PBA.



Press at these four corner spots to make the LCD attached to the adhesive on the PBA.

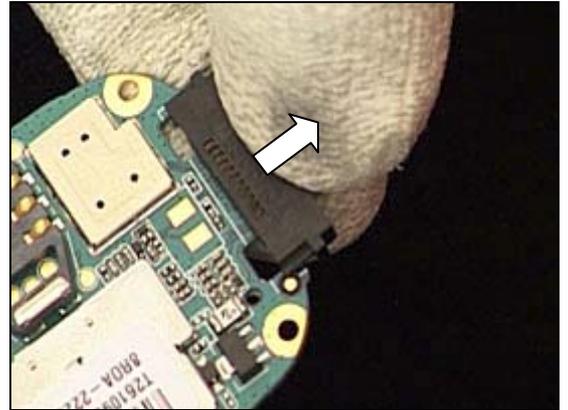
*Follow the 4.1.1 – 4.1.4 Reassembly instructions!*



## 3.6 System Connector

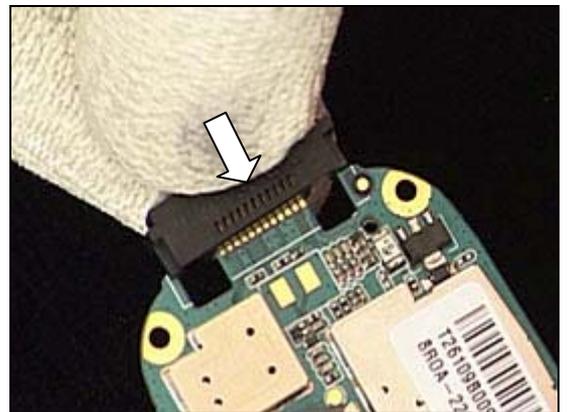
*Follow the 2.1.1 – 2.1.4 Disassembly instructions!*

Pull the *system connector* away from the PBA.



Push the *system connector* onto the PBA.

*Follow the 4.1.1 – 4.1.4 Reassembly instructions!*



### 3.7 Dome Switch Foil

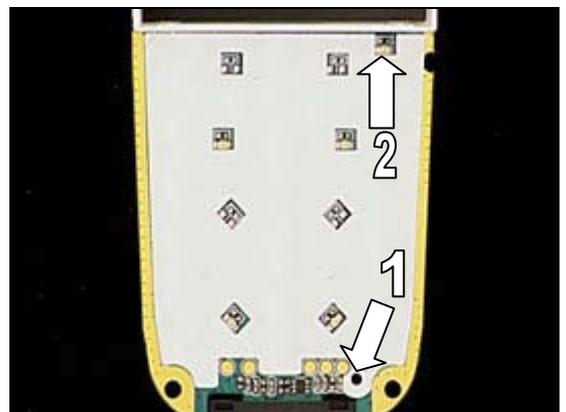
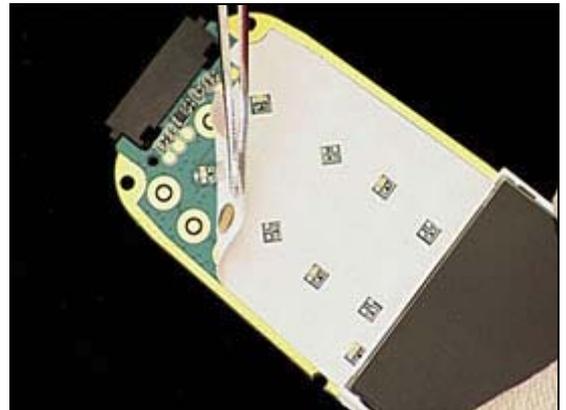
Follow the 2.1.1 – 2.1.4 Disassembly instructions!

Use the tweezers to peel off the *dome foil* from the *PBA* and clean the *PBA* surface with isopropyl alcohol.

Attach the new *dome foil* so that

1. the holes at the bottom of the *PBA* and the *dome foil* are aligned
2. the LED on the *PBA* and the square opening of the *dome foil* are aligned

Follow the 4.1.1 – 4.1.4 Reassembly instructions!

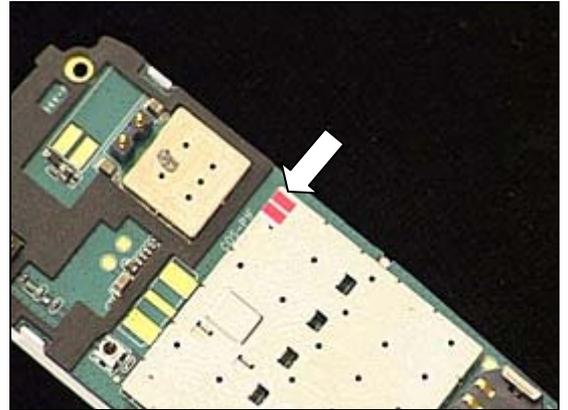


## 3.8 Liquid Intrusion Indicator

*Follow the 2.1.1 – 2.1.4 Disassembly instructions!*

Peel off the *liquid intrusion indicator*, clean the surface, and attach a new *liquid intrusion indicator*.

*Follow the 4.1.1 – 4.1.4 Reassembly instructions!*



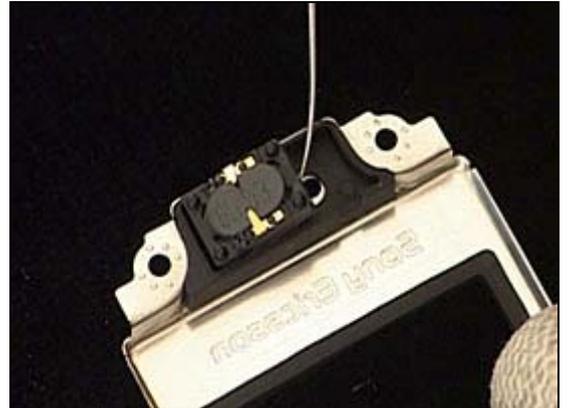
## 3.9 Earphone

*Follow the 2.1.1 – 2.1.4 Disassembly instructions!*

Use the dentist hook to raise the *earphone* out of its cavity and then remove it with the tweezers.

Use the tweezers to place the *earphone* in its proper position and press gently, without touching the contacts, until it reaches the bottom of the cavity.

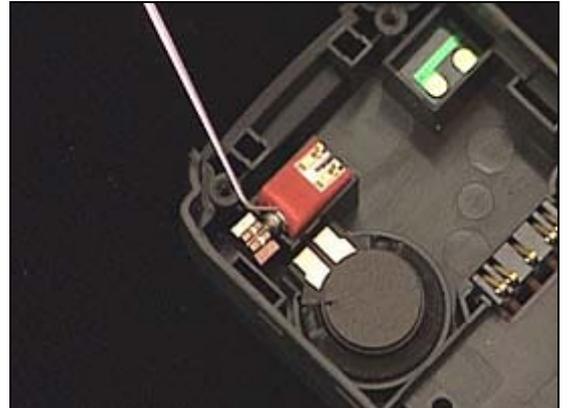
*Follow the 4.1.1 – 4.1.4 Reassembly instructions!*



## 3.10 Vibrator

*Follow the 2.1.1 – 2.1.4 Disassembly instructions!*

Use the dentist hook to raise the *vibrator* out of its cavity and then remove it with the tweezers.



Use the tweezers to place the *vibrator* in its proper position and press gently, without touching the contacts, until it reaches the bottom of the cavity.

*Follow the 4.1.1 – 4.1.4 Reassembly instructions!*



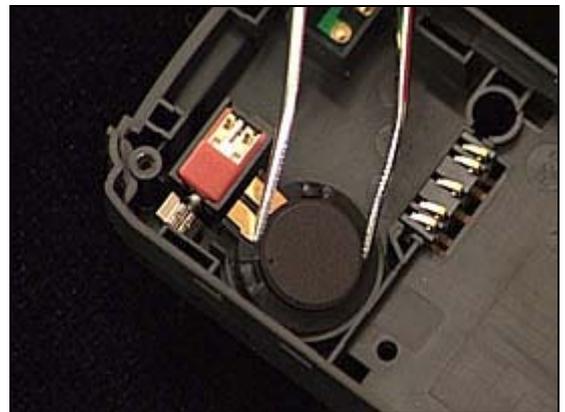
## 3.11 Loudspeaker

*Follow the 2.1.1 – 2.1.4 Disassembly instructions!*

Use the dentist hook to raise the *loudspeaker* out of its cavity and then remove it with the tweezers.

Use the tweezers to place the *loudspeaker* in its proper position and press gently, without touching the contacts, until it reaches the bottom of the cavity.

*Follow the 4.1.1 – 4.1.4 Reassembly instructions!*



## 3.12 Battery Connector

Follow the 2.1.1 – 2.1.4 Disassembly instructions!

Push with the tweezers ...



until the *battery connector* falls out of the frame cabinet.



**BE CAREFUL NOT TO DAMAGE THE CONTACTS OF THE BATTERY CONNECTOR!**

Use the tweezers to place the *battery connector* in this position.

Then press very carefully with the flat side of the guitar pick on the contacts and simultaneously press straight down with the tweezers ...



until the *battery connector* drops down into its proper position.

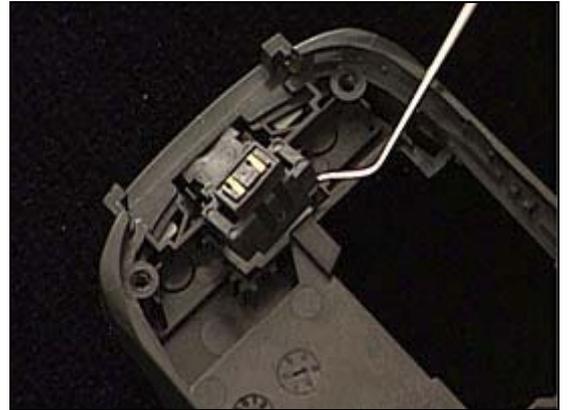
Follow the 4.1.1 – 4.1.4 Reassembly instructions!



## 3.13 Microphone

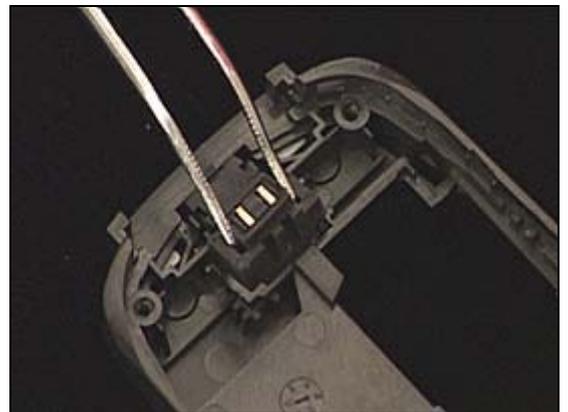
*Follow the 2.1.1 – 2.1.4 Disassembly instructions!*

Use the dentist hook to raise the *microphone* out of its cavity and then remove it with the tweezers.



Use the tweezers to place the *microphone* in its proper position and press gently, without touching the contacts, until it reaches the bottom of the cavity.

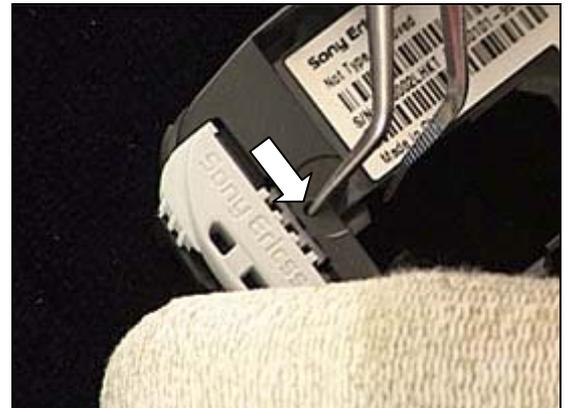
*Follow the 4.1.1 – 4.1.4 Reassembly instructions!*



## 3.14 Strap Holder

Follow the 2.1.1 Disassembly instructions!

Insert one leg of the tweezers into the hole and push ...



to release and remove the *strap holder*.



Put the *strap holder* in position and push it onto the frame cabinet ...



until it is securely fastened.

Follow the 4.1.4 Reassembly instructions!



## 3.15 Cabinet Frame

*Follow the 2.1.1 – 2.1.4 Disassembly instructions!*

Remove the parts found in *Replacements 3.10 – 3.14.*

**THERE IS ONE CABINET FRAME FOR THE 850 MHZ VERSION AND A DIFFERENT ONE FOR THE 900 MHZ VERSION!**

**THE FREQUENCY BAND IS PRINTED ON THE FRAME CABINET, 850 OR 900, IN THE POSITION INDICATED BY THE ARROW!**

Attach a new label as described in *3.18 Label.*

Reinstall the parts found in *Replacements 3.10 – 3.14.*

*Follow the 4.1.1 – 4.1.4 Reassembly instructions!*



## 3.16 Keypad

*Follow the 2.1.1 – 2.1.2 Disassembly instructions!*

Use the tweezers to remove the *keypad*.



Place the *keypad* inside the front cover and press with your fingers to attach it to the front cover.

*Follow the 4.1.3 – 4.1.4 Reassembly instructions!*



## 3.17 Name Plate

*Follow the 2.1.1 – 2.1.2 Disassembly instructions!*

Remove the keypad as described in 3.16 Keypad.

Loosen the *name plate* by pressing from the inside through the hole with the tweezers and then remove it from the front with the help of the dentist hook and/or the tweezers.

Clean the surface with isopropyl alcohol.

Attach the new *name plate* using the tweezers and your fingers.

**REMEMBER TO REMOVE THE PROTECTION FOIL FROM THE NAME PLATE!**

Install the keypad as described in 3.16 Keypad.

*Follow the 4.1.3 – 4.1.4 Reassembly instructions!*



## 3.18 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

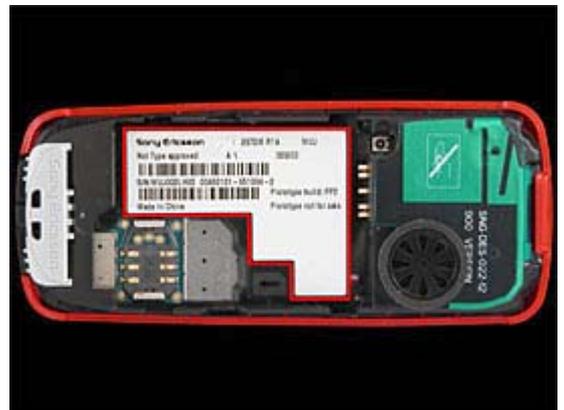
Check that the proper label format is loaded in the Zebra printer.

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.

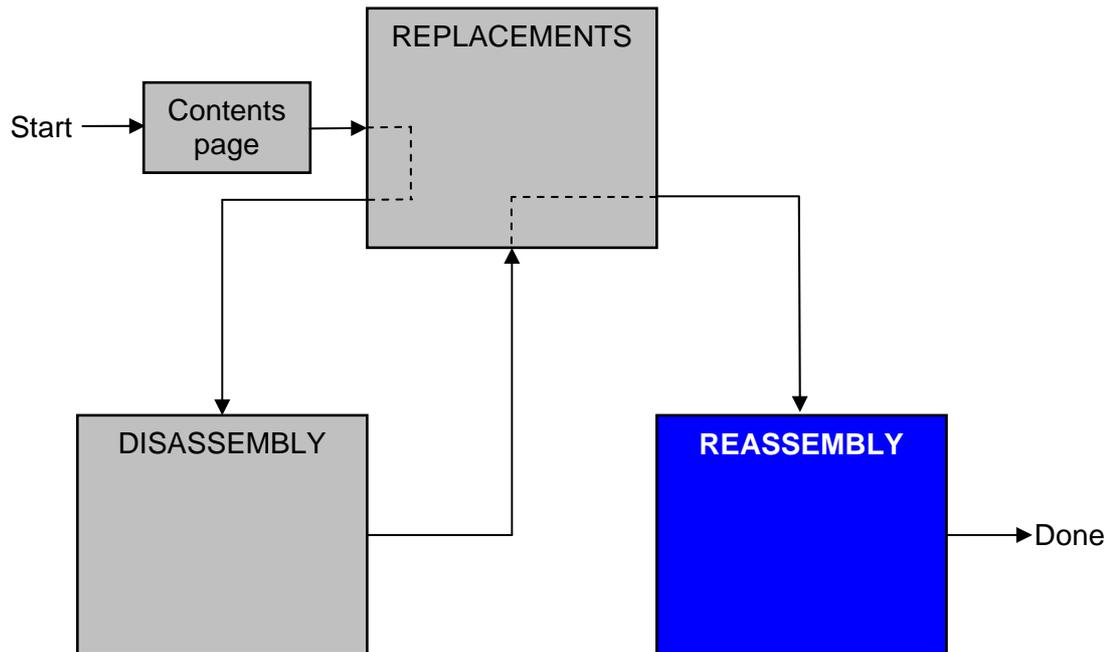
**ONE LABEL ONLY IS ALLOWED!**

*Follow the 4.1.4 Reassembly instructions!*



## 4 Reassembly

After replacing a part being listed in *Replacements*, the instruction of that section will end 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

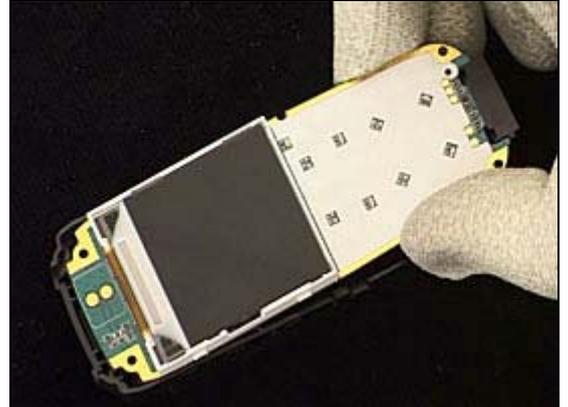
The reassembly is done in the following sequence:

1. PBA
2. Metal Carrier (a) and Light Guide (b)
3. Front Cover
4. Battery (a) and Rear Cover (b)

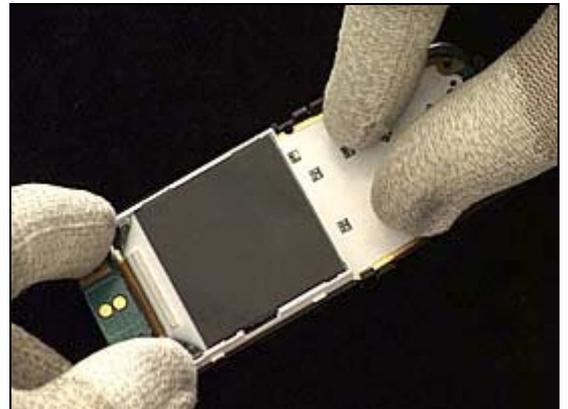


### 4.1.1 PBA

Place the *PBA* into the frame cabinet.



Press at these four spots to snap the *PBA* to the frame cabinet.

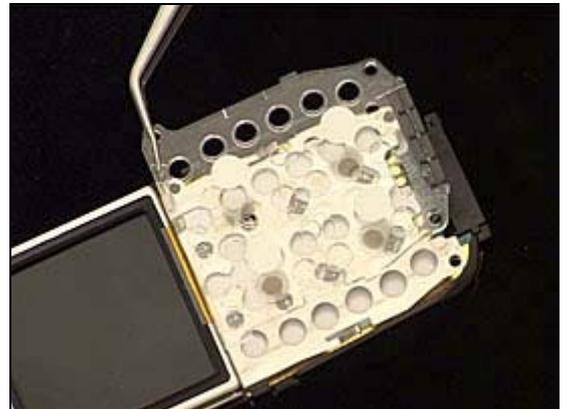


## 4.1.2 Metal Carrier & Light Guide

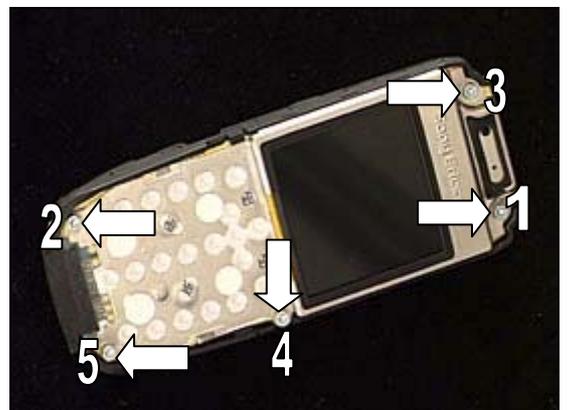
Place the *metal carrier* on top of the PBA.



Place the *light guide* on the lower part of the metal carrier.

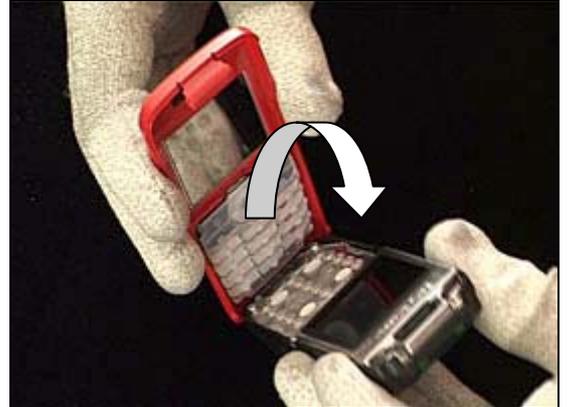


Tighten five **new** T6 screws in the order 1 - 5 by using 11 Ncm torque.



### 4.1.3 Front Cover

Position the frame cabinet into the *front cover* at the bottom and put the two parts together.



Press the *front cover* against the frame cabinet so that both sides and the top of the *front cover* are securely snapped to the frame cabinet.



#### 4.1.4 Battery & Rear Cover

Push the *battery* towards the battery connector ...



and press it down at the bottom.



Position the *rear cover* into the frame cabinet at the bottom and put the two parts together.



Press on both sides at the top until the *rear cover* is securely snapped to the frame cabinet.



## 5 Revision history

<b>Rev.</b>	<b>Date</b>	<b>Changes / Comments</b>
A	2006-03-08	Initial release