

# Working Instruction, Mechanical

Applicable for K700i/K700c

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# 1 Disassembly

#### **Tools**

- Torque screwdriver, set to 18 Ncm  $\pm$  6%. Bits 6, NTZ 112 288
- Flex film assembly tool NTZ 112 521
- Blunt pair of tweezers, pair of tweezers
- Screwdriver, width 3 mm
- K700i/Front opening tool NTZ 112 540
- Front opening tool NTZ 112 302/2
- Dentist hook

#### **Equipment**

- ESD-gloves (cotton gloves)
- ESD-wristband

#### Instruction

- Keep all contact surfaces clean of dirt and hand-grease
- Removing Front Cover and Antenna Cover is very hard, due to that you do not know how
  much force that is needed unsnapping these parts. It also requires much technique
  removing these two parts. Training is very important, both by performing training in
  Learning Community and by hands on practice.

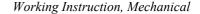
#### Phone views



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	Step-by-Step Instructions	
1	NOTE! Turn off the phone.  Remove the battery cover with your fingers. Slide the battery cover in the arrow direction.	
2	Remove the battery from the phone with your fingers. Use the tab (1) and lift the battery up.	SUNI STREETSON  When you have seen  For SIL PROFILE STREET  FOR SIL PROFILE  FOR SIL PROFIL
3	Open the system connector plug with your fingers.	





4 Separating front from frame:

#### 1A-1B hooks:

Put the phone on a flat, clean surface. First release hooks 1A and 1B close to the system connector. Use a screwdriver, width 3 mm.

#### NOTE!

ESD gloves must not be used when separating snap fit hooks.

Be careful when using the screwdriver, hooks are tight fitted and you may easily slip and injure your fingers. Also be careful not to scratch the frame and damage front hooks with the screwdriver.

Put Place the screwdriver in the slot (1B). Press directly down **hard** to release the snap fit hook. Do the same on the opposite side. The phone should be placed on a flat, clean surface during the releasing of 1A -1B hooks.

#### NOTE!

Do not use any tool or your nail to separate front from frame, front will easily get scratched. The only way to separate front from frame is to release hooks according to the instruction.



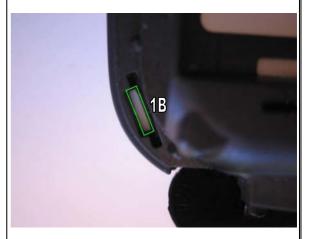
The screwdriver should be in 90 degrees angle when releasing the bottom front snap fit hooks.

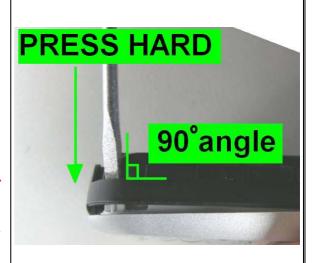
#### NOTE!

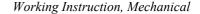
When removing the front cover the first time, it is hard to predict the amount of force needed. **Usually it requires more force then you think.** Pushing of 1A & 1B is the hardest part!

When the two bottom hooks are released a small gap is seen between front and frame.











#### 1C-1H hooks:

NOTE! Now use the K700 Front opening tool and **NOT** the screwdriver for snaphooks 1C-1H.



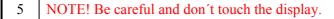
Angle the new K700i/Front opening tool, as the picture shows, when releasing the hooks. Place the K700i/Front opening tool (in correct angle), close to the frame and press down to release the snap fit hooks. Begin with snap hooks marked (3). **No** hard force is needed.

Whereupon hooks are released the gap between front and frame increases.

Continue to release hooks (1E/F resp 1G/H). NOTE! You might need to repeat releasing the hooks a few times as they easily get back to original location.

The frame is firmly clamped on to the top of the phone and cannot be dislodged easily. Gently lift the front cover upwards to separate front and frame. The two top hooks will be released with a "break" sound, this sound is normal. As long as you remove the front gently there will be no damage on the front or its snap hooks.

The keypad might fall out. If not remove it with your fingers.



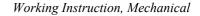
Remove the 4 screws.

#### NOTE

Removed screws cannot be reused and must be scrapped.

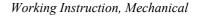








# **Step-by-Step Instructions** Remove the joystick button with your fingers. NOTE! The joystick may be tight fitted to the switch. Use front opening tool to separate the metal carrier from the frame. Two frame snap fit hooks, located in the middle section, shall be released. Place the opening tool close to the metal carrier and press down until the hook moves to the frame wall (1). Angle the opening tool, as the picture shows (2), until the metal carrier is released. Do the same on the opposite side of the metal carrier. Remove the metal carrier. The system connector plug will most likely fall out when releasing the metal carrier (3). If not remove the plug.





#### 8 NOTE!

Do not touch the display glass with your fingers.

Lift the display with your fingers.

#### NOTE!

Be careful not to damage the display flexfilm with the tweezers.

Remove the connector tape with a blunt pair of tweezers.

#### NOTE!

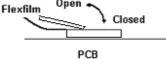
Removed tape cannot be reused and must be scrapped.

#### NOTE

Be careful not to damage the FPC connector clamp with the tweezers.

Open the FPC connector with a pair of tweezers.

# FPC Connector



#### NOTE!

Be careful with the display flexfilm.

Remove the display assembly from the FPC connector with the flex film assembly tool.







## **Step-by-Step Instructions** 9 Open the keyboard foil assembly FPC connector with a pair of tweezers. **FPC Connector** Open 4 Flexfilm Closed PCB Remove the keyboard foil assembly from the FPC connector. 10 NOTE! Be very careful not to damage the FPC connector clamp when opening it. The clamp may fall off and then the connector must be replaced (electrical repair). Open the two FPC connectors, in arrows direction, with a blunt pair of tweezers. The dark (brown/black) part of the connector is the moveable part (clamp). **FPC Connector** Closed Flexfilm PCB Remove the flexfilm from both FPC connectors by using the flex film assembly tool.





#### 11 NOTE!

PCB and frame are connected by camera flexfilm

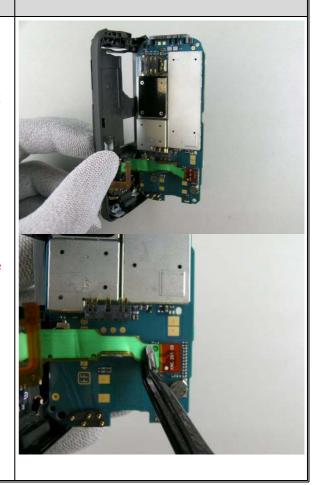
Release the PCB from the frame by overturning the frame as the picture shows.

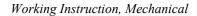
#### NOTE!

Be careful with the tweezers and do not damage the board-to-board connector.

Disconnect the camera flexfilm board-to-board connector by lifting upwards with the flex film assembly tool.

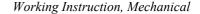
Front, frame and PCB disassembled.







	Step-by-Step Instructions	
12	Antenna Cover removal:	
	NOTE! The antenna cover should only be removed if there is a need of replacing the antenna cover itself, the frame or any of the following components located underneath the antenna cover: Volume and camera keys Internet access key Antenna flex Flexfilm volume and camera key Flexfilm camera light assembly Camera (for verifying that the camera is fitted properly)  There is no need to remove the external antenna connector plug.  Use a dentist hook or a flat screwdriver to remove the antenna cover. As long as you do not scratch the antenna cover or frame, you can use the tool that you feel most comfortable with. If you use a sharp tool be careful not to damage the snap hook.  When removing the antenna cover the first time it is hard to predict the amount of force needed. Usually, as when removing the front cover, it requires more force then you think.  If the phone is already disassembled, and there is a need for removing the antenna cover snap hooks from the inside.	





Put your thumb under the edge of the camera ring. When pressing on the snap hooks use your thumb to pull off the antenna cover. It is very tight fitted and requires some force to pull up.

Take the tool you have chosen (flat screwdriver or dentist hook) and press **hard** on the snap hook as the green arrow shows.

#### NOTE!

Do not press between the frame and snap hook. As the red arrow shows. You will only damage the phone, not release the snap hook.

#### Be careful not to scratch frame or antenna cover.

At the same time pull with your thumb under the antenna ring. Press with the tool and pull with your thumb until you feel that the snap hook get released with a click sound.

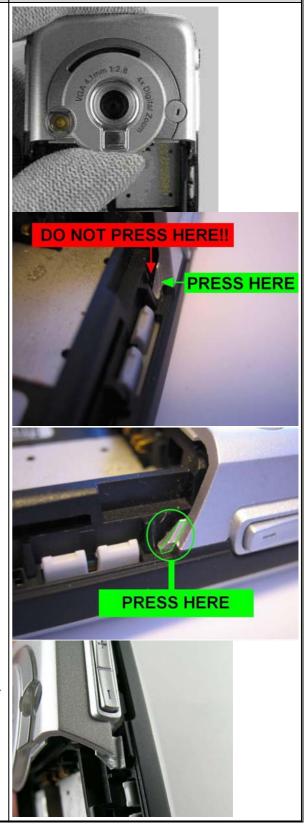
Green marking shows area where to press.

Be prepared for a sudden release of the Antenna Cover. Most force is required pulling up the cover with your thumb.

Unlocked snap hook. Do the same on the opposite side of the antenna cover. Lift the cover up to remove the antenna cover.

#### NOTE!

The volume/camera key and internet access key will most likely fall out when the antenna cover is removed.





# 2 Reassembly

#### **Tools**

- Torque screwdriver, set to 18 Ncm  $\pm$  6%. Bits 6, NTZ 112 288
- Flex film assembly tool NTZ 112 521
- Blunt pair of tweezers, pair of tweezers
- Screwdriver, width 3 mm
- Front opening tool NTZ 112 302/2
- Dentist hook

#### **Equipment**

- ESD-gloves (cotton gloves)
- ESD-wristband

#### Instruction

Keep all contact surfaces clean of dirt and hand-grease



# **Step-by-Step Instructions** Place the PCB between camera flexfilm (1 board-to-board connector) and volume/camera flexfilm (2). Connect the camera flexfilm board-to-board connector with your fingers. Fold the internet access key flexfilm to the right before you place the PCB into the frame like the picture shows (3).



#### NOTE!

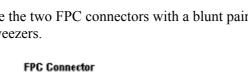
Press the PCB down to make it easier when assemble the flexfilm.

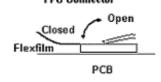
Assemble the two flexfilms on both FPC connectors using the flex film assembly tool. Assure that flexfilms are pushed all the way into the connector.

#### NOTE!

Be very careful not to damage the FPC connector clamp when closing it. The clamp may fall off and then the connector must be replaced (electrical repair).

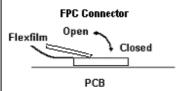
Close the two FPC connectors with a blunt pair of tweezers.







Assemble the keyboard foil flexfilm into the FPC connector. Use flex film assembly tool. Close the FPC connector with a blunt pair of tweezers.

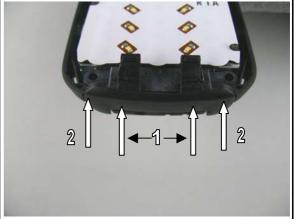


Press down the keyboard foil close to the system connector.

4 Assemble the system connector plug. Align the two tabs (1). Press on the plug as the picture shows (2) to assure that the system connector plug is placed in the recess.

Assure that system connector plug is properly fitted close to the frame before assembling metal carrier and front.





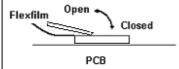


#### 5 NOTE!

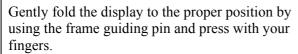
Do not touch the display glass with your fingers.

Assemble the display flexfilm into the FPC connector. Use the flex film assembly tool. Close the FPC connector with a blunt pair of tweezers.

#### **FPC Connector**

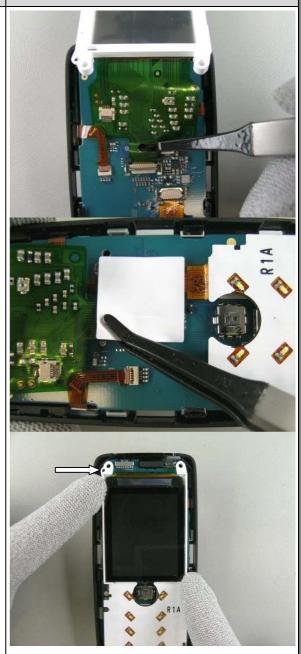


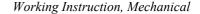
Assemble a new connector tape over the display and keyboard foil connectors.



#### NOTE!

If you have assembled a new display: Remember to remove the display protection foil with a pair of tweezers before assembling the metal carrier.







Place the metal carrier over the frame assembly. Assure that system connector plug latches are under the frame (1).

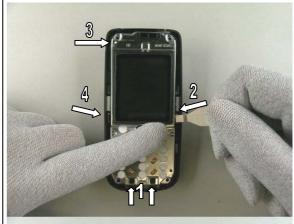
Place the front opening tool close to the metal carrier (2) and press down until the frame hook fastens the metal carrier with a "click" sound. Use the white display-guiding pin (3 close to screw opening) to get the metal carrier in the correct position.

Do the same on the opposite side of the metal carrier (4).

Press on the phone, as the picture shows, to assure that the hooks are properly fitted into the metal carrier.

#### NOTE!

Another "click" sound might be heard.





Press the joystick assembly onto the joystick switch pin.

#### NOTE!

If you have assembled a new joystick: Remember to assemble the black/grey joystick dust gasket, see picture below.



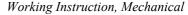
Assemble new screws in the order 1-4.

#### NOTE!

Use torque screwdriver set to 18 Ncm.

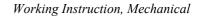








# **Step-by-Step Instructions** 9 Place the keyboard into the front. NOTE! Assure that the front glass is clean. Use air blow equipment. NOTE! If you have assembled a new front: Remember to remove the protection foil inside the front, with a pair of tweezers, before assembling. Be careful not to scratch the glass with the tweezers. Place the frame assembly over the front, make 10 sure that the keypad is correctly fitted in the frontcover and press on all sides where front 1616 10 snap fit hooks are located (1A-1J). Click sounds are heard when hooks fastens into the frame. NOTE! If Antenna Cover already is mounted continue with battery and battery cover assembly - go to picture 13 and 14. 10 11 NOTE! If the antenna cover has been disassembled proceed with picture 11 and 12 for assembly. Place the Volume/Camera key (1) and Internet access key (2) into the antenna cover. 12 Place the phone, in correct position, into the top of the antenna cover. NOTE! Be careful as keys easily fall out from its





	Step-by-Step Instructions	
	Hold the antenna cover top and phone together and lift the phone.	
	Turn the phone around.	
	NOTE! Be careful not to scratch the plastics if using a dentist hook / screwdriver.  If needed use a dentist hook or a screwedriver, to press the antenna cover snap fit hook in place, and then press the antenna cover down with your forefinger. If possible use only your fingers to avoid damaging the Antenna Cover.  Do the same on the opposite side.	
13	Place the battery into the frame cavity. Start at battery connector area.	SIGNAL CRICKINGS  MARCH AND ARREST  AND STAFF AND ARREST  AND STAFF AND ARREST  AND STAFF AND ARREST  AND STAFF AND ARREST  AN
14	Slide the battery cover, in the arrow direction, onto the phone.	

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# 3 Replacement of Mechanical Parts

#### **Equipment**

- ESD-gloves (cotton gloves)
- ESD-wristband

#### Instruction

Keep all contact surfaces clean of dirt and hand-grease

# 3.1 System Connector

Replacement of System Connector: Check end of Disassembly and Reassembly headings. Draw attention to Note comments.

### 3.2 Antenna Cover Complete

Replacement of antenna cover complete: Check end of Disassembly and Reassembly headings. Draw attention to Note comments.

# 3.3 Volume/Camera Keys & Internet Access Key

Replacement of volume/camera keys & Internet access key: Check end of Disassembly and Reassembly headings. Draw attention to Note comments.

# **3.4** Front Complete

Replacement of front complete: Check Disassembly and Reassembly headings and draw attention to Note comments.

# 3.5 Display Assembly

Replacement of display assembly: Check Disassembly and Reassembly headings and draw attention to Note comments.

# 3.6 Keyboard Foil Assembly

Replacement of keyboard foil assembly: Check Disassembly and Reassembly headings and draw attention to Note comments.

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#### 3.7 Front Label

#### **Tools**

- Dentist hook
- Blunt pair of tweezers

#### **Step-by-Step Instructions**

#### 1 NOTE!

Be careful not to scratch the front with the dentist hook.

- 1. Gently remove the old front label with a dentist hook like the picture shows.
- 2. Remove adhesive remains with isopropyl alcohol.
- 3. Assemble a new label with a blunt pair of tweezers or with your fingers.



# 3.8 Side Key Label

#### **Tools**

- Dentist hook
- Blunt pair of tweezers

#### **Step-by-Step Instructions**

#### 1 NOTE!

Be careful not to scratch the antenna cover with the dentist hook.

- 1. Gently remove the old side key label with a dentist hook like the picture shows.
- 2. Remove adhesive remains with isopropyl alcohol.
- 3. Assemble a new label with a blunt pair of tweezers or with your fingers.



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# 3.9 External Antenna Connector Plug

#### **Tools**

Dentist hook

# Step-by-Step Instructions NOTE! Be careful not to scratch the antenna cover with the dentist hook. 1. Gently remove the old external antenna connector plug by lifting it up with the dentist hook. Use the small hole in the plug. 2. Assemble new plug with a blunt pair of tweezers or with your fingers. Rotate the plug to follow the circle of the camera ring.

#### 3.10 Metal Carrier

#### **Tools**

• Blunt pair of tweezers

#### Instruction

• Disassemble the phone as described in 1 Disassembly

	Step-by-Step Instructions	
1	Assemble new Conductive gasket (1) and Display driver pad (2) as the picture shows. Use a blunt pair of tweezers or your fingers.  The Metal Carrier is delivered as a sparepart without these two components. For full functionality of the phone, it is very important to mount them according to the instruction.	

Assemble the phone as described in 2 Reassembly

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# 3.11 Joystick Button

	Step-by-Step Instructions	
1	The Joystick Button is delivered as spare part without the Dust Gasket. Mount the black/grey joystick dust gasket as shown in the picture	



# 3.12 Antenna Flex

#### **Tools**

• Pair of tweezers

#### Instruction

• Disassemble the phone, including the antenna cover, as described in 1 Disassembly

	Step-by-Step Instructions	
1	NOTE! Notice the antenna flexfilm position before removal.  Remove the antenna flexfilm from the frame with a pair of tweezers or with your fingers.  Remove adhesive remains with isopropyl alcohol.	
2	Peel off the protection foil from the antenna contact pads. Locate the antenna flex into the frame opening and fasten it on the frame (1).	
	Remove the rest of the protection foil, fold the flexfilm and fasten it on the frame with your thumbs.	



# 3.13 Flexfilm Volume and Camera Key

#### **Tools**

Dentist hook

#### Instruction

• Disassemble the phone, including the antenna cover, as described in *I Disassembly* 

	Step-by-Step Instructions	
1	NOTE! Notice the flexfilm position before removal.  Remove the volume and camera key flexfilm from the frame with a dentist hook.  Remove adhesive remains with isopropyl alcohol.	
2	Put the flexfilm through the opening in the frame (1).	
	Peel off the protection foil and place the domefoil close to the frame wall (2). Fasten the domefoil inside the support edges (3).	

• Assemble the phone as described in 2 Reassembly

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# 3.14 Flexfilm Camera Light Assembly

#### **Tools**

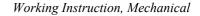
• Dentist hook

#### Instruction

• Disassemble the phone, including the antenna cover, as described in 1 Disassembly

	Step-by-Step Instructions	
1	NOTE! Notice the flexfilm position before removal.	
	Remove the camera light assembly flexfilm from the frame with a dentist hook.	
	Continue to remove the flexfilm with your fingers.	
	Remove adhesive remains with isopropyl alcohol.	

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# **Step-by-Step Instructions** Put the flexfilm through the opening in the frame. Peel off the protection foil and place the domefoil close to the frame wall (1). Fasten the domefoil inside the support edges (2) and around the guiding pin (3). Peel off the light protection foil and fasten the light in its cavity (4).



# 3.15 On/Off Button

#### **Tools**

Pair of tweezers

#### Instruction

• Disassemble the phone as described in 1 Disassembly

	Step-by-Step Instructions	
1	<ol> <li>Remove the old On/Off button with a pair of tweezers.</li> <li>Assemble a new On/Off button in the frame. Use the tweezers and press the On/Off button down into the bottom of the cavity (1).</li> </ol>	HO1 HO1 4A18



#### 3.16 IRDA Window

#### Instruction

• Disassemble the phone as described in 1 Disassembly

#### **Step-by-Step Instructions**

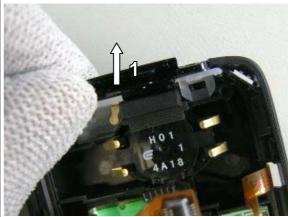
1 NOTE!

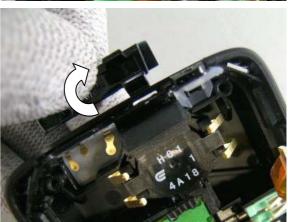
Notice the irda window position before removal.

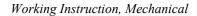
If irda window shall be replaced; be careful not to touch the display glass with your fingers.

Remove the irda window. Lift it up a little (1).

Overturn the irda window as the picture shows. Continue to overturn irda window in 180 degrees angle to release it. A "click" sound will be heard.









	Step-by-Step Instructions	
2	Press the irda window latch into the frame opening.	
	Fold the irda window up in arrow direction.	HOT
	Lift the irda window up a little, locate it in the frame recess to the left and finally press the irda window down into the bottom of the recess.	HO11



# 3.17 Dual Speaker

#### **Tools**

• Screwdriver

#### Instruction

• Disassemble the phone as described in 1 Disassembly

	Step-by-Step Instructions	
1	Remove the dual speaker. Use a screwdriver and start like the picture shows. Gently bend with the screwdriver against the frame under the speaker contact spring, until the speaker come loose.	H01 F01 4418
2	NOTE! If necessary – remove speaker gasket remains from the frame speaker cavity.  Remove adhesive remains with isopropyl alcohol.  Peel off the protection foil and locate the speaker into the frame cavity. Press on the speaker to fasten it properly.	H O T T



#### 3.18 Vibrator

#### **Tools**

Pair of tweezers

#### Instruction

• Disassemble the phone as described in 1 Disassembly

	Step-by-Step Instructions	
1	Gently fold away the Camera light flexfilm (1). Remove the vibrator with a pair of tweezers.	SIVV LOH
2	NOTE! Do not touch the vibrator contact springs or damage the flywheel.  Gently fold away the Camera light flexfilm. Assemble the vibrator in the frame cavity by using the tweezers. Press the vibrator to the bottom of the cavity.	8 L V L O H



# 3.19 Microphone Assembly

#### **Tools**

• Pair of tweezers

#### Instruction

• Disassemble the phone as described in 1 Disassembly

	Step-by-Step Instructions	
1	1. Remove the old microphone with a pair of tweezers. Lift the microphone up by using the microphone grommet tap (1).	
	NOTE! Do not touch the contact springs with your fingers or the tweezers.	7
	2. Assemble the new microphone using the tweezers. Press the microphone to the bottom of the cavity.	



# 3.20 Camera Part (VGA) and Camera Conductive Gasket

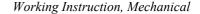
#### **Tools**

Pair of tweezers

#### Instruction

• Disassemble the phone, including the antenna cover, as described in 1 Disassembly

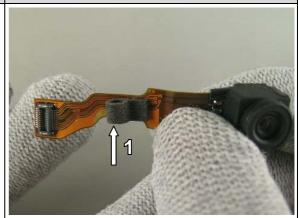
	Step-by-Step Instructions	
1	NOTE! Be careful not to touch vibrator and microphone contact springs or vibrator flywheel.  Remove the camera assembly by holding the flexfilm with your left thumb and forefinger. Gently lift the camera up.	H01 #01 4A18





Take the camera assembly and assemble the camera conductive gasket as the picture shows (1).

The Camera Part (VGA) is delivered as spare Part without the conductive gasket mounted. For full functionlity of the phone it is very important that the gasket is mounted according to instruction.

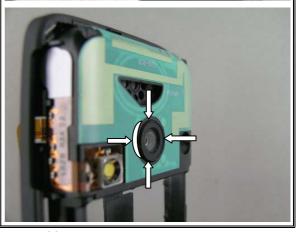


Place the camera assembly into the cavity and lift the frame up.

Press the camera assembly to the bottom of the cavity with your fingers.



Turn the frame assembly around and check that the camera grommet edge is visible all around the frame opening (arrows).

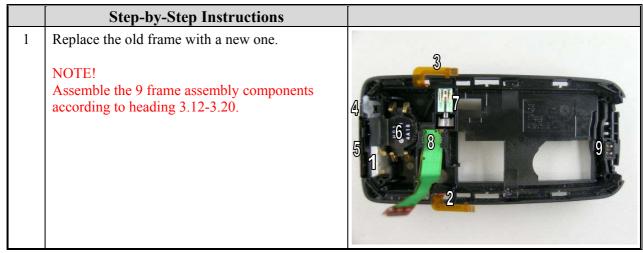




# 3.21 Frame Assembly

#### Instruction

• Disassemble the phone as described in 1 Disassembly





#### 4 Label

#### **Tools**

- Hot air flow solder station
- Blunt pair of tweezers
- Zebra printer and computer

#### Instruction

This instruction should be used when you are intending to exchange an old label or assemble a new one.

#### NOTE!

Notice the position of the label before removal. Only one label is allowed on the frame.

- 1. Read the old label and/or write the information into the Labelmake program.
- 2. Heat up the label with a hot air flow solder station, if needed.
- 3. Carefully remove the label, make sure that all residues are gone. If necessary clean the surface with Isopropyl alcohol. Do not scratch the frame.
- 4. Check that the right label format is loaded in the Zebra printer.
- 5. Write a new label by using the program Labelmake. Check that the printing is ok.
- 6. Take the new label and place it onto the frame according to *Fig 1*. Make sure that the label is placed in the right position.



*Fig 1.* 

3/00021-1/FEA 209 544/83 A 36(37)



# 5 Revision History

	Rev.	Date	Changes / Comments
l	A	2004-05-27	Initial release.