

SERVICE MANUAL

Level 1&2

NOKIA

8600

LUNA

RM-164



Transceiver characteristics:

Band:

EGSM: Quad-band 850/900/1800/1900MHz

Display:

LCD: 5.08cm QVGA (2.0") (240x320 pixel); 16.7M colors

Camera:

Camera: 2.0 Megapixel SMIA85, 4x digital zoom

Operating System:

Connections:

Wireless: Bluetooth

Connector: Micro USB Connector

Memory:

Transceiver with BP-5M Li-Ion battery pack

Talk time	Standby	Note
up to 3.7h	6 to 10days	Depends on network parameters

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1. CHANGE HISTORY

Status	Version No.	Date	Comments
Draft	0.1	04.May.2007	Initial draft
Approved	1.0	31.May.2007	Approval
Approved	2.0	11.Jun.2007	Exploded view & Spare Parts overview updated

The purpose of this document is to help NOKIA service levels 1 and 2 workshop technicians to carry out service to NOKIA products. This Service Manual is to be used only by authorized NOKIA service suppliers, and the content of it is confidential. Please note that NOKIA provides also other guidance documents (e.g. Service Bulletins) for service suppliers, follow these regularly and comply with the given instructions.

While every endeavor has been made to ensure the accuracy of this document, some errors may exist. If you find any errors or if you have further suggestions, please notify NOKIA using the address below:

CMO Operation & Logistics
Training and Vendor Development
Multimedia Creation & Support
<mailto:Service.Manual@nokia.com>

Please keep in mind also that this documentation is continuously being updated and modified, so watch always out for the newest version.

2. COPYRIGHT

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IMPORTANT

This document is intended for use by qualified service personnel only.

3. WARNINGS AND CAUTIONS

Warnings and Cautions

Please refer to the phone's user guide for instructions relating to operation, care and maintenance including important safety information. Note also the following:

Warnings:

1. CARE MUST BE TAKEN ON INSTALLATION IN VEHICLES FITTED WITH ELECTRONIC ENGINE MANAGEMENT SYSTEMS AND ANTI-SKID BRAKING SYSTEMS. UNDER CERTAIN FAULT CONDITIONS, EMITTED RF ENERGY CAN AFFECT THEIR OPERATION. IF NECESSARY, CONSULT THE VEHICLE DEALER/MANUFACTURER TO DETERMINE THE IMMUNITY OF VEHICLE ELECTRONIC SYSTEMS TO RF ENERGY.
2. THE HANDPORTABLE TELEPHONE MUST NOT BE OPERATED IN AREAS LIKELY TO CONTAIN POTENTIALLY EXPLOSIVE ATMOSPHERES, EG PETROL STATIONS (SERVICE STATIONS), BLASTING AREAS ETC.
3. OPERATION OF ANY RADIO TRANSMITTING EQUIPMENT, INCLUDING CELLULAR TELEPHONES, MAY INTERFERE WITH THE FUNCTIONALITY OF INADEQUATELY PROTECTED MEDICAL DEVICES. CONSULT A PHYSICIAN OR THE MANUFACTURER OF THE MEDICAL DEVICE IF YOU HAVE ANY QUESTIONS. OTHER ELECTRONIC EQUIPMENT MAY ALSO BE SUBJECT TO INTERFERENCE.

Cautions:

1. Servicing and alignment must be undertaken by qualified personnel only.
2. Ensure all work is carried out at an anti-static workstation and that an anti-static wrist strap is worn.
3. Use only approved components as specified in the parts list.
4. Ensure all components, modules screws and insulators are correctly re-fitted after servicing and alignment.
5. Ensure all cables and wires are repositioned correctly.

4. ESD PROTECTION

Nokia requires that service points have sufficient ESD protection (against static electricity) when servicing the phone.

Any product of which the covers are removed must be handled with ESD protection. The SIM card can be replaced without ESD protection if the product is otherwise ready for use.

To replace the covers ESD protection must be applied.

All electronic parts of the product are susceptible to ESD. Resistors, too, can be damaged by static electricity discharge.

All ESD sensitive parts must be packed in metallized protective bags during shipping and handling outside any ESD Protected Area (EPA).

Every repair action involving opening the product or handling the product components must be done under ESD protection.

ESD protected spare part packages MUST NOT be opened/closed out of an ESD Protected Area.

For more information and local requirements about ESD protection and ESD Protected Area, contact your local Nokia After Market Services representative.



5. CARE AND MAINTENANCE

This product is of superior design and craftsmanship and should be treated with care. The suggestions below will help you to fulfil any warranty obligations and to enjoy this product for many years.

- Keep the phone and all its parts and accessories out of the reach of small children.
- Keep the phone dry. Precipitation, humidity and all types of liquids or moisture can contain minerals that will corrode electronic circuits.
- Do not use or store the phone in dusty, dirty areas. Its moving parts can be damaged.
- Do not store the phone in hot areas. High temperatures can shorten the life of electronic devices, damage batteries, and warp or melt certain plastics.
- Do not store the phone in cold areas. When it warms up (to its normal temperature), moisture can form inside, which may damage electronic circuit boards.
- Do not drop, knock or shake the phone. Rough handling can break internal circuit boards.
- Do not use harsh chemicals, cleaning solvents, or strong detergents to clean the phone.
- Do not paint the phone. Paint can clog the moving parts and prevent proper operation.
- Use only the supplied or an approved replacement antenna. Unauthorised antennas, modifications or attachments could damage the phone and may violate regulations governing radio devices.

All of the above suggestions apply equally to the product, battery, charger or any accessory.

6. BATTERY INFORMATION

Note: A new battery's full performance is achieved only after two or three complete charge and discharge cycles! The battery can be charged and discharged hundreds of times but it will eventually wear out. When the operating time (talk-time and standby time) is noticeably shorter than normal, it is time to buy a new battery. Use only batteries approved by the phone manufacturer and recharge the battery only with the chargers approved by the manufacturer.

Unplug the charger when not in use. Do not leave the battery connected to a charger for longer than a week, since overcharging may shorten its lifetime.

If left unused a fully charged battery will discharge itself over time. Temperature extremes can affect the ability of your battery to charge.

For good operation times with Ni-Cd/NiMh batteries, discharge the battery from time to time by leaving the product switched on until it turns itself off (or by using the battery discharge facility of any approved accessory available for the product).

Do not attempt to discharge the battery by any other means. Use the battery only for its intended purpose. Never use any charger or battery which is damaged.

Do not short-circuit the battery. Accidental short-circuiting can occur when a metallic object (coin, clip or pen) causes direct connection of the + and - terminals of the battery (metal strips on the battery) for example when you carry a spare battery in your pocket or purse. Short-circuiting the terminals may damage the battery or the connecting object.

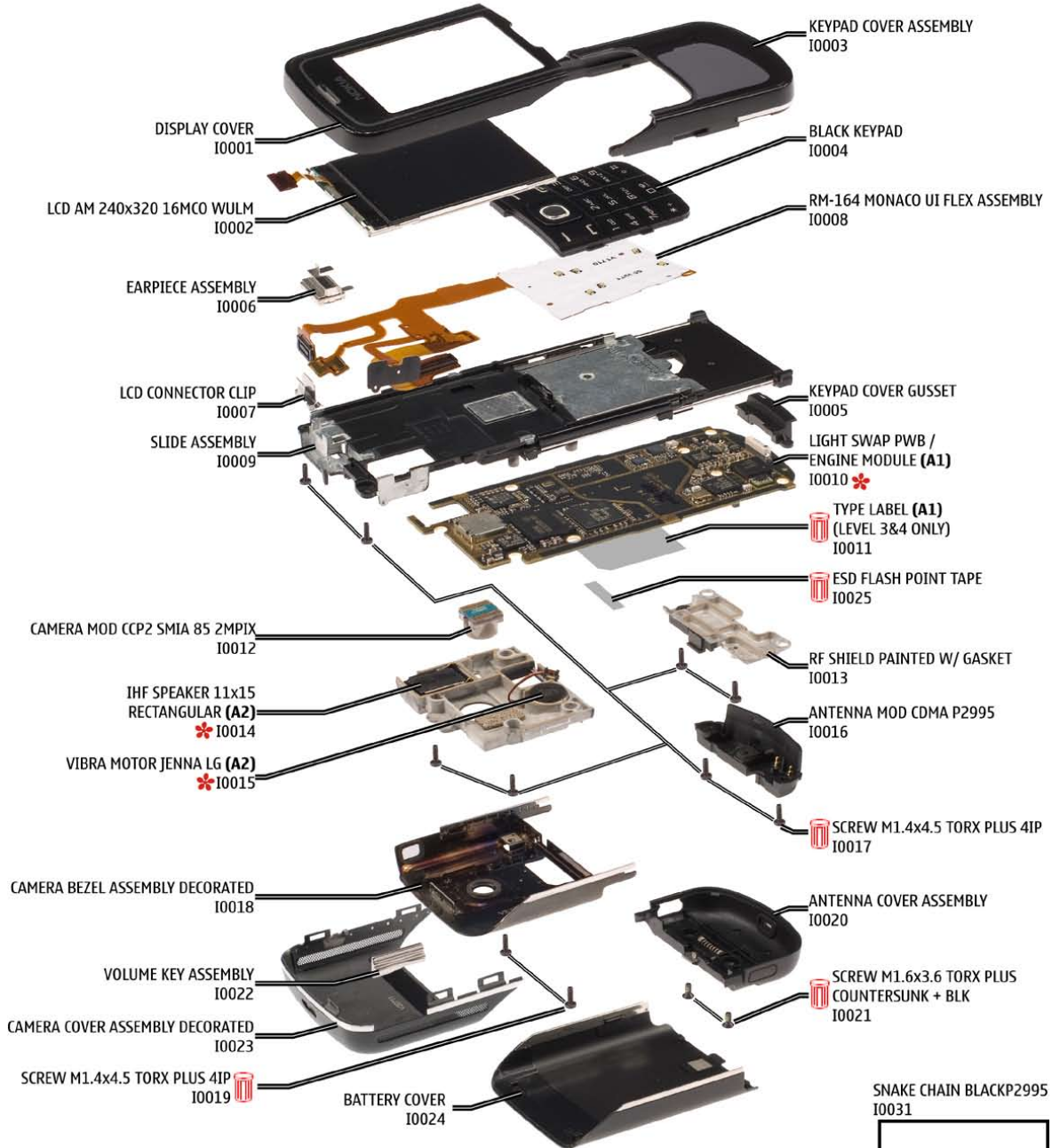
Leaving the battery in hot or cold places, such as in a closed car in summer or winter conditions, will reduce the capacity and lifetime of the battery. Always try to keep the battery between 15°C and 25°C (59°F and 77°F). A phone with a hot or cold battery may temporarily not work, even when the battery is fully charged. Batteries' performance is particularly limited in temperatures well below freezing.

Do not dispose batteries in a fire! Dispose of batteries according to local regulations (e.g. recycling). Do not dispose as household waste.

7. EXPLODED VIEW

See corresponding ITEM/CIRCUIT REF in the Spare Parts Service Bulletins on NOL.

8600 LUNA RM-164 EXPLODED VIEW

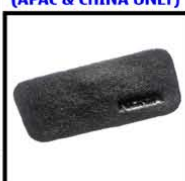


AD-55 ADAPTER
USB 2.5mm
AV ANALOG AUDIO
I0026



Ver. 2.0

CL-10 CLEANING CLOTH
8600 LUNA CHINA
I0027
(APAC & CHINA ONLY)



CP-229 BLACK CARRY
POUCH 8600 LUNA CHINA
I0028
(APAC & CHINA ONLY)



CP-230 STRAP 8600
LUNA CHINA P2995
I0029
(APAC & CHINA ONLY)



CP-211 POUCH W/ CLOTH
I0030



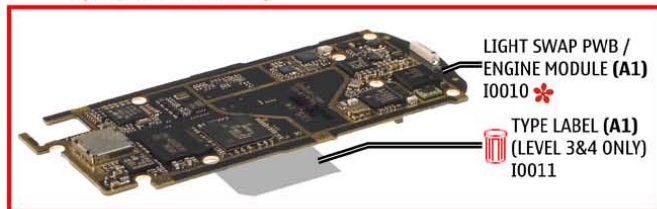
= These parts can not be reused after removal.

* = only available as assembly

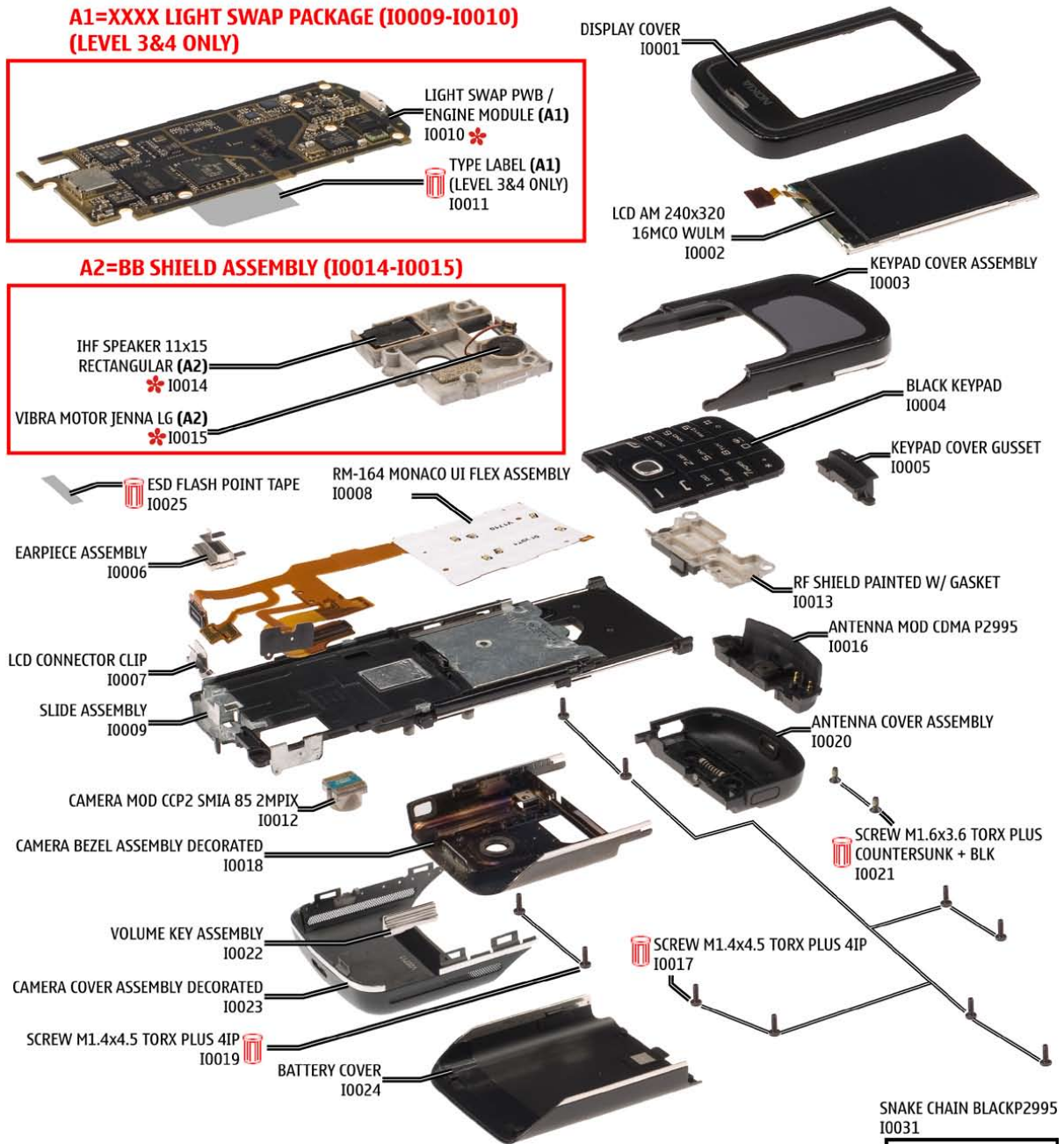
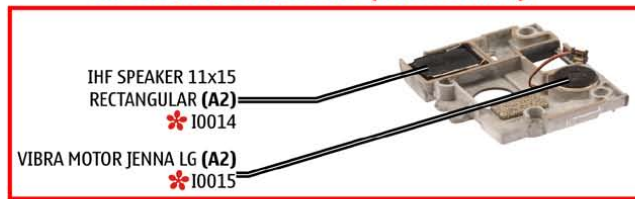
8. SPARE PARTS OVERVIEW

8600 LUNA RM-164 SPARE PARTS OVERVIEW

**A1=XXXX LIGHT SWAP PACKAGE (I0009-I0010)
(LEVEL 3&4 ONLY)**



A2=BB SHIELD ASSEMBLY (I0014-I0015)



AD-55 ADAPTER
USB 2.5mm
AV ANALOG AUDIO
I0026



CL-10 CLEANING CLOTH
8600 LUNA CHINA
I0027
(APAC & CHINA ONLY)



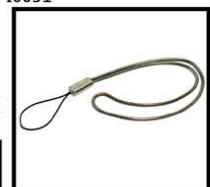
CP-229 BLACK CARRY
POUCH 8600 LUNA CHINA
I0028
(APAC & CHINA ONLY)



CP-230 STRAP 8600
LUNA CHINA P2995
I0029
(APAC & CHINA ONLY)



CP-211 POUCH W/ CLOTH
I0030



= These parts can not be reused after removal.

= only available as assembly

Ver. 2.0

9. HANDLING WASTE / RECYCLING IN NOKIA REPAIR SERVICE

Please refer to the document

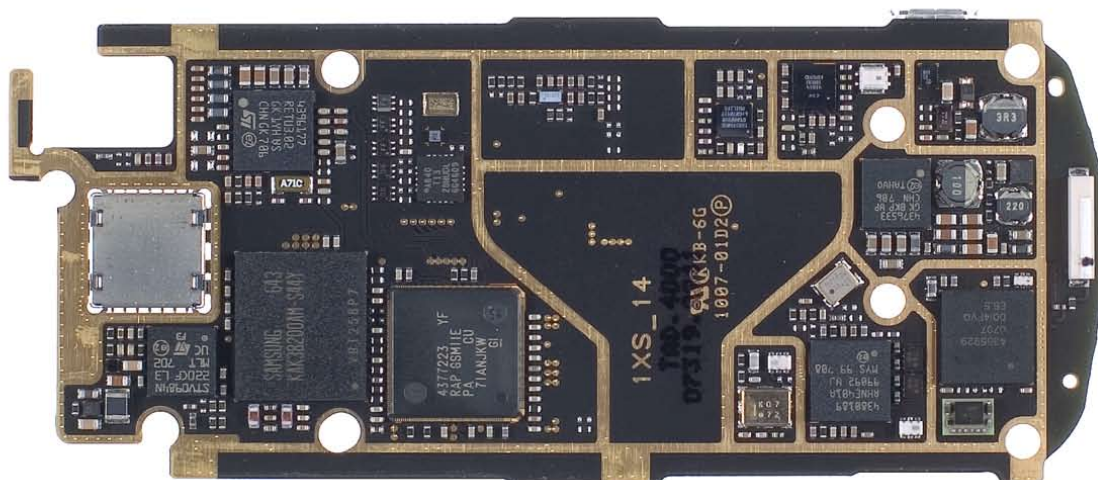
“Handling Waste in NOKIA Repair Service”

on your local delivery server e.g. NOL.

10.LEVEL 2 SOLDER COMPONENTS

8600 Luna RM-164 Level 2 solder components

Solder components only for LEVEL 2



Ver. 1.0

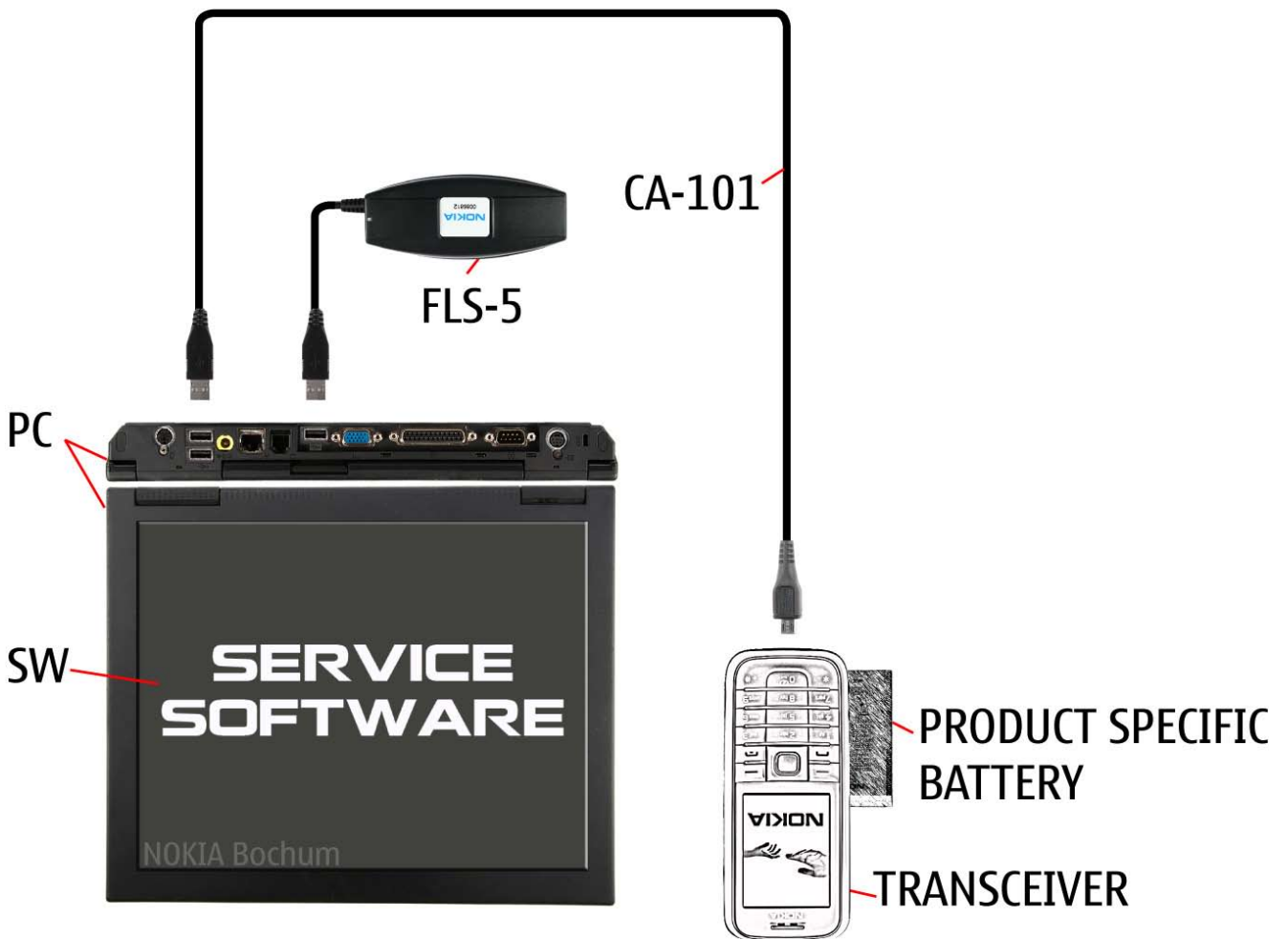
11.SERVICE DEVICES

 <p>FLS-5</p> <p>FLS-5 incl. ACF-8, Driver and User Guide Dongle and flash device incorporated into one package, developed specifically for POS use.</p>	 <p>ACF-8 Universal Power Supply is used to power FLS-4S.</p>	 <p>AC-6E</p> <p>Travel Charger AC-6 Small and lightweight charger for fast charging of your phone battery.</p>
 <p>CA-101 100cm</p> <p>CA-101 Service Cable to connect the PC with the mini USB connector.</p>	 <p>SS-45</p> <p>SS-45 Camera removal tool. One side is for disassembly, the other side for assembly.</p>	 <p>RJ-167</p> <p>RJ-167 Soldering Jig</p>
 <p>BP-5M</p> <p>Internal Battery BP-5M Inserted under the back cover, this Li-Ion battery provides power in a lightweight package.</p>	 <p>Lead-free Solder Wire Mandatory for lead-free products (Level 2 only).</p>	 <p>0772040 NMP Standard Toolkit (V2) For more informations refer to the Service Bulletin (SB-011) on NOKIA Online. Supplier or manufacturer contacts for tool re-order can be found in “Recommended service equipment” document on NOKIA Online.</p>

12.SW-UPDATE

Flash Concept – (Point of Sales)

To use FLS-5 Flash Dongle you have to follow the user guide inside the sales package. Please check always for the latest version of flash software, which is available on [NOKIA Online](#).



13. DISASSEMBLY INSTRUCTION



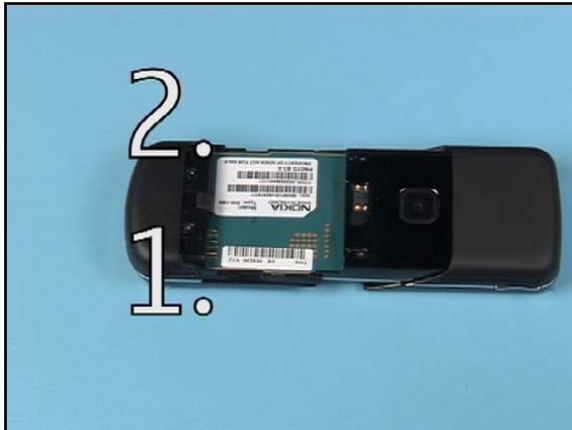
1. Nokia 8600 disassembly.



2. You will need the Nokia Standard Toolkit version 2. Also refer to the General Mechanical Guideline Video for additional hints about the tools and component handling.



3. Unlock and remove the BATTERY COVER.



4. Unscrew these 2 Torx Plus size 6 screws in the order shown and remove them.



5. Gently pry open the clips of the ANTENNA COVER ASSEMBLY with the SRT-6 and remove it.



6. The KEYPAD COVER ASSEMBLY can be shifted down and removed now.



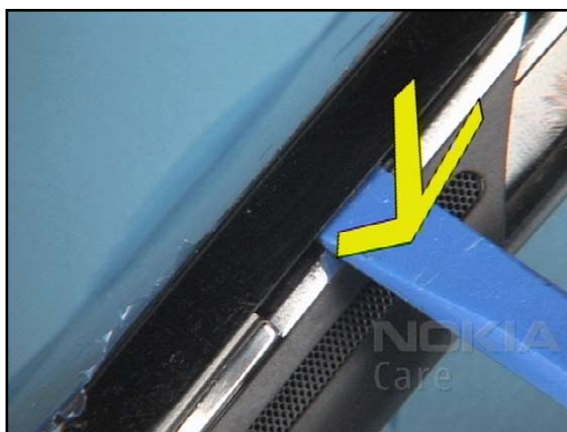
7. Carefully lift up and bend the BLACK KEYPAD.



8. Now it can be removed easily.



9. This BLACK KEYPAD can be reused if the adhesive stays on the keypad. Otherwise it must be renewed when reassembling.



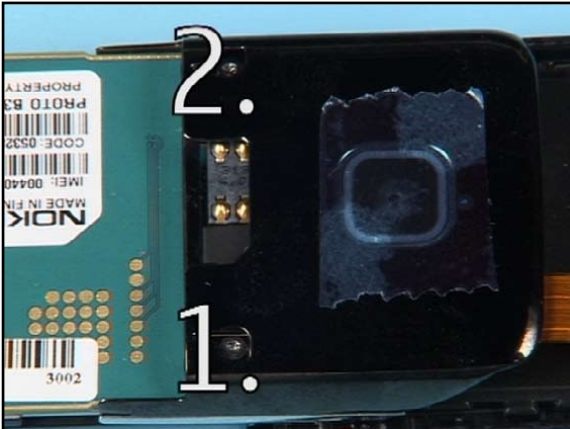
10. Gently push open the clips of the CAMERA COVER ASSEMBLY DECORATED with the SRT-6. Note: The material of the DISPLAY COVER is very delicate and can be scratched easily.



11. Flip over the CAMERA COVER ASSEMBLY DECORATED in order to release the clips on the opposite side. The cover can be removed now.



12. Remove the VOLUME KEY ASSEMBLY.



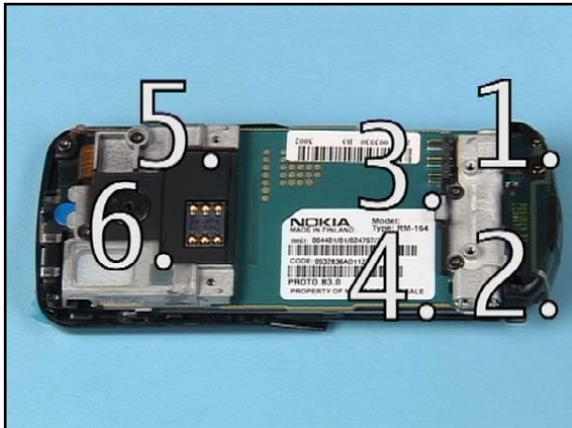
13. Unscrew these Torx Plus size 4 screws in the order shown.



14. Discard these screws. Do not use them again.



15. Slide the CAMERA BEZEL into the direction shown and remove it.



16. Unscrew these six Torx Plus size 4 screws in the order shown.



17. Discard these screws. Do not use them again.



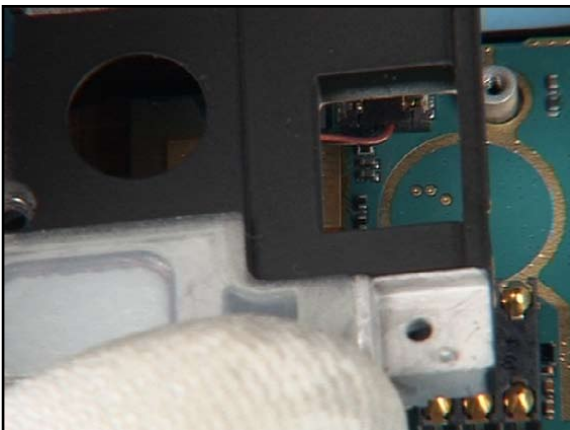
18. Remove the ANTENNA MOD CDMA. The clips of the KEYPAD COVER GUSSET will be released.



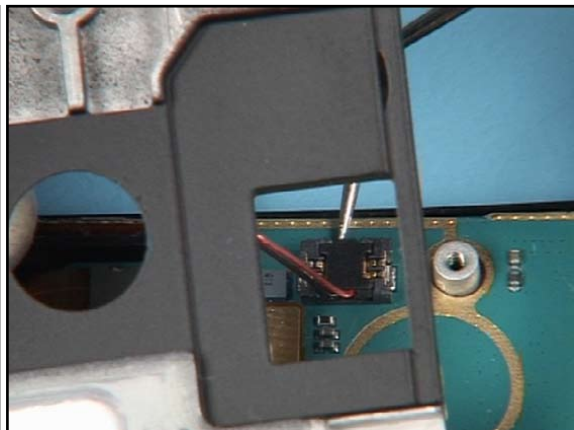
19. Take away the KEYPAD COVER GUSSET.



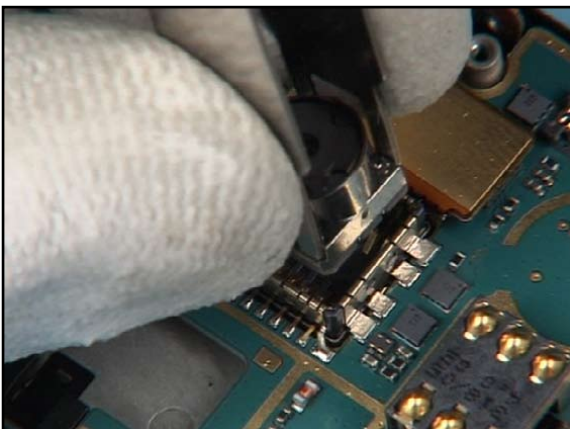
20. Lift up the RF SHIELD PAINTED.



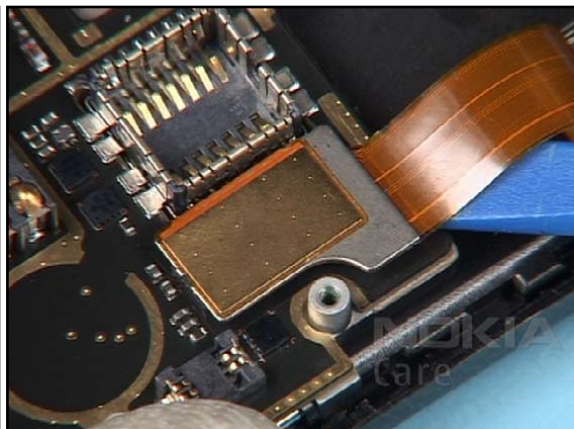
21. Carefully lift up the SHIELD ASSEMBLY. Note that this assembly is still connected with the ENGINE MODULE.



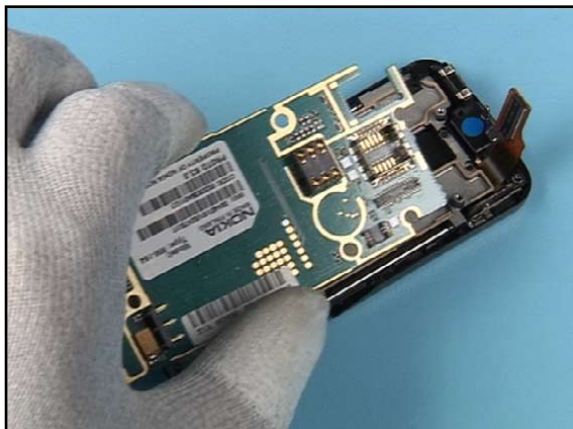
22. Open the connector of the VIBRA MOTOR.



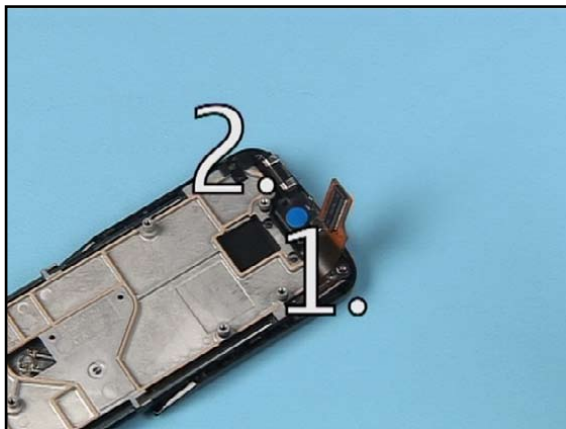
23. Unlock and remove the CAMERA MOD with the SS-45.



24. Open the slider. Carefully open the flex connector with the SS-93.



25. The ENGINE MODULE can be removed now.



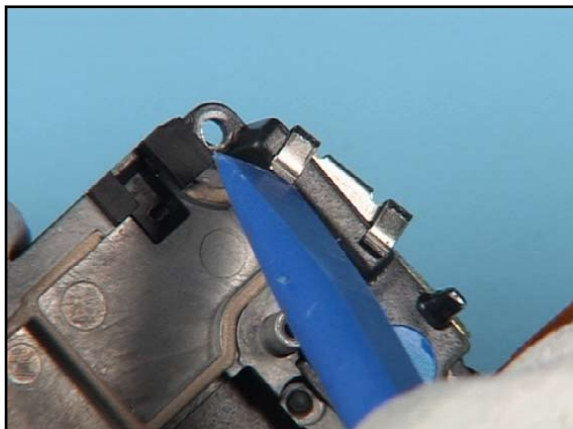
26. Unscrew these 2 Torx Plus size 4 screws in the order shown and remove them.



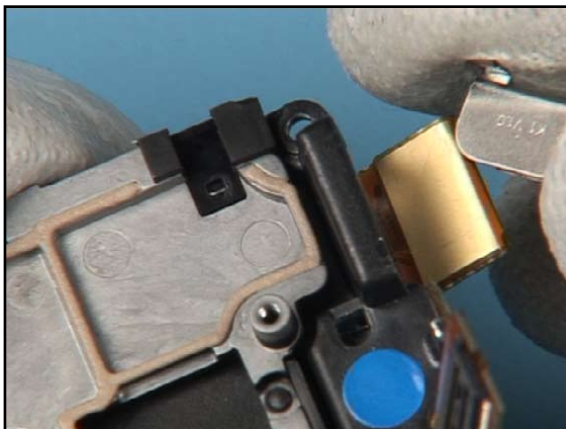
27. Discard these screws. Do not use them again.



28. The DISPLAY COVER can be separated now.



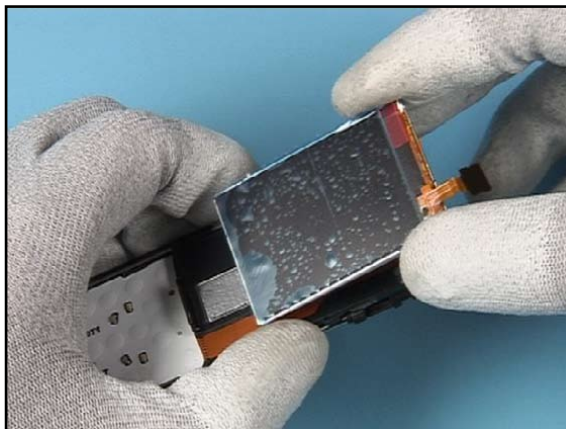
29. Shift out the LCD CONNECTOR CLIP with the SS-93.



30. Remove the clip from the connectors.



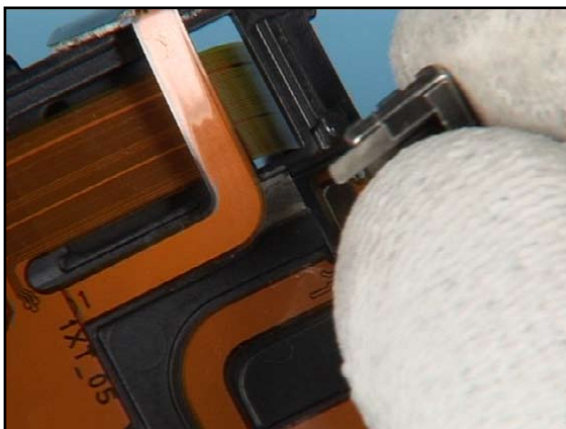
31. Carefully disconnect these flex foil connectors with the SS-93.



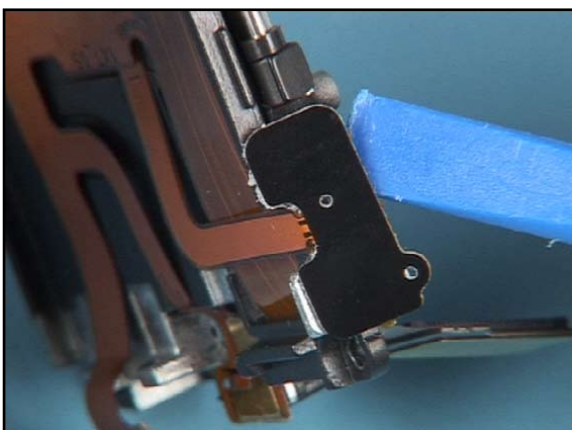
32. Remove the LCD AM 240x320.



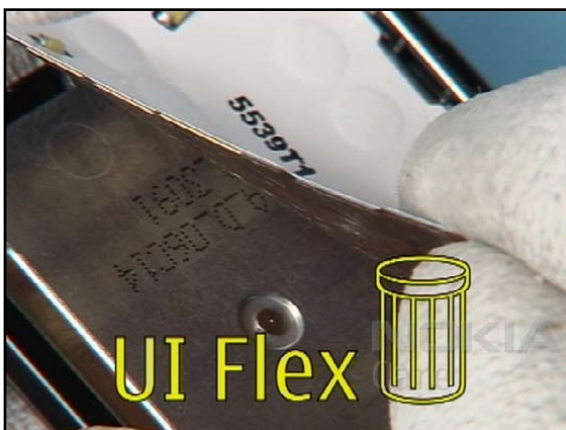
33. Keep this adhesive clean if this part should be reused.



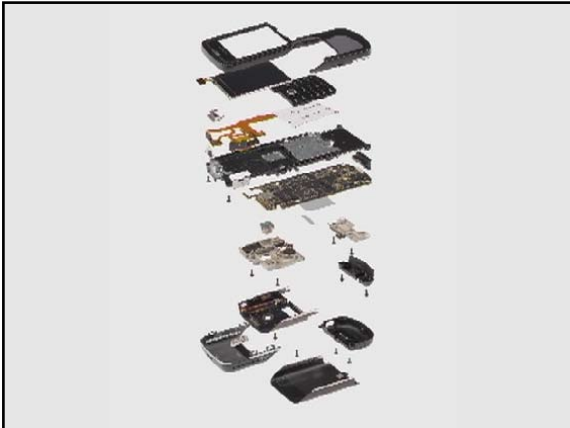
34. Lift out the EARPIECE ASSEMBLY.



35. Release the UI FLEX ASSEMBLY, beginning at the volume dome sheet.



36. Now peel off the UI FLEX ASSEMBLY completely and discard it, do not use it again.



37. The disassembly procedure is now complete.

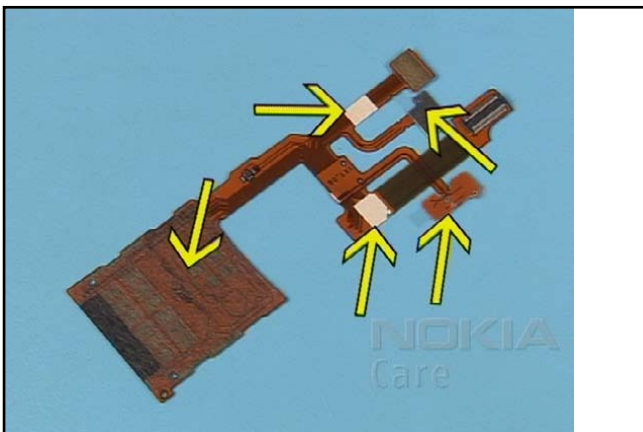
14.ASSEMBLY HINTS



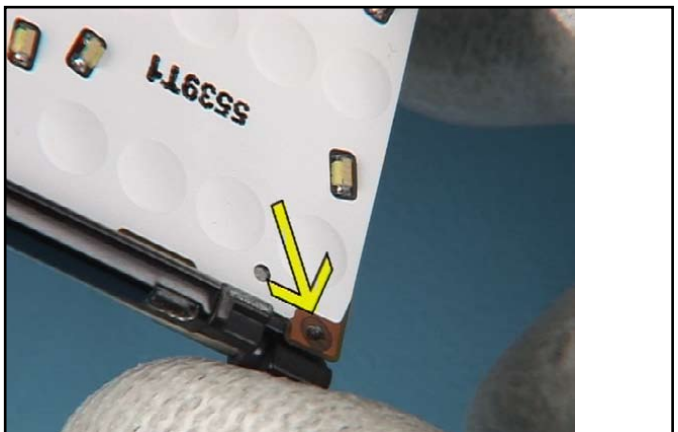
1. Nokia 8600 assembly hints.



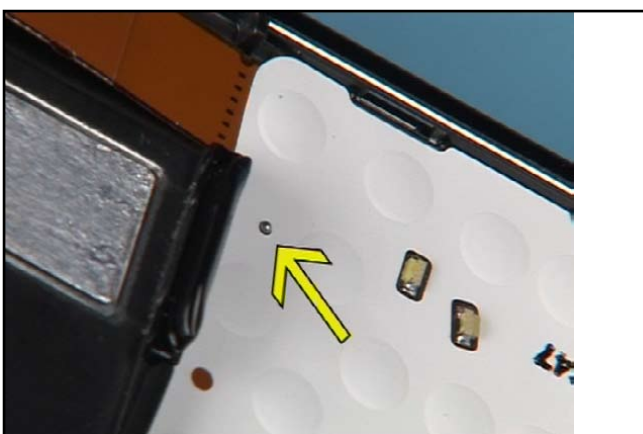
2. You will need the Nokia Standard Toolkit version 2. Also refer to the General Mechanical Guideline Video for additional hints about the tools and component handling.



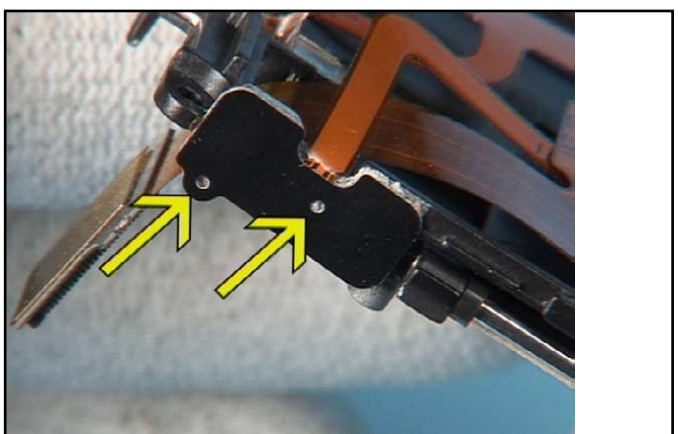
3. Peel up all protection films from the adhesive tapes of the UI FLEX ASSEMBLY.



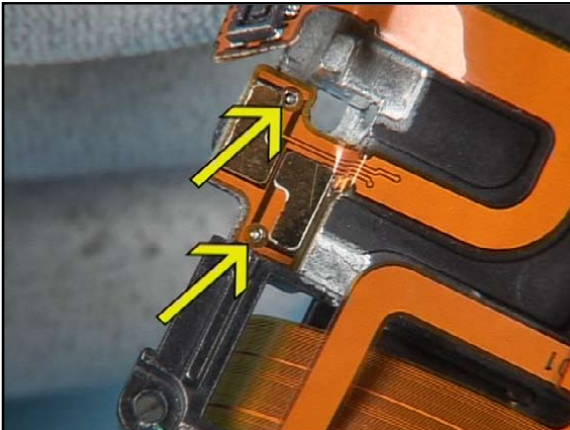
4. When replacing the UI FLEX ASSEMBLY, check this guide at the bottom,...



5. and this pin at the top of the key Dome Sheet.



6. Also note the guides at the Volume Key...



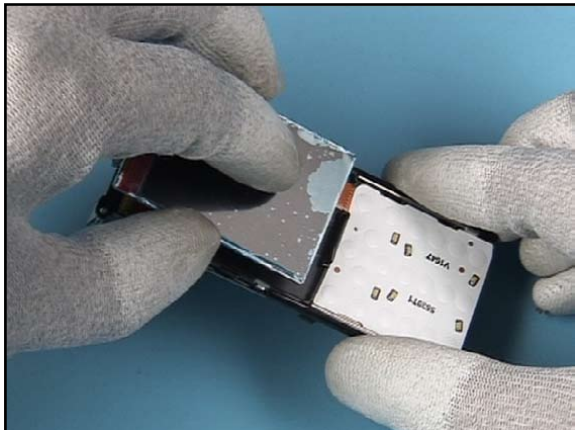
7. and the EARPIECE-contacts flex foil.



8. Place the EARPIECE ASSEMBLY.



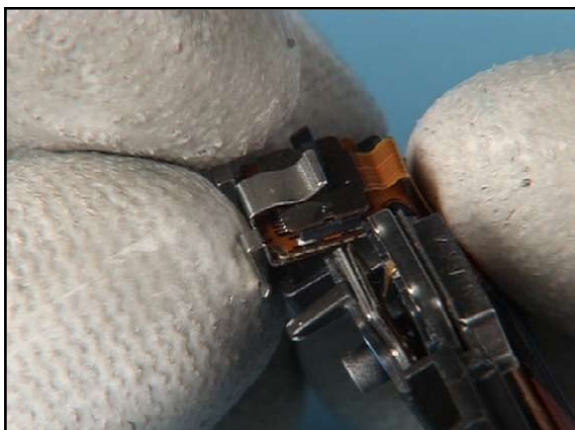
9. Peel up this protective film if this part was renewed.



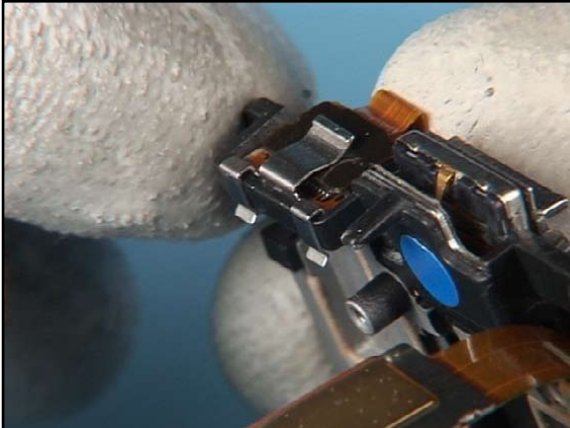
10. Insert the LCD AM.



11. Close the connector of the LCD.



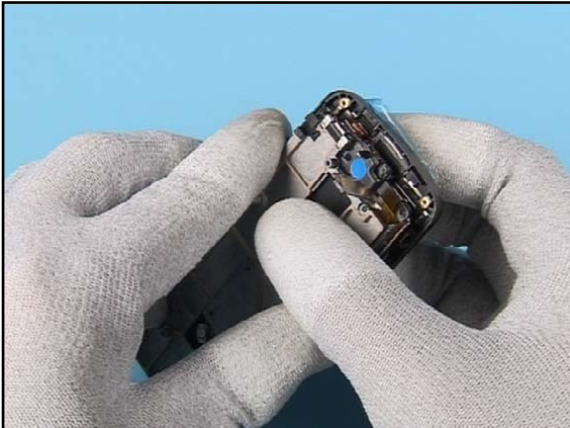
12. Fit the LCD CONNECTOR CLIP.



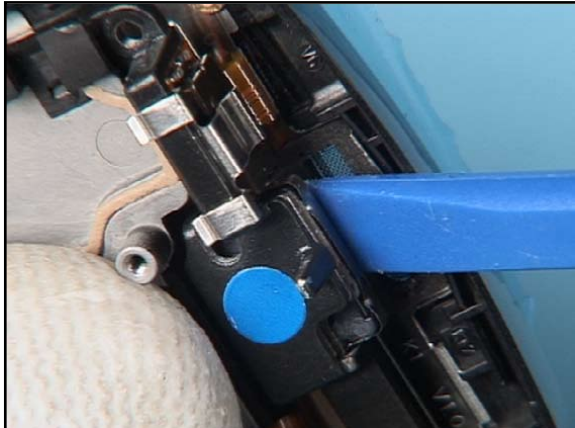
13. Mind the correct position of the clip.



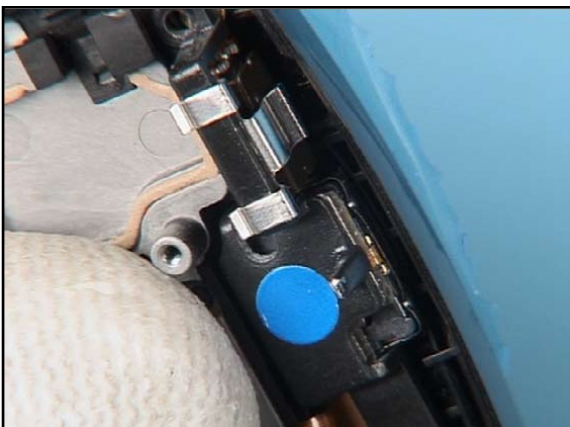
14. Mind the glued in earpiece gasket of the DISPLAY COVER.



15. Bring the assemblies together as shown.



16. Lever up the EARPIECE ASSEMBLY with the SS-93 and hold it in position.



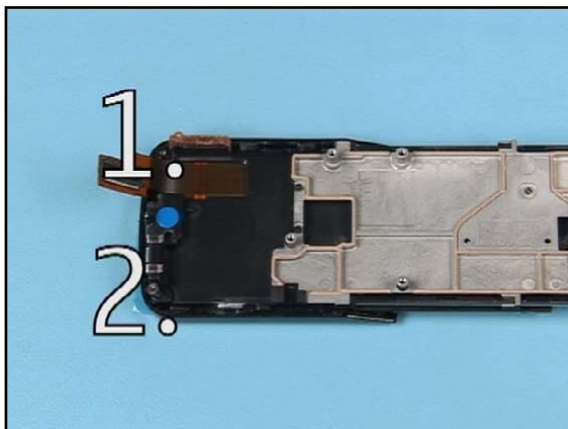
17. Now shift the DISPLAY COVER into its position.



18. Insert 2 new screws.



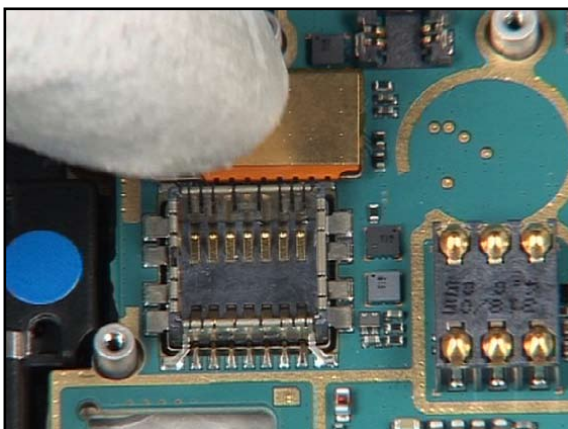
19. Set the correct torque.



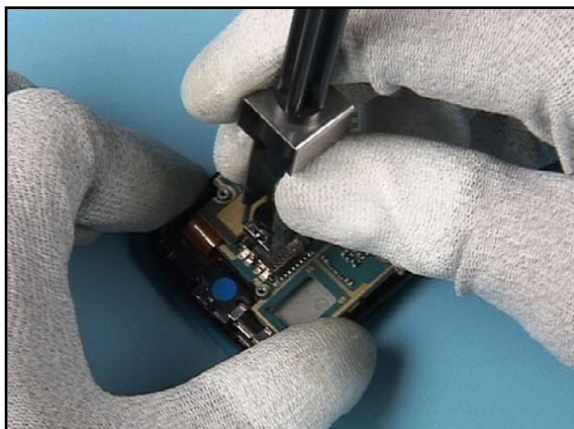
20. Apply the torque to the screws in the order shown.



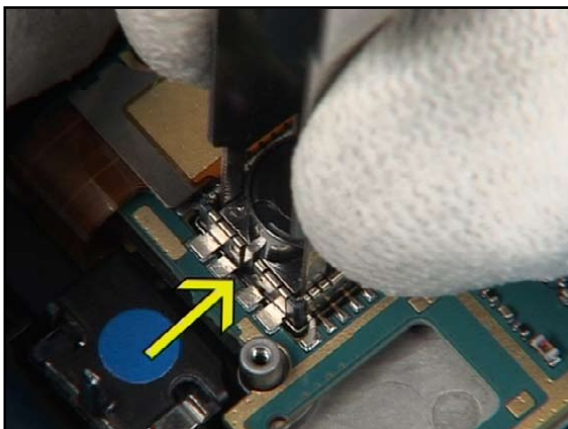
21. Place the ENGINE MODULE.



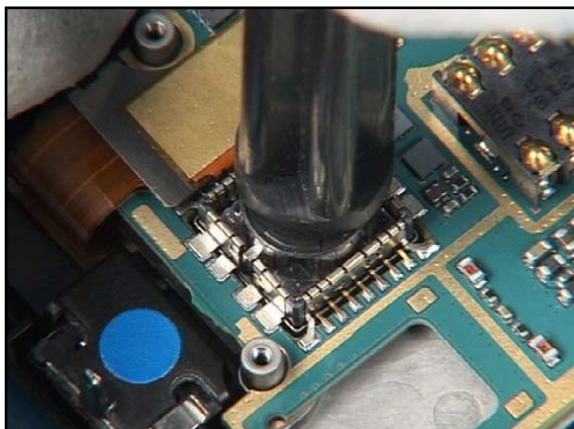
22. Close the flex foil connector.



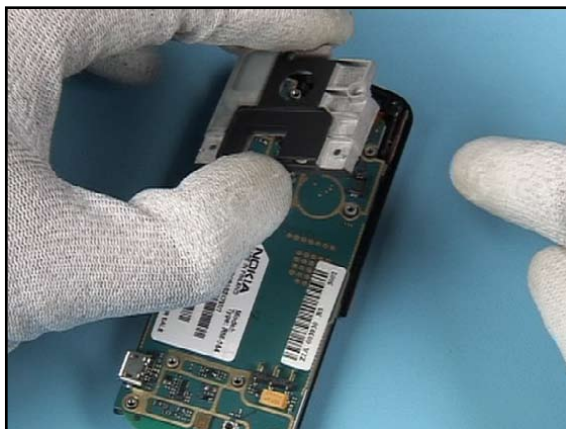
23. Insert the CAMERA MOD with the SS-45.



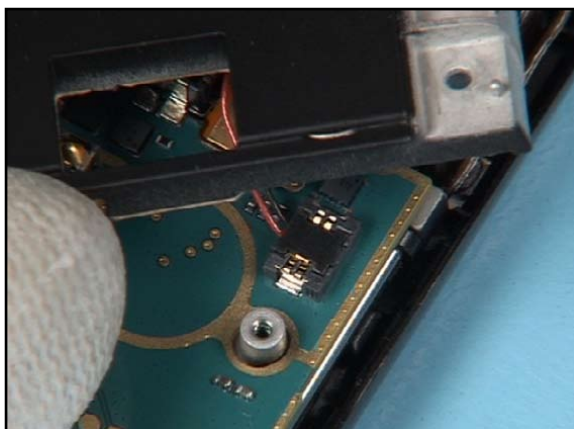
24. Mind the correct positioning of the alignment tab.



25. Push it into its place before continuing.



26. Position the BB SHIELD ASSEMBLY near the ENGINE MODULE.



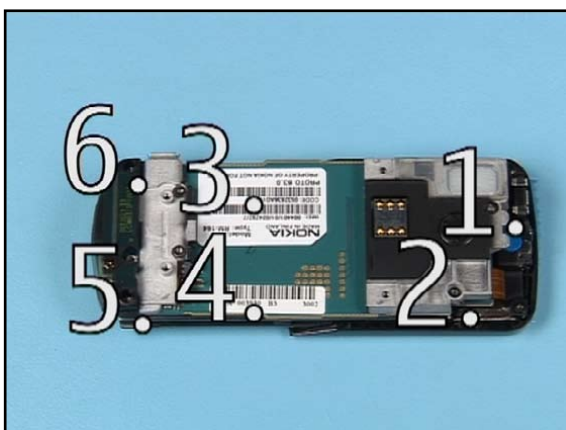
27. Close the connector of the VIBRA MOTOR.



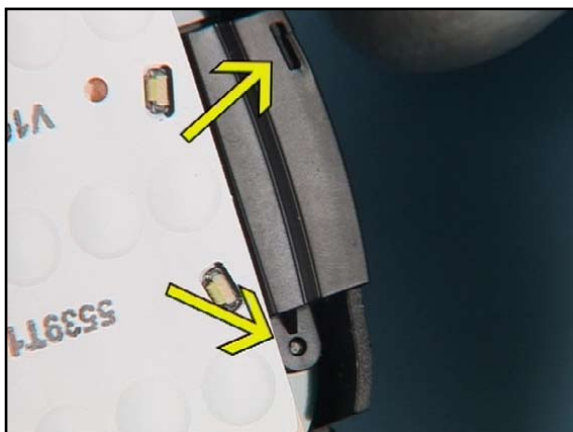
28. Insert 6 new screws.



29. Set the correct torque.



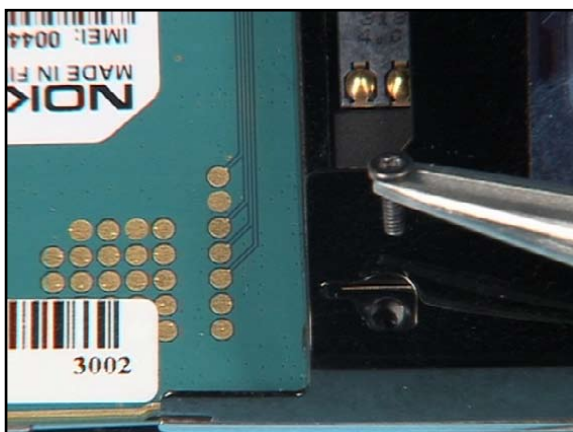
30. Apply the torque to all screws in the order shown.



31. Mind the guiding while placing the KEYPAD COVER GUSSET.



32. Place the CAMERA BEZEL ASSEMBLY, beginning from the top. Mind the hooks.



33. Insert 2 new screws.



34. Set the correct torque.



35. Apply the torque to the screws in the order shown.



36. Do not forget fitting the VOLUME KEY ASSEMBLY.



37. Insert the metal snaps of the CAMERA COVER ASSEMBLY DECORATE into their places.



38. Use the SS-93 for bending the latches slightly in order to prevent destroying the plastic clips.



39. Insert the snaps of the BLACK KEYPAD at the shown side first.



40. Use the SS-93 for bending the keypad. Mind the components underneath.



41. Push down the BLACK KEYPAD now while removing the SS-93 carefully. The KEYPAD should snap in place properly.



42. Check the positioning of the BLACK KEYPAD before going on.



43. Click the snaps of the KEYPAD COVER ASSEMBLY into their places.



44. Nopte the correct positioning of these clips before going on.



45. Place the ANTENNA COVER ASSEMBLY, beginning at the connector side. Click the snaps into their places.



46. Insert 2 screws at the ANTENNA COVER ASSEMBLY.






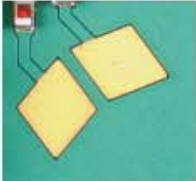














47. Set the correct torque.

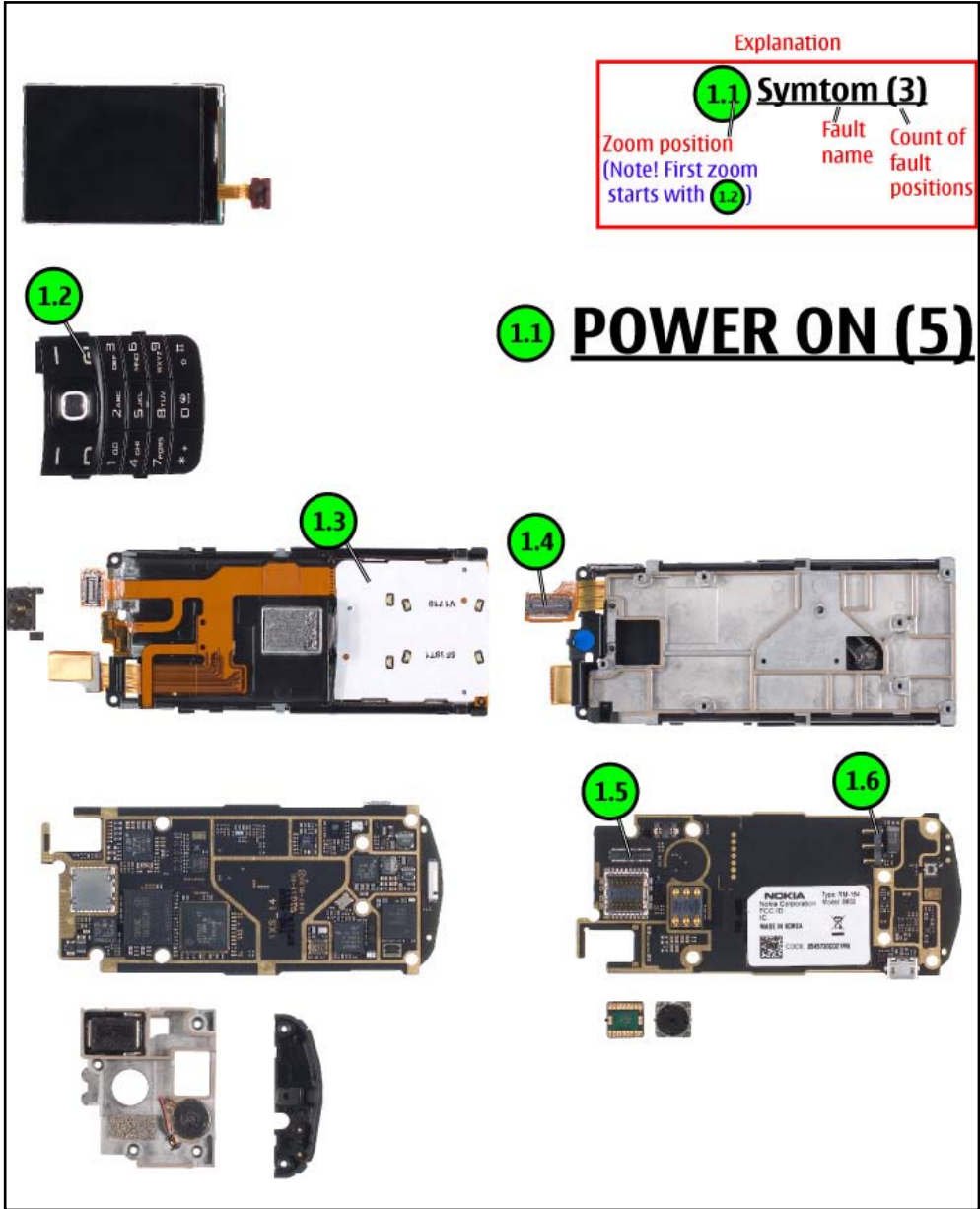
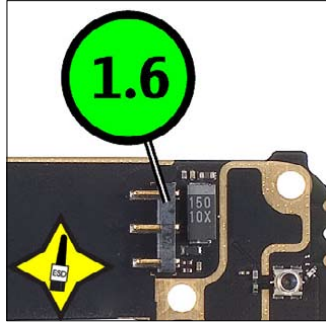
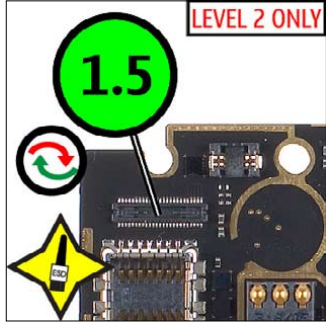
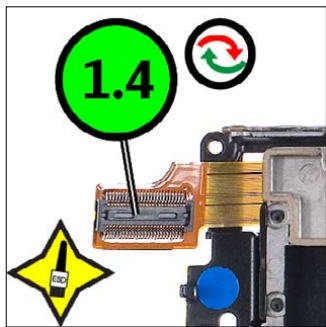


48. Apply the torque to the screws in the order shown.

15.LEGEND FOR QUICK TROUBLE SHOOTER

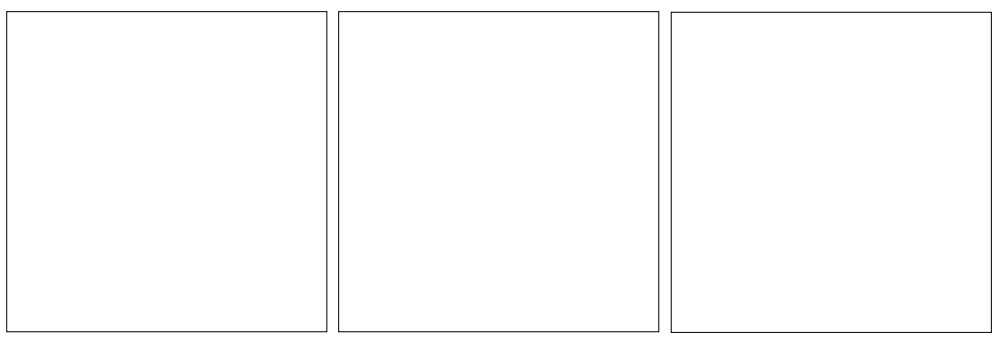
Legend for Quick Troubleshooter	
This legend is valid for all parts of the Quick Troubleshooter	
Follow the steps until the problem is solved. If this doesn't help, you are not authorized to go forward.	
	Check the mechanical condition of the component (bent, broken or missing).
	Only marked components can be replaced. If additionally " =CHANGE ASSY " appears, then change the whole assembly (e.g. A4=D-COVER ASSEMBLY).
	Cloth usage: Check pads or contacts for optical and mechanical condition particularly regarding to corrosion. Clean it if necessary.    
	Measure component for electrical functionality and change, if needed. (Level 2 only)  
	ESD Brush usage: Check contacts for optical and mechanical condition particularly regarding to corrosion. Clean it if necessary.    
	<p>Explanation</p> <div style="border: 1px solid red; padding: 5px; display: inline-block;">  Syptom (3) Zoom position (Notel First zoom starts with ) Fault name Count of fault positions </div>

16. QUICK TROUBLE SHOOTER - POWER ON

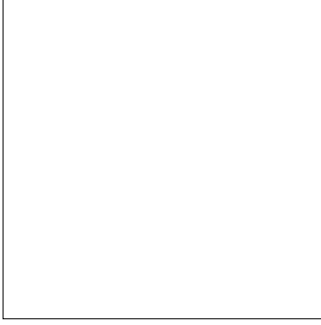
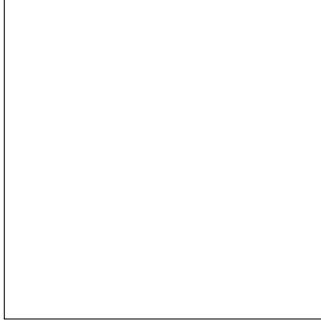
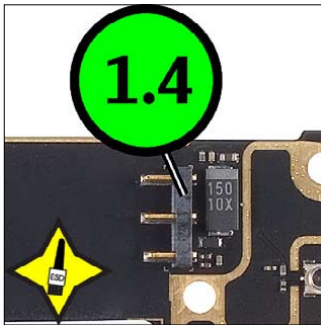
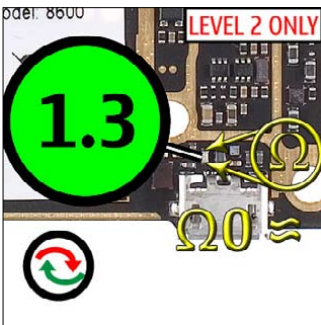
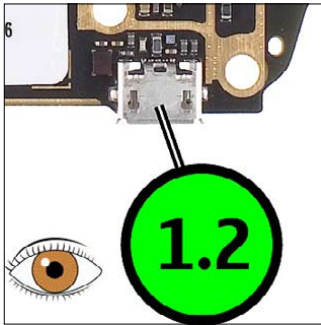


Explanation		
1.1	Symtom (3)	
Zoom position (Note! First zoom starts with 1.2)	Fault name	Count of fault positions

1.1 POWER ON (5)





17. QUICK TROUBLE SHOOTER - CHARGING





Explanation

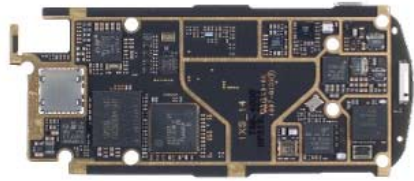
1.1	Symtom (3)
Zoom position (Note! First zoom starts with 1.2)	Fault name Count of fault positions

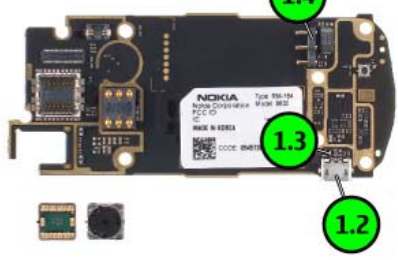


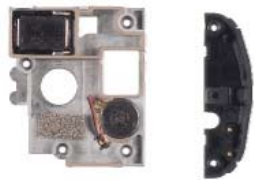









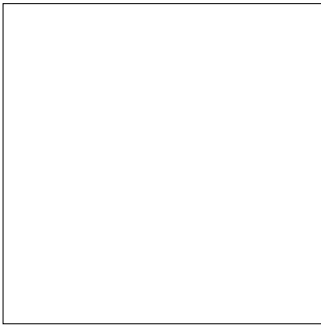
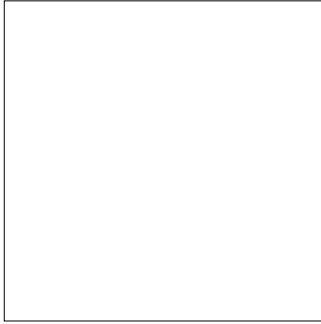
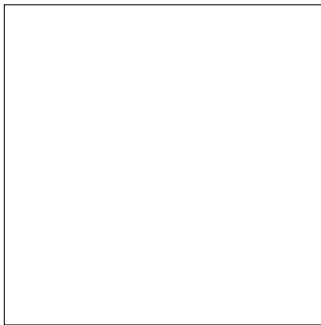
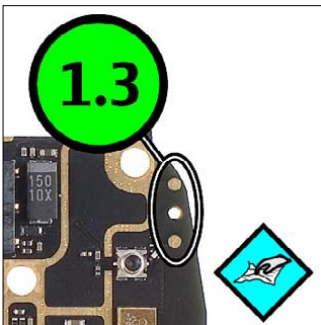






1.1 CHARGING (3)


18. QUICK TROUBLE SHOOTER - NO SERVICE


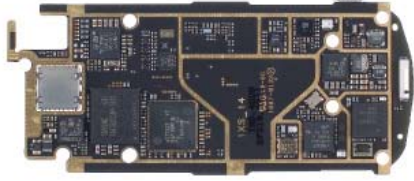




Explanation

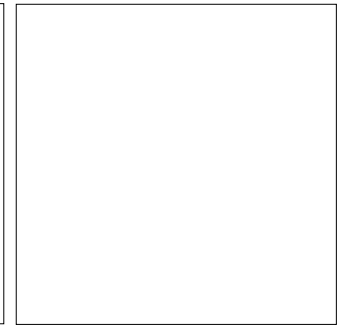
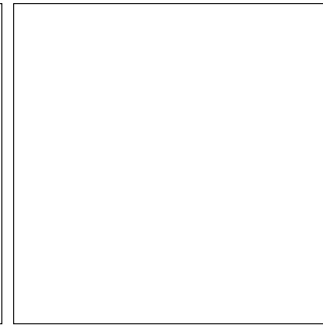
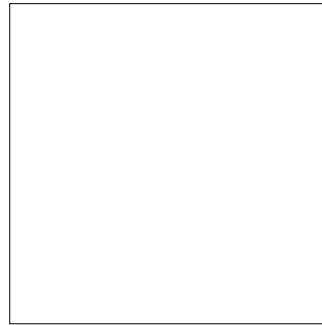
1.1	Symtom (3)	Fault name	Count of fault positions
Zoom position (Note! First zoom starts with 1.2)			

1.1 NO SERVICE (2)

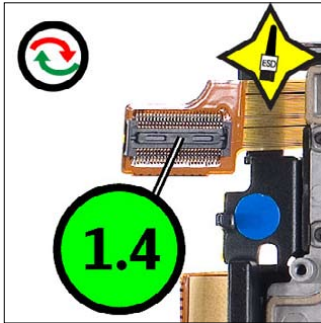
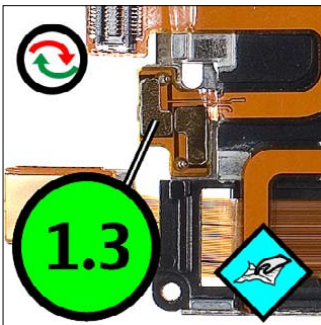
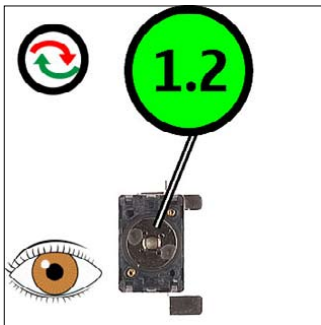



1.3



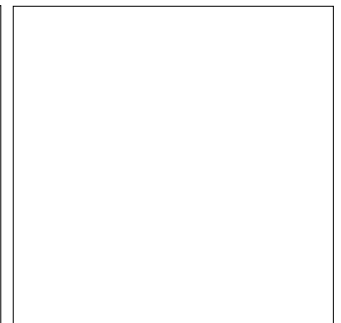
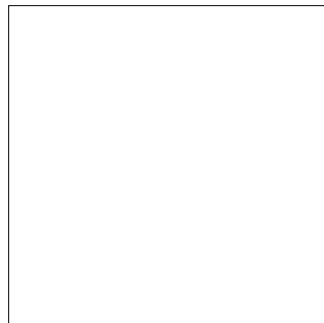
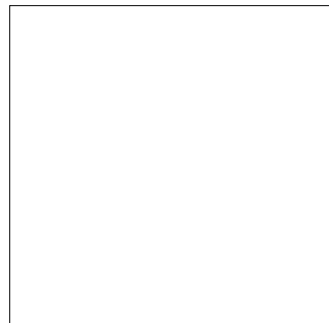
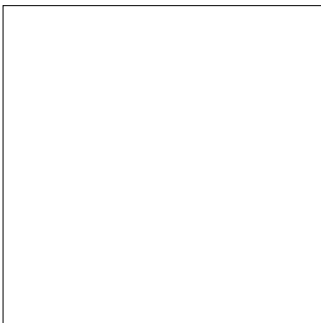
19. QUICK TROUBLE SHOOTER - EARPIECE



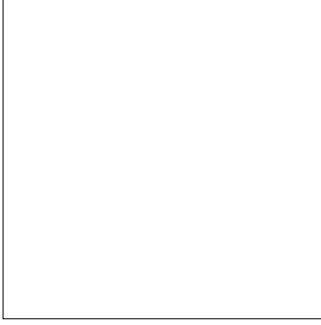
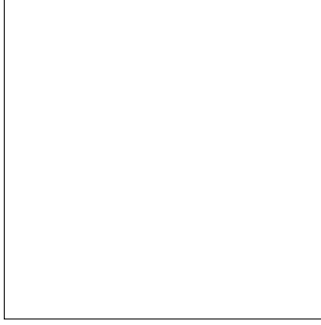
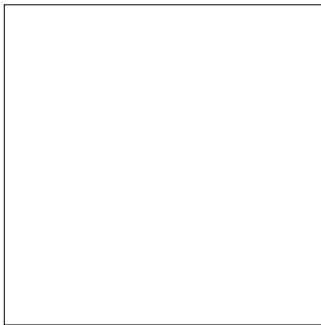
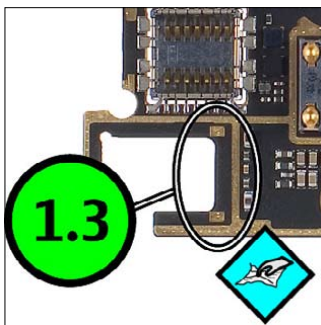
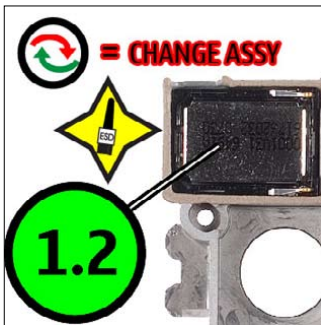
Explanation

<p>1.1 Symtom (3)</p> <p>Zoom position (Note! First zoom starts with 1.2)</p>	<p>Fault name</p>	<p>Count of fault positions</p>
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1.1 **EARPIECE (4)**



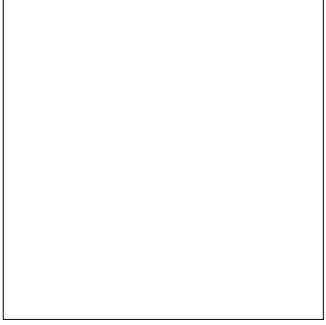
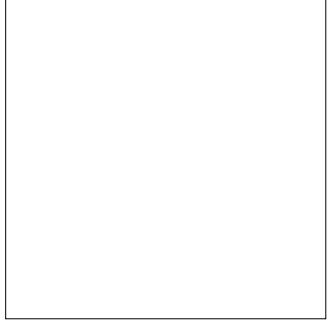
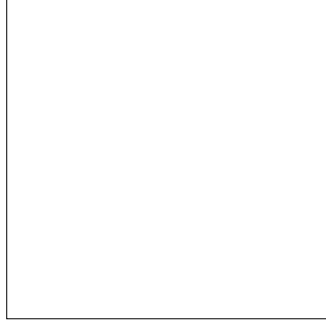
20. QUICK TROUBLE SHOOTER - IHF SPEAKER



Explanation

1.1	Symtom (3)
Zoom position (Note! First zoom starts with 1.2)	Fault name Count of fault positions

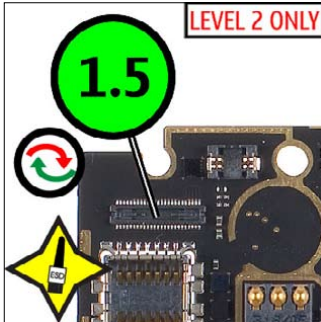
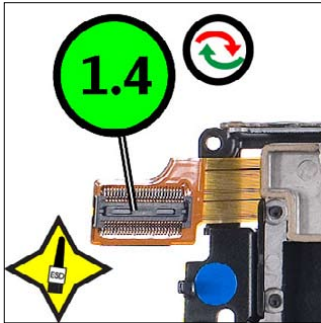
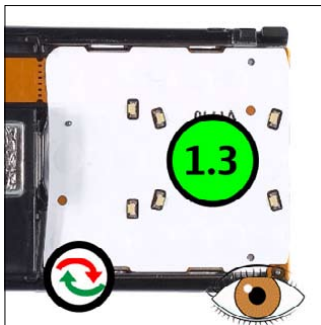
1.1 IHF SPEAKER (2)



21. QUICK TROUBLE SHOOTER - DISPLAY

	<div style="text-align: right;">Explanation</div> <table border="1" style="margin-left: auto;"> <tr> <td style="text-align: center;">1.1</td> <td>Symtom (3)</td> </tr> <tr> <td style="text-align: center;">Zoom position (Note! First zoom starts with 1.2)</td> <td style="text-align: center;">Fault name Count of fault positions</td> </tr> </table> <p style="text-align: center;">1.1 DISPLAY (4)</p>			1.1	Symtom (3)	Zoom position (Note! First zoom starts with 1.2)	Fault name Count of fault positions
1.1	Symtom (3)						
Zoom position (Note! First zoom starts with 1.2)	Fault name Count of fault positions						

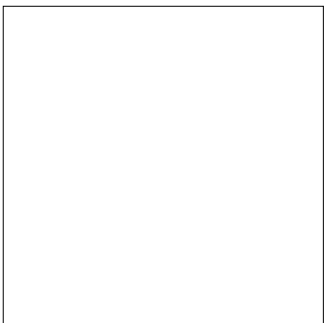
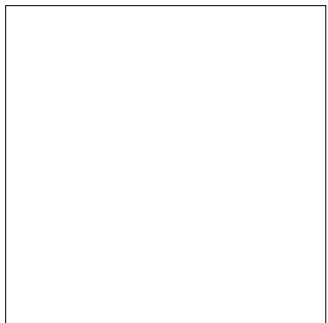
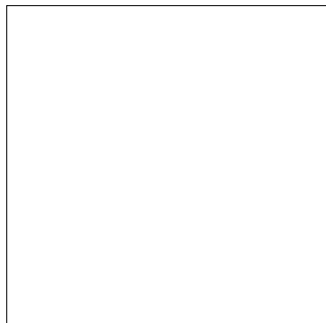
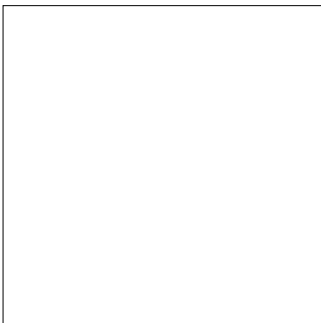
22. QUICK TROUBLE SHOOTER - KEYMAT



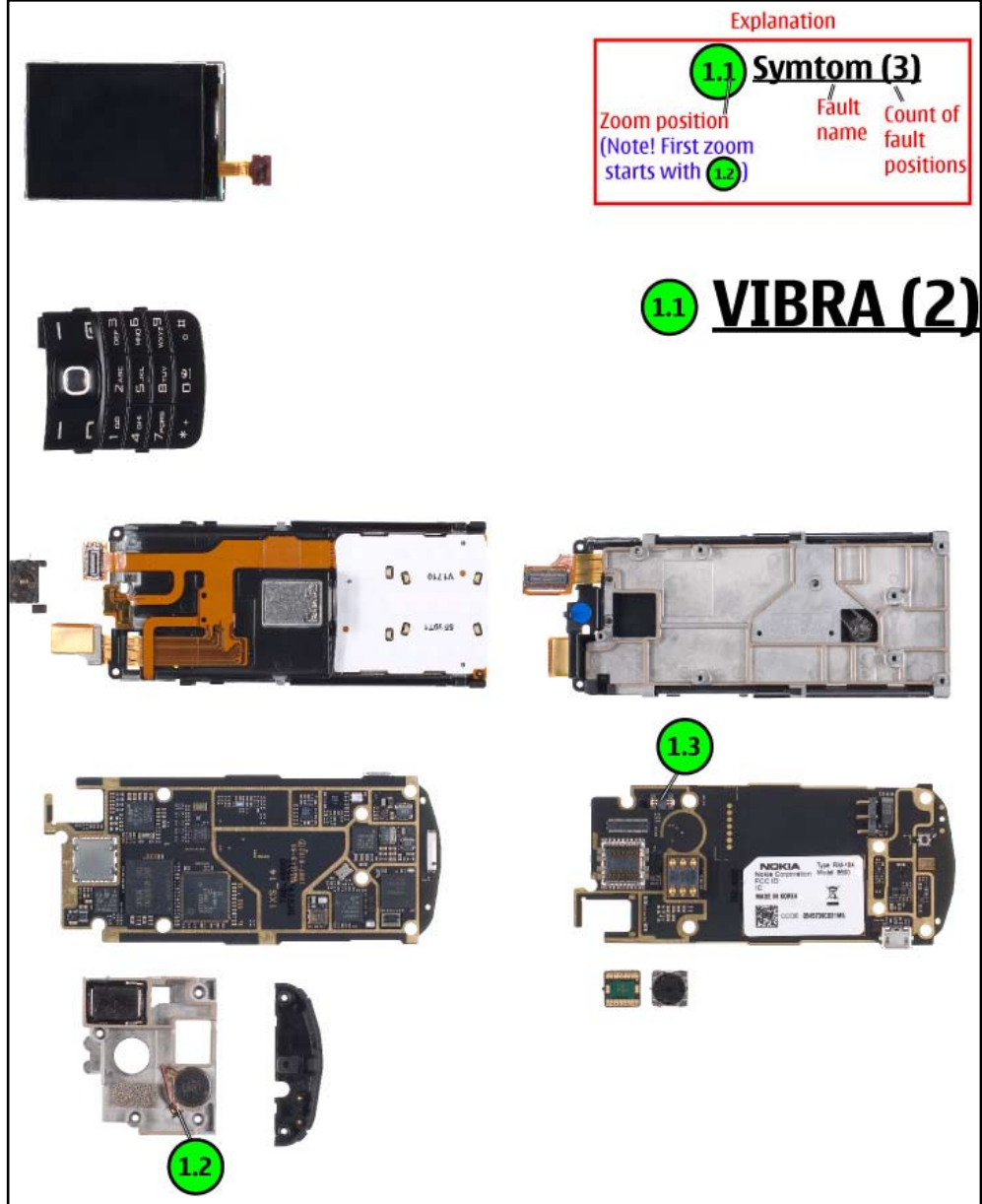
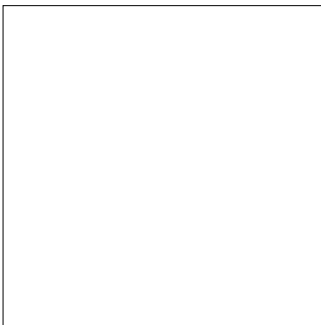
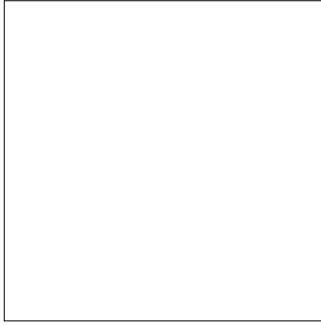
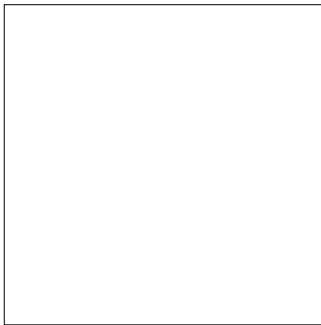
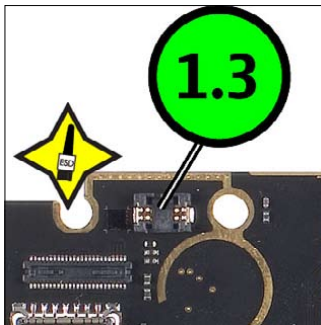
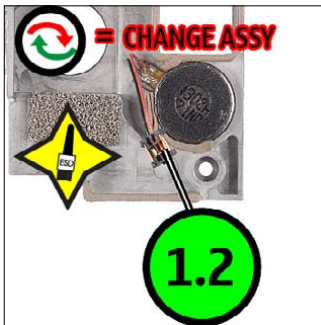
Explanation

1.1	Symtom (3)
Zoom position (Note! First zoom starts with 1.2)	Fault name Count of fault positions

1.1 **KEYMAT (4)**



23. QUICK TROUBLE SHOOTER - VIBRA

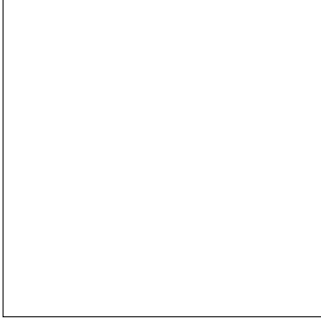
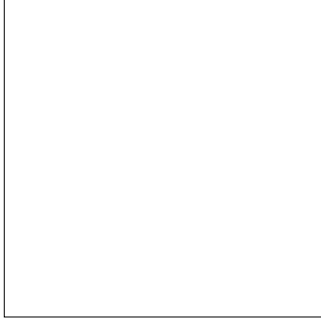
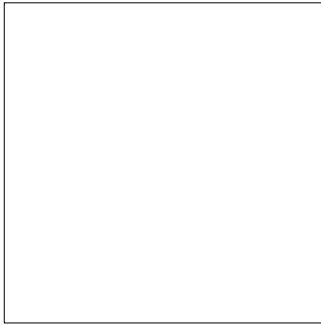
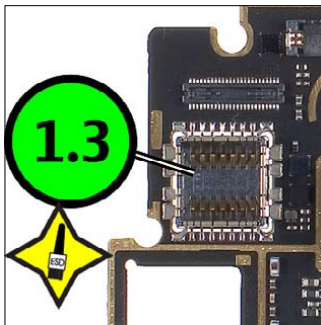
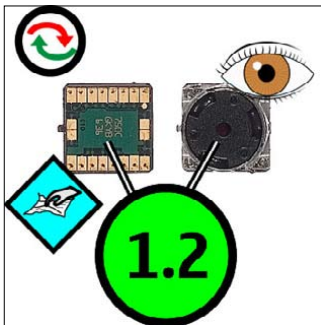


Explanation

1.1	Symtom (3)	
Zoom position (Note! First zoom starts with 1.2)	Fault name	Count of fault positions

1.1 VIBRA (2)

24. QUICK TROUBLE SHOOTER - CAMERA



Explanation

1.1	Symtom (3)	Fault name	Count of fault positions
Zoom position (Note! First zoom starts with 1.2)			

1.1 CAMERA (2)

