

# SERVICE MANUAL Level 1&2

## NOKIA NOKIA 7500 7500b

RM-249

RM-250



### Transceiver characteristics:

#### Band:

**RM-249: GSM:** Tri-band 900/1800/1900MHz

**RM-250: GSM:** Tri-band 850/1800/1900MHz

**WCDMA:** -----

#### Display:

**LCD:** 5.08cm QVGA (2.0") (320x240 pixel); 16M colors

#### Camera:

**Camera:** 2.0 Megapixel SMIA85, 8x digital zoom

#### Operating System:

Series 40

#### Connections:

**Wireless:** Bluetooth

**Connector:** Mini USB Connector; AV Connector

#### Memory:

MicroSD™ (max 2GB)

### Transceiver with BL-4B Li-Ion battery pack

Talk time	Standby	Note
up to 2.8h	up to 10.4days	Depends on network parameters

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## 1. CHANGE HISTORY

Status	Version No.	Date	Comments
Draft	0.1	18.Jun.2007	Initial draft
Approved	1.0	22.Jun.2007	Approved
Approved	2.0	10.Oct.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.

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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.

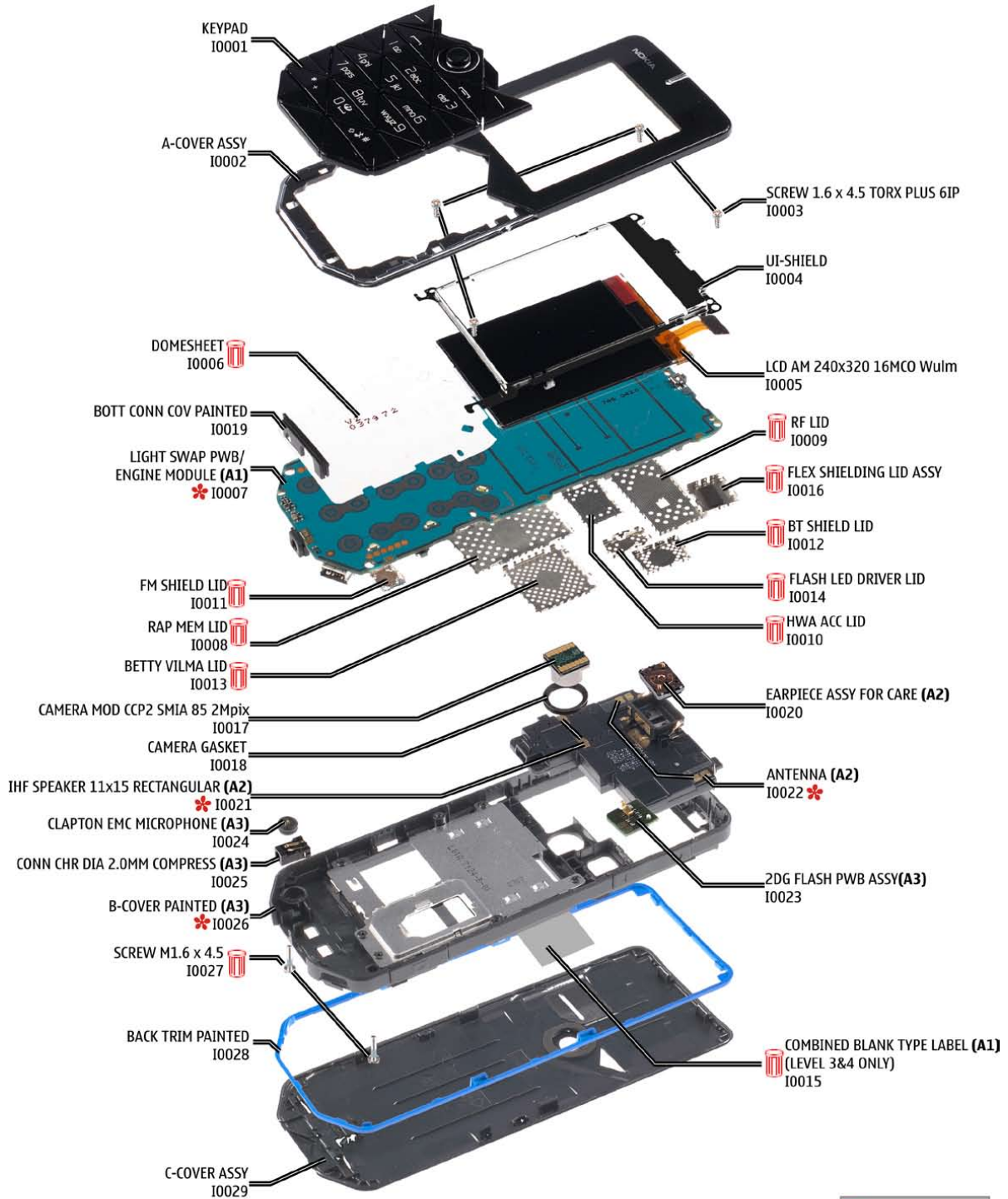
Leaving the battery in hot or cold places, such as in a closed car in summer or winter conditions, will reduce the capacity and lifetime of the battery. Always try to keep the battery between 15°C and 25°C (59°F and 77°F). A phone with a hot or cold battery may temporarily not work, even when the battery 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.

**7500 RM-249/RM-250 EXPLODED VIEW**



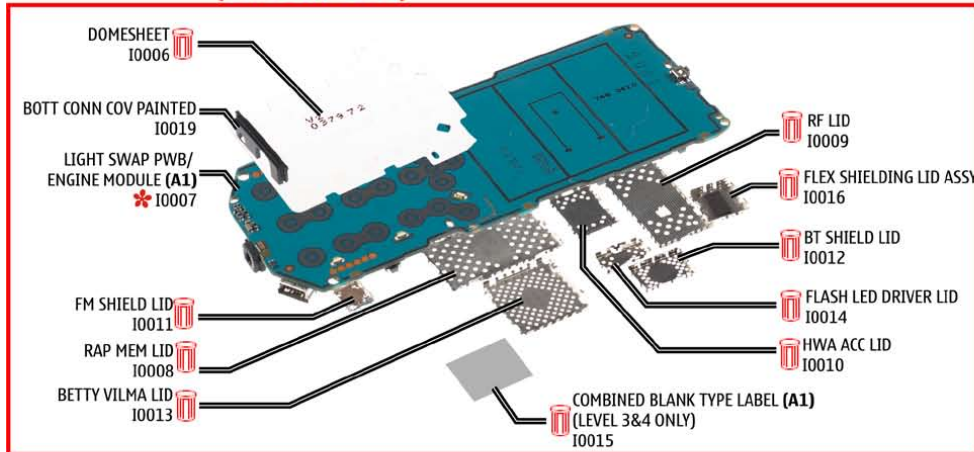
 = These parts can not be reused after removal.

\* = only available as assembly

## 8. SPARE PARTS OVERVIEW

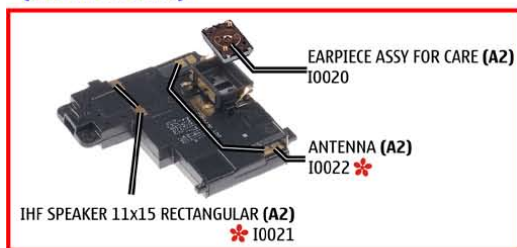
### 7500 RM-249/RM-250 SPARE PARTS OVERVIEW

**A1=XXXX LIGHT SWAP PACKAGE (I0006-I0015)  
(LEVEL 3&4 ONLY)**

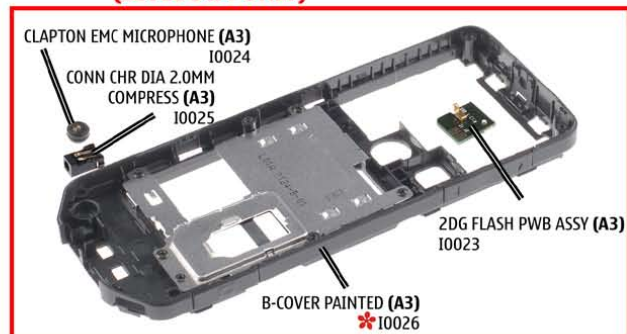


**A2=ANTENNA IHF MODULE 850 (I0020-I0022)  
(RM-250 ONLY)**


**A2=ANTENNA IHF MODULE 900 (I0020-I0022)  
(RM-249 ONLY)**




**A3=B-COVER ASSY (I0023-I0026)  
(LEVEL 3&4 ONLY)**



Ver. 2.0

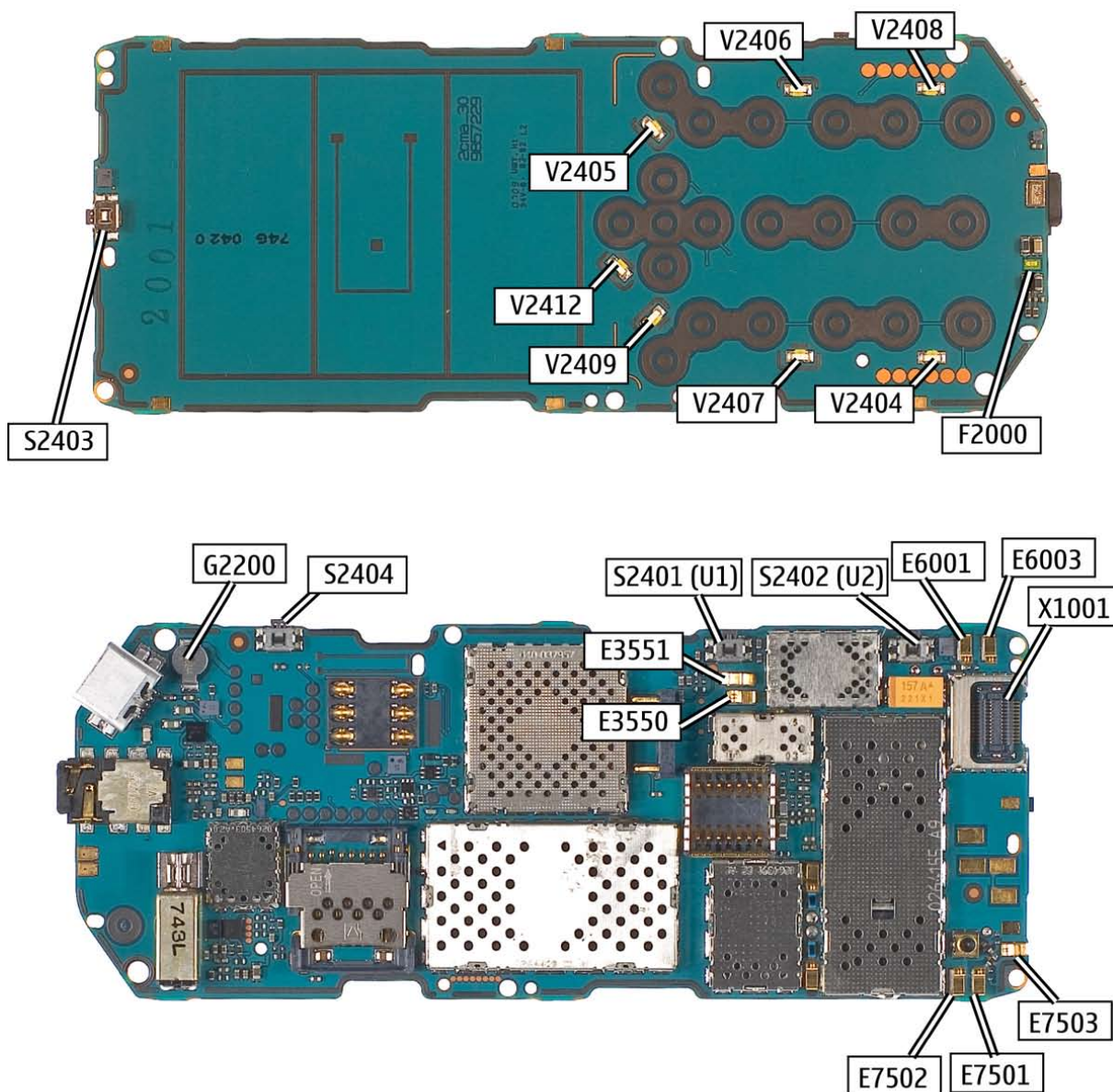
 = These parts can not be reused after removal.

 = only available as assembly

## 9. LEVEL 2 SOLDER COMPONENTS

7500 RM-249/RM-250 Level 2 solder components


**Solder components only for LEVEL 2**



Ver. 1.0



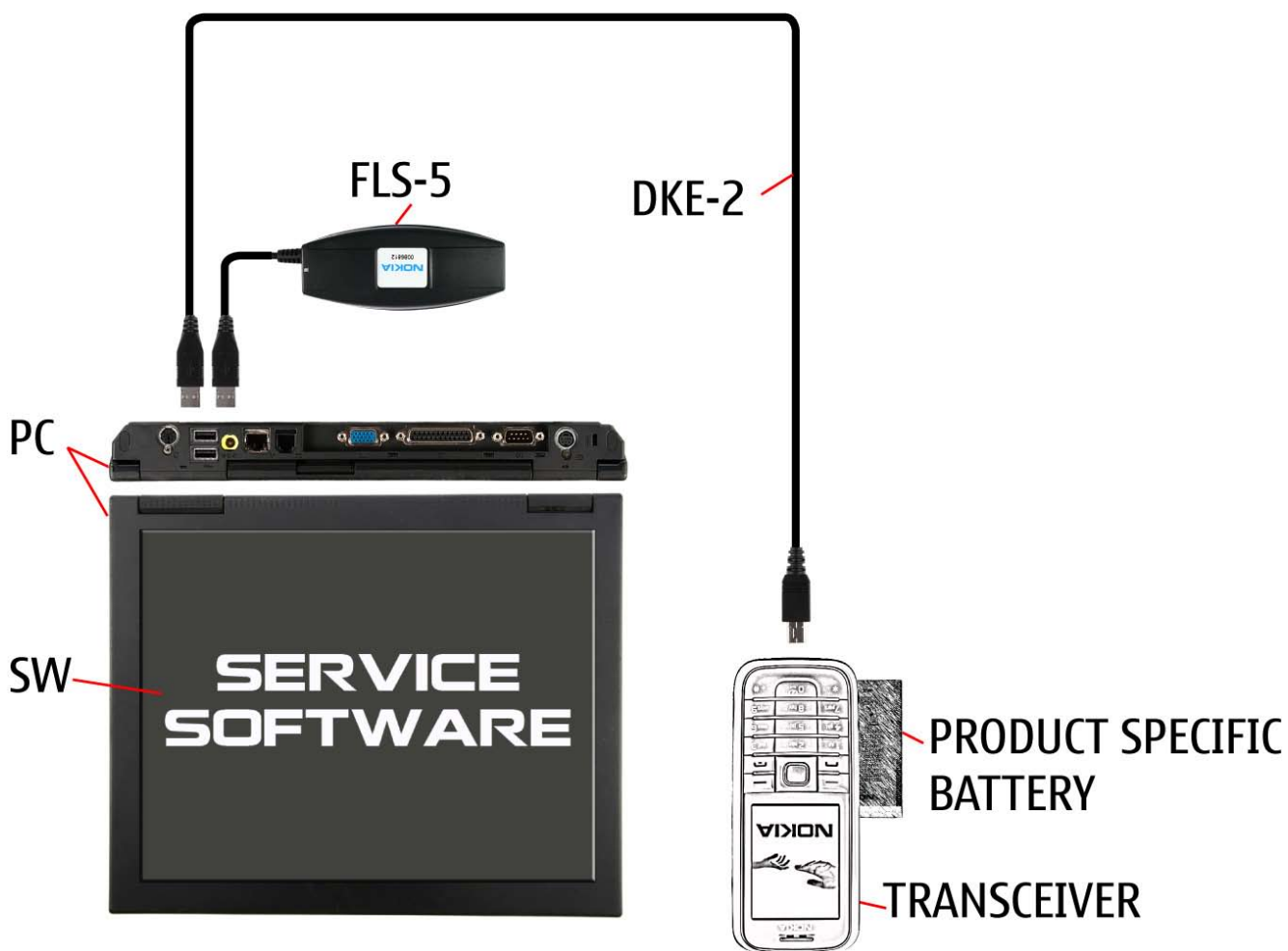
**10.SERVICE TOOLS**

 <p><b>FLS-5</b></p> <p><b>FLS-5 incl. ACF-8, Driver and User Guide</b> Dongle and flash device incorporated into one package, developed specifically for POS use.</p>	 <p><b>ACF-8</b> Universal Power Supply is used to power FLS-5S.</p>	 <p><b>Travel Charger AC-4</b> Small and lightweight charger for fast charging of your phone battery.</p>
 <p><b>DKE-2</b> Service Cable to connect the PC with the mini USB connector.</p>	<p><b>SS-45</b></p>  <p><b>SS-45</b> Camera removal tool. One side is for disassembly, the other side for assembly.</p>	<p><b>RJ-172</b></p>  <p><b>RJ-172</b> Soldering Jig</p>
<p><b>BL-4B</b></p>  <p><b>Internal Battery BL-4B</b> Inserted under the back cover, this Li-Ion battery provides power in a lightweight package.</p>	<p><b>0772040</b></p>  <p><b>NMP Standard Toolkit (V2)</b> 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 “<b>Recommended service equipment</b>” document on NOKIA Online.</p>	

## 11.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](#).



**12. DISASSEMBLY INSTRUCTION**



1. Nokia 7500 Disassembly.



2. You will need the Nokia Standard Toolkit version 2 as well as the camera removal tool SS-45. Also refer to the General Mechanical Guideline Video for additional hints about the tools and component handling.



3. Cover all sensitive surfaces with a protective film. Unlock and remove the C-COVER ASSY. Remove the battery if inserted.



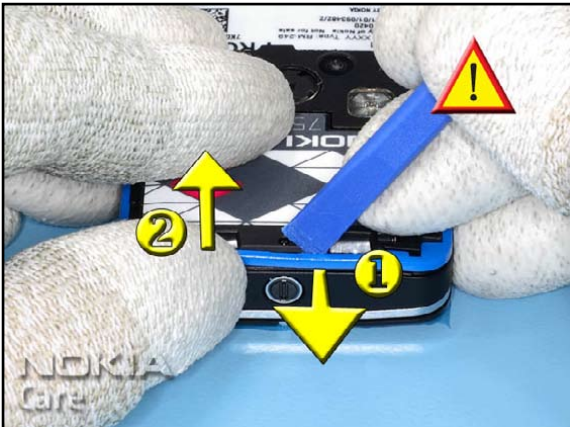
4. Place the SRT-6 between the A-COVER ASSY and the KEYPAD and gently unlock the clips starting at the shown side.



5. Repeat the same on the opposite side.



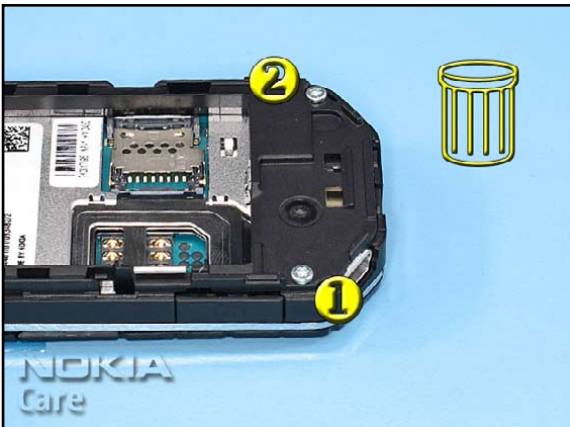
6. Remove the KEYPAD from the A-COVER.



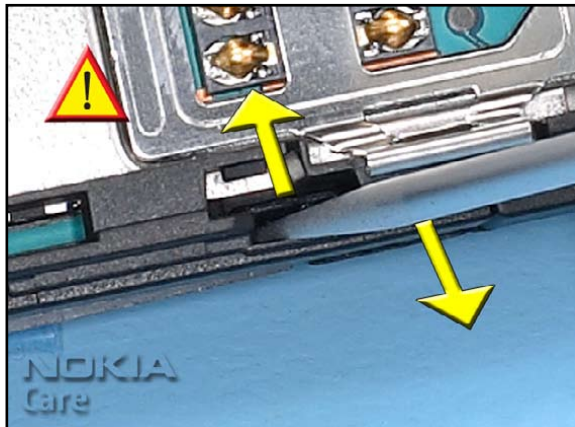
7. Release the BACK TRIM at the shown side first.



8. Unlock the other clips of the BACK TRIM with the SS-93.



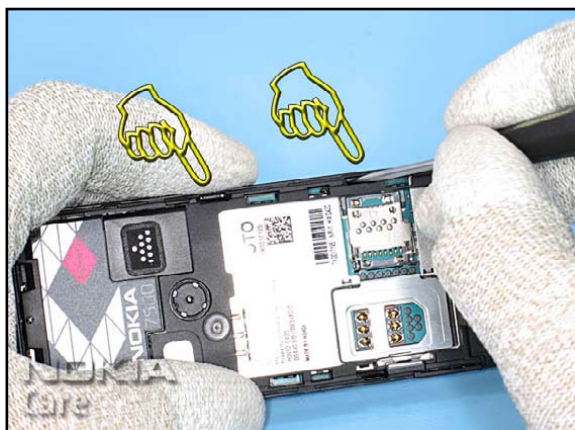
9. Undo the screws in the order shown and discard them.



10. The A-COVER ASSY is attached to the B-COVER ASSY with four clips. Place a flat bladed screwdriver between the clip of the A-COVER ASSY and the B-COVER and bend them gently back.



11. Open the clips starting at the shown side.



12. Continue at the opposite side.



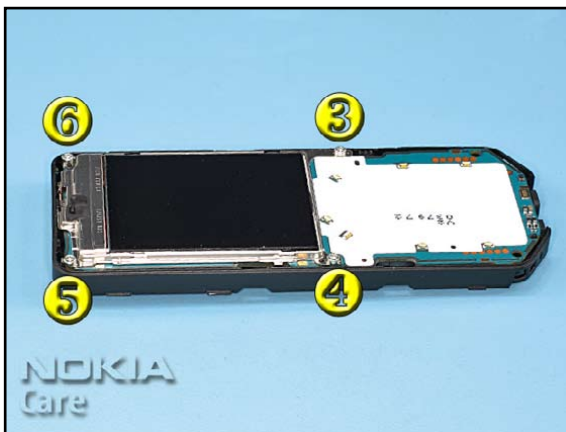
13. Carefully remove the A-COVER ASSY.



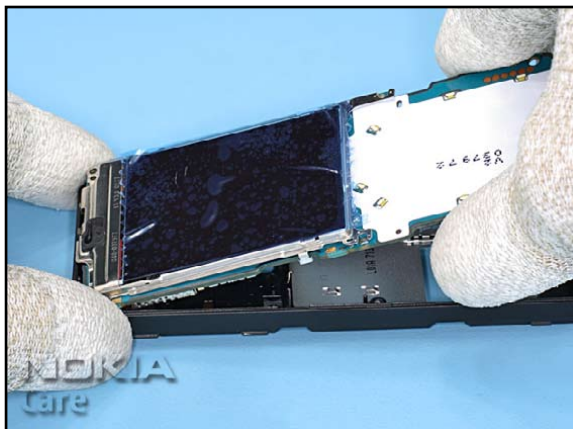
14. Take care of the electronic components on the ENGINE MODULE.



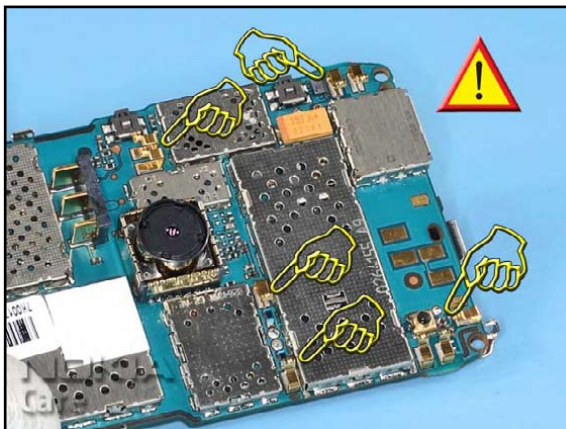
15. Remove the BOTTOM CONNECTOR COVER.



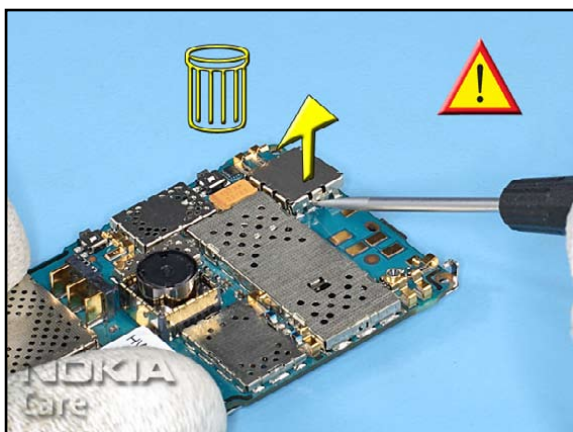
16. Undo the screws in the order shown and remove them.



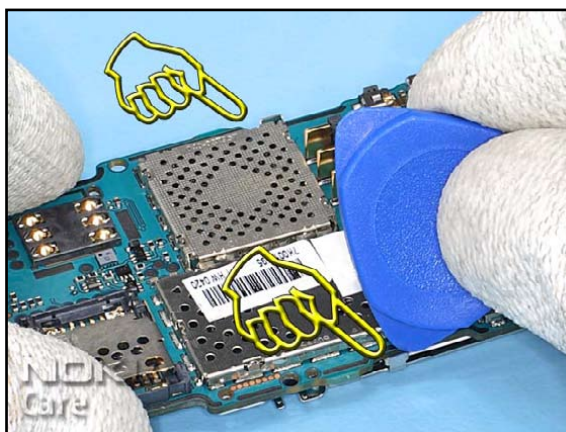
17. Remove the ENGINE MODULE from the B-COVER ASSY.



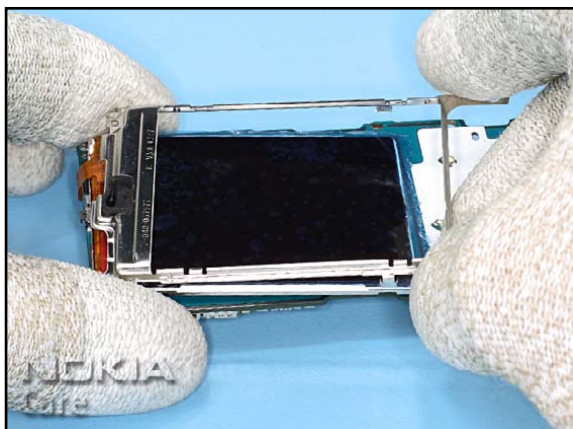
18. Take special care to the contacts springs on the PWB. Do not bend them.



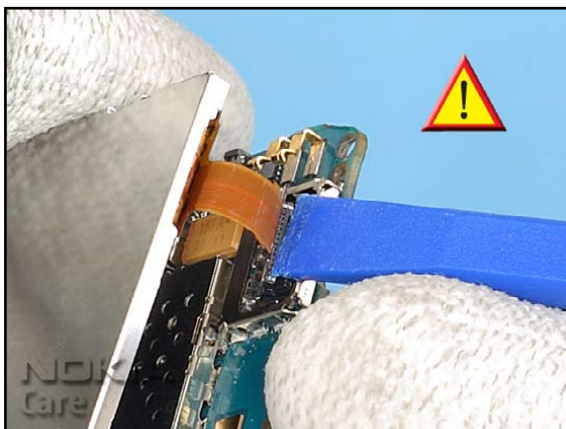
19. Remove the FLEX SHIELDING LID and discard it.



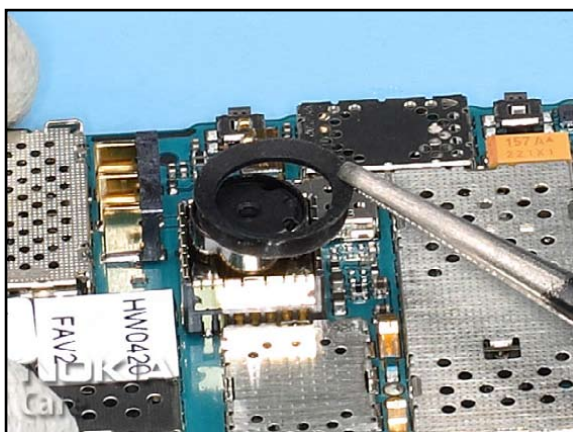
20. Unlock the UI-SHIELD...



21. ... and remove it from the ENGINE MODULE.



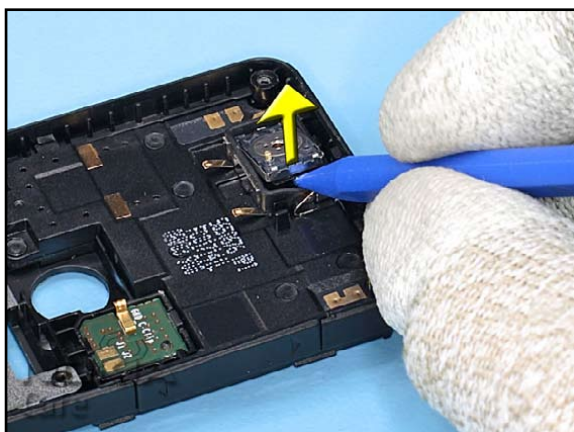
22. Turn the LCD AM as shown and very gently open the LCD connector.



23. Remove the CAMERA GASKET.



24. Unlock and remove the CAMERA MODULE.



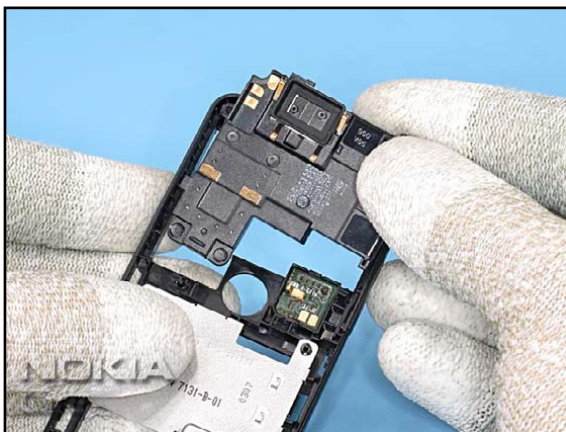
25. Remove the EARPIECE.



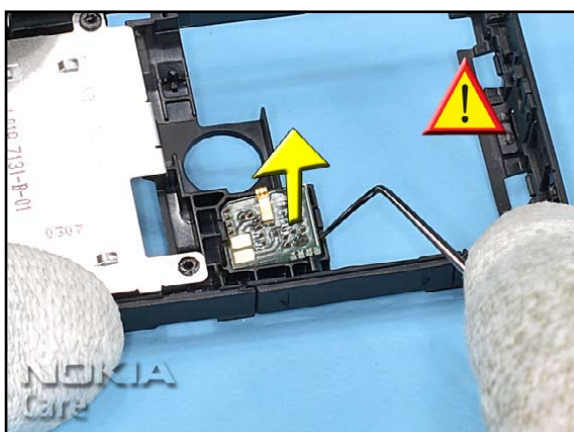
26. To remove the ANTENNA ASSY first unlock the clip on the left side...



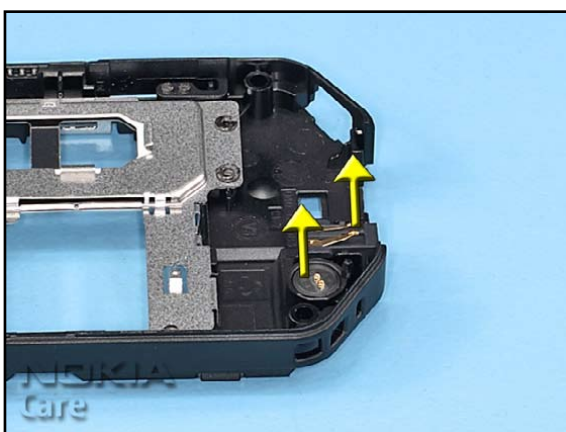
27. ... and then unlock the upper clip.



28. Gently remove the ANTENNA from the B-COVER ASSY.



29. Carefully remove the FLASH PWB ASSY.

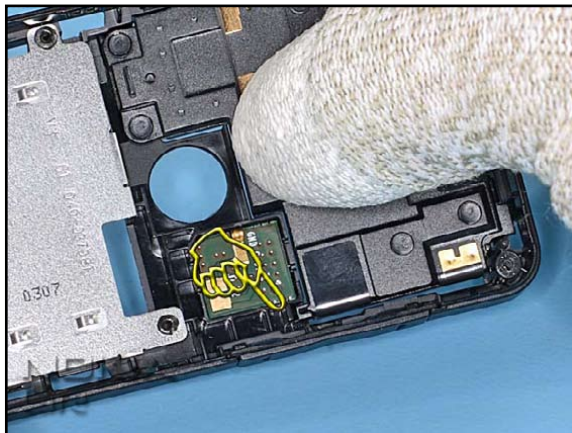


30. The CHARGER CONNECTOR and the MICROPHONE can be removed easily. The disassembly procedure is now finished.

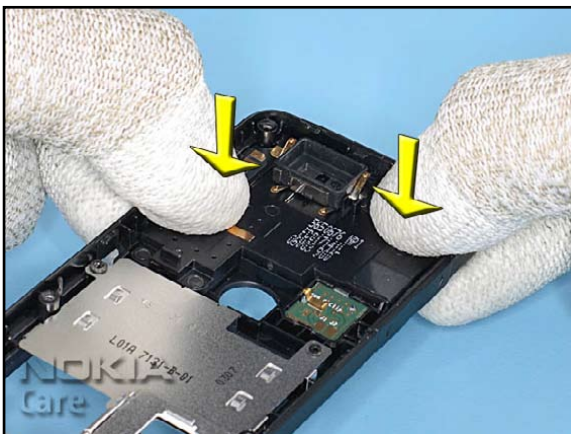
**13.ASSEMBLY HINTS**



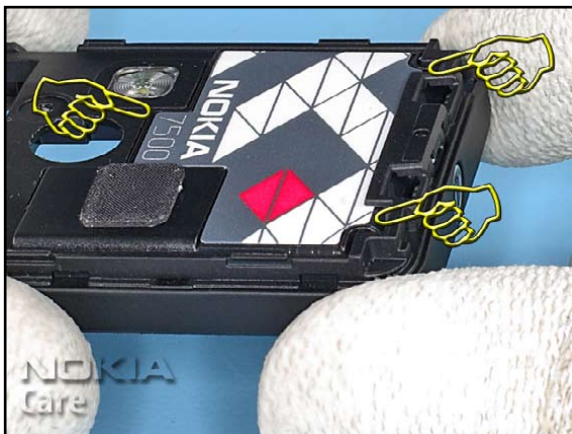
1. Nokia 7500 Assembly Hints.



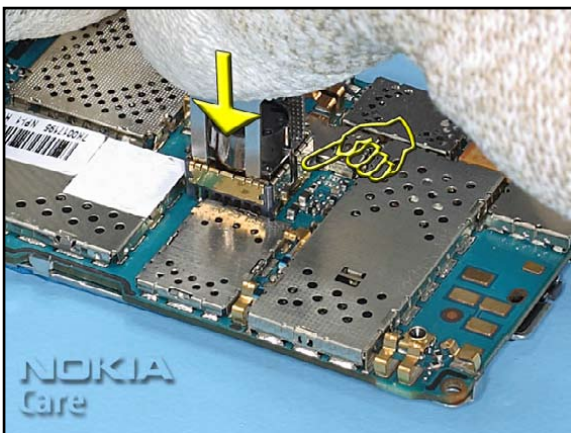
2. Insert the ANTENNA into the B-COVER ASSY starting with the shown clip.



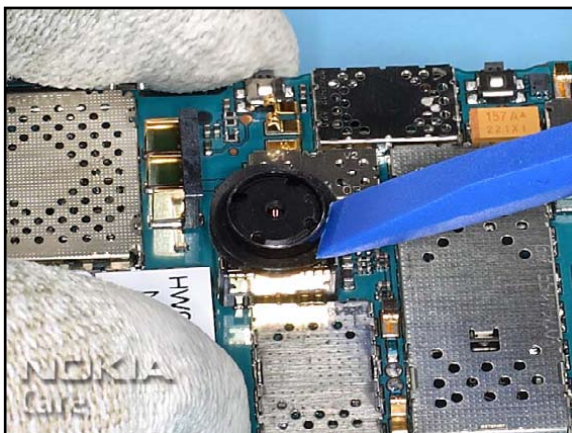
3. Secure the ANTENNA to the B-COVER by pressing it into place. Avoid bending the spring contacts.



4. Ensure that the ANTENNA is fitted correctly.

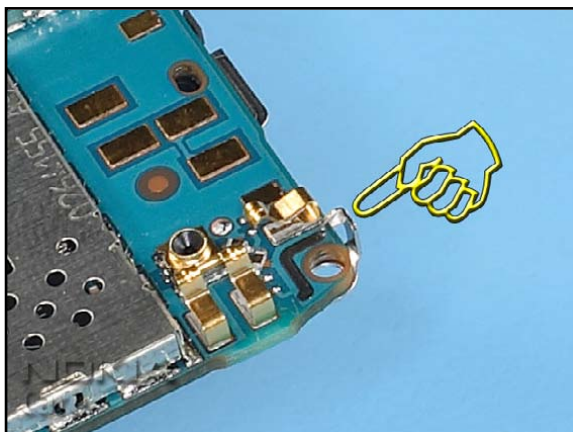


5. Insert the CAMERA MODULE paying attention to the correct position.

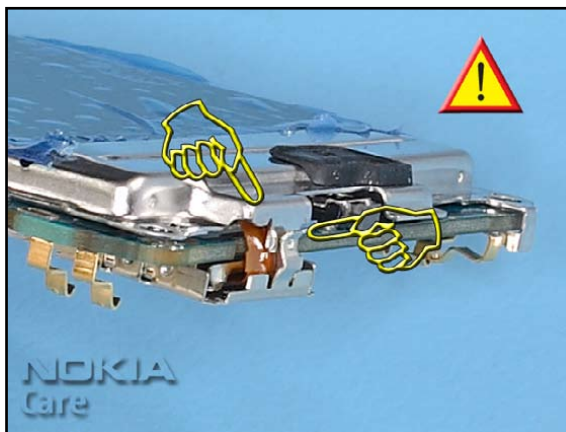


6. Fit the CAMERA GASKET to the CAMERA MODULE.





7. Check the correct position of the UI-SHIELD.



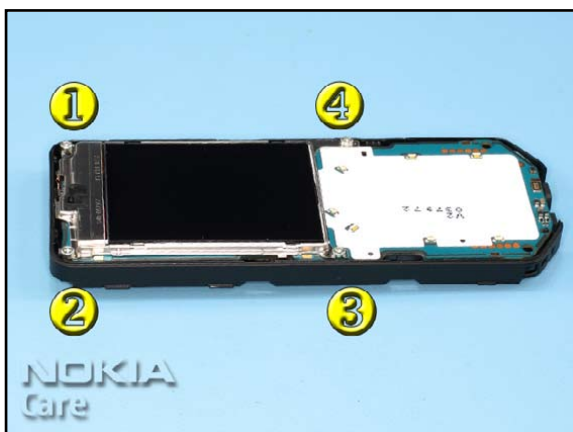
8. Always use a new FLEX SHIELDING LID ASSY and fit it as shown.



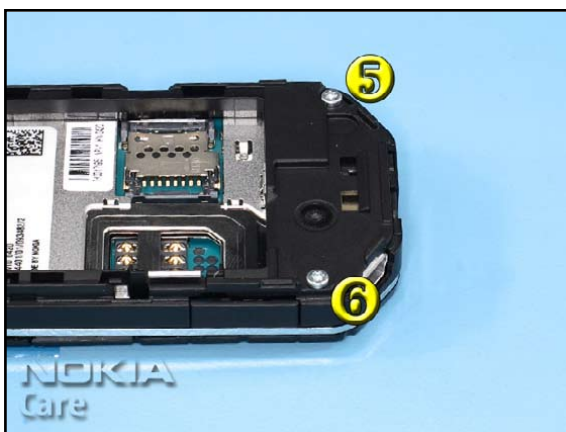
9. Avoid damaging the switch when inserting the ENGINE MODULE into the B-COVER.



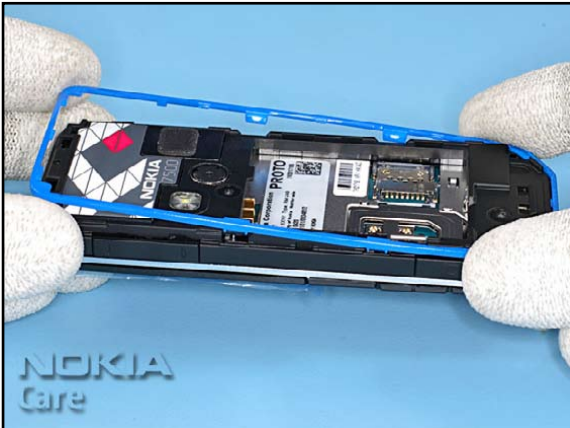
10. Ensure that all spring contacts are in a good condition before fitting the A-COVER.



11. Tighten the four screws to the torque of 21Ncm in the order shown.



12. Insert the two new screws and tighten them to the torque of 21Ncm in the order shown.



13. Fit the BACK TRIM and check its correct position.



14. Squeeze the A-COVER a bit and gently fit the KEYPAD. Secure it by pressing it into the A-COVER.