

SERVICE MANUAL  
Level 1&2

# NOKIA 7020

RM-497



### Transceiver characteristics

**Band:**

GSM 850/900/1800/1900

**Main display:**

2.2" 320 x 240 pixels (QVGA), up to 262,144 colours

**Secondary display:**

1.36" 160 x 128 pixels, black and white

**Camera:**

2 megapixel camera

**Operating System:**

S40

**Connections:**

- MicroUSB connector, USB 2.0
- 2.5 mm Nokia AV connector
- DC Charger
- microSD memory card slot
- Bluetooth 2.1 +EDR

### Transceiver with BL-4S battery pack

Talk time	Standby
<b>GSM:</b> Up to 4h 36min	<b>GSM:</b> Up to 360 hours

**Note:**

Talk times are dependant on network parameters and phone settings

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## 1. CHANGE HISTORY

Status	Version No.	Date	Comments
Approved	1.0	24.08.2009	
Approved	2.0	07.12.2009	Standby time updated
Approved	3.0	20.05.2010	Exploded view, disassembly instructions and battery model 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.Manuals@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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The availability of particular products may vary by region.

### **IMPORTANT**

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

### 3. 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:

#### 3.1 Warnings

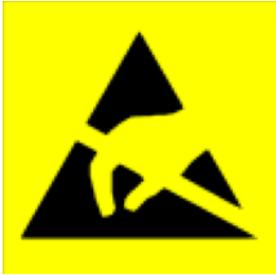
1. CARE MUST BE TAKEN ON INSTALLATION IN VEHICLES FITTED WITH ELECTRONIC ENGINE MANAGEMENT SYSTEMS AND ANTI-SKID BRAKING SYSTEMS. UNDER CERTAIN FAULT CONDITIONS, EMITTED RF ENERGY CAN AFFECT THEIR OPERATION. IF NECESSARY, CONSULT THE VEHICLE DEALER/MANUFACTURER TO DETERMINE THE IMMUNITY OF VEHICLE ELECTRONIC 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.

#### 3.2 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. Shortcircuiting the terminals may damage the battery or the connecting object.

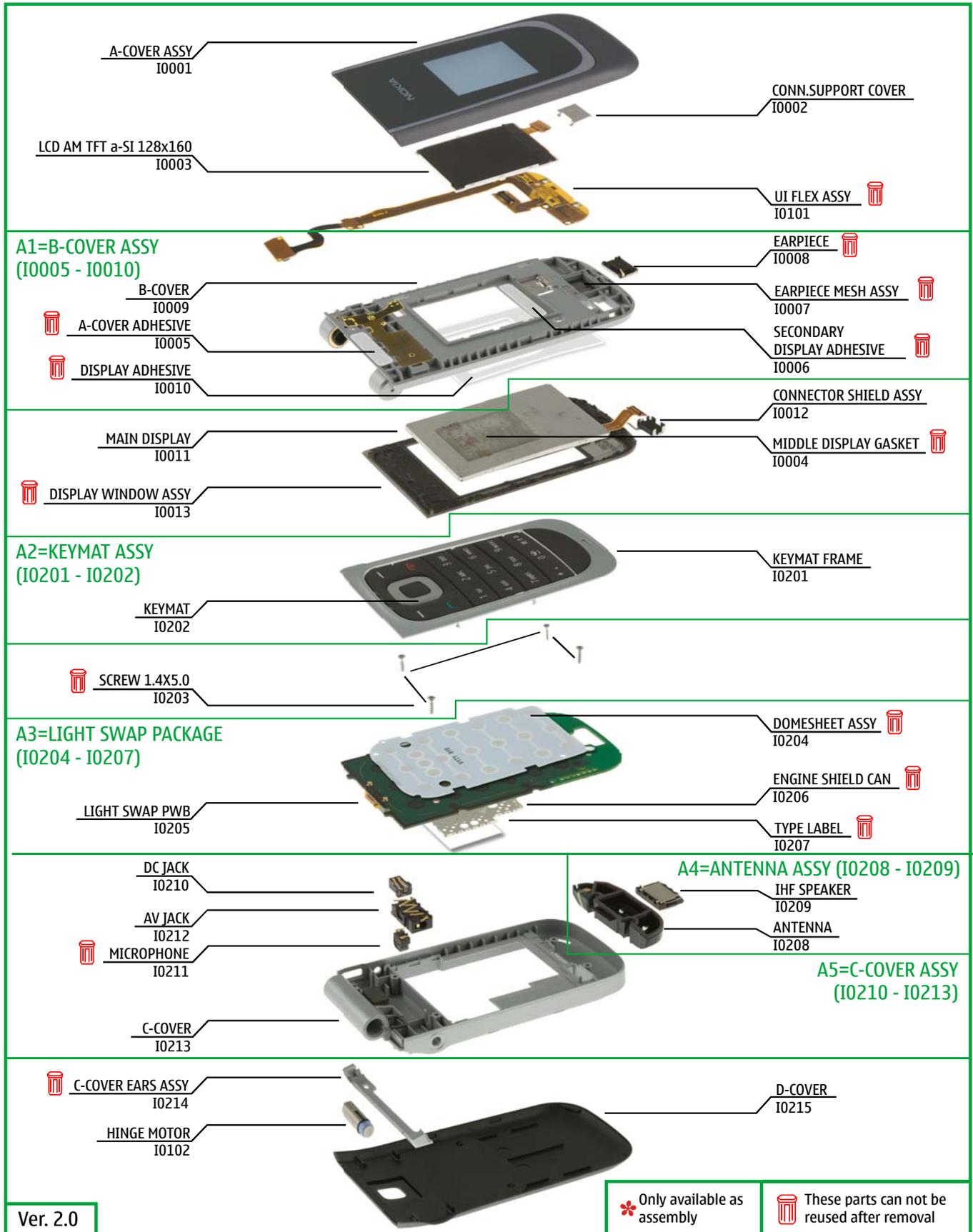
Leaving the battery in hot or cold places, such as in a closed car in summer or winter conditions, will reduce the capacity and lifetime of the battery. Always try to keep the battery between 15°C and 25°C (59°F and 77°F).

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**



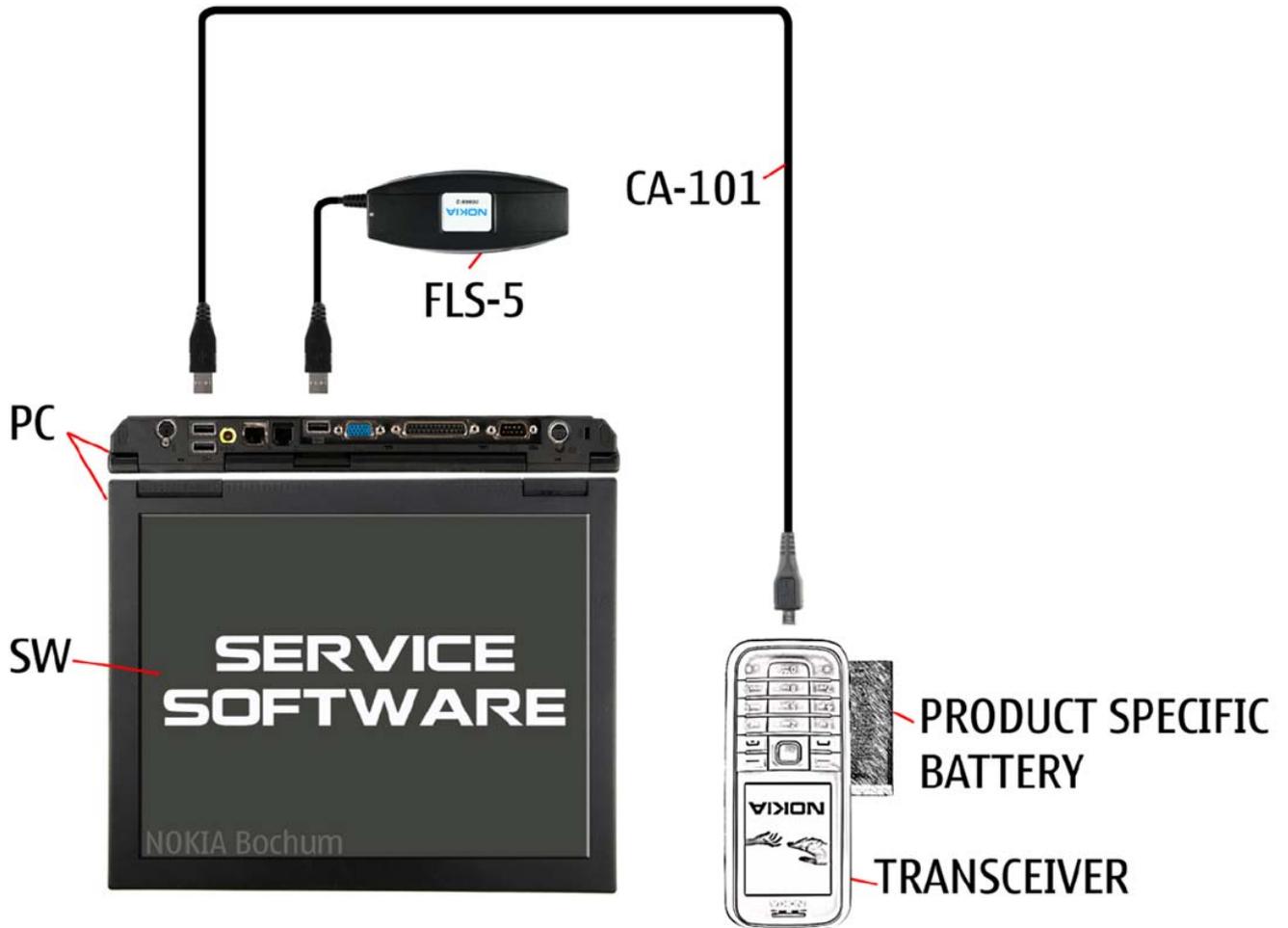
**8. SERVICE DEVICES**

 <p>FLS-5</p> <p>FLS-5 Flash Device</p>	 <p>CA-101 100cm</p> <p>CA-101 Service Cable</p>	 <p>AC-3 Travel Charger</p>
 <p>BL-4S Battery</p>	 <p>SS-212</p>	 <p><b>NMP standard toolkit (v2)</b> For more information, 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>

**9. SW-UPDATE**

**Flash concept- (Point of Sales)**

To use the FLS-5 Flash Dongle, follow the user guide inside the sales package.  
Please check always for the latest version of flash software, which is available on Nokia Online.



## 10. DISASSEMBLY INSTRUCTIONS



1) Nokia 7020 disassembly.



2) You must use the Nokia Standard Toolkit version 2 + the SS-212 tool.



3) To remove the BATTERY COVER, use the notches on the top side.



4) Remove the BATTERY COVER. If there is a battery inserted, remove it also.



4) Use the SS-93 to release the clip holding the KEYMAT ASSEMBLY.



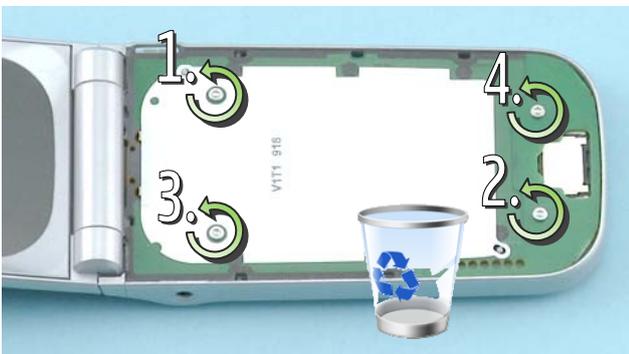
6) Release also the clip on the opposite side.



7) Finally loosen carefully the adhesive on the bottom side of the KEYMAT ASSEMBLY.



8) Remove the KEYMAT ASSEMBLY. Do not use it again. Discard it.



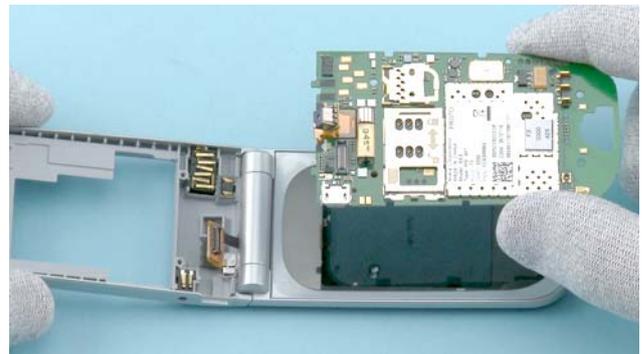
9) Unscrew the four TORX + size 4 screws in the order shown. Do not use them again.



10) Lift up the PWB in the direction shown.



11) Open the connector with SS-93 as shown. The vibra rotor can be used as a lever. Be careful not to damage the components nearby!



12) Remove the PWB.



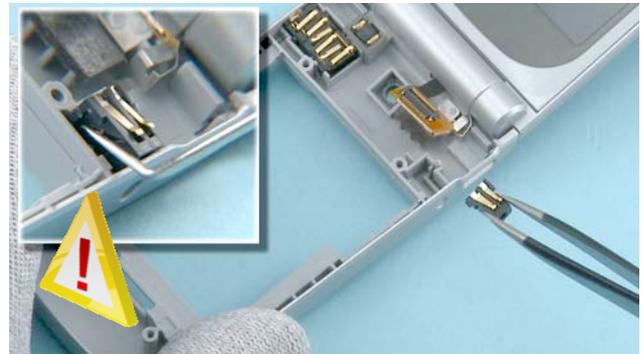
13) Use the SS-93 to loosen the shown corner of the DOMESHEET.



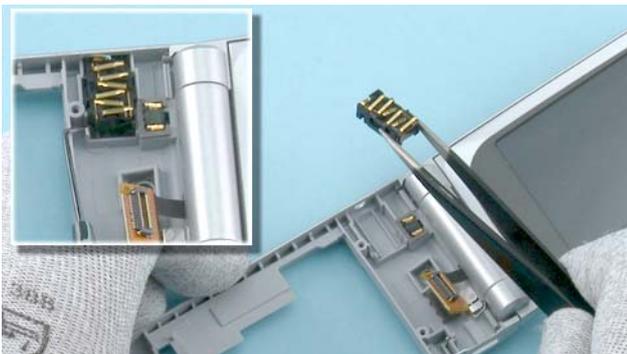
14) Then peel off the DOMESHEET and remove it. Do not use it again.



15) Press out the ANTENNA MODULE with the SS-93 and remove it.



16) Lever out the DC JACK with the dental tool and remove it with tweezers. Be careful not to injure yourself with the sharp end of the dental tool!



17) Use the dental tool to release the AV JACK. Then remove it with tweezers.



18) Remove the MICROPHONE by lifting it from its connector pins by using tweezers. Do not use it again. Discard it.



19) Use the SRT-6 to release the A-COVER.



20) Slide the SRT-6 between the A-COVER and the B-COVER as shown.



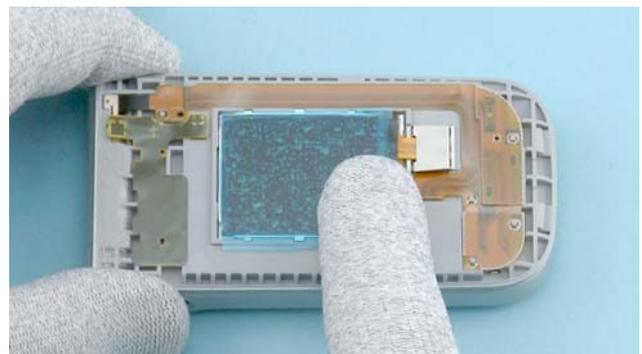
21) Release also the opposite side ...



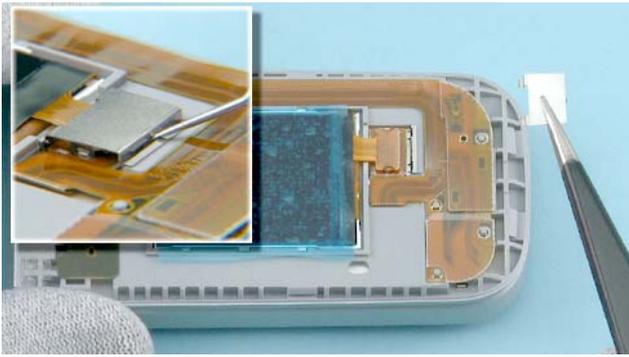
22) ... and the top side of the A-COVER.



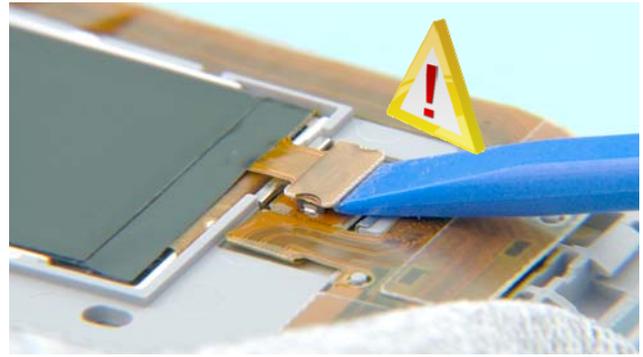
23) Slide the A-COVER to the direction shown to release the final two clips holding the A-COVER. Remove it.



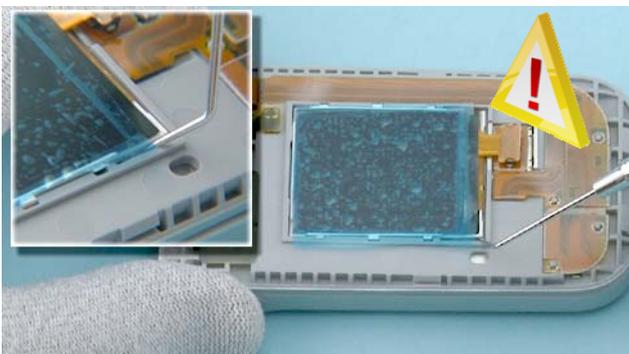
24) Protect the SECONDARY DISPLAY with protective film.



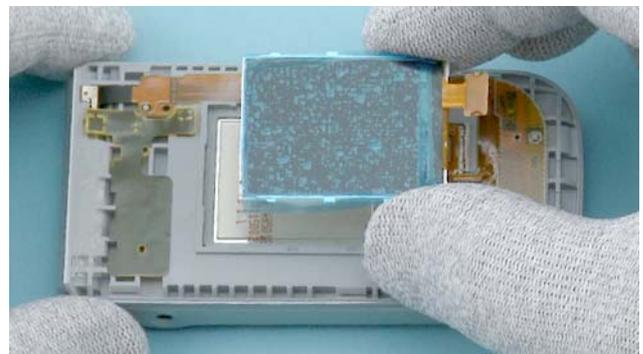
25) Release the CONN. SUPPORT COVER with dental tool as shown and remove it with tweezers.



26) Open the LCD CONNECTOR with the SS-93. Be careful not to damage the connector or nearby components!



27) Carefully lift up the LCD with the dental tool as shown.



28) Remove the LCD.



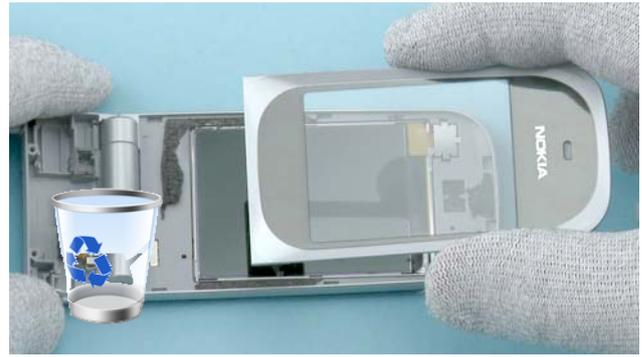
29) Start releasing the DISPLAY WINDOW ASSY by inserting SRT-6 between the DISPLAY WINDOW ASSY and the B-COVER.



30) Slide the SRT-6 along the sides of DISPLAY WINDOW ASSY.



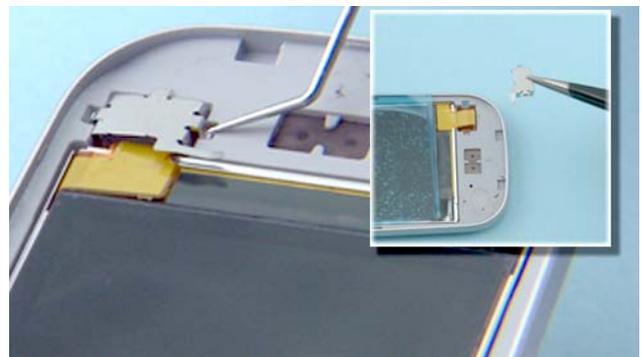
31) Finally lift up and ...



32) ... remove the DISPLAY WINDOW ASSY. Do not use it again.



33) Protect the MAIN DISPLAY with protective film.



34) Open the CONNECTOR SHIELD ASSY with the dental tool and remove it with tweezers.



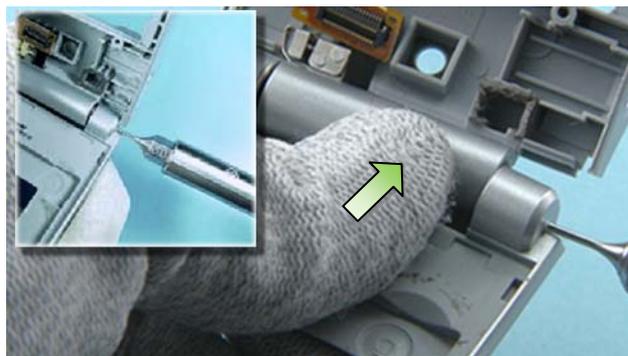
35) Open the MAIN DISPLAY connector with the SS-93. Be careful not to damage the connector!



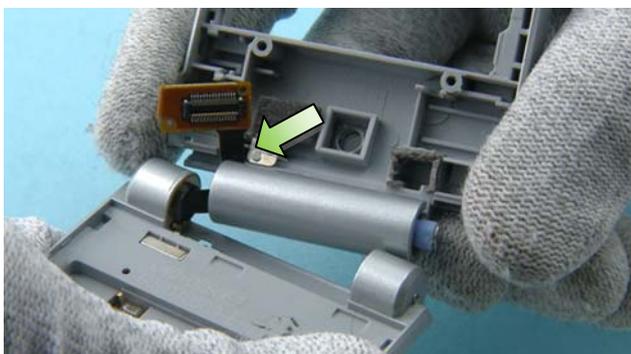
36) Start releasing the MAIN DISPLAY with the dental tool from the shown place. Carefully loosen up the adhesive holding the MAIN DISPLAY.



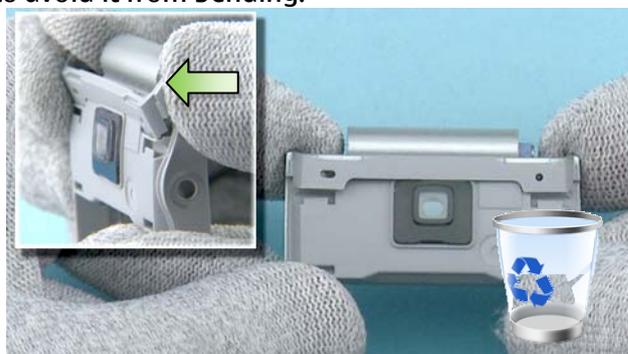
37) Remove the MAIN DISPLAY.



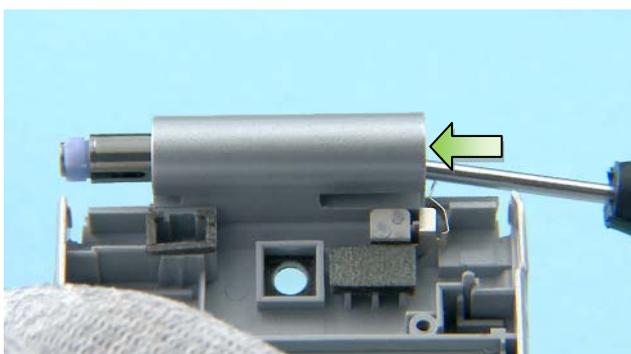
38) Push the SS-212 tool into the hole to the maximum depth to release the spring holding the C-COVER. Keep the spring pressed and gently push the C-COVER to the position shown in main picture. Before twisting them all apart, pull out the SS-212 to avoid it from bending.



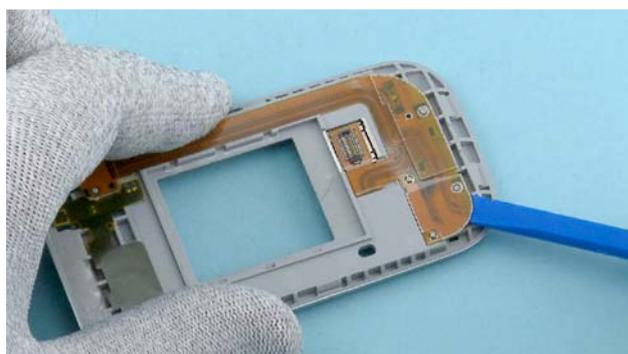
39) Carefully separate the C-COVER so that the flex and the connector stays unharmed.



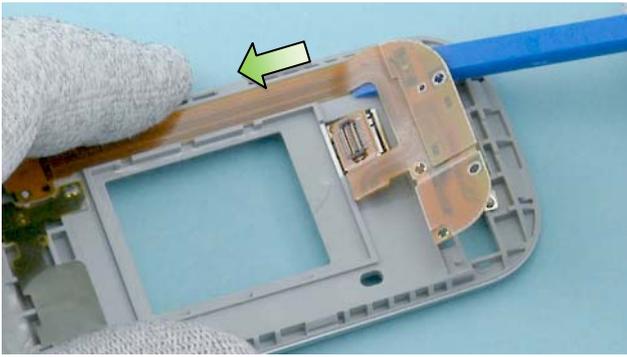
40) Remove the C-COVER EARS ASSY as shown. Do not use it again. Discard it.



41) Push out the HINGE MOTOR with a screwdriver.



42) Start releasing the UI FLEX ASSY with the SS-93.



43) Slide the SS-93 into direction shown.



44) Finally pull carefully the connector through the gap and remove the UI FLEX ASSY. Do not use it again. Discard it.



45) Nokia 7020 disassembly is now complete.

-END OF DISASSEMBLY-

## 11. ASSEMBLY HINTS



1) Tighten the four TORX + size 4 screws to the torque of 13 Ncm in the order shown.