

Service Manual

Simplified

Notebook Computer

Model No. **CF-30CTQAZBM**

TOUGHBOOK

This is the Service Manual for
the following areas.
M ...for U.S.A. and Canada

 **WARNING**

This service information is designed for experienced repair technicians only and is not designed for use by the general public. It does not contain warnings or cautions to advise non-technical individuals of potential dangers in attempting to service a product. Products powered by electricity should be serviced or repaired only by experienced professional technicians. Any attempt to service or repair the product or products dealt with in this service information by anyone else could result in serious injury or death.

Panasonic[®]

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WARNING

For U.K.

This apparatus must be earthed for your safety.

To ensure safe operation the three-pin plug must be inserted only into a standard three-pin power point which is effectively earthed through the normal household wiring.

Extension cords used with the equipment must be three-core and be correctly wired to provide connection to earth. Wrongly wired extension cords are a major cause of fatalities.

The fact that the equipment operates satisfactorily does not imply that the power point is earthed and that the installation is completely safe.

For your safety, if you have any doubt about the effective earthing of the power point, consult a qualified electrician.

FOR YOUR SAFETY PLEASE READ THE FOLLOWING TEXT CAREFULLY

This appliance is supplied with a moulded three pin mains plug for your safety and convenience.

A 3 amp fuse is fitted in this plug.

Should the fuse need to be replaced please ensure that the replacement fuse has a rating of 3 amps and that it is approved by ASTA or BSI to BS 1362.

Check for the ASTA mark  or the BSI mark  on the body of the fuse.

If the plug contains a removable fuse cover you must ensure that it is refitted when the fuse is replaced.

If you lose the fuse cover the plug must not be used until a replacement cover is obtained.

A replacement fuse cover can be purchased from your local Panasonic Dealer.

IF THE FITTED MOULDED PLUG IS UNSUITABLE FOR THE SOCKET OUTLET IN YOUR HOME THEN THE FUSE SHOULD BE REMOVED AND THE PLUG CUT OFF AND DISPOSED OF SAFELY.

THERE IS A DANGER OF SEVERE ELECTRICAL SHOCK IF THE CUT OFF PLUG IS INSERTED INTO ANY 13 AMP SOCKET.

If a new plug is to be fitted please observe the wiring code as shown below.

If in any doubt please consult a qualified electrician.


Warning: THIS APPLIANCE MUST BE EARTHED.

Important

The wires in this mains lead are coloured in accordance with the following code:

Green-and-yellow:	Earth
Blue:	Neutral
Brown:	Live

As the colours of the wires in the mains lead of this apparatus may not correspond with the coloured markings identifying the terminals in your plug, proceed as follows:

The wire which is coloured GREEN-and-YELLOW must be connected to the terminal in the plug which is marked by the letter E or by the safety earth symbol  coloured GREEN or GREEN-and-YELLOW.

The wire which is coloured Blue must be connected to the terminal which is marked with the letter N or coloured BLACK.

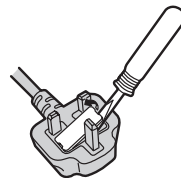
The wire which is coloured Brown must be connected to the terminal which is marked with the letter L or coloured RED.

The mains plug on this equipment must be used to disconnect the mains power.

Please ensure that a socket outlet is available near the equipment and shall be easily accessible.

How to replace the fuse

Open the fuse compartment with a screwdriver and replace the fuse.



Warnings

- This equipment is not designed for connection to an IT power system.
(An IT system is a system having no direct connections between live parts and Earth; the exposed-conductive-parts of the electrical installation are earthed.
An IT system is not permitted where the computer is directly connected to public supply systems in the U.K.)
- Disconnect the mains plug from the supply socket when the computer is not in use.

This equipment is produced to BS800/1983.

LASER SAFETY INFORMATION

For U.S.A.

Class 1 LASER-Product

This product is certified to comply with DHHS Rules 21 CFR Subchapter J.

This product complies with European Standard EN60825 (or IEC Publication 825)

For all areas

This equipment is classified as a class 1 level LASER product and there is no hazardous LASER radiation.

Caution:

- (1) Use of controls or adjustments or performance of procedures other than those specified herein may result in hazardous radiation exposure.
- (2) The drive is designed to be incorporated into a computer-based system or unit which has an enclosing cover. It should never be used as a stand alone drive.

Danger:

The serviceman should not remove the cover of drive unit and should not service because the drive unit is a non-serviceable part.

Please check DANGER label on PD-drive unit.

- Unplug the AC power cord to the equipment before opening the top cover of the drive.
When the power switch it on, do not place your eyes close to the front panel door to look into the interior of the unit.

LASER Specification

Class 1 level LASER Product

Wave Length: DVD 658±8 nm

CD 775~815 nm

Laser safety information is appropriate only when drive with laser is installed.

Safety precautions

1. Before servicing, unplug the power cord to prevent an electric shock.
2. When replacing parts, use only manufacturer's recommended components for safety.
3. Check the condition of the power cord. Replace if wear or damage is evident.
4. After servicing, be sure to restore the lead dress, insulation barriers, insulation papers, shields, etc.

Important Safety Instructions

When using your telephone equipment, basic safety precautions should always be followed to reduce the risk of fire, electric shock and injury to persons, including the following:

1. Do not use this product near water, for example, near a bath tub, wash bowl, kitchen sink or laundry tub, in a wet basement or near a swimming pool.
2. Avoid using a telephone (other than a cordless type) during an electrical storm. There may be a remote risk of electric shock from lightning.
3. Do not use the telephone to report a gas leak in the vicinity of the leak.
4. Use only the power cord and batteries indicated in this manual. Do not dispose of batteries in a fire. They may explode. Check with local codes for possible special disposal instructions.

SAVE THESE INSTRUCTIONS

LITHIUM BATTERY ⚠

• CAUTION

Danger of explosion if battery is incorrectly replaced.
Replace only with the same or equivalent type recommended by the equipment manufacture.
Discard used batteries according to the manufacturer's instructions.

LITHIUMBATTERIES ⚠

Vorsicht!

Explosionsgefahr bei unsachgemäßem Austausch der Batterie. Ersatz nur durch denselben oder einen vom Hersteller empfohlenen ähnlichen Typ. Entsorgung gebrauchter Batterien nach Angaben des Herstellers.

PILE AU LITHIUM ⚠

ATTENTION: IL Y A DANGER D'EXPLOSION S' IL Y A REMPLACEMENT INCORRECT DE LA PILE. REMPLACER UNIQUEMENT AVEC UNE PILE DU MÊME TYPE OU D'UN TYPE RECOMMANDÉ PAR LE CONSTRUCTEUR. METTRE AU RÉBUT LES PILES USAGÉES CONFORMÉMENT AUX INSTRUCTIONS DU FABRICANT.

For U.S.A. / CANADA



A lithium ion battery that is recyclable powers the product you have purchased. Please call 1-800-8-BATTERY for information on how to recycle this battery.

L'appareil que vous vous êtes procuré est alimenté par une batterie au lithium-ion. Pour des renseignements sur le recyclage de la batterie, veuillez composer le 1-800-8-BATTERY.

Lithium Battery

Lithium Battery!

This computer contains a lithium battery to enable the date, time, and other data to be stored. The battery should only be exchanged by authorized service personnel.

Warning! A risk of explosion from incorrect installation or mis-application may possibly occur.

Precautions (Battery Pack)

- Care should be exercised with regard to the following in order to avoid the possibility of overheating, fire or damage.



Avoid Heat

Do not throw the battery pack into a fire or expose it to excessive heat.



Keep Articles Away

Do not place the battery pack together with articles such as necklaces or hairpins when carrying or storing.



Do Not Disassemble

Do not insert sharp objects into the battery pack, expose it to bumps or shocks, deform, disassemble, or modify it.



Do Not Short

Do not short the positive (+) and negative (-) contacts.



Avoid Extreme Heat, Cold and Direct Sunlight

Do not charge, use or leave the battery pack for extended periods where it will be exposed to direct sunlight, in a hot place (in an automobile on a sunny day, for example), or in a cold place.



Do Not Use With Any Other Computer

The battery pack is rechargeable and was intended for the specified computer or charger. Do not use it with a computer other than the one for which it was designed.



Do Not Put into a Microwave

Do not put the battery pack into a microwave oven or a pressurized chamber.



Discontinue Use

Should the battery emit an abnormal odor, become hot to the touch, become discolored, change shape, or become in any way different from normal, remove it from the computer or charger and discontinue use.

- Do not touch the terminals on the battery pack. The battery pack may no longer function properly if the contacts are dirty or damaged.
- Do not expose the battery pack to water, or allow it to become wet.

- If the battery pack will not be used for a long period of time (a month or more), charge or discharge (use) the battery pack until the remaining battery level becomes 30% to 40% and store it in a cool, dry place.
- This computer prevents overcharging of the battery by recharging only when the remaining power is less than approx. 95% of capacity.
- The battery pack is not charged when the computer is first purchased. Be sure to charge it before using it for the first time. When the AC adaptor is connected to the computer, charging begins automatically.
- Should the battery leak and the fluid get into your eyes, do not rub your eyes. Immediately flush your eyes with clear water and see a doctor for medical treatment as soon as possible.

NOTE

- The battery pack may become warm during recharging or normal use. This is completely normal.
- Recharging will not commence outside of the allowable temperature range (0 °C to 50 °C {32°F to 122 °F}). (☞ Reference Manual “Battery Power”) Once the allowable range requirement is satisfied, charging begins automatically. Note that the recharging time varies based on the usage conditions. (Recharging takes longer than usual when the temperature is 10 °C {50 °F} or less.)
- If the temperature is low, the operating time is shortened. Only use the computer within the allowable temperature range.
- The battery pack is a consumable item. If the amount of time the computer can be run off a particular battery pack becomes dramatically shorter and repeated rechargings do not restore its performance, the battery pack should be replaced with a new one.
- When transporting spare batteries inside a package, briefcase, etc., it is recommended that it be placed in a plastic bag so that its contacts are protected.
- Always power off the computer when it is not in use. Leaving the computer on when the AC adaptor is not connected will exhaust the remaining battery capacity.

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1 Specifications

Main Specifications

Model No.	CF-30CTQAZBM/CF-30CTQEZBM	
CPU	Intel® Core™ Duo Processor L2400 (1.66 GHz, 2 MB ¹ L2 cache, 667 MHz FSB)	
Chipset	Intel® 945GM	
Memory ^{**2}	512 MB (4096 MB Max.)	
Video Memory ^{**3}	UMA (128 MB Max.)	
Hard Disk Drive ⁴	80 GB	
Display Method	13.3 XGA type (TFT) with Touchscreen	
Internal LCD ⁵	65,536/16,777,216 colors (800 × 600 dots/1024 × 768 dots)	
	65,536/16,777,216 colors (800 × 600 dots/1024 × 768 dots/1280 × 768 dots/1280 × 1024 dots)	
Wireless LAN ⁷	Intel PRO /Wireless 3945 ABG (802.11 a + b + g)	
Bluetooth™ ⁸	2.0 + EDR	
LAN	IEEE 802.3 10Base-T, IEEE 802.3u 100Base-TX, IEEE 802.3ab 1000Base-T	
Modem	Data: 56 kbps (V.92) FAX: 14.4 kbps	
Sound	WAVE and MIDI playback, Intel® High Definition Audio subsystem support, Monaural speaker	
Security Chip	TPM (TCG V1.2 compliant) ⁹	
Card Slot	PC Card	Type I or Type II x 1 (3.3 V: 400 mA, 5 V: 400 mA)
	ExpressCard	ExpressCard/34 ¹⁰ or ExpressCard/54 x 1
	SD Memory Card ¹¹	x 1, Data transfer rate = 8 MB per second ¹²
	Smart Card ¹³	x 1
RAM Module Slot	200-pin, 1.8 V, SO-DIMM, DDR2 SDRAM, PC2-4200 Compliant	
Interface	USB port (4-pin, USB 2.0) x 3, Serial port (Dsub 9-pin male), Modem port (RJ-11), LAN port (RJ-45), External display port (Mini Dsub 15-pin female), Expansion Bus Connector (Dedicated 80-pin female), External Antenna Connector (Dedicated 50 coaxial connector), IEEE 1394a Interface Connector (4-pin x 1), Microphone Jack (Miniature jack, 3.5 DIA, Stereo), Headphone Jack (Miniature jack, 3.5 DIA, Impedance 32 Ω, Output Power 4 mW × 2)	
Keyboard / Pointing Device	87 keys / Touch Pad / Touchscreen (Anti-Reflection, Stylus (included) touch capable)	
Power Supply	AC adaptor or Battery pack	
AC Adaptor ¹⁴	Input: 100 V to 240 V AC, 50 Hz/60 Hz, Output: 15.6 V DC, 5.0 A	
Battery Pack	Li-ion 10.65 V, 8.55 Ah	
Operating Time ¹⁵	Approx. 4 hours at set to maximum LCD brightness setting (typ: 1000 cd/m ²) Approx. 5 hours (typ: 500 cd/m ²) to Approx. 8 hours (minimum brightness) ¹⁶ (Approx. 7 hours ¹⁷)	
	Charging Time ¹⁵	Power on
		Power off
Clock Battery	Coin type lithium battery 3.0 V	
Power Consumption ¹⁸	Approx. 45 W ¹⁹ / Approx. 70 W (Maximum when recharging in the ON state)	
Physical Dimensions (W × H × D) (including the carrying handle)	302 mm × 67.5 - 69.5 mm × 285 mm {11.9" × 2.7 - 2.8" × 11.3"}	
Weight (including the carrying handle)	Approx. 3.8 kg {Approx. 8.4 lb.}	
Operation Environment	Temperature: 5 °C to 35 °C {41 °F to 95 °F} Humidity: 30% to 80% RH (No condensation)	
Storage Environment	Temperature: -20 °C to 60 °C {-4 °F to 140 °F} Humidity: 30% to 90% RH (No condensation)	

Operating System	Microsoft® Windows® XP Professional Service Pack 2 with Advanced Security Technologies (NTFS File System)
Utility Programs	DMI Viewer, Microsoft® Windows® Media Player 10, Adobe Reader, PC Information Viewer, SD Utility, Icon Enlarger, Loupe Utility, Intel® Matrix Storage Manager, Intel® PROSet/Wireless Software ⁷ , Bluetooth™ Stack for Windows® by TOSHIBA ⁸ , Wireless Switch Utility, Hotkey Settings, Battery Recalibration Utility, Panasonic Hand Writing, InNeon TPM Professional Package ²⁰ , Recover Pro™ 6 ²⁰
	Setup Utility, Hard Disk Data Erase Utility ²¹ , PC-Diagnostic Utility

Wireless LAN <Only for model with wireless LAN>

Intel PRO / Wireless 3945 ABG (802.11 a + b + g)	
Data Transfer Rates ²²	IEEE802.11a: 54/48/36/24/18/12/9/6 Mbps (automatically switched) IEEE802.11b: 11/5.5/2/1 Mbps (automatically switched) IEEE802.11g: 54/48/36/24/18/12/9/6 Mbps (automatically switched)
Standards Supported	IEEE802.11a/IEEE802.11b/IEEE802.11g
Transmission method	OFDM system, DSSS system
Wireless Channels Used	IEEE802.11a: Channels 36/40/44/48/52/56/60/64/149/153/157/161/165 IEEE802.11b/IEEE802.11g: Channels 1 to 11
RF Frequency Band	IEEE802.11a: 5.18-5.32 GHz, 5.745-5.825 GHz IEEE802.11b/IEEE802.11g: 2.412-2.462 GHz

Bluetooth™ <Only for model with Bluetooth>

Bluetooth Version	2.0 + EDR
Transmission method	FHSS system
Wireless Channels Used	Channels 1 to 79
RF Frequency Band	2.402-2.48 GHz
Power Class	Class1

¹¹ 1MB = 1,048,576 bytes

²² You can physically expand the memory upto 4 GB, but the total amount of usable memory available will be less depending on the actual system configuration.

³ A segment of the main memory is allotted automatically depending on the computer's operating status. The size of the Video Memory cannot be set by the user.

⁴ 1GB = 1,000,000,000 bytes. Your operating system or some application software will report as fewer GB.

⁵ A 16,777,216 color display is achieved by using the dithering function.

⁶ Maximum resolution depends on the specifications of the external display.

⁷ Only for model with wireless LAN

⁸ Only for model with Bluetooth

⁹ For information on TPM, click [start] - [Run] and input "c:\util\drivers\tpm\README.pdf", and refer to the Installation Manual of "Trusted Platform Module (TPM)".

¹⁰ When using ExpressCard/34, the card slot cover cannot be closed.

¹¹ Operation has been tested and confirmed using Panasonic SD Memory Cards with a capacity of up to 2 GB. The transfer rate using the SD Memory Card slot on this computer is 8 MB per second. (This is a theoretical value, and differs from actual speeds.)

The transfer rate is 8 MB per second even if you use an SD Memory Card that supports high-speed transfer rates.

Operation on other SD equipment is not guaranteed.

This computer is not compatible with MultiMediaCards or SDHC Memory Cards. Do not insert these kinds of cards.

¹² Theoretical value and not the actual speed. The transfer rate does not become higher even if you use a card that supports the higher transfer rate.

¹³ Only for model with Smart Card slot

¹⁴ The AC adaptor is compatible with power sources up to 240 V AC adaptor. The computer is supplied with a 125 V AC compatible AC cord. ^{20-M-2-1}

¹⁵ Varies depending on the usage conditions.

¹⁶ Measured using BatteryMark™ Version 4.0.1

¹⁷ Measured using MobileMark™ 2005 (LCD brightness: 60 cd/m²)

¹⁸ Approx. 0.9 W when the battery pack is fully charged (or not being charged) and the computer is OFF.

Approx. 1.5 W when the Wake up from LAN has been enabled.

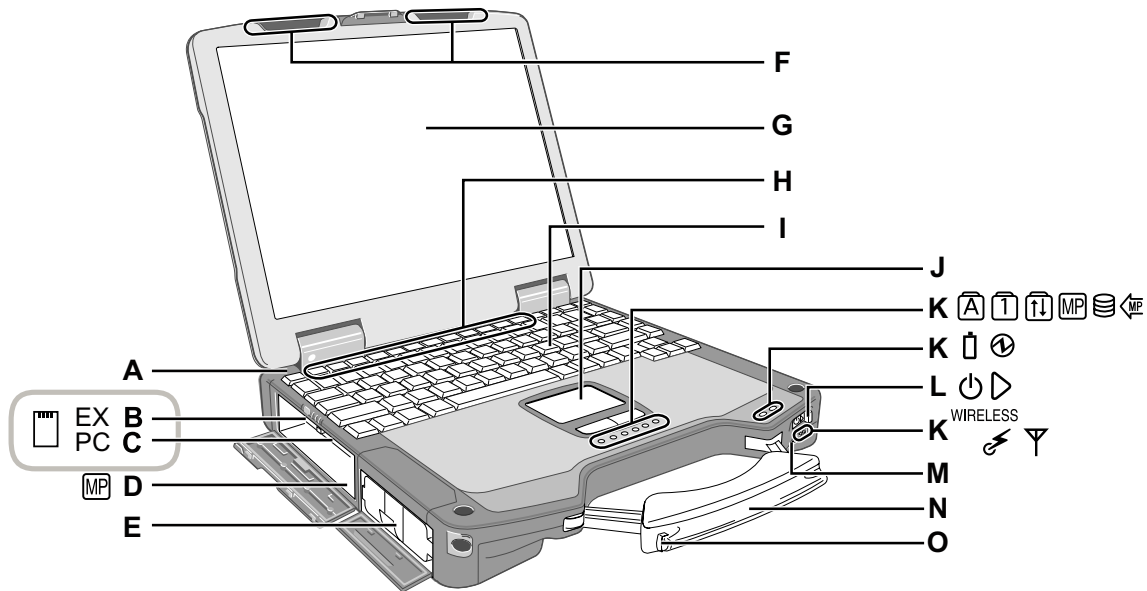
¹⁹ Rated power consumption ^{23-E-1}

²⁰ You need to install to use the feature.

²¹ The Product Recovery DVD-ROM is required.

²² These are speeds specified in IEEE802.11a+b+g standards. Actual speeds may differ.

2 Names and Functions of Part



A: Bluetooth Antenna

<Only for model with Bluetooth>

➔ *Reference Manual* "Bluetooth"

B: ExpressCard Slot

➔ *Reference Manual* "PC Card / ExpressCard"

C: PC Card Slot

➔ *Reference Manual* "PC Card / ExpressCard"

D: Multimedia Pocket

➔ *Reference Manual* "Multimedia Pocket"

E: Battery Pack

F: Wireless LAN Antenna

<Only for model with wireless LAN>

➔ *Reference Manual* "Wireless LAN"

G: LCD

<Only for model with touchscreen>

➔ *Reference Manual* "Touchscreen"

H: Function Key

➔ *Reference Manual* "Key Combinations"

I: Keyboard

J: Touch Pad

K: LED Indicator

: Caps lock

: Numeric key (NumLk)

: Scroll lock (ScrLk)

: Multimedia pocket device status or the second battery status

➔ *Reference Manual* "Multimedia Pocket"
"Battery Power"

: Hard disk drive status

: Power status of the multimedia pocket

: Battery status

➔ *Reference Manual* "Battery Power"

: Power status

(Off: Power off/Hibernation, Green: Power on, Blinking green: Standby)

: Wireless ready

This indicator lights when Wireless LAN, Bluetooth, and/or Wireless WAN are connected and ready. It does not necessarily indicate the On/Off condition of the wireless connection.

➔ *Reference Manual* "Wireless LAN" "Bluetooth" "Wireless Switch Utility"

: Wireless WAN status

<Only for model with wireless WAN>

➔ Refer to the instruction manual of the wireless device

L: Power Switch

M: Wireless Switch

➔ *Reference Manual* "Wireless Switch Utility"

N: Carrying Handle

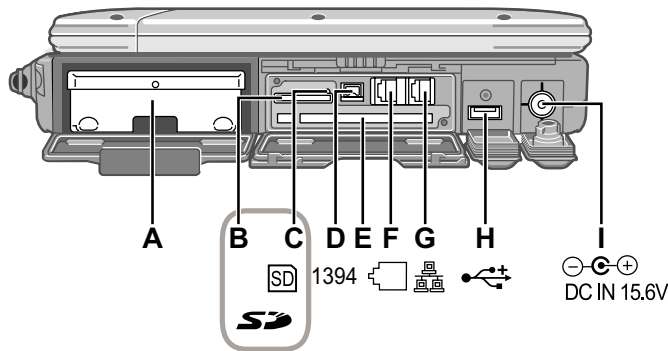
O: Stylus Holder



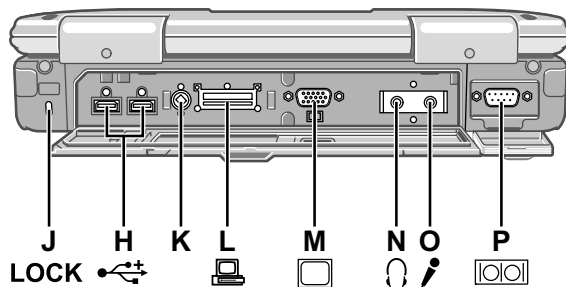
A lithium ion battery that is recyclable powers the product you have purchased. Please call 1-800-8-BATTERY for information on how to recycle this battery.

L'appareil que vous vous êtes procuré est alimenté par une batterie au lithium-ion. Pour des renseignements sur le recyclage de la batterie, veuillez composer le 1-800-8-BATTERY.

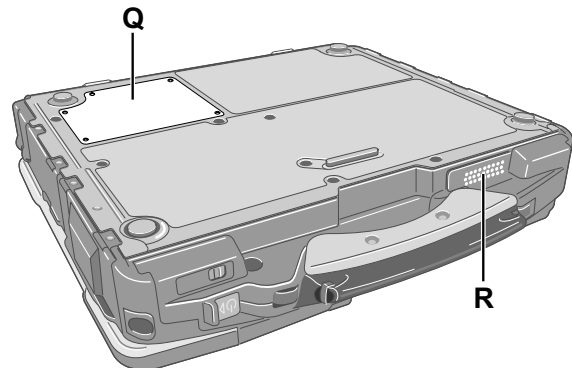
Right side



Rear side



Bottom



A: Hard Disk Drive

→ Reference Manual "Hard Disk Drive"

B: SD Memory Card Slot

→ Reference Manual "SD Memory Card"

C: SD Memory Card Indicator

(Blinking: During access)

→ Reference Manual "SD Memory Card"

D: IEEE 1394 Interface Connector

→ Reference Manual "IEEE 1394 Devices"

E: Smart Card Slot

<Only for model with Smart Card slot>

→ Reference Manual "Smart Card"

F: Modem Port

→ Reference Manual "Modem"

G: LAN Port

→ Reference Manual "LAN"

H: USB Port

→ Reference Manual "USB Devices"

I: DC-IN Jack

J: Security Lock

A Kensington cable can be connected.
For further information, read the manual that comes with the cable.

K: Ext Antenna Connector

L: Expansion Bus Connector

→ Reference Manual "Port Replicator"

M: External Display Port

→ Reference Manual "External Display"

N: Headphone Jack

You can connect headphones or amplified speakers. When they are connected, audio from the internal speakers is not heard.

O: Microphone Jack

A condenser microphone can be used. If other types of microphones are used, audio input may not be possible, or malfunctions may occur as a result.

When recording in stereo using a stereo microphone:

Double-click in the notification area, click [Options] - [Properties], and add a check mark for [Recording], click [OK] - [Options] - [Advanced Controls] - [Advanced], remove a check mark for [Mono Microphone], and then click [Close].

When using a monaural microphone with a 2-terminal plug:

With the settings outlined above, only audio on the left track will be recorded.

When monitoring the microphone audio using headphones, sounds on the left track cannot be heard, regardless of the above settings. This is a result of the computer's specifications, and is not a malfunction.

P: Serial Port

Q: RAM Module Slot

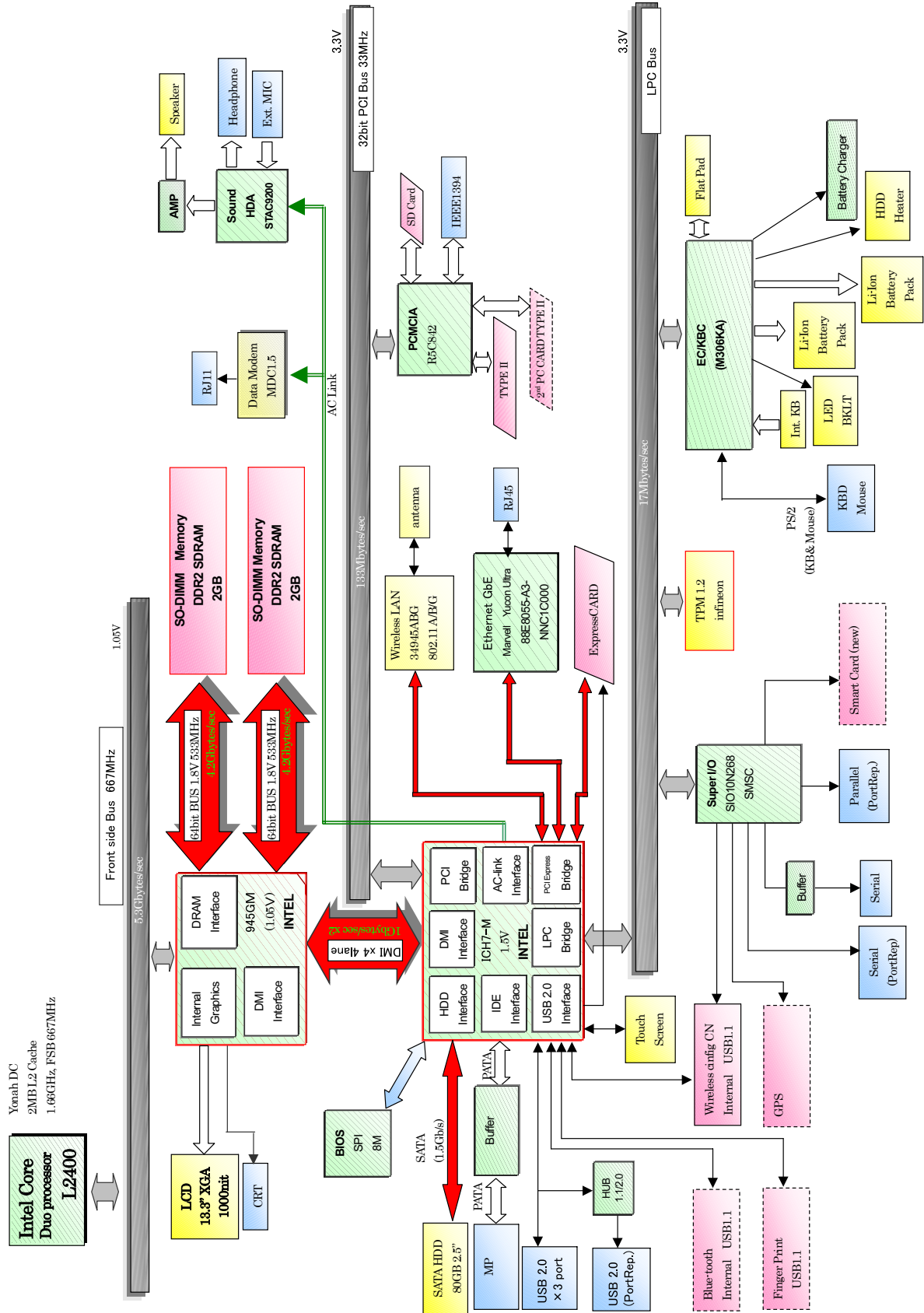
→ Reference Manual "RAM Module"

R: Speaker

→ Reference Manual "Key Combinations"

3 Block Diagram

CF-30
Block Diagram

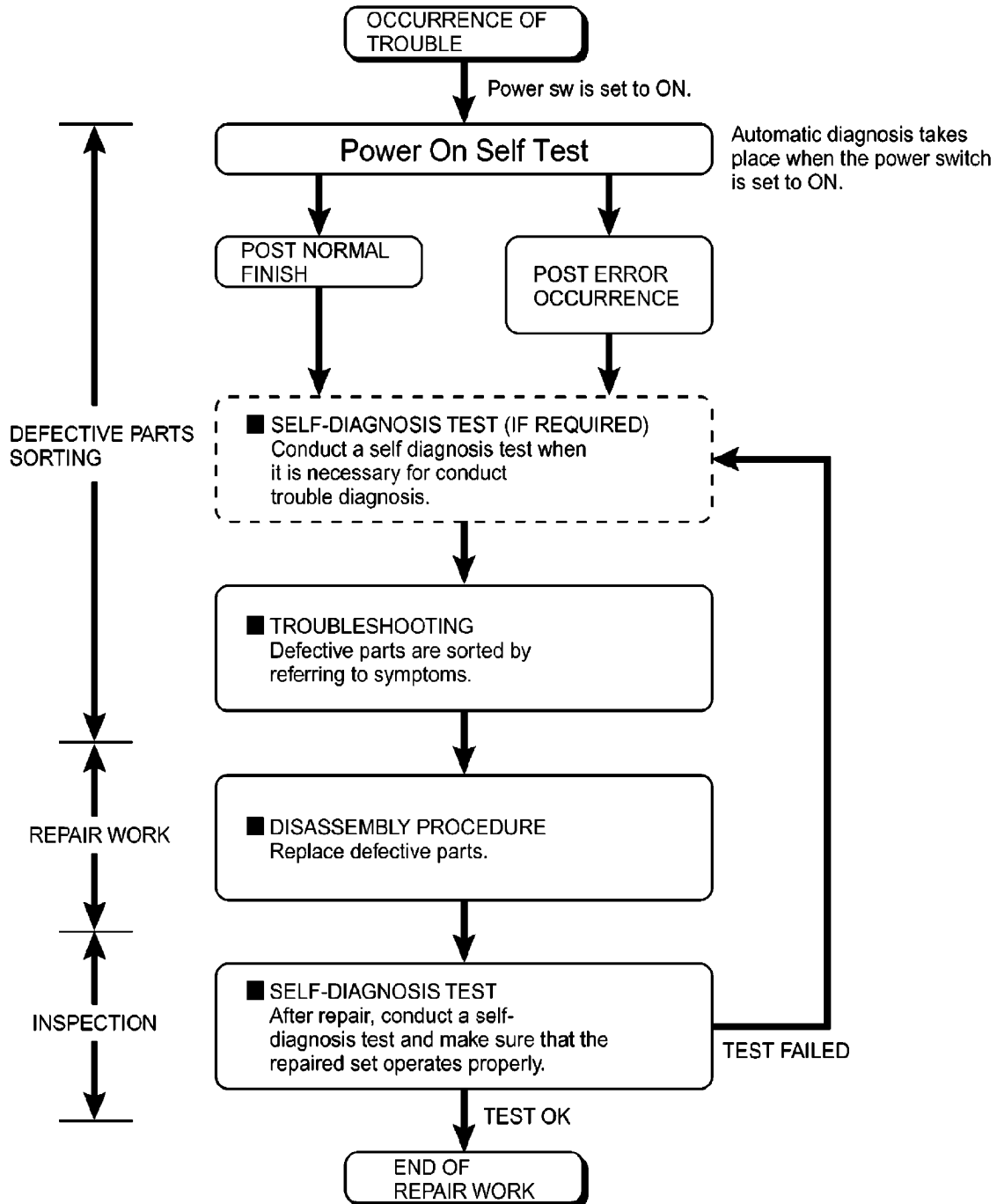


4 Diagnosis Procedure

4.1. Basic Procedures

The basic procedures for diagnosis, disassembly, and test of defective parts of a set to be repaired are summarized below. For details, refer to relevant pages in the Service Manual.

● Flow Chart

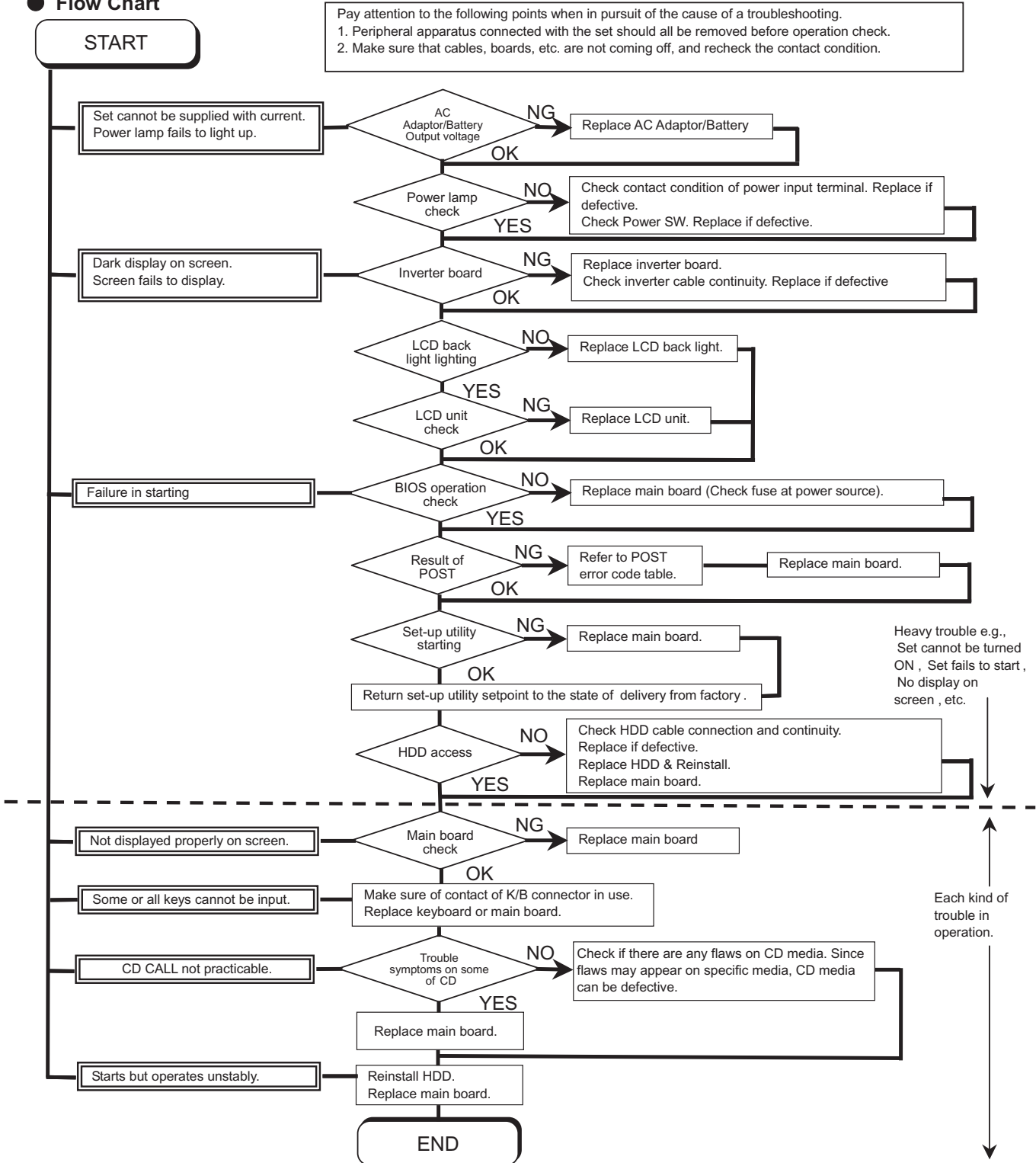


4.2. Troubleshooting

Please take note of the following two points with regard to troubleshooting:

1. Know-how of diagnosis upon occurrence of heavy troubles, e.g. Set cannot be turned ON, Set fails to start, No display on screen, etc.
2. Explanation of each trouble, mainly symptom of trouble in operation.

Flow Chart



5 Power-On Self Test (Boot Check)

Outline of POST

The set has a boot check function called POST (Power-On Self Test) in it.

The condition of the main body is diagnosed by checking beep sound or error code.

StartTest begins automatically when power switch is set to ON.

Normal finishAfter memory checking, a beep sound is issued once and the set is placed into automatic stop.

Note: If no error occurs, nothing is displayed. (No display of OK, etc.)

Error Diagnosis by Checking Beep Signal Sound

The beep sound is as follows:



(Length of bar shows length of sound.)

■ = long sound (about 0.4 sec.), ■ = short sound (about 0.2 sec.), Length between sounds is about 0.1 sec.

Table of errors classified by beep sounds

Diagnosis	Beep signal sound	Error message
Main board	1(long sound)-2	BIOS ROM error
	1-2-2-3	BIOS ROM error
	1-3-1-1	RAM error
	1-3-1-3	Keyboard controller error
	1-3-4-1	RAM error
	1-3-4-3	RAM error
	1-4-1-1	RAM error
	2-1-2-3	BIOS ROM error
	2-2-3-1	Occurrence of unexpected offering

(Note) A beep sound is also issued in case of other I/O trouble.

6 List of Error Codes <Only when the port replicator is connected>

The following is a list of the messages that BIOS can display. Most of them occur during POST. Some of them display information about a hardware device, e.g., the amount of memory installed. Others may indicate a problem with a device, such as the way it has been configured. Following the list are explanations of the messages and remedies for reported problems. If your system displays one of except the messages marked below with an asterisk (*), write down the message and contact Panasonic Technical Support. If your system fails after you make changes in the Setup menus, reset the computer, enter Setup and install Setup defaults or correct the error.

0200 Failure Fixed Disk

Fixed disk in not working or not configured properly. Check to see if fixed disk is attached properly. Run Setup. Find out if the fixed-disk type is correctly identified.

0210 Stuck key

Stuck key on keyboard.

0211 Keyboard error

Keyboard not working.

0212 Keyboard Controller Failed

Keyboard controller failed test. May require replacing keyboard controller.

0213 Keyboard locked - Unlock key switch

Unlock the system to proceed.

0230 System RAM Failed at offset : *nnnn*

System RAM failed at offset *nnnn* of in the 64k block at which the error was detected.

0231 Shadow RAM Failed at offset : *nnnn*

Shadow RAM failed at offset *nnnn* of the 64k block at which the error was detected.

0232 Extended RAM Failed at offset : *nnnn*

Extended memory not working or not configured properly at offset *nnnn*.

0250 System battery is dead - Replace and run SETUP

The CMOS clock battery indicator shows the battery is dead. Replace the battery and run Setup to reconfigure the system.

***0251 System CMOS checksum bad - Default configuration used**

System CMOS has been corrupted or modified incorrectly, perhaps by an application program that changes data stored in CMOS. The BIOS installed Default SETUP Values. If you do not want these values, enter Setup and enter your own values. If the error persists, check the system battery or contact Panasonic Technical Support.

0260 System timer error

The timer test failed. Requires repair of system board.

0270 Real time clock error

Real-time clock fails BIOS test. May require board repair.

***0280 Previous boot incomplete - Default configuration used**

Previous POST did not complete successfully. POST loads default values and offers to run Setup. If the failure was caused by incorrect values and they are not corrected, the next boot will likely fail. On systems with control of **wait states**, improper Setup settings can also terminate POST and cause this error on the next boot. Run Setup and verify that the wait-state configuration is correct. This error is cleared the next time the system is booted.

0281 Memory Size found by POST differed from EISA CMOS

Memory size found by POST differed from EISA CMOS.

02D0 System cache error - Cache disabled

Contact Panasonic Technical Support.

02F0: CPU ID:

CPU socket number for Multi-Processor error.

02F4: EISA CMOS not writable

ServerBIOS2 test error: Cannot write to EISA CMOS.

02F5: DMA Test Failed

ServerBIOS2 test error: Cannot write to extended DMA (Direct Memory Access) registers.

02F6: Software NMI Failed

ServerBIOS2 test error: Cannot generate software NMI (Non-Maskable Interrupt).

02F7: Fail - Safe Timer NMI Failed

ServerBIOS2 test error: Fail-Safe Timer takes too long.

device address Conflict

Address conflict for specified *device*.

Allocation Error for: *device*

Run ISA or EISA Configuration Utility to resolve resource conflict for the specified *device*.

Failing Bits : *nnnn*

The hex number *nnnn* is a map of the bits at the RAM address which failed the memory test. Each 1 (one) in the map indicates a failed bit. See error 230,231 or 232 for offset address of the failure in System, Extended or Shadow memory.

Invalid System Configuration Data

Problem with NVRAM (CMOS) data.

I/O device IRQ conflict

I/O device IRQ conflict error.

Operating System not found

Operating system cannot be located on either drive A: or drive C:. Enter Setup and see if fixed disk and drive A: are properly identified.

Parity Check 1 *nnnn*

Parity error found in the system bus. BIOS attempts to locate the address and display it on the screen. If it cannot locate the address, it displays ????. Parity is a method for checking errors in binary data. A parity error indicates that some data has been corrupted.

Parity Check 2 *nnnn*

Parity error found in the I/O bus. BIOS attempts to locate the address and display it on the screen. If it cannot locate the address, it displays ????.

Press <F1> to resume, <F2> to Setup

Displayed after any recoverable error message. Press <F1> to start the boot process or <F2> to enter a Setup and change the settings. Write down and follow the information shown on the screen.

7 Self Diagnosis Test

As for the self-diagnosis test(PC-Diagnostic utility) to use this model, a standard test and the enhancing test by the module of the main body building in are possible.

- Notes To skip BIOS password
Use <Ctrl>+<F10> key to skip BIOS password or authentication of fingerprint.
This key is only for entering DIAG mode. Not available to boot the computer.
If customer set "HDD Lock", the DIAG program cannot perform HDD test.
*This key is for service purpose only. Do not disclose this information to unrelated others.

1. Beginning of self-diagnosis test

1-1. Setting of content of setup

1. The power supply of the computer is turned on.
2. " F2 " is pushed on the screen of "Panasonic" while " press <F2 to enter Setup> " is displayed.
3. The setup utility starts and then takes notes of the content of the BIOS setup of present set.
4. " F9 " is pushed, " Yes" is selected on the screen of " Is the default value loaded? ", and " Enter" is pushed.
5. " F10 " is pushed.
6. " Yes" is selected on the screen of the setup confirmation, and " Enter" is pushed.
7. The computer starts automatically.

Attention

- If the device which can be set is set to "Invalidity" by "Advanced" or "Security" menu, becomes an error by "PC-Diagnostic utility".
(It is judged that the device which can be set to "Invalidity" by "Main" menu such as "Flat pad" is normal if the controller operates normally though sets to "Invalidity" by the setup.)
- In the model with built-in DVD of the USB connection, even if DVD is normal, becomes an error if legacy USB is set to "Invalidity"


1-2. When you execute an automatic test

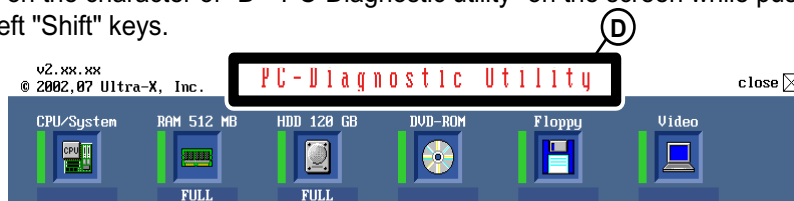
1. "Ctrl" + "F7" is pushed while the "Panasonic" start screen is displayed after the computer is started.
2. The test of all devices begins automatically by "PC-Diagnostic utility"s starting.


Attention

- It is a test which the customer who bought PC can execute. (As for HDD, the enhancing test is also possible.)
- A flat pad does not work for a while after starting "PC-Diagnostic utility".
- The movement of a flat pad might become abnormal If after RAM begins from the CPU/System test, a flat pad will be operated in about 30 seconds. In that case, restarts pushing "Alt" + "Ctrl" + "Del" key. Or, please start "PC-Diagnostic utility" again after doing the power supply switch in the slide, and turning off the power supply.

1-3. When you execute the enhancing test

1. Please let me discontinue diagnosing clicking  to end an automatic test.
2. Please click on the character of "D" "PC-Diagnostic utility" on the screen while pushing both of right "Shift" and left "Shift" keys.



3. All devices which can select the enhancing test make the setting of the enhancing test possible.
4. The district device is made "FULL" display (enhancing test).
5. The test begins clicking .

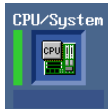
*Please refer to item 4 for the error result of each test and the division of the breakdown part.

2. Operation of PC-Diagnostic Utility

- Only the device which can be inspected on the entire screen is displayed.
- The item does not appear when the device of wireless LAN etc. is not physically connected.
- The movement of the item must use an arrow key or a flat pad.





- As for the device under the diagnosis, blue and yellow are alternately displayed at the left of the icon.
- The diagnosis result of the device greens at the left of the icon when it is normal, and becomes red when abnormal.



- When the test of all devices ends, the test result is displayed under the right of the screen.



- Please click  while diagnosing when being stop on the way by the time the test of all devices ends.
- Please click  when you restart "PC-Diagnostic utility".

*Each device is tested from the beginning, and it is not possible to restart on the way.

2-1. Selection of tested device


- To test only a specific device, "Test" and "Do not test" of each device can be selected.
- The device which can select the enhancing test changes in order of "The standard is tested" and "Do not test" whenever the device icon is clicked.



Start the standard test



Do not test

Please begin testing clicking  if the selection of the tested device ends.

2-2. "PC-Diagnostic utility" End method

When of "Close" on the right of the screen is clicked, the computer reactivates automatically. Or, the power supply switch is done in the slide and the power supply is turned off.

2-3. The content of the setup is returned to the setting of the user

1. Turned on the computer.
2. "F2" is pushed on the screen while "Press<F2>to enter Setup" is displayed of "Panasonic".
3. Push "F10", and on the screen of "Is the change in the setting preserved and do end?"and then "Yes" is selected, and "Enter" is pushed.
4. The computer reactivates automatically.
5. The end option is chosen by the start menu, and the power supply of the computer is turned off.

Standard at test time

All devices other than RAM and HDD ----- about 1 minute

RAM standard test ----- 1 - 2 minutes

HDD standard test ----- 2 - 3 minutes

HDD enhancing test (60GB) ----- about 40 minutes

Ex.The standard when the standard <all device> is tested becomes $1+2+3=6$ minutes.

- There is greatly a difference from RAM test when the memory is increased according to the performance of the memory occasionally.
- Moreover, when the main body of PC under the test is a high temperature, it occasionally takes time.
- There is greatly a difference from HDD according to the performance of the drive occasionally.

7.1. Test Item and Division of trouble

Test item	Standard	Enhancing	Content of standard test	Content of enhancing test	Place with possibility of breakdown
CPU / SYSTEM	○	—	CPU is shifted to protected mode, and "Violation of the paging", "Operation of the violation of a privileged instruction", and DMA, INT, TIMER, and the RTC operation are confirmed.	—	CPU / Main board
RAM	○	—	All memory space is tested in a special memory access pattern based on "R.S.T . technology".	—	Memory / Mainboard
HDD	○	○	The record area frequently accessed with Microsoft Windows XP to test in about two minutes regardless of points of HDD is emphatically tested.	All record area is tested.	HDD / Mainboard / Cable / Connector
MODEM	○	—	It is confirmed not to find abnormality in the AC97 modem controller.	—	MODEM/ Mainboard
Wireless LAN	○	—	It is confirmed not to find abnormality in the Wireless LAN modem controller.	—	Wireless LAN board / Connector / Mainboard
Sound *5	○	—			
USB	○	○ ^{*1}	It is confirmed not to find abnormality in the USB controller.	It is confirmed not to find abnormality in the wiring between the USB controller and the connector by confirming the connection of the USB equipment connected with the USB connector.	Mainboard / Connector
LAN	○	○ ^{*2}	It is confirmed not to find abnormality in the LAN controller.	It is confirmed not to find abnormality in the wiring between the controller and the connector by connecting to HUB with LAN cable.	Mainboard / Connector
PC Card	○	—	It is confirmed not to find abnormality in the CardBus controller.	—	Mainboard
SD	○	—	It is confirmed not to find abnormality in the SD controller.	—	Mainboard
Keyboard	○	○ ^{*3}	It is confirmed not to find abnormality in keyboard controller's keyboard interface.	The key is actually input, and the operation is displayed on the screen.	Mainboard / Keyboard
Touch Pad	○	○ ^{*4}	Whether keyboard controller's mouse interface operates normally is confirmed.	The operation is actually displayed on the screen by operating the touch pad.	Mainboard / Touch Pad
DVD-ROM	○	○ ^{*6}	The drive is normally reset, and it is accessible is confirmed.	It is confirmed to be able to read media normally.	Mainboard / Touch Pad

Test Item	Standard	Enhanced	Content of Standard Test	Content of Extend Test	The place with possibility of breakdown
Touch Screen	○	○	It is confirmed not to find abnormality in the USB connection of Touch Screen. This test cannot find abnormality of Touch Screen.	Perform Touch Screen functionality practically. Operator has to judge PASS/FAIL with test result.	Main board/ Touch Screen
Bluetooth	○		It is confirmed not to find abnormality in the connection of Main board and Bluetooth module.	—	Bluetooth cable
Wireless WAN	○	—	It is confirmed not to find abnormality in the connection of Main board and Wireless WAN module.	—	WWAN cable
Floppy	○	—	It is confirmed not to find abnormality in the legacy FD drive. This test cannot find abnormality of mechanical breakdown. (e.g., Head, Motor)	—	FD Drive/ Main board (Super I/O)/ FDD cable FDD connector
Video	○	—	It is confirmed not to find abnormality in access to VRAM with VESA. The PC which uses main memory as VRAM may fail with main memory failure.	—	Main board (Chipset, Graphic Controller)/ Memory
GPS	○	—	It is confirmed not to find abnormality in the connection of Main board and GPS	—	GPS cable
IEEE1394	○	—	It is confirmed not to find abnormality in the IEEE1394 controller.	—	Main board (IEEE1394 Controller)
Express Card	—	○	—	It is confirmed not to find abnormality in the wiring between Chipset and Express Card.	Main board (Chipset)/ Express Card Connector
Smart Card	○	—	It is confirmed not to find abnormality in the Smart Card controller.	—	Main board (Smart Card Controller)
Serial Port	○	○ *7	It is confirmed not to find abnormality of Super I/O UART function. This test cannot find lack of wiring between Super I/O and Serial Connector.	It is confirmed not to find abnormality in the wiring between Super I/O and Serial Connector. This test cannot find failure of cable characteristic and device problems.	Main board (Super I/O)/ Serial Connector
Parallel Port	○	○ *8	It is confirmed not to find abnormality of Super I/O parallel function. This test cannot find lack of wiring between Super I/O and Parallel Connector.	It is confirmed not to find abnormality in the wiring between Super I/O and Parallel Connector. This test cannot find failure of cable characteristic and device problems.	Main board (Super I/O)/ Parallel Connector

*1 Please connect the USB device with the port (USB connector) which wants to test before the tests.

*2 Please connect LAN port with LAN HUB with LAN cable before the tests.

*3 The operator actually inputs the key, and the operator judges PASS/FAIL of the test.

*4 The operator actually operates the mouse, and the operator judges PASS/FAIL of the test.

*5 It is not abnormal though the sound is emitted from the speaker while testing.

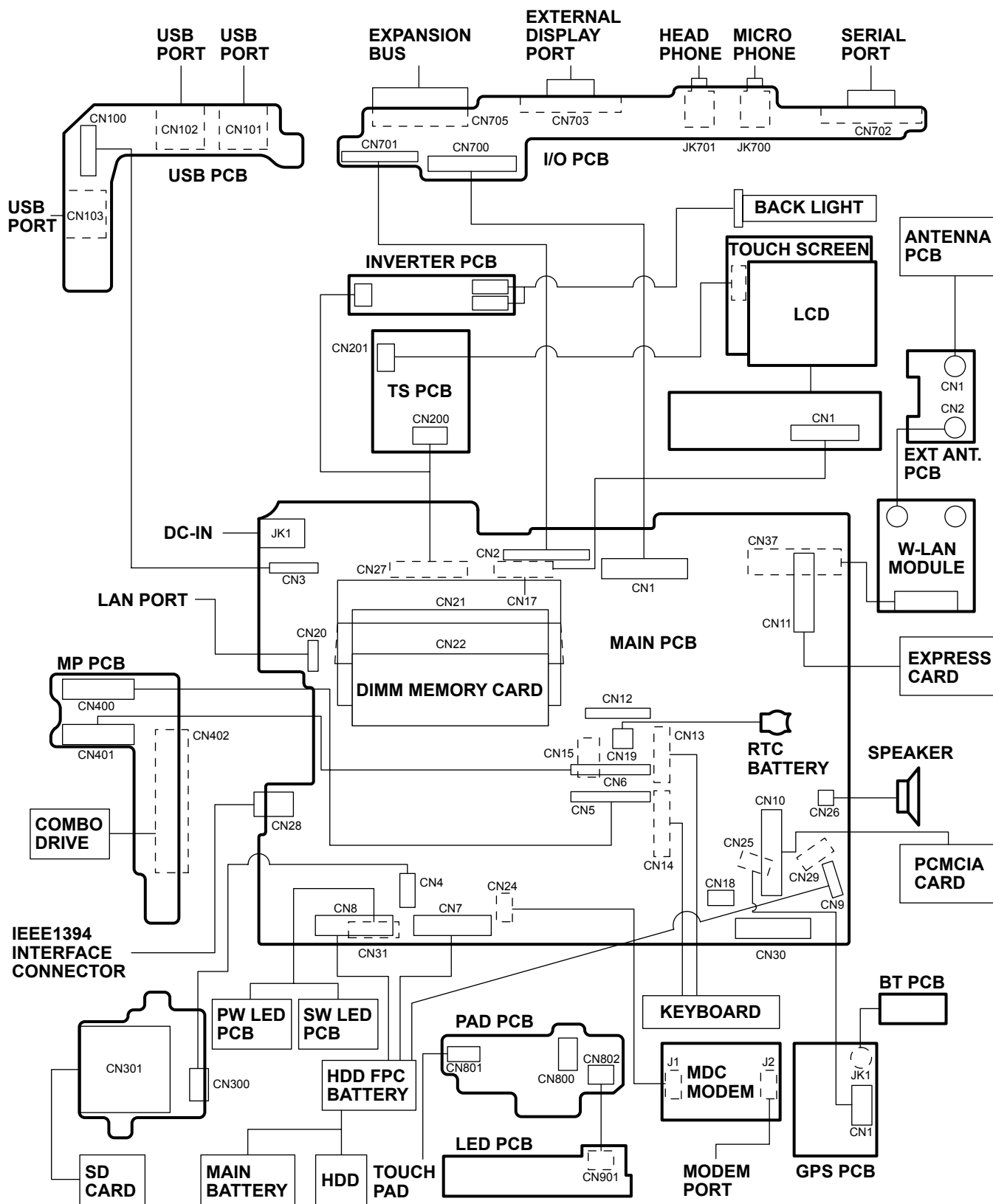
※ When the test result is PASS, trouble is thought by not hearing of the sound under the test from the speaker and the headphone by the wiring of the audio output system.

*6 Please set DVD/CD media in the drive before the tests.

*7 Please set a Special Loop Back Connector Tool at serial connector for Enhanced Test. (This Connector Tool is same as the one used before.)

*8 Please set a Special Loop Back Connector Tool at parallel connector for Enhanced Test. (This Connector Tools is same as the one used before.)

8 Wiring Connection Diagram



9 Disassembly/Reassembly

Note:

Power off the computer. Do not shut down to the Suspend or hibernation mode.

Do not add peripherals while the computer is in the Suspend or hibernation mode; abnormal operation may result.

9.1. Disassembly Instructions

9.1.1. Preparation

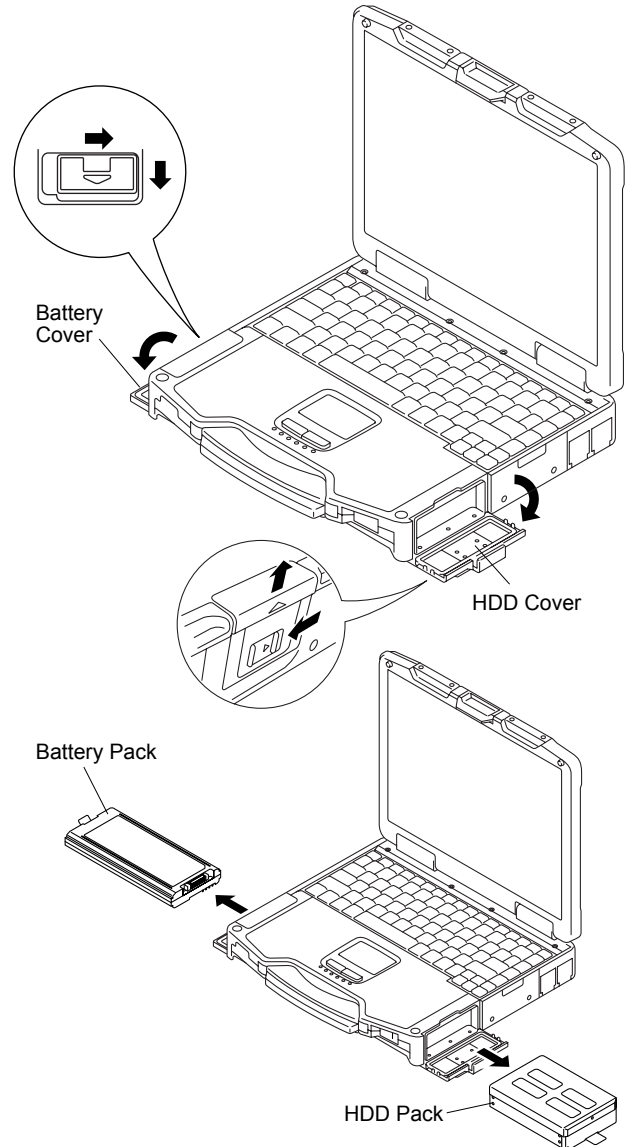
Before disassembling, be sure to make the following preparations.

- Shut down Windows and turn off the power.
- Disconnect the AC adaptor.
- Remove the optional DIMM memory card and PCMCIA card if they are connected.
- Remove other devices if they are connected.

Attention:

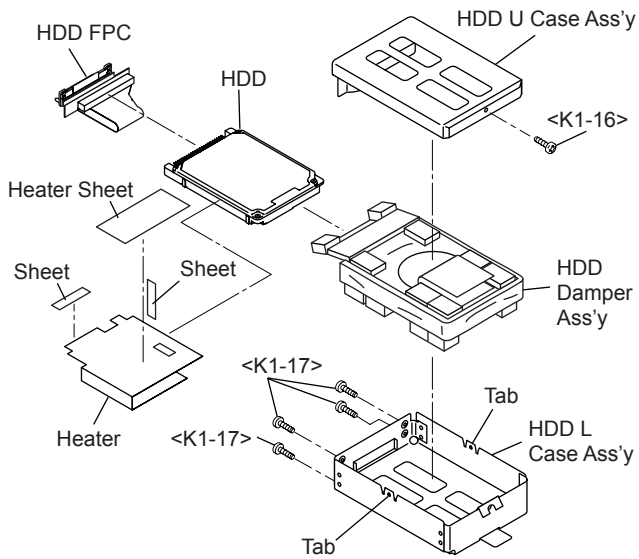
- Please execute writing BIOS ID when you exchange the Main Board.
- Parts (Sheet and rubber) etc. related various the Conductive Cloth and Heat Spreader cannot be recycled. Use new parts.

9.1.2. Removing the Battery Pack and HDD Pack



1. Open the Battery Cover.
2. Remove the Battery Pack.
3. Open the HDD Cover.
4. Remove the HDD Pack.

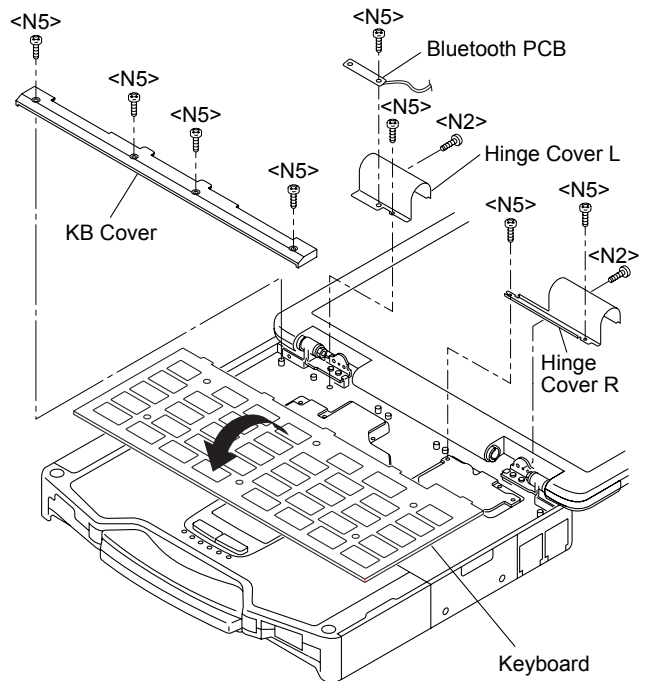
9.1.3. Removing the HDD



1. Remove the Screw. <K1-16>
2. Remove the 4 Screws. <K1-17>
3. Release the 2 Tabs, and remove the HDD U Case Ass'y and the HDD L Case Ass'y.
4. Remove the HDD Dumper Ass'y.
5. Remove the 2 Sheets.
6. Remove the Heater and the Heater Sheet.
7. Remove the HDD FPC.

Screws <K1-16>: DFHE5025XA
 Screws <K1-17>: DRQT2+E8FKL

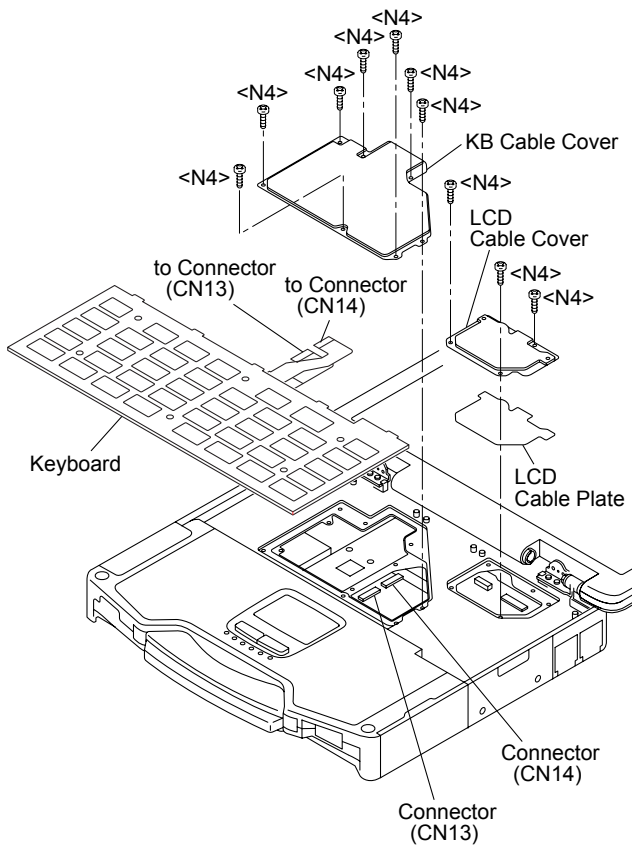
9.1.4. Removing the KB Cover, Hinge Cover L, Hinge Cover R and Keyboard



1. Remove the 4 Screws <N5>, and remove the KB Cover.
2. Remove the 2 Screws <N2> and the 4 Screws <N5>, and remove the Hinge Cover L,R.
3. Remove the Keyboard.

Screws <N2>: DRHM5054XA
 Screws <N5>: DRQT26+D4FKL

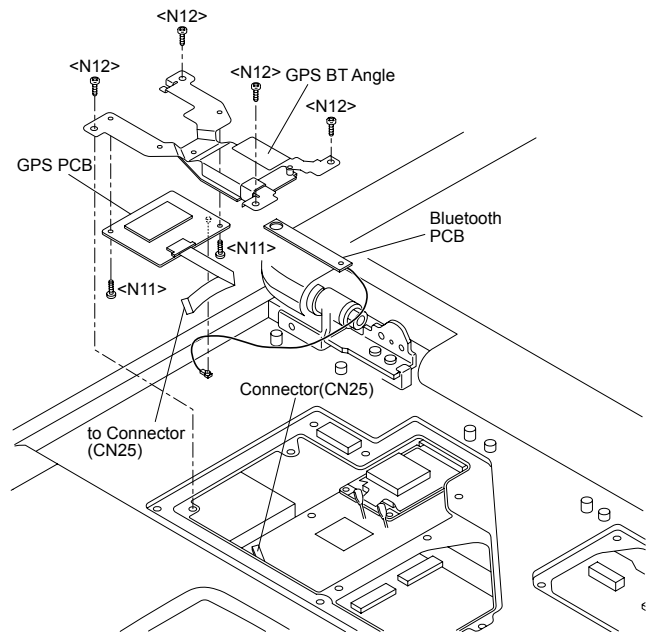
9.1.5. Removing the KB Cable Cover and LCD Cable Cover



1. Remove the 3 Screws <N4>.
2. Remove the LCD Cable Cover.
3. Remove the LCD Cable Plate.
4. Remove the 7 Screws <N4>.
5. Remove the KB Cable Cover.
6. Disconnect the 2 Cable from the 2 Connectors (CN13, CN14).
7. Remove the Keyboard.

Screws <N4>: DRQT26+D3FKL

9.1.6. Removing the GPS PCB and Bluetooth PCB

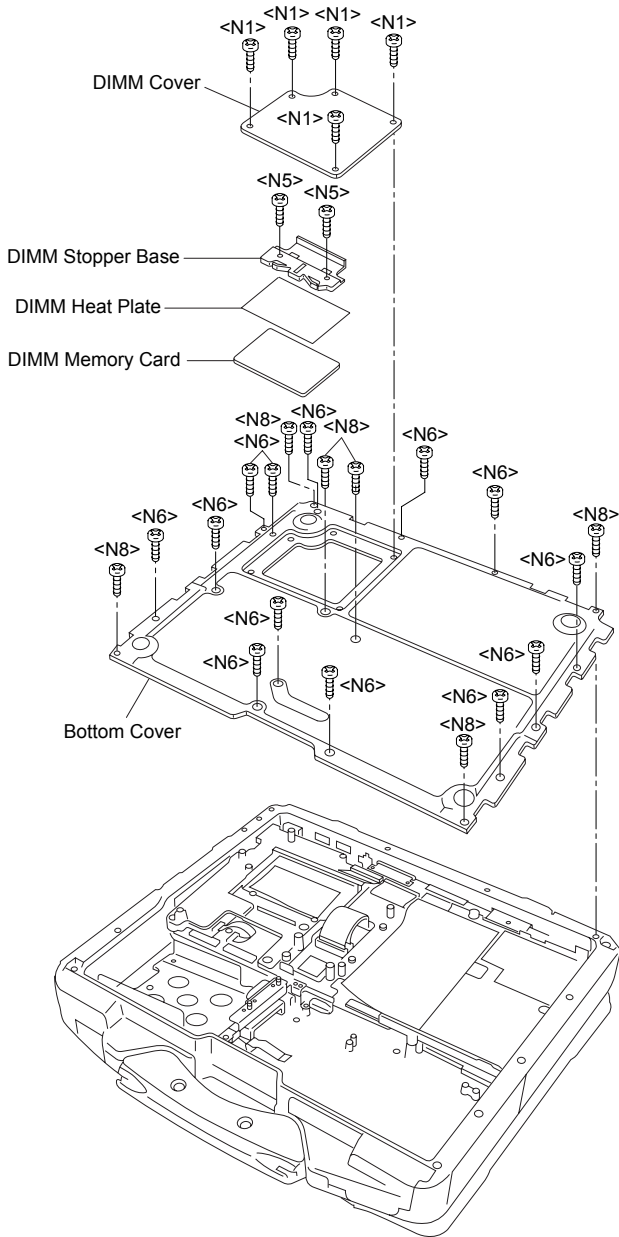


1. Disconnect the Cable from the Connector. (CN25)
2. Remove the 4 Screws. <N12>
3. Remove the 2 Screws. <N11>
4. Remove the Bluetooth PCB, GPS BT Angle and GPS PCB.

Screws <N11>: DFHE5025XA

Screws <N12>: DXQT2+F3FNL

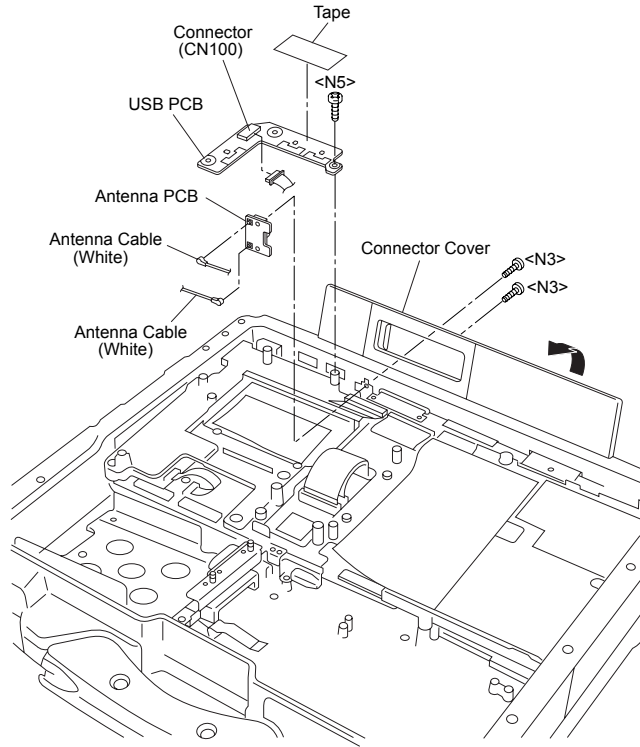
9.1.7. Removing the DIMM Cover and Bottom Cover



1. Remove the 5 Screws. <N1>
2. Remove the DIMM Cover.
3. Remove the 2 Screws. <N5>
4. Remove the DIMM Stopper Base.
5. Remove the DIMM Heat Plate.
6. Remove the DIMM memory card.
7. Remove the 6 Screws. <N8>
8. Remove the 13 Screws. <N6>
9. Remove the Bottom Cover.

Screws <N1>: DRHM0002ZA
 Screws <N5>: DRQT26+D4FKL
 Screws <N6>: DRQT26+E4FKL
 Screws <N8>: DRSB3+8FKL

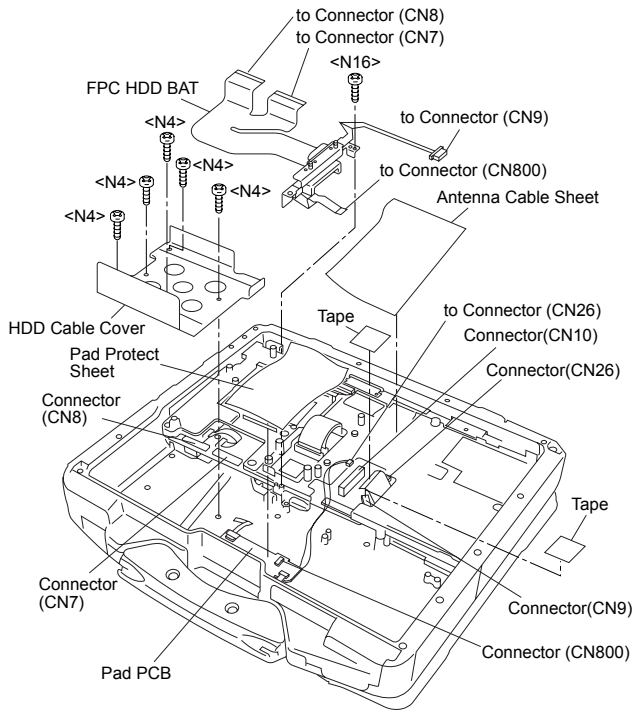
9.1.8. Removing the USB PCB and Antenna PCB



1. Remove the Screw. <N5>
2. Disconnect the Cable from the Connector. (CN100)
3. Remove the Tape.
4. Remove the USB PCB.
5. Open the Connector Cover.
6. Remove the 2 Screws. <N3>
7. Remove the 2 white Cables and remove the Antenna PCB.

Screws <N3>: DRQT2+G6FKL
 Screws <N5>: DRQT26+D4FKL

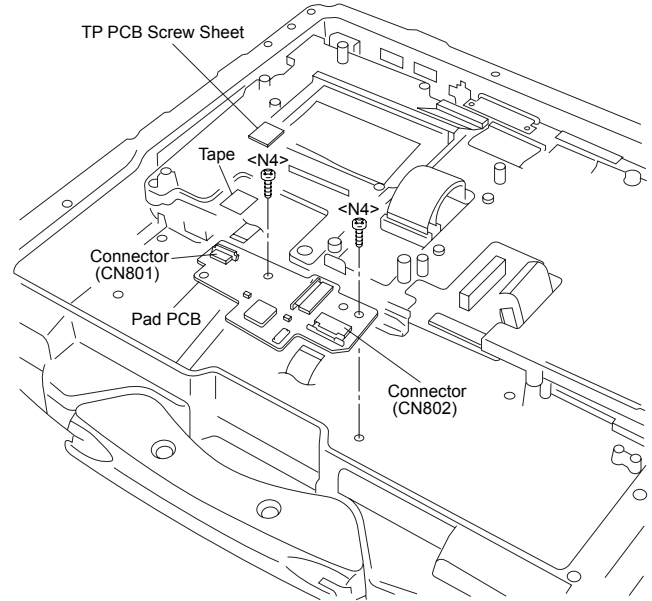
9.1.9. Removing the FPC HDD BAT



1. Remove the 5 Screws. <N4>
2. Remove the HDD Cable Cover.
3. Remove the Antenna Cable Sheet.
4. Remove the 2 Tapes.
5. Disconnect the 2 Cables from the 2 Connectors. (CN10,CN26)
6. Remove the Tape.
7. Disconnect the Cable from the Connector. (CN9)
8. Remove the Pad Protect Sheet.
9. Disconnect the Cable from the Connector. (CN800)
10. Disconnect the 2 Cables from the 2 Connectors. (CN7,CN8)
11. Remove the Screw. <N16>
12. Remove the FPC HDD BATT.

Screws <N4>: DRQT26+D3FKL
 Screws <N16>: DRQT26+E5FKL

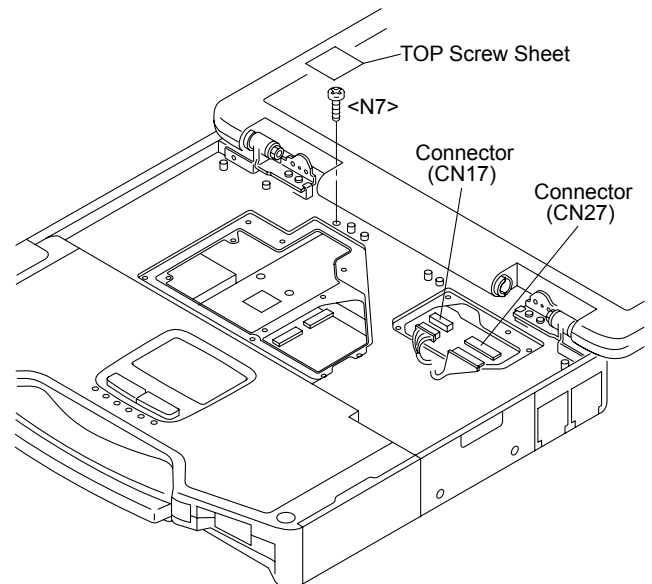
9.1.10. Removing the PAD PCB



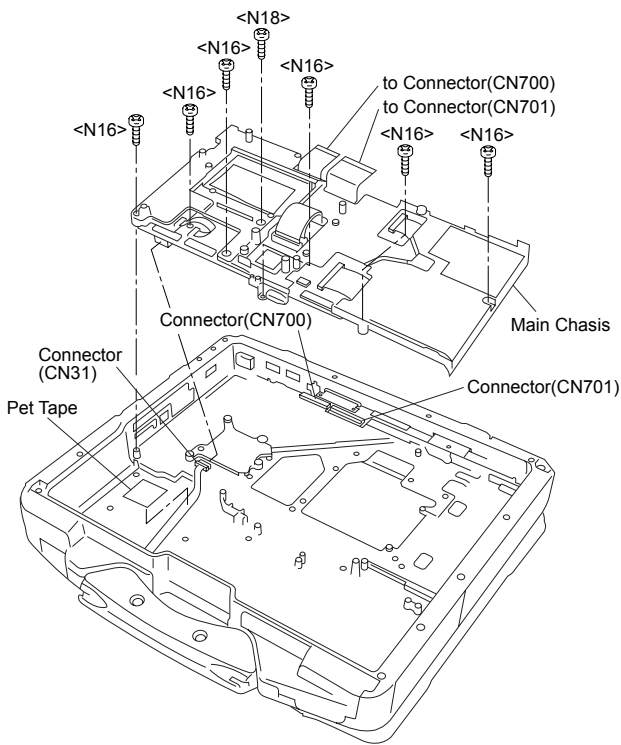
1. Remove the Tape and disconnect the Cable from the Connector. (CN801)
2. Disconnect the Cable from the Connector. (CN802)
3. Remove the TP PCB Screw Sheet.
4. Remove the 2 Screws. <N4>
5. Remove the PAD PCB.

Screws <N4>: DRQT26+D3FKL

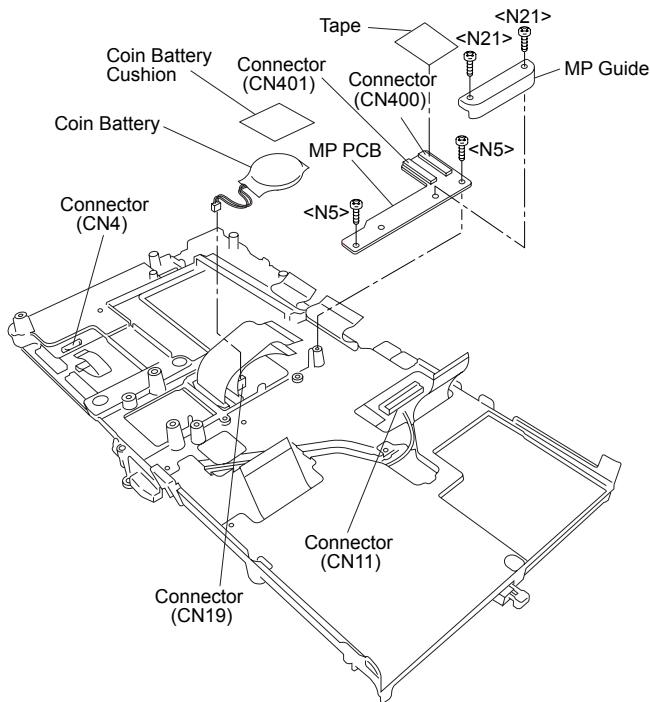
9.1.11. Removing the Main PCB



1. Remove the TOP Screw Sheet.
2. Remove the Screw. <N7>
3. Disconnect the 2 Cables from the 2 Connectors. (CN17,CN27)

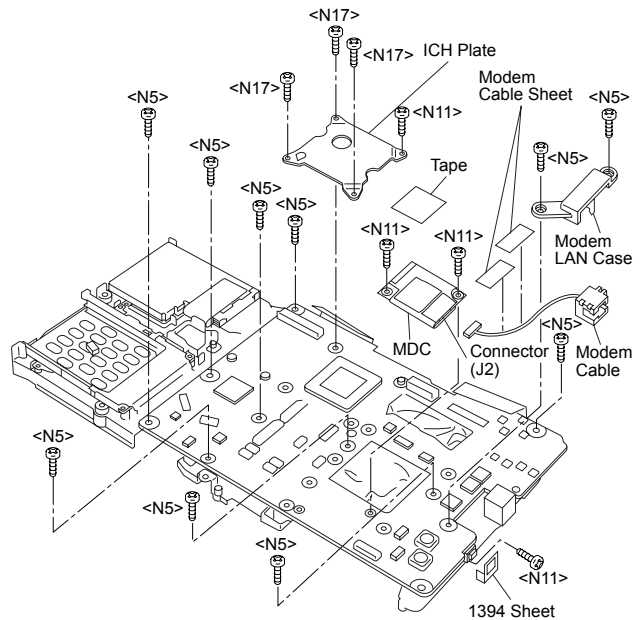


4. Remove the 6 Screws. <N16>
5. Remove the Screw. <N18>
6. Disconnect the 2 Cables from the 2 Connectors. (CN700,CN701)
7. Remove the Pet Tape and disconnect the Cable from the Connector. (CN31)
8. Remove the Main chassis.



9. Remove the Tape.
10. Disconnect the 2 Cables from the 2 Connectors.

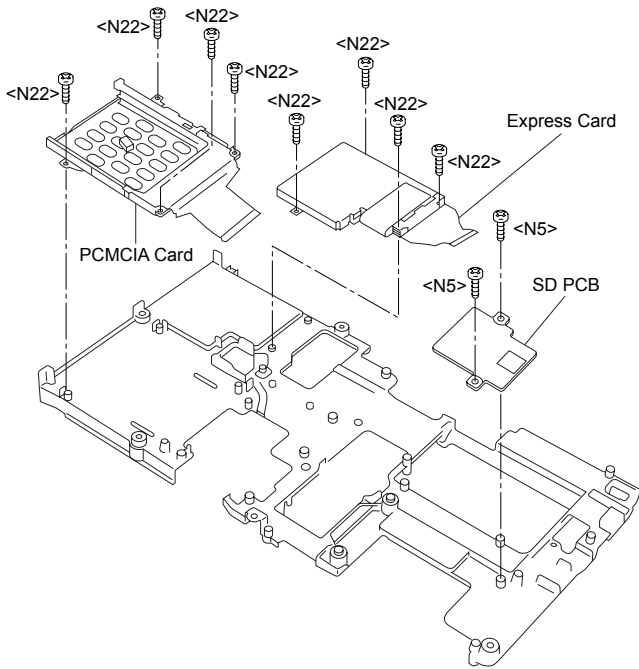
- (CN400,CN401)
11. Remove the 2 Screws. <N5>
12. Remove the 2 Screws. <N21>
13. Remove the MP Guide.
14. Remove the MP PCB.
15. Remove the Coin Battery Cushion.
16. Disconnect the Cable from the Connector. (CN19)
17. Remove the Coin Battery.
18. Remove the Tape.
19. Disconnect the 2 Cables from the 2 Connectors. (CN4,CN11)



20. Remove the 3 Screws <N17> and the Screw. <N11>
21. Remove the ICH Plate.
22. Remove the 2 Modem Cable Sheets.
23. Remove the 2 Screws. <N5>
24. Remove the Modem LAN Case.
25. Remove the 1394 Sheet.
26. Remove the 2 Screws. <N11>
27. Remove the Tape.
28. Disconnect the Cable from the Connector (J2) and remove the MDC.
29. Remove the Modem Cable.
30. Remove the 7 Screws. <N5>
31. Remove the Screw. <N11>
32. Remove the Main PCB.

Screws <N5>: DRQT26+D4FKL
 Screws <N7>: DRSB26+10HKL
 Screws <N11>: DFHE5025XA
 Screws <N16>: DRQT26+E5FKL
 Screws <N17>: DRQT26+E6FKL
 Screws <N18>: DRSB26+8FKL
 Screws <N21>: DXQT2+E12FNL

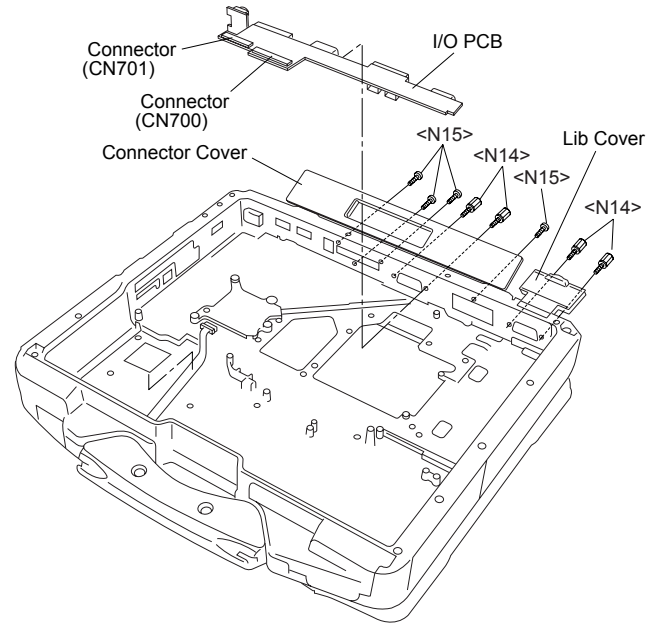
9.1.12. Removing the SD PCB, Express Card and PCMCIA Card



1. Remove the 2 Screws. <N5>
2. Remove the SD PCB.
3. Remove the 4 Screws. <N22>
4. Remove the Express Card.
5. Remove the 4 Screws. <N22>
6. Remove the PCMCIA Card.

Screws <N5>: DRQT26+D4FKL
 Screws <N22>: DXQT2+G4FNL

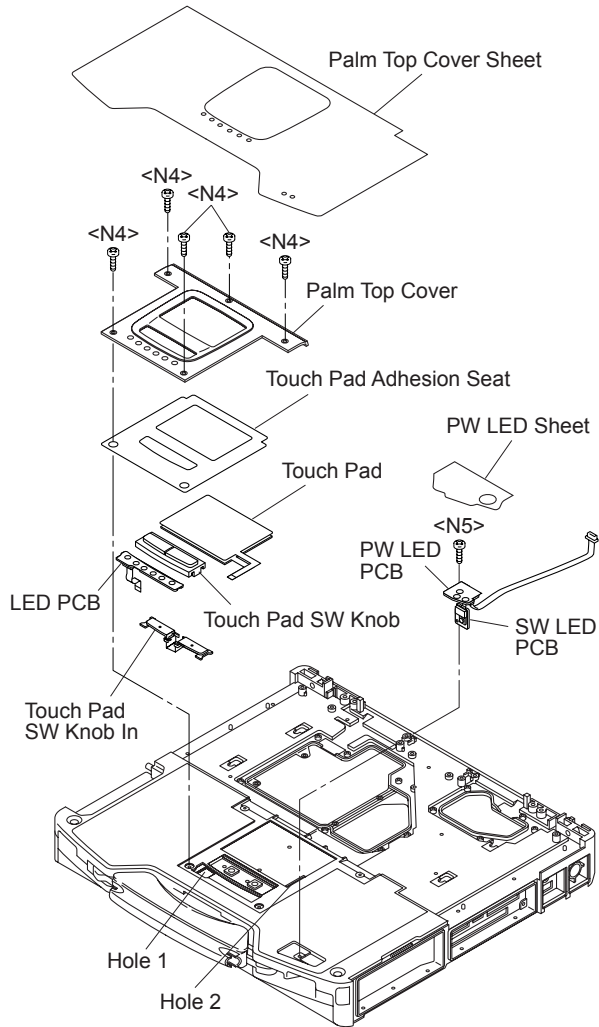
9.1.13. Removing the I/O PCB



1. Open the Connector Cover and Lid Cover.
2. Remove the 4 Screws. <N14>
3. Remove the 4 Screws. <N15>
4. Remove the I/O PCB.

Screws <N14>: DFHE5058ZB
 Screws <N15>: DRHM5104ZA

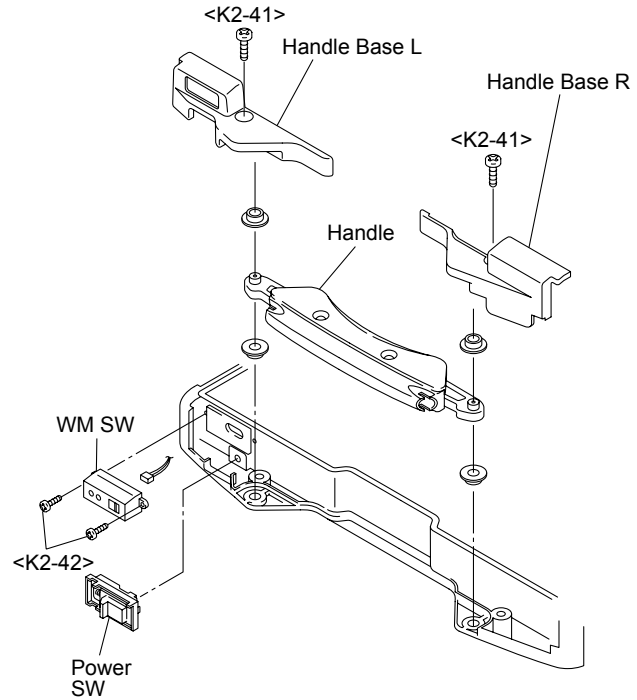
9.1.14. Removing the Palm Top Cover Sheet, Palm Top Cover, Touch Pad Adhesion Seat, Touch Pad, Touch Pad SW Knob, LED PCB and SW LED PCB



1. Remove the Palm Top Cover sheet.
2. Remove the 5 Screws <N4>, and remove the Palm Top Cover.
3. Remove the Touch Pad Adhesion seat.
4. Remove the Touch Pad.
5. Remove the Touch Pad SW knob and Touch Pad SW Knob in.
6. Remove the LED PCB.
7. Remove the PW LED Sheet.
8. Remove the Screw <N5>, and remove the SW LCD PCB.

Screws <N4>: DRQT26+D3FKL
 Screws <N5>: DRQT26+D4FKL

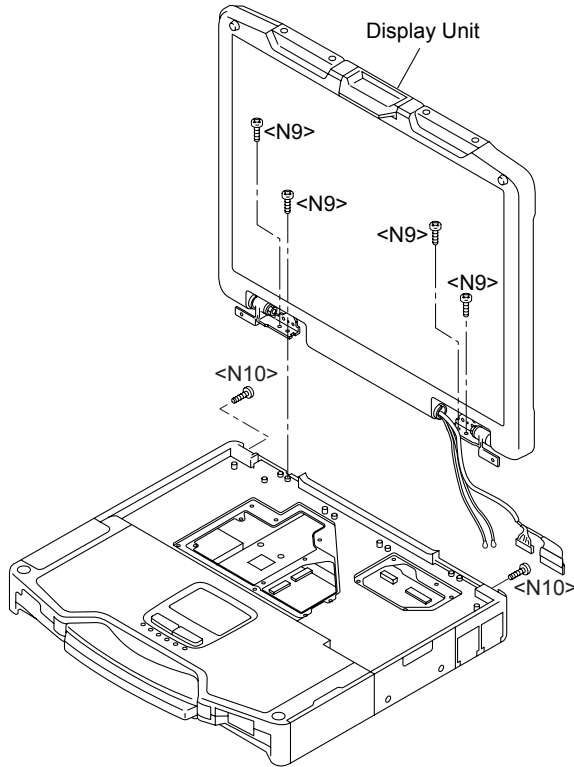
9.1.15. Removing the Handle and Power SW



1. Remove the 2 Screws <K2-41>, and remove the Handle Base L and R.
2. Remove the Handle.
3. Remove the 2 Screws. <K2-42>
4. Remove the WM SW and Power SW.

Screws <K2-41>: DRSN4+6FKLT
 Screws <K2-42>: DXQT26+D4NLT

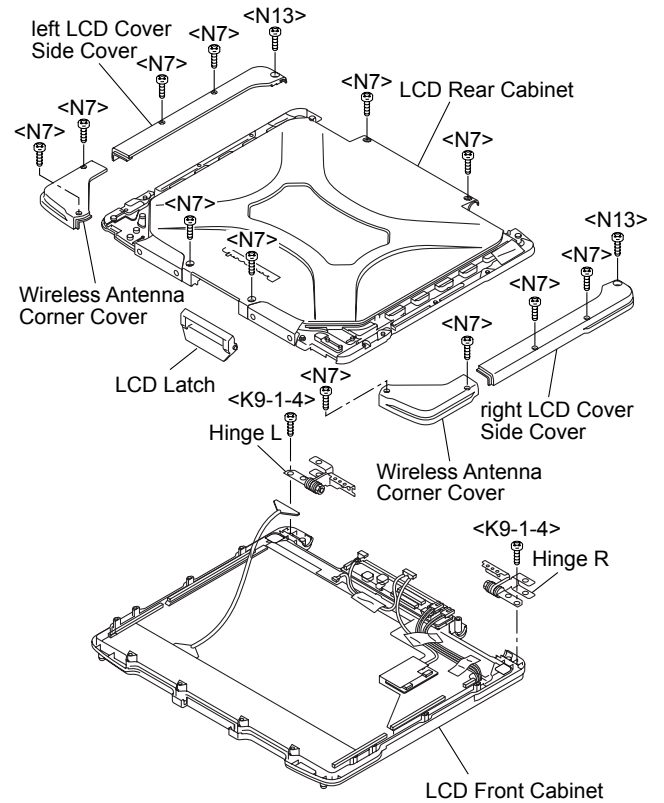
9.1.16. Removing the Display Unit



1. Remove the 2 Screws <N10> and the 4 Screws <N9>.
2. Remove the Display Unit.

Screws <N9>: DRYN4+J10FKL
 Screws <N10>: DXSB4+15FNLB

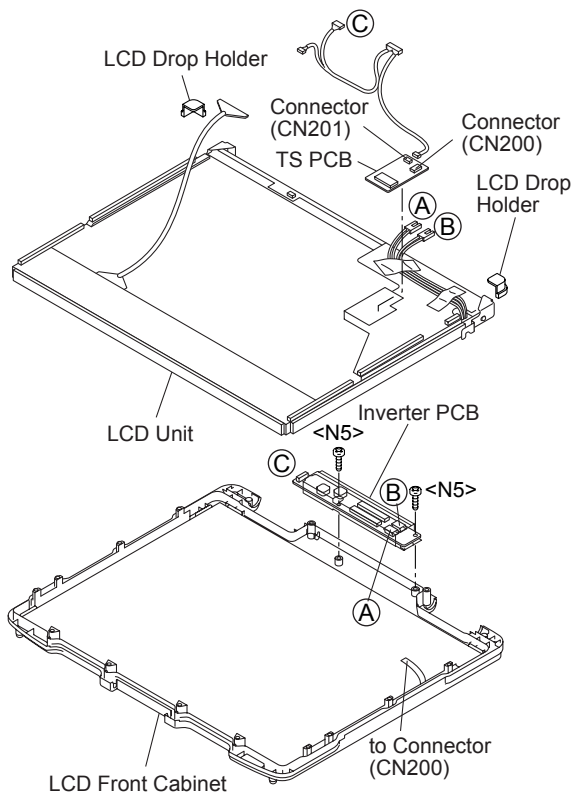
9.1.17. Removing the LCD Rear Cabinet, Hinge L and R



1. Remove the 4 Screws. <N7>
2. Remove the 2 Wireless Antenna Corner Covers.
3. Remove the 4 Screws <N7> and 2 Screws. <N13>
4. Remove the left and right LCD Cover Side Covers.
5. Remove the 4 Screws. <N7>
6. Remove the LCD Rear Cabinet.
7. Remove the LCD Latch.
8. Remove the 2 Screws. <K9-1-4>
9. Remove the Hinge L and R.

Screws <N2>: DRHM5054XA
 Screws <N7>: DRSB26+10HKL
 Screws <N13>: DRSB4+10FKL
 Screws <K9-1-4>: DRYN4+J10KLT

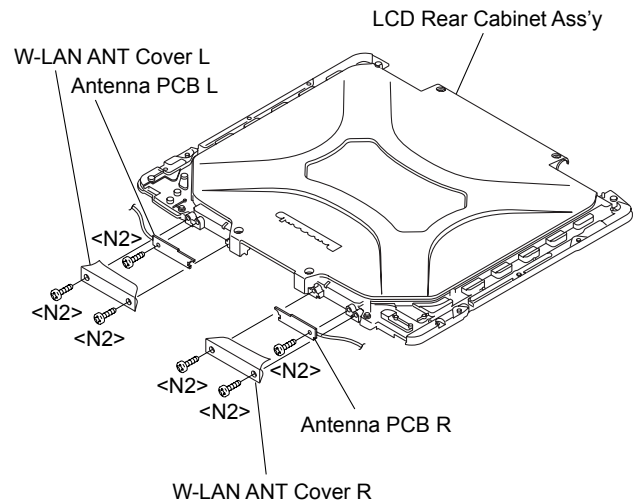
9.1.18. Removing the Inverter PCB, TS PCB and LCD Unit



1. Remove the 2 Screws. <N5>
2. Disconnect the 3 Cables from the 3 Connectors.
3. Remove the Inverter.
4. Disconnect the 2 Cables from the 2 Connectors. (CN200, CN201)
5. Remove the TS PCB.
6. Remove the 2 Drop Holders.
7. Remove the LCD Unit.

Screws <N5>: DRQT26+D4FKL

9.1.19. Removing the Antenna PCB L and R



1. Remove the 4 Screws <N2>.
2. Remove the W-LAN ANT Cover L and R.
3. Remove the 2 Screws. <N2>
4. Remove the Antenna PCB L and R.

Screws <N2>: DRHM5054XA

9.2. Reassembly Instructions

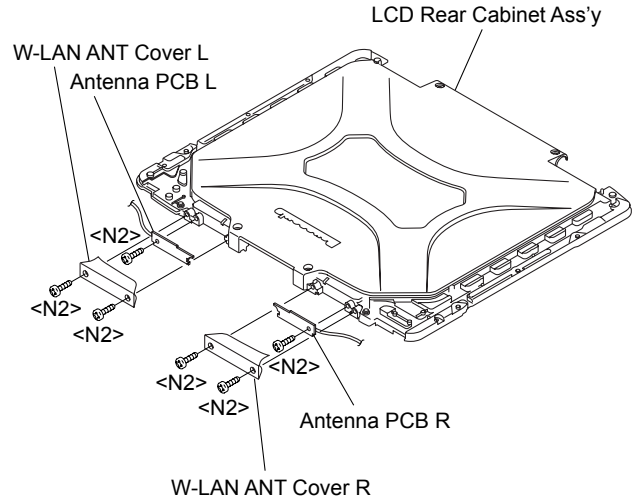
9.2.1. Attention when CF-30 series is repaired

- Please execute writing BIOS ID when you exchange the Main Board.
- Parts (Sheet and rubber) etc. related various the Conductive Cloth and Heat Spreader cannot be recycled. Use new parts.

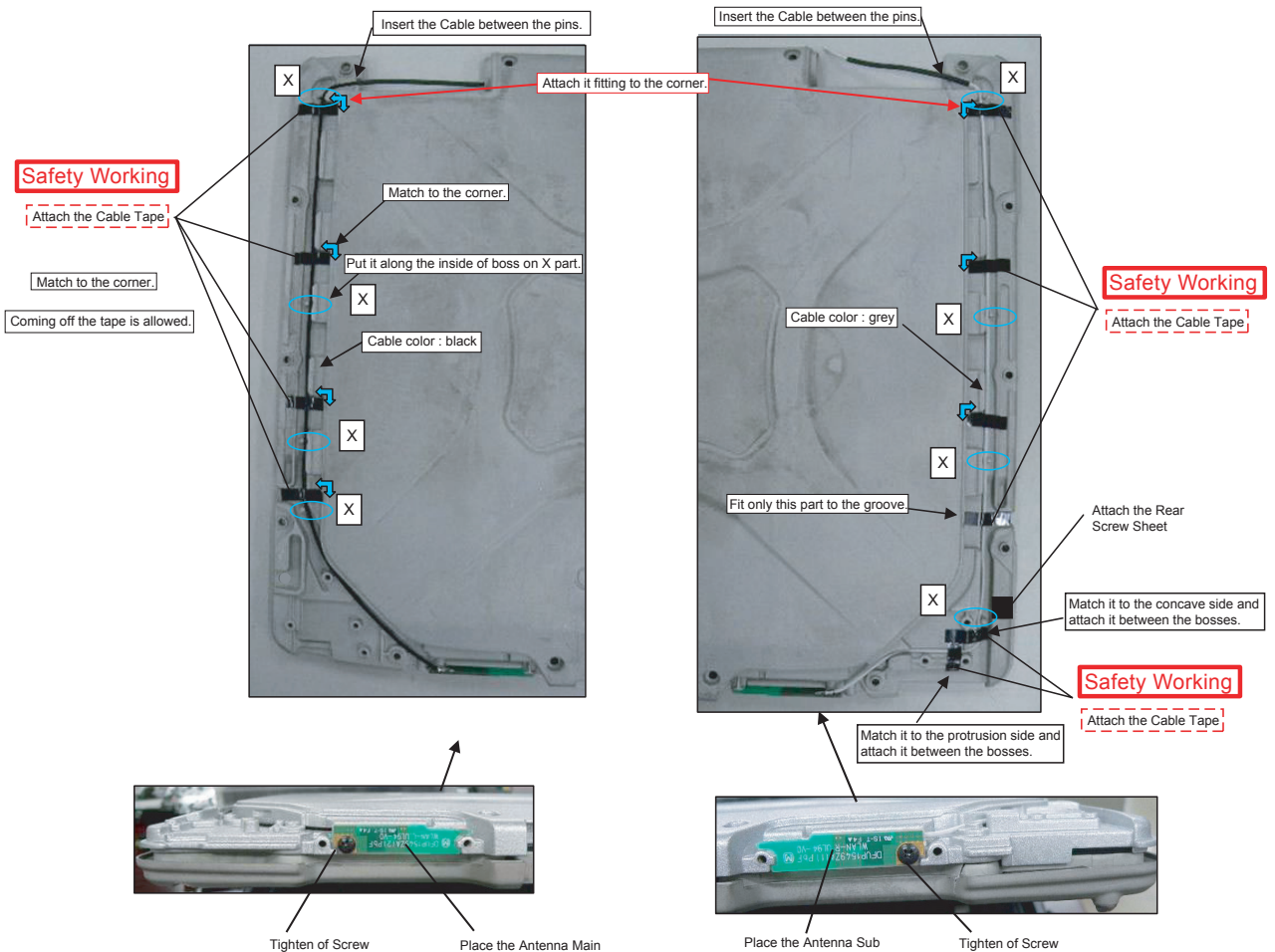
9.2.2. Setting the Antenna PCB L and R

1. Set the Antenna PCB L and R using the 2 Screws. <N2>
2. Fix the W-LAN ANT Cover L and R using the 4 Screws. <N2>

Screws <N2>: DRHM5054XA



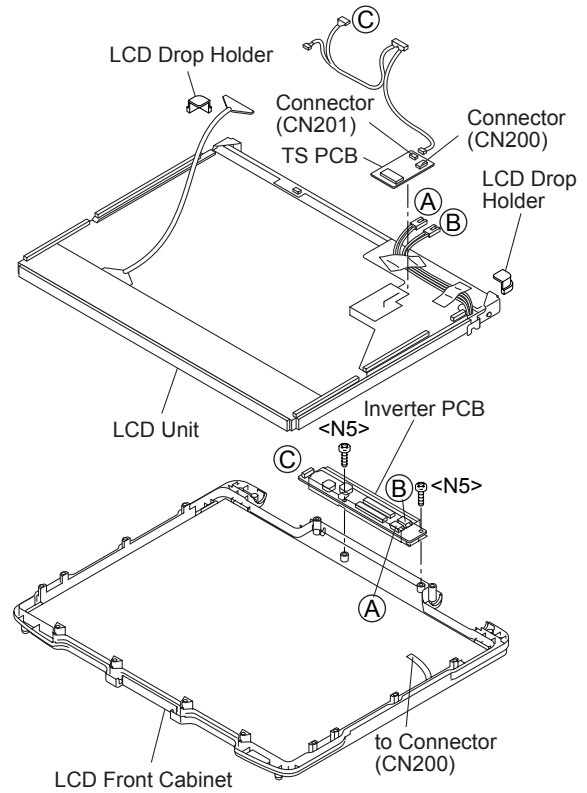
■ Arranging the Antenna L and R Cables



9.2.3. Setting the Inverter PCB, TS PCB and LCD Unit

1. Set the LCD Unit to the LCD Front Cabinet in order.
2. Attach the 2 drop holders.
3. Connect the Cable to the Connector. (CN200,CN201)
4. Connect the 3 Cables to the 3 Connectors.
5. Fix the Inverter PCB using the 2 Screws. <N5>

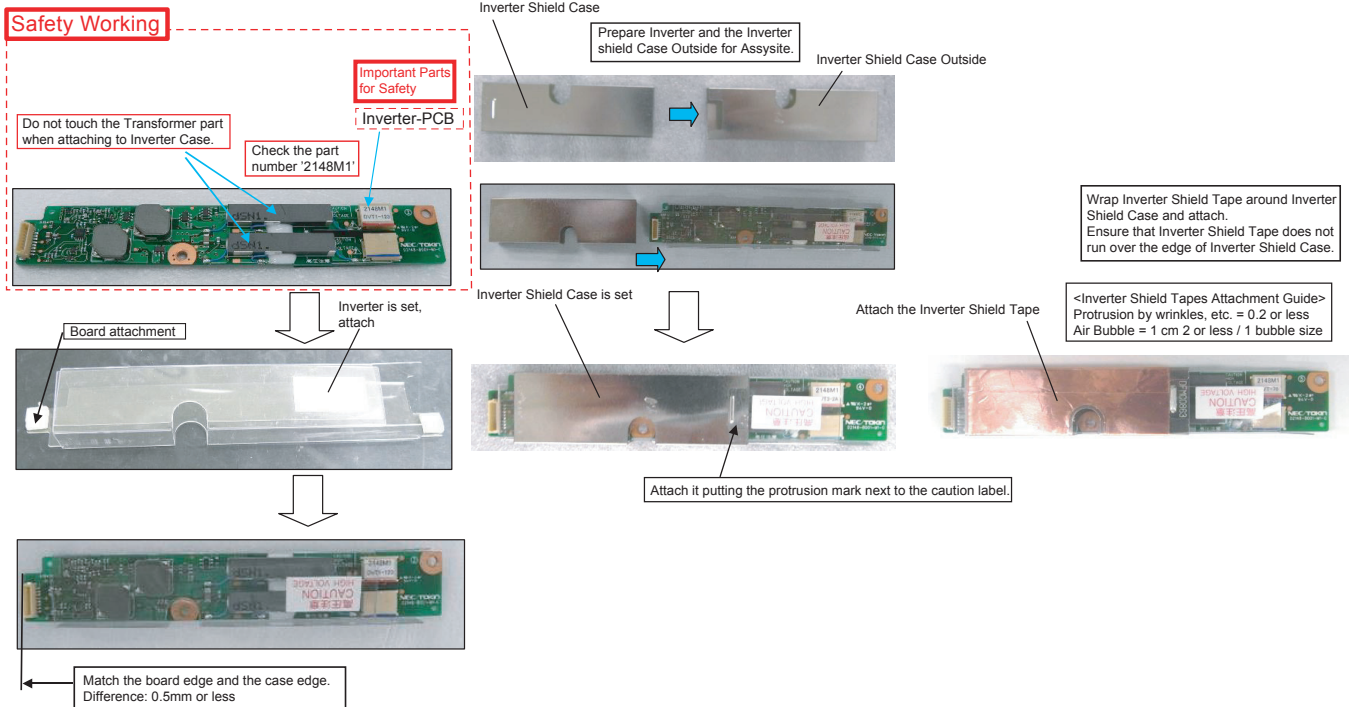
Screws <N5>: DRQT26+D4FKL



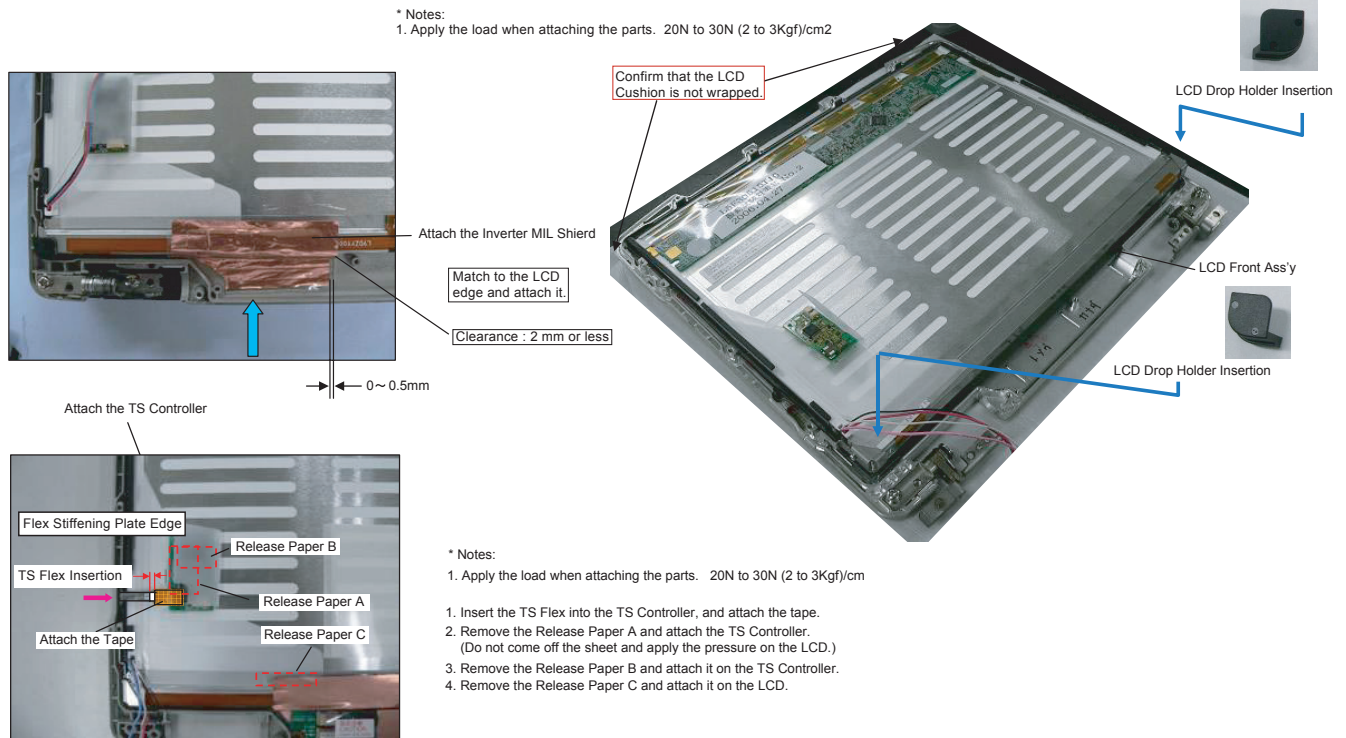
■ Preparation of Inverter

* Notes:

1. Apply the load when attaching the parts. 20N to 30N (2 to 3Kgf)/cm²
2. When handling Inverter-PCB, do not bend or add impact.



■ Assembly of LCD Unit



9.2.4. Setting the LCD Rear Cabinet, Hinge L and R

1. Fix the Hinge L and R using the 2 Screws. <K9-1-4>
2. Set the LCD Latch.
3. Fix the LCD Rear Cabinet using the 4 Screws. <N7> No1 to No4
4. Fix the left and right LCD Cover Side Cover using the 4 Screws <N7> and 2 Screws. <N13>
5. Fix the 2 Wireless Antenna Corner Cover using the 4 Screws. <N7>

Note:

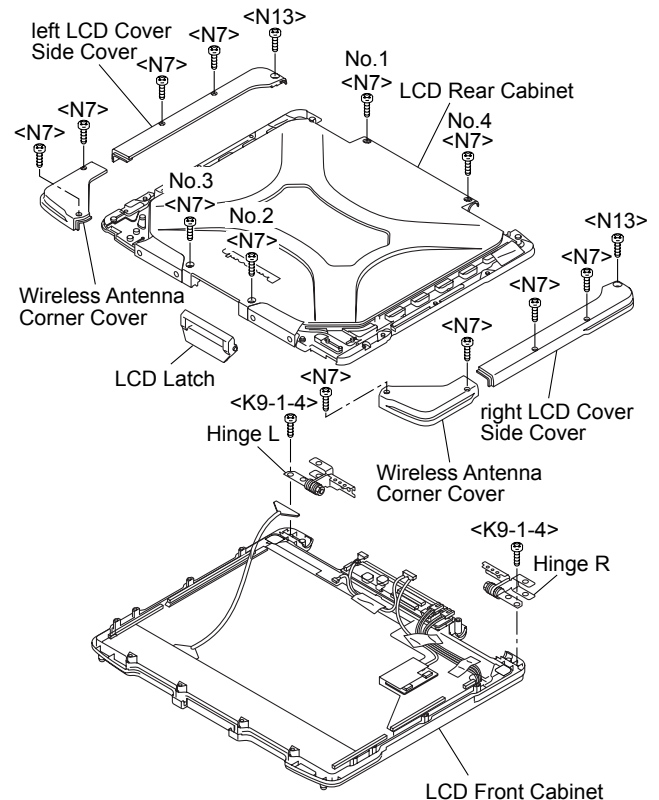
Tighten the Screws in the numbered order (No1 to No4).

Screws <N2>: DRHM5054XA

Screws <N7>: DRSB26+10HKL

Screws <N13>: DRSB4+10FKL

Screws <K9-1-4>: DRYN4+J10KLT



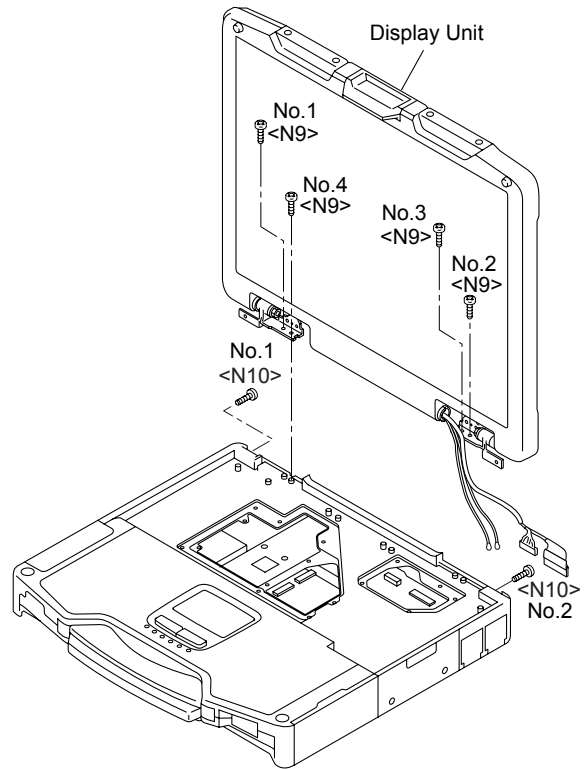
9.2.5. Setting the Display Unit

1. Fix the Display Unit using the 4 Screws. <N9> No1 to No4
2. Fix the Display Unit using the 2 Screws. <N10> No1, No2

Note:

- Tighten the Screws in the numbered order (No1 to No2).
- Tighten the Screws in the numbered order (No1 to No4).

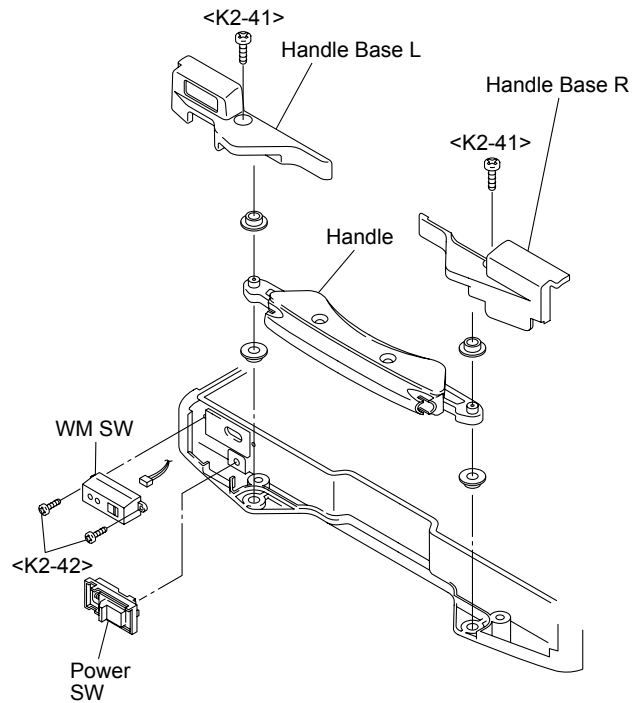
Screws <N9>: DRYN4+J10FKL
Screws <N10>: DXSB4+15FNLB



9.2.6. Setting the Handle and Power SW

1. Set the WM SW using the 2 Screws. <K2-42>
2. Set the Power SW.
3. Set the Handle.
4. Fix the Handle Base L and R using the 2 Screws. <K2-41>

Screws <K2-41>: DRSN4+6FKLT
Screws <K2-42>: DXQT26+D4NLT



9.2.7. Setting the Palm Top Cover Sheet, Palm Top Cover, Touch Pad Adhesion Seat, Touch Pad SW Knob, LED PCB And SW LED PCB

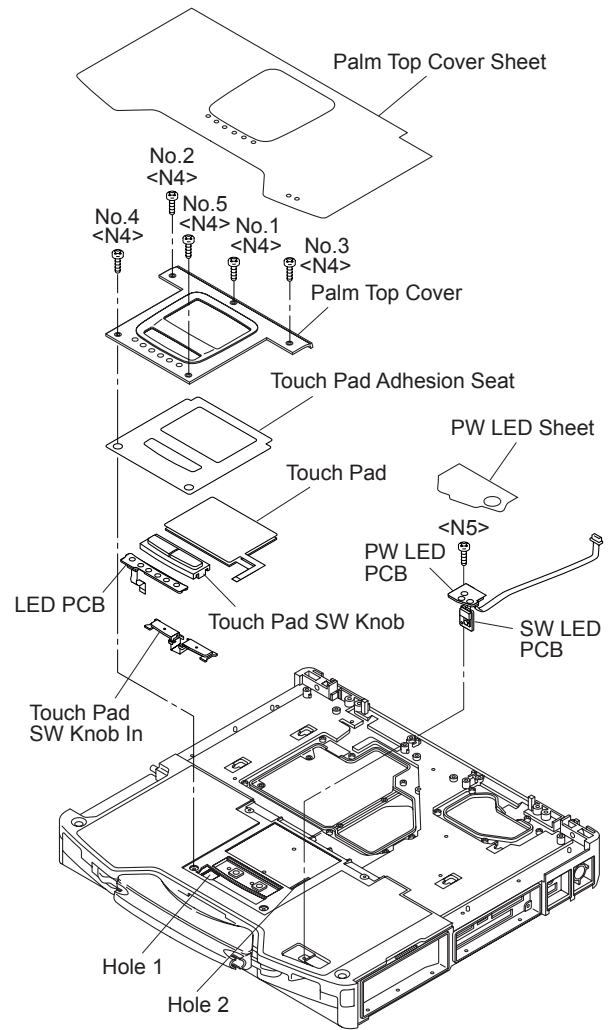
1. Set the SW LED PCB.
2. Attach the Power LED Packing Sheet to the LED Spacer Sheet.
3. Attach the LEDX6 Spacer Sheet on the SW LED PCB.
4. Fix the SW LED PCB using the Screw. <N5>
5. Attach the PW LED Sheet.
6. Pass the Cable of LED PCB through the hole 1 on the Top Cabinet, then set the LED PCB.
7. Attach the LES Spacer Sheet on the LED PCB.
8. Set the touch Pad SW Knob In and Touch Pad SW Knob
9. Attach the TP Bottom Tape to the Touch Pad.
10. Pass the Cables of the Touch Pad through the hole 2 on the Top Cabinet, set the touch Pad.
11. Attach the Touch Pad Adhesion Seat.
12. Fix the Palm Top Cover using the 5 Screws. <N4> No1 to No5
13. Attach the Palm Top Cover Sheet.

Note:

Tighten the Screws in the numbered order (No1 to No5).

Screws <N4>: DRQT26+D3FKL

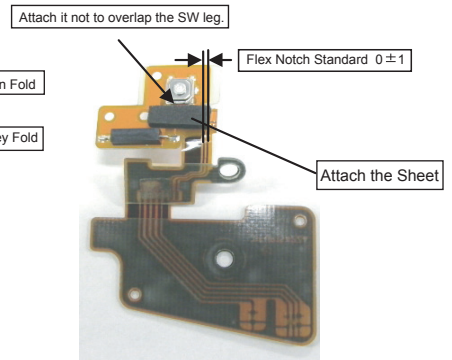
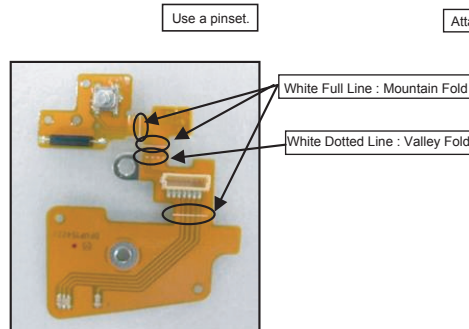
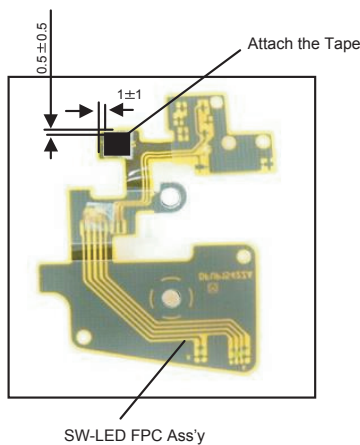
Screws <N5>: DRQT26+D4FKL



■ Preparation of SW LED FPC

* Notes:

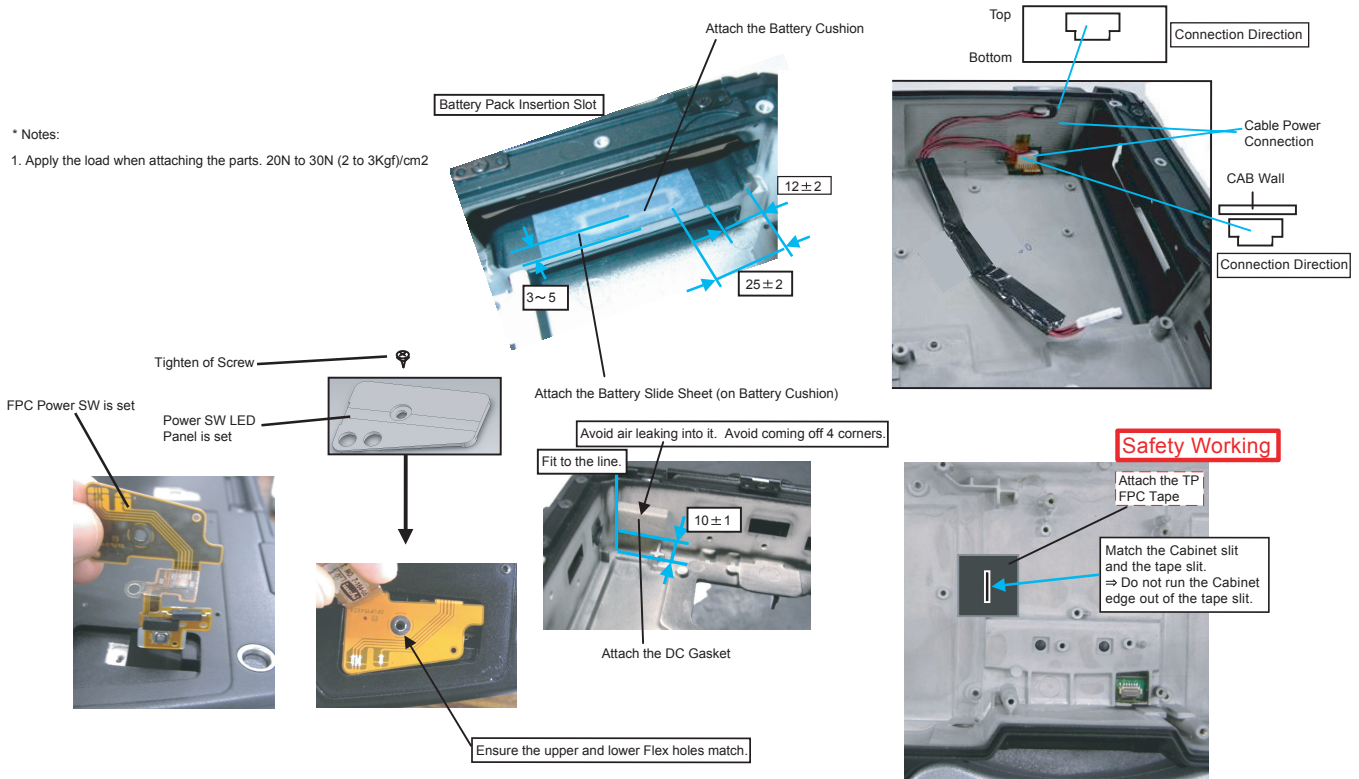
1. Apply the load when attaching the parts. 20N to 30N (2 to 3Kgf)/cm2



■ Assembly of Power SW

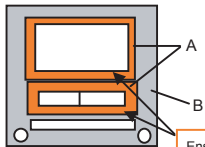
* Notes:

1. Apply the load when attaching the parts. 20N to 30N (2 to 3Kgf)/cm²



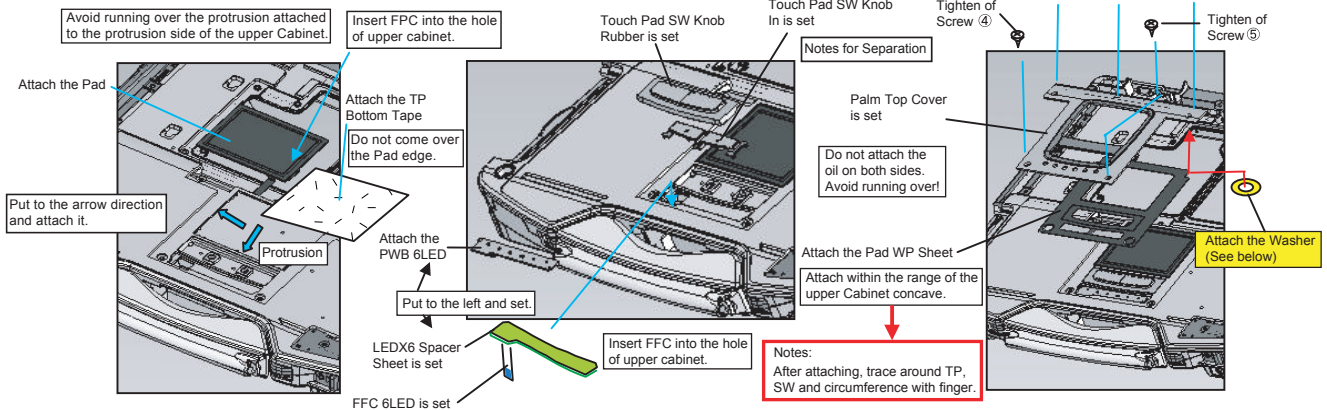
■ Assembly of Palm Top Cover

Using the pressure jig, Ensure the loads are applied equally.
(Make sure the adhesive materials are attached closely on the whole side.)
Process the speaker lead wire not to put inside when applying the load.

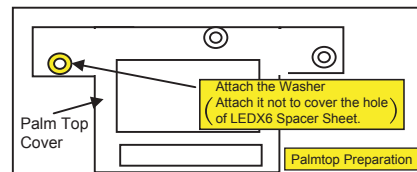


Ensure that the PAD and the button neck are attached with adhesive firmly.

Order of fixing
Screw ①→Screw ②→Screw ③
→Screw ④→Screw ⑤

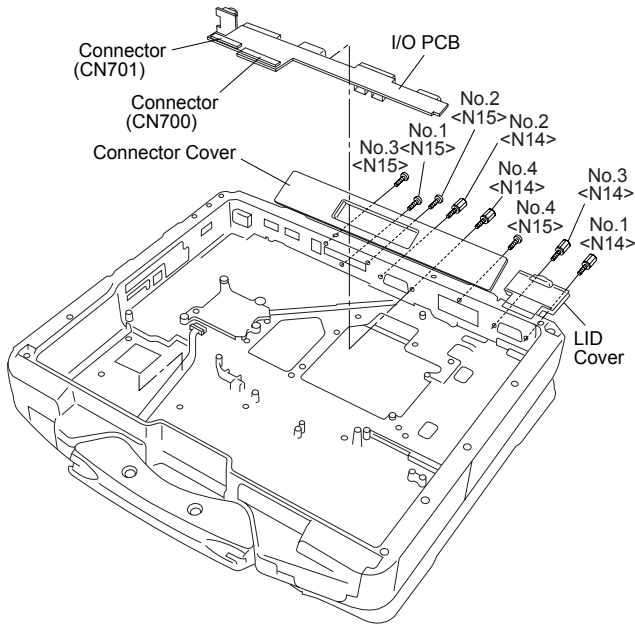


1. Apply the load when attaching the parts. 20N to 30N (2 to 3Kgf)/cm²



9.2.8. Setting the I/O PCB

1. Open the Connector Cover and Lid Cover.
2. Fix the I/O PCB using the 4 Screws. <N15> No1 to No4
3. Fix the I/O PCB using the 4 Screws. <N14> No1 to No4



Note:

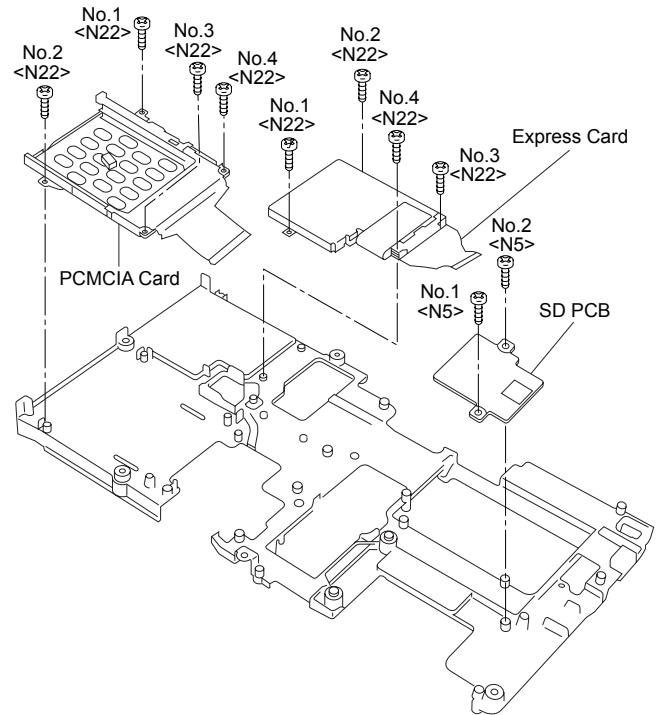
Tighten the Screws in the numbered order (No1 to No4).

Screws <N14>: DFHE5058ZB

Screws <N15>: DRHM5104ZA

9.2.9. Setting the SD PCB, Express Card and PCMCIA Card

1. Fix the PCMCIA Card using the 4 Screws. <N22>
2. Fix the Express Card using the 4 Screws. <N22>
3. Fix the SD PCB using the 2 Screws. <N5>

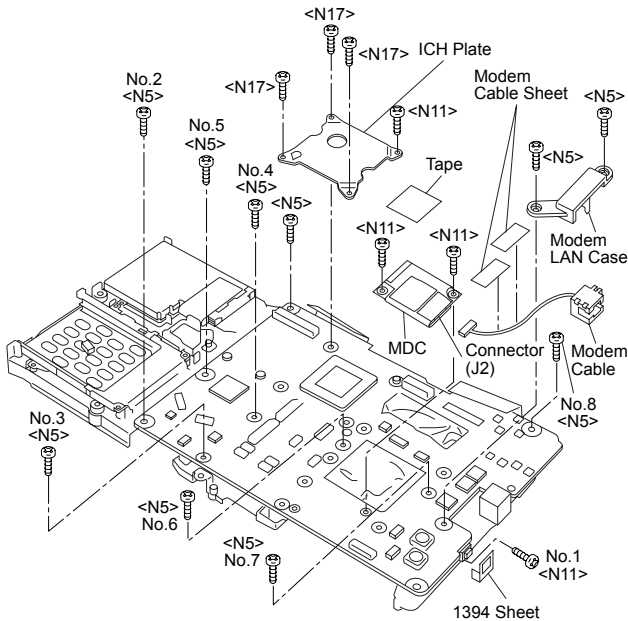


Screws <N5>: DRQT26+D4FKL

Screws <N22>: DXQT2+G4FNL

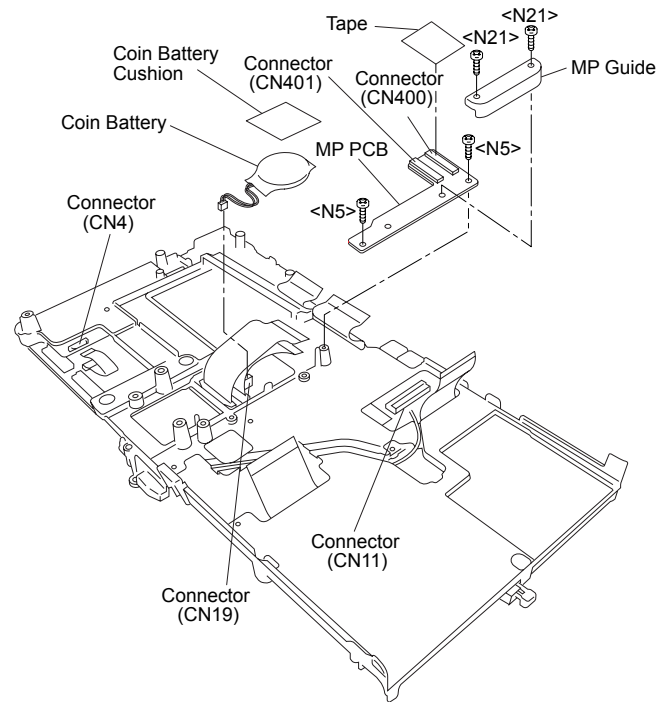
9.2.10. Setting the Main PCB

1. Fix the Main PCB using the 7 Screws <N5> and Screw <N11> No1 to No8.
2. Set the Modem Cable.
3. Connect the Cable to the Connector (J2) and fix the MDC.
4. Attach the Tape.
5. Attach the 1394 Sheet.
6. Fix the MDC using the 2 Screws. <N11>
7. Fix the Modem LAN Case using the 2 Screws. <N5>
8. Attach the 2 Modem Cable Sheets.
9. Fix the ICH Plate using the 3 Screws <N17> and Screw <N11>.

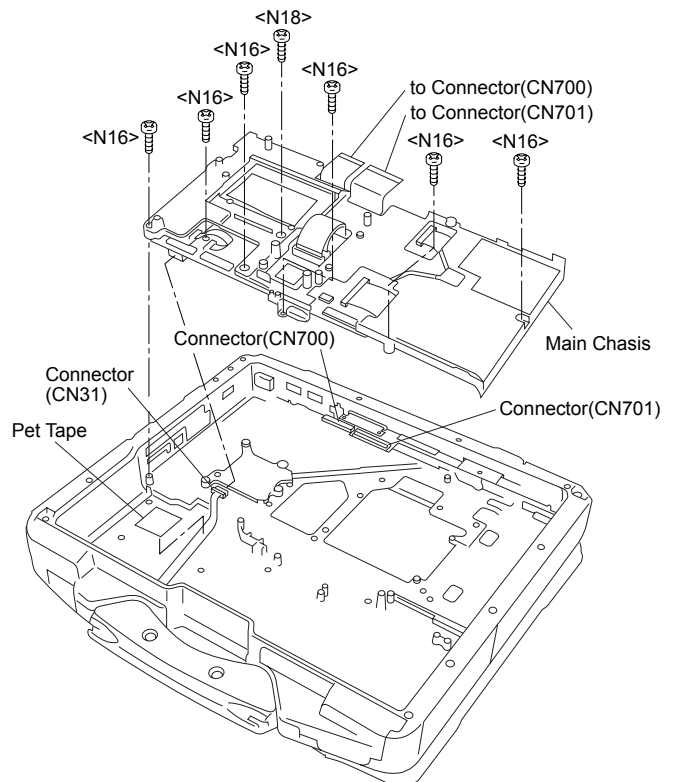


10. Connect the Cable to the Connector (CN4,CN11)
11. Attach the Tape.
12. Attach the Coin Battery.
13. Connect the Cable to the Connector. (CN19)
14. Attach the Coin Battery Cushion.
15. Fix the MP PCB and MP Guide using the 2 Screws <N5> and 2 Screws. <N21>
16. Connect the Cable to the Connector. (CN400,CN401)

17. Attach the Tape.

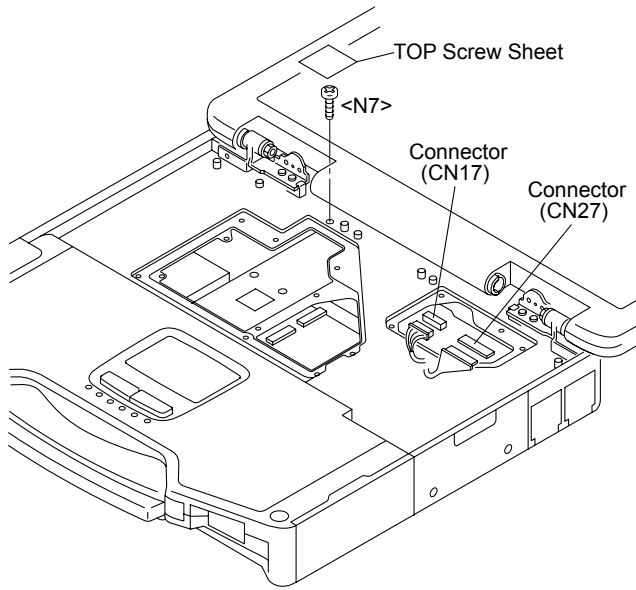


18. Set the Main Chassis on the Computer.
19. Connect the Cable to the Connector (CN31) and Attach the Pet Tape.
20. Connect the Cable to the Connector. (CN700,CN701)
21. Fix the Main Chassis using the 6 Screws <N16> No1 to No6
22. Fix the Main Chassis using the Screw. <N18>



23. Connect the 2 Cables to the 2 Connectors. (CN17,CN27)

- 24. Fix the Screw. <N7>
- 25. Attach the TOP Screws.



Note:

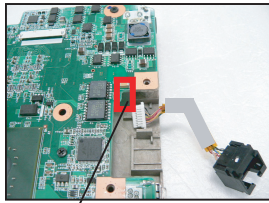
- Tighten the Screws in the numbered order (No1 to No8).
- Tighten the Screws in the numbered order (No1 to No6).

- Screws <N5>: DRQT26+D4FKL
- Screws <N7>: DRSB26+10HKL
- Screws <N11>: DFHE5025XA
- Screws <N16>: DRQT26+E5FKL
- Screws <N17>: DRQT26+E6FKL
- Screws <N18>: DRSB26+8FKL
- Screws <N21>: DXQT2+E12FNL

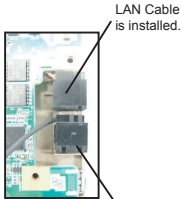
■ Assembly of LAN, Modem and MDC

* Notes:

1. Apply the load when attaching the parts. 20N to 30N (2 to 3Kgf)/cm²

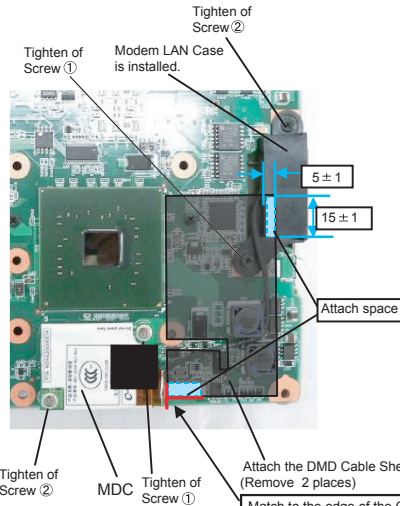


Pass the Cable to the back from the hole of the A side.



LAN Cable is installed.

Modem Cable is installed.



Tighten of Screw ①
Modem LAN Case is installed.
Tighten of Screw ②

5 ± 1

15 ± 1

Attach space

Tighten of Screw ②

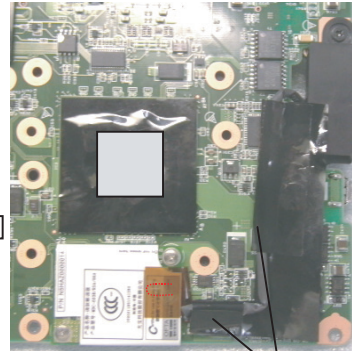
MDC

Tighten of Screw ①

Attach the DMD Cable Sheet (Remove 2 places)

Match to the edge of the Connector. ±1

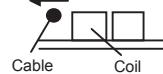
Order of fixing
Screw ① → Screw ②



Process the cable and cover with MDM Cable Sheet

Safety Working

Separate from the coil.

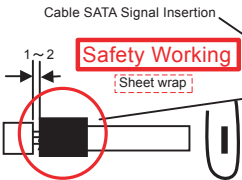


■ Assembly of Main PCB

* Notes:

1. Apply the load when attaching the parts. 20N to 30N (2 to 3Kgf)/cm²

Insert the connector wrapped with the sheet into the connector on the board.

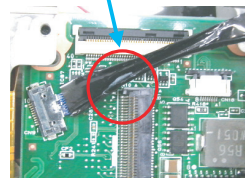


Cable SATA Signal Insertion

Safety Working

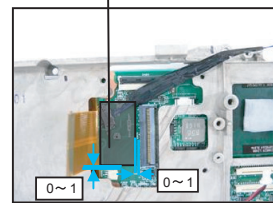
Sheet wrap

Bend the cable avoiding the connector.



Safety Working

Attach the PET Sheet



0 ~ 1

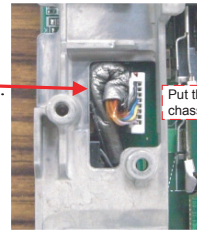
0 ~ 1

Insert the FFC of the card connector into the connector on the main board.

Do not insert the connector incompletely. (Note: Insert diagonally.)

Insert the FFC of the card connector into the connector on the main board.

Connect the LAN cable.



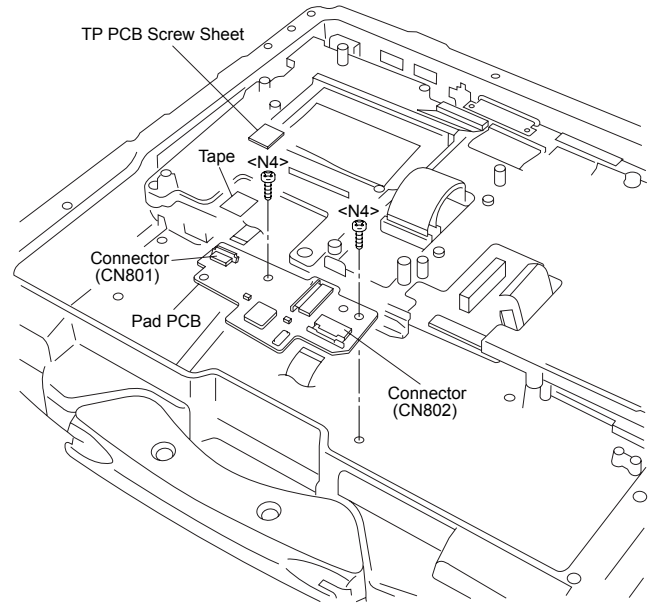
Put the cable in a U-shape into the intermediate chassis aperture next to the Connector.

Safety Working

9.2.11. Setting the PAD PCB

1. Fix the PAD PCB using the 2 Screws. <N4>
2. Attach the TP PCB Screw Sheet.
3. Connect the Cable to the Connector. (CN802)
4. Connect the Cable to the Connector (CN801) and attach the Tape.

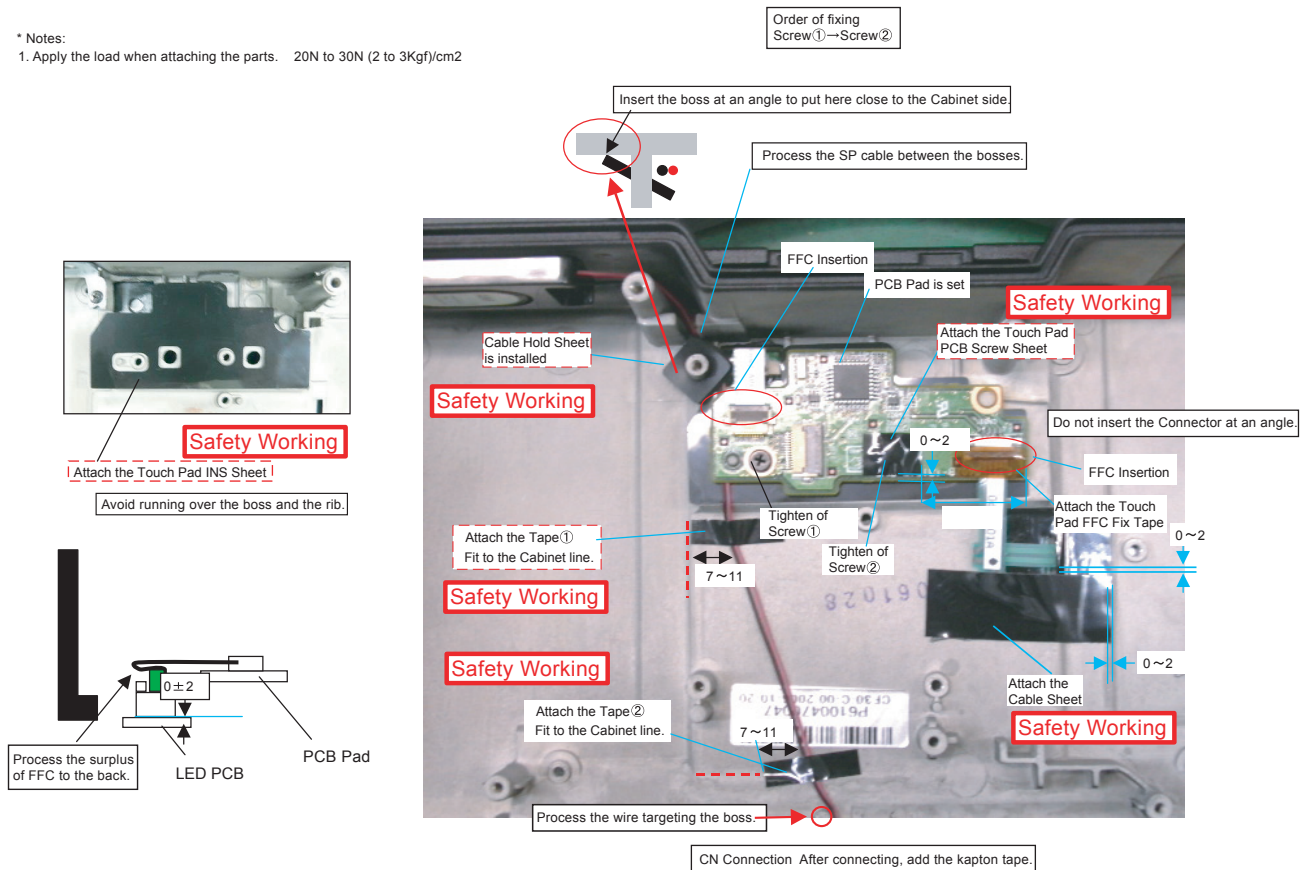
Screws <N4>: DRQT26+D3FKL



■ Assembly of PAD PCB

* Notes:

1. Apply the load when attaching the parts. 20N to 30N (2 to 3Kg/cm²)



9.2.12. Setting the FPC HDD BAT

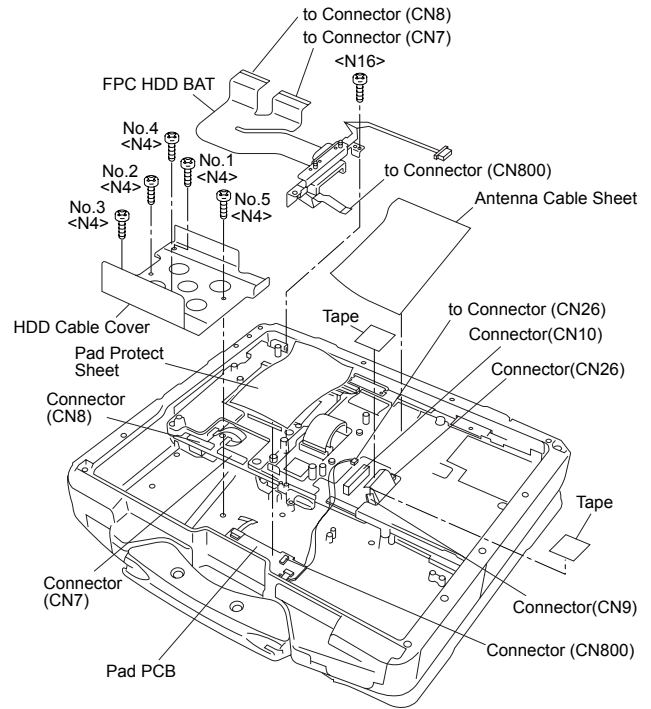
1. Fix the FPC HDD BAT using the Screw. <N16>
2. Connect the 2 Cables to the 2 Connectors. (CN7,CN8)
3. Connect the Cable to the Connector. (CN800)
4. Attach the PAD Protect Sheet.
5. Connect the Cable to the Connector. (CN9)
6. Attach the Tape.
7. Connect the 2 Cables to the 2 Connectors. (CN10,CN26)
8. Attach the Tape.
9. Attach the Antenna Cable Sheet on the Main PCB.
10. Fix the HDD FPC BAT using the 5 Screws. <N4> No1 to No5

Note:

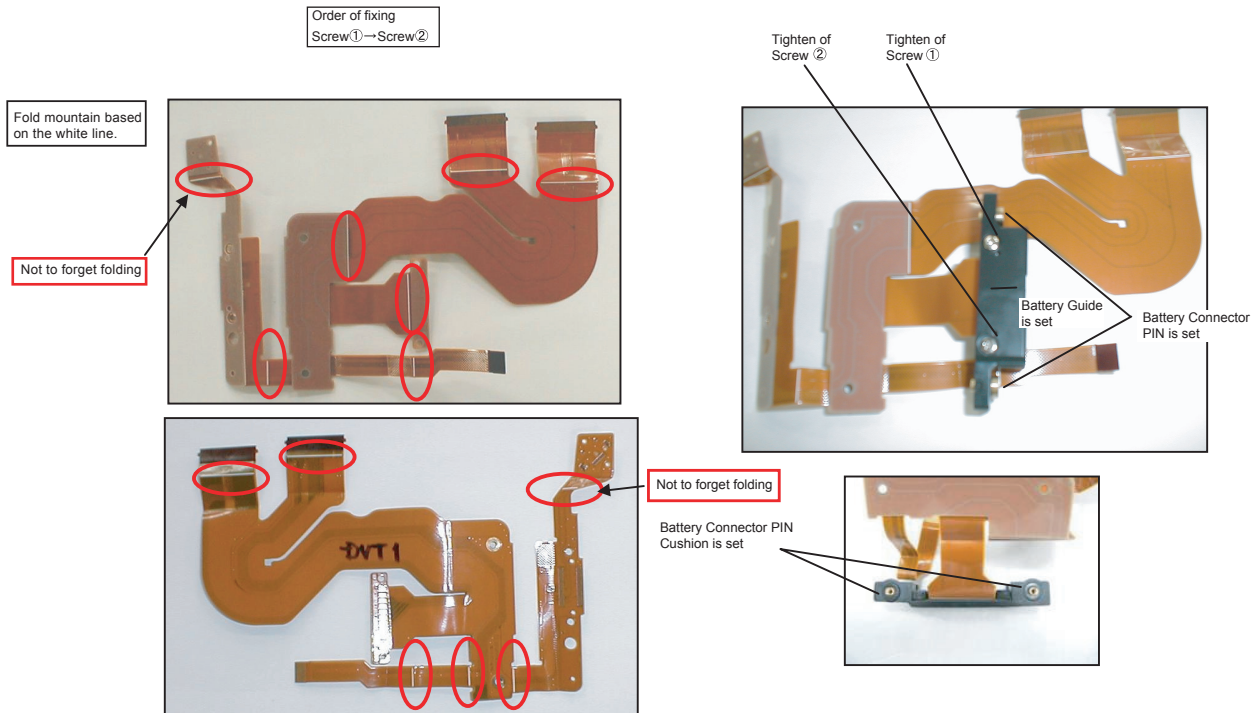
Tighten the Screws in the numbered order (No1 to No5).

Screw <N4>: DRQT26+D3FKL

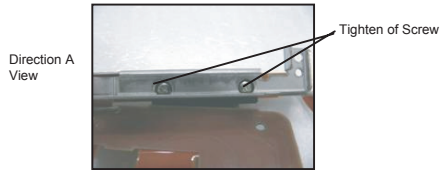
Screw <N16>: DRQT26+E5FKL



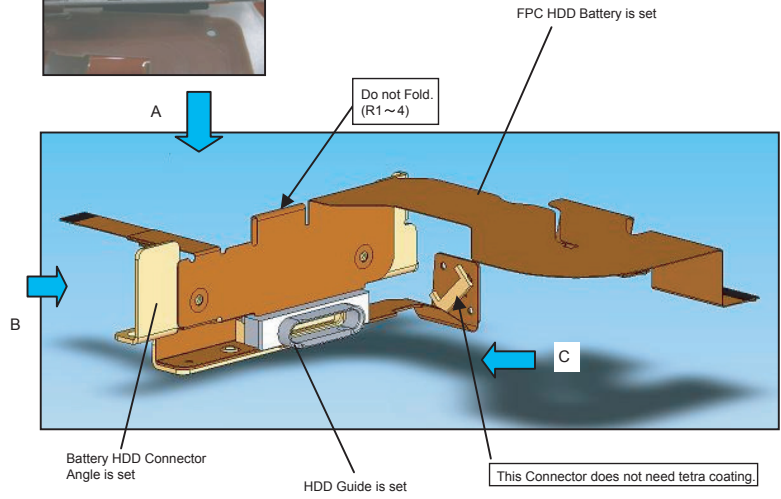
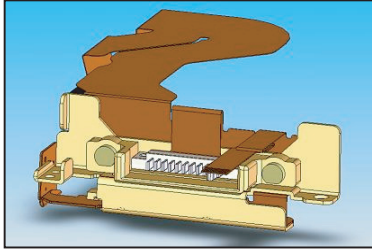
■ Preparation of HDD FPC ASSY



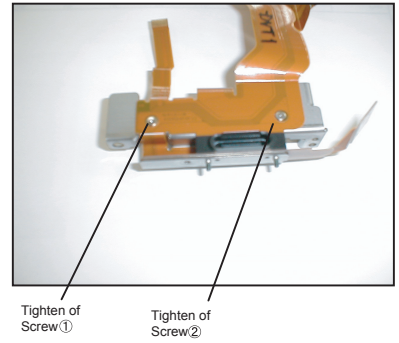
1. Set HDD Guide and fix with Screw.
2. Fix with Screw.
3. Apply tetra coating to each connector pin.

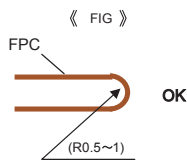
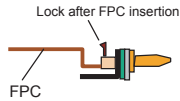
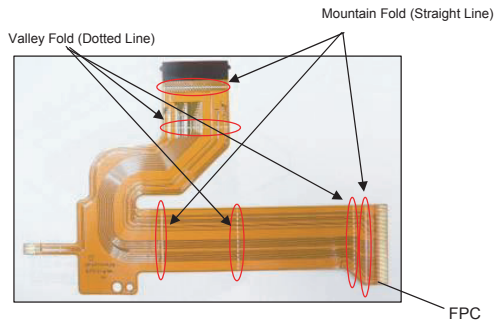
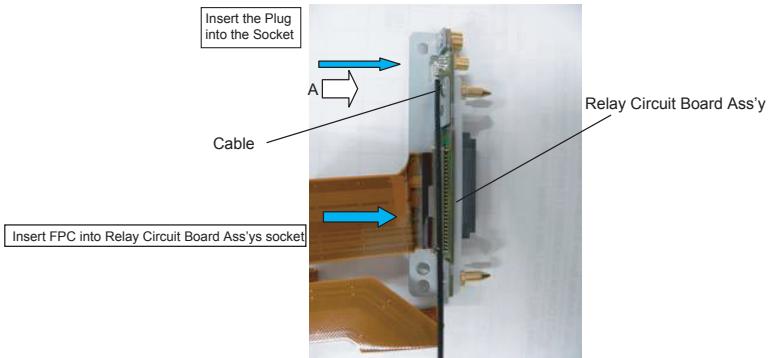
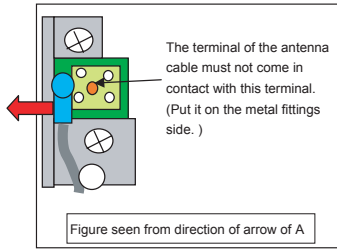


Direction B View



Direction C View



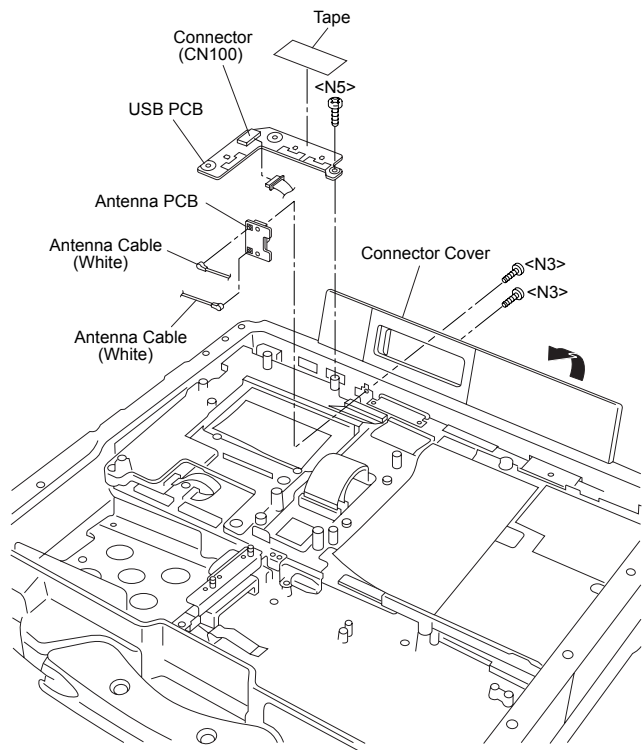


《 The attention of folding 》 : Breakage countermeasure.
 1, The bending inside is R0.5~1
 2, Don't mistake a bending direction.
 Don't use a mistaken thing.

9.2.13. Setting the USB PCB and Antenna PCB

1. Open the Connector Cover.
2. Fix the Antenna PCB using the 2 Screws. <N3>
3. Connect the 2 white Cables.
4. Fix the USB PCB using the Screws. <N5>
5. Connect the Cable to the Connector. (CN100)
6. Attach the Tape.

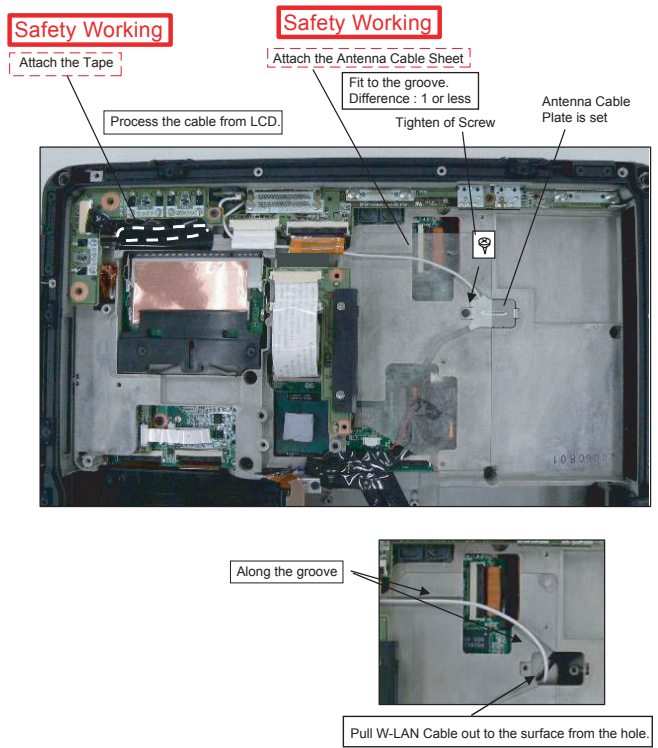
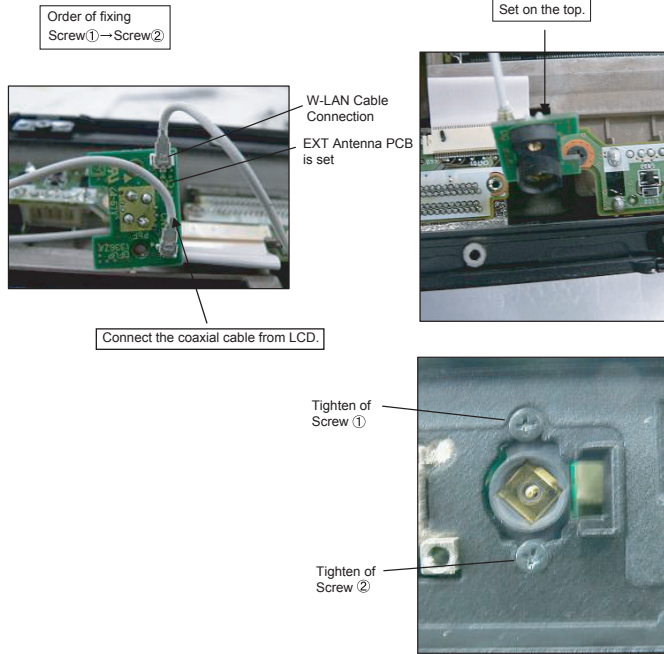
Screws <N3>: DRQT2+G6FKL
 Screws <N5>: DRQT26+D4FKL



■ Assembly of USB PCB and Antenna PCB

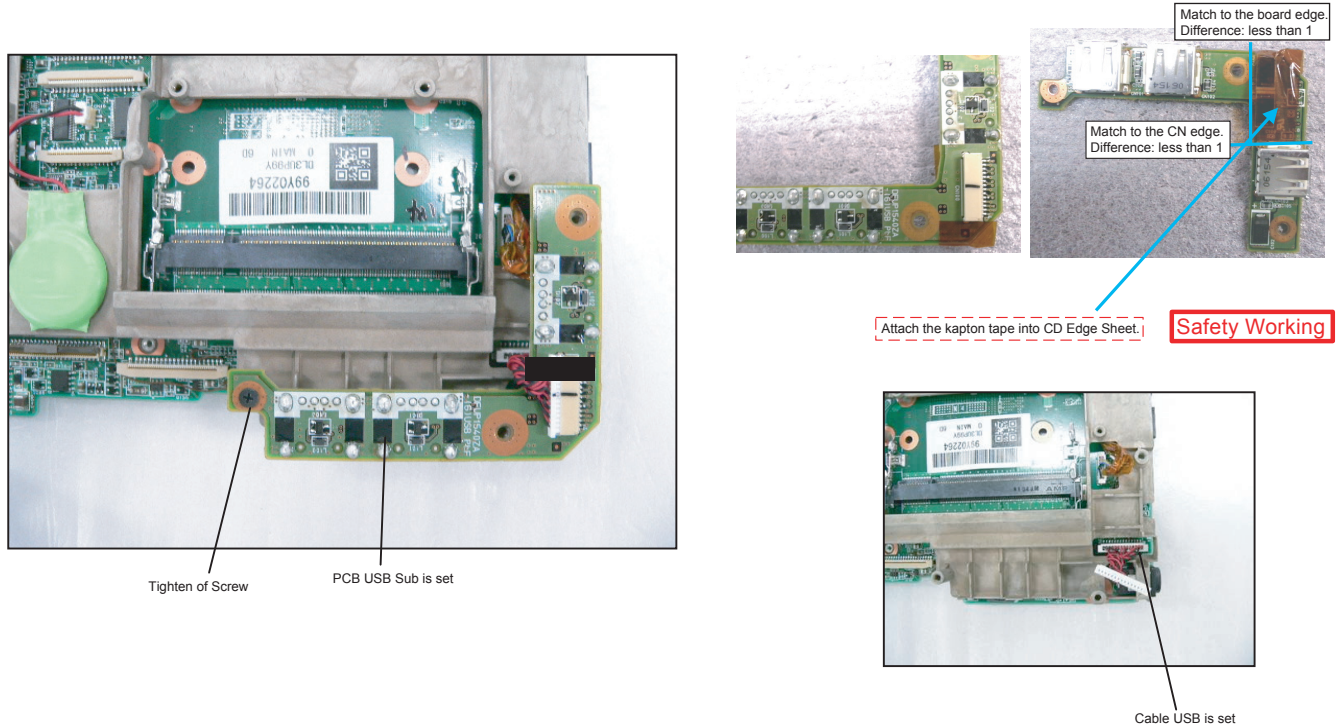
* Notes:

1. Apply the load when attaching the parts. 20N to 30N (2 to 3Kgf)/cm²



* Notes:

1. Apply the load when attaching the parts. 20N to 30N (2 to 3Kgf)/cm²



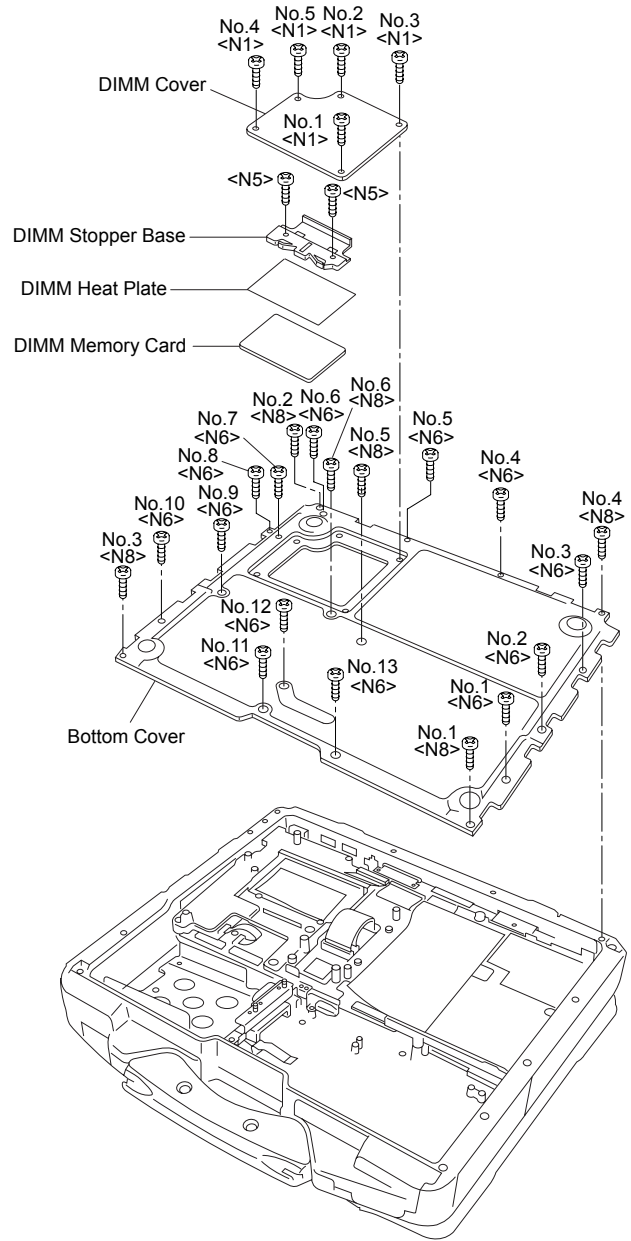
9.2.14. Setting the DIMM Cover and Bottom Cover

1. Set the Bottom Cover.
2. Fix the Bottom Cover using the 6 Screws. <N8> No1 to No6
3. Fix the Bottom Cover using the 13 Screws. <N6> No1 to No13
4. Set the DIMM memory card.
5. Attach the DIMM Heat Plate.
6. Fix the DIMM Stopper Base using the 2 Screws. <N5>
7. Fix the DIMM Cover using the 5 Screws. <N1>

Screws <N1>: DRHM0002ZA
Screws <N5>: DRQT26+D4FKL
Screws <N6>: DRQT26+E4FKL
Screws <N8>: DRSB3+8FKL

Note:

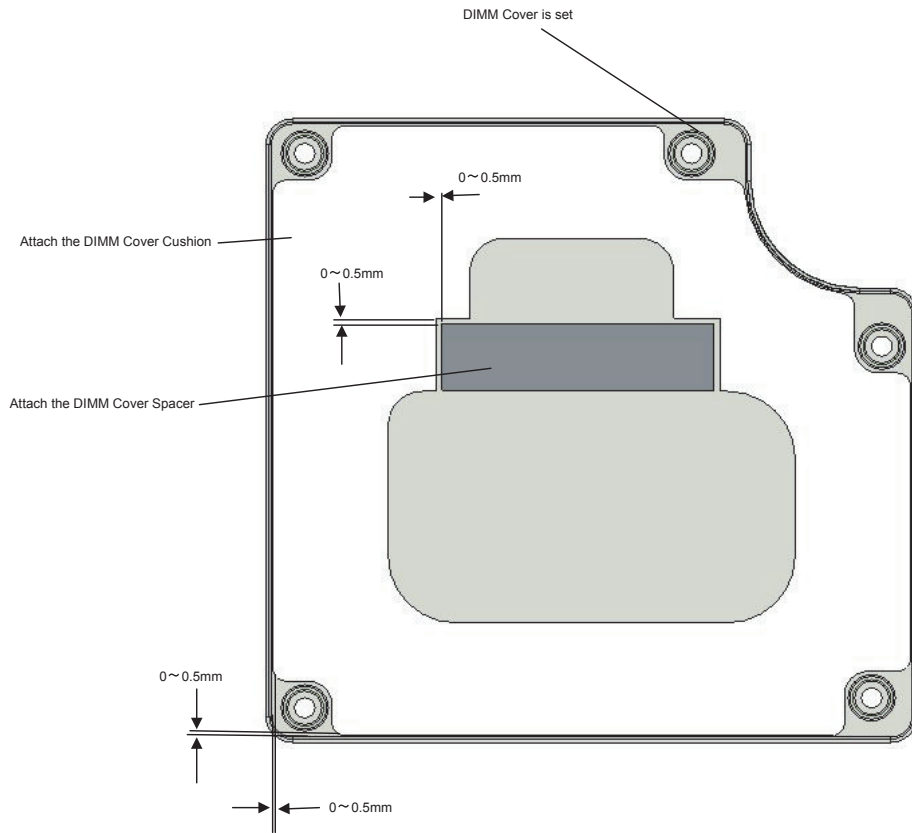
- Tighten the Screws in the numbered order (No1 to No6).
- Tighten the Screws in the numbered order (No1 to No13).
- Tighten the Screws in the numbered order (No1 to No5).



■ Preparation of DIMM Cover

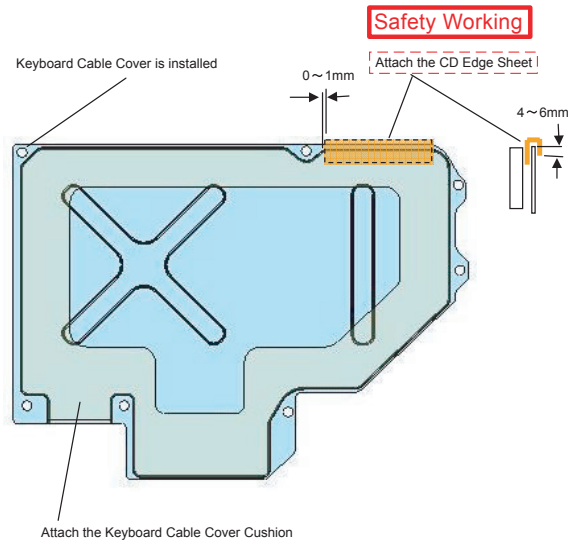
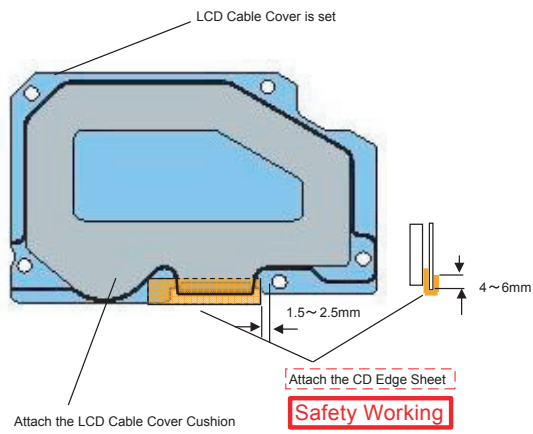
* Notes:

1. Apply the load when attaching the parts. 20N to 30N (2 to 3Kgf)/cm²



* Notes:

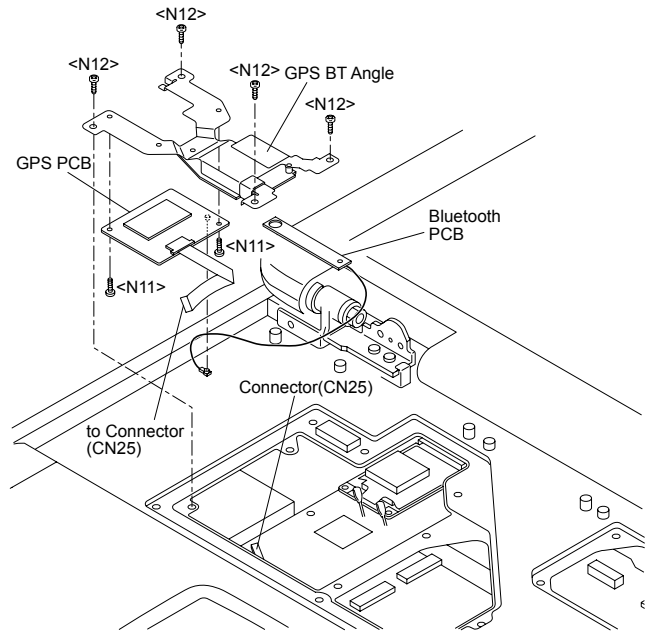
1. Apply the load when attaching the attaching parts. 20N to 30N (2 to 3Kgf)/cm²



9.2.15. Setting the GPS PCB and Bluetooth PCB

1. Fix the GPS BT Angle and GPS PCB using the 2 Screws. <N11>
2. Connect the Cable to the Connector on GPS PCB.
3. Fix the GPS Ass'y using the 4 Screws. <N12>
4. Connect the Cable to the Connector. (CN25)

Screws <N11>: DFHE5025XA
Screws <N12>: DXQT2+F3FNL



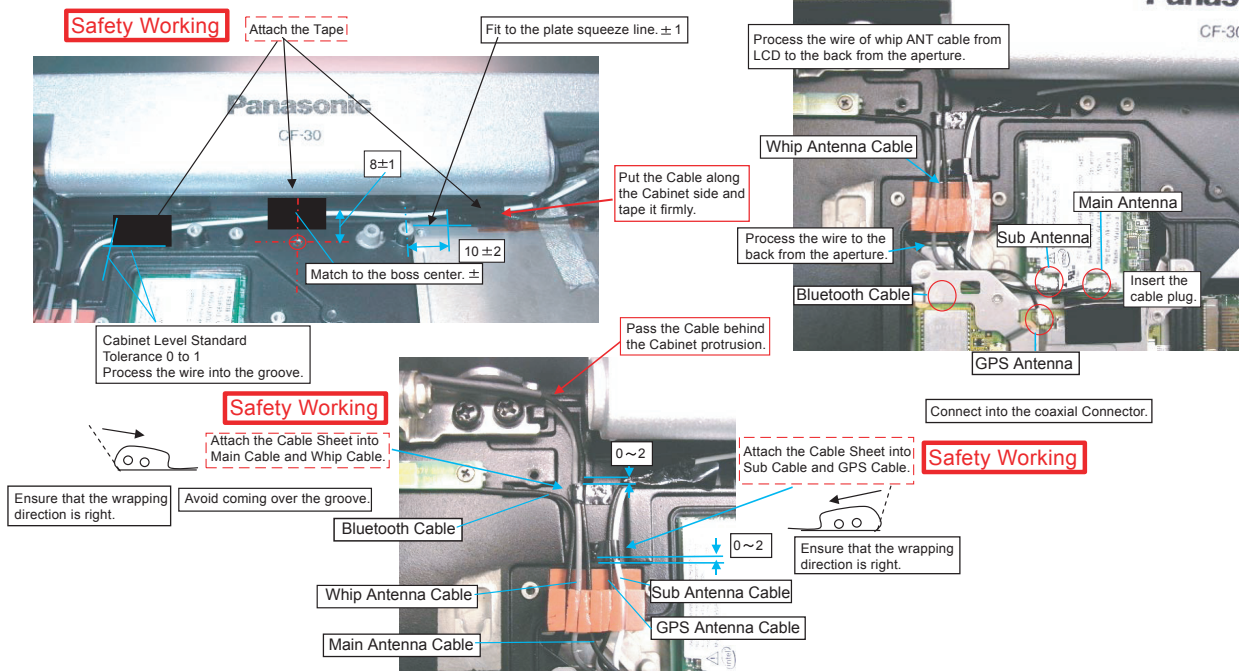
■ Cautions for Setting GPS ASSY and BT PCB ASSY

* Notes:

1. Apply the load when attaching the parts. 20N to 30N (2 to 3Kgf/cm²)

* Notes:

1. Do not gouge when inserting and removing the plug.
2. Do not damage the coating when handling the cable.



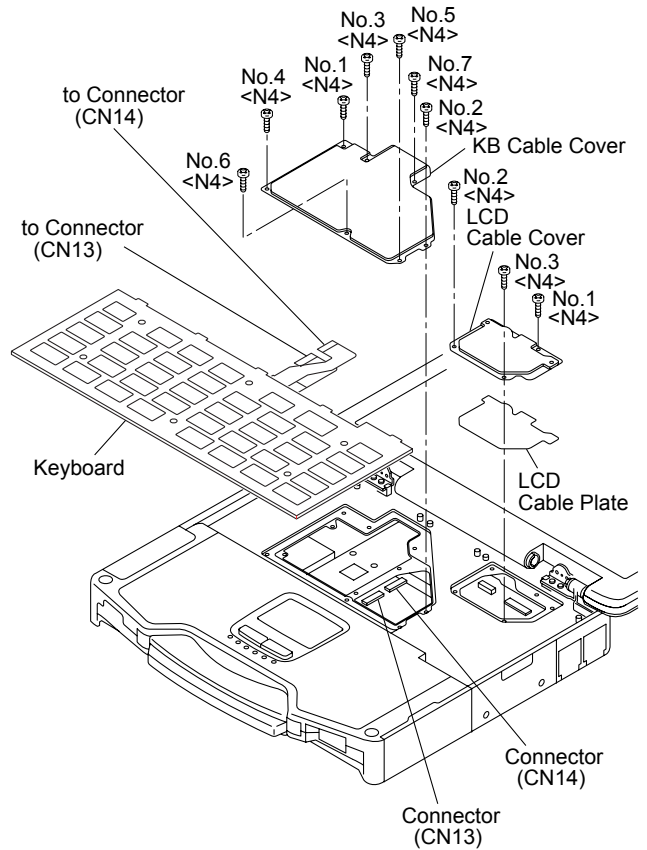
9.2.16. Setting the KB Cable Cover, Keyboard and LCD Cable Cover

1. Set the Keyboard onto the Computer.
2. Connect the 2 Cables to the 2 Cables. (CN13,CN14)
3. Fix the KB Cable Cover using the 7 Screws. <N4> No1 to No7
4. Set the LCD Cable Plate.
5. Fix the LCD Cable Cover using the 3 Screws. <N4> No1 to No3

Note:

- Tighten the Screws in the numbered order (No1 to No7).
- Tighten the Screws in the numbered order (No1 to No3).

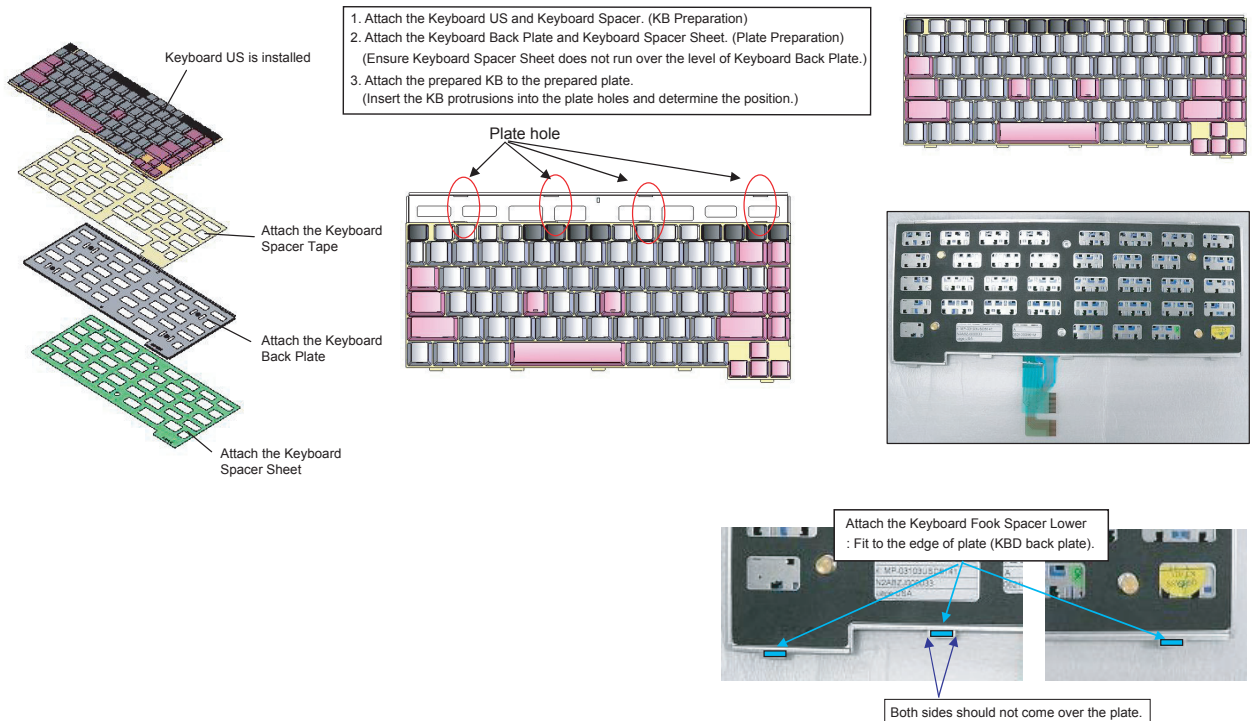
Screws <N4>: DRQT26+D3FKL



■ Arranging the Keyboard

* Notes:

1. Apply the load when attaching the parts. 20N to 30N (2 to 3Kgf/cm2)



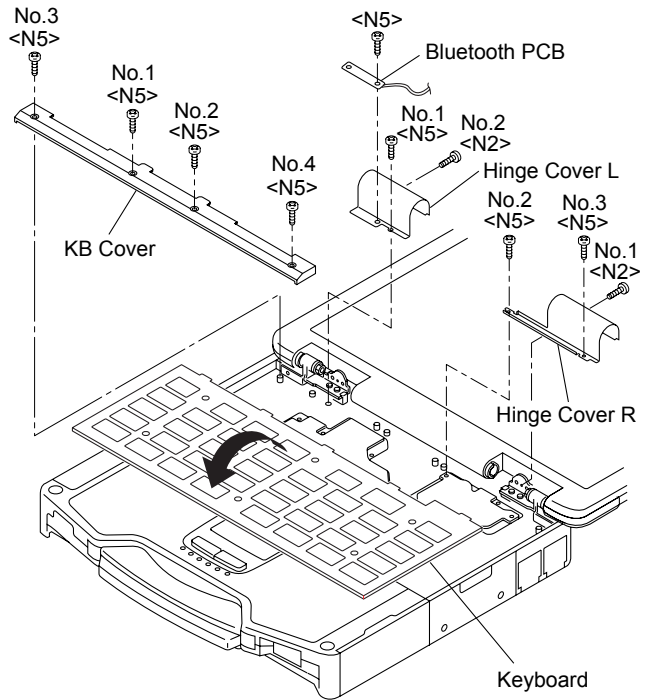
7.2.17. Setting the KB Cover, Hinge Cover L, Hinge Cover R and Keyboard

1. Insert the front hooks of the Keyboard to the Top Cabinet in order, and set the Keyboard.
2. Fix the Hinge Cover L and R using the 4 Screws <N5> No1 to No3
3. Fix the Hinge Cover L and R using the 2 Screws. <N2> No1, No2
4. Fix the Bluetooth PCB using the Screw. <N5>
5. Fix the KB Cover using the 4 Screws. <N5> No1 to No4

Note:

- Tighten the Screws in the numbered order (No1 to No4).
- Tighten the Screws in the numbered order (No1 to No3).
- Tighten the Screws in the numbered order (No1, No2).

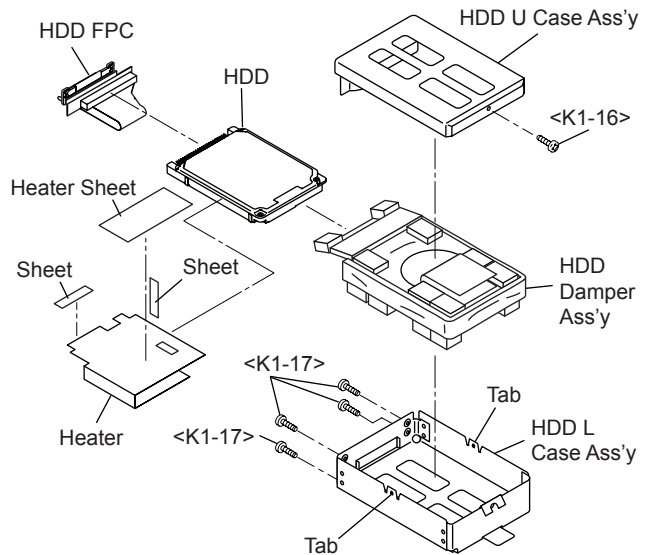
Screws <N2>: DRHM5054XA
Screws <N5>: DRQT26+D4FKL



7.2.18. Setting the HDD

1. Set the HDD FPC to HDD.
2. Attach the Heater to HDD.
3. Attach the Heater Sheet to the Heater.
4. Attach the 2 Sheets to HDD.
5. Attach the 6 HDD Forming MFYPC and the two HDD Terminal Plate Upper to the HDD Damper Ass'y.
6. Attach the six HDD Forming MFYPC and the two HDD Terminal Plate Upper to the HDD Damper Ass'y.
7. Set the HDD Damper Ass'y to HDD.
8. Attach the Side Cushion to the HDD L Case Ass'y.
9. Set the HDD U Case Ass'y and the HDD L Case Ass'y, and set the two Tabs of the HDD L Case Ass'y.
10. Fix the HDD U Case Ass'y and the HDD L Case Ass'y using the 4 Screws <K1-17> and Screw <K1-16>.

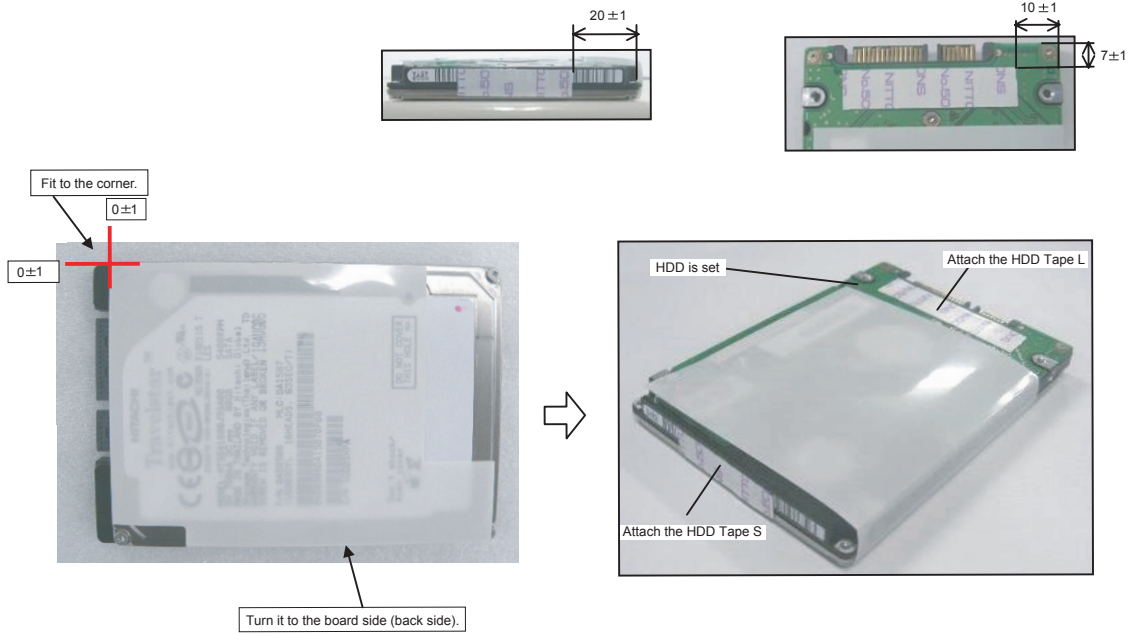
Screws <K1-16>: DFHE5025XA
Screws <K1-17>: DRQT2+E8FKL



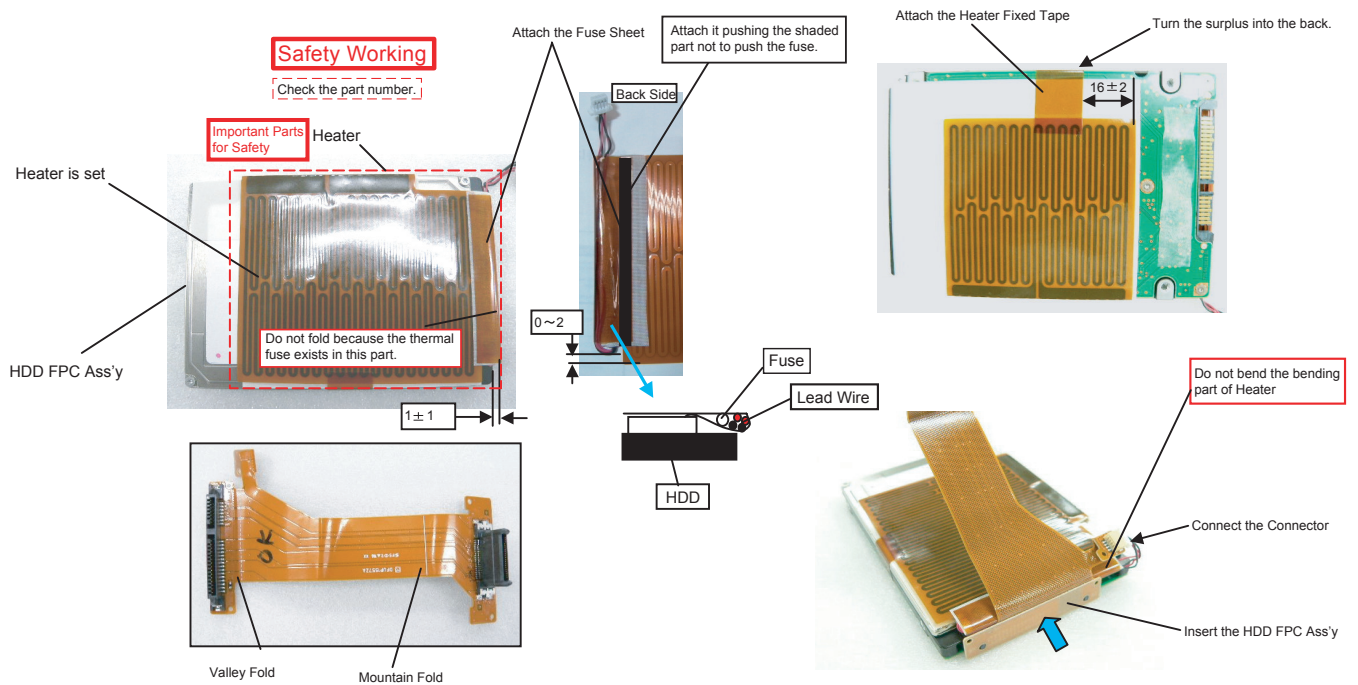
■ Preparation of HDD ASSY

* Notes:

1. Apply the load when attaching the parts. 20N to 30N (2 to 3Kgf/cm²)



1. Do not gouge when inserting and removing the socket.
2. Do not drop HDD or add any impacts on it.
3. Insert CN into the end firmly.
4. Apply the load when attaching the parts. 20N to 30N (2 to 3Kgf/cm²)

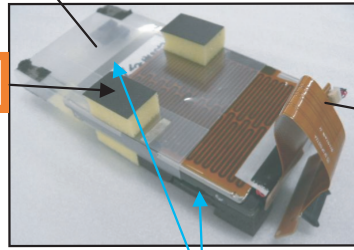


HDD Damper Ass'y

* Notes:

1. Apply the load when attaching the parts. 20N to 30N (2 to 3Kgf/cm2)

Make sure the product with black sheet on the yellow sponge.

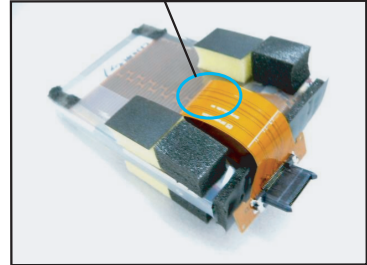
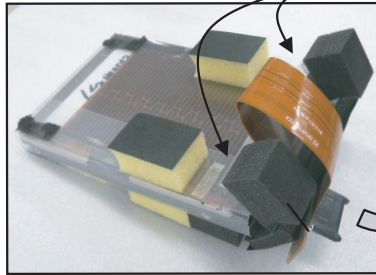


Fold the FPC from the board edge.

Push and bend

HDD Ass'y
HDD Set Insert after removing the Release Paper of the two-sided tape.

Remove the Release Paper on the back, close and attach it.

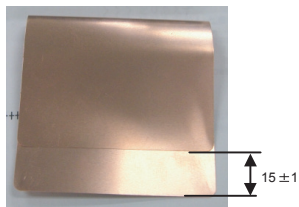
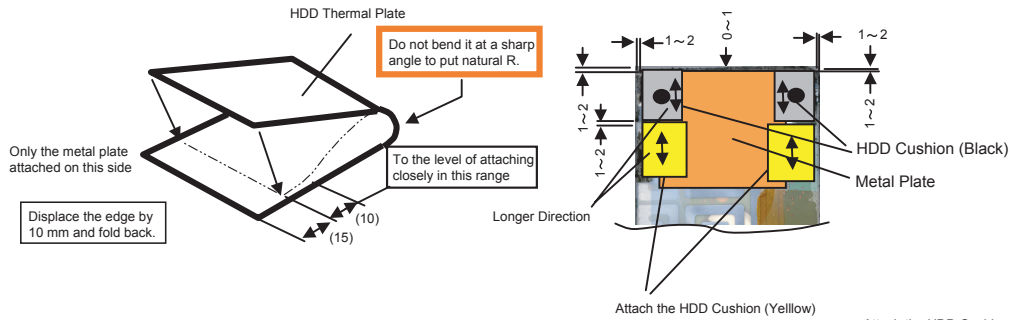


Attach it to HDD closely not to loosen.

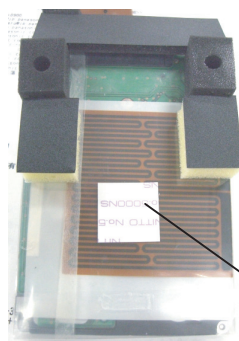
* Notes:

1. Apply the load when attaching the parts. 20N to 30N (2 to 3Kgf/cm2)

When attaching HDD Cushion (Yellow) and HDD Cushion (Black), set the bending part of the metal plate up.



《Prepare the metal plate bend.》

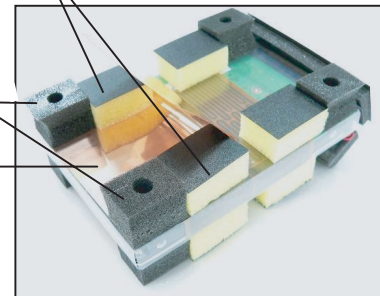


Attach the HDD Cushion (Black)

Attach the HDD Thermal Plate

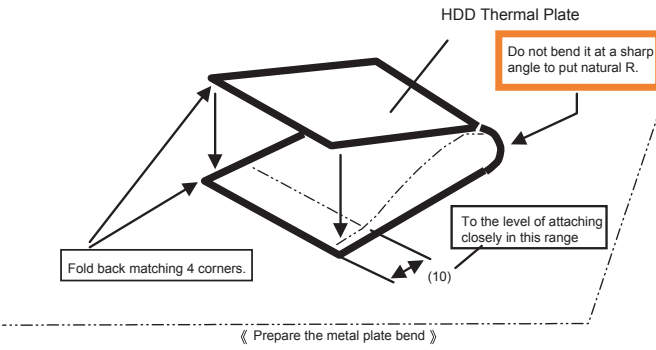
Remove the Release Paper

Attach the HDD Cushion (Yellow)

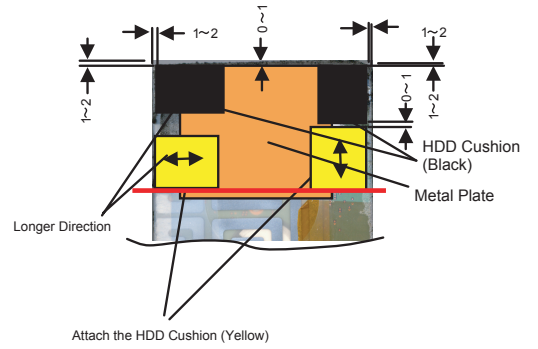


* Notes:

1. Apply the load when attaching the parts. 20N to 30N (2 to 3Kgf)/cm²



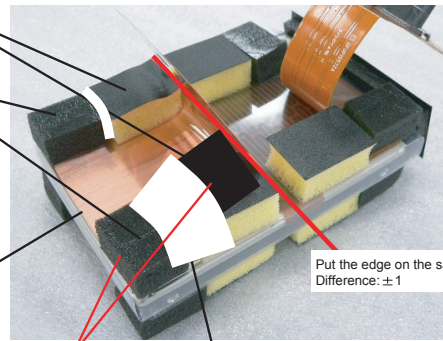
When attaching HDD Cushion Plate and HDD Cushion (Black), set the bending part of the metal plate up.



Attach the HDD Cushion (Yellow)

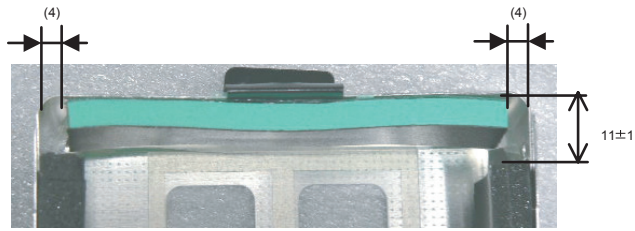
Attach the HDD Cushion (Black)

Attach the HDD thermal Plate

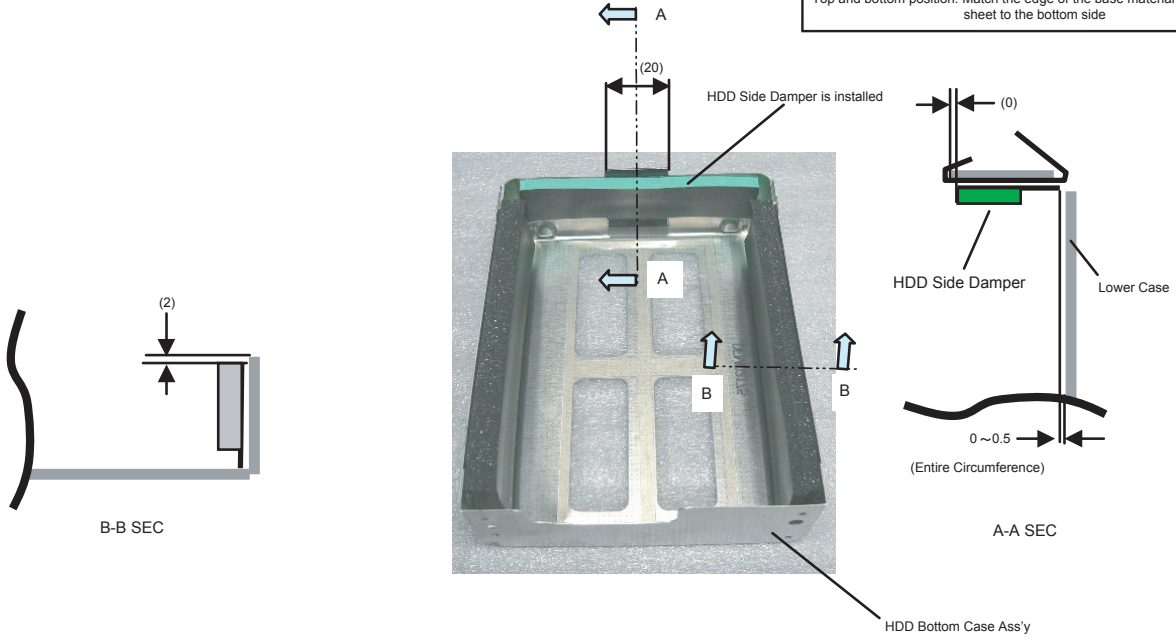


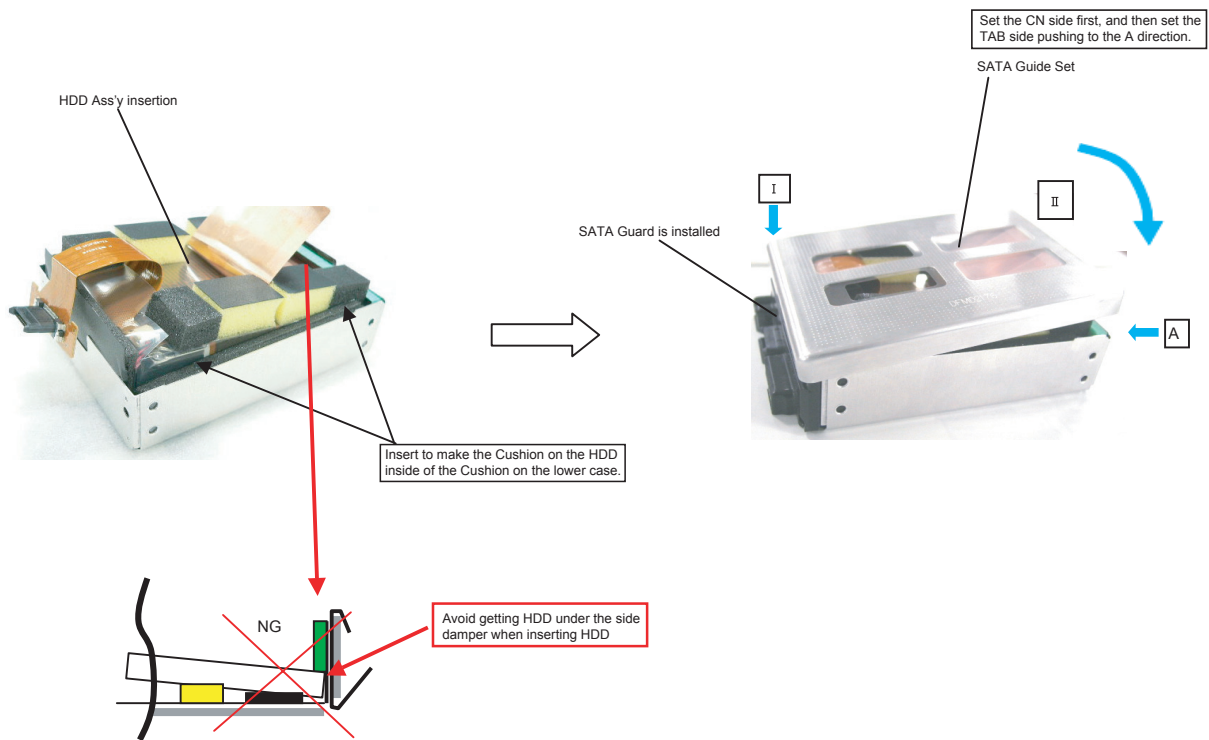
*Ensure the direction is right. (lateral) Keep the space to secure the air vent.

- * Notes:
 1. Apply the load when attaching the parts. 20N to 30N (2 to 3Kgf)/cm2



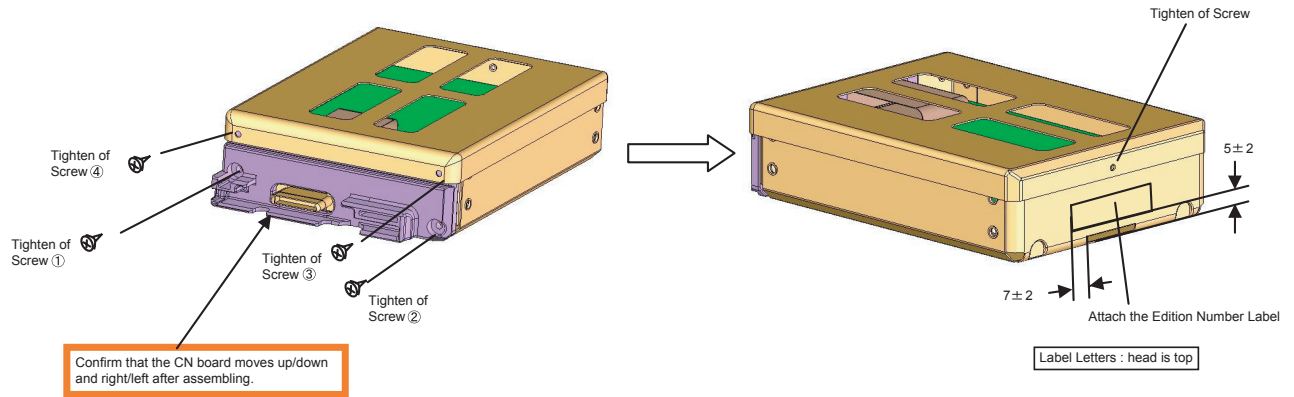
Right and left position: Match to the center
 Top and bottom position: Match the edge of the base material transparent sheet to the bottom side





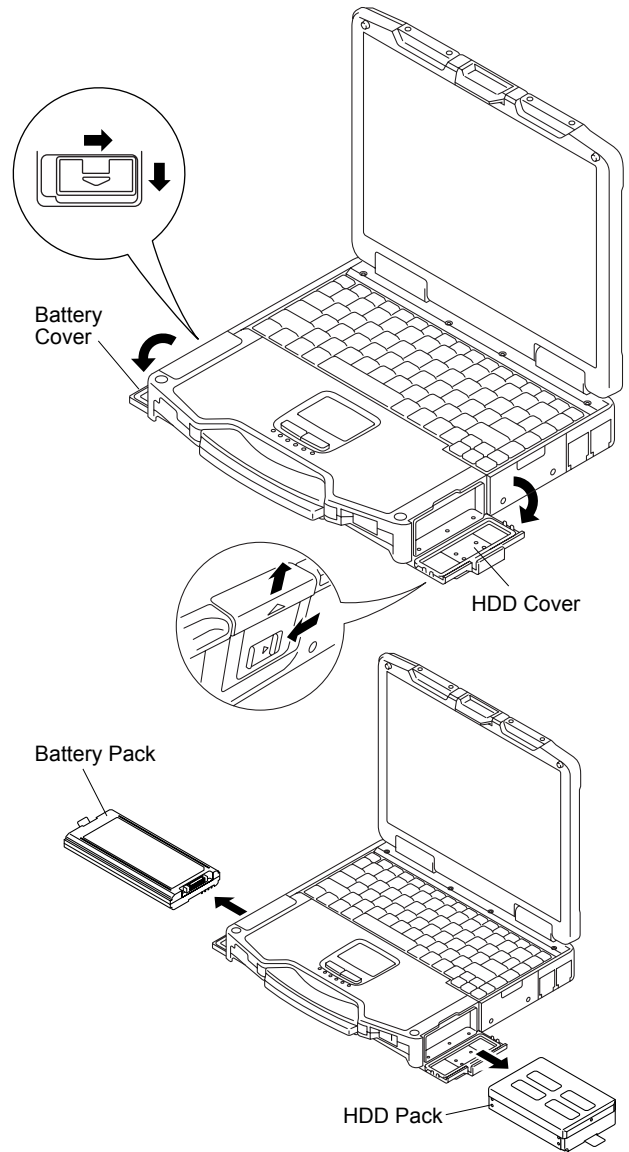
* Notes:
 1. Apply the load when attaching the parts. 20N to 30N (2 to 3Kgf/cm²)

Order of fixing
 Screw ①—Screw ②—Screw ③—Screw ④

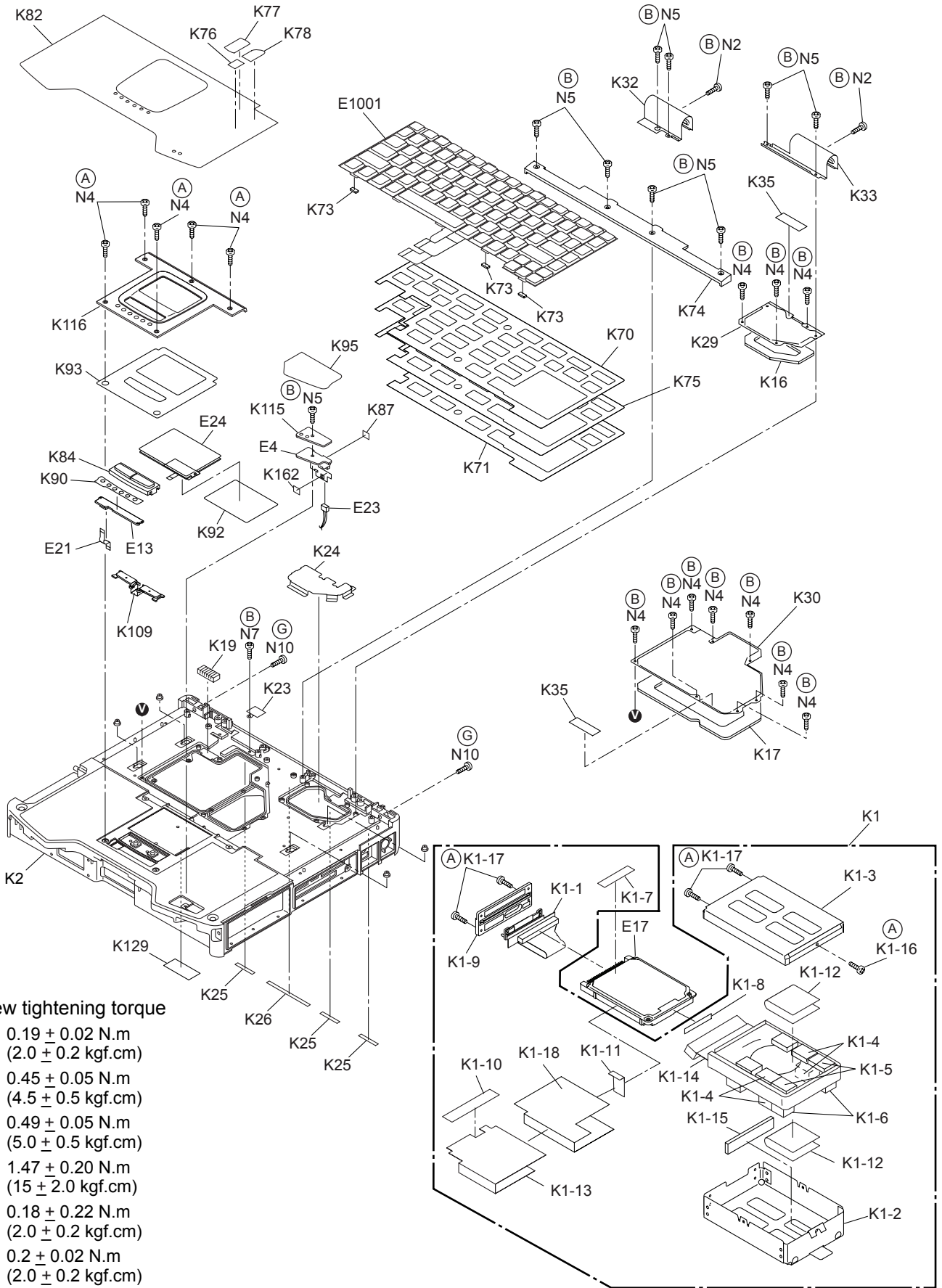


9.2.19. Setting the Battery Pack and HDD Pack

1. Set the HDD Pack.
2. Set the Battery Pack.

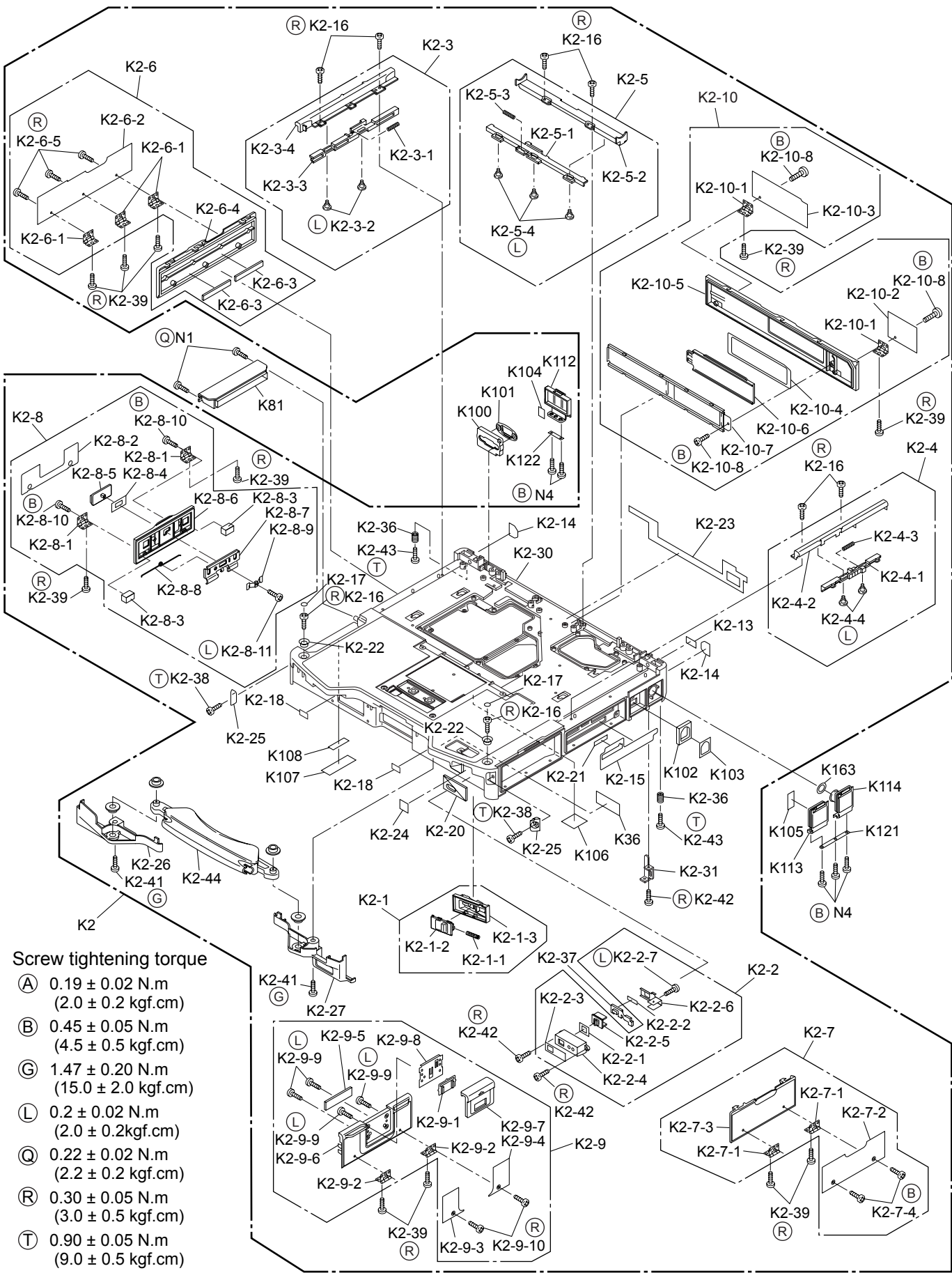


10 Exploded View



Screw tightening torque

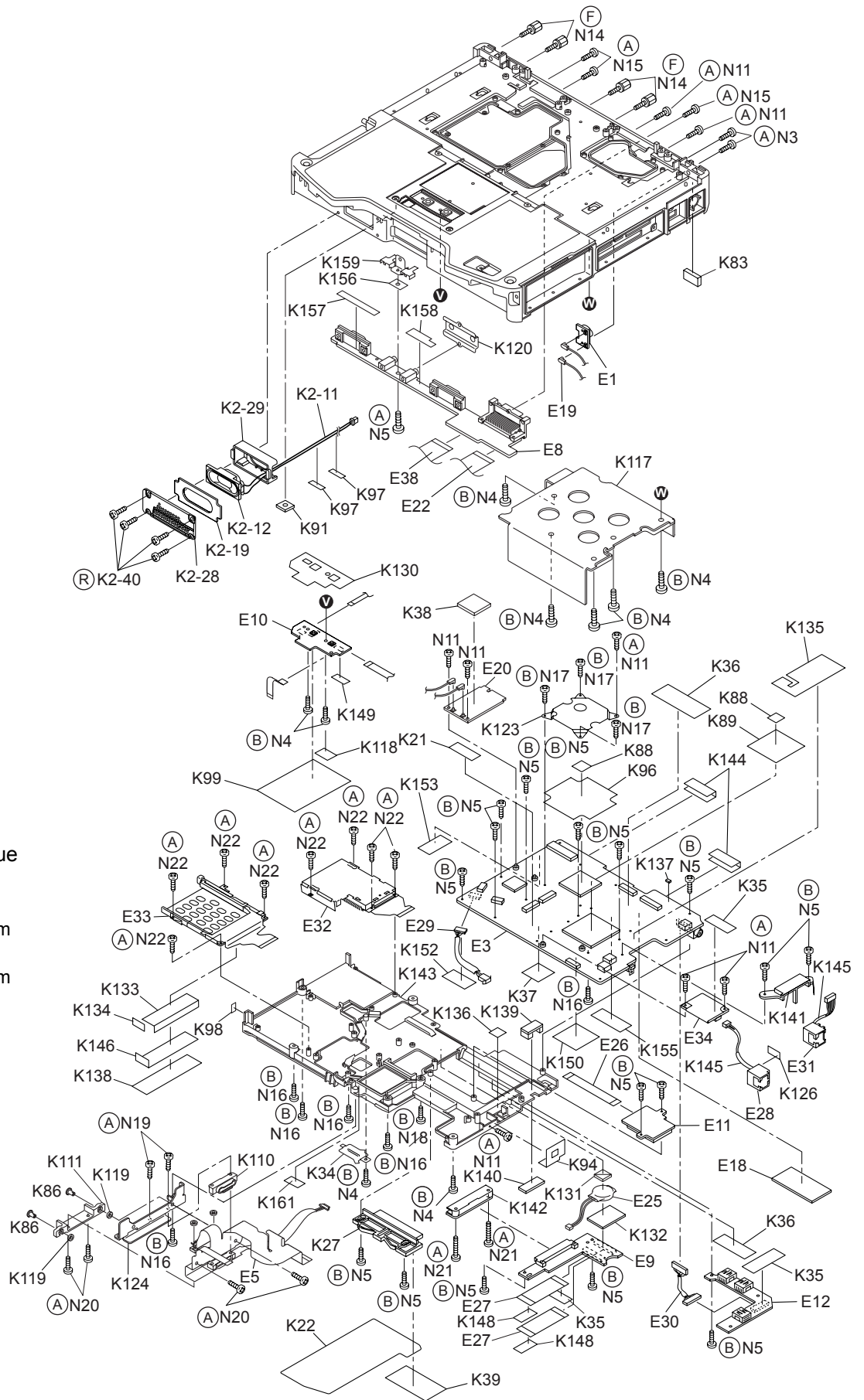
- Ⓐ 0.19 ± 0.02 N.m
(2.0 ± 0.2 kgf.cm)
- Ⓑ 0.45 ± 0.05 N.m
(4.5 ± 0.5 kgf.cm)
- Ⓕ 0.49 ± 0.05 N.m
(5.0 ± 0.5 kgf.cm)
- Ⓒ 1.47 ± 0.20 N.m
(15 ± 2.0 kgf.cm)
- Ⓓ 0.18 ± 0.22 N.m
(2.0 ± 0.2 kgf.cm)
- Ⓖ 0.2 ± 0.02 N.m
(2.0 ± 0.2 kgf.cm)

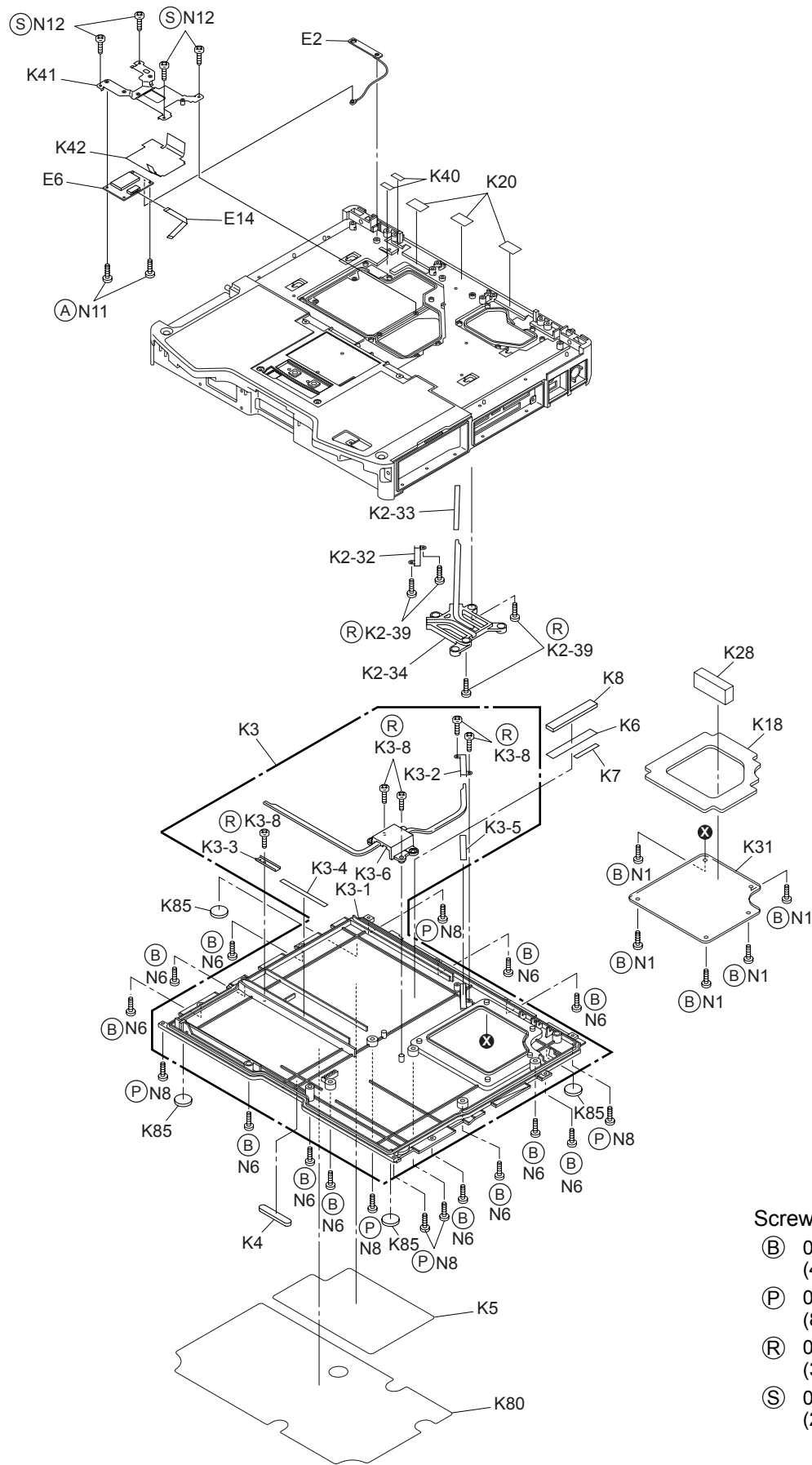


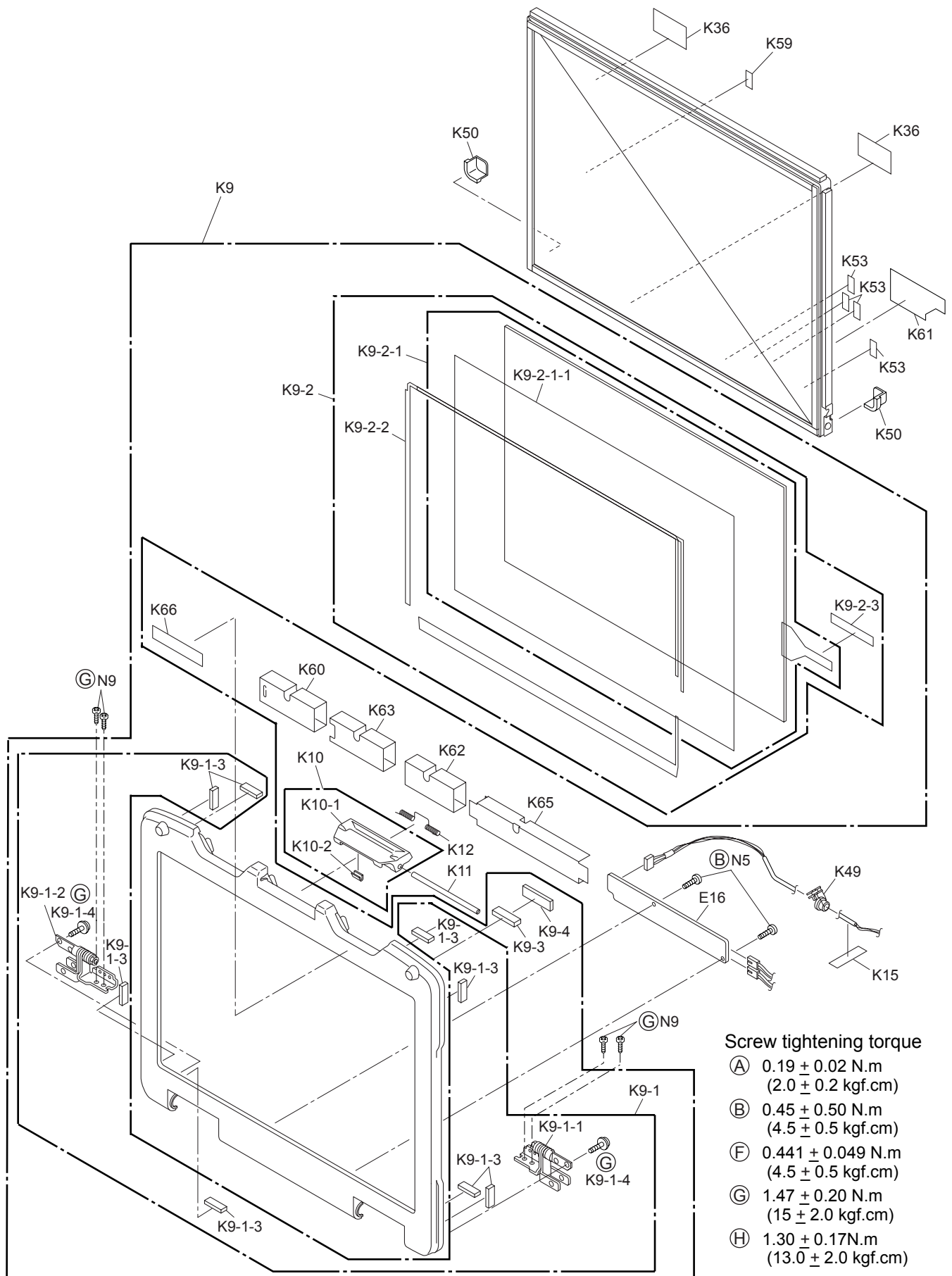
- Screw tightening torque**
- (A) 0.19 ± 0.02 N.m
(2.0 ± 0.2 kgf.cm)
 - (B) 0.45 ± 0.05 N.m
(4.5 ± 0.5 kgf.cm)
 - (G) 1.47 ± 0.20 N.m
(15.0 ± 2.0 kgf.cm)
 - (L) 0.2 ± 0.02 N.m
(2.0 ± 0.2 kgf.cm)
 - (Q) 0.22 ± 0.02 N.m
(2.2 ± 0.2 kgf.cm)
 - (R) 0.30 ± 0.05 N.m
(3.0 ± 0.5 kgf.cm)
 - (T) 0.90 ± 0.05 N.m
(9.0 ± 0.5 kgf.cm)

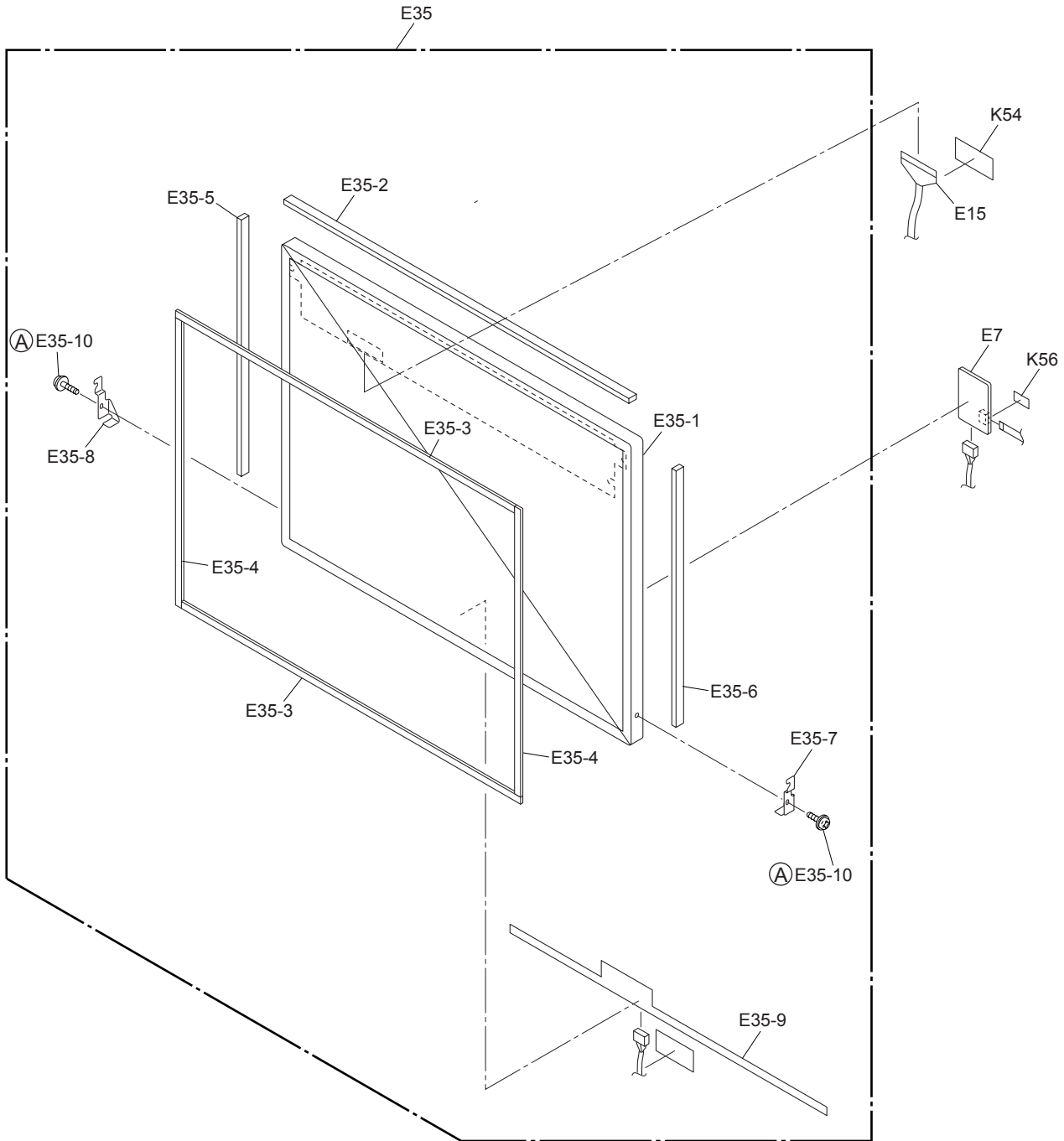
Screw tightening torque

- Ⓐ 0.19 ± 0.02 N.m
(2.0 ± 0.2 kgf.cm)
- Ⓒ 0.216 ± 0.0196 N.m
(2.2 ± 0.2 kgf.cm)
- Ⓔ 0.314 ± 0.0196 N.m
(3.2 ± 0.2 kgf.cm)
- Ⓕ 0.49 ± 0.05 N.m
(5.0 ± 0.5 kgf.cm)
- Ⓖ 0.441 ± 0.049 N.m
(4.5 ± 0.5 kgf.cm)
- Ⓗ 1.47 ± 0.20 N.m
(15 ± 2.0 kgf.cm)
- Ⓙ 1.30 ± 0.17N.m
(13 ± 2.0 kgf.cm)
- Ⓛ 0.18 ± 0.02 N.m
(2.0 ± 0.2 kgf.cm)
- Ⓜ 0.2 ± 0.02 N.m
(2.0 ± 0.2 kgf.cm)
- Ⓝ 0.45 ± 0.03 N.m
(4.5 ± 0.3 kgf.cm)
- Ⓟ 0.8 ± 0.1 N.m
(8.0 ± 1.0 kgf.cm)



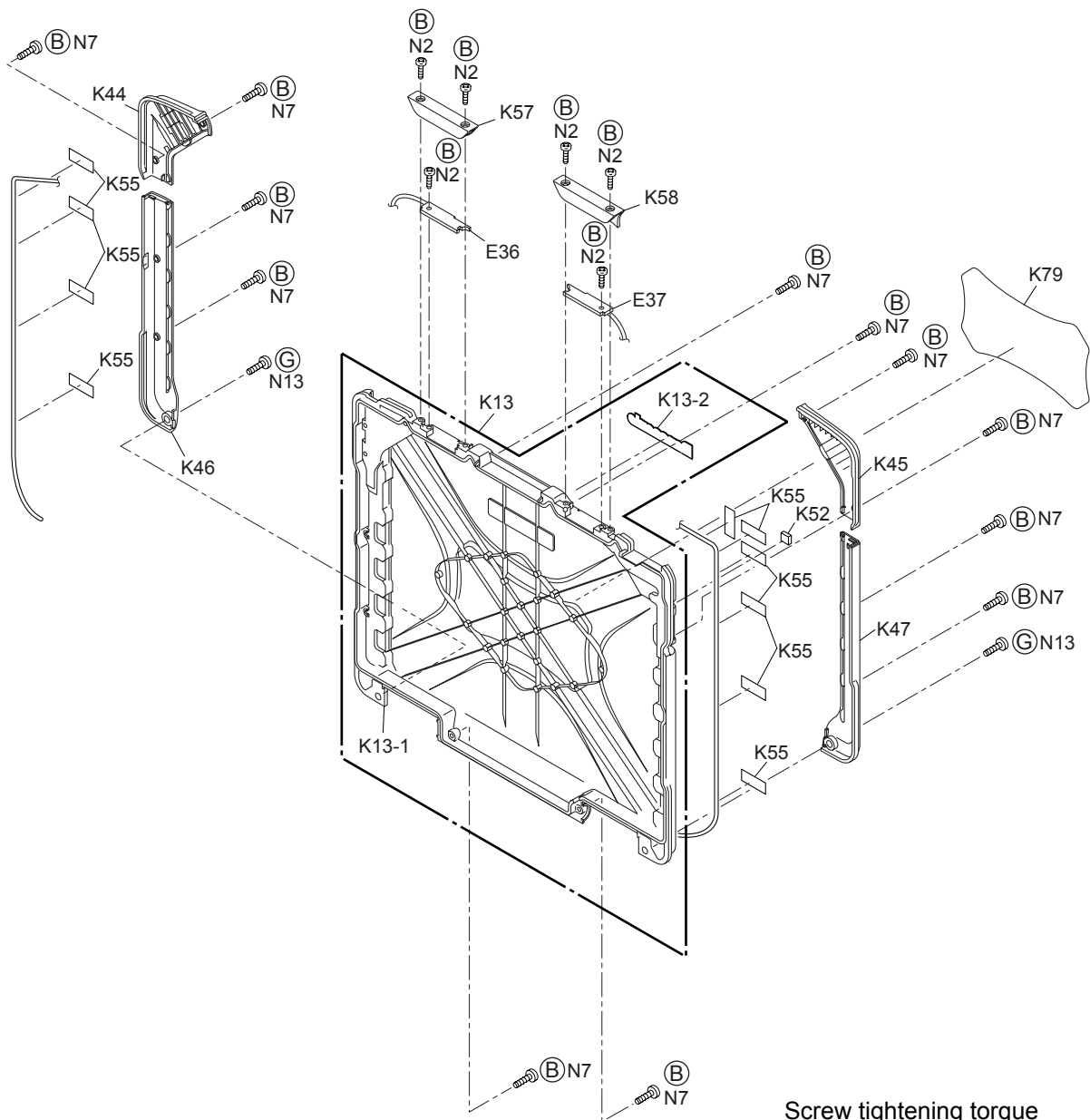






Screw tightening torque

- Ⓐ $0.19 \pm 0.02 \text{ N.m}$
($2.0 \pm 0.2 \text{ kgf.cm}$)
- Ⓑ $0.45 \pm 0.05 \text{ N.m}$
($4.5 \pm 0.5 \text{ kgf.cm}$)
- Ⓒ $0.216 \pm 0.0196 \text{ N.m}$
($2.2 \pm 0.2 \text{ kgf.cm}$)
- Ⓓ $0.314 \pm 0.0196 \text{ N.m}$
($3.2 \pm 0.2 \text{ kgf.cm}$)
- Ⓔ $0.49 \pm 0.05 \text{ N.m}$
($5.0 \pm 0.5 \text{ kgf.cm}$)




Screw tightening torque






- Ⓐ 0.19 ± 0.02 N.m
(2.0 ± 0.2 kgf.cm)
- Ⓑ 0.45 ± 0.05 N.m
(4.5 ± 0.5 kgf.cm)
- Ⓒ 0.216 ± 0.0196 N.m
(2.2 ± 0.2 kgf.cm)
- Ⓓ 0.314 ± 0.0196 N.m
(3.2 ± 0.2 kgf.cm)
- Ⓔ 1.47 ± 0.20 N.m
(15 ± 2.0 kgf.cm)
- Ⓞ 0.49 ± 0.05 N.m
(5.0 ± 0.5 kgf.cm)

Replacement Parts List Comparison Table

Note : Important Safety Notice

Components identified by  mark have special characteristics important for safety.
When replacing any of these components, use only manufacturer's specified parts.

CF-30CTQAZBM (2006/12/14)

REF. NO and AREA	PART NO.		DESCRIPTION	Q'TY
	CF-30CTQAZZZ	CF-30CTQAZBM		
Main Block Unit				
E20 	N5HZC0000020	N5HZC0000019	WIRELESS LAN MODULE	1
E1001		N2ABZJ000033	KEYBOARD US	0->1
Mechanical Parts				
K70	DFHP7261YA	DFHP7261ZA	KB SPACER TAPE	1
K71	DFHR3E65WA	DFHR3E65YA	KB SPACER SHEET	1
K80 	DFGT1214ZA		RATING SHEET MK1 CE	1->0
K80 		DFGT1200ZA	RATING SHEET MK1 UL	0->1
Accessories				
A6 		K2CG3DR00003	AC CABLE	0->1
A7 		DFQX5622ZA	MANUAL	0->1