

# Service Manual

*Simplified*

Notebook Computer

Model No. **CF-52CDxBVxx**

**TOUGHBOOK**

This is the Service Manual for  
the following areas.

E ...for U.K.

G ...for Germany

F ... for France

Model No. CF-52CD 1 BV 2 3

1: DIMM

W: No DIMM

K: 2GB DIMM

2: Operation System

B: Microsoft® Windows® XP Professional

L: Microsoft® Windows® XP Professional MUI

3: Area

E /G /F : Refer to above area table

## **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.

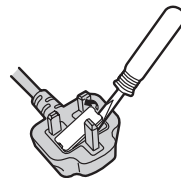
The wire which is coloured Brown must be connected to the terminal which is marked with the letter L or coloured RED.

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 nonserviceable 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

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 misapplication may possibly occur.

### LITHIUM BATTERY ⚠

#### • CAUTION

Danger of explosion if battery is incorrectly replaced.

Replace only with the same or equivalent type recommended by the equipment manufacture.

Dispose of 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.

## Precautions (Battery Pack)

### Do Not Use with Any Other Product

The battery pack is rechargeable and was intended for the specified product. If it is used with a product other than the one for which it was designed, electrolyte leakage, generation of heat, ignition or rupture may result.

### Do Not Charge the Battery Using Methods Other Than Those Specified

If the battery is not charged using one of the specified methods, electrolyte leakage, generation of heat, ignition or rupture may result.

### Do Not Throw the Battery Pack into a Fire or Expose It to Excessive Heat

Generation of heat, ignition or rupture may result.

### Avoid Extreme Heat (Near the Fire, in Direct Sunlight, for Example)

Electrolyte leakage, generation of heat, ignition or rupture may result.

### Do Not Insert Sharp Objects into the Battery Pack, Expose It to Bumps or Shocks, Disassemble, or Modify It

Electrolyte leakage, generation of heat, ignition or rupture may result.

### Do Not Short the Positive (+) and Negative (-) Contacts

Generation of heat, ignition or rupture may result. Do not place the battery pack together with articles such as necklaces or hairpins when carrying or storing.

### Do Not Use This Product with a Battery Pack Other Than the One Specified

Use only the specified battery pack with your product. Use of battery packs other than those manufactured and supplied by Panasonic may present a safety hazard (generation of heat, ignition or rupture).



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.


- 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% (when Economy Mode (ECO) is enabled: 75%) 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 if internal temperature of the battery pack is outside of the allowable temperature range (0 °C to 55 °C {32 °F to 131 °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 below.)
- 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 by using a particular battery pack becomes dramatically shorter and repeated recharging does not restore its performance, the battery pack should be replaced with a new one.
- When transporting a spare battery 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.

# Replacement Parts List Comparison Table

**Note : Important Safety Notice**

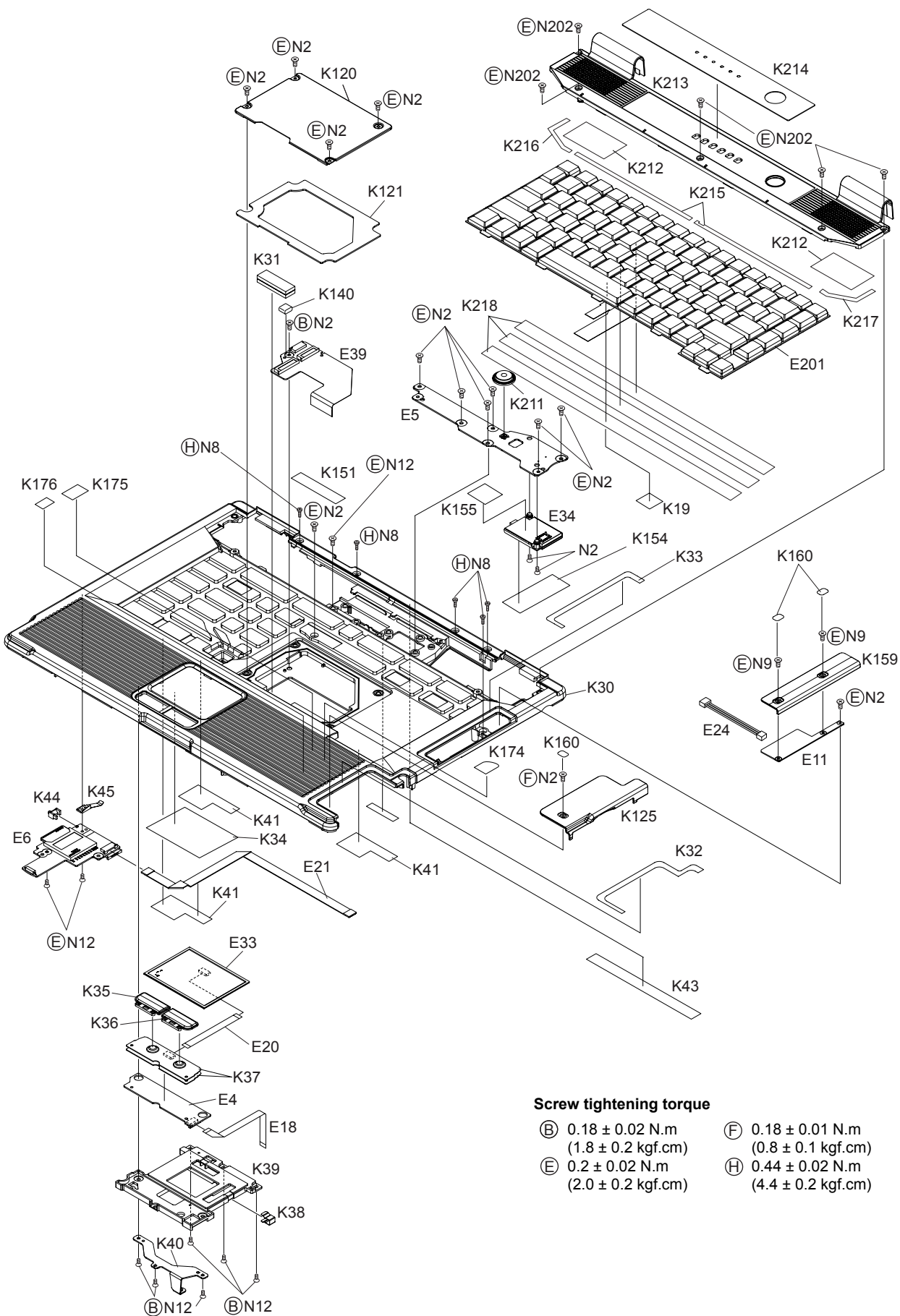
Components identified by  mark have special characteristics important for safety.  
When replacing any of these components, use only manufacturer's specified parts.

**CF-52CDWBVxx (2007/10/25)**

REF. NO and AREA	PART NO.		DESCRIPTION	Q'TY
	CF-52AJYZDM	CF-52CDWBVxx		
<b>Main Block Unit</b>				
E1	DL3U11616AAA	-----	PCB, MAIN HIGH	RTL 1->0
E1	-----	DL3U11656CAA	PCB, MAIN LOW	RTL 0->1
E2	DL3U21616AAA	DL3U21656CAA	PCB, AUDIO	RTL 1
E3	DL3U31616AAA	DL3U31656CAA	PCB, SERIAL	RTL 1
E4	DL3U41616AAA	DL3U41656CAA	PCB, TOUCH PAD	RTL 1
E5	DL3U51616AAA	DL3U51656CAA	PCB, SW LED MDC	RTL 1
E6	DL3U61616AAA	DL3U61656CAA	PCB, SD	RTL 1
E7	DL3U71616AAA	DL3U71656CAA	PCB, PWR BATTERY LED	RTL 1
E8	DL3U81616AAA	DL3U81656CAA	PCB, SC RELAY	RTL 1
E9	DL3U91616AAA	DL3U91656CAA	PCB, WWAN	RTL 1
E10	DL3UA1616AAA	-----	PCB, BIOS HIGH	RTL 1->0
E10	-----	DL3UA1656CAA	PCB, BIOS LOW	RTL 0->1
E15	DL3U11622AAA	DL3U11617AAA	ANTENNA PWB R	RTL 1
E15-2	DFJS1100ZA	DFJS1100ZB	WWAN ANTENNA CABLE R	1
E16	DL3U21622AAA	DL3U21617AAA	ANTENNA PWB L	RTL 1
E17	N5Z200000128	-----	1GB DDR2-667 SO-DIMM	1->0
E17	-----	*2GB DIMM		0->1
E36	K1NB94B00002	-----	EX/PC CARD EJECTOR	1->0
E37	 N5HZC0000031	N5HZC0000032	WIRELESS LAN MODULE	1
E40	L5EDDY000060	-----	LCD HIGH	1->0
E40	-----	DL4DE0184AAA	LCD LOW	0->1
E201	N2ABZY000035	-----	KEYBOARD VISTA US	1->0
E202	 N3CAYYY00021	-----	HDD, 5400RPM SATA 120GB	1->0
E202	 -----	N3CAYYY00033	HDD, 5400RPM SATA 80GB	0->1
<b>Accessories</b>				
A1	 DFQW5048ZBT	*OPERATING INSTRUCTION MANUAL		1
A2	 K2CG3DR00004	*AC CABLE		1
Note: About the parts which written " * " above, please order to Computer Products Europe (CPE) written below. Panasonic Manufacturing (U.K.) Ltd. Computer Products Europe (CPE) TEL: +44-(0)29-20736170 FAX: +44-(0)29-20736250				
<b>Packing Material</b>				
P1	DFPN0851ZAT	DFPN0851YAT	CUSHION T	2
P3	DFPE0873ZAT	-----	BATTERY HOLDER	1->0
P4	DFPE0874ZBT	-----	MANUAL HOLDER	1->0
P6	DFPK1234ZAT	DFPK1234YAT	PACKING CASE	1
<b>Mechanical Parts</b>				
K8	DFMC0890ZA	-----	SHIELD SHEET B	NRP 1->0
K9	DFHR3J68ZA	-----	ADHESIVE TAPE -B	NRP 2->0
K10	DFHR3J67ZA	-----	ADHESIVE TAPE -A	NRP 1->0
K11	 DFKF0281ZB-0	DFKF0281YA-0	LCD REAR COVER	1
K19	DFHE1068ZB	DFHE1068ZB	CONDUCTIVE TAPE -20X20	NRP 2->3
K20	DFMX1282ZB	DFMX1282ZC	INVERTER CASE	NRP 1
K24	 DFKM0535ZD-0	DFKM0535ZE-0	LCD FRONT	1
K27	DFGX0482ZC-0	DFGX0482YB-0	ANTENNA COVER	1
K30	 DFKA0062ZC-0	DFKA0062ZD-0	TOP CASE	1
K46	DFHR3J91ZA	-----	CUSHION-E	NRP 1->0
K47	DFHR3J90ZA	DFHR3J90ZA	CUSHION-D	NRP 2->1
K48	 DFKM0534ZC-0	DFKM0534YA-0	BOTTOM CASE	1
K54	DFHR6331ZC	DFHR6331ZD	FIN COVER	1
K55	DFHR3H19ZA	DFHR3H19ZC	WL SHEET	NRP 1
K56	DFHR3H20ZB	DFHR3H20ZC	LED SHEET	NRP 1
K69	DFMX1294ZB	DFMX1294ZC	INSULATION SHEET POTORE	NRP 1
K74	DFMY0258YA	-----	CPU THERMAL SHEET 2	2->0
K75	DFMX1317ZA	-----	INSULATION SHEET VGA	NRP 1->0
K75	-----	DFHR3H97ZB	VGA DUMMY SHEET	0->1
K78	DFMY0466ZA	-----	MCH THERMAL RUBBER	1->0
K83	DFMY0468ZA	DFMY0468ZA	LAN THERMAL RUBBER	2->1
K84	DFMY3248ZA	-----	VRAM THERMAL SHEET	NRP 1->0

K101	DFHR3J79ZA	-----	BT SHEET	NRP	1->0
K107	DFMD7B29ZC	DFMD7B29YA	HDD HOLD PLATE		1
K109	DFHR3J69ZA	-----	HDD PROTECT SHEET	NRP	1->0
K123	DFMD7B33ZC	DFMD7B33YA	SMART CARD HOLDER		1
K133	DFHR3H87ZA	DFHR3H87ZB	HDD SHEET A	NRP	1
K156	DFHR3J70ZA	DFHR3J70ZB	CABLE SHEET-A		1
K164	DFMX1334ZA	DFMX1334ZA	DIMM SHEET	NRP	2->1
K165	DFHR6340ZA-0	-----	DUMMY PC CARD		1->0
K166	DFHR6339ZA-0	-----	DUMMY EXPRESS CARD		1->0
K169	DFGX0488ZC-0	DFGX0488ZD-0	COVER PC CARD		1
K201	△ DFGT1228ZA	-----	INFORMATION LABEL(US)		1->0
K201	△ -----	DFGT1227ZA	INFORMATION LABEL(EUROPE)		0->1
K202	DFQT0055ZA	-----	COA SERIAL LAMINATE		1->0
K218	DFHR3H99ZC	DFHR3H99YA	KBD TAPE		3
K221	DFWV99A0120	DFWV99A0123	HDD MOUNTING KIT		1
K221-3	DFHM0431ZA	DFHM0431YA	HDD CASE UPPER		1
K221-4	DFHR3F99ZB	DFHR3K31ZA	HDD DAMPER		1
K221-9	-----	DFHR3K17ZA	HDD SHEET	NRP	0->1
K222	-----	K1NBD6B00004	PC/PC EJECTOR		0->1
K223	-----	DFHR3K13ZA	PET SHEET	NRP	0->2

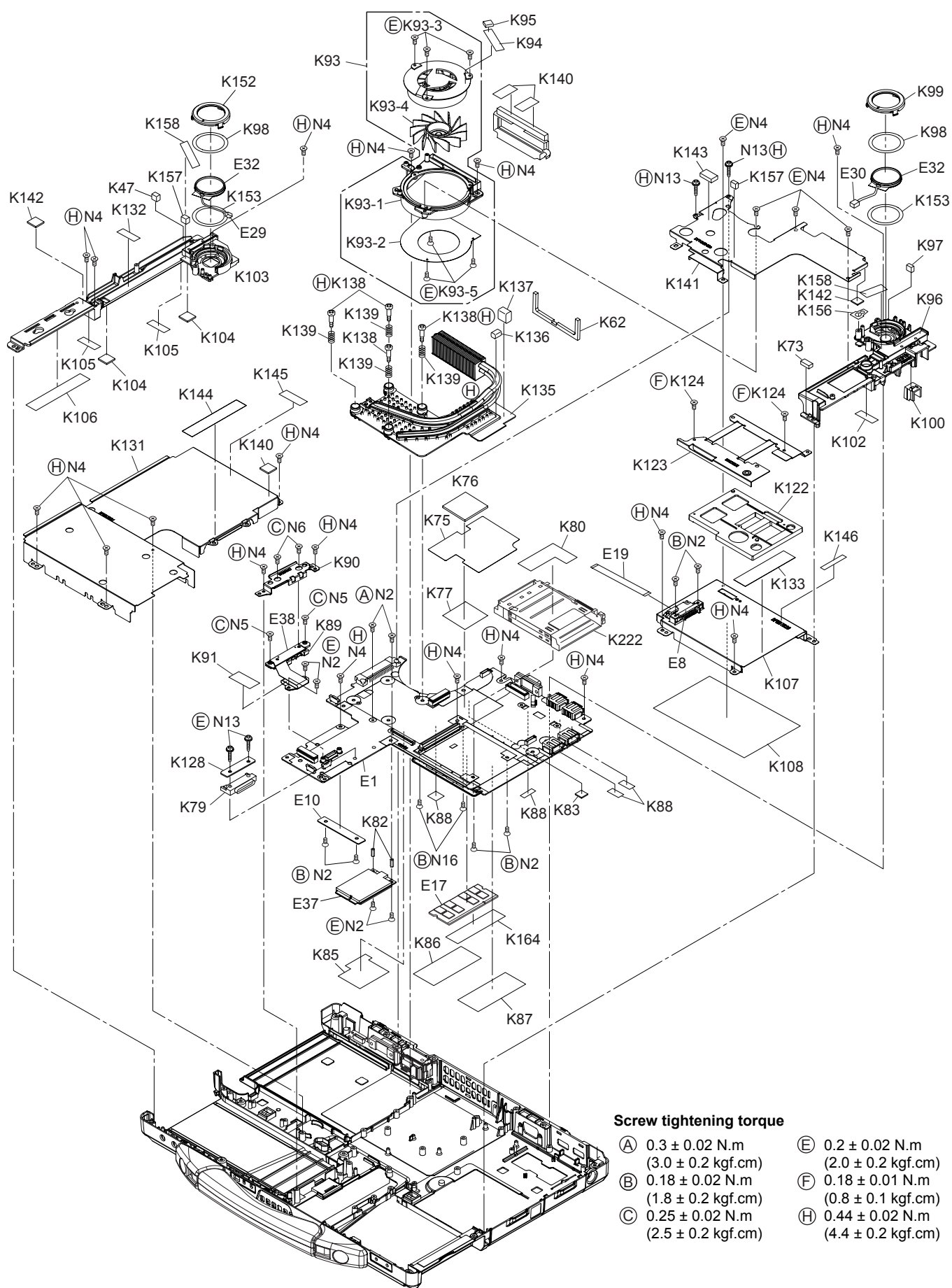
# Exploded View

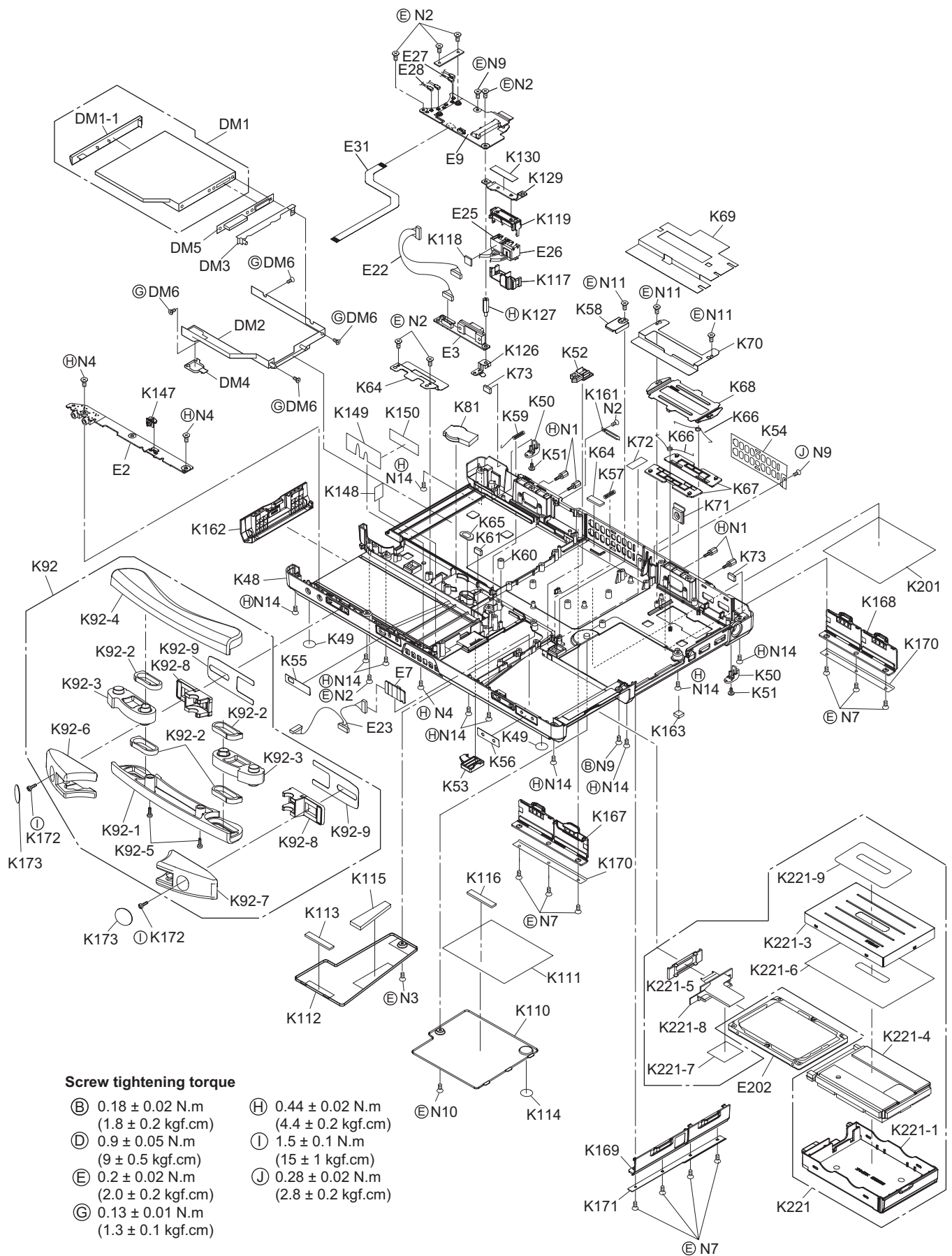


### Screw tightening torque

- |   |                                       |   |                                       |
|---|---------------------------------------|---|---------------------------------------|
| ⓑ | 0.18 ± 0.02 N.m<br>(1.8 ± 0.2 kgf.cm) | ⓕ | 0.18 ± 0.01 N.m<br>(0.8 ± 0.1 kgf.cm) |
| ⓔ | 0.2 ± 0.02 N.m<br>(2.0 ± 0.2 kgf.cm)  | ⓓ | 0.44 ± 0.02 N.m<br>(4.4 ± 0.2 kgf.cm) |







**Screw tightening torque**

- |   |   |   |                                    |
|---|---|---|------------------------------------|
| Ⓑ 0.18 ± 0.02 N.m<br>(1.8 ± 0.2 kgf.cm) | ⓓ 0.9 ± 0.05 N.m<br>(9 ± 0.5 kgf.cm)    | ⓓ 0.44 ± 0.02 N.m<br>(4.4 ± 0.2 kgf.cm) | ⓓ 1.5 ± 0.1 N.m<br>(15 ± 1 kgf.cm) |
| Ⓔ 0.2 ± 0.02 N.m<br>(2.0 ± 0.2 kgf.cm)  | Ⓔ 0.13 ± 0.01 N.m<br>(1.3 ± 0.1 kgf.cm) | ⓓ 0.28 ± 0.02 N.m<br>(2.8 ± 0.2 kgf.cm) |                                    |

