

URGENTE - Azione correttiva per dispositivo medico
Elettrocardiografi Philips PageWriter TC (TC20/30/50/70)
Manutenzione delle batterie agli ioni di litio da parte dell'utente

Gentile Cliente,

È stato rilevato un problema negli elettrocardiografi Philips PageWriter TC (TC20/30/50/70) che, se dovesse verificarsi di nuovo, potrebbe rappresentare un rischio per i pazienti o gli utenti. La presente comunicazione ha lo scopo di segnalare quanto segue:

- la natura del problema e le circostanze in cui potrebbe verificarsi
- le misure da adottare da parte del Cliente/utilizzatore per prevenire eventuali rischi per i pazienti o gli operatori
- le contromisure previste da Philips per risolvere il problema

Il presente documento contiene informazioni importanti per continuare a utilizzare la strumentazione in modo sicuro e corretto.

La invitiamo a leggere con attenzione le informazioni riportate di seguito e a divulgarne i contenuti a tutto il personale operativo di reparto. È fondamentale comprendere le implicazioni di questa comunicazione.

Conservare una copia da allegare alle Istruzioni d'uso delle apparecchiature.

Philips ha ricevuto una segnalazione di surriscaldamento e incendio della batteria agli ioni di litio di un elettrocardiografo PageWriter TC. La batteria ha oltrepassato la durata media e deve essere sostituita. La sostituzione della batteria deve essere effettuata al raggiungimento di 300 cicli di carica/scarica oppure quando la capacità della batteria corrisponde a meno dell'80% della capacità di una batteria nuova. Sebbene sugli elettrocardiografi sia possibile visualizzare lo stato della batteria, l'etichettatura corrente di questi elettrocardiografi non include istruzioni complete su quando sostituire le batterie o sui potenziali rischi associati alla mancata esecuzione di tale azione. Di conseguenza, Philips sta distribuendo un addendum al manuale per l'assistenza tecnica dell'elettrocardiografo PageWriter TC (TC20/30/50/70) con le informazioni necessarie per assistere gli utenti nella gestione della batteria e nella sua sostituzione. L'Addendum al manuale per l'assistenza tecnica è accluso alla presente comunicazione.

Per informazioni sull'identificazione dei dispositivi interessati e sui provvedimenti da adottare, La invitiamo a leggere attentamente le pagine seguenti. La invitiamo, inoltre, ad attenersi alle indicazioni fornite nella sezione "Misure da adottare da parte del cliente" del documento. La presente comunicazione è stata inoltrata all'ente competente.

Philips si scusa per eventuali inconvenienti causati da questo problema. La soddisfazione dei nostri Clienti per i prodotti Philips e per la risposta che saremo in grado di dare in questa circostanza, sono per noi di primaria importanza. Per domande o dubbi su questa azione correttiva, contattare Philips:

0800 80 3000

Distinti saluti,



Vivian Dai
Post Market Surveillance Manager

PRODOTTI INTERESSATI	I prodotti interessati sono tutti gli elettrocardiografi PageWriter TC (TC20/30/50/70) fabbricati prima del 20 novembre 2018 che possono essere utilizzati con alimentazione a batteria e che dispongono di batterie agli ioni di litio attualmente installate. Nello specifico, i seguenti elettrocardiografi PageWriter TC con versioni software fino alla A.07.05.22 inclusa. <table border="1" data-bbox="524 478 1336 911"> <thead> <tr> <th>Prodotto</th><th>Descrizione</th></tr> </thead> <tbody> <tr> <td>860315</td><td>Elettrocardiografo PageWriter TC70</td></tr> <tr> <td>860310</td><td>Elettrocardiografo PageWriter TC50</td></tr> <tr> <td>860306</td><td>Elettrocardiografo PageWriter TC30</td></tr> <tr> <td>860332</td><td>Elettrocardiografo PageWriter TC20</td></tr> <tr> <td>860352</td><td>PageWriter TC70 con trolley Government Bundle</td></tr> <tr> <td>860353</td><td>PageWriter TC70 senza trolley Government Bundle</td></tr> <tr> <td>860354</td><td>PageWriter TC30 con trolley Government Bundle</td></tr> <tr> <td>860355</td><td>PageWriter TC30 senza trolley Government Bundle</td></tr> <tr> <td>860429</td><td>PageWriter TC50 Government Bundle</td></tr> </tbody> </table> NOTA: l'elettrocardiografo PageWriter TC10 (860392) non è interessato dal presente avviso di sicurezza.	Prodotto	Descrizione	860315	Elettrocardiografo PageWriter TC70	860310	Elettrocardiografo PageWriter TC50	860306	Elettrocardiografo PageWriter TC30	860332	Elettrocardiografo PageWriter TC20	860352	PageWriter TC70 con trolley Government Bundle	860353	PageWriter TC70 senza trolley Government Bundle	860354	PageWriter TC30 con trolley Government Bundle	860355	PageWriter TC30 senza trolley Government Bundle	860429	PageWriter TC50 Government Bundle
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DESCRIZIONE DEL PROBLEMA	Philips ha ricevuto una segnalazione di surriscaldamento e incendio della batteria agli ioni di litio di un elettrocardiografo Philips PageWriter TC. In questo caso, la batteria ha oltrepassato la sua durata media e deve essere sostituita al superamento di 300 cicli di carica/scarica o quando la capacità della batteria rimanente corrisponde a meno dell'80% della capacità di una batteria nuova. Sebbene gli elettrocardiografi Philips PageWriter TC consentano di visualizzare informazioni effettive sullo stato di salute (SOH, State Of Health) della batteria e sui cicli di carica/scarica, l'etichettatura corrente non include istruzioni complete su come utilizzare tali informazioni per determinare quando sostituire la batteria.																				
RISCHI CONNESSI	Il surriscaldamento della batteria può volta causare il surriscaldamento dell'involucro esterno del dispositivo, che può determinare a sua volta la fusione e/o l'incendio del dispositivo, con possibili lesioni al paziente e agli utenti nelle vicinanze o danni a oggetti.																				

COME IDENTIFICARE I PRODOTTI INTERESSATI	È possibile determinare se il dispositivo in uso è interessato dalla presente comunicazione identificandone la versione software. Questa operazione può essere eseguita nei seguenti modi: a) Individuare e verificare il numero di parte dell'elettrocardiografo PageWriter TC nella copertina delle <i>Istruzioni d'uso</i> o sull'etichetta posteriore dell'elettrocardiografo; b) Individuare e verificare la versione software nella schermata <i>System Utility</i> (Utilità di sistema) dell'elettrocardiografo PageWriter TC. Per determinare se il dispositivo prevede l'alimentazione a batteria, verificare che sia presente l'icona della batteria nell'angolo in alto a destra del display dell'elettrocardiografo. 
MISURE DA ADOTTARE DA PARTE DEL CLIENTE/UTENTE	Una volta ricevuta la presente comunicazione, leggere con attenzione l'<i>Addendum al manuale per l'assistenza tecnica</i> di PageWriter TC accluso. Determinare immediatamente il numero di cicli e lo stato di salute (SOH) su ciascun elettrocardiografo Philips PageWriter TC (TC20/30/50/70) interessato, come specificato nell'<i>Addendum al manuale per l'assistenza tecnica</i> allegato. Se il numero di cicli è superiore a 300 e/o se il SOH è inferiore all'80%, la batteria ha raggiunto il termine della sua vita utile e deve essere sostituita. È possibile ordinare una batteria sostitutiva approvata utilizzando le procedure standard di sostituzione previste da Philips. I dettagli su come sostituire la batteria sono reperibili nell'<i>Addendum al manuale per l'assistenza tecnica</i> dell'elettrocardiografo PageWriter TC. Dopo aver determinato che la batteria non richiede la sostituzione, oppure dopo aver sostituito la batteria, l'elettrocardiografo PageWriter TC è sicuro e può riprendere a funzionare. In aggiunta, rivedere queste informazioni con tutti i membri dello staff responsabili della gestione del dispositivo per gli elettrocardiografi Philips PageWriter TC. Conservare il seguente <i>Addendum al manuale per l'assistenza tecnica</i> unitamente al Manuale per l'assistenza tecnica dell'elettrocardiografo Philips PageWriter TC. Completare e restituire la scheda di risposta fornita.

PROGRAMMA DI INTERVENTO PHILIPS	Philips prevede di rilasciare un aggiornamento software installabile dal cliente per l'elettrocardiografo PageWriter TC (TC20/30/50/70) che fornirà messaggi di avvertenza per supportare gli utenti nella gestione del ciclo di sostituzione della batteria. Non appena l'aggiornamento software installabile dall'utente sarà disponibile verrà inviata una notifica ai clienti.
ULTERIORI INFORMAZIONI E ASSISTENZA	Per ulteriori chiarimenti e per ricevere assistenza, La invitiamo a contattare l'organizzazione locale di Philips: 0800 80 3000

**URGENTE - Azione correttiva per dispositivo medico
Elettrocardiografi PageWriter TC (TC20/30/50/70)**

**Risposta del cliente per FSN86000263A
Elettrocardiografi PageWriter TC (TC20/30/50/70)
Addendum al manuale per l'assistenza tecnica**

Compilare e spedire tramite e-mail a customercare.ch@philips.com

Nome del contatto	
Numero di telefono	
Indirizzo e-mail	
Nome della struttura	
Via: Città, CAP	

Inviare il modulo compilato tramite e-mail all'indirizzo e-mail fornito sopra.

CONFERMA DEL CLIENTE:

L'Addendum al manuale per l'assistenza tecnica degli elettrocardiografi PageWriter TC (TC20/30/50/70) è stato annesso alla prima pagina della sezione relativa alla *manutenzione della batteria*, in modo da poter essere collocato correttamente e conservato unitamente al Manuale per l'assistenza tecnica per la consultazione.

Confermare che tutte le batterie degli elettrocardiografi PageWriter TC (TC20/30/50/70) con conta dei cicli superiore a 300 e/o con stato di salute (SOH) ≤ 80 % siano state sostituite con batterie sostitutive approvate, come indicato nell'Addendum al manuale per l'assistenza tecnica.

NOME DEL CLIENTE (in stampatello)

QUALIFICA

FIRMA DEL CLIENTE

DATA

Inviare tramite e-mail il modulo di risposta compilato a customercare.ch@philips.com.
In caso di problemi con le istruzioni contenute nella presente comunicazione, contattare l'organizzazione locale di Philips.

PageWriter TC Cardiograph Service Manual Addendum Battery Maintenance

This addendum contains updated information for the PageWriter TC Cardiograph documentation. Please store this addendum with your PageWriter TC Cardiograph Service Manual for future reference.

About the Battery

The rechargeable lithium ion battery used in the PageWriter TC cardiographs is a smart battery with built-in circuitry that communicates battery status information to the cardiograph.

To properly maintain the battery and prevent damage to the cardiograph, observe these guidelines:

- If a battery shows damage or signs of leakage, replace it immediately.
- Never use a faulty battery in a cardiograph.
- Never dispose of the battery in a normal waste container.
- Never leave a battery inside the cardiograph if the cardiograph is not being used for a long period of time.
- Never store a battery that is charged to more than 50% capacity.
- When operating a PageWriter TC20, TC30, TC50 or TC70 cardiograph with one battery or two, **only supported batteries approved by Philips for use with the PageWriter TC cardiographs must be used**. Supported batteries are listed below.

Supported Batteries	Design Capacity	PN
Lithium-ion battery ME202EK	7800 mAh	989803194541
Lithium-ion battery ME202C Rev D	7200 mAh	989803170371 (China only)

Note: If your cardiograph contains batteries with PN 989803160981, Philips strongly recommends that you replace these batteries as soon as possible with the supported batteries listed above.

- When operating a PageWriter TC cardiograph with two batteries installed, both batteries **must** have the same part number. If a cardiograph is operated with two batteries with different part numbers, the cardiograph will display an error message and will not operate.

WARNING

Batteries other than those listed here are not supported. Failure to follow these instructions can lead to undesired consequences (battery overheating, shortened battery life, etc.).



- Lithium batteries are shipped with a 30% charge. Prior to initial use, charge the battery(ies) for 8 hours (for two batteries) or 5 hours (for one battery) before operating the cardiograph. Regularly and consistently charging the battery(ies) will prolong battery life.
- Charging, storing, or using the batteries at temperatures above 50°C (122°F) can damage the batteries and reduce overall battery life.
- Check the battery power indicator on the Status Bar. Tap the battery icon on the Status Bar for information on remaining battery power. See Figure 2-5 on page 7.
- Always charge the battery when the cardiograph is not in use. Plug the cardiograph into AC power. Ensure that the green AC power indicator light on the front of the cardiograph is lit. The battery will charge while the cardiograph is in use, but will charge at a slower rate.
- Operate the cardiograph, charge the batteries, and store the batteries at a room temperature of 25°C (77°F) or lower. Exposure to higher temperatures may reduce battery life, damage the batteries, and degrade overall cardiograph performance.
- Battery reserve capacity may be exhausted due to leakage currents if the cardiograph is stored for more than 60 days without use. If the cardiograph will be stored for more than sixty days without use, fully charge the batteries, and then remove AC power from the cardiograph, and remove the batteries from the cardiograph. Store the batteries in a cool, dry location. A set of fully charged batteries stored outside the cardiograph will need to be recharged every sixty days.
- When the state of health (SOH) of the battery has decreased to 80 percent, or battery cycle count is greater than 300, the battery is considered end-of-life and should be replaced.

The PageWriter TC cardiographs operate on lithium ion batteries as follows:

TC20 Cardiograph

- The TC20 operates with only a single battery, that supplies power to the cardiograph during mobile use.

TC30 Cardiograph

- The TC30 cardiograph uses either one or two removable lithium ion batteries that supply power to the cardiograph during mobile use.
- When operating the TC30 cardiograph with one battery installed, battery charge time from depletion to 90% charge in normal use is maximum four (4) hours.
- The TC30 cardiograph supports printing with only a single battery installed.
- When operating the TC30 cardiograph with two batteries installed, ensure that both batteries contain the same Philips part number. The battery part number identification label is found on the bottom of the battery. The cardiograph cannot operate with two batteries that contain different part numbers.
- When operating the TC30 cardiograph with two batteries installed, battery charge time from depletion to 90% charge in normal use is maximum eight (8) hours.
- When operating the TC30 cardiograph with one battery installed, the battery may be inserted into either battery compartment.

TC50/TC70 Cardiograph

- The TC70 cardiograph requires two lithium ion batteries to support printing reports during mobile use. If printing during mobile use is not required, one battery can be used.
- The TC50 cardiograph uses either one or two lithium ion batteries that supply power to the cardiograph during mobile use.
- When operating the TC70 cardiograph or TC50 cardiograph with two batteries installed, ensure that both batteries contain the same Philips part number. The battery part number identification label is found on the bottom of the battery. The cardiograph cannot operate with two batteries that contain different part numbers.
- When operating the TC70 cardiograph or TC50 cardiograph with two batteries installed, battery charge time from depletion to 90% charge in normal use is maximum eight (8) hours.

TC50 Cardiograph One Battery Operation

- The TC50 cardiograph with installed software version A.06.03 or higher can operate on a single battery.
- When operating a TC50 cardiograph with only one battery installed, a Philips approved battery must be used.
- The battery capacity for the TC50 cardiograph with a single battery installed is 30 minutes of continuous rhythm printing, or 30 total ECG reports.
- When operating the TC50 cardiograph with one battery installed, the single battery may be inserted into either battery compartment.
- When operating the TC50 with one battery installed, battery charge time from depletion to 90% charge in normal use is maximum four (4) hours.
- The TC50 cardiograph supports printing with only a single battery installed.

Viewing Battery Information

As a battery ages, its capacity decreases, and the battery status indicator becomes increasingly less accurate as the total number of charges and discharges increase. You can view information about the battery on the About the Cardiograph screen. To access this screen, see “Using the About the Cardiograph Screen” in Chapter 4 of the Service Manual. Ensure that the monitor is connected to AC power before attempting to review battery information.

***Note:** If only one battery is installed, information will not be displayed for the empty battery compartment*

Battery information displayed on the **About the Cardiograph** screen includes:

- **Current Status:** displays the current status of the battery: No Bat (no battery), No activity, Charging, Discharging.
- **Battery Voltage:** displays the voltage of the battery.
- **Expected Max Error (%):** the expected margin of error in the state of the charge calculation.

- **Full Cap. (mAh):** the predicted capacity of the battery when it is fully charged. The value in the Full Cap. field decreases as the battery ages.
- **Remaining Cap. (mAh):** shows the remaining capacity, in mAh, of the battery.
- **Percent Charged:** the current charge expressed as a percent of the total charge.
- **Charge Current:** current value while the battery is charging.
- **Discharge Current:** current value while the battery is discharging.
- **Cycle Count:** the number of full charge and discharge cycles calculated by the battery.
- **Temperature:** current temperature of the battery in degrees Celsius.
- **B1 Unique ID:** battery ID information, including battery type, date of manufacture (YYYYMMDD, e.g., 20170808).
- **B2 Unique ID:** battery ID information, including battery type, date of manufacture (YYYYMMDD, e.g., 20170809).

About the Cardiograph	Diagnostic Tests and Utilities	Miscellaneous																																																							
Print this Screen as Report Print Refresh																																																									
Software Revisions Main Application Revision: A.07.03.07 Kernel Revision: 4.00.30900 Application Revision: 4.00.31010 PIM Kernel Revision: T.014 FPGA Firmware Revision: 1.6.4	PIM Information Installed PIM Option: Triton 12-lead B	Networking Information MAC Address: 00-09-5C-07-FE-9C IP Address: 0.0.0.0																																																							
Storage Information Total RAM: 213 MB Percentage Total RAM Used: 31% Internal CF Card(Free/Total): 320.3 / 495.2 MB USB Memory Stick(Free/Total): Not Found	Battery Status <table border="1"> <thead> <tr> <th></th> <th>Batt 1 (Frnt)</th> <th>Batt 2 (Bck)</th> </tr> </thead> <tbody> <tr> <td>Current Status</td> <td>No activity</td> <td>No activity</td> </tr> <tr> <td>Battery Voltage</td> <td>12.5 V</td> <td>12.4 V</td> </tr> <tr> <td>Expected Max Error(%)</td> <td>1%</td> <td>1%</td> </tr> <tr> <td>Full Cap.(mAh)</td> <td>7787 mAh</td> <td>7766 mAh</td> </tr> <tr> <td>Remaining Cap. (mAh)</td> <td>7630 mAh</td> <td>7381 mAh</td> </tr> <tr> <td>Percent Charged</td> <td>98%</td> <td>96%</td> </tr> <tr> <td>Charge Current</td> <td>0 mA</td> <td>0 mA</td> </tr> <tr> <td>Discharge Current</td> <td>0 mA</td> <td>0 mA</td> </tr> <tr> <td>Cycle Count</td> <td>1</td> <td>1</td> </tr> <tr> <td>Temperature</td> <td>25</td> <td>25</td> </tr> <tr> <td>B1 Unique ID</td> <td colspan="2">EONEMQLI-P508-20170808-1632</td> </tr> <tr> <td>B2 Unique ID</td> <td colspan="2">EONEMQLI-P508-20170809-1937</td> </tr> </tbody> </table>		Batt 1 (Frnt)	Batt 2 (Bck)	Current Status	No activity	No activity	Battery Voltage	12.5 V	12.4 V	Expected Max Error(%)	1%	1%	Full Cap.(mAh)	7787 mAh	7766 mAh	Remaining Cap. (mAh)	7630 mAh	7381 mAh	Percent Charged	98%	96%	Charge Current	0 mA	0 mA	Discharge Current	0 mA	0 mA	Cycle Count	1	1	Temperature	25	25	B1 Unique ID	EONEMQLI-P508-20170808-1632		B2 Unique ID	EONEMQLI-P508-20170809-1937		Voltage Monitor Information <table border="1"> <thead> <tr> <th></th> <th>Volts</th> </tr> </thead> <tbody> <tr> <td>AC/DC Input</td> <td>14.780 v</td> </tr> <tr> <td>Backlight</td> <td>11.887 v</td> </tr> <tr> <td>I/O</td> <td>3.263 v / 5.126 v</td> </tr> <tr> <td>PIM Power</td> <td>5.104 v</td> </tr> <tr> <td>CPU Internal Core</td> <td>1.494 v</td> </tr> <tr> <td>Flash Memory Internal Core</td> <td>1.787 v</td> </tr> <tr> <td>FPGA Internal Core</td> <td>1.484 v</td> </tr> </tbody> </table>		Volts	AC/DC Input	14.780 v	Backlight	11.887 v	I/O	3.263 v / 5.126 v	PIM Power	5.104 v	CPU Internal Core	1.494 v	Flash Memory Internal Core	1.787 v	FPGA Internal Core	1.484 v
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If the battery cycle count exceeds the recommended limit of 300 cycles, or the battery's state of health (SOH) has decreased to 80%, the battery should be replaced. A battery's state of health can be determined using the following formula:

$$\text{SOH} = \text{Full capacity} / \text{Design capacity}^*$$

* See page 1 for design capacity.

Installing or Replacing the Batteries

WARNING

Properly dispose of or recycle depleted batteries according to local regulations. Do not disassemble, puncture, or incinerate the depleted batteries.

WARNING

Carefully follow the instructions for replacing the batteries. Only use batteries with Philips part number 989803194541 or 989803170371 (available only in China).

WARNING

Incorrect replacement of lithium batteries or fuel cells or replacement by inadequately trained personnel could result in an unacceptable risk (e.g., excessive temperatures, fire, explosion).

Caution

- **Before removing and replacing battery(ies) from the cardiograph, press down and hold the On/Standby button (located on the front of the cardiograph), to shut down the cardiograph. Ensure that the cardiograph is shut down. When the cardiograph is fully shut down, the screen is black, and the On/Standby button is not illuminated. Once the cardiograph is shut down, proceed to remove and replace the battery(ies).**
 - **When removing battery(ies) from the cardiograph, the battery(ies) could feel warm to the touch.**
-

*Note: If the status **Recommend Calibration** appears in the Battery Status window, calibrate the battery(ies) per the calibration procedure on page 7. If the status **Recommend Replacement** appears, the battery(ies) have reached the end of their useful life and need to be replaced. Note that the **Recommend Replacement** notice only appears after you have calibrated the battery(ies).*

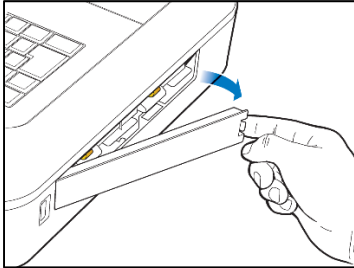
Notes about Battery Installation

- The TC20 cardiograph uses only a single battery.
- The TC70 cardiograph requires two batteries for operation if printing is required; otherwise, a single battery may be used.
- If operating the TC70, TC50 or TC30 cardiograph with one battery installed, the battery may be inserted into either battery compartment.
- When operating the TC70, TC50 or TC30 cardiograph with two batteries installed, ensure that both batteries have the same Philips part number. The battery part number identification label is found

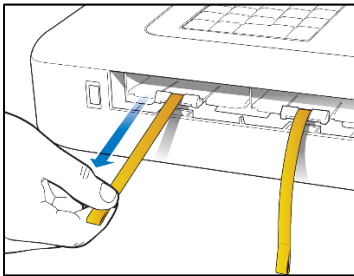
on the bottom of the battery. The cardiograph cannot operate with two batteries that have different part numbers.

To install the batteries:

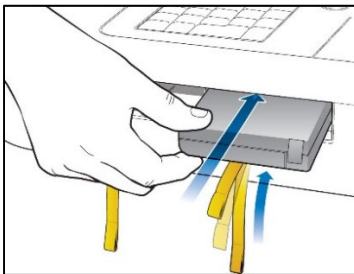
1. Open the battery door.



2. Locate the two gold pull tabs inside of the battery compartment. Pull the tabs straight out of the battery compartment and lay flat.

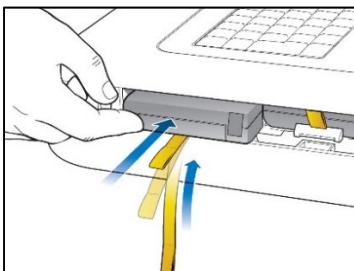


3. Insert the battery with the external connector facing the bottom rear of the compartment.

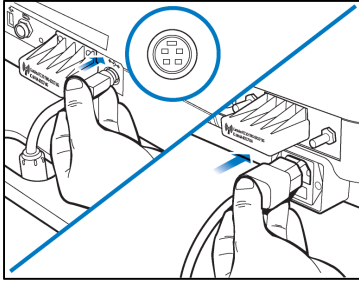


Note: If operating the TC70, TC50 or TC30 cardiograph with one battery installed, the battery may be inserted into either battery compartment.

4. Push in the battery and ensure that the battery is fully inserted into the slot. The pull tab will insert along with the battery. Insert the second battery following the same procedure.



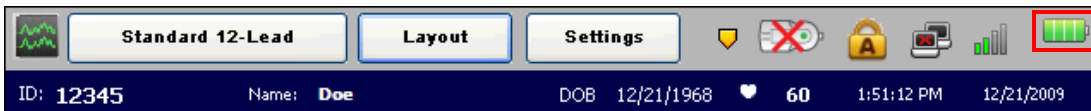
5. Replace the battery door.
6. Connect the AC power cord to the cardiograph. Charge the batteries for five hours before operating the cardiograph on battery power only.



Battery Calibration

Battery calibration may be necessary in order to enhance the accuracy of the battery level indicator that displays on the Status Bar. If the accuracy of this indicator is affected, the other battery indicators included on the Battery Status window (that is opened by tapping the battery icon on the Status Bar) may also be less accurate.

Figure 2-5 Battery Power Indicator on the Status Bar



The recommended intervals for battery calibration are dependent upon factors in your clinical use model. When the battery power indicators are not functioning so that they are useful in your daily work environment, calibrate the batteries as described here.

The battery calibration procedure requires that the cardiograph be taken out of active use for up to 35 hours.

Note: If the status **Recommend Calibration** appears in the Battery Status window, calibrate the battery(ies) per the following procedure. If the status **Recommend Replacement** appears, the battery(ies) have reached the end of their useful life and need to be replaced. Note that the **Recommend Replacement** notice only appears after you have calibrated the batteries.

To calibrate the batteries on the cardiograph:

1. Attach the AC power cord to the cardiograph. Ensure that the AC power supply is connected to a grounded electrical outlet and that the cardiograph is receiving AC power. Check that the AC power indicator light (located next to the power button) is lit.
2. Fully charge the batteries. To ensure that the batteries are fully charged, view the Charge Current field in the Service Utility. Touch the Setup button on the tool bar. Select the Service Utility from the Configuration Setup and Service Utilities main menu.

Note: Accessing the Service Utility may require entering a password. If a password is lost and cannot be retrieved, contact Philips Customer Service for assistance.

3. From the Service Utility screen, ensure that the About the Cardiograph button is selected (top of screen). A selected button is highlighted in blue.
4. Underneath the Battery Status column (middle of screen), check that the Charge Current field for both batteries display 0 mA, ensuring that both batteries are fully charged.

Note: For devices with battery PN 989803194541 or 989803170371, the battery should remain in fully charged status for 5.25 hours or longer.

5. Touch the Print button (top of screen) to print out a report of the cardiograph settings displayed on this screen.
6. Touch the Exit button (lower right hand corner of screen). Touch the Exit button again on the Setup main menu.
7. After the Main screen appears, touch the ID button to open the ID entry screen. Ensure that the ID screen remains open.
8. Unplug the cardiograph from AC power. Ensure that the AC power indicator light (located next to the power button) is not lit.
9. Keep the ID screen displayed and allow the batteries to deplete of all battery power. This process will take approximately 8 hours to complete. When the batteries are depleted of all power, the screen is black and the cardiograph cannot be returned to active use by touching the power button.
10. Once the batteries are fully depleted, reconnect the cardiograph to AC power. Press the On/Standby button to power on the cardiograph in order to confirm successful calibration. Afterward, charge the batteries fully before returning it to active use.

Note: For devices with battery PN 989803194541 or 989803170371, the battery should remain in fully depleted status for 5.25 hours or longer.

11. On the Main screen, touch the Setup button.
12. Select the Service Utility from the Configuration Setup and Service Utilities main menu.
13. From the Service Utility screen, ensure that the About the Cardiograph button is selected (top of screen). A selected button is highlighted in blue.
14. Underneath the Battery Status column, check the Expected Max Error (%) and Full Capacity (mAh) values as viewed on the screen are different than the values printed on the report generated from the Service Utility screen. If the values are different, the battery calibration procedure is complete.

Note: If the **Expected Max Error (%)** field has not been reset to 2%, another calibration procedure may be necessary

Ordering a Replacement Battery

To order a replacement lithium ion battery, contact your Philips Customer Care center. For information on For more information on how to contact Philips Customer Care for your country, go to <http://www.healthcare.philips.com>. Select your country and language, then navigate to the Customer Care page.

Product	Description	Battery PN*	Battery PN**
860332	TC20 Cardiograph	989803194541 (11.1V 7800 mAh)	989803170371 (11.1V 7200 mAh)
860306	TC30 Cardiograph		
860310	TC50 Cardiograph		
860315	TC70 Cardiograph		
860354	TC30 w/trolley government bundle		
860355	TC30 w/o trolley government bundle		
860429	TC50 government bundle		
860352	TC70 w/trolley government bundle		
860353	TC70 w/o trolley government bundle		

* World-wide, except China

** China only

Note: Battery PN 989803160981 is no longer available for purchase. If your cardiograph is using batteries with PN 989803160981, you will need to replace both batteries as soon as possible.