



Technical Service Bulletin

CARDIOPULMONARY

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**Bulletin Type:
 NEXT SERVICE ACTIVITY**

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Subject:	TSB-CP150 V2.00.02 SOFTWARE RELEASE
Distribution Scope:	Welch Allyn Global Technical Support, Product, Field & Customer Service teams and WA ASP's
Product(s) Referenced:	All CP150 Electrocardiographs <ul style="list-style-type: none"> • CP150-0029 / SERV KIT, SOFTWARE (ONLY) UPDATE v2.00.02 • CP150-0017 / SERV KIT, SOFTWARE UPDATE v2.00.02 • CP150-0004 / SERV KIT, SMCE PCA • CP150-0004A / SERV KIT, SMCE PCA w INTERP • 20013803 TSB-CP150 V1.00.03 SOFTWARE RELEASE
SW Version:	All software versions prior to v2.00.02
Summary:	<p>The Welch Allyn Diagnostic Cardiology Team is pleased to announce an updated version of software for the CP150 electrocardiographs. This version 2.00.02 software was developed to enhance the functionality and performance of the CP150 electrocardiograph as outlined below.</p> <p>v2.00.02 Manufacturing starting serial number: 100012672614</p> <p><u>NOTE:</u> This software update is not applicable for Singapore and China CP150 units until registration of version 2.00.02 is complete. This TSB will be updated as China and Singapore complete registration.</p> <p>For China and Singapore customers, refer to: 20013803 TSB-CP150 V1.00.03 SOFTWARE RELEASE</p>
Issue:	<p>Update and release software that addresses:</p> <ul style="list-style-type: none"> ▪ Functional Enhancements ▪ Software Updates ▪ Hardware component updates.

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Action:

Functional Enhancements:

- Added ECG print preview option to view acquired and analyzed tests prior to printing.
- Added option to continue with rhythm (continuous) printing using same-patient data as part of the Auto ECG
- Added ECG preview formats 3x1, 3x4, 6x1, and 6x2
- Added print options include:
 - Send PDF to a network folder
 - Print an ECG to internal printer and send PDF to a network folder
 - Print an ECG to internal printer and send PDF to a USB drive
- Added work list support. Manually enter patient information at the start of the day, download individual patient data from CPWS, or download worklists with HL7 interface.
- Added optional Comments field to Auto report patient entry
- Added power down option. Complete power shutdown saves battery capacity if the device is unused for extended periods.
- Added Italian, Finnish, and Danish language support
- Added Thai keyboard support
- Released CP150-0004 / Serv Kit, SMCE PCA
- Released CP150-0004A / SERV KIT, SMCE PCA w INTERP.
- Added SMCE PCA replacement capabilities.

Software issues addressed:

1. Unresponsive touch screen:

- **Cause:** Unresponsive touch screen is caused by the touch screen driver returning a calibration value that is out-of-range. When this happens, all new touches are discarded and the unit is determined to be unresponsive.
- **Solution:** The acceptable range value was changed from 16bit to 32bit in order to accept a wider value.

2. Wrench code 01 during power up due to battery communication conflict:

- **Cause:** Wrench 01 occurs during power up because the communication between the bootloader and the Power controller via the I2C bus communication lines may intermittently fail.
- **Solution:** Added multiple retries for I2C bus communication for recovery.

3. Device shutting down during operation:

- **Cause:** The I2C error also occurs during main operation. When the error occurs, the battery capacity returns a negative value, and the system will proceed to shut down.
- **Solution:** Added multiple retries for I2C bus communication for recovery.

4. DIM LCD brightness value resulting in blank boot up screen:

- **Cause:** Due to the component differences, the DIM LCD brightness value that the bootloader used resulted in the LCD being blank.
- **Solution:** Increased the DIM value to a larger value.

5. Device rebooting during operation due to ECG acquisition board conflict.

- **Cause:** It was detected that certain ECG boards require specific power up sequences.
- **Solution:** The power up sequence was modified to handle these conditions.

Hardware component updates:

The following hardware components will be installed into devices that are returned for repair and have serial numbers prior to 100012672614.

- Switch Power ESD
- CP150 ESD Switch Tape
- Pro Gaff Tape

Supporting document updates to support CP150 V2.00.02:

- DFU CD Material 105755
- Service Manual DIR 80018104
- DFU DIR 80018007

Service Strategy:

Customer Care / Technical Support: Customers with devices that have a previous version of software and desire the ability to use the spirometry option may order part number:

CP150-0029 / SERV KIT, SOFTWARE (ONLY) UPDATE v2.00.02

NOTE: This software update is not applicable for Singapore and China CP150 units until registration of version 2.00.02 is complete. This TSB will be updated as China and Singapore complete registration.

For China and Singapore customers, refer to:

20013803 TSB-CP150 V1.00.03 SOFTWARE RELEASE

Service Centers and ASPs: will perform the following updates on units that come in for repair and have serial numbers before 100012672614:

1. The update of the software to v2.00.02, (for devices that do not already have 2.00.02 installed), by following CP150 CUSTOMER LETTER (721444);
2. Change out the CP150 SWITCH POWER ESD (410182);
3. Install CP150_ESD_SWITCH_TAPE (721364) and TAPE, PRO-GAFF, BLK 3/4" WD (M11580).

A) Check the software version of the device. If at a prior version, update the software to 2.00.02. Refer to CP150 CUSTOMER LETTER (721444) for detailed software update instructions.

B) Replace the hardware components:

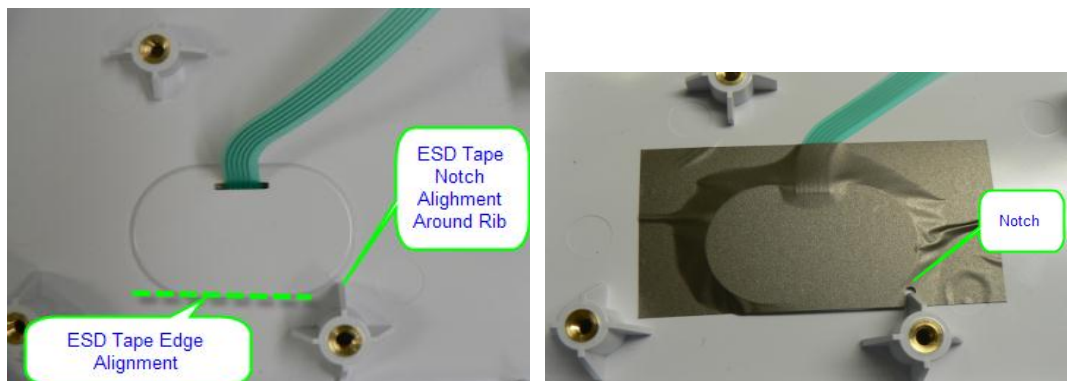
- I. Remove Top Housing assembly from the unit.
- II. Using tweezers, carefully peel the Power Switch Membrane from the Top Housing and remove the Flex cable.



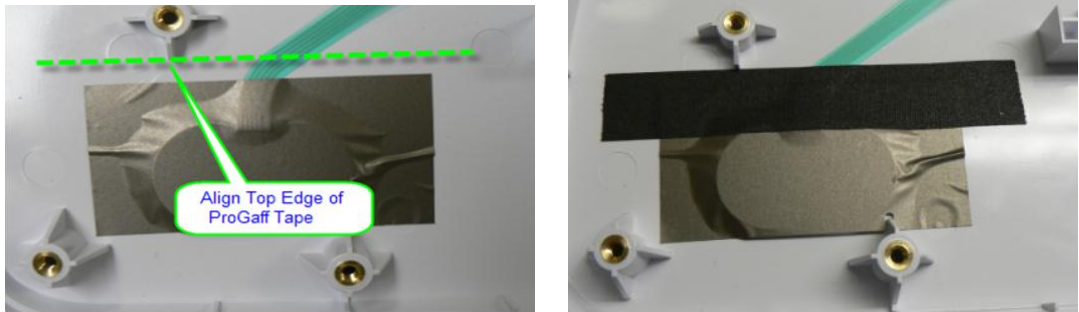
- III. Insert the new Flex cable through the slit in the Top Housing. Remove the adhesive liner from the Power Switch Membrane. Make sure that the liner next to the flex is also removed. Press and secure the Switch Membrane into the recessed area.



- IV. Affix ESD Tape over the underside of the Power Switch and the protruding flex circuit. Align the notch on the screw post rib as shown. Align the edge of the tape around the edge of the indentation for the Power Switch as shown.



V. Add Pro Gaff tape over the EMC Tape. The Pro Gaff Tape should overlap over the length of the ESD Tape. The Pro Gaff Tape top edge should be aligned just under the screw post rib as shown.



- Reassemble back the Top Housing assembly to the unit. Perform all necessary tests and functional checks.

Required Materials:

CP150-0029 / SERV KIT, SOFTWARE (ONLY) UPDATE v2.00.02
 CP150-0017 / SERV KIT, SOFTWARE UPDATE v2.00.02

Quality Documents:

All service centers using SAP to record service transactions: For each product serviced, record the service activity in SAP.
All other service centers and Field Service: For each product serviced, complete and file a service report and attach to the service DHR.

Notes:

1. Contact Welch Allyn regarding any questions or concerns from this or other issues.
2. Drawings, illustrations, and part numbers in this document are for reference purposes only and subject to change.

End of Bulletin

Revision History

Version	Description	Change #	Init	Release Date	Appr
A	Initial Release	D*	AO	D*	D*

D* SEE SAP DIR FOR CHANGE NUMBER, APPROVER NAME AND DATE OF APPROVAL