



Document Description: CVSM/CIWS_CSM – Annual Preventative Maintenance	Document Number: 80021646 Version: A
	
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Customer Service Bulletin

Product: CVSM, CIWS, and CSM	Date: 2016-07-12
Subject: CSB – CVSM/CIWS_CSM – Annual Preventative Maintenance	
HW Version(s) Affected: ALL	SW Version(s) Affected: ALL
Serial Numbers Affected: ALL	Lot or Date Code Affected: ALL

Classification: Informational Only
Distribution: <input checked="" type="checkbox"/> Customer Care <input checked="" type="checkbox"/> Product Service <input checked="" type="checkbox"/> Field Service <input checked="" type="checkbox"/> ASPs <input checked="" type="checkbox"/> Distributors <input checked="" type="checkbox"/> Customers <input type="checkbox"/> Company Confidential

Training Required: <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No

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Summary:


The following checklist is the Welch Allyn recommended annual preventative maintenance for CSM and CVSM devices.

The user should Reference the service manual *Basic functional verification checks* section for detail procedures and tools required to perform each test. Whenever a test fails to meet specification or open case repairs are performed the user must perform the *Full functional verification and Calibration checks* as defined in the service manual.

Users should ensure the current released version of the Welch Allyn Service Tool is installed on their PC prior to performing the below maintenance. If not follow the Install guide and reinstall the Welch Allyn Service Tool from the Welch Allyn web site <http://www.welchallyn.com/en/service-support/service-center/service-tool.html>.

Electrical Safety Testing should be performed based on Facility requirements and IEC 62353 Standards.

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Electrical Safety Testing (CVSM and CIWS only)

Electrical Protection Class:	Applied Part Type:	Test	Specification	Actual reading
I	BF	Protective Earth Resistance <ul style="list-style-type: none"> Mains ground to PE stud Earth connections to PE stud 	200 mΩ max 300 mΩ max	mΩ mΩ
		Device Earth Leakage and Current (Sourcing)	At Protection Class I Parts Direct Method: 0.5 mA	mA

Insulation Resistance:

Welch Allyn does not recommend performing Hi-Pot testing on these products.

Protective Earth Resistance:

The IEC 62353 Standard doesn't provide measuring methods and allowable values for equipment producing dc leakage currents. Welch Allyn recommends the Direct Methods on all Devices. Shown in IEC 62353 Figure 7.

Device Leakage Current:

Measurements shall be performed using a measuring device able to deliver a current of at least 200 mA to 500 mA. The open circuit voltage shall not exceed 500V dc. When using direct current, the measurement shall be repeated with opposite polarity. Either value measured shall not exceed the allowable value. The highest value shall be documented.

NIBP Leak test

Specification	Actual reading	Pass	Fail
Max: 5			

NIBP Overpressure test

Mode	Specification	Actual reading
Adult mode:	280 . . . 329	
Neonate mode:	130 . . . 164	


NIBP accuracy check

Target pressure ± 5 mmHg	Pressure meter	Service tool	Specification	Pass	Fail
0 mmHg	mmHg	mmHg	± 1 mmHg		
50 mmHg	mmHg	mmHg	± 3 mmHg		
150 mmHg	mmHg	mmHg	± 3 mmHg		
250 mmHg	mmHg	mmHg	± 3 mmHg		

Masimo SpO2 tests

Test	Specification	Actual reading	Pass	Fail
SpO2 heart rate	61 ±1 bpm	bpm		
SpO2 saturation	81% ±3%	%		
RRa	Verify appear in RRa frame	Visual		
SpHb	14g/dl ± 1g/dl	g/dl		

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Nonin or Nellcor SpO2 and pulse rate test

Test	Specification	Actual reading	Pass	Fail
SpO2 heart rate	60 ±1 bpm			
SpO2 heart rate	200 ±2 bpm			
SpO2 saturation	75% ±1%			
SpO2 saturation	90% ±1%			

Thermometry tests Calibration key temperature test for SureTemp Plus

Temperature test	Specification ± 0.2°F (± 0.1°C)	Actual reading	Pass	Fail
97.3 °F	97.1 to 97.5°F	°F		
36.3°C	36.2 to 36.4°C	°C		

SureTemp Plus Probe test (Optional)

Temperature test	Specification ± 0.2°F (± 0.1°C)	Actual reading	Pass	Fail
96.8 °F	96.6 to 97.0°F	°F		
36.0°C	35.9 to 36.1°C	°C		
101.3 °F	101.1 to 101.5°F	°F		
38.5°C	38.4 to 38.6°C	°C		
105.8°F	105.6 to 106.0°F	°F		
41.0°C	40.9 to 41.1°C	°C		

Braun ThermoScan PRO 4000/6000 test

Temperature test	Specification ± 0.4°F (± 0.2°C)	Actual reading	Pass	Fail
96.8 °F	96.4 to 97.2°F	°F		
36.0°C	35.8 to 36.2°C	°C		
101.3 °F	100.9 to 101.7°F	°F		
38.5°C	38.3 to 38.7°C	°C		
105.8°F	105.4 to 106.2°F	°F		
41.0°C	40.8 to 41.2°C	°C		


Early Sense test

Test	Specification	Pass	Fail
Movement Frame	Present		
Exit Sensitivity Graphic Presence	Lit and Active		

CO2 Calibration test

Test	Measured CO2	Pass	Fail
CO2 __%	%		

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Version	Sec, Pg, Para Changed	Change Made	Date Version Created	Version Created By (initials)
A	N/A	Initial Release	2016-07-12	KMG