



## **Motion Clinical Workstation MCW-200**

Product Safety Information  
Safety Compliance Notices  
Regulatory Notices  
User Guide

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# MCW-200 Safety and Regulatory Guide







## Introduction

Use this product--Motion Clinical Workstation (MCW-200)--only after carefully reading this document and understanding its contents. Keep this document nearby, so you can refer to it whenever necessary.

**Note:** The term Motion Clinical Workstation refers to the MCW-200.

## Symbol description

The following symbols may appear on the products or accessories.

	WARNING: This symbol alerts you to important operating considerations or a potential operating condition that can be a risk for damaging equipment.
	Dangerous voltage
	Product complies with 2002/96/EC
	Federal Communications Commission notice (USA)
	Wireless symbol
	Compliance with Intertek Testing Services for general product safety in accordance with UL 60601-1 and CAN/CSA C22.2 No. 601.1 and IEC 60601-1-2

## Specifications

Temperature		On	Off (Storage/Transportation)
	Temperature	10–40°C	-20–60°C
	Humidity	30–75% RH	10–90% RH
	Air pressure	700–1060 hPa	187–1060 hPa
Power Protection Class 1 Hoffman Engineering Model: 301-1001	Input: 6.4 A max, 100–240 VAC, 50–60 Hz. Output 15 V DC, 20 A max. Power Supply Module is compliant with UL 60160-1, CAN/CSA C22.2 No. 601.1, and IEC 60601-1-2		

## Product safety information

The Motion Clinical Workstation is designed to optimize safety, minimize strain, and withstand the rigors of mobility. However, to further reduce the risk of personal injury or damage to the unit, certain precautions should be observed.

## Product mounting and installation disclaimer

Motion Computing shall not be liable under any theory of liability (including, without limitation, contract, tort or statutory law) for any loss, damage, personal injury, or other damage of any nature (including, without limitation, direct, special, incidental or consequential damages) arising directly or indirectly as a result of improper or inappropriate placement, installation, or use of its products or any other application. Without limiting the foregoing, Motion specifically disclaims any responsibility for the placement, use, or installation of its products not consistent with (i) the original manufacturer's or governmental or regulatory specifications and recommendations for the environment where the products will be placed, used or installed, (ii) Motion written product instruction sheets, or (iii) workmanship standards.

## Setup precautions

- See the installation instructions before connecting the MCW-200 to a power outlet.
- When setting up the MCW-200, place it on a level surface so it does not fall over and damage the unit, or other components.
- When you move the MCW-200 between environments with very different humidity and/or temperature ranges, allow sufficient time to adjust to the new humidity or temperature.
- Do not tip the MCW-200 or subject it to other mechanical shocks.
- Do not place the MCW-200 in an unsteady location. If the MCW-200 is placed in an unsteady location, such as on an incline, the MCW-200 may tip over and cause injury.
- Do not place the MCW-200 in direct sunlight or next to equipment that generates heat. This can damage the cabinet and components, and may generate heat or fire.
- Do not use the MCW-200 Power supply base for other equipment. This can generate heat or fire. In addition, do not use other Power Supply bases with the MCW-200.

## Basic personal safety precautions

- Do not attempt to service the MCW-200 nor its components yourself. Perform only those service procedures for which Motion provides special instructions, for example, replacing the battery or installing a peripheral device. For a list of accessories, see [www.motioncomputing.com](http://www.motioncomputing.com).
- Completely power down the MCW-200 PC when cleaning the MCW-200, its components, or chassis, or performing operations requiring similar steps. To do this, disconnect the AC cord from the electrical outlet.
- Do not operate the MCW-200 near water, such as near a laundry tub, or in a wet basement. The accessories currently offered by Motion are not designed to be water resistant nor water tight. Do not submerge the MCW-200 or any of its components in water or other fluids. For a list of accessories, see [www.motioncomputing.com](http://www.motioncomputing.com).
- Do not connect or disconnect any cables or perform maintenance or configuration of this product during an electrical storm.
- Do not push foreign objects into air vents or other openings of the MCW-200 or accessories. Doing so can short out interior components and may cause fire or electric shock.
- If leakage from the MCW-200 battery contacts your skin or clothing, immediately wash it with running water. Otherwise, skin inflammation can occur.

## Motion Clinical Workstation precautions

- Operate the MCW-200 at the recommended temperature range of +10°C to +40°C (+50°F to +104°F). Store it at a temperature of -20°C to +60°C (-4°F to +140°F).
- Certain environments may contain particles or debris that can adhere to the MCW-200 display or to the MCW-200 casters. To avoid damaging the display, clean it frequently with a cleaning cloth provided or with a soft cloth. You may spray a window-type cleaner or apply water to the cleaning cloth, and then clean the MCW-200 display with the cloth. For more information on cleaning the MCW-200, see “Cleaning the MCW-200” on page 36 in the User’s Guide provided with this document.
- Do not open or attempt to service this product. Opening or servicing this product can result in electric shock and void the manufacturer’s warranty if not performed by an authorized service professional.

## High risk and dangerous activity warning

The MCW-200 or any of its components are not intended to be used as a medical device or for use in high-risk or dangerous activities, including without limitation, the operation of nuclear facilities, communications systems, medical operations, treating, diagnosing, or monitoring patients, or for any other uses where the failure of the computer system could lead to death, personal injury, or severe environmental damage.

## Clinical usage notice

The MCW-200 is intended to be used for patient data collection, identification, records, and other tasks similar to these. The MCW-200 is not intended to be used to diagnose, treat, or monitor patients under medical supervision. The MCW-200 should not make direct physical or electrical contact with the patient, transfer energy to the patient, or detect such energy transfer to or from the patient.

## Motion Clinical Workstation disposal

- Do not dispose of the unit with general waste.
- Follow your local regulations for disposal of the unit.
- If you are unable to locate a disposal site, contact your reseller or Motion Computing.



## Cabling and power cord precautions

- Power cord sets for use in other countries must meet the requirements of that country. Use the appropriate AC power cord for your locale. For information about power cord set requirements, contact the Motion Reseller from whom you purchased the product, or contact Motion Computing if you purchased the product directly from Motion.
- If no power cord was provided for your MCW-200 or for an accessory, purchase a power cord that is approved for use in your country and that matches the required voltage and amperage rating of the MCW-200.
- When using your power cord, make sure to position it around objects so it will not be cut or punctured.
- Use only the AC power cord approved for this product or accessory. Use of another type of AC power cord may risk fire or explosion.
- Disconnect power cords and cables by grasping the connector, not by pulling on the cable itself. As you pull out the connector, keep it evenly aligned to avoid bending any connector pins. Before you connect a cable, make sure the connectors are correctly aligned.

## Medical power supply precaution

Additional equipment connected to medical electrical equipment must comply with the respective IEC or ISO standards (e.g. IEC 60950-1 for data processing equipment). Furthermore, all configurations shall comply with the requirements for medical electrical systems (see IEC 60601-1 or clause 16 of the 3Ed. of IEC 60601-1, respectively). Anyone connecting additional equipment to medical electrical equipment, configures a medical system and is therefore responsible that the system complies with the requirements for medical electrical systems. Attention is drawn to the fact that local laws take priority over the above mentioned requirements. If in doubt, consult your local representative or the technical service department.

Standard / directive references:

- IEC/EN 60601-1+A1+A2: 1995: 6.8.2.c, 19.2.b, 19.2.c
- IEC 60601-1: 2006: 7.9.2.5
- MDD 93/42/EEC: Annex 1 clause 13.6.c
- UL 60601-1, first edition
- CAN/CSA C22.2 No. 601-1, first edition



## Battery warnings and precautions

Battery pack model number: PCS12350NB

Rating: 12 V DC, 35.0 Ah

- The MCW-200 contains 2 internal Sealed Lead Acid (SLA) battery packs manufactured by Power-Sonic. Replace the internal battery pack only with a Motion-recommended equivalent to avoid the risk of fire or explosion resulting in personal injury.
- If you use a battery to power your MCW-200, be sure you use only a Motion-recommended third-party product. Using a non-Motion-recommended battery may cause the MCW-200 to overheat, emit smoke, burst and/or ignite and cause personal injury or damage to the unit.
- Do not use the battery in combination with other types of battery packs (such as dry-cell battery packs) or battery packs with different capacities or brands. This can result in it being over-discharged during use or overcharged during recharging, possibly leading it to leak, overheat, emit smoke, burst and/or ignite.
- Do not dispose of batteries in a fire. They may explode. Dispose of used batteries according to the manufacturer's instructions. The battery lists the manufacturer's name, Power-Sonic. See "Battery disposal" on page 11 for more information.
- Do not use nor leave the battery near a heat source. Heat can melt the insulation and damage other safety features, possibly leading it to leak, overheat, emit smoke, burst and/or ignite.
- Do not immerse the battery in water nor allow it to get wet. Its protective features can be damaged, it can be charged with extremely high current and voltage, abnormal chemical reactions may occur, possibly leading it to leak, overheat, emit smoke, burst and/or ignite.
- Do not disassemble or modify the battery. If disassembled, the battery could leak, overheat, emit smoke, burst and/or ignite.
- Do not connect the positive (+) and negative (-) terminals with a metal object such as wire. Short-circuiting may occur leading the battery to leak, overheat, emit smoke, burst and/or ignite.
- Do not pierce the battery with a sharp object, strike it with a hammer, step on it, or throw it. These actions could damage or deform it, internal short-circuiting can occur, possibly leading it to leak, overheat, emit smoke, burst and/or ignite.
- Do not use an apparently deformed or damaged battery, which may leak, overheat, emit smoke, burst and/or ignite.
- Do not directly solder the battery. Heat can melt the insulation and damage other safety features, possibly leading it to leak, overheat, emit smoke, burst and/or ignite.
- Store the battery in a location where children cannot reach it.
- If the battery pack leaks, gives off a bad odor, generates heat, becomes discolored or deformed, or in any way appears abnormal during use, recharging, or storage, immediately stop using this product and call an authorized service professional. If this is

discovered when you first use the battery, return it to your Motion reseller or to Motion, if you purchased it directly from Motion.

## Battery disposal

- Dispose of the battery only at approved disposal sites. To locate an appropriate site, contact the solid waste disposal officials where you live or look for a rechargeable battery recycling Web site that lists disposal locations near you.
- Do not dispose of battery packs in a fire, throw them in a trash receptacle, put them in a recycling bin not intended for their disposal, or otherwise discard them in a manner that may result in their being hazardous to the environment.

## Component replacement precautions

- Use only accessories sold by Motion Computing with your MCW-200. Installation or use of non-Motion accessories may damage the MCW-200 and/or its components and void the warranty.
- Accessories currently available from Motion Computing as user replaceable parts include an AC power cord (rated for Medical use), These accessories may change from time to time. Contact Motion Computing for more information or if you have questions about replacing a specific accessory.
- Do not replace nor attempt to service internal accessory components such as the LCD display, mini PC, battery gas gauge module, Keyboard, external antenna, PC memory modules, or USB camera module components. Such actions can damage the accessories, PC and/or its components and void the warranty.
- Please read the instructions packaged with your accessories carefully before setting up or operating them. The Motion accessory you purchase may include documentation about safety, precautions, and warnings needed to set up or operate the accessory. This accessory documentation provides specific information about functionality, usage limitations, user serviceability, battery or component disposal, handling precautions, and electrostatic discharge for the product.

## Wireless devices

The mini PC integrated into the MCW-200 contains a wireless device. It is registered and compliant to all essential regulatory requirements required by both the FCC and the Industry Canada. If you install non-approved wireless devices, you may damage the equipment and/or its internal components and void the warranty. Contact Motion Computing or your authorized Motion reseller for information about regulatory information for the wireless device integrated in the MCW-200.



## Comfort and health

**HEALTH WARNING:** Keyboard use or use of a pointing device may be linked to serious injuries or disorders. For more information, visit the Mayo Clinic™ Web site at [www.mayoclinic.com](http://www.mayoclinic.com).

You may help prevent the occasional discomfort in your hands, arms, shoulders, neck, and other parts of your body by:

- Taking frequent breaks to stretch and change your working position.
- Resting your hands and wrists frequently so they have time to recover from repetitive movements. Use a wrist pad.

If symptoms persist or continue to occur and include pain, throbbing, aching, tingling, numbness, burning sensations, or stiffness, **DO NOT IGNORE THESE WARNING SIGNS. PROMPTLY SEE A QUALIFIED HEALTH PROFESSIONAL.**

## Regulatory and safety compliance

The following sections describe regulatory and safety compliance by country and by region.

**Note:** To determine which regulatory and safety marks apply to a specific product, component, or accessory, check the product label affixed to the product or its component.



### Federal Communications Commission notice (USA)

Electromagnetic Interference (EMI) is any electromagnetic disturbance that interrupts, obstructs, or otherwise degrades or limits the effective performance of electronics or electrical equipment. These emissions can potentially disrupt, degrade, or otherwise interfere with authorized electronic emissions, which may include television, AM/FM broadcasts, cellular services, radar, air-traffic control, and pagers.

The FCC Rules and Regulations have established Radio Frequency (RF) emission limits to provide an interference-free RF spectrum. Many electronic devices, including computers, generate RF energy incidental to their intended function and are, therefore, covered by these rules.

Your Motion Clinical Workstation and all accessories meet the regulatory agency limits for Electromagnetic Compatibility (EMC). EMC is the ability of electronic devices, including computers, to function properly together in the electronic environment. However, there is no guarantee that in a specific installation it will not cause interference. Should this equipment cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, you are encouraged to try to correct the interference by one or more of the following measures:

- Reorient the receiving antenna.
- Relocate the PC and the receiver.
- Separate the PC and the receiver.
- Plug the PC and receiver into different circuits.

You may also need to contact a radio/television technician for assistance.

## Unintentional emitter per FCC Part 15

The rating label on Motion Clinical Workstation and all accessories show which class (A or B) these devices fall into. Class B devices have an FCC logo (shown on page 12) or FCC ID on the label. Class A devices do not have an FCC ID on the label. Once you determine the class of the device, refer to the following corresponding statement and to the FCC notices in this Safety and Regulatory Guide.

- Class A is for business or industrial environments.
- Class B is for residential environments.

This device complies with Part 15 of the Federal Communications Commission (FCC) Rules. Operation is subject to the following two conditions:

- This device may not cause harmful interference.
- This device must accept any interference received, including interference that may cause undesired operation.

**Class A Equipment:** This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a residential environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the manufacturer's instruction manual, may cause interference with radio communications. Operation of this equipment in a residential area is likely to cause harmful interference, in which case you will be required to correct the interference at your own expense.

**Class B Equipment:** This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a residential environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the manufacturer's instruction manual, may cause interference with radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, you are encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and the receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/television technician for help.

The following information is provided on the device or devices covered in this document in compliance with FCC regulations:

Model number: MCW-200 (Motion Clinical Workstation)

Company name: Motion Computing, Incorporated

8601 Ranch Road 2222, Building 2

Austin, Texas 78730

512-637-1100


### Intentional emitter per FCC Part 15

Embedded in your MCW-200 PC is a Radio Frequency (RF) wireless communication device. It is a Radio type device that operates in the 2.4 or 5 GHz band. All radio-type devices embedded in your MCW-200 have met all the qualifications for use under FCC regulations and guidelines.

**FCC CAUTION:** Any changes or modification not expressly approved by the party responsible for compliance could void the user's authority to operate this equipment.

Operation of this wireless communication device is subject to the following two conditions:

- This device may not cause harmful interference.
- This device must accept any interference received, including interference that may cause undesired operation.

 **WARNING:** Do not attempt to service the wireless communication device built into the MCW-200 yourself. Such action may void the warranty on the MCW-200 PC. Contact your Motion Reseller or Motion Computing for information about servicing your wireless communication device.


**Note:** The Radio Frequency (RF) emitter installed in your MCW-200 must not be located or operated in conjunction with any other antenna or transmitter.


### Modifications


The FCC requires that you be notified that any changes or modifications made to this device that are not expressly approved by Motion Computing, Inc. may void your authority to operate the equipment.


### Cables

Connections to the MCW-200 must be made only with shielded cables. This reduces possible interference with radio communications and complies with FCC Rules and Regulations for this EMC classification.

 **Warning:** Medical Electrical Equipment needs special precautions regarding EMC and needs to be installed and put into service according to the EMC information provided in this manual.

 **Warning:** Portable and Mobile RF communications equipment can affect Medical Electric Equipment.

 **Warning:** The use of accessories, transducers and cables other than those specified by Motion Computing Incorporated, may result in increased emissions or decreased immunity of the equipment.

 **Warning:** This Equipment should not be used adjacent to or stacked with other equipment and that if adjacent or stacked use is necessary, the Equipment should be observed to verify normal operation in the configuration in which it will be used.


 The Equipment is intended for use in the electromagnetic environment specified below. The customer or the user of the Equipment should assure that it is used in such an environment.

Table 201		
Guidance and manufacturer's declaration - electromagnetic emissions		
The EQUIPMENT is intended for use in the electromagnetic environment specified below. The customer or the user of the EQUIPMENT should assure that it is used in such an environment.		
Emission Test	Compliance	
RF Emissions CISPR 11	Group 1	The EQUIPMENT uses RF energy only for its internal function. Therefore, its RF emissions are very low and are not likely to cause any interference in nearby electronic equipment.
RF Emissions CISPR 11	Class A	
The EQUIPMENT is suitable for use in all establishments other than domestic and those directly connected to the public low-voltage power supply network that supplies buildings used for domestic purposes.		

Table 202			
Guidance and manufacturer's declaration - Electromagnetic Immunity			
The Equipment is intended for use in the electromagnetic environment specified below. The customer or the user of the Equipment should assure that it is used in such an environment.			
Immunity Test	IEC 60601 test level	Compliance level	Electromagnetic environment guidance
ESD Discharge IEC61000-4-2	(-/+) 6kV (-/+) 8kV	Contact (-/+) 6kV Air (-/+) 8kV	Floors Should be wood, concrete, or ceramic tile. If floors are covered with synthetic material, the relative humidity should be at least 30%.
Electrical fast transient burst IEC61000-4-4	(-/+) 2kV for power supply lines (-/+) 1kV for input output lines	(-/+) 2kV fr power lines Not Applicable	Mains power quality should be that of a typical commercial or hospital environment.
Surge IEC61000-4-5	(-/+) 1kV differential mode. (-/+) 2kV common mode	(-/+) 1kV differential mode (-/+) 2kV common mode	Mains power quality should be that of a typical commercial or hospital environment.
Voltage dips, short interruptions and voltage variations on power supply input lines IEC61000-4-11	<5% UT (>95% dip in UT) for 0,5 cycle 40% UT (60% dip om UT) for 5 cycles 70% UT (30% dip in UT) for 25 cycles , <5% UT (>95% dip in UT) for 5 seconds	<5% UT (>95% dip in UT) for 0,5 cycle 40% UT (60% dip om UT) for 5 cycles 70% UT (30% dip in UT) for 25 cycles , <5% UT (>95% dip in UT) for 5 seconds	Mains power quality should be that of a typical commercial or hospital environment. If the user of the EQUIPMENT requires continued operation during power mains interruptions, it is recommended that the EQUIPMENT be powered from an uninterruptible power supply or battery.
(50/60 Hz) Magnetic field IEC61000-4-8	3 A/m	3 A/m	Power frequency magnetic fields should be at level characteristic of a typical location in a typical commercial or hospital environment.
NOTE: UT is the A.C. Mains voltage prior to application of the test level.			




Table 204			
Guidance and manufacturer's declaration - Electromagnetic Immunity			
The Equipment is intended for use in the electromagnetic environment specified below. The customer or the user of the Equipment should assure that it is used in such an environment.			
Immunity Test	IEC 60601 test level	Compliance level	Electromagnetic environment guidance
			Portable and mobile RF communications equipment should be used no closer to any part of the EQUIPMENT, including cables, other than the recommended separation distance calculated from the equation applicable to the frequency of the transmitter
Conducted RF IEC61000-4-6	3 Vrms 150 kHz to 80 MHz	3 Vrms	Recommended Separation Distance $d = [3.5/V1]VP$
Radiated RF IEC61000-4-3	3 V/m 80 MHz to 2.5 GHz	3 V/m	$d = [3.5/E1]VP$ 80 MHz to 800 MHz $d = [7/E1]VP$ 800 MHz to 2.5 GHz
			where "P" is the maximum output power rating of the transmitter in watts (W) according to the transmitter manufacturer and "d" is the recommended separation distance in metres (m)
			Field strengths from fixed RF transmitters, as determined by an electromagnetic site survey (a), should be less than the level compliance level in each frequency (b).
			
			Interference may occur in the vicinity of equipment marked with the following symbol:
<p><b>Note 1:</b> At 80 MHz and 800 MHz, the higher frequency range applies.</p> <p><b>Note 2:</b> These guidelines may not apply in all situations.</p> <p>Electromagnetic propagation is affected by absorption and reflection from structures, objects, and people.</p>			
<p>(a) Field strengths from fixed transmitters, such as base stations for radio (cellular/cordless) telephones and land mobile radios, amateur radio, AM and FM radio broadcast and TV broadcast cannot be predicted theoretically with accuracy. To assess the electromagnetic environment due to fixed RF transmitters, an electromagnetic site survey should be considered. If the measured field strength in the location in which the EQUIPMENT is used exceeds the applicable RF compliance level above, the EQUIPMENT should be observed to verify normal operation. If abnormal performance is observed, additional measures may be necessary, such as reorienting or relocating the EQUIPMENT.</p> <p>(b) Over the frequency range of 150 kHz to 80 MHz, field strengths should be less than 3 V/m.</p>			

Table 206			
Recommended separation distances between portable and mobile RF equipment and the EQUIPMENT			
The Equipment is intended for use in the electromagnetic environment in which radiated RF disturbances are controlled. The customer or the user of the EQUIPMENT can help prevent electromagnetic interference by maintaining a minimum distance between portable and mobile RF communications equipment (transmitters) and the EQUIPMENT as recommended below, according to the maximum output power of the communications equipment.			
Rated maximum output power of the transmitter (W)	Separation distance according to frequency of transmitter (m)		
	150 kHz to 80 MHz $d = [3.5/\sqrt{P}] \sqrt{P}$	80 MHz to 800 MHz $d = [3.5/\sqrt{P}] \sqrt{P}$	800 MHz to 2.5 GHz $d = [7/\sqrt{P}] \sqrt{P}$
0.01	0.12	0.12	0.23
0.1	0.37	0.37	0.74
1	1.17	1.17	2.33
10	3.69	3.69	7.39
100	11.67	11.67	23.33
<p>For transmitters rated at a maximum output power not listed above, the recommended separation distance (d) in meters (m) can be estimated using the equation applicable to the frequency of the transmitter, where (P) is the maximum output power rating of the transmitter in watts (W) according to the transmitter manufacturer.</p> <p><b>NOTE 1:</b> At 80 MHz and 800 MHz, the separation distance for the higher frequency range applies.</p> <p><b>NOTE 2:</b> These guidelines may not apply in all situations. Electromagnetic propagation is affected by absorption from structures, objects, and people.</p>			

## Other notices

### Medical notices

- Please check with your facility coordinator or regulatory staff to determine whether your environment requires compliance to IEC/EN 60601-1 / IEC/EN 60601-1-2; UL 60601-1 / UL 60601-1-2; or C22.2 No. 601-1 / C22.2 No. 601-1-2. If your environment requires compliance to these standards, please contact Motion Computing for information about how to purchase your Medical Grade AC power cord.
- Use only the Medical Grade AC power cord that is approved for the MCW-200. Use of any other type of medical grade power cord may be a risk for fire or explosion and can void your warranty.
- Do not place objects on the power cord. Place the power cord in a location where it is not a hazard for tripping or foot traffic.
- Disconnect power cords and cables by grasping the connector; do not pull on the power cord itself. As you pull out the connector, keep it evenly aligned to avoid bending any connector pins. Before you connect a power cord, make sure the connectors are correctly aligned.

### California Proposition 65 notice

This product may contain a chemical known to the State of California to cause cancer or birth defects or other reproductive harm.

### Battery notice

Motion Computing Sealed Lead Acid (SLA) batteries comply with all applicable shipping regulations as prescribed by industry and legal standards. This includes compliance with the UN Recommendations on the Transport of Dangerous Goods; IATA (International Air Transport Agency) Dangerous Goods Regulations, 44th Edition, 2003, Special Provisions A45, and applicable U.S. DOT regulations for the safe transport of lithium ion batteries. Each Motion Computing cell or battery has been tested under provisions of the UN Manual of Tests and Criteria, Part III, Sub-section 38.3.

### Wireless notices

In some environments, the use of wireless devices may be restricted. Such restrictions may apply in hospitals, near explosives, in hazardous locations, etc. If you are uncertain of the policy that applies to the use of this device, please ask for authorization to use it prior to turning it on.



# MCW-200 User's Guide

## Introduction

**Note:** The term MCW-200 refers to the Motion Clinical Workstation.

The Motion Clinical Workstation is a fully configured cart for use in clinical environments. It contains a mini PC, LCD monitor, USB camera, USB keyboard and mouse all mounted to a moveable work surface. The MCW-200 includes a power system in the base that delivers power to the devices mounted on the cart. If plugged in, the power system delivers AC, if unplugged, power is available from the sealed lead acid batteries (SLA) installed in the base.

The MCW-200 includes casters for ease of movement. The casters are equipped with a locking feature for parking or storage.



The MCW-200 is designed to aid in the administrative and record taking functions of clinicians. It is not designed or intended to contain equipment that will be used for treating or diagnosing the patient.

- ⚠ No equipment should be added to the MCW-200 that is intended to perform functions such as treating, diagnosing, or to be directly terminated to a patient. Any alterations could damage the system, void the manufacturer's warranty, and or regulatory compliance status.

## Features

### MCW-200 Work Surface

The MCW-200 is configured with a laminated work surface with integrated handle for ease of use in moving or pushing the system, from room to room, floor to floor, or to and from its storage area.

**Note:** Movement of the MCW-200 is performed by gripping the handle of the work surface while walking. It is also recommended to engage the caster lock when arriving at the destination to ensure the system will not continue to move during clinician duties.

The following image shows a side view of the work surface, the keyboard and mouse drawer, and the utility drawer. (The keyboard and mouse and utility drawers are discussed in the next sections of this guide.)



The following image shows the front view of the work surface, keyboard and mouse drawer, and utility drawer.



### MCW-200 Keyboard and Mouse drawer

The MCW-200 is configured with a keyboard and mouse drawer keeping these accessories from taking up needed work space. To access the keyboard, pull out the tray located underneath the laminated work surface. To access the mouse after pulling out the keyboard tray, pull out the mouse tray from the left or right as you prefer. Place the mouse on the preferred tray.

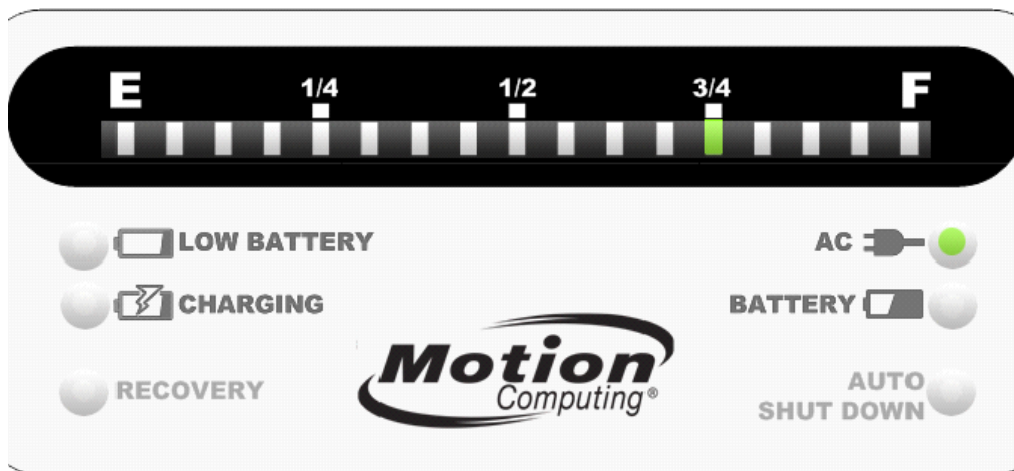
**Note:** Please remember to stow the mouse and place the mouse tray back in its original position before closing the keyboard tray and moving to a different location.

## MCW-200 Utility drawer

The MCW-200 is configured with a utility drawer located beneath the keyboard tray. This drawer can be used for storing clinician supplies. Each clinician requires different tools, supplies, etc., and this utility drawer is able to be configured by the user giving the user a sense of personalizing as well as keeping these supplies from taking up needed work space. To access the utility drawer, pull the handle molded into the drawer tray located underneath the keyboard tray.

## MCW-200 Battery State Remote Display / USB Hub box

The MCW-200 is configured with a remote battery display box that is located above the laminated work surface and below the LCD monitor, it is designed to provide the user with the status of the battery charge level during battery charging.



If the battery is being re-charged, the “**AC**” LED on the panel will be illuminated and the “**Charging**” LED will be illuminated.

If the battery is not being re-charged or is not plugged in, the “**Battery**” LED on the panel will be illuminated.

If the battery charge becomes critically low, the “**Low Battery**” LED will become illuminated. The user should immediately move the cart to an area where the AC power cord can be plugged in so that the system can be charged.

The system is configured to alert the user if the system enters into a critical state while running on battery power. The system will perform an “Auto-shutdown” due to low battery power. A dialogue box will appear on the monitor screen warning the user that the system is nearing the auto-shutdown mode.

The system remote display will also indicate this status by flashing the “**Auto Shut Down**” LED. The LED indicates there is less than 5 minutes before the system begins the shutdown sequence. There is also an audible alarm on the power system that sounds every 10 seconds until the system performs an orderly shut-down sequence.

**Note:** The system does not have to be stored to charge during this low battery state. Although a hindrance, it can be operated on AC power alone. This requires the system’s AC power cord to be plugged into an AC outlet until the battery has been charged.

Below the remote battery display is a USB hub. USB devices were installed and connected to this hub when the system was built. To add additional USB devices to the hub, open the door on the box and attach the USB cable to any available USB port.

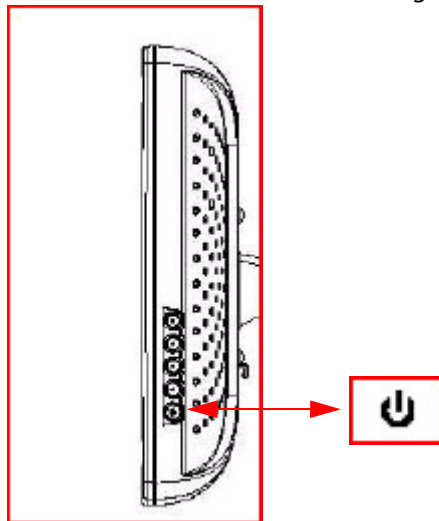
**Note:** The USB hub does not provide power through the ports. Care should be taken when installing USB devices to available ports on the hub. Understanding these devices clearly will limit damage to the system or hub.

If a USB device requiring power from the port is plugged into the hub it could damage the hub and/or the system voiding the manufacturer’s warranty.

## MCW-200 Monitor

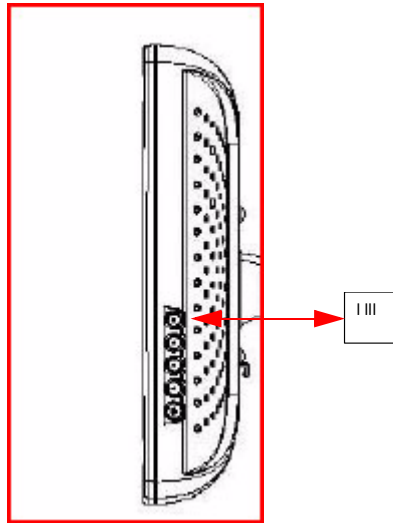
The MCW-200 is configured with a full featured monitor display manufactured by Planar® (model: PT1910MX) and it contains a 19” LCD, speakers and an optional touchscreen version.

To turn the monitor “On” or “Off”, depress the power button (bottom) located on the side of the monitor. Please reference the diagram below.



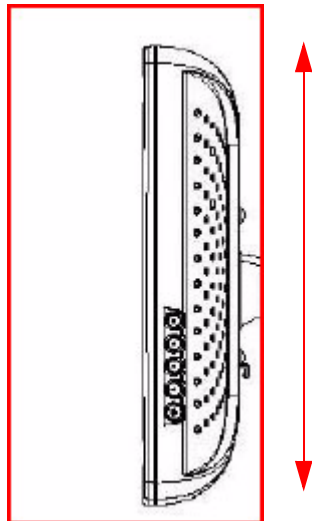


To adjust the speaker volume, use the “Menu” button (top) located on the side of the monitor. Use the On Screen display to choose the “Volume” sub menu. Please reference the diagram below.



**Note:** If the optional touchscreen display is installed, you can touch the screen to navigate to this setting. This too can be achieved by using the mouse integrated into the system.

The Monitor can be moved up or down relative to the work surface.



To adjust the monitor up or down:

- Grasp the bottom of the monitor with one hand.
- Grasp the knob behind the monitor on the left and twist counter-clockwise.
- Once loose, move the monitor up or down. **DO NOT LET GO OF THE MONITOR.**
- Once located where desired, turn the knob clockwise to tighten

## MCW-200 PC

The MCW-200 is configured with a full featured mini PC located behind the monitor. The mini PC is mounted vertically with the "Input" / "Output" ports positioned downwards to keep cable routing manageable and as neat as possible. The mini PC does not need to be accessed by the user directly.

The mini PC delivers 3 USB ports (back), 1 USB port (front), SD memory slot (front), IEEE 1394 port, DVI video port, S-Video port, microphone port, audio port, CD ROM, and a DC power input port.

The PC supports two different alternatives for Networking, a Local Area Network (LAN) RJ-45 connector as well as an 802.11 A/B/G Wireless Local Area Network module (WLAN) operating in the frequency bands of 2.4 GHz and 5 GHz.

**Note:** The LAN connection is only used for PC setup, not while in a mobile application. If the LAN RJ-45 connector is preferred for Networking purposes, the system will be required to be setup and operated within a fixed location as the LAN connector requires the system to be directly terminated to a supporting LAN jack commonly found in the wall of an office or room.

When the PC is installed into the MCW-200 it is configured to support the following ports:

- 3 USB ports
- Antenna output port, to which an antenna cable is attached.
- RJ-45 connector for LAN connection. This port is only used during initial PC setup, and is not the recommended Network interface to use for mobile applications.
- "Audio Out" port, this port is directly terminated to the "Audio In" port located on the monitor.
- The DVI port is directly terminated to the "Video In" port of the monitor.

Please reference the diagrams below to become familiar with the mini PC installed on the MCW-200.







## MCW-200 USB Camera

The MCW-200 is configured with a USB camera located above the monitor. The USB camera can be used as a still camera. Consult your software applications Engineering department for cases where the camera can be used.


The USB camera is manufactured by Microsoft® and can be rotated easily for use in either front or back of the system as well as up or down.



## MCW-200 external RF Antenna

The MCW-200 is configured with a mini PC that supports Wireless Networking in the frequency bands of 2.4 GHz and 5 GHz. The mini PC is installed behind the display monitor. As a result, a typical external "Whip" antenna cannot be used for transmitting and receiving wireless connectivity or data.


The PC is located between two metal mounting plates which dampen the antenna's performance. Because of the dampening performance characteristics, the MCW-200 requires the antenna to be located in a different location. The wireless antenna is located on top of the USB camera to maintain optimum performance, connectivity, and data throughput.

 **WARNING:** Do not attempt to service the wireless communication device built into the MCW-200's mini PC or external RF antenna. Such action may void the warranty on the MCW-200 PC. Contact your Motion Reseller or Motion Computing for information about servicing your wireless communication device.

## MCW-200 Power System

The MCW-200's power system is installed under the base enclosure. The power system contains an AC power supply, DC power supply, and two Sealed Lead Acid (SLA) batteries. This enclosure contains dangerous voltage components and should not be accessed by the user.

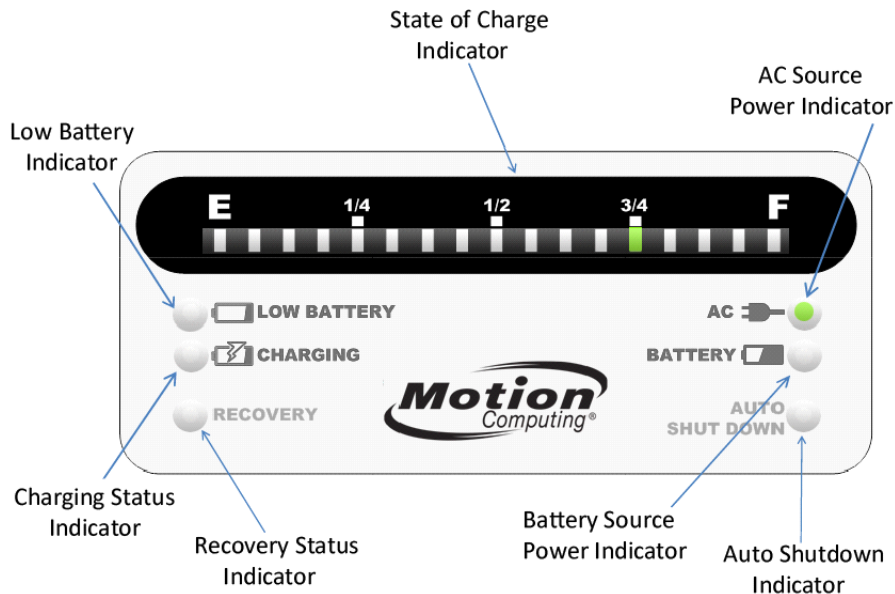
**Note:** DO NOT ATTEMPT TO REMOVE OR OPEN THIS ENCLOSURE.

 Do not attempt to service the power system in the MCW-200. Such action may void the manufacturer's warranty, damage internal components, pose risk of personal injury, and/or electric shock. This system requires servicing by an authorized service professional. Please contact your Motion Reseller or Motion Computing for information about the servicing of the MCW-200 power system.

## MCW-200 Power System Controls

The MCW-200 power system provides long run times on battery power, fast and predictable charging, and various communications methods indicating the power status of the system to the user. The power system is not configured with an "On"/"Off" switch. The system is an always-available technology. The system indicators are located on the "Remote Display / USB Box" located above the laminated work surface as discussed in "MCW-200 Battery State Remote Display / USB Hub box" on page 23.

## MCW-200 Remote display for battery system status



The MCW-200 power system status indicator “Remote Display” has the following indicators provided on the panel for alerting the user of system status.

- **LOW BATTERY INDICATOR** - This indicator is illuminated if the battery charge has been discharged to within 20 minutes of safe discharge levels. If the indicator is illuminated the system should be plugged into an AC outlet to begin the charge sequence.
- **BATTERY SOURCE POWER INDICATOR** - This indicator is illuminated when the system is not plugged into an AC outlet. **Note:** All electrical devices and components are being powered by the batteries.
- **AC SOURCE POWER INDICATOR** - This indicator is illuminated when the system is plugged into an AC outlet.
- **CHARGING STATUS INDICATOR** - This indicator is illuminated when the system is charging the batteries. **Note:** A blinking “Green” light indicates the battery is charging whereas a steady “Green” light indicates the battery is fully charged and is in float mode.
- **AUTO SHUTDOWN INDICATOR** - This indicator is illuminated when the power system is entering an automatic shutdown sequence due to a low battery charge status. **Note:** A steady “Amber” light indicates that the system will perform an orderly shutdown of the Windows® operating system within 10 minutes whereas a blinking “Amber” light indicates that the system will shutdown within 5 minutes.
- **RECOVERY STATUS INDICATOR** - This indicator is illuminated when the battery has entered an “over discharge” condition. An “over discharge” condition happens when the battery power is detected by the control system to be far below the predetermined level of charge. The “Deep Discharge Reconditioning” is an onboard algorithm to charge the batteries in a “Recovery” mode; during this mode the controlled slow charge sequence is performed charging the batteries while minimizing the reduction of the battery’s capacity. This unique process provides the best chance to recover a battery that has been over charged. The typical timeframe for this process may take 24 hours or more to complete. **Note 1:** The system should not be used during a “Deep Discharge Reconditioning” or “Recovery” mode sequence. **Note 2:** An “Amber” light indicates that the battery was over discharged and that the system has entered into an “Auto-Recovery” mode to safely recondition and charge the battery.
- **STATE OF CHARGE INDICATOR**- This user friendly “Fuel Gauge” provides the true State of Charge based on the battery manufacturer’s charge / discharge profiles and Hoffman Engineering proprietary algorithms with multiple temperature compensation inputs.

## Re-initializing the power system

The power system is an always-available system, with no “On” / “Off” switch. There are a few instances when the system may need to be re-initialized, for example, when the system is first installed or the system requires “Recovery” cycle.

### **To re-initialize the system, perform the following steps:**

1. Unplug the cart from the AC outlet (if plugged into one) and wait for a few seconds.
2. Plug in the cart.

Within 1 minute after plugging the system back into an AC outlet, it re-initializes and the “Remote Display” indicates the state of the system.

## Charging the battery

The user can charge the battery at any time. The user does not have to wait until the battery is fully or partially discharged in order to begin a charge sequence.

When the MCW-200 can be stationary near an AC outlet for a period of time, it is recommended to be plugged into an AC outlet so that the system will be ready for use the next time it is needed.

If the “Remote Display” indicates a “Low Battery” status, then the battery charge is low and should be plugged in as soon as possible in order to begin a “charge” sequence.

## Recharging the battery

The “Power System” has intelligent battery monitoring and control. To protect the battery from full discharge which could reduce the life of the batteries, the “Power System” takes the following steps to reduce problematic function:

- The actual electrical use by the “Power System” is monitored in real time.
- The rate of use, along with the state of charge, as well as the age of the batteries is used to determine an accurate estimate of actual run-time.
- The current charge is indicated at all times on the “Remote Display” panel.
- When the battery charge is low, the “Low Battery” LED will become illuminated. The system should be plugged into an AC outlet to begin the “Recharge” sequence.
- If the MCW-200 continues to be operated without being plugged into an AC outlet, there will be an audible “beep.” The “beep” continues until the power system begins the “Auto Shutdown” sequence.
- Once the battery charge falls below the predetermined threshold, the “Power System” will send an “Auto Shutdown” command to the mini PC. **Note:** A shut-down of the PC will slow the rate of discharge of the batteries.
- If the MCW-200 is not plugged in and the battery charge level falls below the maximum predetermined threshold, the “Power System” will shut off. To re-awaken the “Power System” plug the MCW-200 into an AC outlet and begin the “Re-initializing” sequence described in “Re-initializing the power system” on page 32.

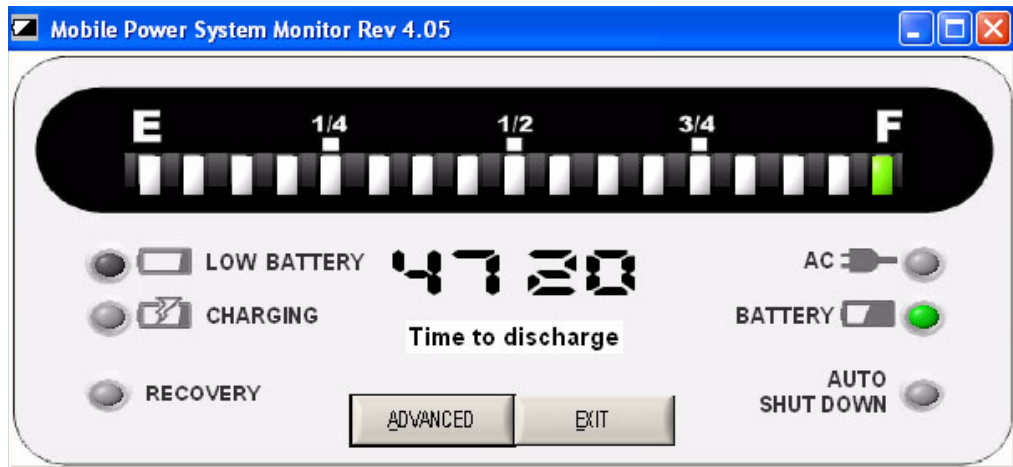


## On-screen features

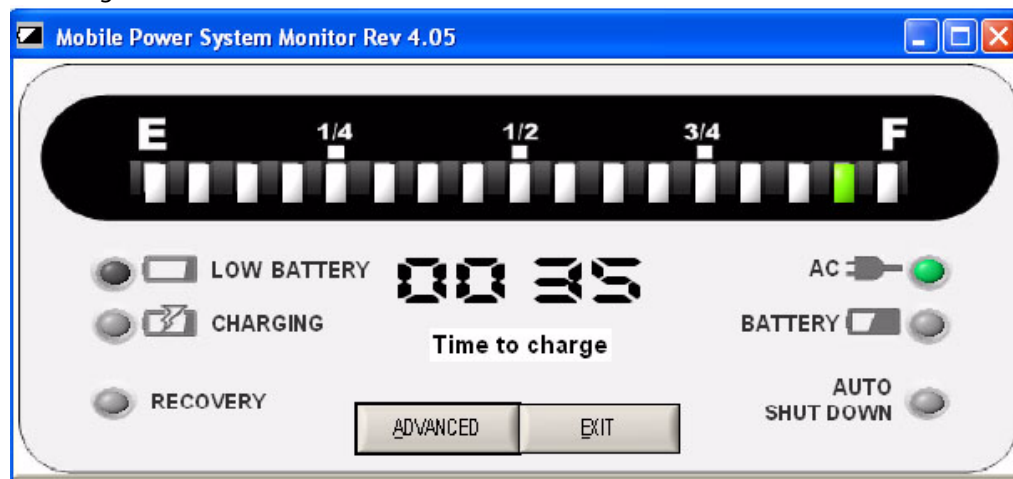
The MCW-200 includes a software application to help manage the “Power System”. The on-screen Graphical User Interface (GUI) is an easy to use interface that is a supplement to the “Remote Display” described previously in this manual.

The on-screen display is available to show the “Power System” state. It looks like the “Remote Display” that is mounted beneath the monitor, except that the on-screen display includes a “Time” field. This “Time” field indicates the following power states of the battery.

- **Time to Discharge** - Indicates the estimated “Time to Discharge” time in hours and minutes (HH:MM) before the “Power System” will need to be plugged into an AC outlet. The time displayed is the usable time the MCW-200 can be operated before a “Recharge” sequence is required.



- **Time to Charge** - Indicates the estimated “Time to Charge” in hours and minutes (HH:MM) while the MCW-200 is plugged into an AC outlet before the batteries are fully charged.



- --:-- - If the hour and minute are shown as dashes and the **"AC"** LED is illuminated, this indicates that the MCW-200 "Power System" has been plugged into an AC outlet within the last 5 minutes. During the 5 minute time period after being plugged into an AC outlet, the "Power System" is calculating the time until the batteries are fully charged. The System can be operated during this time.
- --:-- - If the hour and minute are shown as dashes and the **"Battery"** LED is illuminated, this indicates that the MCW-200 "Power System" has been unplugged from an AC outlet within the last 5 minutes. During the 5 minutes after being unplugged from an AC outlet, the "Power System" is calculating the remaining usable time of the "Power System" before it will need to be plugged into an AC outlet for the "Recharge" sequence.

## MCW-200 Mobility and locking

The MCW-200 includes a base with casters that are lockable. The base casters are designed for ease of movement. There are two types of casters configured on the base of the MCW-200.

- **Gray Pedal Casters** -These pedals are located on each individual caster exposed to the user when facing the work surface. Depressing these caster pedals with the foot will keep the MCW-200 from rolling.
- **Black Pedal Casters** -These pedals, located on opposite corners from the “Gray Pedal Casters,” are casters that are configured with “Black” locking features. Depressing these pedals with the foot will make it easier to steer the MCW-200 during long distance mobility, tight spaces, or corners requiring many turns.



## Base pedal for column movement

There is a pedal located in the front of the MCW-200 base. This pedal is used to move the upper work area up or down. To raise or lower the upper work area perform the following tasks.

- Grasp the 2 hand holds molded into the front of the work surface.
- Depress and hold down the foot pedal located in front of the base.
- Push the work area up or down as desired.
- Release the foot pedal to lock the work area at the desired height.

# Cleaning the MCW-200

## Cleaning in a health care environment

This section describes the cleaning procedures for the MCW-200 in a health care environment.

### Disinfecting procedures

You should periodically disinfect the MCW-200 according to the institutional policies of surface and equipment safety and cleanliness.

According to the Centers for Disease Control, "items that do not ordinarily touch the patient or touch only intact skin are not involved in disease transmission, and generally do not necessitate disinfection between uses on different patients".<sup>1</sup> We recommend using an EPA-approved low-level disinfectant when general cleaning is required.

If the MCW-200 becomes soiled with blood or other body fluids, chemical germicides that are EPA-approved for use as hospital disinfectants and that are tuberculocidal/virucidal when used at recommended dilutions and contact times can be used. Visibly soiled areas should first be cleaned and then chemically decontaminated. For disinfection, the cleaned areas should be moistened with the appropriate germicide and allowed to air dry.<sup>2</sup>

If an MCW-200 is used with patients who are infected or colonized with vancomycin-resistant enterococci or other drug-resistant microorganisms judged by the infection control program (based on current state, regional, or national recommendations, to be of special or clinical or epidemiologic significance or with highly virulent microorganisms such as Ebola or Lassa), then the MCW-200 should be dedicated to one patient or patient cohort or subjected to low-level disinfection between patient uses.<sup>1</sup>

### Training and documentation considerations

All users of the Motion Clinical Workstation in the health care environment should be provided with training on proper cleaning procedures. Cleaning procedures should be added to the institution's policies and procedures for infection control.

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1. Centers for Disease Control and Prevention. "Sterilization or Disinfection of Medical Devices-General Principles." 2002.  
<[www.cdc.gov/ncidod/dhqp/bp\\_sterilization\\_medDevices.html](http://www.cdc.gov/ncidod/dhqp/bp_sterilization_medDevices.html)> (20 Sept. 2006).
  2. Centers for Disease Control and Prevention. "Sterilization or Disinfection of Patient-Care Equipment-HIV Related." 2000.  
<[www.cdc.gov/ncidod/dhqp/bp\\_sterilization\\_patient\\_care.html](http://www.cdc.gov/ncidod/dhqp/bp_sterilization_patient_care.html)> (20 Sept. 2006).