



# **Cleaning and Disinfection: Approaches Recommended by Motion Concepts**

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# Cleaning and Disinfection:

## Approaches Recommended by Motion Concepts

Motion Concepts is a manufacturer of modular power positioning systems and the Matrx line of seat cushions, backs, headrests and accessories. We are a Canadian-based company that delivers high-quality products around the world. As a leader in the medical device industry, Motion Concepts takes cleaning and disinfection very seriously, especially during the times of the Covid-19 pandemic.

We recognize that technicians, clinical partners, and distributors of Motion Concepts products are frequently involved in direct contact with customers, and often customers may need to trial several products to ensure the best choice and fit. Most dealers also provide ongoing services for maintenance and re-adjustment of the seating and mobility equipment over the lifetime of the product.

In this article, we will demonstrate how to approach cleaning and disinfection of Motion Concepts products following the best infection prevention and control practices.

First, let's review some terms and public health requirements:

**Cleaning:** "The physical removal of foreign material (e.g., dust, soil) and organic material (e.g., blood, secretions, excretions, microorganisms). Cleaning physically removes rather than kills microorganisms. It is accomplished with water, detergents and mechanical action" (PHO, 2018, p. 2).

**Disinfection:** The inactivation of disease-producing microorganisms by a disinfectant product applied to surface or equipment. Medical equipment/devices must be cleaned thoroughly before effective disinfection can take place (PHO, 2018). Disinfection may not kill all bacterial spores.

For any equipment that must be disinfected, thorough cleaning is required to remove organic material first. This may be accomplished through a two-step process – cleaning followed by a disinfection.

When the chemical falls under the category of cleaner and disinfectant, both may be achieved in one step, as long as the organic material, debris, and other contaminants are effectively removed, and the specified product contact time is achieved for disinfection.

## Health Care Settings

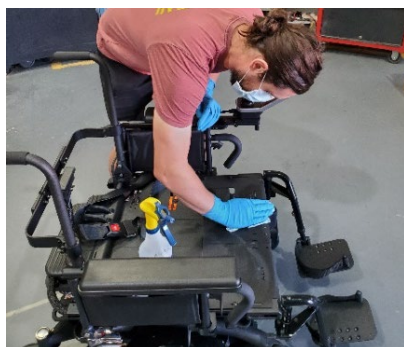
In Canada and the United States, all the equipment, furnishings, and surfaces used in health care settings shall be cleanable and disinfectable. This rule applies to all situations where more than one person may use the same equipment. Low-level disinfection is required for non-invasive medical equipment, noncritical equipment and surfaces meant for contact with people's intact skin.

In the assistive device industry, a demo product may be trialed before a decision about the most appropriate prescription is made. Before trialing the wheelchair, make note of soft and hard surfaces and different approaches to disinfection that they require.

### Wheelchair Hardware:

Cleaning and disinfection of wheelchair hardware in a health care setting may be achieved by wiping the wheelchair hardware – canes, handles, composite or vinyl armrests, leg rests, hand rims - with a facility-approved RTU (ready-to-use) disinfectant wipe, or wiping with a cloth sprayed with a disinfectant\*.

*\*Motion Concepts power systems may be cleaned with Spray Nine® cleaner and disinfectant or an alternative.*



*Motion Concepts employee cleaning and disinfecting the seat pan of a power chair*

### Wheelchair Seating (Soft Surfaces):

Whenever a customer is offered to try a Matrx cushion, backrest, or head rest:

- use special Matrx infection control covers or wipeable slipcovers that allow disinfection\* between patients



*\*Accel, Accel Prevention, 3M, Optim 33, and PREempt ready-to-use disinfecting wipes are approved for use on Matrx wipeable infection control covers and slipcovers.*

- or protect the product with plastic or polyethylene bag that may be disinfected or replaced later.



# Home, Retirement, or Long-Term-Care Residences

## Cleaning:

Equipment used in a home or long-term-care home environment where residents use their own individual wheelchairs and cushions should be maintained in a clean and functional condition.

- All the fabric covers for Matrix cushions, backrests, and head rests may be wiped down with a damp cloth to remove visible and/or solid pieces of food or dirt.
- Organic material (e. g., secretions or blood) may be wiped off the outer surface and covers of soft seating products using a cloth moistened with 0.1% chlorine solution\*

*\*Please note that chlorine/bleach is a strong chemical that may cause damage or discoloration to the woven fabrics. Therefore, Matrix covers should not be immersed in bleach/chlorine solutions. If chlorine solution is used for wiping surface with a cloth, wiping or rinsing the outer cover as soon as possible with clean water is recommended to prolong life of a product.*

- Alternatively, fabric covers for cushions, backrests, and head rests should be laundered regularly as a part of a routine practice and good hygiene:

Matrix cushions, backs, and head rest covers made of Meshtex, Spacetex, or Startex textiles may be machine-washed at 60 °C or 140°F with neutral detergents (Tide, Persil). It would be ideal to use the delicate machine cycle, making sure all the zippers are closed, and placing covers in a laundry mesh bag. It has been reported that 60 °C combined with removal of dirt and laundry with mild soap or detergent successfully deactivates corona viruses like SARS and Covid-19 (Pastorino et al., 2020).



machine wash temperature max 60°C



do not bleach



tumble dry low or cold



do not iron

Regular cleaning of the wheelchair arm rests, joysticks, seat pan, frames, base and mechanical hardware would prolong the life of a wheelchair. Regular cleaning should involve wiping these components with a cloth moistened with mild soapy water. As long as a wet cloth is used, and the wires and electronics are not subjected to direct contact with water or cleaning solution, the function of the wheelchair and its components will be preserved.

## Disinfection:

If a wheelchair is used by multiple people, it has to be cleaned and disinfected after each use.

Personal (individual use) seating and mobility equipment in a home or retirement home setting does not need to be disinfected unless the person has recovered from an infectious disease and returns to using the same equipment after recovery.

Disinfection of personal equipment is recommended if a wheelchair gets exposed to the airborne or droplet pathogens, such as those originating from a coughing and/or sneezing person. Similarly, in an event of an actual or potential exposure to the pathogens with bloodborne or contact mode of transmission, disinfection of a wheelchair would reduce risk of contracting infection.

When disinfection is needed, the wheelchair hardware (not the textile surfaces) may be sprayed with Spray Nine® or similar product formulated to accomplish both cleaning and disinfection (2-in-1)

When you use a product that offers 2-in-1 cleaning and disinfection, remember that:

- For the disinfectant to be effective, all the debris and visible dirt must be removed by rubbing them off the surface first
- Although cleaning and disinfection may be achieved in one step, facility directions with respect to a disinfection of choice and disinfectant-specified dwelling time\* must be followed

*\*Dwelling time is how long the surface with applied disinfectant stays wet before the chemicals evaporate or get wiped off*

*Motion Concepts  
employee  
cleaning and  
disinfecting a  
wheelchair  
hardware*



### **Cleaning and Disinfection of Electronics:**

Please remember that electronics must be protected from direct contact with fluids.

To clean and disinfect wires or joystick, you should avoid spraying them directly and should instead **spray the disinfectant onto the cloth** and then wipe surfaces with it:



*Motion Concepts employee cleaning and  
disinfecting the joystick*



## Seating and Mobility Suppliers and Technicians

As much as we would like to believe that majority of seating and mobility systems are sent to technicians in a clean and disinfected state (Yes, this is an expectation!), we know that both vendors and manufacturers often receive equipment that presents an occupational hazard.



*The images above are generously provided by Mobility Care Co <https://www.mobilitycare.ca/>*

When a manual or power wheelchair requires the attention of a technician, safe occupational health practices should be followed to minimize exposure to potentially contaminated equipment. Cleaning and disinfection of wheelchairs prior to any mechanical work would ensure infection prevention and control is maximized for everybody involved.

In a perfect world, soft seating should not leave a customer's home/residence; cushion covers should be cleaned or laundered at home; cracked seating covers should be replaced by the owner; and food and hair should be removed prior to the pickup of equipment from the customer.

In the real world, we understand that not every customer has adequate strength or manual dexterity to pre-clean their wheelchair. Also, not everyone has the luxury of assistance from family, friends or formal caregivers.

**We recommend approaching cleaning and disinfection of the used wheelchairs as follows:**

1. Before you touch any wheelchair, determine where it came from. In different jurisdictions, public health units, centers for disease control, or border services may impose shipment quarantine regulations. As an example, a 72-hour no-touch policy exists for equipment arriving to Canada from across the border. During this time, equipment must stay in a designated area and should not be touched by anybody.
2. Before proceeding with hardware adjustments, identify which parts of the power wheelchair system can be cleaned and disinfected and which ones cannot.



**Sip-n-puff:** for individual use only, client should have disconnected the mouthpiece and left it at home. The silicon tubing poses a similar hazard. Both should be bagged and handled only in gloves.

**Soft seating** (headrest, back, cushion) are made of textile, should have been left at client's home, but may be laundered - if vendor provides such services – with following manufacturer instructions. Otherwise, it should be bagged until the service of the chair is completed.

**Seat belts** may be laundered, but if such service is not provided, they should be either detached, labeled and bagged, or remain on the chair at all times.

**Arm supports** in this case may be disinfected with spray. In cases where the surface is made of textile, it should be bagged prior to the start of a technician's work on hardware.

**Power hardware** may be disinfected with 2-in-1 cleaner and disinfectant taking care not to subject electronics to a direct contact with water or liquid





3. If any parts/components have textile surfaces, they may need to be covered (using a plastic bag over the head rest, cushion and backrest) or laundered

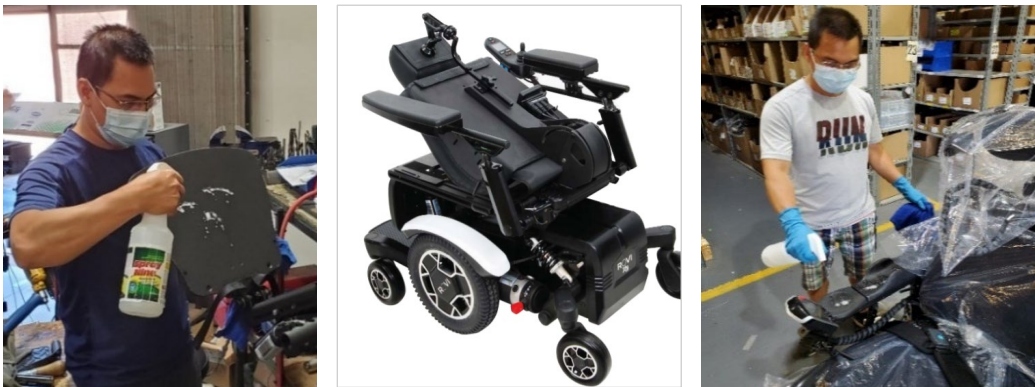


*Motion Concepts employee bagging the cushions of the seat, back, and the head rest*

4. If cushions and back rests are protected with Matr<sup>x</sup>® Infection Control covers, or cushion arrived in a Reversible Matr<sup>x</sup>® cover that may be turned infection control side up, you may disinfect seating surfaces using ready-to-use disinfecting wipes Accel, Accel Prevention, 3M, PREempt, or Optim 33.



5. Frames, back canes, vinyl or plastic arm rests, hardware, and electronics may be cleaned and disinfected using soft cloths and disinfectant solutions such as Spray Nine® or ready-to-use disinfectant wipes



*Motion Concepts employee disinfecting the wheelchair foot plate, hardware, and arm rest*



6. Please remember not to spray directly on electronics and wires (spray on cloth first instead):



*Motion Concepts employee cleaning and disinfecting the joystick*

## Stay Safe and Practice Prevention!

It is always the best practice to work in gloves and wash your hands regularly – this will ensure you protect yourself from any potential infectious agents and protect your hands from accidental cuts, scratches, or blisters.

As the Covid-19 pandemic continues around the world, most jurisdictions still have additional respiratory precautions in place. To protect yourself and others, wear the mask!



*Josh Ma, Motion Concepts*

### References:

<sup>1</sup> Pastorino, B., Touret, F., Gilles, M., de Lamballerie, X., & Charrel, R.N. (2020). Evaluation of heating and chemical protocols for inactivating SARS-CoV-2. doi: 10.1101/2020.04.11.036855

<sup>2</sup> Public Health Ontario (PHO). *Best Practices for Environmental Cleaning for Prevention and Control of Infections in All Health Care Settings*, 3<sup>rd</sup> edition. (April 2018). Retrieved from <https://www.publichealthontario.ca/-/media/documents/b/2018/bp-environmental-cleaning.pdf?la=en>