



## INSTRUCTION SHEET

# ANNUAL PREVENTIVE MAINTENANCE



This document describes the **recommended annual preventive maintenance** for Motion Composites wheelchairs. This operation should **only be performed by a qualified technician**.

For details about **removing, installing, and adjusting parts or assemblies**, refer to the wheelchair **user manual** and **parts manual**. They are available online at [motioncomposites.com](http://motioncomposites.com) in the **Tools and Forms** section. All other technical document mentions below can also be found online in the **Support and Education/How-to documents**. For **third-party components** such as **NXT seating** and **Vicair products** refer the **user manual of the product**.

Please use the **Annual Preventive Maintenance Checklist** (MC-MTKG-CLK-0001) to perform preventive maintenance on a customer wheelchair.

For **information** or **part ordering**, contact your **sales representative** or the **Motion Composites Customer Experience team**.

Telephone: 1-866-650-6555

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[support@motioncomposites.com](mailto:support@motioncomposites.com)



**ONLY USE MOTION COMPOSITES CERTIFIED PARTS.** Using non-approved third-party parts may affect wheelchair integrity and operation and can potentially represent a risk of injury for the user or cause damage or malfunction of the wheelchair. This can also void the warranty (refer to the user manual for details).

### Wheelchair models:

- All models

### Material and tool(s) required:

- Worktable
- The Motion Composites wheelchairs are designed to be serviced with regular tools. All screws and bolts are standard and can be adjusted with wrenches, socket wrenches, or hexagonal keys.
  - Hexagonal keys: 2 mm - 2.5 mm - 3 mm - 4 mm - 5 mm
  - Keys: 10 mm - 11 mm - 1/2" (13 mm)
  - 7/16" (11 mm) - 3/4" (19 mm) - 26 mm
  - Phillips screwdriver
- Torque wrench
- Measuring tape
- Wheelchair support or any kind of object to hold the wheelchair
- Spoke wrench
- Medium strength threadlocker adhesive (Blue *Loctite*®)
- **Do not use air or electric tool, tightening should be done manually**

## CLEANING



- Before maintenance, we suggest cleaning the wheelchair thoroughly. This will help you find small defects.
    - Use a soft clean cloth with mild soap and water to clean.
    - Rinse and dry the adequately.
  - For any subsequent part cleaning while inspecting the wheelchair use a dry cloth or a damp cloth with mild soap then rinse and dry
  - Use the same product and technique for any subsequent part cleaning while inspecting the wheelchair.
- **DO NOT** use **solvent** cleaners.
  - **DO NOT** use **abrasive** cleaners.
  - **DO NOT** use a **pressure** cleaner.



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### GENERAL COMMENTS ON INSPECTION AND TESTING

- When **inspecting** the wheelchair for annual maintenance, the technician should:
  - Check **all** parts for any **apparent damage** like **broken, cracked** and **bent** parts
  - Check for **normal wear** and **premature** or **abnormal wear** of parts
  - Check for **missing components** on parts
  - Check the **tightness** of **all bolts, nuts, and screws**
    - Apply **medium strength threadlocker adhesive** on any loose threaded parts you tighten.
  - Check for **damaged** bolts, nuts and **screws** and replace them if required. **Replace damaged screw and bolt heads**
  - **Verify the torque** of all the **screws, bolts or nuts** that **requires a specific torque**
    - See also “**Torque Specs Table**” technical guide online
  - **Replace any damaged** parts.
- Motion Composites wheelchairs **do not require any lubrication to work properly** unless specify
  - If you find a part is stiff or does not turn freely, it may need cleaning or, the part is bent or damaged
- This procedure is **general**. It applies to **all Motion Composites wheelchair models** and **only to manufacturer installed parts on the user’s wheelchair**.

### PARTS TO CHECK, INSPECT, AND TEST

- **Frame:**
  - Check **frame straightness**
  - Check for any **deformation, unusual wear, and cracks**
  - **Inspect all solders and joints**
  - **Test folding and unfolding** the wheelchair
- **Rear wheels:**
  - Check **tire pressure** (pneumatic tires only)
    - **Recommended pressure** is indicated **on the tire**
    - Do not over inflate or under inflate tire
  - Inspect **rims, spokes and nipples** or **mag**
    - Check **spoke tension** by hand. They should not bend easily and they should not rattle when shaking the wheel.
    - Rims or mags should be straight
    - See also “**Wheel Rim Straightening Procedure**” online
    - Tension any loose spoke with a spoke wrench
  - Check for **tire wear**, worn treads, **deformation, cracks, flat spot, debris**, or **puncture** (even if tire is not leaking air on pneumatic tire)
  - Check **proper tires seating** on rims or mags
  - Verify if **rear wheels** are **turning freely**
  - Check for **wheel axle rod** and **housing** cleanliness and axle rod straightness.
  - **Test quick release axles:**
    - Check if the axle engages and locks properly
    - Inspect **rear wheel mount** on **mounting plates** or **mounting tubes** including amputee adjustable axle plate:
      - No looseness
      - **Adequate torque** on retaining nut or screw. See also “**Torque Specs Table**” technical guide online
  - Check if the **wheels** are **not too close** to the **armrest** or **other parts** of the wheelchair



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- **Rear wheels (continued):**
  - Inspect **handrims** and optional **thumb pieces**:
    - Tightened solidly to the rim
    - No deformation
    - No sharp edges
    - Free from grease or other contaminants
- Inspect and test **One arm Drive**
- **Check** toe-in or toe-out and perform a **wheel alignment if needed**

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### PARTS TO CHECK, INSPECT, AND TEST

- **Front wheels:**
  - Remove any debris from the front wheel
  - Inspect caster wheels
  - Both casters must touch the ground at the same time
  - Wheels should turn freely
  - Ensure that front stem is perpendicular to floor.
    - Adjust caster angle if required. See also “**Eccentric Caster-Housing For Front Wheel Caster**” assembly instructions online
- **Wheel locks including attendant lock:**
  - Ensure wheel locks are working properly
    - Stem embed into the tire rubber when in lock position, preventing the wheel from turning. Tire must be inflated properly
    - See also “Grade Aid Adjustment” instruction sheet online
- **Anti-tipper and tip assist:**
  - Make sure anti-tipper and tip assist tubes are well locked in place
  - Check if anti-tipper heights are adequate
  - Test swing-away anti-tipper
    - See also “**Swing Away Anti-Tipper**” installation instructions online
- **Footrest, elevating legrest and residual limb:**
  - **Inspect and test the footrest mechanism:** removing, installing, pivoting and folding the different parts, depending on the type of footrest (flip-up or auto-folding)
  - **Check adjustable heel loop**
  - **Check calf strap**
  - **Inspect elevating legrest and test its mechanisms:** angle mechanism and calf pad mechanism. **Test** removing, installing, and pivoting legrest
  - **Inspect residual limb support. Test** removing, installing, and pivoting **residual limb support**
- **Armrests and side guards:**
  - Inspect armrest sides, arm pads and installations on the wheelchair
  - Test height adjustment mechanisms and flip back mechanisms
  - Make sure the locking system work properly
- **Backrest components:**
  - Inspect and test backrest components: attachment to the frame, back canes, handles, rigidizer bar, fold down mechanism, stroller handle, and stabilizer bar
    - **IMPORTANT:** If the fold down backrest mechanism (rigid wheelchairs) seems unstable or tend to lean backward, contact your **sales representative** or the **Motion Composites Customer Experience**. Some parts may be under warranty.
- **Back upholstery:**
  - Verify straps and back upholstery
  - Check **back upholstery tension** and **adjust tension** as required.
  - See also “**Tension Adjustable Backrest**” assembly instructions online
  - **AVOID over-tightening of the strap assembly** as this may cause damage to the integrity of the back canes and limit ability to unfold wheelchair
- **Seat and positioning belt:**
  - Check seat upholstery tension. It should be straight when the wheelchair is open and set in position. **Adjust tension** as required
  - Ensure that the seat sling is in good condition (e.g. no fraying, no wear and no tears)
  - **Inspect positioning belt** especially at **attachment points** on the frame. **Test locking mechanism** or **Velcro**
- **Fabrics:**
  - Visually inspect fabric for protruding metal, rips, cracks or tears especially at fixing points
- **Accessories and other parts:**
  - Check all four (4) transit tie down
  - Inspect cane carrier
  - Inspect oxygen tank holder
  - Inspect spoke guards
  - Inspect neoprene impact guards
  - Inspect headrest



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### ADJUST THE WHEELCHAIR

Verify and adjust the wheelchair depending on the user condition, needs and preferences and according to the directions of a professional health care advisor:

- Seat-to-floor height
  - **WARNING:** Any modification to the seat-to-floor height involves adjustment of both anti-tippers, front caster angle, and rear wheel toe-in/toe-out if with a camber angle different than 0°. It is important to make these adjustments before using the wheelchair as to reduce risk of injury.
- Center of gravity
- Anti-tipper height
- Footrest height
- Footplate angle
- Legrest length
- Residual limb support position left, right, up and down position, closer to or further from the seat and angle
- Back cane position
- Armrest position
- Armrest height
- Side guard position
- Push handles height
- Backrest depth and height
- Back angle
- Back upholstery tension
- Headrest height and position

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### ROAD TEST

- Make sure wheelchair rolls easily and straight.
  - If the wheelchair tends to veer to one side while coasting, it could be that the wheels are out of alignment or that some spokes have become loose or are damaged.
- Check for vibrations, noise, or any deviation from normal functioning.
- Test the wheel locks
- Check the front wheels shaking or wobbling and flutter. Adjust caster flutter if required
- Correct any problem detected

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### FINISHING TOUCHES

- **Apply paint touch-ups** where needed. Please use official **touch-up color bottles from Motion Composites** for a **perfect color match with the wheelchair** (different part numbers may appear in older part manuals; use the part number below to order):
  - 0070358A-00 Color touch-up **Fuchsia**
  - 0070359A-00 Color touch-up **Burgundy**
  - 0070360A-00 Color touch-up **Ferrari red**
  - 0070361A-00 Color touch-up **Sunkissed orange**
  - 0070362A-00 Color touch-up **Acid green**
  - 0070363A-00 Color touch-up **Monster green**
  - 0070364A-00 Color touch-up **Sapphire blue**
  - 0070365A-00 Color touch-up **Steel blue**
  - 0070366A-00 Color touch-up **Charcoal**
  - 0070367A-00 Color touch-up **Black**
- **Protect the paint** with a coat of **non-abrasive automobile wax**.