



## INSTRUCTION SHEET

# CONVERT A STANDARD WHEELCHAIR INTO A ONE ARM DRIVE WHEELCHAIR



This document describes how to **convert a standard driving wheelchair** to a **One Arm Driving (OAD) wheelchair**.

### Wheelchair model(s)

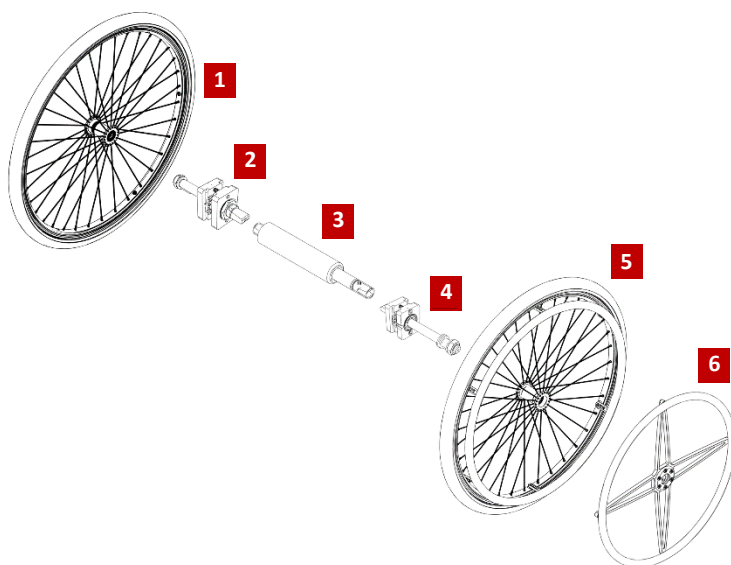
- HELIO C2/XC2/A6/A7/Kid/K
- CHRONOS
- PLATINUM1/2
- COBALT 1/2

### Tool(s) and materials required

- Torque wrench
- Socket wrench
- 26 mm open-end wrench or 26 mm hexagonal socket
- Hexagonal socket 19 mm
- 5/8" open-end wrench
- Hex key (Allen key): 5 mm
- Flat head screwdriver
- Hammer
- Worktable or flat, leveled surface
- Wheelchair support or any other object to support the wheelchair

### PARTS REQUIRED

- Before starting the conversion of the wheelchair, make sure you **have all the parts** on hand.
  - **Parts** must be **ordered** through your **representative** or the Motion Composites **Customer Experience Team**. Have the **serial number** of the chair available before ordering.
- The parts you should have are:
  - Two **Newton One wheels** (#1 and #5) **24 inches** with tires
    - The **wheel hub** on the **driving** side (#5) is a standard hub with **two bearings**
    - The **driving wheel** is the one **with a handrim**
    - Unless specifically requested, the **driven wheel** (#1) is the one **without a handrim**
    - If you have ordered a **driven wheel** with a **handrim**, it can be distinguished by the **keyway** on the **outer side of the hub** and a bearing on the inner side of the hub
  - Two **mounts with shafts** (#2 and #4)
    - The appearance of the wheel mount may vary depending on the **type of mounting plate**: V2B (shown) or T2
    - The mount with the **longest shaft** is the one on the **driving wheel side**.
  - **One arm drive handrim** (#6) assembled on a cross link plate
  - A **drive shaft** (#3)
    - The **length of the shaft** you received depends on the **width of the chair**



The **driving wheel** is the one that does the propulsion. It is the one **with a handrim**.

The **driven wheel** is the one that is driven by the driving wheel. It is the one **without a handrim**.



## INSTRUCTION SHEET

# CONVERT A STANDARD WHEELCHAIR INTO A ONE ARM DRIVE WHEELCHAIR

### DISASSEMBLY

- **Note** the **rear seat-to-floor height** and the **position of** the original **wheel mount** on the **mounting plate** (letter or hole, depending on the mounting plate model)
- **Remove** the **wheels** and place the **wheelchair** on a **stand**
- **Remove** the **wheel mounts** but keep the **mounting plates in place**

### INSTALL THE WHEEL MOUNTS

- There are **two types** of **wheel mounts**, as there are **two main families** of rear wheel **mounting plates** on the different models of Motion Composites **folding chairs**
- **V2B rectangular wheel mounts** for **multi-positions mounting plates**:
  - Wheelchair models: **HELIO A7/C2/XC2/Kids/K - PLATINUM 1/2**
- **Oblong wheel mounts T2** for **6 positions non-reversible mounting plates** or for **12 positions reversible mounting plates**:
  - Chair models: **HELIO A6 - MOVE - CHRONOS - COBALT 1/2**



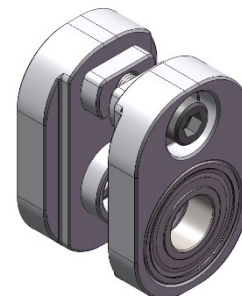
**Multi-positions**  
mounting plate



**12 positions reversible**  
mounting plate



**6 positions non-reversible**  
mounting plate

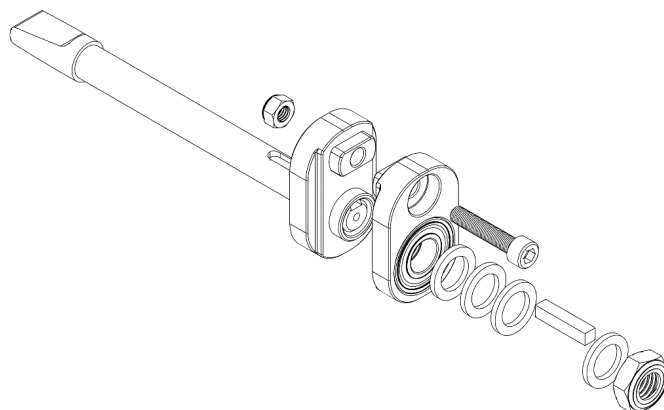




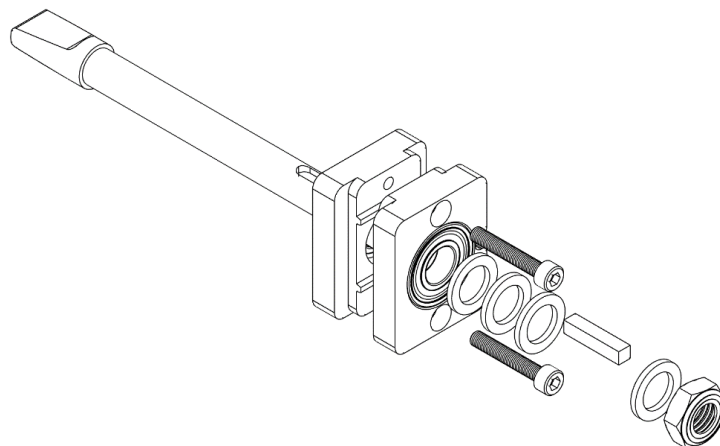
## INSTRUCTION SHEET

# CONVERT A STANDARD WHEELCHAIR INTO A ONE ARM DRIVE WHEELCHAIR

- Make sure you have all the parts for the **wheel and shaft assemblies** shown below.



Wheel assembly for **12 positions reversible** and **6 positions non-reversible** mounting plate  
(driving wheel side shown)



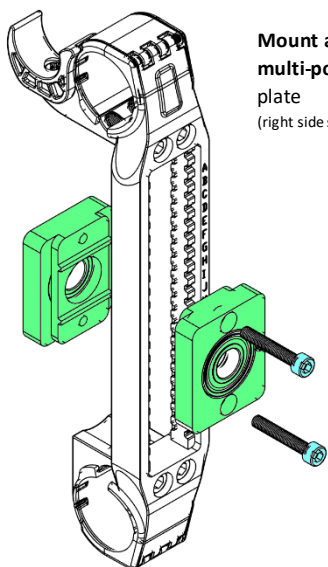
Wheel assembly for **multi-position** mounting plate  
(driving wheel side shown)



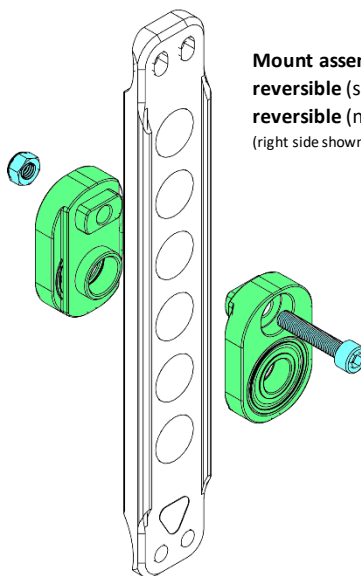
## INSTRUCTION SHEET

# CONVERT A STANDARD WHEELCHAIR INTO A ONE ARM DRIVE WHEELCHAIR

- Assemble the **left** and **right wheel mounts** to the rear wheel **mounting plates** using a **5 mm** hex key
- **Position** the **wheel assembly** on the **mounting plate** in the **same place** as the **previous wheel assembly**
  - **Check** the **rear seat-to-floor height** and **adjust the height of the wheel mounts if necessary**.
- **Do not tighten the screws completely** at this time



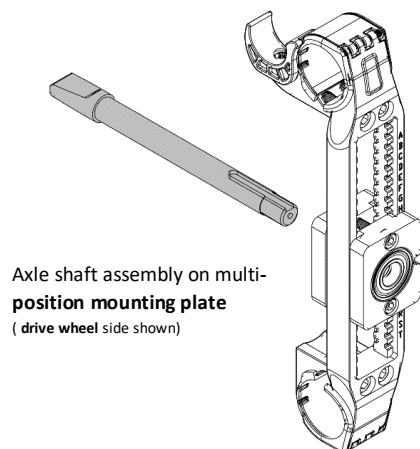
Mount assembly on  
multi-position mounting  
plate  
(right side shown)



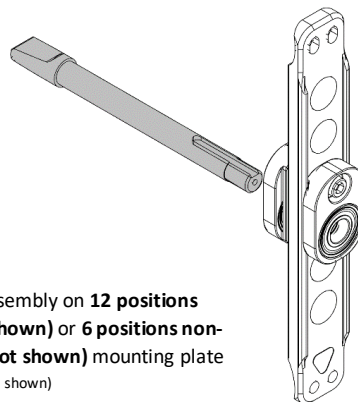
Mount assembly on 12 positions  
reversible (shown) or 6 positions non-  
reversible (not shown) mounting plate  
(right side shown)

## INSTALL THE AXLE SHAFTS

- Insert the **two (2)** **axle shafts** into the **wheel assemblies** with the **threads** to the **outside of the chair**
  - The **long shaft** is installed on the **side of the driving wheel** (the one, where there will be the One Arm Drive handrim)
  - The **short shaft** is installed on the **driven wheel side**
- **Tighten** the wheel mount **screws**. Apply a tightening **torque of 12 Nm**



Axle shaft assembly on multi-  
position mounting plate  
(drive wheel side shown)



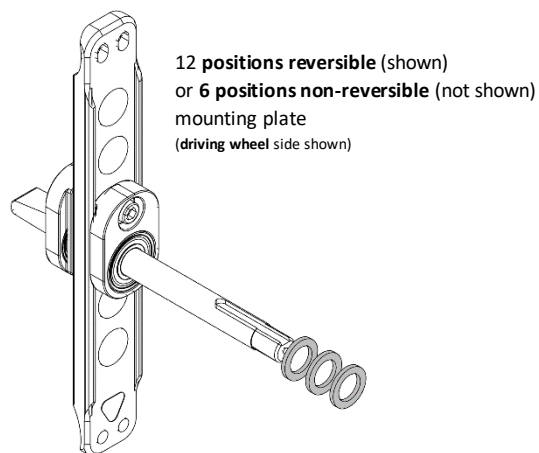
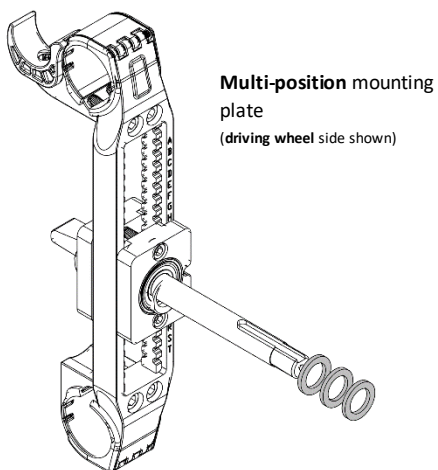
Axle shaft assembly on 12 positions  
reversible (shown) or 6 positions non-  
reversible (not shown) mounting plate  
(drive wheel side shown)



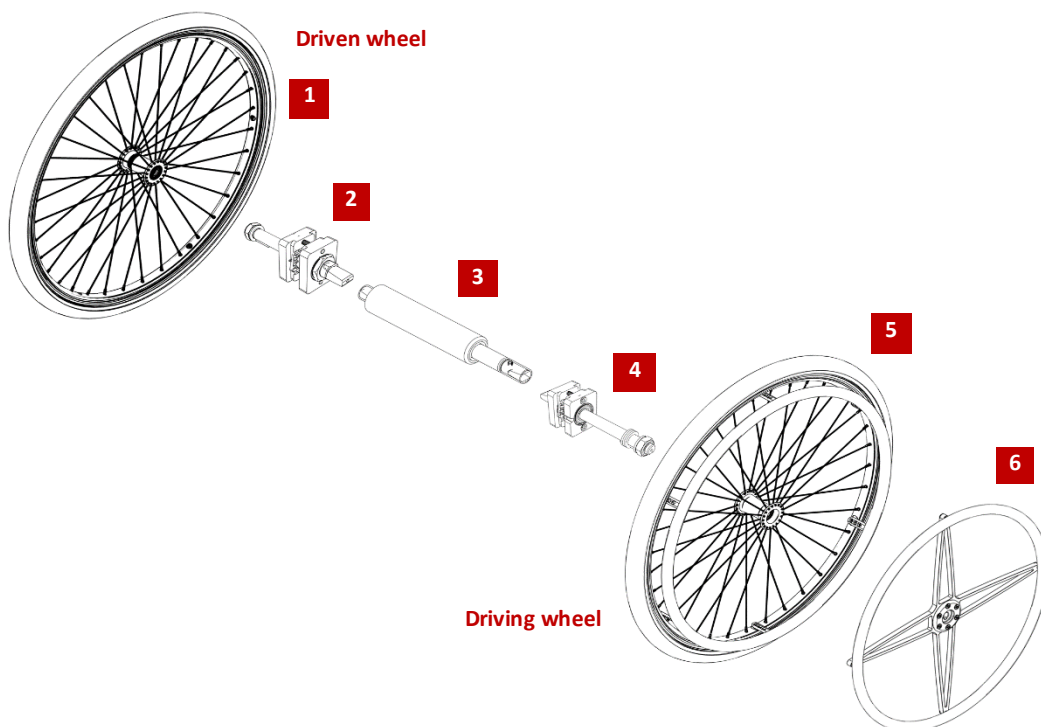
## INSTRUCTION SHEET

# CONVERT A STANDARD WHEELCHAIR INTO A ONE ARM DRIVE WHEELCHAIR

- Insert **three (3) washers** on **each shaft** as shown



- Install the **wheel with the handrim (#5)** on the **long shaft (#4)**, on the **driving wheel side**
- Insert the **One Arm Drive handrim (#6)** on the shaft (#4) on the **driving wheel side**
- Install the **wheel without handrim (#1)** on the **short shaft (#2)** on the **driven wheel side**

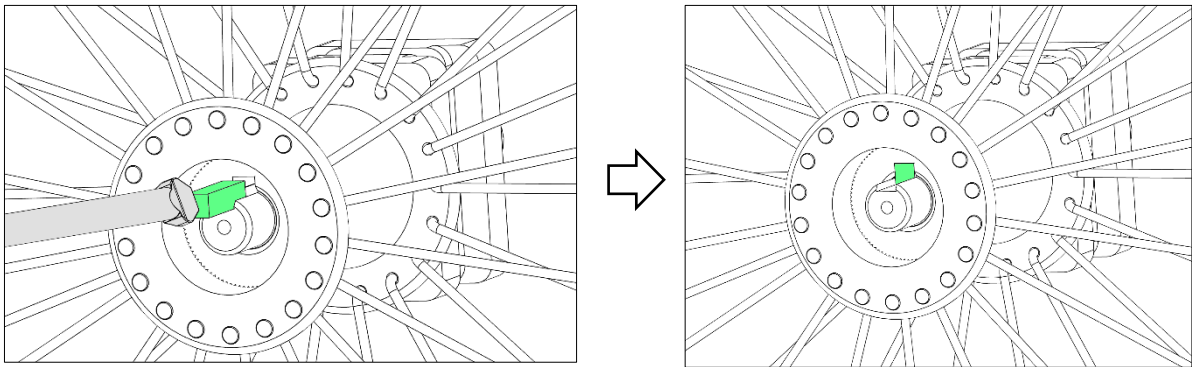


## INSTRUCTION SHEET

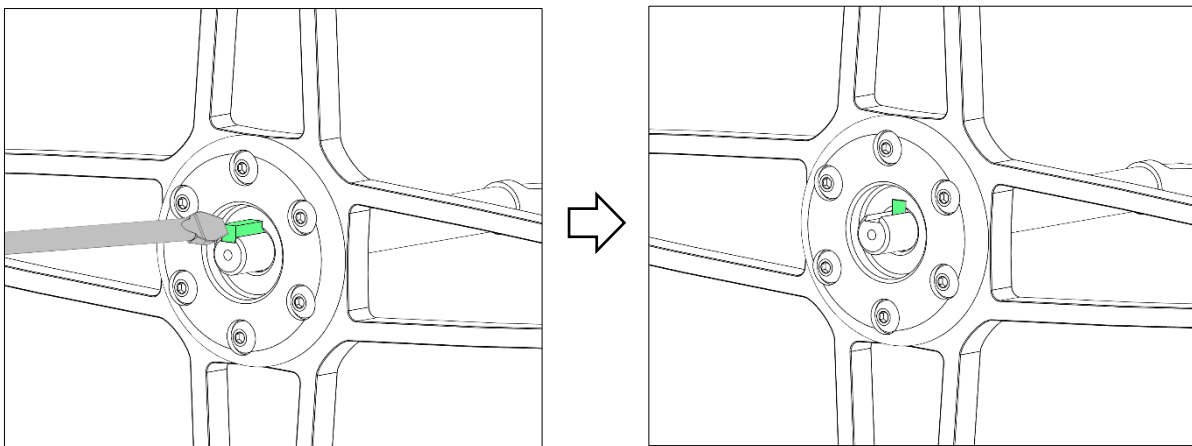
# CONVERT A STANDARD WHEELCHAIR INTO A ONE ARM DRIVE WHEELCHAIR

- Install the **keys** in the **keyways** on **both sides**:
  - On the **driven wheel side**, the **key** is installed into the **wheel hub**
  - On the **driving wheel side**, the key is installed into the **center plate** of the **cross-shaped support** of the **One Arm Drive handrim**
  - Use a **flathead screwdriver** and **hammer** and **gently tap** the key **into** the **keyway** (shown on the left)
  - **Insert** the key **until flush** with the **surface** (shown on the right)

**Driven wheel side**



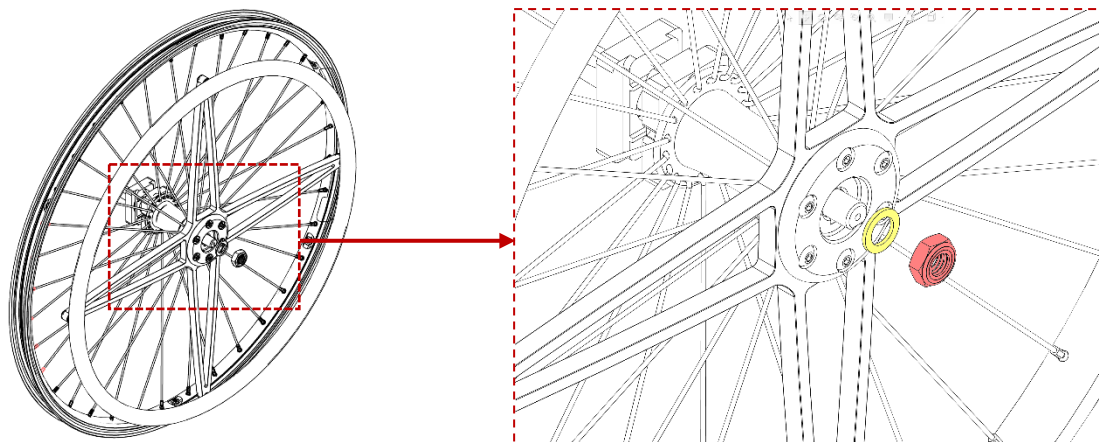
**Driving wheel side**



## INSTRUCTION SHEET

# CONVERT A STANDARD WHEELCHAIR INTO A ONE ARM DRIVE WHEELCHAIR

- Assemble the two wheels to the shafts with a **washer** and a **bolt**
  - Socket wrench and hexagonal socket: **19 mm**
  - Driving wheel shown below. The procedure is the same for the driven wheel
- **Tighten** so that **there is no axial play**, but **not too much so** as **not to restrict the wheel bearings** and **damage the bearings**.  
There is no specific tightening torque to apply



## ASSEMBLE THE DRIVE SHAFT AND TEST THE ONE ARM DRIVE MECHANISM

- Insert the **end of the drive shaft** onto the **shaft of one of the wheels** (#1)
- **Compress** the **drive shaft** and **insert the other side of the drive shaft** onto the **shaft of the other wheel** (#2)
- **Make sure** the shaft is **securely installed** before using the wheelchair
- **Test the One Arm Drive system** by **going straight ahead** and **turning on both sides**

