

# User Manual



## 7100 Low Flyer-I



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## Introduction

The Globetrotter Motion, 7100 Low Flyer-I Hand Rim, is intended for daily use wheelchairs, both indoors and outdoors. It is the result of an intensive development program to address the ergonomic short comings of the traditional hand rim to:

- Ensure that the user's hand is guided to the optimum pushing configuration to reduce associated injuries.
- Assist in the developing the correct pushing posture.
- Have a more relaxed hand grip configuration to reduce hand stresses.
- Relieve the pressure on the carpel tunnel.
- Keep the fingers clear of the attachment tags and spokes to prevent entrapment.
- Increase the hand contact surface area for greater and finer control.
- Improve pushing and braking efficiency.

The user will typically discover several additional benefits in their day-to-day use of the hand rim. Please let us know what these are for you by leaving a review on our website.

The hand rim is manufactured from carbon fibre prepreg material used in the high-performance sport and aerospace industries. This allows the design to achieve a strong, tough, stiff and light weight complex shape.

The hand rim was tested by Globetrotter Motion to conform to the ISO 7176 and additional requirements identified by Globetrotter Motion.

**Note:** the 7100 hand rim is **not a one-to-one replacement** of your current hand rim. Therefore, please ensure you are familiar with the information in this manual and that you complete the "Adaption exercises" to train your hands and pushing method to enable you to use the 7100 Hand rim to its optimum.

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## Specification

Outer Diameter:	525 mm
Interface Diameter:	512 mm
Mass per hand rim:	385 g $\pm$ 5 g
Material:	Carbon Fibre / Epoxy composite
Attachments:	6 x M5 mm bolts
Maximum mass of User:	120 kg

## Safety Instructions

### WARNING

Special care is required for installation and adjustment of your 7100-Low Flyer I Hand Rim.

Take careful note of the points below. If you do not, this may result in **serious injury and/or death**.

For your safety, only an authorized dealer should install, adjust, or service the hand rim.

You must register your hand rims to make a warranty claim (see the instructions in the Warranty Section).

Ensure that you have done the "Adaption Exercises".

Only use your hand rim if it is correctly and securely fitted.

Adhere to all instructions for attaching the hand rim to the wheel. Incorrect fitting could cause the hand rim to fail and void the warranty. Do not exceed 8-12 Nm torque for the attachment bolts.

Always replace the self-locking nuts once removed.

At high speed, or when descending down a hill, be aware that the 7100 hand rim will heat your hand faster than a metal hand rim. Adjust your speed and approach accordingly.

The carbon composite black surface can get hot when exposed

to direct sunlight. Check and allow to cool down before using.

Do not exceed 170°F (77°C) exposure to your hand rims. High temperatures can occur inside an automobile or exposure to an open flame or other heat sources, which may damage the adhesive that holds carbon fibers together.

Watch for hazards while riding, such as potholes, sharp protrusions, and various obstacles. These hazards can damage hand rim.

Any form of crack, puncture, delamination, unusual noise, or change of coloring indicates that the hand rim maybe unsafe to use. Stop using the hand rim immediately and consult your authorized dealer.

Impact or crash damage to composite hand rim may be invisible to the user. Consult your authorized dealer immediately.

Do not use pressurized water for cleaning.

Do not use solvents to clean, only wash with warm soapy water.

Do not use any other material than Stainless Steel for the attachment bolts, washers, and nuts to prevent corrosion.

## Hand Rim Installation

1. Included in the installation kit:
  - (A) Two handrims
  - (B) 6 off M5 pan hex head stainless-steel bolts.
  - (C) 6 off M5 self-locking stainless-steel nuts
  - (D) 6 off shimming washers as required
2. Tools required (not included):
  - a. 5 mm Alan key
  - b. 5-20 Nm torque wrench
  - c. Feeler gauge

### WARNING

3. Trial fit the hand rim to the wheel rim:
  - a. Fit the hand rim to the wheel, ensure that all the tabs slide freely into position without any interference as shown in Figure 1. Should you require any force to position the hand rim, stop immediately and consult your authorized dealer.

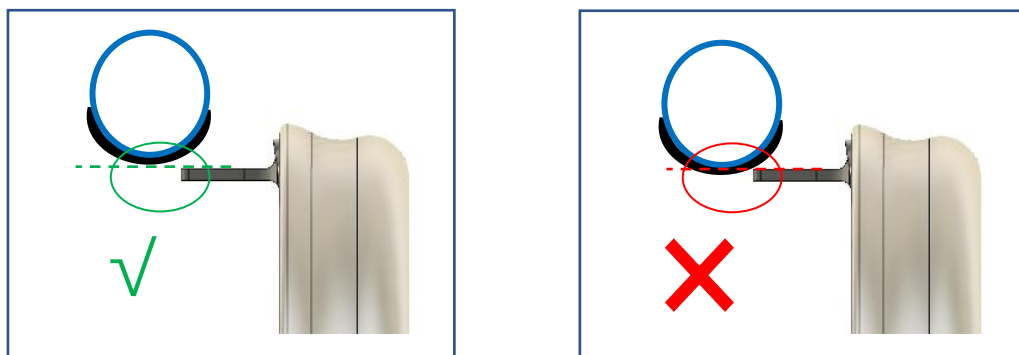


Figure 1: Checking for interference of the hand rim tabs

- b. Check that the tab holes align with the mounting holes on the wheel. Ensure that the bolts fit without being forced. If one or more holes are not aligned, do not proceed and consult your authorized dealer immediately. **Do not** drill the holes bigger.

- c. Position the hand rim and add (B) and (C) to all the mounting tabs, as shown in Figure 3. Only tighten (C) until the nuts just touch the tab. **DO NOT** tighten further until the following checks have been performed.

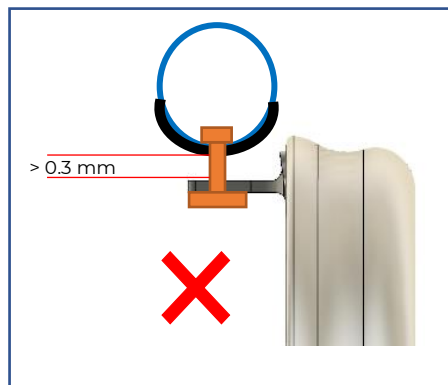


Figure 2: Measuring the gap between the mounting tab and wheel

- d. Using a feeler gauge, check that the gaps between the mounting tabs and wheel does not exceed 0.3 mm. See Figure 2.

If the maximum gap exceeds 0.3mm, add a 0.2 mm spacer (E) as shown in Figure 3 and remeasure. Up to 3 spacers, per tab, may be added. Ensure that each tab has the same number of spacers added.

If the gap still exceeds 0.3 mm, consult with your authorized dealer immediately.

If the trial fit is successful, proceed to final fit the hand rim to the wheel.

4. Fit the hand rim to the wheel as follows:
- Attach each mounting tab of the hand rim to the wheel with Bolts (B) and self-locking Nuts (C) that are tighten finger tight only. The spacers (D) are added as required. See Figure 3.
  - Torque the Nuts (D) to (8-12 Nm). **DO NOT** over tighten as this can damage the mounting tab.

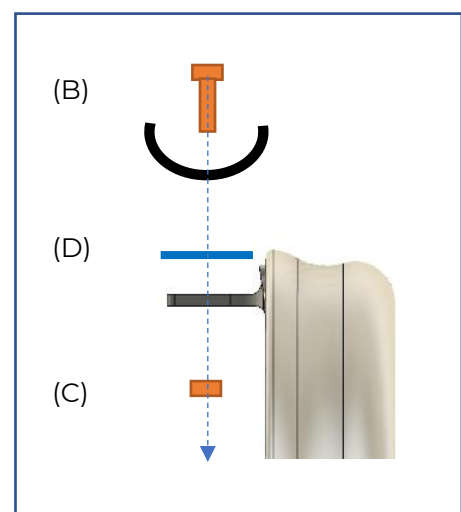


Figure 3

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## Adapting to the 7100 Hand Rim

The 7100 hand rim may require you to adapt your hand grip and pushing style to ensure that you gain the greatest benefit and safety from the product. The following points will assist with the process.

### 1. Hand Grip Pressure

The 7100 hand rim allows you to operate with a significantly lower grip pressure. This reduces the stresses throughout your hand and body, while increasing endurance and control. To determine the correct grip pressure:

- Sit in the wheelchair and slide your hand back and forth over the hand rim without moving the wheelchair.
- Slowly increase the grip pressure until the wheelchair just moves backwards and forwards.
- Keeping this level of force in your grip and continue moving backwards and forwards on the spot for 2-3 minutes.
- Repeat this exercise three time a day or as often as possible, for the first week.

This process should be repeated for different situations such as rolling over a door threshold or pushing up a ramp, etc.

### 2. Posture

Ensure that your elbows are drawn in to align your wrist and forearm. This requires you to pull your shoulders back and straighten the spine – being the ideal pushing posture. You may find that you are engaging muscles that have been less used and need to be strengthened. This improved posture will significantly reduce stresses in the body.

### 3. Braking

All hand rims heat up when braking continuously or at high speed. The carbon composite material may in certain conditions heat up quicker than your metal rim and can cause burning of the skin.

It is important that you familiarize yourself with this characteristic by progressively increasing descend gradients and speeds to understand how the material reacts to your hand.



## General Servicing and Care

### STORING

Store your hand rim so that they are protected from dangerous conditions.

**Do not** position them near any heat or open flame sources.

Ultraviolet radiation from the sun can fade the resin systems of the hand rim.

**Do not** rest the hand rim on sharp edges as this may puncture the hand rim.

### CLEANING

Clean your hand rims with a soft, moist cloth and a solution of dish soap and water.

**Do not** use industrial solvents or harsh chemicals that can damage the material.

**Do not** use high-pressure water.

### INCIDENTAL DAMAGE

If the hand rim is scratched or impacted, the surface of the hand rim must be inspected immediately, as the damage sustained may cause serious injury. See Table 1 for a guideline as to the actions required:

Condition	Inspection	Action
a. Surface scratches < 0.5 mm	Visually check if there are sharp edges or loose fiber ends	If required, lightly polish only the sharp edge with 3000 grit water paper.
b. Gouges >0.5 mm	Visual	Return the hand rim to your authorized dealer for inspection.
c. Cracks, de-laminations and punctures	Visual	Return the hand rim to your authorized dealer for inspection.

Table 1: Incidental damage and actions



### EMERGENCY REPAIR

If the hand rim has been cracked or punctured and the User is stranded, but the hand rim can still safely propel the wheelchair, a temporary repair may be performed by covering the damaged area with Duct Tape, such as 3M™ Heavy Duty Duct Tape 3939. Ensure all sharp edges are removed before applying the tape. Apply at least two layers.

The damaged hand rim must be replaced at the earliest opportunity.

### TRANSPORT

When packing your hand rim for transport, use a hard case or carton that will protect it from damage. Do not:

- Set heavy things on top of the hand rim.
- Rest the hand rim against sharp edges.
- Place the hand rim close to a source of heat or in direct sunlight.
- If the hand rims are not packaged or located correctly, they could be damaged in transit.

### MAINTENANCE

The following guidelines are not considered to be a complete inspection. The guidelines will help maintain the performance and safety of the hand rim. Any issue detected on the hand rim can be checked against the Table 1 above.

<b>Daily:</b>	<ul style="list-style-type: none"><li>Check the hand rims for signs of stress: scratches, cracks, dents, deformation or discoloration.</li><li>Clean hand rim by wiping with a dish cloth and warm mild soapy water.</li></ul>
<b>Weekly:</b>	<ul style="list-style-type: none"><li>Check all attachment bolts for looseness and if required, re-tighten to the specified torque</li></ul>

Table 2: Maintenance



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## Warranty

### WARRANTY

Globe Trotter Motion warrants, to the original owner, that this new Hand rim shall be free of defective materials and workmanship for a period of one year from the date of the original purchase (proof of purchase required) provided the Hand rim is operated under normal conditions and use. During this warranty period, Globetrotter Motion shall repair or replace, at its sole option, all parts that are found by Globetrotter Motion to be defective and subject to this Limited Warranty. with this exception: Globetrotter Motion will offer replacement parts on any Hand rims no longer in production / obsolete that otherwise fall within the time constraints of this warranty. This Limited Warranty is made only to the original owner of this new Globetrotter Motion Hand rim, and it shall remain in force only as long as the original owner retains ownership of the Globetrotter Motion Hand rim. This Limited Warranty is not transferable. This Limited Warranty does not apply to normal wear or tear, nor to defects, malfunctions or failures that result from the abuse, neglect, shocks or crashes, improper maintenance, alteration, modification, accident, or misuse, (including without limitation, basketball, quad rugby, tennis or any similar sporting activities), nor damage occurring during shipment, improper assembly or assembly with non-compatible products.

This Limited Warranty is the only express or Limited Warranty applicable to the Globetrotter Motion Hand rims. Any implied warranties, including warrants of merchantability and fitness for a particular purpose, shall be limited in scope and duration in accordance with this Limited Warranty. Globetrotter Motion shall not be responsible for any direct, incidental, consequential or exemplary damages suffered by any party. The foregoing statements of warranty are exclusive and in lieu of all other remedies. This Limited Warranty gives you specific legal rights; you may also have other legal rights which vary from state to state/country to country. Some states/countries do not allow limitations on the duration of implied warranties, or the limitations or exclusion of incidental or consequential damages; therefore, the limitations and exclusions set forth in this Limited Warranty may not apply to you. This Limited Warranty set forth herein may not be extended, enlarged or otherwise modified by any Globetrotter Motion dealer, distributor, agent, or employee, and Globetrotter Motion does not assume any liability or make any Warranty except as stated in this Limited Warranty. This warranty does not cover products whose serial number or identification has been erased, damaged or modified.

### FILING A WARRANTY CLAIM

Ensure you register your rims upon purchasing on the Globetrotter Motion website. File a warranty claim using our Warranty Claim Form under Support at [http://www. Globetrotter-motion.com](http://www.Globetrotter-motion.com). We'll do everything we can to keep you mobile.