

**WARNING!**

Carefully read, follow and understand the instructions given in this manual. It is an essential part of the product, and you should keep it in a safe place for future reference.

**MECHANIC QUALIFICATION** - Please be advised that many bicycle service and repair tasks require specialized knowledge, tools and experience. General mechanical aptitude may not be sufficient to properly service or repair your bicycle. If you have any doubt whatsoever regarding your service/repair ability, please take your bicycle to a qualified repair shop.

**INTENDED USE** - This Fulcrum® product is designed and manufactured for use only on road racing style bicycles that are ridden only on smooth road or track surfaces. Any other use of this product, such as tandem, off-road or on trails is forbidden.

**"AN ACCIDENT"** - Please note that throughout this manual, reference is made that "an accident" could occur. Any accident could result in damage to your bicycle, its components and, more importantly, could cause you or a bystander to sustain severe personal injury or even death.

**LIFESPAN - WEAR - INSPECTION REQUIREMENT** - The lifespan of Fulcrum® components depends on many factors, such as rider size and riding conditions. Impacts, falls, improper use or harsh use in general may compromise the structural integrity of the components and significantly reduce their lifespan. Some components are also subject to wear over time. Please have your bicycle and its components regularly inspected by a qualified mechanic for any cracks, deformation, signs of fatigue or wear (use of penetrating fluid or other visual enhancers to locate cracks on parts is recommended). Disassembly your bicycle components and especially the pedals, is required during these inspections. If the inspection reveals any deformation, cracks, impact marks or stress marks, no matter how slight, immediately replace the component; components that have experienced excessive wear also need immediate replacement. The frequency of inspection depends on many factors; check with your authorized representative of Fulcrum wheels S.r.l. to select a schedule that is best for you.

- **If you weigh over 109 kg/240 lbs we advise you not to use this product. Non compliance with this warning can damage the product irreversibly.**
- **If you weigh 82 kg/180 lbs or more, you must be especially vigilant and have your bicycle inspected more frequently (than someone weighing less than 82 kg/180 lbs).** Check with your mechanic to discuss whether the wheels you selected are suitable for your use, and to determine the frequency of inspections.

**Note:** Tools supplied by other manufacturers for components similar to Fulcrum® components may not be compatible with Fulcrum® components. Likewise, tools supplied by Fulcrum wheels S.r.l. may not be compatible with components supplied by other manufacturers. Always check with your mechanic or the tool manufacturer to insure compatibility before using tools supplied by one manufacturer on components supplied by another.

The user of this Fulcrum® product expressly recognizes that there are risks inherent in bicycle riding, including but not limited to the risk that a component of the bicycle can fail, resulting in an accident, personal injury or death. By his purchase and use of this Fulcrum® product, the user expressly, voluntarily and knowingly accepts and/or assumes these risks and agrees to hold Fulcrum wheels S.r.l. harmless against any resulting damages.

**If you ever have any questions, please contact your mechanic or your nearest Fulcrum® dealer for additional information.**



## SAFETY RECOMMENDATIONS



### WARNING!

Always wear protective gloves and glasses while working on the wheels.

DO NOT RIDE YOUR BICYCLE IF IT DOES NOT PASS THIS PRE-RIDE TEST. CORRECT ANY CONDITION BEFORE YOU RIDE!

- Never use a bicycle or bicycle component unless you are thoroughly familiar with its use and maintenance history. “Used” equipment may have been misused and abused, and can unexpectedly fail resulting in an accident.
- Be sure that your wheels are perfectly centered. Spin the wheels to be sure that they do not wobble up and down or from side to side, and that they do not make contact with the brake pads while rotating.
- Be sure that all of the components of your bicycle, including but not limited to your brakes, pedals, handgrips, handlebars, frame and seating system, are in optimum condition and suitable for use.
- Be sure that none of the components of bicycle are bent, damaged or out of alignment.
- Check to be sure that all quick release fasteners, nuts and bolts are properly adjusted (see the “Quick Release” instruction sheet). Bounce the bicycle on the ground and listen and look for anything which may be loose.
- Be sure that your wheels are perfectly centred. Spin the wheels to be sure that they do not wobble up and down or from side to side, and that they do not make contact with the fork legs or brake pads while rotating.
- Check all reflectors to make sure that they are clean, straight and securely mounted.
- Check you brake pads and cables to be sure they are in good condition.
- Test your brakes in the beginning of your ride to make sure that they are operating properly.
- Wear clothes which are snug-fitting and which make you visible to traffic, such as neon fluorescent or other bright colors.
- Avoid biking at night, because it is more difficult for you to be seen by traffic, and it is more difficult for you to see obstructions on the ground. If you do ride at night, you should equip your bicycle with and use a headlight and a taillight.
- Learn and follow the local bicycle laws and regulations, and obey all traffic signals, signs and laws while you ride.
- Fulcrum wheels.s.r.l. reminds you to always wear a properly fitted and fastened bicycle helmet that has been approved by ANSI or SNELL.



## 1 - TECHNICAL SPECIFICATIONS

### 1.1 - WHEEL TECHNICAL SPECIFICATIONS

<b>RIM:</b>	700C (622x15C)	
<b>O.L.D:</b>	front: 100 mm	rear: 130 mm
<b>INFLATION PRESSURE:</b>	see the inflation pressure recommended by the producer of the tire.	
<b>USE:</b>	road racing on smooth road or track surfaces <b>only</b> .	

### 1.2 - SPOKES TECHNICAL SPECIFICATIONS



#### WARNING!

Only use genuine Fulcrum spokes for your specific type and model of wheel. Failure to use correct spokes can result in an accident, personal injury or death.



#### WARNING!

To correctly assess wheel tension a tensiometer must be used: do not go by the tension you feel manually. It is therefore essential to have all the spoke replacement operations carried out by a Fulcrum Store, a Fulcrum Service Centre or a mechanic specialised in assembly and maintenance on Fulcrum wheels. The spoke part numbers can be found in the spare parts catalogue which is downloadable from our website [www.fulcrumwheels.com](http://www.fulcrumwheels.com).

## 2 - TIRES

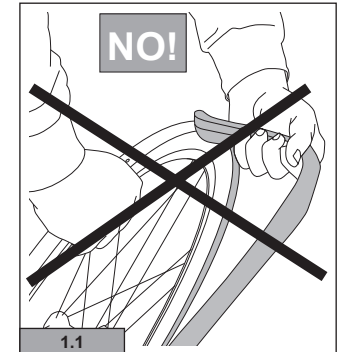
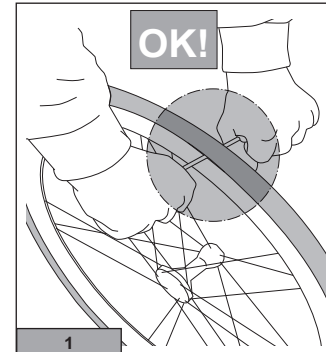
### 2.1 - TUBULAR TYPE VERSION

- The wheel you have purchased is designed to use tubular tires.
- Check to insure that the diameter and cross-section of the tubular tire you plan to use are compatible with the dimension of the rim.
- Use acetone to degrease the bonding surface of the rim before applying the glue for tubular installation.
- We recommend using at least 2 coats of glue on the rim and one on the tyre and leaving the glue to dry at least 12 hours between one gluing and the next. Wait at least 24 hours after gluing the tubular tyre before using the wheel.
- Ensure that, when high pressure is applied by hand on the tubular tyre, it does not detach from the wheel.
- To remove the tubular tyre from the rim, unglue the tubular tyre in an area sufficient to insert a screwdriver between the rim and the tubular tyre; moving the screwdriver along the rim, unglue the tubular tyre (Fig. 1).
- Do not remove the tubular tyre tearing it from the rim (Fig. 1.1).
- In order to ensure correct installation of the tubular tyre, check the tyre manufacturer mounting instructions as well.



#### WARNING!

- **Do not carry out any operation that may create scratches or cuts on the rim or which, in any way whatsoever, may damage it. A damaged rim can break suddenly and cause accidents, physical injuries or even death.**



- **Incorrect mounting of the tyre may cause it to deflate, burst or detach suddenly and cause accidents, physical injuries or even death.**

### 2.2 - INFLATING AND DEFLATING THE TIRE

- To inflate the tire: remove the cap, unscrew the valve and inflate using a pump with a pressure gauge to obtain the required pressure, then tighten the valve and re-fit the cap.
- To deflate the tire: remove the cap, slightly unscrew the valve, then press it until the required pressure is obtained; tighten the valve and re-fit the cap.

**WARNING!**

Never exceed the maximum inflation pressure recommended by the tire manufacturer.

Excessive tire pressure reduces the grip of the tire on the road and increases the risk that the tire will unexpectedly burst.

Inflation pressure that is too low reduces tire performance and increases the probability of sudden and unexpected loss of tire pressure. In addition, premature wear and damage to the rim may occur.

**Note**

The tire pressure should also be adjusted depending on the weight of the rider; a heavy rider should have a greater tire pressure than a light rider.

### 2.3 - CLINCHER VERSION

**WARNING!****RIM-TIRE COMPATIBILITY**

Fulcrum® rims are very precise dimensionally. If a tire is too easy to install on a Fulcrum® rim, that tire is most likely too big and will not seat properly on the rim. If a tire is too difficult to install, that tire is most likely too small. Use only high quality tires that require the use of tire levers and a reasonable installation effort. Using talcum powder on the tire will make installation easier. Using a tire that does not fit properly on the rim can cause unexpected tire failure, resulting in an accident, personal injury or death.

- The wheel you have purchased is designed to use clincher tires.
- Before fitting the tires, check that the diameter indicated on the tire is 622 and that the cross-section is between 23 and 28 mm, to insure that the tire and wheel are compatible.

**WARNING!**

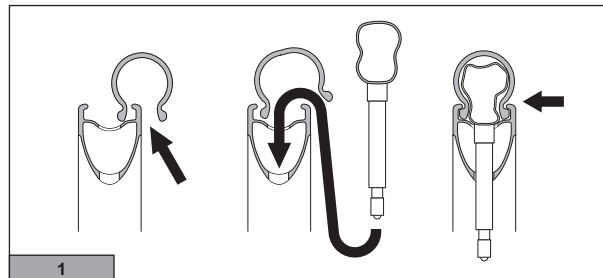
Failure to properly install the tire can cause sudden and unexpected loss of tire pressure, resulting in an accident, personal injury or death.



### 2.2.1 - INSTALLING CLINCHER TIRES

Be sure that you do not bend or otherwise damage any portion of the rim when installing the tire.

- Insert one side of the clincher into the seat provided on the rim (Fig. 1).
- Slightly inflate the inner tube to facilitate assembly.
- Insert the valve through the hole in the rim, and then position the remainder of the inner tube between the rim and the tyre.
- In order to install the tube on the rim, inflate the tube slightly first.
- You should then manually set the tube and tire on the rim, making sure that the tube is positioned correctly within the tire and that the tire is positioned correctly on the rim.



- Insert the second side of the tyre into its seat in the rim.

You may then fully inflate the tube to the correct working pressure. Please inflate the tube slowly, making sure that you maintain the correct positioning of the tube and tire on the rim.

### 2.2.2 - INFLATING AND DEFLATING THE TIRE

- **To inflate the tire:** 1) remove the cap, 2) unscrew the valve, 3) inflate the tire using a compressor or pump equipped with a pressure gauge to obtain the required pressure, then 4) tighten the valve and replace the cap.
- **To deflate the tire:** 1) remove the cap, 2) unscrew the valve, 3) press and hold down the valve to obtain the required pressure, then 4) tighten the valve and replace the cap.

#### **WARNING!**

- **Never exceed the maximum pressure recommended by the tyre manufacturer.**
- **The inflating pressure of the tyres must NOT exceed the LOWER pressure level between the maximum pressure stated by the tyre manufacturer and the value recommended by the rim manufacturer.**

Excessive tire pressure reduces the grip of the tire on the road and increases the risk that the tire will unexpectedly burst.

Inflation pressure that is too low reduces tire performance and increases the probability of sudden and unexpected loss of tire pressure. In addition, premature wear and damage to the rim may occur.

#### **WARNING!**

Incorrect tire pressure could cause tire failure or loss of control of the bicycle, resulting in an accident, personal injury or death.



### 3 - FITTING THE WHEEL ON THE FRAME / USING THE QUICK RELEASE

See the "Quick Release" instruction sheet.

### 4 - SPROCKET ASSEMBLY AND REMOVAL

#### 4.1 - 10s SPROCKETS

Refer to the instruction leaflet enclosed with the 10s sprockets for all the assembly, disassembly, use and maintenance operations.

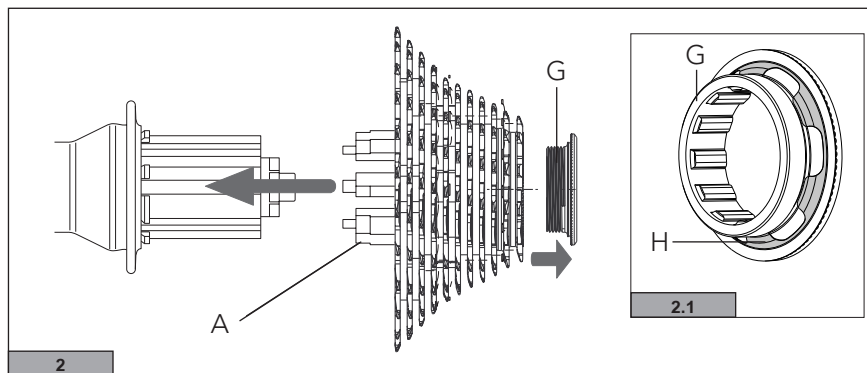
#### 4.2 - 11s SPROCKETS of Campagnolo s.r.l. (on FW body for 11s sprockets of Campagnolo s.r.l.)

##### 4.2.1 - ASSEMBLY

1) The sprockets are pre-assembled and timed on the plastic support (A - Fig. 2). The ring G (Fig. 2) is provided with a preassembled washer (H); ensure that it is positioned as in fig. 2.1.

2) Remove the ring (G - Fig. 2).

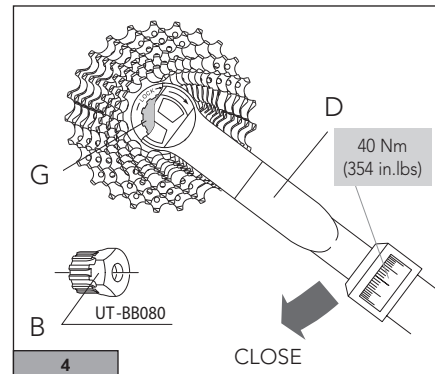
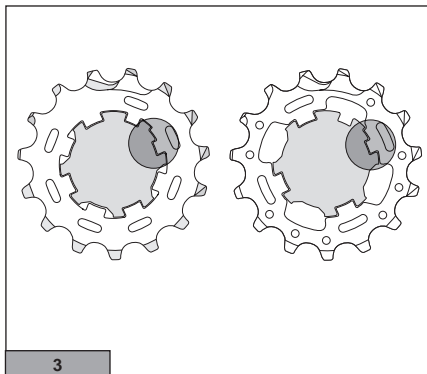
3) Insert the support on the side of the freewheel body, align the spline patterns, press the sprockets onto the freewheel and extract the support (A) from the hub (Fig. 2).





4) If installing the sprockets without the plastic support, install the individual or preassembled sprockets and the spacers on the sprocket body of the hub aligning the spline patterns (Fig. 3). The profile of the freewheel body with two asymmetrical grooves (Fig. 3) ensures automatic sprocket timing since there is only one assembly option

5) Using a torque wrench (D - Fig. 4) equipped with Campagnolo® tool UT-BB080 (B - Fig. 4), tighten the locking (G - Fig. 4), which is provided with the Campagnolo sprockets, on to the freewheel body to **40 Nm (354 in.lbs)**.

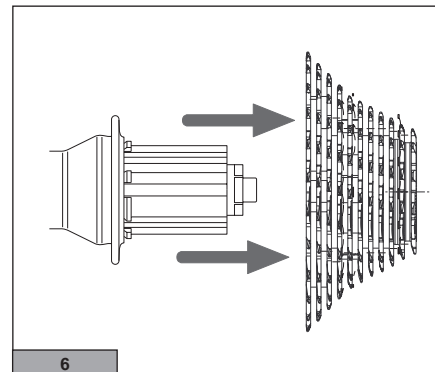
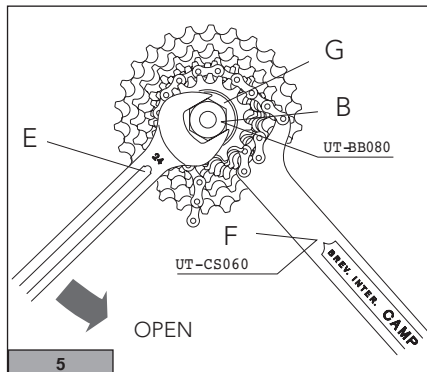


#### 4.2.2 - DISASSEMBLY

1) Remove the locking (G - Fig. 5) using the Campagnolo® tool UT-BB080 (B - Fig. 5) with a 24 mm hexagonal wrench (E - Fig. 5) and the chain whip Campagnolo® UT-CS060 (F - Fig. 5).

2) Insert the plastic sprocket carrier on the side of the freewheel body and align the spline patterns on the body with those on the carrier. Slide the sprockets onto the carrier.

3) Slide the sprockets, off the freewheel body (Fig. 6).







### 4.3 - 9S, 10S, 11S SPROCKETS FROM SHIMANO INC. and SPROCKETS FROM SRAM CORPORATION (on the Campagnolo® freewheel body for Shimano Inc. 9/10/11s sprockets and Sram OG 1070 - OG 1090 sprockets)

#### 4.3.1 - ASSEMBLY

##### • SHIMANO INC. SPROCKETS

- 1) Fit the sprockets on the freewheel body and check that:
  - the surface with the name of the group of each sprocket is turned to the outside of the freewheel body.
  - the broadest groove of the sprocket (A – Fig. 7) and the broadest of the freewheel body (B – Fig. 7) are aligned.

**Important!**  
With the 11s freewheel body, only use the adapter (M - Fig.8) for 9s and 10s sprocket packs by Shimano Inc. and Sram Co. (the adapter must not be used for 11s sprocket packs by Shimano Inc.).

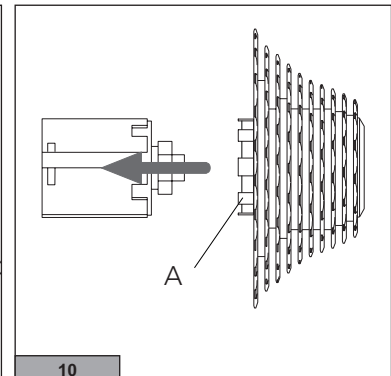
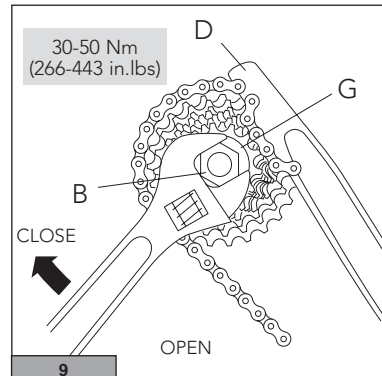
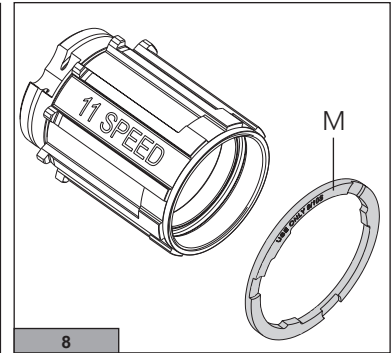
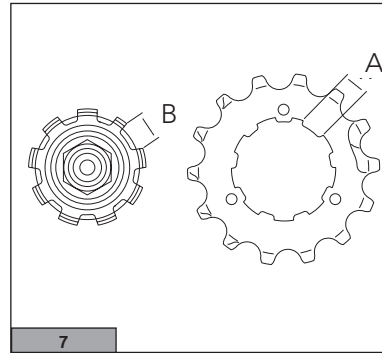
The adapter (M - Fig.8) must be fitted on the freewheel body of the 9s or 10s sprocket pack, or on any washer supplied together with the 9s or 10s sprocket pack.

See the instruction sheet provided by the sprocket pack manufacturer for installation, removal and maintenance instructions.

- 2) Using tool TL-LR15 from Shimano Inc. or FR-5 from Park Tool Co. (B - Fig. 9) tighten the locking (G - Fig. 9) on the freewheel body to **30-50 Nm (266-443 in.lbs)**.

##### • SRAM CORPORATION SPROCKETS

- 1) The sprockets are preassembled on a support (A - Fig. 10).
- 2) Insert the support on the side of the freewheel body, align the grooves, press the sprockets onto the freewheel body and extract the support (A) from the hub (Fig. 10).
- 3) Using tool TL-LR15 from Shimano Inc. or FR-5 from Park Tool Co. (B - Fig. 9) tighten the locking (G - Fig. 9) on the freewheel body to **30-50 Nm (266-443 in.lbs)**.



### 4.3.2 - DISASSEMBLY

- 1) Remove the lockring (G - Fig. 9) using tool TL-LR15 from Shimano Inc. or FR-5 from Park Tool Co. (B - Fig. 9) and a chain whip (e.g. Shimano Inc. TL-SR20 - D - Fig. 9).
- 2) Remove the sprockets from the freewheel body.

## 5 - BRAKES

Please consult the instruction sheet supplied by the manufacturer.

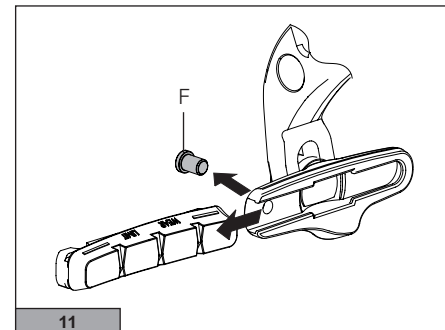


### WARNING!

Use only the special red braking blocks with the RACING ZERO NITE wheels:

- code BR-BO500, for Campagnolo® brakes, except for versions that have a locking screw (F - Fig. 11) on the block holders
- code BR-BO500X, for Dura-Ace brakes from Shimano Inc. and Campagnolo® brakes that have a locking screw (F - Fig. 11) on the block holders.

Using any other block-rim combination could cause insufficient and/or irregular braking and could cause accidents, physical injury or death. Using braking blocks other than those specified could also seriously damage the rim.



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## 6 - MAINTENANCE

**Note for RACING ZERO NITE wheels:** The surface treatment on the braking rim can be removed quickly in the case of inclusions (e.g. small rocks, gravel, sand) that may deposit on the brake block surface, in particular when used in wet conditions. It is recommended to clean the brake blocks frequently with a file.

NEVER use sandpaper to prevent inclusions from the sandpaper itself from remaining on the surface of the brake blocks.

A partial removal of the surface layer of the braking rim does not reduce the braking efficiency and represents normal wear, and is therefore not covered by the warranty as indicated in the "Fulcrum limited warranty".



**Note**

We recommend that you contact a specialized mechanic for all the assembly, disassembly and all hub, rim and spoke replacement operations. Choose with him the most suitable interval of inspections for you on the basis of the conditions of use and intensity of your activities (e.g. racing, rain, salted roads, muddy roads, cyclist's weight, etc.).

**ATTENTION! NOTE FOR SPECIALIZED MECHANICS**

**CONTACT YOUR FULCRUM SERVICE CENTER FOR THE INSTRUCTIONS FOR ASSEMBLING, MAINTAINING AND REPLACING RIMS, SPOKES AND HUBS, OR YOUR FULCRUM DEALER.**

TYPE OF OPERATION	KMS (MAX)
Check at a specialized mechanic's:	2.000-5.000
<ul style="list-style-type: none"> <li>• check the lubrication, rolling and clearance of the hubs</li> </ul>	
<ul style="list-style-type: none"> <li>• check the wheel centering</li> </ul>	
Check at a specialized mechanic's:	10.000-20.000
<ul style="list-style-type: none"> <li>• check the lubrication, rolling and clearance of the hubs and replace any worn parts of the hubs and free wheel body</li> </ul>	
<ul style="list-style-type: none"> <li>• check the wheel centering</li> </ul>	
<ul style="list-style-type: none"> <li>• check the wear of the braking track and replace rim if required</li> </ul>	

- If the hub bearings are CULT (in Cronitect®, advanced solution by FAG and the balls in ceramic), periodically take the bicycle to a specialised mechanic to have the hub bearings and the balls lubricated with specific oil for bearings.
- If the hub bearings are USB or Standard, periodically take the bicycle to a specialised mechanic to have the hub bearings and the balls lubricated with specific grease for bearings.
- Keep the braking surface of the rim and the brake pads free from oil and grease.
- At the end of the lubrication operations, CAREFULLY degrease the braking rim and the brake blocks.
- To maintain the brake pads are in efficient working order and to avoid wear on the sides of the rims, you should remove with a file any residue of sand, debris or foreign objects which may become embedded in the brake pads, especially during use in the rain.
- When riding in wet conditions, remember that the stopping power of your brakes is greatly reduced and the adherence of the tires to the ground is considerably reduced. This makes it harder to control and stop your bicycle. Extra care is required when riding your bicycle in wet conditions to avoid an accident. An accident could result in severe personal injury or death.



- Never make any modifications whatsoever to any component of any Fulcrum product.
- Parts which have been bent or otherwise damaged in an accident or as a result of any other impact must not be re-straightened. They must be replaced immediately with original Fulcrum parts.
- After using the wheel for the first time, check wheel trueness and circularity.

### **WARNING!**

**Using wheels that have not been centred properly or which have broken or damaged spokes may result in accidents, personal injury or death.**

- Do not expose the carbon wheels to high temperatures. Do not store bike parts in vehicles parked in the sun, and do not store near radiators or other heat sources. Do not store carbon fiber products in direct sunlight.

## 6.1 - CLEANING THE WHEELS

**When cleaning the wheels, only use non-aggressive, non-corrosive products such as water and neutral soap, or specific products specially designed for cleaning bicycles. Absolutely never use abrasive or metal sponges. Dry with a soft cloth.**

### **NOTE**

Never spray your bicycle with water under pressure.

Pressurized water, even from the nozzle of a small garden hose, can pass seals and enter into your Fulcrum components, damaging them beyond repair. Wash your bicycle and Fulcrum components by wiping them down with water and neutral soap.

### **WARNING!**

**Salt water environments (as found on winter roads and near the seaside) can cause galvanic corrosion on most bike parts. Carefully rinse, clean, dry and re-lubricate all exposed parts to avoid damage, malfunctions and accidents.**

## 6.2 - TRANSPORT AND STORAGE

When transporting the wheel separately from the bike or if the wheel will not be used for a long period of time, store it in the wheelbag to protect it against impacts and dirt.

Fulcrum wheels S.r.l. reserves to modify the content of this manual without notice.  
The updated version will always be available [www.fulcrumwheels.com](http://www.fulcrumwheels.com).