## WARNING!

THIS TECHNICAL MANUAL IS INTENDED FOR USE BY PROFESSIONAL MECHANICS. Anyone who is not a qualified professional for bicycle assembly must not attempt to install and operate on the components independently due to the risk of carrying out incorrect operations which could cause the components to malfunction, resulting in accidents, physical injury or even death.

### 1 - TECHNICAL SPECIFICATIONS

<table>
<thead>
<tr>
<th>BRAKES</th>
<th>FRONT</th>
<th>REAR</th>
</tr>
</thead>
<tbody>
<tr>
<td>Super Record</td>
<td>DUAL PIVOT</td>
<td>DUAL PIVOT</td>
</tr>
<tr>
<td>Record</td>
<td>DUAL PIVOT</td>
<td>DUAL PIVOT</td>
</tr>
<tr>
<td>*Super Record</td>
<td>DUAL PIVOT</td>
<td>MONO PIVOT (DUAL PIVOT OPZ.)</td>
</tr>
<tr>
<td>*Record</td>
<td>DUAL PIVOT</td>
<td>MONO PIVOT (DUAL PIVOT OPZ.)</td>
</tr>
<tr>
<td>Chorus</td>
<td>DUAL PIVOT</td>
<td>DUAL PIVOT</td>
</tr>
<tr>
<td>Potenza</td>
<td>DUAL PIVOT</td>
<td>DUAL PIVOT</td>
</tr>
<tr>
<td>*Campagnolo</td>
<td>DUAL PIVOT</td>
<td>MONO PIVOT (DUAL PIVOT OPZ.)</td>
</tr>
<tr>
<td>MY2015</td>
<td></td>
<td></td>
</tr>
<tr>
<td>*Athena</td>
<td>DUAL PIVOT</td>
<td>MONO PIVOT (DUAL PIVOT OPZ.)</td>
</tr>
<tr>
<td>Centaur</td>
<td>DUAL PIVOT</td>
<td>DUAL PIVOT</td>
</tr>
<tr>
<td>Veloce</td>
<td>DUAL PIVOT</td>
<td>DUAL PIVOT</td>
</tr>
</tbody>
</table>

* In case of different brakes, between front (dual pivot) and rear (mono pivot), the braking power is different.

**NOTE:** 1.6 mm BRAKE FIXING CABLES
## 2 - COMPATIBILITY

### 3.1 - BRAKES / FRAMES COMPATIBILITY

In order to assure full compatibility with various frame thicknesses, brakes are available in three versions:

<table>
<thead>
<tr>
<th>SUPER RECORD</th>
<th>SUPER RECORD</th>
<th>POTENZA</th>
</tr>
</thead>
<tbody>
<tr>
<td>RECORD</td>
<td>RECORD</td>
<td>CAMPAGNOLO.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>MY2015</td>
</tr>
</tbody>
</table>

- **WITH 16,5 mm SOCKET-HEAD NUT (STANDARD)**
- **WITH 21,5 mm SOCKET-HEAD NUT (LONG)**
- **WITH 27 mm SOCKET-HEAD NUT (EXTRALONG)**
- **WITH 10 mm SOCKET-HEAD NUT (STANDARD)**
- **WITH 18 mm SOCKET-HEAD NUT (LONG)**
- **WITH 25 mm SOCKET-HEAD NUT (EXTRALONG)**

⚠ **WARNING!**

Different combinations from those included in the table could cause the malfunction of the drivetrain and result in an accident, personal injury or death.

### 3.2 - BRAKE BLOCKS / BRAKEPADS COMPATIBILITY

<table>
<thead>
<tr>
<th>BRAKING RIM</th>
<th>FIXING OF THE BRAKE PAD WITH RETENTION SPRING</th>
<th>FIXING OF THE BRAKE PAD WITH SCREWS</th>
<th>FIXING OF THE BRAKE PAD BY INTERFERENCE</th>
</tr>
</thead>
<tbody>
<tr>
<td>CARBON</td>
<td>BR-BO500</td>
<td>BR-BO500X1</td>
<td>BR-BO500</td>
</tr>
<tr>
<td>P.E.O.</td>
<td>BR-PEO5001</td>
<td>BR-PEO500X1</td>
<td>BR-SR040 (Black) + BR-PEO5001</td>
</tr>
<tr>
<td>ALUMINIUM</td>
<td>BR-SR500 / BR-RE700</td>
<td>BR-CA500</td>
<td>BR-RE700</td>
</tr>
</tbody>
</table>

⚠ **WARNING!**

Always check the compatibility between your brake blocks and the type of braking rim of your rim. Combinations other than those provided for in the table could cause insufficient braking and could be the cause of accidents, physical injury or even death.
CAUTION

The distance “B” becomes smaller with changes in the distance “A” with a ratio of about 1:30; therefore if you move the axle 20 mm (with respect to the nominal value), the position “B” becomes 0,65 mm less.
IMPORTANT: To obtain a distance of at least 4 mm between the clincher tyre and the lower part of the brake, it is necessary to observe the following measurements for “B”.

<table>
<thead>
<tr>
<th>Ø TYRE</th>
<th>“B” FRONT BRAKE</th>
</tr>
</thead>
<tbody>
<tr>
<td>25 mm nominal</td>
<td>354 - 356 mm</td>
</tr>
<tr>
<td>28 mm nominal</td>
<td>356 - 360 mm</td>
</tr>
</tbody>
</table>

C = 40 mm - distance between the brake pivot and the maximum height of the brake blocks locking screw.
D = 52 mm - distance between the brake pivot and the minimum height of the brake blocks locking screw.

CAUTION
The distance “B” becomes smaller with changes in the distance “A” with a ratio of about 1:30; therefore if you move the axle 20 mm (with respect to the nominal value), the position “B” becomes 0.65 mm less.
IMPORTANT: To obtain a distance of at least 4 mm between the clincher tyre and the lower part of the brake, it is necessary to observe the following measurements for “B”.

<table>
<thead>
<tr>
<th>Ø TYRE</th>
<th>“B” REAR BRAKE</th>
</tr>
</thead>
<tbody>
<tr>
<td>25 mm nominal</td>
<td>354 - 356 mm</td>
</tr>
<tr>
<td>28 mm nominal</td>
<td>356 - 360 mm</td>
</tr>
</tbody>
</table>

*Note: in case the brake block is too close to the upper chainstay, it is possible to use two washers instead of only one.

C = 40 mm - distance between the brake pivot and the maximum height of the brake blocks locking screw.
D = 52 mm - distance between the brake pivot and the minimum height of the brake blocks locking screw.

CAUTION
The distance “B” becomes smaller with changes in the distance “A” with a ratio of about 1:30; therefore if you move the axle 20 mm (with respect to the nominal value), the position “B” becomes 0,65 mm less.
### 4 - ASSEMBLY OF THE BRAKES

#### 4.a) Apply the brake to the frame or on the fork and tighten the hex nut (A - Fig. 1) using a Torx T25 wrench.

#### 4.b) Keeping the brake with the brake blocks in contact with the rim and the cable set screw (C - Fig. 1) loosened two turns, fix the cable by tightening the cable clamp screw (B - Fig. 2) to a torque of **5 Nm (44 in.lbs)** with a 5 mm Allen wrench.

⚠️ **WARNING!**

Please be sure that you tighten the cable sufficiently, without crushing the cable, so that it does not slip when brakes are applied. A loose or damaged cable can cause the brake system to malfunction resulting in an accident, personal injury or death.

#### 4.c) Carry out an initial centring of the brake with respect to the wheel acting on the locknut (D - Fig. 2) with a wrench:

- **13 mm (Super Record / Record Version)**
- **12 mm (Chorus Version)**

so that the brake blocks are about 1 mm from the surface of the wheel (Fig. 3).

Use the cable tension set screw to make any necessary adjustments (C - Fig. 4).

⚠️ **WARNING!**

When mounting the brake to the frame always make sure that at least 6 threads of the brake's centre bolt are engaged with the internally threaded sleeve (Fig. 5). If fewer threads are engaged, the centre bolt may fail during use, resulting in brake detachment from the frame an accident, personal injury or death.
4.d) Secure firmly the brake to the frame by tightening the nut (A - Fig. 6) with a torque wrench to 10 Nm (89 in.lbs).

⚠️ WARNING!
A loose nut can cause the brake system to malfunction resulting in an accident, personal injury or death.

4.e) If your brakes are fitted with the adjustment screw (E - Fig. 7), then correct centering using a 2 mm Allen wrench.

4.f) If your brakes have a set screw (E - Fig. 8) proceed with correcting the centring (Fig. 9) using a Phillips screwdriver.

4.g) If your brakes are fitted with a screw for adjusting the tension of the return spring (F - Fig. 6) you can adjust the return force of the brakes spring. To adjust the tension, tighten or loosen the Allen screw (using a 2 mm wrench), within the limits permitted by the travel.

⚠️ WARNING!
After installing the brakes practice using them in a clear area without traffic. Understanding how the brake system reacts before using the bicycle in public is important. Inadequate use of the bicycle’s brake system could cause you to lose control of the vehicle or fall, which could result in serious injuries.

### 4.1 - ADJUSTING THE BRAKE PADS

- Periodically check to make sure that brake blocks are 1 mm from the surface of the rim (Fig. 9). If the brake blocks are equidistant but are not 1 mm from the rim surface, adjust the distance by acting on the cable tension set screw (C - Fig. 1). If this is not sufficient, loosen the cable clamp screw (B - Fig. 2) and follow the instructions from 4.b to 4.g.

- If, on the other hand, the brake blocks are not equidistant from the rim, loosen the hex nut (A - Fig. 1) using a T25 Torx wrench and follow the instructions from 4.c to 4.g.
• For pad-holders equipped with orbital articulation which can be oriented in all directions (Fig. 10): adjust the brake pads so that they are centered in height in relation to the braking surface of the rim and parallel to it horizontally and vertically.

**IMPORTANT**

If you want a less aggressive braking, position the front area of the brake pads so that it is closer to the rim, compared to the rear area of the brake pads themselves (the difference between the front and rear area must be at maximum 0.5 mm).

⚠️ **WARNING!**

Please be sure that you tighten the cable sufficiently, without crushing the cable, so that it does not slip when brakes are applied. A loose or damaged cable can cause the brake system to malfunction resulting in an accident, personal injury or death.

• Clamp the pad-holders by tightening the Torx T25 screw (G - Fig. 10) to a torque of **8 Nm (71 in.lbs)**.

⚠️ **DANGER!**

Always ensure that the closed part of the brake block holder (X) is facing the forward direction as indicated in figure 10. Incorrect mounting of the brake block holder may cause the brake block to slide out of the brake block holder and cause accidents, physical injury or even death.
5.a) Fit the brake on the frame or the fork and tighten the socket-head nut (A - Fig. 1) using a 5 mm Allen wrench.

5.b) Secure the cable by tightening the cable retainer screw (B - Fig. 1) with a 5 mm Allen wrench to a torque of 5 Nm (44 in.lbs).

⚠️ WARNING!

Please be sure that you tighten the cable sufficiently, without crushing the cable, so that it does not slip when brakes are applied. A loose or damaged cable can cause the brake system to malfunction resulting in an accident, personal injury or death.

5.c) Initially center the brake in relation to the wheel using the lock-nut (D - Fig. 2) and a 12 mm open end wrench in order to position the brake pads about 1 mm from the surface of the rim (Fig. 3). If necessary, perform fine adjustment using the cable tension adjustment screw (C - Fig. 4).

⚠️ WARNING!

When mounting the brake to the frame always make sure that at least 6 threads of the brake’s centre bolt are engaged with the internally threaded sleeve (Fig. 5). If fewer threads are engaged, the centre bolt may fail during use, resulting in brake detachment from the frame an accident, personal injury or death.
5.d) Secure firmly the brake to the frame by tightening the nut (A - Fig. 8) with a torque wrench to 10 Nm (89 in.lbs).

⚠️ WARNING!

A loose nut can cause the brake system to malfunction resulting in an accident, personal injury or death.

5.e) If your brakes are fitted with the adjustment screw (E - Fig. 7), then correct centering (Fig. 3), using a Phillips screwdriver.

⚠️ WARNING!

After installing the brakes practice using them in a clear area without traffic. Understanding how the brake system reacts before using the bicycle in public is important. Inadequate use of the bicycle's brake system could cause you to lose control of the vehicle or fall, which could result in serious injuries.

5.1 - ADJUSTING THE BRAKE PADS

- Periodically check the brake pads to insure that they are about 1 mm from the surface of the rim (Fig. 3). If this is not the case, adjust the distance using the cable tension adjustment screw (C - Fig. 4). If this proves insufficient, loosen the cable securing screw (B - Fig. 1), adjust the distance of the pads to the rim, reset the position of the cable and secure it again by tightening the cable retainer screw (B - Fig. 1).
- For pad-holders equipped with orbital articulation which can be oriented in all directions (Fig. 8): adjust the brake pads so that they are centered in height in relation to the braking surface of the rim and parallel to it horizontally and vertically.

IMPORTANT

If you want a less aggressive braking, position the front area of the brake pads so that it is closer to the rim, compared to the rear area of the brake pads themselves (the difference between the front and rear area must be at maximum 0.5 mm).

⚠️ WARNING!

Please be sure that you tighten the cable sufficiently, without crushing the cable, so that it does not slip when brakes are applied. A loose or damaged cable can cause the brake system to malfunction resulting in an accident, personal injury or death.

- Clamp the pad-holders by tightening the 5 mm Allen screw (Fig. 8) to a torque of 8 Nm (71 in.lbs).
**DANGER!**

Always ensure that the closed part of the brake block holder (B) is facing the forward direction as indicated in figure 10. Incorrect mounting of the brake block holder may cause the brake block to slide out of the brake block holder and cause accidents, physical injury or even death.

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### 6 - REPLACING THE BRAKE PADS

<table>
<thead>
<tr>
<th>Super Record</th>
<th>Record</th>
<th>Super Record</th>
</tr>
</thead>
<tbody>
<tr>
<td>Record</td>
<td>Chorus</td>
<td>Athena</td>
</tr>
<tr>
<td>Potenza</td>
<td>Campagnolo</td>
<td>Centaur</td>
</tr>
<tr>
<td>Veloce</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

#### 6.1 - FIXING OF THE BRAKE PAD WITH RETENTION SPRING

- Using a screwdriver, gently lift the spring H (Fig. 1) and remove the worn pad from the pad holder (Fig. 1).

**CAUTION**

**Do not force the spring during pad replacement.**

Insert the new pad until you hear a click (Fig. 1) and check to make sure that the spring has entered its seat.

- To facilitate insertion of the new brake pad, wet the inside of the brake shoe with alcohol. Never use lubricants (Fig. 1).

Check that the pad is properly secured by trying to turn it in the opposite direction.

**WARNING!**

Alcohol is extremely flammable. Use in a well ventilated area. Do not use alcohol near any fire, flame, spark, heat or other source of combustion.

- Make sure that the distance between the brake pads and the rim is about 1 mm, as shown in figure 2 (Chapter 7) and adjust as necessary.
6.2 - FIXING OF THE BRAKE PAD WITH SCREWS

• To replace the brake blocks remove the screw on the brake block holder (F - Fig. 2) using a 2 mm Allen wrench, remove the worn brake block (Fig. 2) and replace it with a new one.

• Insert the new brake block, ensuring that the wheel direction arrow on the brake block is in the actual forward direction of the wheel.

• Ensure that the seat (G - Fig. 2) of the brake block screw is in the position that corresponds to the locking screw on the brake block holder (Fig. 2).

DANGER!

Fully tighten the screw on the brake block holder using a 2 mm Allen wrench. Incorrect mounting of the brake block holder may cause the brake block to slide out of the brake block holder and cause accidents, physical injury or even death.

• Ensure that the distance of the pads from the wheel is about 1 mm (Fig. 2 - Chapter 7).

DANGER!

For both front and rear brake pad, identify the brake pad with “LEFT” indication to install it on the LEFT brake pad holder and the brake block with “RIGHT” indication to install it on the RIGHT brake pad holder. Insert the new brake pad, ensuring that the wheel direction arrow on the brake pad is in the actual forward direction of the wheel. Incorrect mounting of the brake pad may cause the brake pad to slide out of the brake pad holder and cause accidents, physical injury or even death.
6.3 - FIXING OF THE BRAKE PAD BY INTERFERENCE

- If your Campagnolo brake pad holders do not have a release spring and do not have a fixing screw follow these instructions:
  - remove the worn brake block and replace it with a new one.
- To facilitate insertion of the new brake pad, wet the inside of the brake shoe with alcohol. Never use lubriants.

⚠️ WARNING!

Alcohol is extremely flammable. Use in a well ventilated area. Do not use alcohol near any fire, flame, spark, heat or other source of combustion.

- Periodically check that the brake pads are about 1 mm from the surface of the rim (Fig. 2 - chapter 7).
- If the gap is incorrect, adjust by referring to the instructions for your braking system or take the bicycle to your preferred mechanic.

⚠️ DANGER!

For both front and rear brake pad, identify the brake pad with “LEFT” indication to install it on the LEFT brake pad holder and the brake block with “RIGHT” indication to install it on the RIGHT brake pad holder. Insert the new brake pad, ensuring that the wheel direction arrow on the brake pad is in the actual forward direction of the wheel. Incorrect mounting of the brake pad may cause the brake pad to slide out of the brake pad holder and cause accidents, physical injury or even death.

⚠️ WARNING!

FOR ALL THE INFORMATION AND COMPATIBILITY BETWEEN BRAKE PADS AND RELATIVE BRAKE PAD HOLDERS, SEE THE “2018 BRAKE PADS COMPATIBILITY TABLE” AVAILABLE ON OUR WEBSITE. USING ANY OTHER PAD-WHEEL COMBINATION MAY CAUSE INSUFFICIENT AND/OR IRREGULAR BRAKING WHICH MAY LEAD TO ACCIDENTS, PHYSICAL INJURY OR EVEN DEATH. USING BRAKE PADS OTHER THAN THOSE SPECIFIED MAY ALSO SERIOUSLY DAMAGE THE WHEEL. WE RECOMMEND ALWAYS CHECKING THE PAD-WHEEL COMPATIBILITY INDICATED ON THE PACKAGE OF THE PADS.
7 - BRAKE MAINTENANCE

- Check the wear status of the brake pads at regular intervals and replace them when the braking surfaces reach the limit marked by the wording “WEAR LIMIT” or if braking power is in any way insufficient (Fig. 1).

- Periodically check that the brake pads are about 1 mm from the surface of the rim (Fig. 2).

- If this is not the case, adjust the distance using the cable tension adjustment screw (C - Fig. 3/4).

- If this proves insufficient, loosen the cable securing screw (B - Fig. 3/4), adjust the distance of the pads to the rim, reset the position of the cable and secure it again by tightening the cable retainer screw (B - Fig. 3/4).

**WARNING!**

Please be sure that you tighten the cable sufficiently, without crushing the cable, so that it does not slip when brakes are applied. A loose or damaged cable can cause the brake system to malfunction resulting in an accident, personal injury or death.

- Check torque setting(s) of the brake, brake pad and cable locking screws at regular intervals.

- Using the bicycle in the rain can lead to a greater accumulation of sand/dirt on the brake pads, with consequent damage to the rims, even in the course of a single outing. To keep the pads in optimum condition and to avoid wear on the sides of the rims, check your brake pads constantly. Use a file to immediately remove any foreign bodies which could be deposited on the pads themselves.

- When riding in wet conditions, remember that the stopping power of your brakes is greatly reduced and that the adherence of the tires on 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.

**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.
Maintenance intervals are strictly approximate and may vary significantly in relation to the intensity and conditions of use (for example: competitions, rain, winter roads with salt, weight of the athlete, etc.). Schedule the appropriate maintenance with your mechanic.

**Periodic maintenance operations for the end customer**

<table>
<thead>
<tr>
<th>PROCEDURE</th>
<th>KM INDICATION (MAX)</th>
<th>TIME INDICATION (MAX)</th>
<th>CALCULATION METHOD</th>
</tr>
</thead>
<tbody>
<tr>
<td>Check screws are tightened to the correct torque</td>
<td>2000</td>
<td>2 months</td>
<td>torque wrench</td>
</tr>
<tr>
<td>Periodically check to make sure that the brake pads are about 1 mm from the surface of the rim</td>
<td>1000</td>
<td>as soon as possible</td>
<td></td>
</tr>
<tr>
<td>Constantly check for and immediately remove any foreign objects which may deposit on the pads themselves</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Periodically check the braking power of the brake pads</td>
<td>1000</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Replacing brake pads</td>
<td></td>
<td>24 months</td>
<td></td>
</tr>
</tbody>
</table>

**Maintenance operations for a specialised mechanic**

<table>
<thead>
<tr>
<th>PROCEDURE</th>
<th>KM INDICATION (MAX)</th>
<th>TIME INDICATION (MAX)</th>
<th>CALCULATION METHOD</th>
</tr>
</thead>
<tbody>
<tr>
<td>Periodically check the tightening torque of the screws that secure the brake onto the frame, the brake pad holder screws and the cable locking screw</td>
<td>1000</td>
<td></td>
<td>torque wrench</td>
</tr>
</tbody>
</table>