Campagnolo®

SKELETON

BRAKES

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.

"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.

INTENDED USE - This Campagnolo® 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 off-road or on trails is forbidden.

LIFESPAN - WEAR - INSPECTION REQUIREMENT - The lifespan of Campagnolo® 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 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). 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 Campagnolo® representative to select a schedule that is best for you.

If you weigh 82 kg/180 lbs or more, you must be especially vigilant and have your bicycle inspected more frequently (than someone weighting less than 82 kg/180 lbs) for any evidence of cracks, deformation, or other signs of fatigue or stress. Check with your mechanic to discuss whether the components you selected are suitable for your use, and to determine the frequency of inspections.

The components of Campagnolo® 10s, 11s transmissions, as well as the brakes, rims, pedals and all other Campagnolo® products are designed as a single integrated system. Not to affect safety, performance, longevity, functionality and the WARRANTY, use exclusively the parts and components supplied or specified by Campagnolo S.r.l., without interfacing or replacing them with products, parts or components manufactured by other companies.

Note: Tools supplied by other manufacturers for components similar to Campagnolo® components, may not be compatible with Campagnolo® components. Likewise, tools supplied by Campagnolo 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 Campagnolo® 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 Campagnolo® product, the user expressly, voluntarily and knowingly accepts and/or assumes these risks, including but not limited to the risk of passive or active neglicence of Campagnolo s.r.l. or hidden, latent or obvious defects in the product, and agrees to hold Campagnolo s.r.l. harmless to the fullest extent permitted by law against any resulting damages.

WARNING!

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

SAFETY TIPS

DO NOT USE YOUR BICYCLE IF IT DOES NOT PASS THIS TEST – CORRECT ANY FAULTY SITUATIONS BEFORE USING THE BICYCLE.

- Please note that failure to correctly carry out the maintenance and repair procedures indicated in this manual or to follow the instructions in this manual could result in an accident.
- Never make any modifications to any Campagnolo® product.
- Ensure that the brake cables and brake block are in good condition.
- Ensure correct operation of the brakes before riding.
- If you brake too hard with the front brake the wheel could lock up causing a forward fall with potentially serious injuries.
- Any bent or damaged parts following impact or accidents must be replaced with original Campagnolo® parts.
- Wear close fitting and highly visible clothing (fluorescent colours or other bright colours / alternatively light colours).
- Avoid cycling at night because it is difficult for others to see you and obstacles on the road are difficult to distinguish. If you use the bicycle at night, fit it with suitable lights and reflectors which are securely mounted and clean.
- Never use a bicycle or component with which you are not completely familiar or the use and maintenance operations of which are unknown. Second hand parts may have been used incorrectly or may be ruined, therefore they could break unexpectedly, causing an accident.
- If the bicycle is used in the wet remember that the braking power and tyre grip decrease significantly, making it more difficult to control. Therefore pay closer attention when riding on wet surfaces in order to prevent possible accidents.
- Learn and observe local cycling rules and all the road signs during your ride.
- Always wear a correctly fastened protective helmet and ensure that it is approved for use in your country.

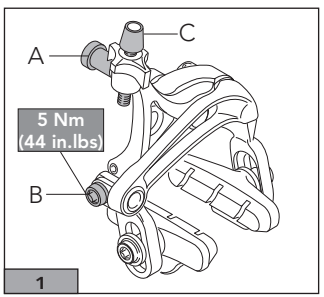
1 - TOOLS

5 mm Allen wrench	2 mm Allen wrench
Torque wrench	T25 Torx wrench
12 mm wrench / 13 mm wrench	Phillips screwdriver

2 - ASSEMBLY

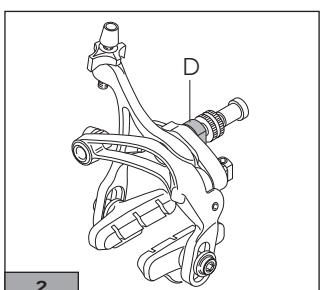
2.a) Apply the brake to the frame or on the fork and tighten the hex nut (A - Fig. 1) using a 5 mm wrench or a Torx T25 wrench.

2.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. 1) 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.

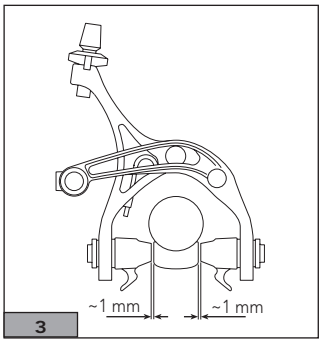


2.c) Carry out an initial centring of the brake with respect to the wheel acting on the locknut (D - Fig. 2) with a wrench:

- **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. 1).

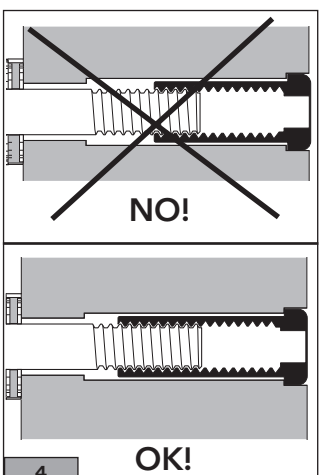


⚠ WARNING!

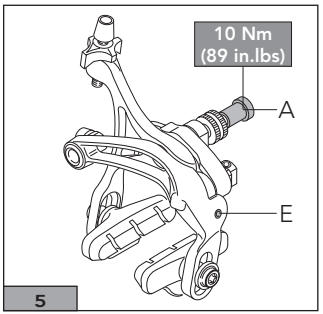
When mounting the brake to the frame always make sure that at least 6 threads of the brake's centre bolt are engaged with the internally threaded sleeve (Fig. 4). If fewer threads are engaged, the centre bolt may fail during use, resulting in brake detachment from the frame an accident, personal injury or death.

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

- with 13.5 mm socket-head nut (standard)
- with 18.5 mm socket-head nut (long)
- with 24 mm socket-head nut (extralong)



2.d) Secure firmly the brake to the frame by tightening the nut (A - Fig. 5) with a torque wrench to **10 Nm - 89 in.lbs.**



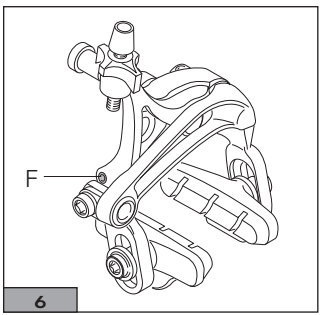
⚠ WARNING!

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

SUPER RECORD / RECORD VERSION

2.e) If your brakes are fitted with the adjustment screw (E - Fig. 5), then correct centering using a 2 mm Allen wrench.

2.f) If your brakes are fitted with the recall spring tension adjustment screw (F - Fig. 6) you can adjust the force required to activate the brakes. To modify the force, tighten or loosen the Allen screw (2 mm wrench) within the limits allowed by its travel.

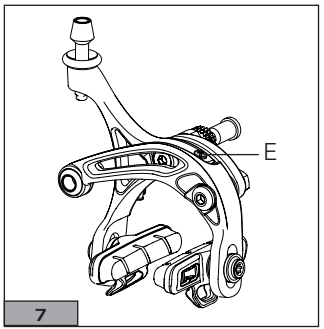


⚠ WARNING!

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.

CHORUS VERSION

2.g) If your brakes have a set screw (E - Fig. 7) proceed with correcting the centring (Fig. 8) using a Phillips screwdriver.



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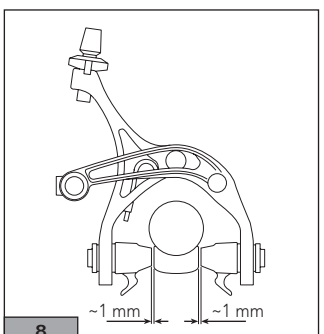

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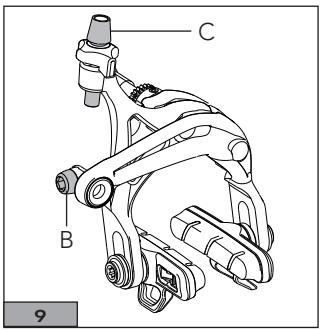
⚠ WARNING!

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.

3 - ADJUSTING THE BRAKE PADS

• Periodically check to make sure that brake blocks are 1 mm from the surface of the rim (Fig. 8). 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. 9). If this is not sufficient, loosen the cable clamp screw (B - Fig. 9) and follow the instructions from 2.b to 2.g.

• If, on the other hand, the brake blocks are not equidistant from the rim, loosen the hex nut (A - Fig. 1) using a 5 mm wrench or a T25 Torx wrench and follow the instructions from 2.c to 2.g.



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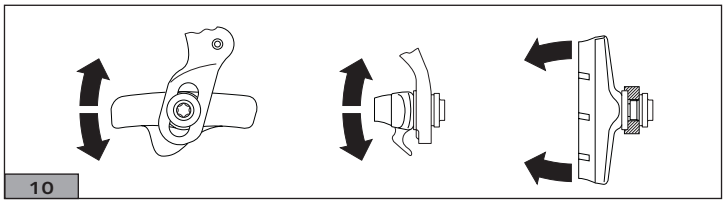
• For pad-holders equipped with orbital articulation which can be oriented in all directions (Fig. 10): adjust the brake pads so that they are centered in height in relation to the braking surface of the rim and parallel to it horizontally and vertically.

⚠ WARNING!

Please be sure that you tighten the cable sufficently, 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.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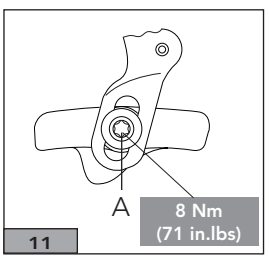
• Clamp the pad-holders by tightening the 5 mm Allen screw or Torx T25 screw (A - Fig. 11) to a torque of **8 Nm (71 in.lbs).**

DANGER!

Always ensure that the closed part of the brake block holder (B) is facing the forward direction as indicated in figure 12.
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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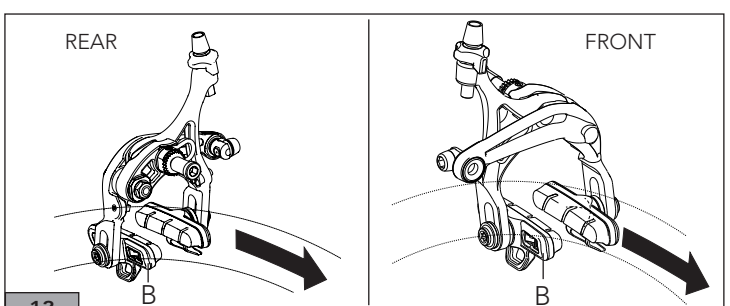

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4 - REPLACING THE BRAKE PADS

• Using a screwdriver, gently lift the spring H (Fig. 13) and remove the worn pad from the pad holder (Fig. 13).

CAUTION
Do not force the spring during pad replacement.

Insert the new pad until you hear a click (Fig. 13) and check to make sure that the spring has entered its seat.

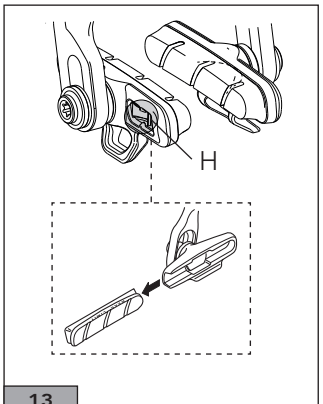
• To facilitate insertion of the new brake pad, wet the inside of the brake shoe with alcohol. Never use lubriants (Fig. 13.1).

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 15 and adjust as necessary.



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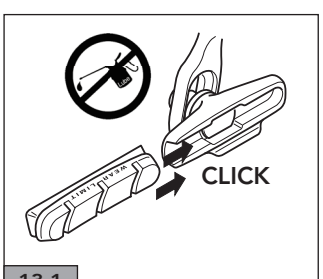
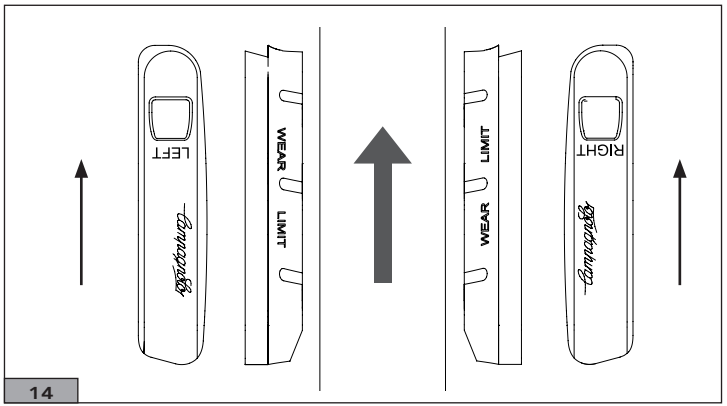


13.1



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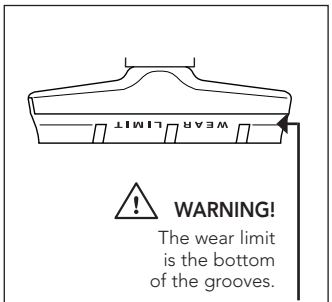
DANGER!

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.

5 - 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. 15).

• Periodically check that the brake pads are about 1 mm from the surface of the rim (Fig. 16). If this is not the case, adjust the distance using the cable tension adjustment screw (C - Fig. 17). If this proves insufficient, loosen the cable securing screw (B - Fig. 17), 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. 17).



WARNING!
The wear limit is the bottom of the grooves.

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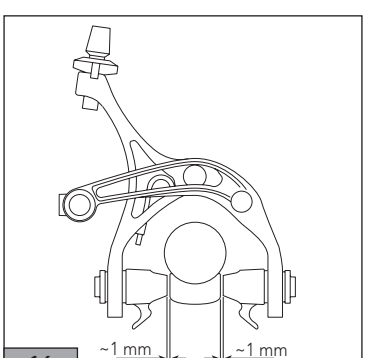

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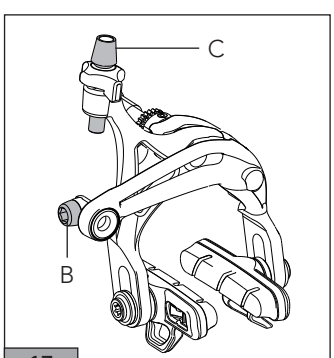

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WARNING!

Please be sure that you tighten the cable sufficently, 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.

• When replacing brake pads, cables and casings - only use original Campagnolo® spare parts.

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

• Do not allow oil or grease to contaminate the brake blocks.

• 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.

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

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.

NOTES

Campagnolo S.r.l. reserves the right to change the content of this manual without notice. The most updated version will be available on www.campagnolo.com.