



TECHNICAL MANUAL

12s / 11s CHAIN

C-LINK VERSION

HD-LINK VERSION

Campagnolo®

WARNING!

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



12s / 11s CHAIN



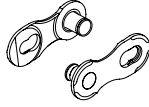
THIS TECHNICAL MANUAL IS INTENDED FOR USE BY PROFESSIONAL MECHANICS.

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.

The actual product may differ from what is illustrated, as the specific purpose of these instructions is to explain the procedures for using the component.



1 - TECHNICAL SPECIFICATIONS / COMPATIBILITY

| CHAIN | WIDTH | LENGTH | FASTENING SYSTEM | | | TOOL |
|-------|-------|--------------|------------------|------------|---|---|
| | (mm) | (links) | type | code | image | code |
| 11s | 5,5 | 114 | ULTRA-LINK | 5-CN-RE500 |  | UT-CN300 |
| 12s | 5,15 | 114 | ULTRA-LINK | 5-CN-SR600 |  | UT-CN300 / UT-CN400 |
| | 5,15 | 113 + C-LINK | C-LINK | CN-SR702 |  | Connecting link closing caliper with teeth less than 1.8 mm thick |

WARNING!

The 12s chain is not compatible with 10s and 11s drivetrains. Use the 12s chain only and exclusively with components specifically designed by Campagnolo for the Campagnolo® 12s drivetrain; using other combinations could lead to accidents, physical injury or death.

The 11s chain is not compatible with 10s and 12s drivetrains. Use the 11s chain only and exclusively with components specifically designed by Campagnolo for the Campagnolo® 11s drivetrain; using other combinations could lead to accidents, physical injury or death.



WARNING!

The use of sprockets or chainrings which are not marked Campagnolo® can damage the chain. This may result in its unexpected opening of the chain and cause accidents, personal injury or death.



2 - 12s CHAIN INSTALLATION WITH C-LINK (CONNECTING LINK)

2.1 - CHAIN LENGTH FOR WRL GROUPSETS (WITH C-LINK)

Determine the correct chain length without passing it through the rear derailleur, positioning it on the largest sprocket and on the main chainring.

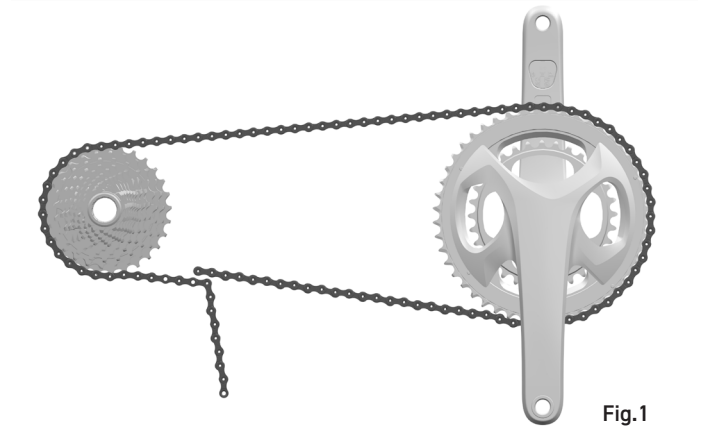


Fig.1

If the pins are not perfectly aligned, the length of the chain must be increased until it crosses the right hand pin of the next external link; inasmuch, in the example in Fig 1.1, the correct length is obtained at point A.

Starting from this point, add another 3 links (two inner and one outer) to obtain the exact pin when the chain can be shortened (point B Fig. 1.1).

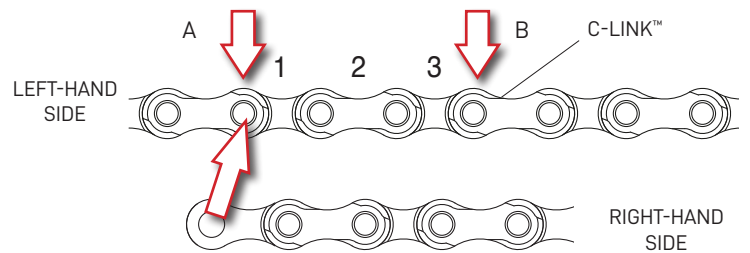


Fig.1.1

2.2 - CHAIN LENGTH FOR EPS GROUPSETS (WITH C-LINK)

- Determine the correct length of the chain positioning it on the sprocket and the smallest chainring and ensuring that the measurement H (Fig. 2), the distance between the bottom part of the rocker and the upper part of the chain, is about circa 10 - 15 mm.

- In order to avoid malfunctioning of the drivetrain, the measurement H should not under any circumstances be less than 3 mm and must not be greater than 22 mm because, with a large sprocket and chainring the chain would be excessively taut.

CAUTION!

An overly tight chain will cause the rear derailleur and front derailleur to malfunction.

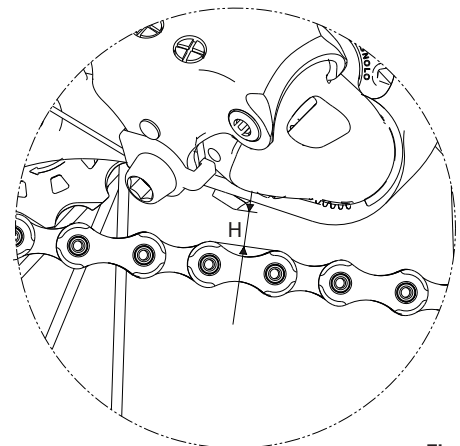


Fig.2

2.3 - CHAIN LENGTH FOR MECHANICAL GROUPSETS (WITH C-LINK)

The chain is sold with 113 links + 1 connecting link.

For the length of the chain (only with a crankset with 48-32 chainrings and 11-34 cassette), follow the indications below according to the frame chainstay length:

| | |
|--|----------------|
| 405-409 mm: 108 links (107 + connecting link) | remove 6 links |
| 410-415 mm: 110 links (109 + connecting link) | remove 4 links |
| over 415 mm: 112 links (111 + connecting link) | remove 2 links |

For any other chainring combination from that indicated above, the chain must be 110 links long (remove 4 links) for frames with a chainstay length between 405 and 415mm.

In the case of longer frames, the chain must be 112 links long (remove 2 links).

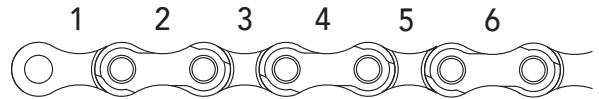


Fig.3

2.4 - HOW TO SHORTEN THE CHAIN (WITH C-LINK)

Fit the link to be opened in tool (Fig. 4) taking care to end with an internal link;

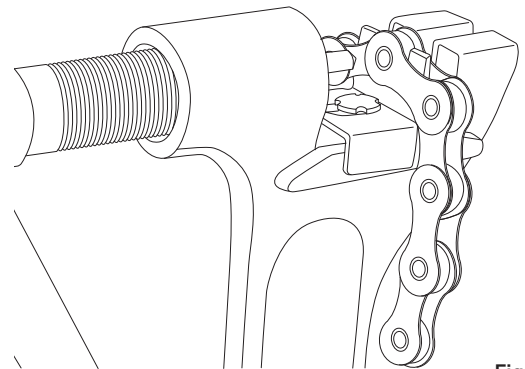


Fig.4

- tighten the tool until the small pin emerges completely from the hole in the link (Fig. 5).

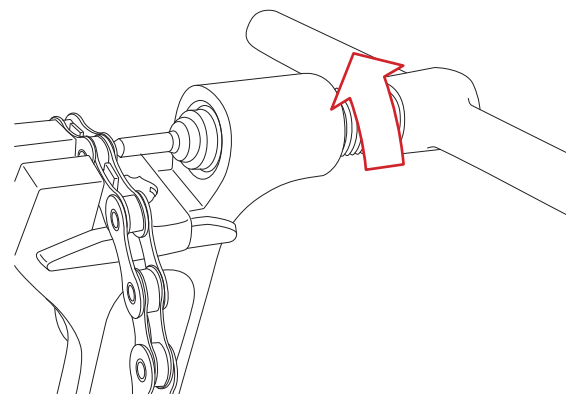


Fig.5

2.5 - CLOSING THE CHAIN (WITH C-LINK™)

DANGER!



If you open the chain by removing the C-Link™ (connecting link), even for chain cleaning and maintenance tasks, you must use a new C-Link™ to close the chain.

The C-Link™ is damaged during disassembly: it is therefore mandatory ALWAYS to use a new C-Link™ to close the chain.

Failure to follow these instructions may cause the chain to fail, even suddenly, with consequent accidents, physical injury or death.

- Lubricate the pins of the C-Link™ using a specific chain lubricant (Fig.6).

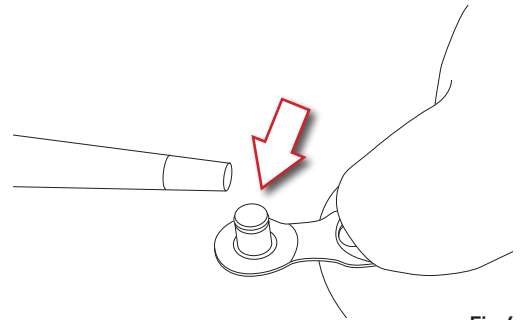


Fig.6

- Fit each pin of the C-Link™ in the two free holes on the inner links of the chain (Fig. 7).

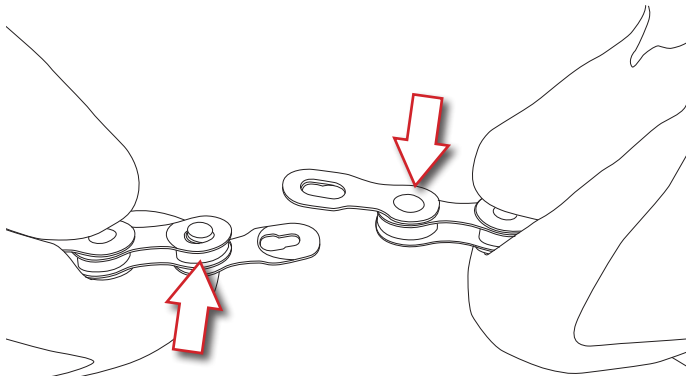


Fig.7

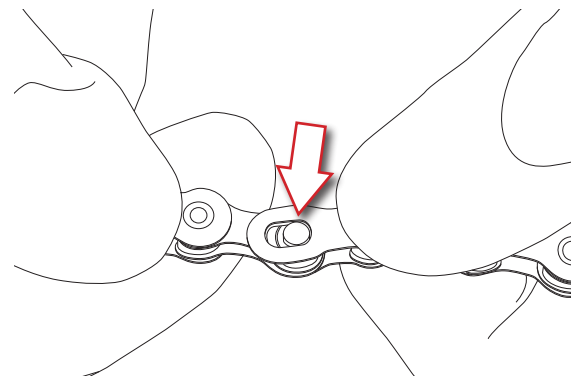


Fig.8

- Fit the pins into the area with the largest slot diameter of the C-Link™ (Fig. 8).
- Press the C-Link™ to make sure that the pins are fully inserted (Fig. 9).

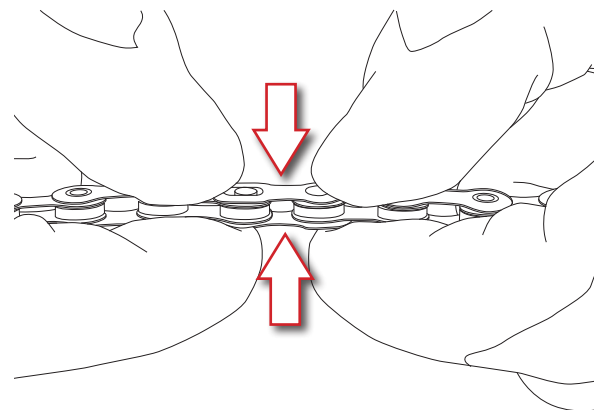


Fig.9

- Fit the connecting link closing calliper with teeth less than 1.8 mm thick into the inner links adjacent to the C-Link™ (Fig. 10).

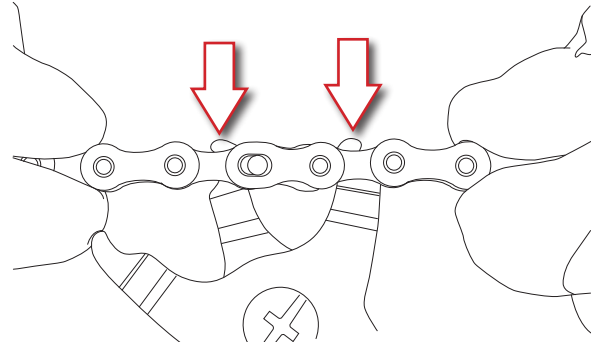


Fig.10

- Press the callipers until you hear a click indicating that the two pins have been positioned in the smaller diameter slot area (Fig. 11).

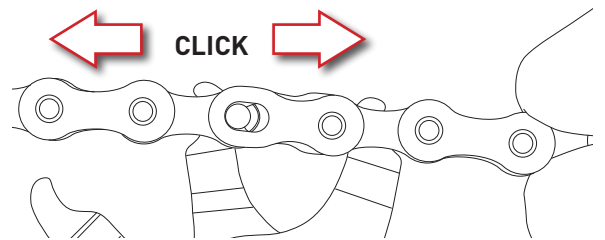


Fig.11

2.6 - OPENING THE CHAIN WITH C-LINK™ (CONNECTING LINK)

- Insert the false link opening tool with teeth less than 1.8 mm thick into the inner links adjacent to the C-Link™ (Fig. 12).

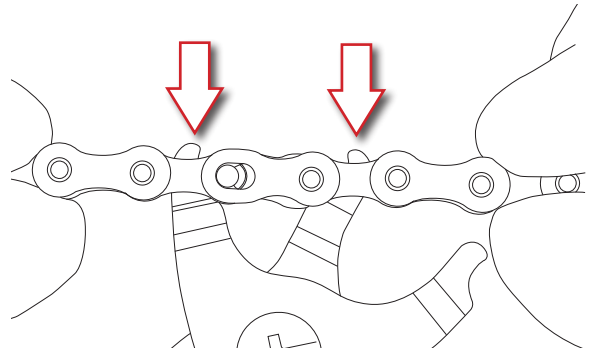


Fig.12

- Compress the C-Link™ by pushing on both sides (inner and outer) and simultaneously operate the callipers to bring the two pins closer together (Fig. 13).

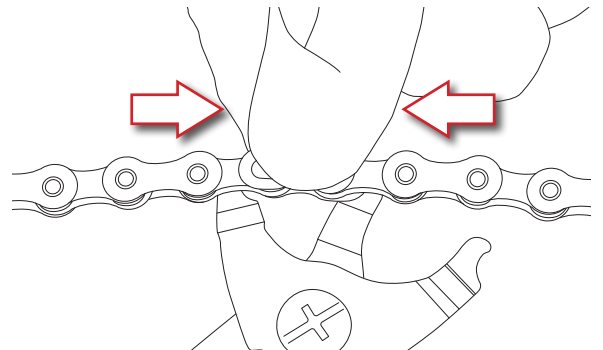


Fig.13

- Remove the C-Link™ from the inner and outer sides (Fig. 14).

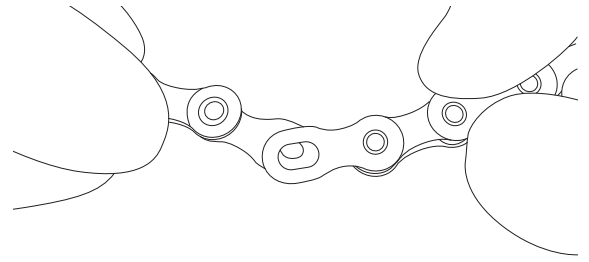


Fig.14



DANGER!

If you open the chain by removing the C-Link™ (connecting link), even for chain cleaning and maintenance tasks, you must use a new C-Link™ to close the chain.

The C-Link™ is damaged during disassembly: it is therefore mandatory **ALWAYS** to use a new C-Link™ to close the chain. Failure to follow these instructions may cause the chain to fail, even suddenly, with consequent accidents, physical injury or death.

3 - 12s / 11s CHAIN INSTALLATION (WITH HD-LINK)



WARNING!

· All connecting and disconnecting of the Campagnolo® 11s / 12s chains should be performed using the special Campagnolo® UT-CN300 / UT-CN400 (Tab.pag.3) tool. Use of other tools could damage the chain and/or provoke unexpected chain failure resulting in an accident, personal injury or death.

· The pusher of the Campagnolo® tool UT-CN300 / UT-CN400 is provided with a replaceable tapered tip pin; if the pin is damaged or it becomes worn, please replace it with the suitable Campagnolo® spare pin UT-CN301. Failure to timely replace the tip pin can damage your chain, resulting in an accident, personal injury or death.

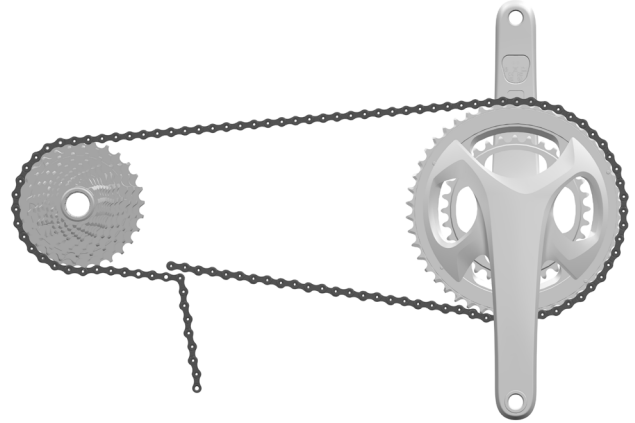
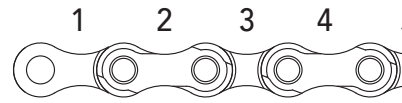


WARNING!

An incorrectly assembled chain unexpectedly break, while riding in an accident, personal injury, or death. If you have any doubt whatsoever regarding your ability to properly perform any of the operations in this manual, please take your bicycle to a qualified repair shop.

3.1 - CHAIN LENGTH FOR 12s WRL GROUPSETS (WITH HD-LINK)

· Determine the correct chain length without passing it through the rear derailleur, positioning it on the largest sprocket and on the chainring. Once you have identified the correct pin on the inner link, from the opposite side to the outer one with the plastic clamp and the adhesive "Warning!" label, add 4 more links, two outer and two inner, to obtain the exact pin onto which to shorten the chain.



3.1 - CHAIN LENGTH FOR 12s MECHANICAL GROUPSETS (WITH HD-LINK)

For the length of the chain (only with a crankset with 48-32 chainring and 11-34 sprocket box), follow the indications below according to the frame chainstay length:

405 - 409 mm: 108 links

410 - 415 mm: 110 links

over 415 mm: 112 links

For any other crankset combination from that indicated above, the chain must be 110 links long for frames with a chainstay length between 405 and 415 mm.

3.2 - CHAIN LENGTH FOR 12s EPS GROUPSETS (WITH HD-LINK)

· Determine the correct length of the chain positioning it on the sprocket and the smallest chainring and ensuring that the measurement H (Fig. 1), the distance between the bottom part of the rocker and the upper part of the chain, is about circa 10 - 15 mm.

· In order to avoid malfunctioning of the drivetrain, the measurement H should not under any circumstances be less than 3 mm and must not be greater than 22 mm because, with a large sprocket and chainring the chain would be excessively taut.

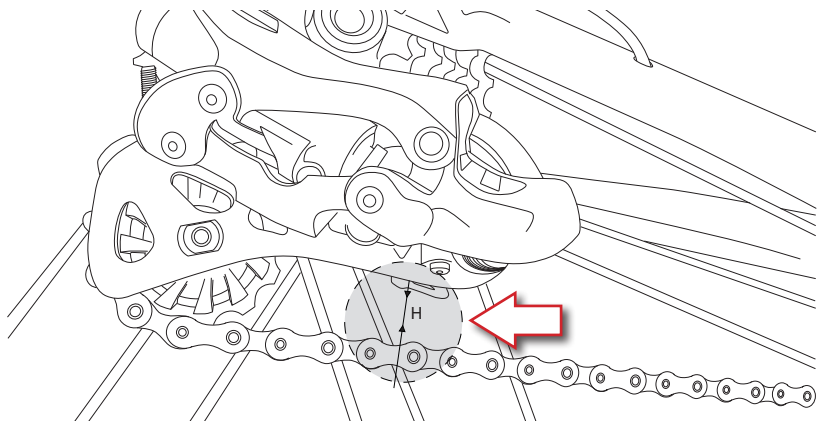


Fig.1

3.3 - CHAIN LENGTH FOR 11s GROUPSETS (WITH HD-LINK)

• Determine the correct length of the chain positioning it on the sprocket and the smallest chainering and ensuring that the measurement H (Fig. 2), the distance between the bottom part of the rocker and the upper part of the chain, is about circa 10 - 15 mm.

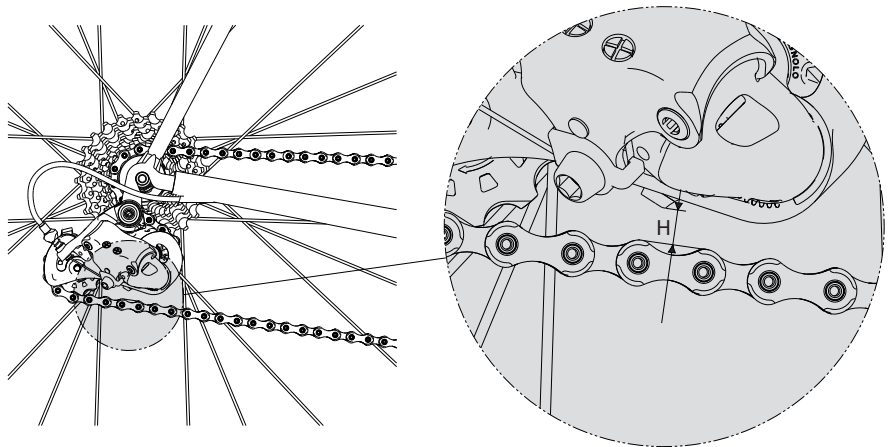


Fig.2

• In order to avoid malfunctioning of the drivetrain, the measurement H should not under any circumstances be less than 3 mm (Fig. 3) and must not be greater than 22 mm because, with a large sprocket and chainering the chain would be excessively taut (Fig. 4).

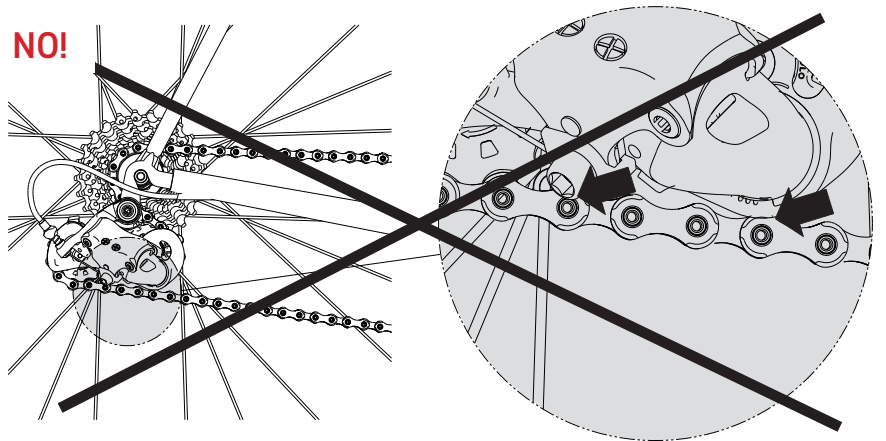


Fig.3

• Perform all of the following operations and remove extra links from the side of the chain opposite the external link, which is identified by the plastic band and the adhesive "WARNING!" label (Fig. 4.1).

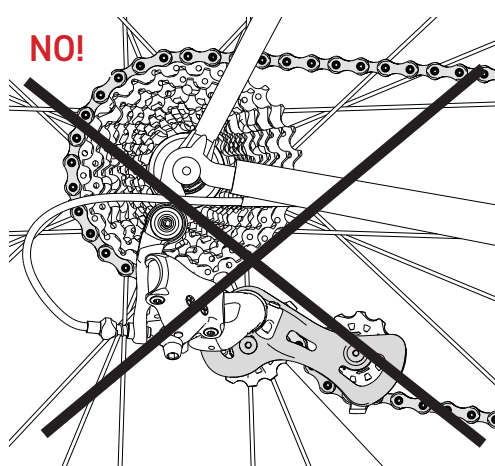


Fig.4

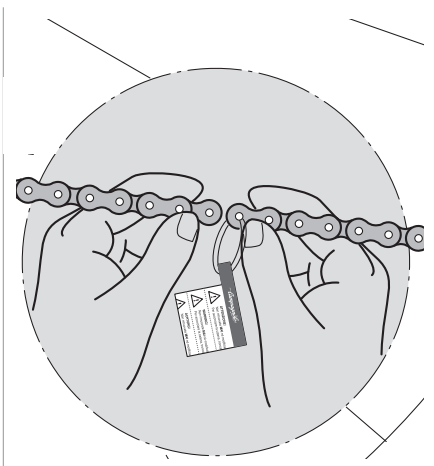


Fig.4.1



IMPORTANT (for 11s chain "CAMPAGNOLO")

Unlike the 11s chains, this chain does not have the calibrated hole reference adhesive "Warning" label, which must be left on the chain, therefore it can be truncated from both sides. We therefore recommend leaving the link that indicates the chain batch, truncating the opposite side.

3.4 - HOW TO SHORTEN THE CHAIN (WITH HD-LINK)

- Prepare the tool **UT-CN400 (12s) / UT-CN300 (11s / 12s)** by positioning the tongue in open mode (X - Fig. 5)

- fit the link to be opened in tool **UT-CN400 (12s) / UT-CN300 (11s / 12s)** (Fig. 5) taking care to end with an internal link:

- clamp the link with the special clamping device (Z) (Fig. 6);

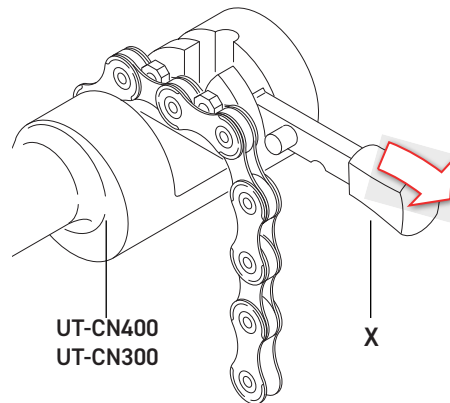


Fig.5

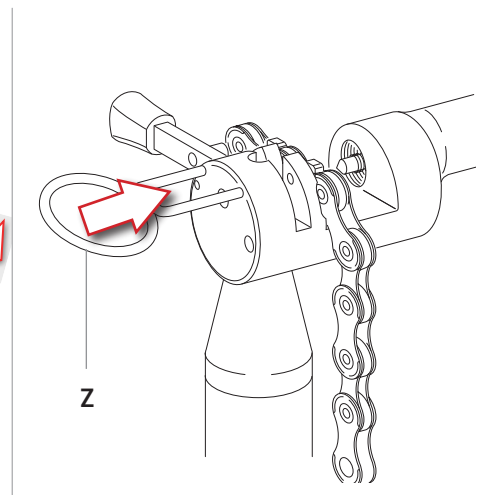


Fig.6

- Tighten the tool until the small pin emerges completely from the hole in the link (Fig. 7).

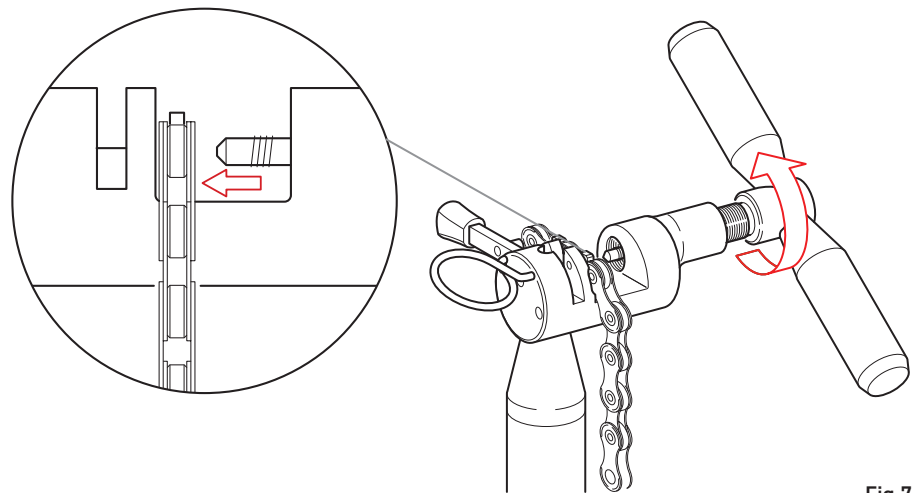


Fig.7

3.5 - INSERTING THE ULTRA-LINK 5-CN-SR600 BUSHING (12s) / 5-CN-RE500 BUSHING (11s)

- Remove the plastic band and the adhesive "Warning" label.

- To install the closing pin **ULTRA-LINK 5-CN-RE500 (11s) / 5-CN-SR600 (12s)**, place the chain on the bottom bracket shell.

- Insert the inner link (B - Fig. 8) into the outer link (C - Fig. 8), and then insert the guide of the rivet **ULTRA-LINK 5-CN-RE500 (11s) / 5-CN-SR600 (12s)** (D - Fig. 8) into the hole of the link from the inside of the chain towards the outside.

- Move the chain on to the larger chainring (keeping it on the smallest sprocket), then position the links to be closed in the area indicated in Figure 9.

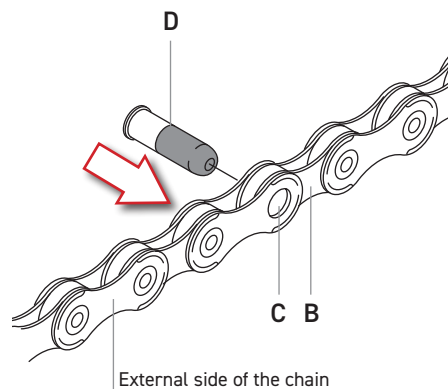


Fig.8

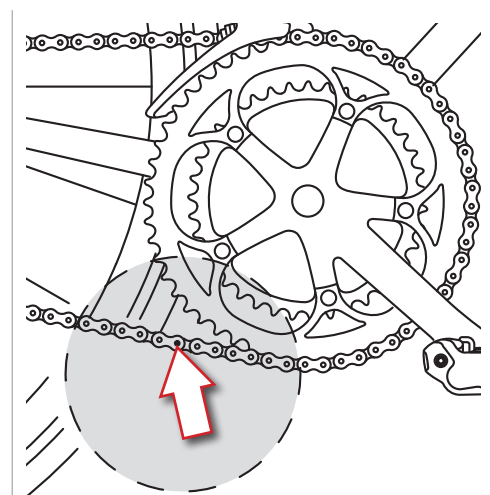
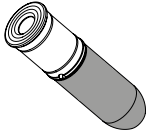
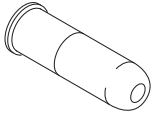


Fig.9

| IMPORTANT! COMPATIBILITY | FASTENING SYSTEM | |
|---|---|---|
| <p>The 11s closing pin is not compatible with 12s drivetrains. Use pin 5-CN-RE500 solely with 11s chains.</p> <p>The 12s closing pin is not compatible with 11s drivetrains. Use pin 5-CN-SR600 solely with 12s chains.</p> | 11s | 12s |
| |  |  |
| | 5-CN-RE500 | 5-CN-SR600 |

- Unscrew tool **UT-CN400 (12s) / UT-CN300 (11s / 12s)** Fig. 10.

- Position the tool **UT-CN400 (12s) / UT-CN300 (11s / 12s)** as shown in Fig. 11.

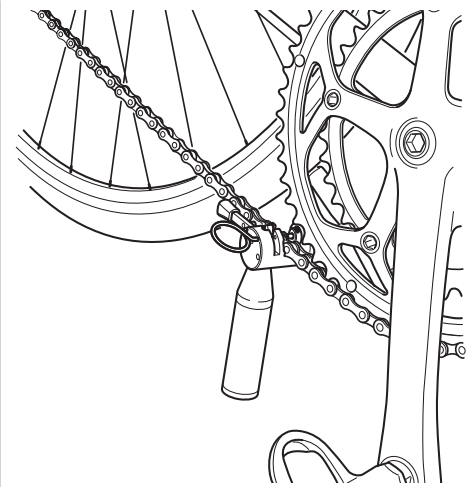
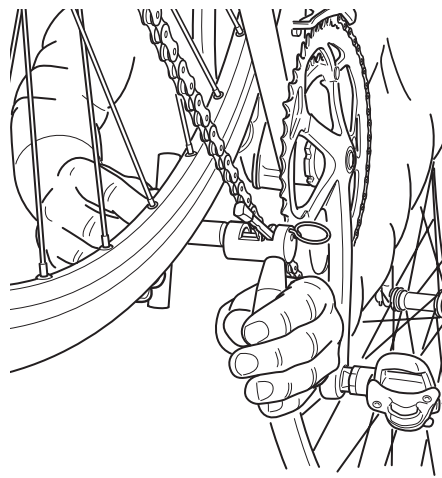


Fig.10

- Fit the link to be closed in the relative seats (Fig. 11).

- Clamp the link with the special clamping device (Z - Fig. 12).

- Check that the tongue of tool **UT-CN400 (12s) / UT-CN300 (11s / 12s)** is in the external position (Y - Fig. 12).

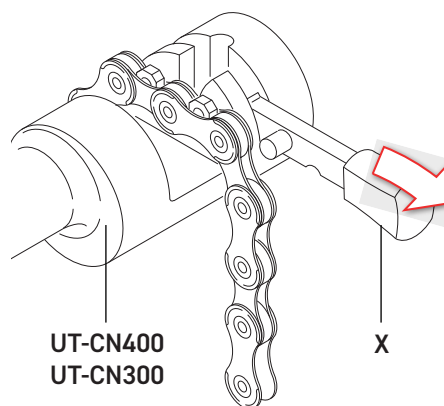


Fig.11

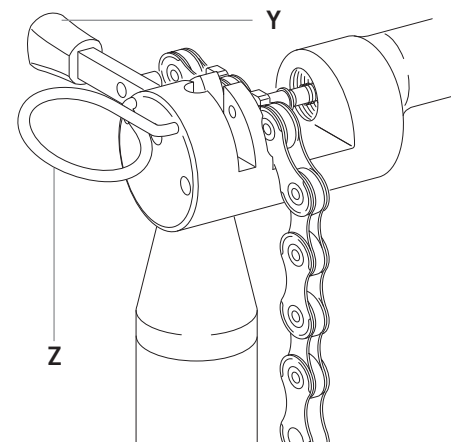


Fig.12

- Check that the tapered tip of the pusher (F) (Fig. 13) is in line with the centre of the bushing **ULTRA-LINK 5-CN-RE500 (11s) / 5-CN-SR600 (12s)** (E) (Fig. 13).

- While exerting a uniform force, screw in the tool (Fig. 14) so that the bushing **ULTRA-LINK 5-CN-RE500 (11s) / 5-CN-SR600 (12s)** (E) has completely entered the thickness of the chain.

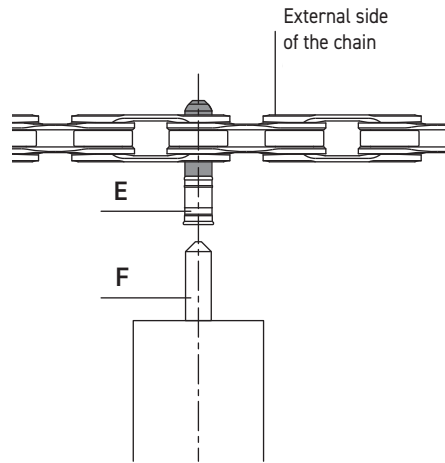


Fig.13

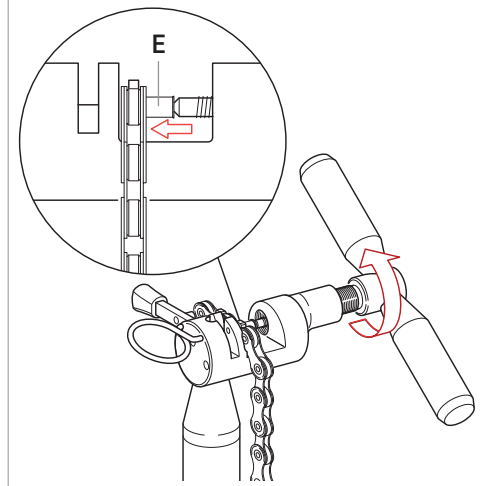


Fig.14

Note

In order to minimize the possibility of damaging the chain irreparably, **DO NOT TIGHTEN** the tool beyond the beat. Let the bushing **ULTRA-LINK 5-CN-RE500 (11s) / 5-CN-SR600 (12s)** (E) protrude 0.1 mm from the inner side of the chain (Fig. 13).

- Insert the protruding part of the guide into the hole provided at the base of the tool and split it by bending (Fig. 14).

The terminal part of the split guide must always remain inside the bushing.

- Remove the clamping device and remove the chain from the tool.

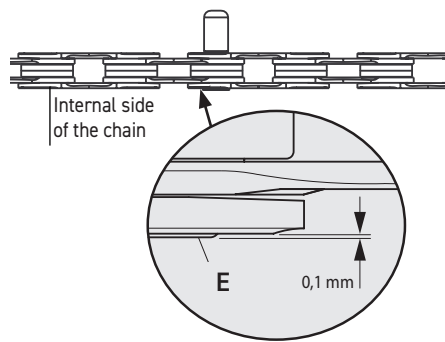


Fig.15

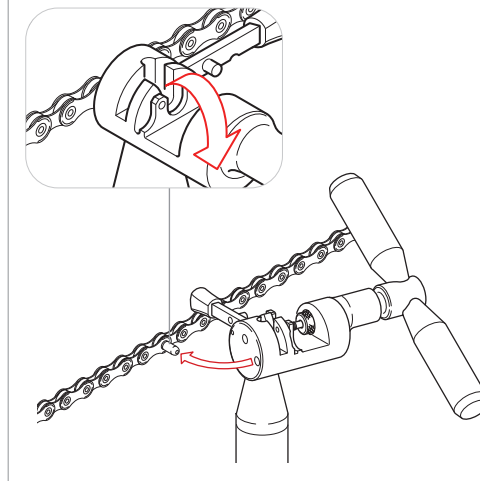


Fig.16

3.6 - LOCKING THE BUSHING **ULTRA-LINK 5-CN-SR600 (12s) / 5-CN-RE500 (11s)**

- Prepare the tool **UT-CN400 (12s) / UT-CN300 (11s / 12s)** by positioning the tongue in closure mode (Y - Fig. 17).

- Position the tool **UT-CN400 (12s) / UT-CN300 (11s / 12s)** as indicated in Fig. 18 (from the outside of the chain towards the inside).

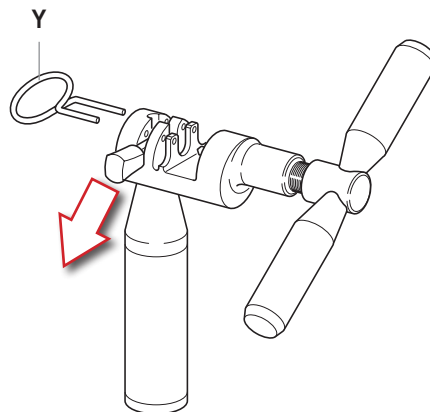


Fig.17

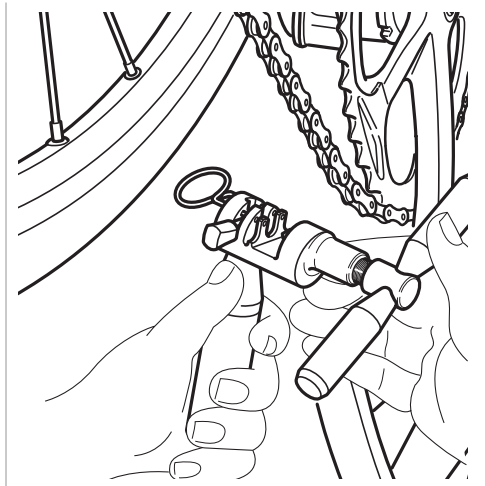


Fig.18

- Insert the link to close into the provided seats (Fig. 19).
- Lock the link by means of the special locking device (Z - Fig. 19).
- Check that the tapered tip of the pusher is in line with the centre of the bushing **ULTRA-LINK 5-CN-RE500 (11s) / 5-CN-SR600 (12s)** (Fig. 20).

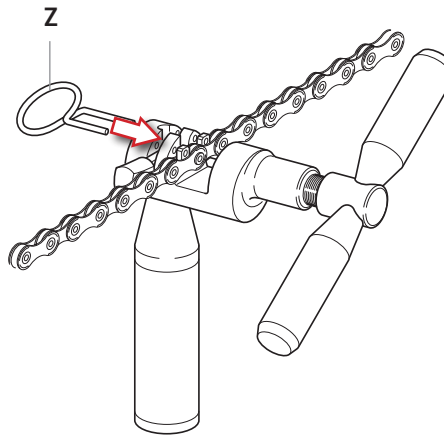


Fig.19

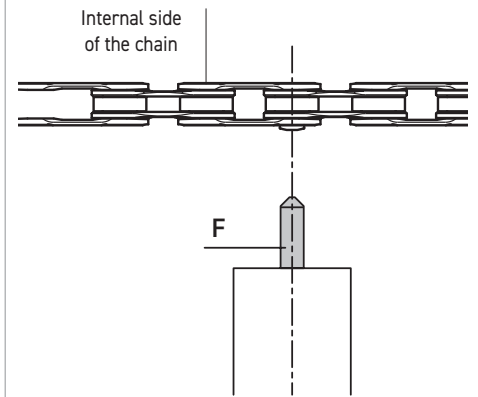
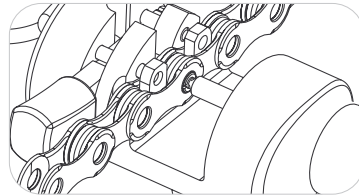


Fig.20

- Screw in the tool to bring the pusher into contact with the protruding end of the **ULTRA-LINK 5-CN-RE500 (11s) / 5-CN-SR600 (12s)** bush, turning it by about 3/4 of a turn and exerting moderate force till distorted (Fig. 21).



- The slight protrusion (X) (towards the external side of the chain) of the small pin (E) from the link (Fig. 22) is entirely normal and does not obstruct normal chain movement.

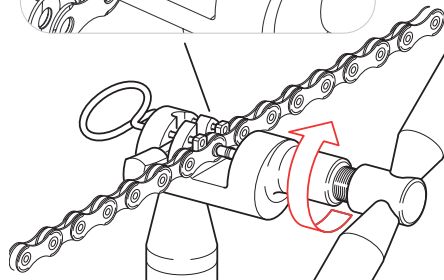


Fig.21

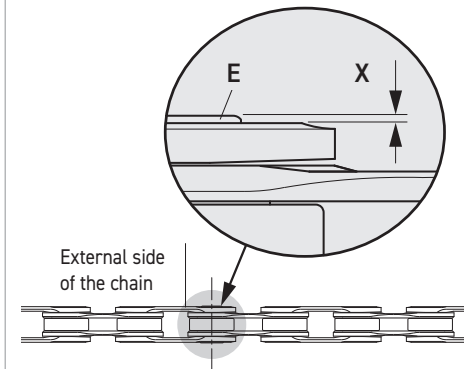
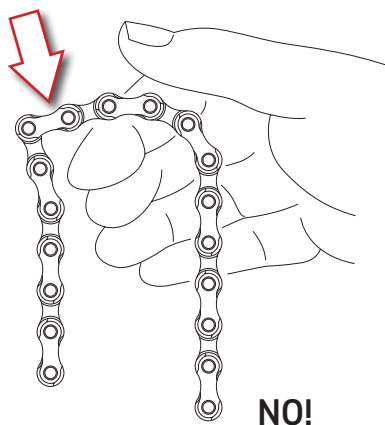


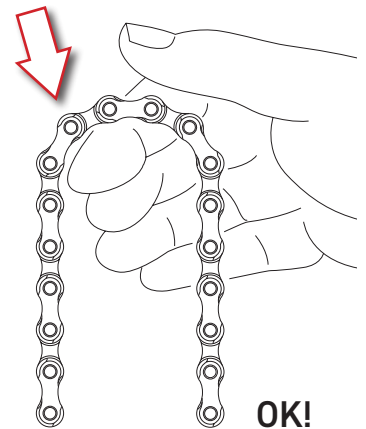
Fig.22

! NEVER try to eliminate this protrusion!

- Make sure that chain closure does not present any "harsh points" or links that do not bend freely (Fig. 23).



NO!



OK!

Fig.23

- Free the joints as required with delicate lateral bending of the links (Fig. 24).

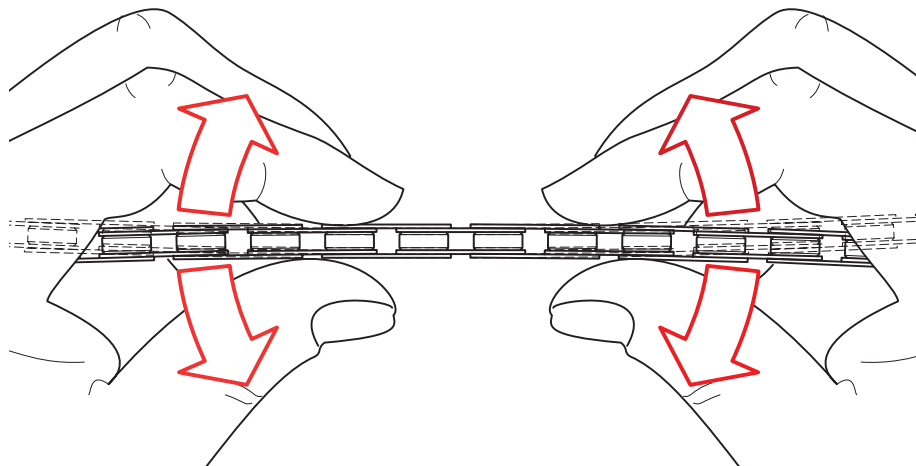


Fig.24

WARNING!



A poorly joined chain could open suddenly when using the bicycle, causing accidents, physical injury or death. If you have any doubt over your ability to follow the instructions in this manual correctly, contact a specialist mechanic.

3.7 - CHAIN OPENING (WITH HD-LINK)

WARNING!



If it becomes necessary to open and close the chain (which can be done only twice), use only the special Campagnolo **ULTRA-LINK 5-CN-RE500 (11s) / 5-CN-SR600 (12s)** pin with Campagnolo **UT-CN400 (12s) / UT-CN300 (11s / 12s)** tool. The use of pin produced by different manufacturers can damage the chain. A damaged chain can break, even suddenly, and cause accidents, injuries and even death.

WARNING!



Opening and closing the chain on more than two occasions can result in the chain unexpectedly failing while riding, resulting in an accident, personal injury or death.

- Get the special Campagnolo® bushing **ULTRA-LINK 5-CN-RE500 (11s) / 5-CN-SR600 (12s)**.
- Only and exclusively use the tool **UT-CN400 (12s) / UT-CN300 (11s / 12s)**.
- Identify the opening link on the chain; this must be different and away from the one used for closing the first time (a link that can be recognizable from the impression showing the production batch).

Note

To open the chain, carry out the operations indicated in chapter 3 "Chain installation", using the Campagnolo® tool **UT-CN400 (12s) / UT-CN300 (11s / 12s)** only.

4 - CHAIN MAINTENANCE

The life of the chain depends on conditions of use and on the frequency and quality of maintenance. To keep the chain in good condition, cleaning and lubrication must therefore be repeated frequently, especially if it is subjected to heavy-duty use (i.e. after washing your bicycle, after every ride in wet, dusty or muddy conditions etc.).

! | To increase the service life of the chain-rings and the chain, the chain can be cleaned with neutral detergent (avoiding the use of degreasers) and thoroughly lubricate it.

- Do not remove the chain to clean and/or lubricate it.
- Before lubricating, thoroughly clean the drive system (chain, sprocket set, chain-rings and derailleur pulleys) with a brush or cloth saturated with a neutral detergent. Never use alkaline or acid based solvents, such as rust preventive products, as they could break the chain, resulting in possible serious injuries.

! | For cleaning the bicycle only use environmentally-friendly and neutral products without caustic substances and safe to use for you and for the environment.

- Lubricate each individual roller drop by drop, so that the oil penetrates to the pin inside. Avoid using spray oils, which can easily come into contact with brake pads.

! | During the operations of the chain lubrication pay special attention that the lubricant goes inside the rollers. A chain without proper lubrication causes abnormal noise and excessive wear of the drive system.

- After applying the lubricant move the cranks and engage all possible gear combinations in order to thoroughly lubricate the entire drive system.
- Thoroughly clean any residual lubricant from the bicycle and floor.

WARNING!



Lubricant residues on the rims, brake shoes, discs and brake pads can decrease or nullify your bicycle's braking capacity, and can lead to accidents, physical injuries, or even death.

Using poor-quality or incorrect lubricant may damage the chain and cause excessive wear or damage to the system. A damaged drive system can malfunction, resulting in an accident, personal injury or death.

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 Campagnolo® components, damaging them beyond repair. Wash your bicycle and Campagnolo® 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.

4.1 - CHAIN REPLACEMENT

A chain typically lasts, depending on the conditions of use and on the frequency and quality of maintenance operations. Use a high precision caliper gauge to measure, in different points of the chain, the length as indicated in fig. 1. If even one of the measurement is longer than 132.60 mm the chain must immediately be replaced.

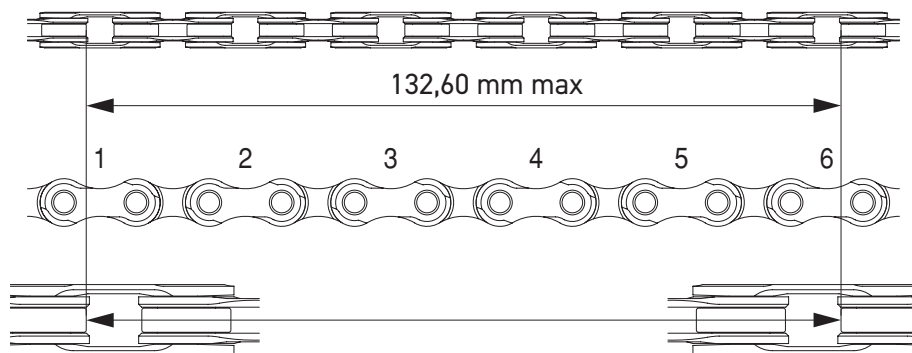


Fig.1

! If even one of the measurement is longer than 132.60 mm the chain must immediately be replaced.



WARNING!

Failure to timely replace the chain can result in unexpect chain failure while riding, resulting in an accident, personal injury or death.

5 - PERIODIC MAINTENANCE TABLE

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.

| PROCEDURE | MILEAGE IN KM (MAX) | TIME (MAX) | METHOD FOR CHECKING |
|-------------------|---------------------|------------|------------------------|
| Check lengthening | 3000 | 1 MONTH | High precision caliper |