Campagnolo

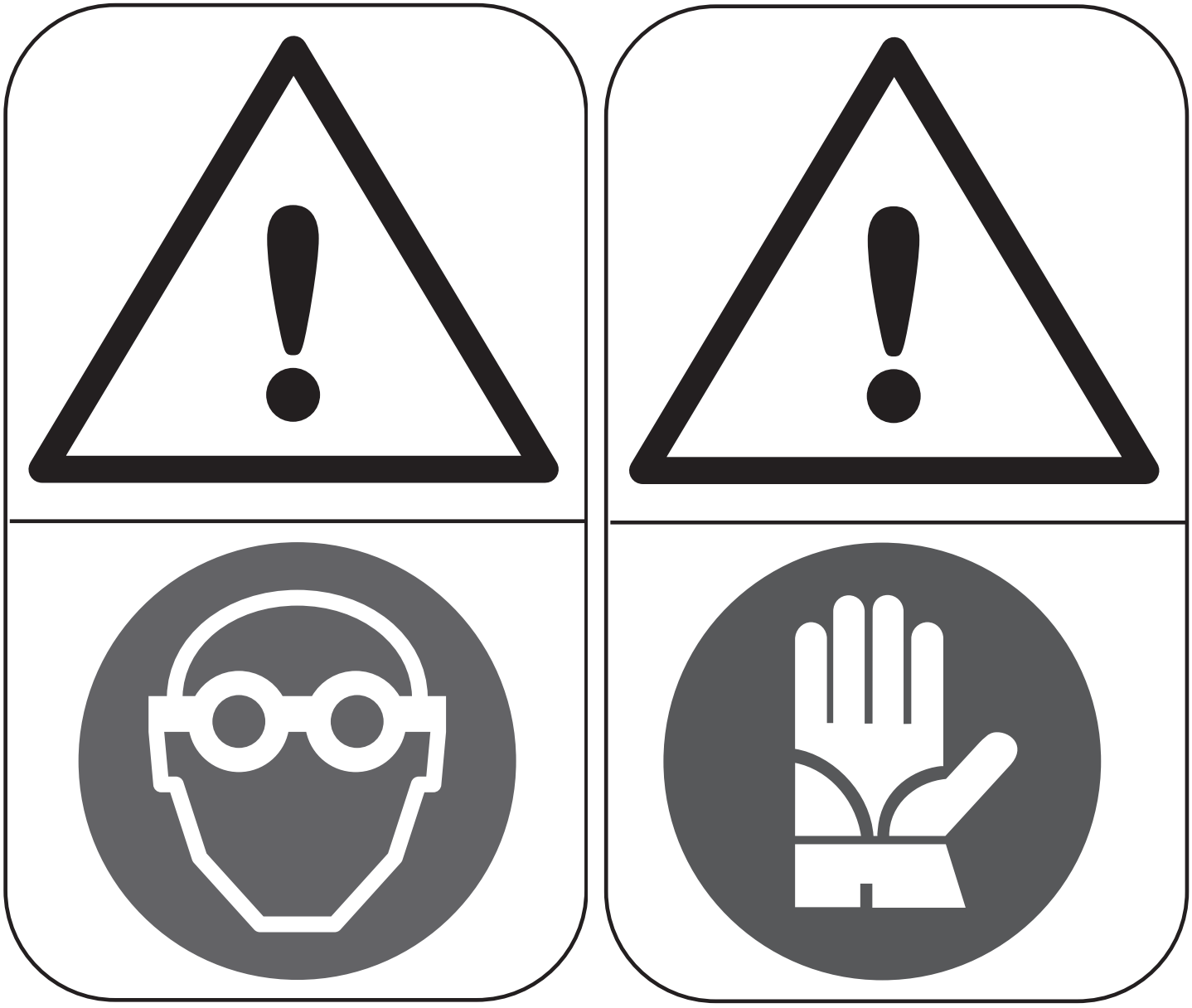
CAMPAGNOLO®

13KAR™

13S REAR DERAILLEUR

WARNING!

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



13s REAR DERAILLEUR

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

REAR DERAILLEUR	MAX SPROCKET (TEETH)	MIN SPROCKET (TEETH)
EKAR 13s	44	9

2 - COMPATIBILITY

	13S REAR DERAILLEUR	13S ERGOPOWER CONTROLS	13S CHAIN	CABLES AND HOUSINGS
	EKAR	EKAR	EKAR WITH HD-LINK (CLOSING PIN)	THE MAXIMUM SMOOTHNESS
			EKAR WITH C-LINK (CONNECTING LINK)	
MARKINGS	RD21-EK13	EP21-EKD13L4 / EP21-EKD13R4	C13	THE MAXIMUM SMOOTHNESS
	RD21-EK13 (CF)			

WARNING!

Combinations other than those shown in the tables could cause the drivetrain to malfunction and result in accidents, physical injury or death.
The use of components that do not belong to the correct range can significantly reduce the overall performance of the drivetrain, and it is therefore advisable not to mix components from old ranges with those from the new one.

3 - INTERFACE WITH THE FRAME

3.1 - STANDARD DROP-OUT SPECIFICATIONS

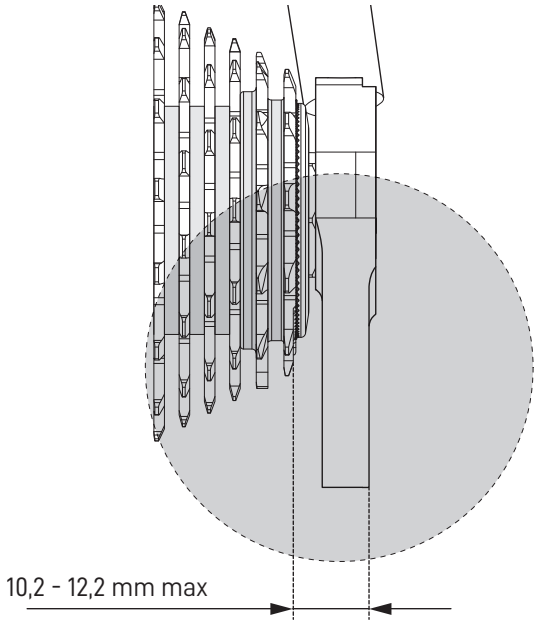


Fig.1

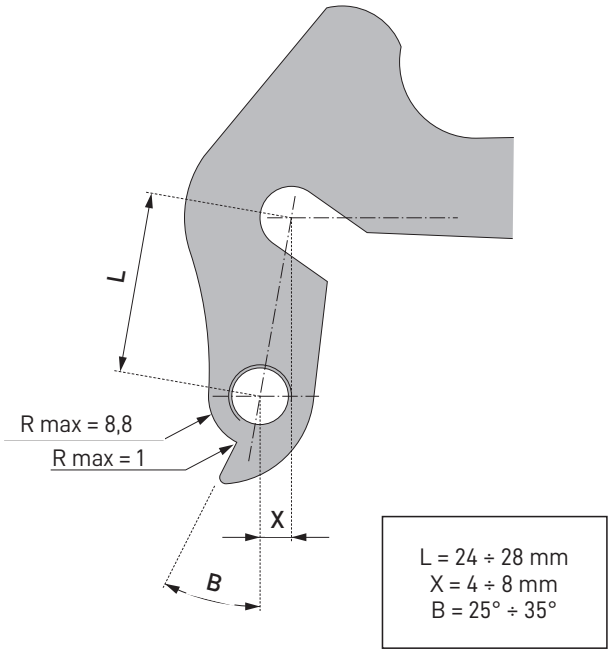


Fig.2

The stroke of the cage in relation to the cable throw is checked by Campagnolo Quality Control for each single piece produced.
The distance of the rear derailleur hanger from the first sprocket influences this stroke, so it is indispensable to stay within the tolerance prescribed as per the drawing (Fig. 1).

WARNING!

Campagnolo® rear derailleurs are designed to work with dropouts that have the dimensions shown in Fig. 2.
For your safety and for the performance of the drivetrain please make sure that the dropout of your bicycle has those dimensions.
If you have any doubts please have a qualified mechanic inspect your bike before using it.
Drop-outs outside these specifications can lead to a serious loss of performance.

3.2 -FRAME SPECIFICATIONS

Height of the chain stays near the sprocket pack: **B < 7 mm**

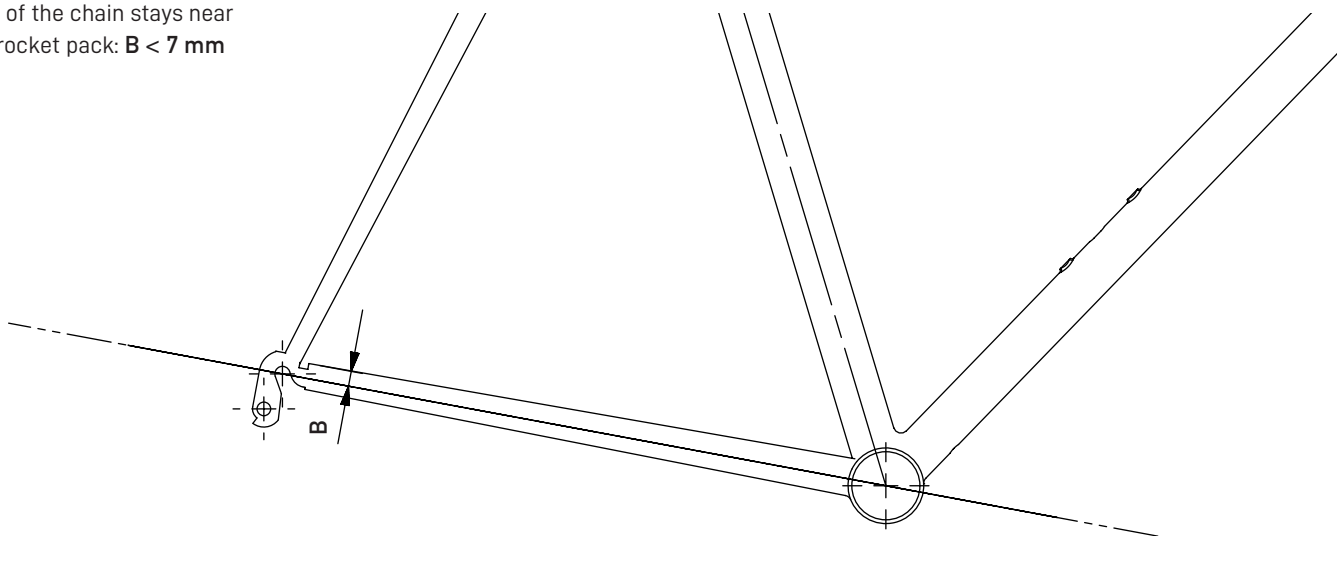


Fig.3

4 - ASSEMBLY

4.1 - PREPARING THE FRAME

• Check that the Campagnolo® plate (**Fig. 1**) is fitted under the bottom bracket shell.

Different plates can also give rise to a serious loss of performance.

• Chase the threads of the rear derailleur hanger (X - **Fig. 2**) using a tool tap with threading M10x1.

Fig.1

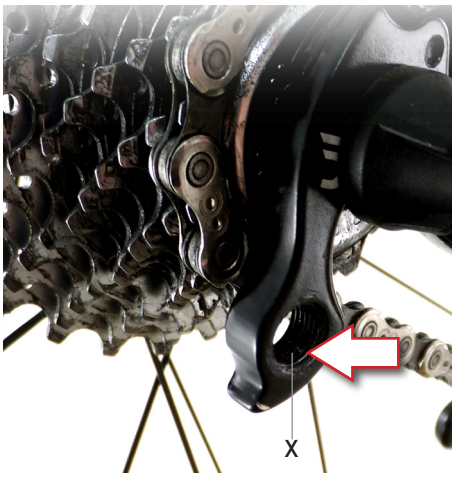


Fig.2

! **Check and, if necessary, realign the rear derailleur dropout only be using Campagnolo® tool UT-VS030 (Fig. 3).**
NEVER straighten the dropout with the rear derailleur assembled because you could damage the dropout and cause irreparable damage or loss in functionality to your rear derailleur.

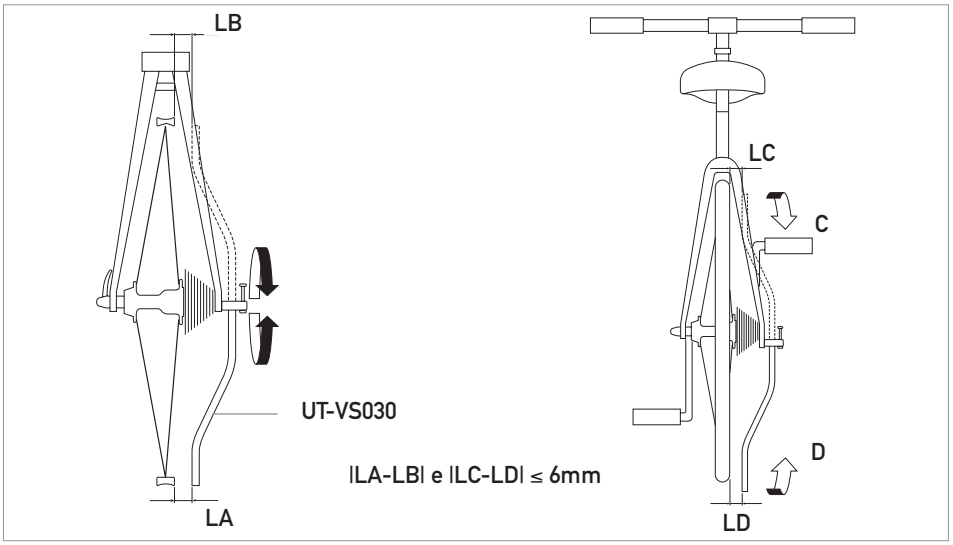


Fig.3

4.2 - ASSEMBLY AND ADJUSTMENT OF THE REAR DERAILLEUR

• Secure the rear derailleur to the frame with the screw (A - **Fig. 4**) using a 5 mm Allen wrench.

! **Tightening torque : 10-12 Nm (89-106 in.lbs).**

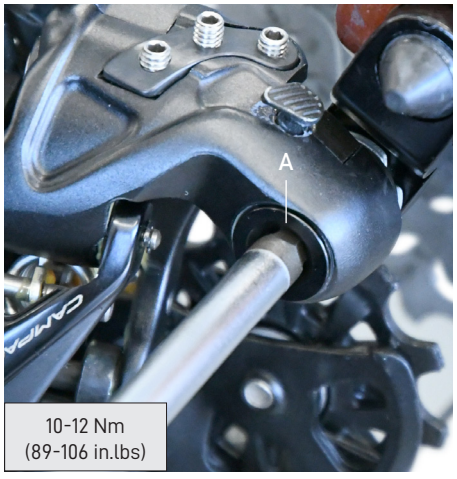


Fig.4

• During assembly, ensure that the rear derailleur tooth (B - **Fig.5**) is resting correctly on the tooth in the drop-out (C - **Fig. 6**).

! **Tightening torque : 10-12 Nm (89-106 in.lbs).**

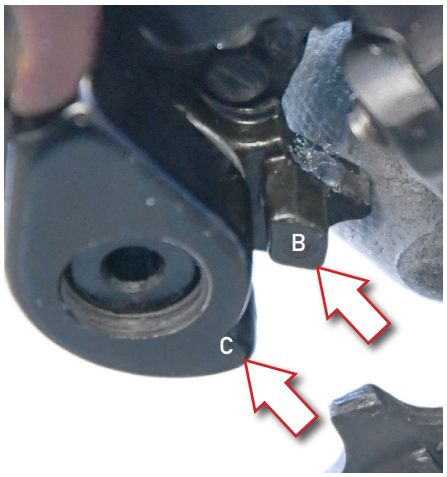


Fig.5

Fig.6

• Carry out this operation with the chain positioned on the smallest sprocket (**Fig. 7**) of the freewheel and with the Ergopower™ control button set to zero (**Fig. 8**).

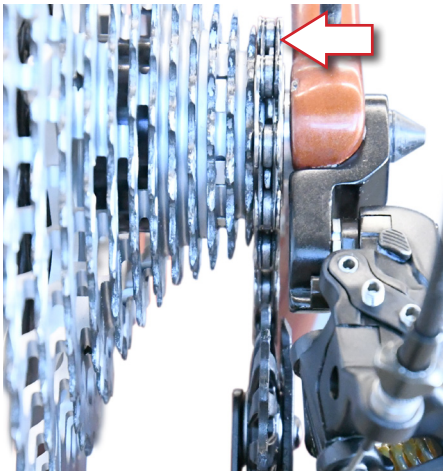


Fig.7

Fig.8

• Turn the screw (**Fig. 9**) until the centre section of the upper wheel is perfectly aligned with the first sprocket (**Fig. 10**).

Fig.9

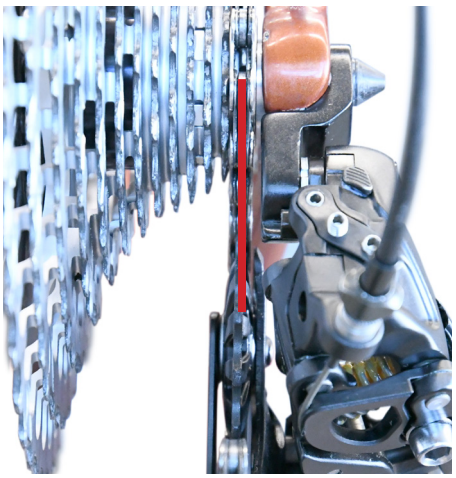


Fig.10

• Use only "The Maximum Smoothness" cables and housings, and ferrules like the ones shown in **Fig.11**.

• Pay particular attention not to drag the cables of the rear derailleur and of the front derailleur on the metallic or sharp edges to prevent damage to the Teflon™ surface.

! Cables and casings do not require lubrication since they are supplied already lubricated.

• Check the length and, if necessary, shorten the casing.
Take care to cut it straight across without altering the configuration of the casing and without damaging the cable in any way (**Fig.12**).

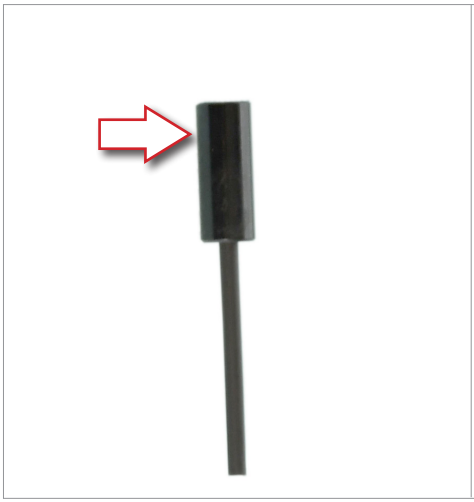


Fig.11

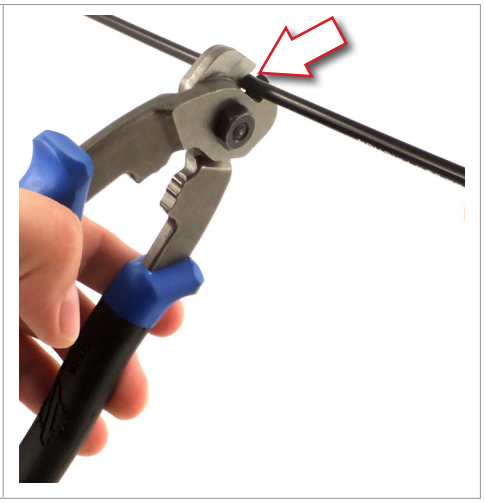


Fig.12

• If the cable is damaged, please replace it before riding your bicycle. If the casing is too short, rear derailleur operation will be affected (**Fig. 13**).

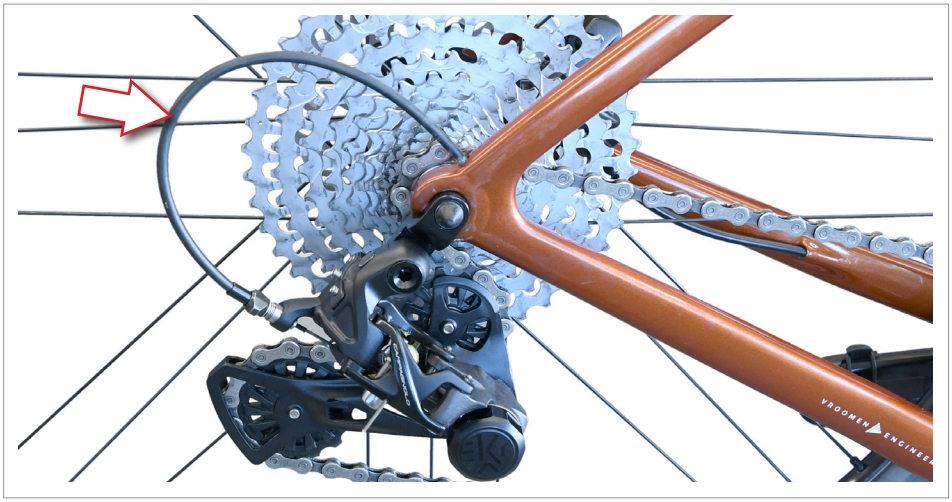


Fig.13

• Insert the cable into the cable tension adjuster (E - **Fig.14**), and pass it through the appropriate cam (F - **Fig.14**) and the recess (G - **Fig.15**) in the rear derailleur.

Fix the cable in place with the locking screw, tightening to a torque of 5 Nm (44 in.lbs).

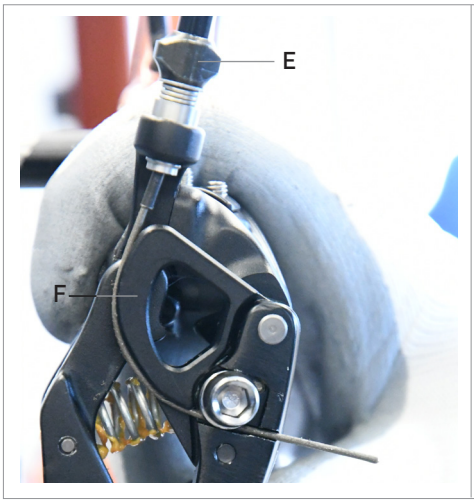


Fig.14

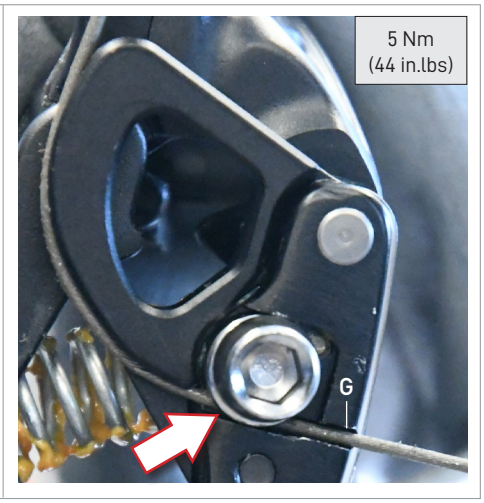


Fig.15

• Cut the excess cable to about 2 cm from the fixing screw and protect the end of the cable with a cable protector.

• Position the rear derailleur on the smallest sprocket and check that the screw (**Fig.16**) is correctly adjusted so that the upper wheel is in line with the teeth of the sprocket (**Fig.17**).

Fig.16

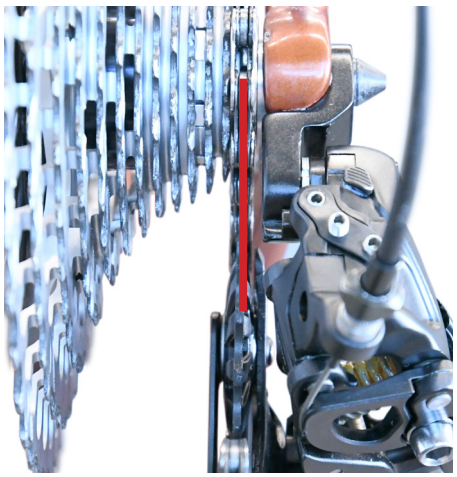


Fig.17

!

Check that the screw (**Fig. 18**) is correctly adjusted: **when operating the rear derailleur control with the chain on the largest sprocket, the internal derailleur rocker must NOT come into contact with the spokes.**

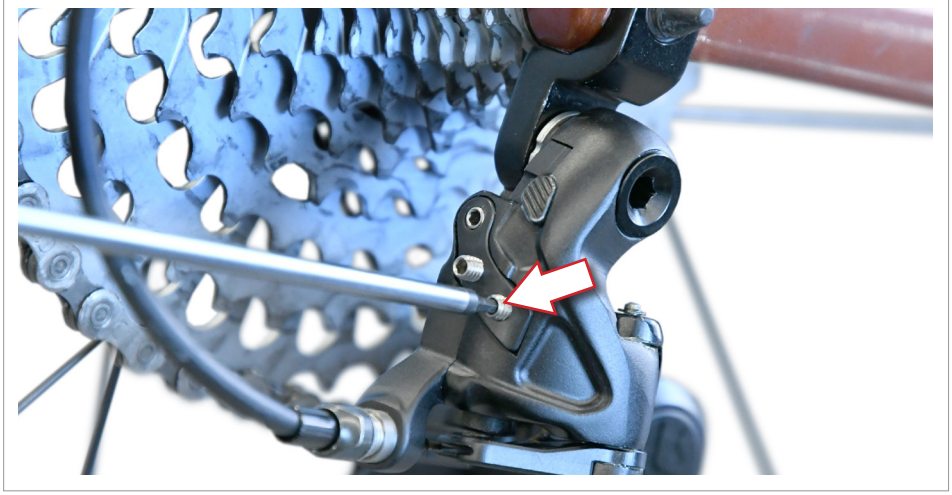


Fig.18

• The correct positioning of the upper wheel is achieved as follows:

• Position the chain on the penultimate sprocket, the one next to the largest sprocket (**Fig.19**).

• Turn the screw (**Fig. 20**) that adjusts the position of the rear derailleur.

Fig.19

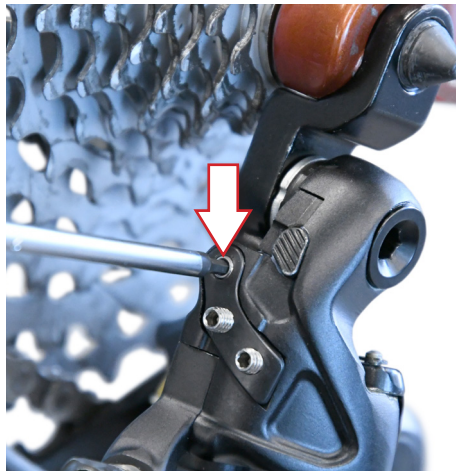


Fig.20

• The upper wheel must be at the correct distance from the largest sprocket (**Fig.21**).

• The MAXIMUM distance between the tip of the teeth of the upper wheel and the tip of the teeth of the largest sprocket must be MAX 3 mm.

• The MINIMUM distance is the point at which, when the rear derailleur is operated, this makes a noise because the wheel is too close to the sprockets.

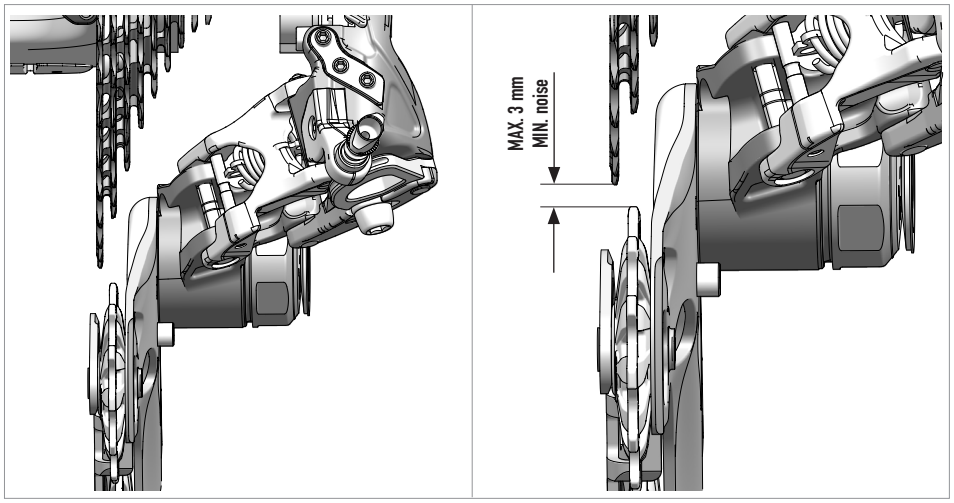


Fig.21

• Position the chain on the 5TH sprocket counting from the smallest.

• Turn the cable tension adjuster (E - **Fig. 22**) until perfect alignment is obtained between the centreline of the top roller and the centreline of the 5TH sprocket.

• If centering between the centrelines of the roller and the fourth sprocket is not correct, turn the adjuster (E - **Fig. 22**) counterclockwise to shift the rear derailleur inwards. Turn clockwise to shift the rear derailleur outwards.

• Check that when the shifter is actuated accordingly, the rear derailleur positions the chain on the largest sprocket; if this does not occur, turn the screw (**Fig. 23**) repeatedly (slackening it until the chain is positioned on the largest sprocket without overshifting).

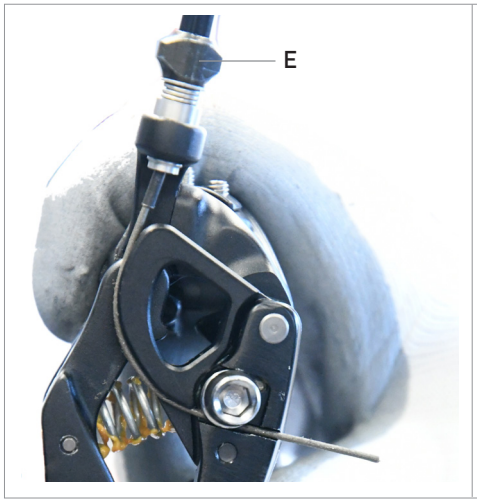


Fig.22

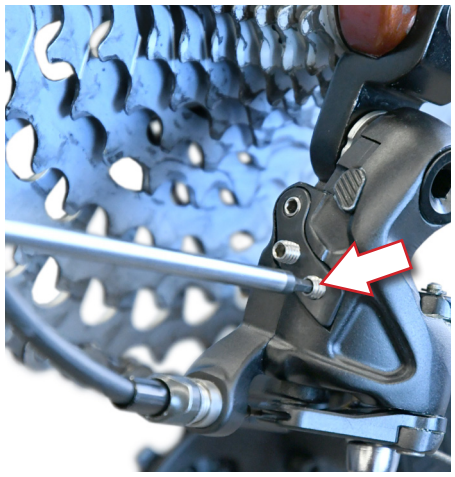


Fig.23

WARNING!

Derailleur adjustments must be performed by skilled personnel: a badly adjusted derailleur can result in an accident, personal injury or death.

4.3 - JOCKEY CAGE LOCK/UNLOCK BUTTON

If you have to remove the rear wheel, it is useful to be able to lock the jockey cage in the rearward position; follow the steps below for locking and subsequent unlocking.

• **LOCKING:**
- Rotate the rear derailleur clockwise (**Fig. 1**), until it locks into rearward position (**Fig. 2**). The jockey cage lock button will engage automatically.
You can now follow the procedure for removing the rear wheel.

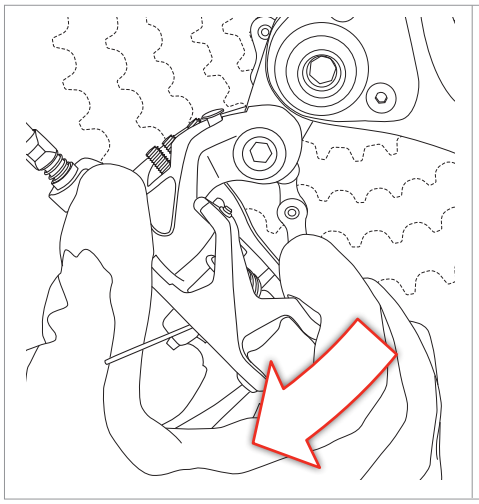


Fig.1

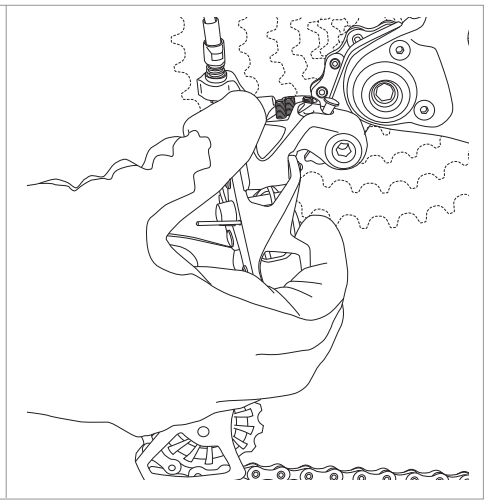


Fig.2

• **UNLOCKING:**
- After following the rear wheel assembly procedure, rotate the rear derailleur clockwise slightly and simultaneously press the release button, accompanying the rear derailleur back into the operating position (**Fig. 3**).

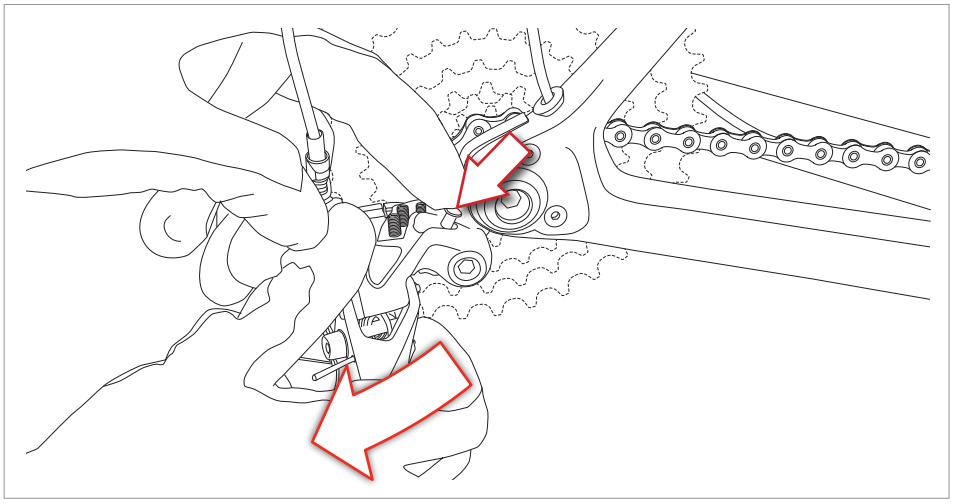
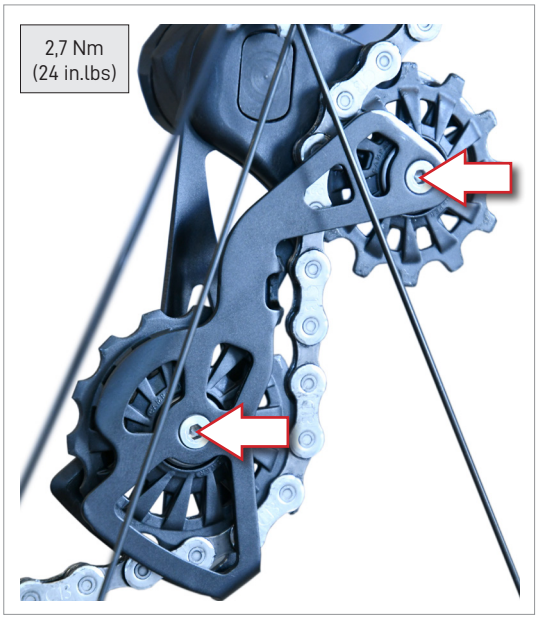


Fig.3

5 - MAINTENANCE OF THE REAR DERAILLEUR

• The duration of the components is variable based on the conditions of use, frequency and quality of maintenance. For proper component maintenance, it is necessary to frequently perform the cleaning and lubrication operations, especially under conditions of heavy use (e.g. each time after washing the bicycle, after use in wet conditions, on dusty or muddy roads etc.).

• Lubricate all the joints regularly.
• If the rollers do not rotate smoothly, clean throughly and replace if necessary.
• To remove the rollers, unscrew the screws (**Fig. 1**) with a 3 mm Allen screw.



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WARNING!

The two rollers are different: on the upper section, fit the roller (**Fig. 1**) marked "UPPER" (with side play); in the lower section, fit the roller (**Fig. 1**) marked "LOWER".

Comply with the following specifications when replacing the pulleys:

TIGHTENING TORQUE:
2,7 Nm (24 in.lbs)

• Before lubricating, carefully clean the drivetrain (system, sprocket pack, chainrings and rear derailleur wheels) with a brush or cloth soaked in a specific degreaser/detergent. In the case of dust or mud, remove any residuals with specific plastic tools.
• Dry the drivetrain with a soft cloth: never use abrasive sponges or metal scouring pads.
• Carefully lubricate the components, using a specific lubricant.
• After application, turn the hand cranks using all the possible gear combinations in order to properly lubricate the entire drivetrain.
• Carefully clean any remaining lubricant remaining on the bicycle or the 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.

• Dirt seriously damages the bicycle and its components. **Wash, clean and dry your bicycle carefully after use**.

• Never spray your bicycle with water under pressure. Pressurized water, even form the nozzle of a small garden hose, can pass under seals and enter your Campagnolo components, thereby affecting its operation.
Wash your bicycle and Campagnolo components by wiping them down with water and neutral soap.

!

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

WARNING!

Salty environments (such as winter roads or roads near the sea) may lead to galvanic corrosion of most of the bicycle's exposed components. To prevent damage, malfunctions and accidents, rinse, dry and carefully re-lubricate all components which are subject to this phenomenon.

• Do not expose the products to high temperature, do not leave them closed in cars parked under the sun, do not keep them near radiators or other heat sources, do not leave carbon or plastic products in direct sunlight.

6 - 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 screws are tightened to the correct torque	2000	2 MONTHS	Torque wrench
Lubricate the axles regularly	6000	6 MONTHS	
Check alignment frame drop-out	2000	2 MONTHS	Rear derailleur hanger alignment tool UT-VS030
Wheel cleaning	500	1 MONTHS	
Replacement if necessary wheels	2000	2 MONTHS	