WARNING!

CAMPAGNOLO THINKS ABOUT YOUR SAFETY, REMEMBER TO WEAR GLOVES AND GOGGLES BEFORE DOING ANYTHING ON YOUR BIKE.

QUICK CHECK GUIDE

How to ensure optimal functionality of Campagnolo drivetrains

IMPORTANT WARNING!

Dear Customer, please remember that THE DERAILLEUR WORKS at its best ONLY by activating the control WITH THREE CLICKS.

A - INSTALLING THE CRANKSET

A.1 - POWER-TORQUE SYSTEM

• The bearing seat must be fit without interference on the RIGHT side, and the bolt should be inserted in the LEFT cup bearing.

• Insert the left crank after making sure there is grease on the tooth profile and on the fixing bolt thread.

• After tightening the central bolt with a 14mm Allen wrench attached to a torque wrench, check that crankset rotates freely (there should only be joint friction).

• Use a caliber to check obtained chain line.

• Remember to insert the retaining spring bearing

A.2 - ULTRA-TORQUE

• Avoid assembling bearings with force; they must fit into place with normal hand push (both, press-fit external cups, and frame special applications).

• After tightening the central bolt with a torque wrench, check that crankset rotates freely (there should only be joint friction).

• Use a caliber to check obtained chain line.

• Remember to insert the retaining spring bearing.

B - SHIFTING

Let the cable come out and attach a 1kg weight to it.

Change with the lever to reach the third position

Get down with the lever in the second position

If the cables are correct, the strength of the rear derailleur spring is enough to lift the weight

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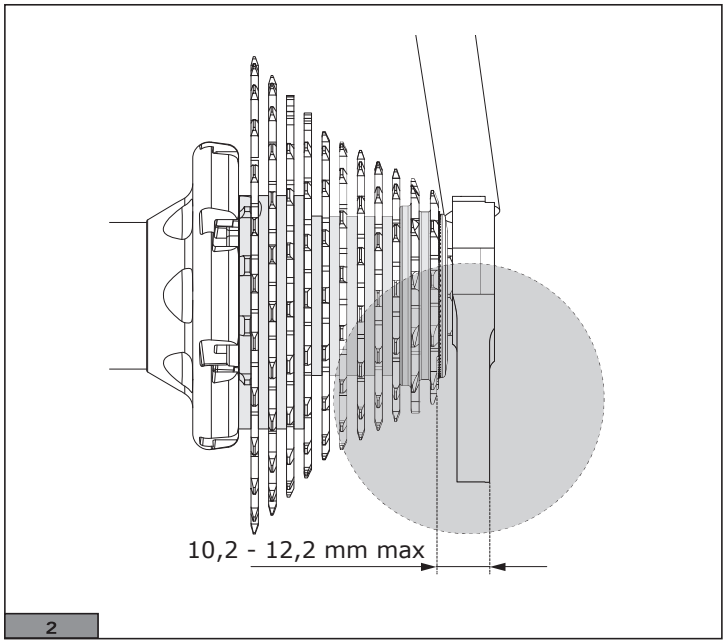
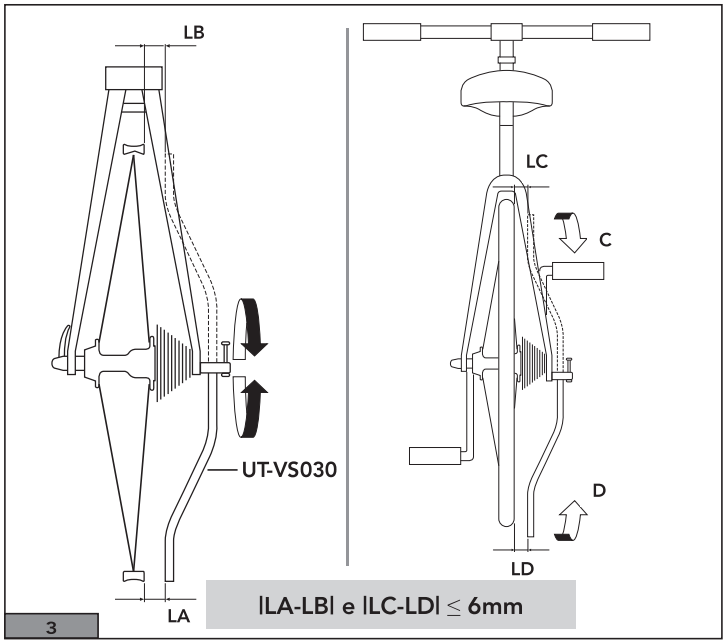
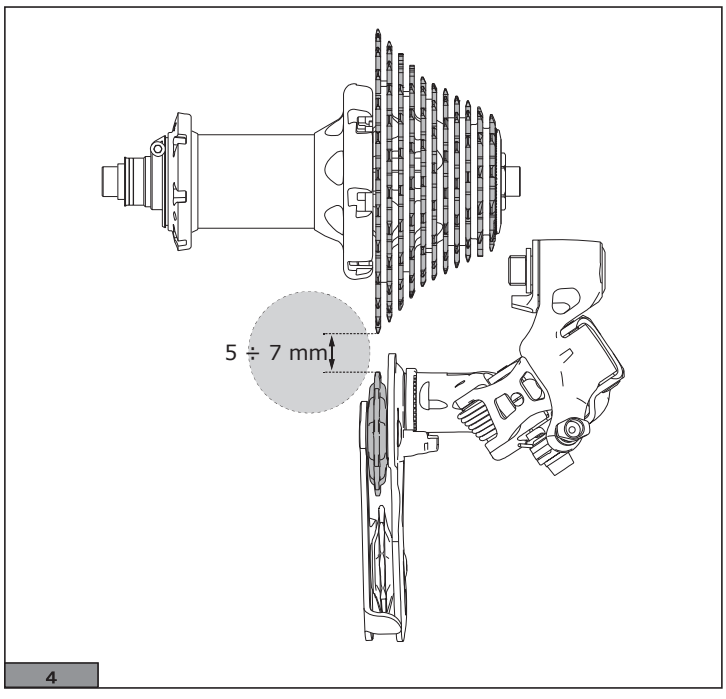
1. Verify the proper cable routing on the frame and handlebar, making sure that, with the drivetrain mounted and without chain, the rear derailleur positioned on the third sprocket is able to descend onto the second, lifting a weight of minimum 1 kg (hooked to the head of the cable coming from the right control - Fig. 1).
If this does not occur, the position of the rear derailleur in descent will not be correct and this will make adjustment difficult or impossible and will create noise, jeopardising the functionality of the drivetrain. In such case, re-check the path of the cables and housings according to the specifications of this technical manual.

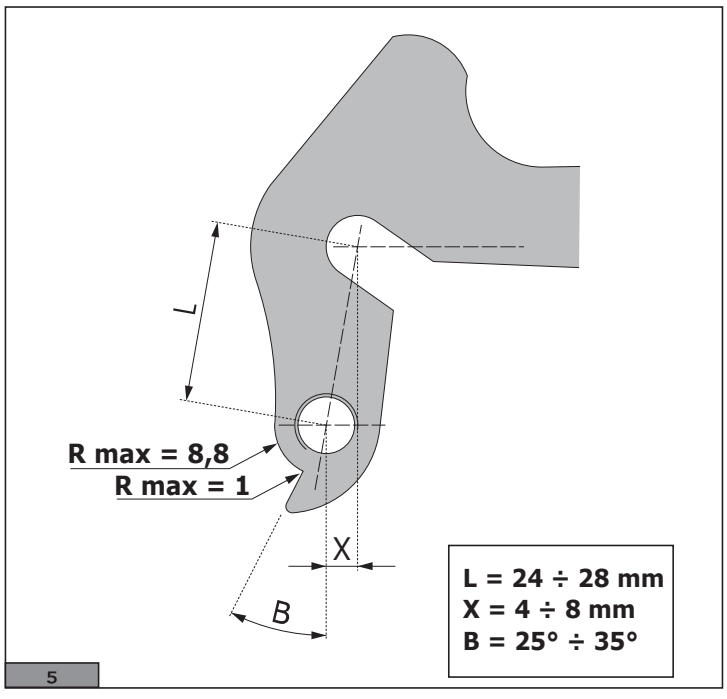




2. The stroke of the cage in relation to the cable throw is checked by Campagnolo Quality Control for each single piece produced.
The distance of the rear derailleur hanger from the first sprocket influences this stroke, so it is indispensable to stay within the tolerance prescribed as per the drawing (Fig. 2).

The alignment of the derailleur hanger with respect to the wheel is of equal importance, and incorrect positioning of it not only creates noisiness but will also negatively influence the stroke of rear derailleur (Fig. 3). If these specifications are not followed, the stroke will no longer be correct and the rear derailleur reset on the second sprocket will no longer be aligned when it goes to position on the larger sprockets.



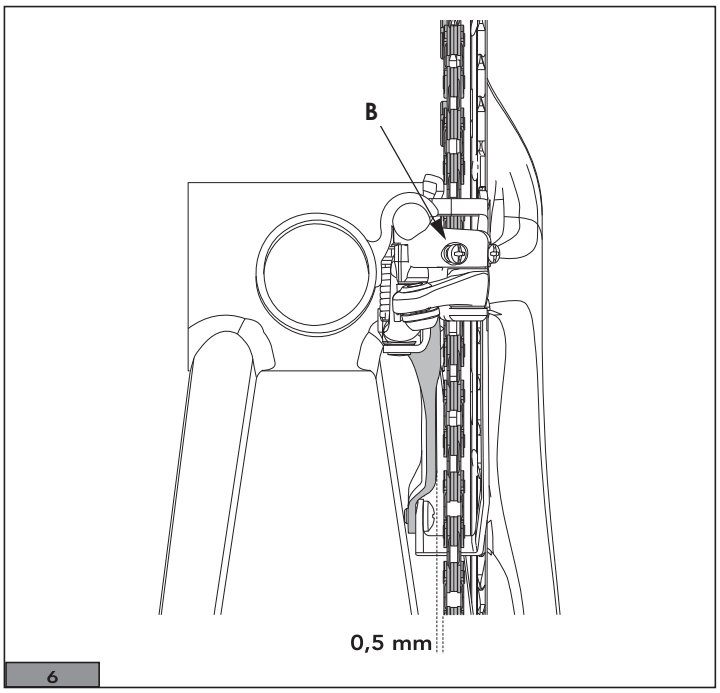


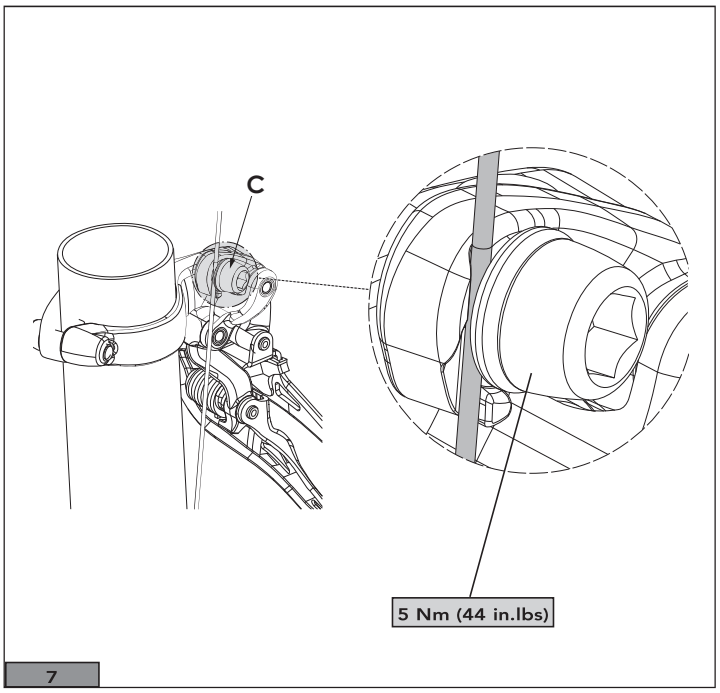
3. For prompt shifting in both up shifting and downshifting, the rear derailleur must keep a minimum distance from the sprocket set, but no less than 5-7 mm on the largest sprocket (and the chain positioned on the smallest gear of the crankset) (Fig. 4).

The combination of adjusting of the rear derailleur springs and following the guidelines for the measurements of the rear derailleur hangar (Fig. 5) guarantee this positioning and, consequently, the promptness of shifting. If the rear derailleur is too close to the larger sprockets, the passage of the chain could occur outside the dedicated zone with consequent loss of precision during upshifting. If, on the contrary, the rear derailleur is positioned too far from the largest sprocket, the chain will have difficulty descending towards the smaller sprockets, requiring a lower adjustment and therefore creating noise, which will worsen upshifting.

C - ADJUSTING THE FRONT DERAILLEUR

C.1 - LOWER POSITION



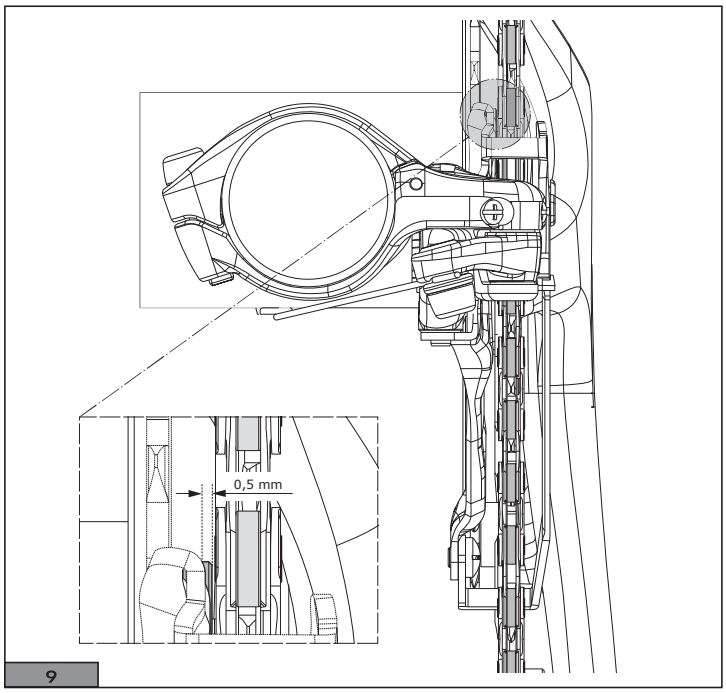


1. With the chain positioned on the smallest gear and on the largest sprocket of the cassette, adjust the inner limit screw (B - Fig. 6) so that the inner part of the cage of the front derailleur is 0.5 mm from the inner side of the chain.

2. Install the cable, pulling it moderately. Position it in the groove below the washer (Fig. 7) and fasten it using a 5 mm allen wrench with torque of **5 Nm (44 in.lbs)**.

3. Set the cable by pulling the cable moderately (Fig. 8). If it has lost tension, repeat points 1 and 2. This will provide an adjustment that will remain stable over time.

C.2 - UPPER POSITION



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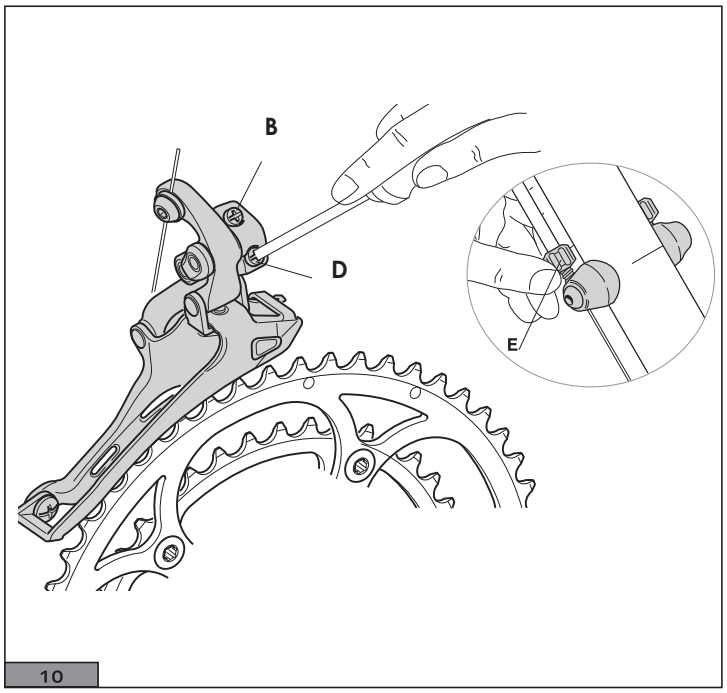

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1. Leaving the chain on the largest sprocket of the cassette, carry out the shifting by activating the control with three clicks.
2. Adjust the cable tension using the adjuster (E - Fig.10) so that the inner part of the cage of the derailleur skims (max 0.5 mm) the chain (Fig. 9).

DIFFERENT ADJUSTMENTS DO NOT GUARANTEE THE SHIFTING WITH THREE CLICKS, CREATING FUNCTIONALITY PROBLEMS.

3. Adjust the outer limit screw (D - Fig. 10) until it rests. Tension on the outer limit stop, can cause the shifter to release the gear index thus shifting the gear to the smaller chainring.
If you have not followed all the steps described above, the shifting will not take place correctly at the third click or in any case the cage will not be centred.

AN ADJUSTMENT THAT USES THE FOURTH CLICK IS NOT ACCEPTABLE BECAUSE THE OPERATING STROKE OF THE SHIFT LEVER BECOMES EXCESSIVE AND AWKWARD, WITH DIFFICULTY IN PERFORMING THE UPSHIFT.

COMPONENT	TYPE OF OPERATION	MAX KMS	MAX TIME	CALCULATION METHOD
ALL COMPONENTS	Screw torque check	1000	1 month	Torque wrench
ERGOPOWER ULTRA-SHIFT ERGOPOWER POWER-SHIFT ERGOPOWER PER FLAT-BAR BAR END SHIFTERS 10s / 11s 2012	Check by a specialized mechanic	30000	3 years	
	Check by a specialized mechanic (if used in races)	15000	1 year	
	Cable and sheath replacement	20000	2 years	
	Cable and sheath replacement (if used in races)	15000	1 year	
BAR END BRAKE SHIFTERS	Cable and sheath replacement	20000	2 years	
	Cable and sheath replacement (if used in races)	15000	1 year	
ULTRA-TORQUE CRANKSET	Check of chainring wear	8000		
ULTRA-TORQUE CRANKSET (RECORD 11S e CHORUS 11S)	A specialized mechanic should grease the half-pins, bearings and bearing housings with suitable bearing grease (preferably Campagnolo LB-100 synthetic grease)	6000	6 months	
POWER-TORQUE CRANKSET CX CRANKSET	Check of chainring wear	4000		
	A specialized mechanic should grease the pin, bearings and bearing housings with suitable bearing grease (preferably Campagnolo LB-100 synthetic grease)	3000	3 months	
11S / 10S REAR DERAILLEUR	Grease joints regularly	6000	6 months	
	Check the frame fork alignment	1000	1 year	Alignment tool for UT-VS030 rear derailleur attachment eyelet
	If the small wheels do not rotate smoothly, clean thoroughly or replace as required	1000	1 month	
11S / 10S FRONT DERAILLEUR	Regularly lubricate the various joints of the derailleur with oil	6000	6 months	

COMPONENT	TYPE OF OPERATION	MAX KMS	MAX TIME	CALCULATION METHOD
BRAKES	Check at regular intervals that the brake pads are about 1 mm from the surface of the rim.	1000		
	Check the tightening torques of the brake, pad and cable locking screws regularly	1000		
	Regularly check the pads and remove any foreign bodies that might have settled on them	1000		
	Check the brake pad braking power regularly	1000		
	Brake pads replacement		2 years	Check the brake pad wear limit – the end of the grooves is the wear limit
10s / 11s CHAIN	Clean and grease the chain, also check it doesn't show any "stretching"	500	2 weeks	
	Chain replacement	8000		With a precision gauge, measure the distance between the bushings of six outside links in various points of the chain If just one of the measurements exceeds 132.60mm, the chain must be replaced immediately
PRO-FIT PLUS PEDALS	Keep an eye on the release tension and replace worn parts as required	1000	1 year	
	Regularly check the wear of the pedal mechanism and replace it if the engagement / disengagement into/from the pedals proves difficult	1000	1 month	
11s / 10S SPROCKETS	Clean the sprockets regularly	500	2 weeks	
	Check the wear of the sprockets regularly	8000		

ERGOPOWER POWER-SHIFT
ERGOPOWER ULTRA-SHIFT

1 - TECHNICAL SPECIFICATIONS

REAR DERAILLEUR CONTROL	10S	11S	REAR DERAILLEUR CASING	REAR DERAILLEUR CABLE	BRAKE CASING	BRAKE CABLE
ERGOPOWER POWER-SHIFT	3 UP 1 DOWN	3 UP 1 DOWN	Ø 4.1 mm Campagnolo ultra-low friction	Ø 1.2 mm	Ø 4.9 mm Campagnolo	Ø 1.6 mm
ERGOPOWER ULTRA-SHIFT		3 UP 5 DOWN	Ø 4.1 mm Campagnolo ultra-low friction	Ø 1.2 mm	Ø 4.9 Campagnolo	Ø 1.6 mm

FRONT DERAILLEUR CONTROL	DOUBLE	TRIPLE	FRONT DERAILLEUR CASING	FRONT DERAILLEUR CABLE	BRAKE CASING	BRAKE CABLE
ERGOPOWER POWER-SHIFT	1 UP 1 DOWN	2 UP 2 DOWN	Ø 4.1 mm Campagnolo ultra-low friction	Ø 1.2 mm	Ø 4.9 mm Campagnolo	Ø 1.6 mm
ERGOPOWER ULTRA-SHIFT	1 UP 1 DOWN	2 UP 2 DOWN	Ø 4.1 mm Campagnolo ultra-low friction	Ø 1.2 mm	Ø 4.9 Campagnolo	Ø 1.6 mm

2 - COMPATIBILITY

ERGOPOWER	REAR DERAILLEUR	FRONT DERAILLEUR	CRANKSET
POWER-SHIFT 10s	10s	10s	POWER-TORQUE SYSTEM 10s
POWER-SHIFT 11s	11s	11s	ULTRA-TORQUE 11s
			POWER-TORQUE SYSTEM 11s
ULTRA-SHIFT11s	11s	11s	ULTRA-TORQUE 11s
			POWER-TORQUE SYSTEM 11s

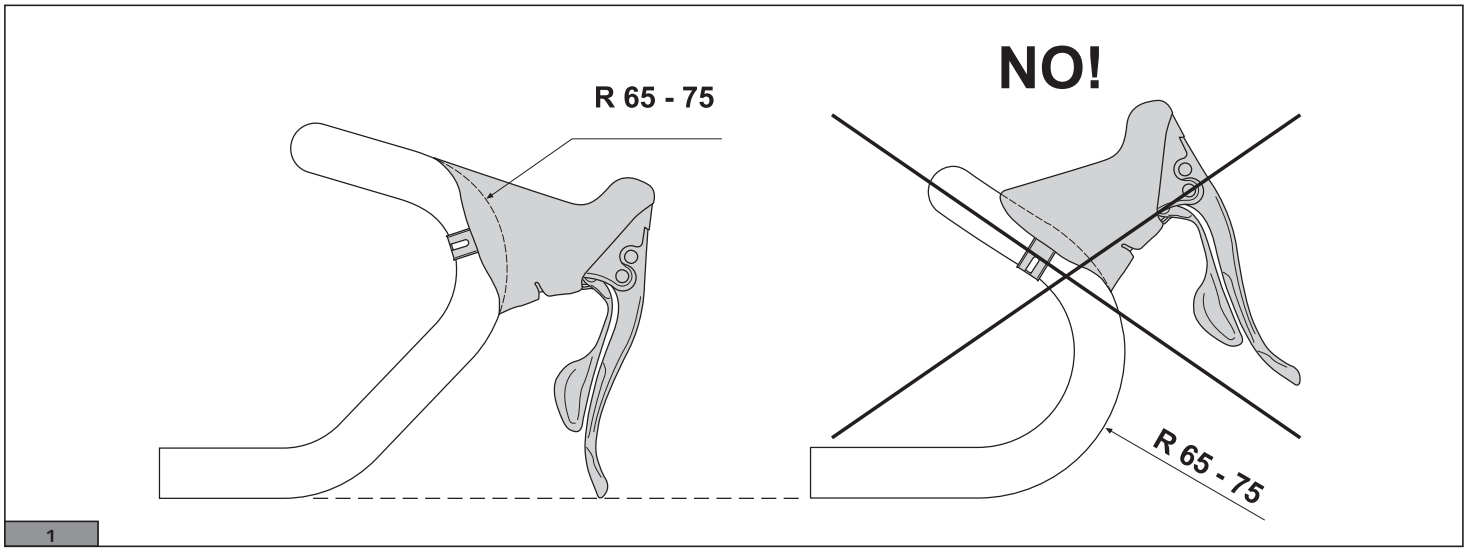
WARNING!

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

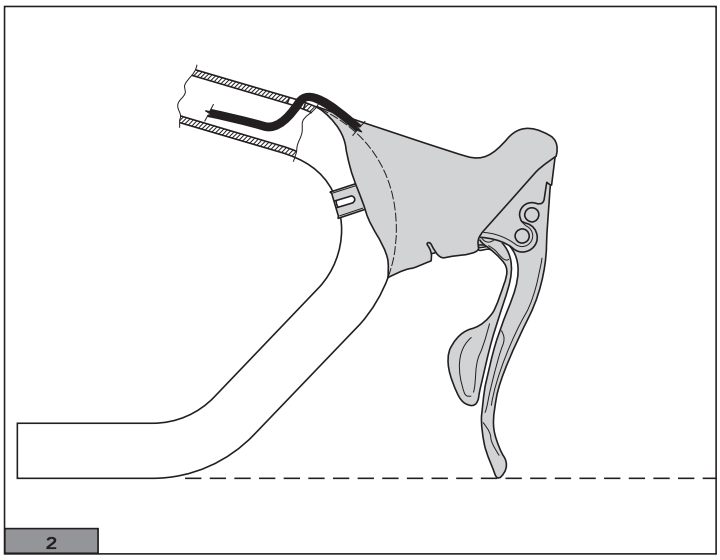
3 - INTERFACE WITH HANDLEBAR

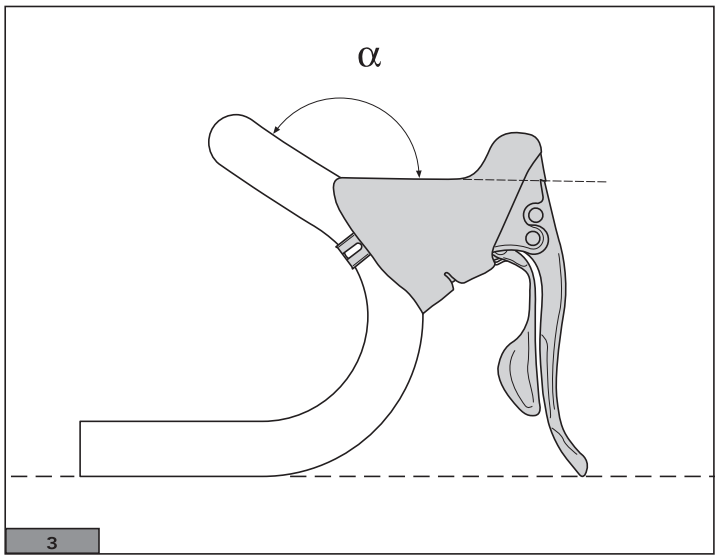
⚠ **WARNING!**

If the controls are not fitted correctly they may cause accidents or physical injuries.



• Do not seat the top part of the control in the straight section of the handlebar (Fig. 1).
Seat the control in the curved part with R = 65 - 75 and diameter = 23.8 - 24.2 (including any ovalization) to guarantee more effective fixing (Fig. 1).





CAUTION

The routing of cables of the type indicated in figure 2 seriously affect the shifting performance of the drivetrain. DO NOT USE HANDLEBARS WITH THIS TYPE OF ROUTING OF CABLES.

• Ensure that the angle α is sufficiently large to guarantee correct assembly of the housing and the associated smoothness of the cable (Fig. 3).

CAUTION

Make sure that the part of the handlebar onto which you are fitting the control has a surface rough enough to guarantee maximum adherence.

4 - ERGOPOWER CONTROL LEVERS ASSEMBLY

• Fold back the rear of the hood (A - Fig. 1) to expose the securing screw (B - Fig. 1).

• Loosen the bolt (B - Fig. 1) positioned in the top of the body sufficiently to fit the clamp (C - Fig. 2) on the untaped handlebar.

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2

The ergonomics of the Ergopower™ **Power-Shift™**, **Ultra-Shift™** controls can be adapted for cyclists with very large hands by applying an insert.

- fit the "big hands" insert into the rear bottom part of the control (Fig. 2) before installing it on the handlebar.

Make sure that the arrow on the band faces towards the upper part of the control unit (C - Fig. 3).

• If the hood has been completely removed, moisten the inside slightly with alcohol to facilitate installation on the control unit.

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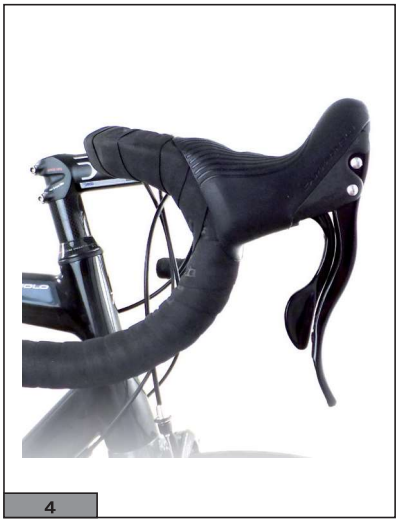
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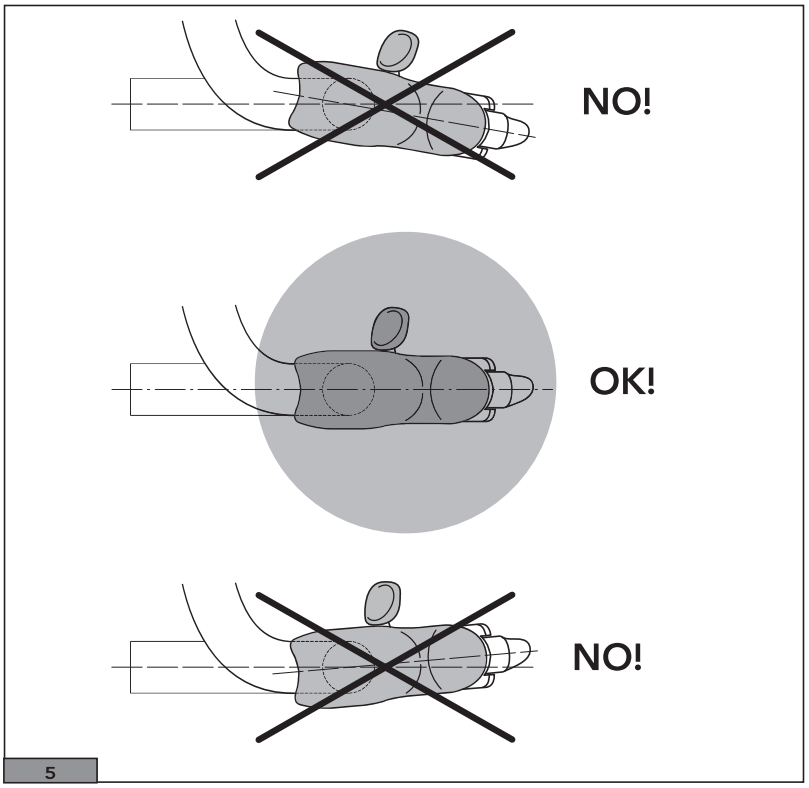
• Position the Ergopower™ control in the curved area of the handlebar and attempt to create a straight line if the handlebar bend lets you (Fig. 4).

- The control unit must be correctly oriented to avoid affecting bicycle aerodynamics (Fig. 5)

• Secure the control on to the handlebar by tightening the screw (B - Fig. 1) to **10 Nm (89 in.lbs)** using a torque wrench.



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4.1 - FITTING THE DRIVETRAINS

• Install the cable guide plate under the bottom bracket shell, as follows:
- position the washer (A – Fig. 6) in the provided seat in the cable guide plate.
- place the cable guide plate under the bottom bracket shell and fix it by means of the provided screw (B – Fig. 6) with a torque of **3÷4 Nm(27÷35 in.lbs).**

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

• The cable housings of the rear derailleur (Fig. 7) have a diameter of 4.1 mm, while the brake cable housings (Fig.7) have a diameter of 4,9 mm.

Note
Use 4.1 mm housings exclusively with Ergopower Ultra-Shift and Ergopower Power-Shift controls.

• Depending on your frame, it may be necessary to cut the rear brake housing and install a housings end (not supplied in your Ergopower™ control levers package). and install a casing lead end (not supplied in your Ergopower™ control levers package).

⚠ **WARNING!**

Before cutting the housing, carefully check that the length you choose is suitable for the dimensions of your frame. Insufficient slack in the cable and housing could affect your ability to turn or control your bicycle, resulting in an accident personal injury or death.

NOTES
The housing must be cut so that the end is perpendicular to the length (Fig. 8). In addition, the cross section of the housing must not change. After cutting the housing, check that you have restored its roundness to ensure that there is no friction between the cable and housing.
To cut the casings, we suggest you to use the specific tool Park Tool CN-10.

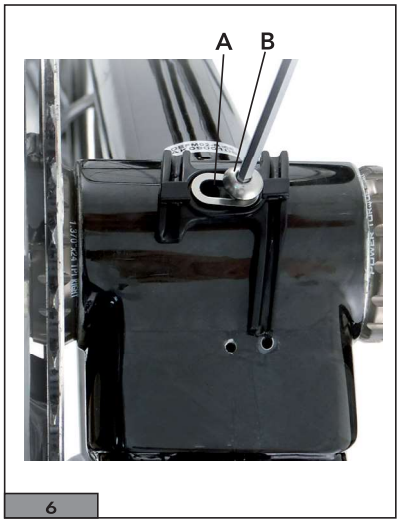
Insert the end of the housing into the provided slot in the body of the control (Fig. 9) Ensure that the housing rests perfectly on the bushing fixed on the body.

⚠ **WARNING!**

After installation, check that the cables do not interfere with your steering or any other function of your bicycle. Interference could affect your ability to turn or control your bicycle, resulting in an accident, personal injury or death.

• Attach the housing to the Ergopower™ control lever as illustrated. The rear derailleur (or front derailleur) housing (A - Fig. 10) should be positioned in the outer slot of the control unit; the brake housing (B - Fig. 10) should be positioned in the inner slot of the Ergopower™ control lever unit. If you prefer, you can pass the derailleur cable housing alongside the brake casing, as shown in figure 11.

CAUTION
Position the cable so that it is as straight as possible. At all costs avoid kinks or sharp bends in the housing (less than R = 50 mm).



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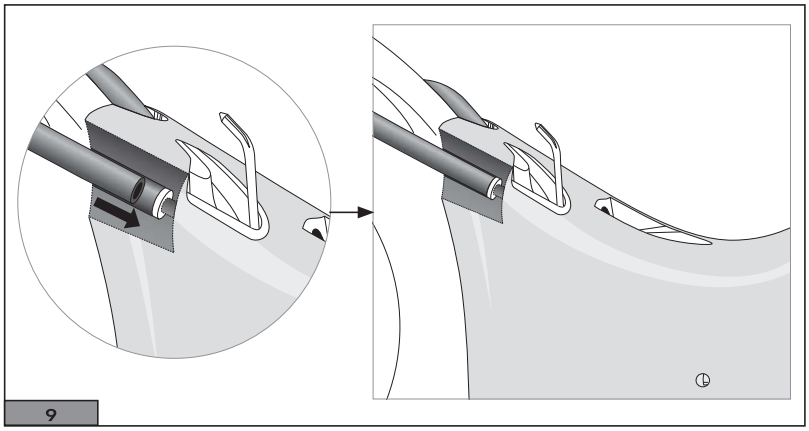
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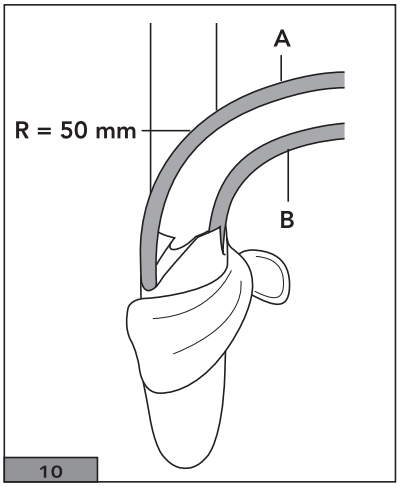

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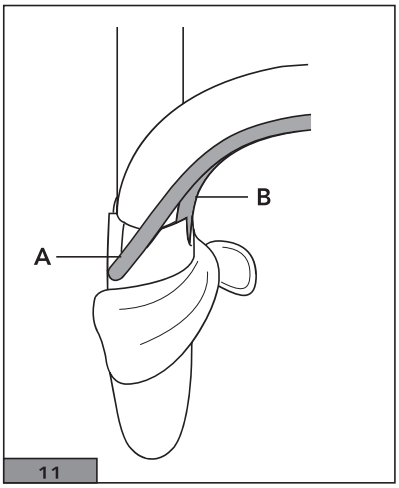

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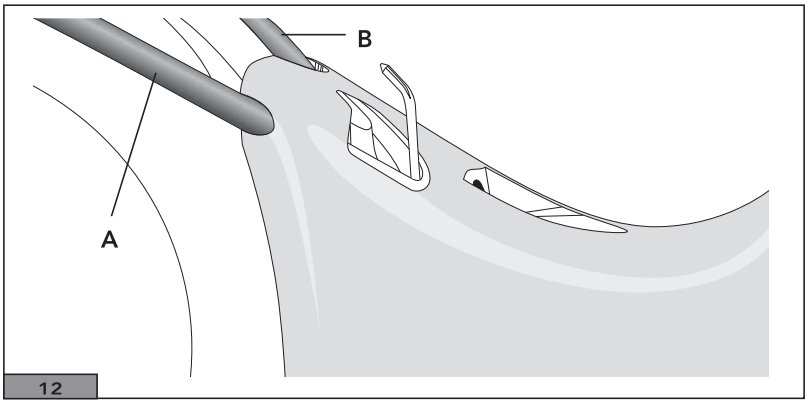
4.1.1 - Rear derailleur cable and housings

Lift up the hood and push the end of the 680 mm long, 4.1 mm diameter housing into the hole provided (Fig. 12).

Slightly bend the cable (for the first 5 – 10 mm) (Fig. 12) to facilitate insertion of the same into the housing.



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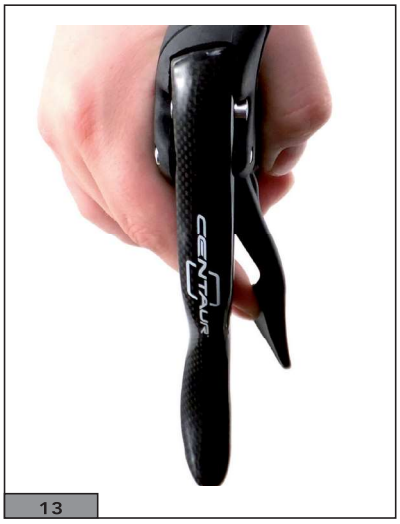
• **Ergopower Power-Shift:** bring the control to the position of the smallest sprocket, pressing the lever repeatedly (Fig. 13).
• **Ergopower Ultra-Shift:** bring the control to the position of the smallest sprocket, pressing the lever all the way down (Fig. 13.1).
The **Ergopower Ultra-Shift** controls allow you to upshift up to five cogs in a single lever throw (i.e. 17T'16T'15T'14T'13T'12T).



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13.1

Insert the rear derailleur cable (length 2,000 mm - ø 1.2 mm) into the bottom of the control (B – Fig. 14).

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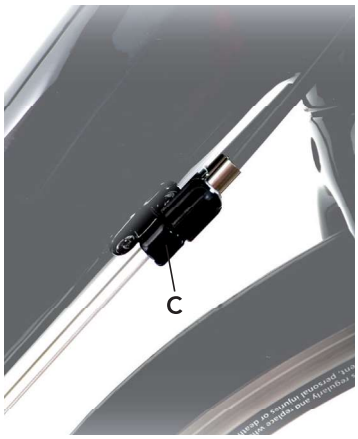

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⚠ **WARNING!**

Before cutting out the housing, please be careful to make sure that the chosen length is suitable for the size of your frame. An insufficient length may cause too straight curves and will prevent the transmission from functioning properly (Fig. 18 - 18.1).

• Cut the housing (on the frame side) so that it reaches the metal cable stop on the frame (C - Fig. 15).

• After cutting the housing at the suitable length, fit a housing end and insert the housing in the Downtube barrel adjuster (C - Fig. 15) on the frame.

• Pass the cable through the RH slot on the cable guide plate located underneath the bottom bracket box (D - Fig. 16); insert the cable through the cable stop present on the chain stay.

• Fit a housing end (some frames require the use of the special housing end) on the 330 mm - diameter ø 4.1 mm housing, pass the cable through the housing and insert it in the cable stop on the right chain stay (A - Fig. 17).

• Fit a housing end to the other end of the housing and secure the cable to the rear derailleur (refer to the rear derailleur instruction manual for proper attachment of the cable to the derailleur).

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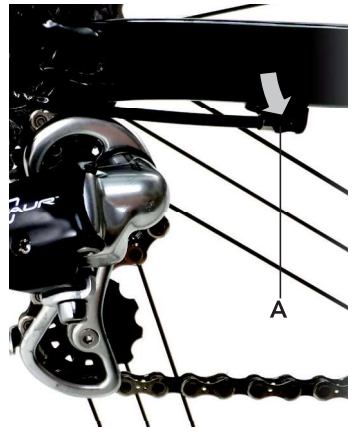

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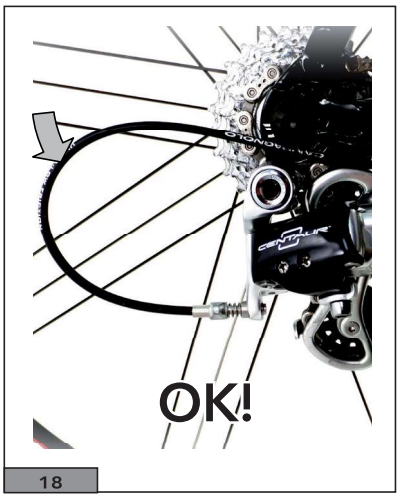
ATTENTION

Use ONLY original Campagnolo housing end (internal diameter 4.3 mm - Fig. 19). Check that no abnormal folds have been created by forcing the cable.

• Please make sure that the cable is flowing freely within the sheath. Verify in particular that the sheath head entries are rectilinear (Fig. 19), to avoid hindrances to the gear-shifting system.

⚠ **WARNING!**

After installation, check that the cables do not interfere with your steering or any other function of your bicycle. Interference could affect your ability to turn or control your bicycle, resulting in an accident, personal injury or death.



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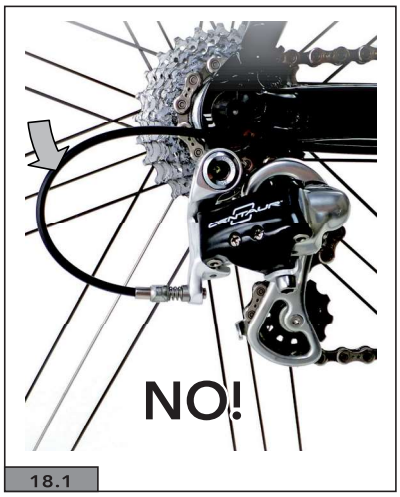

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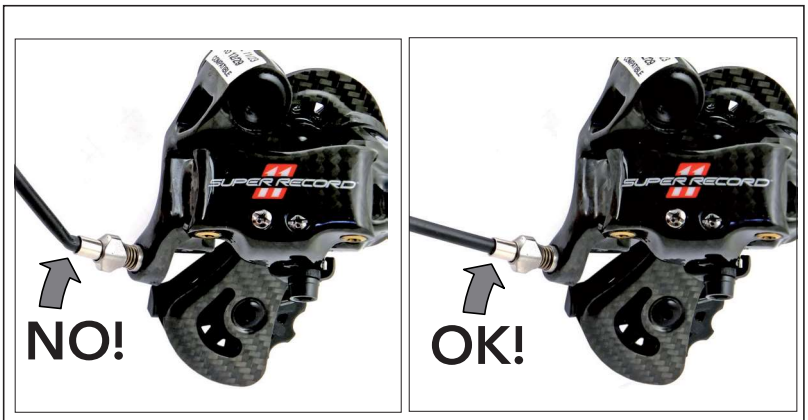

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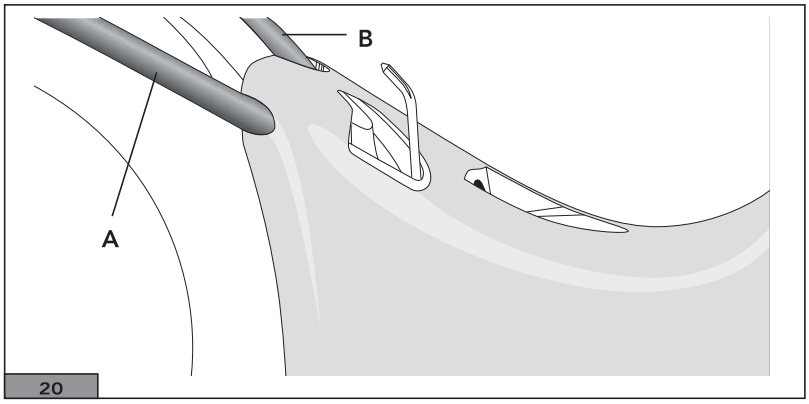
4.1.2 - Front derailleur cable and housing

Lift up the hood and push the end of the 680 mm long, 4.1 mm diameter housing into the hole provided (Fig. 20).

Slightly bend the cable (for the first 5 – 10 mm) (Fig. 20) to facilitate insertion of the same into the sheath.



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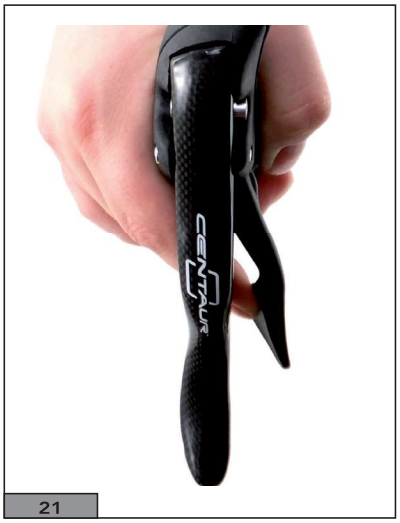
• Ergopower Power-Shift: bring the control to the position of the smallest sprocket, pressing the lever repeatedly (Fig. 21).

• Ergopower Ultra-Shift: bring the control to the position of the smallest sprocket, pressing the lever all the way down (Fig. 21.1).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21.1

Insert the front derailleur cable (length 1,600 mm - ø 1.2 mm) into the bottom of the control (B – Fig. 22).

⚠ **WARNING!**

Before cutting out the housing, please be careful to make sure that the chosen length is suitable for the size of your frame. An insufficient length may cause too straight curves and will prevent the transmission from functioning properly (Fig. 23).

• Cut the housing (on the frame side) so that it reaches the metal housing stop on the frame (C - Fig. 24).

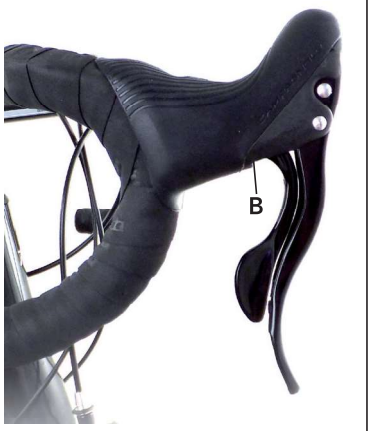
• After cutting the housing at the suitable length, fit a housing end and insert the housing in the Downtube barrel adjuster (C - Fig. 24) on the frame.

• **Ensure that the cable moves fluidly in the housing.**

• Pass the cable through the LH slot on the cable guide plate (D - Fig. 25) located underneath the bottom bracket box and secure the cable to the front derailleur (refer to the derailleur instruction manual for proper attachment of the cable to the front derailleur).

⚠ **WARNING!**

After installation, check that the cables do not interfere with your steering or any other function of your bicycle. Interference could affect your ability to turn or control your bicycle, resulting in an accident, personal injury or death.



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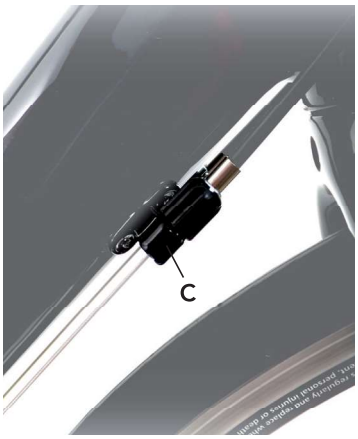

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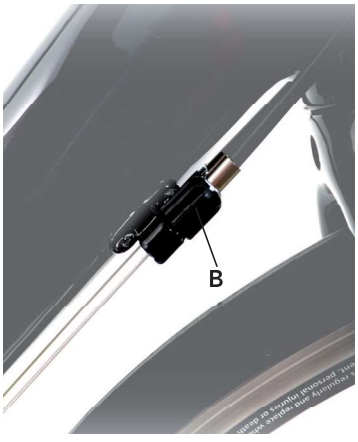
4.1.3 - Adjusting the cable tension

• Rear derailleur cable tension can be modified by turning the adjuster (Fig. 26) on the Downtube barrel adjuster (not included in the pack) or by using the adjuster (F - Fig. 27) placed on the rear derailleur body.

• **Adjust the cable tension in such a way as to shift the chain to the upper chainring by means of 3 CLICKS OF LEVER 2 of the left-hand control.**

• Front derailleur cable tension can only be modified with the adjuster (B - Fig. 26) on the Downtube barrel adjuster retainer clamp (not included in the pack) or by means of the adjustment system envisaged by the frame manufacturer.

ATTENTION
For a correct adjustment of the derailleur there must be a Downtube barrel adjuster.



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27

4.2 - REAR BRAKE CABLE AND HOUSING / FRONT BRAKE CABLE AND HOUSING


28

• Fit the brake cable (1,600 mm long - diameter ø 1.6 mm) in the bushing on the Ergopower™ control brake lever, making sure that the cable stop head fits into its seat (Fig. 28).

• Ergopower™ Ultra-Shift and Power-Shift control levers do not require a brake housing end.

• Depending on your frame, it may be necessary to cut the rear brake housing (1,250 mm long - diameter ø 4,9 mm) and install a housing lead end (diameter ø 6 mm, not supplied in your Ergopower™ control levers package).

• Fit the housing (without the housing end) in the brake housing retainer and secure the cable to the brake (refer to the brake instruction manual for proper attachment of the cable to the brake).

• Fit the brake cable (800 mm long - diameter ø 1.6 mm) in the bushing on the Ergopower™ control brake lever, making sure that the cable stop head fits into its seat (Fig. 28).

• Ergopower™ Ultra-Shift and Power-Shift control levers do not require a brake housing end.

• Fit the housing (580 mm long - diameter ø 4,9 mm) in the brake housing retainer (without the housing end) and secure the cable to the brake (refer to the brake instruction manual for proper attachment of the cable to the brake).

4.3 - TAPING THE HANDLEBAR

• Fold back the hood.

• Tape the handlebar of the Ergopower™ control body.

• Refit the support hood in position.

⚠ **WARNING!**

Before using your Ergopower™ system on public roads, ride in an open, traffic free area to become familiar with the Ergopower's function and operation. Failure to do so could result in an accident, personal injury or deat

5 - MAINTENANCE

• Periods and riding distances are purely indicative and may be significantly different in relation to conditions of use and the intensity of your activity (for example: racing, rain, salted Winter roads, weight of the rider etc.). Check with your mechanic to select a schedule that is best for you based on your size, riding conditions and you riding style.

• Casings are supplied pre-lubricated and do not require any additional lubrication.

•Ergopower™ control levers must be checked by a specialist mechanic every 3 years or every 30,000 Km (18,000 miles). The cables and casings must be replaced every 2 years or after 20,000 Km (12,000 miles).

• In the event of competitive use, Ergopower™ control levers must be checked by a specialist mechanic and cables and casings must be replaced every year or every 15,000 Km (9,000 miles).

• Dirt seriously damage bicycles and their components. Thoroughly rinse, clean and dry your bike after using it in these conditions.

• 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. Dry them using a soft cloth. Never use abrasive or metal pads.

• Relubricate the drivetrains carefully using a lubricant suitable to purpose

• After applying the lubricant move the cranks and engage all possible gear combinations in order to thoroughly lubricate the entire drive system.

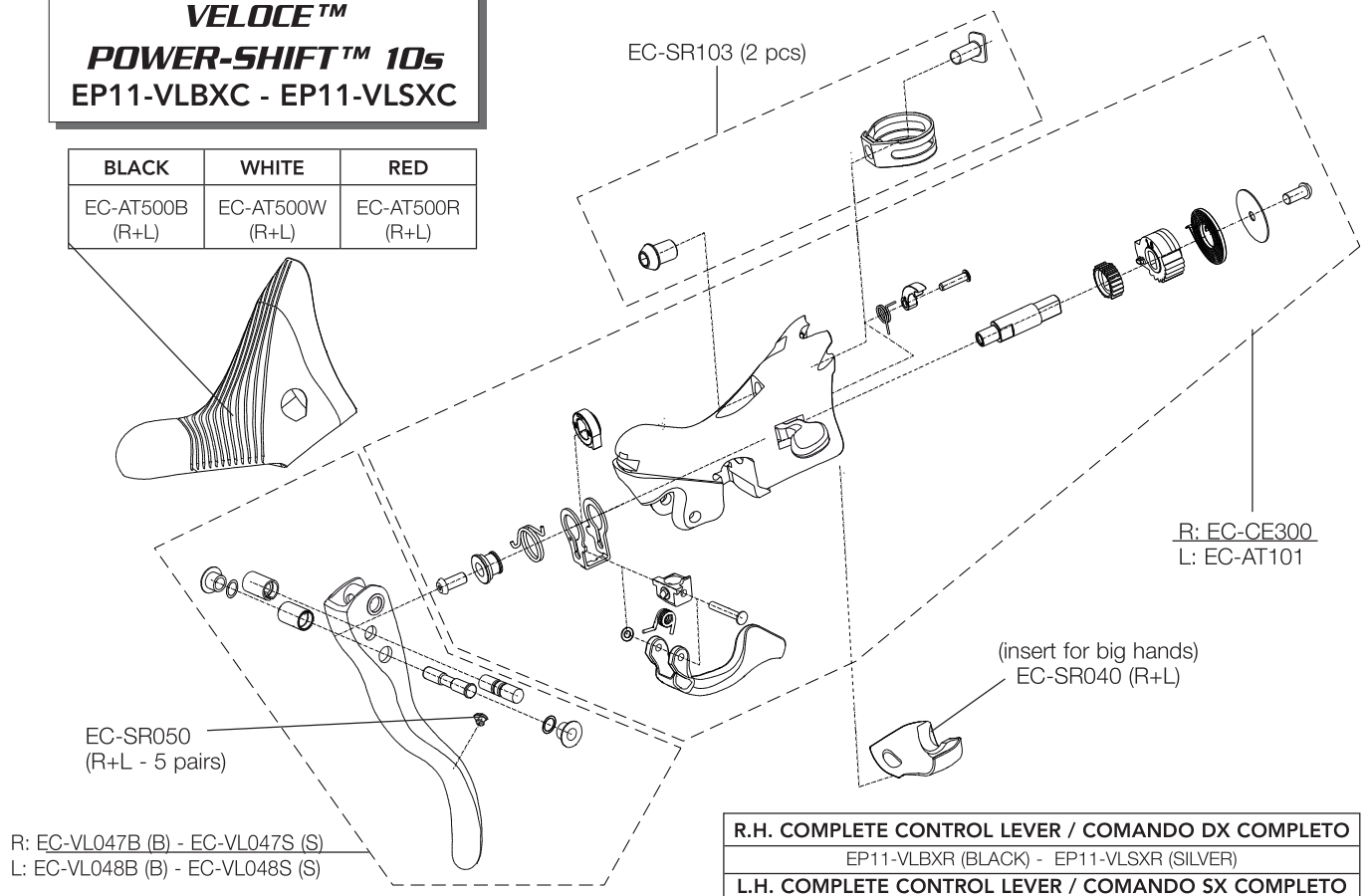
• Thoroughly clean any residual lubricant from the bicycle and floor.

• At the end of the lubrication operation, CAREFULLY degrease rims and brake pads.

6 - SPARE PARTS

VELOCE™ POWER-SHIFT™ 10s
EP11-VLBXC - EP11-VLSXC

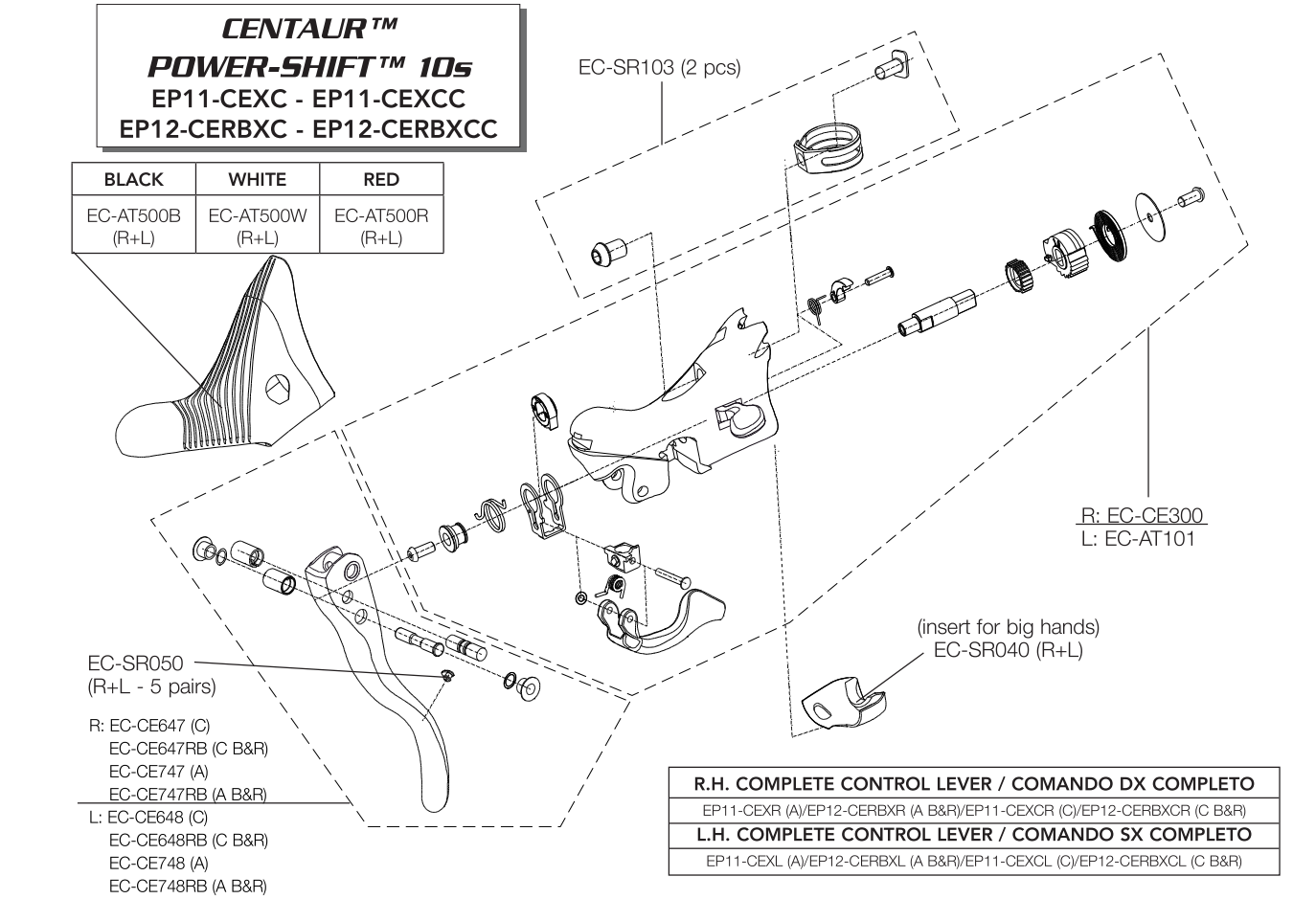
BLACK	WHITE	RED
EC-AT500B (R+L)	EC-AT500W (R+L)	EC-AT500R (R+L)



R.H. COMPLETE CONTROL LEVER / COMANDO DX COMPLETO
EP11-VLBXR (BLACK) - EP11-VLSXR (SILVER)
L.H. COMPLETE CONTROL LEVER / COMANDO SX COMPLETO
EP11-VLBXL (BLACK) - EP11-VLSXL (SILVER)

CENTAUR™ POWER-SHIFT™ 10s
EP11-CEXC - EP11-CEXCC
EP12-CERBXC - EP12-CERBXCC

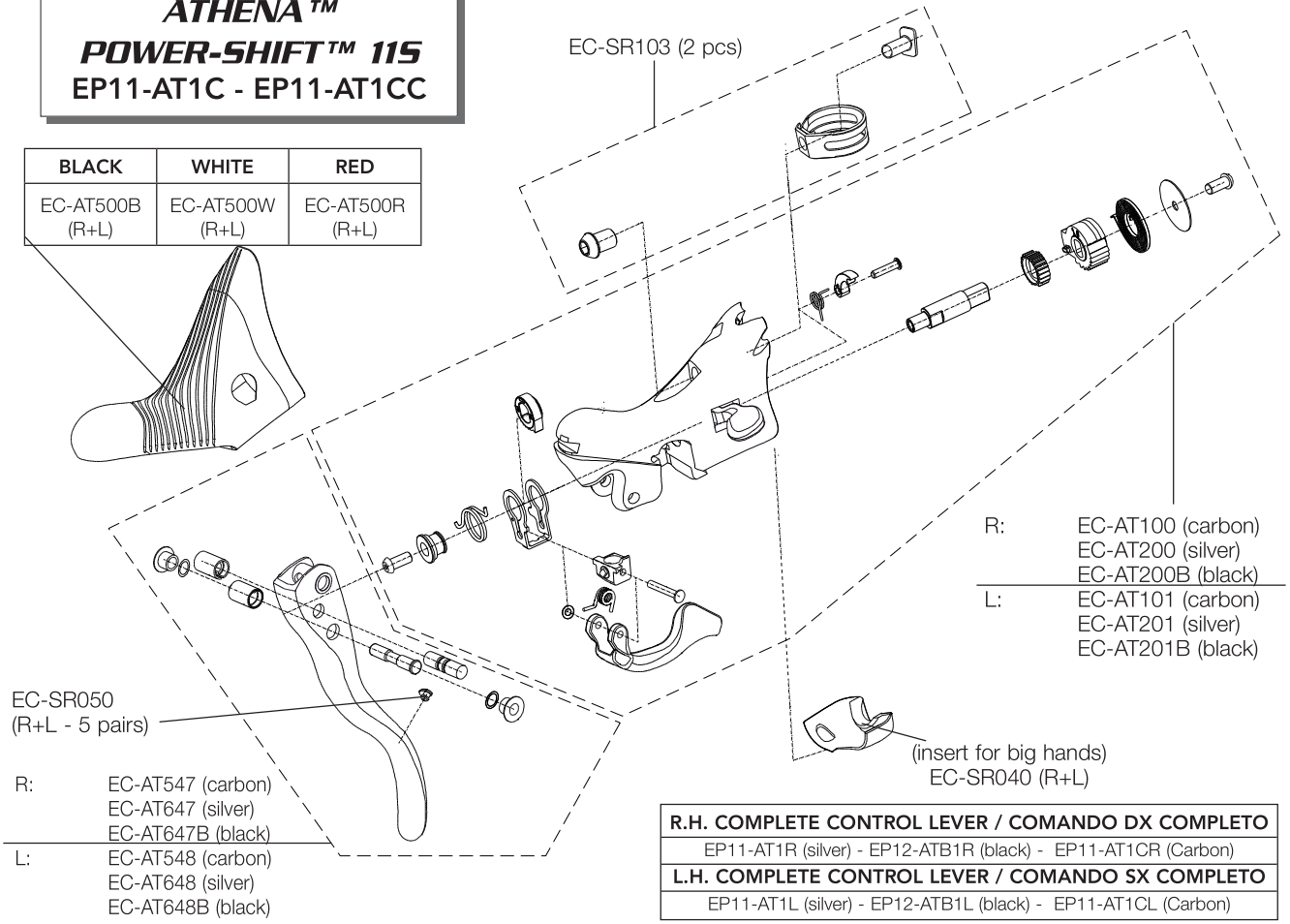
BLACK	WHITE	RED
EC-AT500B (R+L)	EC-AT500W (R+L)	EC-AT500R (R+L)



R.H. COMPLETE CONTROL LEVER / COMANDO DX COMPLETO
EP11-CEXR (A)/EP12-CERBXR (A B&R)/EP11-CEXCR (C)/EP12-CERBXCR (C B&R)
L.H. COMPLETE CONTROL LEVER / COMANDO SX COMPLETO
EP11-CEXL (A)/EP12-CERBXL (A B&R)/EP11-CEXCL (C)/EP12-CERBXCL (C B&R)

ATHENA™ POWER-SHIFT™ 11S
EP11-AT1C - EP11-AT1CC

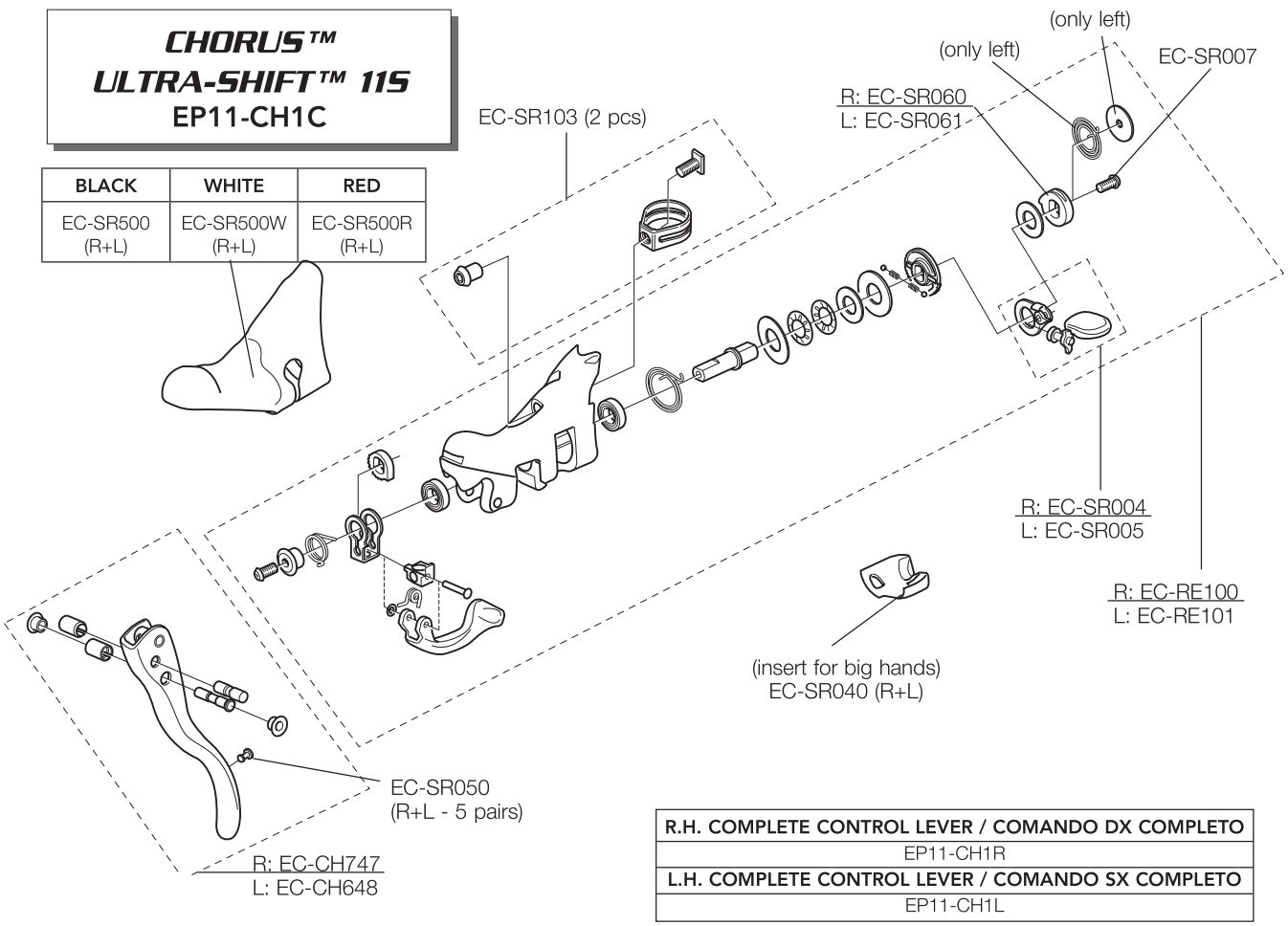
BLACK	WHITE	RED
EC-AT500B (R+L)	EC-AT500W (R+L)	EC-AT500R (R+L)



R.H. COMPLETE CONTROL LEVER / COMANDO DX COMPLETO
EP11-AT1R (silver) - EP12-ATB1R (black) - EP11-AT1CR (Carbon)
L.H. COMPLETE CONTROL LEVER / COMANDO SX COMPLETO
EP11-AT1L (silver) - EP12-ATB1L (black) - EP11-AT1CL (Carbon)

CHORUS™ ULTRA-SHIFT™ 11S
EP11-CH1C

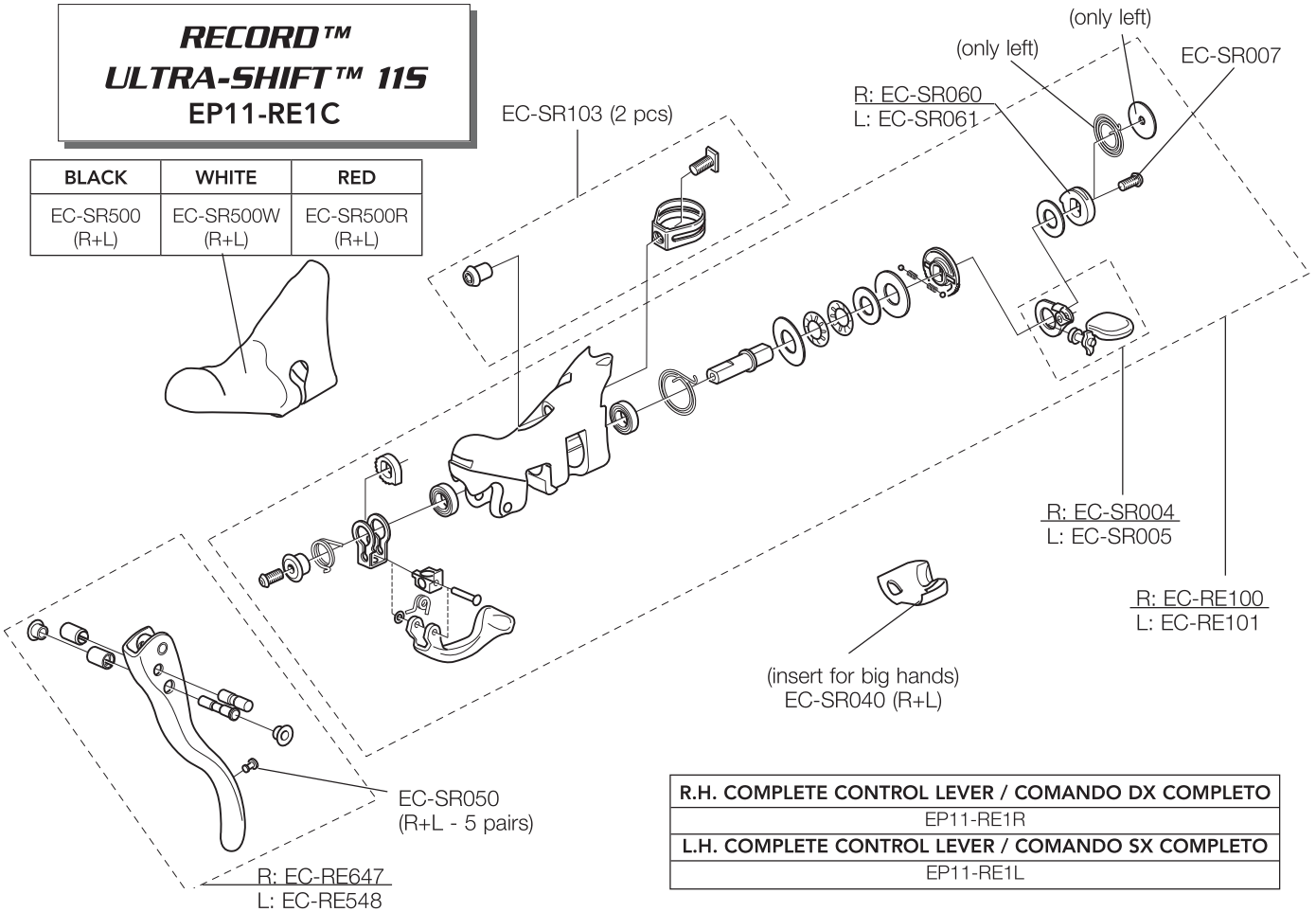
BLACK	WHITE	RED
EC-SR500 (R+L)	EC-SR500W (R+L)	EC-SR500R (R+L)



R.H. COMPLETE CONTROL LEVER / COMANDO DX COMPLETO
EP11-CH1R
L.H. COMPLETE CONTROL LEVER / COMANDO SX COMPLETO
EP11-CH1L

RECORD™ ULTRA-SHIFT™ 11S
EP11-RE1C

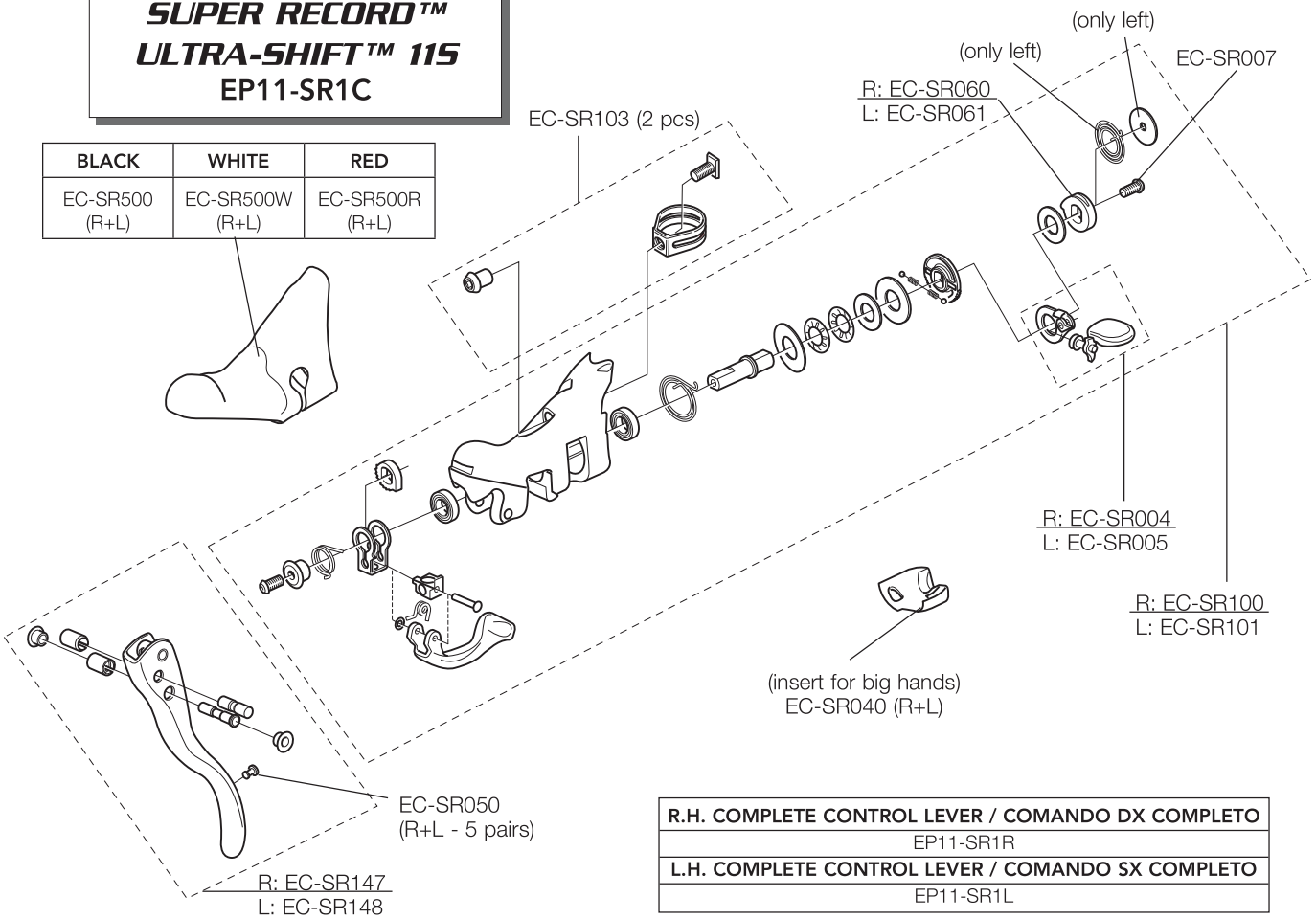
BLACK	WHITE	RED
EC-SR500 (R+L)	EC-SR500W (R+L)	EC-SR500R (R+L)



R.H. COMPLETE CONTROL LEVER / COMANDO DX COMPLETO
EP11-RE1R
L.H. COMPLETE CONTROL LEVER / COMANDO SX COMPLETO
EP11-RE1L

SUPER RECORD™ ULTRA-SHIFT™ 11S
EP11-SR1C

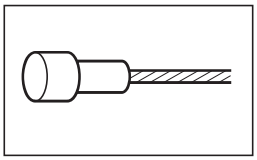
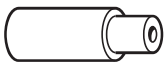
BLACK	WHITE	RED
EC-SR500 (R+L)	EC-SR500W (R+L)	EC-SR500R (R+L)



R.H. COMPLETE CONTROL LEVER / COMANDO DX COMPLETO
EP11-SR1R
L.H. COMPLETE CONTROL LEVER / COMANDO SX COMPLETO
EP11-SR1L

CABLES & CASINGS for ULTRA-SHIFT™ & POWER-SHIFT™ ERGOPOWER

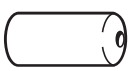
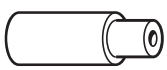
COMPLETE SET	BLACK	CG-ER600
	WHITE	CG-ER600W
	RED	CG-ER600R

		FRONT	REAR
BRAKES		Ø 1,6 mm L. 800 mm **CG-CB003**	Ø 1,6 mm L. 1600 mm **10-CG-CB013** (10 pcs.)
DERAILLEURS	 Ø 1,2 mm	L. 1600 **CG-CB014**	
		L. 2000 **10-CG-CB009** (10 pcs.)	
		Ø 5,7 mm **10-CG-CS112** (for CG-CS115 and CG-CS108 - sealed / con guarnizione - 10 pcs.)	
		Ø 5,7/4 mm **5-CG-CS113** (for CG-CS115 and CG-CS108 - sealed / con guarnizione - 5 pcs.)	

CABLES & CASINGS for all Ergopower™ control levers (except for ULTRA-SHIFT™)

Complete set: CG-ER600

		FRONT	REAR
BRAKES		Ø 1,6 mm L. 800 mm **CG-CB003**	Ø 1,6 mm L. 1600 mm **10-CG-CB013** (10 pcs.)
		Ø 6 mm **10-CG-CS011** (10 pcs.) (not sealed / senza guarnizione)	

DERAILLEURS	 Ø 1,2 mm	ERGOPOWER	L. 1600	**CG-CB014**
		ERGOPOWER	L. 2000	**10-CG-CB009** (10 pcs.)
		Ø 5,7 mm **10-CG-CS012** (for CG-CS015 and CG-CS008 - sealed / con guarnizione - 10 pcs.)		
		Ø 5,7/4 mm **5-CG-CS013** (for CG-CS015 and CG-CS008 - sealed / con guarnizione - 5 pcs.)		

TRADITIONAL LEVERS: CG-BR201 (brakes) - CG-DD101 (derailleurs)

ERGOPOWER FLAT BAR

1 - TECHNICAL SPECIFICATIONS

REAR DERAILLEUR CONTROL	10S	REAR DERAILLEUR CASING	REAR DERAILLEUR CABLE	BRAKE CASING	BRAKE CABLE
ERGOPOWER PER FLAT BAR	3 UP 2 DOWN	Ø 4.5 mm Campagnolo	Ø 1.2 mm	Ø 5 mm Campagnolo	Ø 1.6 mm

FRONT DERAILLEUR CONTROL	DOUBLE	TRIPLE	FRONT DERAILLEUR CASING	FRONT DERAILLEUR CABLE	BRAKE CASING	BRAKE CABLE
ERGOPOWER PER FLAT BAR	1 UP 1 DOWN	2 UP 2 DOWN	Ø 4.5 mm Campagnolo	Ø 1.2 mm	Ø 5 mm Campagnolo	Ø 1.6 mm

2 - COMPATIBILITY

⚠ ***WARNING! COMPATIBILITY***

These controls were conceived, sized and created solely for use on roads. They are therefore not suited to other purposes such as off-roading, mountain biking, etc. Failure to use them on road bikes, employed on smooth tarmac, could lead to accidents, physical injury or death.

REAR DERAILLEUR	FRONT DERAILLEUR	BRAKES	CRANKSET
10s	10s (POUR DOUBLE AND TRIPLE)	ALL DUAL PIVOT OR CALIPER CAMPAGNOL	POWER-TORQUE SYSTEM 10s
		cantilever CX Campagnolo	

⚠ **WARNING!**

• The Ergopower FB shifters are **only** compatible and must **only** be used with FB Campagnolo front derailleurs.

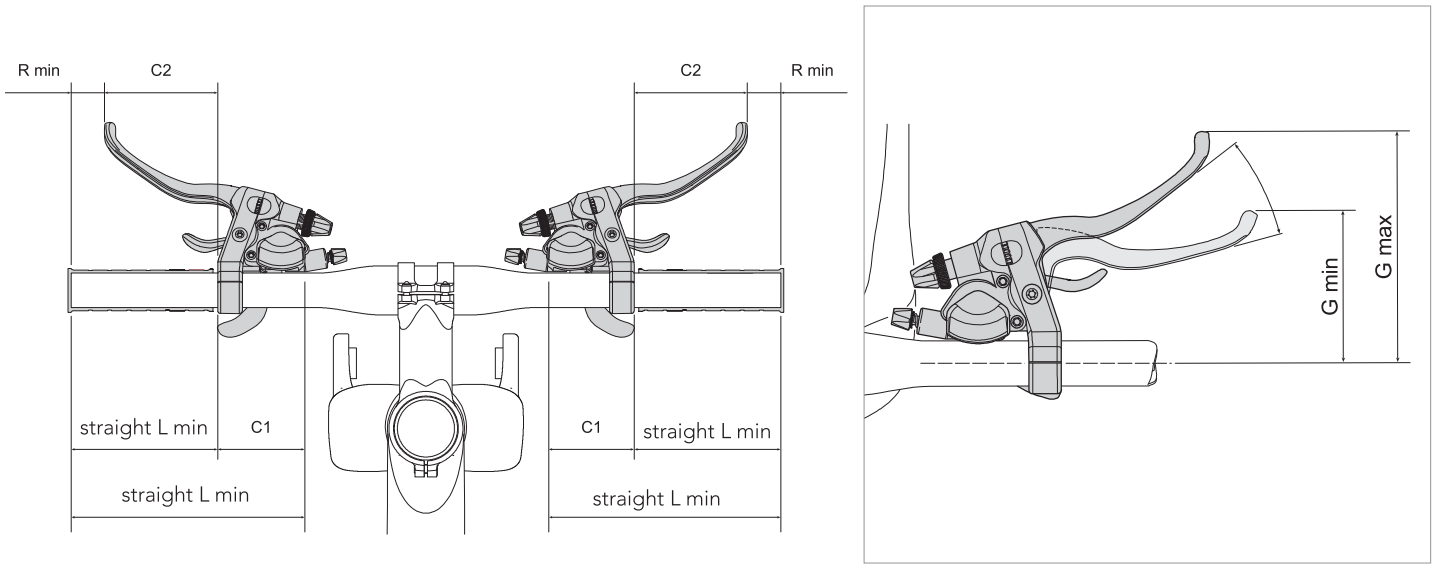
• The Ergopower FB shifters are **only** compatible and must **only** be used with Campagnolo brakes.

⚠ **WARNING!**

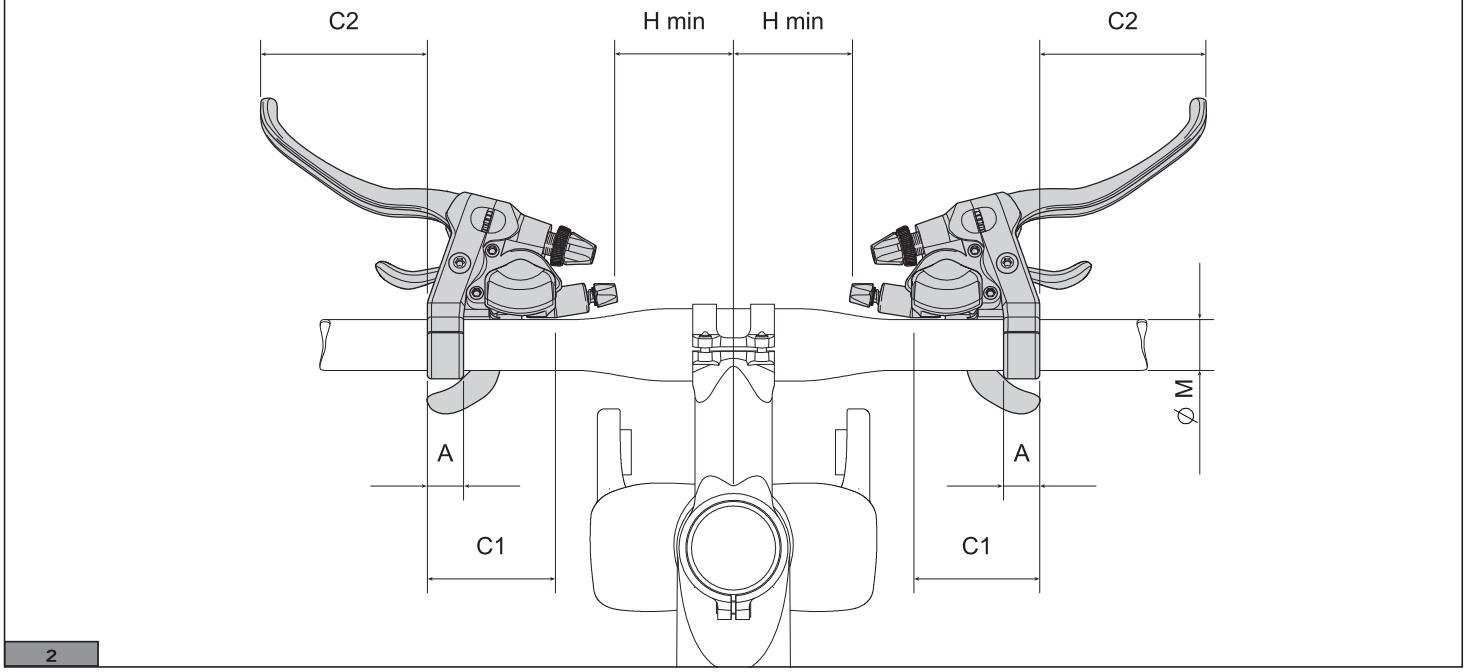
Different combinations from those included in the table could cause the malfunction of the drivetrain and result in an accident, personal injury or death.

3 - INTERFACE WITH HANDLEBAR

CONTROL CONSTRUCTION DIMENSIONS			CONTROL INSTALLATION					DIMENSION REQUIRED IN THE STRAIGHT SECTION OF THE HANDLEBAR	
A	C1	C2	H min.	R min.	**Min. knob L**	G min.	G max.	Ø M	**Min. straight L**
16 mm	56.5 mm	73.4 mm	70 mm	5 mm	C2 + R min.	65 mm	112 mm	22 ÷ 22.4 mm	**Min. knob L + C1**



1



2

4 - ASSEMBLY

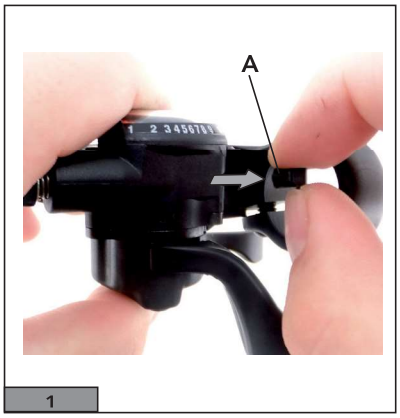
• Before commencing installation, remove the cap (A - Fig. 1) from both shifters.

• Press lever 3 on the right gear shifter (B - Fig. 2) repeatedly until the shifter is in position 1, i.e. the position corresponding to the smallest rear sprocket. Run the rear derailleur cable (length 2000 mm, ø 1.2 mm) through the relative hole (C - Fig. 3.1), making sure that the cable end is seated properly. Return the cap to its place (A - Fig. 1).

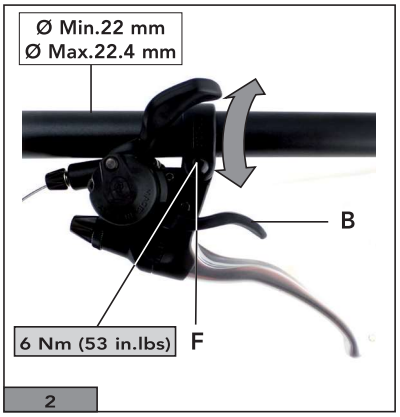
• Press lever 3 on the left gear shifter (B - Fig. 2) repeatedly until the shifter is in the position corresponding to the smallest chainring. Run the front derailleur cable (length 1600 mm, ø 1.2 mm) through the relative hole (E - Fig. 3), making sure that the cable end is seated properly. Return the cap to its place (A - Fig. 1).

Notes
- The front and rear derailleur cables can also be inserted with the controls in place, but the operation could become more complicated.
- To avoid jamming the mechanism, do not operate the lever 3 if the front and rear derailleur cables are slack.

• Loosen the 4 mm Allen screw (F - Fig. 2) as necessary to slide the clamp onto the handlebar. Turn the clamp until you find the best shifter position. Tighten the 4 mm Allen screw (F - Fig. 2), torquing to **6 Nm (53 in.lbs).**



1



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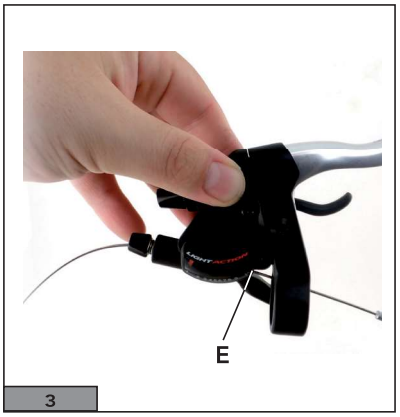
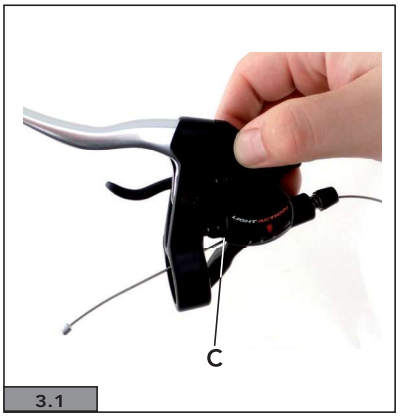


3



3.1

⚠ WARNING!

It is crucial that the above clamps are thigtened to 6 Nm (53 in.lbs) since a loosely fastened shifter could move while riding, resulting in accidents, physical injury or death.

• Fit the casing retainer clamps on the downtube barrel adjusters.

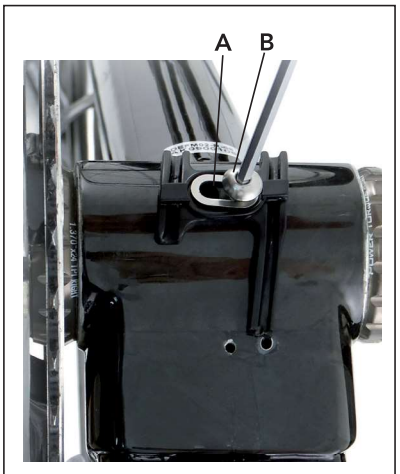
4.1 - INSTALLING THE DRIVETRAINS

• Install the cable guide plate (included in the pack) under the bottom bracket shell, as follows:

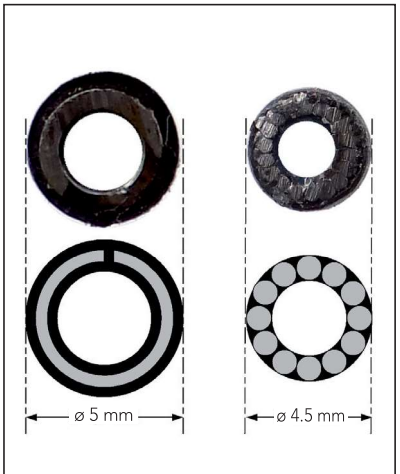
- position the washer (A – Fig. 4) in the provided seat in the cable guide plate.

- place the cable guide plate under the bottom bracket shell and fix it by means of the provided screw (B – Fig. 4) with a torque of **3÷4 Nm (27÷35 in.lbs).**

• Gear cable housings (Fig. 5) measure 4.5 mm in diameter, whereas brake cable housings (Fig. 5) measure 5 mm in diameter.
• Depending on the frame you have, it may be necessary to cut the rear brake housing and mount some end caps (not included in the kit).



4



5

• The cable housings must be cut in such a manner that the end is square and flush and the cross-section remains round (Fig. 6). Make sure you round out the housing after cutting, otherwise there will be friction between the inner wire and crushed housing.
To cut the casings, we suggest you to use the specific tool Park Tool CN-10.

• The front and rear derailleur cable housings are pre-lubricated with special grease applied to the half of the housing where there are no "Campagnolo" logos and the end of which has already been fitted with and end cap. This end of the housing must be fitted into the special seating found on the Ergopower FB shifter. If the housing needs to be shortened, the other end (with the two "Campagnolo" logos and without the end cap) must be cut.

6

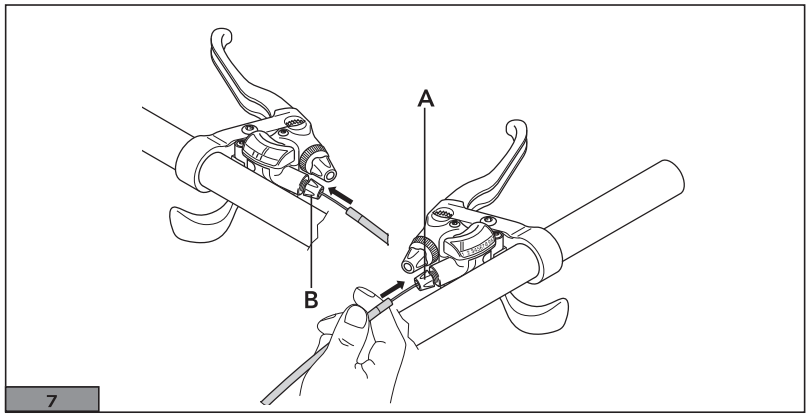
⚠ WARNING!

Before cutting the casing, carefully check that the length you choose is suitable for the size of your frame. Insufficient slack in the cable and casing could affect your ability to turn or control your bicycle, resulting in an accident, personal injury or death.

4.1.1 - Rear derailleur cable and housing

• Pull the housing over the rear derailleur cable you have just installed.

• Fasten the end of the cable (original length 680 mm, diameter ø 4.5 mm) containing the pre-mounted end cap to the adjusting screw (A - Fig. 7) of the right Ergopower FB shifter.

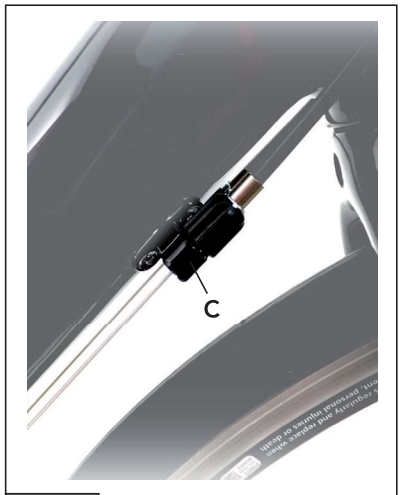


7

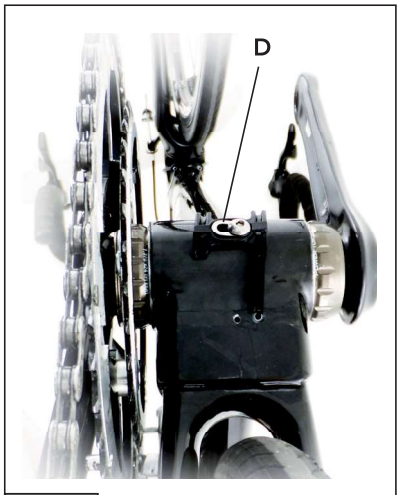
• Cut the housing such that it reaches as far as the steel cable stop mounted on the frame (C - Fig. 8).

• After cutting the cable housing to the correct length, apply the end cap and fit it into the steel cable stop mounted on the frame (C - Fig. 8).

• Run the cable through the slot of the cable guide located beneath the bottom bracket (D - Fig. 9). Run the cable through the cable stop (A - Fig. 10) on the chain stay.



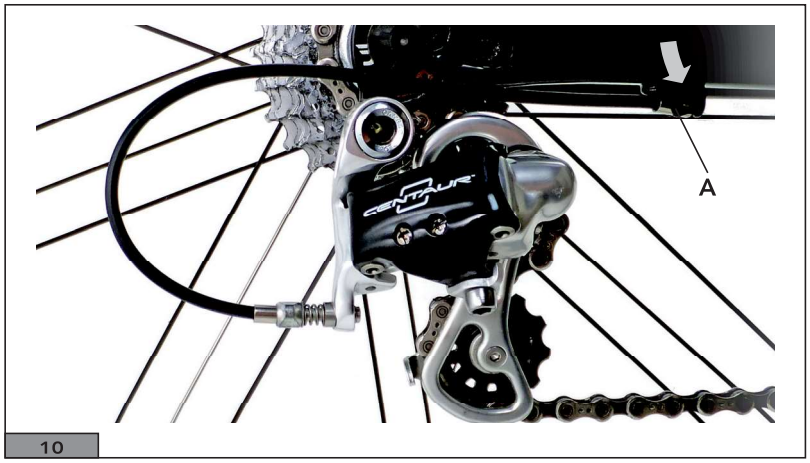
8



9

• Apply an end cap to the 330 mm, ø 4.5 mm cable housing (some frames require the use of the special butted ferrule supplied with the kit). Run the inner wire through it and then run both of them through the cable stop on the right chain stay (A - Fig. 10).

• Apply an end cap to the other end of the cable housing and fasten the cable to the rear derailleur (refer to rear derailleur use and maintenance manual).



10

4.1.2 - Front derailleur cable and housing

Pull the housing over the front derailleur cable you have just installed.

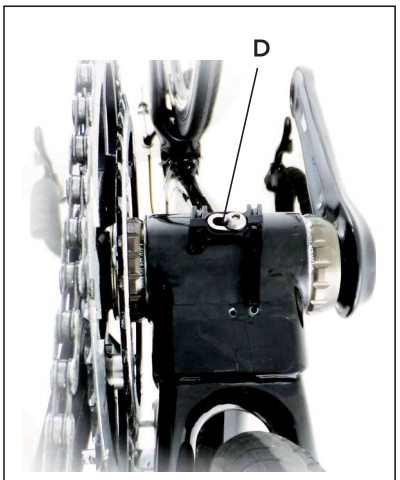
• Fasten the end of the housing (original length 330 mm, ø 4,5 mm) containing the pre-mounted end cap to the adjusting screw (B - Fig. 7) of the left Ergopower FB shifter.

WARNING!

Before cutting the casing, carefully check that the length you choose is suitable for the size of your frame. Insufficient slack in the cable and casing could affect your ability to turn or control your bicycle, resulting in an accident, personal injury or death.

• Cut the housing such that it reaches as far as the steel cable stop mounted on the frame (B - Fig. 11).

11



12

• After cutting the housing to the correct length, apply the end cap and fit it into the steel cable stop mounted on the frame (B - Fig. 11).

• Run the inner wire through the housing.

• Run the cable through the slot of the cable guide located beneath the bottom bracket (D - Fig. 12) and fasten the cable to the front derailleur (refer to front derailleur use and maintenance manual).

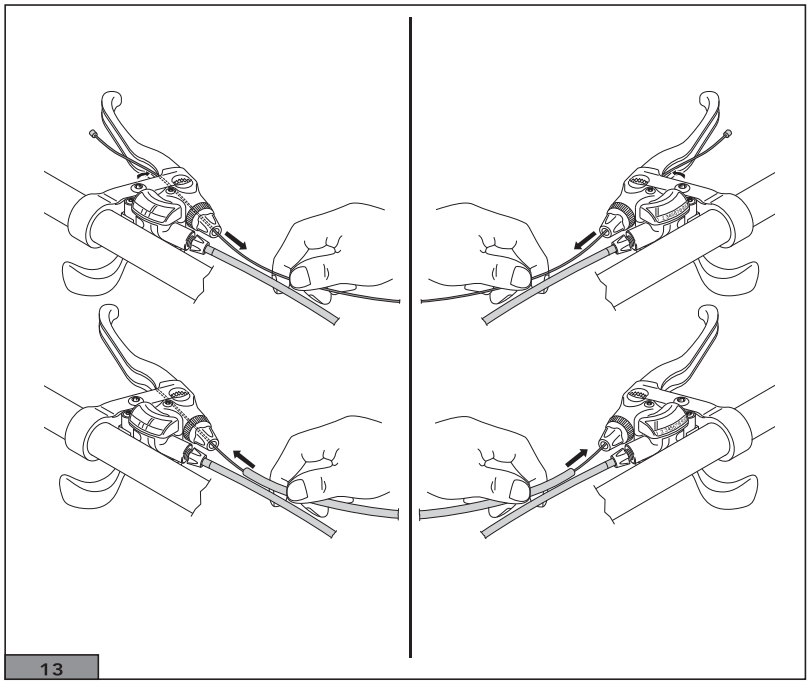
4.1.3 - Front brake cable and housing / rear brake cable and housing

• Run the brake cable (original length 800 mm, ø 1.6 mm) through the hole with the bigger diameter of the brake lever boss on the left (LH) Ergopower FB controls, making sure that the cable end is seated properly (Fig. 13).

• Fit the housing (the end without an end cap - length 580 mm, ø 5 mm) on the brake cable and in the brake cable stop and fasten the cable to the brake (refer to brake use and maintenance manual).

• Run the brake cable (original length 1600 mm, ø 1.6 mm) through the hole with the bigger diameter of the boss on the brake lever of the right (RH) Ergopower FB controls, making sure that the cable end is seated properly (Fig. 13).

• Depending on the frame you have, it may be necessary to cut the rear brake housing (original length 1250 mm, ø 5 mm) and mount some end caps (ø 6 mm, not included in the kit).


13

• Fit the housing (the end without an end cap) on the brake cable and in the brake cable stop and fasten the cable to the brake (refer to brake use and maintenance manual).

⚠ WARNING!

Before cutting the cable housing, carefully check that the length you decide upon is correct for the frame dimensions. A cable housing that is too long or too short may compromise your ability to turn or control your bicycle, resulting in accidents, physical injury or death.

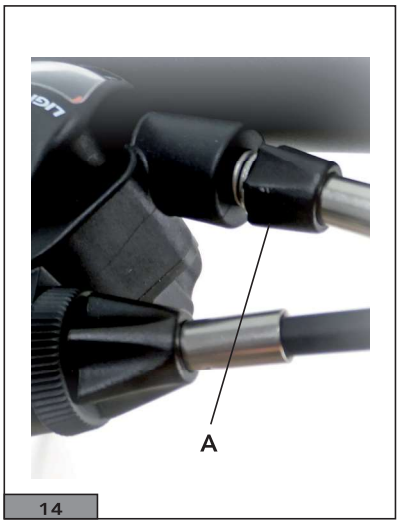
4.1.4 - Adjusting cable tension

• Rear derailleur cable tension can be adjusted either by acting on the cable stop adjuster (A - Fig. 14), or on the adjusting screw found on the upper body of the rear derailleur (B - Fig. 15) or on the adjusting screw on the shifter (C - Fig. 16 / 16.1).

• Front derailleur cable tension can be adjusted either by acting on the cable stop adjuster (A - Fig. 14), or on the adjusting screw on the shifter (D - Fig. 16).

• Brake cable tension can be adjusted either by acting on the brake adjuster or on the adjusting screw on the brake lever (F - Fig. 16 / 16.1).

In order to turn this screw, you must first loosen the locknut (G - Fig. 16/ 16.1); when the operation is over, tighten the locknut completely (G - Fig. 16 / 16.1).



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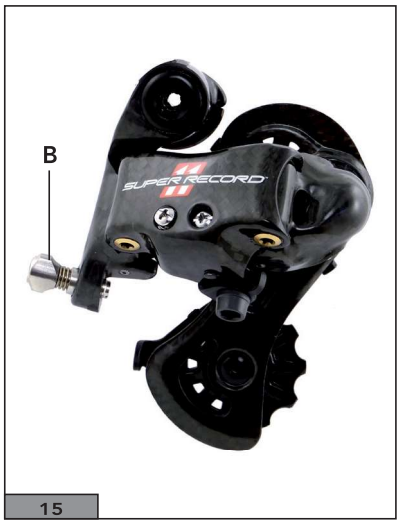

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16

16.1

5 - MAINTENANCE

• Periods and riding distances are purely indicative and may be significantly different in relation to conditions of use and the intensity of your activity (for example: racing, rain, salted Winter roads, weight of the rider etc.). Check with your mechanic to select a schedule that is best for you based on your size, riding conditions and you riding style.

• Casings are supplied pre-lubricated and do not require any additional lubrication.

•Ergopower™ control levers must be checked by a specialist mechanic every 3 years or every 30,000 Km (18,000 miles). The cables and casings must be replaced every 2 years or after 20,000 Km (12,000 miles).

• In the event of competitive use, Ergopower™ control levers must be checked by a specialist mechanic and cables and casings must be replaced every year or every 15,000 Km (9,000 miles).

• Dirt seriously damage bicycles and their components. Thoroughly rinse, clean and dry your bike after using it in these conditions.

• 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. Dry them using a soft cloth. Never use abrasive or metal pads.

• Relubricate the drivetrains carefully using a lubricant suitable to purpose

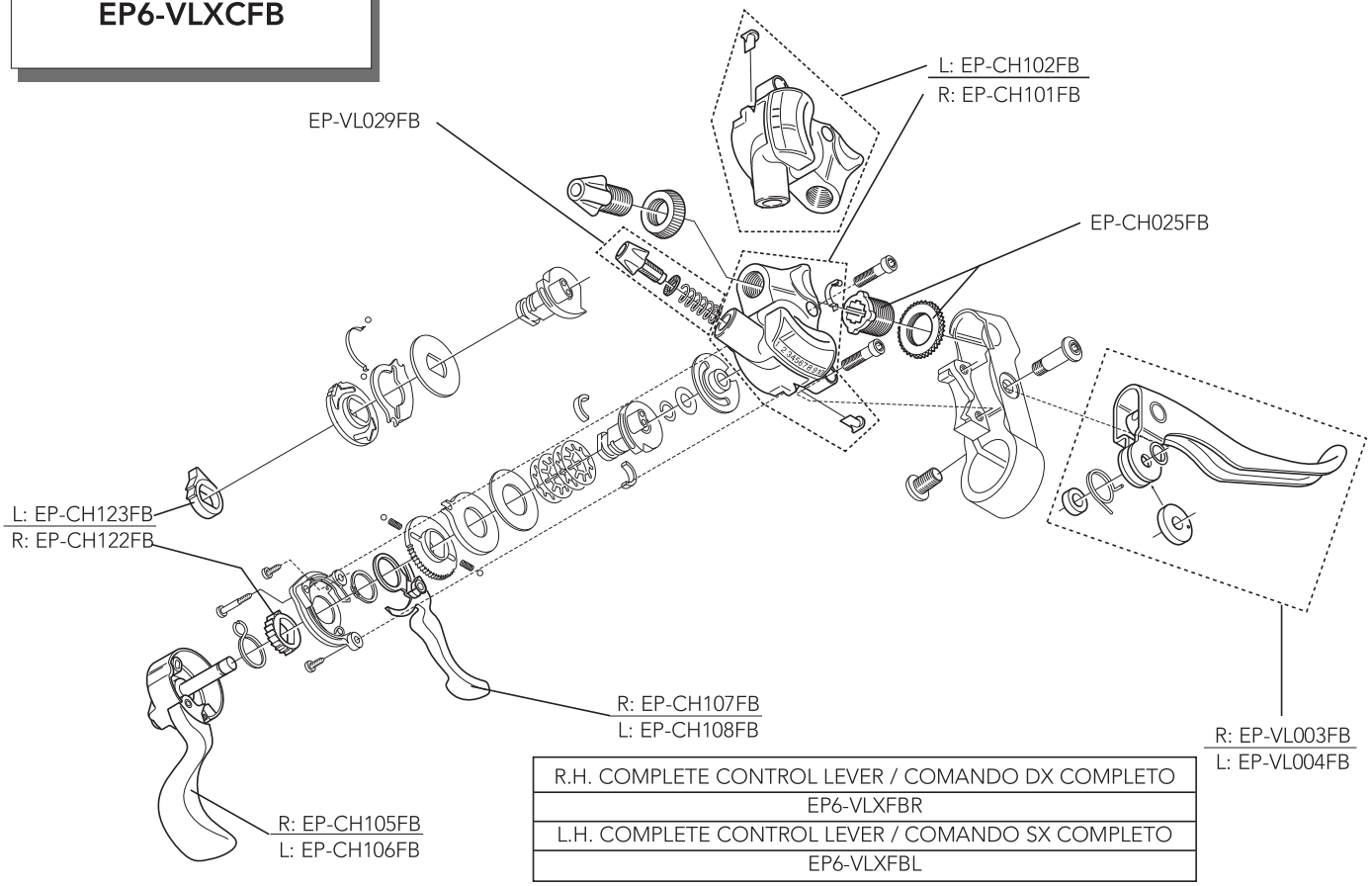
• After applying the lubricant move the cranks and engage all possible gear combinations in order to thoroughly lubricate the entire drive system.

• Thoroughly clean any residual lubricant from the bicycle and floor.

• At the end of the lubrication operation, CAREFULLY degrease rims and brake pads.

6 - SPARE PARTS

VELOCE™ FB 10s
EP6-VLXCFB



R.H. COMPLETE CONTROL LEVER / COMANDO DX COMPLETO
EP6-VLXFBR
L.H. COMPLETE CONTROL LEVER / COMANDO SX COMPLETO
EP6-VLXFBL

BOTTOM BRACKET FOR TRIPLE CRANKSET

1 - TECHNICAL SPECIFICATIONS

BOTTOM BRACKET	CRANKSET	CHAIN LINE
111 mm	**COMP. TRIPLE 10S** (for tubes ø 28,6 mm)	45 mm
		

BOTTOM BRACKET	CRANKSET	CHAIN LINE
115.5 mm	**COMP. TRIPLE 10S** (for tubes ø 32 mm / ø 35 mm)	47.5 mm
		

2 - COMPATIBILITY

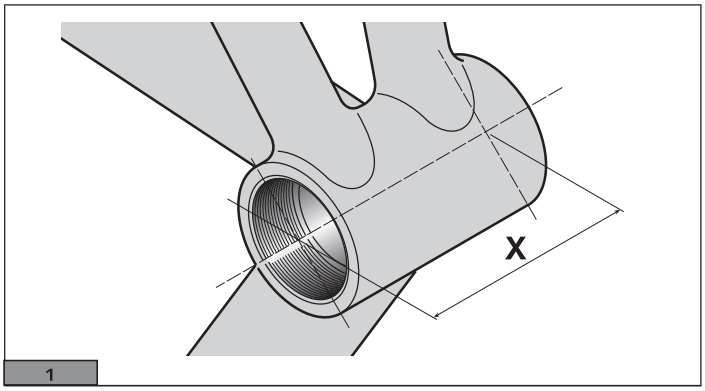
CAUTION
Before starting assembly, check that the bottom bracket cups are compatible with the bottom bracket shell).

3 - INTERFACE WITH THE FRAME

3.1 - COMPATIBILITY WITH BOTTOM BRACKET SHELLS

The Campagnolo® bottom brackets are compatible with shells having the following widths:

TYPE	X (Fig. 1)
Italian thread	69.2 mm ÷ 70.8 mm
English thread	67.2 mm ÷ 68.8 mm



4 - ASSEMBLY

4.1 - FRAME PREPARATION AND BOTTOM BRACKET INSTALLATION

• Make sure that the threads (A - Fig. 1) of the bb shell are compatible with the threads of the bb cups:

Italian thread: 36x24 tpi
English thread: 1.370x24 tpi

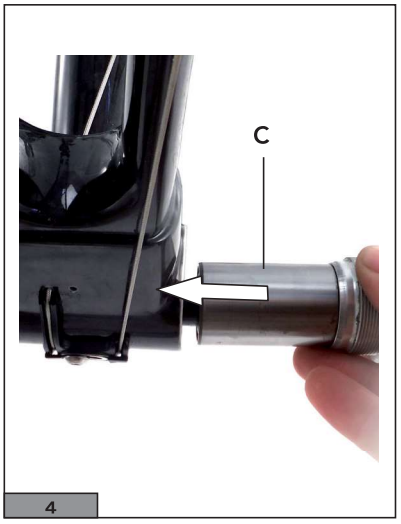
• True the thread (A - fig.1) of the cassette using a suitable tool.

• Face the bottom bracket shell (B - Fig. 2) respecting the measures X (Fig. 1 - chapter "INTERFACE WITH THE FRAME), using a suitable tool.

• Clean and degrease the threads of the bb shell (Fig.3).

• Make sure that there is a water draining hole on the bottom of the bb shell.

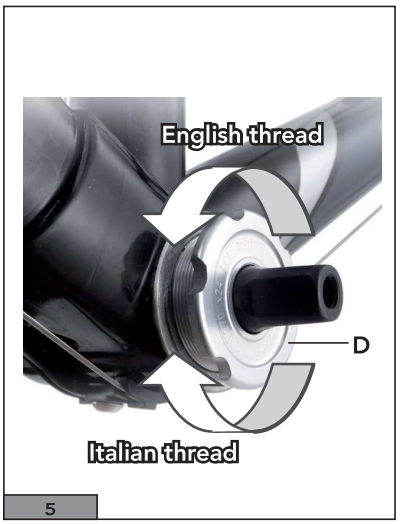
• Fit the cartridge (C - Fig. 4) in the bottom bracket shell, inserting it from the right side.

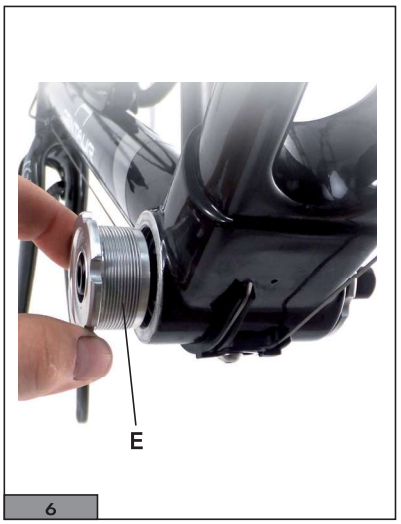


• Tighten the right-hand cup (D - Fig. 5) snugly against the bottom bracket shell.

NOTE
If the bottom bracket has English threading (1.370x24 tpi), the right-hand cup must be tightened counter-clockwise.

• Tighten the left-hand cup (E - Fig. 6) snugly against the bottom bracket shell.



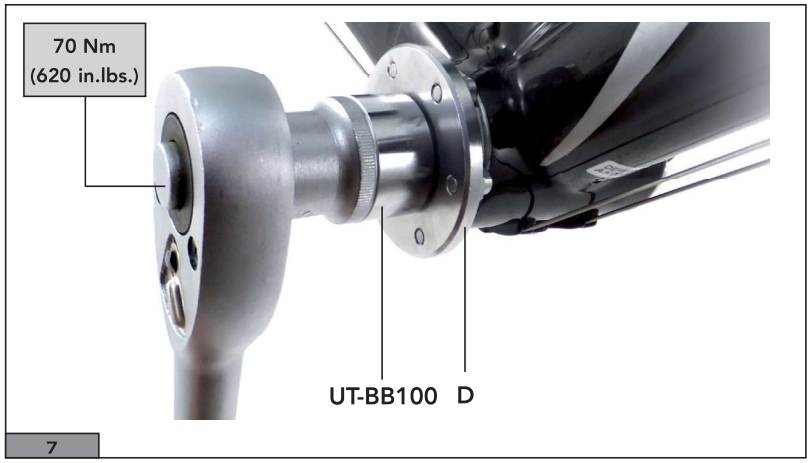


• Fully tighten the right-hand support (D - Fig. 7) using the Campagnolo® tool UT-BB100 and a torque wrench with a 24 mm insert to a torque setting of **70 Nm (620 in.lbs**.).

• Perform the same operation also for the left-hand cup.

• Make sure that the bottom bracket spindle rotates correctly.

• If you should notice an increase in bottom bracket spindle rotation friction, the bottom bracket shell may be deformed or the cups are no longer axial.
In this case, unscrew the left-hand cup, apply the threadlock, then re-tighten to a torque setting of **30 Nm (266 in.lbs).**



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WARNING!

Increased rotation friction will quickly damage the bottom bracket. A damaged bottom bracket may break unexpectedly resulting in an accident, personal injury or death.

5 - MAINTENANCE

The bottom bracket you purchased is a cartridge type with sealed bearings.
This component does not require maintenance.

WARNING!

The useful life of this bottom bracket is determined by the life cycle of the bearings - when the bearings wear out the entire bottom bracket has to be replaced. Replacement of only the bearings will expose the axle to a significantly increased risk of fatigue failure, resulting in failure of the bracket, 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.

TRIPLE CRANKSET

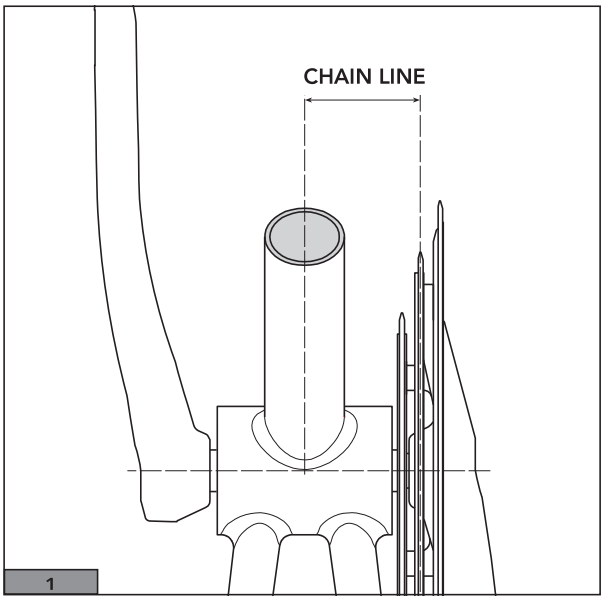
1 - TECHNICAL SPECIFICATIONS

TRIPLE CRANKSET
52/42/30 - 52/42/32
BOLT CIRCLE DIAMETER
135/74 mm
MINIMUM CHAINSTAY LENGTH
405 mm
AXLE THREADS
9/16x20 TPI

1.1 - CHAIN LINE SIZE

• Chain line for triple crankset (Fig.1)

BOTTOM BRACKET	CHAIN LINE
111 mm - SYMMETRICAL 10S triple crankset (for seat tubes ø 28,6 mm)	45.5 mm
	
115,5 mm - SYMMETRICAL 10S triple crankset (for seat tubes ø 32 mm and ø 35 mm)	47.5 mm
	



CAUTION
Before starting assembly, check that the bottom bracket cups are compatible with the bottom bracket shell).

2 - COMPATIBILITY

• The crankset must be installed **only** on original Campagnolo® bottom brackets.

REAR DERAILLEUR	CONTROL LEVERS	CHAIN	REAR DERAILLEUR
10s FOR TRIPLE CRANKSET	ERGOPOWER POWER-SHIFT 10s	10s ULTRA NARROW	10s with long cage

⚠ 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.

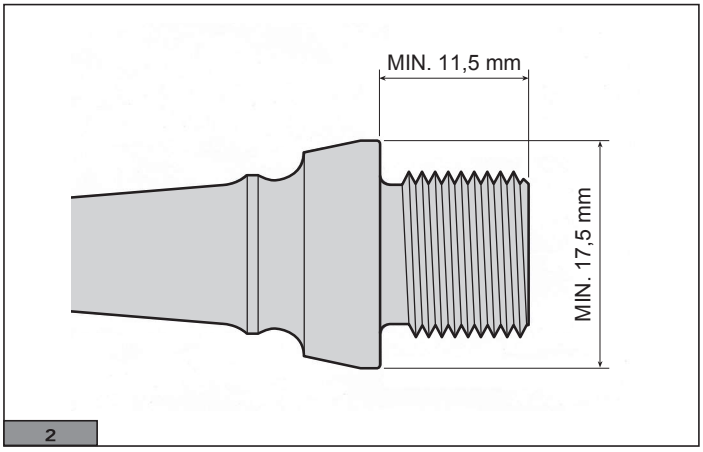
2.1 - PEDAL AXLE COMPATIBILITY

⚠ WARNING!

Do not insert washers between the pedal axle and the crank as they would generate abnormal stresses in the interface area. These stresses could lead to premature failure, resulting in an accident, personal injury or death.

⚠ WARNING!

The contact face of the pedal axle must correspond with the data of Fig. 2.
The above characteristics are necessary to minimize abnormal stresses in the cranks. Such stresses could lead to premature failure, resulting in accidents, personal injury or death.



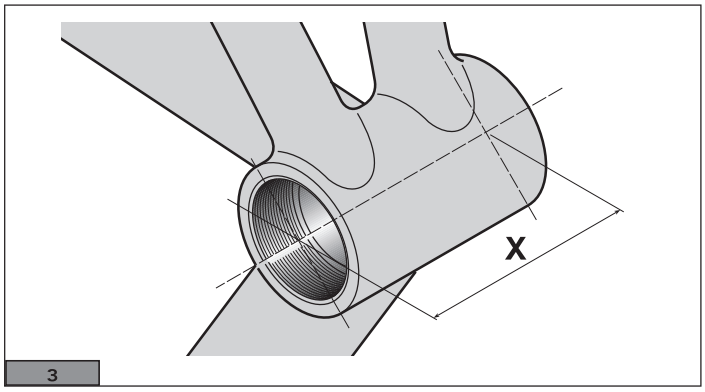
2

3 - INTERFACE WITH THE FRAME

3.1 - COMPATIBILITY WITH BOTTOM BRACKET SHELLS

• The Campagnolo® crankset is compatible with shells having the following widths:

TYPE	X (Fig. 3)
Italian Thread	69.2 mm ÷ 70.8 mm
English Thread	67.2 mm ÷ 68.8 mm



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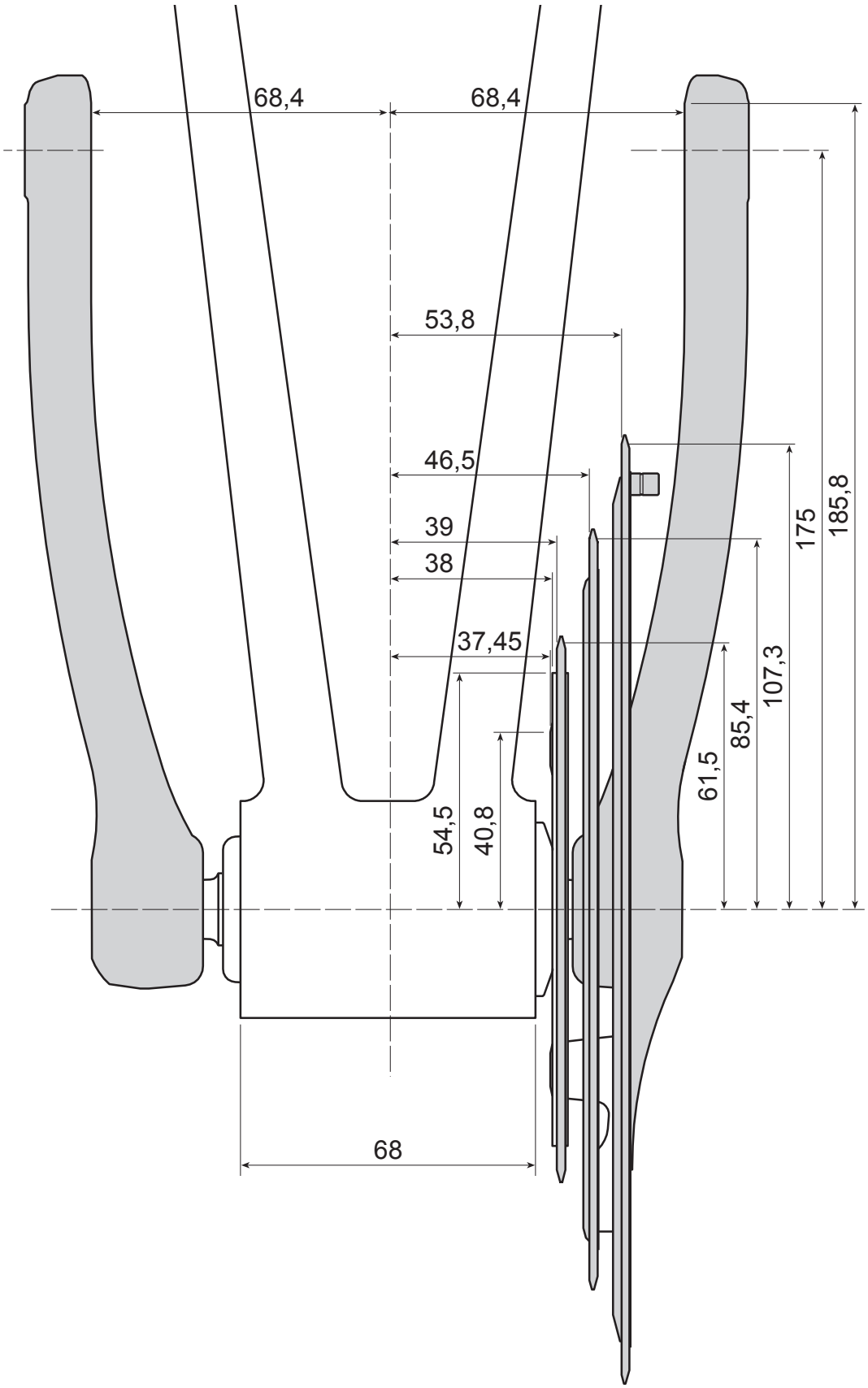
3.2 - DIMENSIONS FOR TRIPLE CRANKSETS



4 - ASSEMBLY

Note
Before you assemble the cranks on the bottom bracket axle, degrease the axle and crankset square heads thoroughly. **NEVER** lubricate the bolts before tightening them.

1

• Fit the crank on the bottom bracket axle, fasten it with the 8 mm socket head bolt and tighten the bolt using a torque wrench, with a setting of **32÷38 Nm (283÷336 in.lbs).** (Fig. 2).

2

5 - MAINTENANCE

⚠ WARNING!

If it is necessary to replace the chainrings, contact a Campagnolo® Service Center since the flatness must be carefully checked using special equipment. Final assembly must be carefully performed.

•Check periodically to make sure that the crankset and chainring fixing bolts are tightened with the correct torque wrench setting:
- crankset fixing bolt: 32÷38 N.m (23.6÷28 lb.ft)
- chainring fixing bolt: 8 N.m (5.9 lb.ft)

⚠ WARNING!

Always inspect your crankset at regular intervals to make sure that there are no signs of damage, such as chipping, cracks or other fatigue marks. In particular, perform this inspection every time the crankset strikes an object or after a fall. If evidence of damage is located, you must replace the cranks with original Campagnolo spare parts. Failure to do so could result in failure of the product, an accident, personal injury or death. DO NOT ATTEMPT TO USE OR REPAIR THE CRANKS.

•In the event of impacts or falls, make sure that the pedals and bottom brackets are not damaged and have the bicycle checked by a specialized mechanic.

•Never modify the crankset in any way. Tampering with the components may cause sudden failure and accidents.

•Clean the chainrings with a soft cloth. Use only specific bicycle cleaning products. Do not use solvents or detergents. Only clean the carbon crank using a soft cloth with mild soap and water.

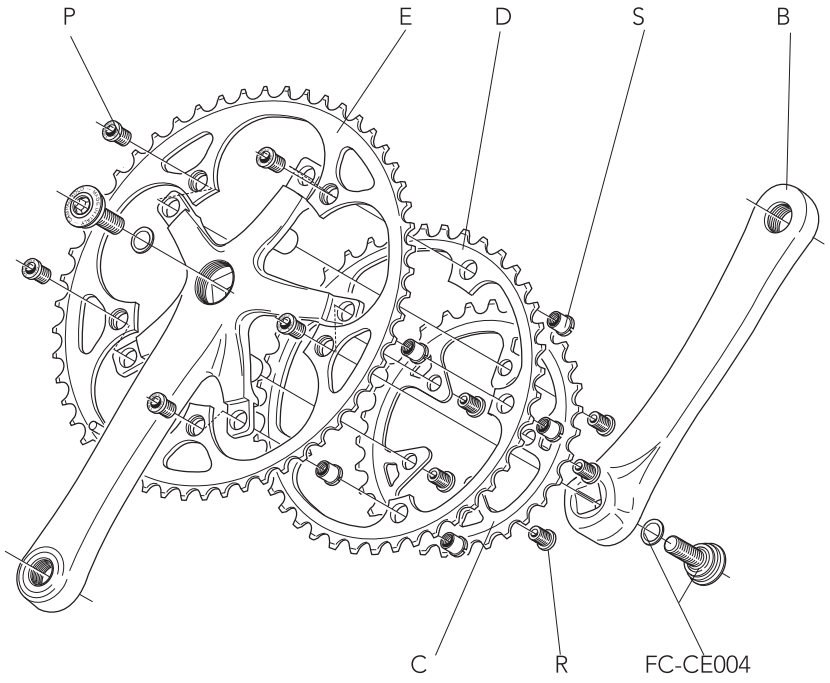
•Do not expose the carbon crankset to high temperatures. Do not expose the carbon crankset to direct sunlight. Do not

6 - SPARE PARTS

COMP TRIPLE™ 10s
FC7-CO....

FC-CO100
KIT VITI / SCREWS&NUTS
5 P + 5 R + 5 S

B	170 mm	FC-CO313
	175 mm	FC-CO315
C	Z30	FC-RE030
D	Z40 for 30	FC-CE040
	Z42 for 30	FC-CE042
E	Z50 for 40	FC-CE050
	Z53 for 42	FC-CE053



POWER-TORQUE SYSTEM CRANKSET

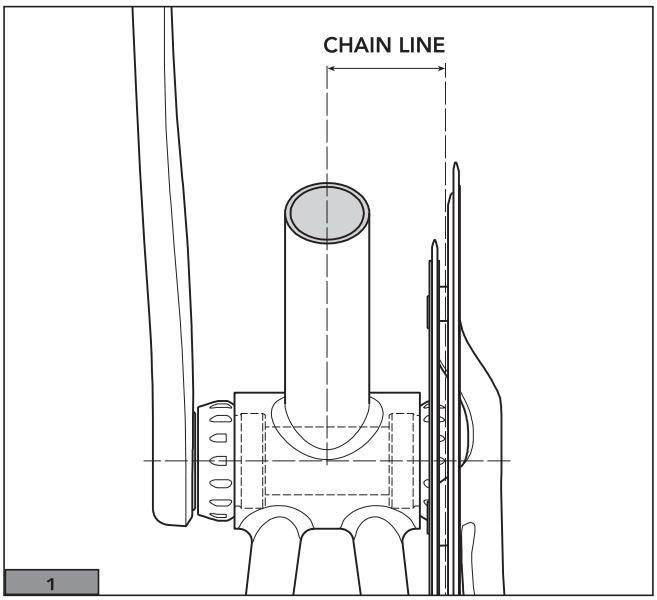
1 - TECHNICAL SPECIFICATIONS

STANDARD CRANKSET	BOLT CIRCLE DIAMETER	CHAIN LINE	MINIMUM CHAINSTAY LENGHT	AXLE THREADS
52/39 53/39	135 mm	43,5 mm	405 mm	9/16x20 TPI

COMPACT CRANKSET	BOLT CIRCLE DIAMETER	CHAIN LINE	MINIMUM CHAINSTAY LENGHT	AXLE THREADS
50/34	110 mm (Shank radius = 56.5 mm)	43,5 mm	405 mm	9/16x20 TPI

1.1 - CHAIN LINE SIZE

- Chain line for double crankset (Fig. 1)



2 - COMPATIBILITY

CRANKSET	CHAIN	CONTROL LEVERS	REAR DERAILLEUR	FRONT DERAILLEUR
Power - torque system 10s	10s Ultra-Narrow	Ergopower Power-Shift 10s	10s	10s
		Bar-End 10s		
Power - torque system 11s	11s	Ergopower Power-Shift 11s	11s	11s
		Ergopower Ultra-Shift 11s		
		Bar-End 11s		

CRANKSET	TYPE OF USE
POWER-TORQUE SYSTEM 10s	ONLY FOR ROAD
POWER-TORQUE SYSTEM 11s	ONLY FOR ROAD

2.1 - PEDAL AXLE COMPATIBILITY

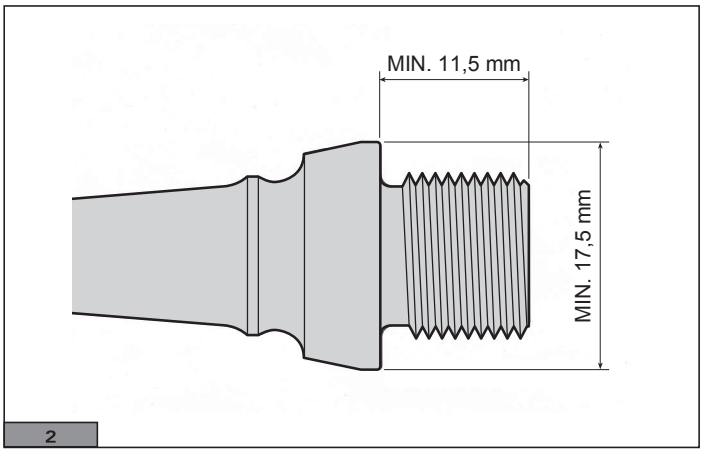
⚠ **WARNING!**

Do not insert washers between the pedal axle and the crank as they would generate abnormal stresses in the interface area. These stresses could lead to premature failure, resulting in an accident, personal injury or death.

⚠ **WARNING!**

The contact face of the pedal axle must correspond with the data of Fig. 2.
The above characteristics are necessary to minimize abnormal stresses in the cranks. Such stresses could lead to premature failure, resulting in accidents, personal injury or death

NOTE
Q-factor: 145,5 mm (nominal value).



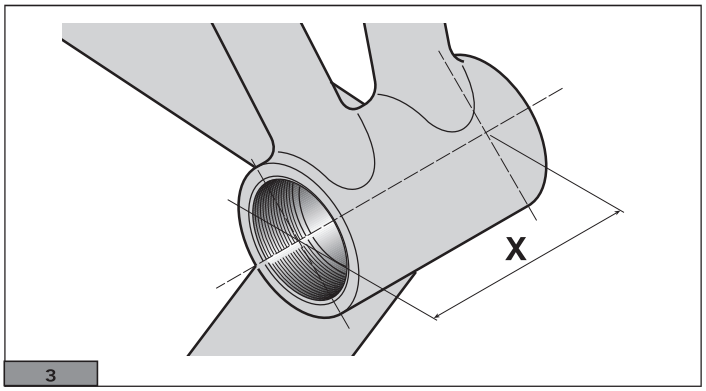
2

3 - INTERFACE WITH THE FRAME

3.1 - COMPATIBILITY WITH BOTTOM BRACKET SHELLS

• The Campagnolo® Power Torque™ System crankset is compatible with shells having the following widths:

TYPE	X (Fig. 3)
Italian thread	69.2 mm ÷ 70.8 mm
English thread	67.2 mm ÷ 68.8 mm



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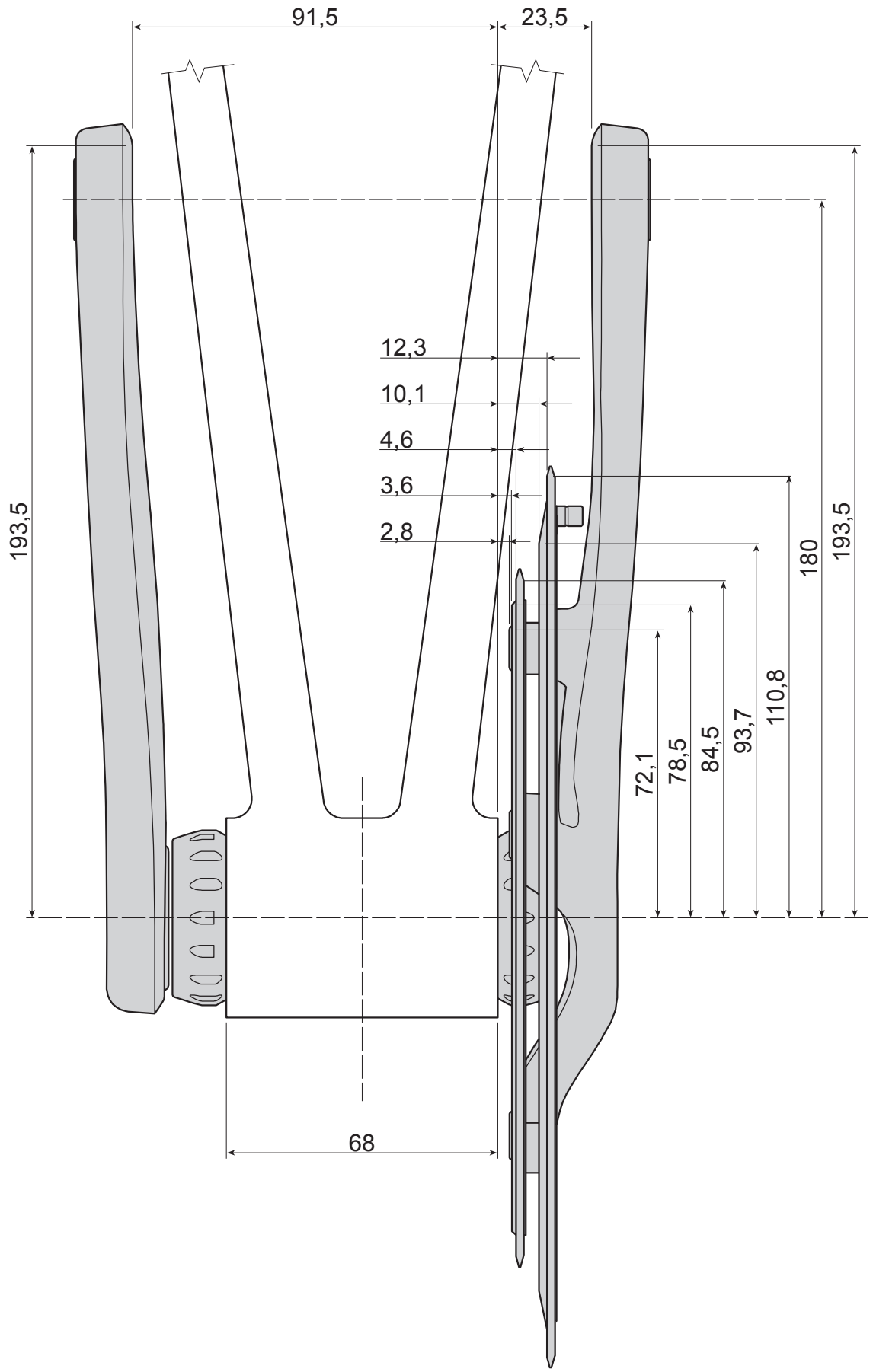
3.2 - DIMENSIONS FOR POWER - TORQUE SYSTEM CRANKSET



4 - ASSEMBLY

When a bike frame is manufactured, the bottom bracket shell is often deformed. In addition, paint residue is often left on the edge of the shell and on its threads. Therefore, in order to prevent the bottom bracket (bb) cups from being twisted off their ideal working axis, it is necessary to face and tap the bb shell (unless this operation has been performed by the frame manufacturer).

4.1 - FRAME PREPARATION AND INSTALLING THE CRANKSET

• Make sure that the threads (A - Fig. 1) of the bb shell are compatible with the threads of the bb cups:

- **Italian thread:** 36x24 tpi
- **English thread:** 1.370x24 tpi

• True the thread (A - fig.1) of the cassette using a suitable tool.

• Face the bottom bracket shell (B - Fig. 2) respecting the measures X (Fig. 3 - chapter "INTERFACE WITH THE FRAME"), using a suitable tool.

• Make sure that there is a water draining hole on the bottom of the bb shell.

If there is no such hole, do not simply drill one. You must contact the frame manufacturer for further information and clarification in this regard.

• Clean and degrease the threads of the bb shell (Fig. 3).

CAUTION
Use **exclusively** the cups for Power Torque system crankset.

• Take the bb right cup, screw it in fully (Fig. 4) and tighten at **35 Nm (310 in.lbs)** with the Campagnolo UT-BB130 tool and the torque wrench (Fig. 5).

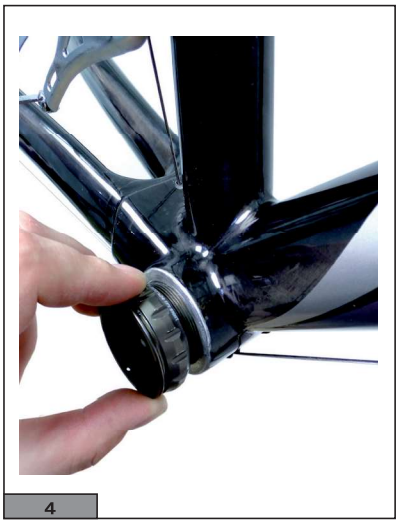
• Repeat the previous step with the left cup.

• Apply a thin layer of grease on the internal surface of the bearing installed in the left bottom bracket cup (Fig.6).

1

2


3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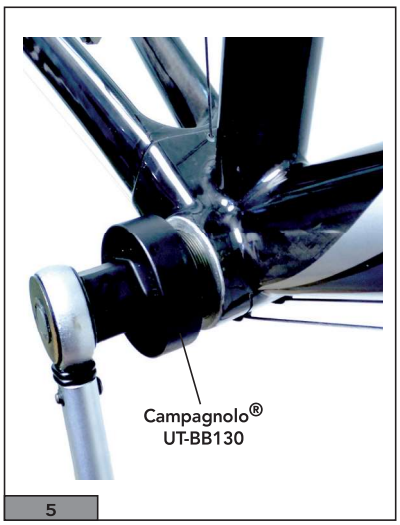


5


6

• Identify the two small holes on the right cover (fig. 7).

• Position the holding clip with its two ends near the holes (fig. 8). Do not insert the clip into the holes.

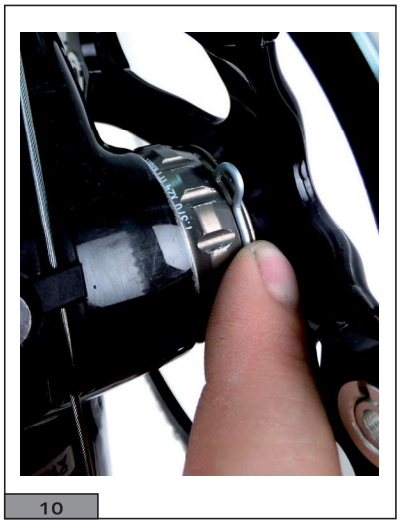
7

8

• Insert the right crank fully into the bottom bracket (fig. 9) letting the pivot protrude from the left cover.

• Press the clip so that the two ends are pushed into the holes (fig. 10).

9



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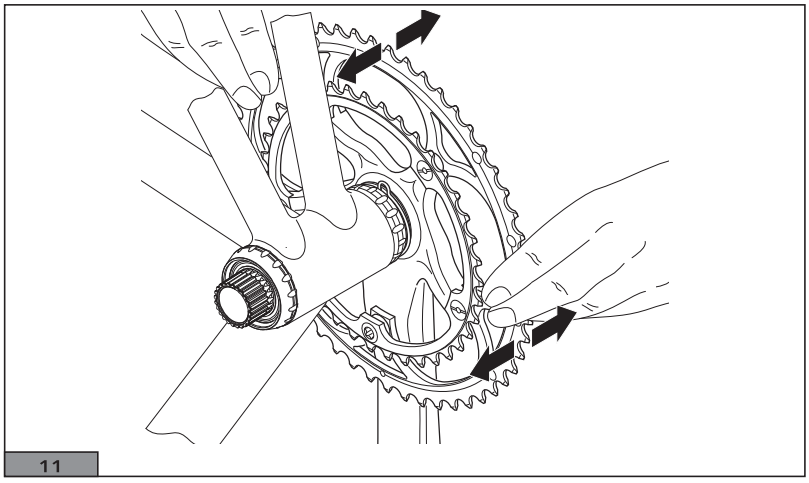
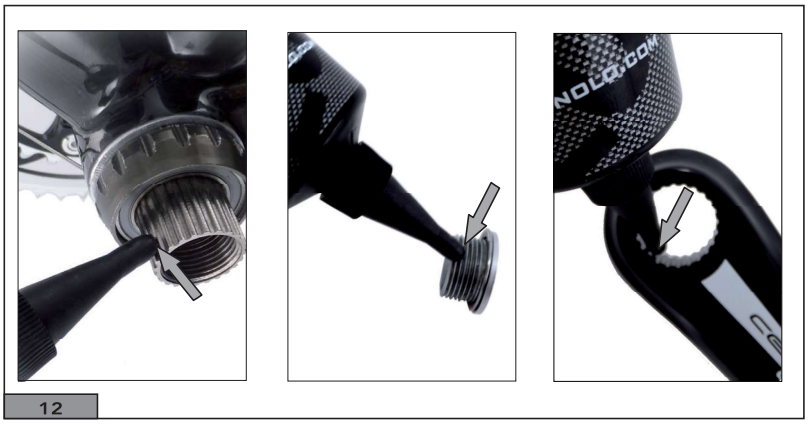
• Move the right crank sideways as if to take it out of the bottom bracket and check the clip is positioned correctly and holds the crank (fig. 11).



11

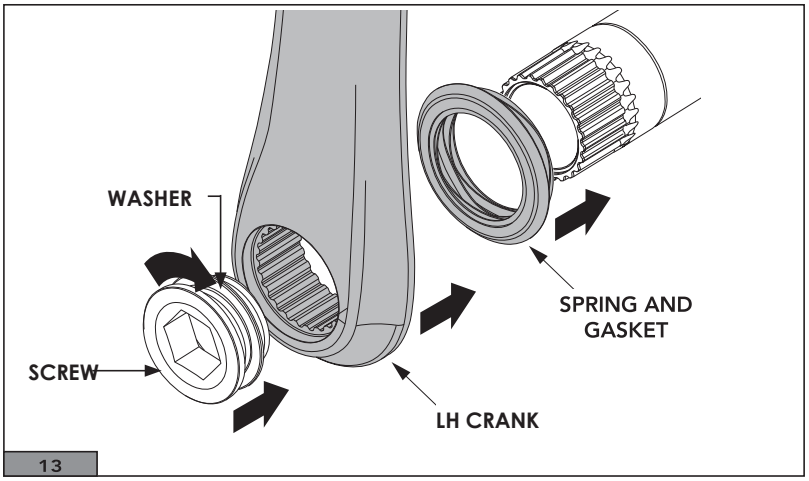
⚠ **WARNING!**

Before ANY installation, grease the splines of the spindle, splines of the crank and the threads of the crank bolt with the appropriate synthetic grease (fig.12).
An incorrect assembly might lead to the sudden break of the component as well as accidents, injuries and even death.



12

• Insert the spring and gasket into the spindle (fig. 13).
• Insert the left crank into the spindle (fig. 13).



13

• Check the cranks are correctly aligned (fig. 14).

14

• Take the crank bolt and check the washer is present. Tighten the screw at a torque of **42 Nm (372 in.lbs)** (Fig. 15).

⚠ **WARNING!**

If it is necessary to replace the chainrings, contact a Campagnolo® Service Center since the flatness must be carefully checked using special equipment. Final assembly must be carefully performed in order to avoid an accident, personal injury or death.

15

5 - MAINTENANCE

• Check regularly that the crank's locking screw and the gears' screws are tightened to the correct torque:
- Crank locking screw: 42 Nm (372 in.lbs)
- chainring fixing bolt: 8 Nm (71 in.lbs)

• To replace the bearings, contact a Campagnolo Service Center. This delicate operation requires a (type Beta / Usag) extractor to remove them and the Campagnolo UT-HS040 tool to drive the new bearings in.
• Never modify the crankset in any way. Tampering with the components may cause sudden failure and accidents.
• Periodically inspect all components of your bicycle to insure that they are in optimum condition and safe for use.
• Only clean the crankset and the cups using specific products for cleaning bikes. Never use solvents and non-neutral detergents.

• Clean and re-grease the ball-bearings and pin and lubricate the cup bearing seats with specific grease CAMPAGNOLO PROFESSIONAL LUBRICATING GREASE (cod. LB-100) for bearings (approximately every 4,000/6,000 km).

• Maintenance intervals are purely indicative and may be significantly different in relation to conditions of use and the intensity of your activity (for example: racing, rain, salted Winter roads, weight of the rider etc.). Check with your mechanic to select a schedule that is best for you.

• Do not expose the carbon crankset 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.

• Dirt seriously damage bicycles and their components. Thoroughly rinse, clean and dry your bike after using it in these conditions.

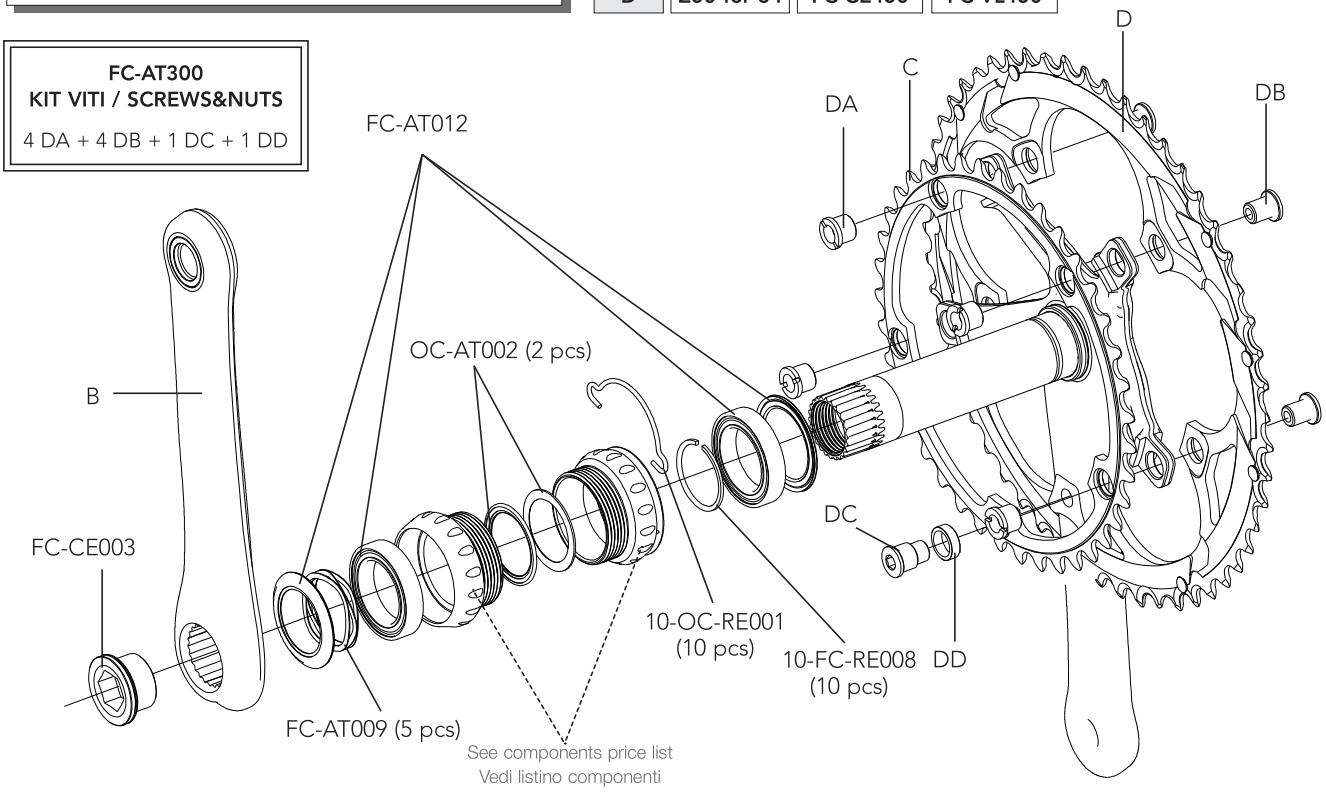
• Never spray your bicycle with water under pressure. Pressurized water, even from the nozzle of a small garden hose, can pass seals and enter into your Campagnolo® components, damaging them beyond repair. Wash your bicycle and Campagnolo® components by wiping them down with water and neutral soap. Dry them using a soft cloth. Never use abrasive or metal pads.

6 - SPARE PARTS

VELOCE™ POWER-TORQUE™ CT™ 10s
FC11-VL...

		BLACK	SILVER
B	170 mm	FC-VL571	FC-VL945
	172,5 mm	FC-VL573	FC-VL947
	175 mm	FC-VL575	FC-VL949
C	Z34	FC-VL434	FC-VL534
D	Z50 for 34	FC-CE450	FC-VL450

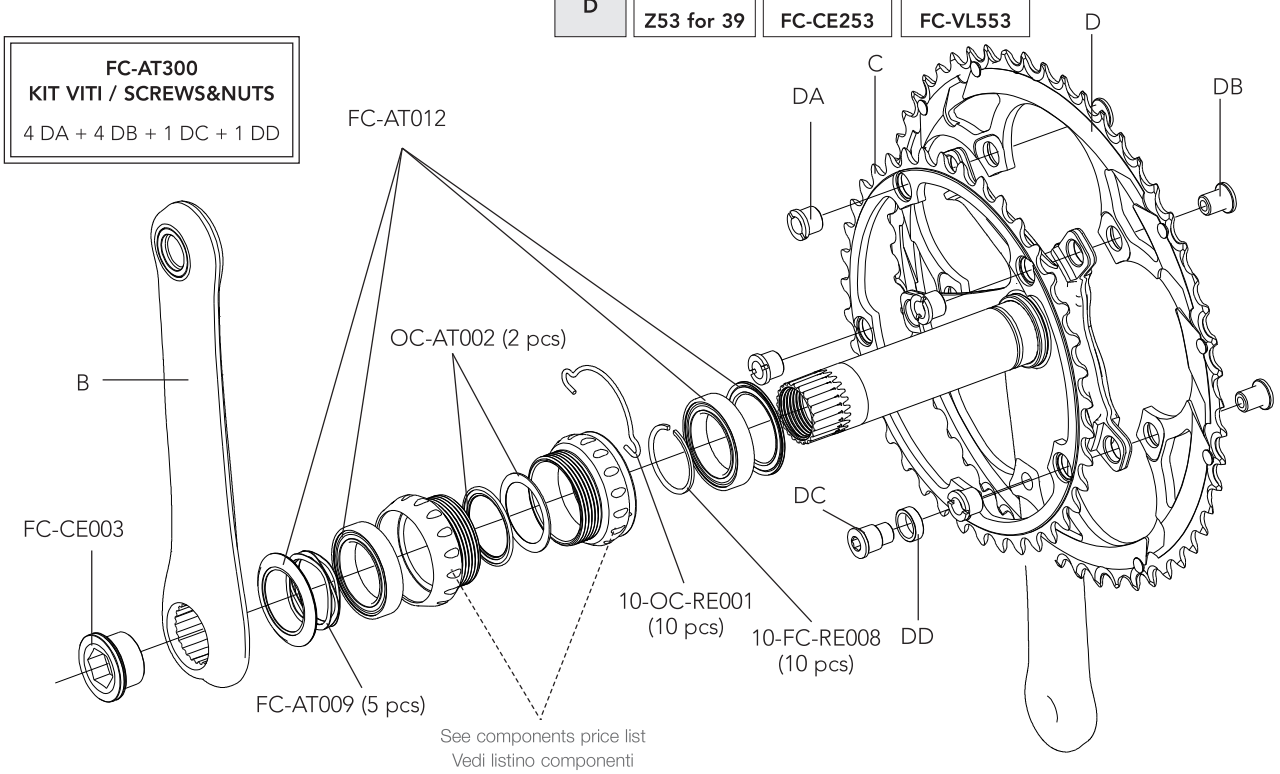
FC-AT300
KIT VITI / SCREWS&NUTS
4 DA + 4 DB + 1 DC + 1 DD



VELOCE™ POWER-TORQUE™ 10s
FC11-VL...

		BLACK	SILVER
B	170 mm	FC-VL571	FC-VL945
	172,5 mm	FC-VL573	FC-VL947
	175 mm	FC-VL575	FC-VL949
C	Z39	FC-VL339	FC-VL439
D	Z52 for 39	FC-CE252	FC-VL652
	Z53 for 39	FC-CE253	FC-VL553

FC-AT300
KIT VITI / SCREWS&NUTS
4 DA + 4 DB + 1 DC + 1 DD

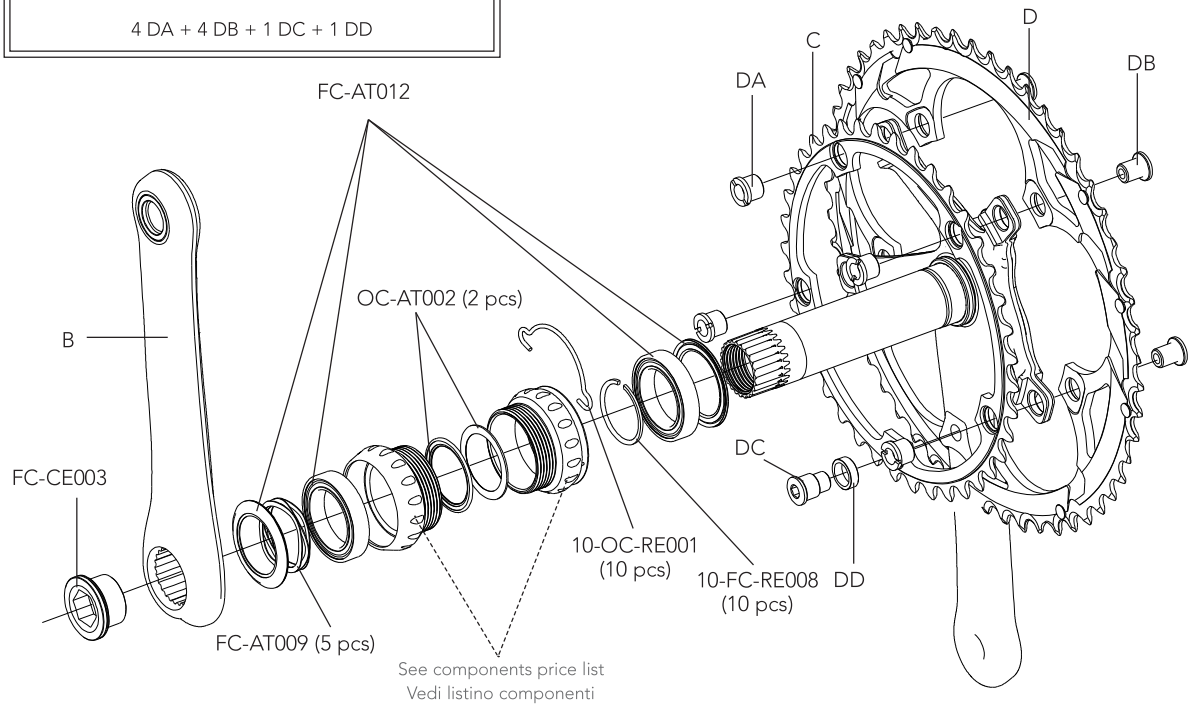


See components price list
Vedi listino componenti

CENTAUR™ POWER-TORQUE™ CT™ 10s
FC12-CE...

		BLACK	BLACK & RED
B	170 mm	FC-CEB170	FC-CERB170
	172,5 mm	FC-CEB172	FC-CERB172
	175 mm	FC-CEB175	FC-CERB175
C	Z34	FC-CE334	
D	Z50 for 34	FC-CE650	

FC-AT300 (BLACK) / FC-CE100R (BLACK&RED)
KIT VITI / SCREWS&NUTS
4 DA + 4 DB + 1 DC + 1 DD



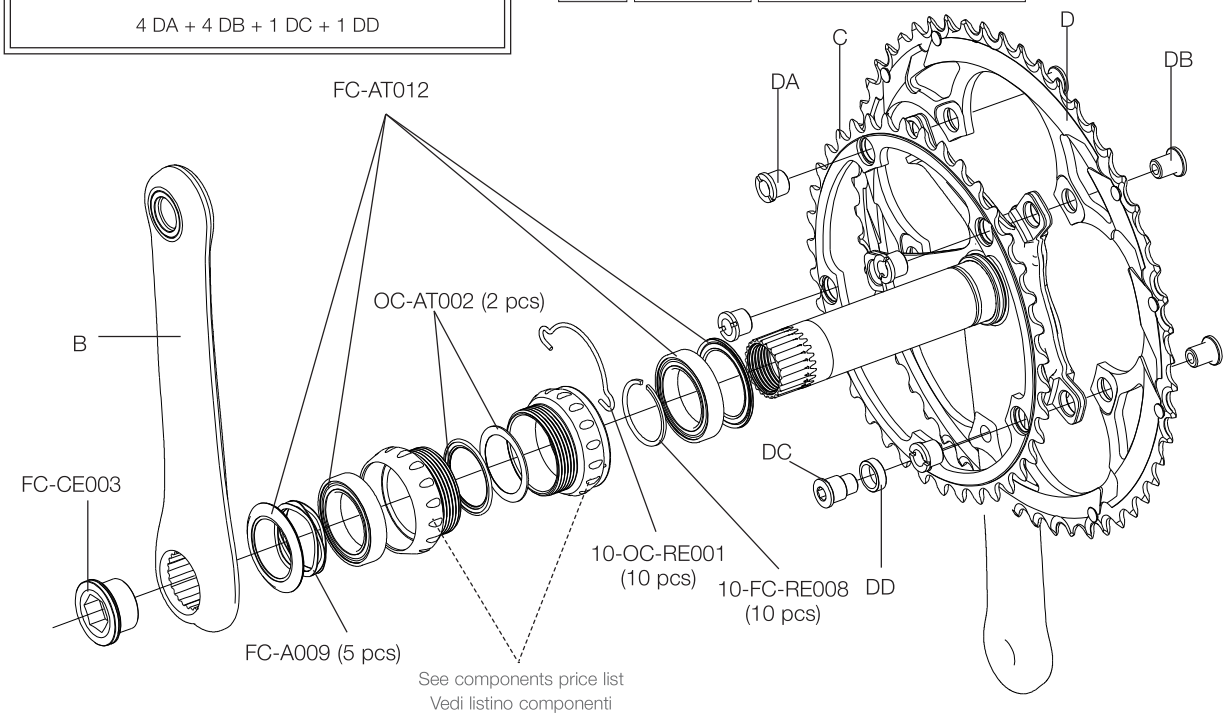
See components price list
Vedi listino componenti

CENTAUR™ POWER-TORQUE™ 10s
FC12-CE...

FC-AT300 (BLACK) / FC-CE100R (BLACK&RED)
KIT VITI / SCREWS&NUTS

4 DA + 4 DB + 1 DC + 1 DD

		BLACK	BLACK & RED
B	170 mm	FC-CEB170	FC-CEBR170
	172,5 mm	FC-CEB172	FC-CEBR172
	175 mm	FC-CEB175	FC-CEBR175
C	Z39	FC-CE239	
D	Z52 for 39 Z53 for 39	FC-CE452 FC-CE453	



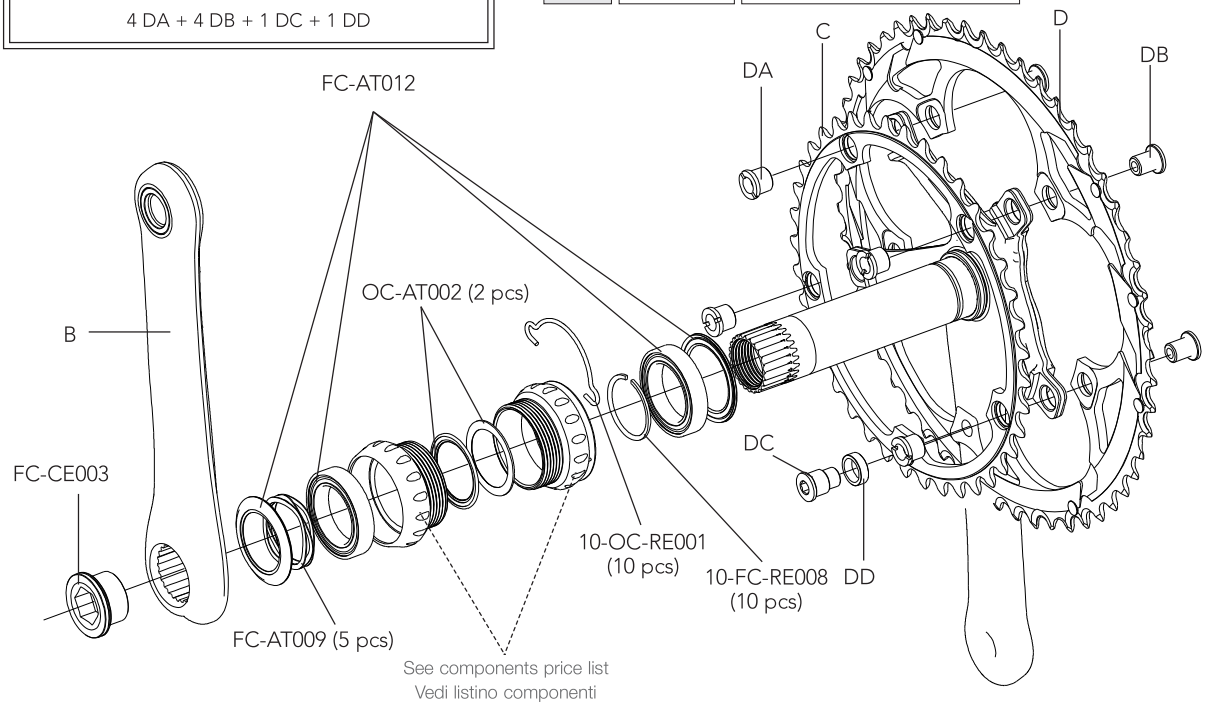
See components price list
Vedi listino componenti

CENTAUR™ POWER-TORQUE™ CT™ Carbon 10s
FC11-CE...C

FC-AT300 (BLACK) / FC-CE200R (BLACK&RED)
KIT VITI / SCREWS&NUTS

4 DA + 4 DB + 1 DC + 1 DD

		BLACK	BLACK & RED
B	165mm	FC-CE165C	FC-CERB165C
	170 mm	FC-CE775	FC-CERB170C
	172,5 mm	FC-CE777	FC-CERB172C
	175 mm	FC-CE779	FC-CERB175C
C	Z34	FC-CE234	
D	Z50 for 34	FC-CE650	



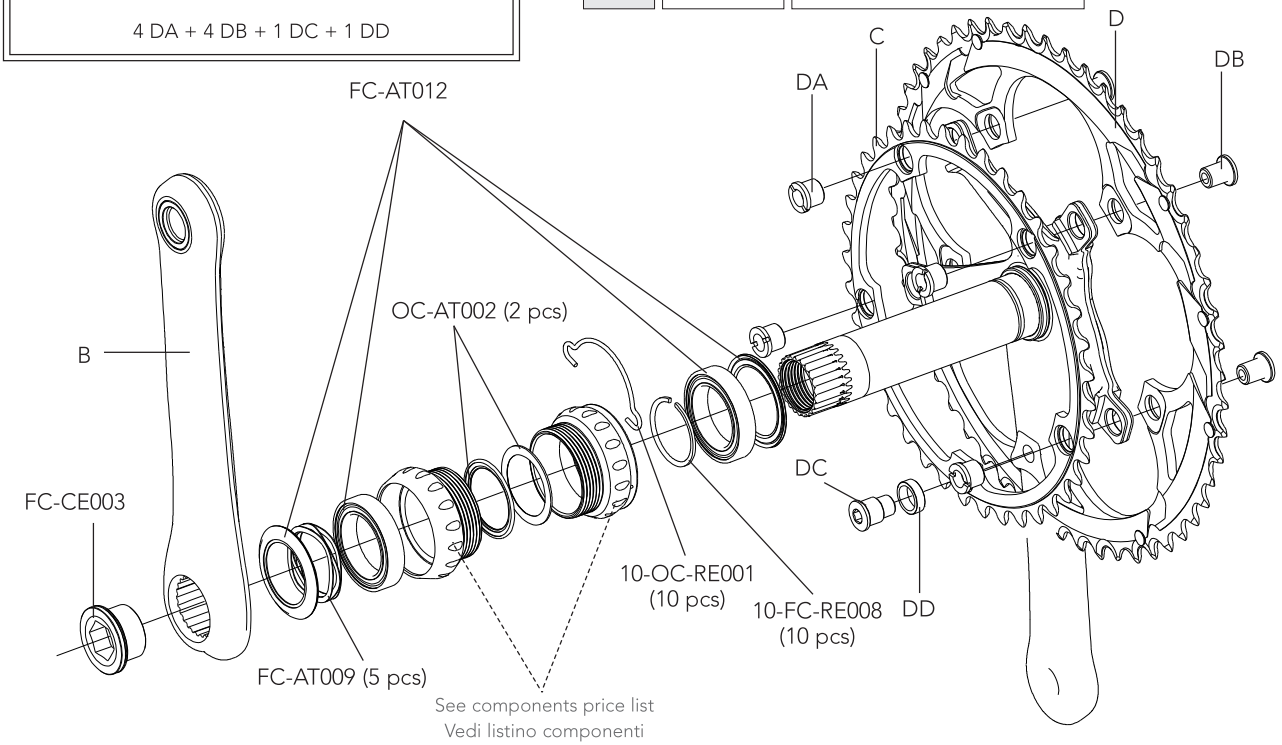
See components price list
Vedi listino componenti

CENTAUR™ POWER-TORQUE™
Carbon 10s
FC11-CE...C

FC-AT300 (BLACK) / FC-CE200R (BLACK&RED)
KIT VITI / SCREWS&NUTS

4 DA + 4 DB + 1 DC + 1 DD

		BLACK	BLACK & RED
B	165mm 170 mm 172,5 mm 175 mm	FC-CE165C FC-CE775 FC-CE777 FC-CE779	FC-CERB165C FC-CERB170C FC-CERB172C FC-CERB175C
C	Z39	FC-CE239	
D	Z52 for 39 Z53 for 39	FC-CE452 FC-CE453	



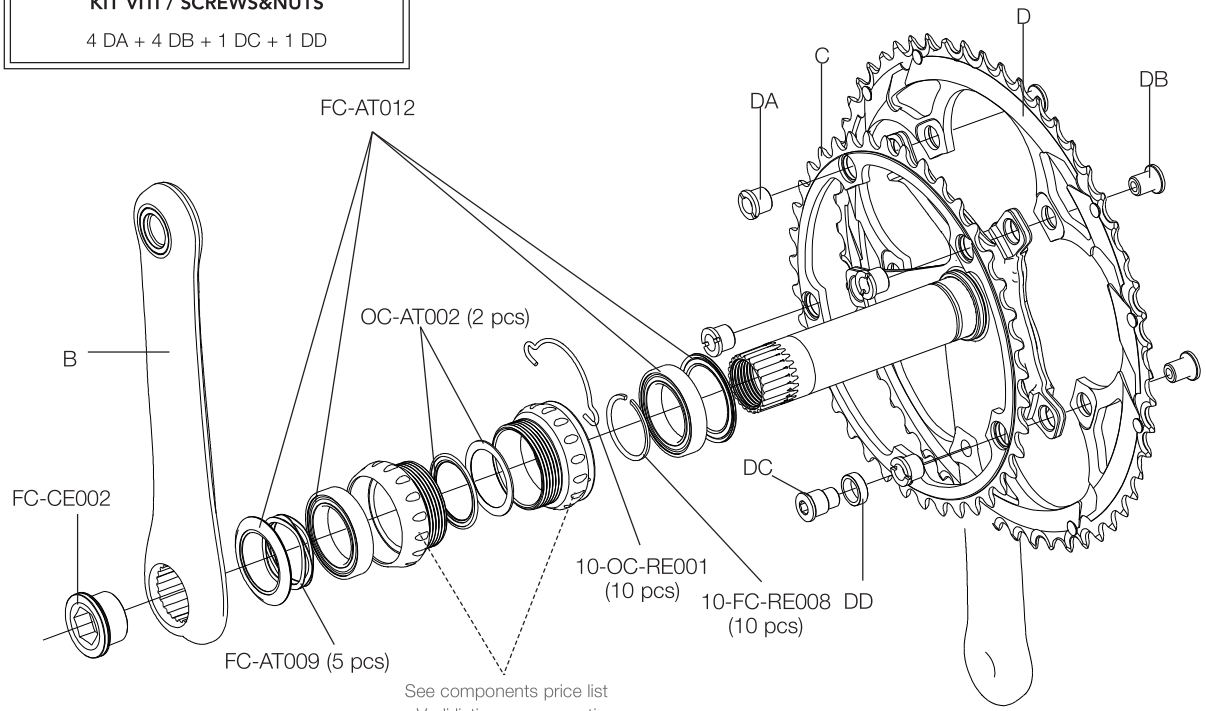
See components price list
Vedi listino componenti

ATHENA™ POWER-TORQUE™
CT™ 11s
FC11-AT... / FC12-ATB...

FC-AT200 (SILVER) - FC-AT200B (BLACK)
KIT VITI / SCREWS&NUTS

4 DA + 4 DB + 1 DC + 1 DD

		SILVER	BLACK
B	170 mm 172,5 mm 175 mm	FC-AT935 FC-AT937 FC-AT939	FC-ATB170 FC-ATB172 FC-ATB175
C	Z34	FC-AT234	
D	Z50 for 34	FC-AT350	

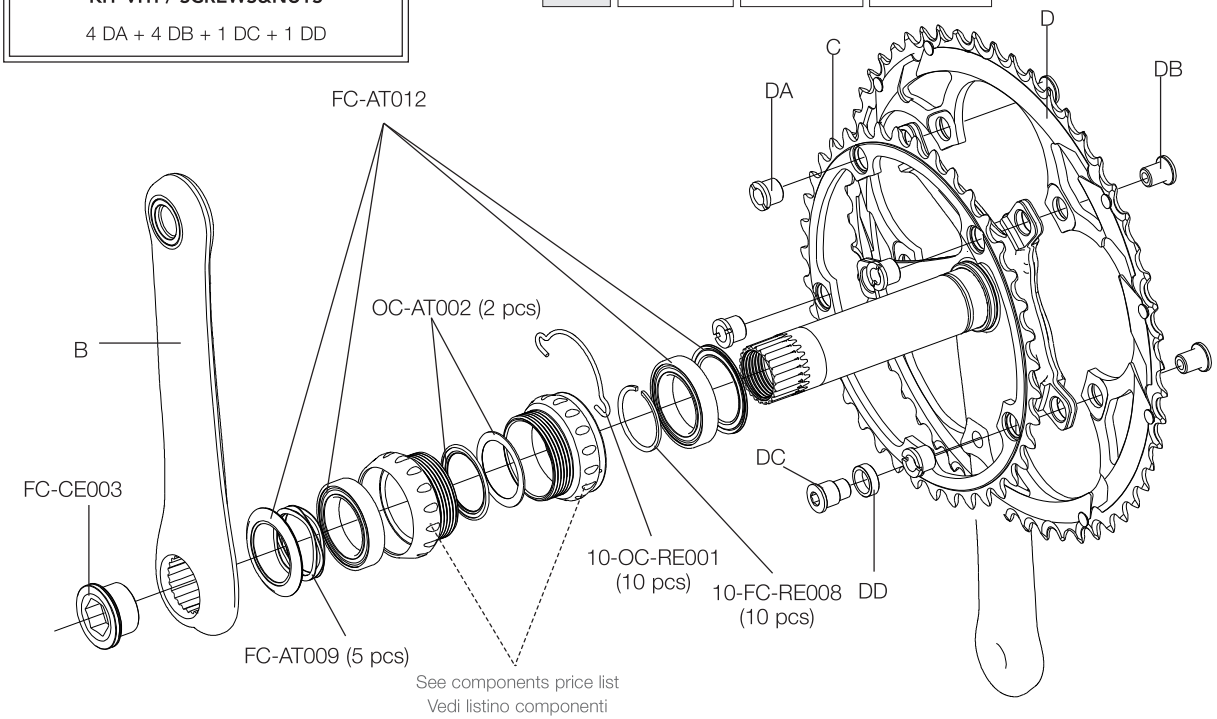


See components price list
Vedi listino componenti

ATHENA™ POWER-TORQUE™ 11s
FC11-AT... / FC12-ATB...

FC-AT200 (SILVER) - FC-AT200B (BLACK)
KIT VITI / SCREWS&NUTS
4 DA + 4 DB + 1 DC + 1 DD

		SILVER	BLACK
B	170 mm	FC-AT935	FC-ATB170
	172,5 mm	FC-AT937	FC-ATB172
	175 mm	FC-AT939	FC-ATB175
C	Z39	FC-AT239	FC-AT139
D	Z52 for 39	FC-AT752	FC-AT652
	Z53 for 39	FC-AT353	FC-AT653

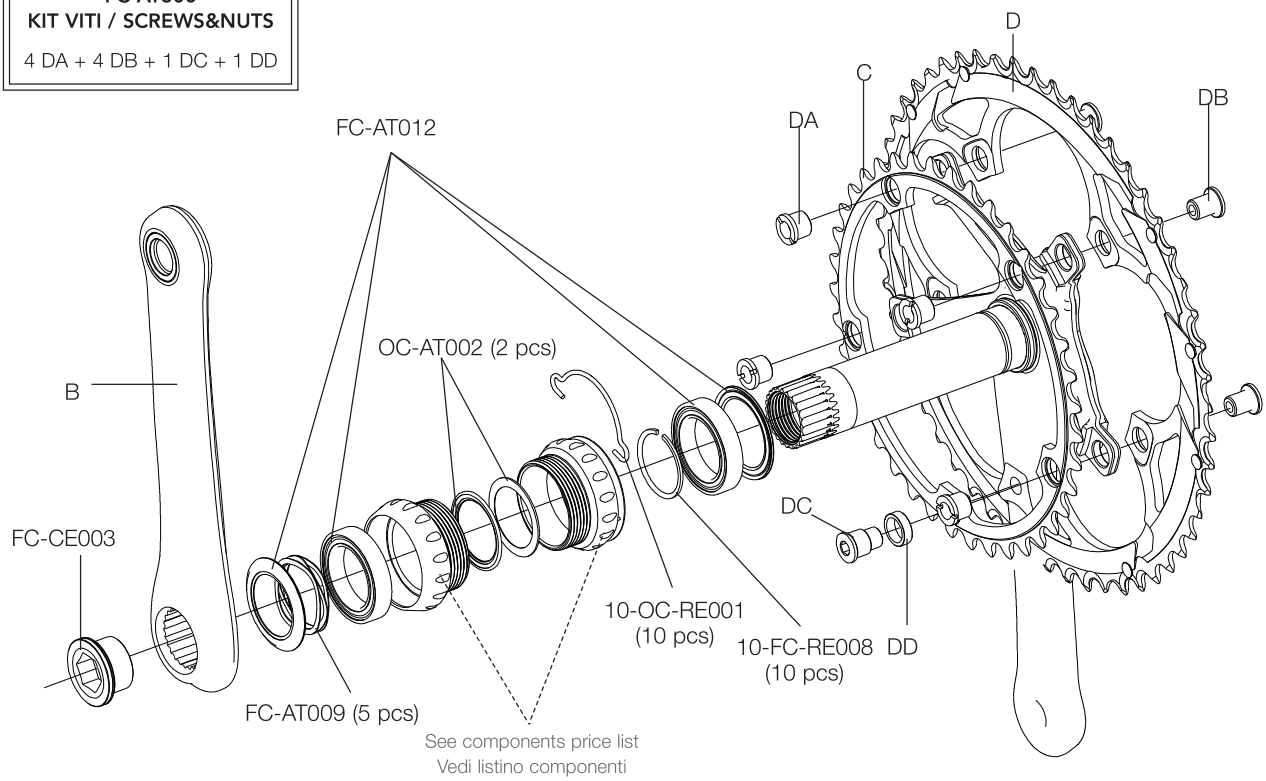


See components price list
Vedi listino componenti

ATHENA™ POWER-TORQUE™ CT™ Carbon 11s
FC11-AT...C

FC-AT300
KIT VITI / SCREWS&NUTS
4 DA + 4 DB + 1 DC + 1 DD

B	165mm	FC-AT165C
	170 mm	FC-AT763
	172,5 mm	FC-AT765
	175 mm	FC-AT767
C	Z34	FC-AT134
D	Z50 for 34	FC-AT250

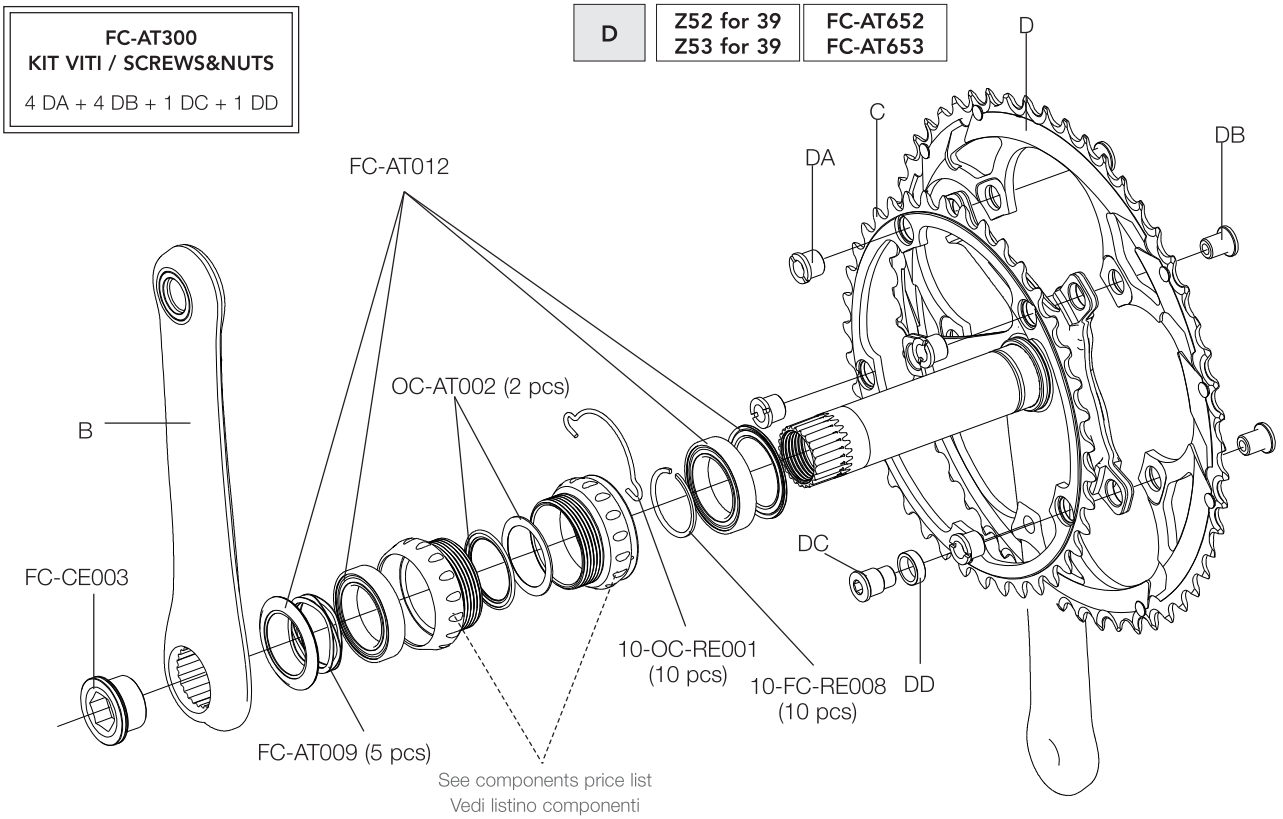


See components price list
Vedi listino componenti

ATHENA™ POWER-TORQUE™
Carbon 11s
FC11-AT...C

B	165 mm 170 mm 172,5 mm 175 mm	FC-AT165C FC-AT763 FC-AT765 FC-AT767
C	Z39	FC-AT139
D	Z52 for 39 Z53 for 39	FC-AT652 FC-AT653

FC-AT300
KIT VITI / SCREWS&NUTS
4 DA + 4 DB + 1 DC + 1 DD



See components price list
Vedi listino componenti

ULTRA-TORQUE CRANKSET

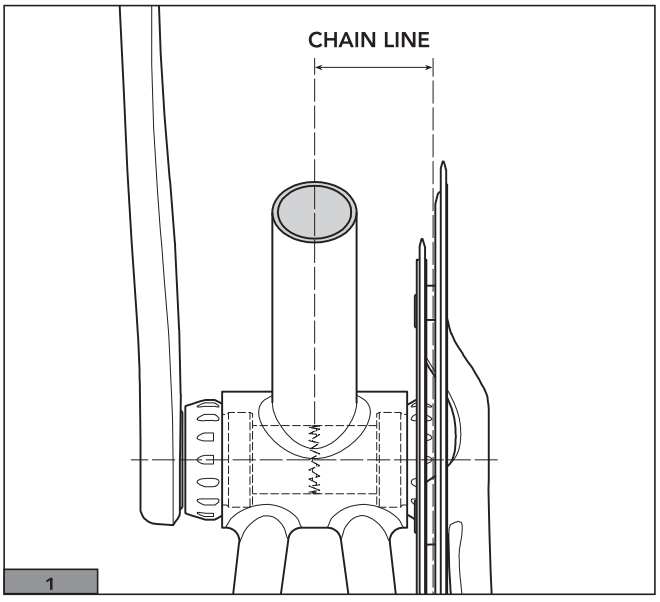
1 - TECHNICAL SPECIFICATIONS

STANDARD CRANKSET	BOLT CIRCLE DIAMETER	CHAIN LINE	MINIMUM CHAINSTAY LENGHT	AXLE THREADS
52/39 53/39 55/42 54/42	135 mm	43,5 mm	405 mm	9/16x20 TPI

COMPACT CRANKSET	BOLT CIRCLE DIAMETER	CHAIN LINE	MINIMUM CHAINSTAY LENGHT	AXLE THREADS
50/34	110 mm (Shank radius = 56.5 mm)	43,5 mm	405 mm	9/16x20 TPI

1.1 - CHAIN LINE SIZE

• Chain line for double crankset (Fig, 1)



2 - COMPATIBILITY

CRANKSET	CHAIN	CONTROL LEVERS	REAR DERAILLEUR	FRONT DERAILLEUR
Ultra - torque 11s	11s	Ergopower Power-Shift 11s	11s	11s
		Ergopower Ultra-Shift 11s		
		Bar-End 11s		

CRANKSET	SEMI-SPINDLE	CENTRAL BOLT
SUPER RECORD Titanium Ultra-Torque	Titanium	Titanium
		Screw in an anti-clockwise direction
SUPER RECORD Ultra-Torque	Steel	Steel
		Screw in a clockwise direction
RECORD Ultra-Torque	Steel	Steel
		Screw in a clockwise direction
CHORUS Ultra-Torque	Steel	Steel
		Screw in a clockwise direction

2.1 - PEDAL AXLE COMPATIBILITY

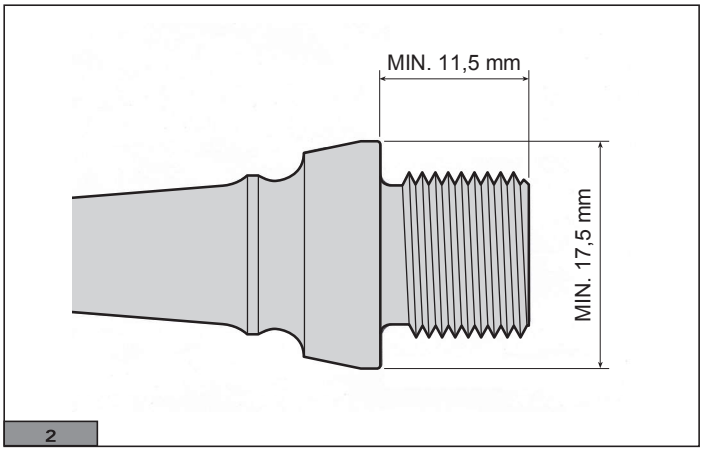
⚠ **WARNING!**

Do not insert washers between the pedal axle and the crank as they would generate abnormal stresses in the interface area. These stresses could lead to premature failure, resulting in an accident, personal injury or death.

⚠ **WARNING!**

The contact face of the pedal axle must correspond with the data of Fig. 2.
The above characteristics are necessary to minimize abnormal stresses in the cranks. Such stresses could lead to premature failure, resulting in accidents, personal injury or death.

NOTE
Q-factor: 145,5 mm (nominal value).



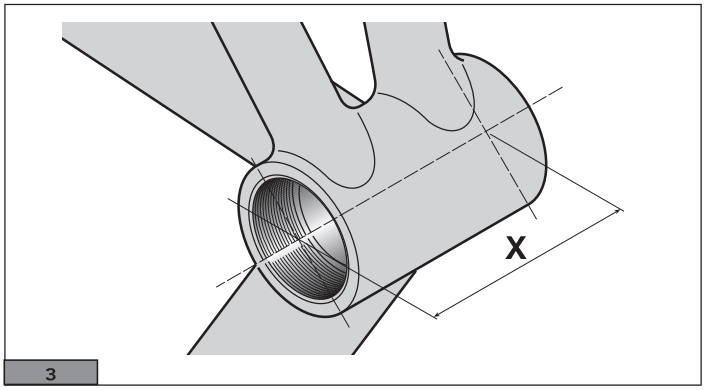
2

3 - INTERFACE WITH THE FRAME

3.1 - COMPATIBILITY WITH BOTTOM BRACKET SHELLS

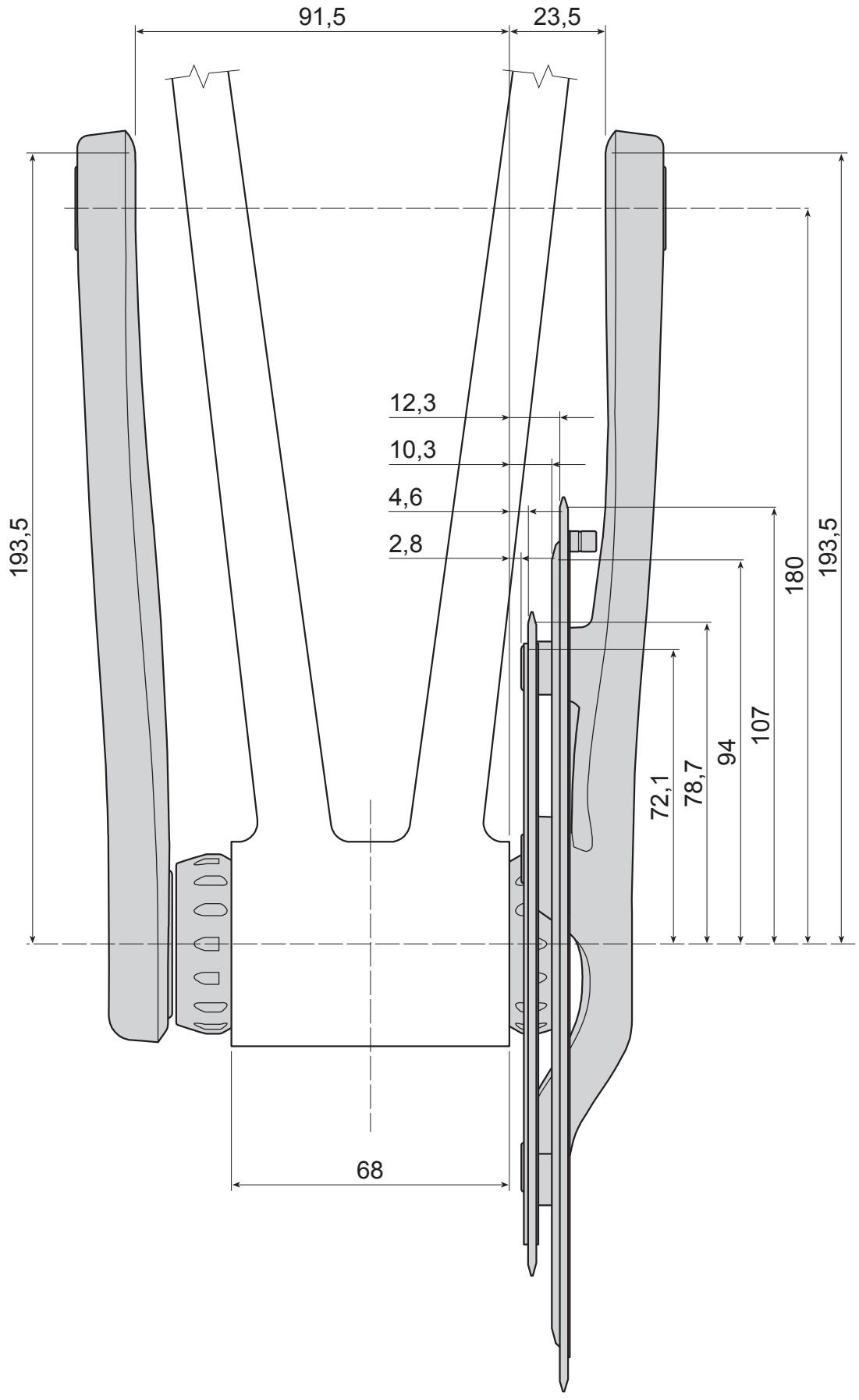
• The Campagnolo® Ultra Torque™ crankset is compatible with shells having the following widths:

TYPE	X (Fig. 3)
Italian thread	69.2 mm ÷ 70.8 mm
English thread	67.2 mm ÷ 68.8 mm



3

3.2 - DIMENSIONS FOR ULTRA - TORQUE CRANKSET



4 - ASSEMBLY

When a bike frame is manufactured, the bottom bracket shell is often deformed. In addition, paint residue is often left on the edge of the shell and on its threads. Therefore, in order to prevent the bottom bracket (bb) cups from being twisted off their ideal working axis, it is necessary to face and tap the bb shell (unless this operation has been performed by the frame manufacturer).

4.1 - FRAME PREPARATION AND INSTALLING THE CRANKSET

• Make sure that the threads (A - Fig. 1) of the bb shell are compatible with the threads of the bb cups:

- **Italian thread:** 36x24 tpi
- **English thread:** 1.370x24 tpi

• True the thread (A - fig.1) of the cassette using a suitable tool.

• Face the bottom bracket shell (B - Fig. 2) respecting the measures X (Fig. 3 - chapter "INTERFACE WITH THE FRAME"), using a suitable tool.

• Make sure that there is a water draining hole on the bottom of the bb shell.

If there is no such hole, do not simply drill one. You must contact the frame manufacturer for further information and clarification in this regard.

• Clean and degrease the threads of the bb shell. (Fig.3)

CAUTION
Use **exclusively** the cups for Ultra-Torque crankset.

• Take the bb right cup, screw it in fully (Fig. 4) and tighten at **35 Nm (310 in.lbs)** with the Campagnolo UT-BB130 tool and the torque wrench (Fig. 5).

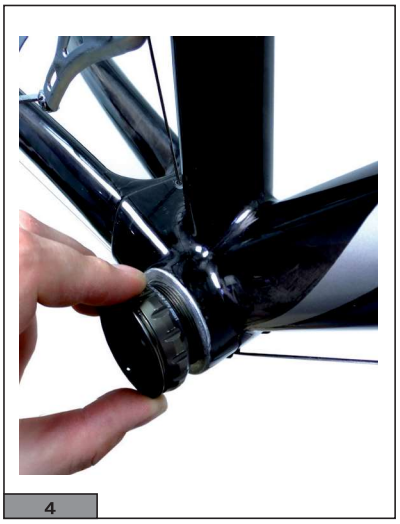
• Repeat the previous step with the left cup.

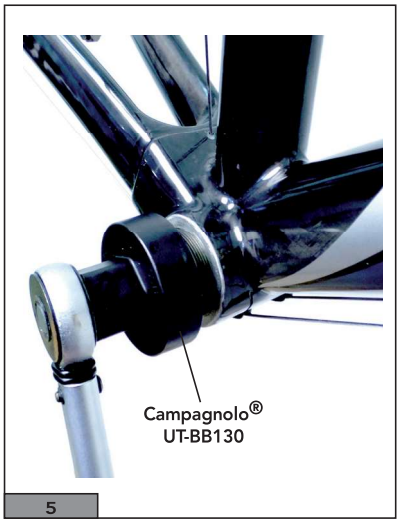
• Make sure that the bearing set are correctly greased (Fig. 6).

1

2


3


4



5


6

• Identify the two holes in the groove of the right-hand cup (Fig. 7).

• Position the retaining spring so that the two ends are near the holes (Fig. 8). Do not insert the spring fully.


7


8

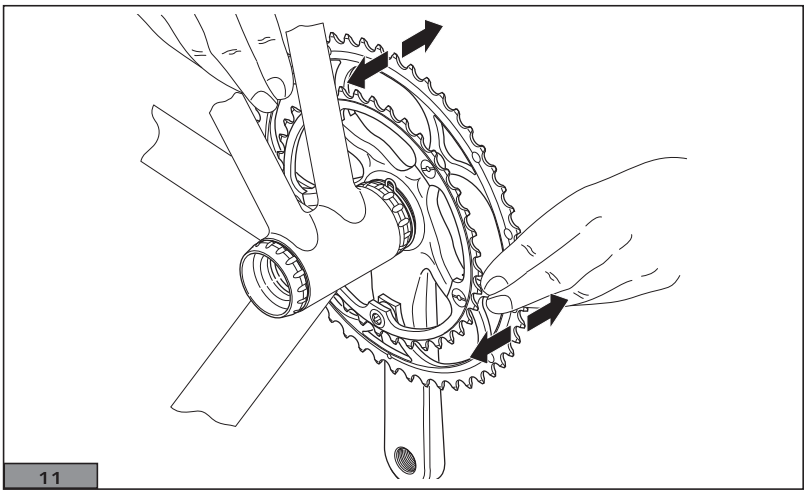
• Insert the right-hand crank fully into the shell (Fig. 9).

• Push the spring so that the two ends slide into the holes (Fig. 10).

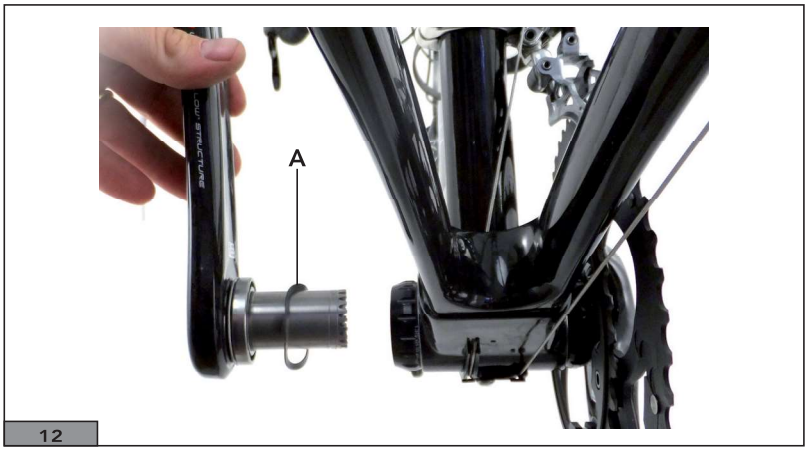

9


10

• Gently move the right crank sideways as if to remove it from the bb cup, to make sure that the spring has been fitted correctly and that it retains the crank (Fig. 11).


11

• Fit the wave washer (A – Fig. 12) into the bearing seat of the left-hand cup.



12

• Fit the left-hand crank into the bottom bracket shell (Fig. 12.1).

• Make sure that the crankarms are correctly aligned (Fig. 13).

• Using Campagnolo tool UT-BB110 insert the fixing bolt (B - Fig. 14) in the semi-spindle of the right crank until it passes through the hole at the inner end of the semi-spindle and it engages the thread of the semi-spindle of the left crank.

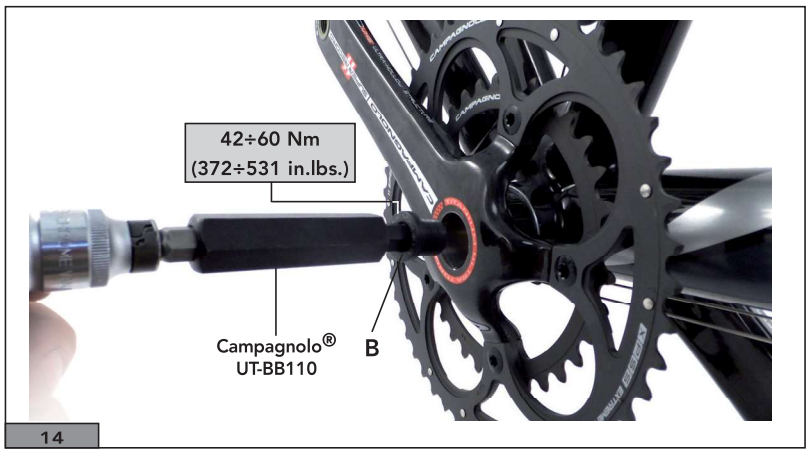
⚠ **WARNING!**

Use the special bolt (cod. FC-SR007 - FC-RE007). Using any other bolt may cause malfunctions or failures, resulting in an accident, personal injury or death.

NOTE

To prevent long-term oxidation of the retaining bolt thread, use a threadlocker fluid. We recommend you use only Loctite 222.

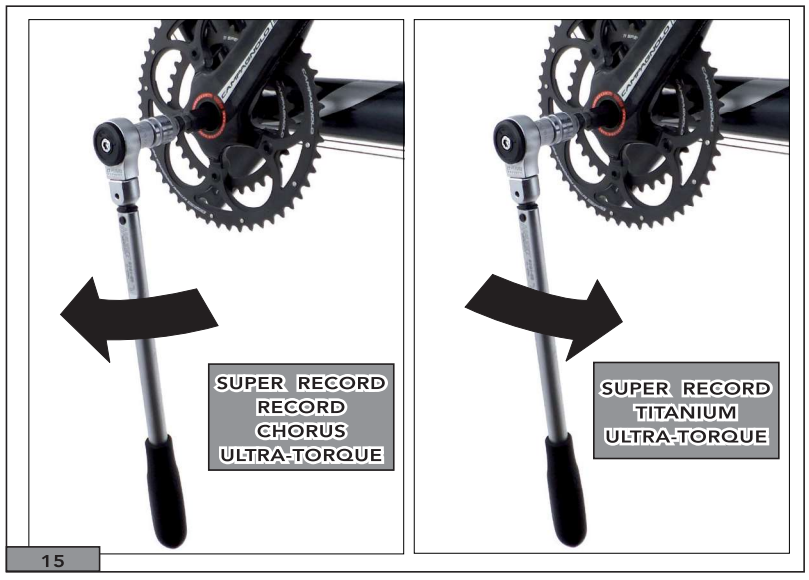
• Hold the left-hand crank in the correct position with one hand, tighten the fixing bolt (B – Fig. 14) manually until it becomes hard to turn, and then fit a torque wrench (with a 10 or 17 mm adaptor) and tighten with a torque of **42 Nm ÷ 60 Nm. (372 in.lbs ÷ 531 in.lbs)** (fig. 14),



WARNING: The central titanium bolt **FC-SR007** fitted **exclusively** on Super Record Ultra-Torque crankset, with titanium semi-spindle, has a left-hand thread (to tighten turn anti-clockwise, to loosen turn clockwise). **Follow the tightening direction indicated by the arrow shown on the head of the central bolt. (Fig. 15)**.

⚠ **WARNING!**

If it is necessary to replace the chainrings, contact a Campagnolo® Service Center since the flatness must be carefully checked using special equipment. Final assembly must be carefully performed in order to avoid an accident, personal injury or death.



5 - MAINTENANCE

• Check periodically to make sure that the crankset and chainring fixing bolts are tightened with the correct torque wrench setting:
- crankset fixing bolt: 42 Nm ÷ 60 Nm. (372 in.lbs ÷ 531 in.lbs)
- chainring fixing bolt: 8 Nm (71 in.lbs)

• Never modify the crankset in any way. Tampering with the components may cause sudden failure and accidents.
• Periodically inspect all components of your bicycle to insure that they are in optimum condition and safe for use.
• Contact your nearest Campagnolo® Service Center for the replacement of the bearings. This delicate operation requires an extractor for pulling them out (and extra care to avoid damage to the teeth of the joint) and the UT-HS040 tool to press fit the new bearings in.
• Only clean the crankset and the cups using specific products for cleaning bikes. Never use solvents and non-neutral detergents.

• SUPER RECORD 11S crankset: Periodically bring the bike to a specialized mechanic to lubricate the hub bearings and ball bearings with specific oil for bearings (approximately every 5.000 km - 3.000 miles).
Campagnolo® Super Record 11S bearings are in Cronitect® (advanced solution by FAG) and the balls are ceramic.
• RECORD 11S / CHORUS 11S : clean and re-grease the ball-bearings and the semi-axle and lubricate the cup bearing seats with specific grease CAMPAGNOLO PROFESSIONAL LUBRICATING GREASE (cod. LB-100) for bearings (approximately every 4,000/6,000 km).

• Maintenance intervals are purely indicative and may be significantly different in relation to conditions of use and the intensity of your activity (for example: racing, rain, salted Winter roads, weight of the rider etc.). Check with your mechanic to select a schedule that is best for you.

Only clean the carbon crank using a soft cloth with mild soap and water.
Do not expose the carbon crankset 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.

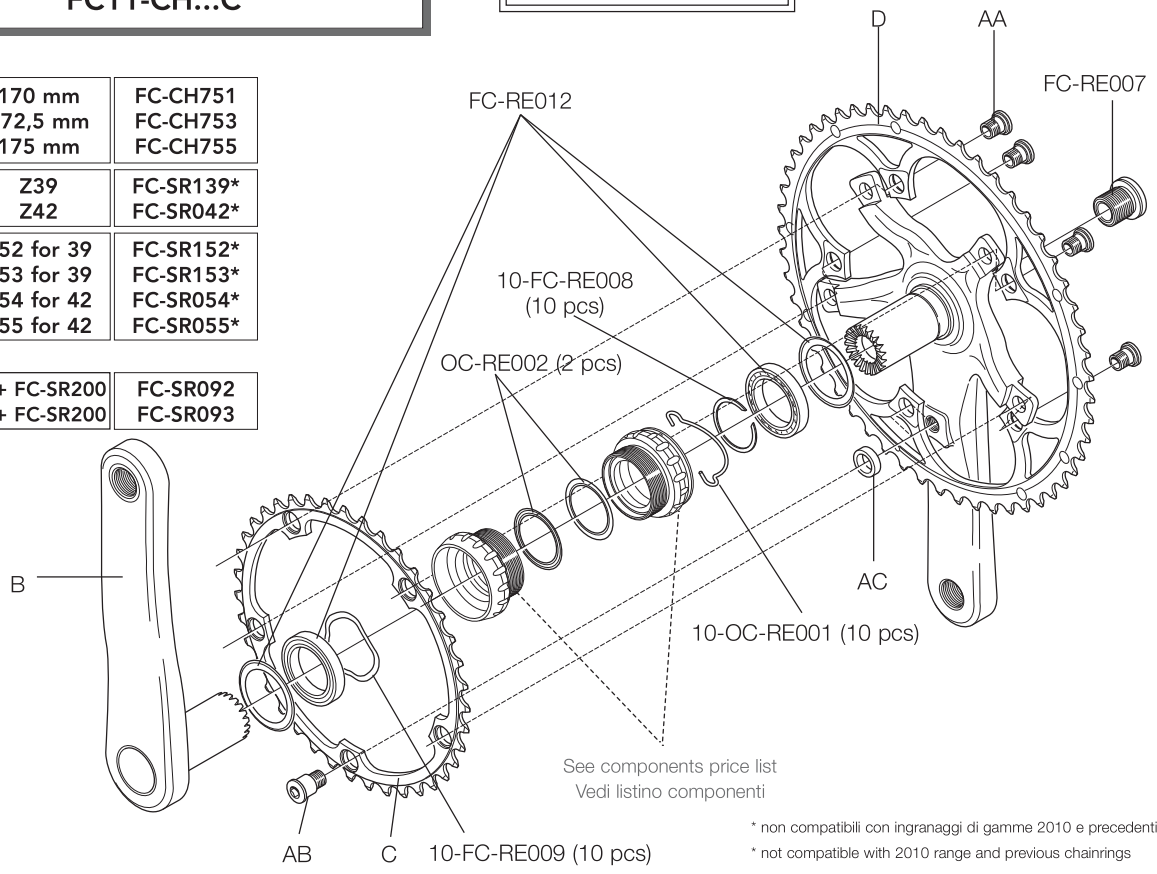
NOTE
Never spray your bicycle with water under pressure. Pressurized water, even from the nozzle of a small garden hose, can pass seals and enter into your Campagnolo® components, damaging them beyond repair. Wash your bicycle and Campagnolo® components by wiping them down with water and neutral soap.

6 - SPARE PARTS

CHORUS™ ULTRA-TORQUE™
Carbon 11s
FC11-CH...C

B	170 mm 172,5 mm 175 mm	FC-CH751 FC-CH753 FC-CH755
C	Z39 Z42	FC-SR139* FC-SR042*
D	Z52 for 39 Z53 for 39 Z54 for 42 Z55 for 42	FC-SR152* FC-SR153* FC-SR054* FC-SR055*
Z39 + Z52 + FC-SR200 Z39 + Z53 + FC-SR200		FC-SR092 FC-SR093

FC-SR200
KIT VITI / SCREWS&NUTS
4 AA + 1 AB + 1 AC



* non compatibili con ingranaggi di gamme 2010 e precedenti
* not compatible with 2010 range and previous chainrings

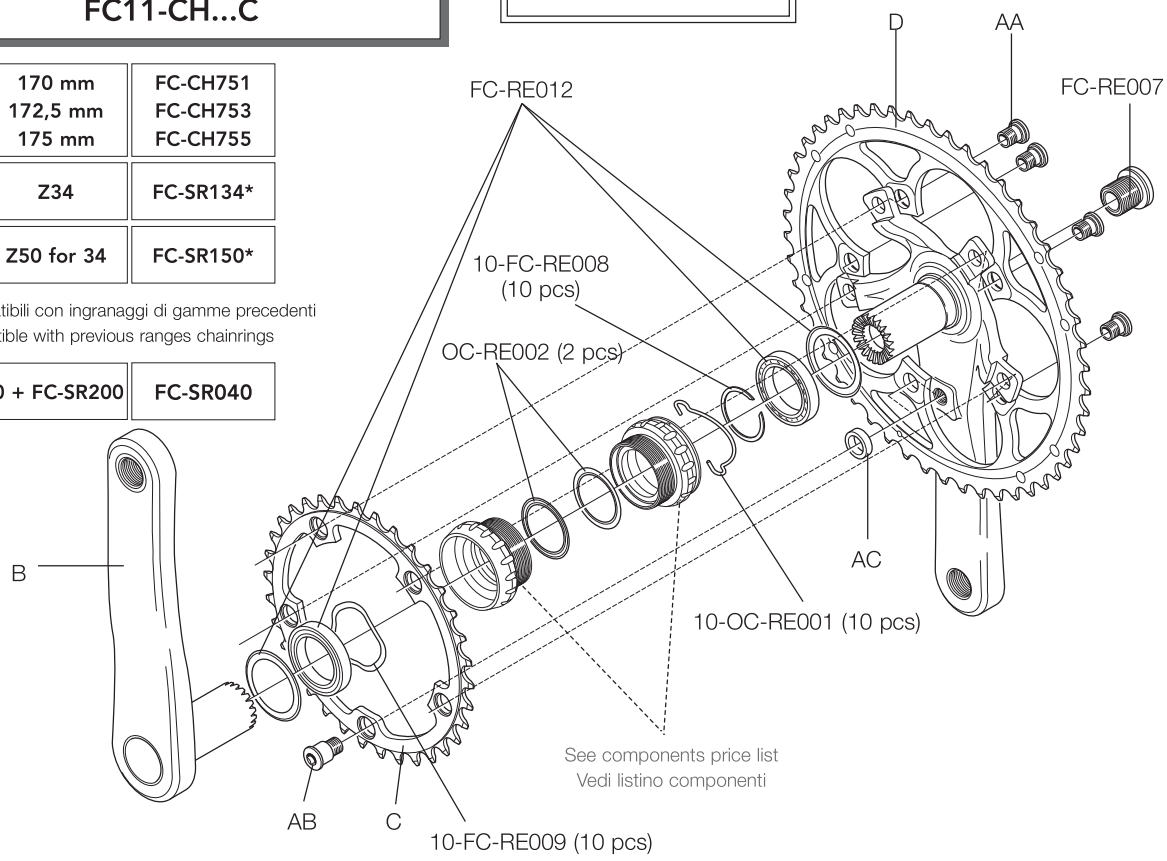
CHORUS™ ULTRA-TORQUE™ CT™ Carbon 11s
FC11-CH...C

FC-SR200
KIT VITI / SCREWS&NUTS
4 AA + 1 AB + 1 AC

B	170 mm 172,5 mm 175 mm	FC-CH751 FC-CH753 FC-CH755
C	Z34	FC-SR134*
D	Z50 for 34	FC-SR150*

* non compatibili con ingranaggi di gamme precedenti
* not compatible with previous ranges chainrings

Z34 + Z50 + FC-SR200	FC-SR040

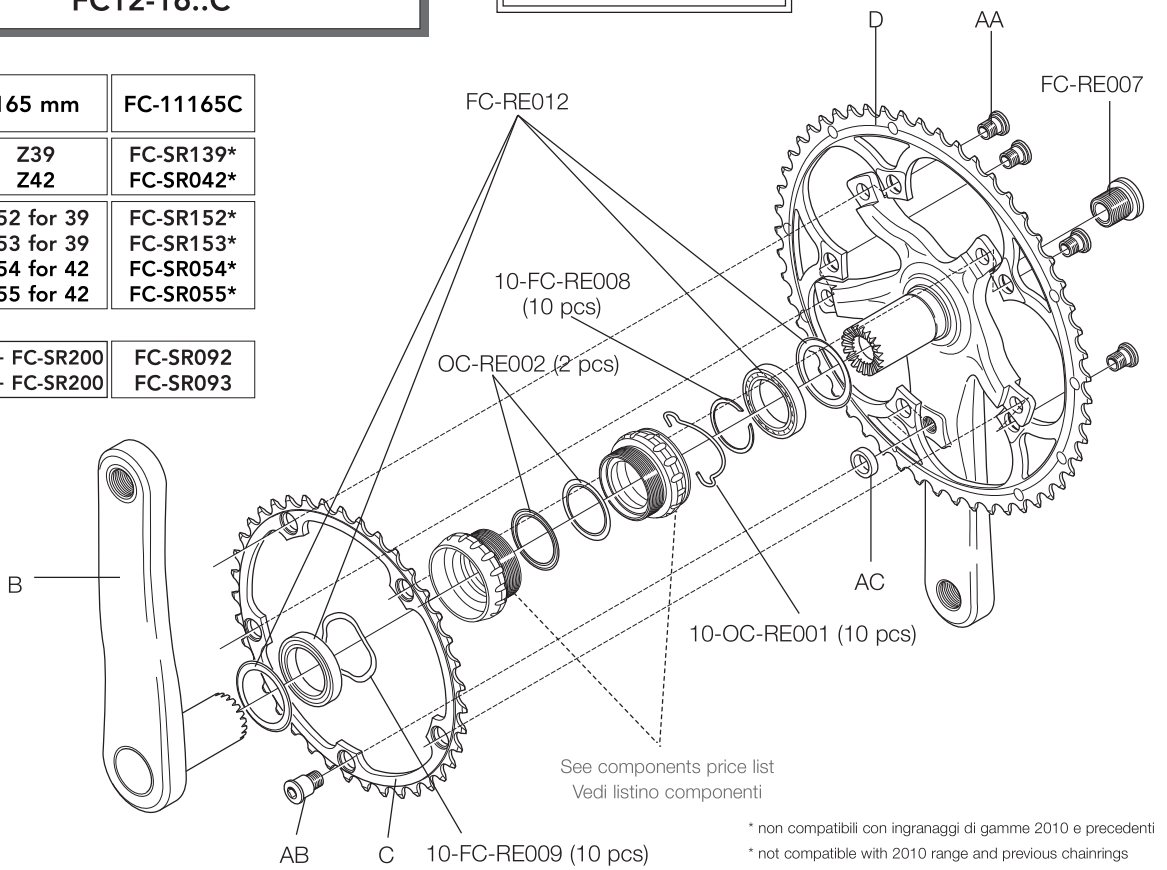


ULTRA-TORQUE™ Carbon 11s
FC12-16..C

FC-SR200
KIT VITI / SCREWS&NUTS
4 AA + 1 AB + 1 AC

B	165 mm	FC-11165C
C	Z39 Z42	FC-SR139* FC-SR042*
D	Z52 for 39 Z53 for 39 Z54 for 42 Z55 for 42	FC-SR152* FC-SR153* FC-SR054* FC-SR055*

Z39 + Z52 + FC-SR200 Z39 + Z53 + FC-SR200	FC-SR092 FC-SR093



* non compatibili con ingranaggi di gamme 2010 e precedenti
* not compatible with 2010 range and previous chainrings

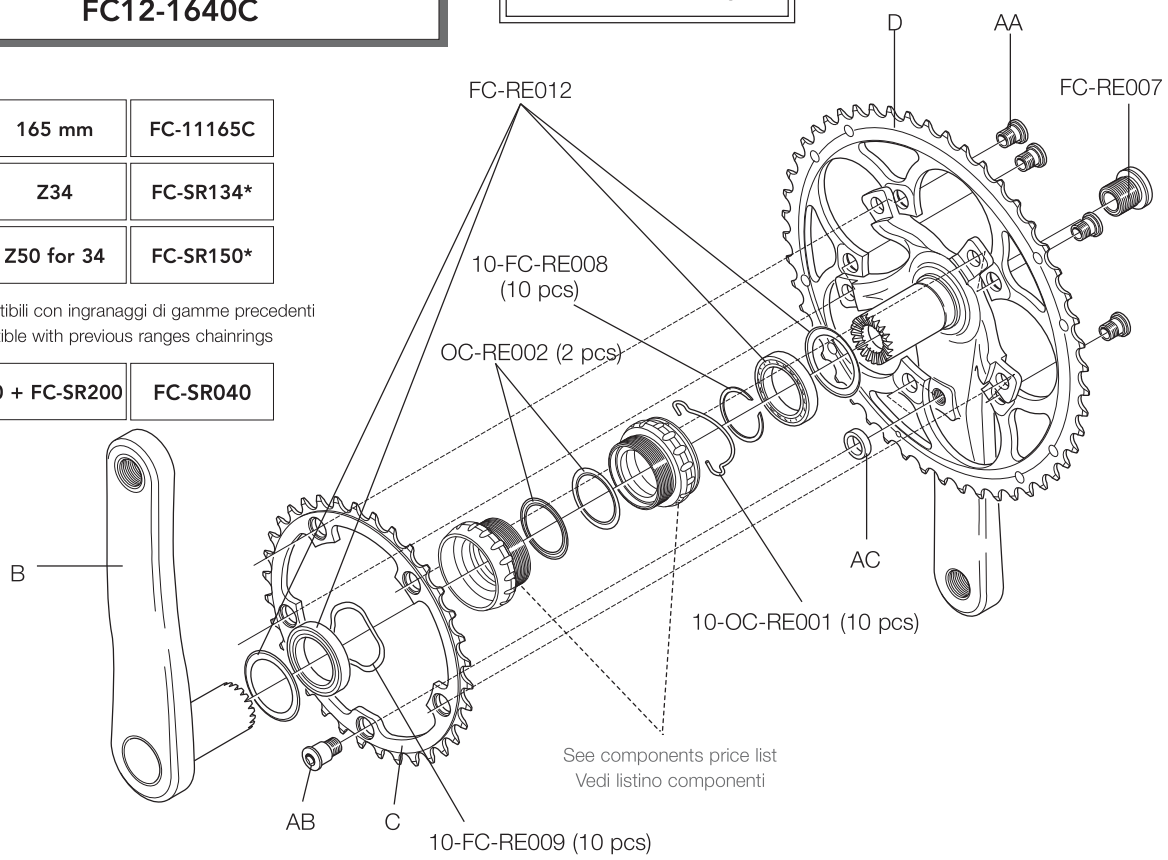
ULTRA-TORQUE™ CT™ Carbon 11s
FC12-1640C

B	165 mm	FC-11165C
C	Z34	FC-SR134*
D	Z50 for 34	FC-SR150*

* non compatibili con ingranaggi di gamme precedenti
* not compatible with previous ranges chainrings

Z34 + Z50 + FC-SR200	FC-SR040

FC-SR200
KIT VITI / SCREWS&NUTS
4 AA + 1 AB + 1 AC



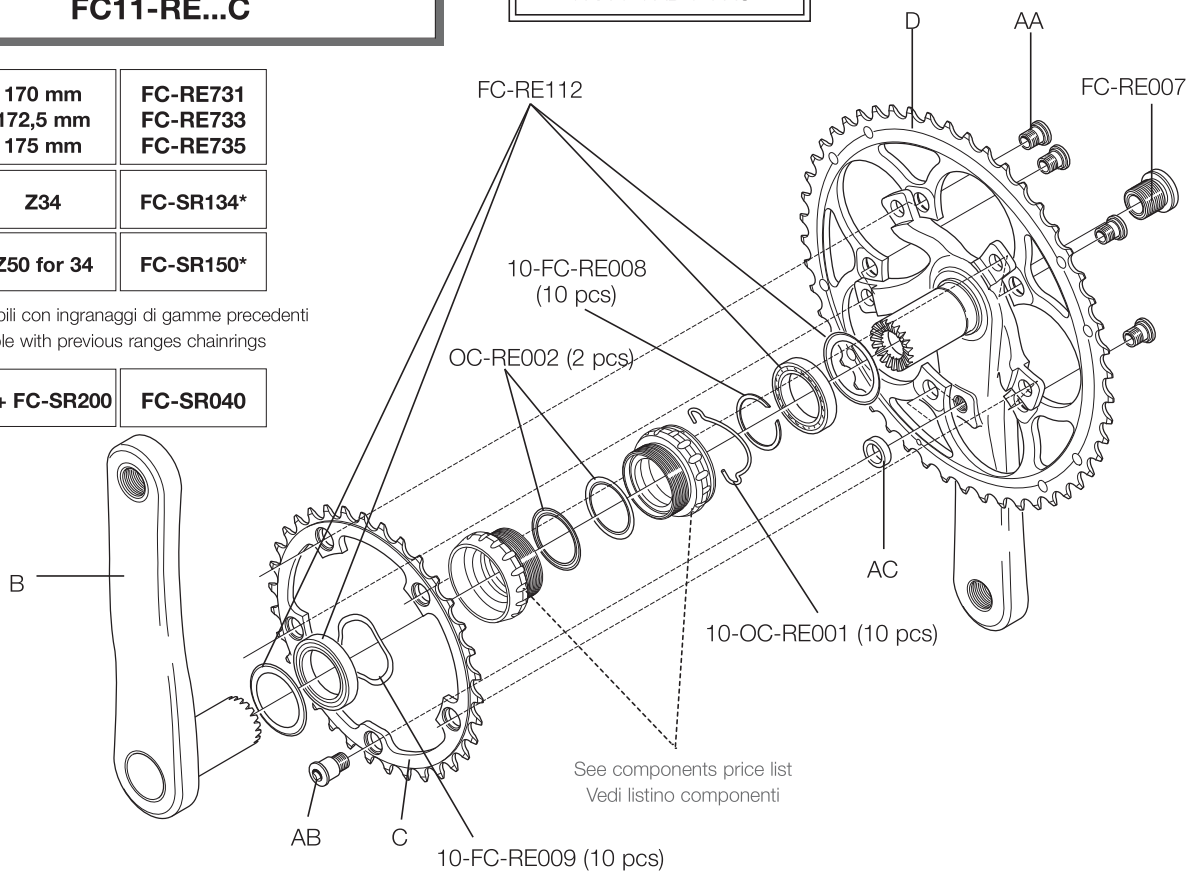
RECORD™ ULTRA-TORQUE™ CT™ Carbon 11s
FC11-RE...C

B	170 mm 172,5 mm 175 mm	FC-RE731 FC-RE733 FC-RE735
C	Z34	FC-SR134*
D	Z50 for 34	FC-SR150*

* non compatibili con ingranaggi di gamme precedenti
* not compatible with previous ranges chainrings

Z34 + Z50 + FC-SR200	FC-SR040

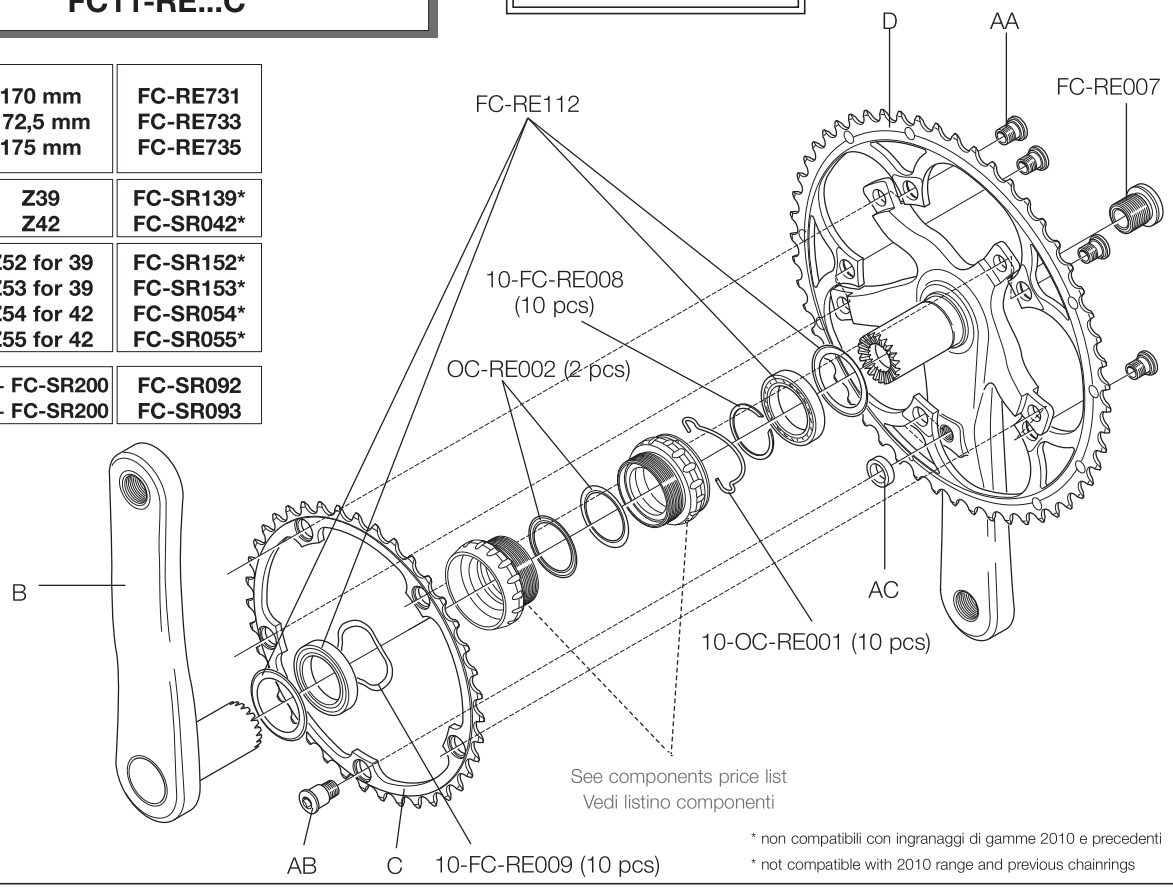
FC-SR200
KIT VITI / SCREWS&NUTS
4 AA + 4 AB + 1 AC



RECORD™ ULTRA-TORQUE™ Carbon 11s
FC11-RE...C

FC-SR200
KIT VITI / SCREWS&NUTS
4 AA + 1 AB + 1 AC

B	**170 mm** **172,5 mm** **175 mm**	**FC-RE731** **FC-RE733** **FC-RE735**
C	**Z39** **Z42**	**FC-SR139*** **FC-SR042***
D	**Z52 for 39** **Z53 for 39** **Z54 for 42** **Z55 for 42**	**FC-SR152*** **FC-SR153*** **FC-SR054*** **FC-SR055***
Z39 + Z52 + FC-SR200 **Z39 + Z53 + FC-SR200**		**FC-SR092** **FC-SR093**



* non compatibili con ingranaggi di gamme 2010 e precedenti
* not compatible with 2010 range and previous chainrings

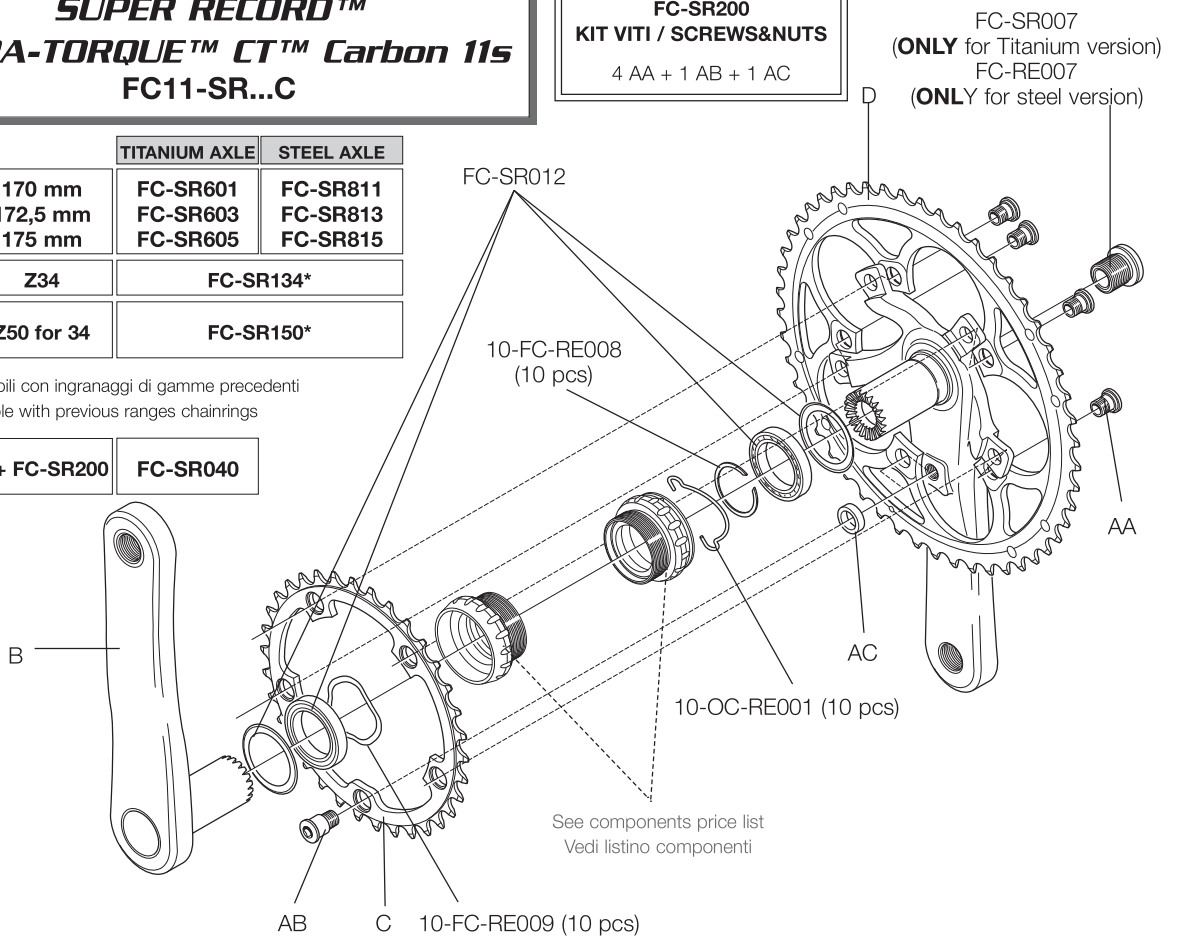
SUPER RECORD™ ULTRA-TORQUE™ CT™ Carbon 11s
FC11-SR...C

FC-SR200
KIT VITI / SCREWS&NUTS
4 AA + 1 AB + 1 AC

		TITANIUM AXLE	STEEL AXLE
B	**170 mm** **172,5 mm** **175 mm**	**FC-SR601** **FC-SR603** **FC-SR605**	**FC-SR811** **FC-SR813** **FC-SR815**
C	**Z34**	**FC-SR134***	
D	**Z50 for 34**	**FC-SR150***	

* non compatibili con ingranaggi di gamme precedenti
* not compatible with previous ranges chainrings

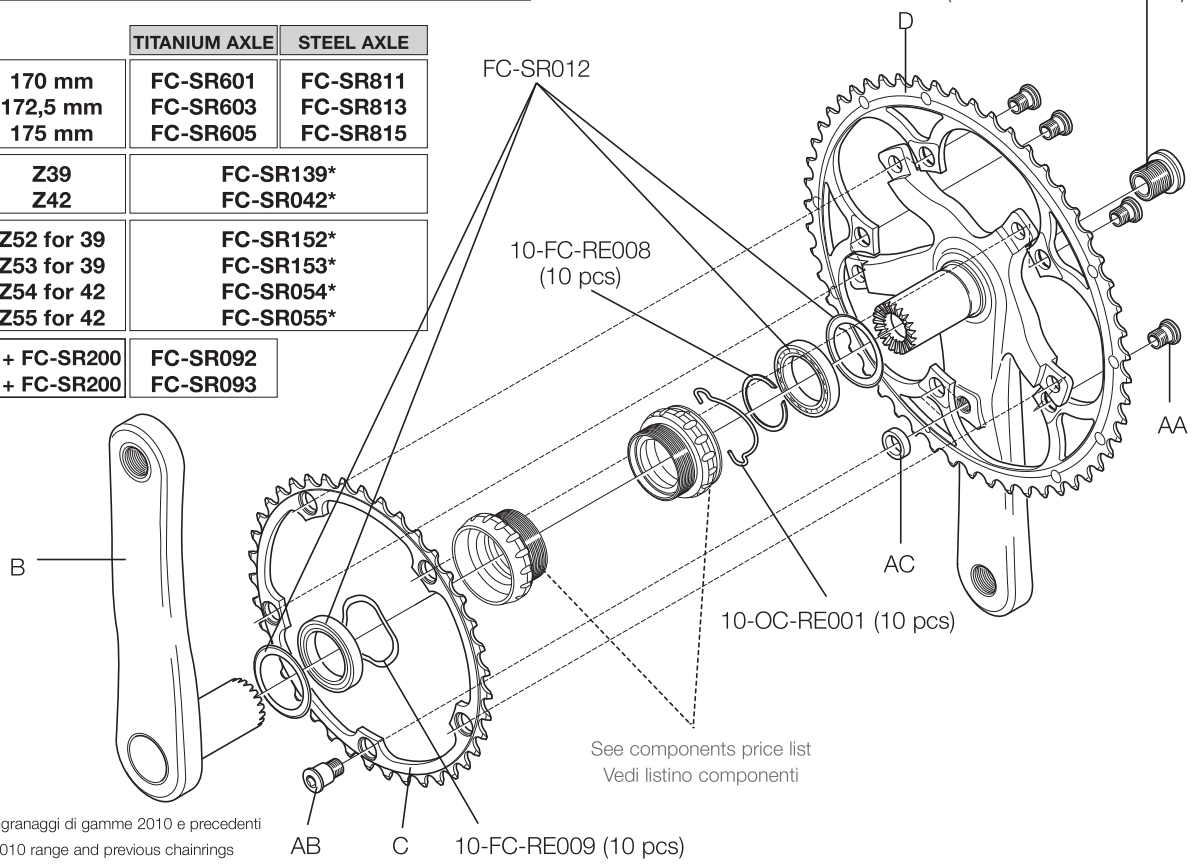
Z34 + Z50 + FC-SR200	**FC-SR040**



SUPER RECORD™
ULTRA-TORQUE™ Carbon 11s
FC11-SR...C

FC-SR200
KIT VITI / SCREWS&NUTS
4 AA + 1 AB + 1 AC

		TITANIUM AXLE	STEEL AXLE
B	**170 mm** **172,5 mm** **175 mm**	**FC-SR601** **FC-SR603** **FC-SR605**	**FC-SR811** **FC-SR813** **FC-SR815**
C	**Z39** **Z42**	**FC-SR139*** **FC-SR042***	
D	**Z52 for 39** **Z53 for 39** **Z54 for 42** **Z55 for 42**	**FC-SR152*** **FC-SR153*** **FC-SR054*** **FC-SR055***	
Z39 + Z52 + FC-SR200 **Z39 + Z53 + FC-SR200**		**FC-SR092** **FC-SR093**	



* non compatibili con ingranaggi di gamme 2010 e precedenti
* not compatible with 2010 range and previous chainrings

CUPS

1 - TECHNICAL SPECIFICATIONS / COMPATIBILITY

1.1 - POWER-TORQUE SYSTEM CUPS

CRANKSET	Standard ITA	Standard ENG	BB30 68x42	86,5x41	BB30 68x46
VELOCE CENTAUR ATHENA					

1.2 - ULTRA-TORQUE CUPS

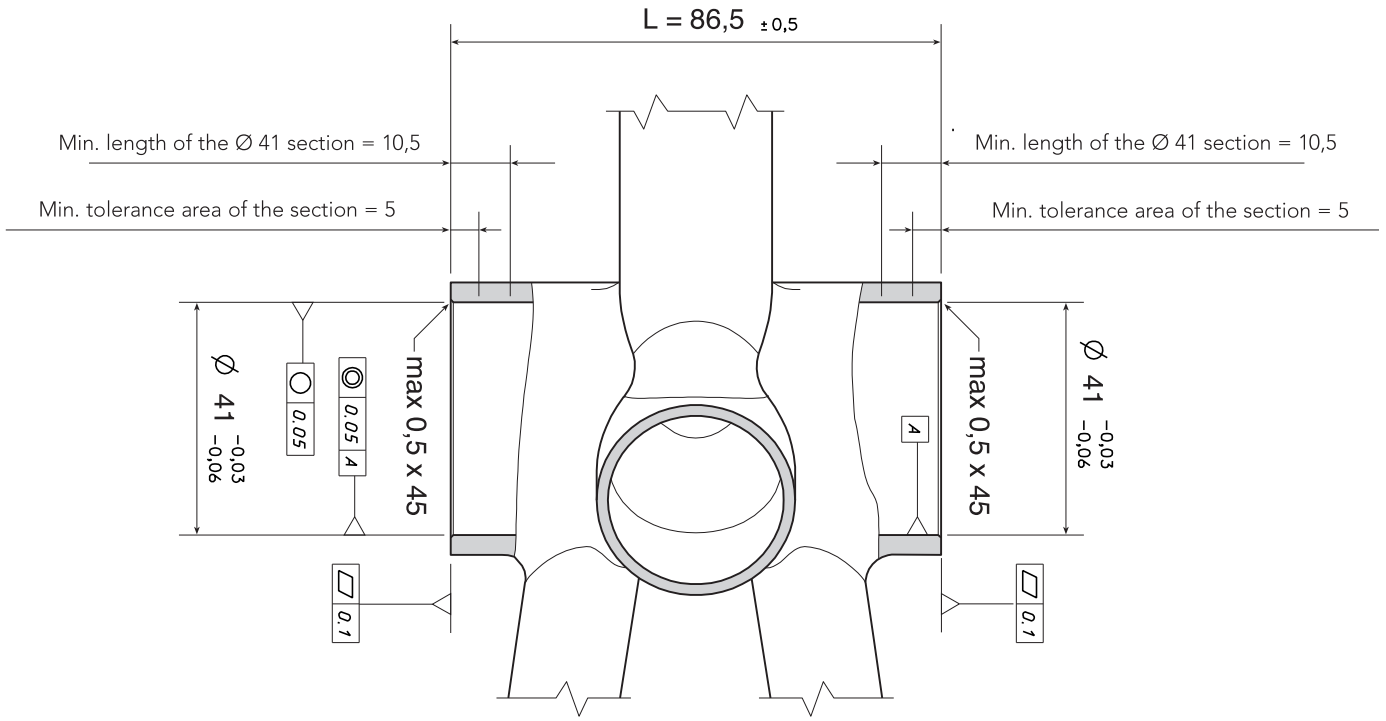
CRANKSET	Standard ITA	Standard ENG	BB30 68x42	86,5x41	BB30 68x46	BB Right
CHORUS RECORD						
SUPER RECORD						

1.3 - POWER-TORQUE SYSTEM CUPS FOR CYCLOCROSS

CRANKSET	Standard ITA	Standard ENG
CX 10 CX 11		

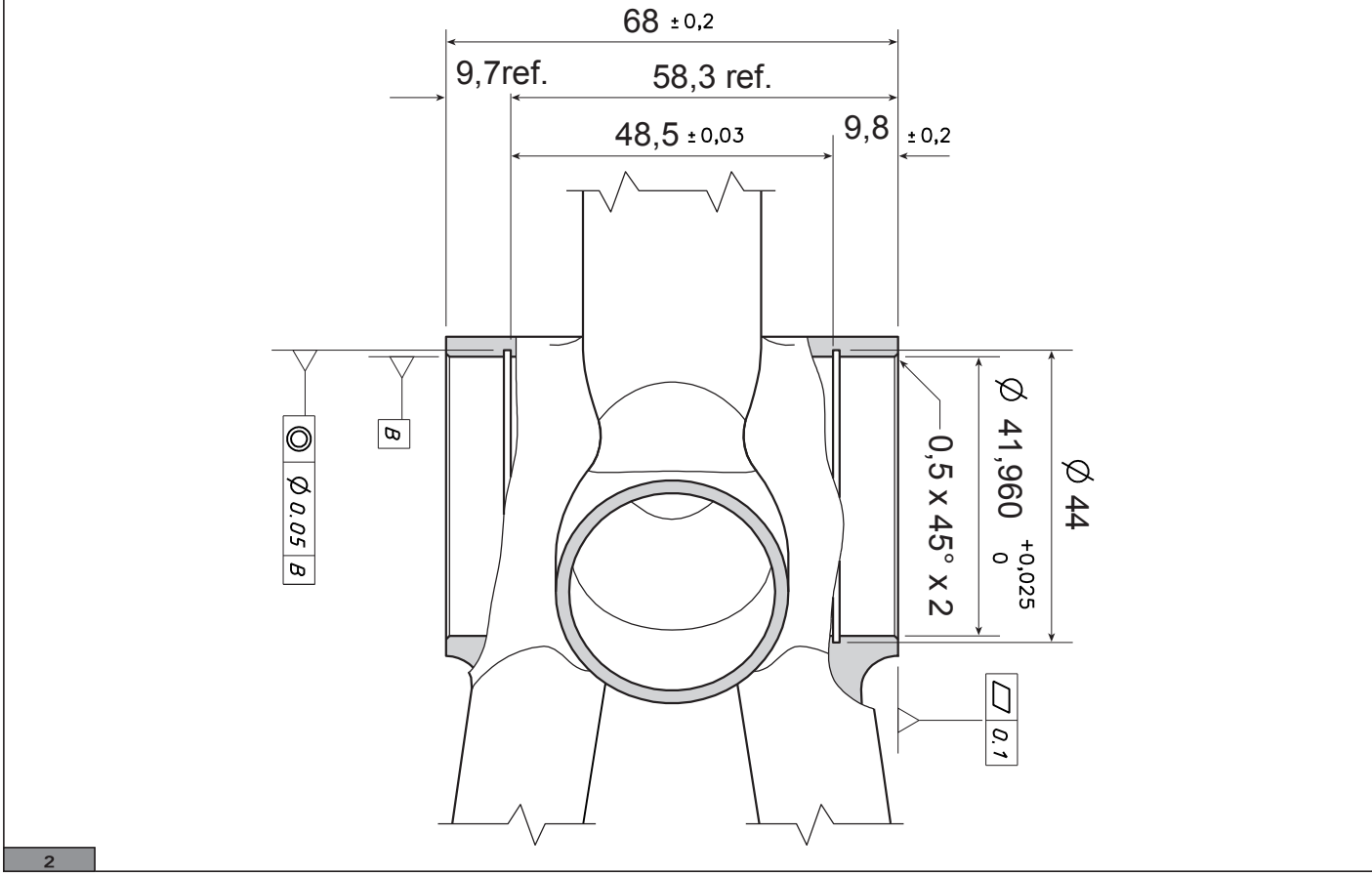
3 - INTERFACE WITH THE FRAME

3.1 - BOTTOM BRACKET SHELL L = 86.5 mm X Ø 41mm (Fig. 1)



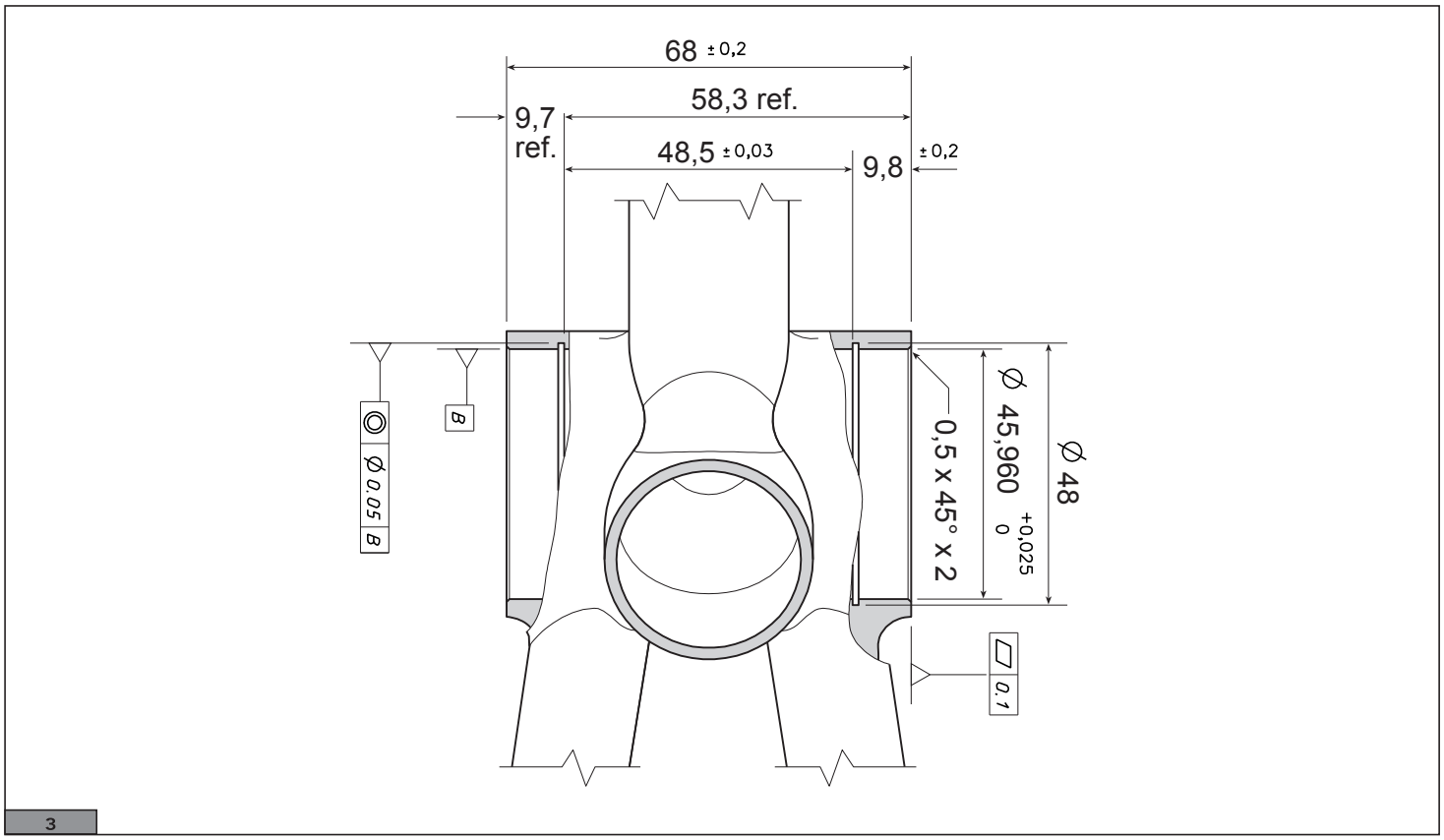
1

3.2 - BOTTOM BRACKET SHELL L = 68 mm X Ø 42mm (Fig. 2)



2

3.3 - BOTTOM BRACKET SHELL L = 68 mm X Ø 46 mm (Fig. 3)



4 - ASSEMBLY

4.1 - ASSEMBLY OF THE STANDARD CUPS

For assembly the standard cups, refer to the chapters “Power-Torque System crankset” and “Ultra-Torque crankset” in this technical handbook.

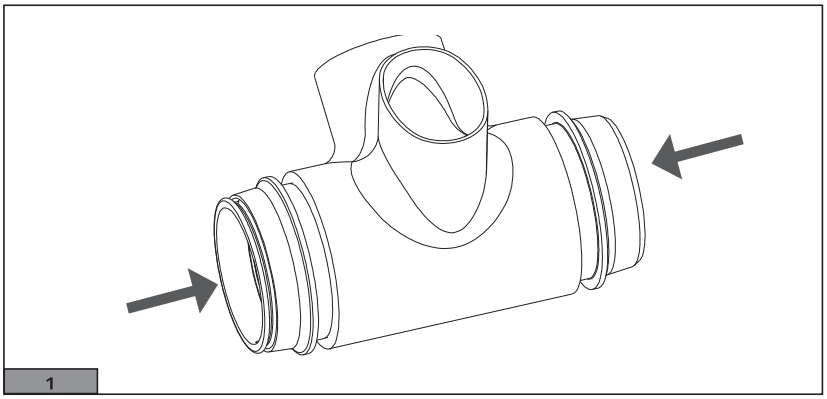
4.2 - ASSEMBLY OS-FIT CUPS

ATTENTION

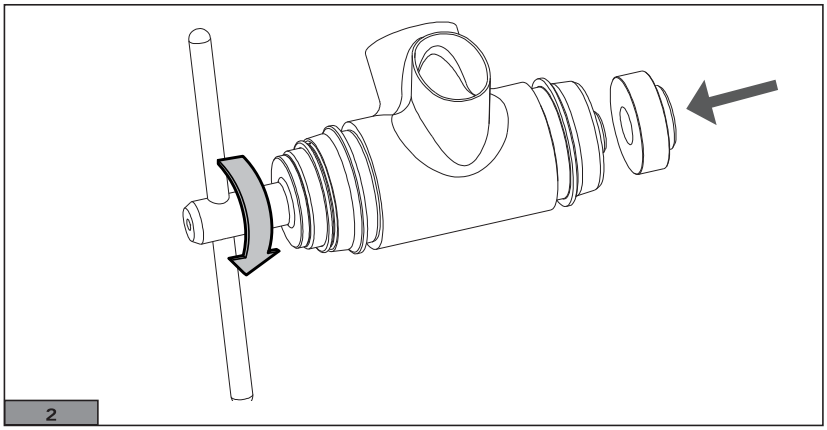
ONLY use Campagnolo® tool UT-BB140 for the assembly operations of Campagnolo cups.

• Position both cups on the bottom bracket until you feel the resistance on the cup increasing and the O-ring disappears inside the bracket itself (Fig. 1).

• Insert the tool UT-BB140 into the right-hand cup until you rest on the inside shoulder of the cup.

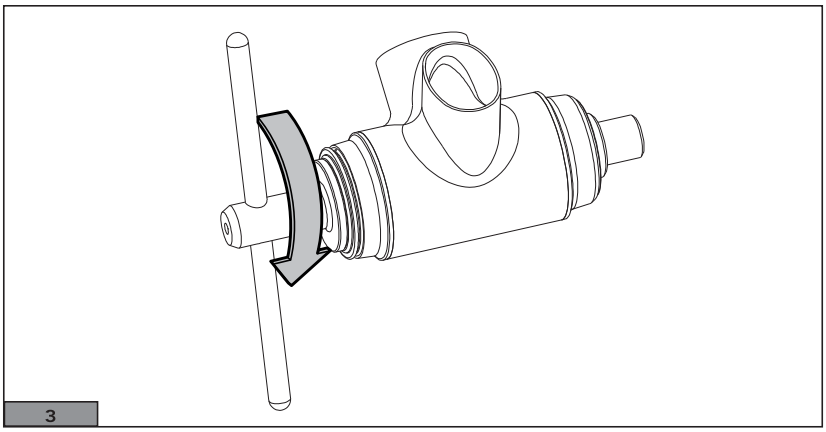


• Screw the tool UT-BB140 into the left-hand cup guide until you rest on the cup itself (Fig. 2).

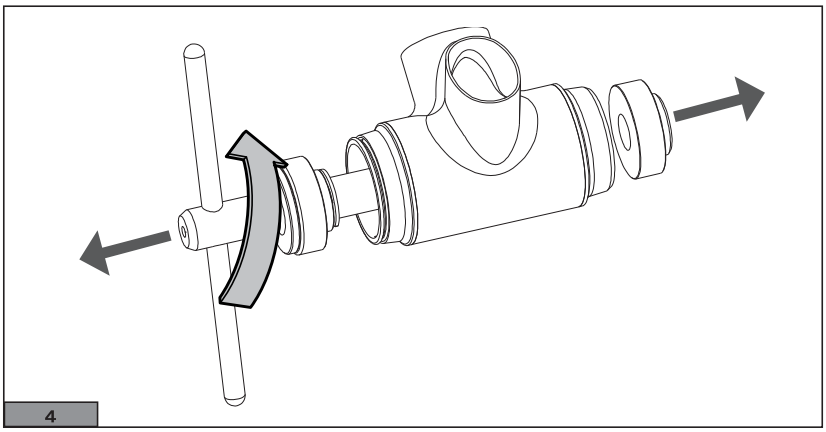

2

• Turn the lever of the tool UT-BB140 clockwise until both cups are screwed in flush (Fig. 3).

Before pulling out the tool ensure that you have positioned the cups correctly on the bottom bracket (Fig. 3).


3

• Turn the tool lever anticlockwise until you completely unscrew the left-hand cup guide and then remove the screw (Fig. 4).


4

5 - MAINTENANCE

• Maintenance intervals are purely indicative and may be significantly different in relation to conditions of use and the intensity of your activity (for example: racing, rain, salted Winter roads, weight of the rider etc.). Check with your mechanic to select a schedule that is best for you.

• Contact your nearest Campagnolo® Service Center for the replacement of the bearings. This delicate operation requires an extractor for pulling them out (and extra care to avoid damage to the teeth of the joint) and the UT-HS040 tool to press fit the new bearings in.

• Only clean the crankset and the cups using specific products for cleaning bikes. Never use solvents and non-neutral detergents.

• Dirt seriously damage bicycles and their components. Thoroughly rinse, clean and dry your bike after using it in these conditions.

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.

FRONT DERAILLEUR

1 - TECHNICAL SPECIFICATIONS

FRONT DERAILLEUR 10S FOR TRIPLE	Capacity (teeth)	Max. chainring (teeth)	Chain line	Chainstay angle
	23	53	47,5 mm	61° - 66°

FRONT DERAILLEUR 10S FOR DOUBLE	Capacity (teeth)	Max. chainring (teeth)	Chain line	Chainstay angle
	16	55	43,5 mm	61° - 66°

FRONT DERAILLEUR 11S FOR DOUBLE	Capacity (teeth)	Max. chainring (teeth)	Chain line	Chainstay angle
	16	55	43,5 mm	61° - 66°

2 - COMPATIBILITY

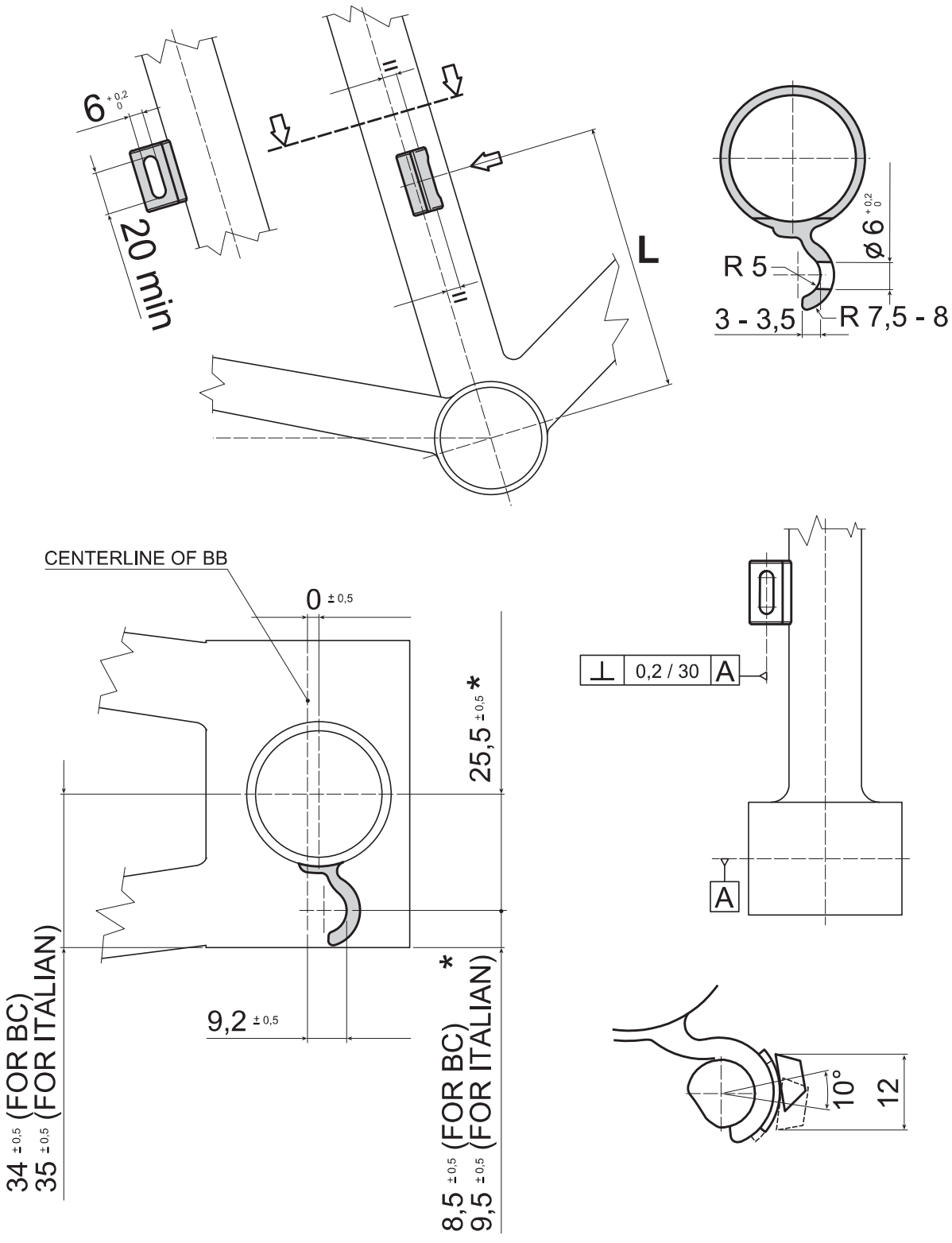
FRONT DERAILLEUR	CRANKSET	CONTROL LEVERS	CHAIN
FRONT DERAILLEUR 10s FOR TRIPLE	Triple 10s	Ergopower Power - Shift 10s	Ultra-Narrow 10s
FRONT DERAILLEUR 10s FOR DOUBLE	Power - Torque system 10s	Ergopower Power - Shift 10s Bar - End 10s	Ultra-Narrow 10s
FRONT DERAILLEUR 11s FOR DOUBLE	Power - Torque system 11s Ultra - Torque 11s	Ergopower Power - Shift 11s Ergopower Ultra - Shift 11s Bar - End 11s	11s

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 - INTERFACE WITH THE FRAME

3.1 - BRAZE-ON VERSION

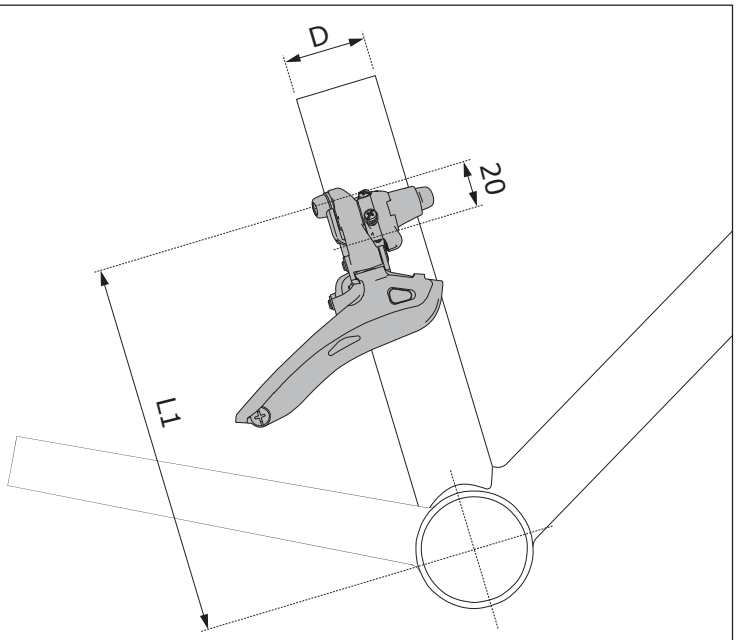


(*) ONE OF TWO DIMENSION MUST BE RESPECTED

DIMENSION L	CENTERING OF THE MOUNTING BOSS	COMPATIBLE CHAINRINGS
140 mm	48	45 - 46 - 47 - 48 - 49 - 50 - 51
142 mm	49	46 - 47 - 48 - 49 - 50 - 51 - 52
144 mm	50	47 - 48 - 49 - 50 - 51 - 52 - 53
146 mm	51	48 - 49 - 50 - 51 - 52 - 53 - 54
148 mm	52	49 - 50 - 51 - 52 - 53 - 54 - 55
150 mm	53	50 - 51 - 52 - 53 - 54 - 55 - 56
152 mm	54	51 - 52 - 53 - 54 - 55 - 56 - 57

3.2 - CLAMP-ON VERSION

EXT. CHAINRINGS	L1 mm
48	152
50	156
52	160
53	162
54	164
55	166

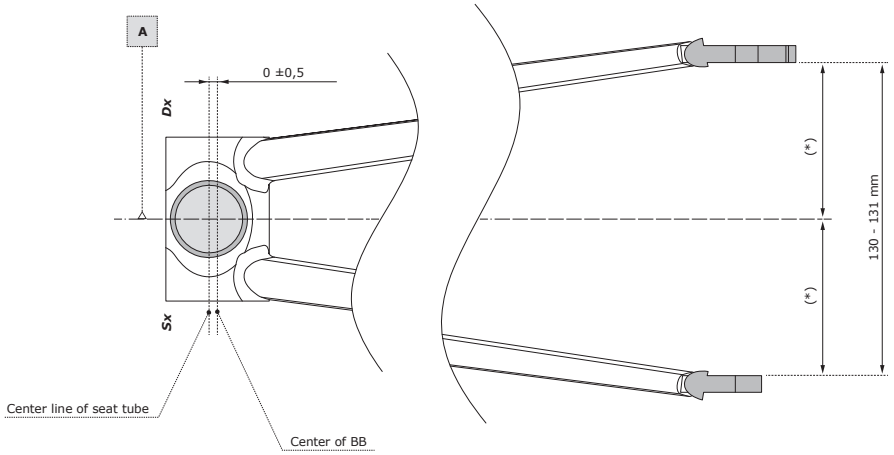


D 28 ± 0,2	**D 32 ± 0,2**
D 35 + 0,8 /- 0,2	**D 35 ± 0,2** (only for Veloce)

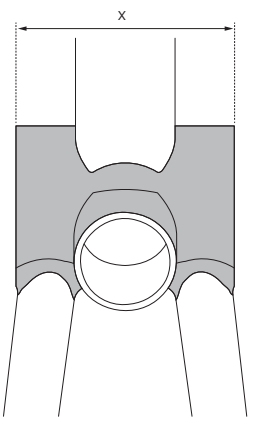
2

CAUTION

Make sure nothing interferes with the frame in the area indicated as L1.



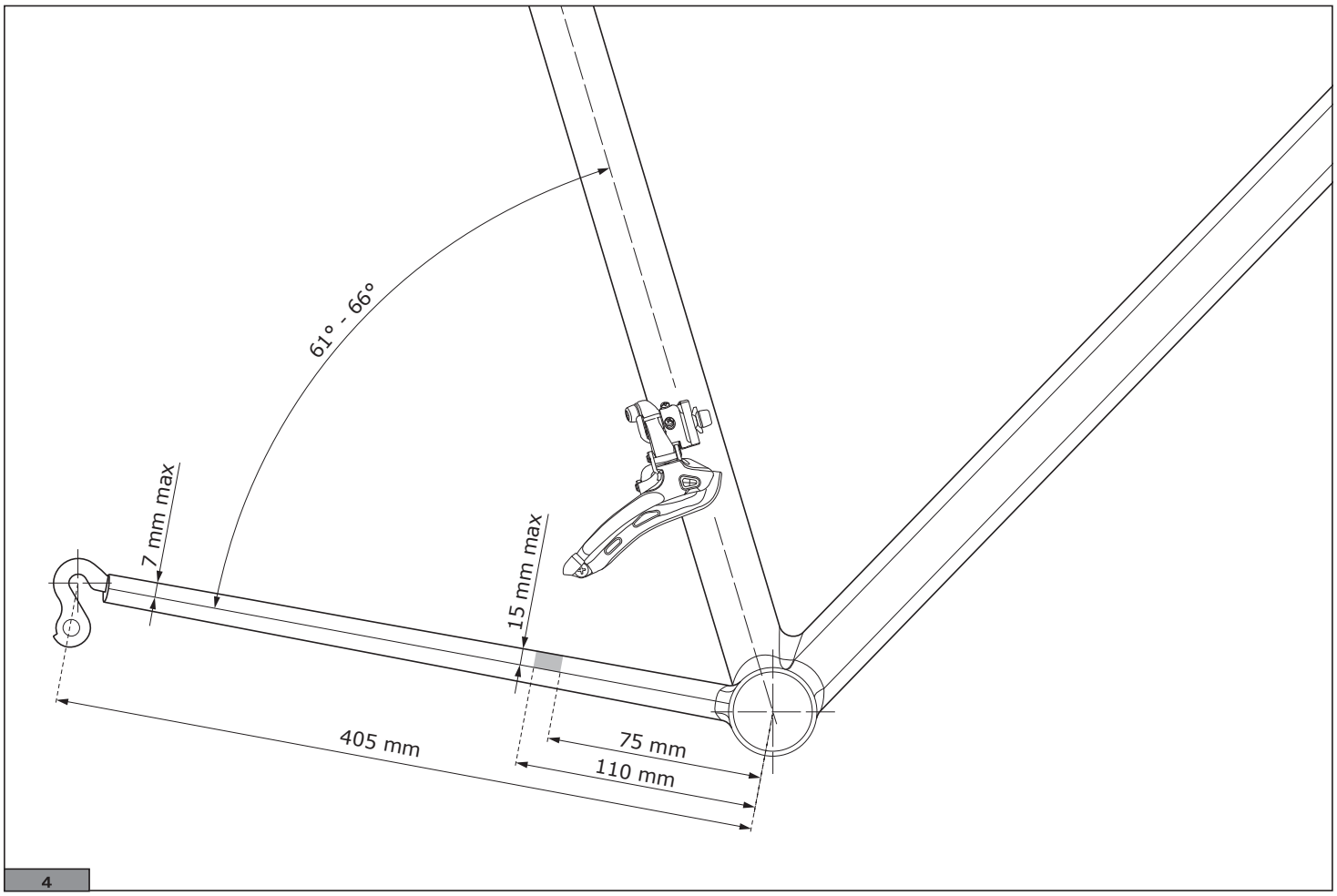
(*) MAX. SYMMETRY ERROR 2 mm respect to A



	X
Italian thread	69,2 - 70,8
BC thread	67,2 - 68,8

3

3.3 - CHAINSTAY DIMENSIONING



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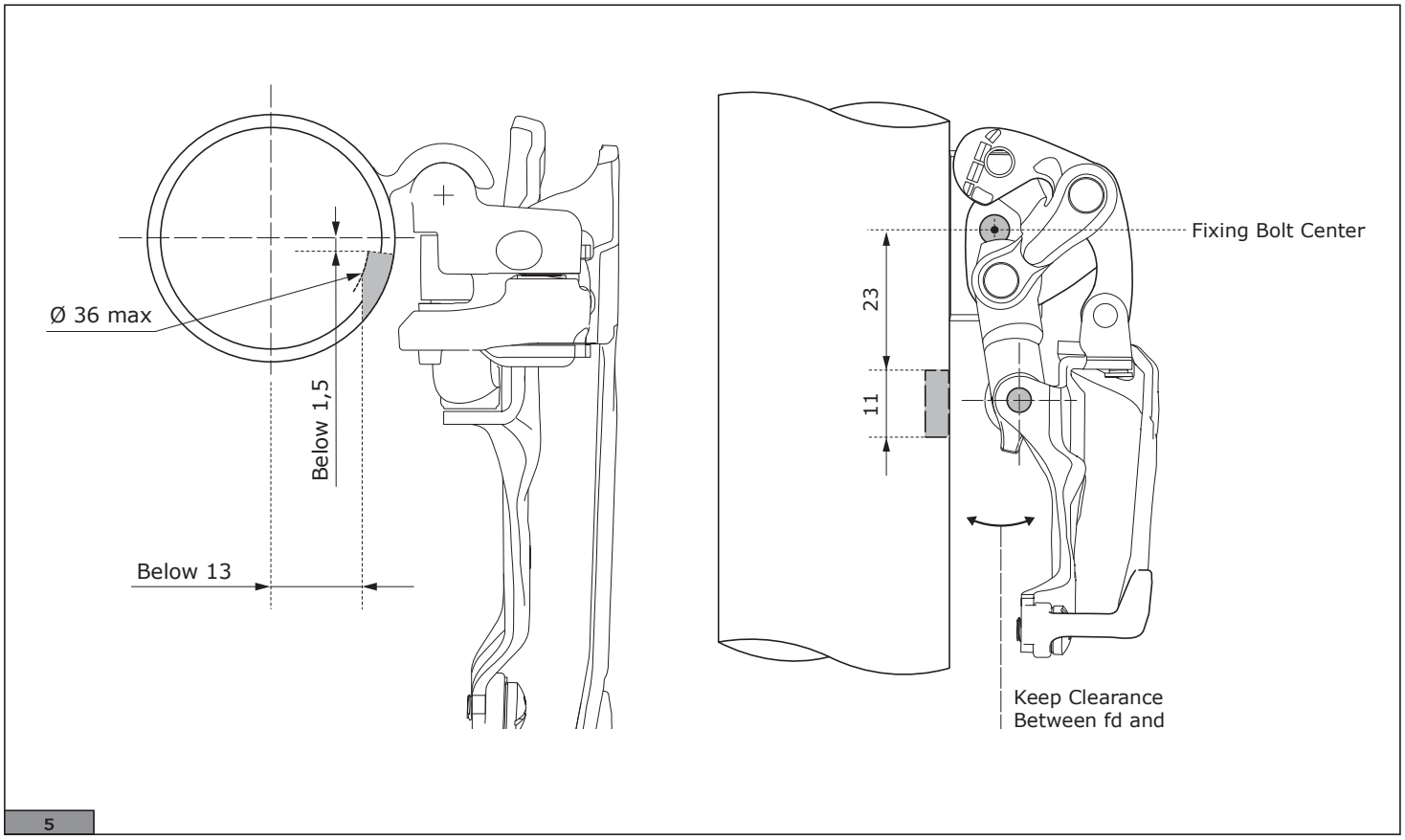


5

4 - ASSEMBLY

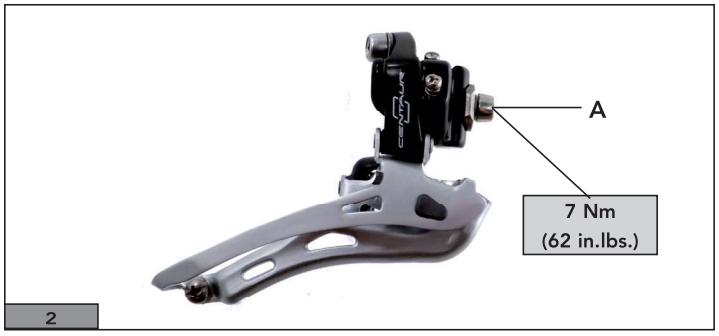
4.1 - PRE-ASSEMBLY CHECKS

- Check the crankset is fitted correctly.
- Check the derailleur is compatible with your frame.

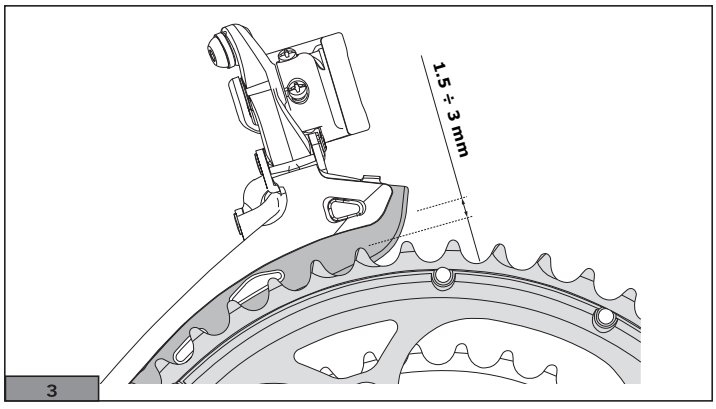
4.2 - FRONT DERAILLEUR ASSEMBLY

CLIP-ON DERAILLEUR:
Loosen the screw using a 5 mm Allen wrench (A - Fig. 1), open the clip completely and clamp it onto the frame.

BRAZE-ON DERAILLEUR:
Loosen the screw using a 5 mm Allen wrench (A - Fig. 2) and remove the screw together with the washers, then secure the derailleur on the frame's braze-on coupling.



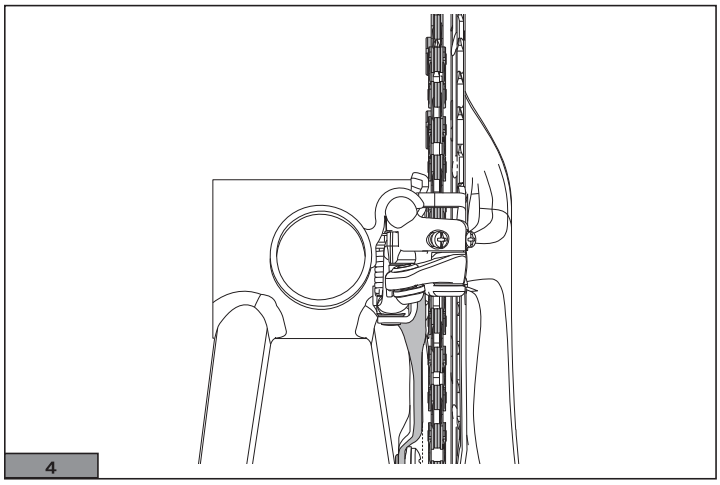
- Adjust the height of the derailleur so that the cage is at a distance of 1,5÷3 mm from the larger chainring (Fig. 3).



- Align the derailleur: the inner side of the derailleur cage must be parallel with the chainring (Fig. 4).
- Using a torque wrench, fasten the tightening bolt (Fig. 1/2 pos. A) to the frame, torquing to the following values:
  - 7 N.m (62 in.lbs) for braze-on versions
  - 5 N.m (44 in.lbs) for clamp-on versions.

Note
If you are using a carbon fibre frame, it might be necessary to reduce the tightening torque to avoid damaging the frame itself. Contact the manufacturer of the bicycle or frame to obtain the information necessary on the correct tightening values.

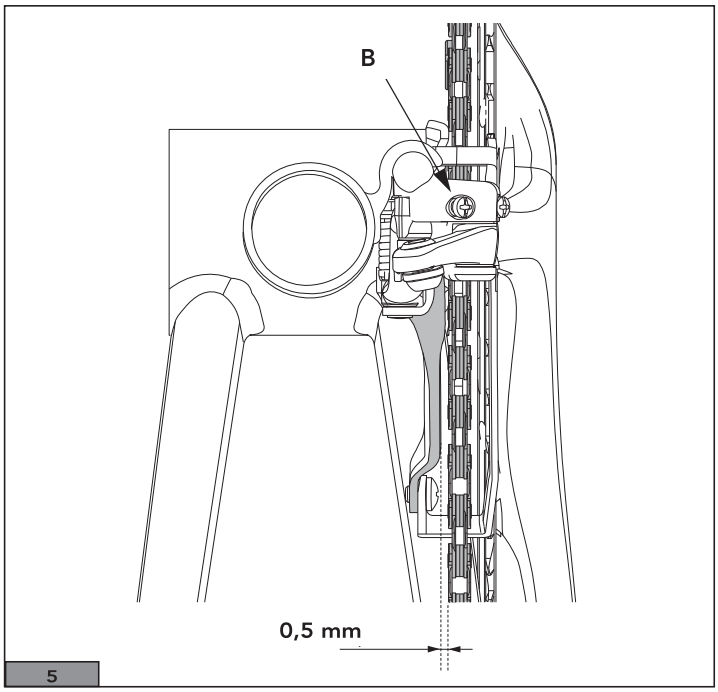
- Install the chain and position it on the smaller chainring and larger sprocket.



4.3 - ADJUSTING THE FRONT DERAILLEUR

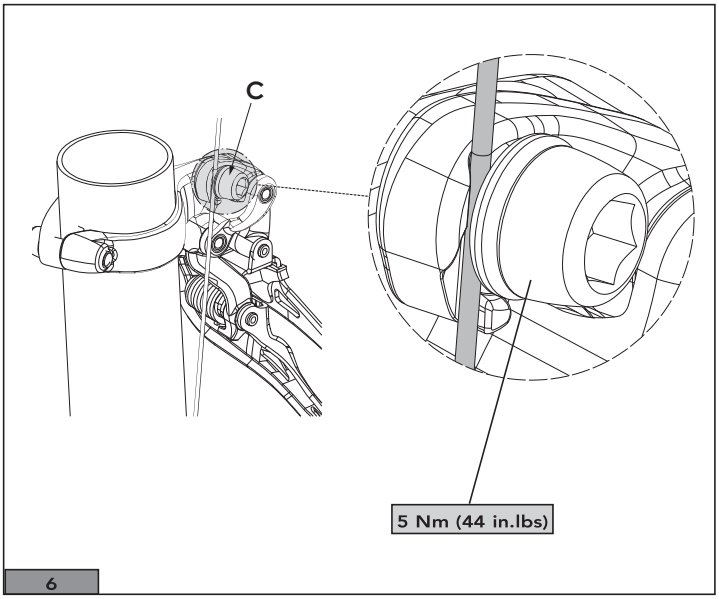
4.3.1 - Lower position

1) With the chain on the smallest gear and on the biggest sprocket, adjust the internal travel limit screw (B - Fig. 5) so that the inside face of the derailleur cage is 0.5 mm from the internal side of the chain (Fig. 5).



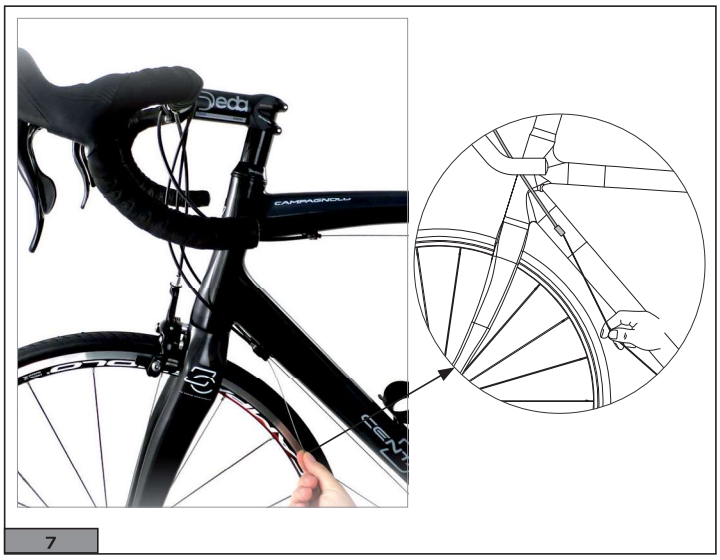
5

2) Install the cable and pull it moderately. Position it on the spline underneeth the washer (C - Fig. 6) and tighten at **5 Nm (44 in.lbs)** with a 5 mm Allen wrench.



6

3) Set the cable by pulling the cable moderately (Fig. 7). If it has lost tension, repeat points 1 and 2.


7

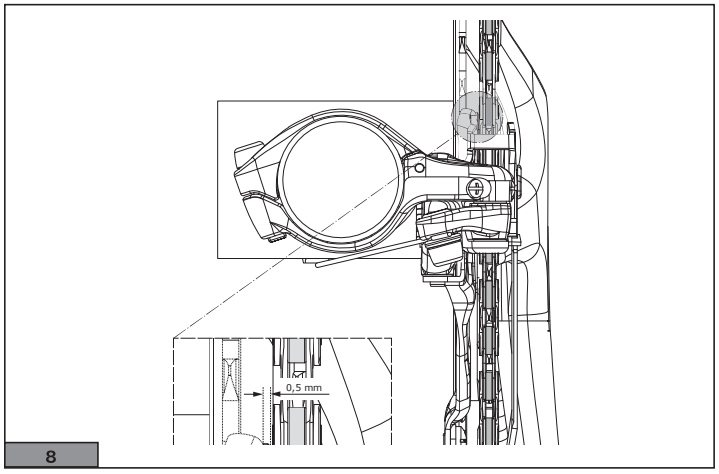
4.3.2 - Upper position

1) Leaving the chain on the biggest sprocket of the cassette, shift operating the shift lever FOR 3 CLICKS.

2) Adjust the tension of the cable with the adjuster (E - Fig. 9) so that the inside face of the derailleur cage just skims the chain (0.5 mm max) (Fig. 8).

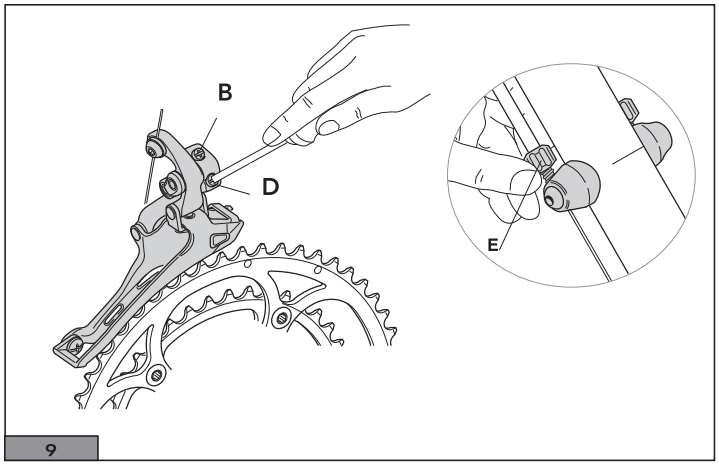
3) Adjust the external travel limit screw (D - Fig. 9) to bring it flush (Fig. 9).

ATTENTION!
After adjusting the derailleur, test it and check the chain never goes down inside the smallest gear or outside the biggest one.



8

THE DERAILLEUR MUST WORK IN 3 CLICKS.



9

⚠ **WARNING!**

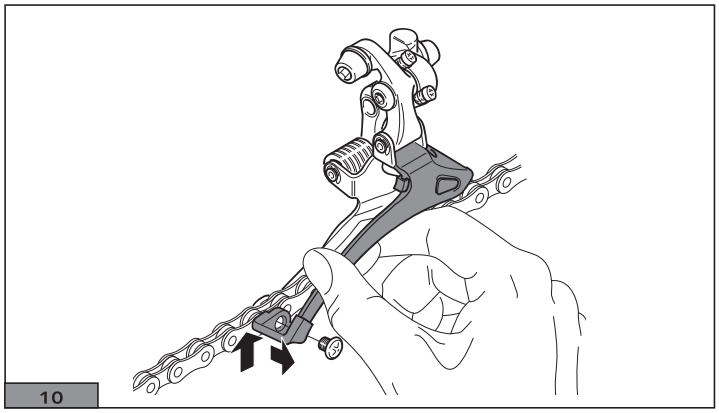
Check all gears work perfectly. While using the bike with the sprockets / chainrings at opposite extremes some noisiness is possible and the performance of the transmission is not the best.

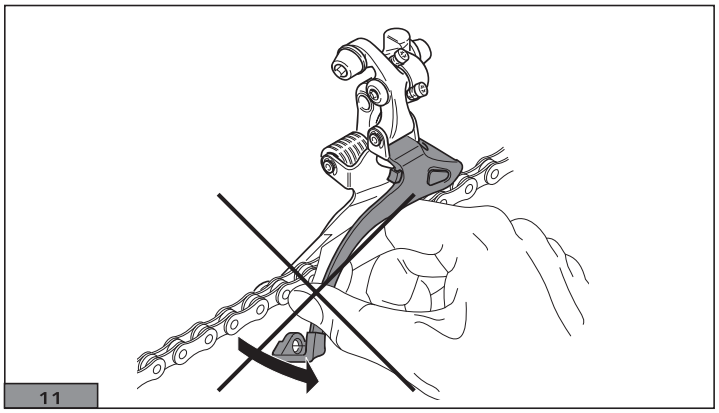
4.4 - INSTRUCTIONS FOR DERAILLEUR WITH CARBON FIBER EXTERNAL CAGE

CAUTION!
When you slip the chain through the derailleur cage (Fig. 10), do not strain the external carbon fiber semi-cage (Fig. 11) since this could be irreversibly damaged.

CAUTION

The dimensions of the derailleurs with a carbon-fibre fork don't fit the Z46 cyclocross chainrings.


10


11

5 - MAINTENANCE

• Never remove the front derailleur spring from its seat.
If this operation has been carried out, go to a Campagnolo Service centre to restore the front derailleur's functionality.
• Regularly lubricate all moving parts of the derailleur mechanism and make sure the derailleur bar moves freely.

• Make sure that the derailleur is always properly adjusted:
- the derailleur cage must be positioned 1,5÷3 mm from the larger chainring (Fig. 3).
- the outside side of the derailleur cage must be parallel with the larger chainring (Fig. 5).

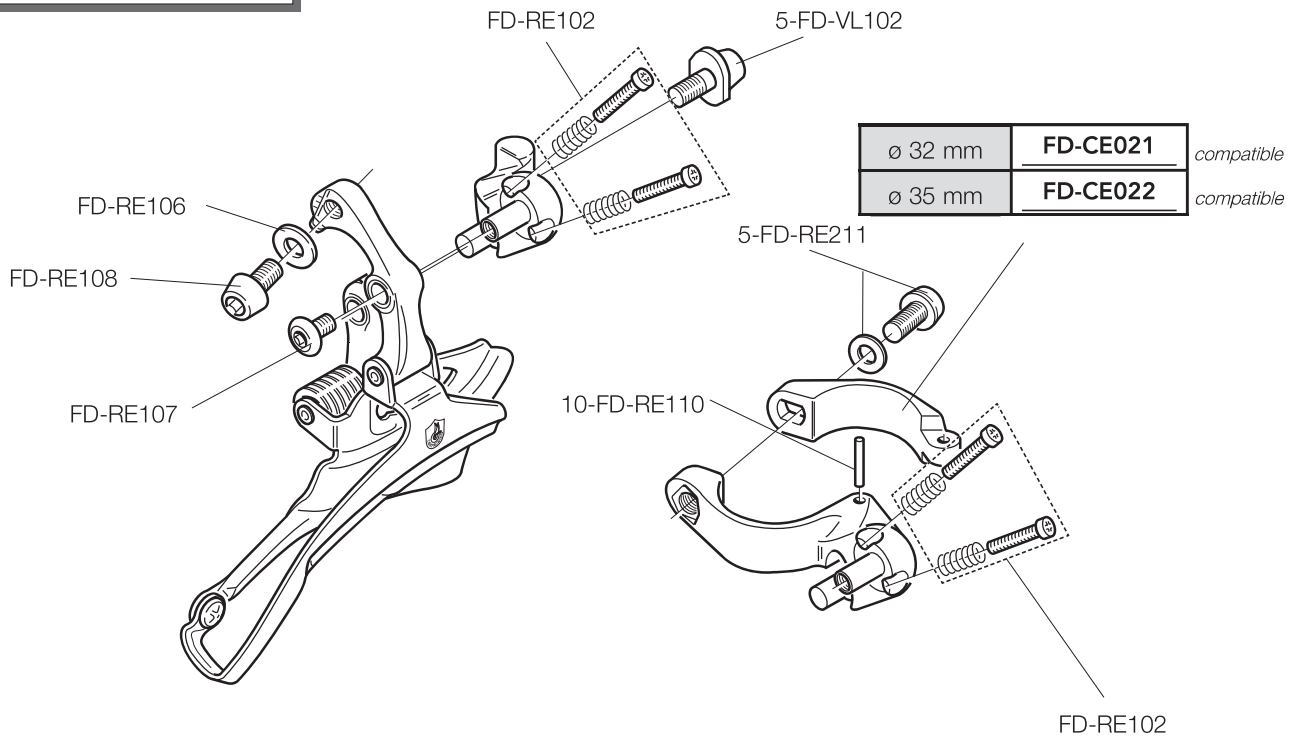
• The life of the components depends on conditions of use and on the frequency and quality of maintenance. To keep the components in good condition, cleaning and lubrication must therefore be repeated frequently, especially if it is subjected to heavy-duty use (i.e. after washing your bicycle, after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

• Dirt seriously damage bicycles and their components. Thoroughly rinse, clean and dry your bike after using it in these conditions.

• 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. Dry them using a soft cloth. Never use abrasive or metal pads.

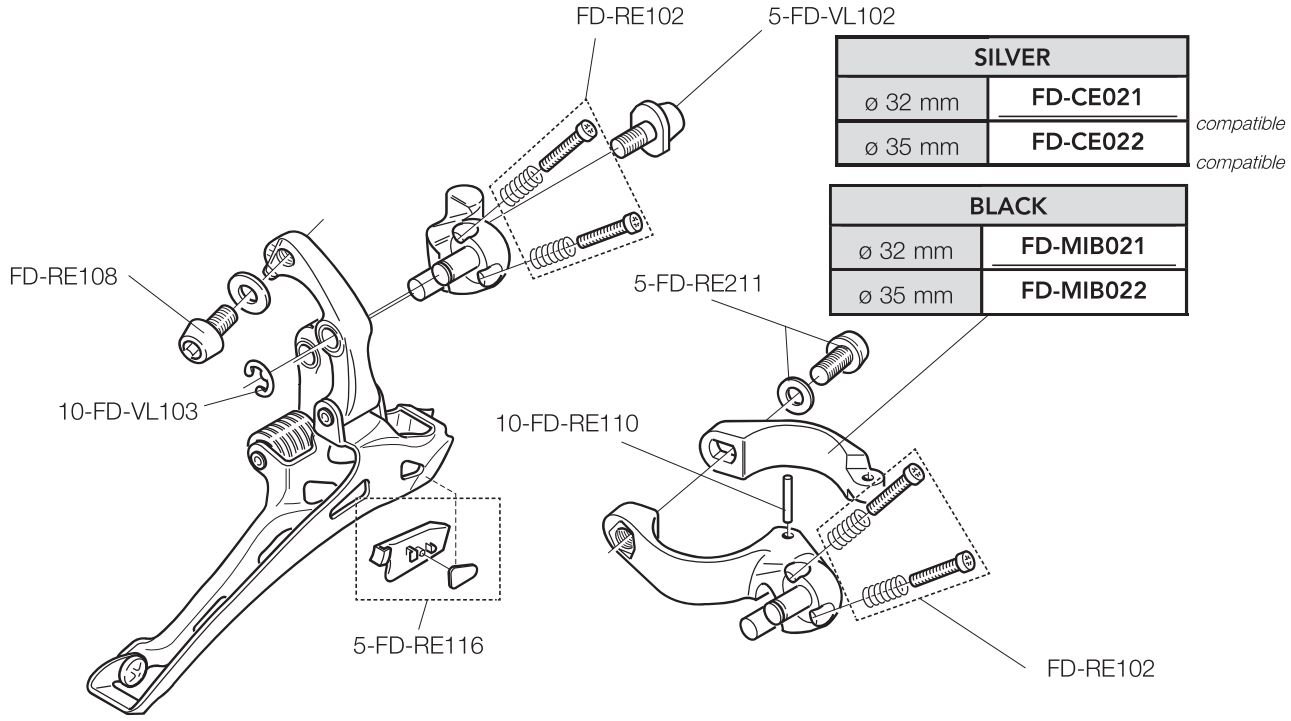
6 - SPARE PARTS

COMP TRIPLE™
10s
FD7-CO3..



ø 32 mm	FD-CE021	*compatible*
ø 35 mm	FD-CE022	*compatible*

VELOCE™ 10s
FD11-VL2..



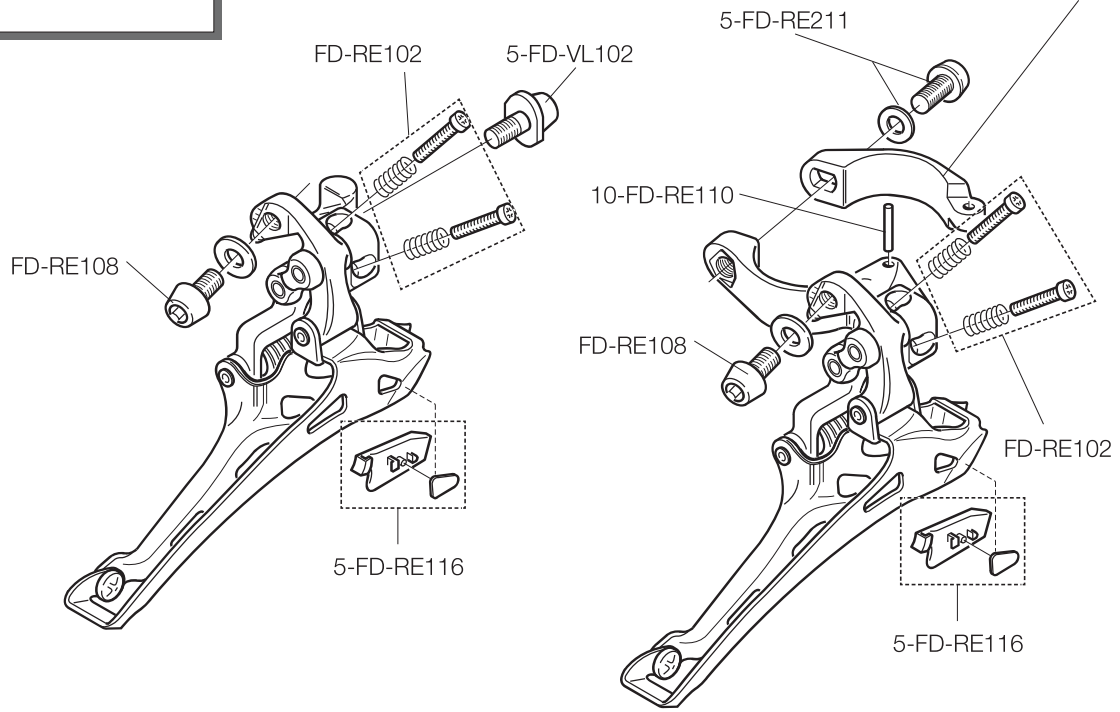
SILVER	
ø 32 mm	FD-CE021
ø 35 mm	FD-CE022

compatible

compatible

BLACK	
ø 32 mm	FD-MIB021
ø 35 mm	FD-MIB022

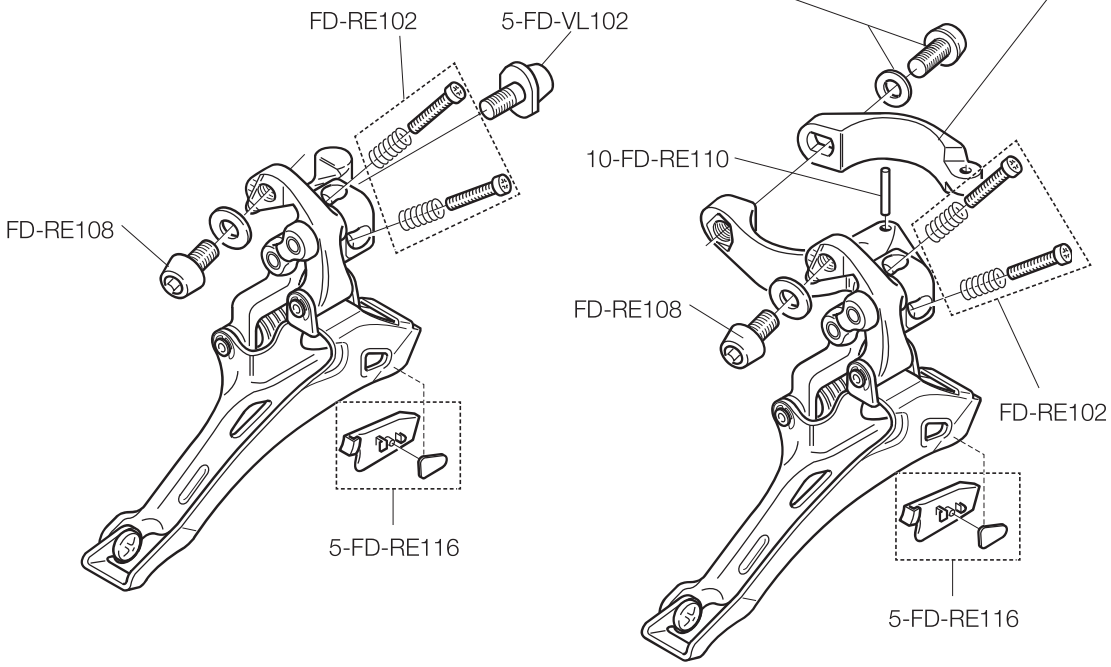
CENTAUR™ 10s
FD11-CE2..
FD12-CERB2..



ø 32 mm	FD-CE021
ø 35 mm	FD-CE022

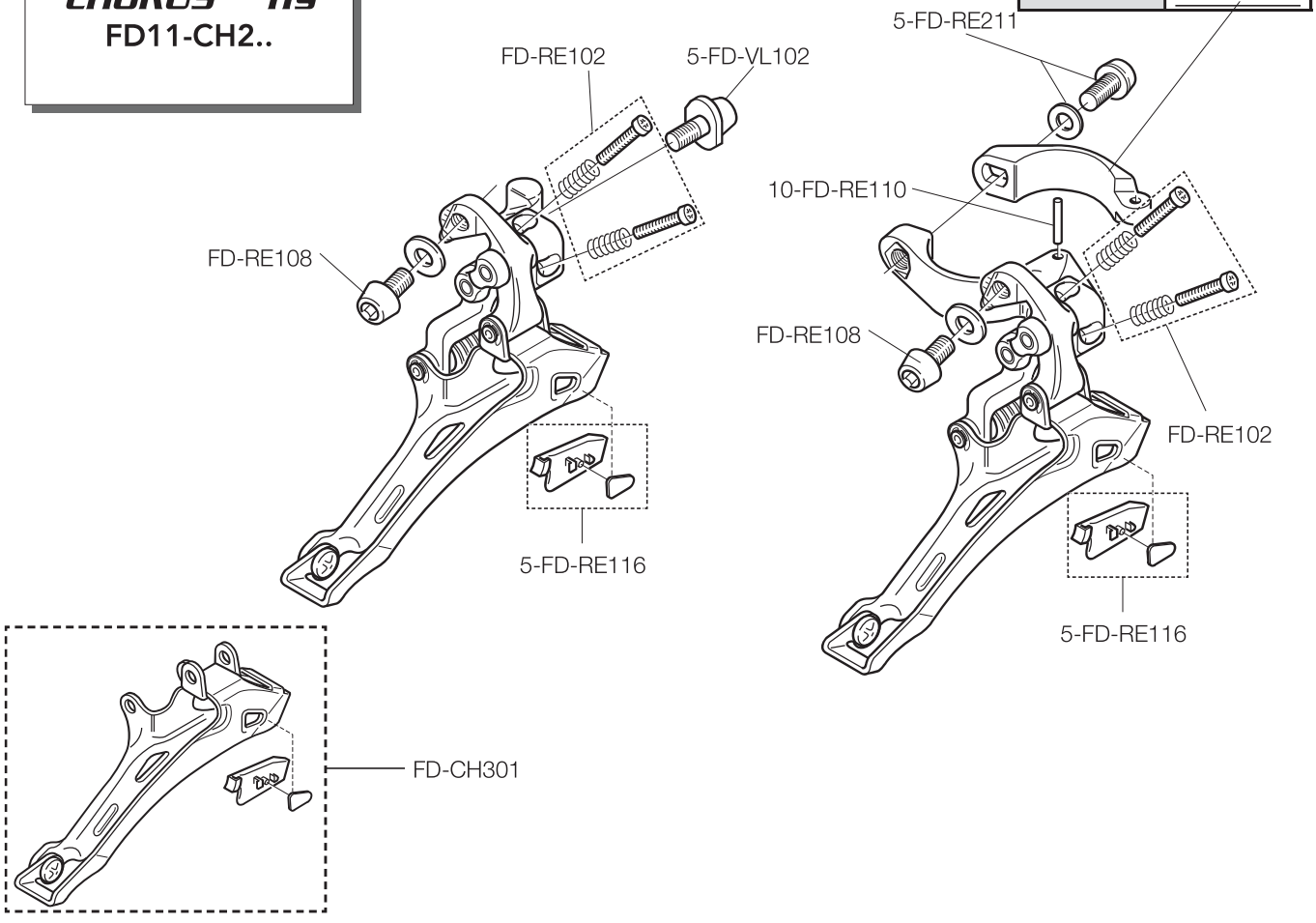
ATHENA™ 11s
FD11-AT2..

ø 32 mm	FD-RE321
ø 35 mm	FD-RE322



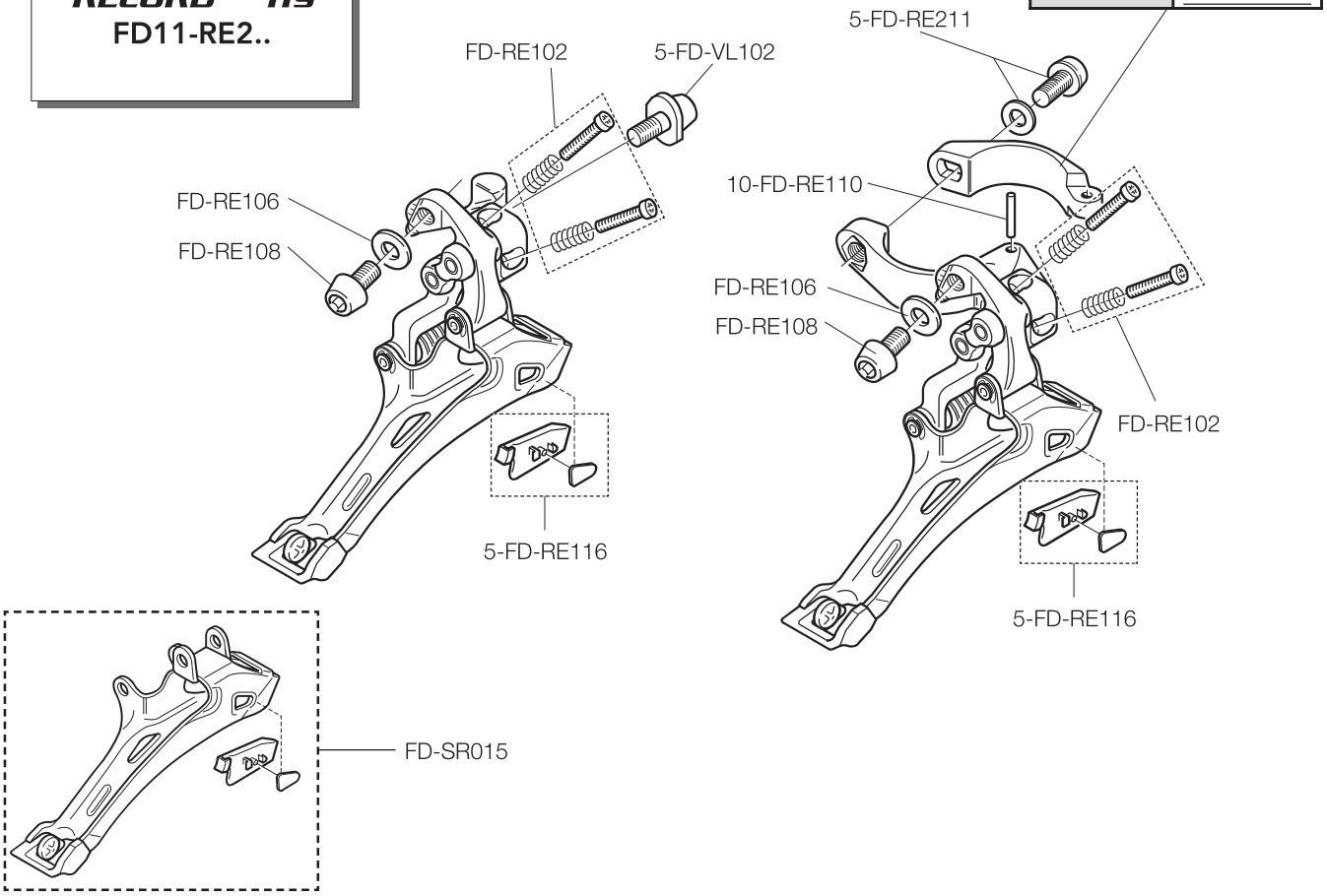
CHORUS™ 11s
FD11-CH2..

ø 32 mm	FD-RE321
ø 35 mm	FD-RE322



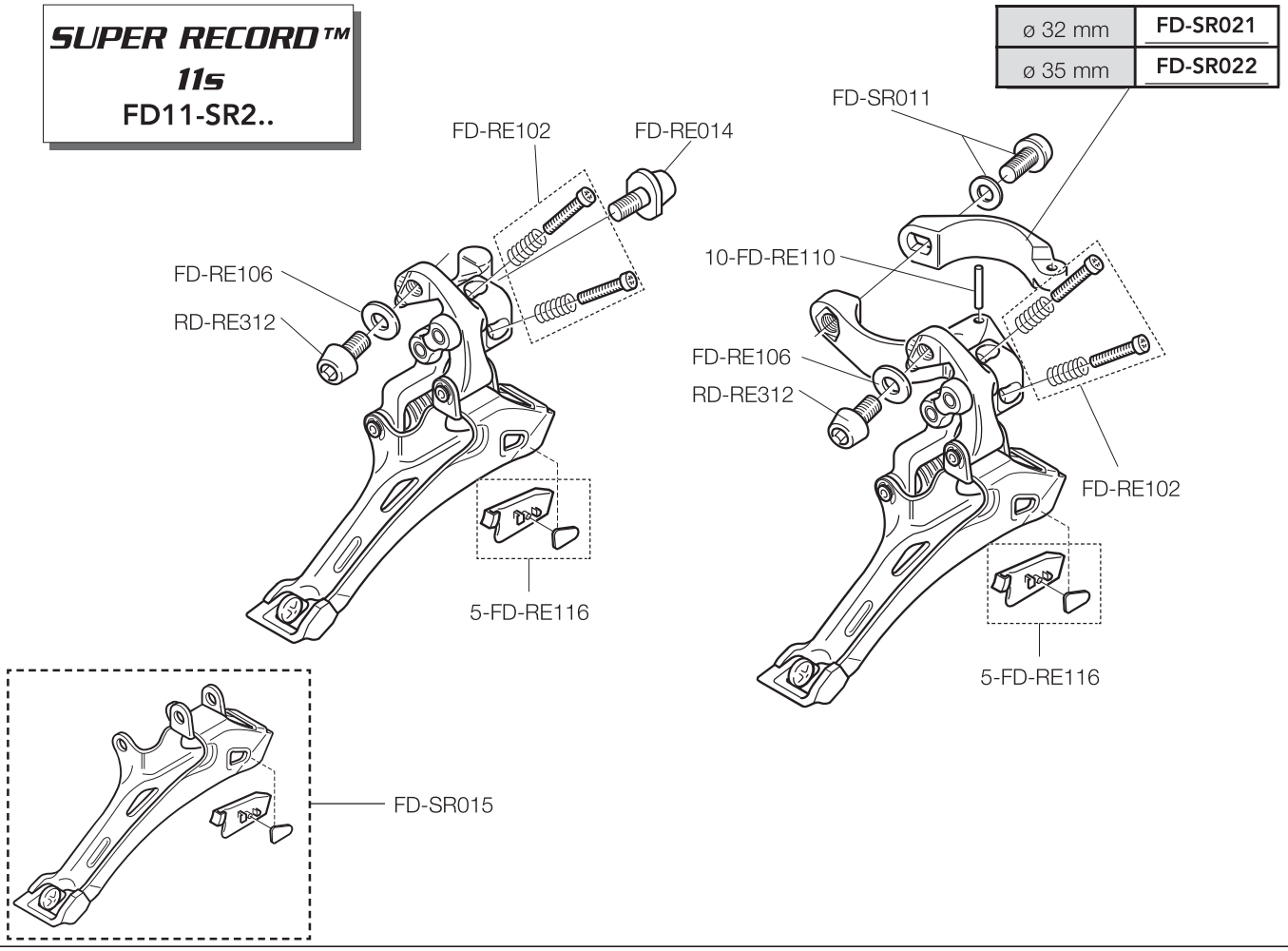
RECORD™ 11s
FD11-RE2..

ø 32 mm	FD-RE321
ø 35 mm	FD-RE322



SUPER RECORD™ 11s
FD11-SR2..

ø 32 mm	FD-SR021
ø 35 mm	FD-SR022



REAR DERAILLEUR

1 - TECHNICAL SPECIFICATIONS

1.1 - 10s REAR DERAILLEUR TECHNICAL SPECIFICATIONS

10S REAR DERAILLEUR	CAPACITY (TEETH)	MAX SPROCKET (TEETH)	MIN SPROCKET (TEETH)	DIFFERENCE BETWEEN MAX AND MIN SPROCKET (TEETH)
SHORT CAGE	32	29	11	16
MEDIUM CAGE	36	29	11	20
LONG CAGE (only for triple crankset)	39	29	11	23

1.2 - 11s REAR DERAILLEUR TECHNICAL SPECIFICATIONS

11S REAR DERAILLEUR	CAPACITY (TEETH)	MAX SPROCKET (TEETH)	MIN SPROCKET (TEETH)	DIFFERENCE BETWEEN MAX AND MIN SPROCKET (TEETH)
SHORT CAGE	33	29	11	16

2 - COMPATIBILITY

2.1 - COMPATIBILITY OF 10S REAR DERAILLEUR

CONTROL LEVERS	CHAIN	CRANKSET	FRONT DERAILLEUR
Ergopower Power - Shift 10s	Ultra - Narrow 10s	Power - Torque system 10s	10s
Bar - End 10s			

2.2 - COMPATIBILITY OF 11S REAR DERAILLEUR

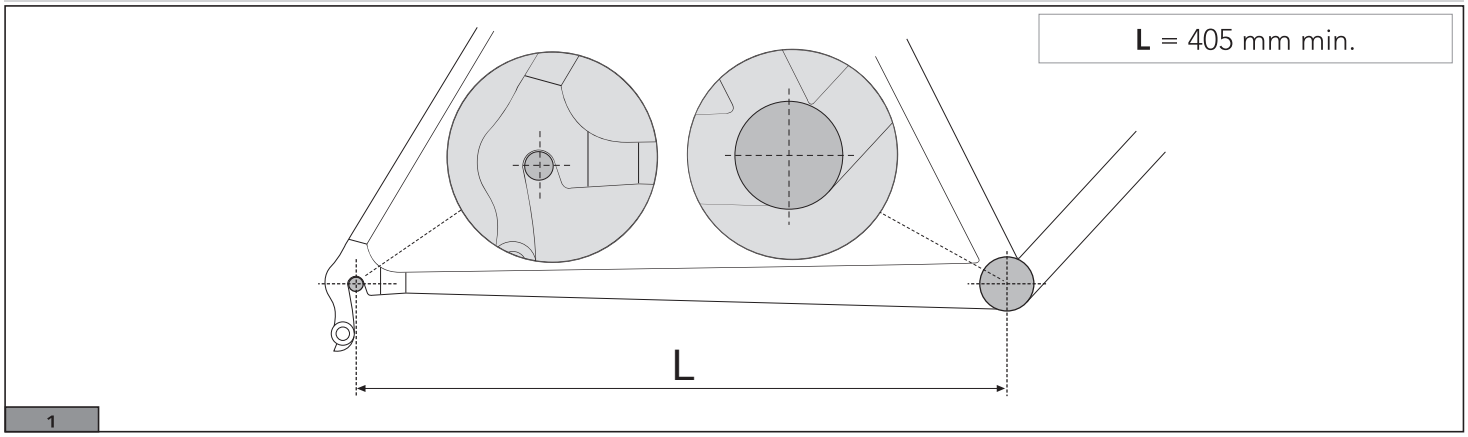
CONTROL LEVERS	CHAIN	CRANKSET	FRONT DERAILLEUR
Ergopower Ultra - Shift 11s	11s	Ultra - Torque 11s	11s
Ergopower Power - Shift 11s		Power - Torque system 11s	
Bar - End 11s			

WARNING!

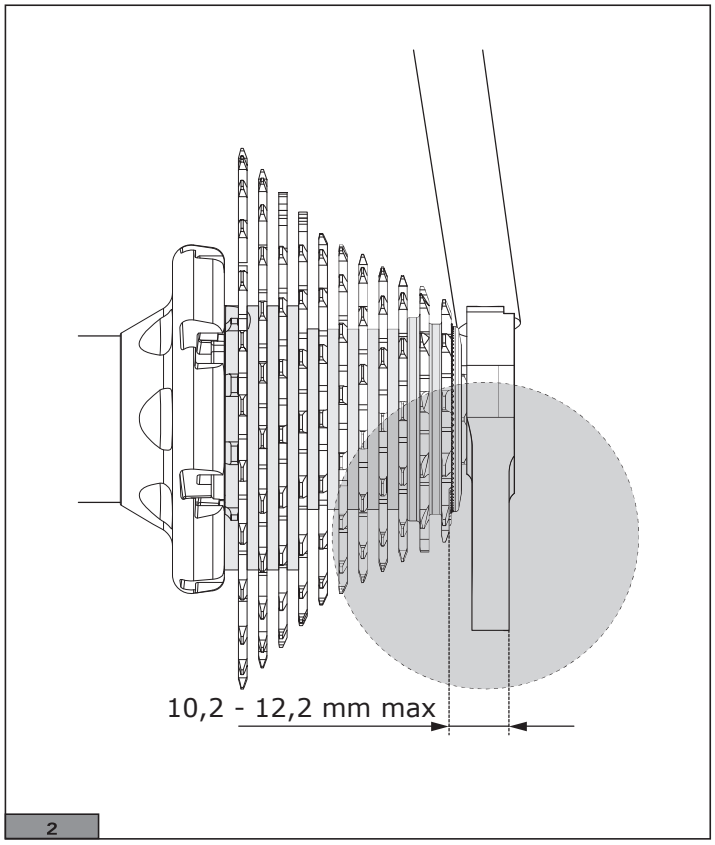
Different combinations from those included in the table could cause the malfunction of the drivetrain and result in an accident, personal injury or death.

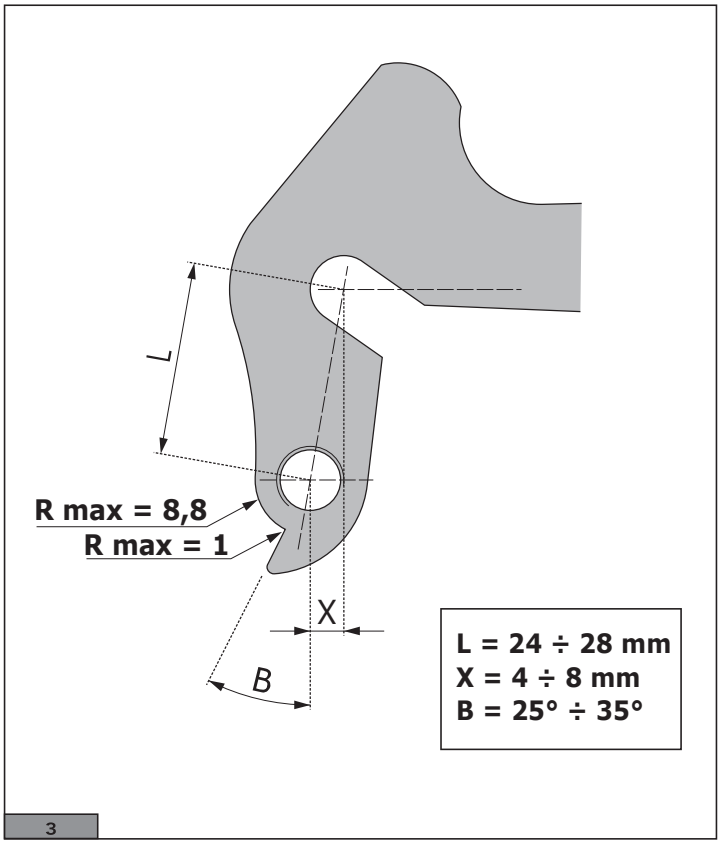
3 - INTERFACE WITH THE FRAME

3.1 - MINIMUM CHAINSTAY LENGTH



3.2 - DROP-OUT SPECIFICATIONS



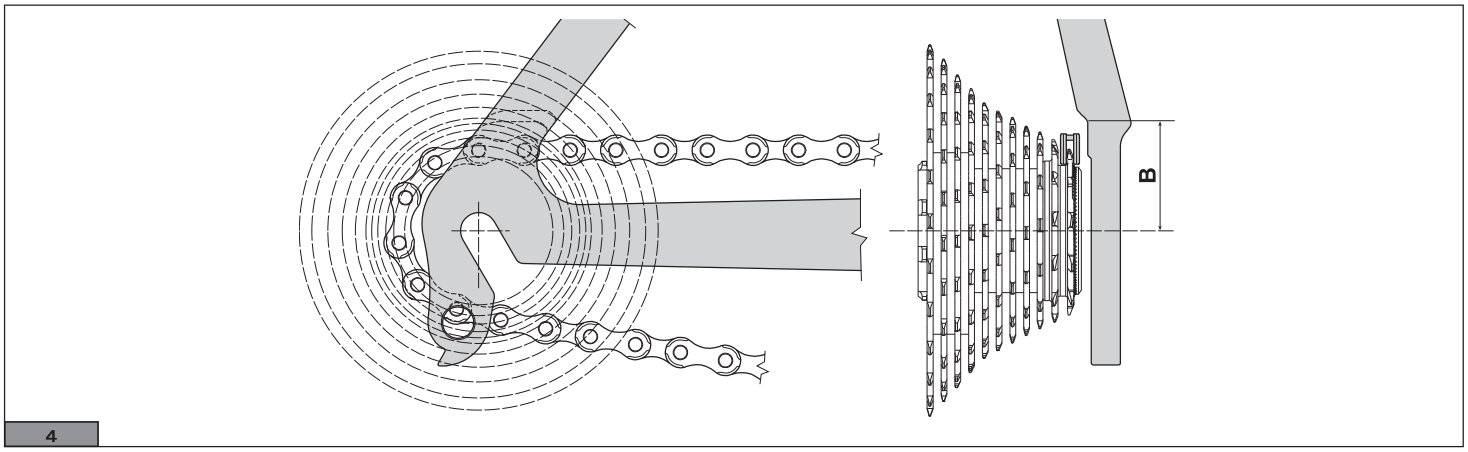


The stroke of the cage in relation to the cable throw is checked by Campagnolo Quality Control for each single piece produced.
The distance of the rear derailleur hanger from the first sprocket influences this stroke, so it is indispensable to stay within the tolerance prescribed as per the drawing (Fig. 2).

ATTENTION!

Campagnolo® rear derailleurs are designed to work with dropouts that have the dimensions shown in Fig. 3.
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.

N° TEETH	B (Fig. 4)
Z 11	30 mm
Z 12	30 mm
Z 13	32 mm



4

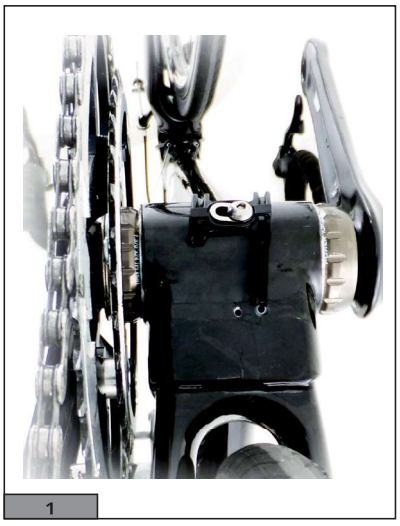
4 - ASSEMBLY

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 (B - Fig. 2) using a tool tap with threading 10x26 TPI.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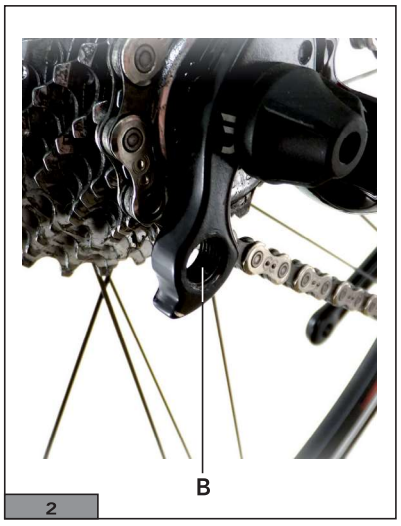
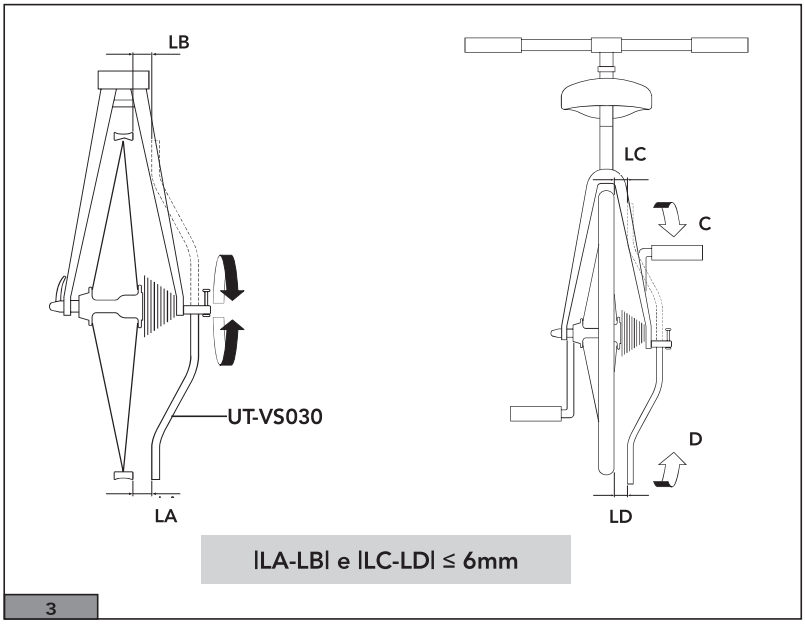


2

CAUTION

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



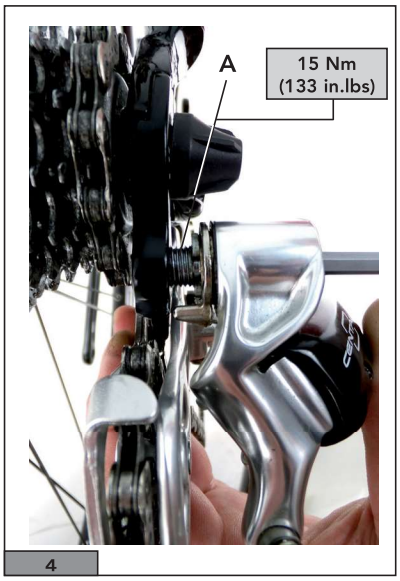
3

4.2 - REAR DERAILLEUR ASSEMBLY AND ADJUSTMENT

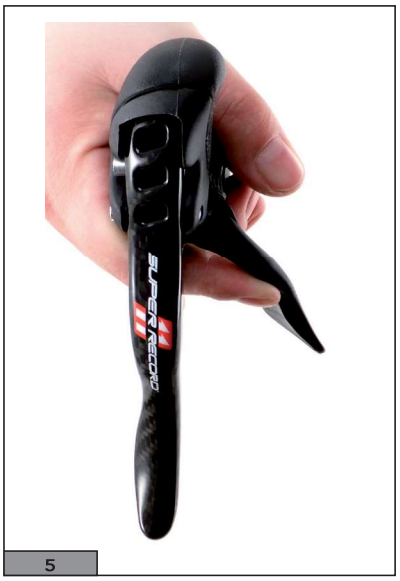
• Secure the rear derailleur to the frame using screw (A - Fig. 4), and tighten with a TORX T-25.

Tightening torque: 15 Nm (133 in.lbs).

• Carry out this adjustment with the chain on the smallest cassette sprocket and with the Ergopower control button zero-ed (Fig. 5).

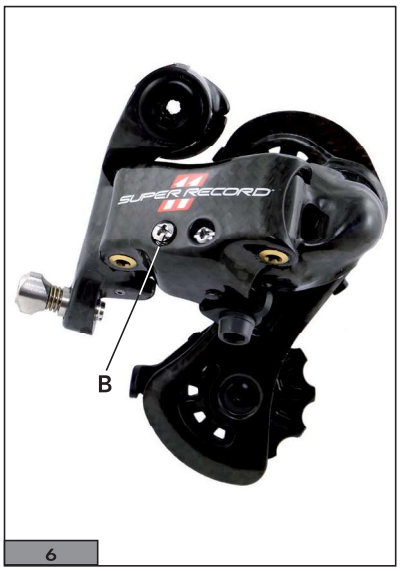


4



5

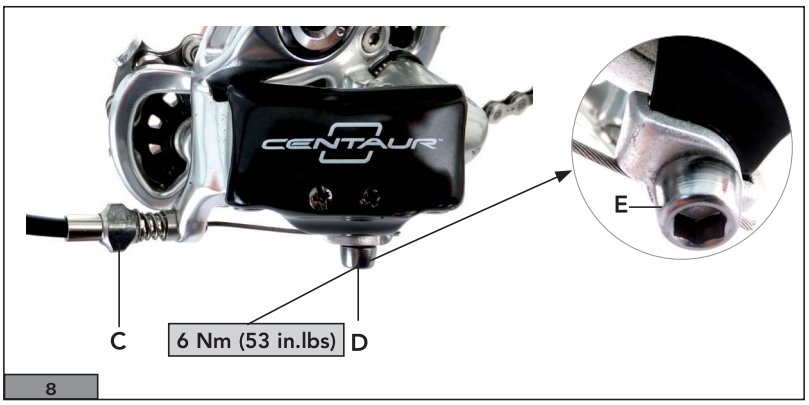
• Turn the screw (B - Fig. 6) until perfect alignment is obtained between the centreline of the top roller and the axis of the first sprocket (Fig. 7).



6


7

• Pass the cable through the adjustment screw (C - Fig. 8) and insert the end of the housing; then pass the cable underneath the plate (E - Fig. 8) and clamp it by tightening the Allen screw (D - Fig. 8) at a tightening torque of **6 Nm - (53 in.lbs).** Cut the excess cable at about two cm. from the clamping screw and protect the end with a cable cap.



8

• Make sure that the screw (G - Fig. 10) is correctly adjusted: by operating the gear lever with the chain on the largest sprocket, the inner plate of the derailleur cage must **NOT** come into contact with the spokes.

• Position the chain on the 5TH sprocket counting from the smallest (4TH for 10s).

• Turn the cable tension adjuster (F - Fig. 9) until perfect alignment is obtained between the centreline of the top roller and the centreline of the 5TH sprocket (4TH for 10s).

• If centering between the centrelines of the roller and the fourth sprocket is not correct, turn the adjuster (F - Fig. 9) 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 (G - Fig. 10) repeatedly (slackening it until the chain is positioned on the largest sprocket without overshifting).

• Make sure that all gear ratios work perfectly.

• Fit the chain on the max. sprocket and on the smallest front chainring.

9

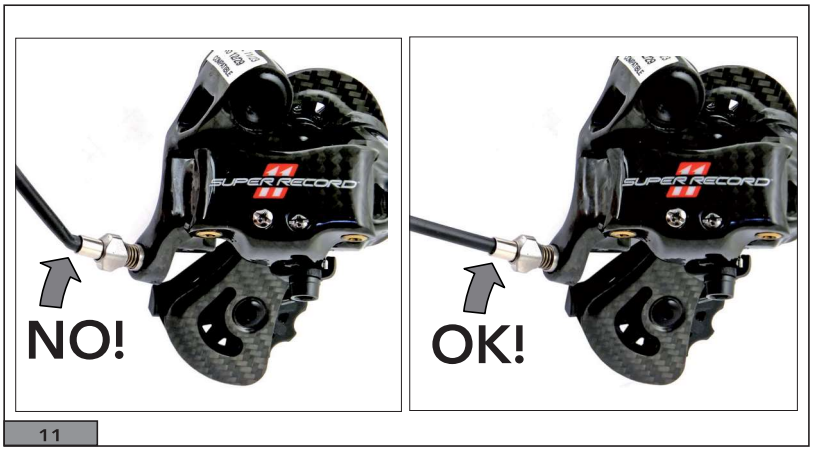
10

⚠ **ATTENTION!**

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

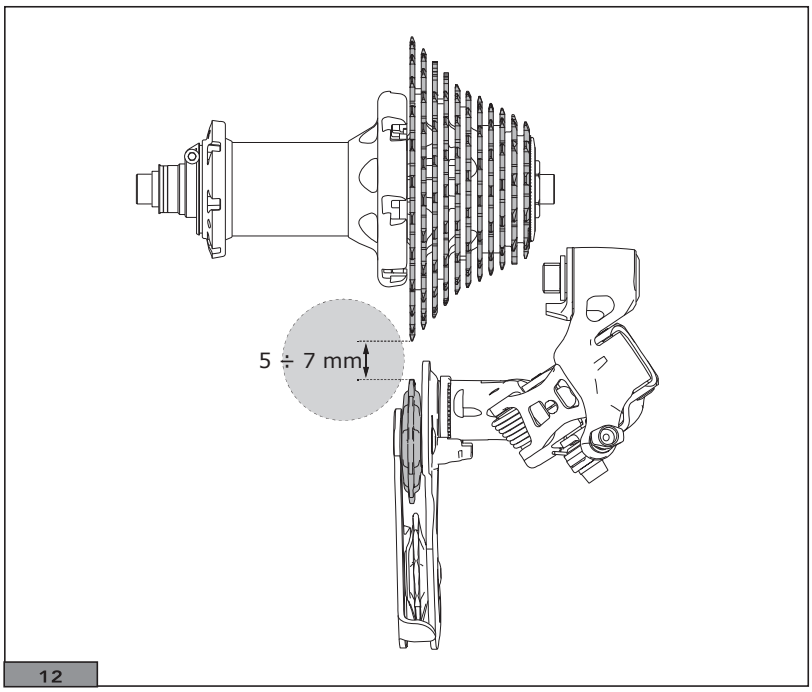
ATTENTION

Use ONLY original Campagnolo housing end (internal diameter 4.3 mm - Fig. 11). Check that no abnormal folds have been created by forcing the cable.



11

Adjust the screw (H – Fig. 10) and position the derailleur cages as in Fig. 12. A distance which is too great or too small compared with the specifications indicated could have a negative impact on snappy shifting.

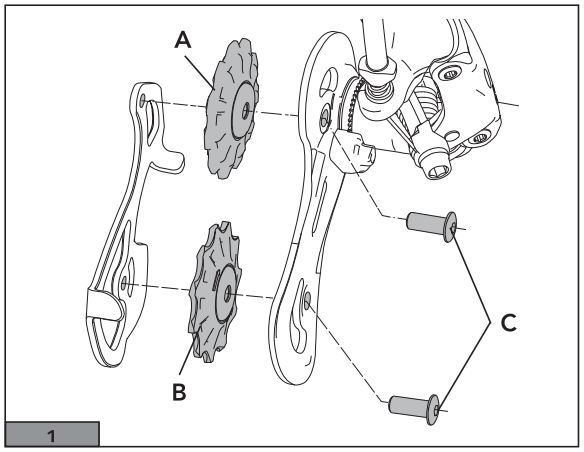


12

5 - MAINTENANCE

• 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 (C - Fig. 1) with a 3 mm Allen screw.

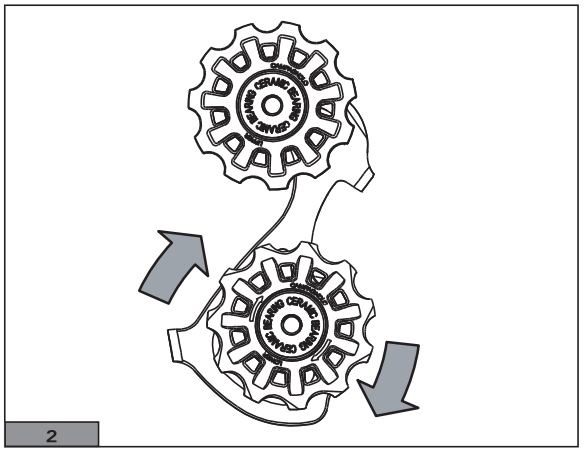
WARNING!
The two rollers are different: on the upper section, fit the roller (A - Fig. 1) marked "UPPER" (with side play); in the lower section, fit the roller (B - Fig. 1) marked "LOWER": it is unidirectional and must be fitted so that it rotates in the direction indicated by the arrows (Fig. 2).



1

WARNING!
Comply with the following specifications when replacing the pulleys:

TIGHTENING TORQUE
11s: 2,7 Nm (24 in.lbs)
10s: 3 Nm (27 in.lbs)


2

• The life of the components depends on conditions of use and on the frequency and quality of maintenance. To keep the components 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.).

• Dirt seriously damage bicycles and their components. Thoroughly rinse, clean and dry your bike after using it in these conditions.

• 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. Dry them using a soft cloth. Never use abrasive or metal pads.

• Before lubricating, thoroughly clean the drive system (chain, sprocket set, chainrings and derailleur pulleys) with a brush or cloth saturated with an appropriate degreaser or detergent.

• Relubricate the components carefully using a lubricant suitable to purpose.

• 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.

• 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.

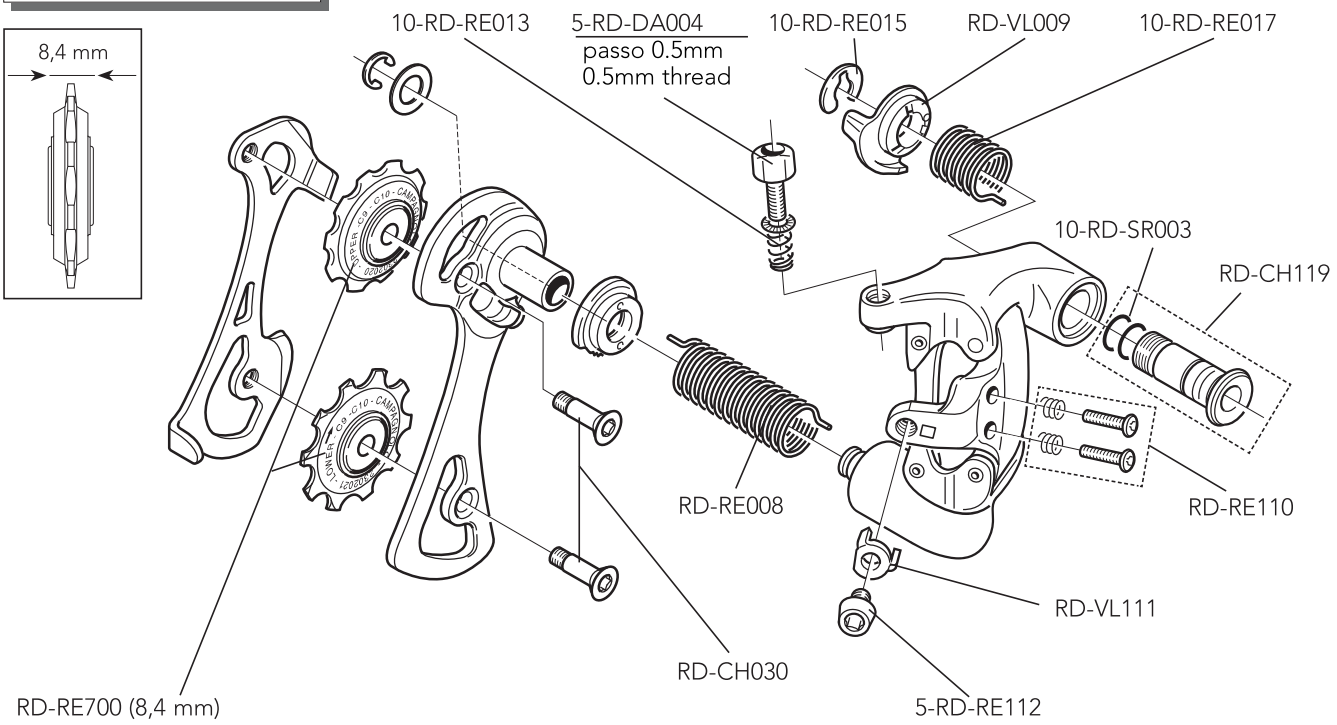
• At the end of the lubrication operation, CAREFULLY degrease rims and brake pads.

⚠ **WARNING!**

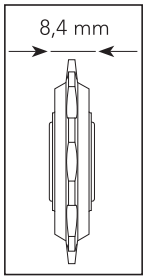
Traces of lubricant on the rims and brake pads can reduce or eliminate the braking capabilities of your bicycle, resulting in an accident, personal injury or death.

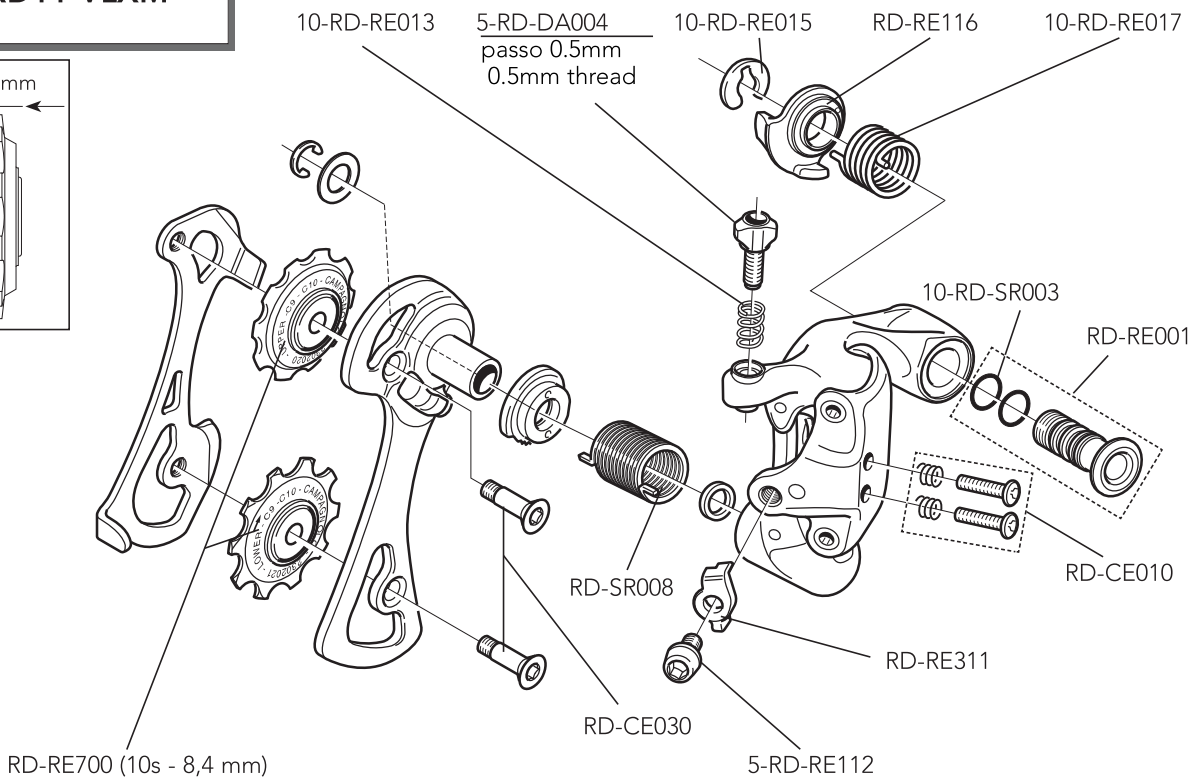
6 - SPARE PARTS

COMP TRIPLE™ 10s
RD7-COXL

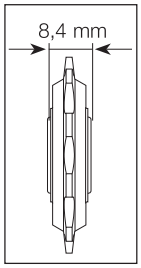


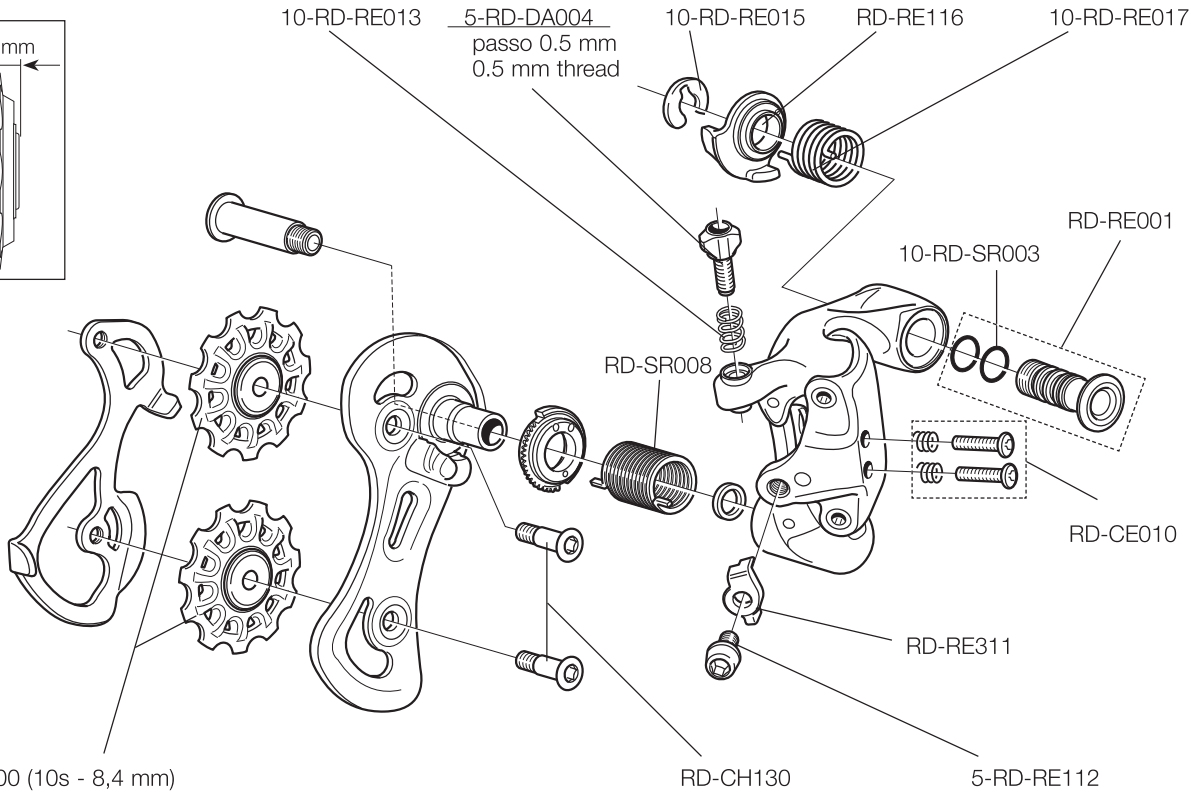
VELOCE™ 10s
RD11-VLXS
RD11-VLXM



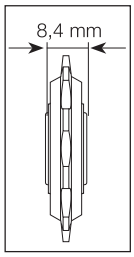


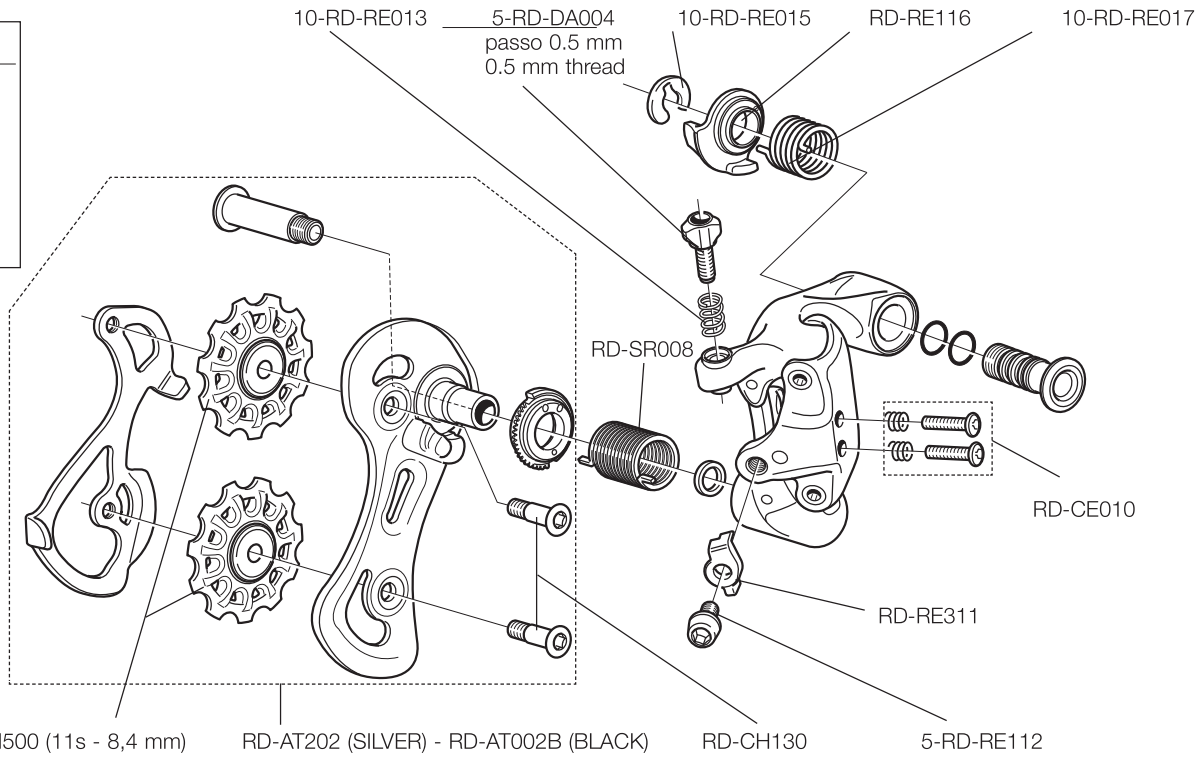
CENTAUR™ 10s
RD11-CEX
RD12-CERBX



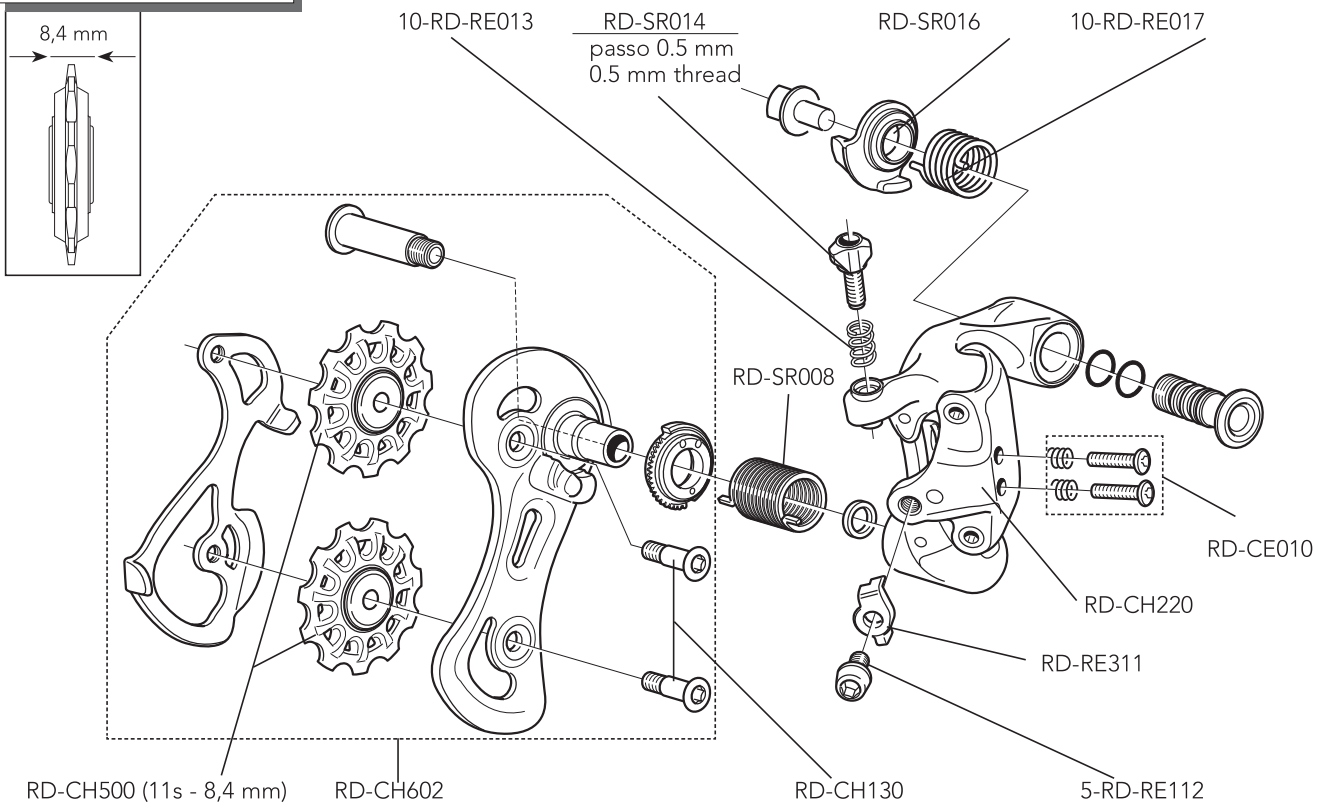


ATHENA™ 11s
RD11-AT1

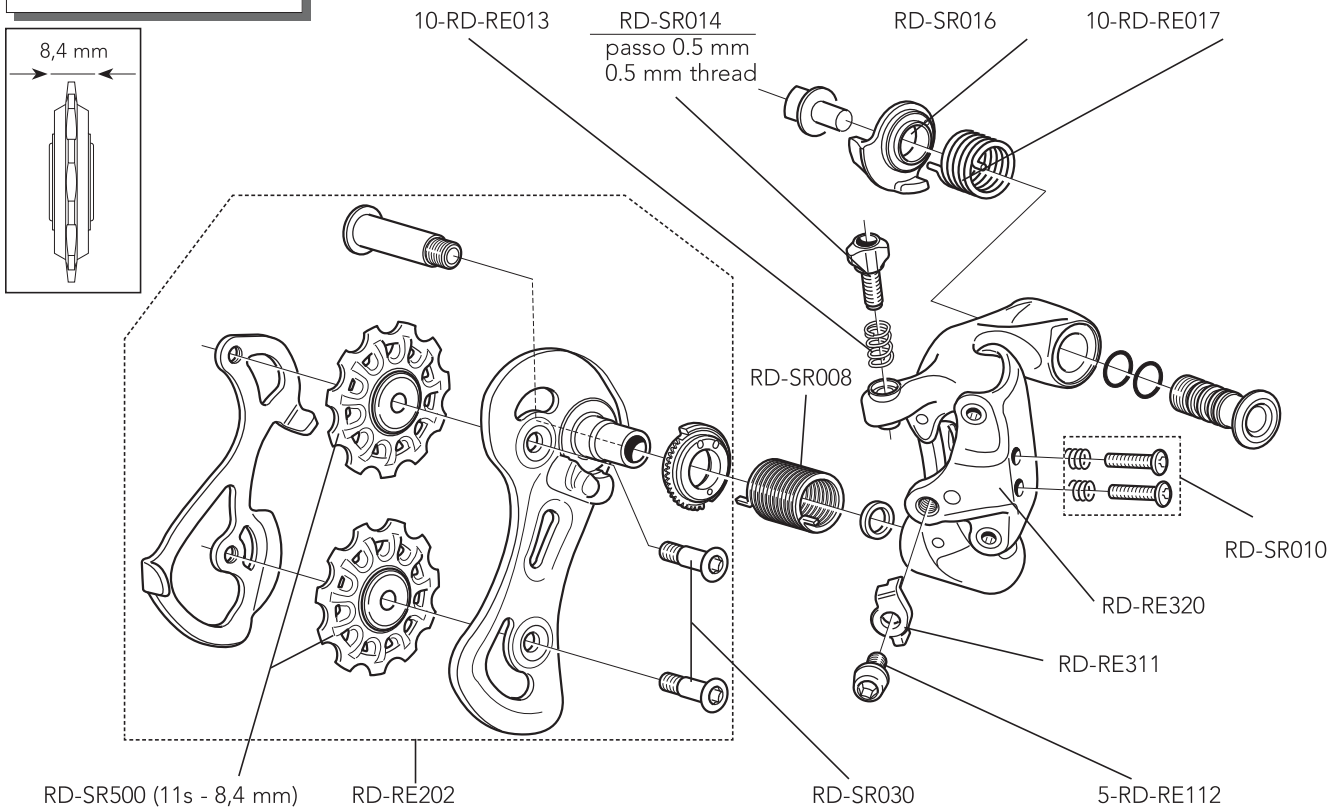




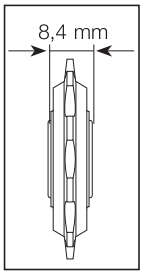
CHORUS™ 11s
RD11-CH1

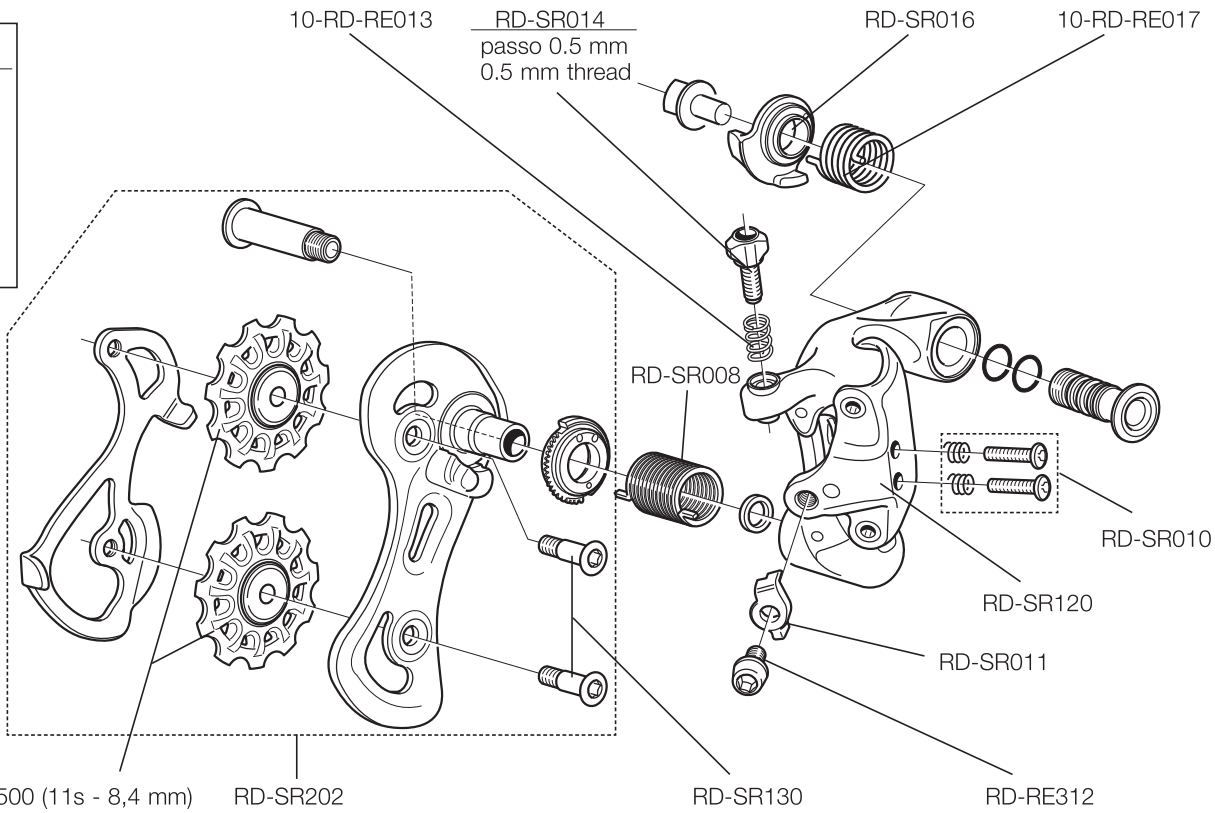


RECORD™ 11s
RD11-RE1



SUPER RECORD™11s
RD11-SR1





BRAKES

1 - TECHNICAL SPECIFICATIONS

BRAKES	FRONT	REAR
VELOCE	dual pivot	dual pivot
CENTAUR	dual pivot	dual pivot
ATHENA SKELETON*	dual pivot	mono pivot (dual pivot opt.)
CHORUS SKELETON*	dual pivot	mono pivot (dual pivot opt.)
RECORD SKELETON*	dual pivot	mono pivot (dual pivot opt.)
SUPER RECORD SKELETON*	dual pivot	mono pivot (dual pivot opt.)
* Differentiated braking		

1.6 mm brake fixing cables

2 - COMPATIBILITY

	CENTAUR / VELOCE BRAKES	SKELETON BRAKES
In order to assure full compatibility with various frame thicknesses, brakes are available in three versions:	with **10 mm** socket-head nut (standard)	with **13,5 mm** socket-head nut (standard)
	with **18 mm** socket-head nut (long)	with **18,5 mm** socket-head nut (long)
	with **25 mm** socket-head nut (extralong)	with **24 mm** socket-head nut (extralong)

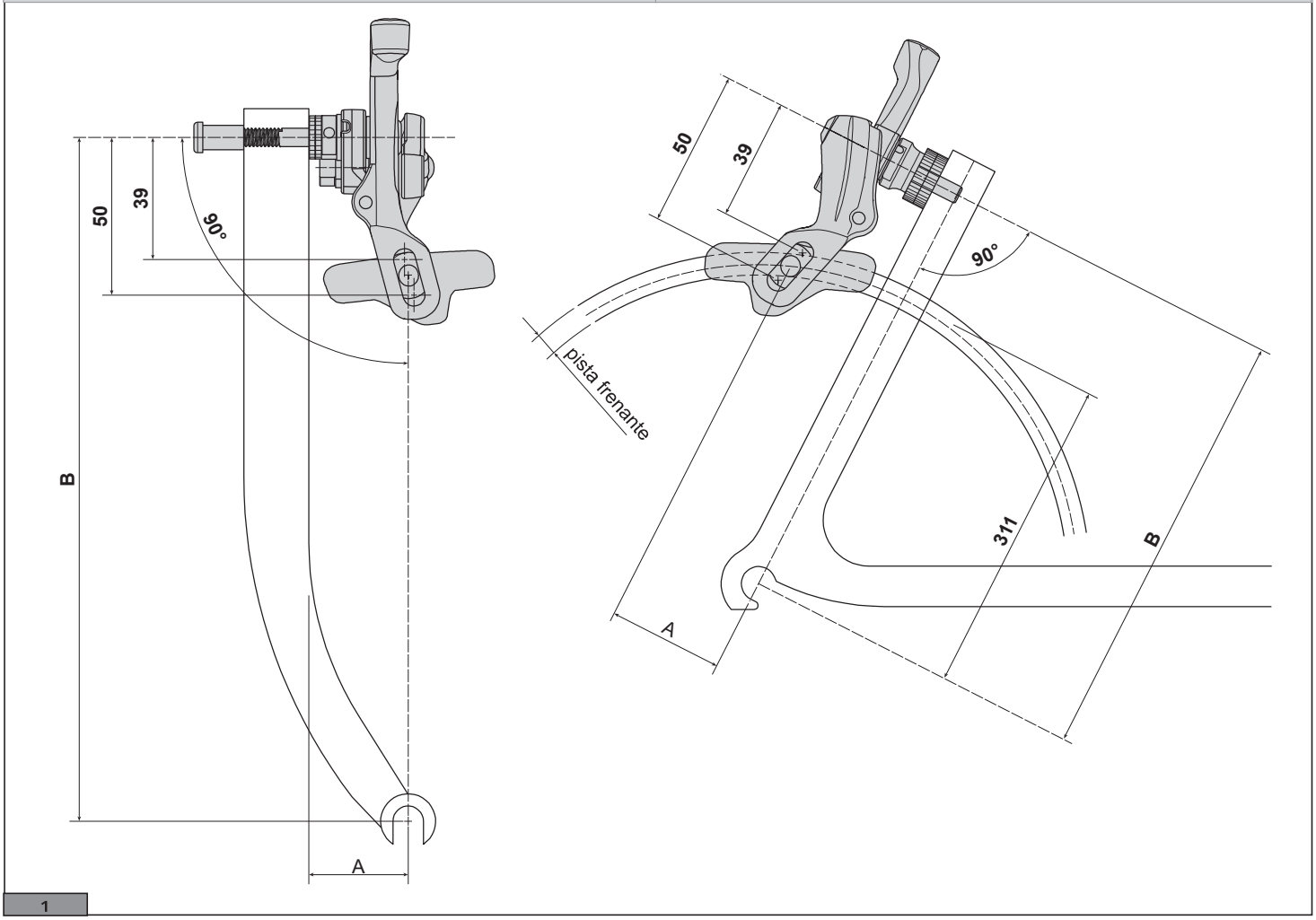
BRAKE PADS	COMPOSITE RIMS	ALUMINUM RIMS
BR-BO500 / BR-BO500X	**Only for composite rims.** The use of any other pad-rim combination could result in insufficient or uneven braking and lead to accidents, physical injury or death.	
BR-RE700		**Only for aluminium rims.** The use of any other pad-rim combination could result in insufficient or uneven braking and lead to accidents, physical injury or death.

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 - INTERFACE WITH THE FRAME

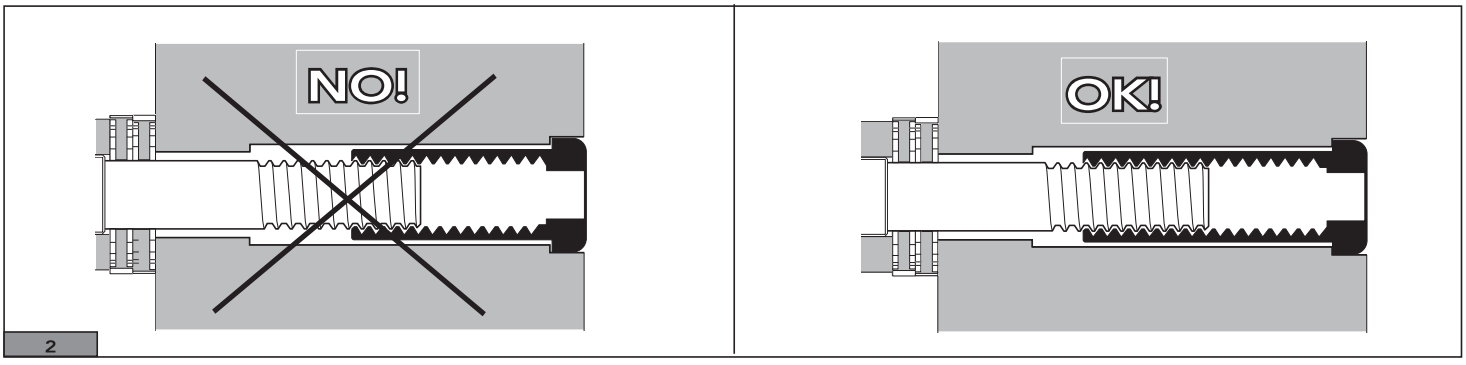
"B" FRONT: 352 - 361 mm	**"B" REAR:** 350 - 359 mm



1

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.



2

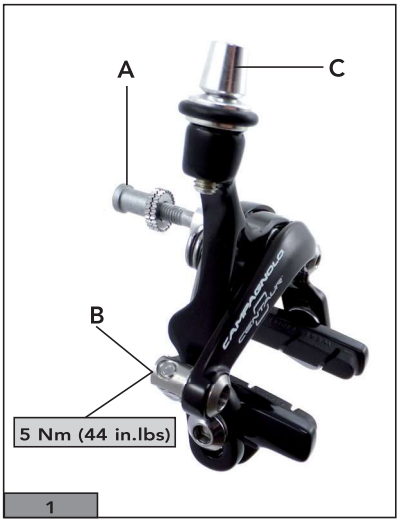
⚠ WARNING!

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. 2). 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 - CENTAUR - VELOCE BRAKES ASSEMBLY

• Fit the brake on the frame or the fork and tighten the socket-head nut (A - Fig. 1) using a 5 mm Allen wrench.

• Secure the cable by tightening the cable retainer screw (B - Fig. 1) with a 5 mm Allen wrench or Torx T25 wrench to a torque of **5 N.m (44 in.lbs).**



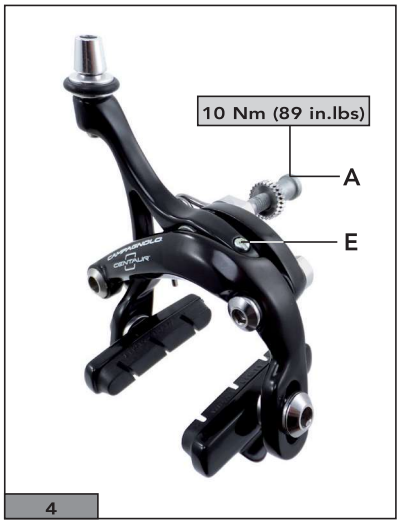
⚠ WARNING!

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.

• 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. 1).

• Secure firmly the brake to the frame by tightening the nut (A - Fig. 4) with a torque wrench to (**10 Nm - 89 in.lbs**).



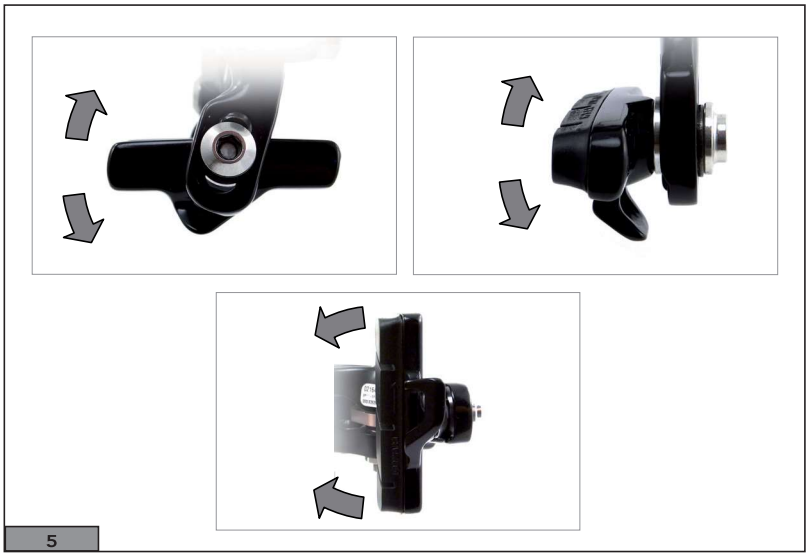
⚠ WARNING!

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

• If your brakes are fitted with the adjustment screw (E - Fig. 4), then correct centering (Fig. 3), using a Phillips screwdriver.

• 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. 1). 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. 5): 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.



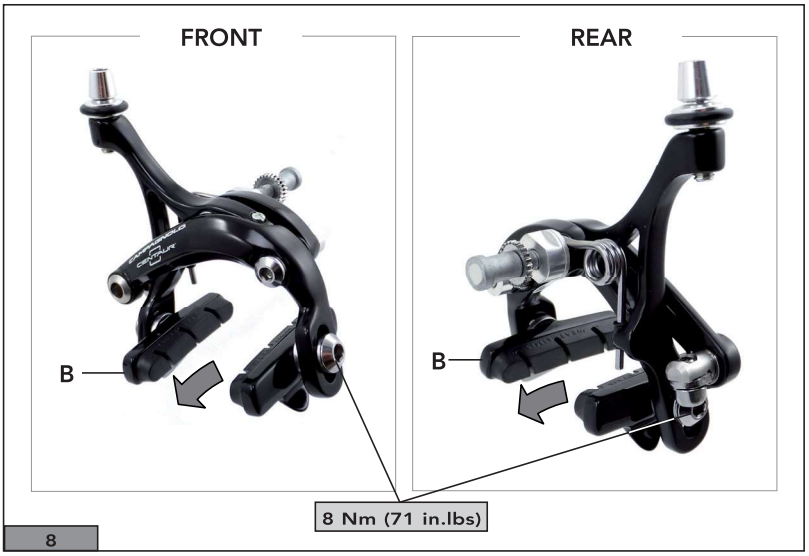
⚠ WARNING!

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.

• Clamp the pad-holders by tightening the 5 mm Allen screw or Torx T25 screw (Fig. 8) to a torque of **8 Nm (71 in.lbs).**

⚠ DANGER!

For brakes equipped with pad-holders, always make sure that the closed part of the pad-holder (B) faces in the driving direction, as shown in figure 8.
Incorrect installation of the pad-holder may cause the pad to slip out of the holder, resulting in an accident, personal injury or death.

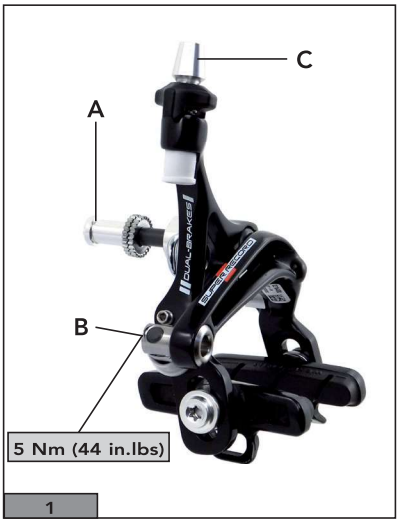


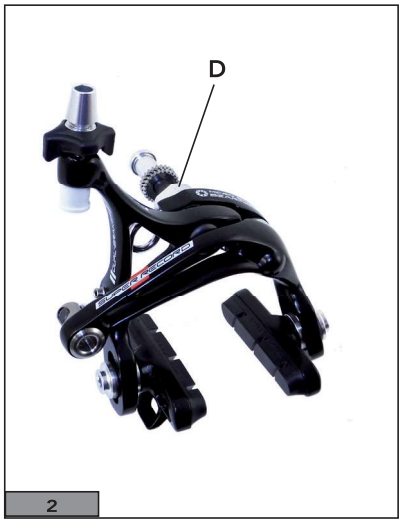
5 - SKELETON BRAKES ASSEMBLY

• Fit the brake on the frame or the fork and tighten the socket-head nut (A - Fig. 1) using a 5 mm Allen wrench.
• Secure the cable by tightening the cable retainer screw (B - Fig. 1) with a 5 mm Allen wrench or Torx T25 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.





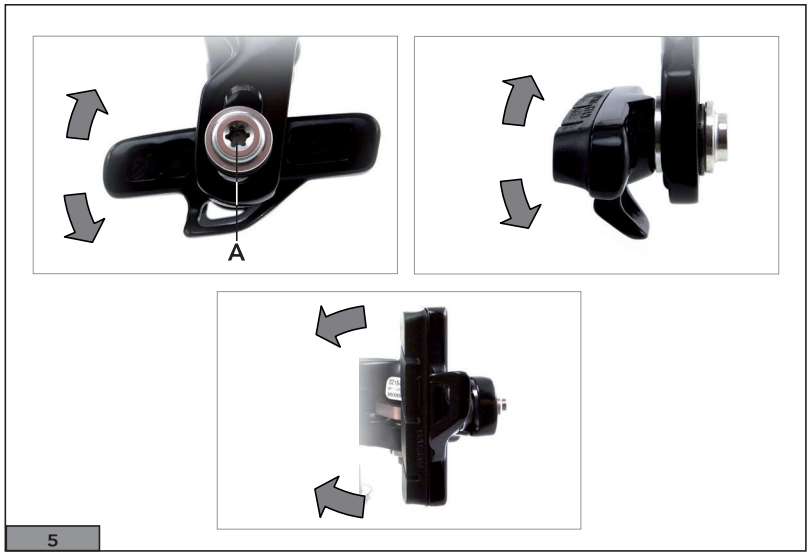
• Initially center the brake in relation to the wheel using the lock-nut (D - Fig. 2) and a 15 mm open end wrench in order to position the brake pads about 1 mm from the surface of the rim (Fig. 3).
If necessary, perform fine adjustment using the cable tension adjustment screw (C - Fig. 4).

• For pad-holders equipped with orbital articulation which can be oriented in all directions (Fig. 5): 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.

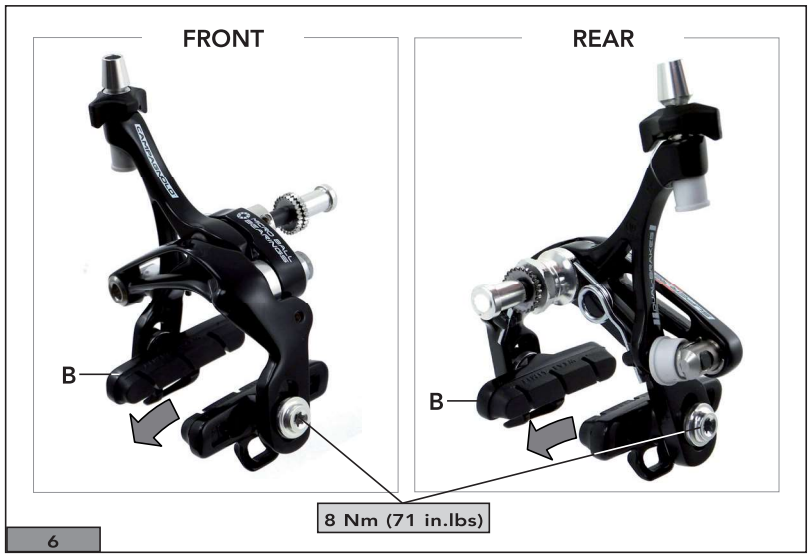
• Clamp the pad-holders by tightening the 5 mm Allen screw or Torx T25 screw (A - Fig. 5) to a torque of **8 Nm (71 in.lbs).**



5

⚠ DANGER!

For brakes equipped with pad-holders, always make sure that the closed part of the pad-holder (B) faces in the driving direction, as shown in figure 6.
Incorrect installation of the pad-holder may cause the pad to slip out of the holder, resulting in an accident, personal injury or death.



6

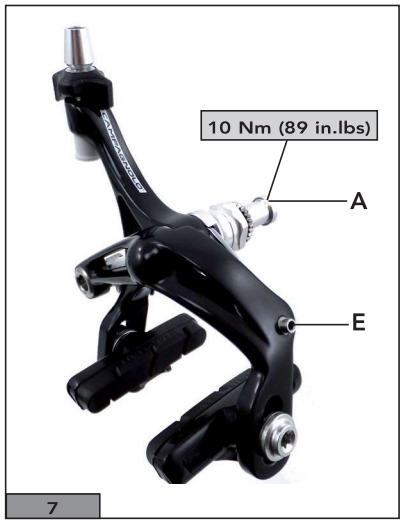
• Secure firmly the brake to the frame by tightening the nut (A - Fig. 7) with a torque wrench to **10 Nm (89 in.lbs).**

⚠ WARNING!

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

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

• If your brakes are fitted with the recall spring tension adjustment screw (F - Fig. 8) 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.



7

8

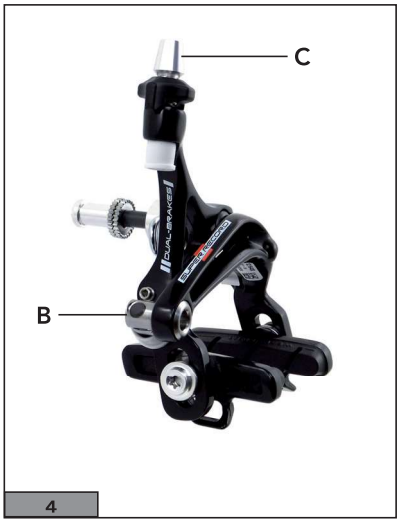
6 - BRAKE MAINTENANCE

• 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 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.

• 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.

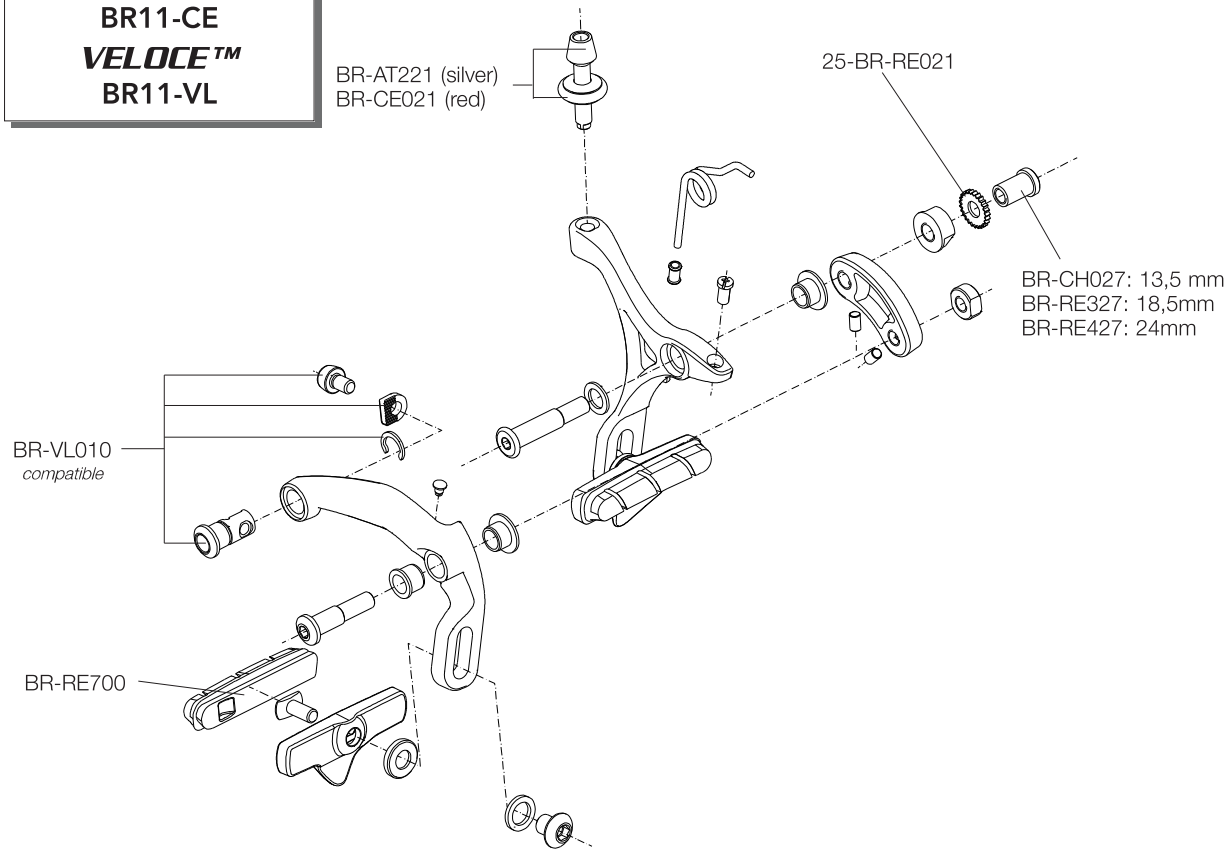
• When riding in wet conditions, remember that the stopping power of your brakes is greatly reduced and that the adherence of the tires on the ground is considerably reduced. This makes it harder to control and stop your bicycle. Extra care is required when riding your bicycle in wet conditions to avoid an accident.

⚠ WARNING!

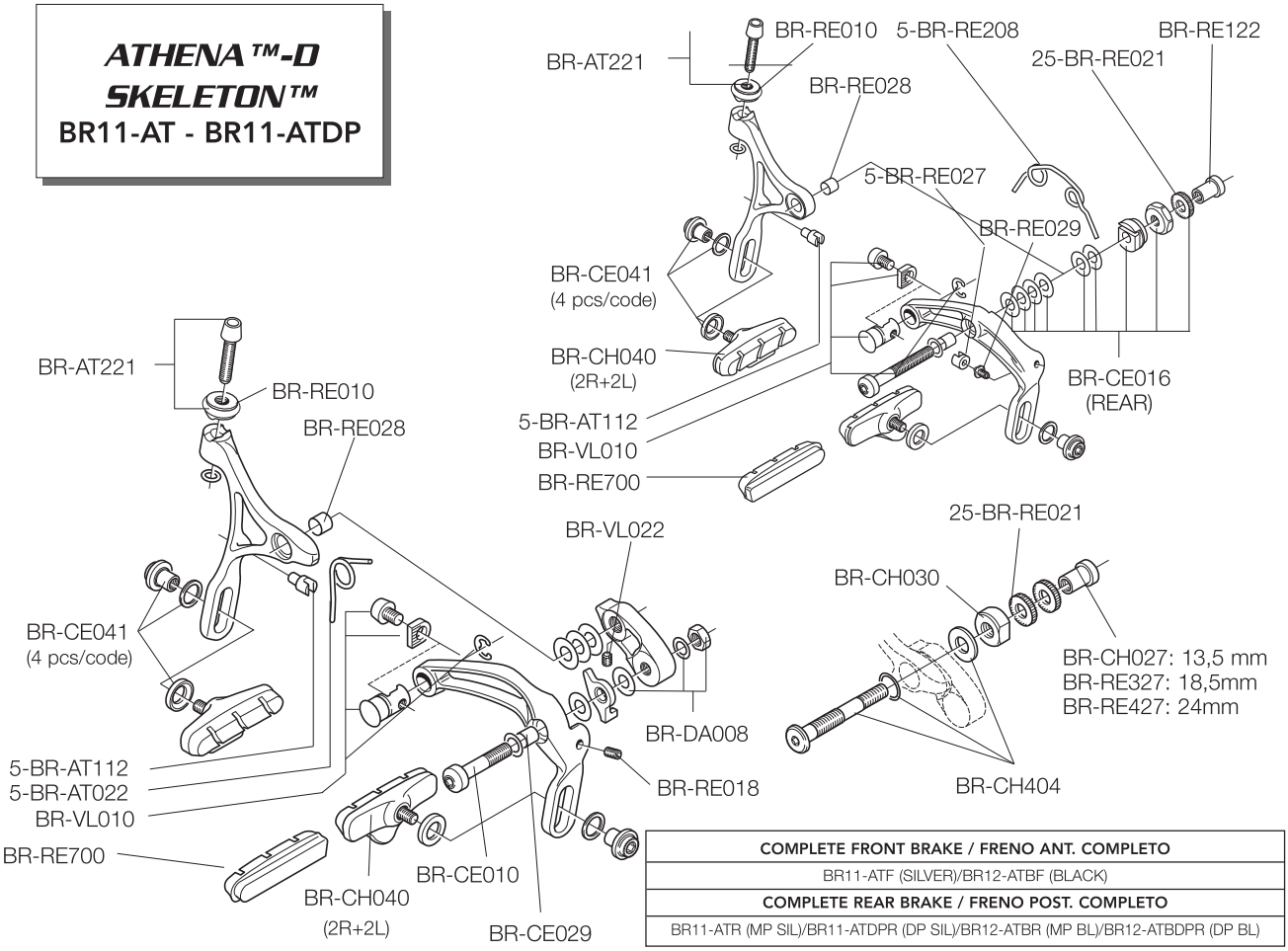
Salt water environments (as found on winter roads and near the seaside) can cause galvanic corrosion on most bike parts. Carefully rinse, clean, dry and re-lubricate all exposed parts to avoid damage, malfunctions and accidents.

7 - SPARE PARTS

CENTAUR™
BR11-CE
VELOCE™
BR11-VL

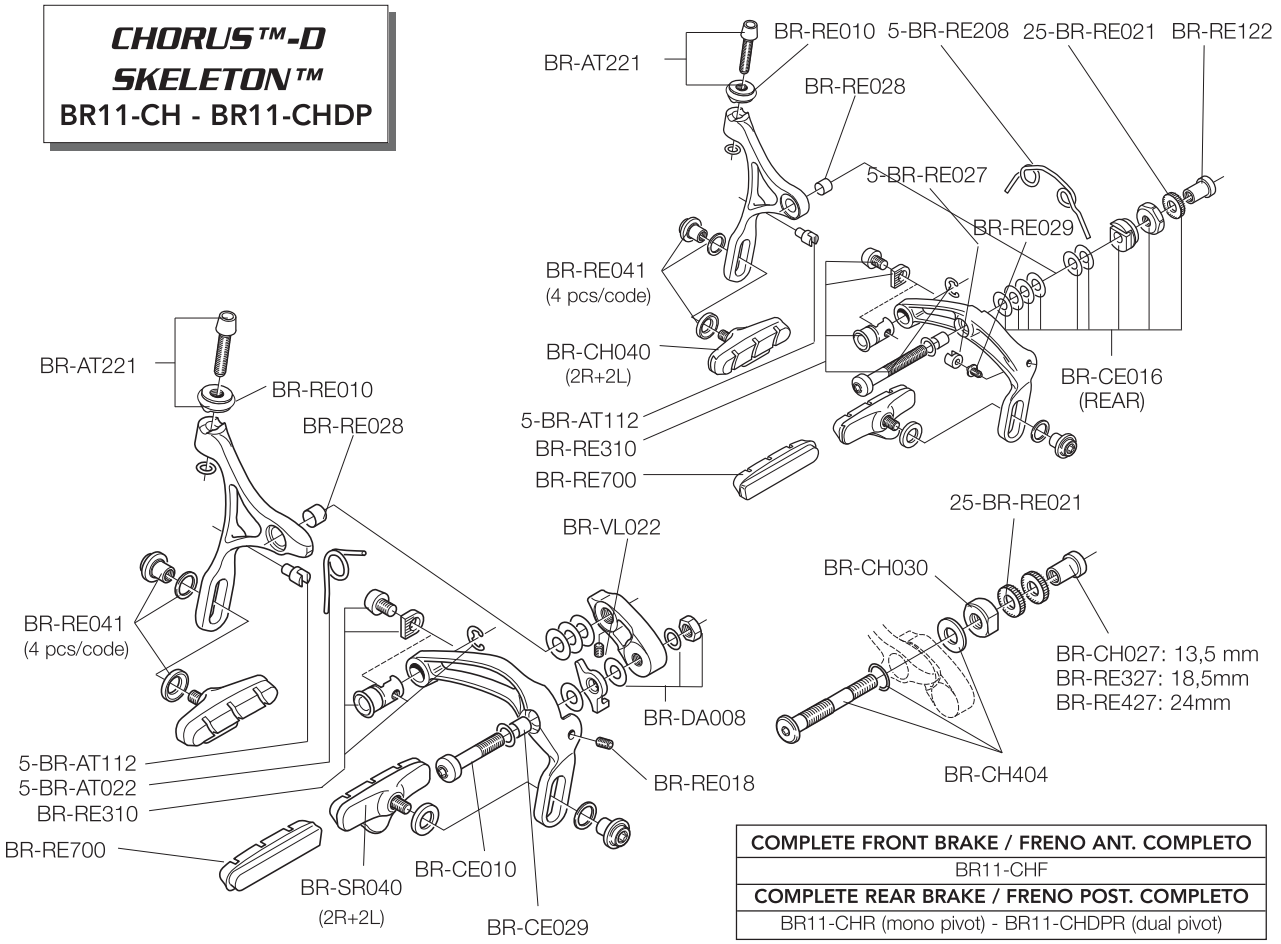


ATHENA™-D
SKELETON™
BR11-AT - BR11-ATDP



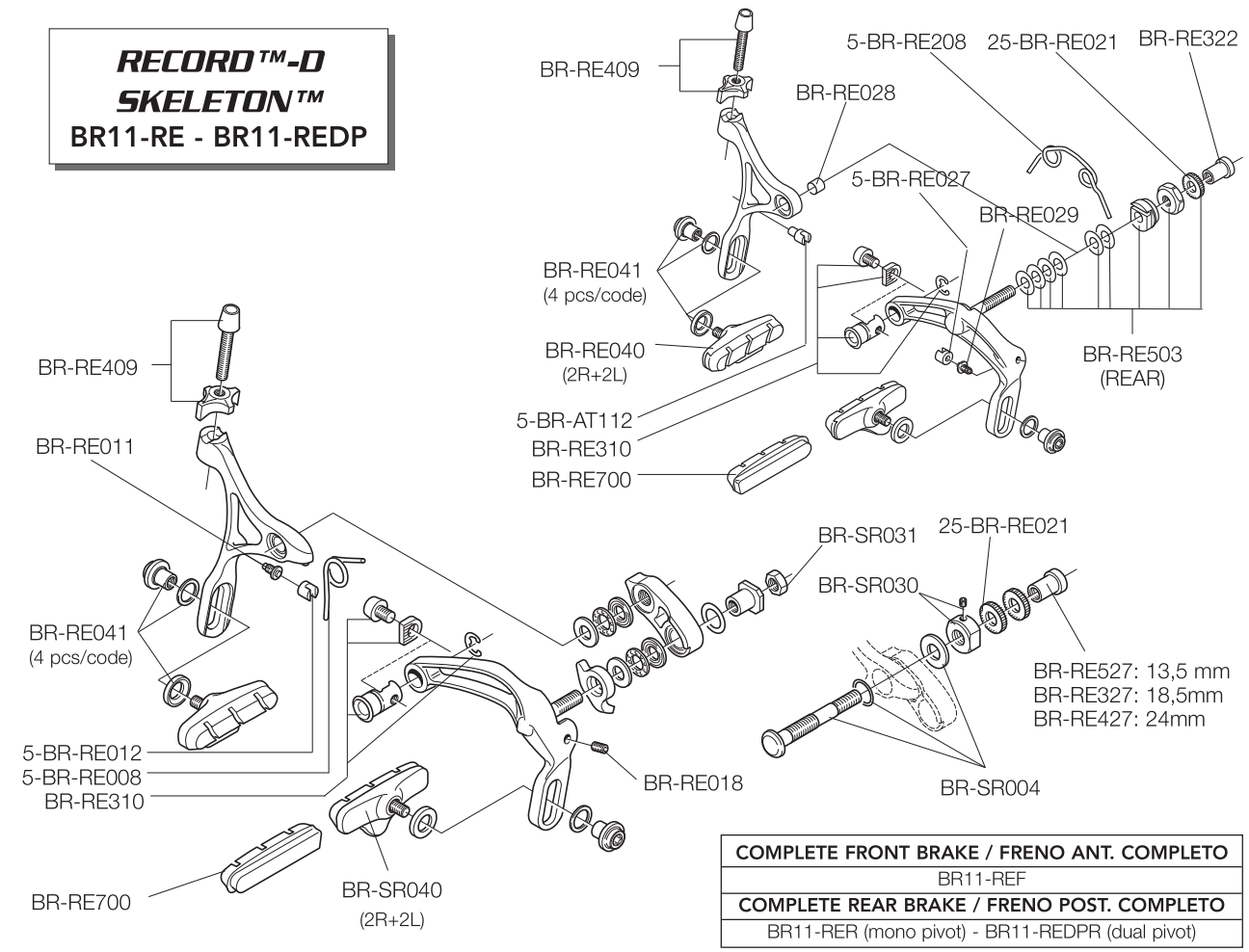
COMPLETE FRONT BRAKE / FRENO ANT. COMPLETO
BR11-ATF (SILVER)/BR12-ATBF (BLACK)
COMPLETE REAR BRAKE / FRENO POST. COMPLETO
BR11-ATR (MP SIL)/BR11-ATDPR (DP SIL)/BR12-ATBR (MP BL)/BR12-ATBDPR (DP BL)

CHORUS™-D SKELETON™
BR11-CH - BR11-CHDP



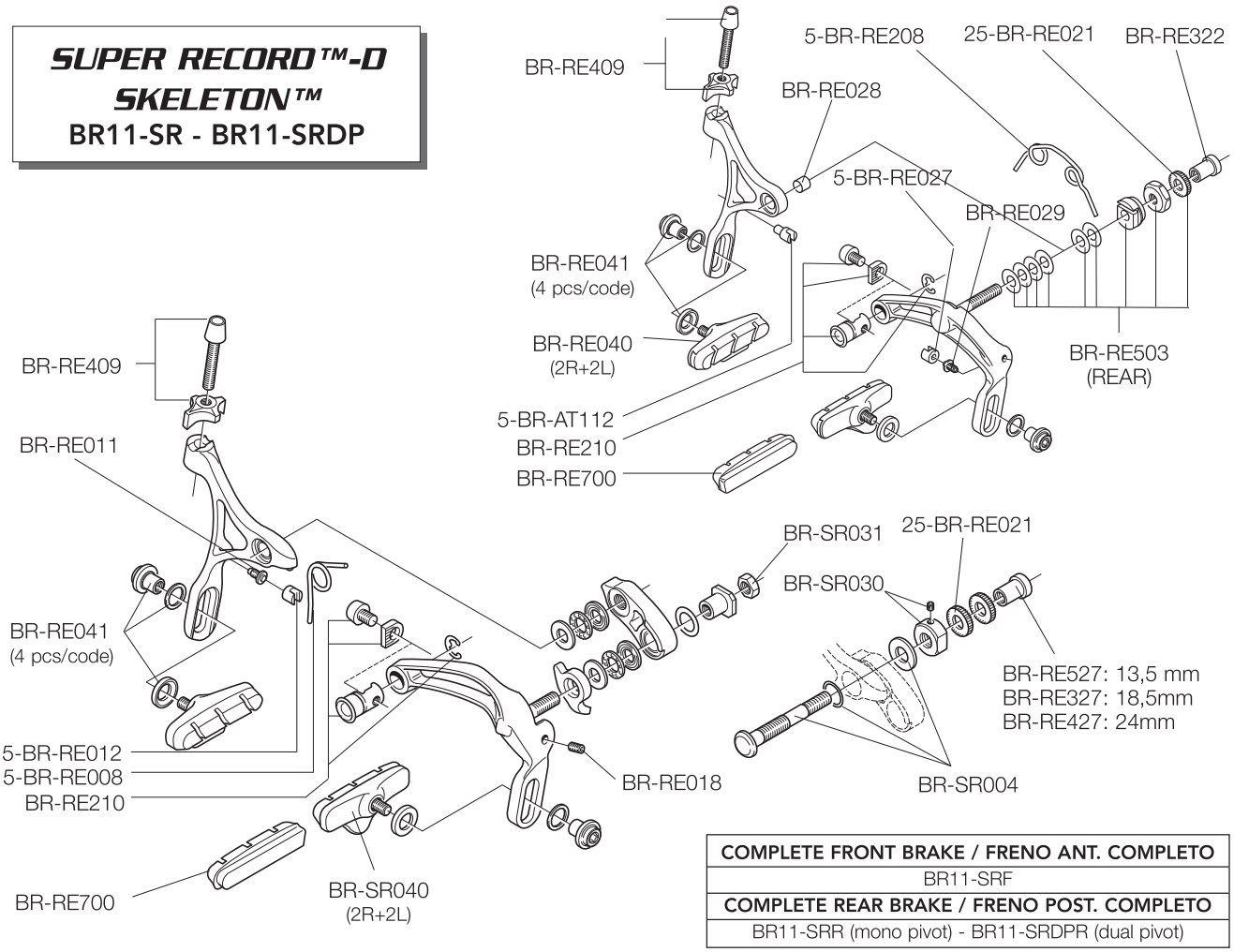
COMPLETE FRONT BRAKE / FRENO ANT. COMPLETO
BR11-CHF
COMPLETE REAR BRAKE / FRENO POST. COMPLETO
BR11-CHR (mono pivot) - BR11-CHDPR (dual pivot)

RECORD™-D SKELETON™
BR11-RE - BR11-REDP



COMPLETE FRONT BRAKE / FRENO ANT. COMPLETO
BR11-REF
COMPLETE REAR BRAKE / FRENO POST. COMPLETO
BR11-RER (mono pivot) - BR11-REDPR (dual pivot)

SUPER RECORD™-D SKELETON™
BR11-SR - BR11-SRDP



COMPLETE FRONT BRAKE / FRENO ANT. COMPLETO
BR11-SRF
COMPLETE REAR BRAKE / FRENO POST. COMPLETO
BR11-SRR (mono pivot) - BR11-SRDPR (dual pivot)

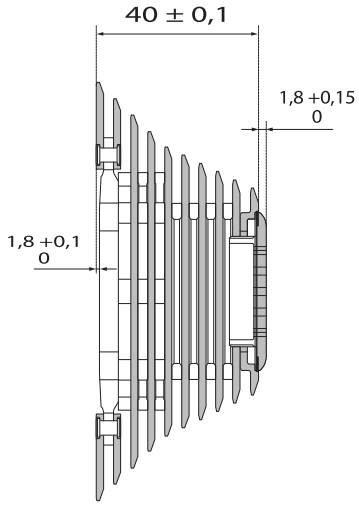
SPROCKETS

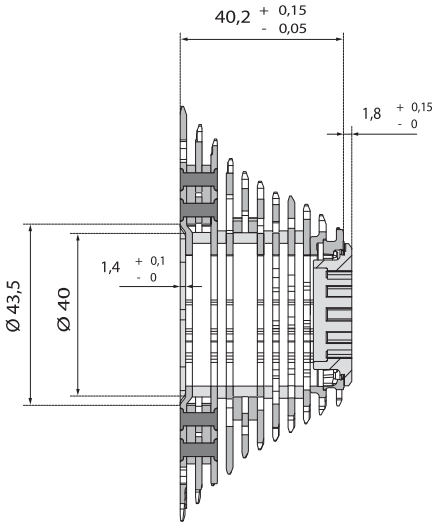
1 - TECHNICAL SPECIFICATIONS

10s
MIN. SPROCKET 11
MAX. SPROCKET 29
TIGHTENING TORQUE 50 Nm (443 in.lbs)


11s
MIN. SPROCKET 11
MAX. SPROCKET 29
TIGHTENING TORQUE 40 Nm (354 in.lbs)


2 - COMPATIBILITY

10s
SPACERS: 10s
CHAIN: 10s Ultra Narrow
FIXING RING: 10s
REAR HUB: 10s


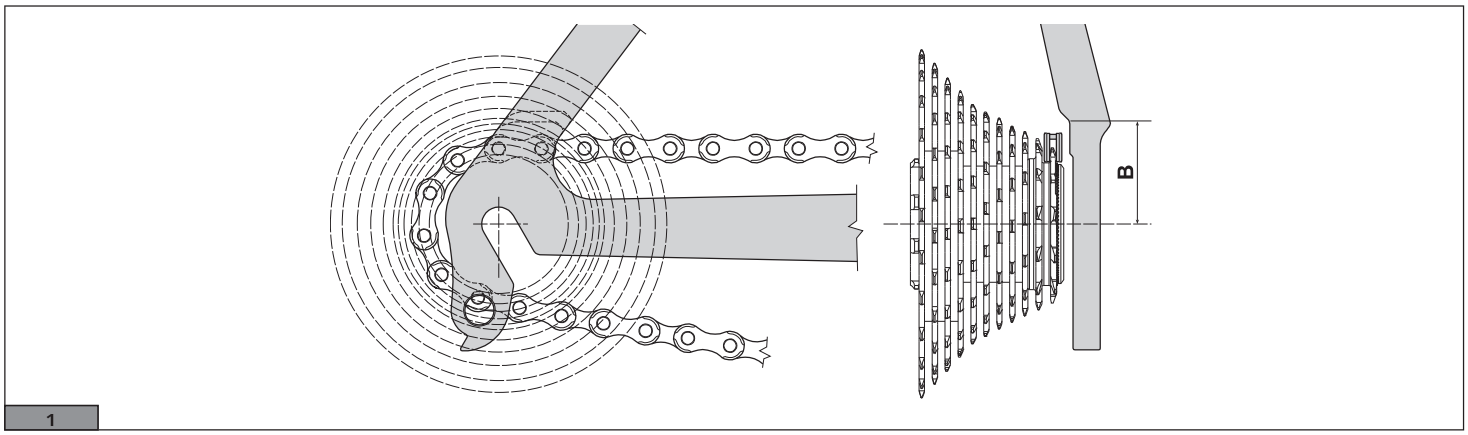
11s
SPACERS: 11s
CHAIN: 11s
FIXING RING: 11s
REAR HUB: 10s


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 - INTERFACE WITH THE FRAME

N° TEETH	B (Fig. 4)
Z 11	30 mm
Z 12	30 mm
Z 13	32 mm

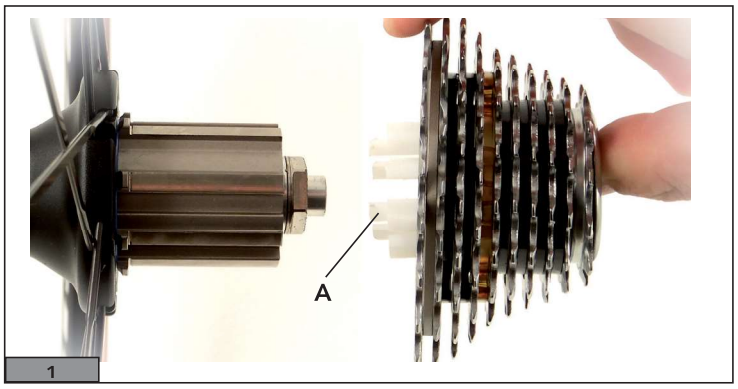


1

4 - 10s SPROCKETS ASSEMBLY

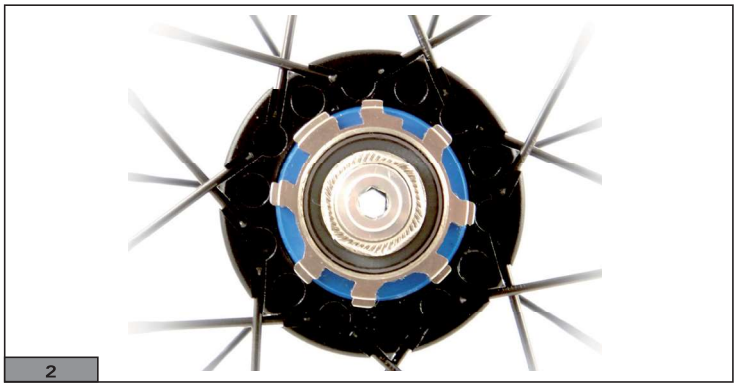
• The sprockets are pre-assembled and timed on the plastic support (A - Fig. 1).

• 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. 1).

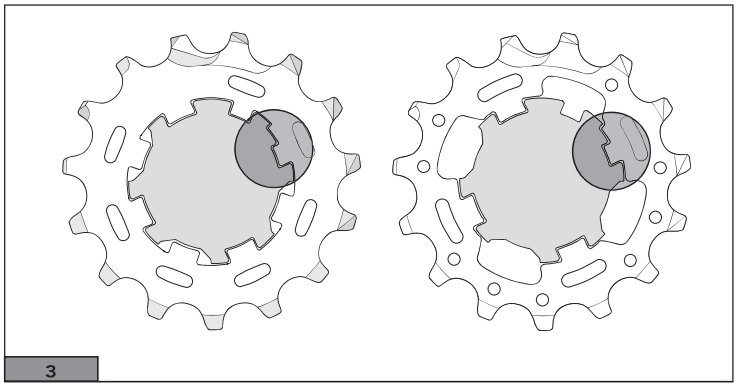


1

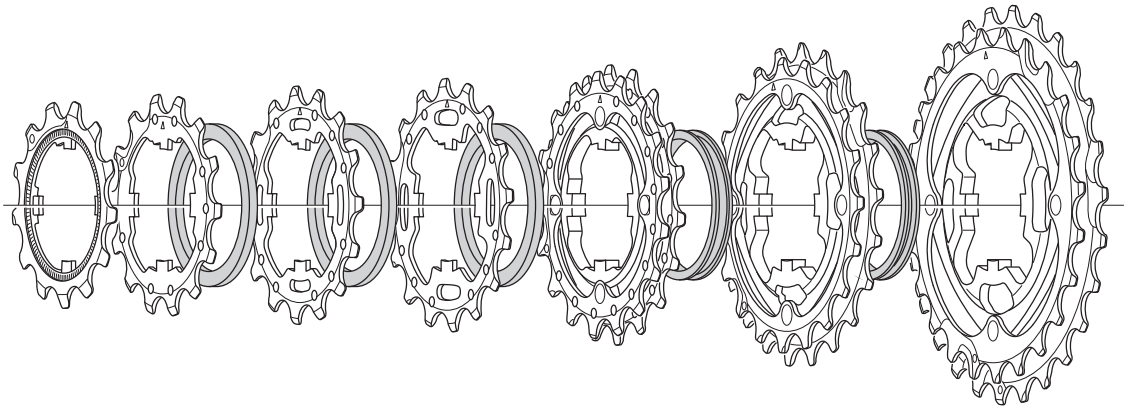
• If installing the sprockets without the plastic support, install the individual or preassembled sprockets and the spacers on the sprocket body of the hub aligning the spline patterns (Fig. 2).


2

• The profile of the freewheel body with two asymmetrical grooves (Fig. 3) ensures automatic sprocket timing since there is only one assembly option.


3

SPACERS
N = 2,4 mm
O = 2,55 mm
P = 1,6 mm
Q = 2,4 mm

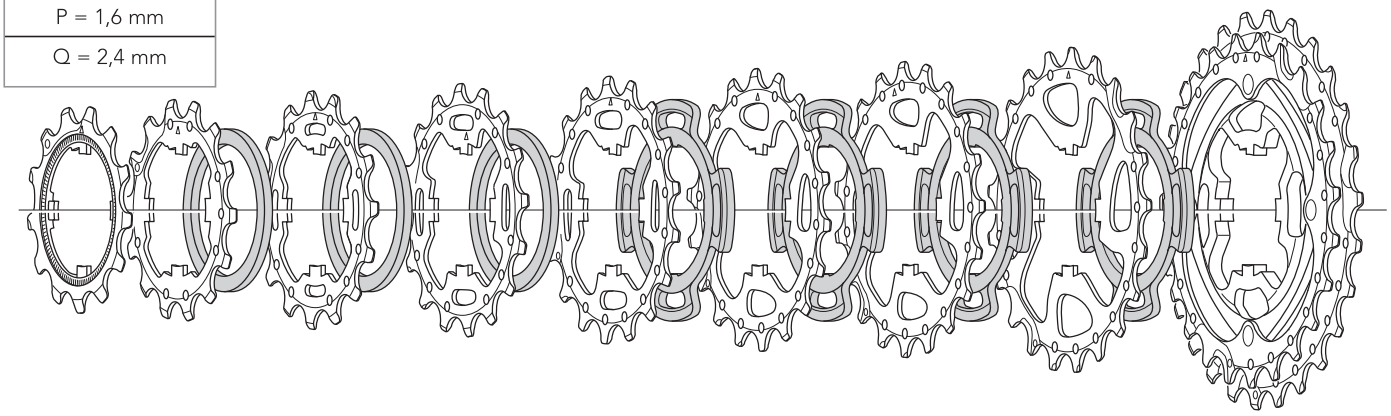


11-25	11A-1°	12A-2°		13A	Q	14A	Q	15A	Q	17G	O	19G	N	21G	N	23G	P	25G
12-23	12A-1°	13A	Q	14A	Q	15A	Q	16A	Q	17A	O	18C	N	19C	N	21C	P	23C
12-25	12A-1°	13A	Q	14A	Q	15A	Q	16A	Q	17A	O	19A	N	21A	N	23A	P	25A
13-26	13A-1°	14A	Q	15A	Q	16A	Q	17A	N	18C	O	19C	N	21C	N	23C	P	26C
13-29	13A-1°	14A	Q	15A	Q	16A	Q	17A	N	19A	O	21A	N	23A	N	26A	P	29A
14-23	14A-1°	15A	Q	16A	Q	17A	Q	18C	N	19C	O	20D	N	21D	N	22D	P	23D

4

Pay attention to the exact assembly order of the spacers (Fig. 4).

SPACERS
N = 2,4 mm
O = 2,55 mm
P = 1,6 mm
Q = 2,4 mm



11-23	11A-1°	12A-2°		13A	Q	14A	Q	15A	Q	16A		17A	N	19A	M	21A-23A*
11-25	11A-1°	12A-2°		13A	Q	14A	Q	15A	Q	17G	O	19G	N	21G	M	23G-25G*
12 -25	12A-1°	13A	Q	14A	Q	15A	Q	16A	Q	17A	O	19A	N	21A	M	23A-25A*
13-26	13A-1°	14A	Q	15A	Q	16A	Q	17A	N	18C	O	19C	N	21C	M	23C-26C*
13-29	13A-1°	14A	Q	15A	Q	16A	Q	17A	N	19A	O	21A	N	23A	M	26A-29A*

* pre-assembled

5

Pay attention to the exact assembly order of the spacers (Fig. 5).

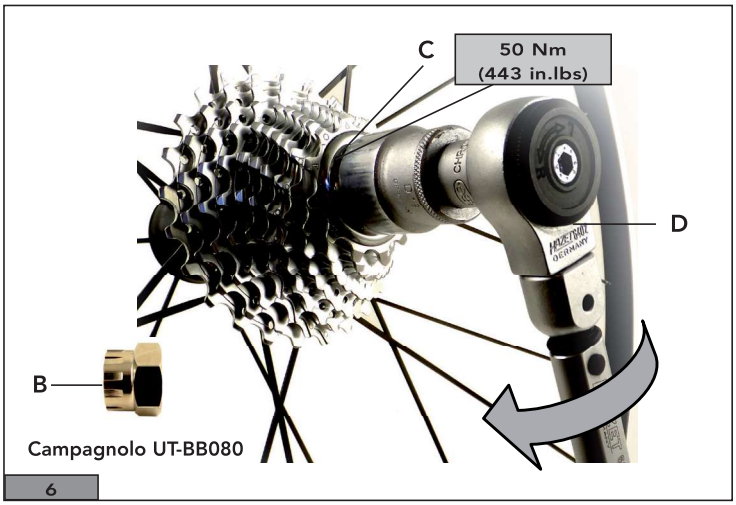
• Using a torque wrench (D - Fig. 6) equipped with Campagnolo® tool UT-BB080 (B - Fig. 6), tighten the lockring (C - Fig. 6), which is provided with the Campagnolo hubs® and wheels, on to the freewheel body to **50 Nm (443 in.lbs)**.

Note

The lockring (C - Fig. 6) supplied with the hub is not compatible with Campagnolo® sprocket sets starting from Z = 11 that are sold with their special lockring.

NOTE

• Use Campagnolo® 10 Speed sprockets and spacers only.
• There are two types of 12A sprockets for 10 Speed:
- First type with knurling for the first position.
- Second type without knurling for the second position (for sprocket assemblies starting from Z=11).



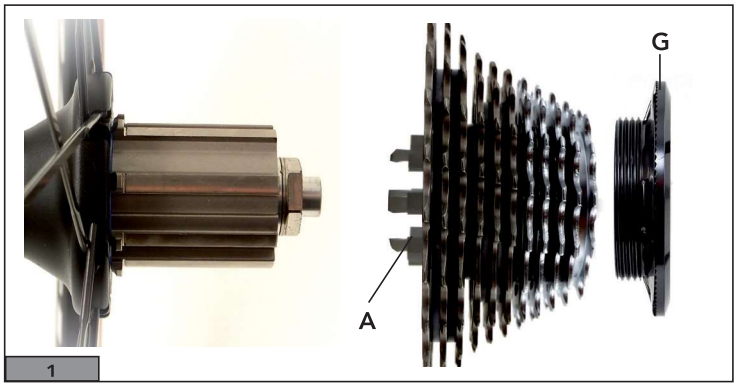
6

WARNING!

With the 10s Campagnolo® sprockets use ONLY the specific lockring. Be sure to use the correct size lockring to properly tighten the assembly. An incorrect lockring could cause failure to the assembly, resulting in an accident, personal injury, or death.

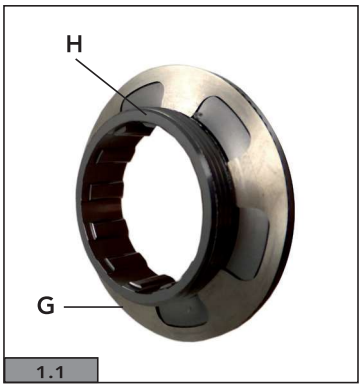
5 - 11s SPROCKETS ASSEMBLY

• The sprockets are pre-assembled and timed on the plastic support (A - Fig. 1). The ring G (Fig. 1.1) is provided with a preassembled washer (H); ensure that it is positioned as in fig. 1.
• Remove the ring (G - Fig. 1).

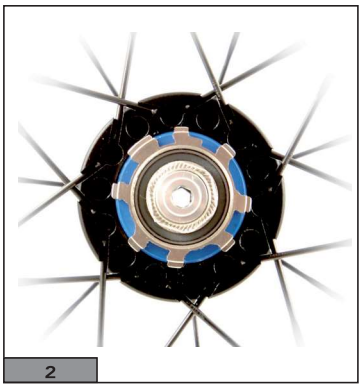


1

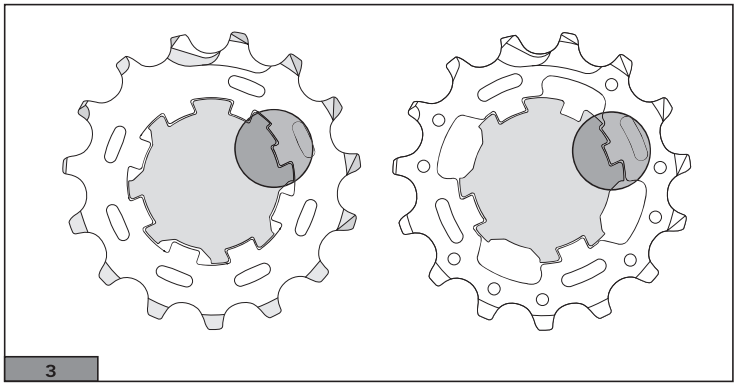
• Insert the support on the side of the freewheel body, align the spline patterns, press the sprockets onto the freewheel and extract the support (A) from the hub (Fig. 1).
• If installing the sprockets without the plastic support, install the individual or preassembled sprockets and the spacers on the sprocket body of the hub aligning the spline patterns (Fig. 2).



1.1

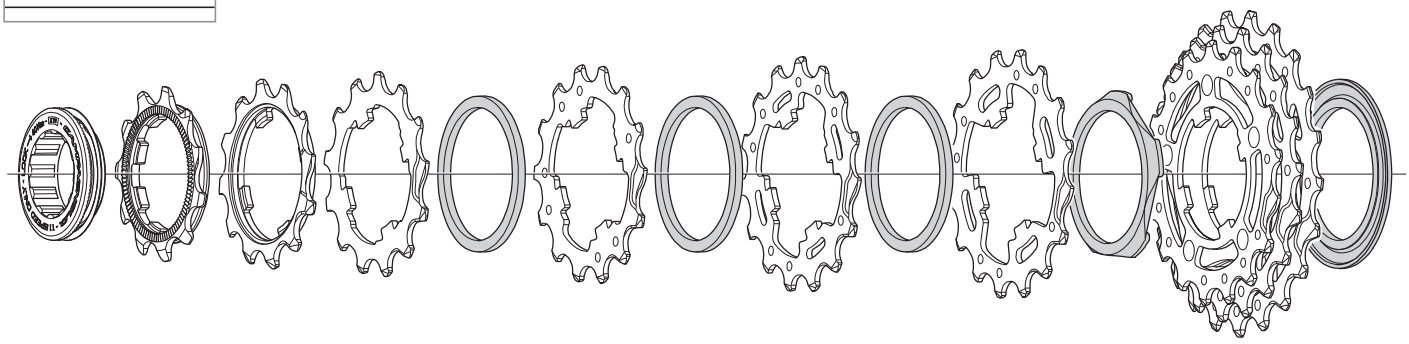

2

The profile of the freewheel body with two asymmetrical grooves (Fig. 3) ensures automatic sprocket timing since there is only one assembly option.


3

SPACERS
F = 2,2 mm
G = 2,3 mm

GHIBLI



11 - 21	11A-1°	12A-2°	13A	F	14A	F	15A	F	16A	G	17A-19A-21A*	H

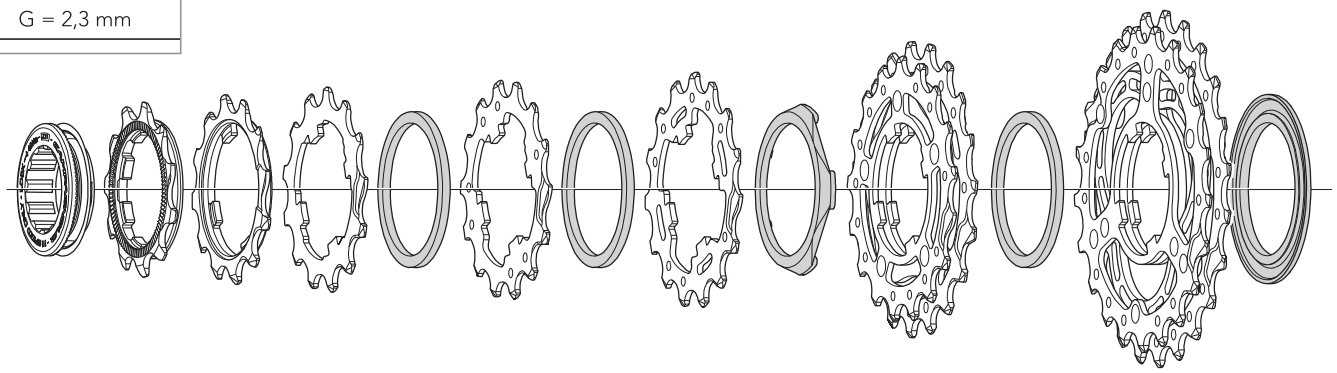
* pre-assembled

4

Pay attention to the exact assembly order of the spacers (Fig. 4).

SPACERS
F = 2,2 mm
G = 2,3 mm

GHIBLI



11 - 23	11A-1°	12A-2°	13A	F	14A	F	15A	G	17A-19A*	F	21A-23A*	H

* pre-assembled

5

Pay attention to the exact assembly order of the spacers (Fig. 5).

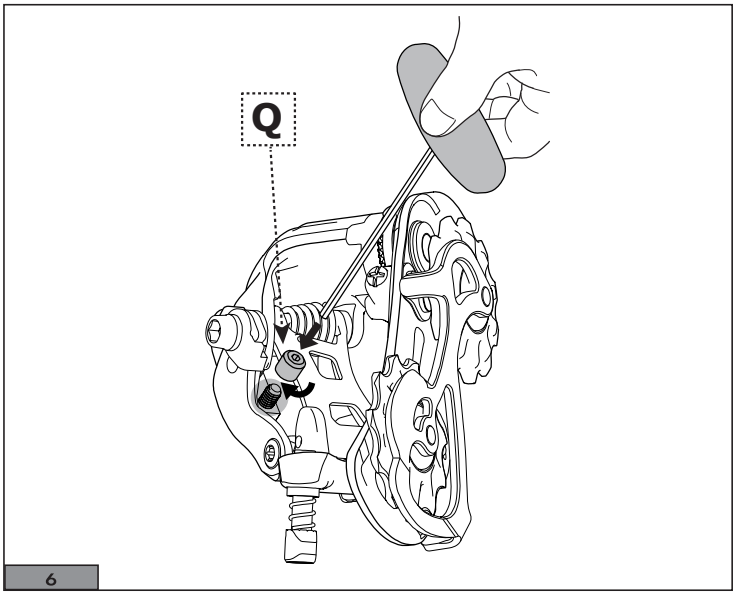
⚠ WARNING!

ONLY FOR GHIBLI SPROCKETS

Remember to fit the transmission locking bush, supplied with the pinions, before adjusting and using the bicycle. Failure to fit the lock can damage the wheel and make you lose control of your bicycle.

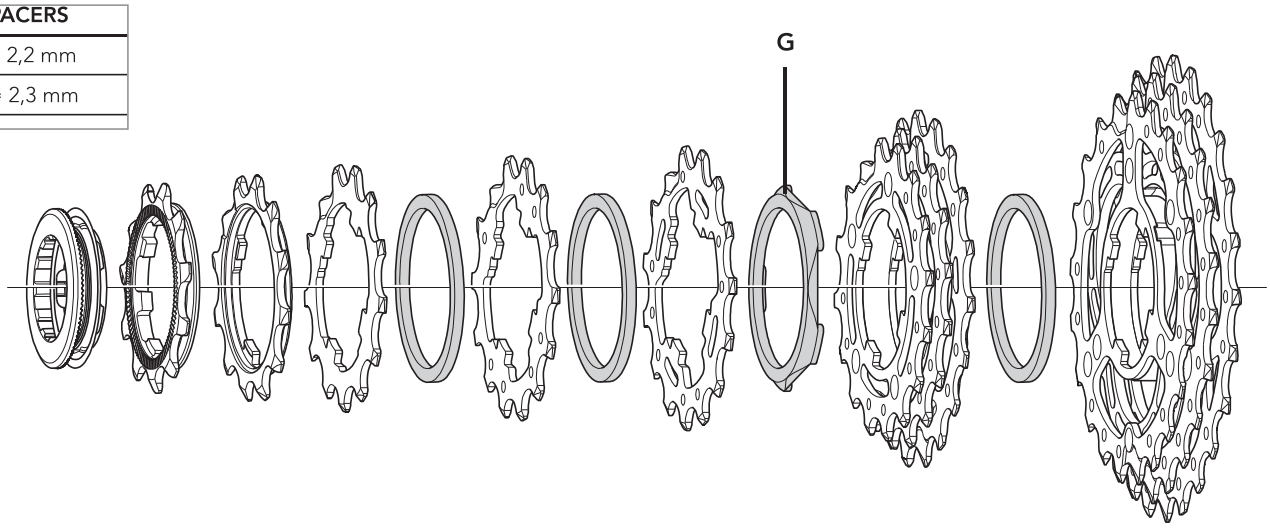
• SCREW THE TOP LOCKING SCREW IN AND APPLY THREADED BUSH (Q), USING A 2mm ALLEN KEY.

A drop of thread locking fluid is recommended.



6

SPACERS
F = 2,2 mm
G = 2,3 mm



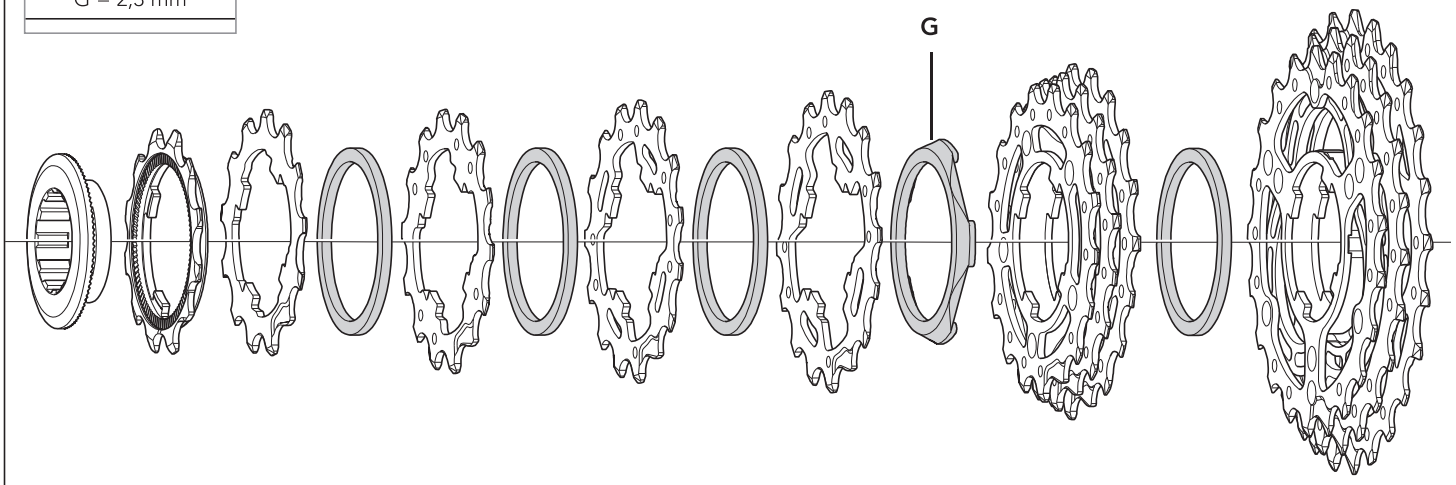
11 - 23	11A-1°	12A-2°	13A	F	14A	F	15A	G	16A-17A-18A*	F	19A-21A-23A*
11 - 25	11A-1°	12A-2°	13A	F	14A	F	15A	G	16A-17A-19B*	F	21B-23B-25B*

* pre-assembled

7

Pay attention to the exact assembly order of the spacers (Fig. 7).

SPACERS
F = 2,2 mm
G = 2,3 mm



12 - 25	12A-1°	13A	F	14A	F	15A	F	16A	G	17A-18A-19A*	F	21A-23A-25A*
12 - 27	12A-1°	13A	F	14A	F	15A	F	16A	G	17A-19B-21B*	F	23B-25B-27B*
12 - 29	12A-1°	13A	F	14A	F	15A	F	16A	G	17A-19B-21B*	F	23B-26C-29C*

* pre-assembled

8

Pay attention to the exact assembly order of the spacers (Fig. 8).

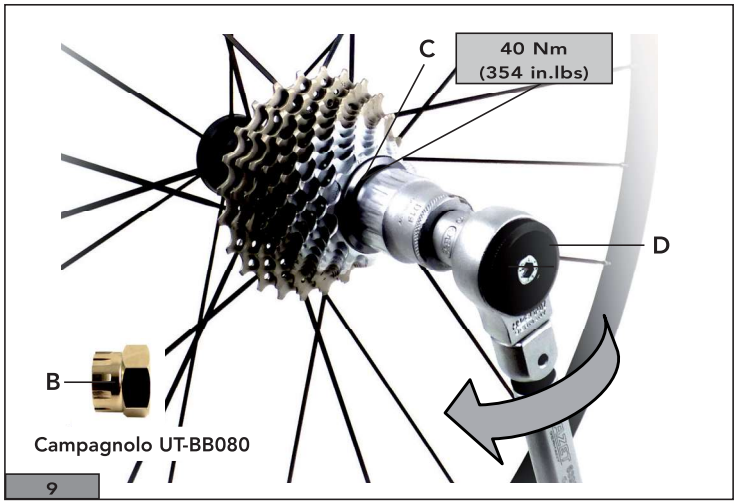
• Using a torque wrench (D - Fig. 9) equipped with Campagnolo® tool UT-BB080 (B - Fig. 9), tighten the lockring (C - Fig. 9), which is provided with the Campagnolo sprockets, on to the freewheel body to **40 Nm (354 in.lbs)**.

Note
- Use the respective specific rings for sprocket sets staring from Z11 or sprocket sets starting from Z12.

- Check that the preassembled washer is present.

⚠ WARNING!

The ring and the smallest sprocket (Z11 and Z12) have a specific knurl which is compatible solely and exclusively with 11S versions. Other combinations may cause accidents, physical injury and death.



6 - MAINTENANCE

• The life of the components depends on conditions of use and on the frequency and quality of maintenance. To keep the components 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.).

• Dirt seriously damage bicycles and their components. Thoroughly rinse, clean and dry your bike after using it in these conditions.

• 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. Dry them using a soft cloth. Never use abrasive or metal pads.

• Before lubricating, thoroughly clean the drive system (chain, sprocket set, chainrings and derailleur pulleys) with a brush or cloth saturated with an appropriate degreaser or detergent.

• Relubricate the components carefully using a lubricant suitable to purpose.

• 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.

• 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.

• At the end of the lubrication operation, CAREFULLY degrease rims and brake pads.

⚠ WARNING!

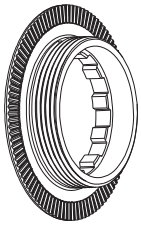
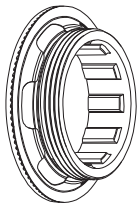
Traces of lubricant on the rims and brake pads can reduce or eliminate the braking capabilities of your bicycle, resulting in an accident, personal injury or death.

⚠ 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.

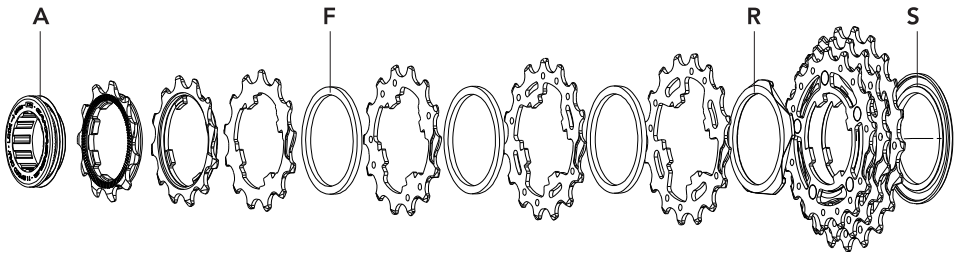
7 - SPARE PARTS

LOCKRINGS

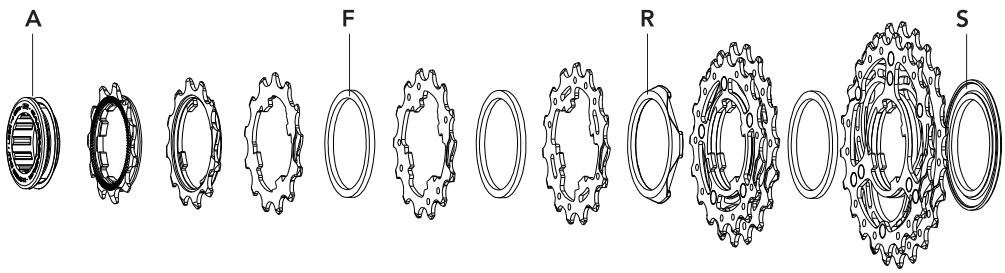
	CODE	TYPE		RANGE	HUB COMPATIBILITY
	CS-401	9s / 10s "oversize" thread/fil.: 27 x 1	steel / acciaio	2000 e succ. **2000 and following**	**all groups / tutti i gruppi** all wheels / tutte le ruote
				1999	**RECORD™ - CHORUS™** all wheels / tutte le ruote
	CS-501	9s / 10s "oversize" thread/fil.: 27 x 1	steel / acciaio (for Z. 11)	2000 e succ. **2000 and following**	**all groups / tutti i gruppi** all wheels / tutte le ruote
				1999	**RECORD™ - CHORUS™** all wheels / tutte le ruote
	CS-701	**for sprockets/ per pignoni HG 10s** thread/fil.: 27 x 1	steel / acciaio	2007-2008	all Campagnolo® wheels with HG 10 type FW body / tutte le ruote Campagnolo® con corpetto RL tipo HG 10
	CS-801	**for sprockets/ per pignoni HG 10s** thread/fil.: 27 x 1	steel / acciaio (for Z. 11)	2007-2008	all Campagnolo® wheels with HG 10 type FW body / tutte le ruote Campagnolo® con corpetto RL tipo HG 10
	CS-112	11 SPEED only thread/fil.: 27 x 1	alloy / alluminio	2009	**only 11s sprocket sets / solo pacchi pignoni 11s**
	CS-111	11 SPEED only thread/fil.: 27 x 1	alloy / alluminio (for Z. 11)	2009	**only 11s sprocket sets / solo pacchi pignoni 11s**

GHIBLI™
(11s drivetrain)
CS12-GH1111
CS12-GH1113

A	CS-111	11s only (for Z 11)	R	2-CS-712 (2 pcs)	2,3 mm
F	2-CS-612 (2 pcs)	2,2 mm	S	CS-613 (2 pcs)	2,5 mm



11-21	A	11A-1°	12A-2°	13A	F	14A	F	15A	F	16A	R	17A-19A-21A*	S
		11S-011	11S-022	11S-131		11S-141		11S-151		11S-161		11S-791	

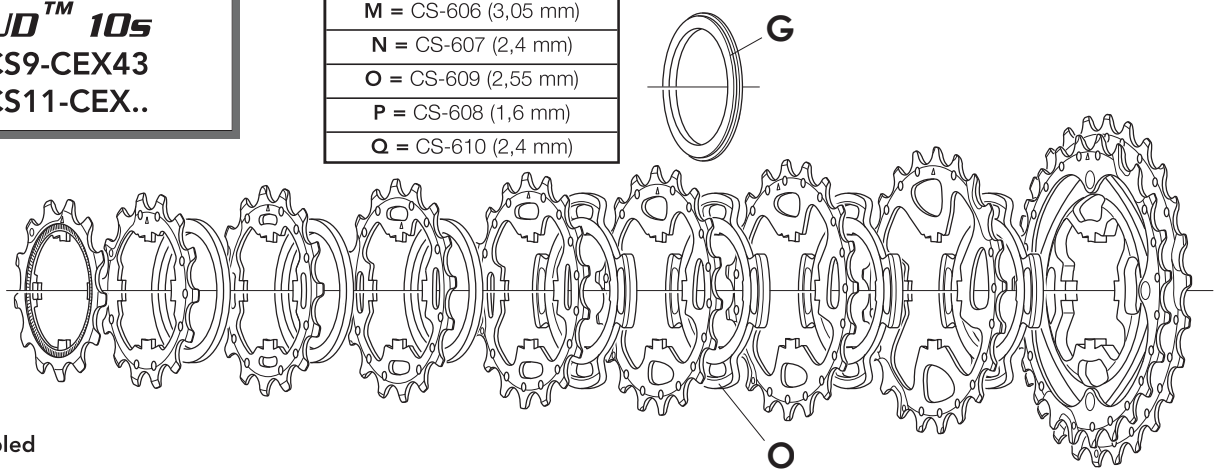


11-23	A	11A-1°	12A-2°	13A	F	14A	F	15A	R	17A-19A*	F	21A-23A*	S
		11S-011	11S-022	11S-131		11S-141		11S-151		11S-79GH		11S-13GH	

CENTAUR™ UD™ 10s
CS9-CEX43
CS11-CEX..

DISTANZIALI / SPACERS
G = CS-602 (2,55 mm)
M = CS-606 (3,05 mm)
N = CS-607 (2,4 mm)
O = CS-609 (2,55 mm)
P = CS-608 (1,6 mm)
Q = CS-610 (2,4 mm)

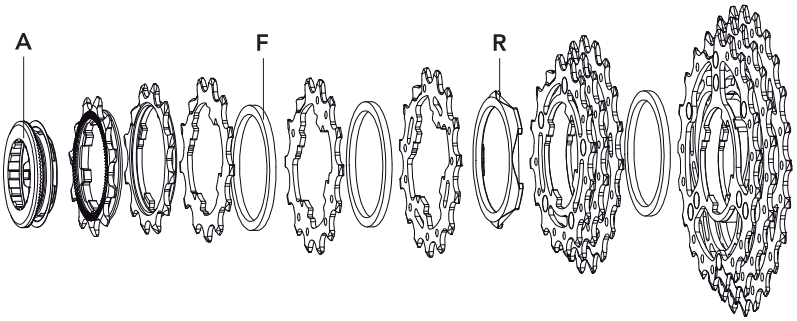
VELOCE 10s compatible



* pre-assembled

11 - 23	**11A-1°** 10S-011	**12A-2°** 10S-022	**13A** 10S-131	**Q**	**14A** 10S-141	**Q**	**15A** 10S-151	**Q**	**16A** 10S-161	**G**	**17A** 10S-171	**N**	**19A** 10S-191	**M**	**21A-23A*** 10S-13A						
11 - 25	**11A-1°** 10S-011	**12A-2°** 10S-022	**13A** 10S-131	**Q**	**14A** 10S-141	**Q**	**15A** 10S-151	**Q**	**17G** 10S-177	**O**	**19G** 10S-197	**N**	**21G** 10S-217	**M**	**23G-25G*** 10S-35G						
12 - 25	**12A-1°** 10S-032	**13A** 10S-131	**Q**	**14A** 10S-141	**Q**	**15A** 10S-151	**Q**	**16A** 10S-161	**Q**	**17A** 10S-171	**O**	**19A** 10S-191	**N**	**21A** 10S-211	**M**	**23A-25A*** 10S-35A					
13 - 26	**13A-1°** 10S-023	**14A** 10S-141	**Q**	**15A** 10S-151	**Q**	**16A** 10S-161	**Q**	**17A** 10S-171	**N**	**18C** 10S-183	**O**	**19C** 10S-193	**N**	**21C** 10S-213	**M**	**23C-26C*** 10S-36C					
13 - 29	**13A-1°** 10S-023	**14A** 10S-141	**Q**	**15A** 10S-151	**Q**	**16A** 10S-161	**Q**	**17A** 10S-171	**N**	**19A** 10S-191	**O**	**21A** 10S-211	**N**	**23A** 10S-231	**M**	**26A-29A*** 10S-69A					
14 - 23	**14A-1°** 10S-014	**15A** 10S-151	**Q**	**16A** 10S-161	**Q**	**17A** 10S-171	**Q**	**18C** 10S-183	**N**	**19C** 10S-193	**O**	**20D** 10S-204	**N**	**21D** 10S-214	**N**	**22D** 10S-224	**P**	**23D** 10S-234			

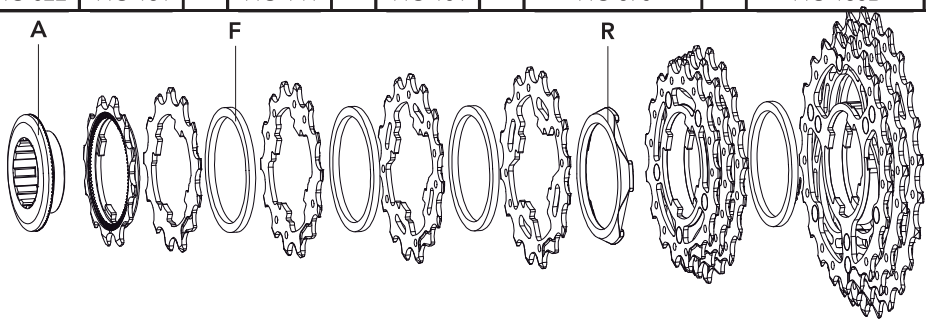
CHORUS™ 11s
CS9-CH1...



* pre-assembled

11-23	A	11A-1° 11S-011	12A-2° 11S-022	13A 11S-131	F	14A 11S-141	F	15A 11S-151	R	16A-17A-18A* 11S-678	F	19A-21A-23A* 11S-913									
11-25	A	11A-1° 11S-011	12A-2° 11S-022	13A 11S-131	F	14A 11S-141	F	15A 11S-151	R	16A-17A-19B* 11S-679	F	21B-23B-25B* 11S-135B									

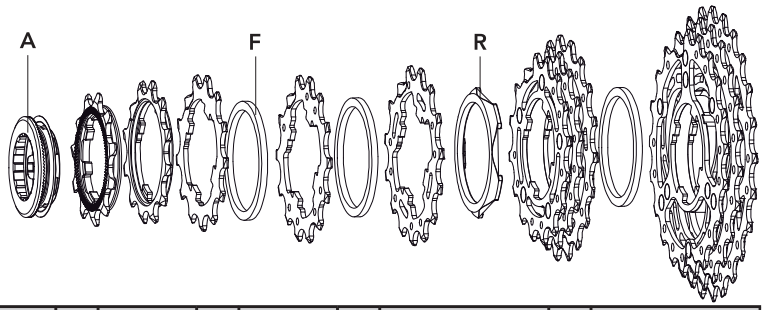
A	CS-112	**11s only**
	CS-111	**11s only** (for Z 11)
F	**2-CS-612** (2 pcs)	**2,2 mm**
R	**2-CS-712** (2 pcs)	**2,3 mm**



12-25	A	12A-1° 11S-012	13A 11S-131	F	14A 11S-141	F	15A 11S-151	F	16A 11S-161	R	17A-18A-19A* 11S-789	F	21A-23A-25A* 11S-135A								
12-27	A	12A-1° 11S-012	13A 11S-131	F	14A 11S-141	F	15A 11S-151	F	16A 11S-161	R	17A-19B-21B* 11S-791	F	23B-25B-27B* 11S-357								
12-29	A	12A-1° 11S-012	13A 11S-131	F	14A 11S-141	F	15A 11S-151	F	16A 11S-161	R	17A-19B-21B* 11S-791	F	23B-26C-29C* 11S-369								

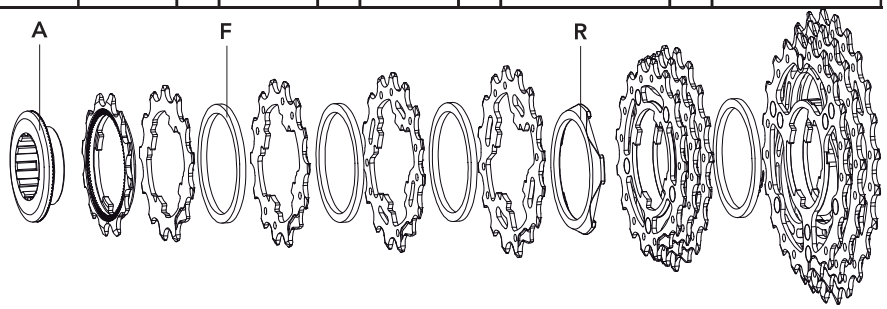
RECORD™ 11s
CS9-RE1...

* pre-assembled



11-23	A	11A-1°	12A-2°	13A	F	14A	F	15A	R	16A-17A-18A*	F	19A-21A-23A*
		11S-011	11S-022	11S-131		11S-141		11S-151		11S-678		11S-913T
11-25	A	11A-1°	12A-2°	13A	F	14A	F	15A	R	16A-17A-19B*	F	21B-23B-25B*
		11S-011	11S-022	11S-131		11S-141		11S-151		11S-679		11S-135BT

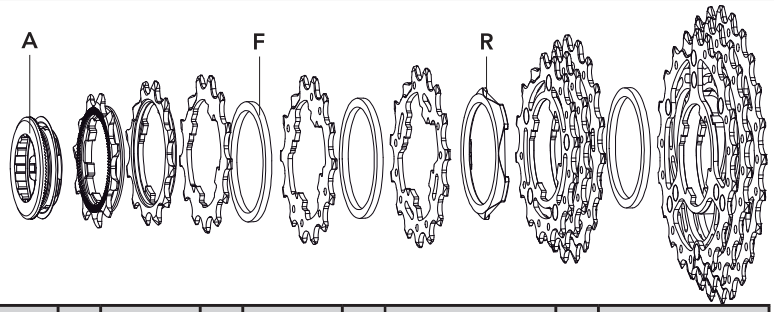
A	CS-112	11s only
	CS-111	11s only (for Z 11)
F	2-CS-612 (2 pcs)	2,2 mm
R	2-CS-712 (2 pcs)	2,3 mm



12-25	A	12A-1°	13A	F	14A	F	15A	F	16A	R	17A-18A-19A*	F	21A-23A-25A*
		11S-012	11S-131		11S-141		11S-151		11S-161		11S-789		11S-135AT
12-27	A	12A-1°	13A	F	14A	F	15A	F	16A	R	17A-19B-21B*	F	23B-25B-27B*
		11S-012	11S-131		11S-141		11S-151		11S-161		11S-791		11S-357T
12-29	A	12A-1°	13A	F	14A	F	15A	F	16A	R	17A-19B-21B*	F	23B-26C-29C*
		11S-012	11S-131		11S-141		11S-151		11S-161		11S-791		11S-369T

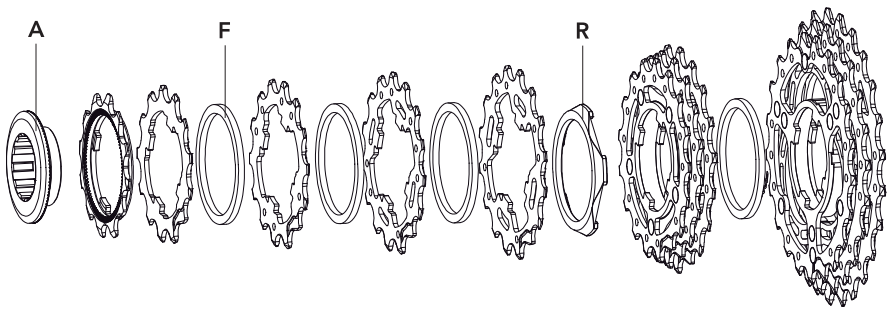
SUPER RECORD™ 11s
CS9-SR1...

* pre-assembled



11-23	A	11A-1°	12A-2°	13A	F	14A	F	15A	R	16A-17A-18A*	F	19A-21A-23A*
		11S-011	11S-022	11S-131		11S-141		11S-151		11S-678T		11S-913T
11-25	A	11A-1°	12A-2°	13A	F	14A	F	15A	R	16A-17A-19B*	F	21B-23B-25B*
		11S-011	11S-022	11S-131		11S-141		11S-151		11S-679T		11S-135BT

A	CS-112	11s only
	CS-111	11s only (for Z 11)
F	2-CS-612 (2 pcs)	2,2 mm
R	2-CS-712 (2 pcs)	2,3 mm



12-25	A	12A-1°	13A	F	14A	F	15A	F	16A	R	17A-18A-19A*	F	21A-23A-25A*
		11S-012	11S-131		11S-141		11S-151		11S-161		11S-789T		11S-135AT
12-27	A	12A-1°	13A	F	14A	F	15A	F	16A	R	17A-19B-21B*	F	23B-25B-27B*
		11S-012	11S-131		11S-141		11S-151		11S-161		11S-791T		11S-357T
12-29	A	12A-1°	13A	F	14A	F	15A	F	16A	R	17A-19B-21B*	F	23B-26C-29C*
		11S-012	11S-131		11S-141		11S-151		11S-161		11S-791T		11S-369T

CHAIN

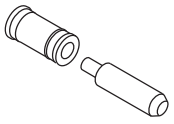
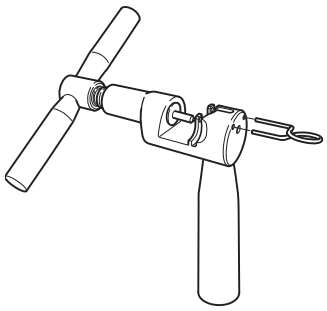
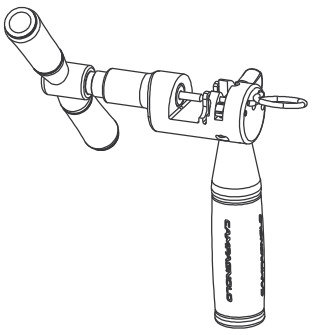
1 - TECHNICAL SPECIFICATIONS

10s		11s	
Width:	5,9 mm	**Width:**	5,5 mm
Length:	114 links	**Length:**	114 links

2 - COMPATIBILITY

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.

10s		11s	
Drivetrain:	10s	**Drivetrain:**	11s
Fastening system:	Hd-link Ultra-Narrow CN-RE400	**Fastening system:**	Ultra-Link CN-RE500
			
Tools:	CAMPY UT-CN200	**Tools:**	UT-CN300
			

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 - 10s CHAIN INSTALLATION

⚠ WARNING!

All connecting and disconnecting of the Campagnolo® **10S** chains should be performed using the special Campagnolo® **UT-CN200** tool, not included in this kit (Fig.1). Use of other tools could damage the chain and/or provoke unexpected chain failure resulting in an accident, personal injury or death.

⚠ WARNING!

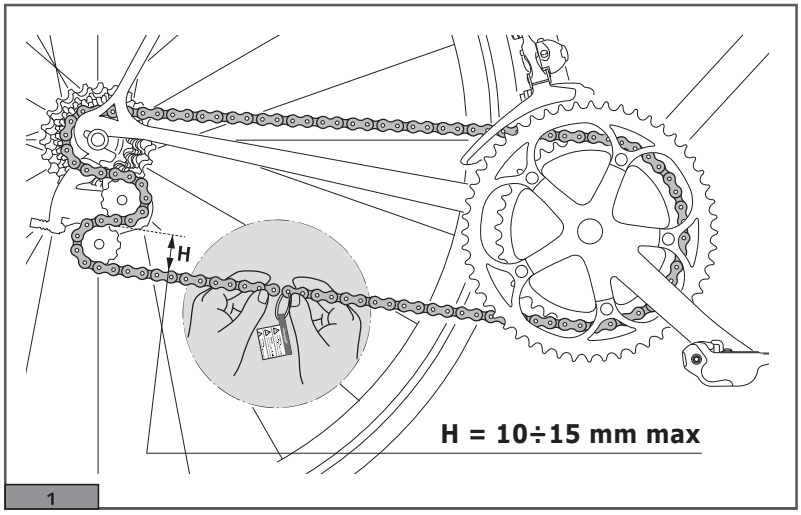
The pusher of the Campagnolo® tool **UT-CN200** is provided with a replaceable tapered tip pin; if the pin is damaged or it becomes worn, please replace it with the suitable Campagnolo® spare pin UT-CN201. Failure to timely replace the tip pin can damage your chain, resulting in an accident, personal 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.

• Determine the correct length of the chain by putting it onto the smallest sprocket and chainring and check that the dimension H (Fig. 1) does not exceed 10÷15 mm.

• 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. 1).**



1

⚠ WARNING!

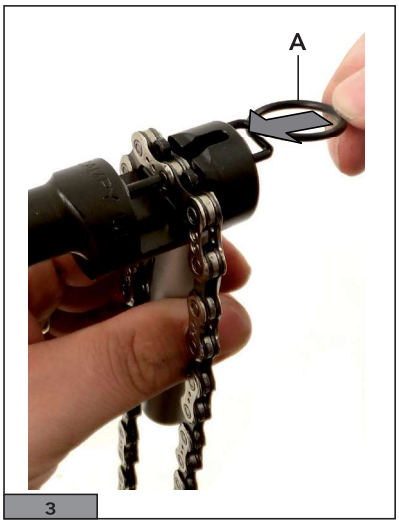
NEVER remove or modify in any way whatsoever this external link, which is permanently identified by the stamped production batch number, since it has the calibrated holes need to close the chain.
Use of any other connecting link to join the chain may result in unexpected opening of the chain and provoke accidents, personal injury or death.

3.1 - TO OPEN THE CHAIN

- FIt the link to be opened in tool **UT-CN200** (Fig. 2) taking care **to end with an internal link;**

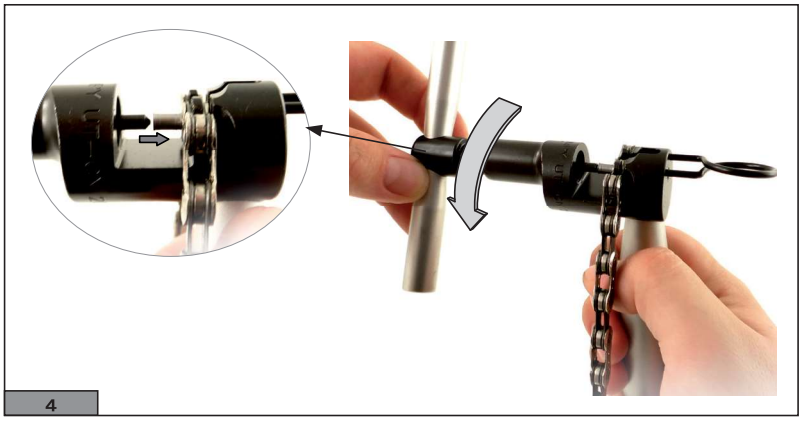
- clamp the link with the special clamping device (A) (Fig. 3)

2



3

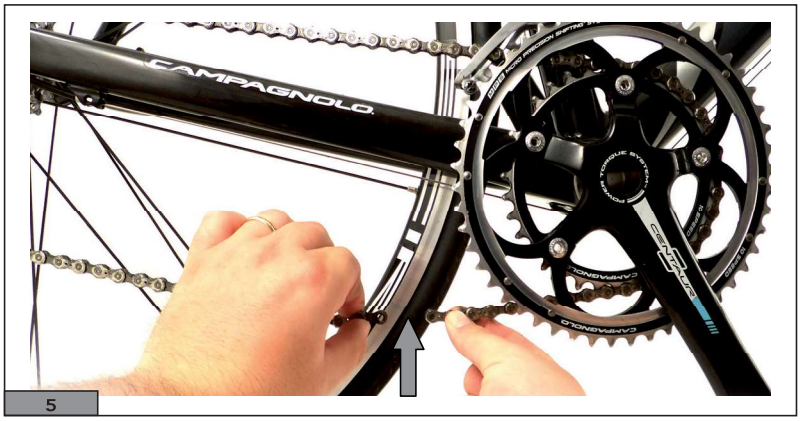
- tighten the tool until the small pin emerges completely from the hole in the link (Fig. 4).



4

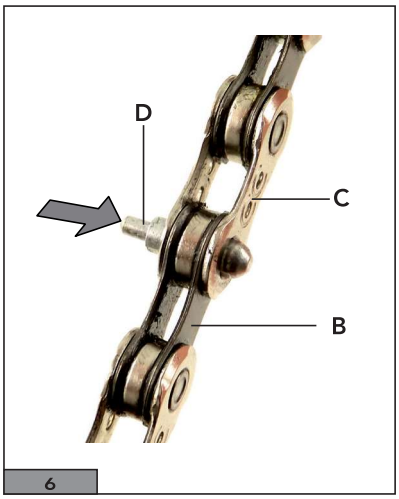
• Remove the plastic band and the adhesive "Warning" label.

• 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 5.



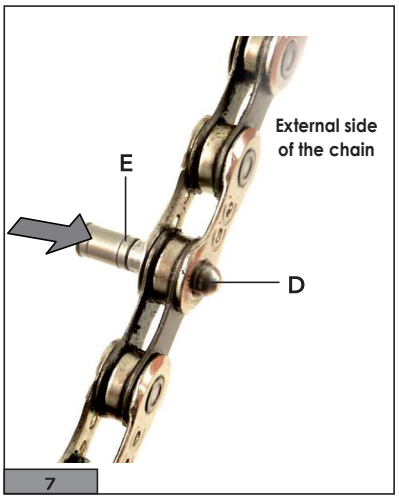
5

• Fit the internal link (B - Fig. 6) into the external link (C - Fig. 6), then fit the small guide pin (D - Fig. 6) in the link hole **from inside the chain towards the outside.**



6

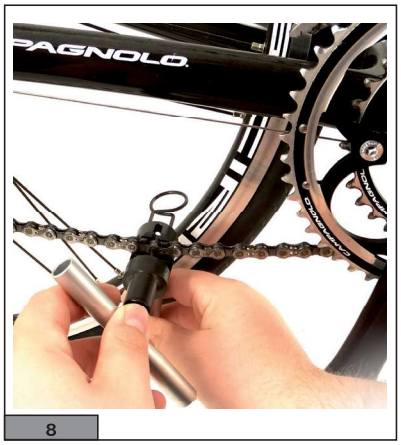
• Centre the small guide pin (D) in relation to the axis of the chain, then fit the small pin (E) into the small guide pin (D), **from inside the chain towards the outside** (Fig. 7).



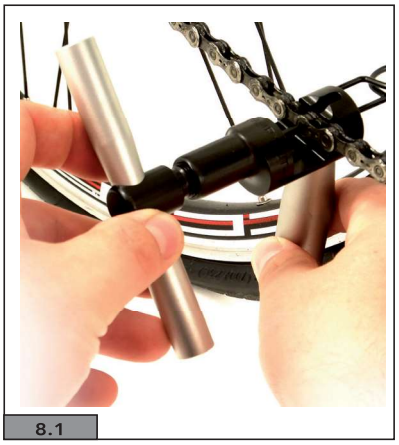
7

Note
Only one of the two holes in the small pin (E) can be used for coupling with the small guide pin (D).

• Position the tool **UT-CN200** as shown in Fig. 8 - 8.1.



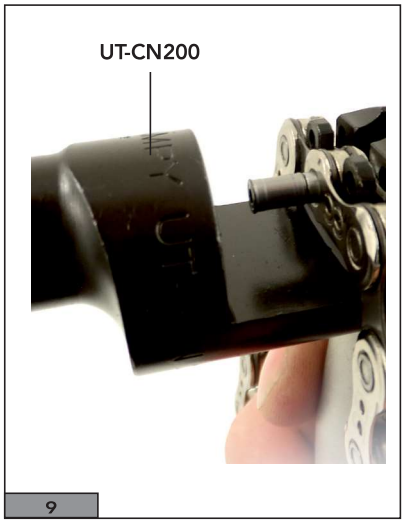
8



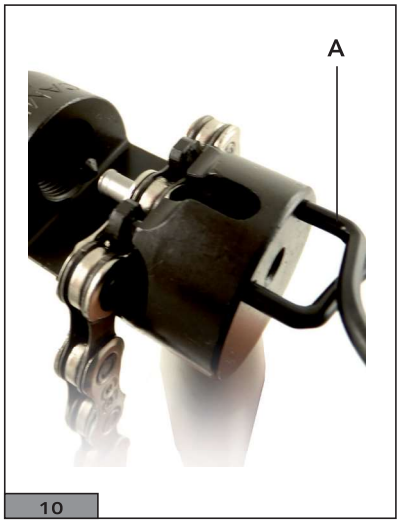
8.1

• Unscrew tool **UT-CN200**, then fit the link to be closed in the relative seats (Fig. 9).

• Clamp the link with the special clamping device (A) (Fig. 10).

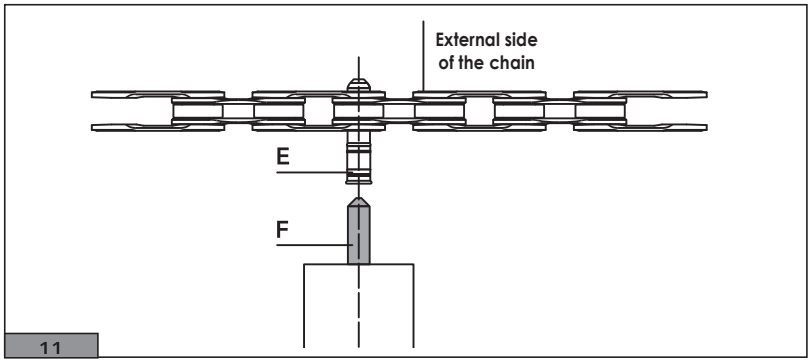


9



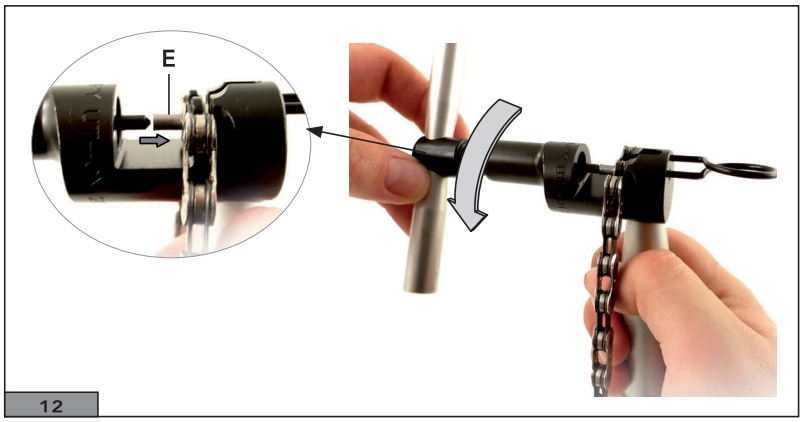
10

• Make sure that the tapered tip of the pusher (F) (Fig. 11) is in alignment with the center of the small pin (E) (Fig. 11).



11

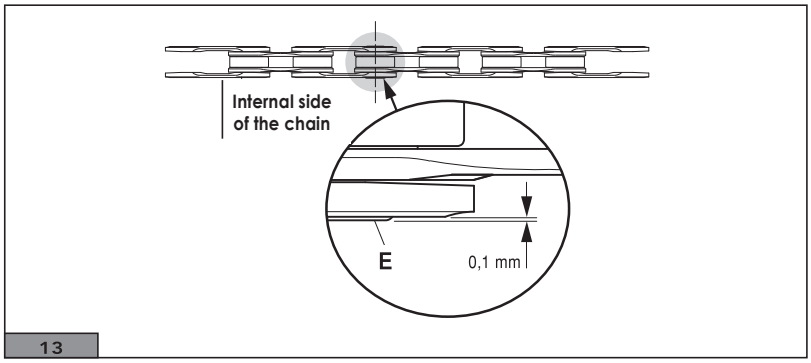
• Apply uniform force to tighten the tool (Fig. 12) until the small pin (E) completely enters the hole in the link.



12

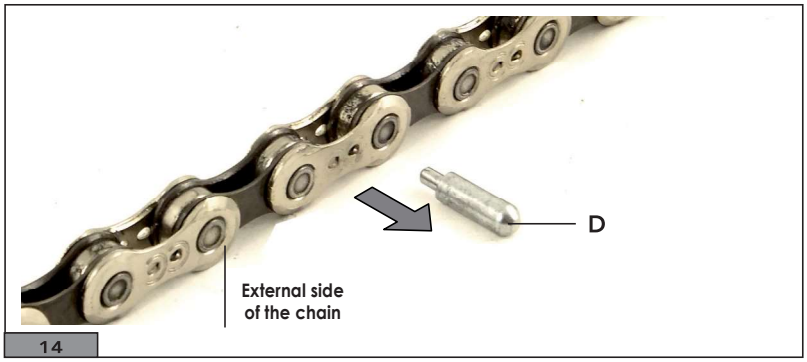
Note
To avoid irreparable damage to the chain, **NEVER TIGHTEN** the tool beyond the locator stop. Allow the small pin (E) to protrude 0.1 mm from the internal side of the chain (Fig. 13).

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



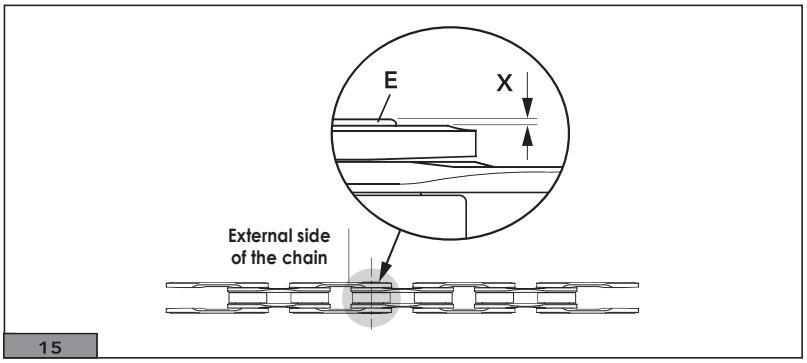
13

• Slide the small guide pin (D) out of the link (Fig. 14).



14

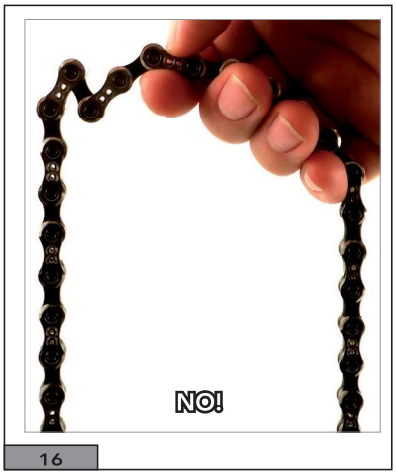
• The slight protrusion (X) (towards the external side of the chain) of the small pin (E) from the link (Fig. 15) is entirely normal and does not obstruct normal chain movement.
NEVER try to eliminate this protrusion!



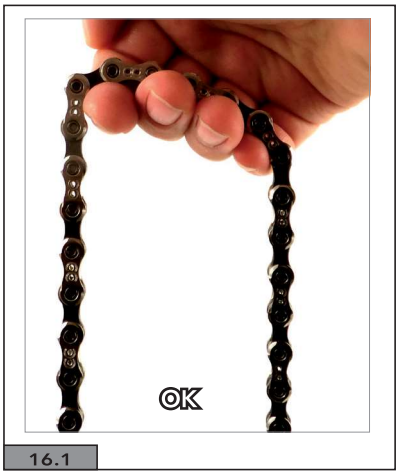
15

• Make sure that chain closure does not present any "harsh points" or links that do not bend freely (Fig. 16 - 16.1).

Free the joints as required with delicate lateral bending of the links.

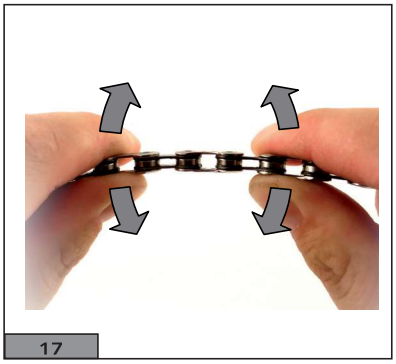


16



16.1

Free the joints as required with delicate lateral bending of the links (Fig. 17 / 17.1).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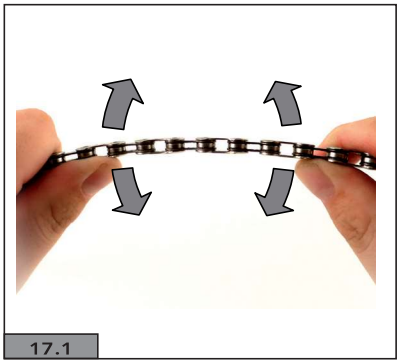

17.1

4 - 11s CHAIN INSTALLATION

⚠ WARNING!

All connecting and disconnecting of the Campagnolo® **11 SPEED** chains should be performed using the special Campagnolo® **UT-CN300** tool. Use of other tools could damage the chain and/or provoke unexpected chain failure resulting in an accident, personal injury or death.

⚠ WARNING!

The pusher of the Campagnolo® tool **UT-CN300** 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!

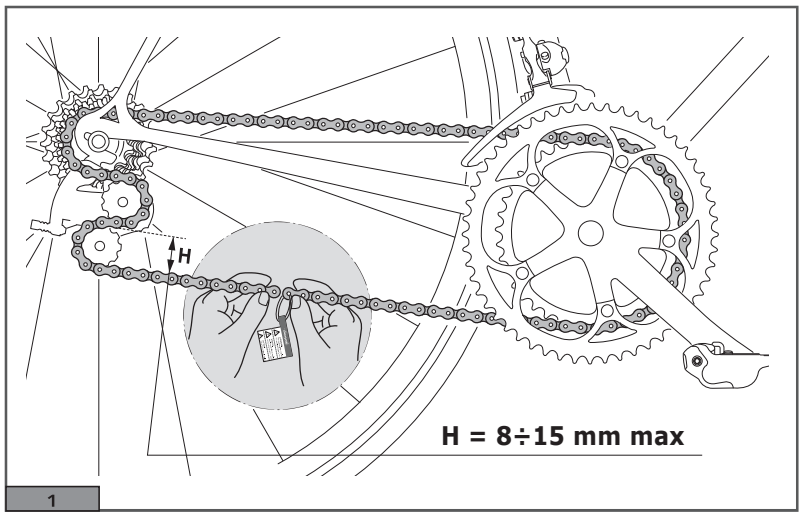
An incorrectly assembled chain unexpectedly break, while riding in an accident, personal injury, or death. If you have any doubt whatsoever regarding your ability to properly perform any of the operations in this manual, please take your bicycle to a qualified repair shop.

• Determine the correct length of the chain by putting it onto the smallest sprocket and chainring and check that the dimension H (Fig. 1) does not exceed 8-15 mm.

• 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.1)**

⚠ WARNING!

NEVER remove or modify in any way whatsoever this external link, which is permanently identified by the stamped production batch number, since it has the calibrated holes needed to close the chain.
Use of any other connecting link to join the chain may result in unexpected opening of the chain while riding, resulting in an accident, personal injury or death.

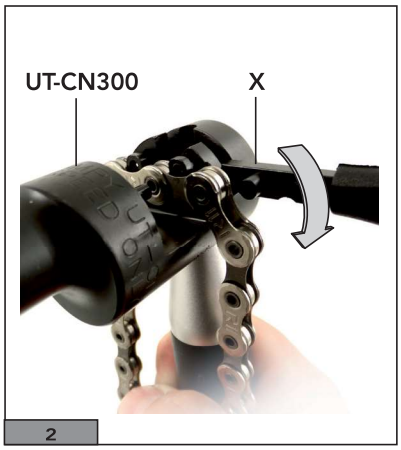


1

4.1.1 - To open the chain

• Prepare the tool **UT-CN300** by positioning the tongue in open mode (X - Fig. 2)

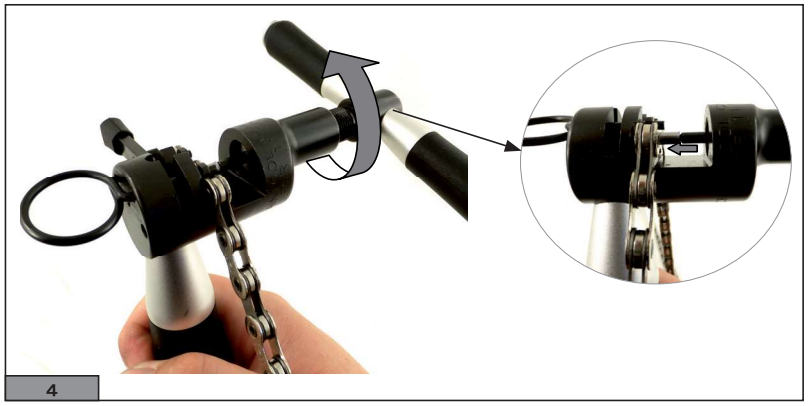
- fit the link to be opened in tool **UT-CN300** (Fig. 2) taking care **to end with an internal link:**
- clamp the link with the special clamping device (Z) (Fig. 3)



2

3

- Tighten the tool until the small pin emerges completely from the hole in the link (Fig. 4).


4

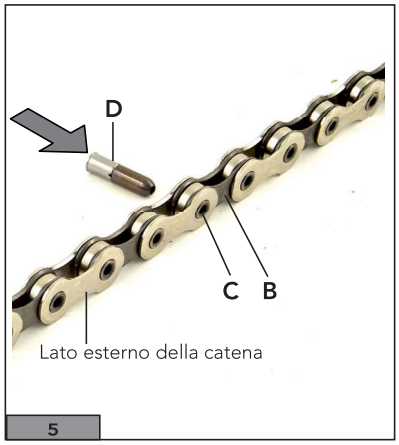
4.1.2 - Inserting the bushing Ultra-Link CN-RE500

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

• To install the closing pin ULTRA-LINK CN-RE500, place the chain on the bottom bracket shell.

• Insert the inner link (B - Fig. 5) into the outer link (C - Fig. 5), and then insert the guide of the rivet **ULTRA-LINK CN-RE500** (D - Fig. 5) 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 6.



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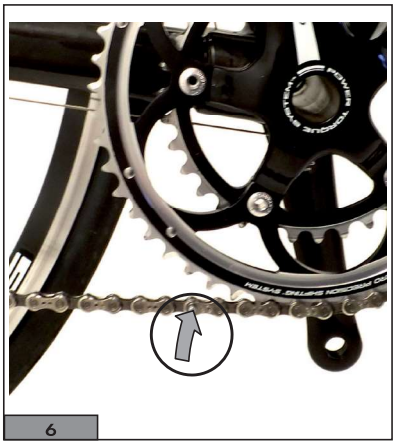
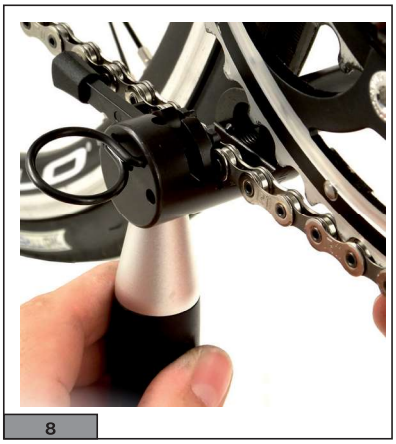

6

• Unscrew tool **UT-CN300** Fig. 7**.**

• Position the tool **UT-CN300** as shown in Fig. 8.

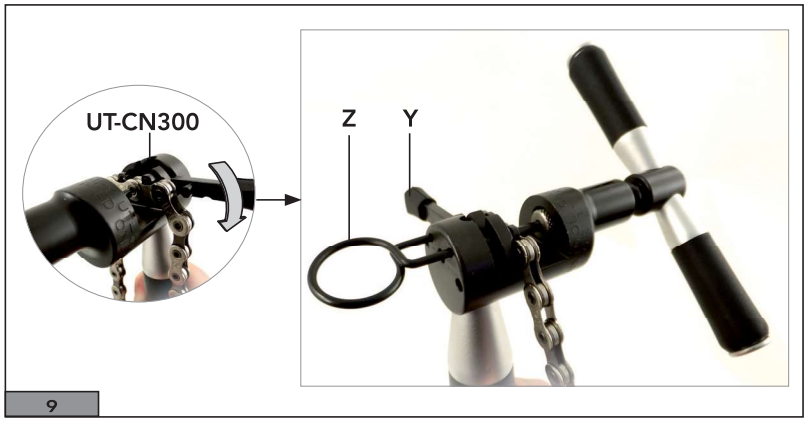

7


8

• Fit the link to be closed in the relative seats (Fig. 9).

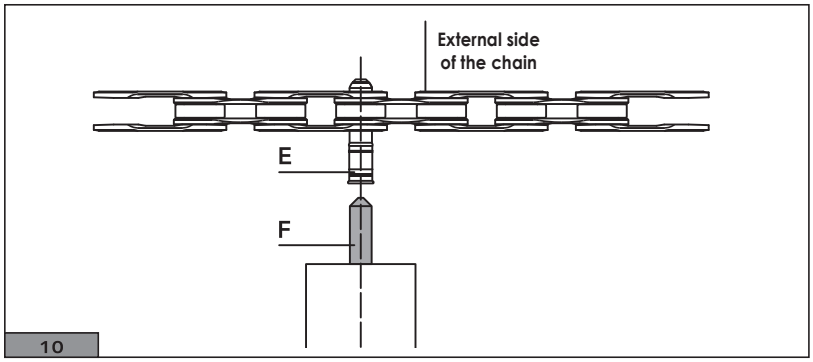
• Clamp the link with the special clamping device (Z - Fig. 9).

• Check that the tongue of tool **UT-CN300** is in the external position (Y - Fig. 9).



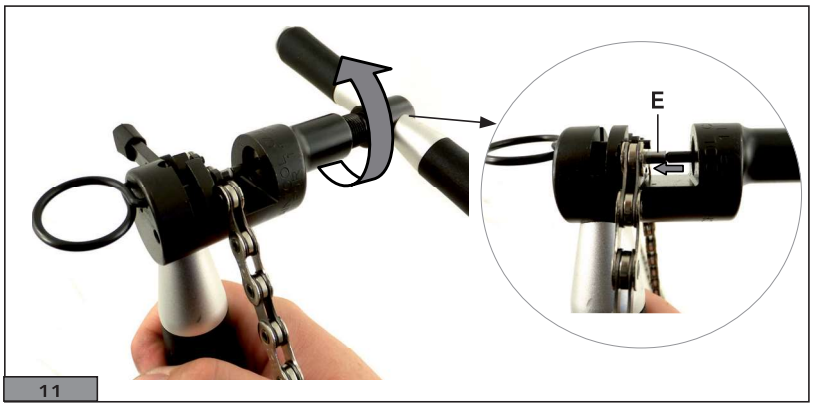
9

• Check that the tapered tip of the pusher (F) (Fig. 10) is in line with the centre of the rivet **ULTRA-LINK CN-RE500** (E) (Fig. 10).



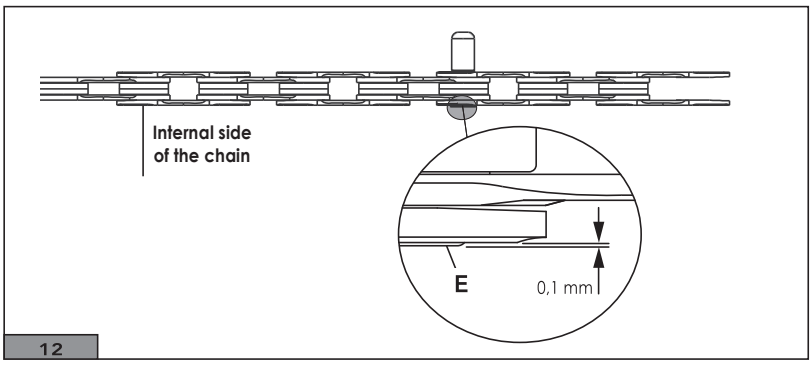
10

• While exerting a uniform force, screw in the tool (Fig. 11) so that the rivet **ULTRA-LINK CN-RE500** (E) has completely entered the thickness of the chain.



11

Note
In order to minimize the possibility of damaging the chain irreparably, **DO NOT TIGHTEN** the tool beyond the stop. Let the rivet **ULTRA-LINK CN-RE500** (E) protrude 0.1 mm from the inner side of the chain (Fig. 12).

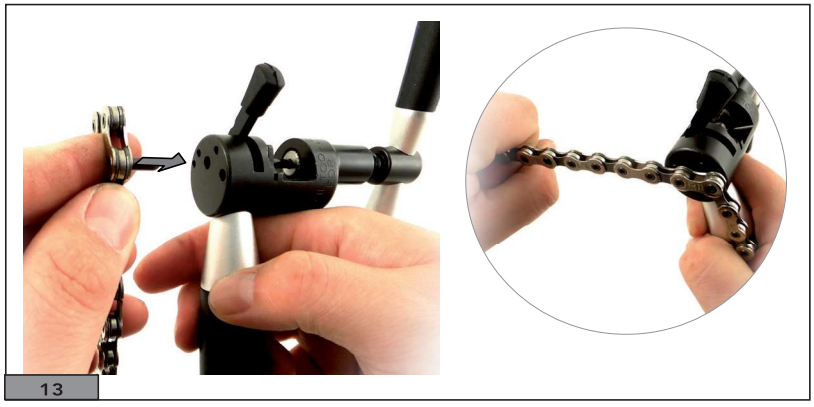


12

• Insert the protruding part of the guide into the hole provided at the base of the tool and split it by bending (Fig. 13).

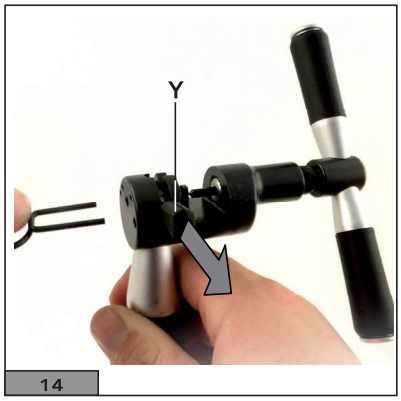
Note
The terminal part of the split guide must always remain inside the rivet.

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


13

4.1.3 - Locking the rivet Ultra-Link CN-RE500

• • Prepare the tool **UT-CN300** by positioning the tongue in closure mode (Y - Fig. 14).

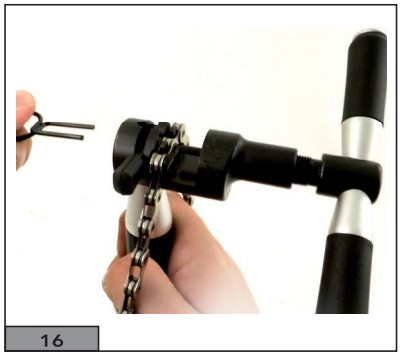


14

• Position the tool **UT-CN300** as indicated in Fig. 15 (from the outside of the chain towards the inside).


15

• Insert the link to close into the provided seats (Fig. 16).
• Lock the link by means of the special locking device (Z - Fig. 17).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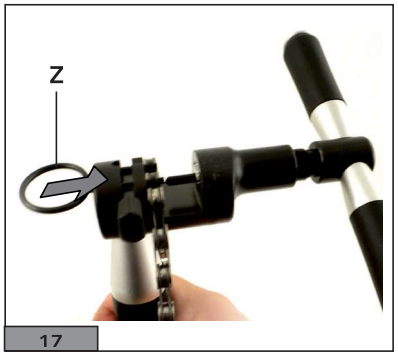
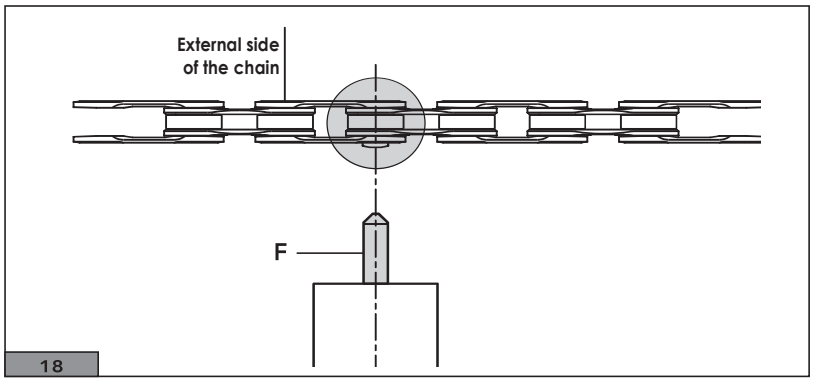


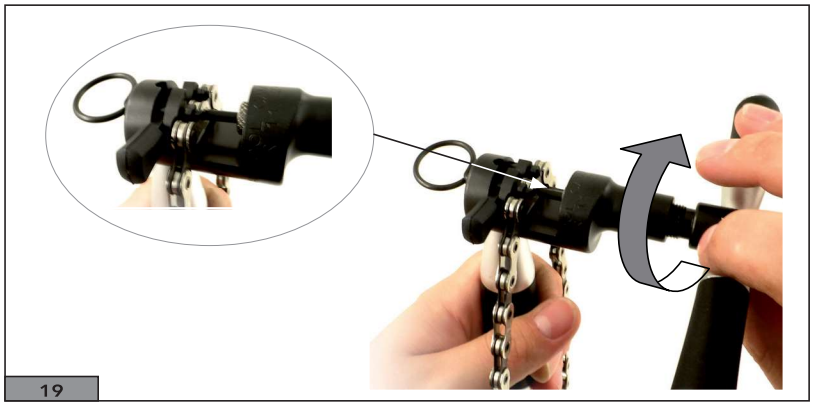
17

• Check that the tapered tip of the pusher is in line with the centre of the rivet **ULTRA-LINK CN-RE500** (Fig. 18).



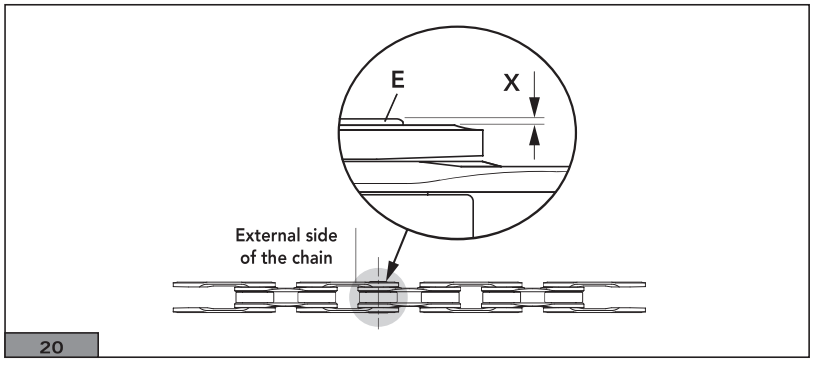
18

• Screw in the tool to bring the pusher into contact with the protruding end of the **ULTRA-LINK CN-RE500** rivet, turning it by about 3⁄4 of a turn and exerting moderate force till distorted (Fig. 19).


19

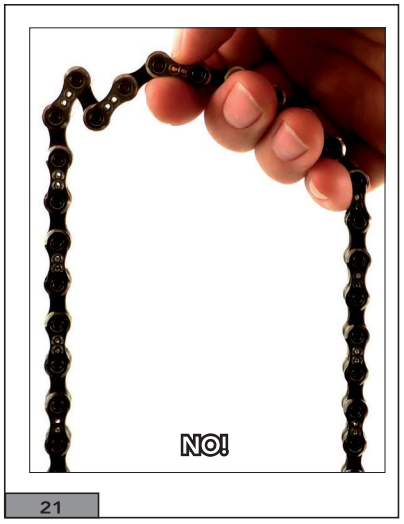
• The slight protrusion (X) (towards the external side of the chain) of the small pin (E) from the link (Fig. 20) is entirely normal and does not obstruct normal chain movement.

NEVER try to eliminate this protrusion!

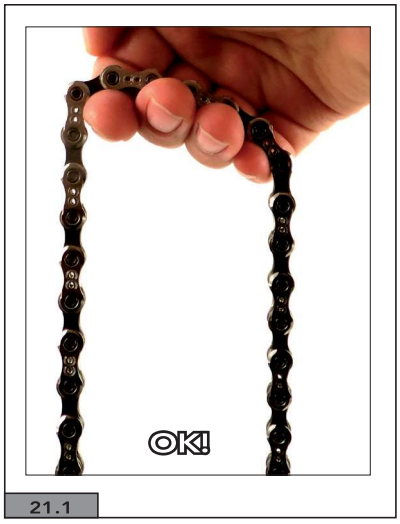


20

• Make sure that chain closure does not present any "harsh points" or links that do not bend freely (Fig. 21 - 21.1).

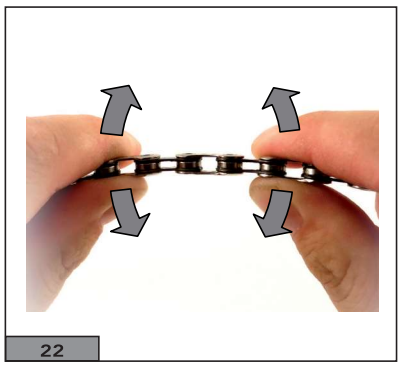


21



21.1

Free the joints as required with delicate lateral bending of the links (Fig. 22 / 22.1).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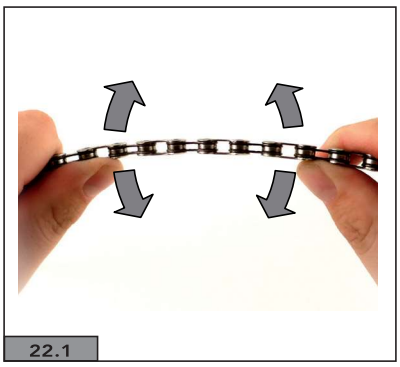

22.1

5 - MAINTENANCE

⚠ WARNING!

11S CHAIN

If it becomes necessary to open and close the chain (which can be done only twice), use only the special Campagnolo Ultra-link CN-RE500 socket with Campagnolo UT-CN300 tool.
The use of sockets produced by different manufacturers can damage the chain. A damaged chain can break, even suddenly, and cause accidents, injuries and even death.

10S CHAIN

If it becomes necessary to open and close the chain (which can be done only once), use only the special Campagnolo HD-link ULTRA-NARROW CN-RE400 closing clip with Campagnolo UT-CN200 tool.
The use of sockets produced by different manufacturers can damage the chain. A damaged chain can break, even suddenly, and cause accidents, injuries and even death.

• 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.).
• Do not remove the chain for cleaning and lubrication.
•Before lubricating, thoroughly clean the drive system (chain, sprocket set, chainrings and derailleur pulleys) with a brush or cloth saturated with an appropriate degreaser or detergent.
• Lubricate the chain.
• 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.
• At the end of the lubrication operation, CAREFULLY degrease rims and brake pads with acetone.

⚠ WARNING!

• Traces of lubricant on the rims and brake pads can reduce or eliminate the braking capabilities of your bicycle, resulting in an accident, personal injury or 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

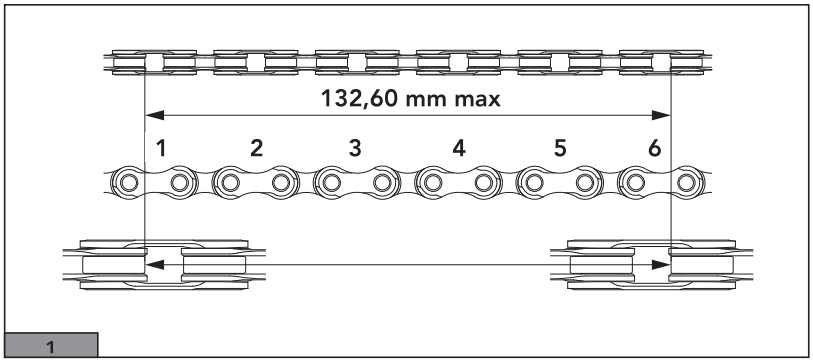
Never spray your bicycle with water under pressure. Pressurized water, even from the nozzle of a small garden hose, can pass seals and enter into your Campagnolo® components, damaging them beyond repair. Wash your bicycle and Campagnolo® components by wiping them down with water and neutral soap.

⚠ **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.

5.1 - CHAIN REPLACEMENT

A chain typically lasts between 2,000 miles and 5,000 miles, 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.



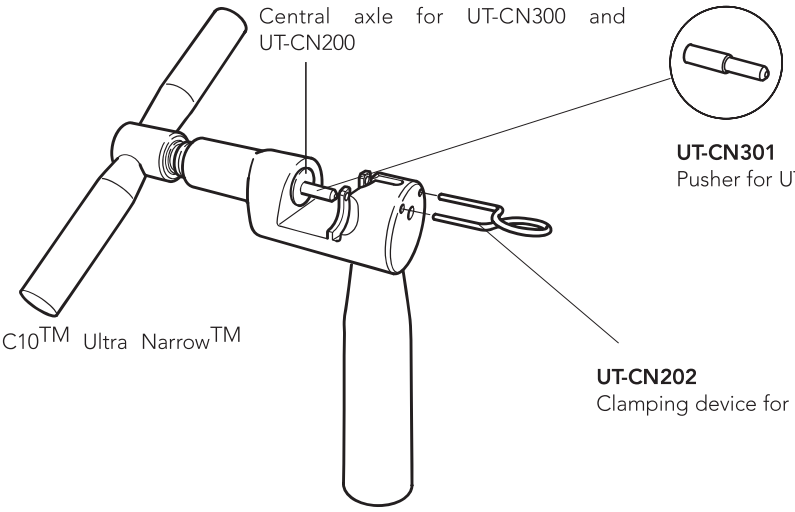
1

⚠ **WARNING!**

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

6 - SPARE PARTS

10s CHAIN

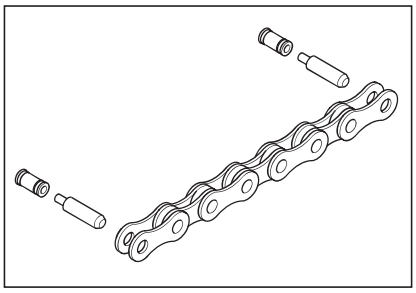


UT-CN303
Central axle for UT-CN300 and UT-CN200

UT-CN301
Pusher for UT-CN300 and UT-CN200

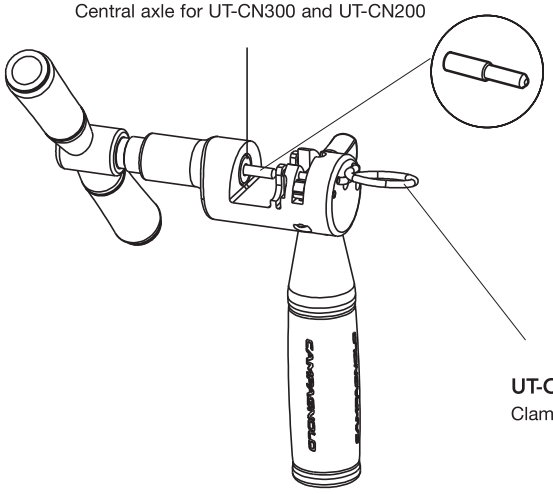
CAMPY™ UT-CN200
Tool for HD-Link™ (C10™ and C10™ Ultra Narrow™ chains)

UT-CN202
Clamping device for UT-CN200



CN-RE400
HD-Link™ Ultra Narrow™ (5,9 mm) for C10™ Ultra Narrow™ chains

11 SPEED CHAIN

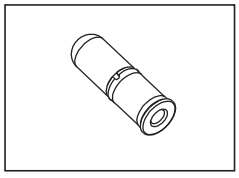


UT-CN303
Central axle for UT-CN300 and UT-CN200

UT-CN301
Pusher for UT-CN300 and UT-CN200

UT-CN300
Tool for ***Ultra-Link™*** (11s chains only)

UT-CN302
Clamping device for UT-CN300

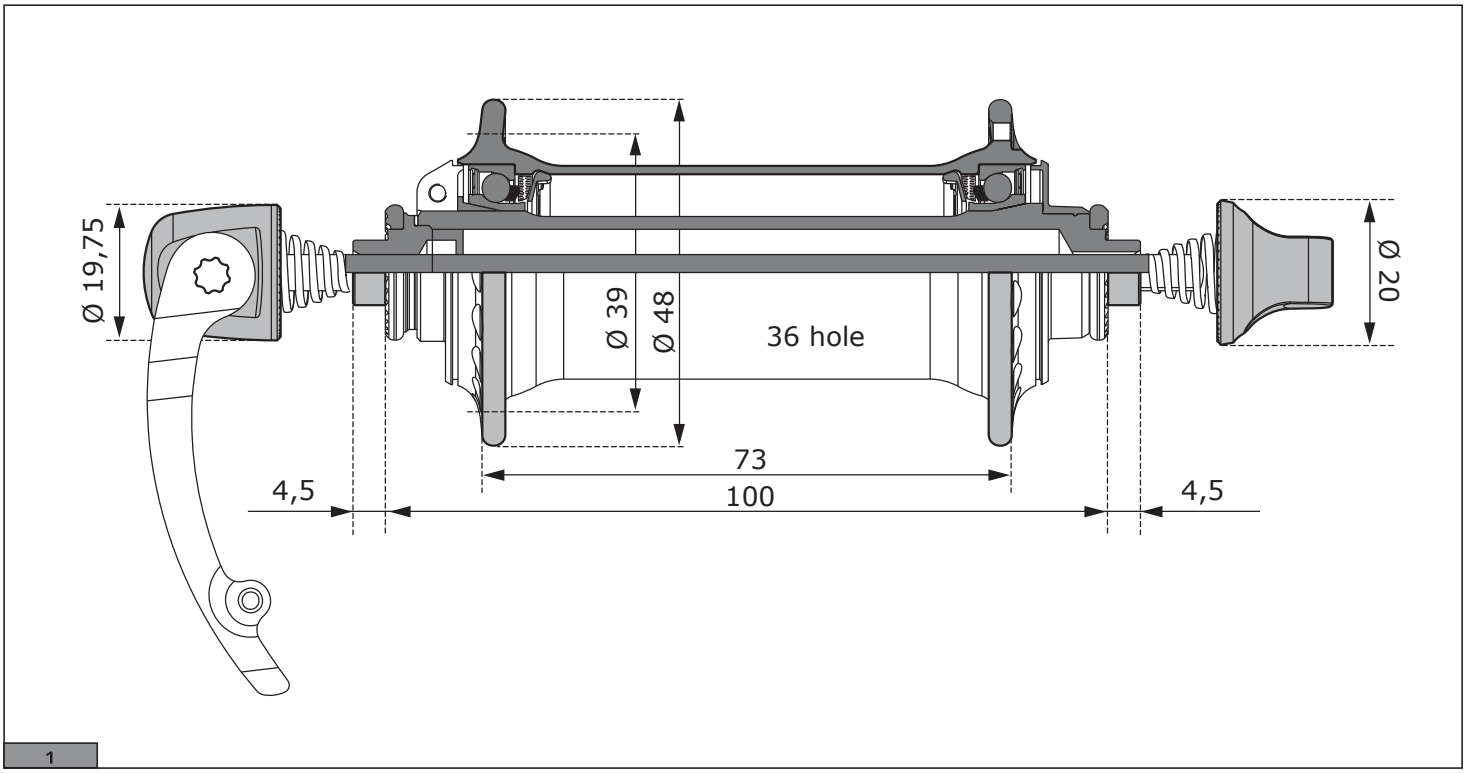


5-CN-RE500
Ultra-Link™ for 11s chains only (5 pcs)

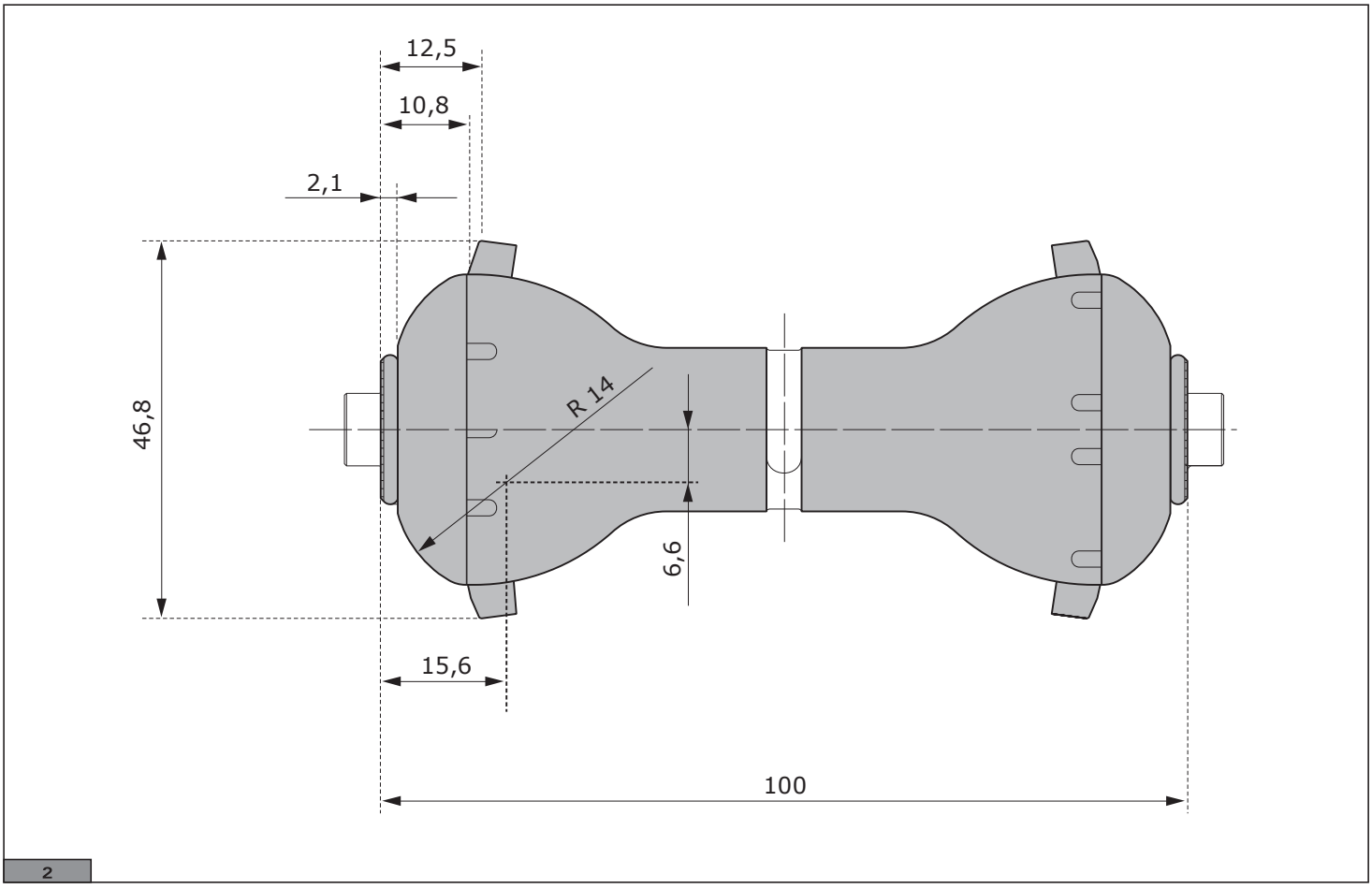
HUBS

1 - TECHNICAL SPECIFICATIONS / INTERFACE WITH THE FRAME

1.1 - FRONT HUB SPECIFICATIONS FOR DIMENSIONING THE FRONT FORK (Fig. 1 - Fig. 2)

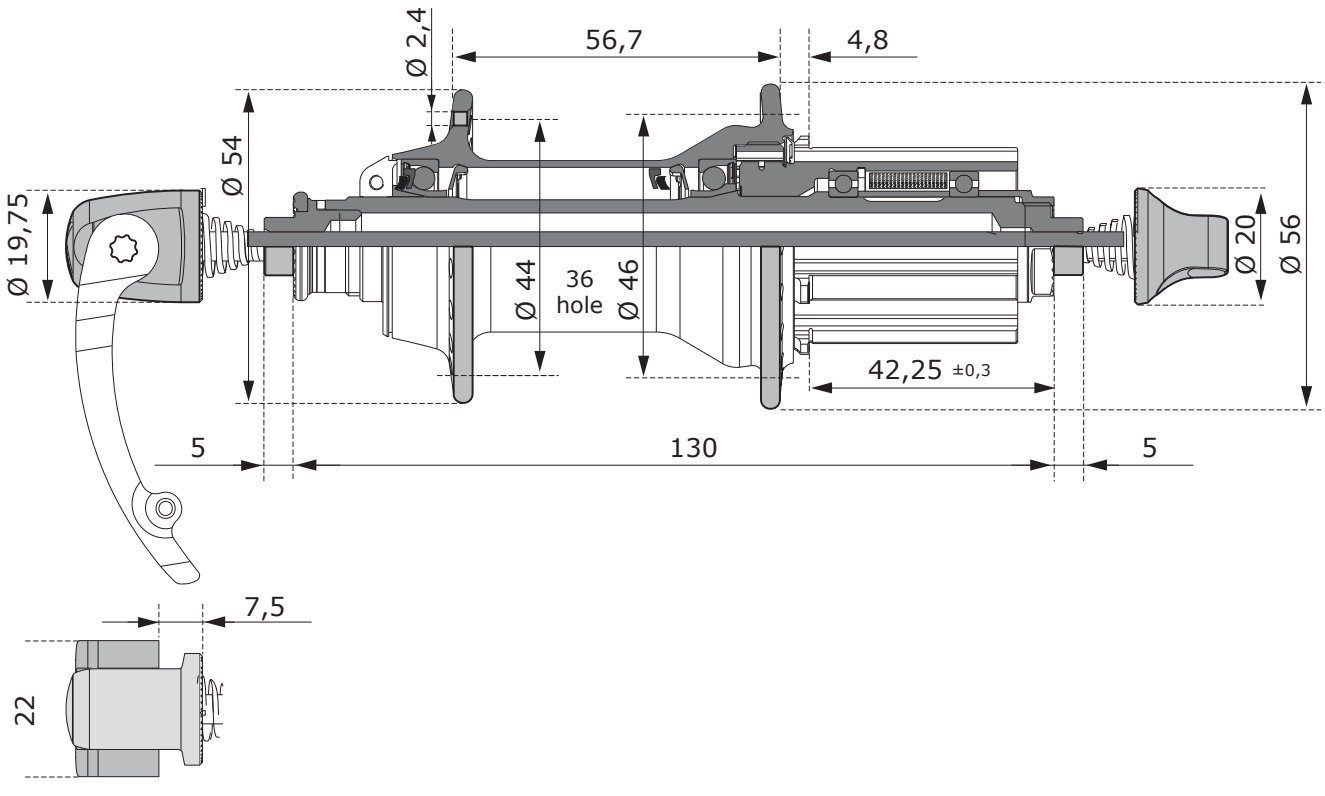


1



2

1.2 - REAR HUB SPECIFICATIONS FOR DIMENSIONING THE CHAINSTAY / COMPATIBILITY WITH 10S/11S SPROCKET SETS 10s / 11s (Fig. 3)



3

PRO FIT•PLUS PEDALS

1 - TECHNICAL SPECIFICATIONS

RIGHT PEDAL AXLE	LEFT PEDAL AXLE	AXLE THREADS
R	L	9/16 x 20 TPI

2 - COMPATIBILITY

WARNING!

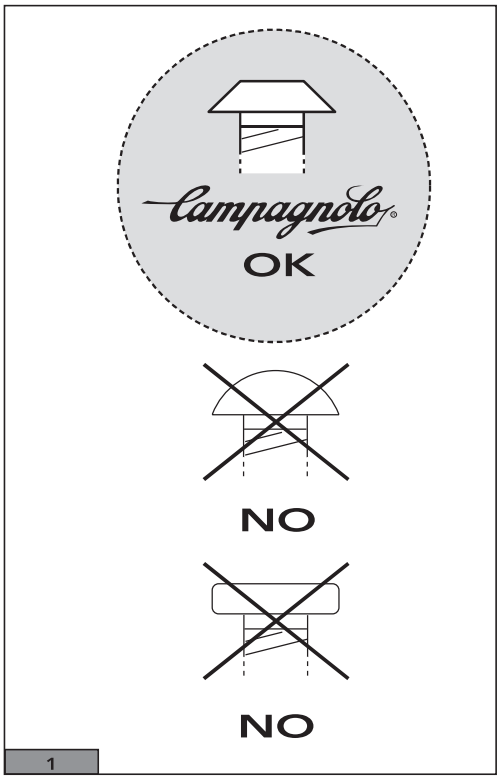
Should you need to use longer screws than those provided, kindly contact Campagnolo S.r.l. DO NOT use screws supplied by anyone other than Campagnolo.

WARNING!

Use only the screws supplied with Campagnolo® **Pro·Fit PLUS™** cleats (Fig. 1). **NEVER use any other screws. Use of any other screws could prevent proper engagement and disengagement of the cleats, resulting in an accident, personal injury or death.**

WARNING!

Use shoes with a sole curvature that matches as much as possible the curvature of the cleat. The use of shoes with unsuitable sole curvature can deform the cleats and prevent proper engagement and disengagement of the cleats, resulting in an accident, personal injury or death.



1

3 - INTERFACE WITH THE CRANKS

WARNING!

Do not insert washers or spacers between the pedal axle and the crank as they would generate abnormal stresses in the interface area. These stresses could lead to premature failure, resulting in an accident, personal injury or death.

IMPORTANT!

Campagnolo® Pro•Fit PLUS™ clipless pedals have 9/16" x 20 TPI threaded axles.
The right pedal axle is marked with the letter "R",while the left pedal axle is marked with an "L".
The right pedal will thread into the crankarm clockwise and the left pedal counter-clockwise.

4 - ASSEMBLY

4.1 - INSTALLATION OF PEDALS ONTO CRANKARMS

Campagnolo® Pro•Fit PLUS™ clipless pedals have 9/16" x 20 TPI threaded axles. The right pedal axle is marked with the letter "R",while the left pedal axle is marked with an "L". The right pedal will thread into the crankarm clockwise and the left pedal counter-clockwise.

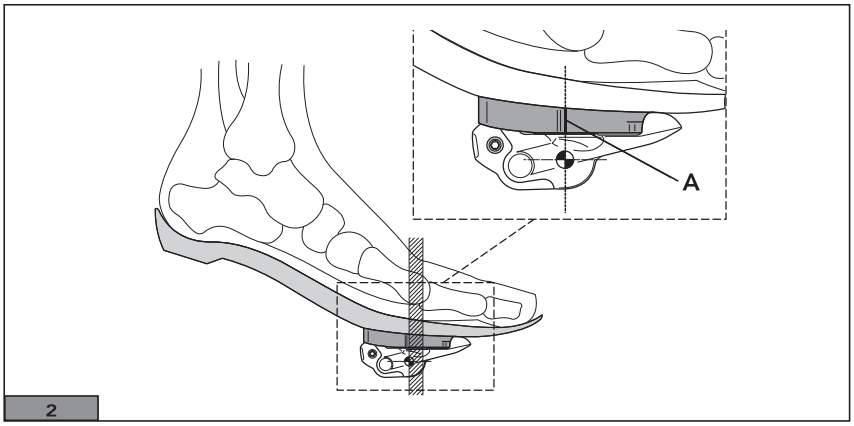
The pedals must be tightened to a torque of **40 Nm (354 in.lbs)**.

1

4.2 - CLEAT INSTALLATION

Campagnolo® **Pro·Fit PLUS™** pedals are sold with cleats that provide lateral float. Correct alignment of the cleats will permit lateral movement without the feeling of being restricted on either side.

If replacement cleats without float (available as a spare part) are used, you must find a position in which ankles, knees and hips are in proper alignment, not stressed or strained. A correct fore-aft position of the cleat will depend on your foot's instep. The ball of your foot should be located directly over, or slightly in front of, the center of the pedal axle (Fig. 2).

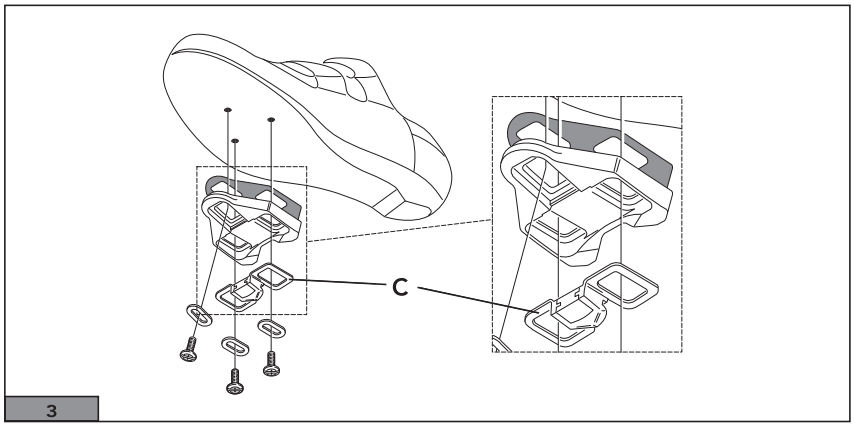


2

In order to make fore-aft positioning of the cleats easier, there are lines (A - Fig. 2) located on the sides of the cleats which correspond with the center of the pedal axle.

• Apply the anti-slip adhesive to the rough side of the resin cleat.

• Fix the metal cleat insert (C - Fig. 3) into the resin cleat, while maintaining the proper orientation.



3

• Turn the shoe upside-down.

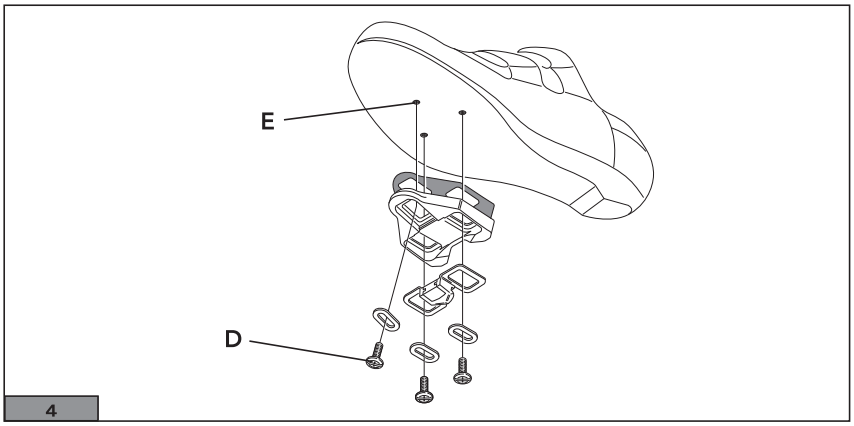
• Position the cleat over the standard three-hole bolt pattern in the shoe sole (Fig. 4).

• Place a washer into each of the three rectangular slots in the cleat. NEVER use more than one washer per slot.

• The kit contains two sets of screws having different lenghts. Select the screw lenght most suited to your shoes. You may use long and short screws on a cleat.

• Fasten the cleats by tightening the screw as far as they will go. It is imperative that each screw (D - Fig. 4) is engaged at least three (3) full turns while tightening. The mounted screws should not deform the insole of the shoe in any manner.

Should you need to use longer screws than those provided, kindly contact Campagnolo S.r.l. **DO NOT use screws supplied by anyone other than Campagnolo.**



4

• Check that the position of the cleat is correct. If necessary loosen the screws and adjust the position of the cleat. Repeat the operation until a perfect positioning is reached.

⚠ **WARNING!**

Improperly aligned cleats can cause pain or discomfort in the knees, ankles and hips and could lead to injury. If pain or discomfort of any kind is experienced, stop the use of the cleats and pedals immediately. See a certified bicycle dealer to properly set up your cleats and pedals. If pain persists, see your physician.

4.3 - REMOVING AND INSTALLING CARTRIDGES

4.3.1 - Wear of pedals and cleats

Your pedals and cleats are subject to wear over time. This wear will lead to a progressive modification of the release tension of your pedals, which can only be partially compensated by adjustment of the tension adjustment bolt. Accordingly, it is critical that you closely monitor the release tension of your pedals and immediately replace worn parts as necessary.
Please note the replacement of worn parts will change the release tension of your pedals. Therefore, after any replacement you must re-adjust the release tension and re-familiarize yourself with the system before using it again.

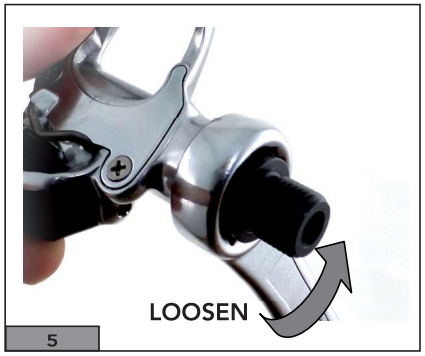
⚠ **WARNING!**

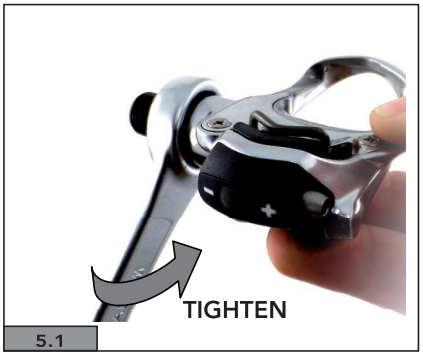
Never use a system that you have not previously tested in a safe area and that you are unable to use properly.

4.3.2 - Removing and installing cartrdiges into pedal body

• Using a standard 20mm box wrench, unthread the composite cartridge fastening nut (Fig. 5 / 5.1).

IMPORTANT: To unthread the right cartridge, turn clockwise; to unthread the left cartridge, turn counter-clockwise (Fig. 5 / 5.1).

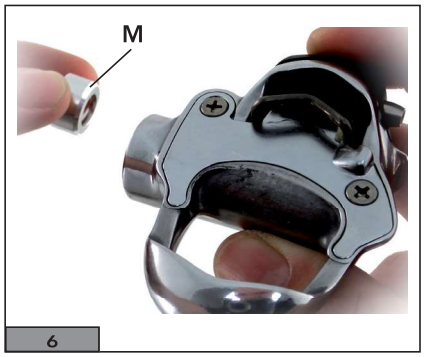


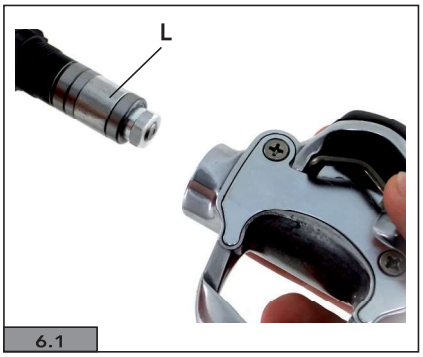


• Extract the cartridge (L - Fig. 6.1) from pedal body. In addition to the cartridge, an alloy bushing (M - Fig. 6) sits at the innermost end of the axle. This bushing must be in place with its concave side facing the axle opening before the cartridge can be re-inserted.

• Make sure the alloy bushing (M - Fig. 6) is in place at the inner end of the cartridge shaft.

• Insert the cartridge (L - Fig. 6.1) until the cartridge nut threads meet the pedal body threads.

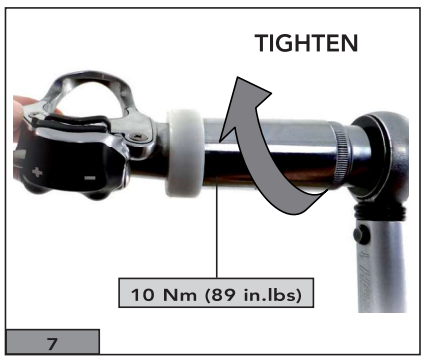


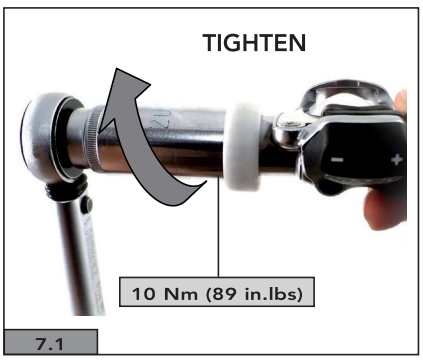


• Tighten using a 20mm box wrench (Fig. 7 / 7.1).

IMPORTANT: The cartridge for the right pedal is tightened in a counter-clockwise direction, and the cartridge for the left pedal is tightened in a clockwise direction (Fig. 7 / 7.1).

The cartridges must be tightened to a torque of **10 Nm. (89 in.lbs)**

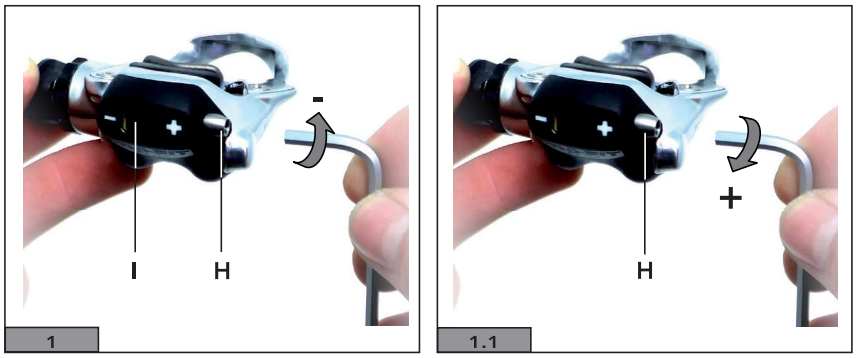




5 - MAINTENANCE

⚠ WARNING!

Normal wear of the various parts of the pedal coupling system leads to a progressive modification of the coupling and release dynamics which can only be partly compensated by adjusting the tension adjustement bolt (H - Fig 1 / 1.1).



The retaining spring is subject to wear. We recommend that you change it about every 30,000 km. Please keep in mind that this distance is purely indicative and could vary significantly on the basis of the conditions of use and the intensity of your activities (for example: racing, rain, salted winter roads, cyclist's weight, etc.). You should always check the spring regularly and change it immediately if it shows signs of wear or a reduction in the release force. Worn springs can fail or malfunctioning, resulting in accidents, personal injury or death.

Carefully monitor the release tension and replace worn parts when necessary.
Replacement of worn parts completely or partly restore the initial pedal coupling and release tension conditions, thereby modifying the situation you were used to. Therefore, after any replacement of worn parts you must re-adjust the tension adjustement bolt (H - Fig 1 / 1.1) and thoroughly familiarize yourself with the system before using it again. Never use a system you do not feel completely at ease with and that you are unable to use perfectly.

⚠ WARNING!

You must set the release tension adjustment in accordance with your riding style (See below).
If the release tension adjustment is too low, your foot could unintentionally disengage from the pedal resulting in loss of control of your bicycle, an accident, personal injury or death.
If the release tension adjustment is too high, you may not be able to disengage from the pedal properly or timely, resulting in loss of control of your bicycle, an accident, personal injury or death.

- To increase the release tension turn the tension adjustment bolt (H - Fig. 1/1.1) clockwise.
- To decrease the release tension turn the tension adjustment bolt (H - Fig. 1/1.1) counter-clockwise.

The display (I - Fig. 1) on the back-side of the pedal shows the approximate release tension adjustment. The pedals are supplied with the release tension adjusted to the minimum.

⚠ WARNING!

- You must become thoroughly familiar and competent with the engagement and disengagement of the cleats from the pedals (starting with one foot on the ground) before using them on public roads. Please practice engagement and disengagement in a safe area , free from other traffic, until you are confident that you can use your pedals properly.
- Before enganging the pedals, always make sure that both the cleat and pedal are clean. Mud, dust and gravel compromise pedal operation, which can cause improper engagement, that can result in an accident, personal injury or death.

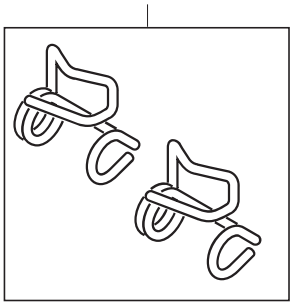
• The life of the components depends on conditions of use and on the frequency and quality of maintenance. To keep the components in good condition, cleaning and lubrication must therefore be repeated frequently, especially if it is subjected to heavy-duty use (i.e. after washing your bicycle, after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

- Dirt seriously damage bicycles and their components. Thoroughly rinse, clean and dry your bike after using it in these conditions.
- 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. Dry them using a soft cloth. Never use abrasive or metal pads.

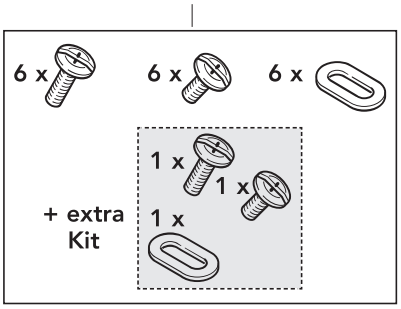
6 - SPARE PARTS

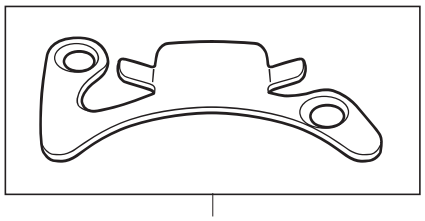
PRO-FIT™ / PRO-FIT PLUS™

R + L: PD-RE105

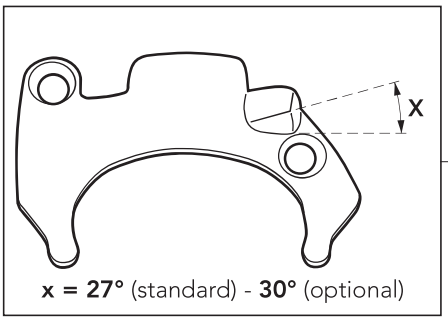


PD-RE116





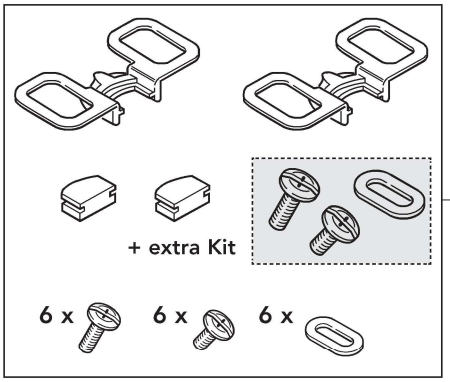
PRO-FIT™
PD-RE111



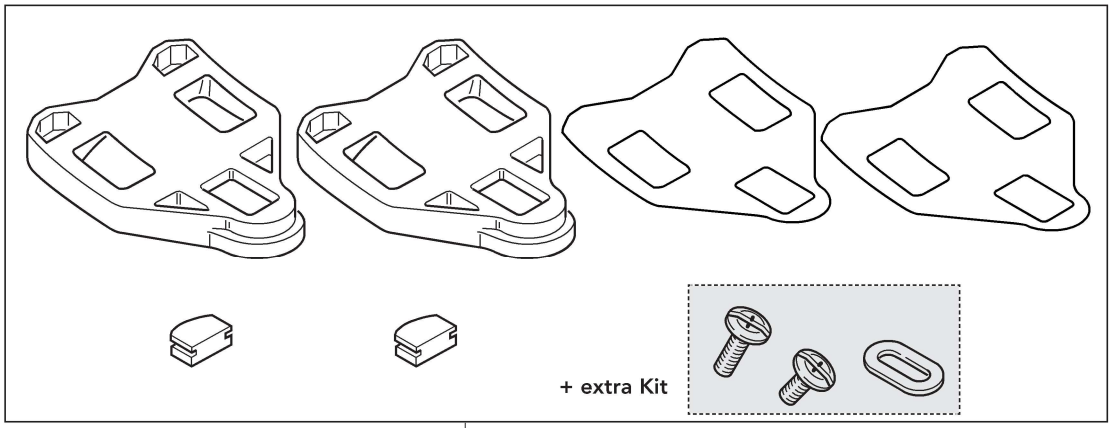
x = **27°** (standard) - **30°** (optional)

PRO-FIT PLUS™
PD-RE110: standard - 27°
PD-RE109: HRE - optional - 30°

PRO-FIT™ / PRO-FIT PLUS™



PD-RE200



PD-RE020 FLOATING CLEATS - **PD-RE021** FIXED CLEATS

BAR END SHIFTERS

1 - TECHNICAL SPECIFICATIONS

REAR DERAILLEUR CONTROL	10S	11S	REAR DERAILLEUR CASING	REAR DERAILLEUR CABLE
Bar-End	3 UP 3 DOWN	3 UP 3 DOWN	Ø 4.1 mm Campagnolo Ultra-low friction	Ø 1.2 mm

FRONT DERAILLEUR CONTROL	DOUBLE	FRONT DERAILLEUR CASING	FRONT DERAILLEUR CABLE
Bar-End	3 UP 3 DOWN	Ø 4.1 mm Campagnolo Ultra-low friction	Ø 1.2 mm

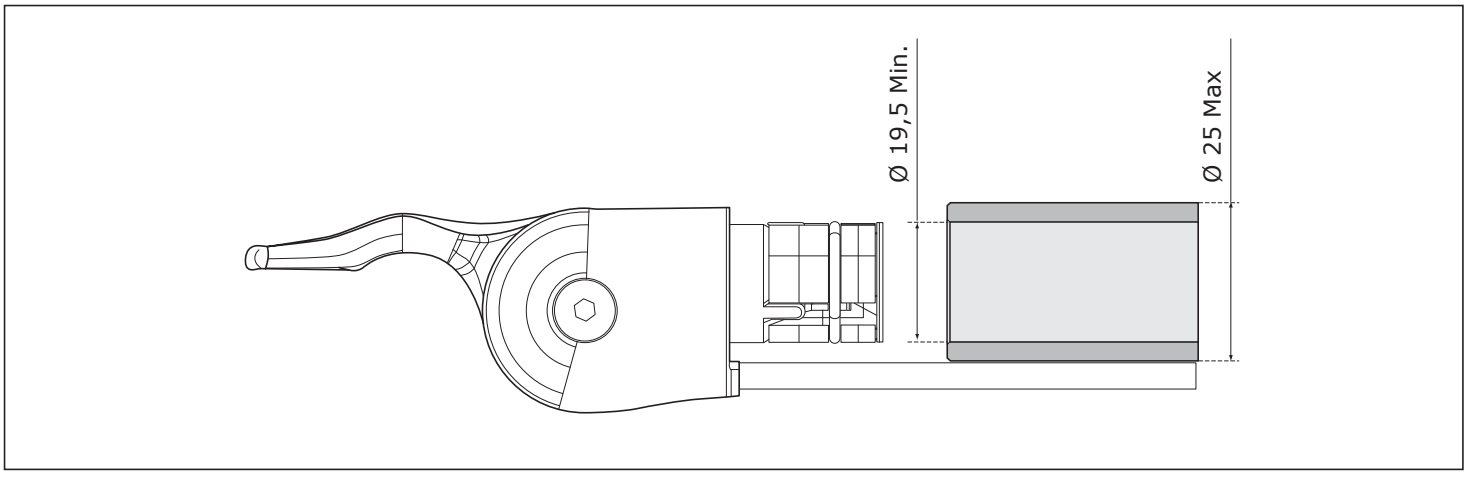
2 - COMPATIBILITY

BAR END SHIFTERS	REAR DERAILLEUR	FRONT DERAILLEUR	CRANKSET
10s	10s	10s	Power-Torque System 10s
11s	11s	11s	Ultra-Torque 11s
			Power-Torque System 11s

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 - INTERFACE WITH HANDLEBAR

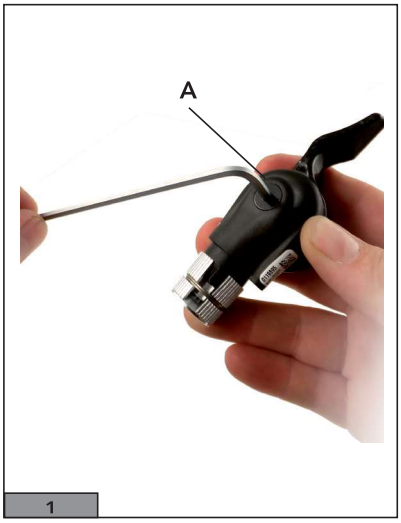


4 - ASSEMBLY

WARNING
The Bar End shift lever assembly must be separated from the body as a single piece.

• Remove the 3mm countersunk screw (A – Fig. 1) of the transmission control to separate the shift lever assembly from the body.

• Insert the expander into the handlebar extension as far as it goes. Tighten the 4 mm internal locking screw (B – Fig. 2) to **5 Nm (44 in.lbs).**



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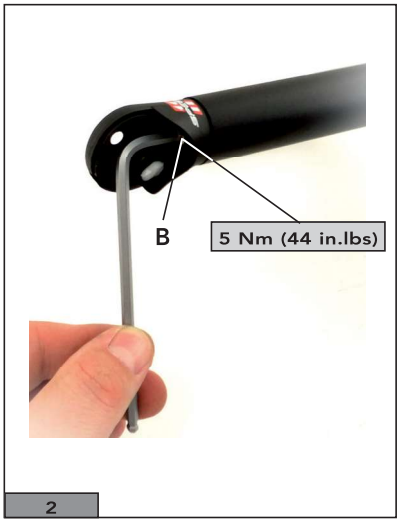

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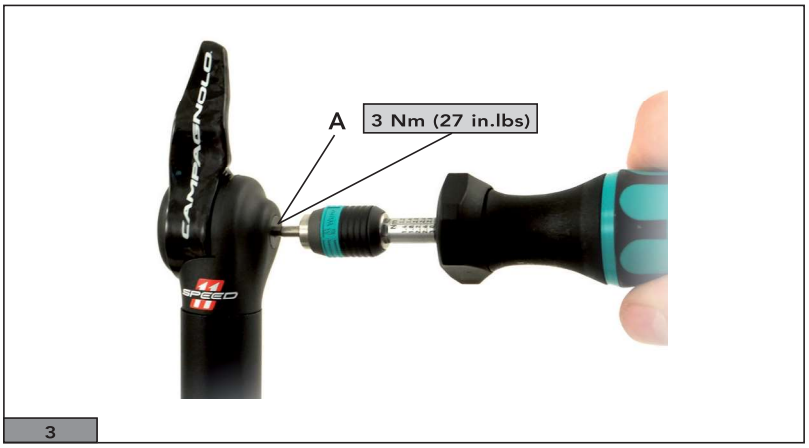
• Refit the the shift lever assembly onto the body. Tighten the 3mm locking screw (A – Fig. 3) to **3 Nm (27 in.lbs).**



3

4.1.1 - Tilt adjustment

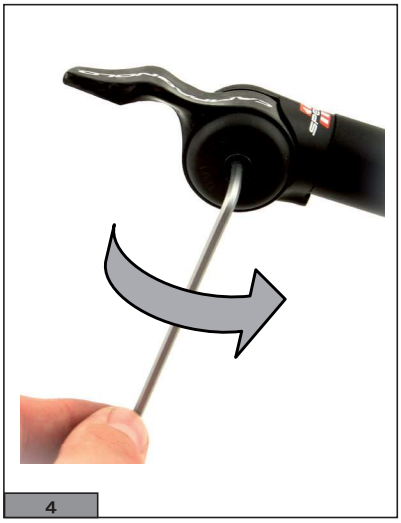
The Campagnolo BAR END controls let you change gear starting from the most aerodynamic position. After changing, the lever returns automatically to the "central" starting position.

To modify the central starting position of the shift lever, proceed as follows:

Loosen, without removing it, the 3 mm tilt adjustment screw (Fig. 4).

⚠ **WARNING!**

Do not remove the 3mm tilt adjustment screw. If the screw is removed, the shift lever assembly will disassemble.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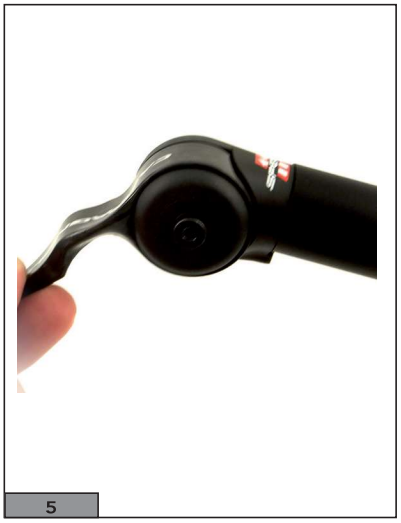
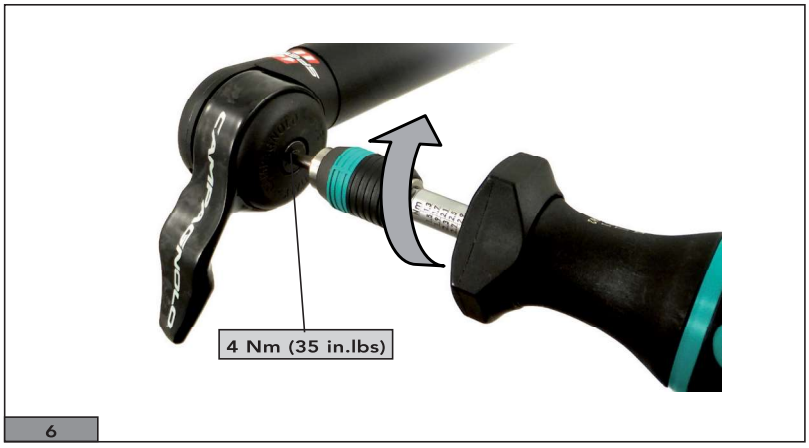

5

• Position the gear change lever with an aerodynamic tilt that is easily reachable (Fig. 5).

• Tighten the 3mm tilt adjustment screw to **4 Nm (35 in.lbs).**



6

4.2 - CABLE INSTALLATION

• Measure the shift cable housing and cut it, making sure it is long enough to allow the handlebar to move freely.

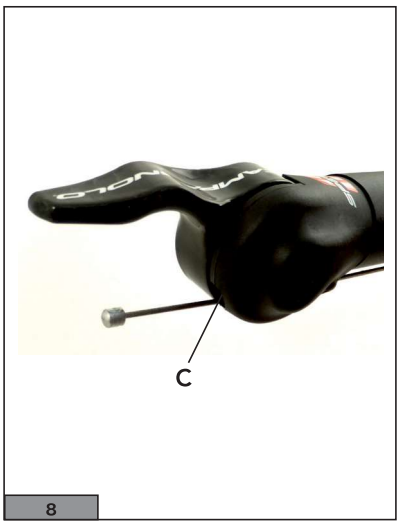
⚠ WARNING!

Before cutting the cable housing, check the selected length is suitable to the size of your frame. An incorrect length of cable and sheathing might jeopardize your ability to steer or control the bike and might cause accidents, injuries and even death.

NOTE

The housing must be cut so that the end is perpendicular to the length (Fig. 7). In addition, the cross section of the housing must not change. After cutting the housing, check that you have restored its roundness to ensure that there is no friction between the cable and housing.
To cut the casings we suggest you to use the specific tool Park Tool CN-10.

7



8

NOTE

The BAR-END controls do not need any housing end cap.

• Operate the shift lever, moving it to the lowest gear.
• Operate the derailleur lever, moving it to the lowest gear.
• Insert the cable through inlet (C – Fig. 8), making it exit from the shift assembly into the shift housing.
• Fix the cable onto the derailleur and adjust indexing following the instructions supplied by the derailleur manufacturer.

⚠ WARNING!

Once the cable is installed, check it doesn't foul steering or any other bike function. Any fouling might jeopardize your ability to steer or control the bike and might cause accidents, injuries and even death.

5 - MAINTENANCE

The cables and housings must be replaced every 2 years or after 20,000 km maximum.

If the bike is used in competitions, the cables and sheaths must be replaced every year or after 15,000 km maximum.

Dirt damages the bike and its components seriously. Clean, rinse and dry your bike accurately after using it.

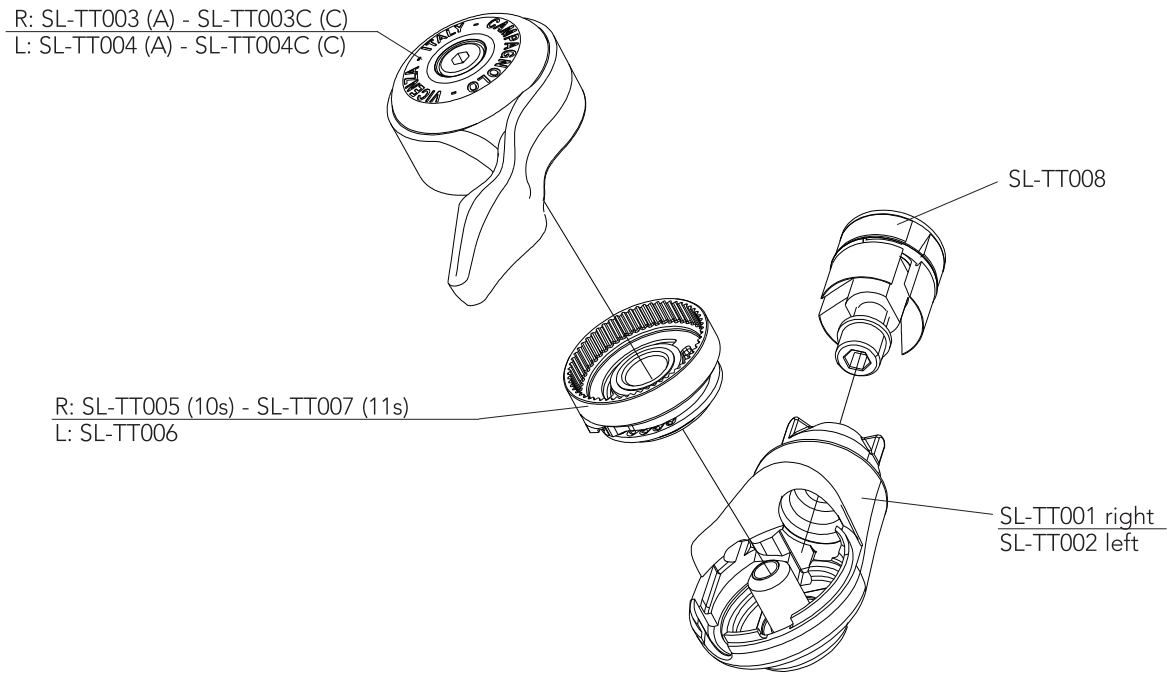
The intervals stated are just an indication and might vary significantly according to the conditions and intensity with which the bike is used (i.e. significant factors are: competitions, rain, salted roads during the winter, cyclist's weight, etc.). To identify the best intervals for your characteristics, contact your mechanic.

Never wash your bike with a pressure washer. Pressurized water, even the water coming out of a garden hose, may penetrate gaskets and enter your Campagnolo® components, damaging them irreparably. Wash your bike and Campagnolo® components with water and a neutral detergent. Dry with a soft cloth: never use abrasive or metal brushes.

6 - SPARE PARTS

BAR-END TT
10s: SL12-TT10CG (alu)
11s: SL12-TT11CG (alu)
SL12-TT11CGC (carbon)

R.H. COMPLETE CONTROL LEVER / COMANDO DX COMPLETO
SL12-TT10R - SL12-TT11R - SL12-TT11CR
L.H. COMPLETE CONTROL LEVER / COMANDO SX COMPLETO
SL12-TT10L - SL12-TT11L - SL12-TT11CL



BAR END BRAKE LEVERS

1 - TECHNICAL SPECIFICATIONS

FRONT BRAKE CABLES		BACK BRAKE CABLES		FRONT BRAKE CABLE HOUSING		BACK BRAKE CABLE HOUSING	
Lenght:	800 mm	**Lenght:**	1600 mm	**Lenght:**	580 mm	**Lenght:**	1250 mm
Diameter:	1.6 mm	**Diameter:**	1.6 mm	**Diameter:**	4.9 mm	**Diameter:**	4.9 mm

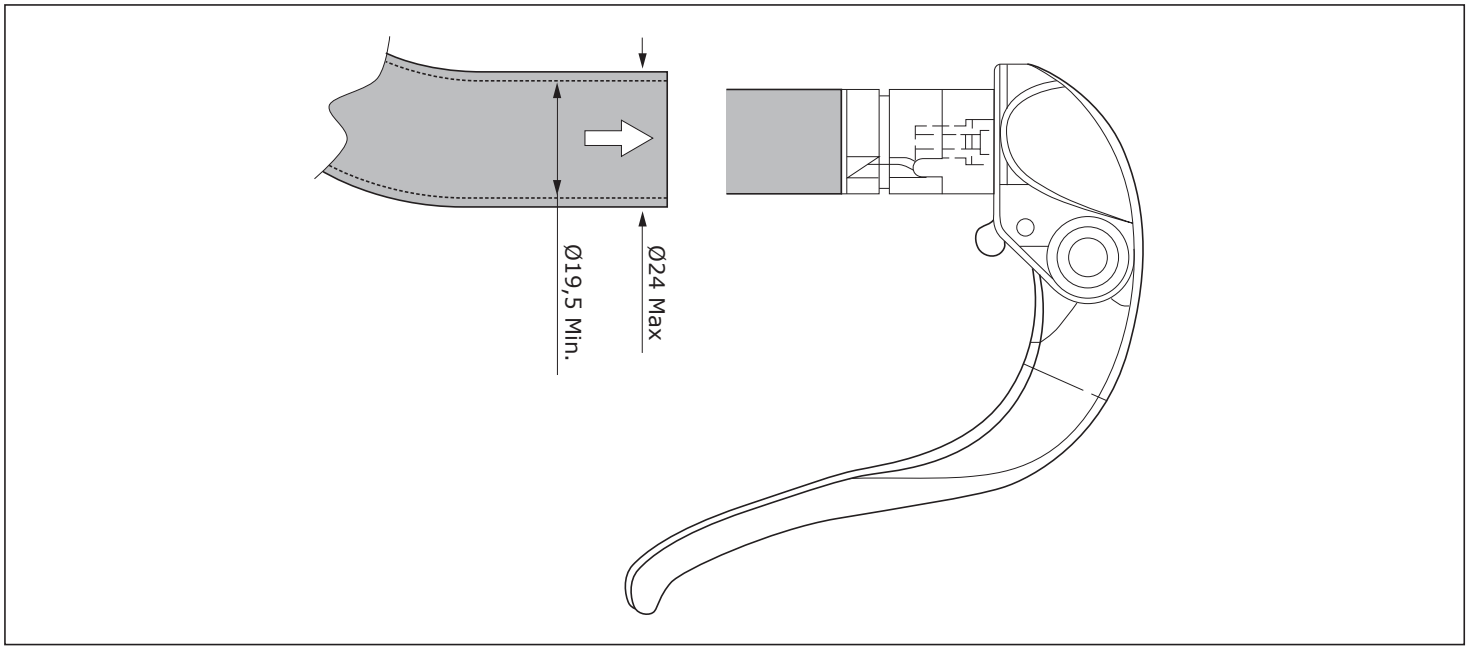
2 - COMPATIBILITY

COMPATIBILITY WITH HANDLEBAR
Aluminium time trial handlebar.
Carbon fiber time trial handlebar with aluminium inserts where the brakes are installed.
Handlebar internal diameter: 19,5 mm (Min.)

WARNING! COMPATIBILITY

The BAR END brake levers are compatible ONLY with caliper brakes.

3 - INTERFACE WITH HANDLEBAR



4 - ASSEMBLY

4.1 - BRAKE LEVER ASSEMBLY

• Get the housing to pass through the handlebar and adjust its length letting it stick out at the front for about 10 mm (Fig. 1).

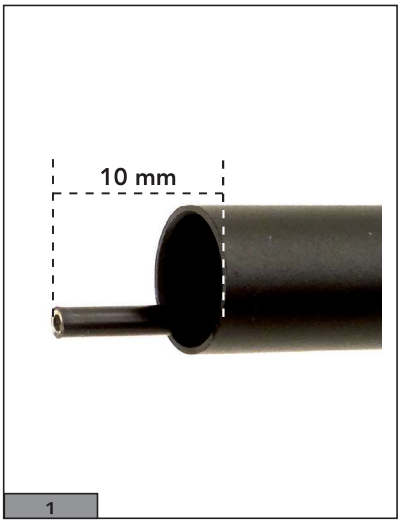
⚠ **WARNING!**

Before cutting the sheath, check the selected length is suitable to the size of your frame. An incorrect length of cable and sheathing might jeopardize your ability to steer or control the bike and might cause accidents, injuries and even death.

NOTE

The sheath must be cut at a right angle without altering its section (Fig. 2). After cutting the sheath, make sure it is still round in order to avoid friction between the cable and the sheath itself.

To cut the casings we suggest you to use the specific tool Park Tool CN-10.



1

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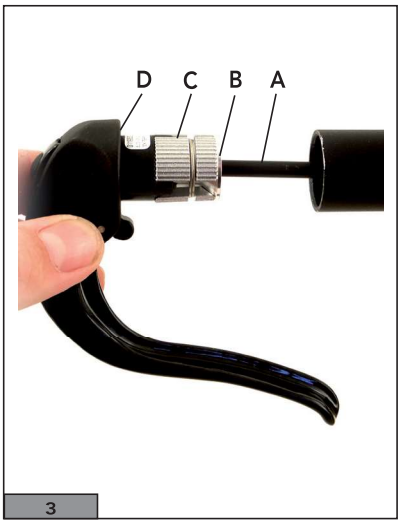
• Insert the end (A – Fig. 3) of the sheath into the back housing (B - Fig. 3) of the control.

NOTE
The BAR-END brake levers do not need any housing end cap.

• Insert the expanding part (C – Fig. 3) of the lever into the handlebar bringing it level with the face (D – Fig. 3).

• Fix the lever with a 4 mm Allen key, tightening the screw (E – Fig. 4) fitted inside the lever itself, at **6-8 Nm (53 - 71 in. lbs).**



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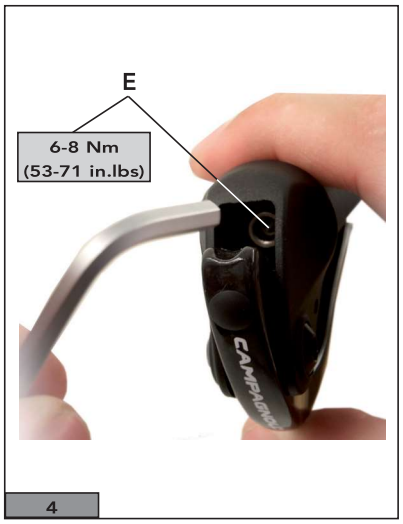


4

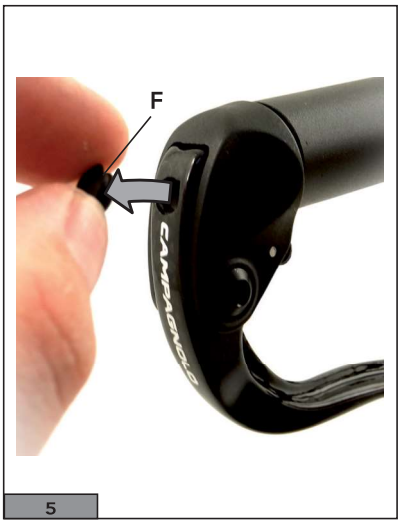
If a carbon fibre handlebar is used, it might be necessary to reduce the tightening torque in order not to damage the handlebar. Contact the manufacturer of the bike and of the handlebar to get all the necessary information on the correct tightening torques.

4.2 - ASSEMBLING AND FITTING THE CABLE

• Remove rubber cap (F – Fig. 5) from the front of the brake lever.

• Insert cable (G - Fig. 6) making it go through hole (H – Fig. 6) of the brake lever and the hole in fixing screw (E - Fig. 4).

Make sure the cable slides freely in the sheath.



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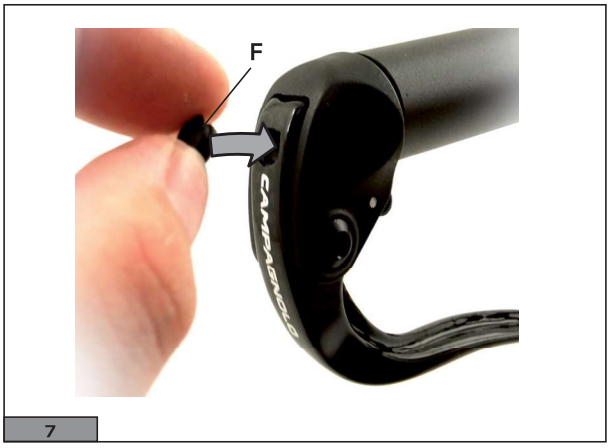
• Fix the cable with the brake fastening screw (refer to the brake user manual).

• Replace cap (F – Fig. 7) into the brake lever hole.

⚠ **WARNING!**

Once the cable is installed, check it doesn't foul steering or any other bike function. Any fouling might jeopardize your ability to steer or control the bike and might cause accidents, injuries and even death.



5 - MAINTENANCE OF THE BAR END LEVERS

The intervals stated are just an indication and might vary significantly according to the conditions and intensity with which the bike is used (i.e. significant factors are: competitions, rain, salted roads during the winter, cyclist's weight, etc.). To identify the best intervals for your characteristics, contact your mechanic.

The cables and housings must be replaced every 2 years or after 20,000 km maximum.

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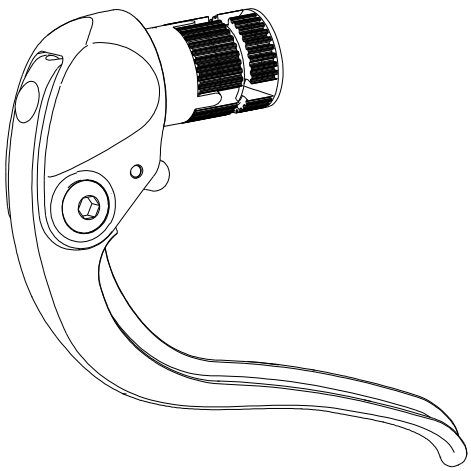
Dirt damages the bike and its components seriously. Clean, rinse and dry your bike thoroughly after using it.

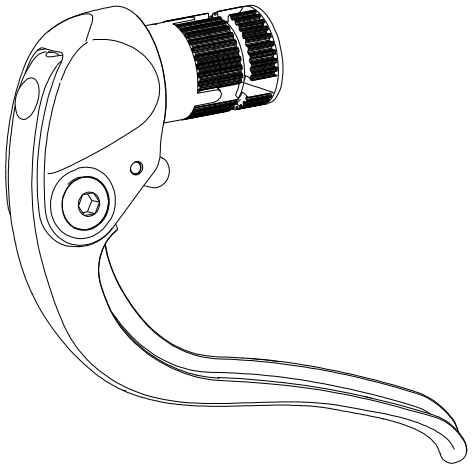
Never wash your bike with a pressure washer. Pressurized water, even the water coming out of a garden hose, may penetrate gaskets and enter your Campagnolo® components, damaging them irreparably. Wash your bike and Campagnolo® components with water and a neutral detergent. Dry with a soft cloth: never use abrasive or metal brushes.

6 - SPARE PARTS

BRAKE LEVERS TT
BL12-TTCG (alu)
BL12-TTCGC (carbon)

R.H. COMPLETE BRAKE LEVER / LEVA FRENO DX COMPLETA
BL12-TTCR (carbon) - BL12-TTR (alu)
L.H. COMPLETE BRAKE LEVER / LEVA FRENO SX COMPLETA
BL12-TTCL (carbon) - BL12-TTL (alu)





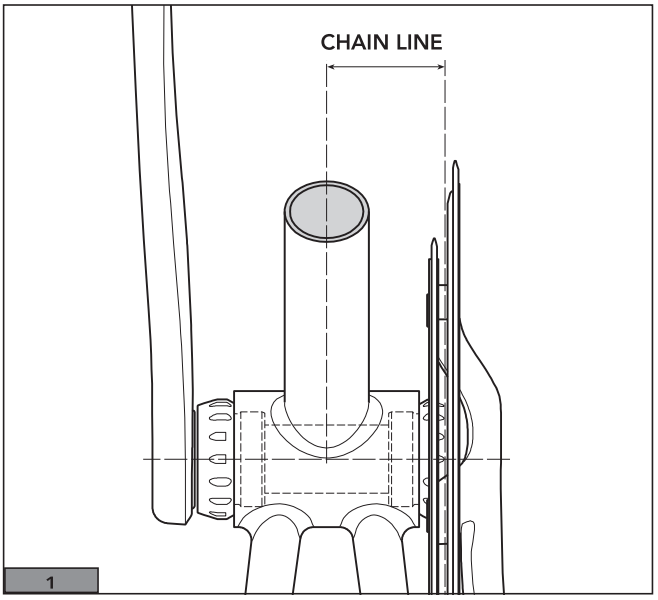
CX CRANKSET

1 - TECHNICAL SPECIFICATION

COMPACT CRANKSET	BOLT CIRCLE DIAMETER	CHAIN LINE	MINIMUM CHAINSTAY LENGHT	AXLE THREADS
50/34	110 mm (Shank radius = 56.5 mm)	43,5 mm	405 mm	9/16x20 TPI

1.1 - CHAIN LINE SIZE

• Chain line for double crankset (Fig, 1)



2 - COMPATIBILITY

CRANKSET	CHAIN	CONTROL LEVERS	REAR DERAILLEUR	FRONT DERAILLEUR
CX 10	10s Ultra-Narrow	Ergopower Power-Shift 10s	10s	10s
		Ergopower Flat-Bar 10s		
CX 11	11s	Ergopower Power-Shift 11s	11s	11s
		Ergopower Ultra-Shift 11s		

INTENDED USE - This Campagnolo® product has been designed and manufactured to be fitted and used only on "cyclocross" bikes, and any other use is expressly excluded. Any other use of this product (like, for instance, cross country, all mountain-enduro, acrobatic off-road, downhill, fourcross, freeride, free-style or any other type of extreme off-road cycling as defined by UCI) can cause accidents, injuries and even death and is therefore expressly forbidden.

CRANKSET	INTENDED USE
CX 10	for cyclocross
CX 11	for cyclocross

2.1 - PEDAL AXLE COMPATIBILITY

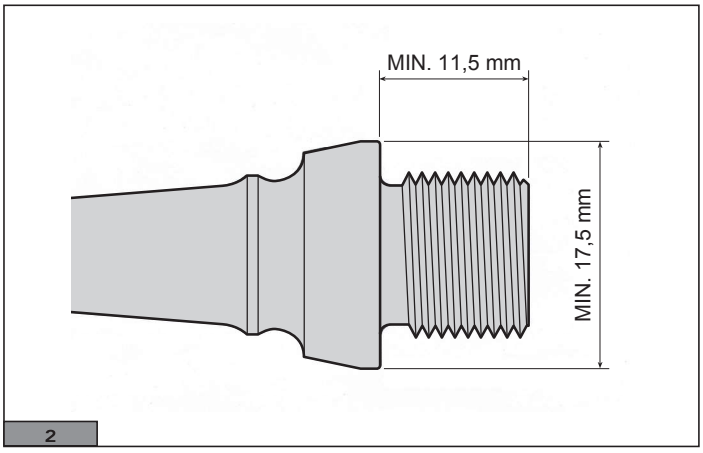
⚠ **WARNING!**

Do not insert washers between the pedal axle and the crank as they would generate abnormal stresses in the interface area. These stresses could lead to premature failure, resulting in an accident, personal injury or death.

⚠ **WARNING!**

The contact face of the pedal axle must correspond with the data of Fig. 2.
The above characteristics are necessary to minimize abnormal stresses in the cranks. Such stresses could lead to premature failure, resulting in accidents, personal injury or death.

NOTE
Q-factor: 145,5 mm (nominal value).



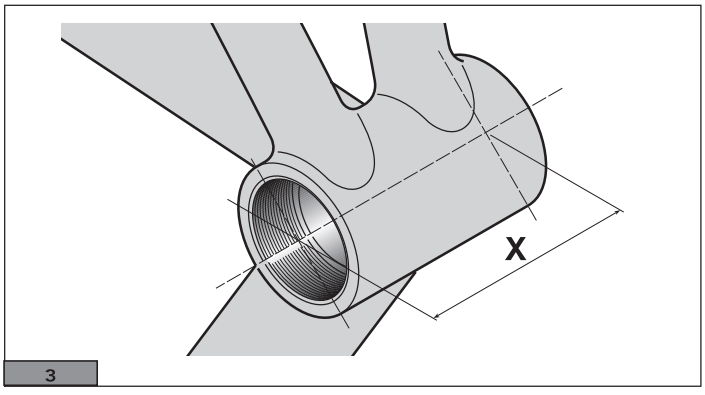
2

3 - INTERFACE WITH THE FRAME

3.1 - COMPATIBILITY WITH BOTTOM BRACKET SHELLS

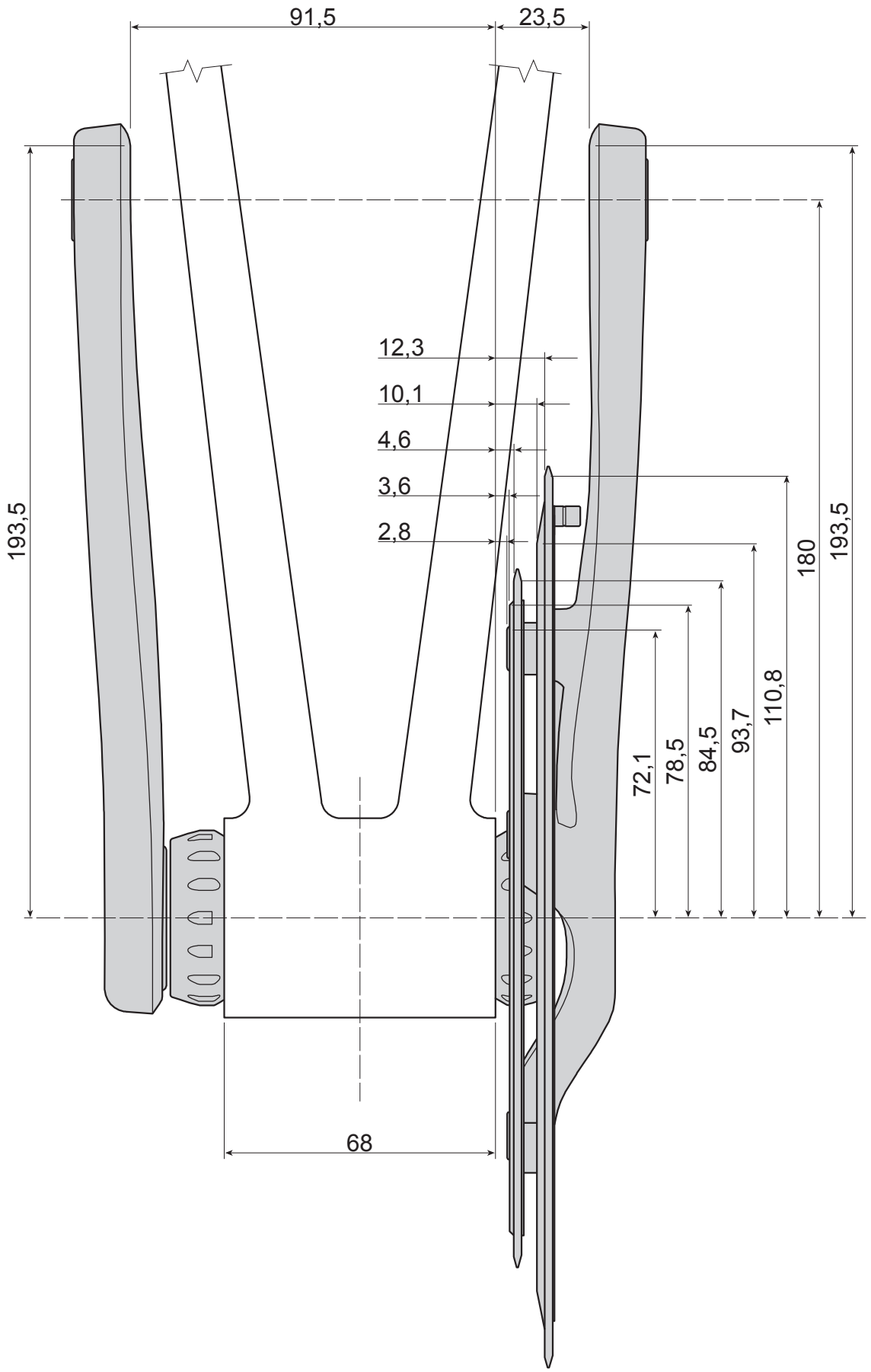
• The Campagnolo® CX™ crankset is compatible with shells having the following widths:

TYPE	X (Fig. 3)
Italian thread	69.2 mm ÷ 70.8 mm
English thread	67.2 mm ÷ 68.8 mm



3

3.2 - DIMENSIONS FOR CX CRANKSETS



4 - ASSEMBLY AND MAINTENANCE

As far as the fitting and maintenance of the CX cranksets are concerned, refer to the chapter "Power Torque System crankset" in this technical handbook.

ATTENTION
Use only cups for Campagnolo CX crankset.

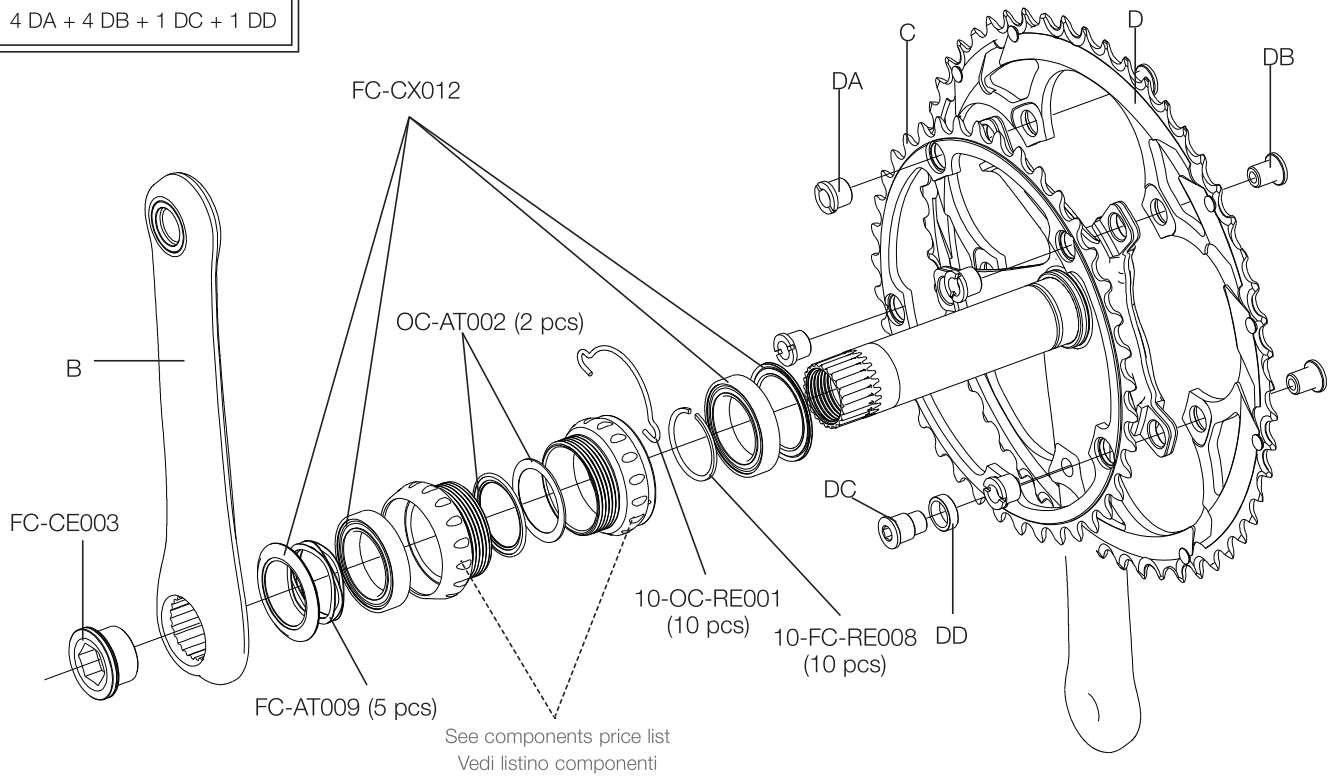
CRANKSET	Standard ITA	Standard ENG
CX 10 CX 11		

5 - SPARE PARTS

CX™ POWER-TORQUE™
10s
FC11-CXX...

FC-AT300
KIT VITI / SCREWS&NUTS
4 DA + 4 DB + 1 DC + 1 DD

		CARBON	ALUMINIUM
B	170 mm 172,5 mm 175 mm	FC-CX799 FC-CX801 FC-CX803	FC-CX656 FC-CX657 FC-CX658
C	Z34 Z36	FC-CE334 FC-CX136	FC-CX034 FC-CX036
D		FC-CX146 FC-CX150	FC-CX046 FC-CX050



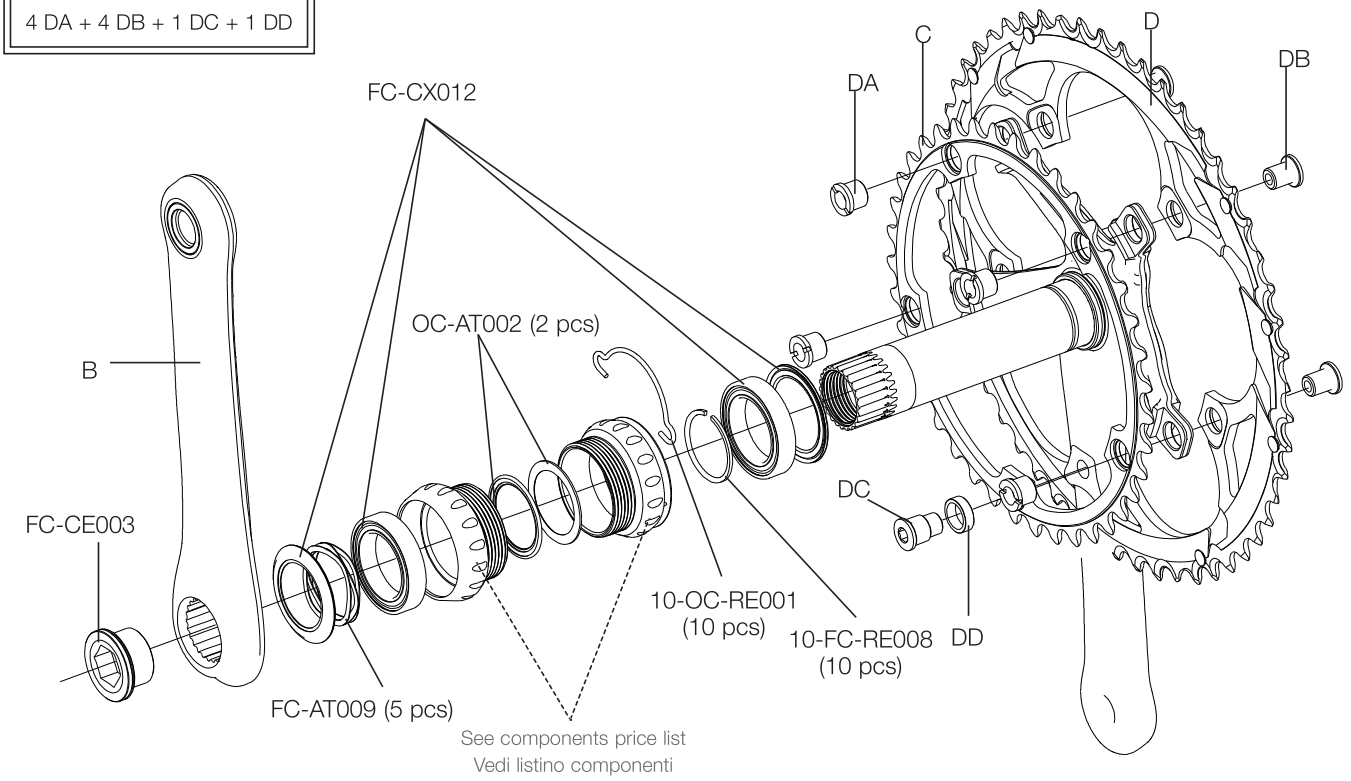
See components price list
Vedi listino componenti

CX™ POWER-TORQUE™ 11s

FC11-CX1...

FC-AT300
KIT VITI / SCREWS&NUTS
4 DA + 4 DB + 1 DC + 1 DD

		CARBON	ALUMINIUM
B	170 mm 172,5 mm 175 mm	FC-CX787 FC-CX789 FC-CX791	FC-CX636 FC-CX637 FC-CX638
C	Z34 Z36	FC-CX134 FC-CX236	FC-CX234 FC-CX336
D	Z46 for 36 Z50 for 34	FC-CX246 FC-CX250	FC-CX346 FC-CX350



See components price list
Vedi listino componenti

CX BRAKES

1 - TECHNICAL SPECIFICATIONS

CANTILEVER CX BRAKES
Brake-pad height adjustment ratio: 20÷35 mm
Adjustment of the distance between pads, possibility to use tires of width 19-35 mm, rims of width 19-22 mm
Possibility of adjusting the tension of the cables

2 - COMPATIBILITY

INTENDED USE - This Campagnolo® product has been designed and manufactured to be fitted and used only on "cyclocross" bikes, and any other use is expressly excluded. Any other use of this product (like, for instance, cross country, all mountain-enduro, acrobatic off-road, downhill, fourcross, freeride, free-style or any other type of extreme off-road cycling as defined by UCI) can cause accidents, injuries and even death and is therefore expressly forbidden.

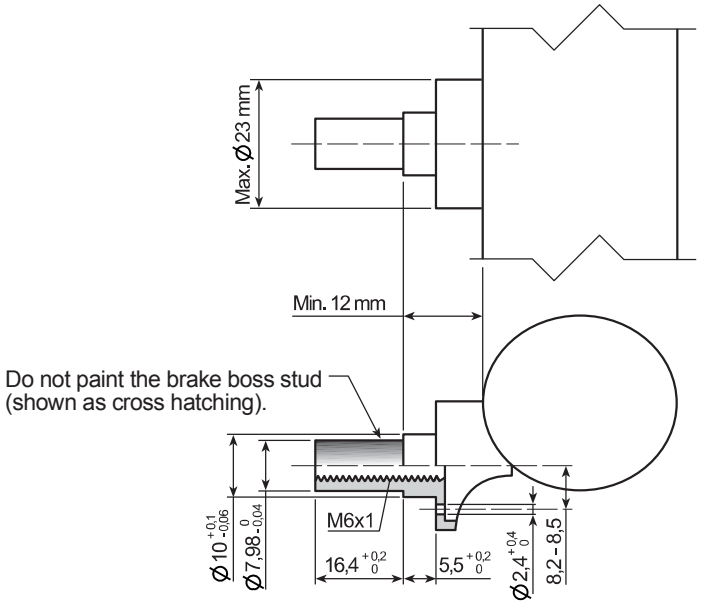
CONTROL LEVERS	CRANKSET
Ergopower Flat-Bar 10s	CX 10s
Ergopower Power - Shift 10s	CX 10s
Ergopower Power - Shift 11s	CX 11s

BRAKE PADS	COMPOSITE RIMS	ALUMINUM RIMS
BR-BO500X	**Only for composite rims.** The use of any other pad-rim combination could result in insufficient or uneven braking and lead to accidents, physical injury or death.	
BR-CX500		**Only for aluminium rims.** The use of any other pad-rim combination could result in insufficient or uneven braking and lead to accidents, physical injury or death.

WARNING!

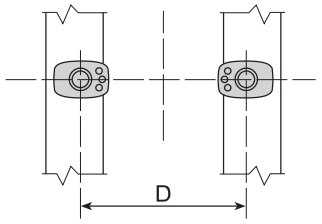
Different combinations from those included in the table could cause the malfunction of the drivetrain and result in an accident, personal injury or death.

3 - INTERFACE WITH THE FRAME

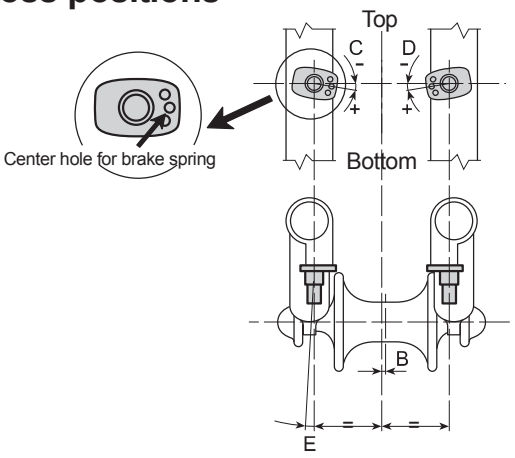


Brake boss positions

Cantilever brake boss distance D



Dimension D is the distance between the cantilever brake bosses center to center.

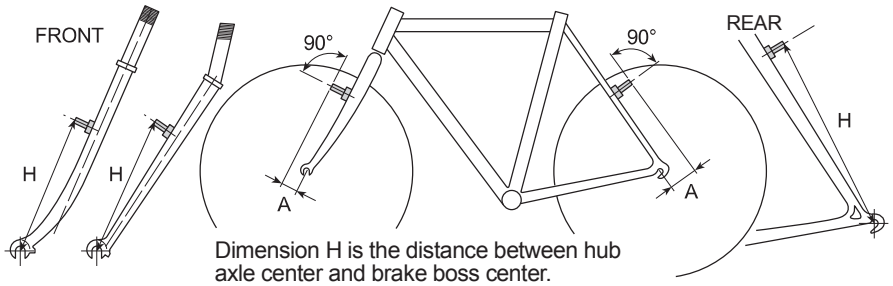


+/-: Direction

C = D
(For cantilever brake)

-3 ≦ E ≦ 3
B ≦ 2 mm

Frame mounting height for brake bosses



Dimension H is the distance between hub axle center and brake boss center.

Dimension A is the height of the brake boss measured from hub axle center.

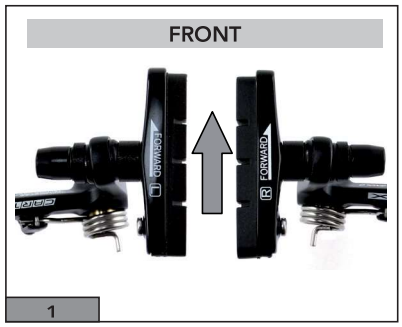
ISO 5775 #622 (Old marking 700C, 28-inch)

H = 283 ± 1 mm	-8 mm ≦ A ≦ 70 mm

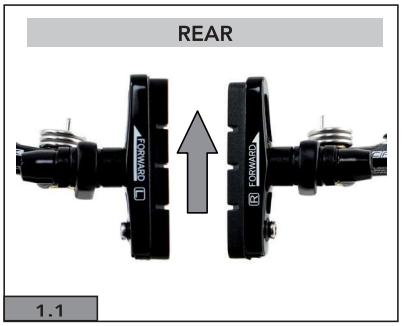
4 - ASSEMBLY

4.1 - BRAKE ASSEMBLY

• Check the correct position of the pad holders in relation to the direction of the wheel rotation. (Fig. 1 / 1.1).



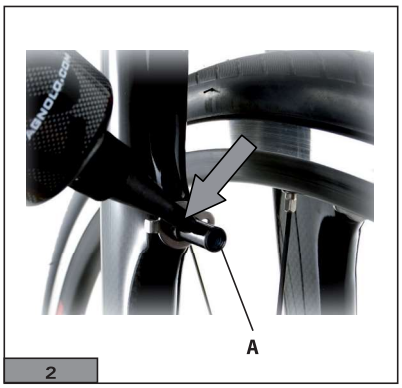
1



1.1

• Clean and grease the frame brake bosses (A – Fig. 2).

• Check that the springs (B – Fig. 3) are positioned correctly on the calipers.

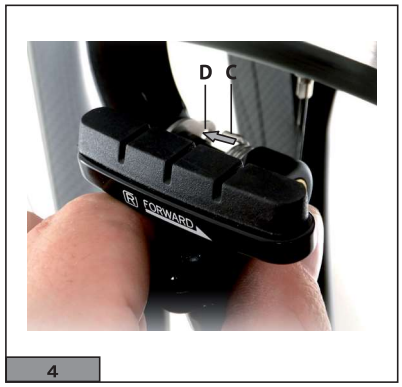


2

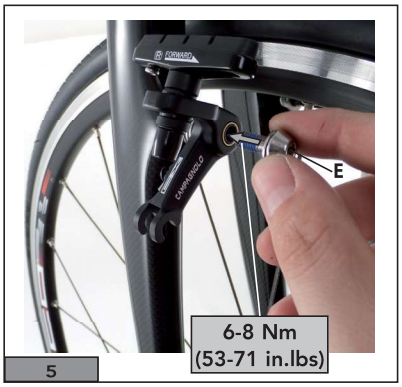
3

• Place the calipers on the bosses, inserting the spring end (C – Fig. 4) into the relative hole (D – Fig. 4).

• Tighten the calipers at **6-8 Nm (53-71 in. lbs)**, using a 5 mm hexagonal key and the appropriate screws (E - Fig. 5).



4



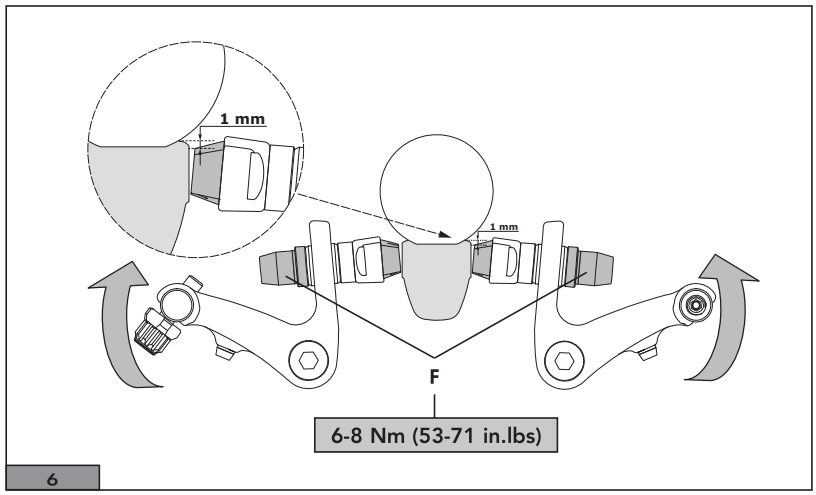
5

4.1.1 - Brake pad positioning

• Rotate the brake calipers so that the pads are in contact with the rim face (Fig. 6).
The pad faces must be parallel to the rim surface.

• The pads must be central to the braking surface, so that there is at least 1mm from the edge of the rim (Fig. 6).

• Secure each brakeshoeby thigtening each nut (F – Fig. 6) in at **6-8 Nm (53-71 in. lbs)**, using a 5 mm hexagonal key with spherical head.

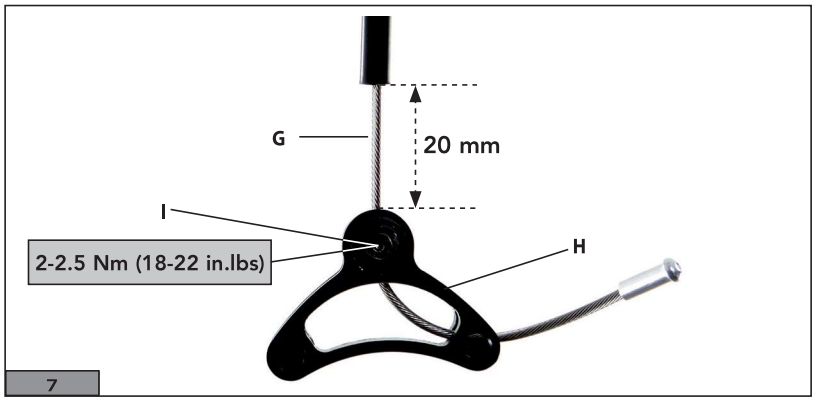


6

4.1.2 - Triangle assembly and cable fastening

• Insert the brake cable (G – Fig. 7) into the triangular support (H – Fig. 7), adjust the distance from the tire leaving a minimum of 20mm from the housing stop (Fig. 7).

• Fix the cable (G – Fig. 7) tightening the two set screw alternatively (I – Fig. 7) to **2-2.5 Nm (18-22 in. lbs)**, using a 3 mm hexagonal key.



7

WARNING!

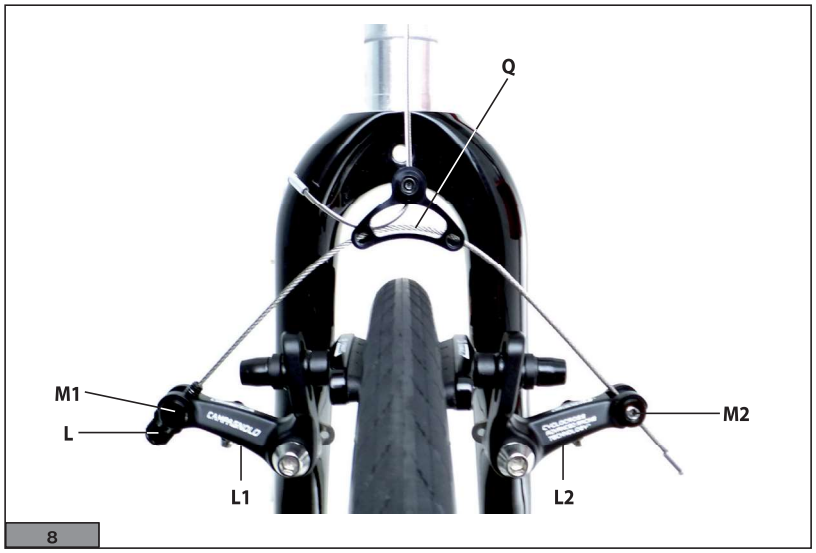
Please be sure that you tighten the cable sufficiently, without crushing the cable, so that it does not slip when brakes are applied. A loose or damaged cable can cause the brake system to malfunction resulting in an accident, personal injury or death.

4.1.3 - Assembling and fitting the triangle cable

• Take the cable to adjusting screw L (Fig. 8) and position the stay on the first brake caliper L1 (Fig. 8).

• Pass cable Q (Fig. 8) through the triangle.

• Insert the cable into anchoring stay M (Fig. 8) on the second brake caliper L2 (Fig. 8) and fix the dowel moderately.

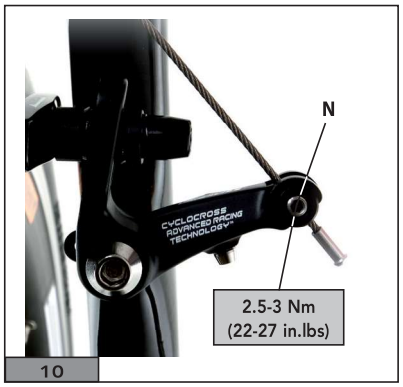


8

• Adjust the cable length operating the brake levers of the Ergopower control (Fig. 9).

• Fix the cable tightening alternatively the two set screw N (Fig. 10) of the stay at **2.5-3 Nm (22-27 in. lbs),** using a 2.5 mm hexagonal key.

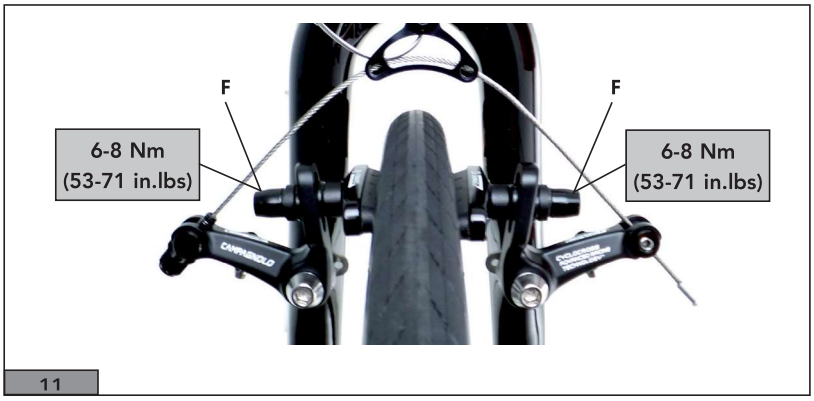

9



10

4.1.4 - Fixing the pad holders

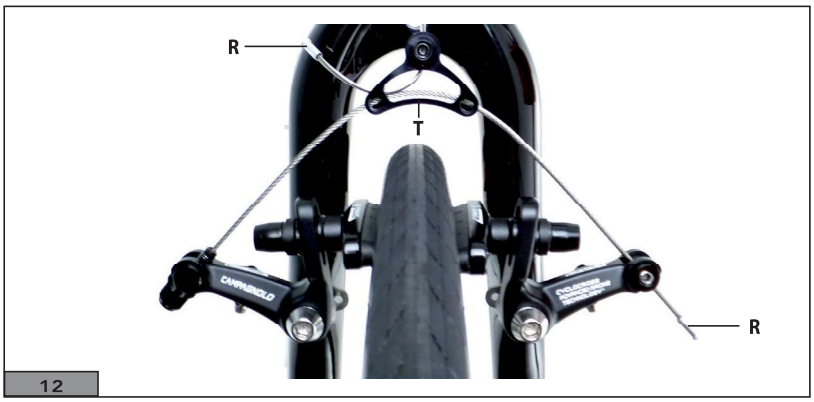
• Check once more that the alignment of the pads with the rim is correct.
• Secure both pad holders by tightening the two nuts at **6-8 Nm (53-71 in.lbs),** using a 5 mm hexagonal key (F – Fig. 11).
• Try and brake a few times (Fig. 9).



11

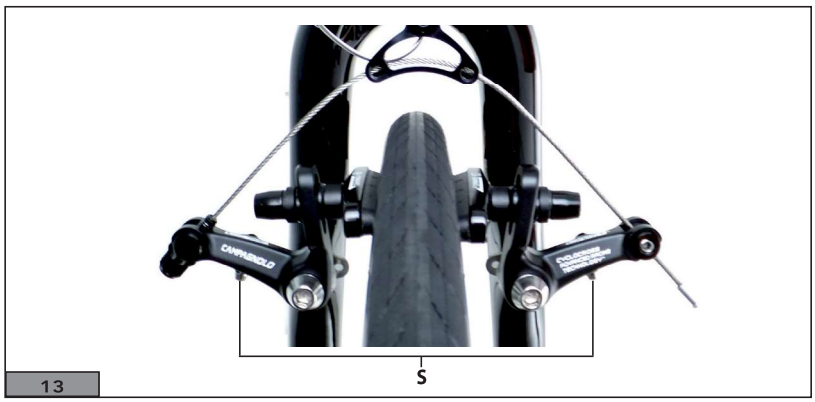
4.1.5 - Final operations

• Cut the cables for the central brake and for the triangle to the desired length.
• Insert and fix cables R at the ends (Fig. 12).



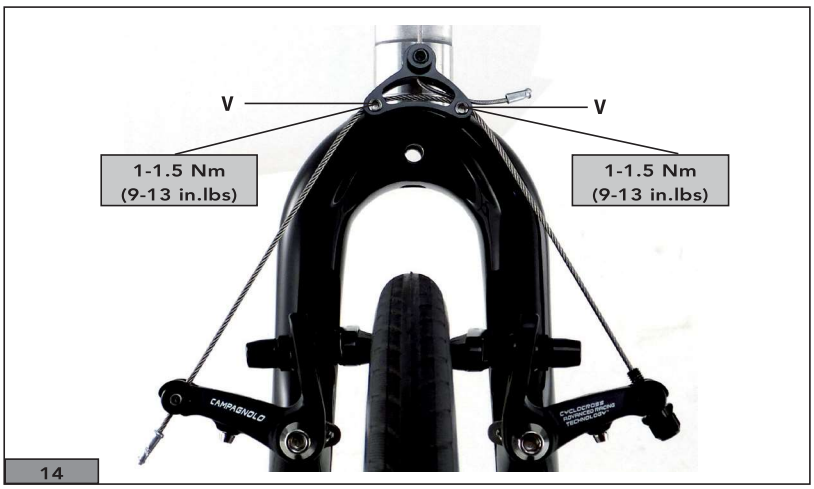
12

• Balance the calipers by adjusting the springs with screws S (Fig. 13) (using a 3 mm hexagonal key).
• Place the triangle centrally (T – Fig. 12) in relation to the central cable.



13

• Fix the two set screws (V – Fig. 14) onto the triangle using a 3 mm hexagonal key and tightening it at **1-1.5 Nm (9-13 in.lbs).**



14

5 - MAINTENANCE

• 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.

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.

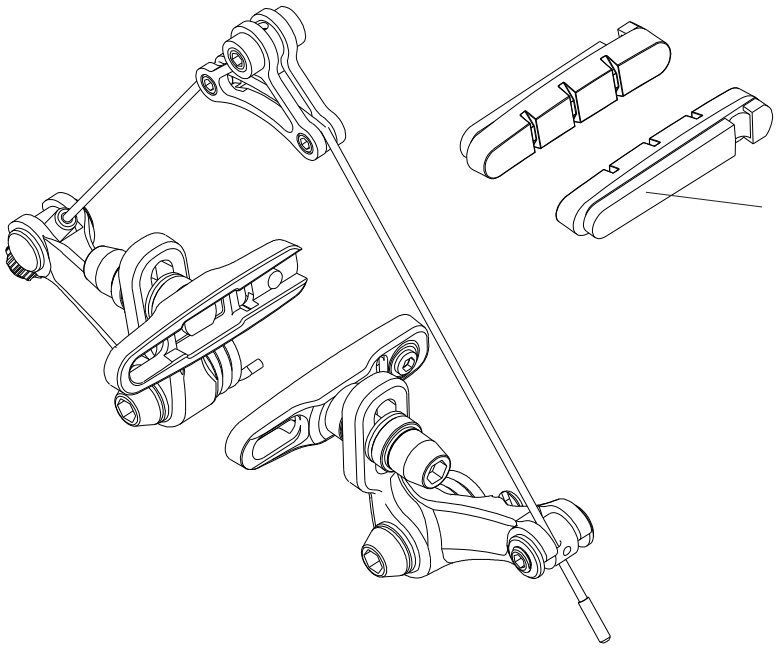
⚠ **WARNING!**

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.

6 - SPARE PARTS

CX™ CANTILEVER BRAKES
BR12-CXS (silver)
BR12-CXB (black)

COMPLETE FRONT BRAKE / FRENO ANT. COMPLETO
BR12-CXSF (SILVER)/BR12-CXBF (BLACK)
COMPLETE REAR BRAKE / FRENO POST. COMPLETO
BR12-CXSR (SILVER)/BR12-CXSR (BLACK)



BR-CX500
(4 pcs - for alu rims - Dura-Ace compatible)

BR-BO500X
(4 pcs - for carbon rims - Dura-Ace compatible)

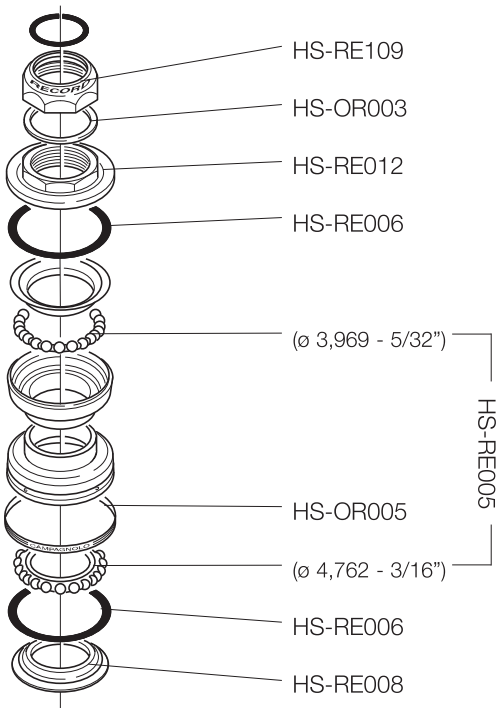
RECORD PISTA

1 - TECHNICAL SPECIFICATIONS

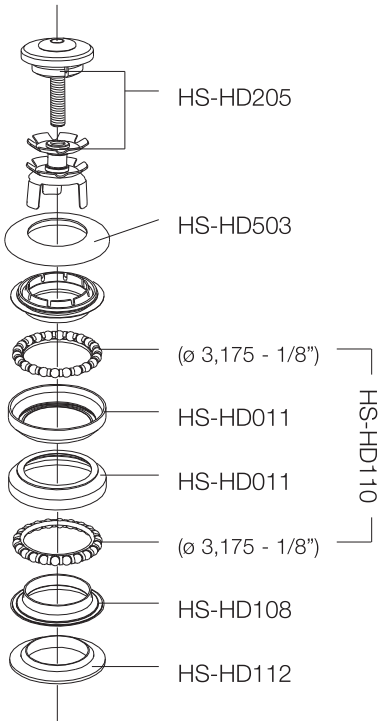
COMPONENT	OPTIONS	FEATURES
RECORD™ PISTA™ front hub	32, 36 holes	light alloy body – lubrication port - small flanges - O.L.D. 100 mm
RECORD™ PISTA™ rear hub	32, 36 holes	light alloy body – lubrication port - small flanges - O.L.D. 120 mm
RECORD™ PISTA™ crankset	165, 170 mm 47, 48, 49, 50, 51, 52	requires b.b. L. 111 mm (asymmetrical)
RECORD™ PISTA™ bottom bracket	ITA, ENG	axle L. 111 mm (asymmetrical) - composite and light alloy cartridge - light alloy cups - without sealings
RECORD™ Pro·Fit Plus™ pedals		Titanium axle - light alloy body - with floating (standard) or fixed (optional) cleats - composite axle fixing nuts - polished aluminium finish - left axle compatible with the ErgoBrain™ magnet
RECORD™ headset		BC 1”x24tpi - height 36.5 mm - light alloy with steel inserts - cup and cone system
RECORD™ Threadless™ headset		1” - for unthreaded fork tube - height 24.5 mm - composite cover and light alloy fixing screw - lubrication port - cup and cone system - patented centering system
RECORD™ Hiddenset™ headset	1-1/8” 1-1/8” TTC™	internal headset for unthreaded fork tube - version 1-1/8”: height 5.9 mm, version 1-1/8” TTC™: height 15.9 mm - patent pending system - composite and light alloy fixing screw and cap - cup and cone system

2 - SPARE PARTS

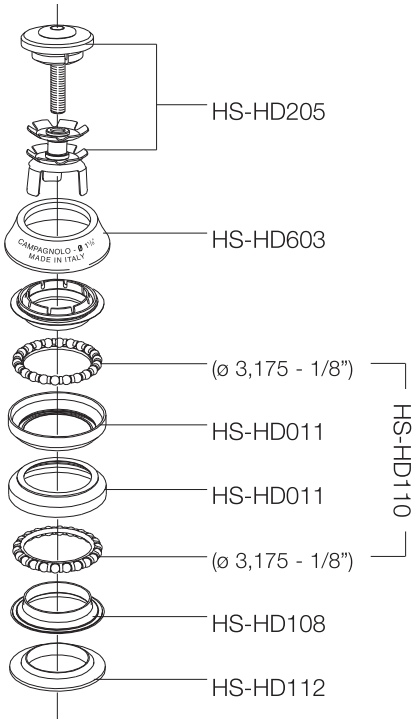
RECORD™ HS7-RE



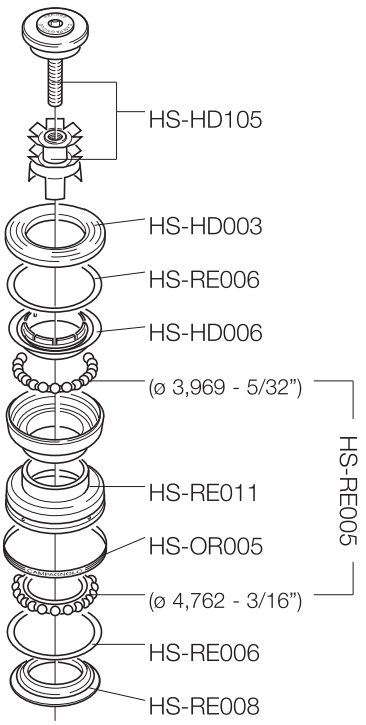
RECORD™ Hiddenset™ 1 1/8": HS03-REHIOS



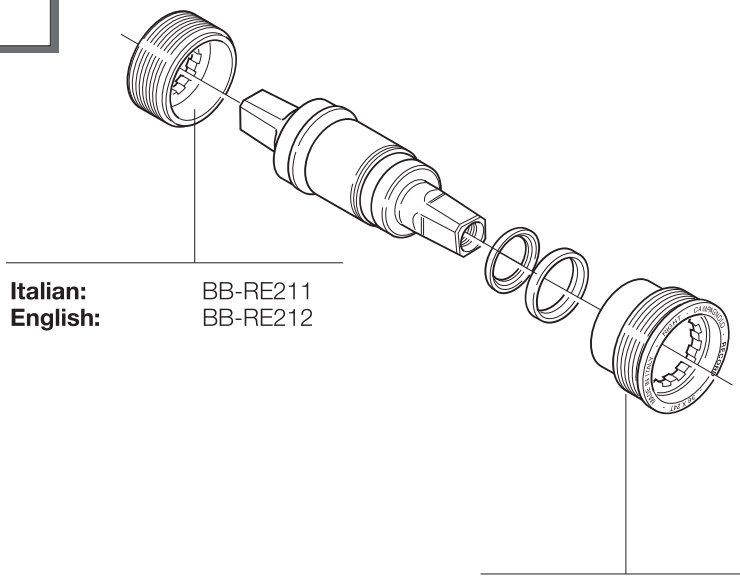
RECORD™ Hiddenset™ TTC™ 1 1/8": HS03-REHIOST



RECORD™ Threadless™ 1": HS00-RETH



RECORD™
PISTA™
111 mm
BB01-REPIIT



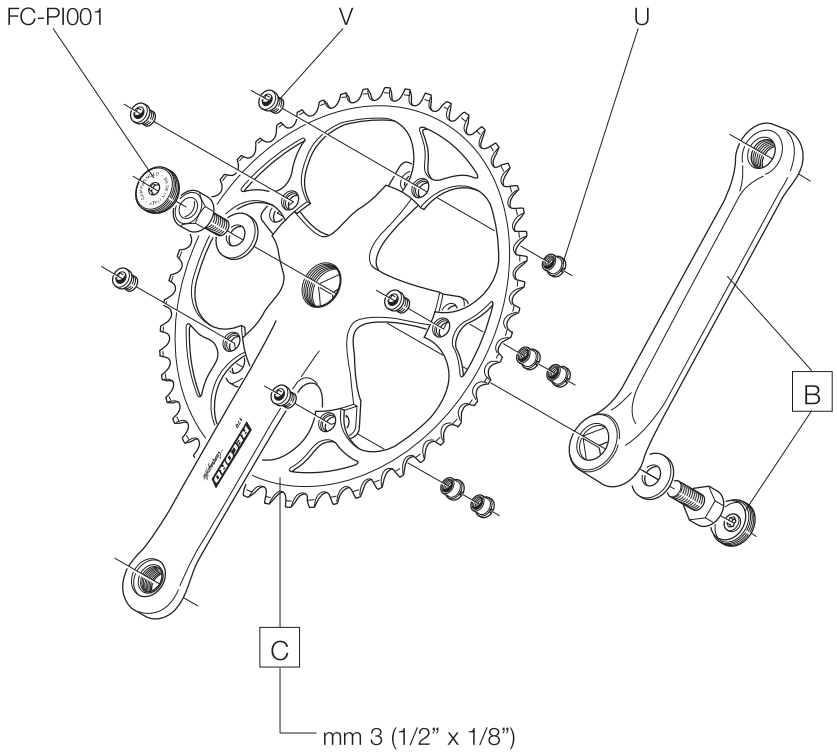
Italian: BB-RE211
English: BB-RE212

Italian: BB-RE213
English: BB-RE214

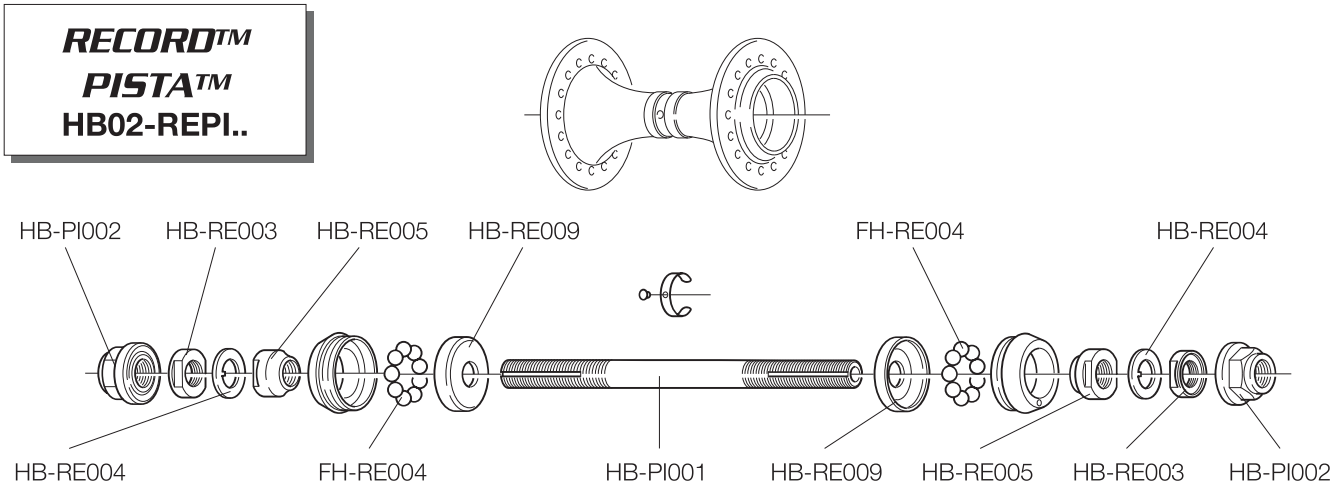
RECORD™
PISTA™
FC01-REPI...

B	**165 mm**	**FC-PI465**
	170 mm	**FC-PI470**
C	**Z47**	**FC-PI047**
	Z48	**FC-PI048**
	Z49	**FC-PI049**
	Z50	**FC-PI050**
	Z51	**FC-PI051**
	Z52	**FC-PI052**

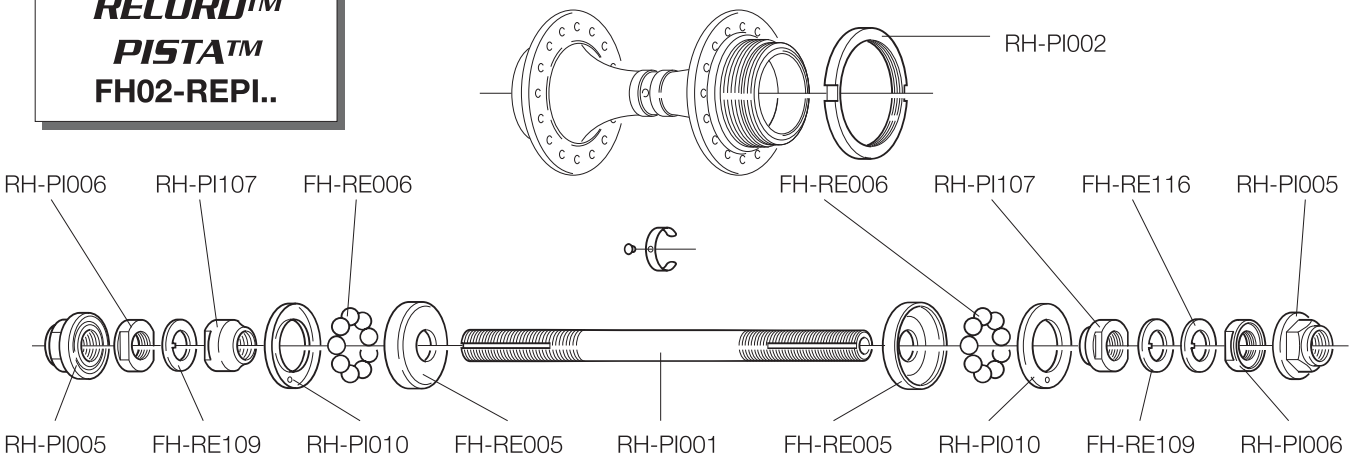
FC-PI100
KIT VITI / SCREWS&NUTS
5 U + 5 V



RECORD™ PISTA™ HB02-REPI..



RECORD™ PISTA™ FH02-REPI..



TOOLS

KEY TO SYMBOLS:	
CAMPAGNOLO PRO-TOOLS	Tools that can be bought from a Campagnolo Dealer
PRO-TOOLS	Professional tools that can be bought from specialized shops **(for information on availability, please contact a Campagnolo authorized Service Centre)**
USER TOOLS	Commonly used tool available to the user

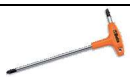
PICTURE	CODE	DESCRIPTION	FEATURES	TOOL TYPE
	N.A.	Dynamometric screwdriver with 3mm Allen driver bit	Tightening range from 1.2 Nm to 3.0 Nm	PRO-TOOLS
		Allen wrench 3mm 4 mm		USER TOOLS
	CN-10	CN-10 PARK TOOL cable/sheath cutter		PRO-TOOLS
		Torque wrench With 24mm hexagonal socket	50 Nm	USER TOOLS
	UT-BB080	Campagnolo pinion ring nut tightening tool		*CAMPAGNOLO PRO-TOOLS*
		Torx wrench T-25		*USER TOOLS*
	UT-BB140	Campagnolo OS-FIT cap driving tool		*CAMPAGNOLO PRO-TOOLS*
	UT-VS030	Gearbox alignment jig		*CAMPAGNOLO PRO-TOOLS*
	UT-BB100	Central movement ring nut tightening key		*CAMPAGNOLO PRO-TOOLS*
	UT-CN200	10V chain breaker tool		*CAMPAGNOLO PRO-TOOLS*
	UT-CN300	11V chain breaker tool		*CAMPAGNOLO PRO-TOOLS*
	UT-BB110	Ultra-Torque gasket wrench		*CAMPAGNOLO PRO-TOOLS*
		Power-Torque System screw tightening socket	14mm	USER TOOLS
	UT-BB130	Ultra-Torque and Power-Torque System central movement cap tightening key		*CAMPAGNOLO PRO-TOOLS*

TABLE OF METRIC DEVELOPMENT OF THE PEDAL ROTATION

Wheel radius (rim + tire): 336 mm - Wheel circumference with tire: 2110 mm

SPROCKET Z	CHAINRING Z = 34	
	Gear Ratio	Metric development (m)
11	3,09	6,52
12	2,83	5,98
13	2,62	5,52
14	2,43	5,12
15	2,27	4,78
16	2,13	4,48
17	2,00	4,22
18	1,89	3,99
19	1,79	3,78
21	1,62	3,42
23	1,48	3,12
25	1,36	2,87
26	1,31	2,76
27	1,26	2,66
29	1,17	2,47

SPROCKET Z	CHAINRING Z = 36	
	Gear Ratio	Metric development (m)
11	3,27	6,91
12	3,00	6,33
13	2,77	5,84
14	2,57	5,43
15	2,40	5,06
16	2,25	4,75
17	2,12	4,47
18	2,00	4,22
19	1,89	4,00
21	1,71	3,62
23	1,57	3,30
25	1,44	3,04
26	1,38	2,92
27	1,33	2,81
29	1,24	2,62

TABLE OF METRIC DEVELOPMENT OF THE PEDAL ROTATION

Wheel radius (rim + tire): 336 mm - Wheel circumference with tire: 2110 mm

SPROCKET Z	CHAINRING Z = 39	
	Gear Ratio	Metric development (m)
11	3,55	7,48
12	3,25	6,86
13	3,00	6,33
14	2,79	5,88
15	2,60	5,49
16	2,44	5,14
17	2,29	4,84
18	2,17	4,57
19	2,05	4,33
21	1,86	3,92
23	1,70	3,58
25	1,56	3,29
26	1,50	3,17
27	1,44	3,05
29	1,34	2,84

SPROCKET Z	CHAINRING Z = 42	
	Gear Ratio	Metric development (m)
11	3,82	8,06
12	3,50	7,39
13	3,23	6,82
14	3,00	6,33
15	2,80	5,91
16	2,63	5,54
17	2,47	5,21
18	2,33	4,92
19	2,21	4,66
21	2,00	4,22
23	1,83	3,85
25	1,68	3,54
26	1,62	3,41
27	1,56	3,28
29	1,45	3,06

TABLE OF METRIC DEVELOPMENT OF THE PEDAL ROTATION

Wheel radius (rim + tire): 336 mm - Wheel circumference with tire: 2110 mm

SPROCKET Z	CHAINRING Z =46	
	Gear Ratio	Metric development (m)
11	4,18	8,82
12	3,83	8,09
13	3,54	7,47
14	3,29	6,93
15	3,07	6,47
16	2,88	6,07
17	2,71	5,71
18	2,56	5,39
19	2,42	5,11
21	2,19	4,62
23	2,00	4,22
25	1,84	3,88
26	1,77	3,73
27	1,70	3,59
29	1,59	3,35

SPROCKET Z	CHAINRING Z = 50	
	Gear Ratio	Metric development (m)
11	4,55	9,59
12	4,17	8,79
13	3,85	8,12
14	3,57	7,54
15	3,33	7,03
16	3,13	6,59
17	2,94	6,21
18	2,78	5,86
19	2,63	5,55
21	2,38	5,02
23	2,17	4,59
25	2,00	4,22
26	1,92	4,06
27	1,85	3,91
29	1,72	3,64

TABLE OF METRIC DEVELOPMENT OF THE PEDAL ROTATION

Wheel radius (rim + tire): 336 mm - Wheel circumference with tire: 2110 mm

SPROCKET Z	CHAINRING Z = 52	
	Gear Ratio	Metric development (m)
11	4,73	9,97
12	4,33	9,14
13	4,00	8,44
14	3,71	7,84
15	3,47	7,31
16	3,25	6,86
17	3,06	6,45
18	2,89	6,10
19	2,74	5,77
21	2,48	5,22
23	2,26	4,77
25	2,08	4,39
26	2,00	4,22
27	1,93	4,06
29	1,79	3,78

SPROCKET Z	CHAINRING Z = 53	
	Gear Ratio	Metric development (m)
11	4,82	10,17
12	4,42	9,32
13	4,08	8,60
14	3,79	7,99
15	3,53	7,46
16	3,31	6,99
17	3,12	6,58
18	2,94	6,21
19	2,79	5,89
21	2,52	5,33
23	2,30	4,86
25	2,12	4,47
26	2,04	4,30
27	1,96	4,14
29	1,83	3,86

TABLE OF METRIC DEVELOPMENT OF THE PEDAL ROTATION

Wheel radius (rim + tire): 336 mm - Wheel circumference with tire: 2110 mm

SPROCKET Z	CHAINRING Z = 54	
	Gear Ratio	Metric development (m)
11	4,91	10,36
12	4,50	9,50
13	4,15	8,76
14	3,86	8,14
15	3,60	7,60
16	3,38	7,12
17	3,18	6,70
18	3,00	6,33
19	2,84	6,00
21	2,57	5,43
23	2,35	4,95
25	2,16	4,56
26	2,08	4,38
27	2,00	4,22
29	1,86	3,93

SPROCKET Z	CHAINRING Z = 55	
	Gear Ratio	Metric development (m)
11	5,00	10,55
12	4,58	9,67
13	4,23	8,93
14	3,93	8,29
15	3,67	7,74
16	3,44	7,25
17	3,24	6,83
18	3,06	6,45
19	2,89	6,11
21	2,62	5,53
23	2,39	5,05
25	2,20	4,64
26	2,12	4,46
27	2,04	4,30
29	1,86	3,93

COMPATIBILITY 2010 - 2011 /2012

ERGOPOWER		FRONT DERAILLEUR				
		2010		2011 / 2012		
		SR-R-CH-ATH	CE-VE	SR-R-CH	ATH	CE-VE
2010	ULTRA-SHIFT 11s	OK	NO	OK	OK	NO
	ULTRA-SHIFT 10s	NO	OK	NO	NO	OK
2011 2012	ULTRA-SHIFT 11s	OK	NO	FULL PERFORMANCE	OK	NO
	POWER-SHIFT 11s	OK	NO	OK	FULL PERFORMANCE	NO
	POWER-SHIFT 10s	NO	OK	NO	NO	FULL PERFORMANCE

ERGOPOWER		REAR DERAILLEUR				
		2010		2011 / 2012		
		SR-R-CH-ATH	CE-VE	SR-R-CH	ATH	CE-VE
2010	ULTRA-SHIFT 11s	OK	NO	OK	OK	NO
	ULTRA-SHIFT 10s	NO	OK	NO	NO	NO
2011 2012	ULTRA-SHIFT 11s	OK	NO	FULL PERFORMANCE	OK	NO
	POWER-SHIFT 11s	OK	NO	OK	FULL PERFORMANCE	NO
	POWER-SHIFT 10s	NO	NO	NO	NO	FULL PERFORMANCE

FAQ

	QUESTIONS	ANSWERS
1	**I have trouble inserting the cables and housings in the ULTRA-SHIFT controls**	Check to make sure you are using the correct cables and housings (see page 10). Do not fit the part that has been shortened on the control.
2	**I'd like to know if the handlebar I'm using is okay or if it could cause some functional problems**	Check the interface with the handlebar (see page 11) and make sure that the housings are not making overly narrow curves that make the cables run sluggishly
3	**I have problems with the front derailleur control – it doesn't work properly**	Check that the control works with 3 clicks up and 3 clicks down. If not, adjust the tension of the cable (see page 16). Also check the chain line (see page 37 and 49 (double) and 32 (triple)).
4	**I'd like to know if I can fit the Ultra-Torque crankset on my frame.**	Check the interface with the frame (see page 50).
5	**I hear noise coming from the bottom bracket**	Check the installation procedure (see pages 40-41-42).
6	**I fitted the OS-fit cups but I hear noises in the BB and there is play**	Check the interface with the frame for integrated cups (see page 61/62 - fig.1 / fig. 2 / fig.3).
7	**I have trouble fitting the OS-fit cups**	Check the installation procedure (page 62/63).
8	**The rear derailleur seems to be lazy, not very reactive**	Check that you installed the drivetrains following the instructions given on page 13/14
9	**I've already checked point 8 but I'm not able to adjust the rear derailleur**	Check the dimensions of the Rear Derailleur hanger on page 76 fig. 2 /3
10	**I have some doubts about the brakes I'm using**	Check the compatibility with the groupset and the wheels used (see page 85).
11	**The 11s chain seems to be too long/short**	Check the length of the chain (see page 109 - fig.1)
12	**The 10s chain seems to be too long/short**	Check the length of the chain (see page 105 - fig.1).
13	**I have to close an 11s chain; what tool and pin do I need to use?**	Use ONLY: UT-CN300 + CN-RE500 (see page 104)
14	**I have to close a 10s chain; what tool and pin do I need to use?**	Use ONLY: UT-CN200 + CLOSURE PIN (see page 104)

FAQ

	QUESTIONS	ANSWERS
15	**Is it possible to fit 11S rear derailleur and front derailleur casings in the 10S drivetrain?**	Yes
16	**How should I lubricate your components?**	To ensure the best performance, it is preferable to use the Campagnolo lubricant LB100; ask for it at an authorised pro-shop.
17	**I'd like to check the compatibility between the components?**	Check the table pag. 151
18	**The rear derailleur seems noisy**	Check the dimensions of the Rear Derailleur hanger on page 76 fig. 2 /3
19	**How many openings can I make with an 11s or 10s chain?**	(See the respective fitting instructions pag.113).
20	**Can I use the brake pads for carbon on aluminium wheels?**	NO. Check the compatibility table (see pag.85)
21	**I have a problem with the lever that sticks and doesn't work properly. What can I do?**	Ensure you use only original Campagnolo cables and sheaths. Non-original cables and sheaths might cause the synchronization to fail and mechanisms to break. Check the handlebar tape is wound correctly and does not interfere with the cables sliding inside the sheaths. Carry out the changing operations one at a time and do not activate the controls at the same time. Incorrect use of the controls might cause malfunctioning and/or failures.
22	**How do I know when the chain must be replaced?**	A chain typically lasts between 2,000 miles and 5,000 miles, 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 pag.114. If even one of the measurement is longer than 132.60 mm the chain must immediately be replaced.
23	**How do I know if the Campagnolo brakes are compatible with my frame?**	In order to assure full compatibility with various frame thicknesses, brakes are available in three versions (pag. 85)
24	**My cassette needs to be replaced, as some of the sprocket teeth are worn. Do I also need to replace the chain?**	Yes.
25	**The braking performance is not like was before. What can i do?**	While operating the brake lever, check the two brake pads GET into contact with the rim surface AT THE SAME TIME. If this is not the case, check the brakes are correctly centred.