



2012



# TECHNICAL MANUAL

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**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



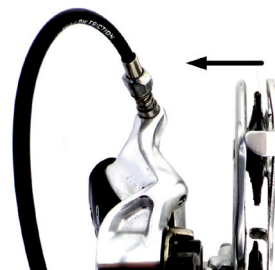
Let the cable come out and attach a 1kg weight to it.



Change with the lever to reach the third position



Get down with the lever in the second position



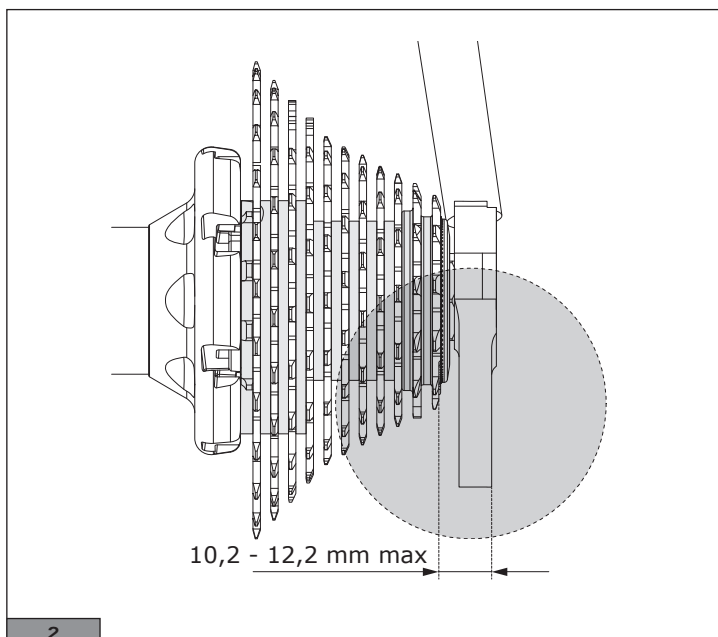
If the cables are correct, the strength of the rear derailleur spring is enough to lift the weight



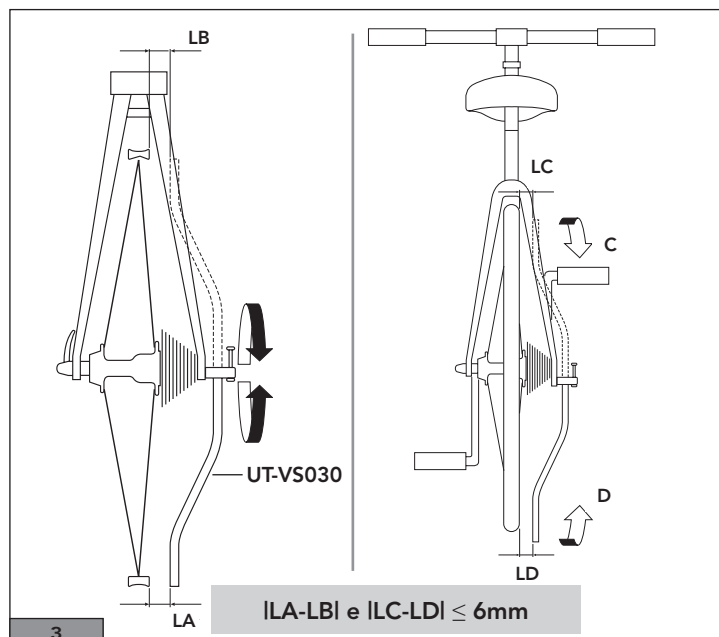
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1. Verify the proper cable routing on the frame and handlebar, making sure that, with the drivetrain mounted and without chain, the rear derailleur positioned on the third sprocket is able to descend onto the second, lifting a weight of minimum 1 kg (hooked to the head of the cable coming from the right control - Fig. 1).

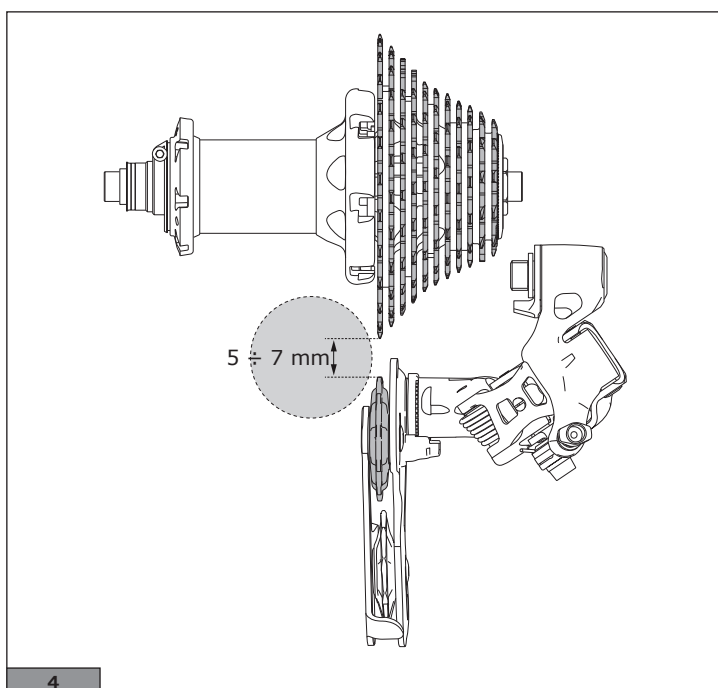
If this does not occur, the position of the rear derailleur in descent will not be correct and this will make adjustment difficult or impossible and will create noise, jeopardising the functionality of the drivetrain. In such case, re-check the path of the cables and housings according to the specifications of this technical manual.



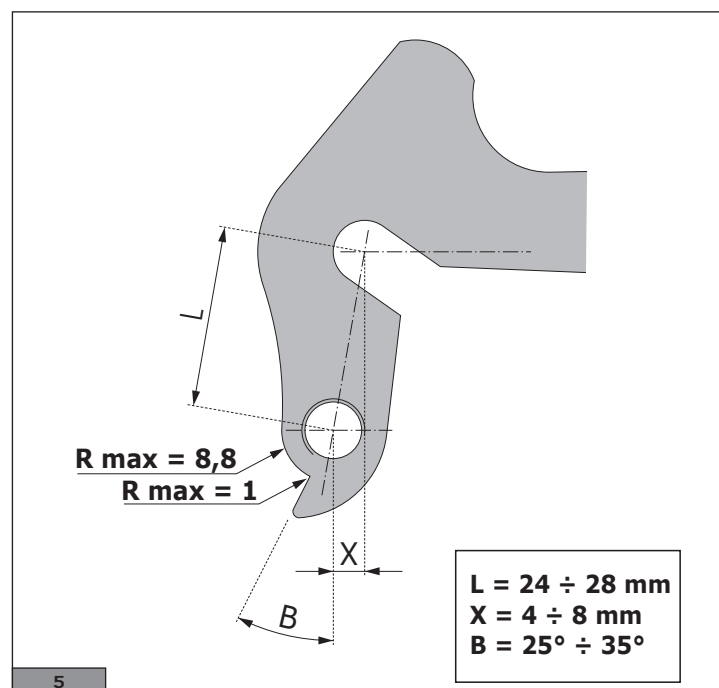
2. The stroke of the cage in relation to the cable throw is checked by Campagnolo Quality Control for each single piece produced. The distance of the rear derailleur hanger from the first sprocket influences this stroke, so it is indispensable to stay within the tolerance prescribed as per the drawing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



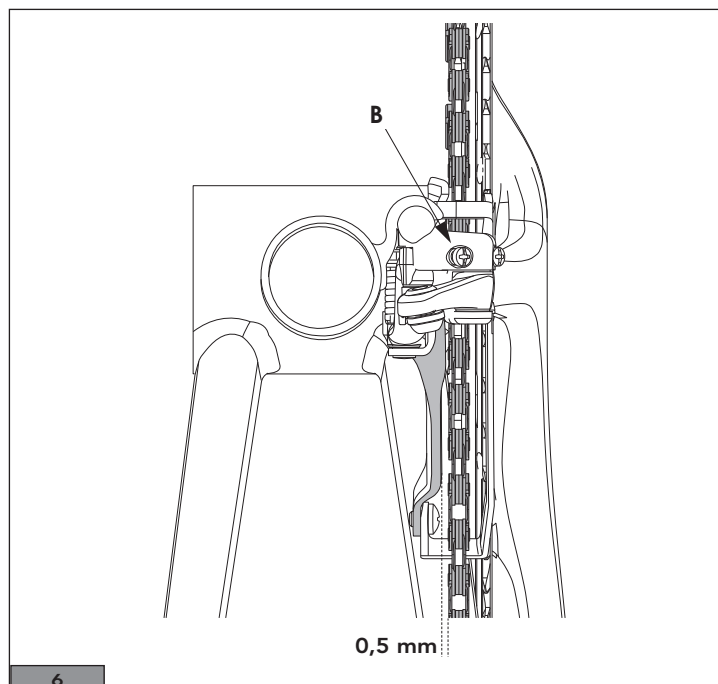
3. For prompt shifting in both up shifting and downshifting, the rear derailleur must keep a minimum distance from the sprocket set, but no less than 5-7 mm on the largest sprocket (and the chain positioned on the smallest gear of the crankset) (Fig. 4).



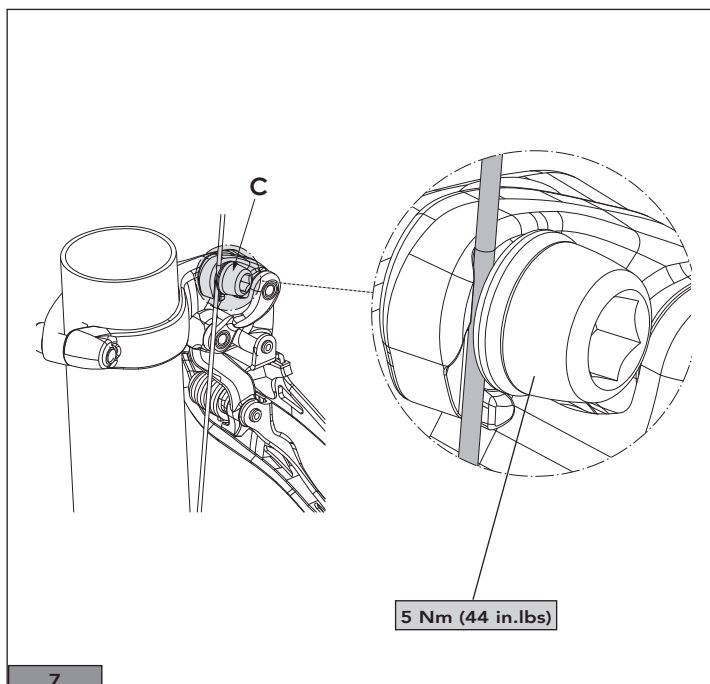
The combination of adjusting of the rear derailleur springs and following the guidelines for the measurements of the rear derailleur hanger (Fig. 5) guarantee this positioning and, consequently, the promptness of shifting. If the rear derailleur is too close to the larger sprockets, the passage of the 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.

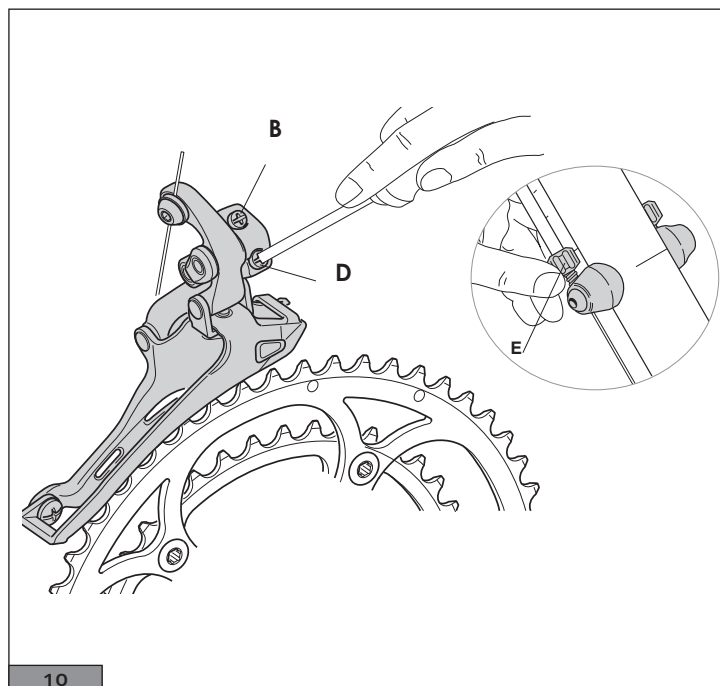
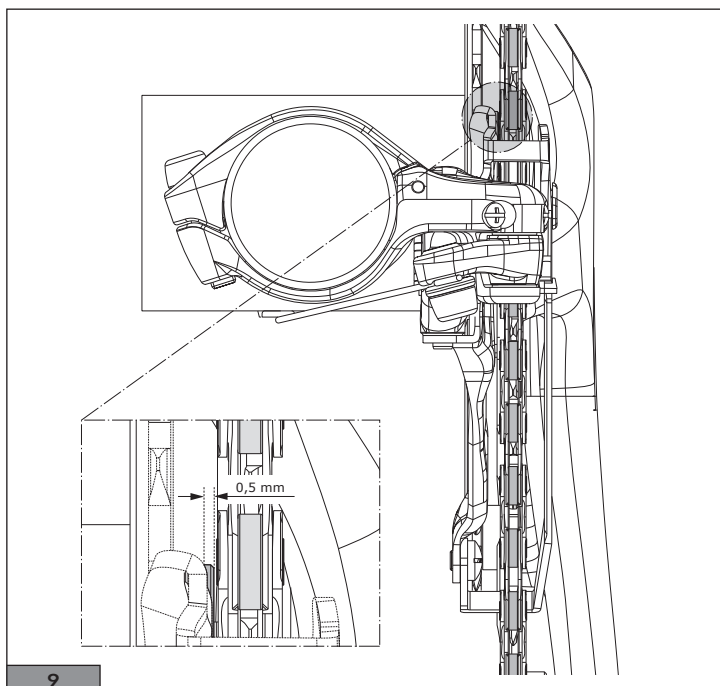


2. Install the cable, pulling it moderately. Position it in the groove below the washer (Fig. 7) and fasten it using a 5 mm allen wrench with torque of **5 Nm (44 in.lbs)**.



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



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	Alignment tool for UT-VS030 rear derailleur attachment eyelet
	Check the frame fork alignment	1000	1 year	
	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!**

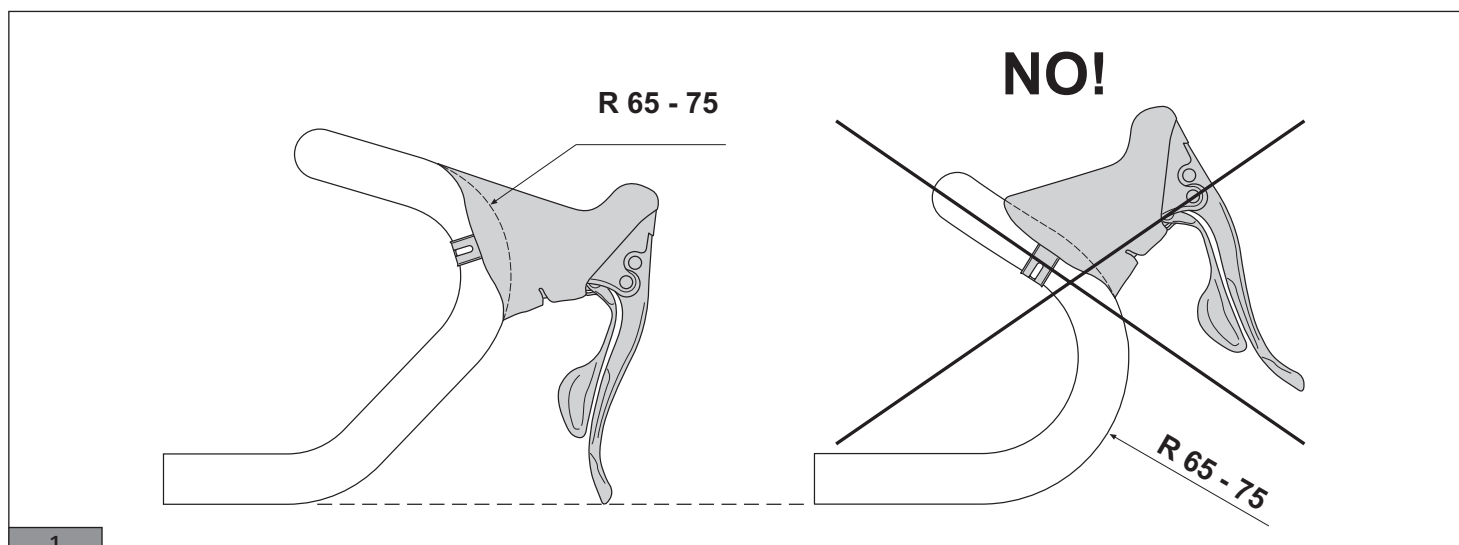
Different combinations from those included in the table could cause the malfunction of the drivetrain and result in an accident, personal injury or death.



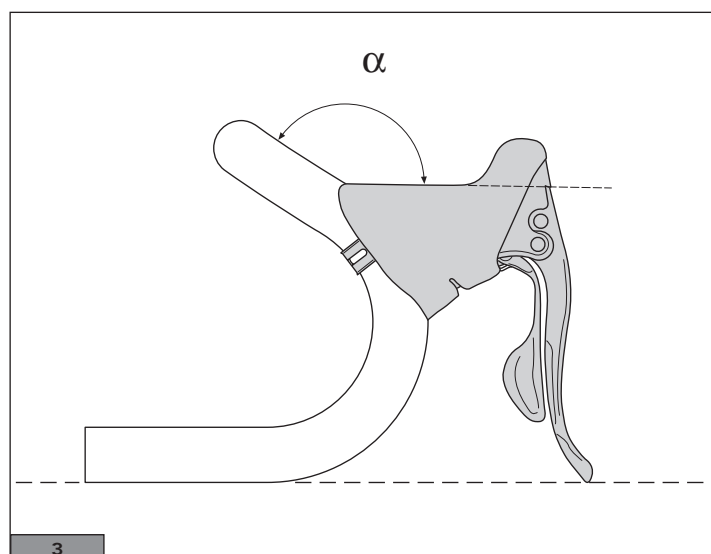
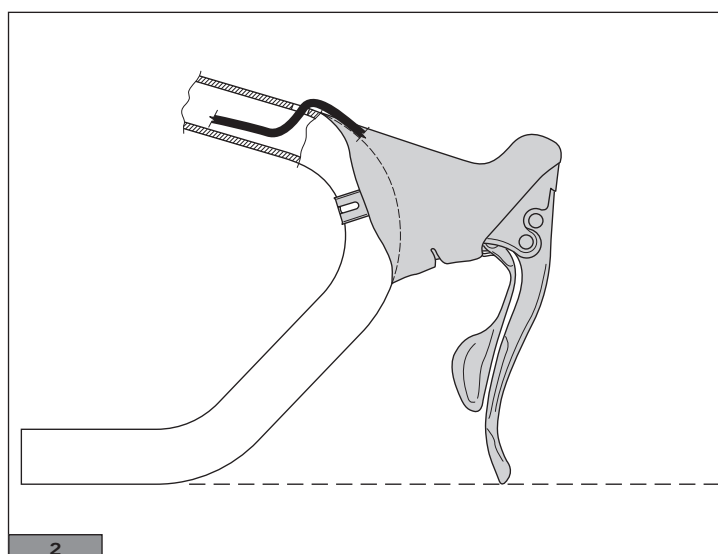
### 3 - INTERFACE WITH HANDLEBAR

#### ⚠ 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  $\alpha$  is sufficiently large to guarantee correct assembly of the housing and the associated smoothness of the cable (Fig. 3).

#### CAUTION

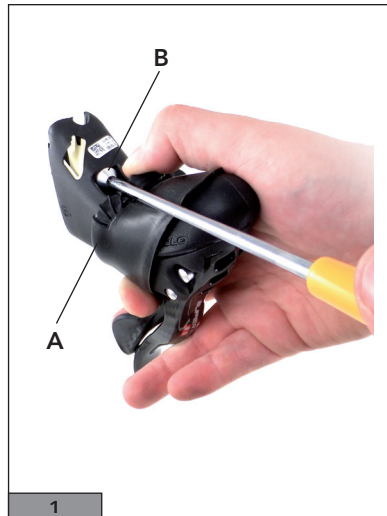
Make sure that the part of the handlebar onto which you are fitting the control has a surface rough enough to guarantee maximum adherence.

## 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.

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

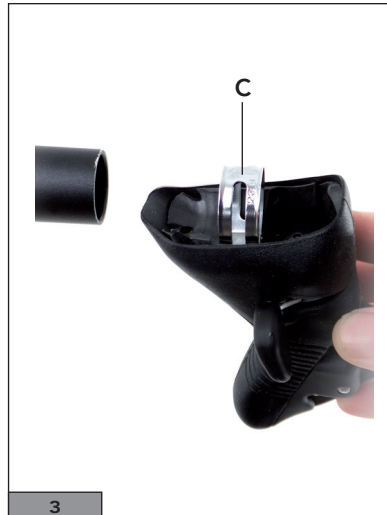
- fit the "big hands" insert into the rear bottom part of the control (Fig. 2) before installing it on the handlebar.



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

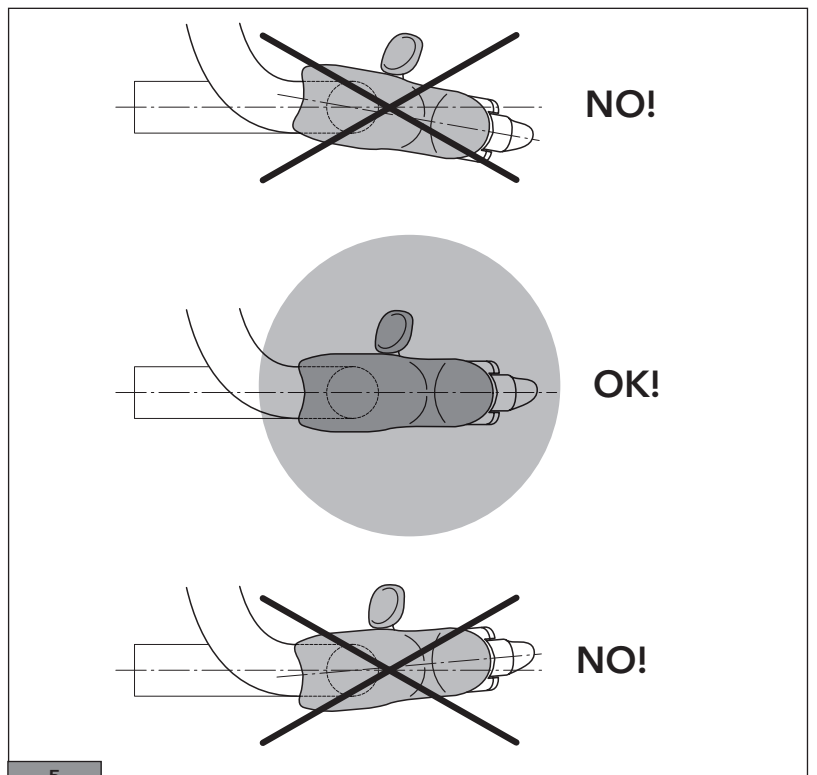
- If the hood has been completely removed, moisten the inside slightly with alcohol to facilitate installation on the control unit.

- 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.



## 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.

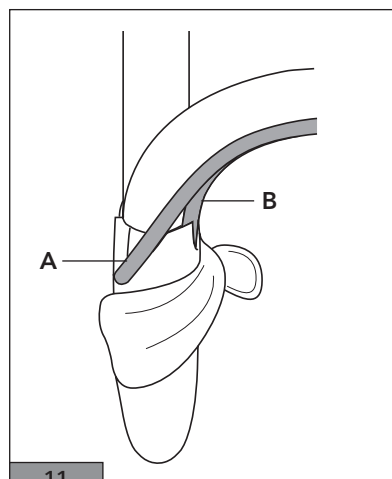
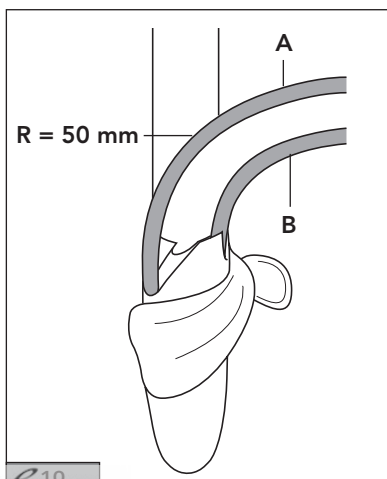
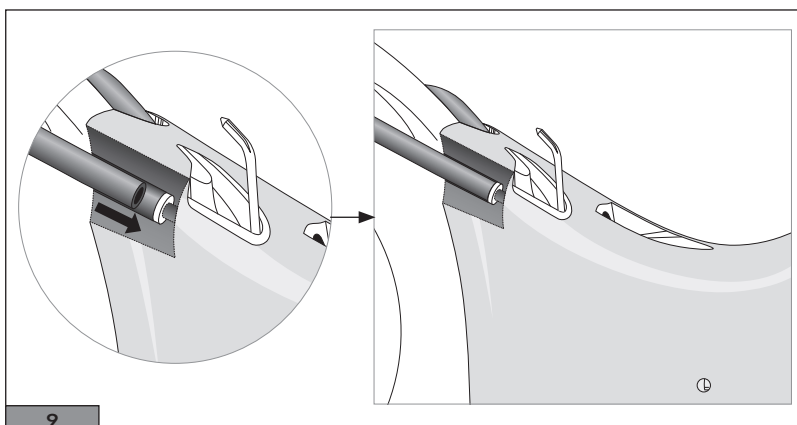
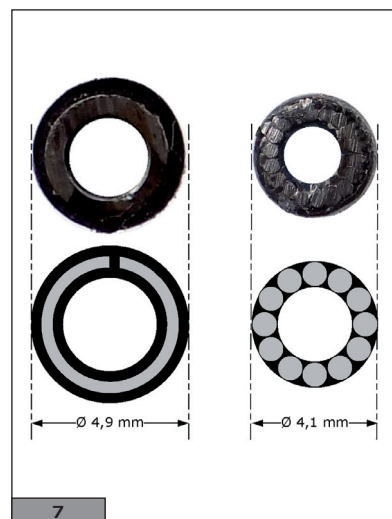
### ⚠ WARNING!

**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

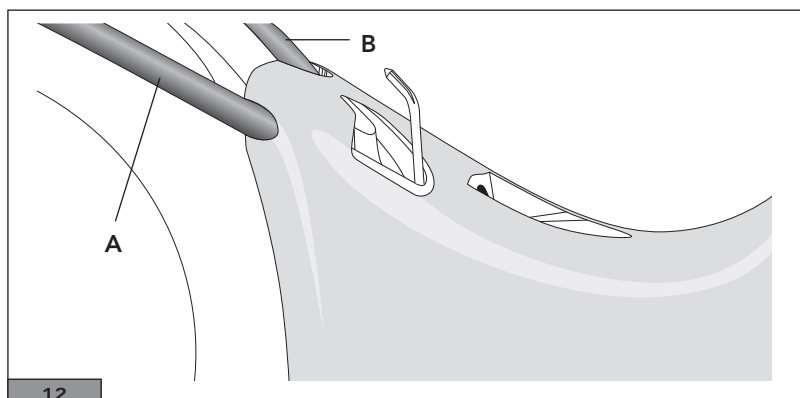
**Position the cable so that it is as straight as possible. At all costs avoid kinks or sharp bends in the housing (less than  $R = 50$  mm).**



### 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.



- **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).



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

#### ⚠ 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).

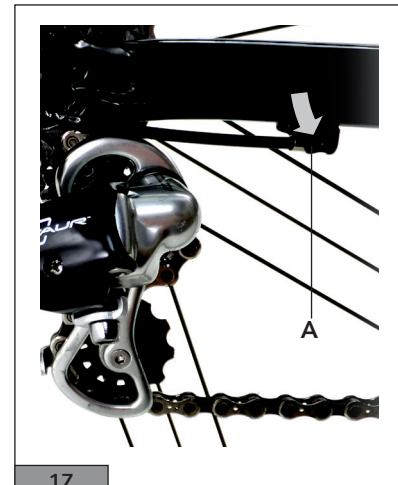
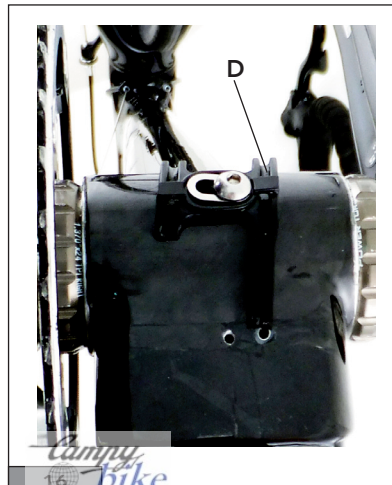
- After cutting the housing at the suitable length, fit a housing end and insert the housing in the Downtube barrel adjuster (C - Fig. 15) on the frame.



- 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  $\varnothing$  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).



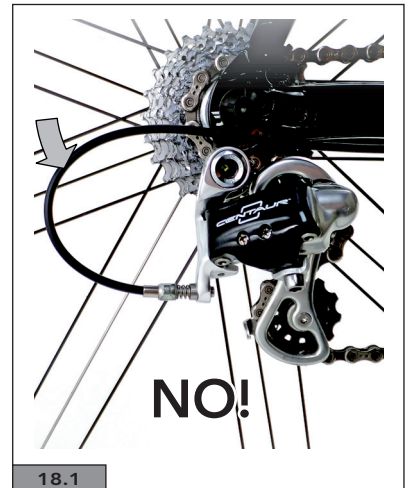
**ATTENTION**

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.

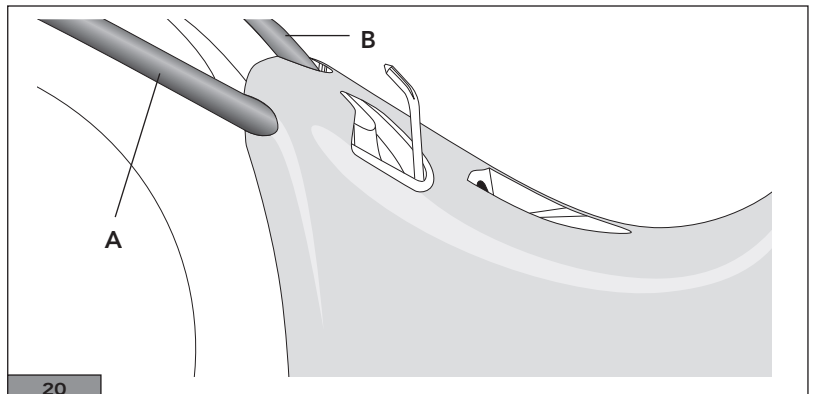
**⚠ WARNING!**

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.

**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.



- **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).



Insert the front derailleur cable (length 1,600 mm -  $\varnothing$  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!

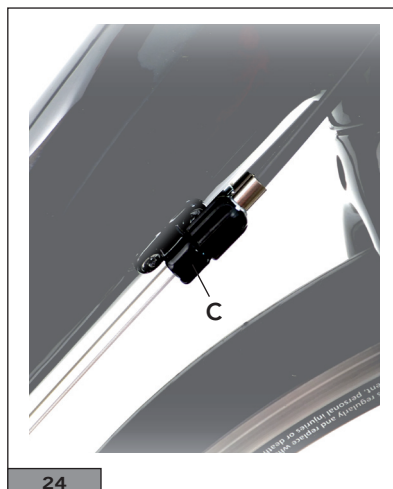
After installation, check that the cables do not interfere with your steering or any other function of your bicycle. Interference could affect your ability to turn or control your bicycle, resulting in an accident, personal injury or death.



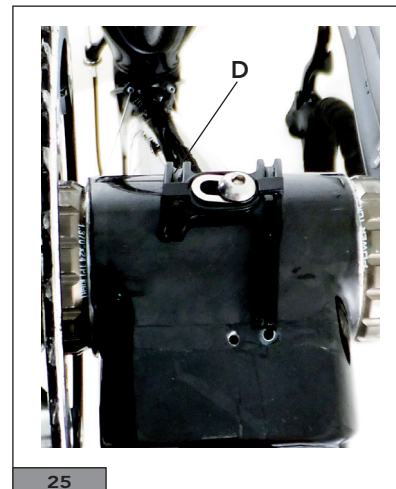
22



23



24



25

## 4.1.3 - Adjusting the cable tension

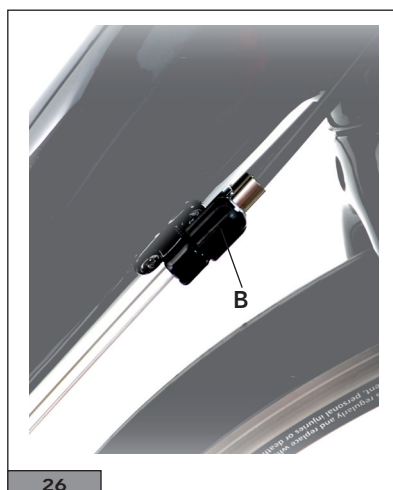
- Rear derailleur cable tension can be modified by turning the adjuster (Fig. 26) on the Downtube barrel adjuster (not included in the pack) or by using the adjuster (F - Fig. 27) placed on the rear derailleur body.

- 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.



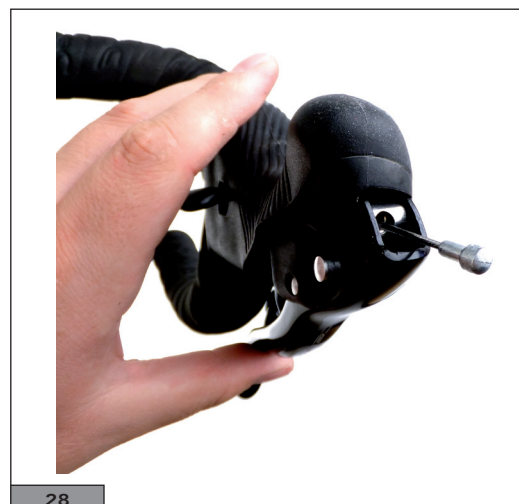
26



27

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

- Fit the brake cable (1,600 mm long - diameter  $\varnothing$  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  $\varnothing$  4,9 mm) and install a housing lead end (diameter  $\varnothing$  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  $\varnothing$  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  $\varnothing$  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 death

## 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 your 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)

EC-SR103 (2 pcs)

EC-SR050  
(R+L - 5 pairs)

R: EC-VL047B (B) - EC-VL047S (S)  
L: EC-VL048B (B) - EC-VL048S (S)

R: EC-CE300  
L: EC-AT101

(insert for big hands)  
EC-SR040 (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)

EC-SR103 (2 pcs)

EC-SR050  
(R+L - 5 pairs)

R: EC-CE647 (C)  
EC-CE647RB (C B&R)  
EC-CE747 (A)  
EC-CE747RB (A B&R)  
L: EC-CE648 (C)  
EC-CE648RB (C B&R)  
EC-CE748 (A)  
EC-CE748RB (A B&R)

R: EC-CE300  
L: EC-AT101

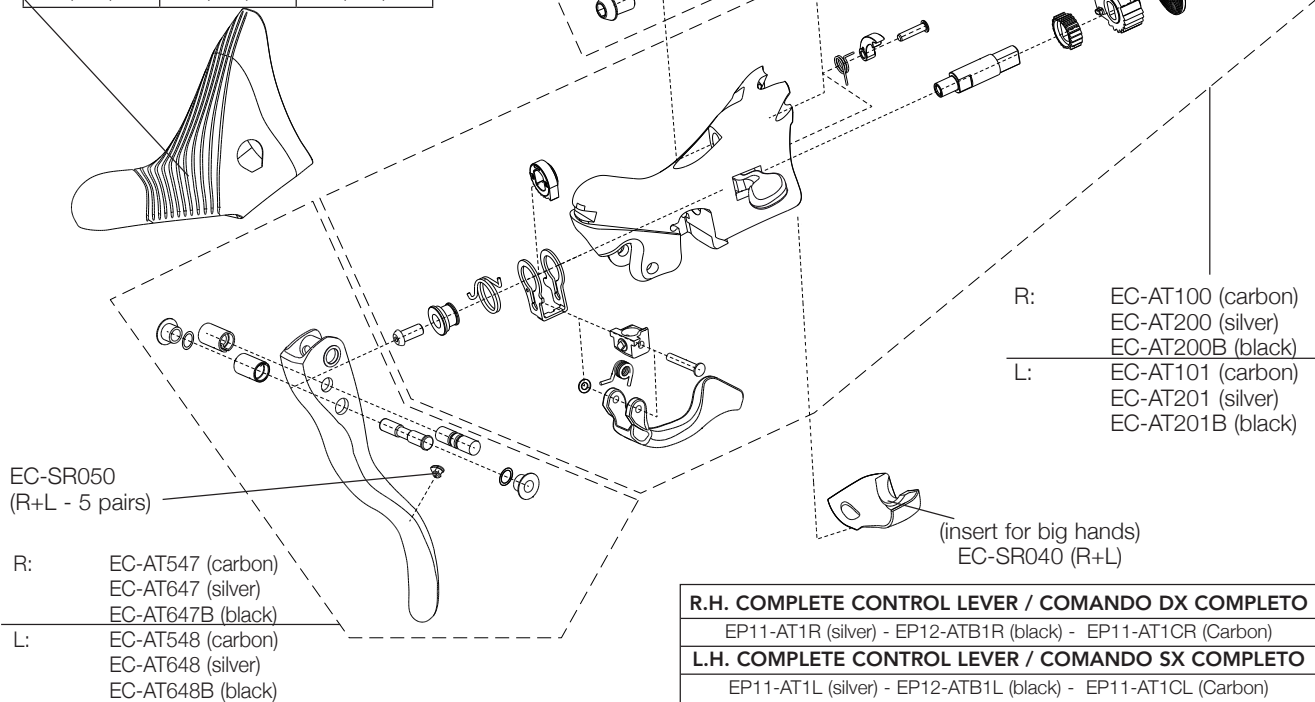
(insert for big hands)  
EC-SR040 (R+L)

**R.H. COMPLETE CONTROL LEVER / COMANDO DX COMPLETO**  
EP11-CEXR (A)/EP12-CERBXR (A B&R)/EP11-CEXCR (C)/EP12-CERBXC (C B&R)

**L.H. COMPLETE CONTROL LEVER / COMANDO SX COMPLETO**  
EP11-CEXL (A)/EP12-CERBXL (A B&R)/EP11-CEXCL (C)/EP12-CERBXC (C B&R)

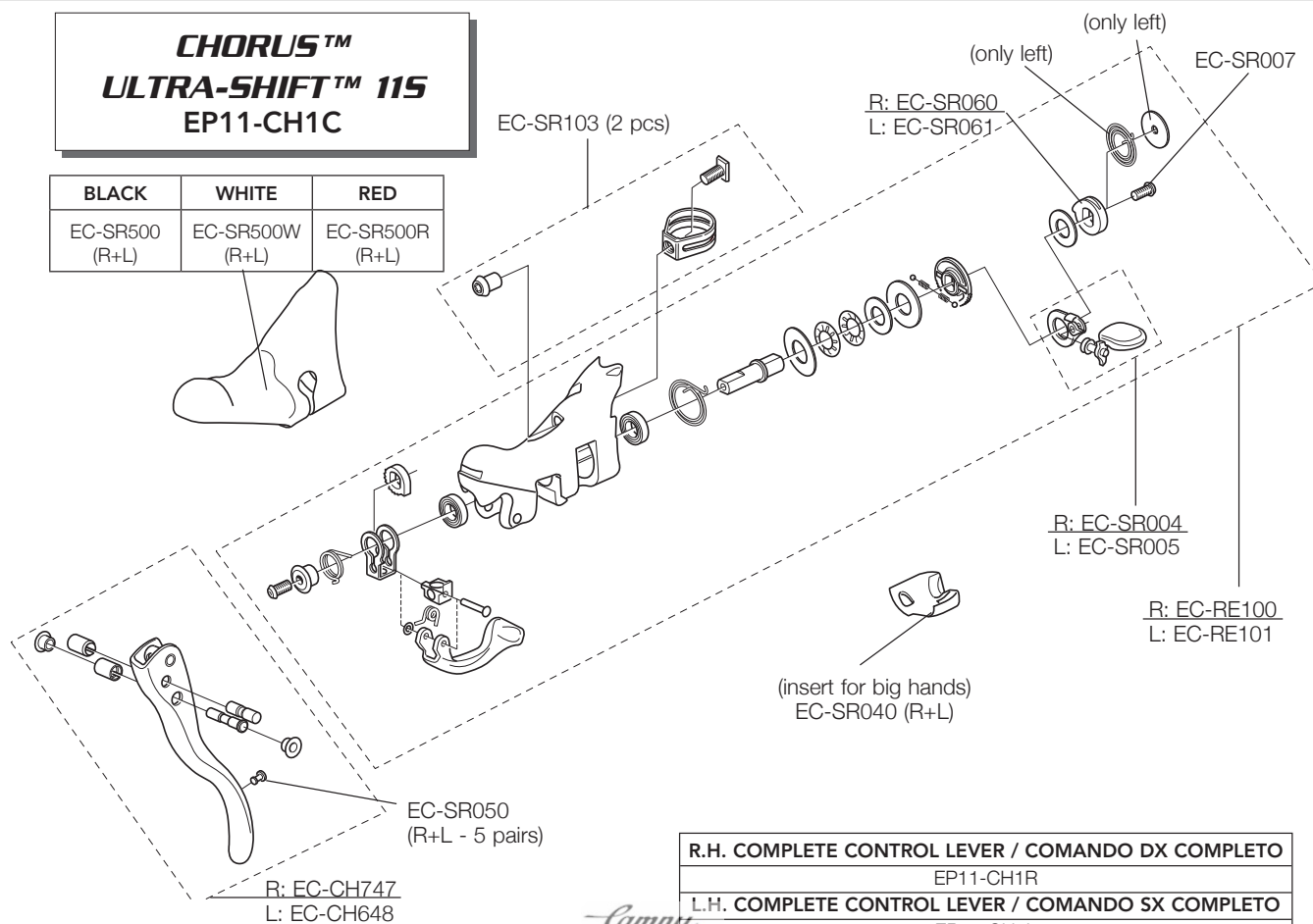
**ATHENA™**  
**POWER-SHIFT™ 11S**  
 EP11-AT1C - EP11-AT1CC

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



**CHORUS™**  
**ULTRA-SHIFT™ 11S**  
 EP11-CH1C

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



**RECORD™**  
**ULTRA-SHIFT™ 115**  
**EP11-RE1C**

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

EC-SR103 (2 pcs)

(only left)

R: EC-SR060  
L: EC-SR061

EC-SR007

R: EC-SR004  
L: EC-SR005

R: EC-RE100  
L: EC-RE101

(insert for big hands)  
EC-SR040 (R+L)

EC-SR050  
(R+L - 5 pairs)

R: EC-RE647  
L: EC-RE548

**R.H. COMPLETE CONTROL LEVER / COMANDO DX COMPLETO**  
EP11-RE1R

**L.H. COMPLETE CONTROL LEVER / COMANDO SX COMPLETO**  
EP11-RE1L

**SUPER RECORD™**  
**ULTRA-SHIFT™ 115**  
**EP11-SR1C**

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

EC-SR103 (2 pcs)

(only left)

R: EC-SR060  
L: EC-SR061

EC-SR007

R: EC-SR004  
L: EC-SR005

R: EC-SR100  
L: EC-SR101


(insert for big hands)  
EC-SR040 (R+L)

EC-SR050  
(R+L - 5 pairs)

R: EC-SR147  
L: EC-SR148

**R.H. COMPLETE CONTROL LEVER / COMANDO DX COMPLETO**  
EP11-SR1R


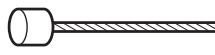


**L.H. COMPLETE CONTROL LEVER / COMANDO SX COMPLETO**  
EP11-SR1L



## CABLES &amp; CASINGS for ULTRA-SHIFT™ &amp; POWER-SHIFT™ ERGOPOWER



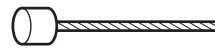


## COMPLETE SET

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

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

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

## Complete set: CG-ER600

		FRONT	REAR
BRAKES		Ø 1,6 mm L. 800 mm <b>CG-CB003</b>	Ø 1,6 mm L. 1600 mm <b>10-CG-CB013</b> (10 pcs.)
		Ø 6 mm <b>10-CG-CS011</b> (10 pcs.) (not sealed / senza guarnizione)	
DERAILLEURS	 Ø 1,2 mm	ERGOPOWER L. 1600	<b>CG-CB014</b>
		ERGOPOWER L. 2000	<b>10-CG-CB009</b> (10 pcs.)
		Ø 5,7 mm <b>10-CG-CS012</b> (for CG-CS015 and CG-CS008 - sealed / con guarnizione - 10 pcs.)	
		Ø 5,7/4 mm <b>5-CG-CS013</b> (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!**

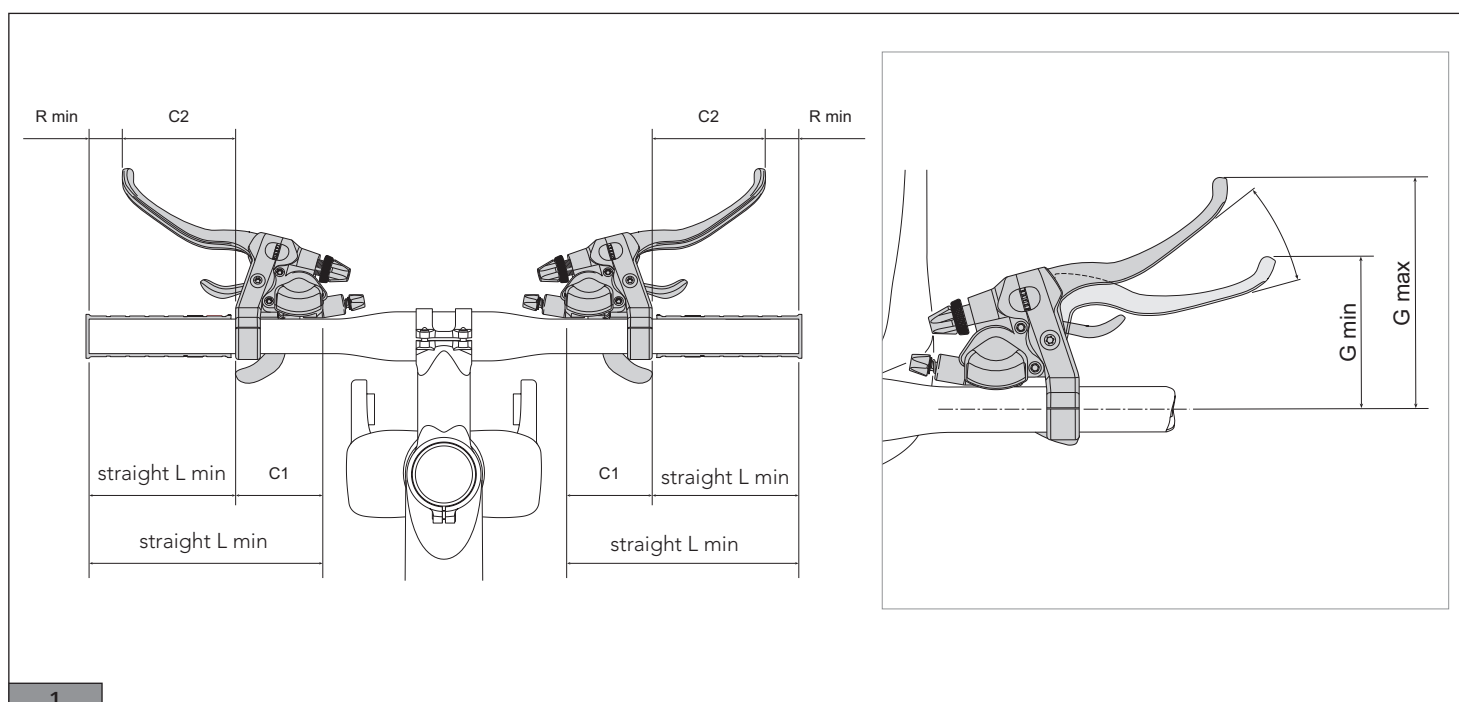
- The Ergopower FB shifters are **only** compatible and must **only** be used with FB Campagnolo front derailleurs.
- The Ergopower FB shifters are **only** compatible and must **only** be used with Campagnolo brakes.

**WARNING!**

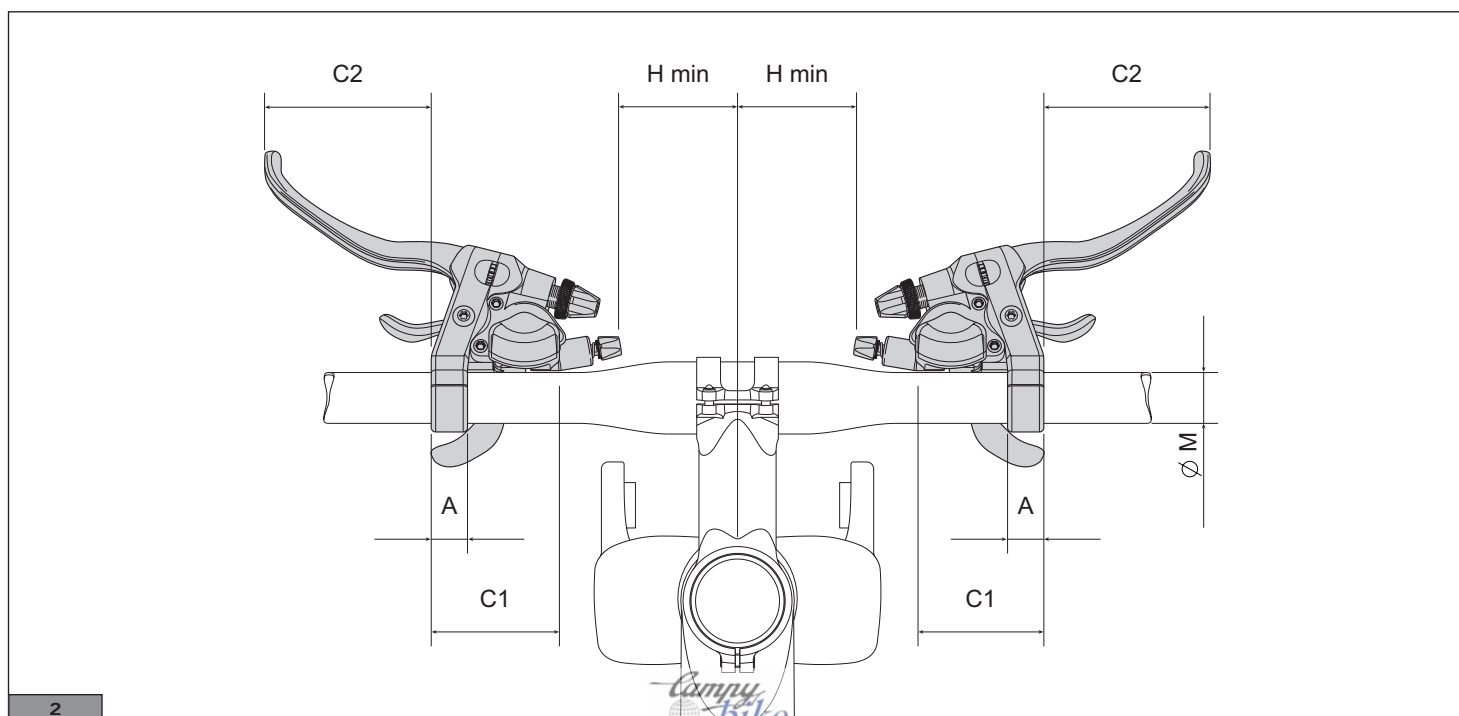
Different combinations from those included in the table could cause the malfunction of the drivetrain and result in an accident, personal injury or death.

## 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,  $\varnothing$  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).

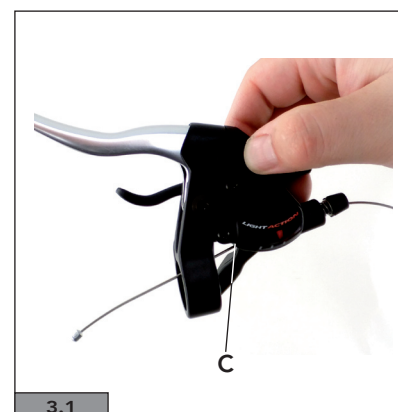
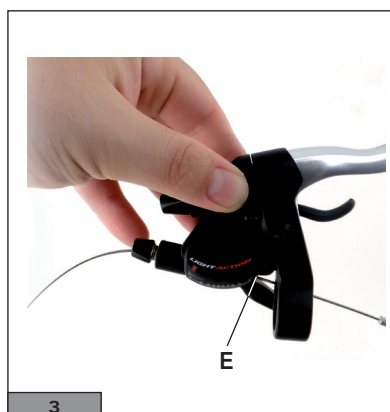
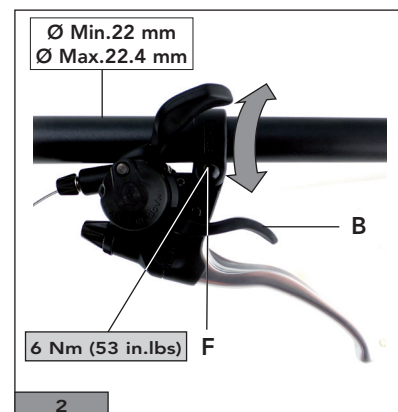
• Press lever 3 on the left gear shifter (B - Fig. 2) repeatedly until the shifter is in the position corresponding to the smallest chainring. Run the front derailleur cable (length 1600 mm,  $\varnothing$  1.2 mm) through the relative hole (E - Fig. 3), making sure that the cable end is seated properly.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



### WARNING!

It is crucial that the above clamps are tightened 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

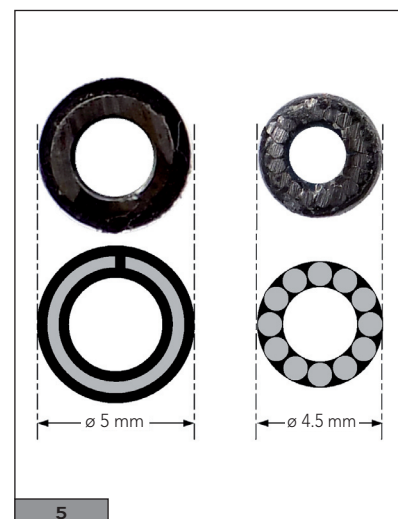
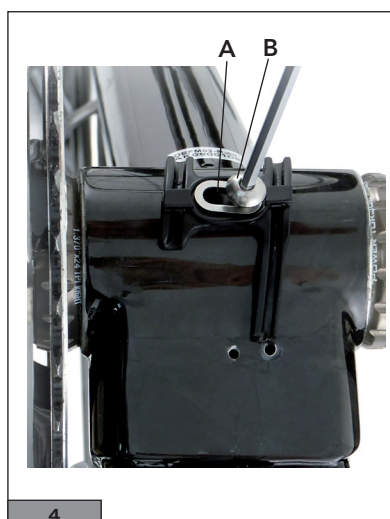
• Install the cable guide plate (included in the pack) under the bottom bracket shell, as follows:

- 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).



- 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 an 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.



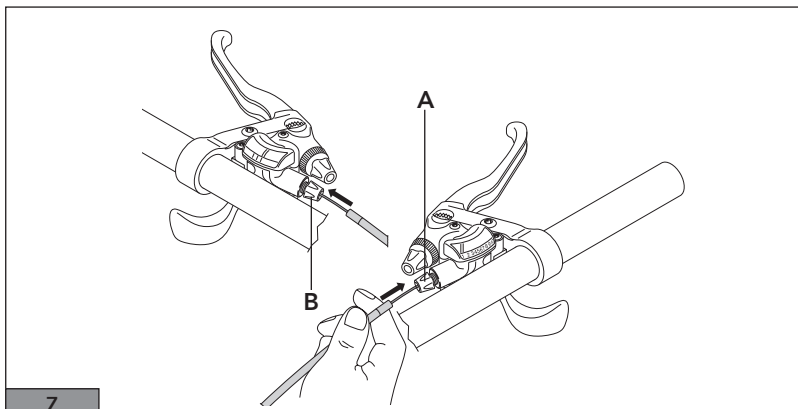
### ⚠ WARNING!

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.

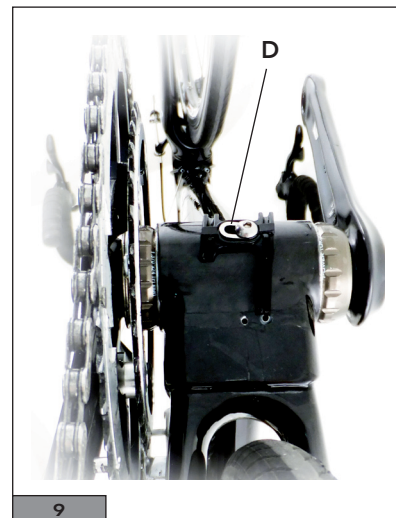
- Fasten the end of the cable (original length 680 mm, diameter  $\varnothing$  4.5 mm) containing the pre-mounted end cap to the adjusting screw (A - Fig. 7) of the right Ergopower FB shifter.



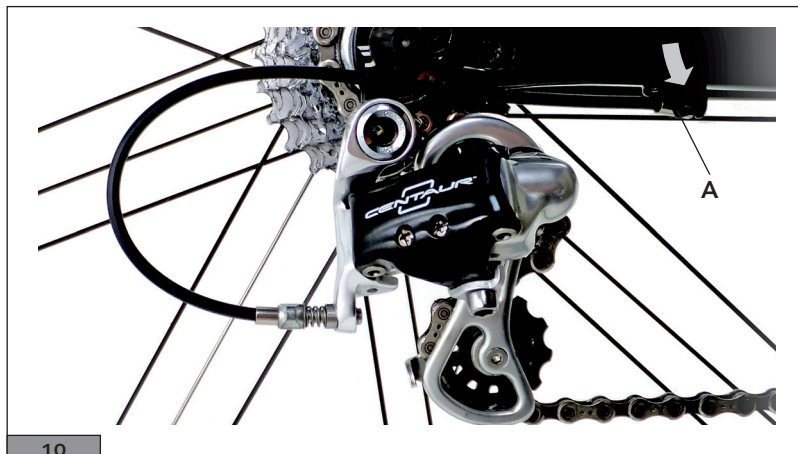
- Cut the housing such that it reaches as far as the steel cable stop mounted on the frame (C - Fig. 8).

- 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.



- Apply an end cap to the 330 mm,  $\varnothing$  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

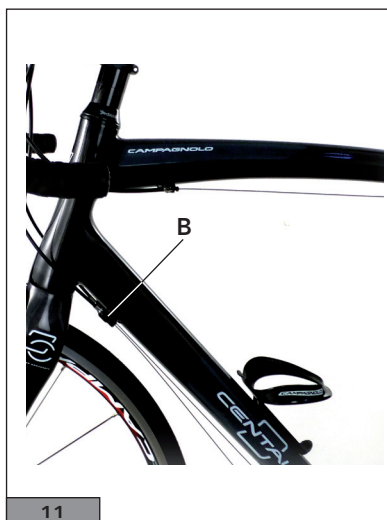
Pull the housing over the front derailleur cable you have just installed.

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

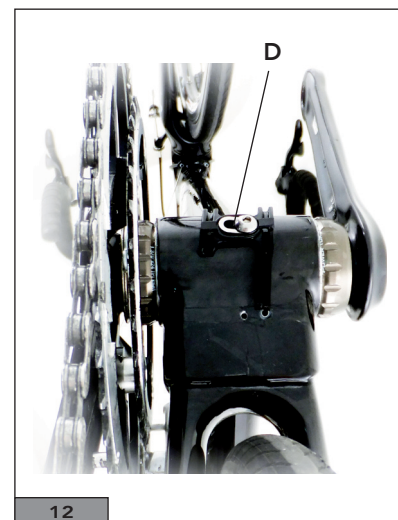
#### WARNING!

**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).

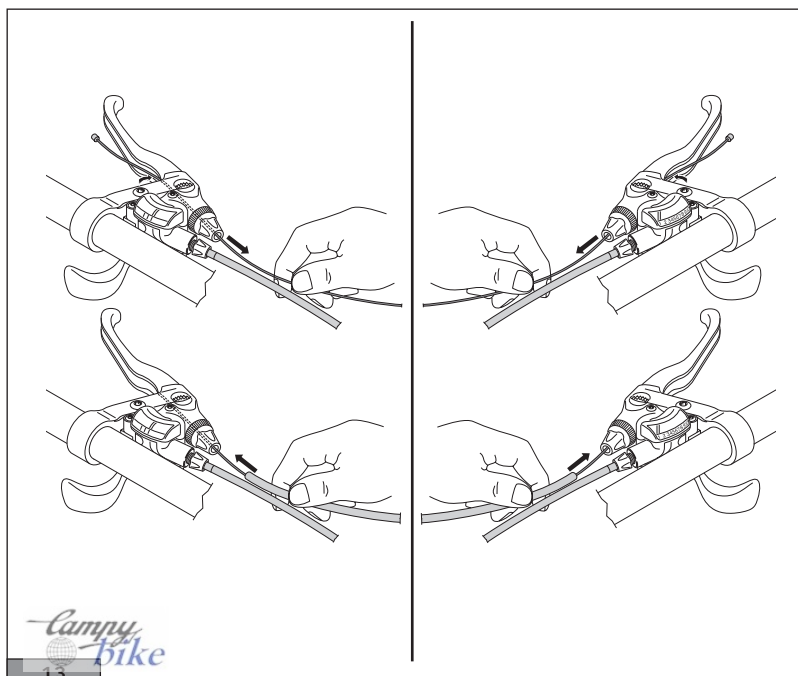
#### 4.1.3 - Front brake cable and housing / rear brake cable and housing

- Run the brake cable (original length 800 mm,  $\varnothing$  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,  $\varnothing$  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,  $\varnothing$  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,  $\varnothing$  5 mm) and mount some end caps ( $\varnothing$  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).

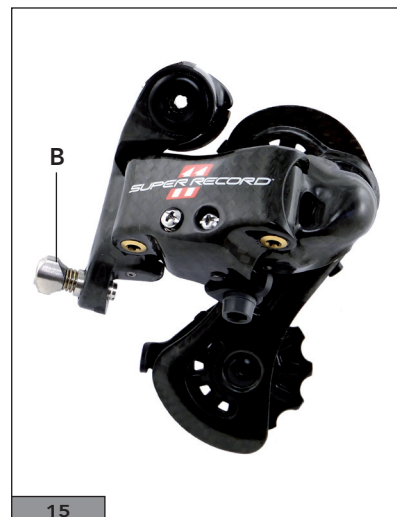
### ⚠ WARNING!

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).



## 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 your 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**

EP-VL029FB

L: EP-CH123FB  
R: EP-CH122FB

R: EP-CH105FB  
L: EP-CH106FB

R: EP-CH107FB  
L: EP-CH108FB

L: EP-CH102FB  
R: EP-CH101FB


EP-CH025FB


R: EP-VL003FB  
L: EP-VL004FB

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	<b>COMP. TRIPLE 10S</b> (for tubes $\varnothing$ 28,6 mm)	45 mm
		

BOTTOM BRACKET	CRANKSET	CHAIN LINE
115.5 mm	<b>COMP. TRIPLE 10S</b> (for tubes $\varnothing$ 32 mm / $\varnothing$ 35 mm)	47.5 mm
		

## 2 - COMPATIBILITY

### CAUTION

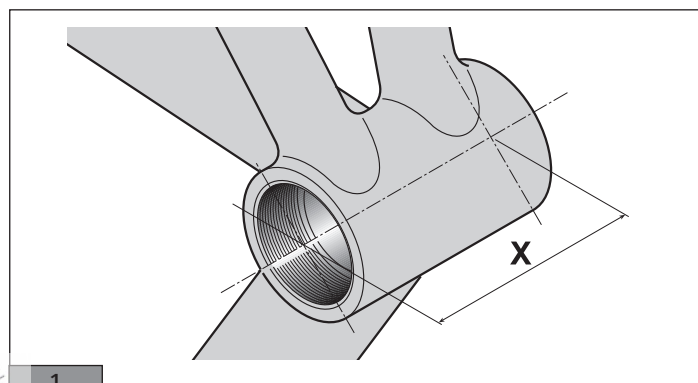
Before starting assembly, check that the bottom bracket cups are compatible with the bottom bracket shell).

## 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

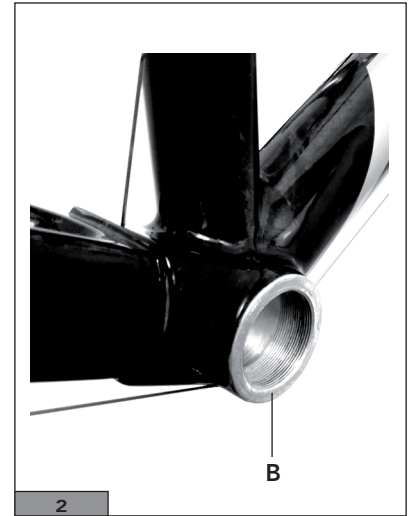
- Make sure that the threads (A - Fig. 1) of the bb shell are compatible with the threads of the bb cups:

**Italian thread:** 36x24 tpi

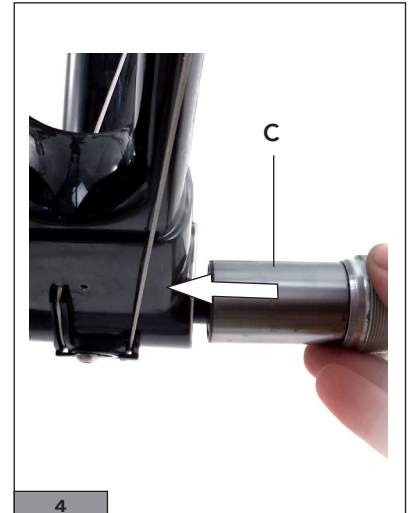
**English thread:** 1.370x24 tpi

- 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.

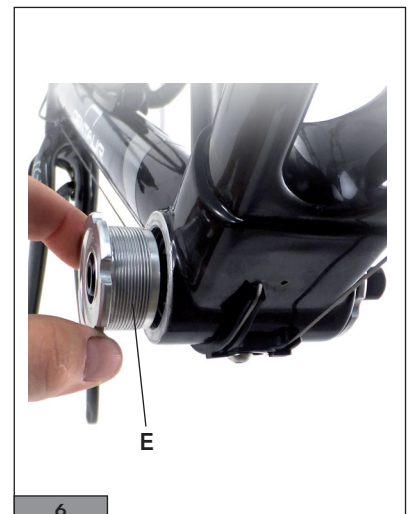
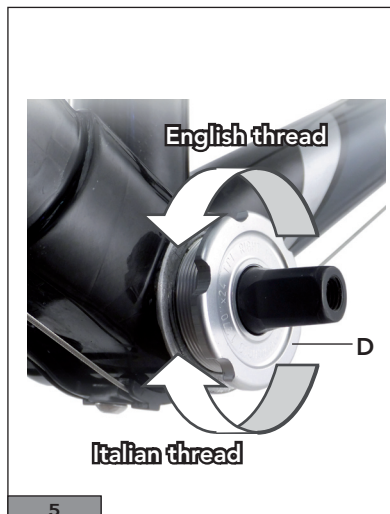


- Tighten the right-hand cup (D - Fig. 5) snugly against the bottom bracket shell.

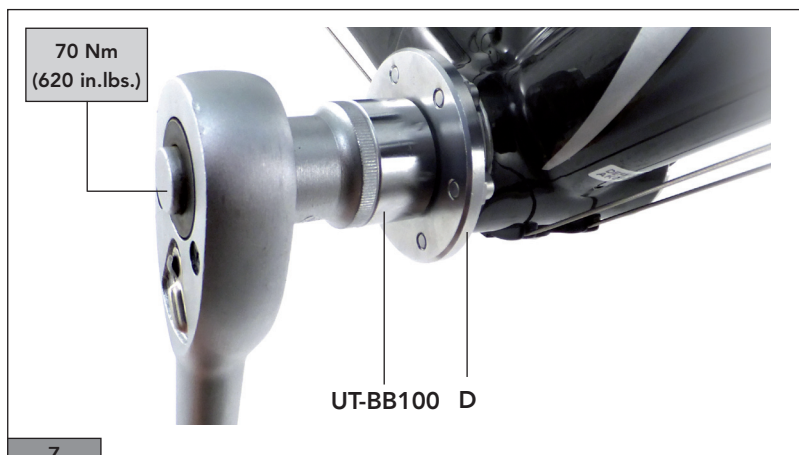
#### NOTE

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.)**.



### 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

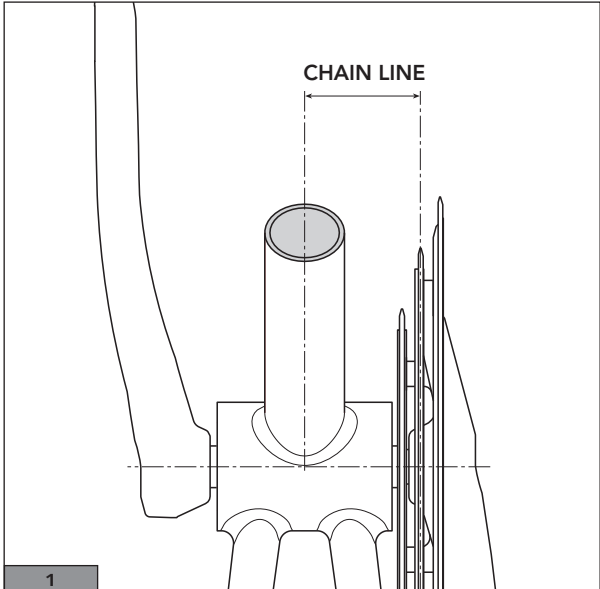
## 1 - TECHNICAL SPECIFICATIONS

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
<b>111 mm - SYMMETRICAL</b> 10S triple crankset (for seat tubes $\varnothing$ 28,6 mm)	45.5 mm
	
<b>115,5 mm - SYMMETRICAL</b> 10S triple crankset (for seat tubes $\varnothing$ 32 mm and $\varnothing$ 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

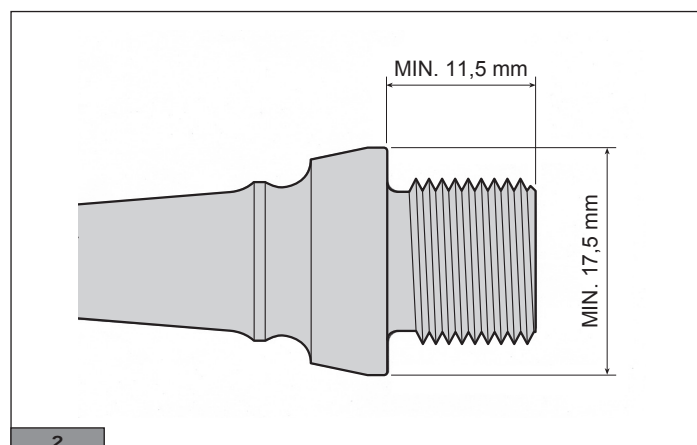
#### WARNING!

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.

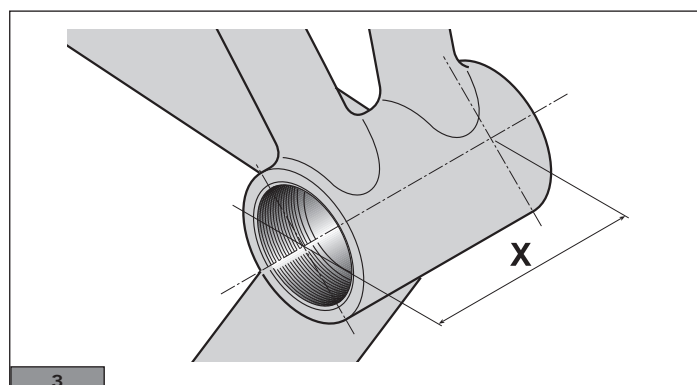


## 3 - INTERFACE WITH THE FRAME

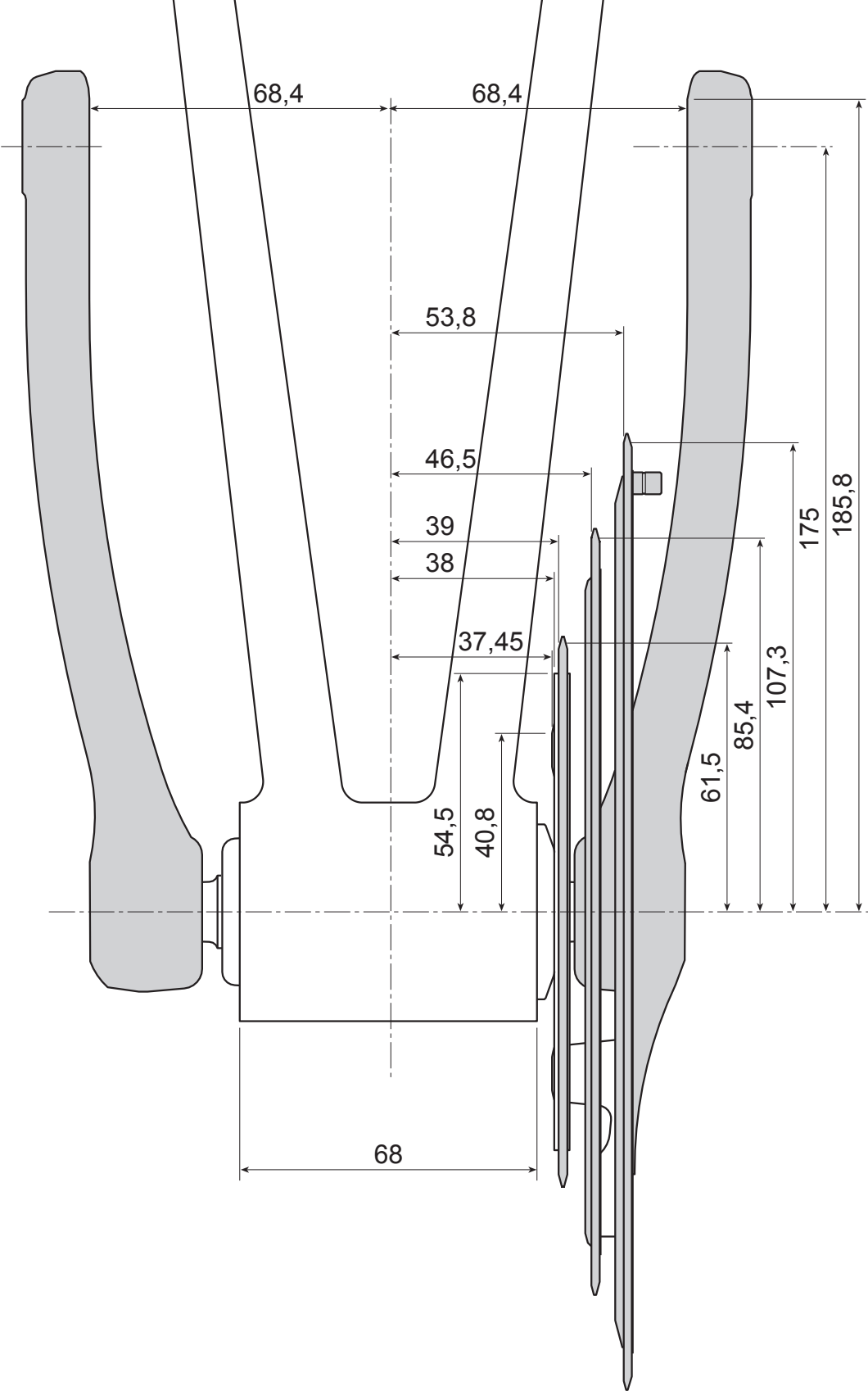
### 3.1 - COMPATIBILITY WITH BOTTOM BRACKET SHELLS

- 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



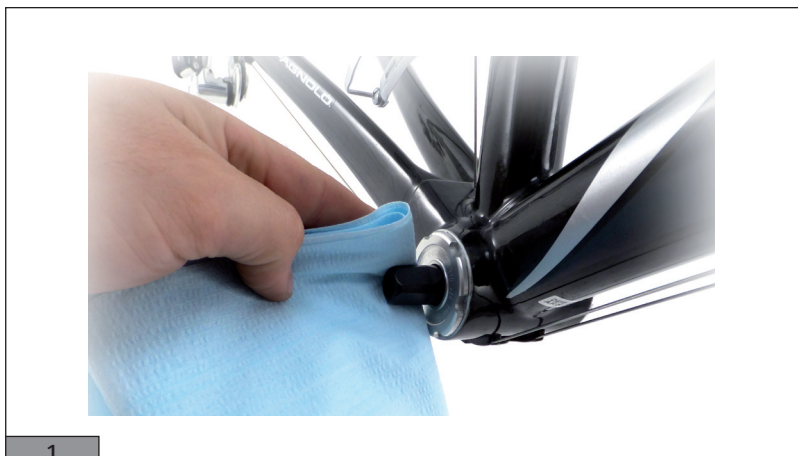
3.2 - DIMENSIONS FOR TRIPLE CRANKSETS



## 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.**

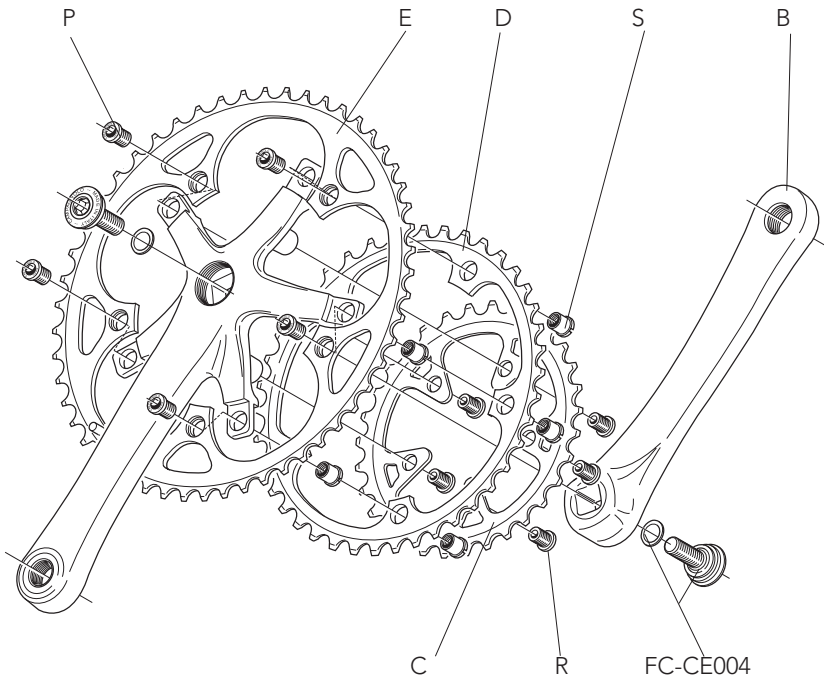
- In the event of impacts or falls, make sure that the pedals and bottom brackets are not damaged and have the bicycle checked by a specialized mechanic.
- Never modify the crankset in any way. Tampering with the components may cause sudden failure and accidents.
- Clean the chainrings with a soft cloth. 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

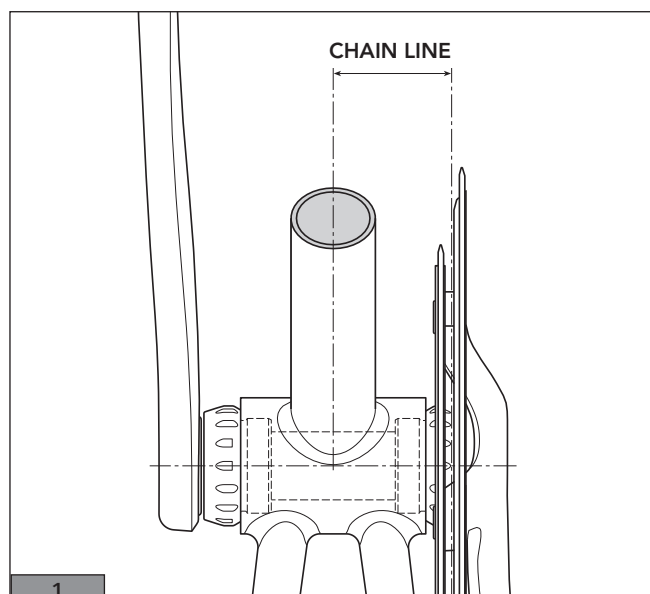
## 1 - TECHNICAL SPECIFICATIONS

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		

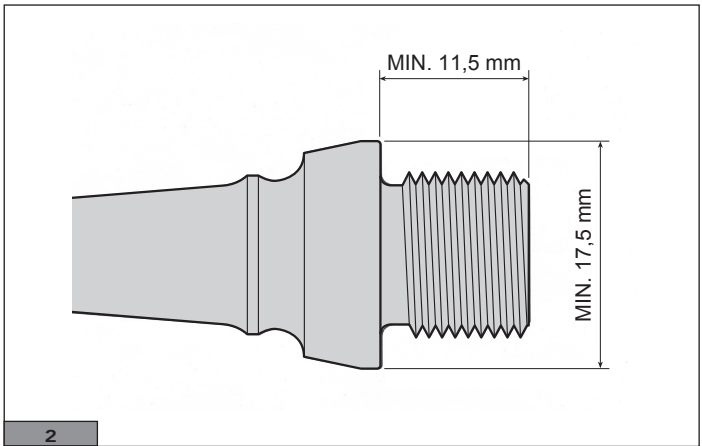
CRANKSET	TYPE OF USE
POWER-TORQUE SYSTEM 10s	ONLY FOR ROAD
POWER-TORQUE SYSTEM 11s	ONLY FOR ROAD

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).

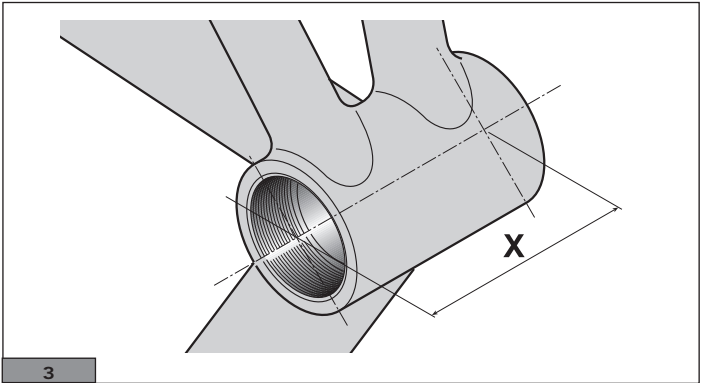


3 - INTERFACE WITH THE FRAME

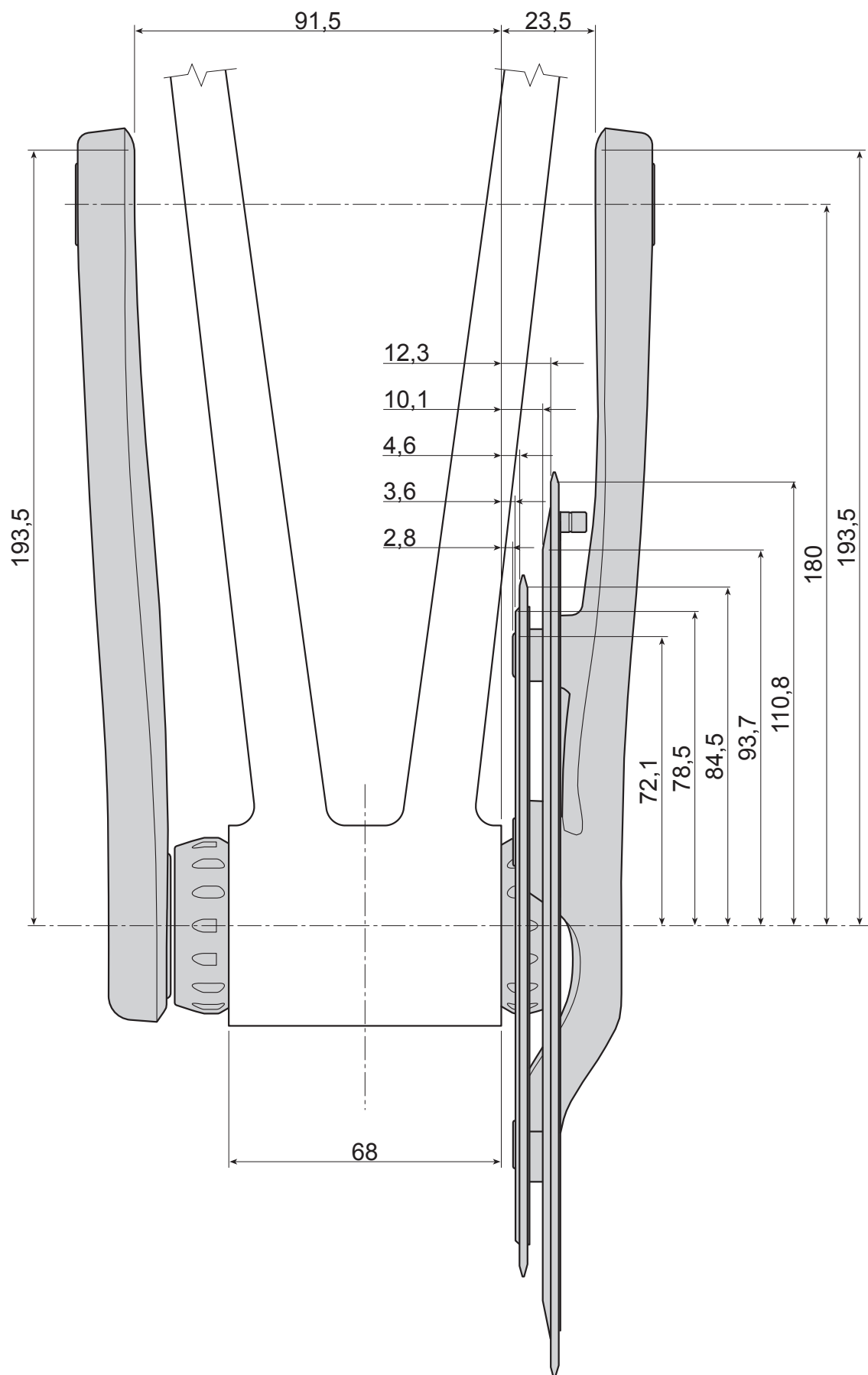
3.1 - COMPATIBILITY WITH BOTTOM BRACKET SHELLS

- 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



## 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).

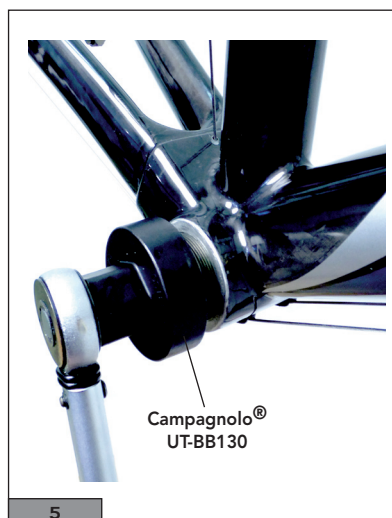
#### CAUTION

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

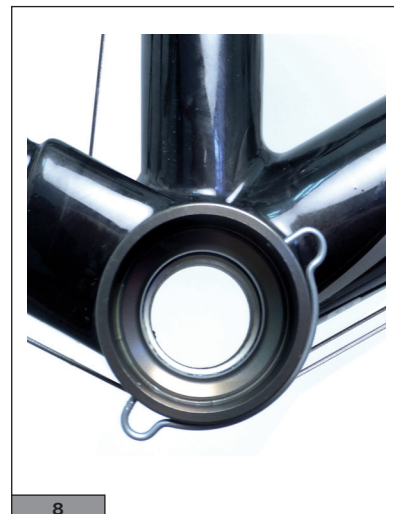
- Take the bb right cup, screw it in fully (Fig. 4) and tighten at **35 Nm (310 in.lbs)** with the Campagnolo UT-BB130 tool and the torque wrench (Fig. 5).

- 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).



- 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.

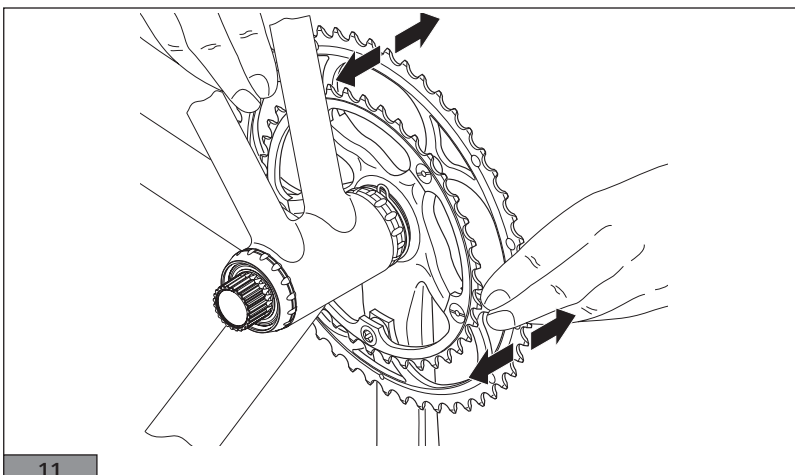


- Insert the right crank fully into the bottom bracket (fig. 9) letting the pivot protrude from the left cover.



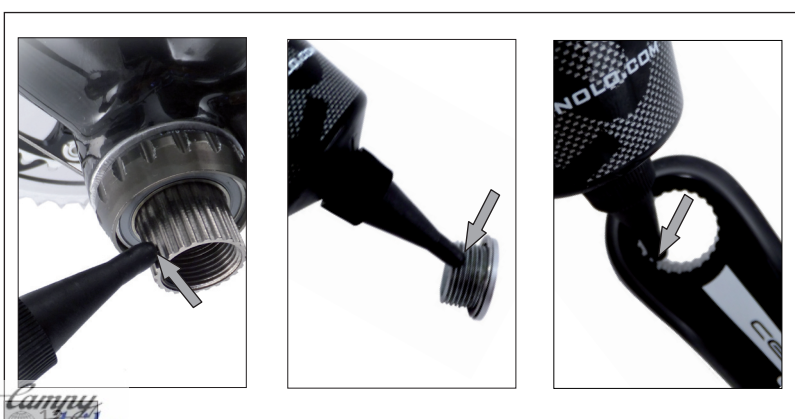
- Press the clip so that the two ends are pushed into the holes (fig. 10).

- 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).

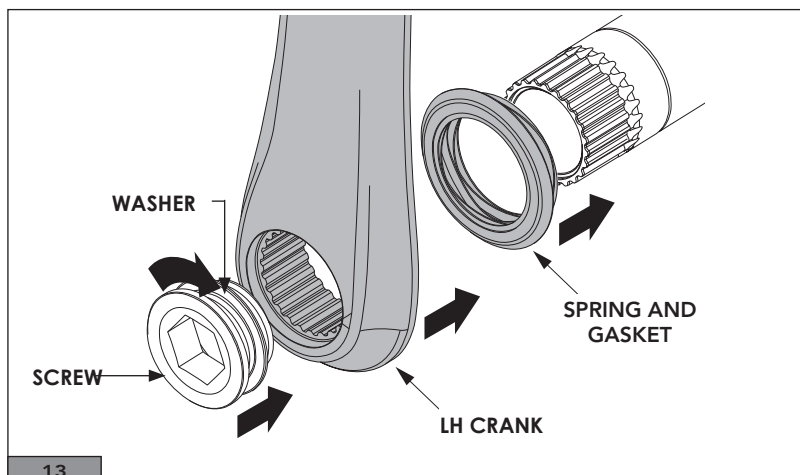


### ⚠ WARNING!

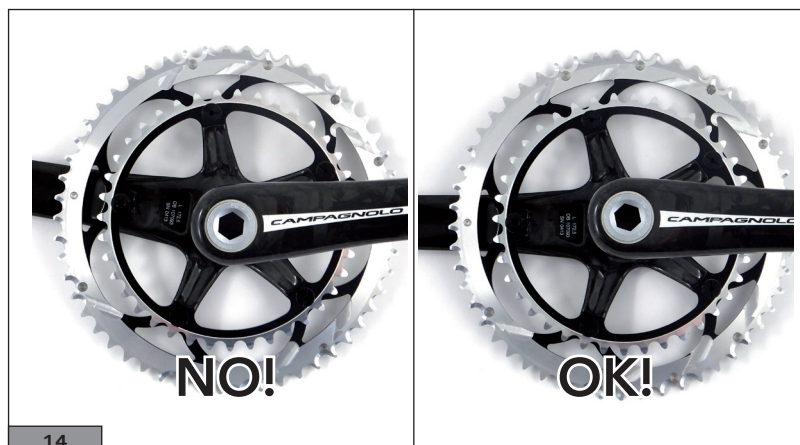
Before **ANY** installation, grease the splines of the spindle, splines of the crank and the threads of the crank bolt with the appropriate synthetic grease (fig.12). An incorrect assembly might lead to the sudden break of the component as well as accidents, injuries and even death.



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



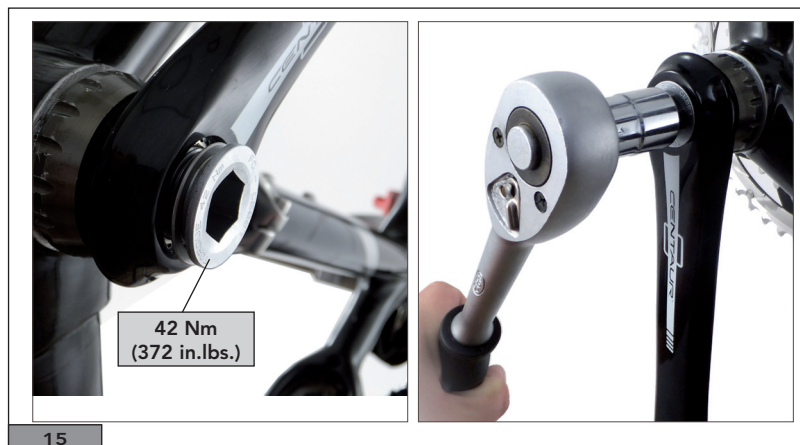
- Check the cranks are correctly aligned (fig. 14).



- 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.



## 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.

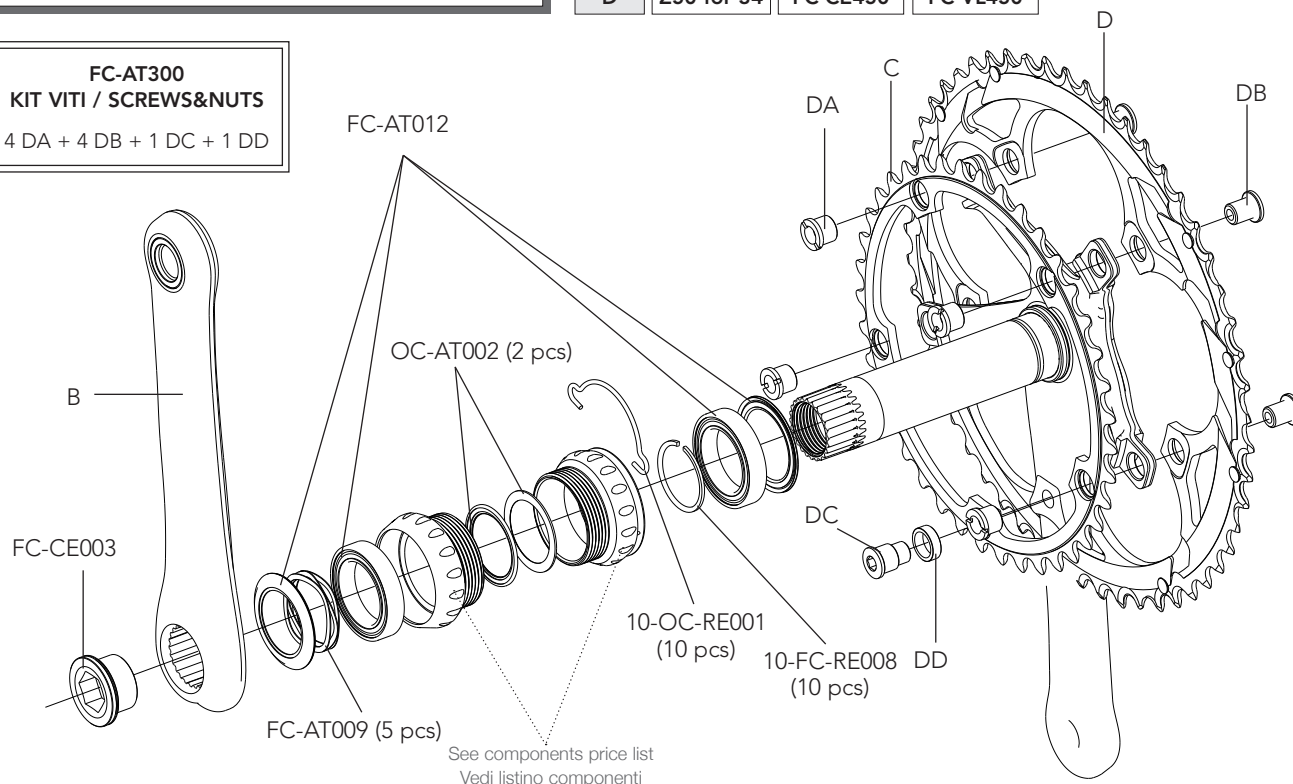
- Never spray your bicycle with water under pressure. Pressurized water, even from the nozzle of a small garden hose, can pass seals and enter into your Campagnolo® components, damaging them beyond repair. Wash your bicycle and Campagnolo® components by wiping them down with water and neutral soap. Dry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

## 6 - SPARE PARTS

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

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

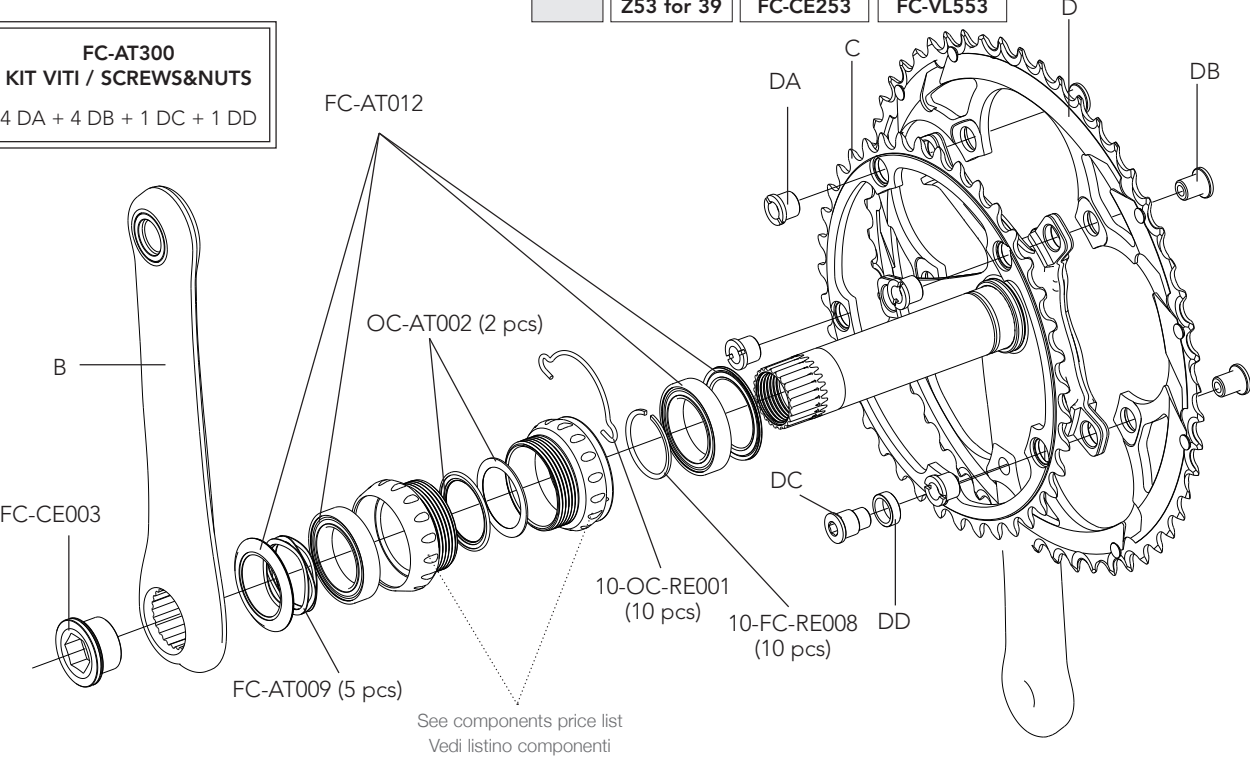
		BLACK	SILVER
B	170 mm	FC-VL571	FC-VL945
	172,5 mm	FC-VL573	FC-VL947
	175 mm	FC-VL575	FC-VL949
C	Z34	FC-VL434	FC-VL534
D	Z50 for 34	FC-CE450	FC-VL450



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

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

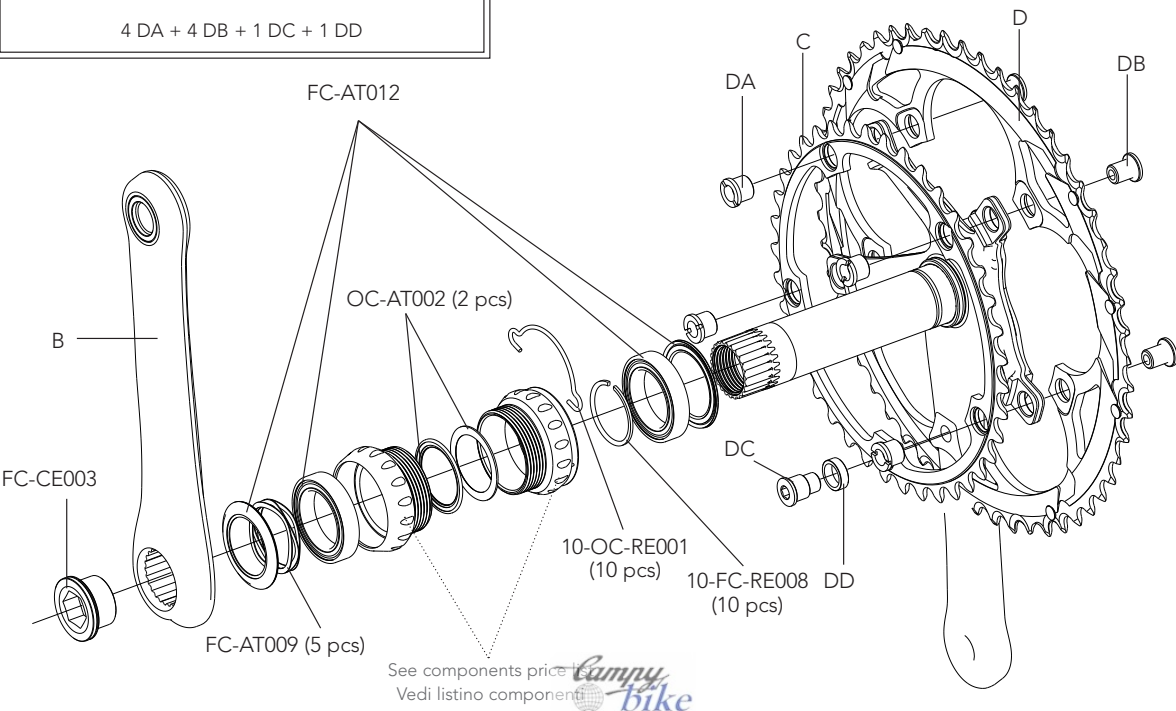
		BLACK	SILVER
B	170 mm	FC-VL571	FC-VL945
	172,5 mm	FC-VL573	FC-VL947
	175 mm	FC-VL575	FC-VL949
C	Z39	FC-VL339	FC-VL439
D	Z52 for 39	FC-CE252	FC-VL652
	Z53 for 39	FC-CE253	FC-VL553



**CENTAUR™ POWER-TORQUE™**  
**CT™ 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-CERB170
	172,5 mm	FC-CEB172	FC-CERB172
	175 mm	FC-CEB175	FC-CERB175
C	Z34	FC-CE334	
D	Z50 for 34	FC-CE650	

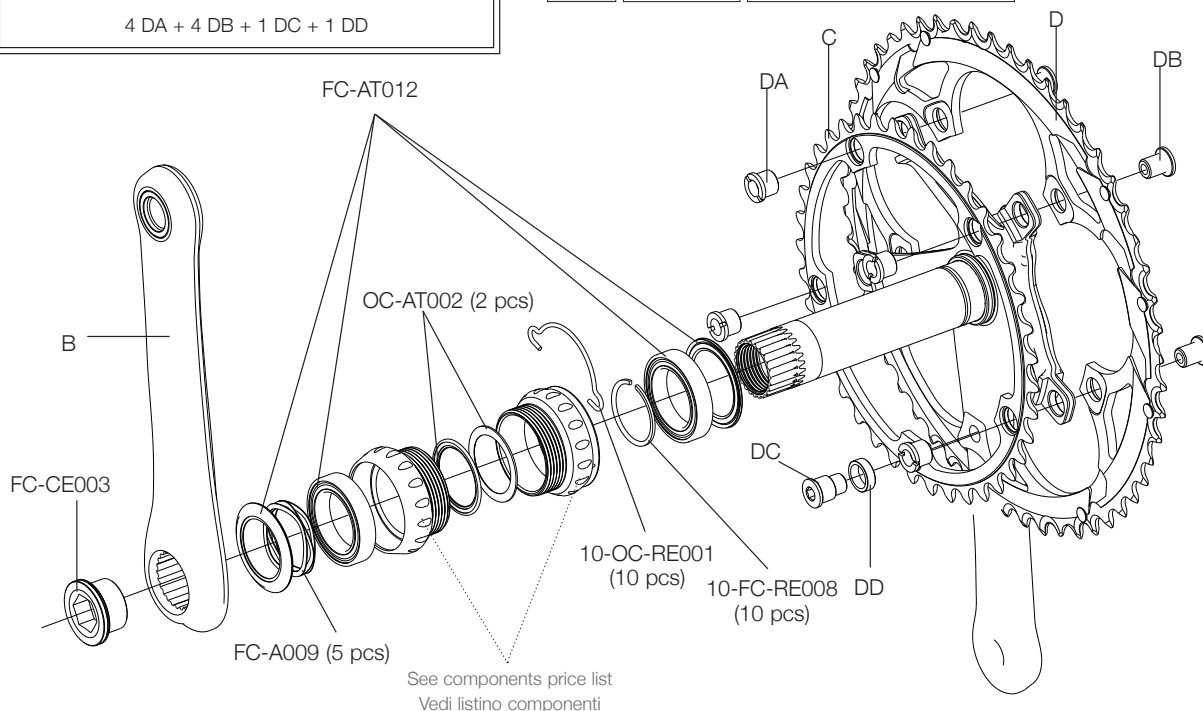


**CENTAUR™ POWER-TORQUE™**  
**10s**  
**FC12-CE...**

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	FC-CE452	
	Z53 for 39	FC-CE453	

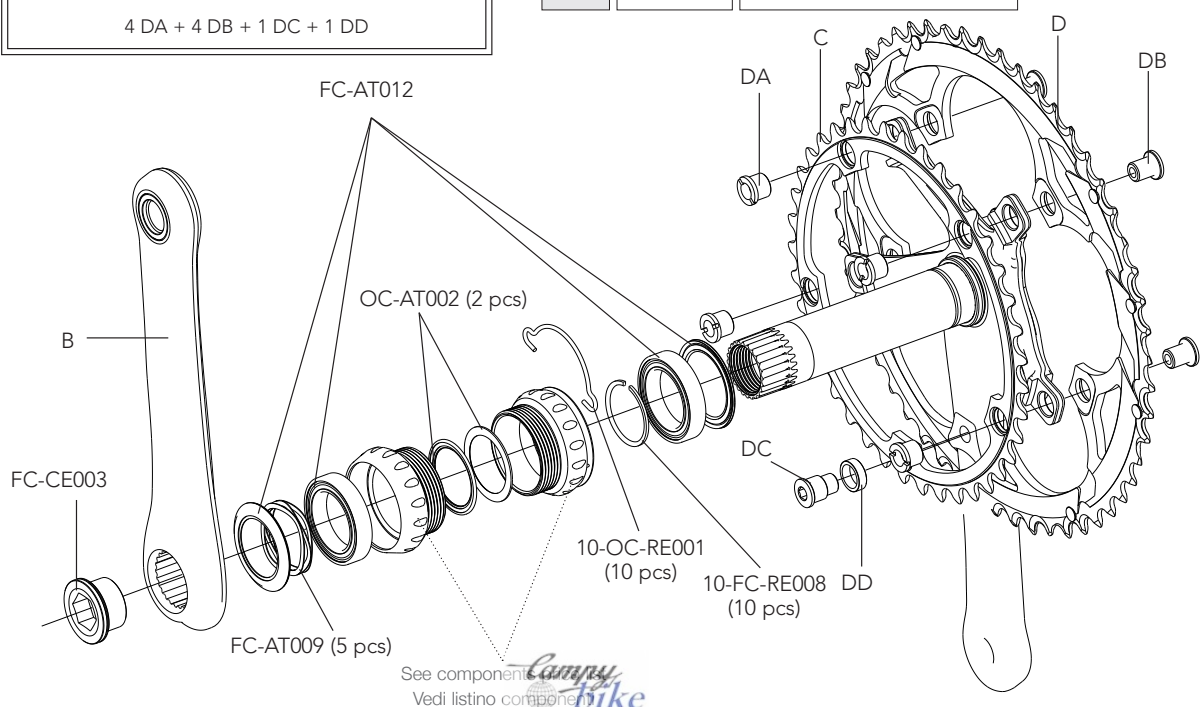


**CENTAUR™ POWER-TORQUE™**  
**CT™ Carbon 10s**  
**FC11-CE...C**

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

4 DA + 4 DB + 1 DC + 1 DD

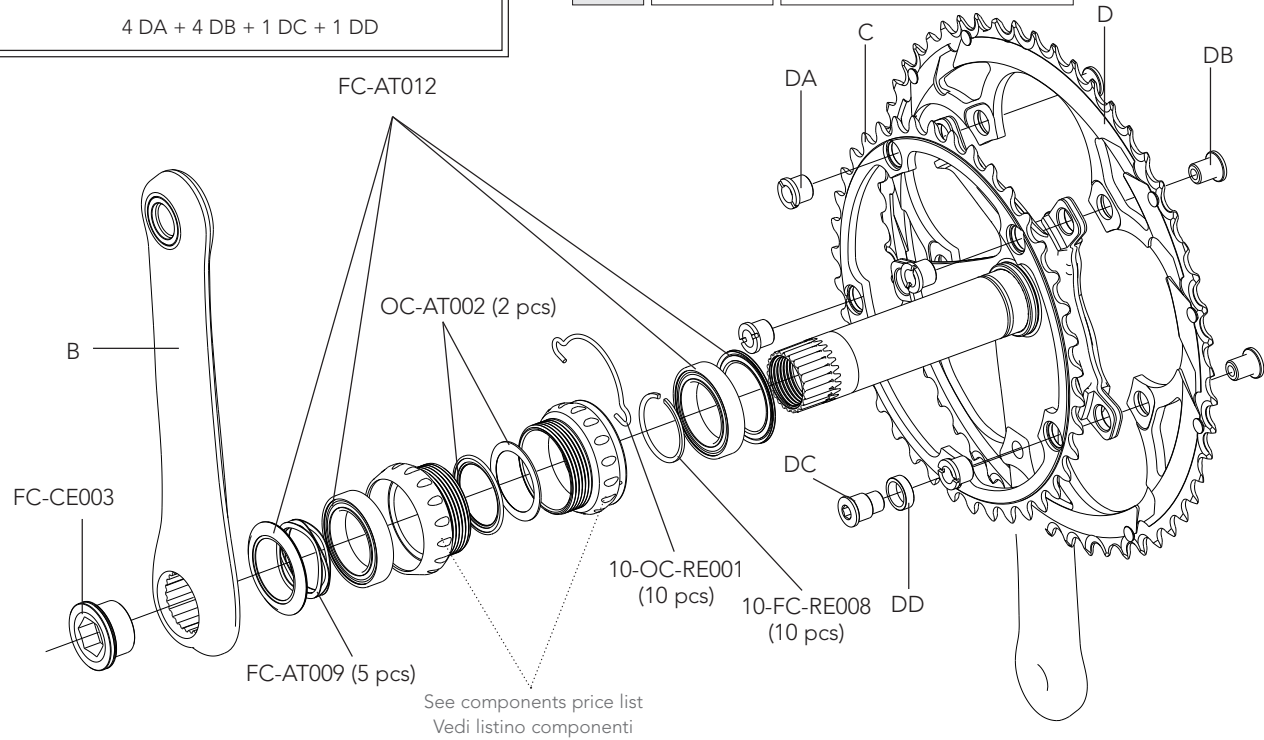
		BLACK	BLACK & RED
B	165mm	FC-CE165C	FC-CERB165C
	170 mm	FC-CE775	FC-CERB170C
	172,5 mm	FC-CE777	FC-CERB172C
	175 mm	FC-CE779	FC-CERB175C
C	Z34	FC-CE234	
D	Z50 for 34	FC-CE650	



**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

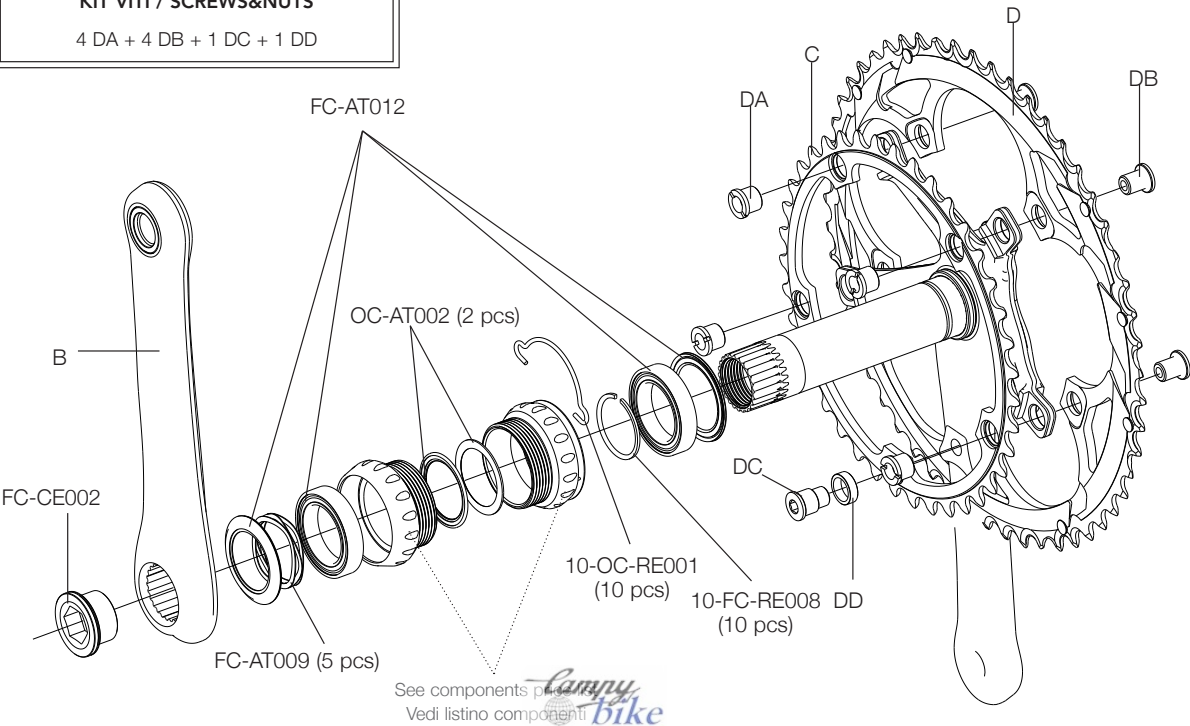
		BLACK	BLACK & RED
B	165mm	FC-CE165C	FC-CERB165C
	170 mm	FC-CE775	FC-CERB170C
	172,5 mm	FC-CE777	FC-CERB172C
	175 mm	FC-CE779	FC-CERB175C
C	Z39	FC-CE239	
D	Z52 for 39 Z53 for 39	FC-CE452 FC-CE453	



**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

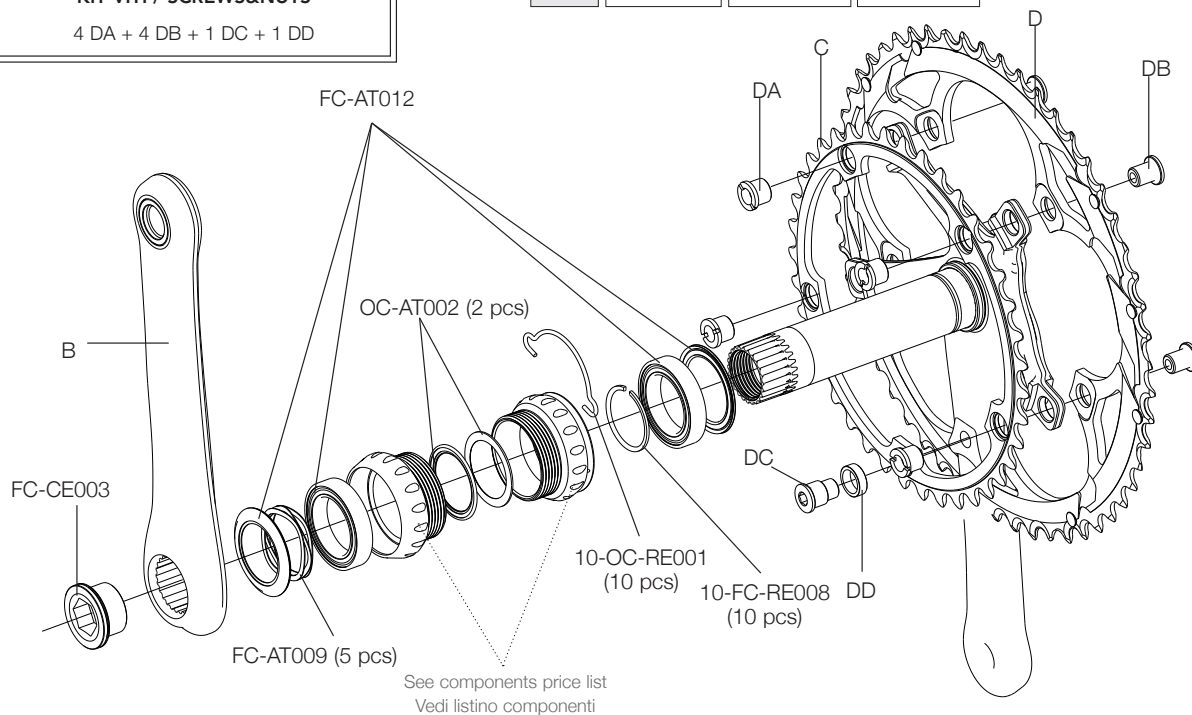
		SILVER	BLACK
B	170 mm	FC-AT935	FC-ATB170
	172,5 mm	FC-AT937	FC-ATB172
	175 mm	FC-AT939	FC-ATB175
C	Z34	FC-AT234	
D	Z50 for 34	FC-AT350	



**ATHENA™ POWER-TORQUE™****11s****FC11-AT... / FC12-ATB...**FC-AT200 (SILVER) - FC-AT200B (BLACK)  
KIT VITI / SCREWS&NUTS

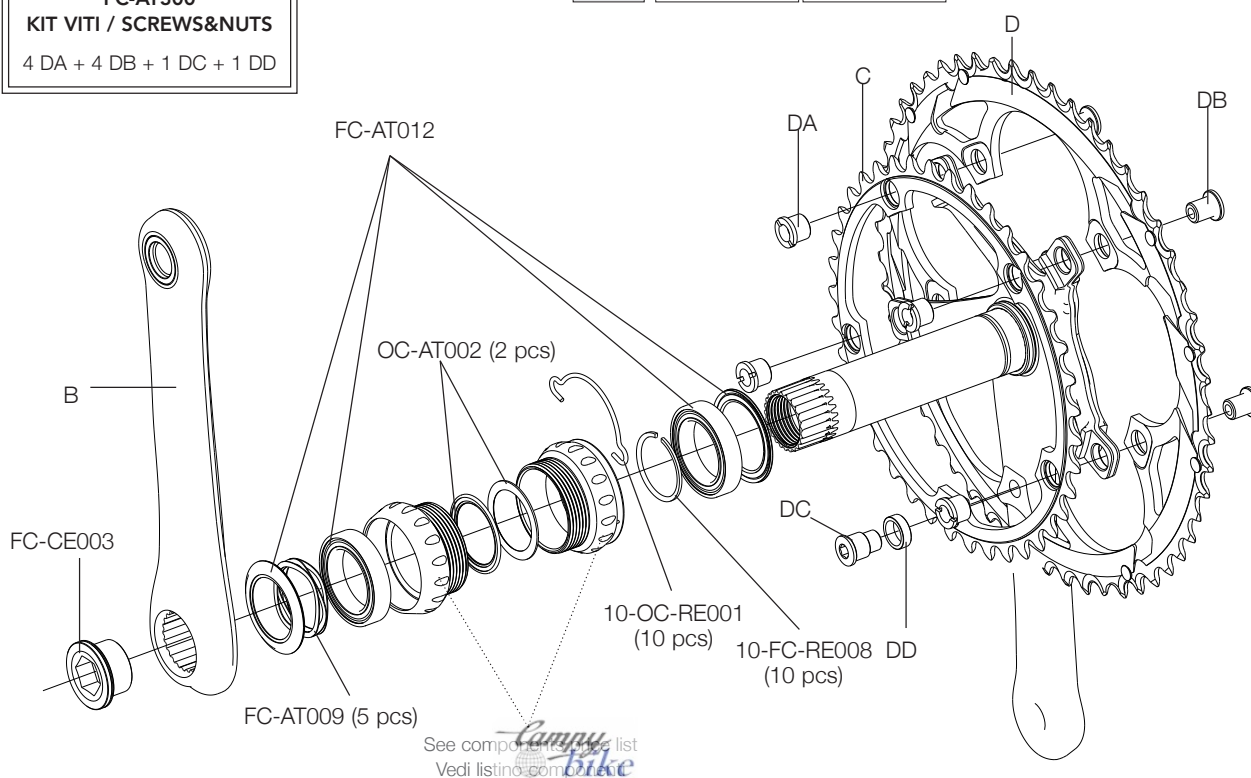
4 DA + 4 DB + 1 DC + 1 DD

		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

**ATHENA™ POWER-TORQUE™****CT™ Carbon 11s****FC11-AT...C**FC-AT300  
KIT VITI / SCREWS&NUTS

4 DA + 4 DB + 1 DC + 1 DD

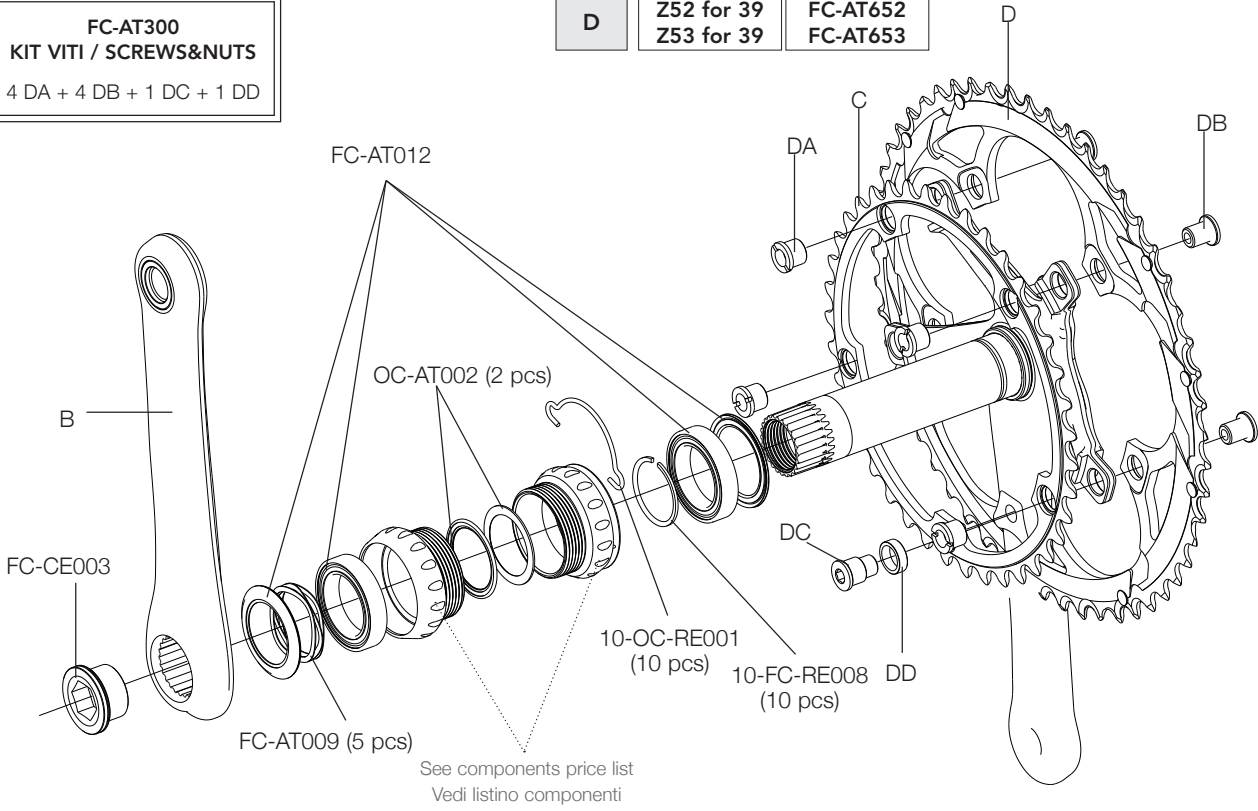
B	165mm	FC-AT165C
	170 mm	FC-AT763
	172,5 mm	FC-AT765
	175 mm	FC-AT767
C	Z34	FC-AT134
D	Z50 for 34	FC-AT250



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

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

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



# ULTRA-TORQUE CRANKSET

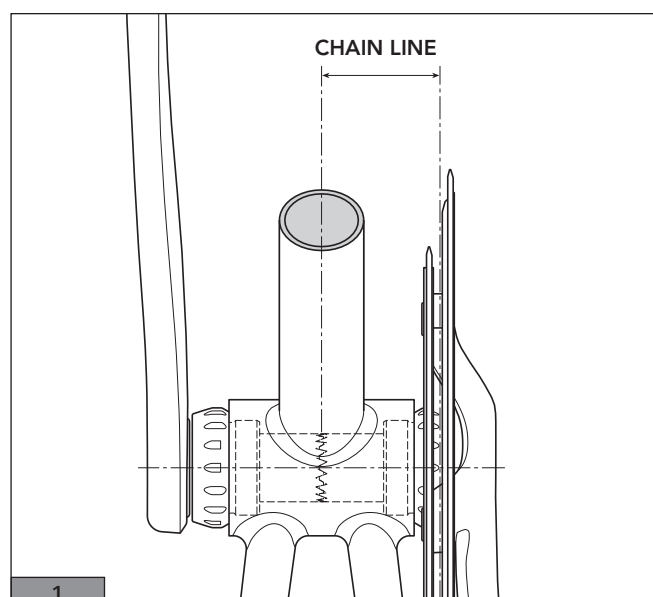
## 1 - TECHNICAL SPECIFICATIONS

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		

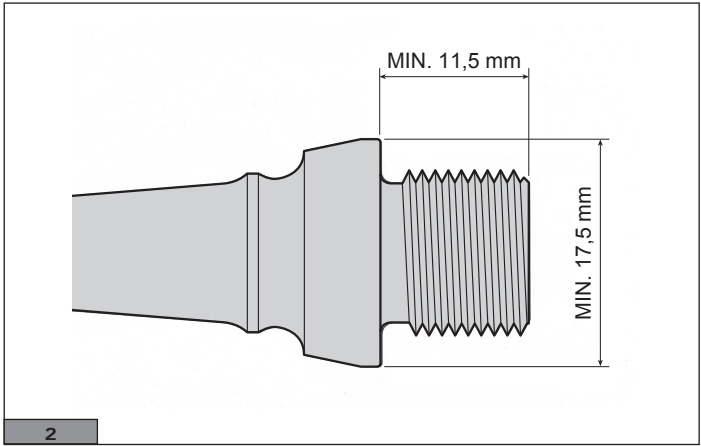
CRANKSET	SEMI-SPINDLE	CENTRAL BOLT
SUPER RECORD Titanium Ultra-Torque	Titanium	Titanium
		Screw in an anti-clockwise direction
SUPER RECORD Ultra-Torque	Steel	Steel
		Screw in a clockwise direction
RECORD Ultra-Torque	Steel	Steel
		Screw in a clockwise direction
CHORUS Ultra-Torque	Steel	Steel
		Screw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

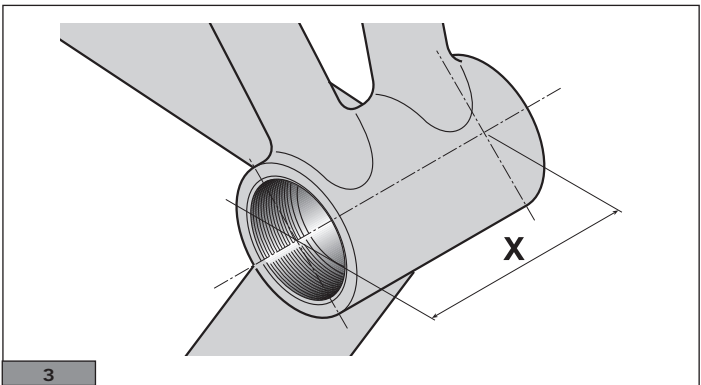


3 - INTERFACE WITH THE FRAME

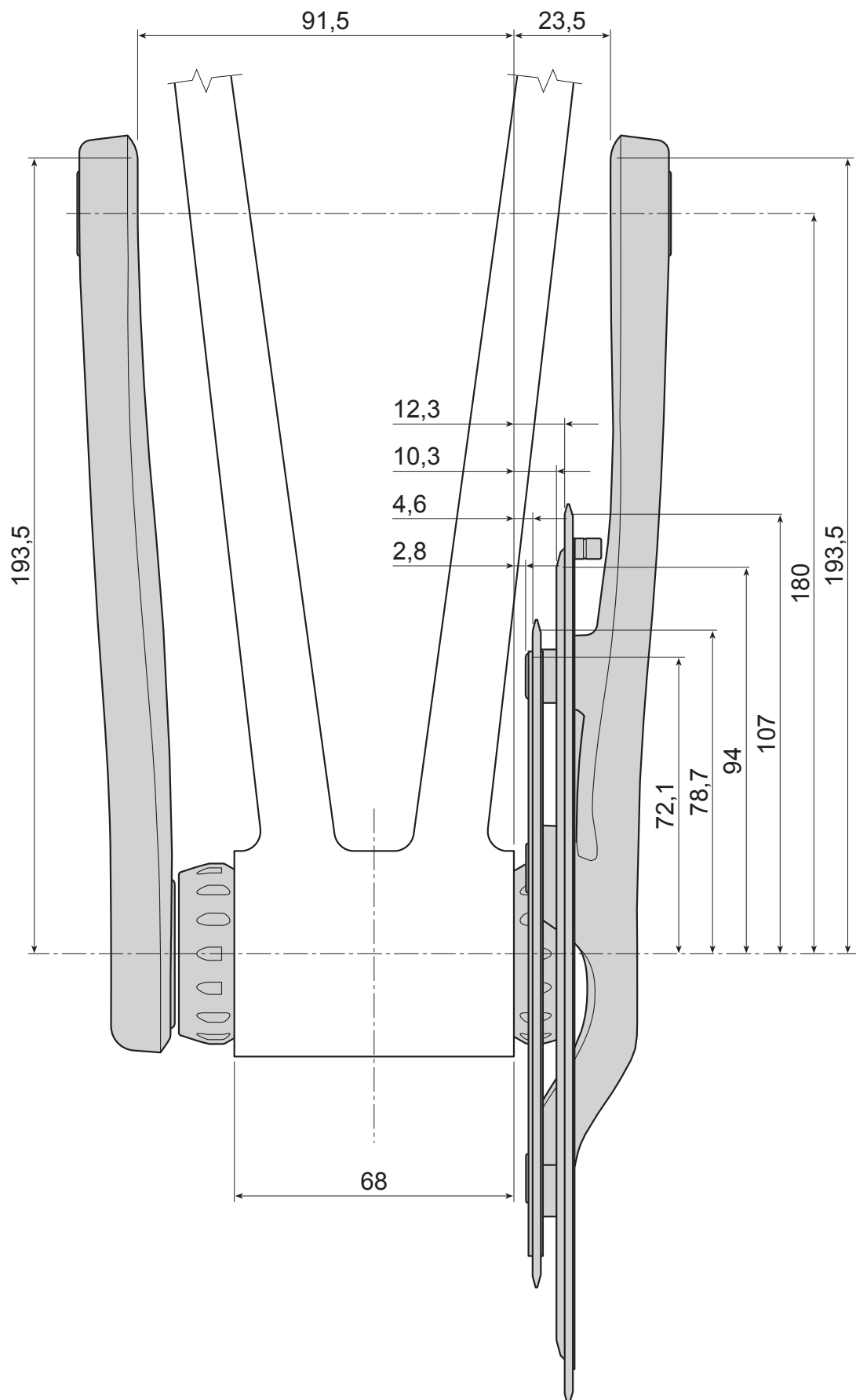
3.1 - COMPATIBILITY WITH BOTTOM BRACKET SHELLS

- 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



## 3.2 - 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)

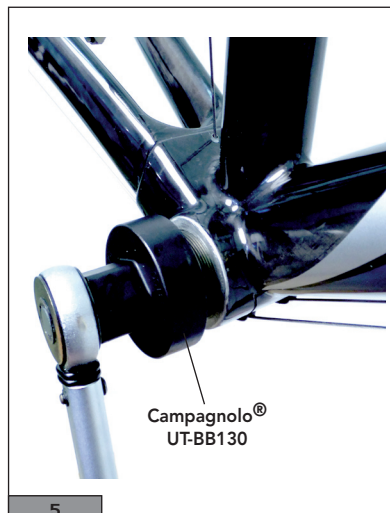
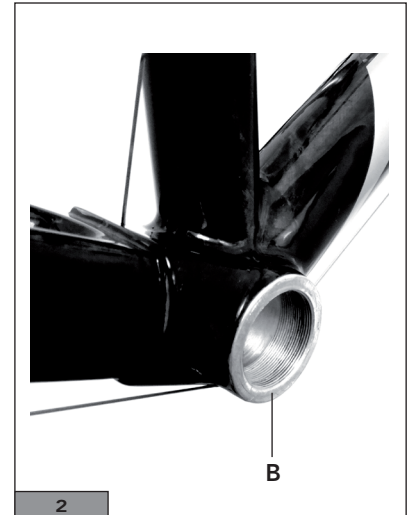
#### CAUTION

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

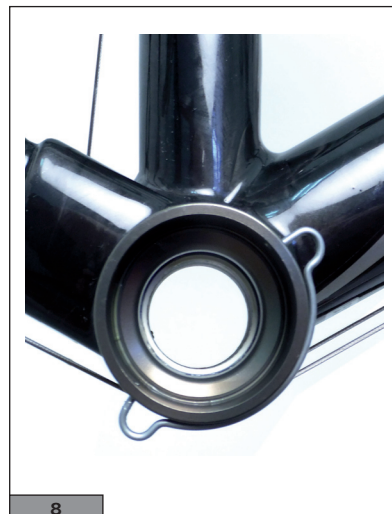
- Take the bb right cup, screw it in fully (Fig. 4) and tighten at **35 Nm (310 in.lbs)** with the Campagnolo UT-BB130 tool and the torque wrench (Fig. 5).

- Repeat the previous step with the left cup.

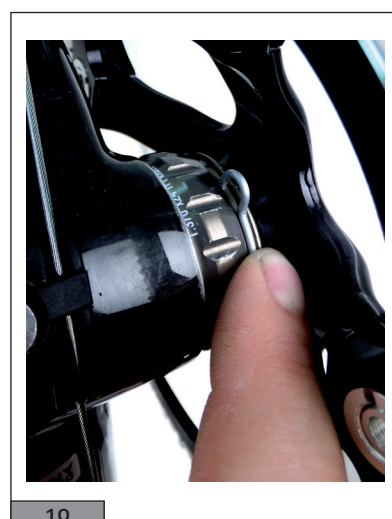
- Make sure that the bearing set are correctly greased (Fig. 6).



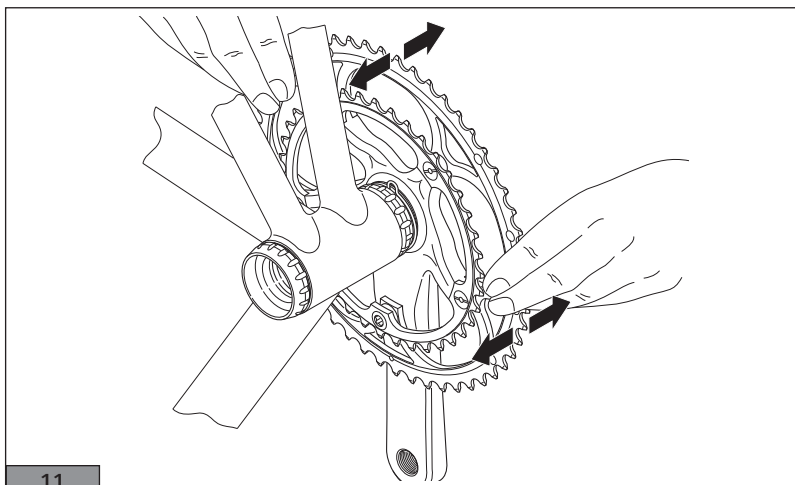
- Identify the two holes in the groove of the right-hand cup (Fig. 7).
- Position the retaining spring so that the two ends are near the holes (Fig. 8). Do not insert the spring fully.



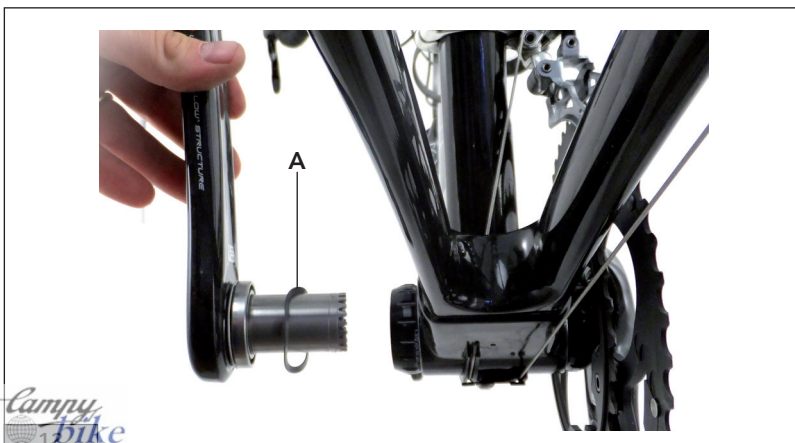
- Insert the right-hand crank fully into the shell (Fig. 9).
- Push the spring so that the two ends slide into the holes (Fig. 10).



- 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).



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



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



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**

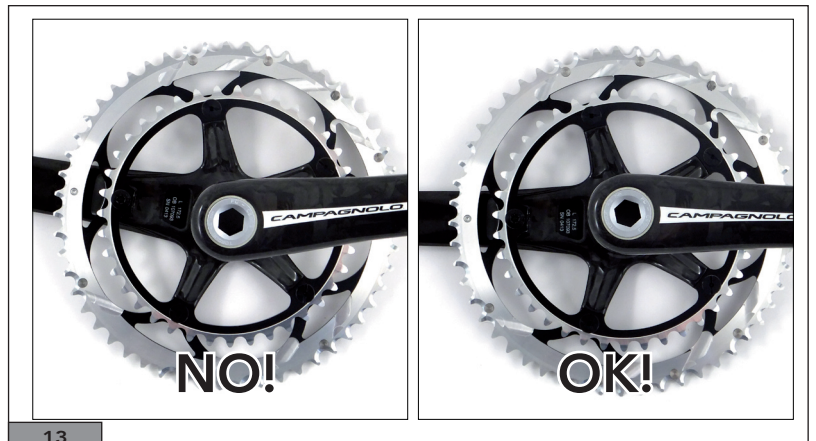
To prevent long-term oxidation of the retaining bolt thread, use a threadlocker fluid. We recommend you use only Loctite 222.

- 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),

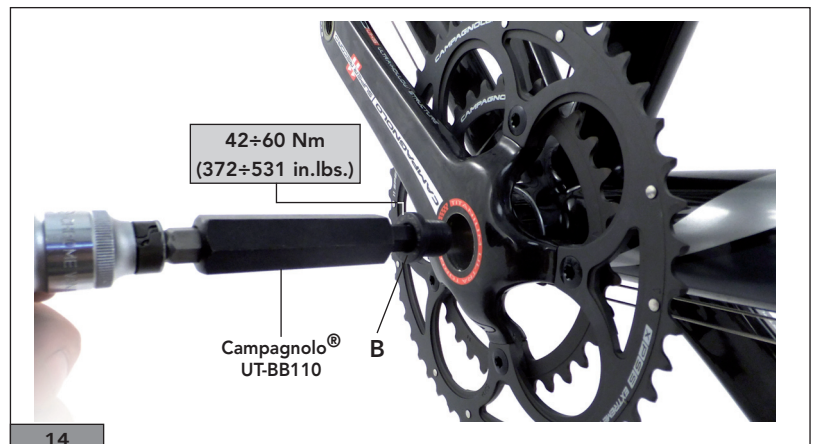
**WARNING:** The central titanium bolt **FC-SR007** fitted **exclusively** on Super Record Ultra-Torque crankset, with titanium semi-spindle, has a left-hand thread (to tighten turn anti-clockwise, to loosen turn clockwise). **Follow the tightening direction indicated by the arrow shown on the head of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

**WARNING!**

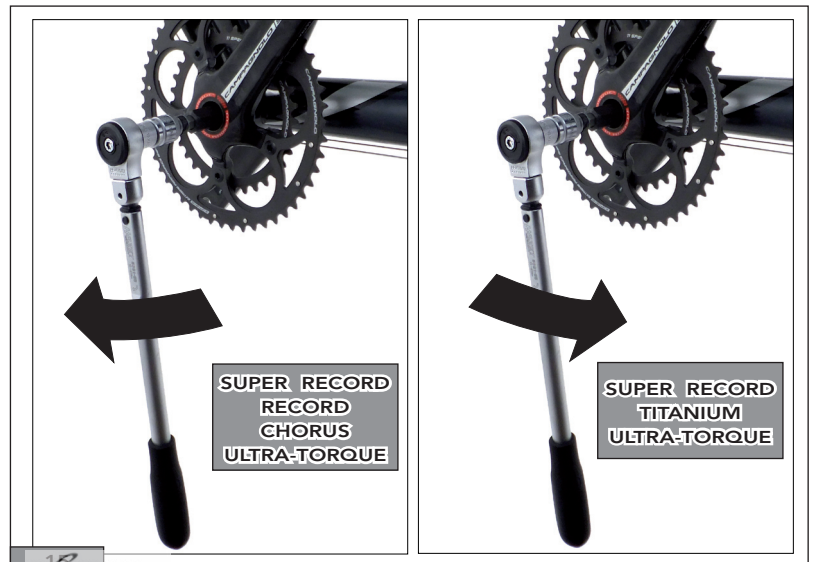
If it is necessary to replace the chainrings, contact a Campagnolo® Service Center since the flatness must be carefully checked using special equipment. Final assembly must be carefully performed in order to avoid an accident, personal injury or death.



13



14



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

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

See components price list  
Vedi listino componenti

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

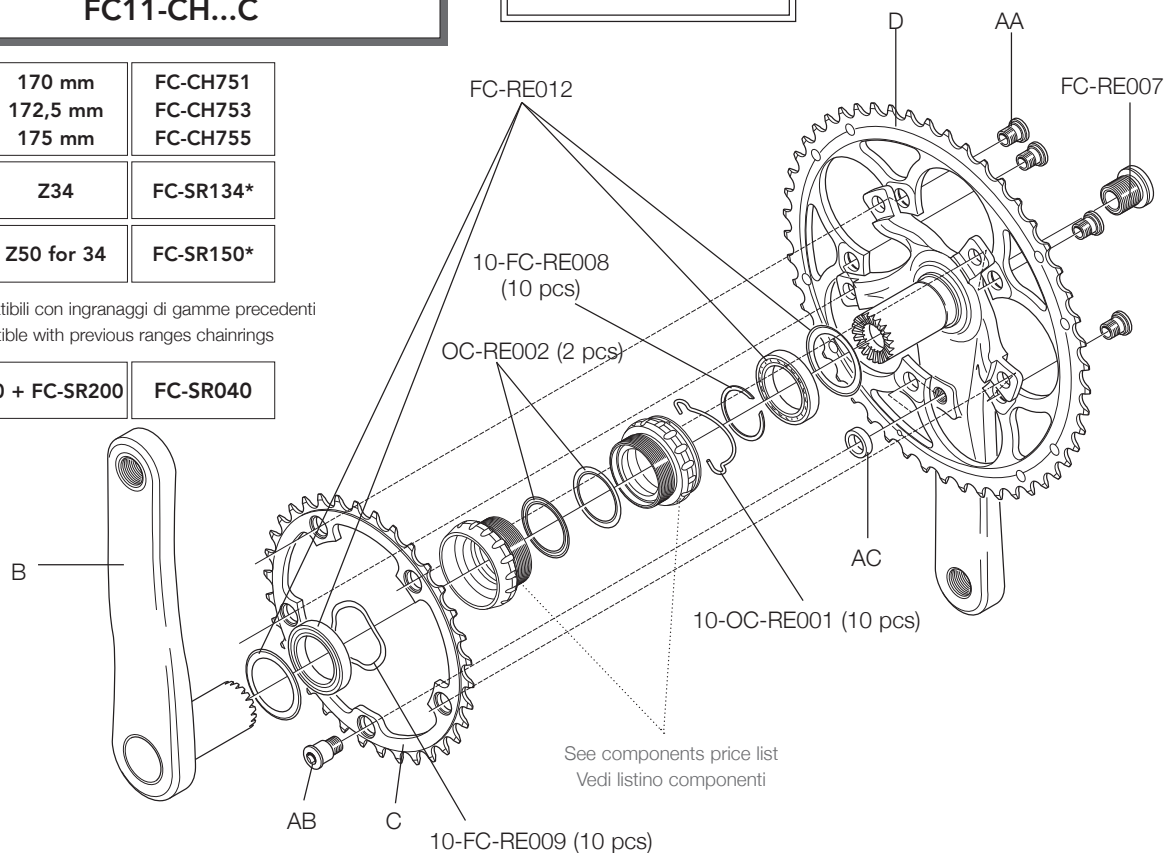
**CHORUS™ ULTRA-TORQUE™**  
**CT™ Carbon 11s**  
**FC11-CH...C**

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

B	170 mm	FC-CH751
	172,5 mm	FC-CH753
	175 mm	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
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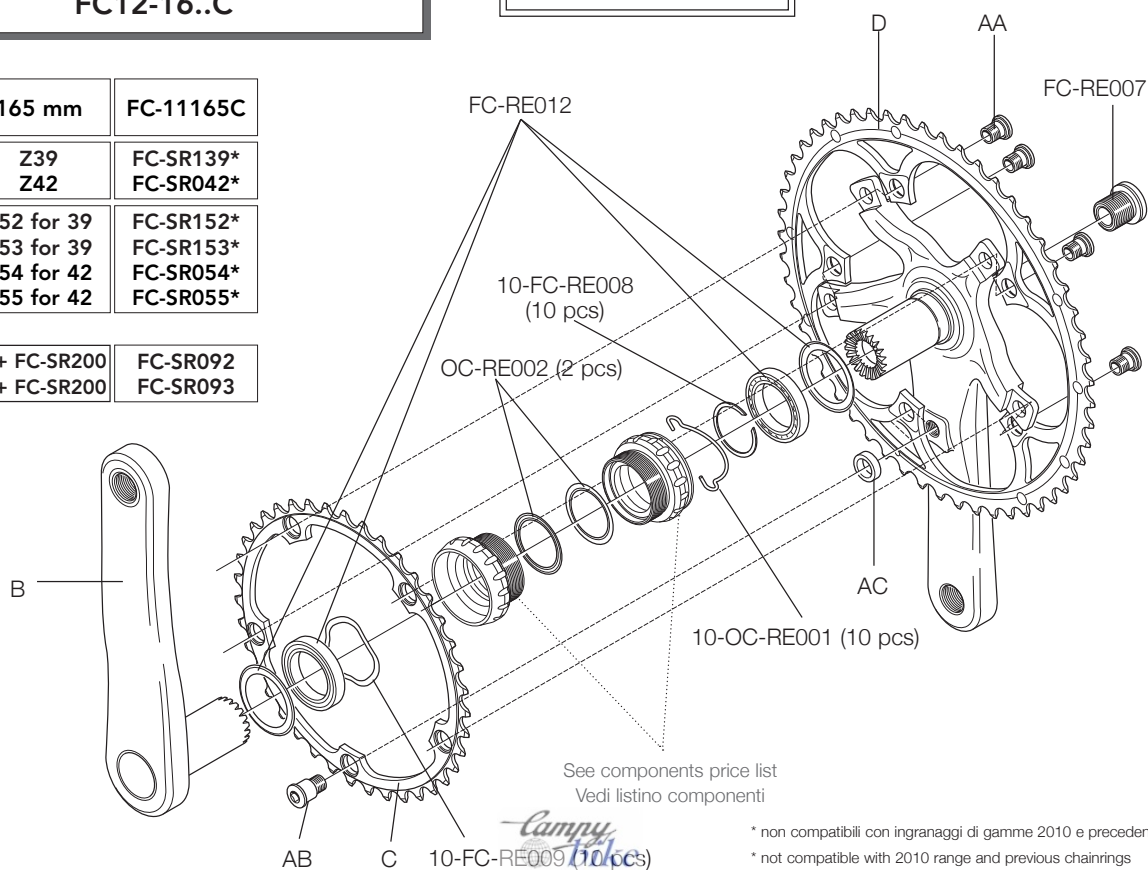


**ULTRA-TORQUE™**  
**Carbon 11s**  
**FC12-16..C**

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

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

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



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

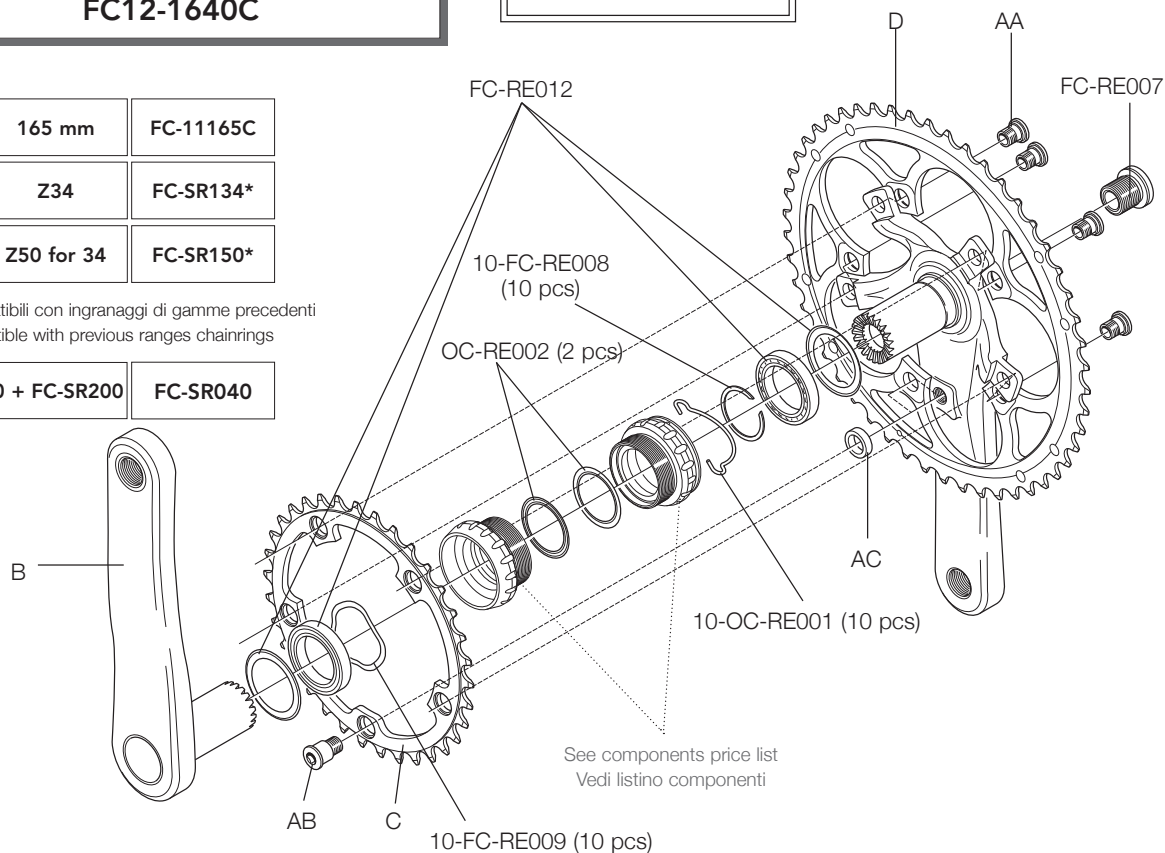
**ULTRA-TORQUE™ CT™**  
**Carbon 11s**  
**FC12-1640C**

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

<b>B</b>	165 mm	FC-11165C
<b>C</b>	Z34	FC-SR134*
<b>D</b>	Z50 for 34	FC-SR150*

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

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



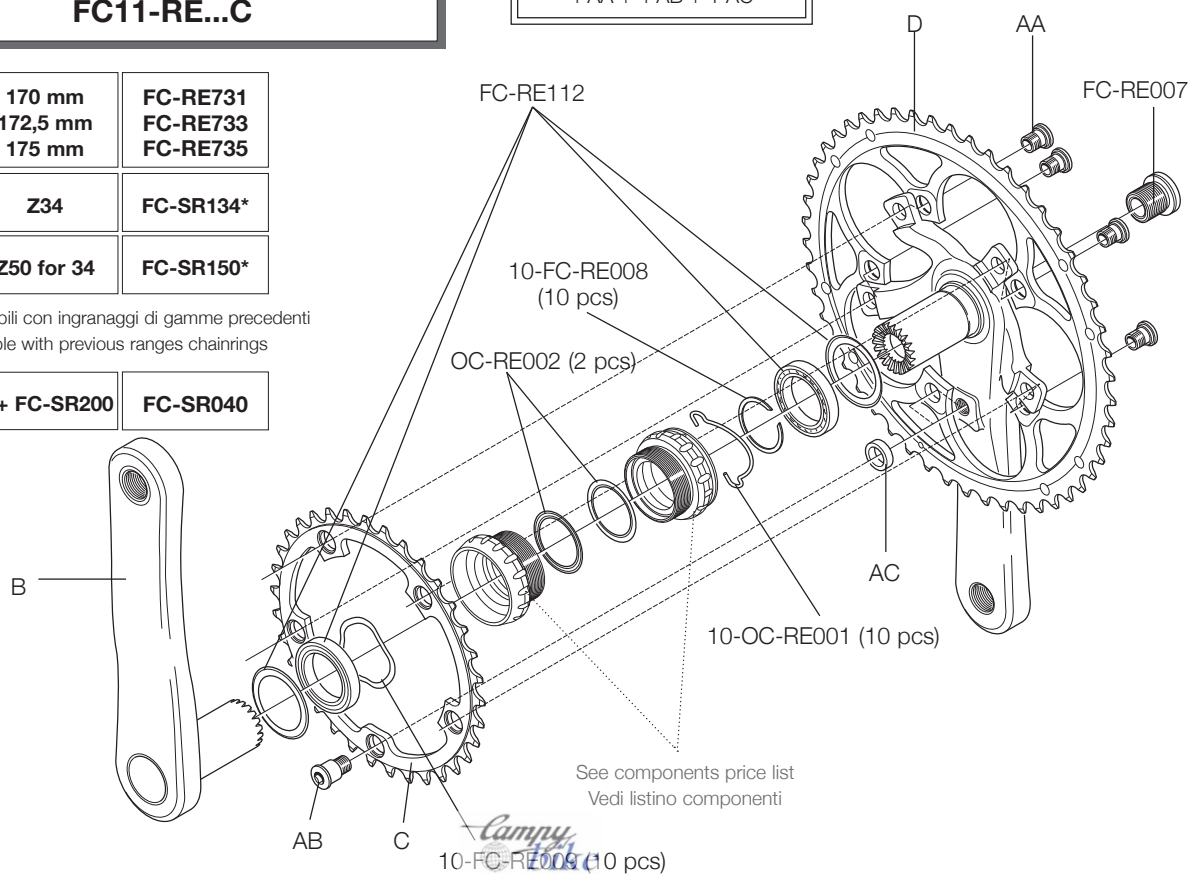
**RECORD™ ULTRA-TORQUE™**  
**CT™ Carbon 11s**  
**FC11-RE...C**

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

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

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

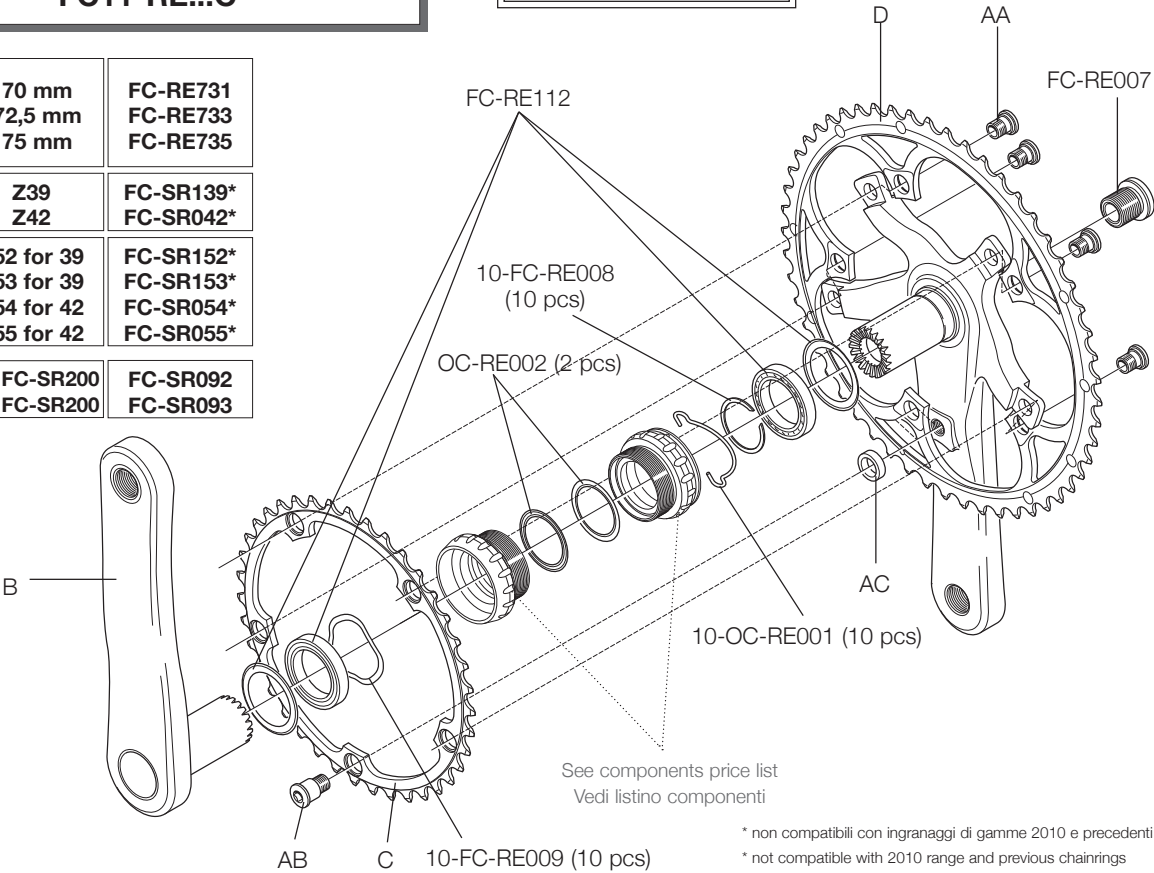
**Z34 + Z50 + FC-SR200**    **FC-SR040**



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

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

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



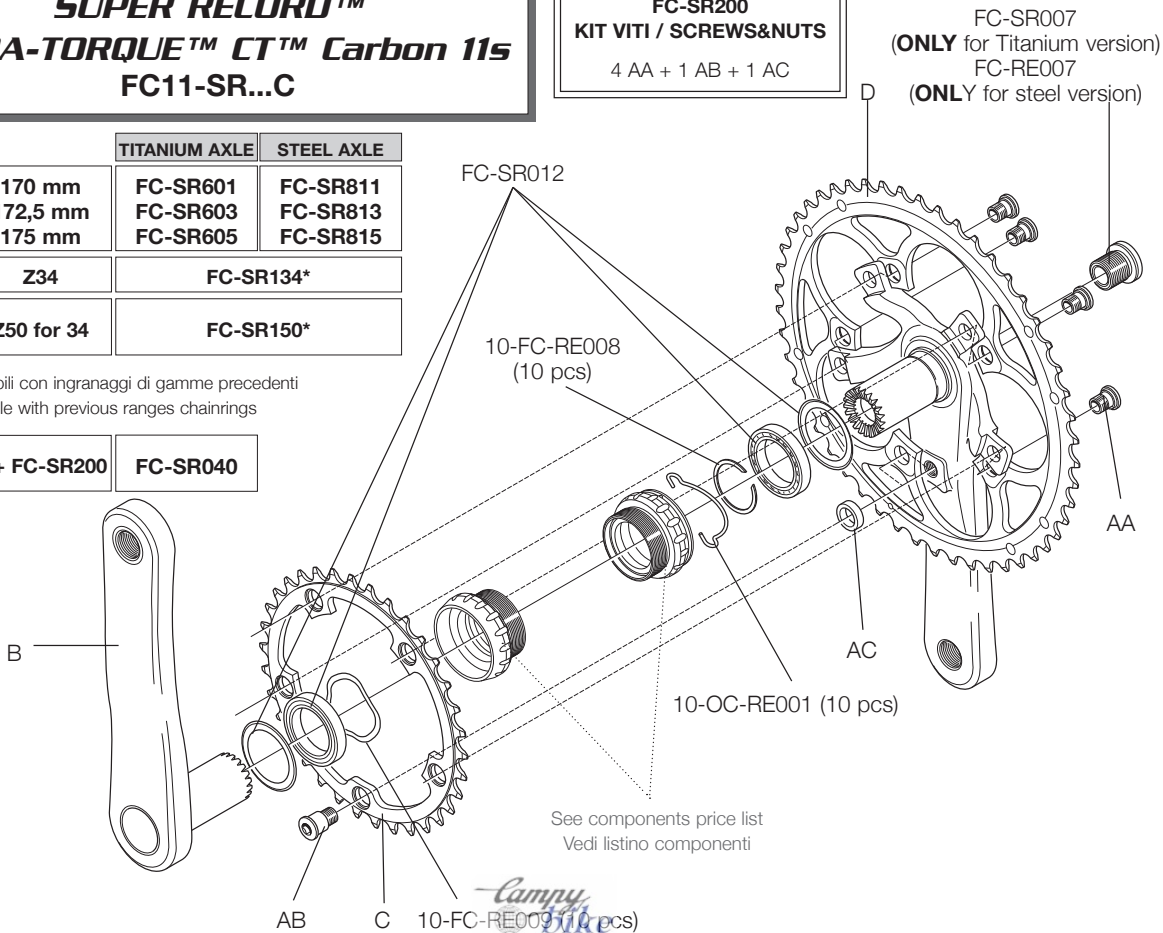
**SUPER RECORD™**  
**ULTRA-TORQUE™ CT™ Carbon 11s**  
**FC11-SR...C**

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

		TITANIUM AXLE	STEEL AXLE
B	170 mm	FC-SR601	FC-SR811
	172,5 mm	FC-SR603	FC-SR813
	175 mm	FC-SR605	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**

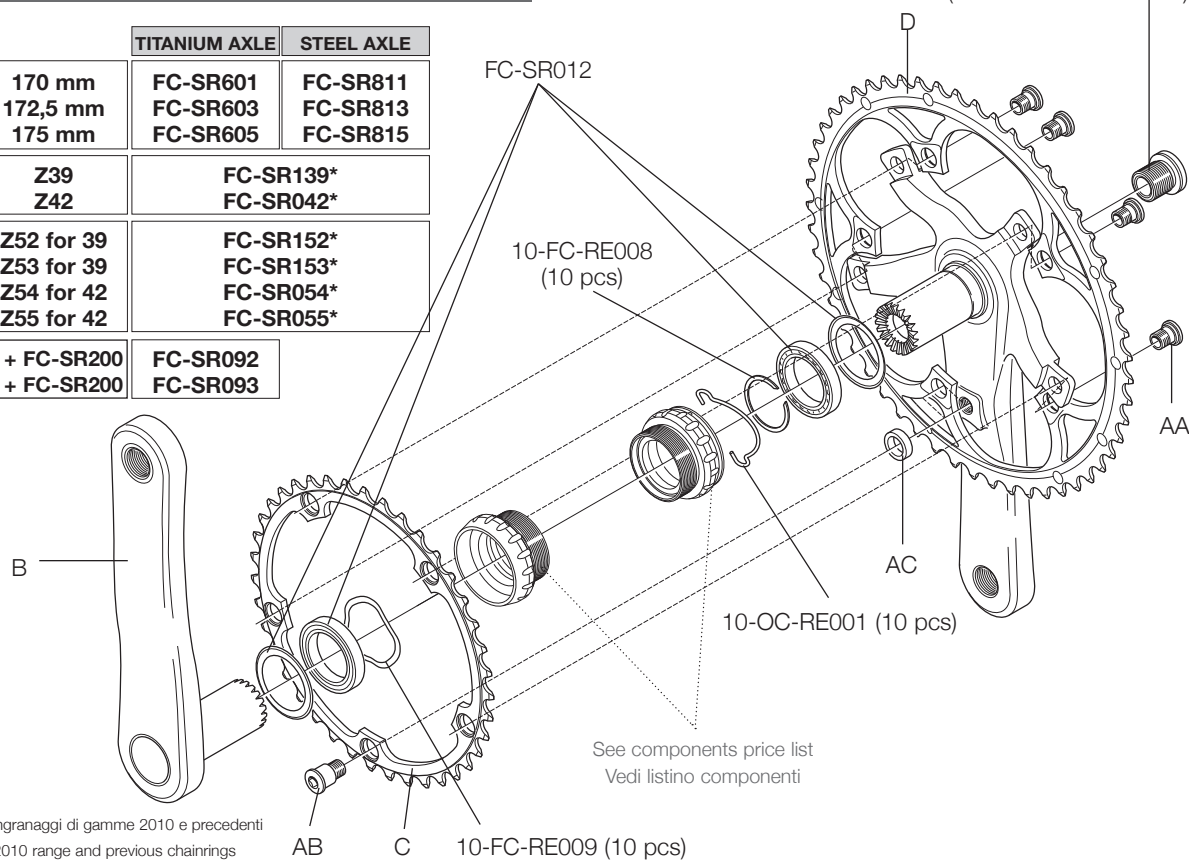


**SUPER RECORD™**  
**ULTRA-TORQUE™ Carbon 11s**  
**FC11-SR...C**

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

FC-SR007  
 (ONLY for Titanium version)  
 FC-RE007  
 (ONLY for steel version)

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

### 1.2 - ULTRA-TORQUE CUPS

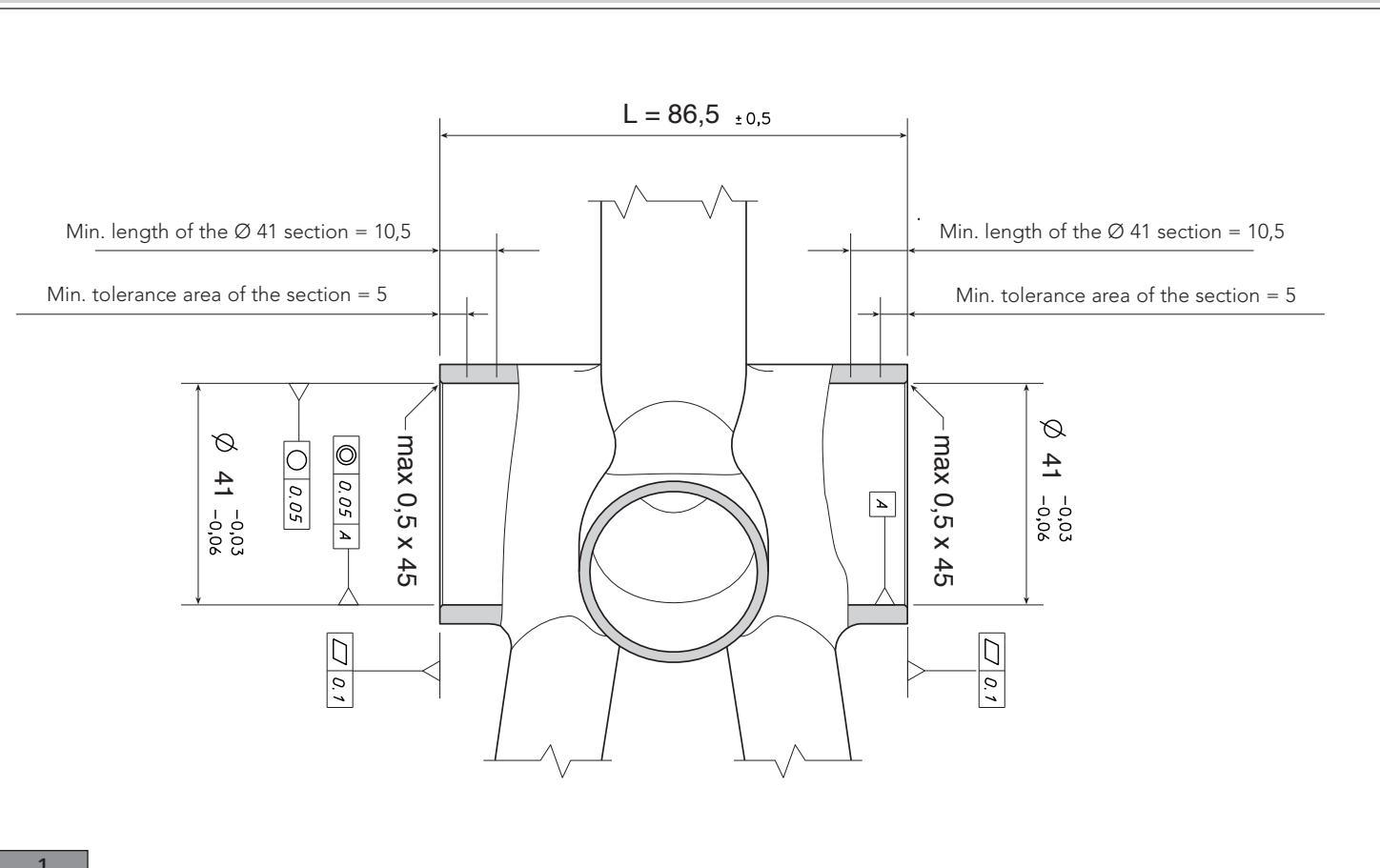
CRANKSET	Standard ITA	Standard ENG	BB30 68x42	86,5x41	BB30 68x46	BB Right
 						
						

### 1.3 - POWER-TORQUE SYSTEM CUPS FOR CYCLOCROSS

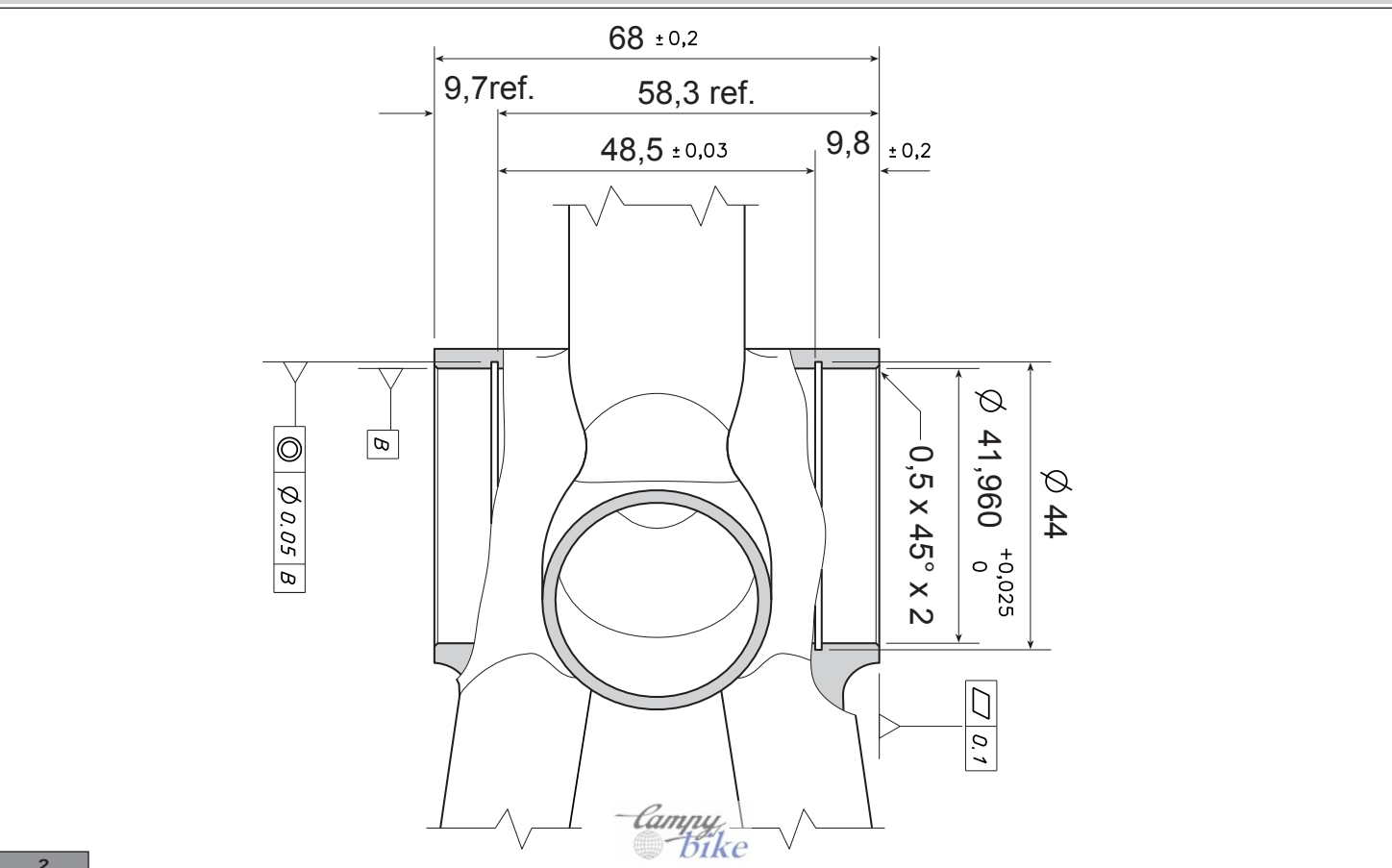
CRANKSET	Standard ITA	Standard ENG
 		

### 3 - INTERFACE WITH THE FRAME

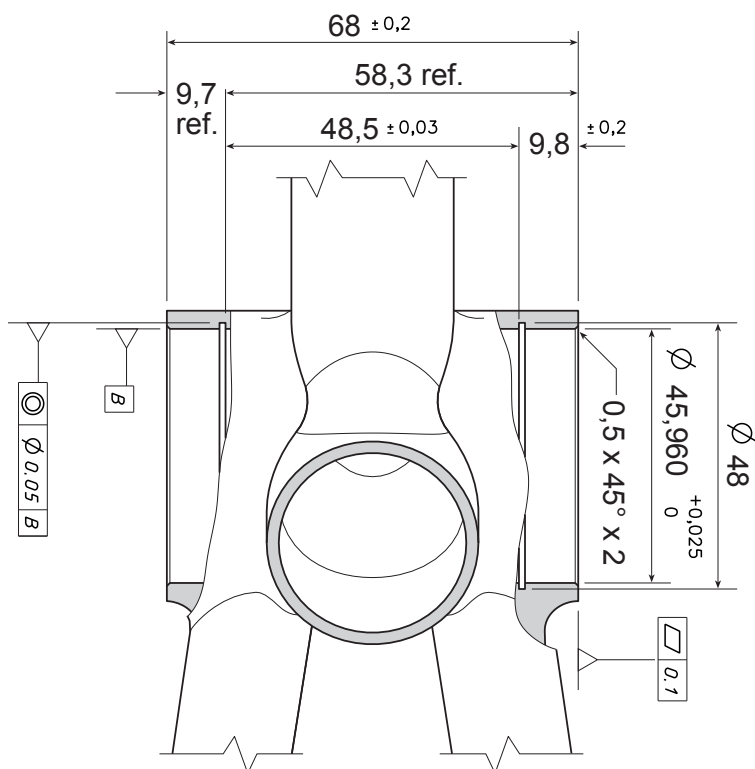
#### 3.1 - BOTTOM BRACKET SHELL L = 86.5 mm X Ø 41mm (Fig. 1)



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



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



## 4 - ASSEMBLY

### 4.1 - ASSEMBLY OF THE STANDARD CUPS

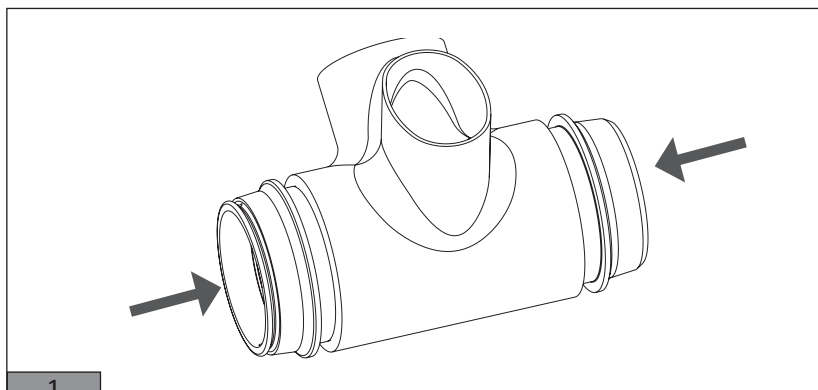
For assembly the standard cups, refer to the chapters "Power-Torque System crankset" and "Ultra-Torque crankset" in this technical handbook.

### 4.2 - ASSEMBLY OS-FIT CUPS

#### ATTENTION

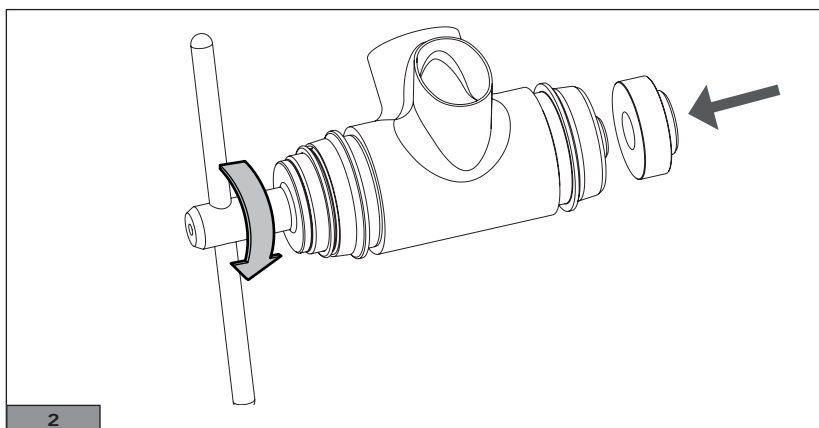
ONLY use Campagnolo® tool UT-BB140 for the assembly operations of Campagnolo cups.

- 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.



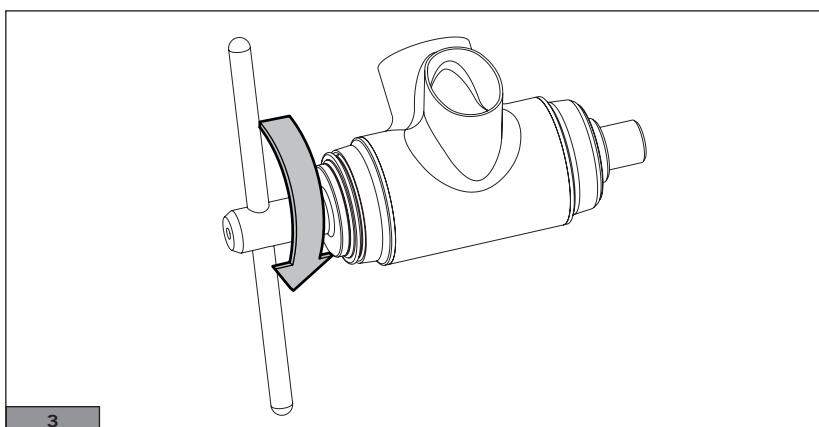
1

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

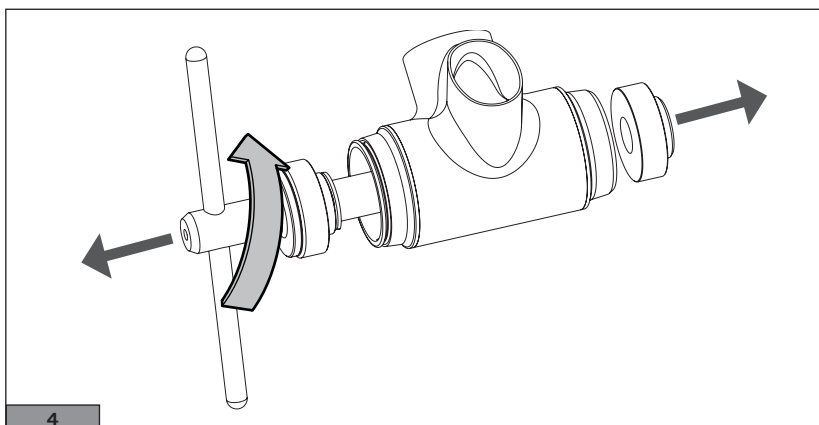


- Turn the lever of the tool UT-BB140 clockwise until both cups are screwed in flush (Fig. 3).

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



- Turn the tool lever anticlockwise until you completely unscrew the left-hand cup guide and then remove the screw (Fig. 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 DERAILEUR 10S FOR TRIPLE	Capacity (teeth)	Max. chainring (teeth)	Chain line	Chainstay angle
	23	53	47,5 mm	61° - 66°
FRONT DERAILEUR 10S FOR DOUBLE	Capacity (teeth)	Max. chainring (teeth)	Chain line	Chainstay angle
	16	55	43,5 mm	61° - 66°
FRONT DERAILEUR 11S FOR DOUBLE	Capacity (teeth)	Max. chainring (teeth)	Chain line	Chainstay angle
	16	55	43,5 mm	61° - 66°

## 2 - COMPATIBILITY

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

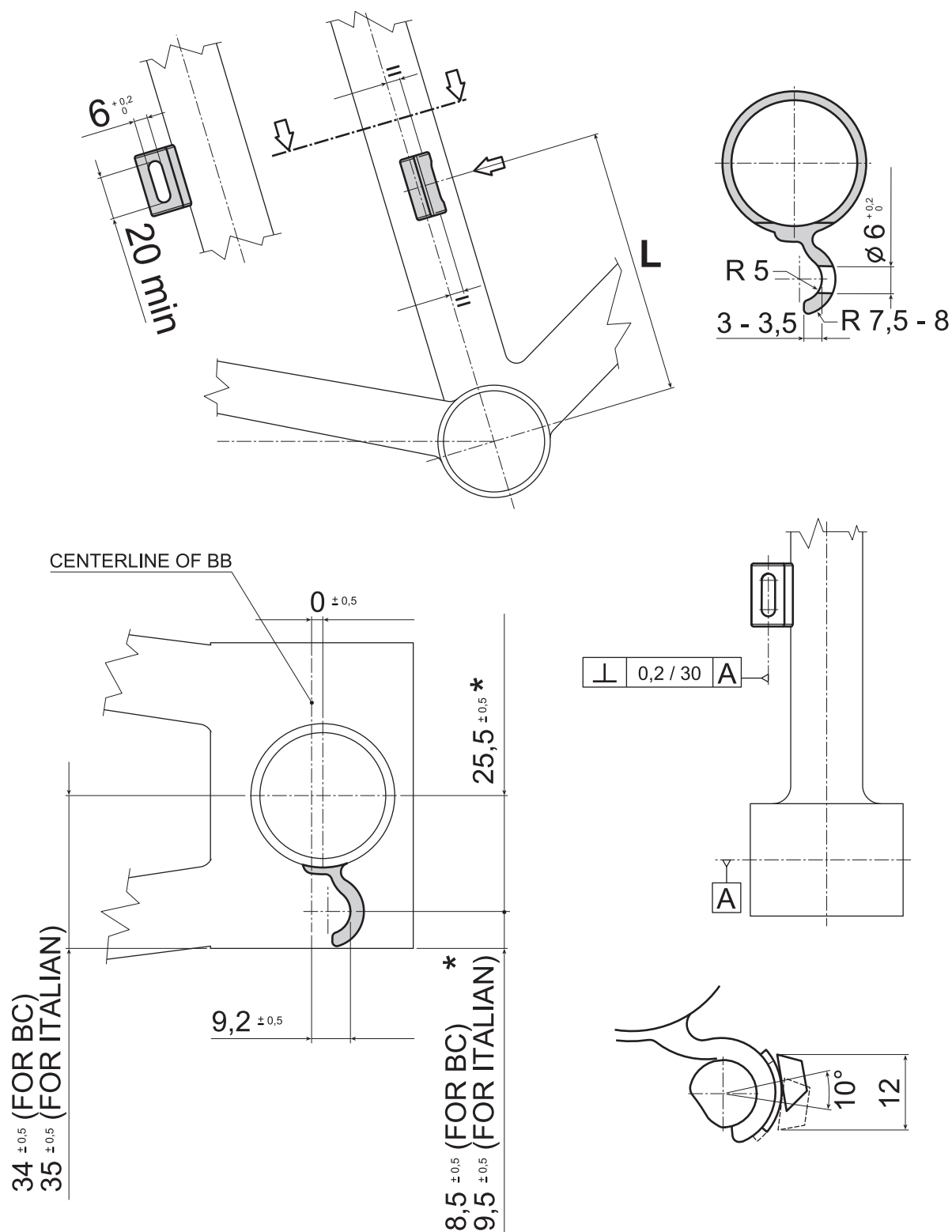


### WARNING!

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

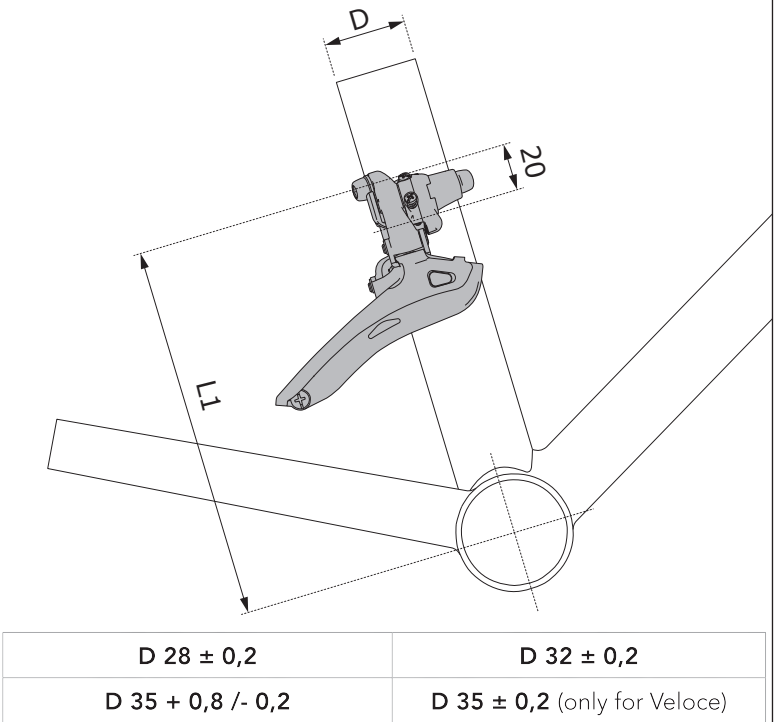


(\*) ONE OF TWO DIMENSION MUST BE RESPECTED

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

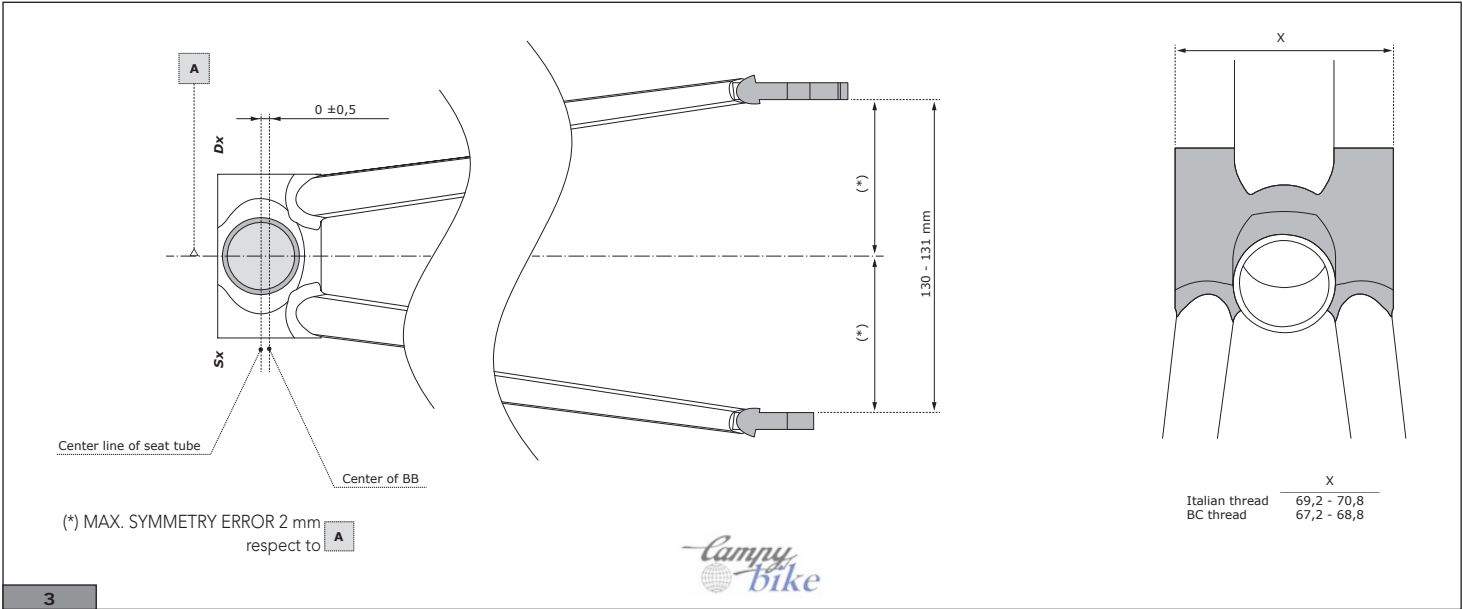
EXT. CHAINRINGS	L1 mm
48	152
50	156
52	160
53	162
54	164
55	166



2

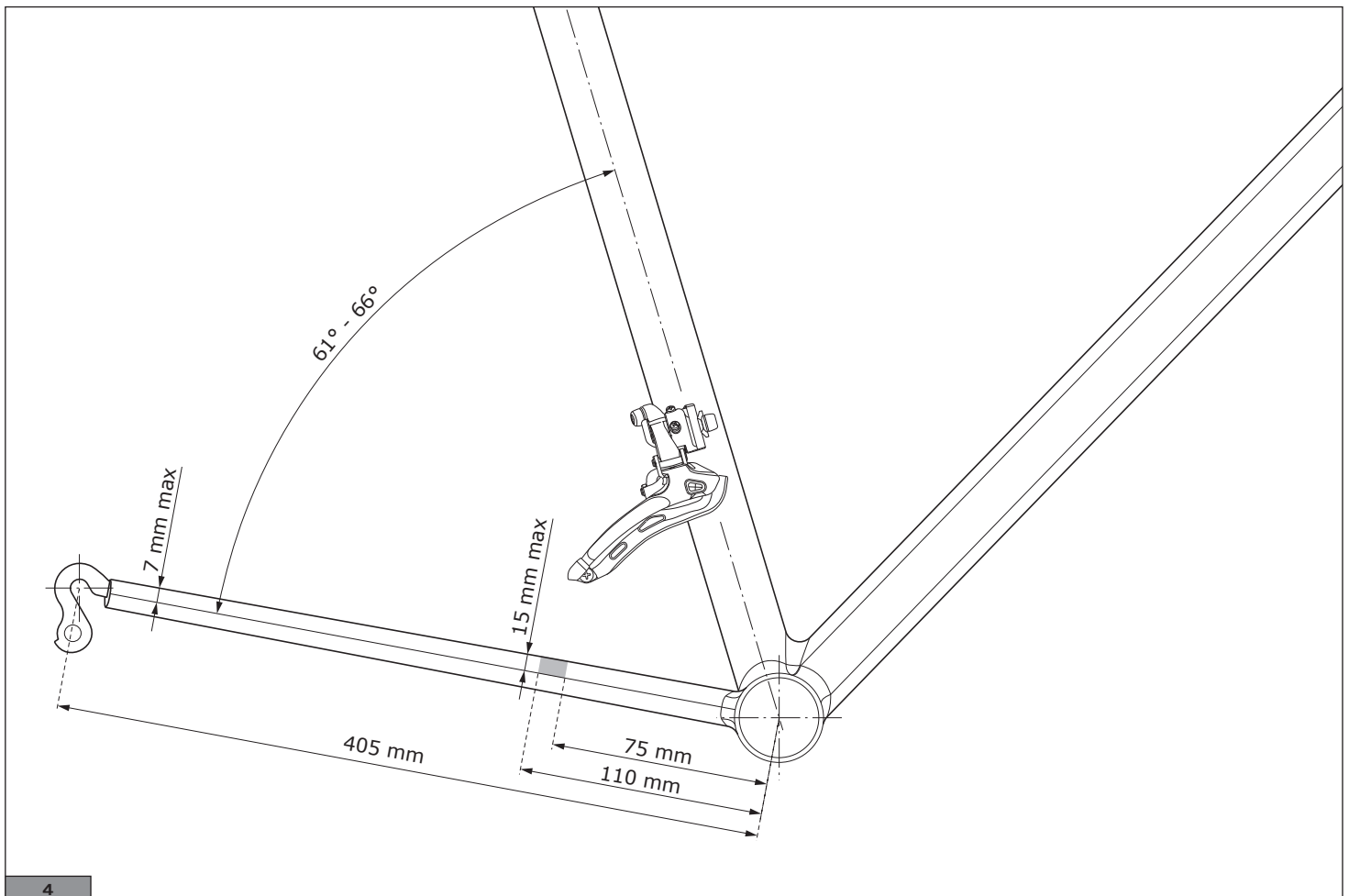
CAUTION

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

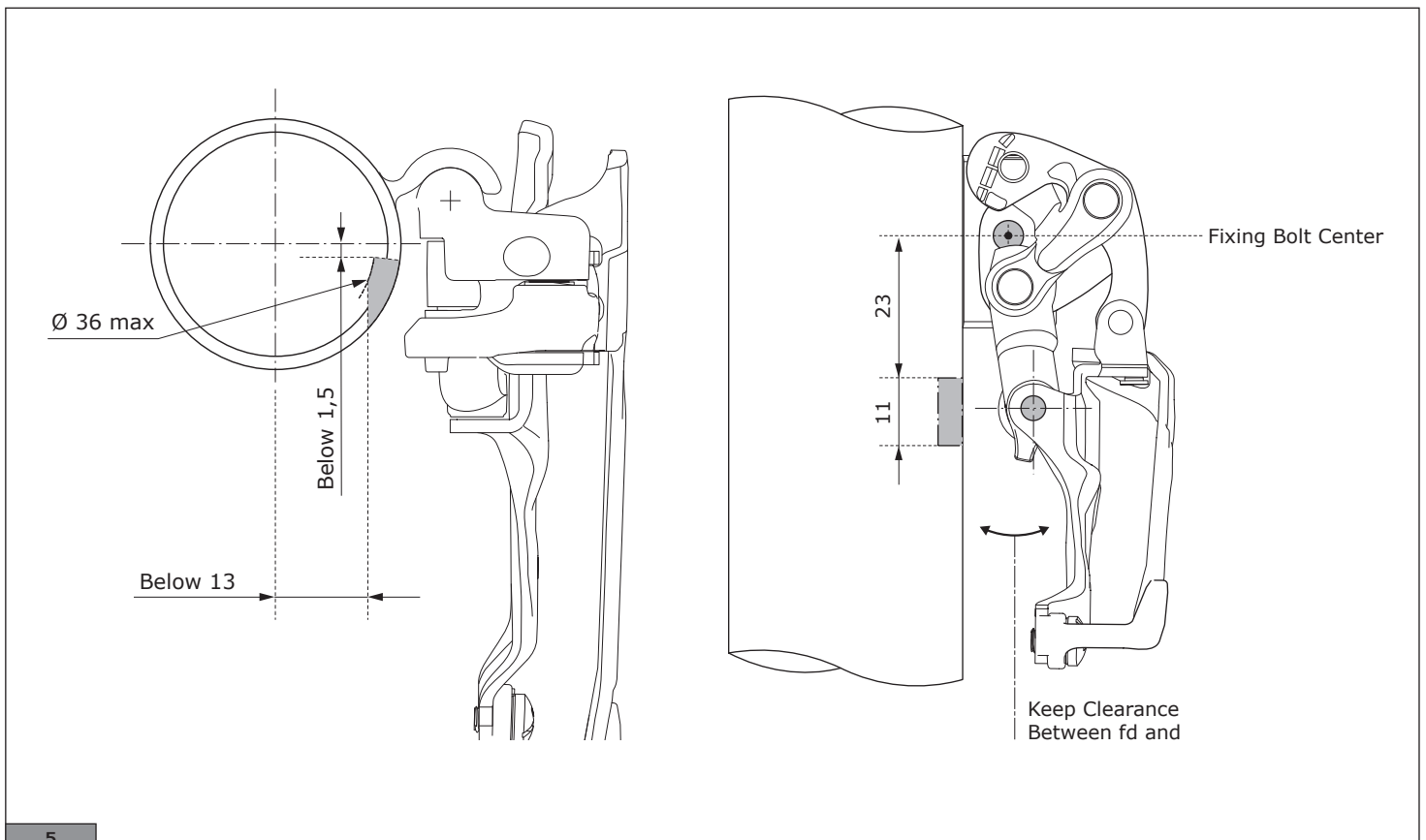


3

## 3.3 - CHAINSTAY DIMENSIONING



4



5

## 4 - ASSEMBLY

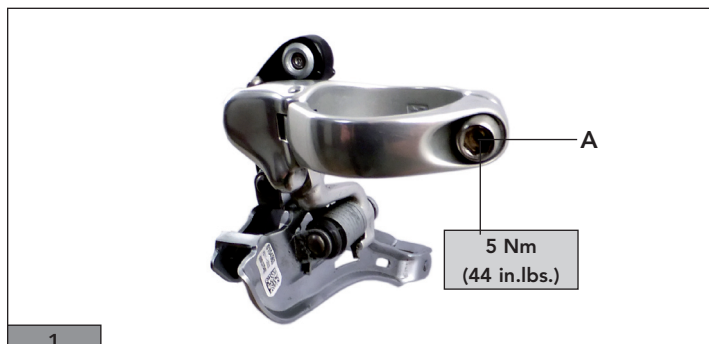
### 4.1 - PRE-ASSEMBLY CHECKS

- 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.

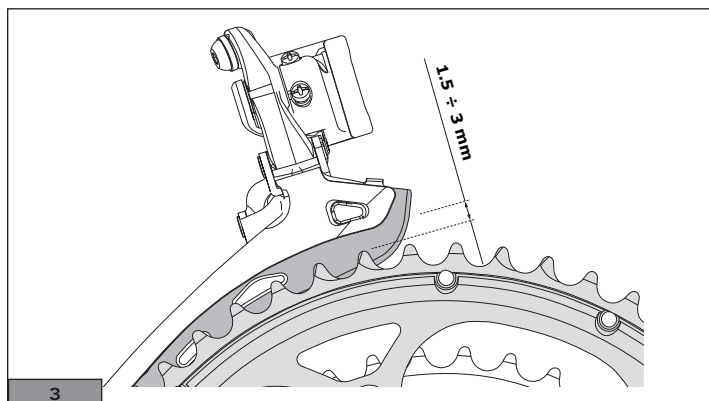


#### BRAZE-ON DERAILLEUR:

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  $1,5 \div 3$  mm from the larger chainring (Fig. 3).

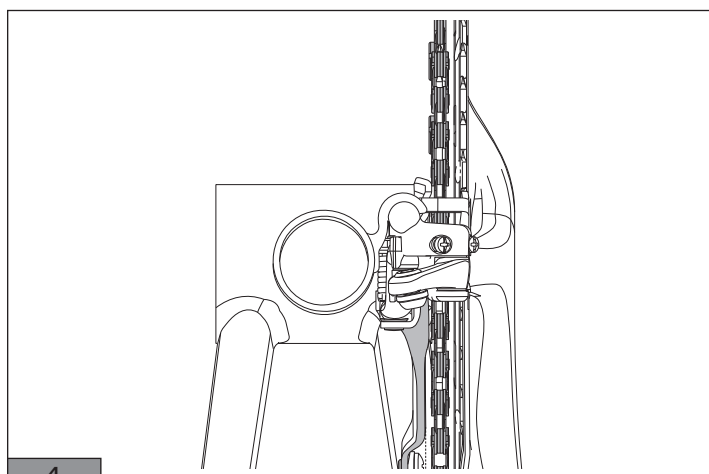


- Align the derailleur: the inner side of the derailleur cage must be parallel with the chainring (Fig. 4).
- Using a torque wrench, fasten the tightening bolt (Fig. 1/2 pos. A) to the frame, torquing to the following values:
  - **7 N.m (62 in.lbs) for braze-on versions**
  - **5 N.m (44 in.lbs) for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

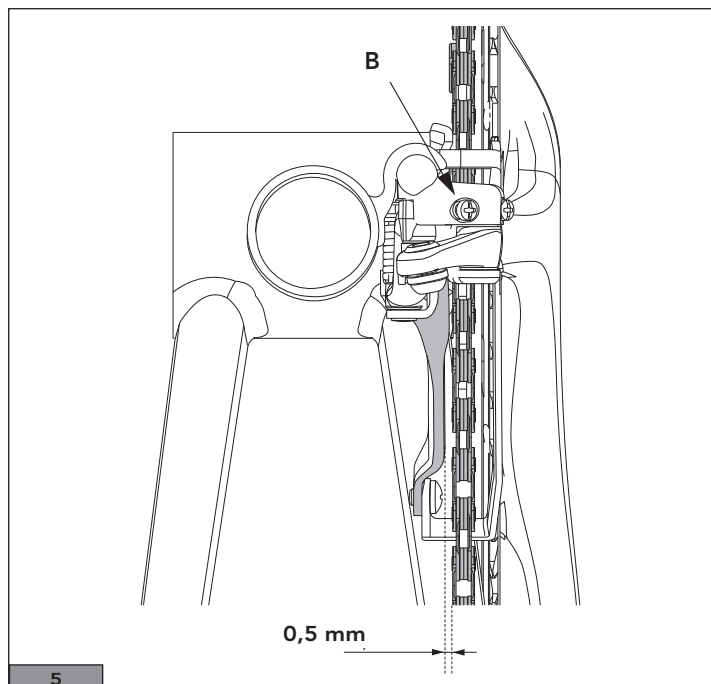
- Install the chain and position it on the smaller chainring and larger sprocket.



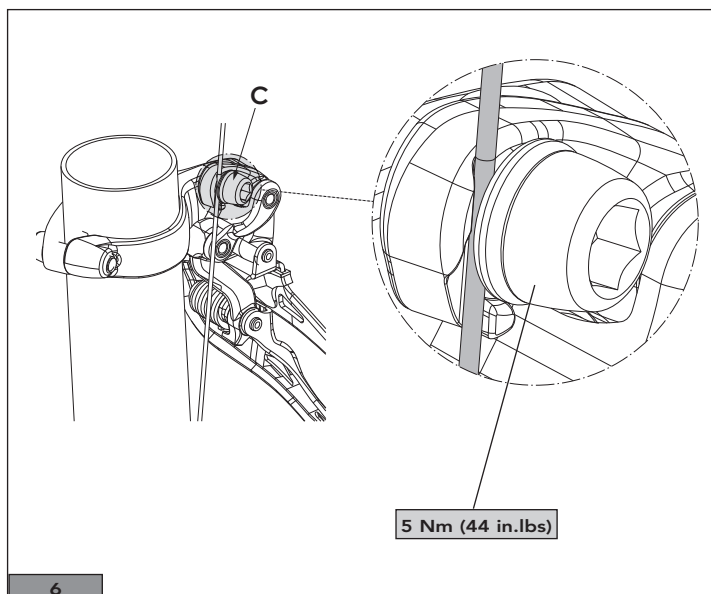
### 4.3 - ADJUSTING THE FRONT DERAILLEUR

#### 4.3.1 - Lower position

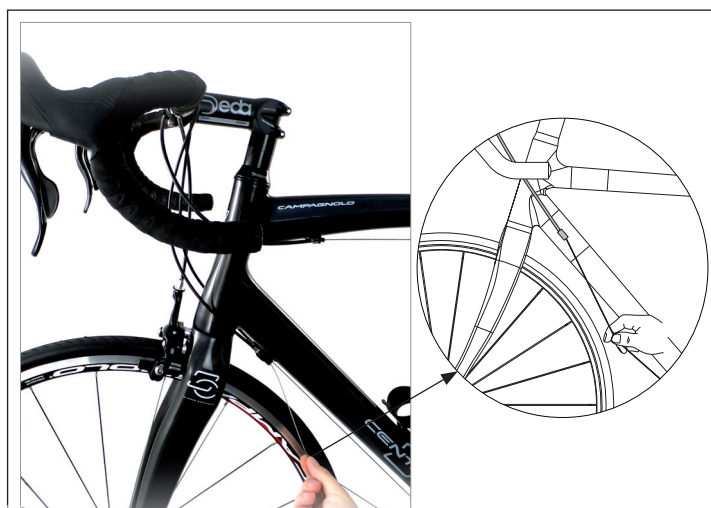
**1)** With the chain on the smallest gear and on the biggest sprocket, adjust the internal travel limit screw (B - Fig. 5) so that the inside face of the derailleur cage is 0.5 mm from the internal side of the chain (Fig. 5).



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



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



### 4.3.2 - Upper position

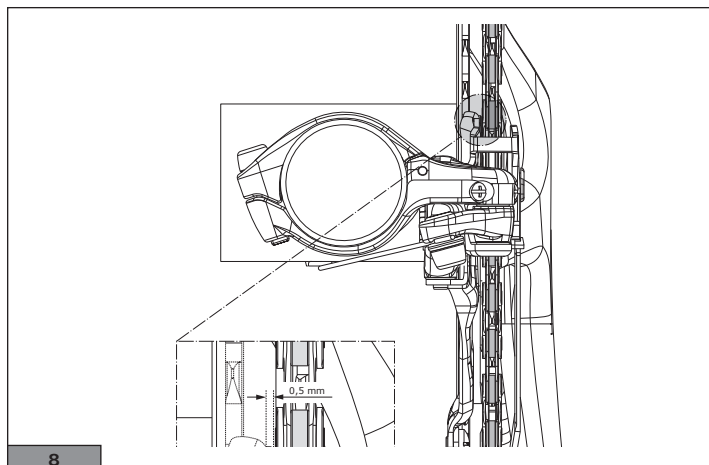
1) Leaving the chain on the biggest sprocket of the cassette, shift operating the shift lever FOR 3 CLICKS.

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.

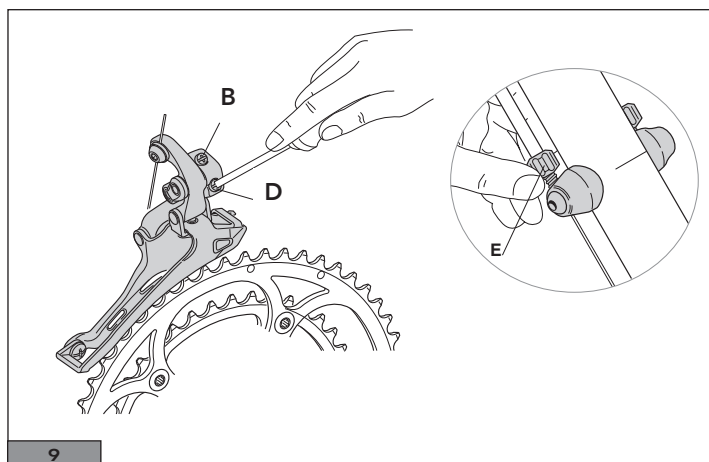


8

THE DERAILLEUR MUST WORK IN 3 CLICKS.

#### ! 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.



9

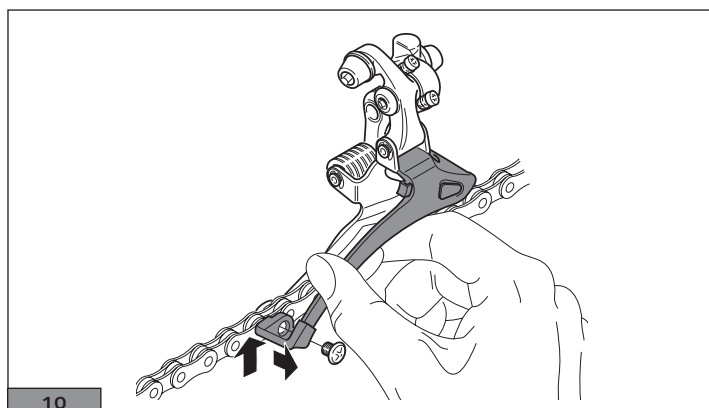
## 4.4 - INSTRUCTIONS FOR DERAILLEUR WITH CARBON FIBER EXTERNAL CAGE

#### CAUTION!

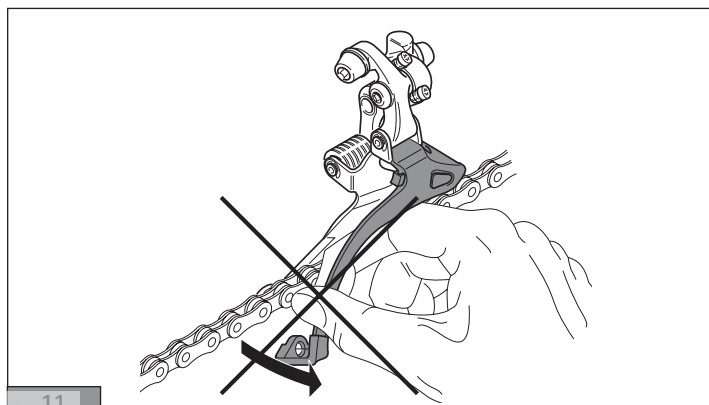
When you slip the chain through the derailleur cage (Fig. 10), do not strain the external carbon fiber semi-cage (Fig. 11) since this could be irreversibly damaged.

#### 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).

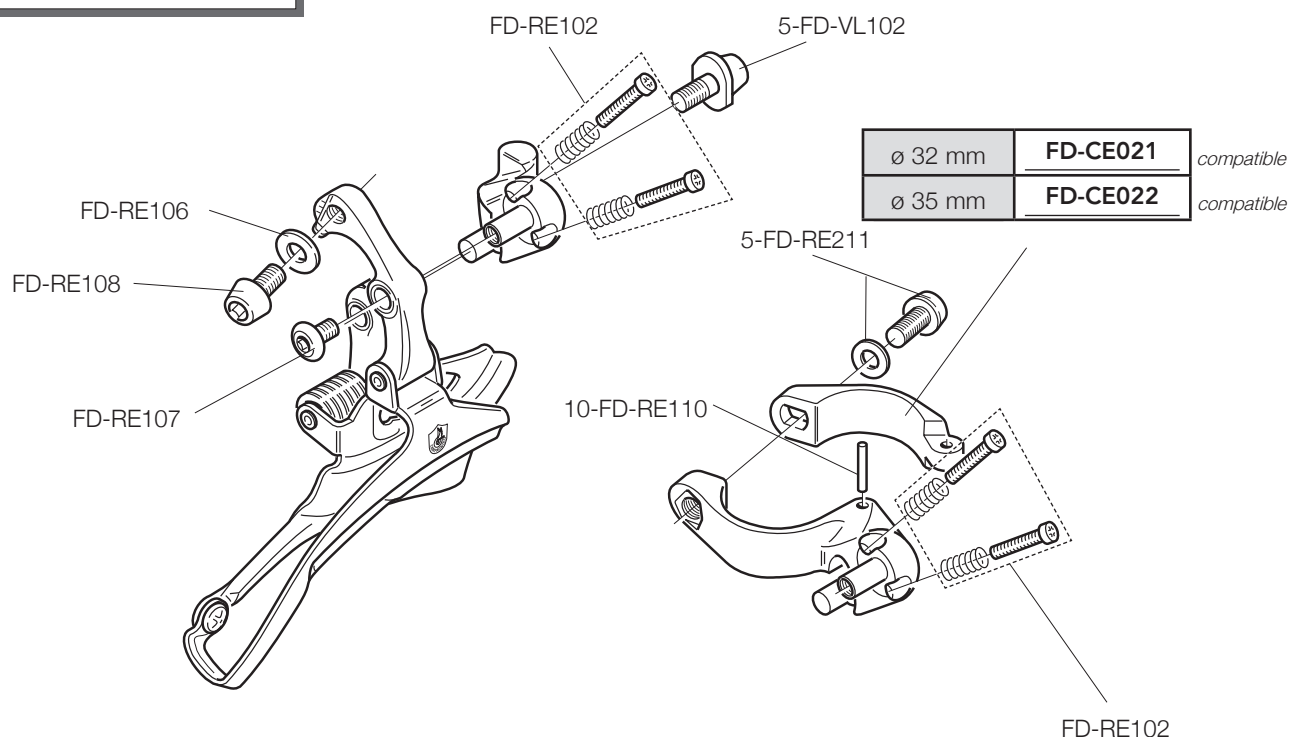
- **The life of the components depends on conditions of use and on the frequency and quality of maintenance. To keep the components in good condition, cleaning and lubrication must therefore be repeated frequently, especially if it is subjected to heavy-duty use (i.e. after washing your bicycle, after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

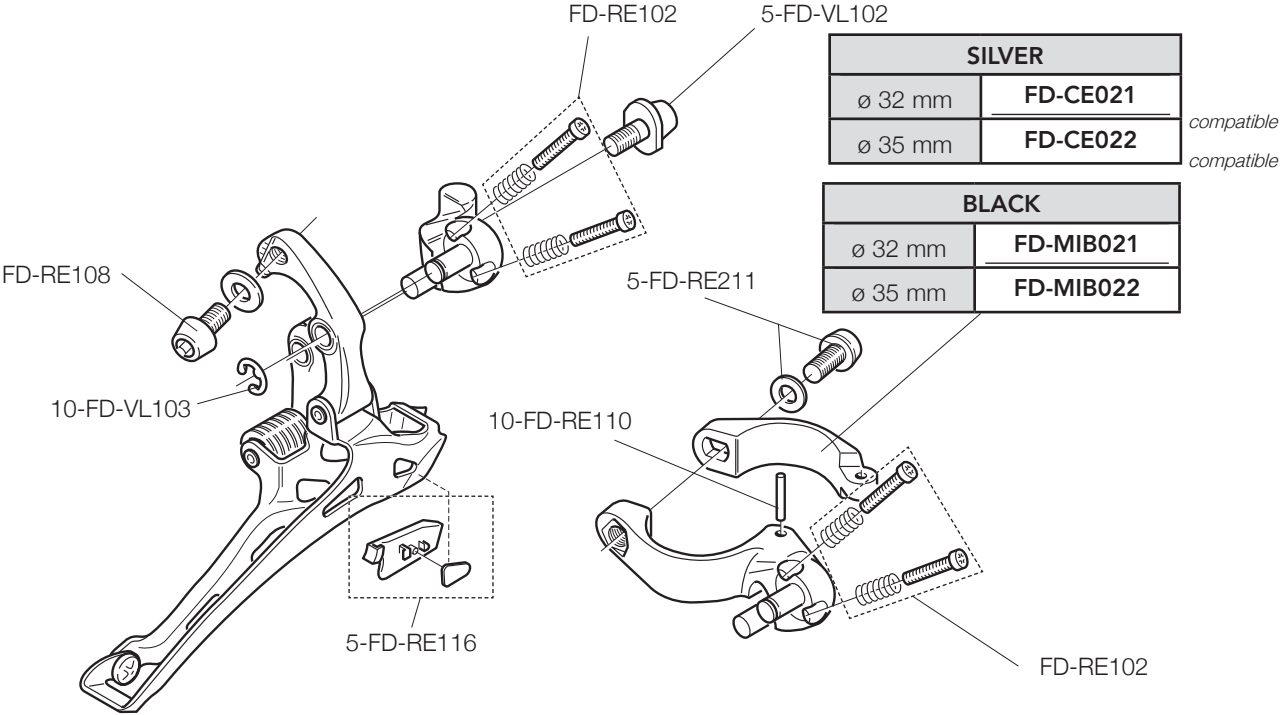
- Never spray your bicycle with water under pressure. Pressurized water, even from the nozzle of a small garden hose, can pass seals and enter into your Campagnolo® components, damaging them beyond repair. Wash your bicycle and Campagnolo® components by wiping them down with water and neutral soap. Dry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

## 6 - SPARE PARTS

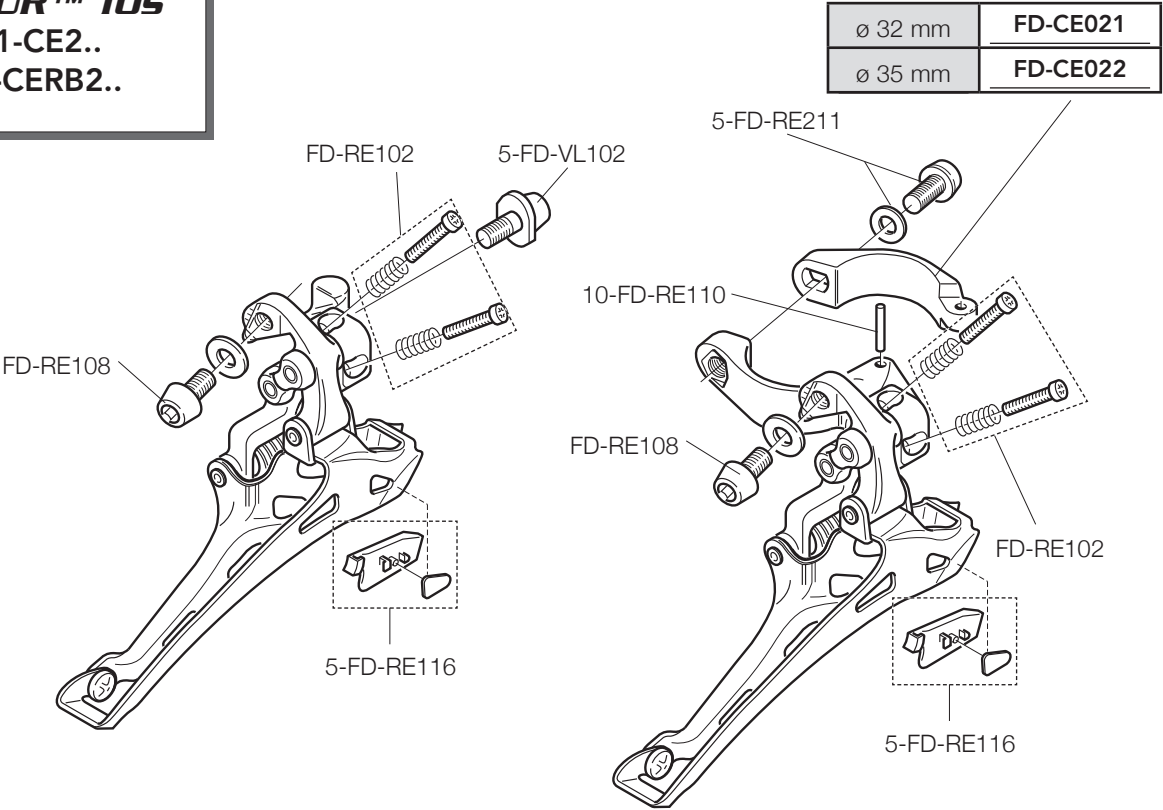
**COMP TRIPLE™**  
**10s**  
**FD7-CO3..**

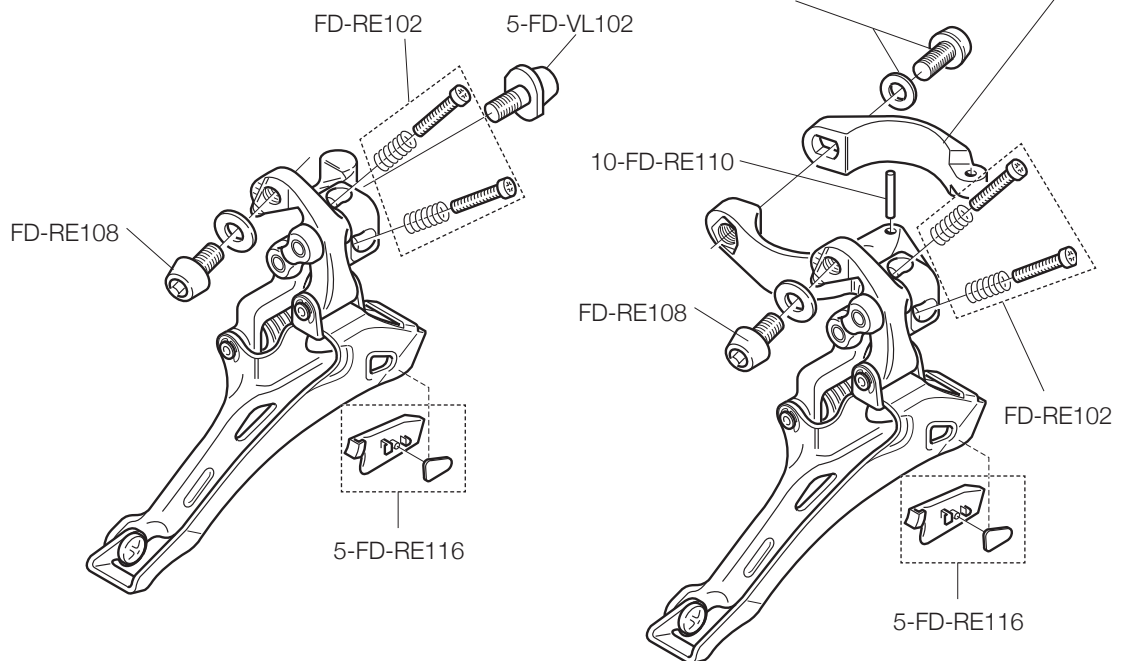
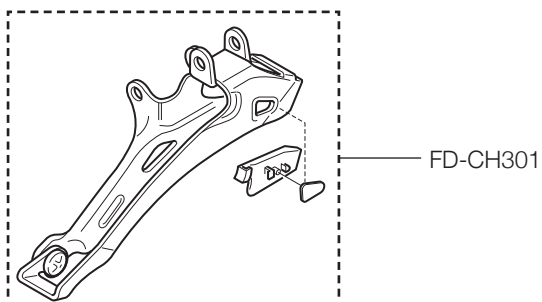
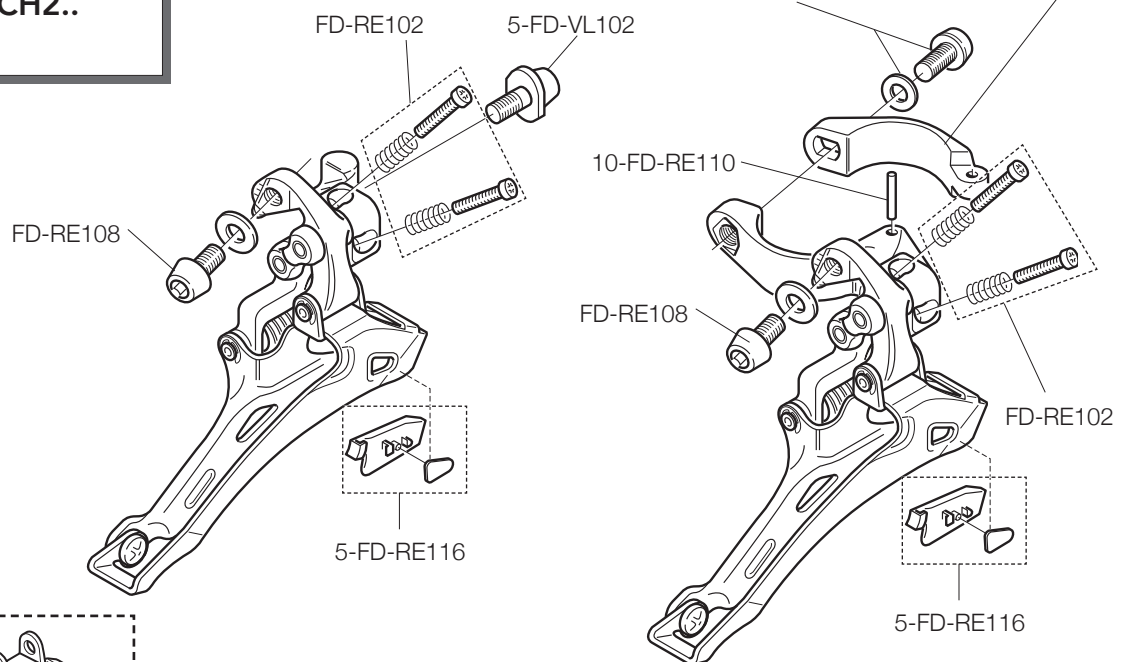


**VELOCE™ 10s**  
**FD11-VL2..**



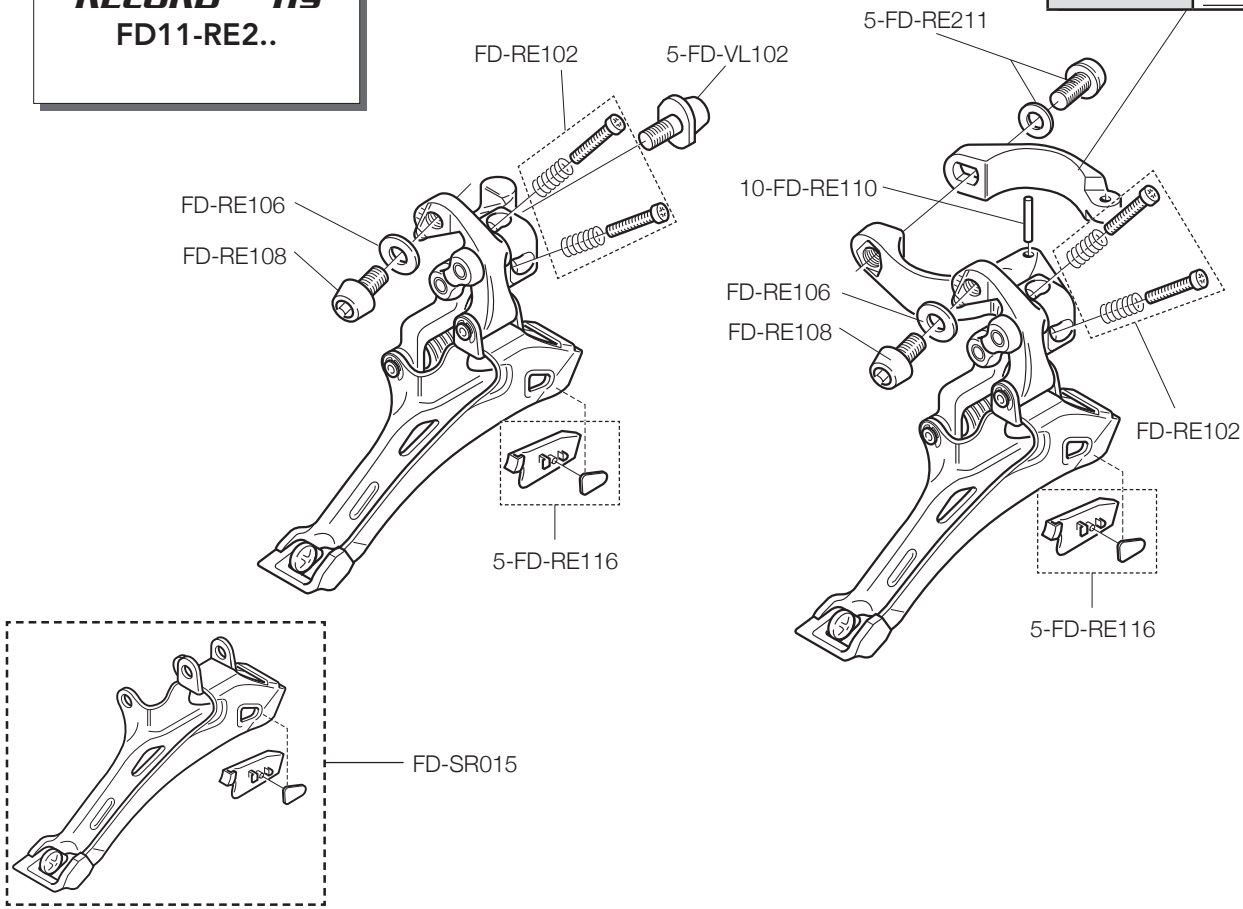
**CENTAUR™ 10s**  
**FD11-CE2..**  
**FD12-CERB2..**



**ATHENA™ 11s**  
**FD11-AT2..**

**CHORUS™ 11s**  
**FD11-CH2..**


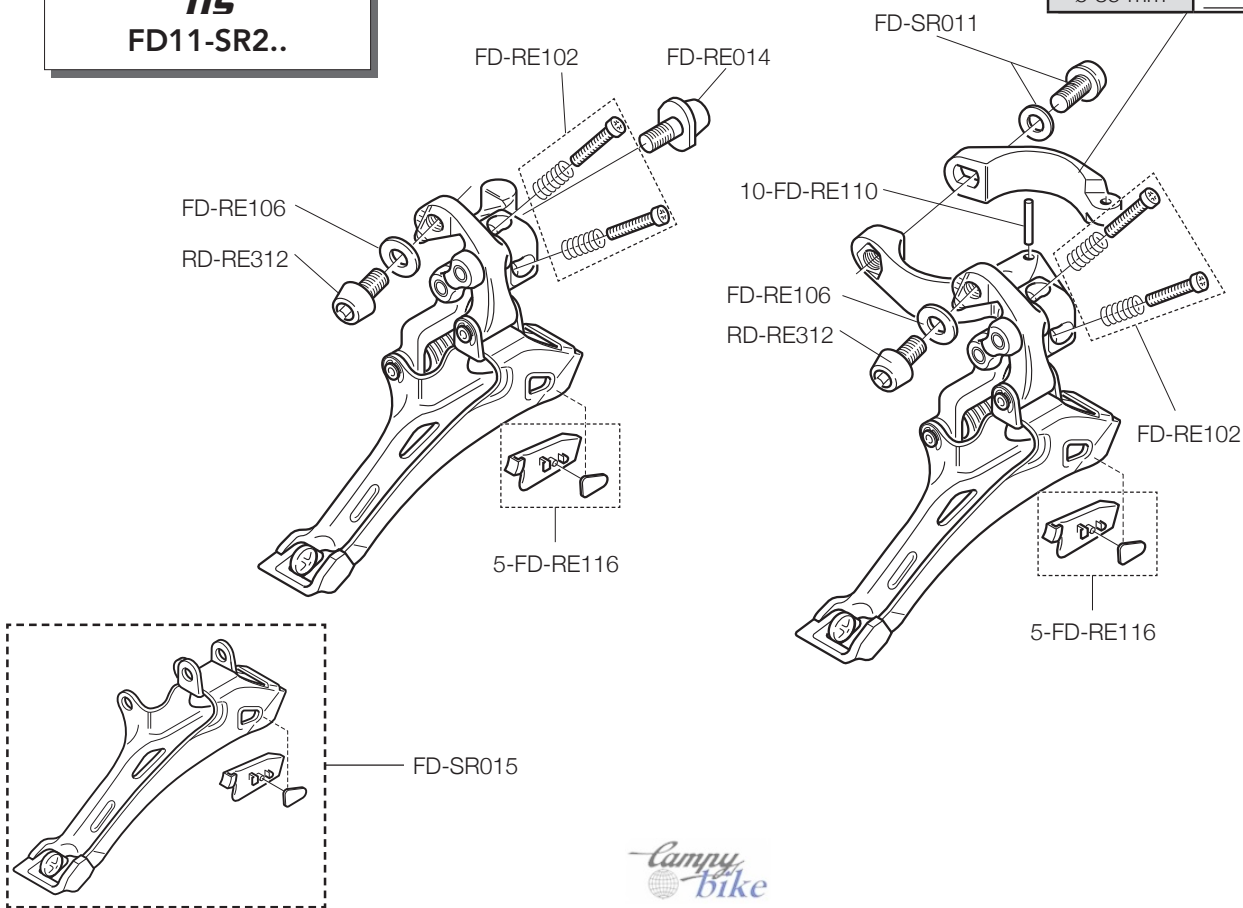
**RECORD™ 11s**  
**FD11-RE2..**

ø 32 mm	<b>FD-RE321</b>
ø 35 mm	<b>FD-RE322</b>



**SUPER RECORD™**  
**11s**  
**FD11-SR2..**

ø 32 mm	<b>FD-SR021</b>
ø 35 mm	<b>FD-SR022</b>



# 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			

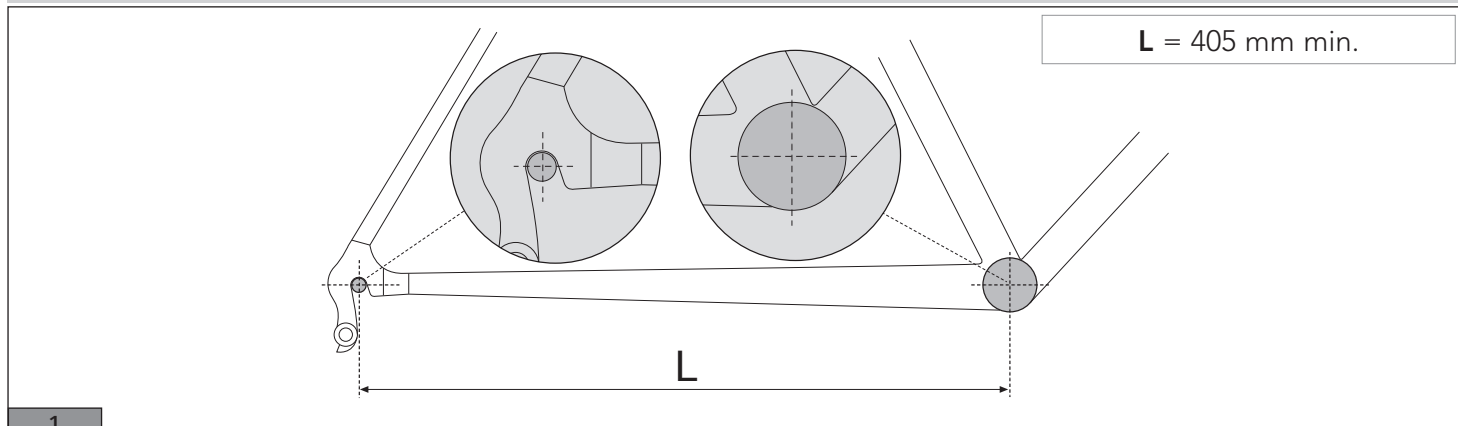


#### WARNING!

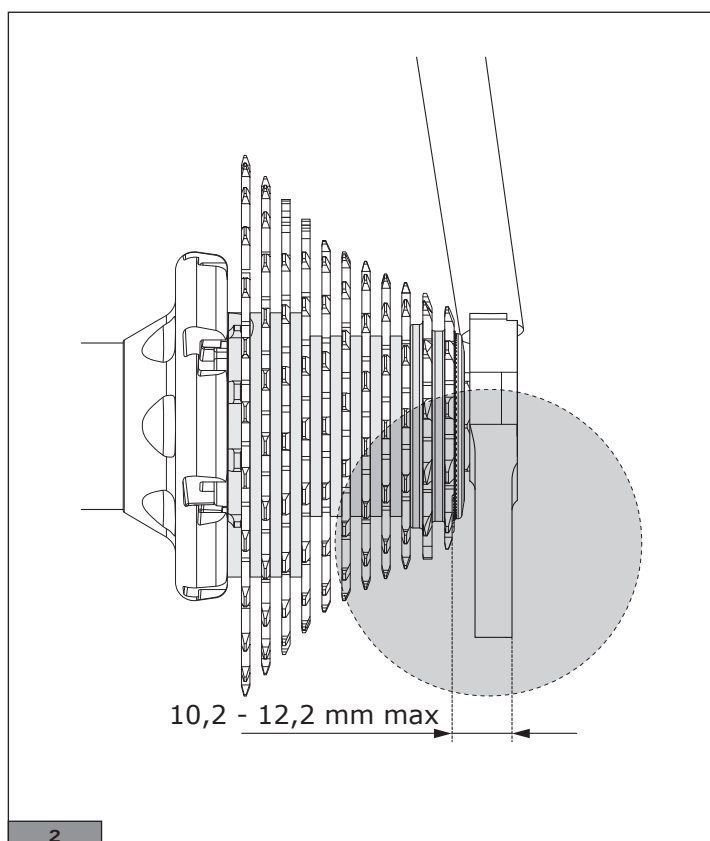
Different combinations from those included in the table could cause the malfunction of the drivetrain and result in an accident, personal injury or death.

### 3 - INTERFACE WITH THE FRAME

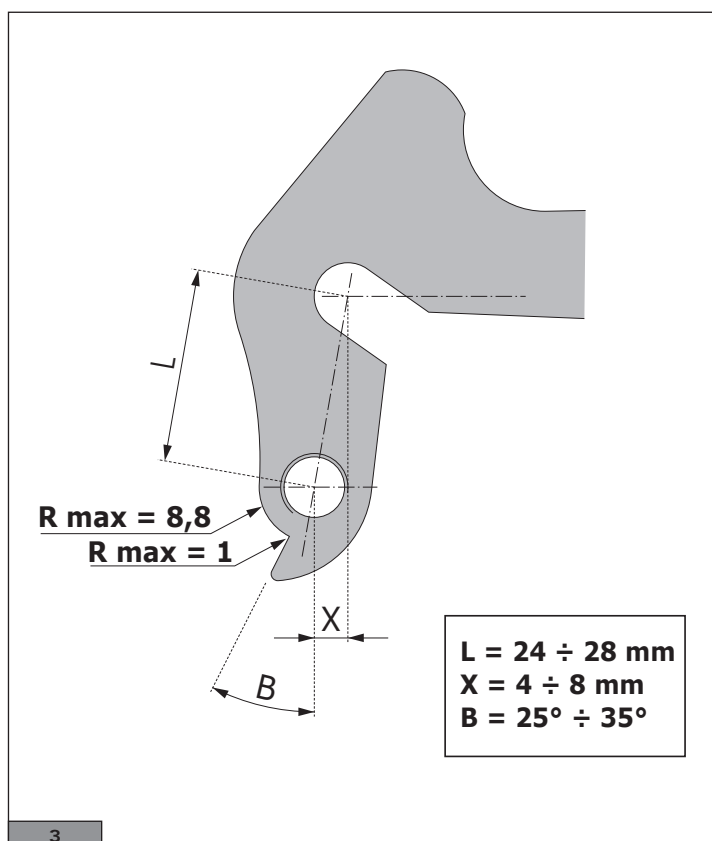
#### 3.1 - MINIMUM CHAINSTAY LENGTH



#### 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).



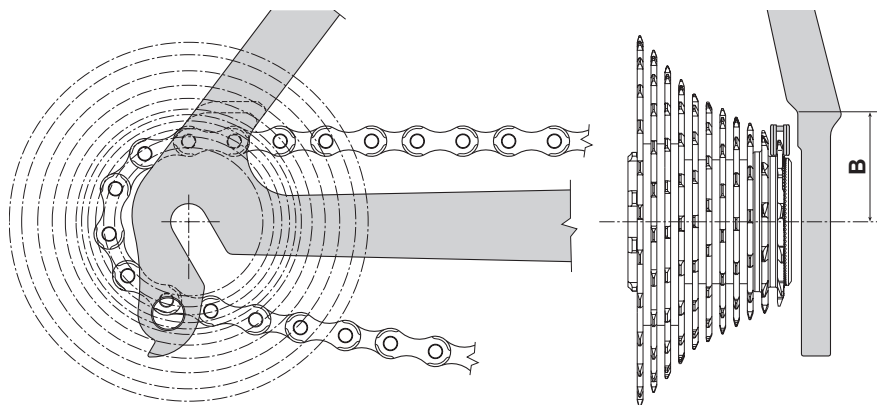
#### ⚠ ATTENTION!

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

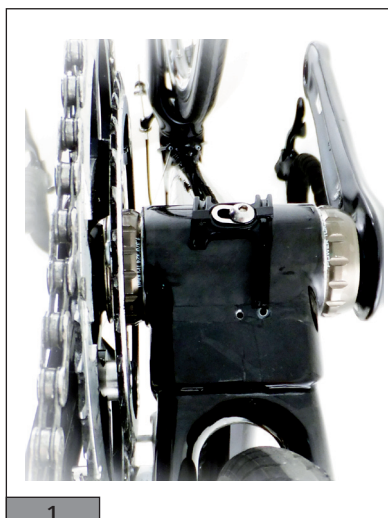
## 4 - ASSEMBLY

### 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.



1

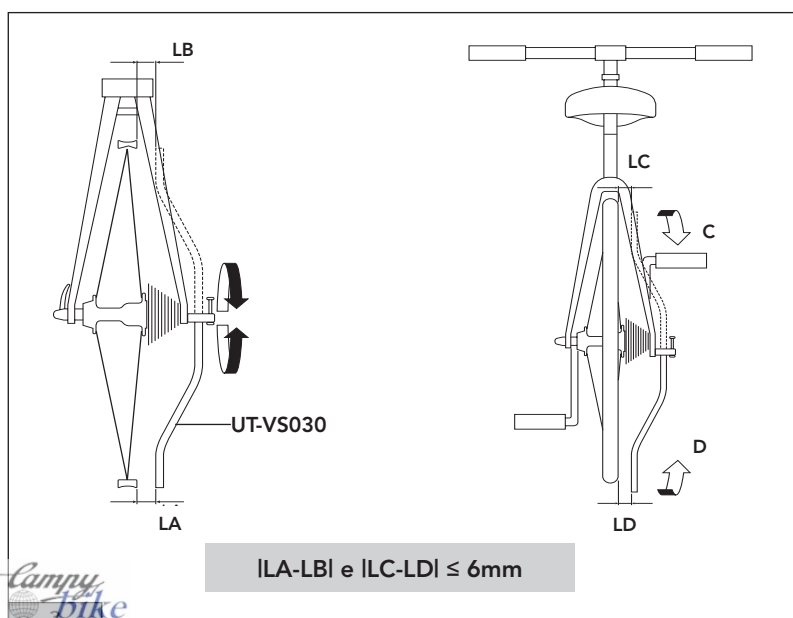


2

#### CAUTION

Check and, if necessary, realign the rear derailleur dropout only by 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.



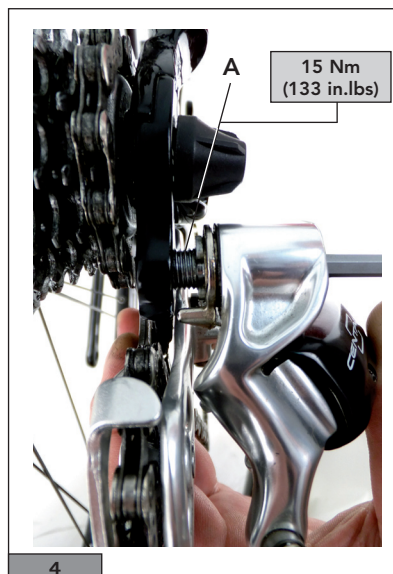
$|LA-LB| \text{ e } |LC-LD| \leq 6\text{mm}$

## 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).**

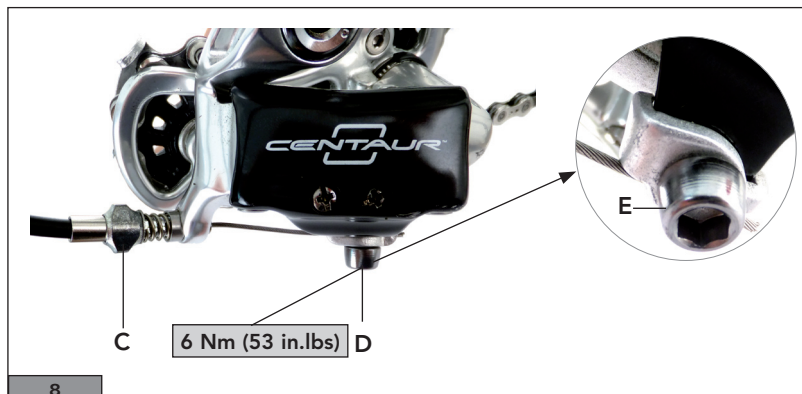
- Carry out this adjustment with the chain on the smallest cassette sprocket and with the Ergopower control button zero-ed (Fig. 5).



- 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).



- 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.



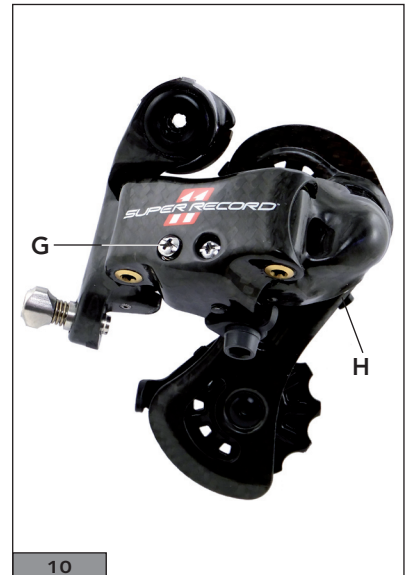
- Make sure that the screw (G - Fig. 10) is correctly adjusted: by operating the gear lever with the chain on the largest sprocket, the inner plate of the derailleur cage must **NOT** come into contact with the spokes.
- Position the chain on the 5TH sprocket counting from the smallest (4TH for 10s).
- 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.

### ⚠ ATTENTION!

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

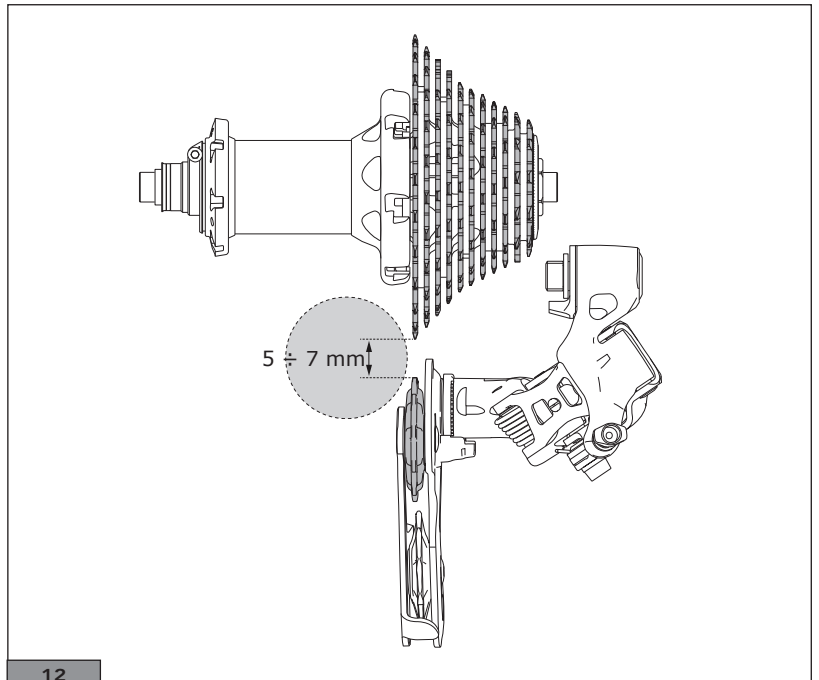
### ATTENTION

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 thoroughly and replace if necessary.
- To remove the rollers, unscrew the screws (C - Fig. 1) with a 3 mm Allen screw.

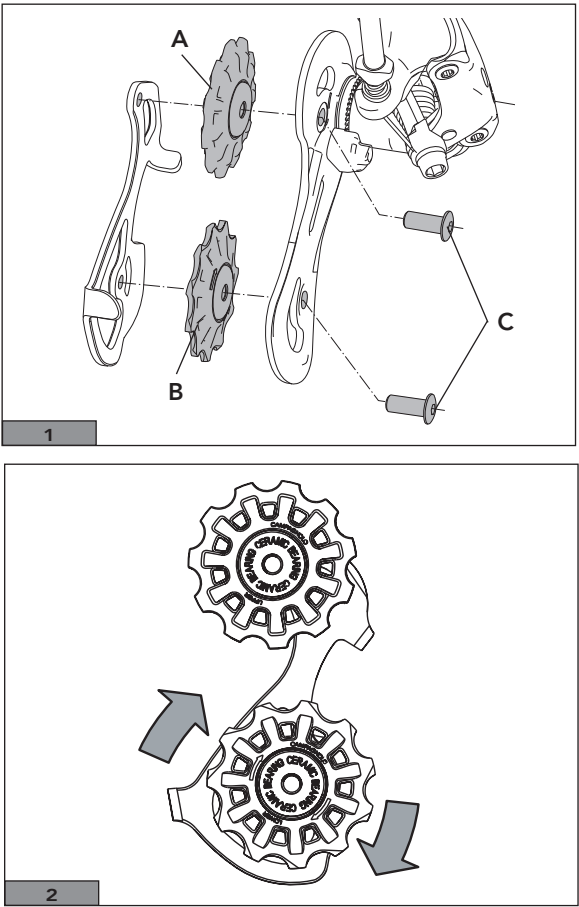
**WARNING!**  
The two rollers are different: on the upper section, fit the roller (A - Fig. 1) marked "UPPER" (with side play); in the lower section, fit the roller (B - Fig. 1) marked "LOWER": it is unidirectional and must be fitted so that it rotates in the direction indicated by the arrows (Fig.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

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

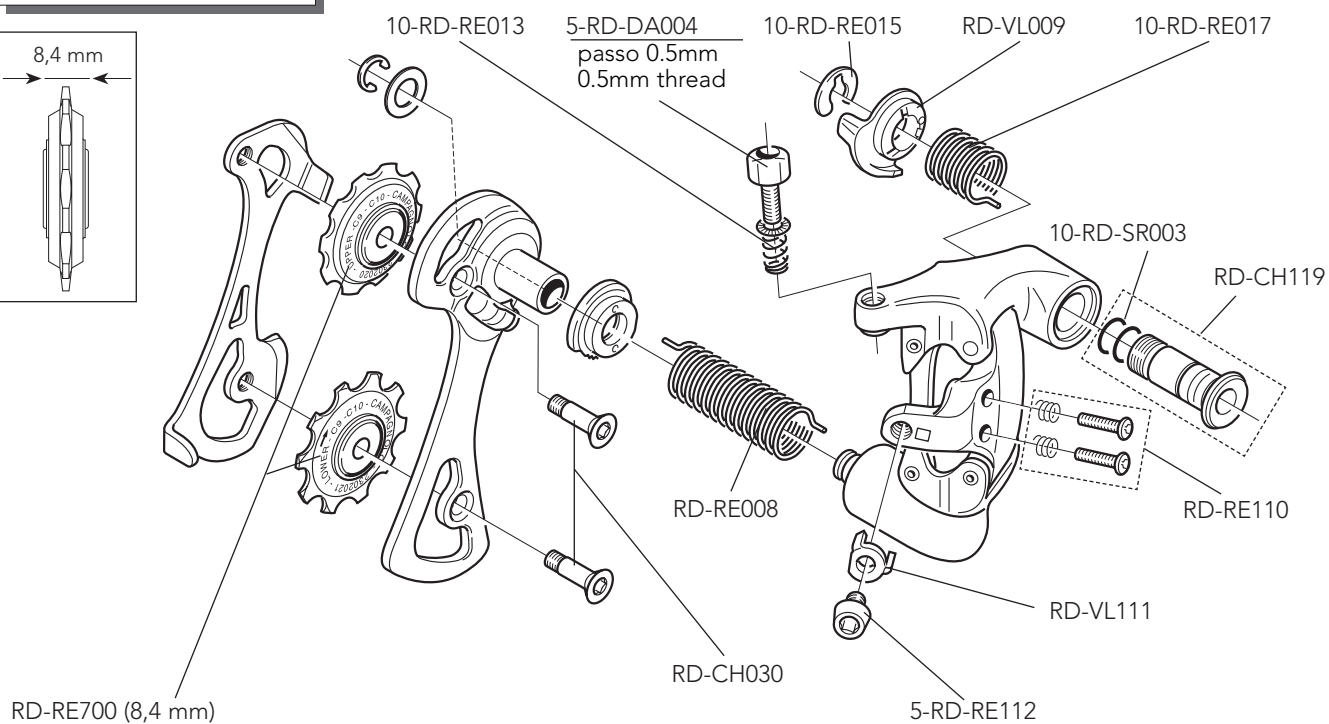
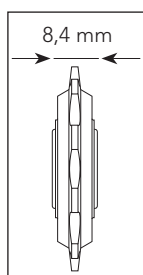
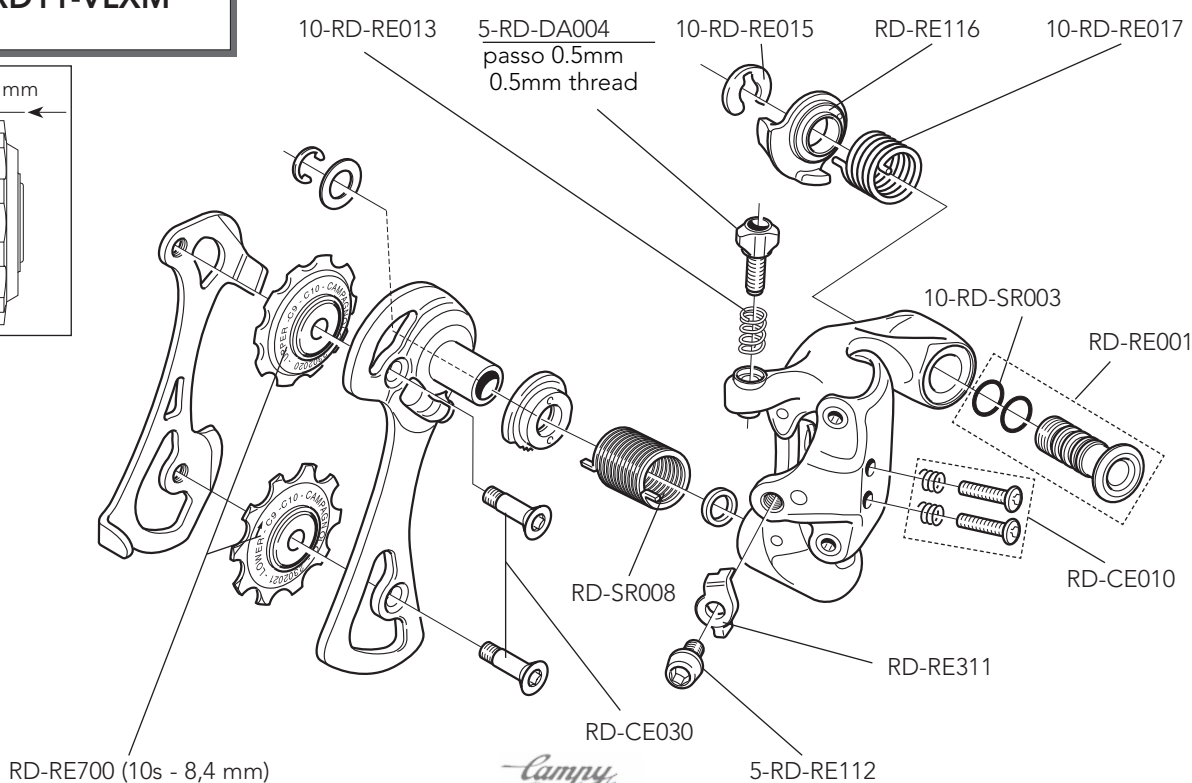
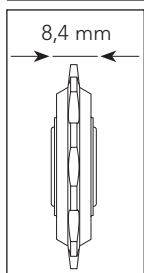
TIGHTENING TORQUE
11s: 2,7 Nm (24 in.lbs)
10s: 3 Nm (27 in.lbs)

- 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.

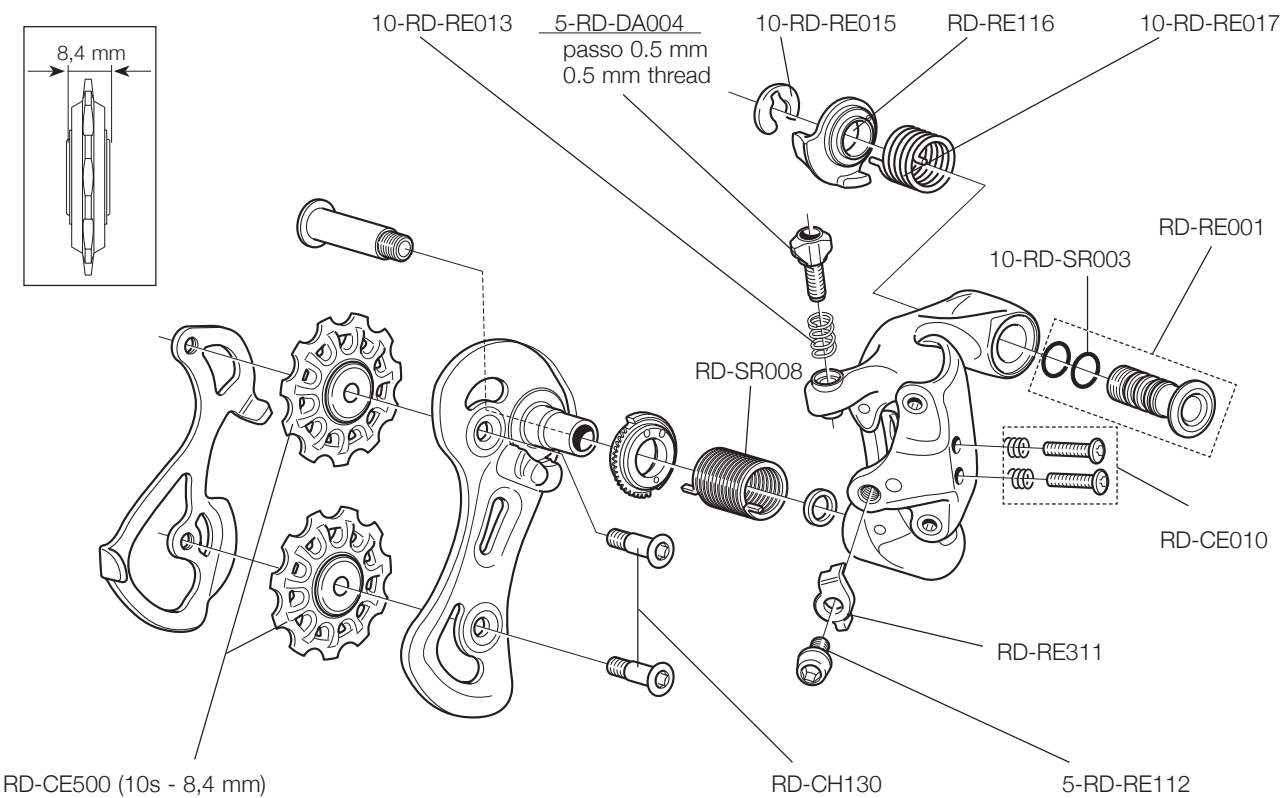
**! WARNING!**  
Traces of lubricant on the rims and brake pads can reduce or eliminate the braking capabilities of your bicycle, resulting in an accident, personal injury or death.



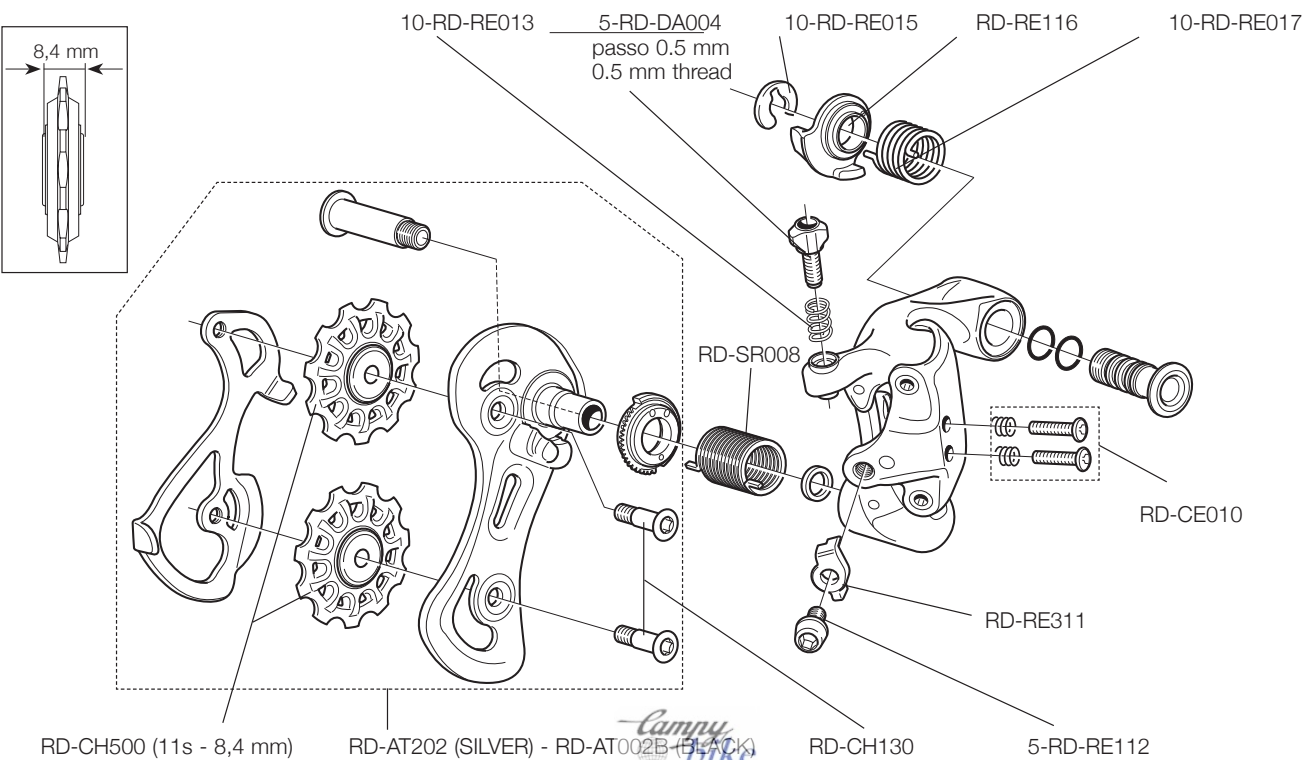
## 6 - SPARE PARTS

**COMP TRIPLE™**  
**10s**  
**RD7-COXL**

**VELOCE™ 10s**  
**RD11-VLXS**  
**RD11-VLXM**


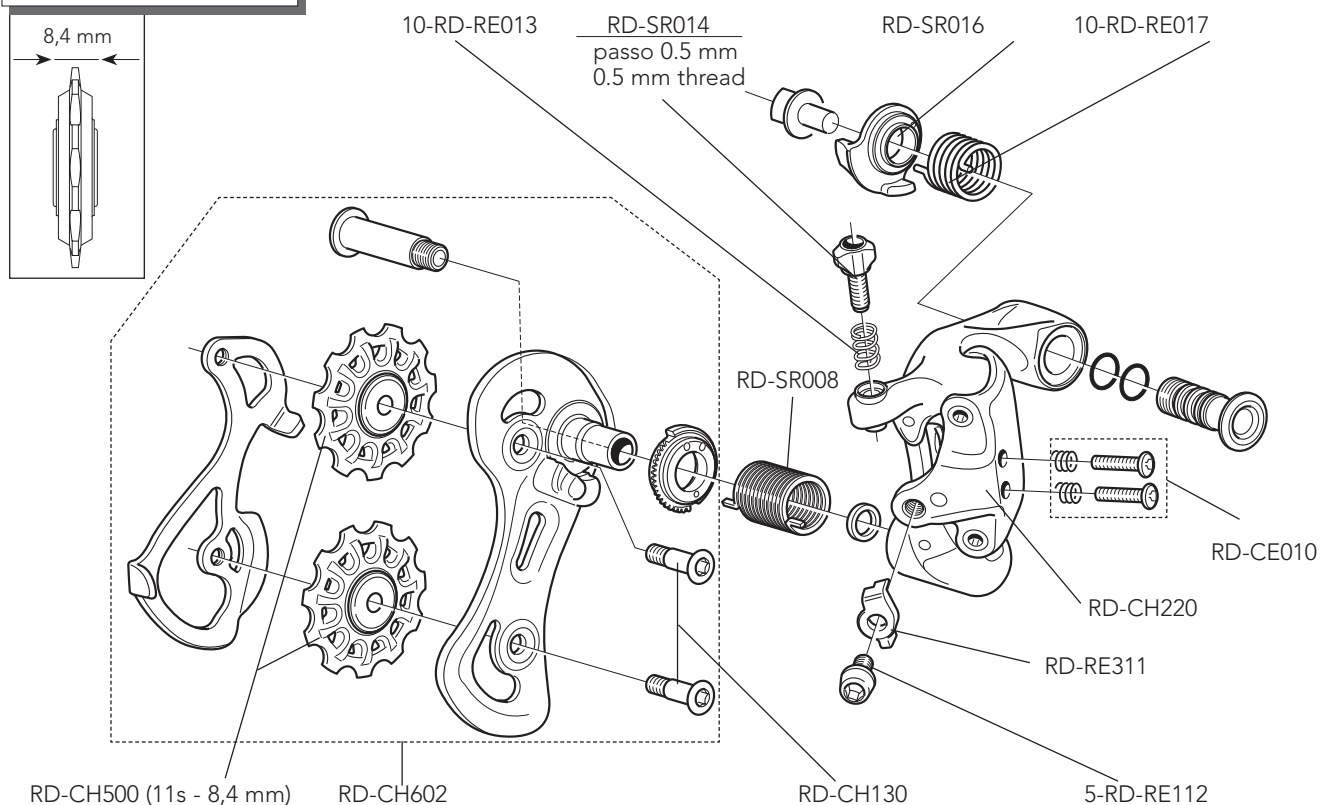
**CENTAUR™ 10s**  
**RD11-CEX**  
**RD12-CERBX**



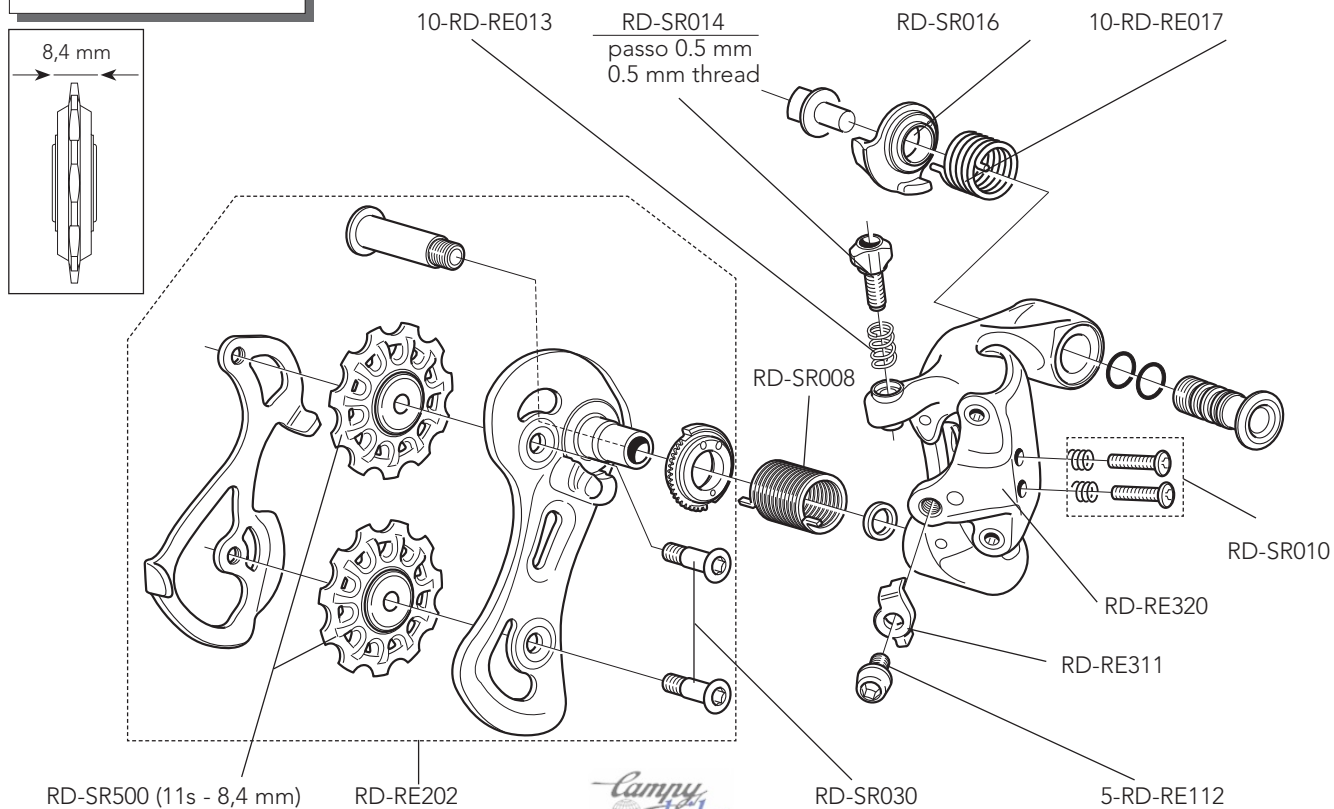
**ATHENA™ 11s**  
**RD11-AT1**



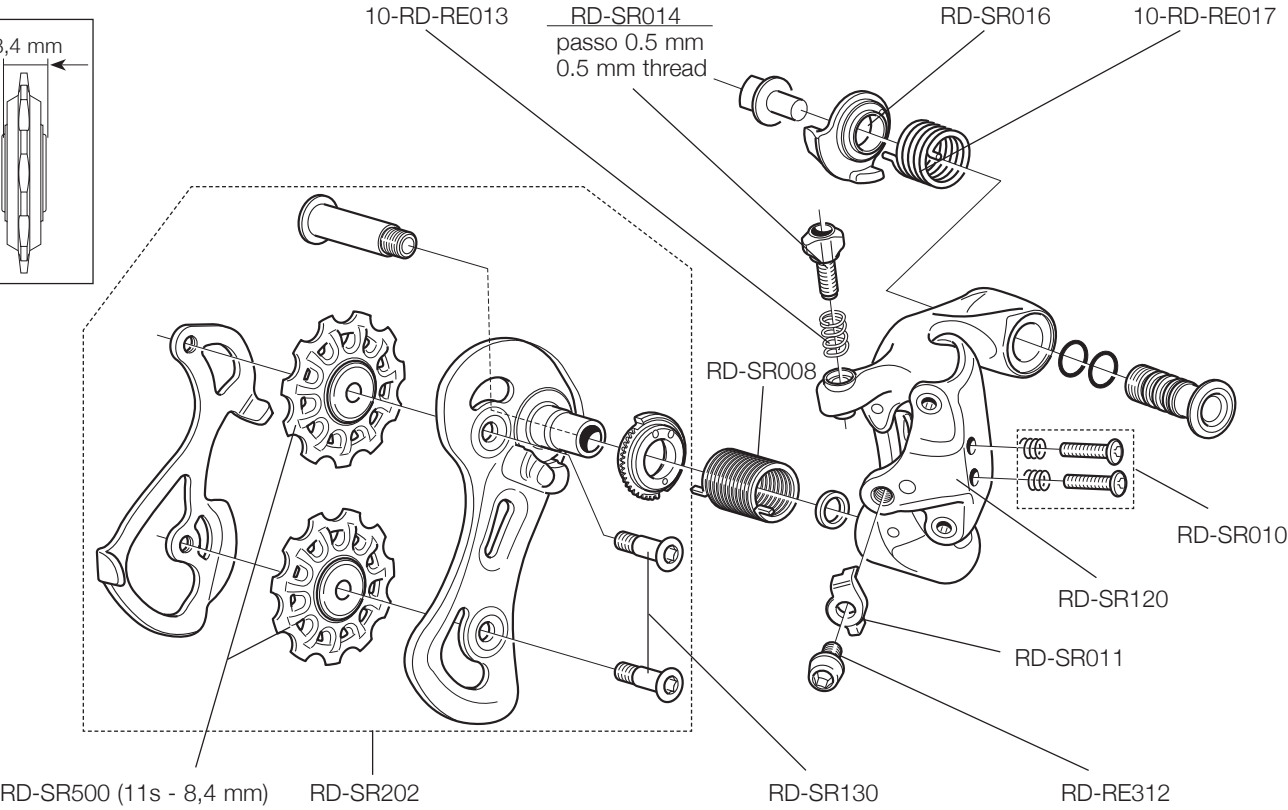
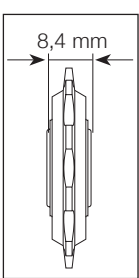
**CHORUS™ 11s**  
RD11-CH1



**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

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

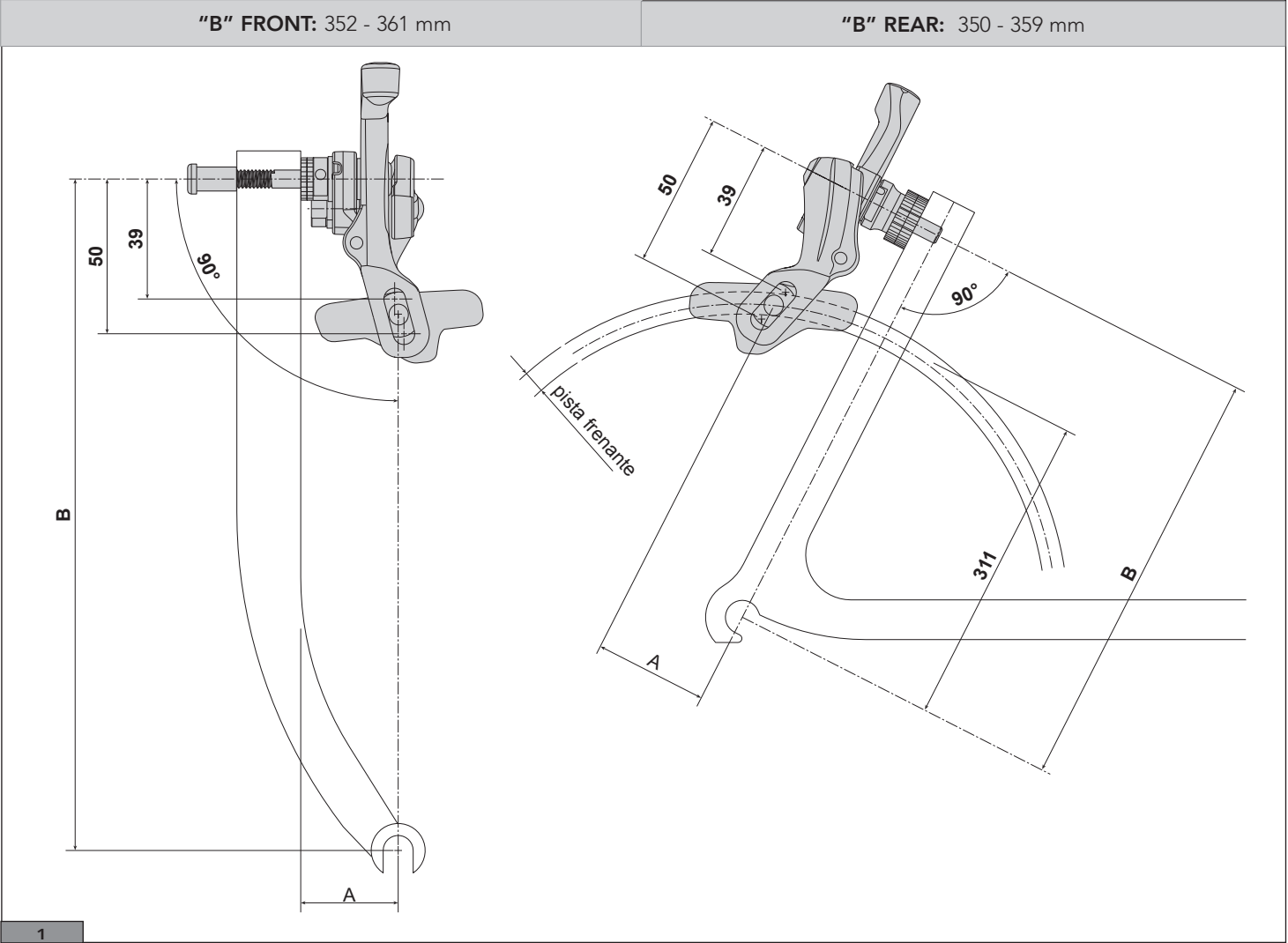
BRAKE PADS	COMPOSITE RIMS	ALUMINUM RIMS
BR-BO500 / BR-BO500X	<b>Only for composite rims.</b> The use of any other pad-rim combination could result in insufficient or uneven braking and lead to accidents, physical injury or death.	
BR-RE700		<b>Only for aluminium rims.</b> The use of any other pad-rim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



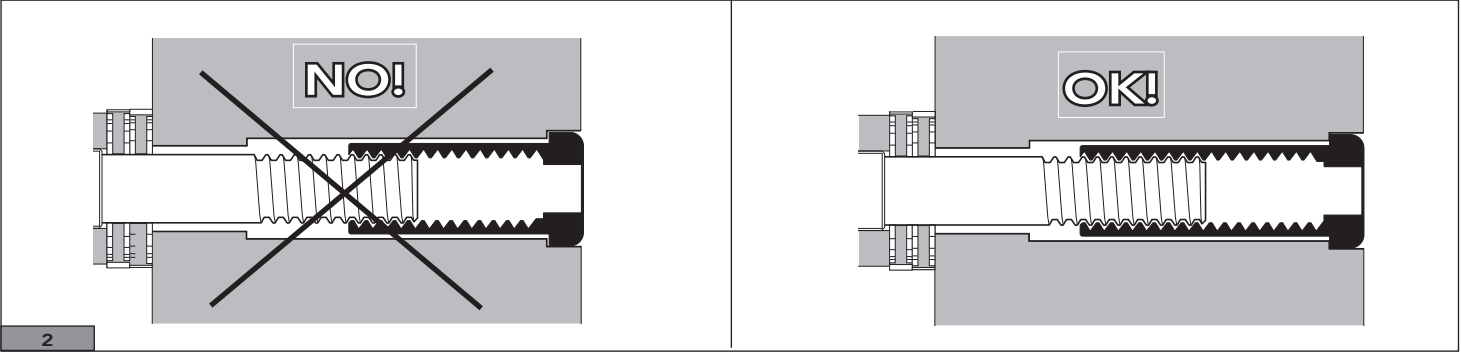
**WARNING!**

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



**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.



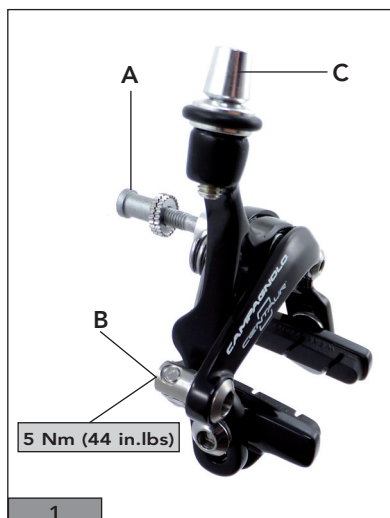
**! WARNING!**  
When mounting the brake to the frame always make sure that at least 6 threads of the brake's centre bolt are engaged with the internally threaded sleeve (Fig. 2). If fewer threads are engaged, the centre bolt may fail during use, resulting in brake detachment from the frame an accident, 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!

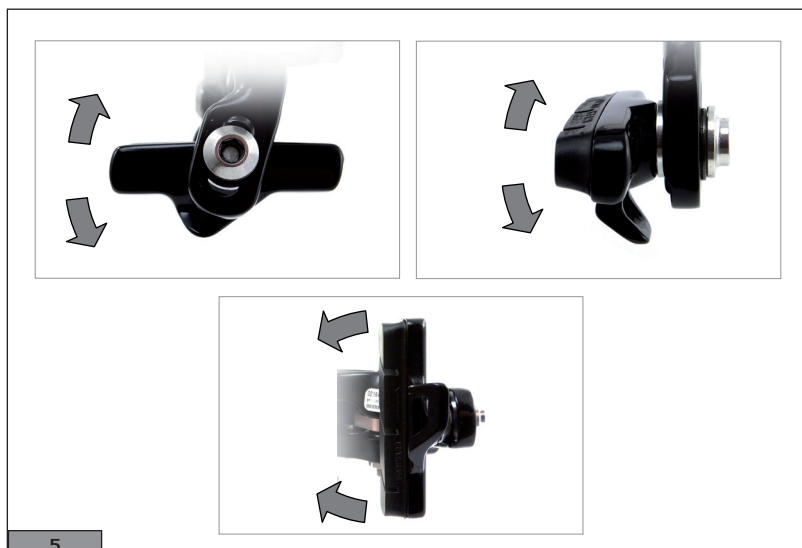
A loose nut can cause the brake system to malfunction resulting in an accident, personal injury or death.



- 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.



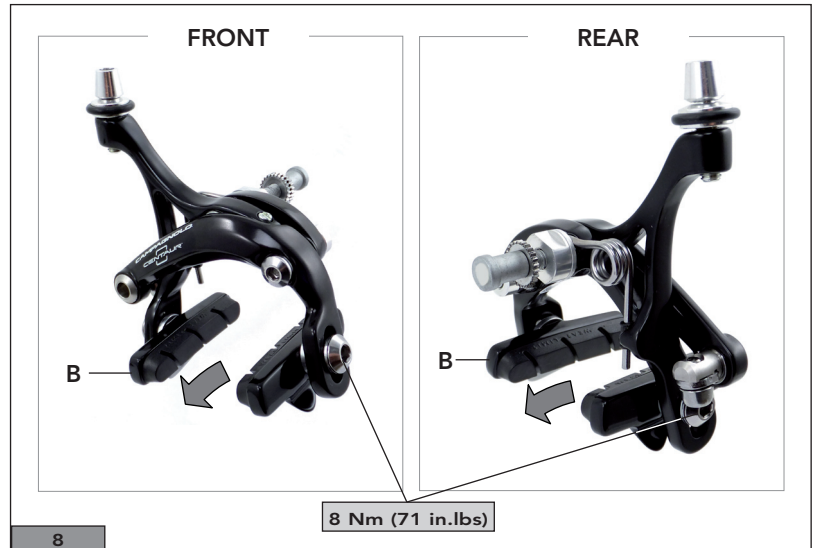
### ! WARNING!

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

- Clamp the pad-holders by tightening the 5 mm Allen screw 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.

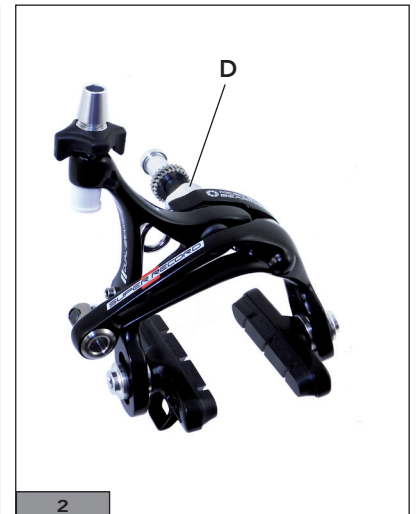
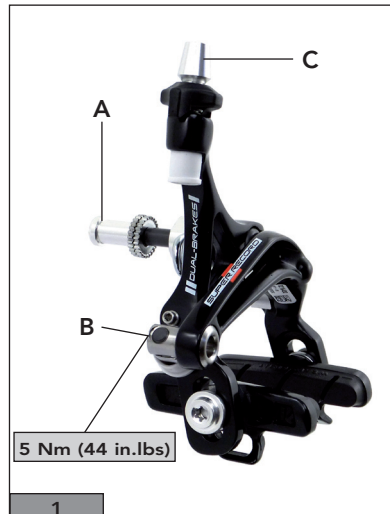


## 5 - SKELETON BRAKES ASSEMBLY

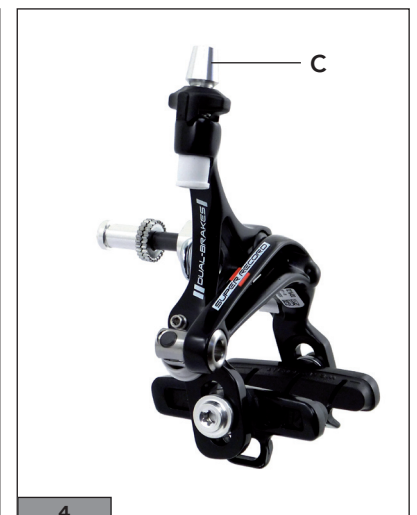
- Fit the brake on the frame or the fork and tighten the socket-head nut (A - Fig. 1) using a 5 mm Allen wrench.
- Secure the cable by tightening the cable retainer screw (B - Fig. 1) with a 5 mm Allen wrench or Torx T25 wrench to a torque of **5 Nm (44 in.lbs)**.

### ⚠ 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).

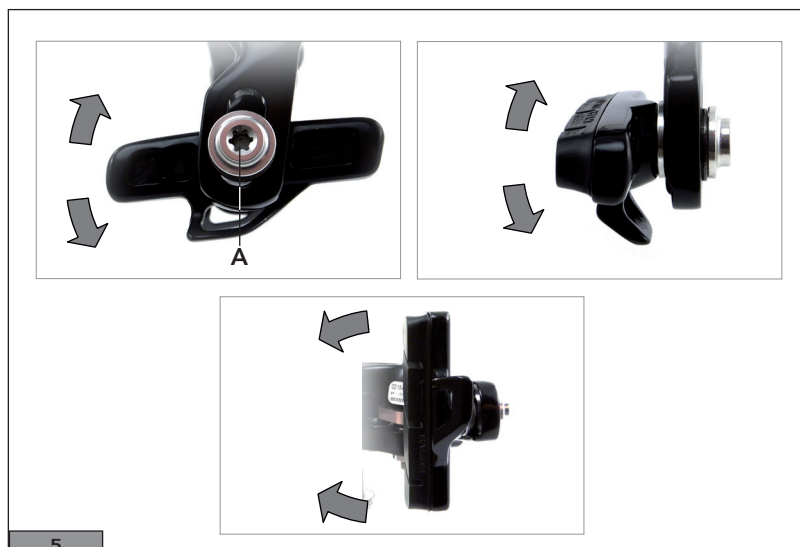


- For pad-holders equipped with orbital articulation which can be oriented in all directions (Fig. 5): adjust the brake pads so that they are centered in height in relation to the braking surface of the rim and parallel to it horizontally and vertically.

### ! WARNING!

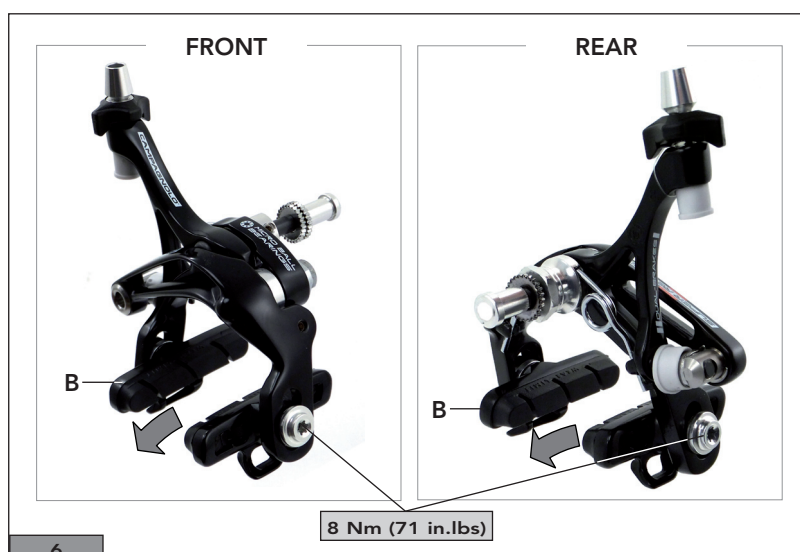
Please be sure that you tighten the cable sufficiently, without crushing the cable, so that it does not slip when brakes are applied. A loose or damaged cable can cause the brake system to malfunction resulting in an accident, personal injury or death.

- Clamp the pad-holders by tightening the 5 mm Allen screw or Torx T25 screw (A - Fig. 5) 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 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.



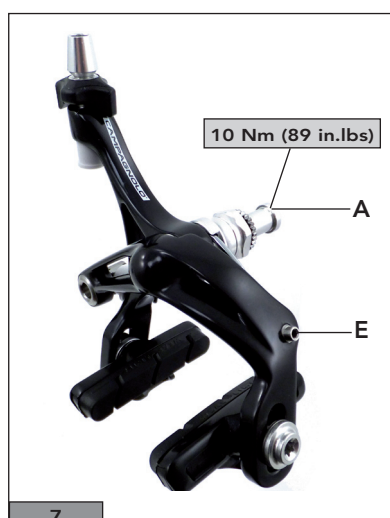
- Secure firmly the brake to the frame by tightening the nut (A - Fig. 7) with a torque wrench to **10 Nm (89 in.lbs)**.

### ! 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.



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

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

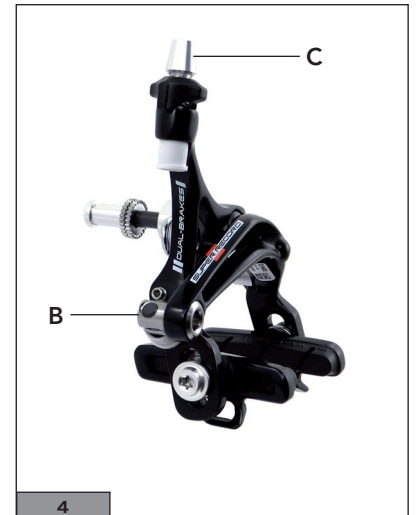
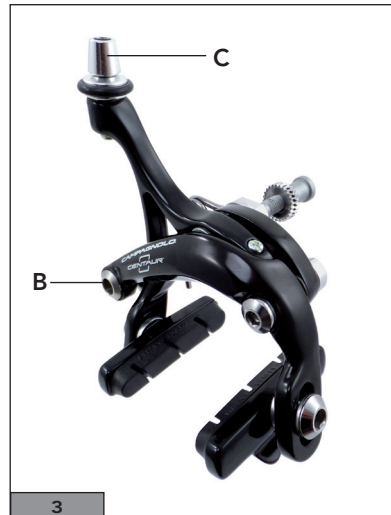
- Using the bicycle in the rain can lead to a greater accumulation of sand/dirt on the brake pads, with consequent damage to the rims, even in the course of a single outing. To keep the pads in optimum condition and to avoid wear on the sides of the rims, check your brake pads constantly. Use a file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

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

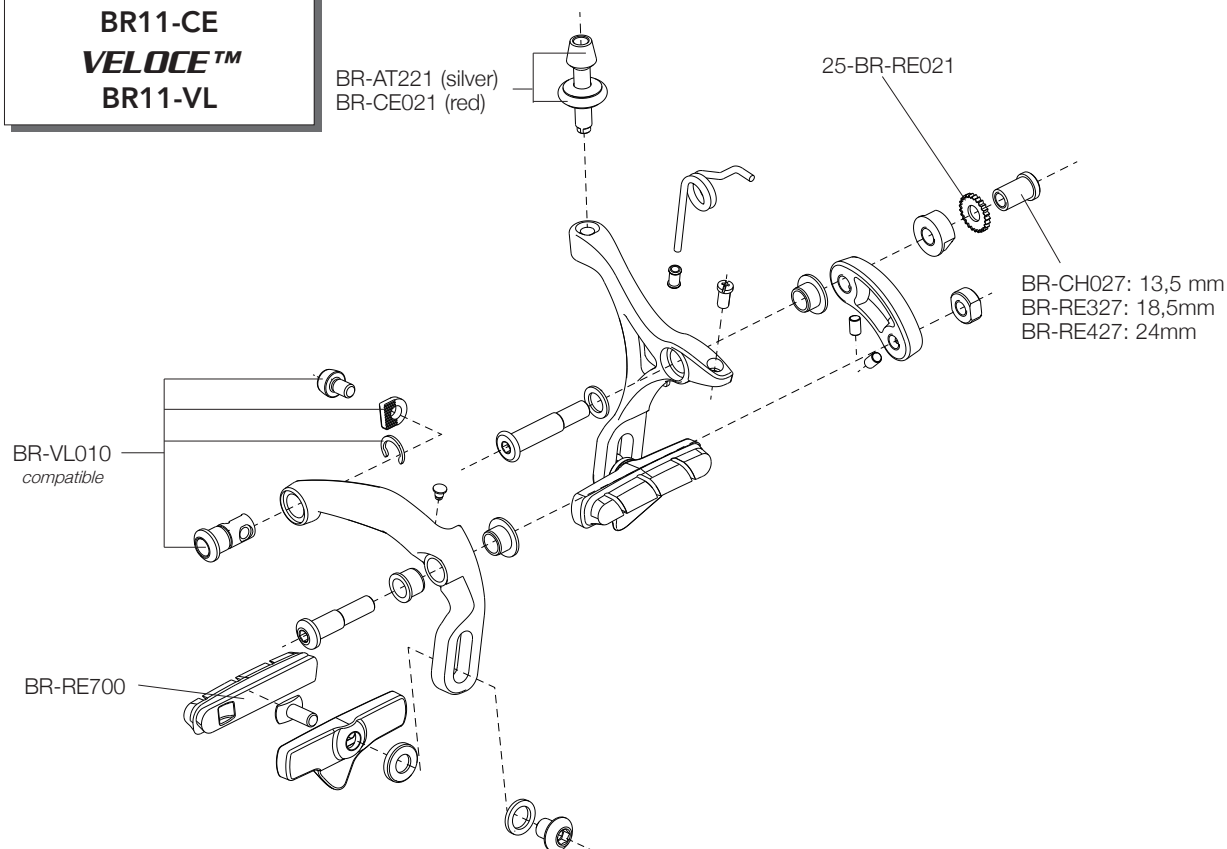
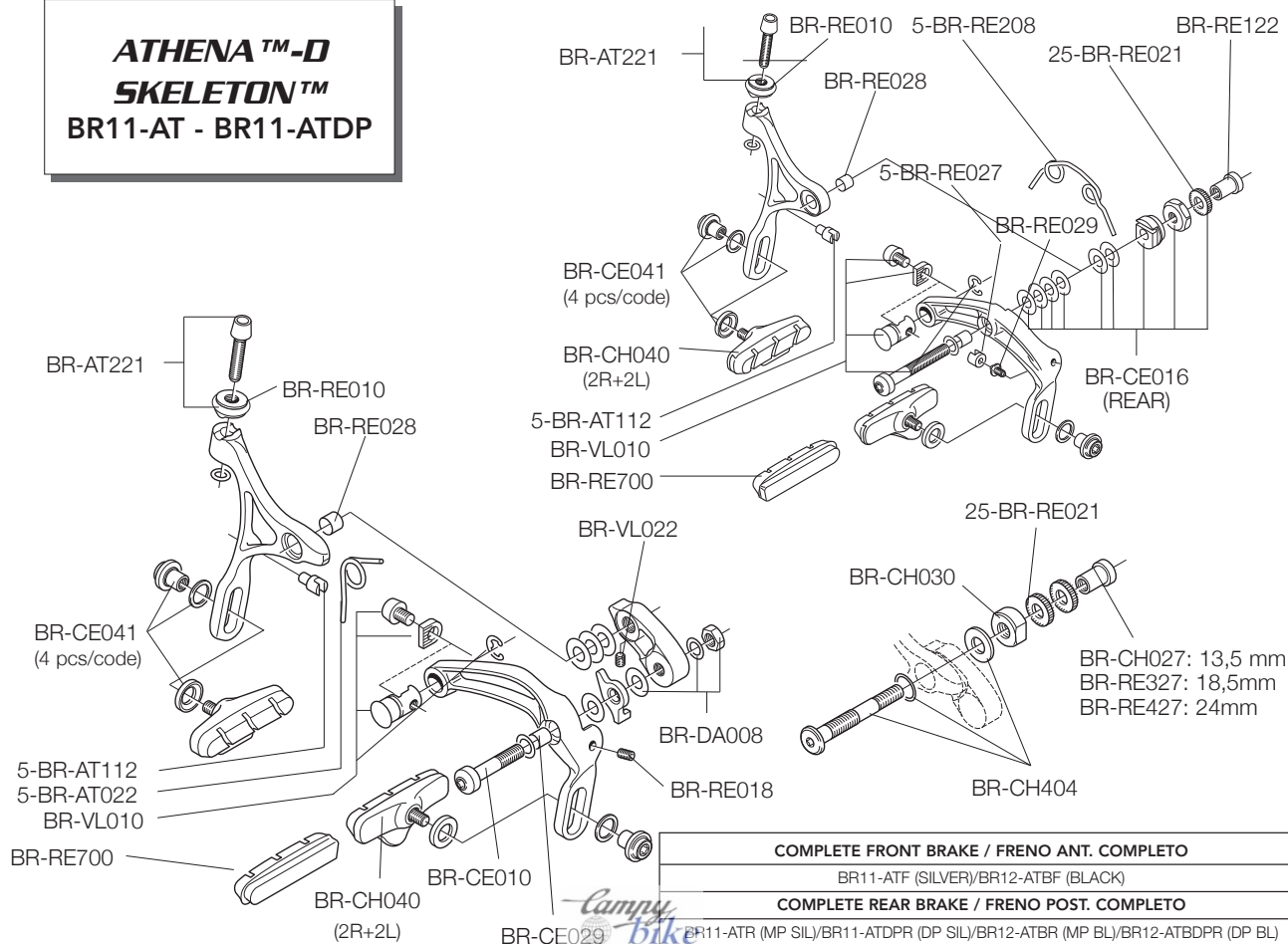


### WARNING!

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



## 7 - SPARE PARTS

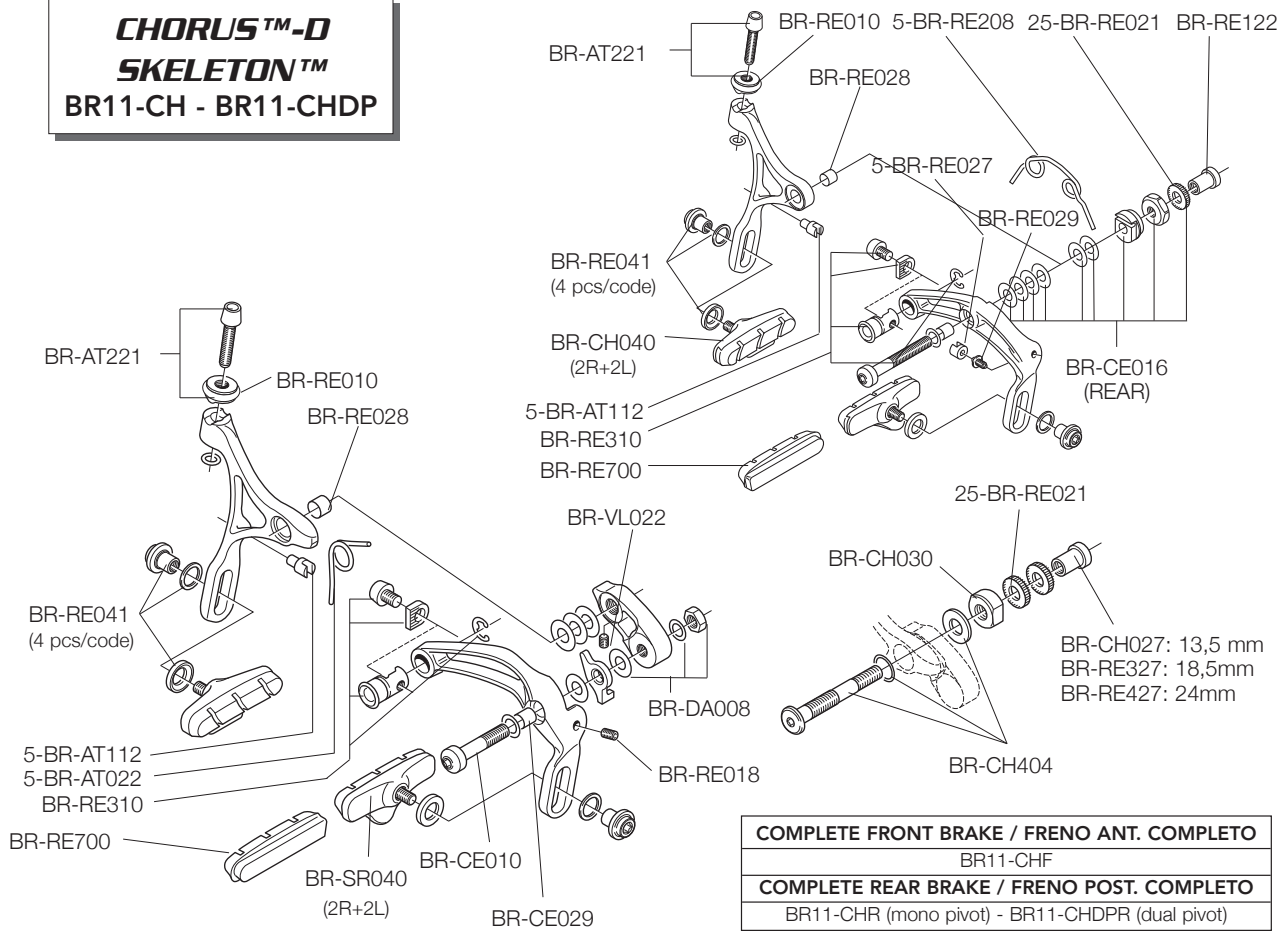
**CENTAUR™**  
**BR11-CE**  
**VELOCE™**  
**BR11-VL**

**ATHENA™-D**  
**SKELETON™**  
**BR11-AT - BR11-ATDP**
**COMPLETE FRONT BRAKE / FRENO ANT. COMPLETO**

BR11-ATF (SILVER)/BR12-ATBF (BLACK)

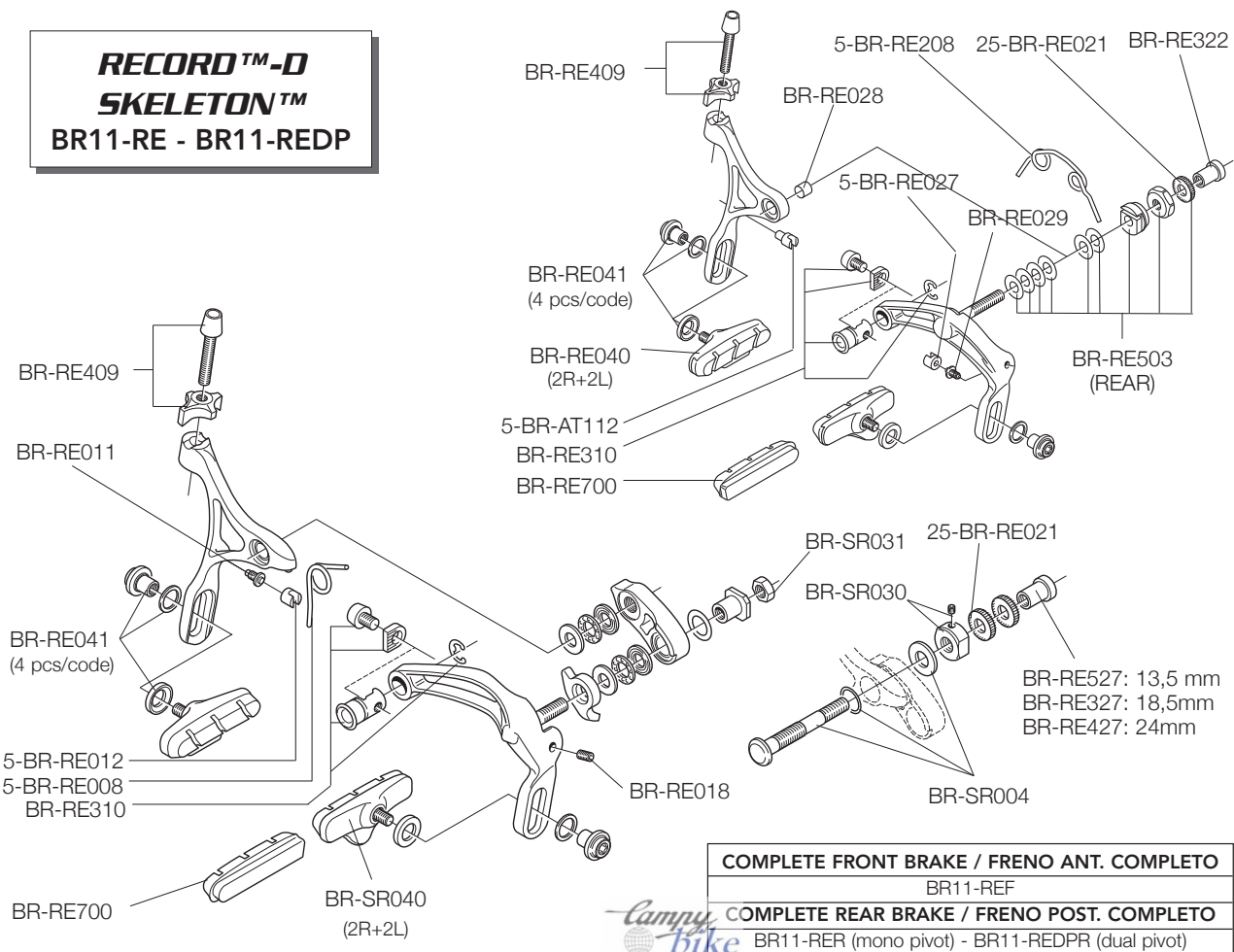
**COMPLETE REAR BRAKE / FRENO POST. COMPLETO**

BR11-ATR (MP SIL)/BR11-ATDPR (DP SIL)/BR12-ATBR (MP BL)/BR12-ATBDPR (DP BL)

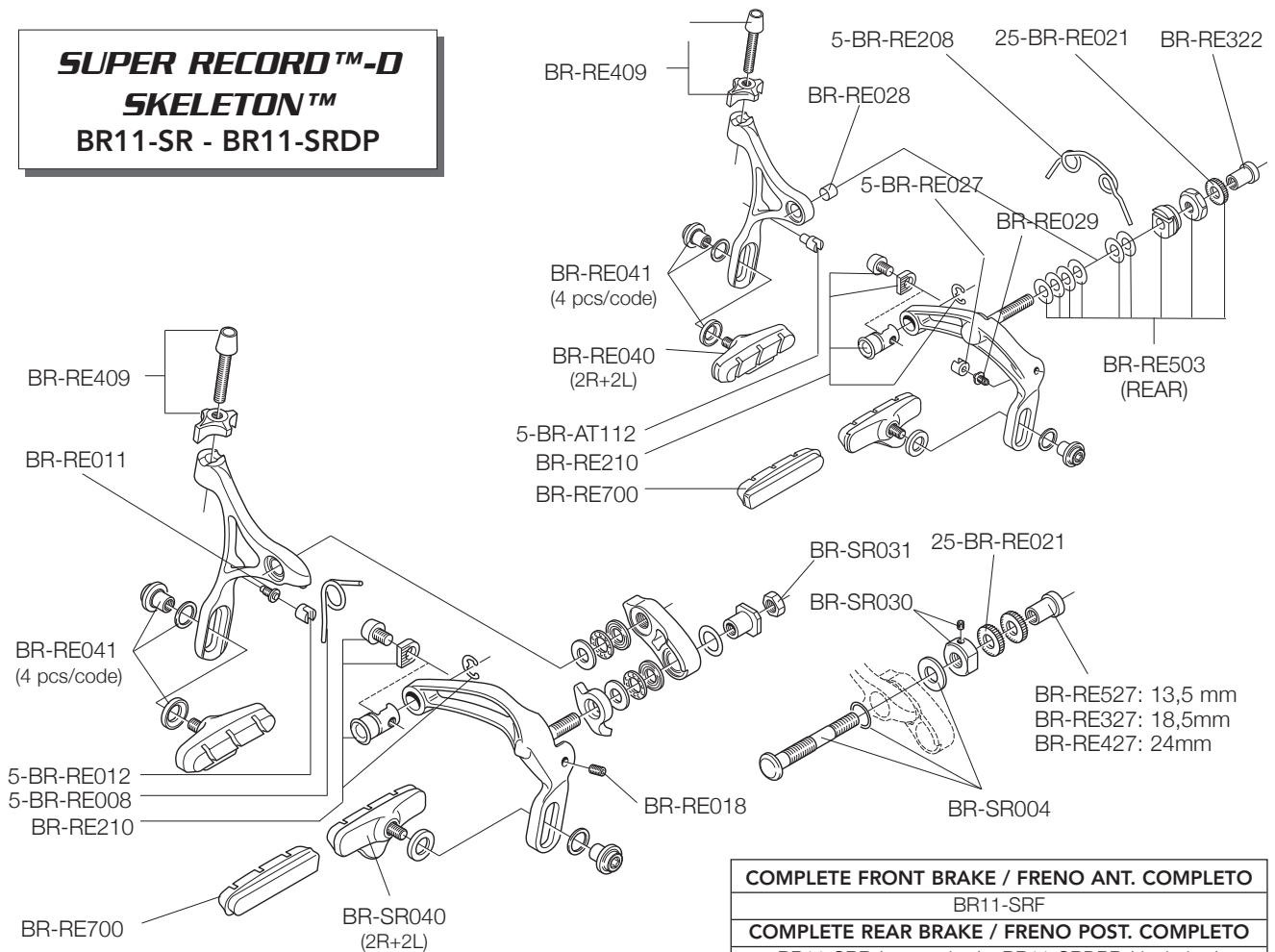
**CHORUS™-D**  
**SKELETON™**  
**BR11-CH - BR11-CHDP**



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



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



**COMPLETE FRONT BRAKE / FRENO ANT. COMPLETO**

BR11-SRF

**COMPLETE REAR BRAKE / FRENO POST. COMPLETO**

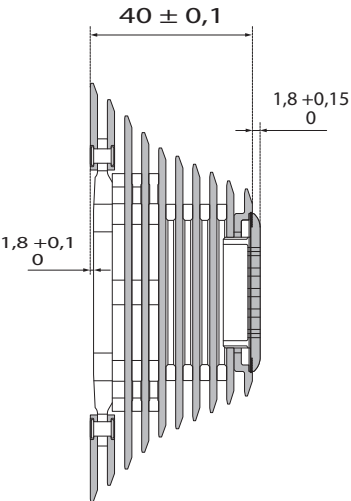
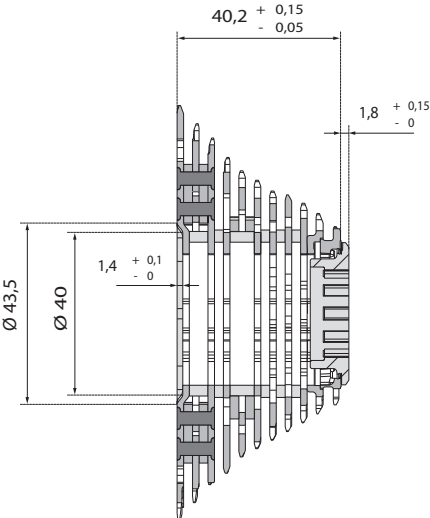
BR11-SRR (mono pivot) - BR11-SRDP (dual pivot)

# SPROCKETS

## 1 - TECHNICAL SPECIFICATIONS

10s	11s
MIN. SPROCKET 11	MIN. SPROCKET 11
MAX. SPROCKET 29	MAX. SPROCKET 29
TIGHTENING TORQUE 50 Nm (443 in.lbs)	TIGHTENING TORQUE 40 Nm (354 in.lbs)
	

## 2 - COMPATIBILITY

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

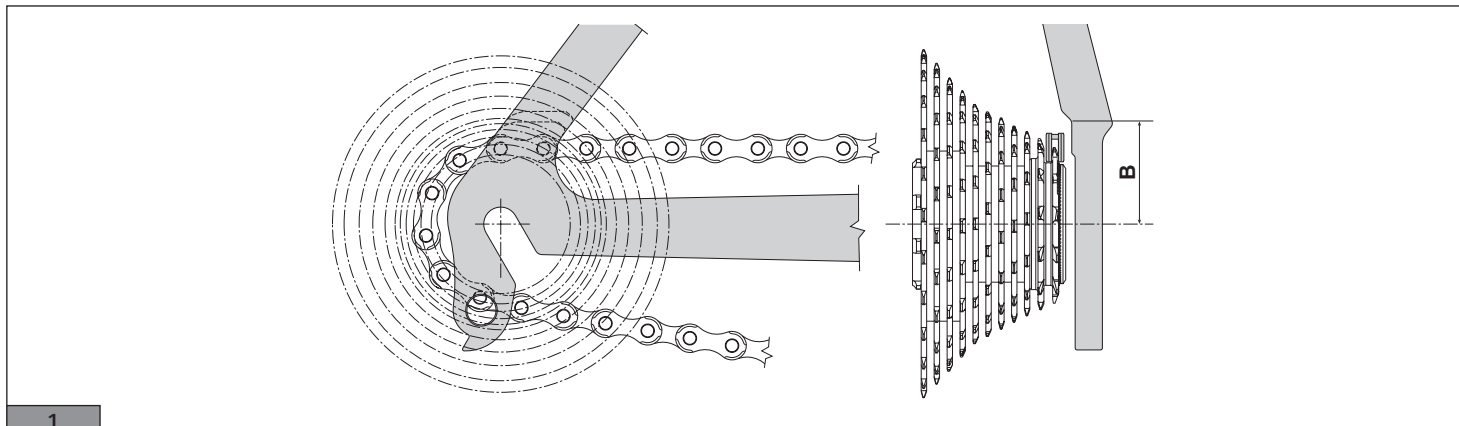
 **WARNING!**

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



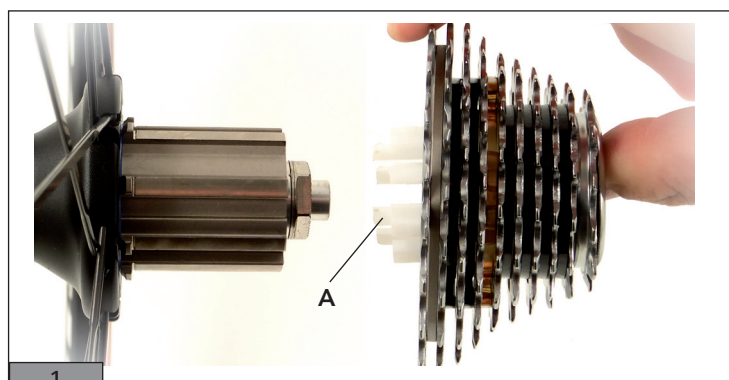
### 3 - INTERFACE WITH THE FRAME

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

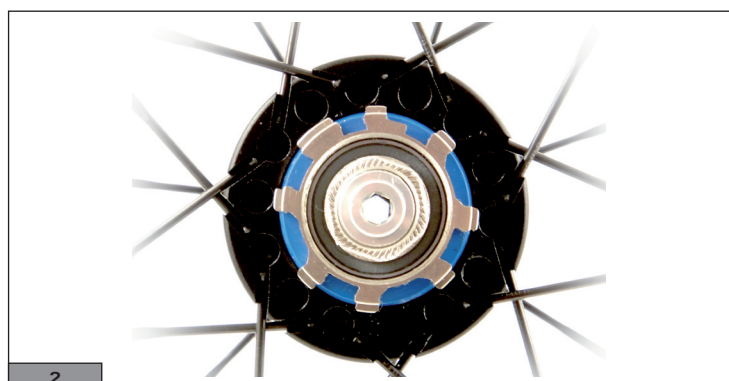


### 4 - 10s SPROCKETS ASSEMBLY

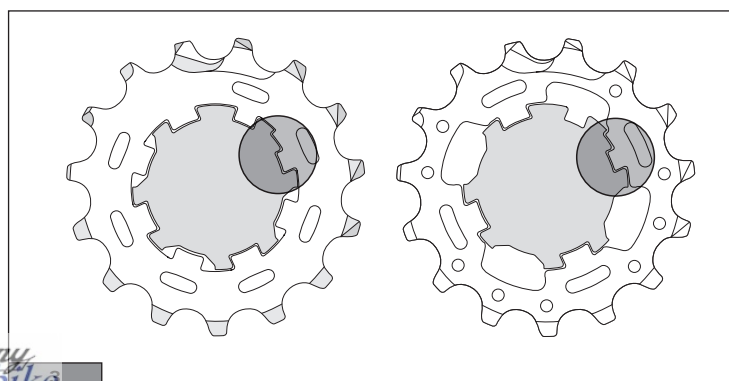
- The sprockets are pre-assembled and timed on the plastic support (A - Fig. 1).
- Insert the support on the side of the freewheel body, align the spline patterns, press the sprockets onto the freewheel and extract the support (A) from the hub (Fig. 1).



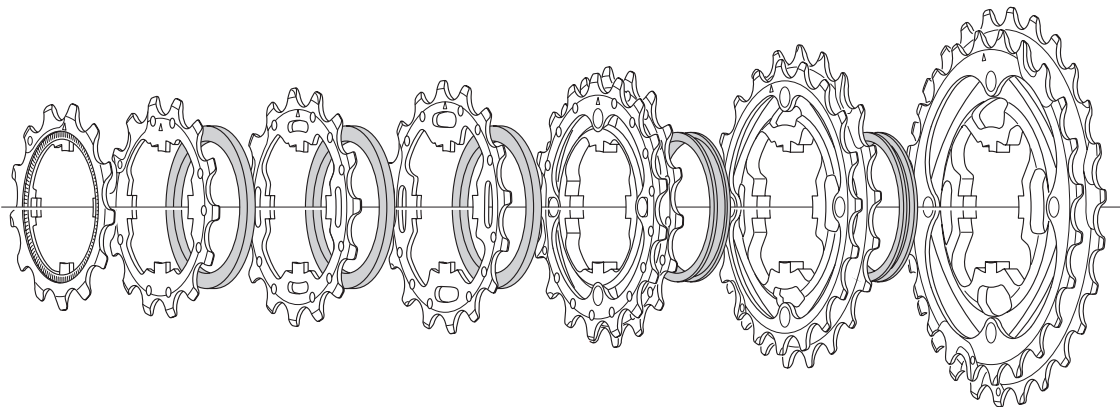
- If installing the sprockets without the plastic support, install the individual or preassembled sprockets and the spacers on the sprocket body of the hub aligning the spline patterns (Fig. 2).



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



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

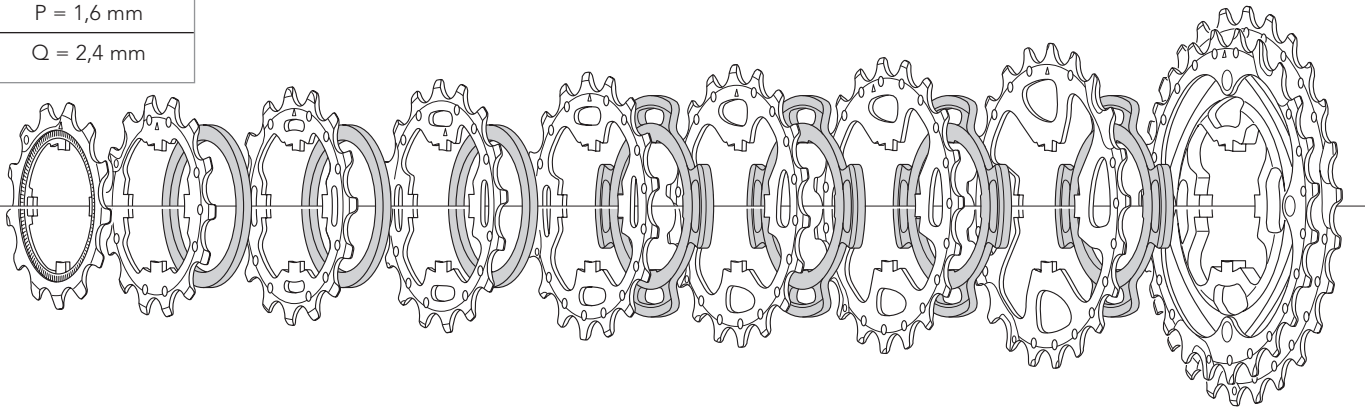


11-25	11A-1°	12A-2°		13A	Q	14A	Q	15A	Q	17G	O	19G	N	21G	N	23G	P	25G
12-23	12A-1°	13A	Q	14A	Q	15A	Q	16A	Q	17A	O	18C	N	19C	N	21C	P	23C
12-25	12A-1°	13A	Q	14A	Q	15A	Q	16A	Q	17A	O	19A	N	21A	N	23A	P	25A
13-26	13A-1°	14A	Q	15A	Q	16A	Q	17A	N	18C	O	19C	N	21C	N	23C	P	26C
13-29	13A-1°	14A	Q	15A	Q	16A	Q	17A	N	19A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

5

\* pre-assembled

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



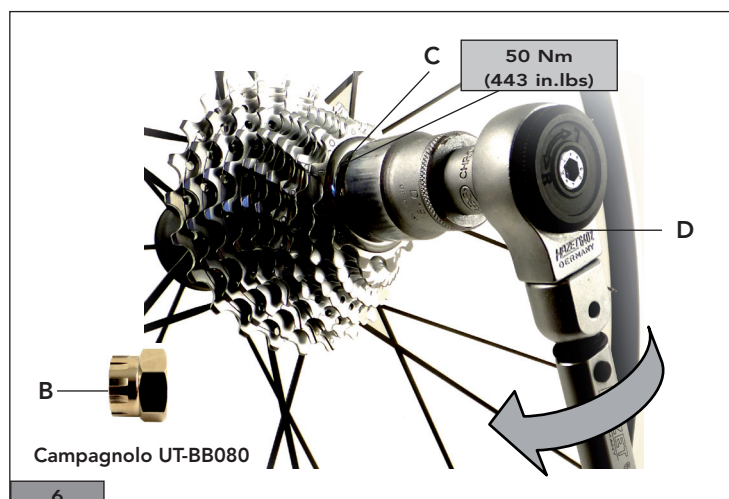
• Using a torque wrench (D - Fig. 6) equipped with Campagnolo® tool UT-BB080 (B - Fig. 6), tighten the lockring (C - Fig. 6), which is provided with the Campagnolo hubs® and wheels, on to the freewheel body to **50 Nm (443 in.lbs)**.

#### 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 locking.

#### 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).

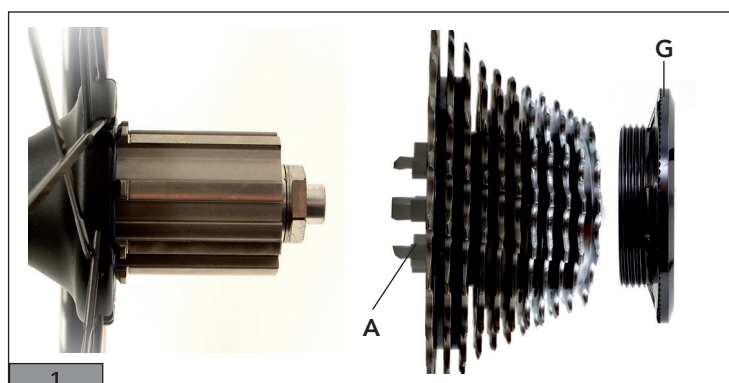


#### ! WARNING!

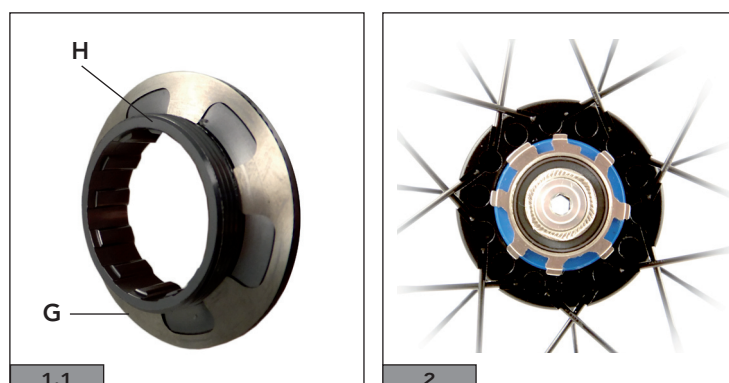
With the 10s Campagnolo® sprockets use **ONLY** the specific locking. Be sure to use the correct size locking to properly tighten the assembly. An incorrect locking could cause failure to the assembly, resulting in an accident, personal injury, or death.

## 5 - 11s SPROCKETS ASSEMBLY

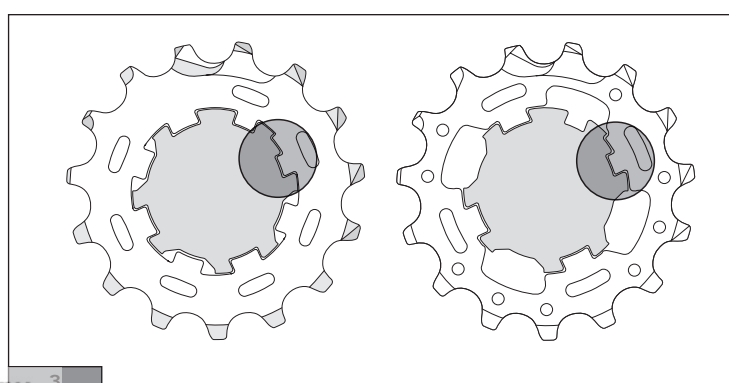
- The sprockets are pre-assembled and timed on the plastic support (A - Fig. 1). The ring G (Fig. 1.1) is provided with a preassembled washer (H); ensure that it is positioned as in fig. 1.
- Remove the ring (G - Fig. 1).



- 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).



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



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
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\* 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

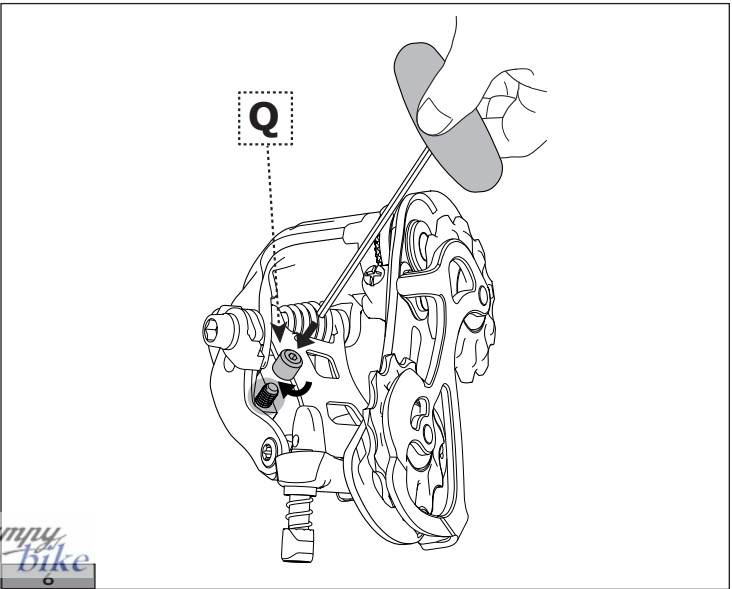
Pay attention to the exact assembly order of the spacers (Fig. 5).

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.

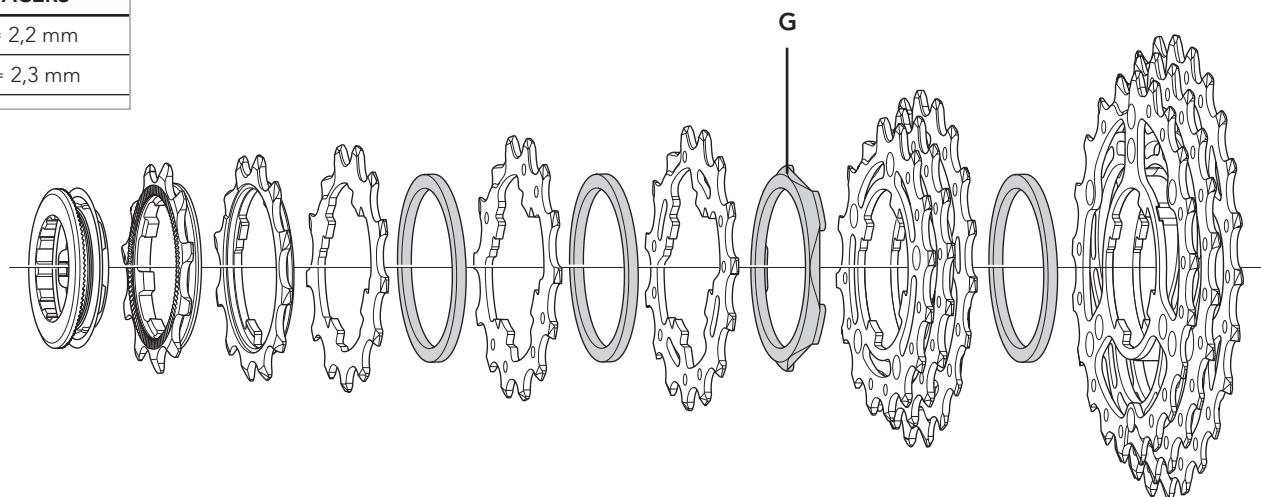
- SCREW THE TOP LOCKING SCREW IN AND APPLY THREADED BUSH (Q), USING A 2mm ALLEN KEY.
- A drop of thread locking fluid is recommended.



**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

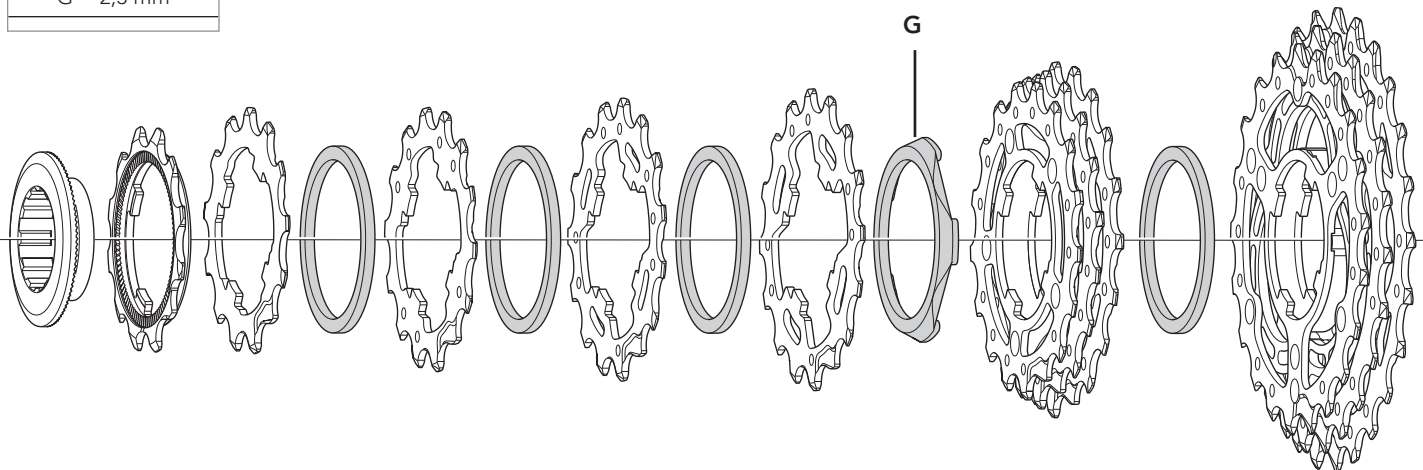
7

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)**.

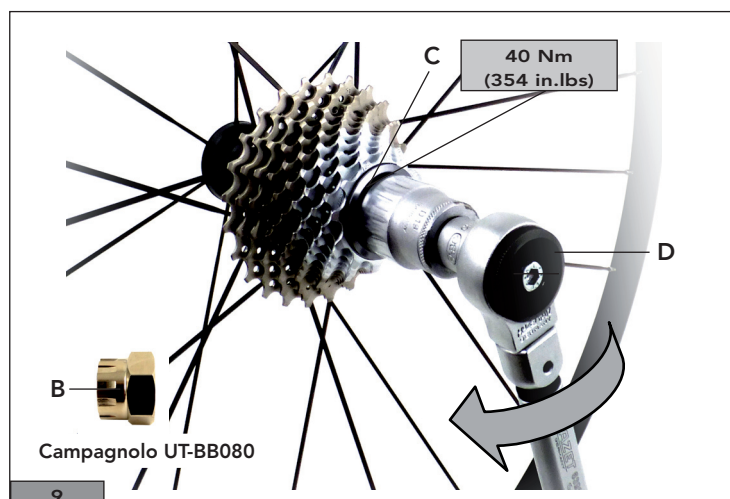
**Note**

- Use the respective specific rings for sprocket sets starting 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!**

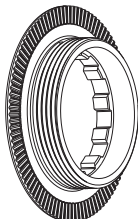
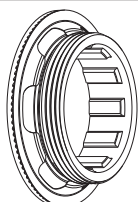
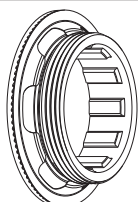
Traces of lubricant on the rims and brake pads can reduce or eliminate the braking capabilities of your bicycle, resulting in an accident, personal injury or death.

**! 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

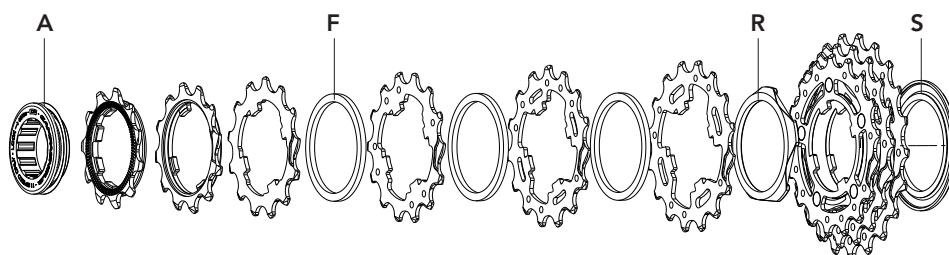
**LOCKRINGS**

	CODE	TYPE		RANGE	HUB COMPATIBILITY
	CS-401	<b>9s / 10s</b> "oversize" thread/fil.: 27 x 1	steel / acciaio	2000 e succ. <b>2000 and following</b>	<b>all groups / tutti i gruppi</b> all wheels / tutte le ruote
				<b>1999</b>	<b>RECORD™ - CHORUS™</b> all wheels / tutte le ruote
	CS-501	<b>9s / 10s</b> "oversize" thread/fil.: 27 x 1	steel / acciaio (for Z. 11)	2000 e succ. <b>2000 and following</b>	<b>all groups / tutti i gruppi</b> all wheels / tutte le ruote
				<b>1999</b>	<b>RECORD™ - CHORUS™</b> all wheels / tutte le ruote
	CS-701	for sprockets/ per pignoni <b>HG 10s</b> 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 <b>HG 10s</b> 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	<b>11<sup>s</sup> SPEED only</b> thread/fil.: 27 x 1	alloy / alluminio	2009	<b>only 11s sprocket sets / solo pacchi pignoni 11s</b>
	CS-111	<b>11<sup>s</sup> SPEED only</b> thread/fil.: 27 x 1	alloy / alluminio (for Z. 11)	2009	<b>only 11s sprocket sets / solo pacchi pignoni 11s</b>

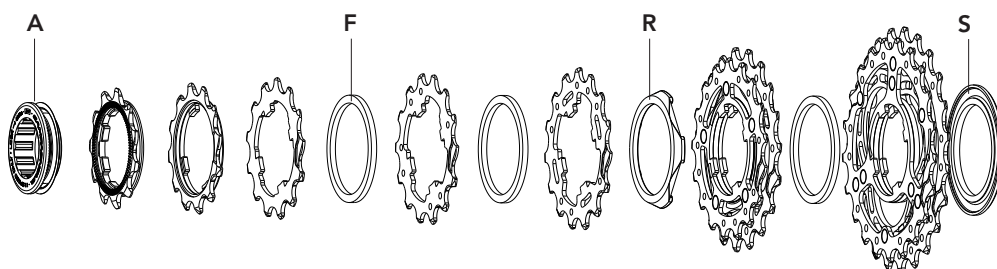
**GHIBLI™**  
(11s drivetrain)  
CS12-GH1111  
CS12-GH1113

<b>A</b>	<b>CS-111</b>	<b>11s only</b> (for Z 11)
<b>F</b>	<b>2-CS-612</b> (2 pcs)	<b>2,2 mm</b>

<b>R</b>	<b>2-CS-712</b> (2 pcs)	<b>2,3 mm</b>
<b>S</b>	<b>CS-613</b> (2 pcs)	<b>2,5 mm</b>



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	

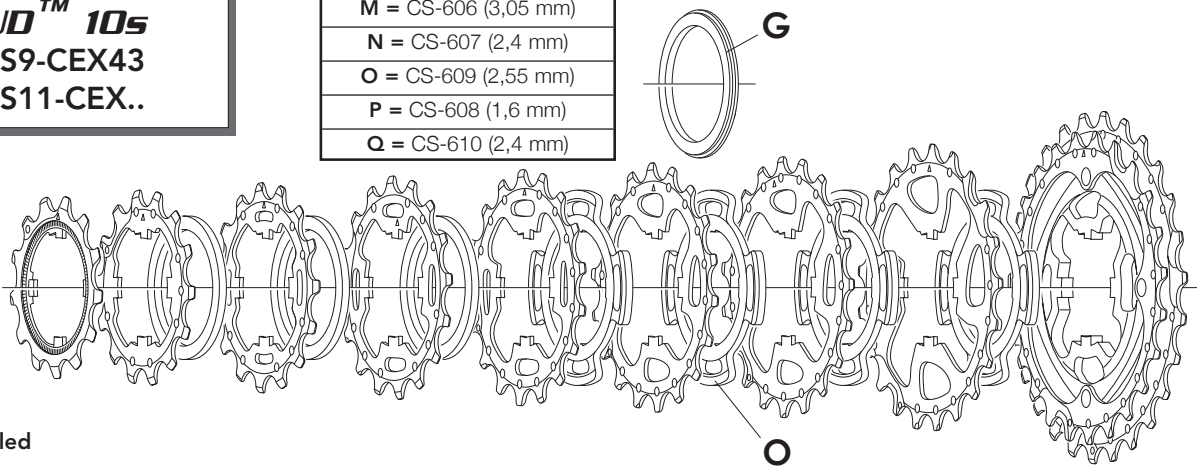


11-23	A	11A-1°	12A-2°	13A	F	14A	F	15A	R	17A-19A*	F	21A-23A*	S
		11S-011	11S-022	11S-131		11S-141		11S-151		11S-79GH		11S-13GH	

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

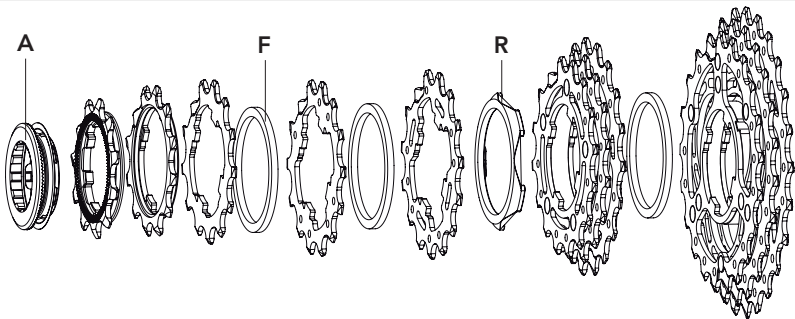


\* pre-assembled

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

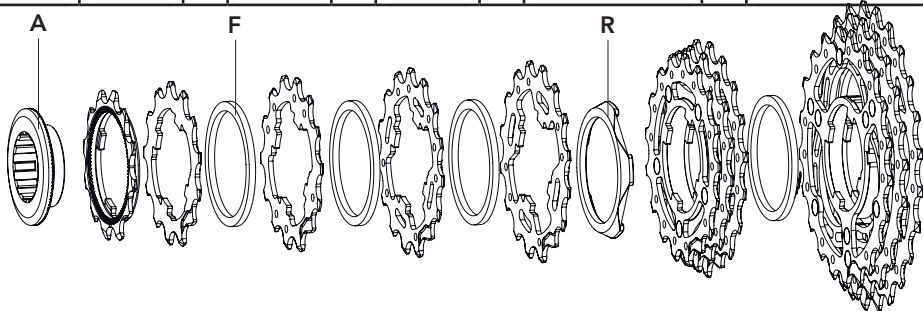
CHORUS™  
11s  
CS9-CH1...

\* 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

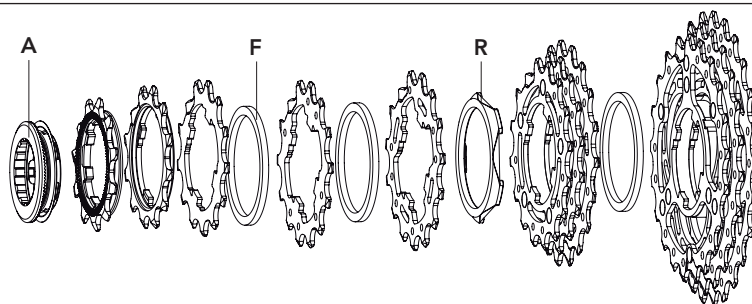
A	CS-112	11s only
A	CS-111	11s only (for Z 11)
F	2-CS-612 (2 pcs)	2,2 mm
R	2-CS-712 (2 pcs)	2,3 mm



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

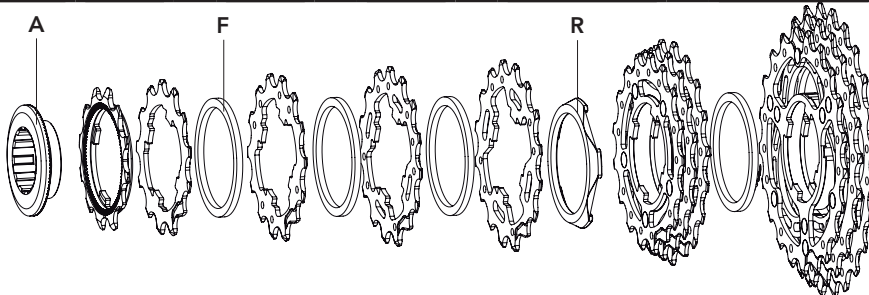


11-23	A	11A-1°	12A-2°	13A	F	14A	F	15A	R	16A-17A-18A*	F	19A-21A-23A*
		11S-011	11S-022	11S-131		11S-141		11S-151		11S-678		11S-913T
11-25	A	11A-1°	12A-2°	13A	F	14A	F	15A	R	16A-17A-19B*	F	21B-23B-25B*
		11S-011	11S-022	11S-131		11S-141		11S-151		11S-679		11S-135BT

A	CS-112	11s only
	CS-111	11s only (for Z 11)

F	2-CS-612 (2 pcs)	2,2 mm
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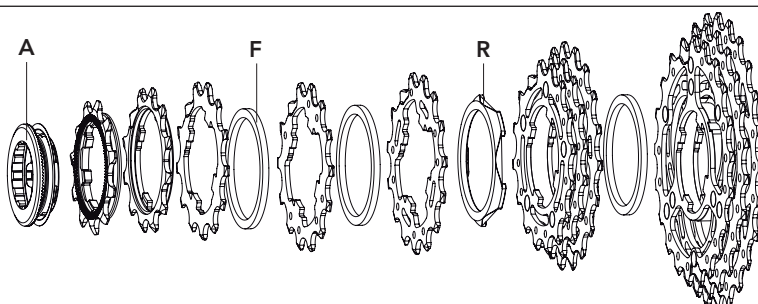
R	2-CS-712 (2 pcs)	2,3 mm
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12-25	A	12A-1°	13A	F	14A	F	15A	F	16A	R	17A-18A-19A*	F	21A-23A-25A*
		11S-012	11S-131		11S-141		11S-151		11S-161		11S-789		11S-135AT
12-27	A	12A-1°	13A	F	14A	F	15A	F	16A	R	17A-19B-21B*	F	23B-25B-27B*
		11S-012	11S-131		11S-141		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

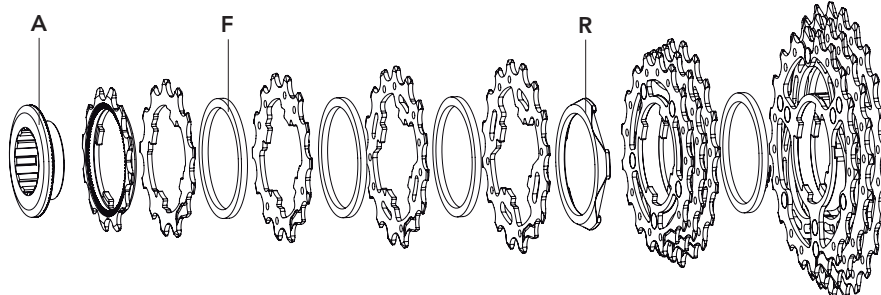


11-23	A	11A-1°	12A-2°	13A	F	14A	F	15A	R	16A-17A-18A*	F	19A-21A-23A*
		11S-011	11S-022	11S-131		11S-141		11S-151		11S-678T		11S-913T
11-25	A	11A-1°	12A-2°	13A	F	14A	F	15A	R	16A-17A-19B*	F	21B-23B-25B*
		11S-011	11S-022	11S-131		11S-141		11S-151		11S-679T		11S-135BT

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

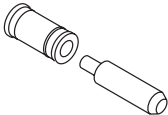

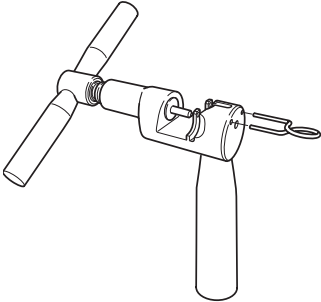
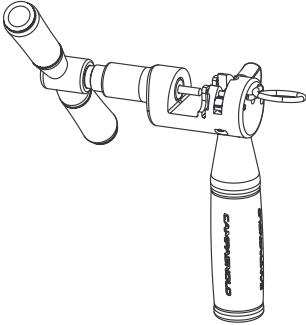
## 1 - TECHNICAL SPECIFICATIONS

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!

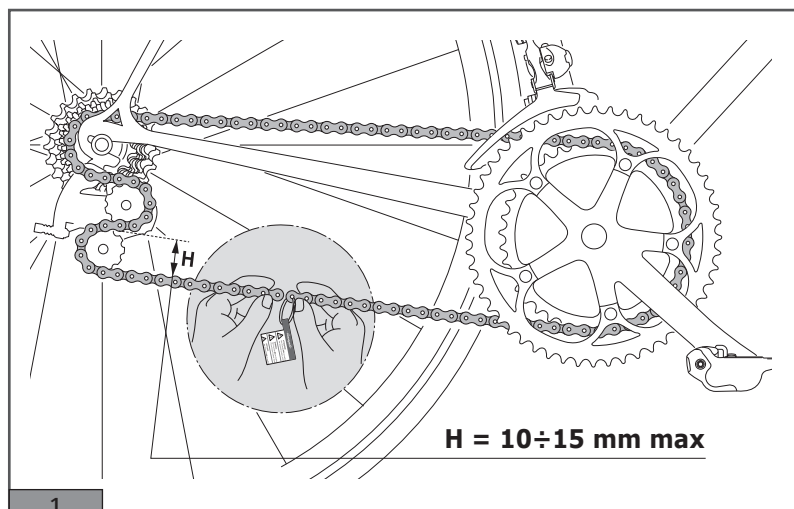
The pusher of the Campagnolo® tool **UT-CN200** is provided with a replaceable tapered tip pin; if the pin is damaged or it becomes worn, please replace it with the suitable Campagnolo® spare pin UT-CN201. Failure to timely replace the tip pin can damage your chain, resulting in an accident, personal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



#### ⚠ 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.

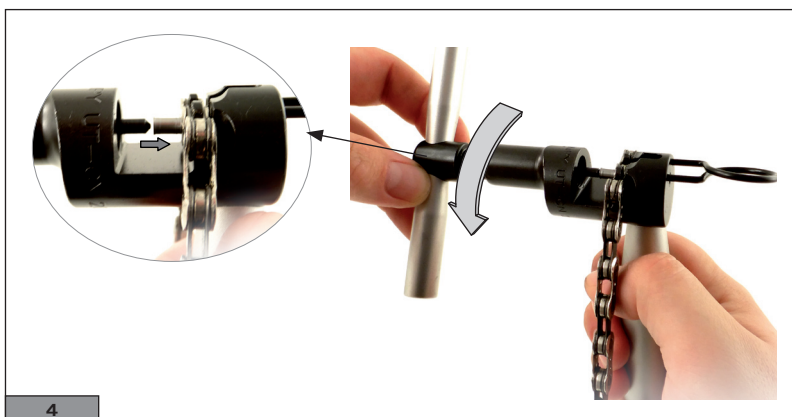
#### 3.1 - TO OPEN THE CHAIN

- 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)

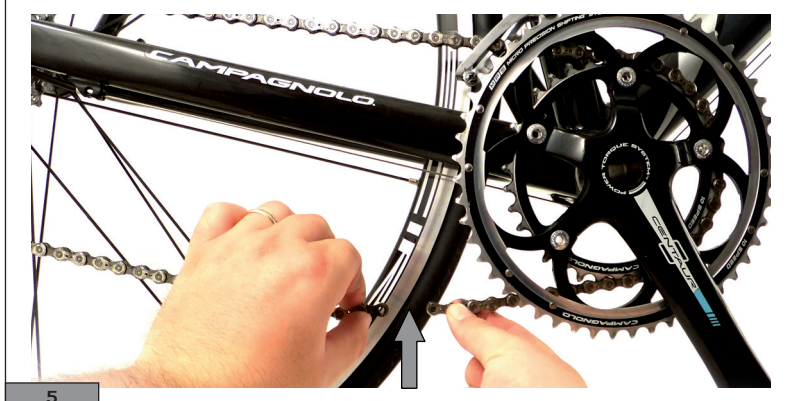


- tighten the tool until the small pin emerges completely from the hole in the link (Fig. 4).



- 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.

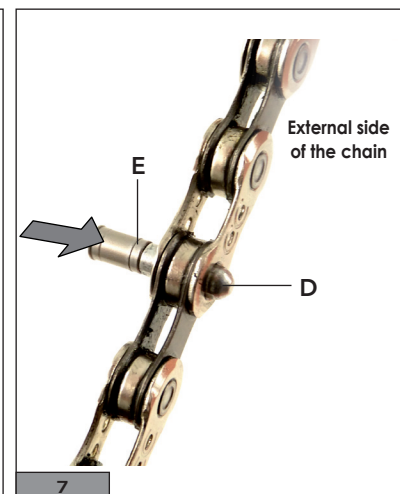
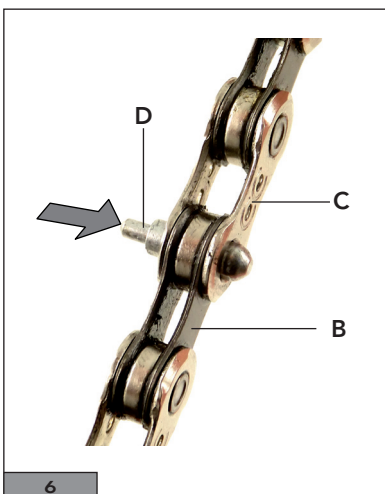


- Fit the internal link (B - Fig. 6) into the external link (C - Fig. 6), then fit the small guide pin (D - Fig. 6) in the link hole **from inside the chain towards the outside**.

- 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).

#### Note

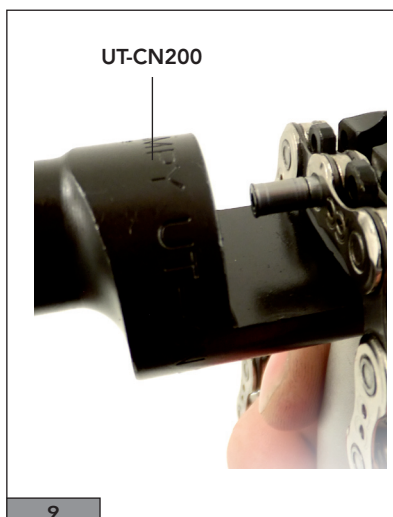
Only one of the two holes in the small pin (E) can be used for coupling with the small guide pin (D).



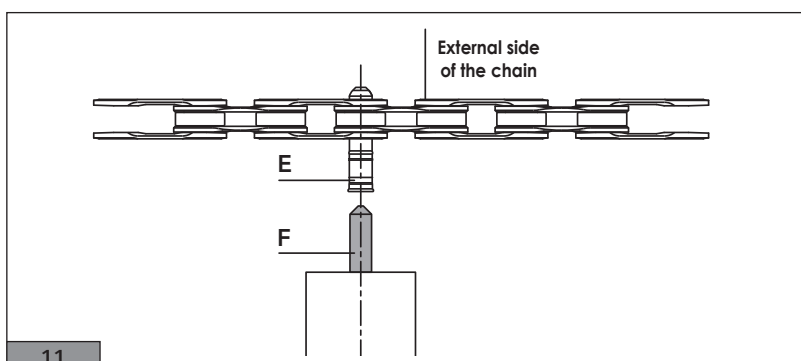
- Position the tool **UT-CN200** as shown in Fig. 8 - 8.1.



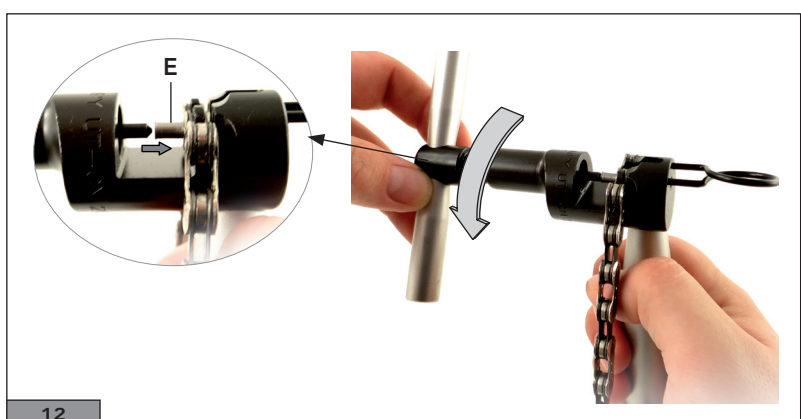
- Unscrew tool **UT-CN200**, then fit the link to be closed in the relative seats (Fig. 9).
- Clamp the link with the special clamping device (A) (Fig. 10).



- 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).



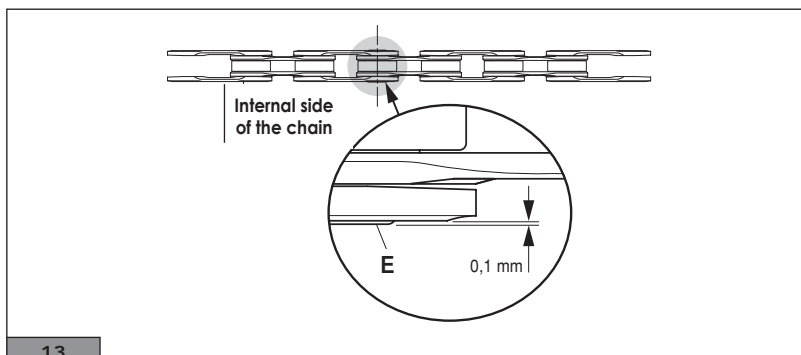
- Apply uniform force to tighten the tool (Fig. 12) until the small pin (E) completely enters the hole in the link.



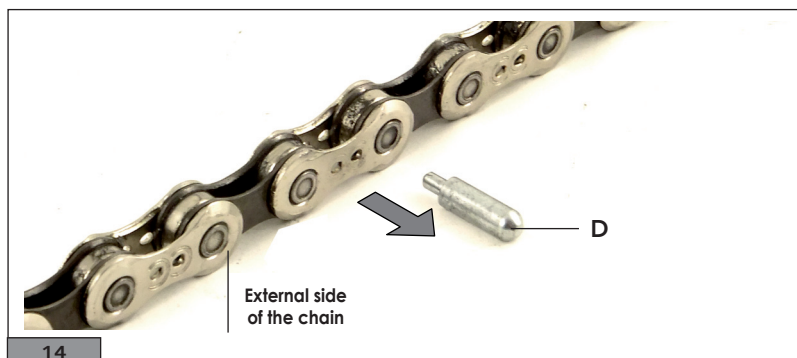
#### Note

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.

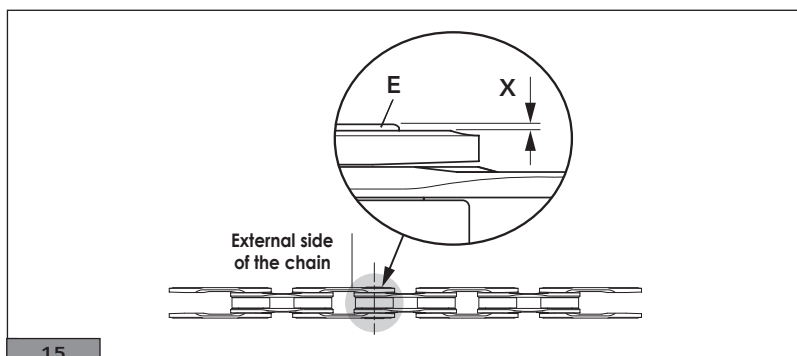


- Slide the small guide pin (D) out of the link (Fig. 14).



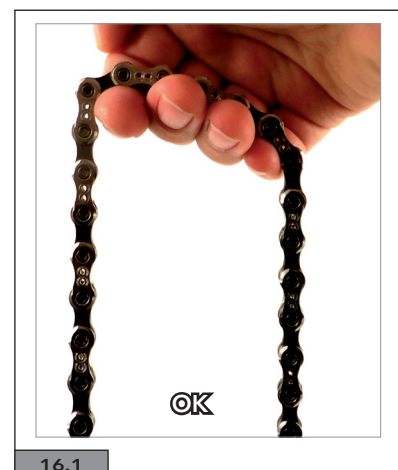
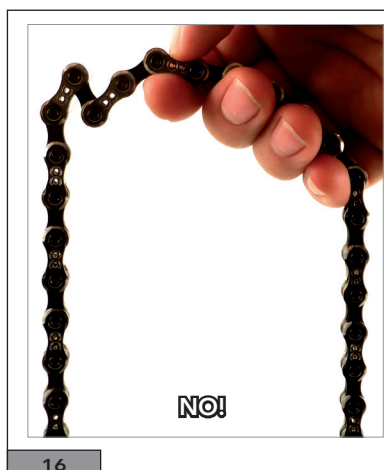
- The slight protrusion (X) (towards the external side of the chain) of the small pin (E) from the link (Fig. 15) is entirely normal and does not obstruct normal chain movement.

**NEVER try to eliminate this protrusion!**

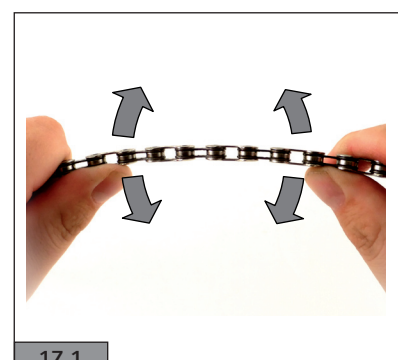
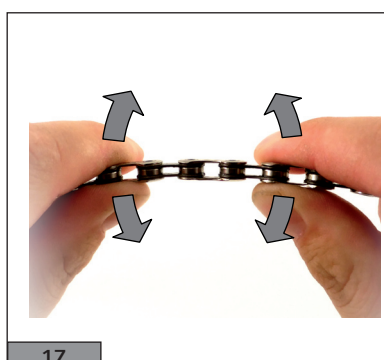


- Make sure that chain closure does not present any "harsh points" or links that do not bend freely (Fig. 16 - 16.1).

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



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

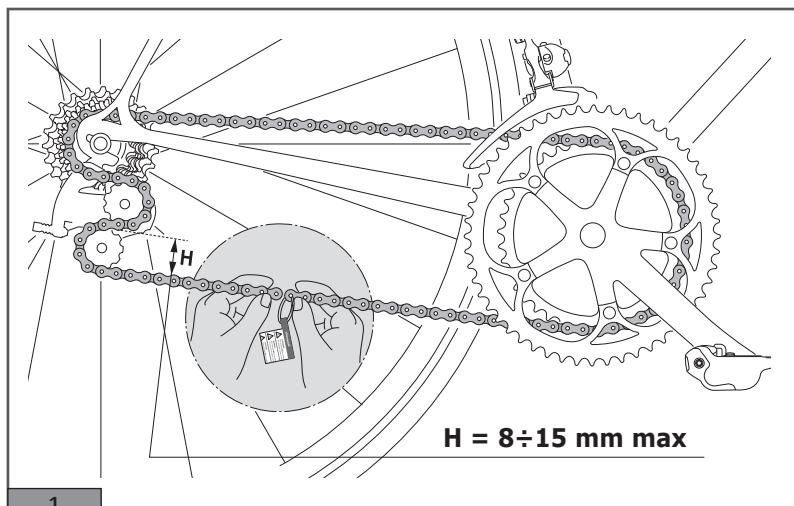
- Determine the correct length of the chain by putting it onto the smallest sprocket and chainring and check that the dimension H (Fig. 1) does not exceed 8-15 mm.

- 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.

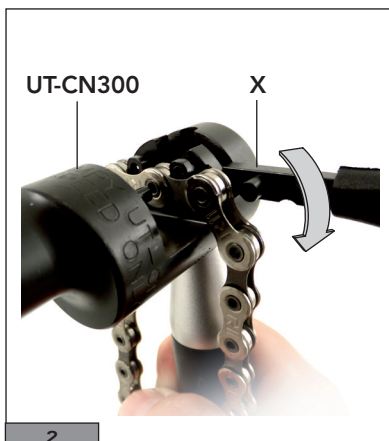


### 4.1.1 - To open the chain

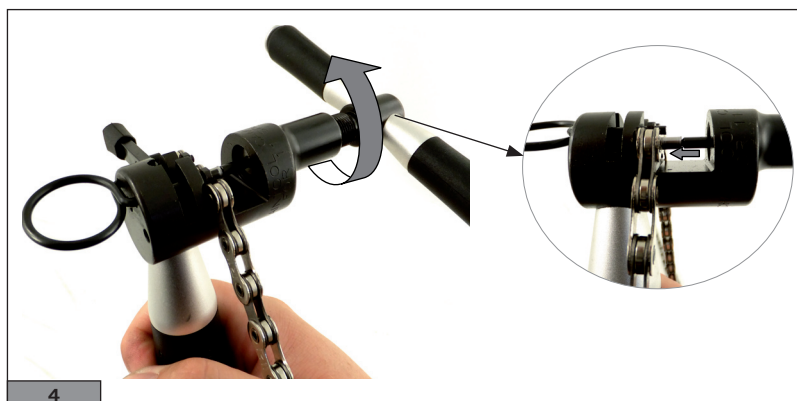
- Prepare the tool **UT-CN300** by positioning the tongue in open mode (X - Fig. 2)

- 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)

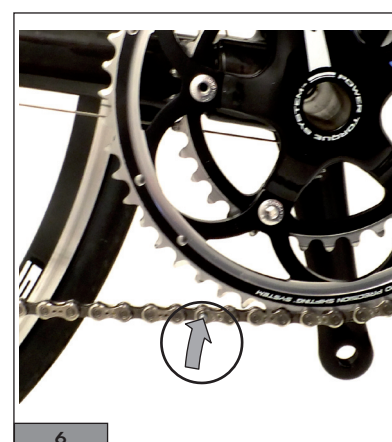
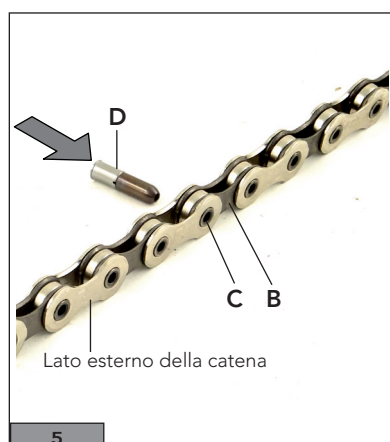


- Tighten the tool until the small pin emerges completely from the hole in the link (Fig. 4).



#### 4.1.2 - Inserting the bushing Ultra-Link CN-RE500

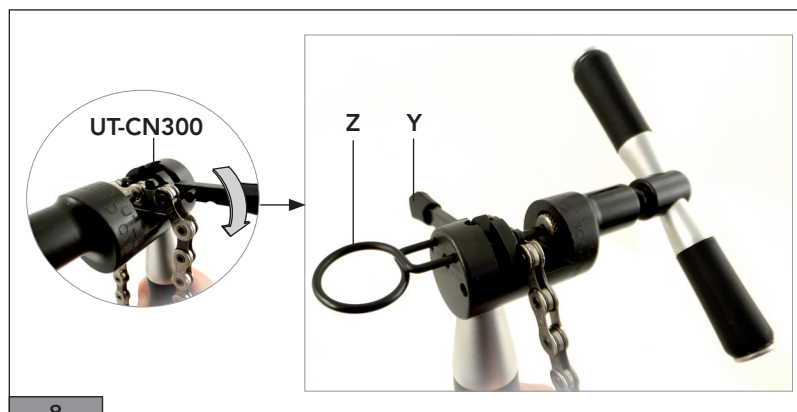
- Remove the plastic band and the adhesive "Warning" label.
- To install the closing pin ULTRA-LINK CN-RE500, place the chain on the bottom bracket shell.
- Insert the inner link (B - Fig. 5) into the outer link (C - Fig. 5), and then insert the guide of the rivet **ULTRA-LINK CN-RE500** (D - Fig. 5) 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.



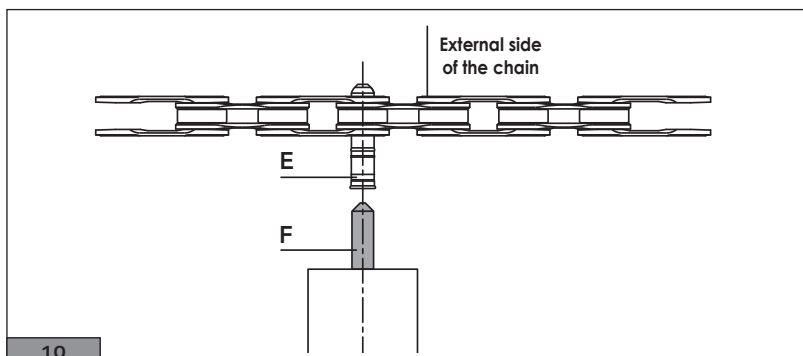
- Unscrew tool **UT-CN300** Fig. 7.
- Position the tool **UT-CN300** as shown in Fig. 8.



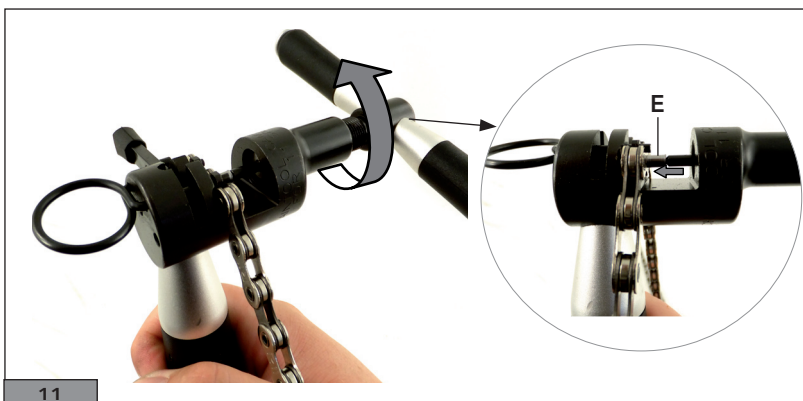
- Fit the link to be closed in the relative seats (Fig. 9).
- Clamp the link with the special clamping device (Z - Fig. 9).
- Check that the tongue of tool **UT-CN300** is in the external position (Y - Fig. 9).



- 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).

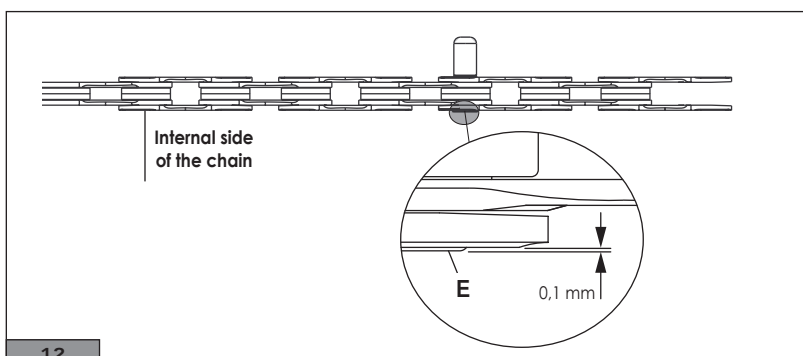


- While exerting a uniform force, screw in the tool (Fig. 11) so that the rivet **ULTRA-LINK CN-RE500** (E) has completely entered the thickness of the chain.



#### 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).

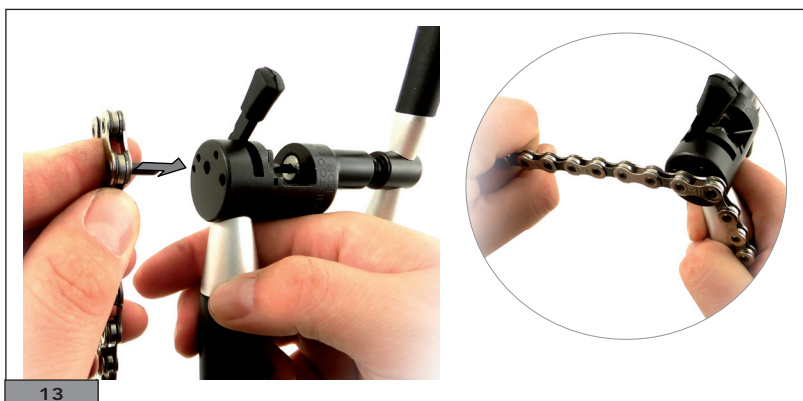


- Insert the protruding part of the guide into the hole provided at the base of the tool and split it by bending (Fig. 13).

#### 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.



### 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).

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

- Insert the link to close into the provided seats (Fig. 16).

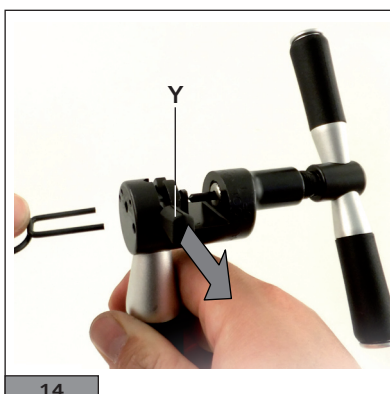
- Lock the link by means of the special locking device (Z - Fig. 17).

- Check that the tapered tip of the pusher is in line with the centre of the rivet **ULTRA-LINK CN-RE500** (Fig. 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  $\frac{3}{4}$  of a turn and exerting moderate force till distorted (Fig. 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!**



14



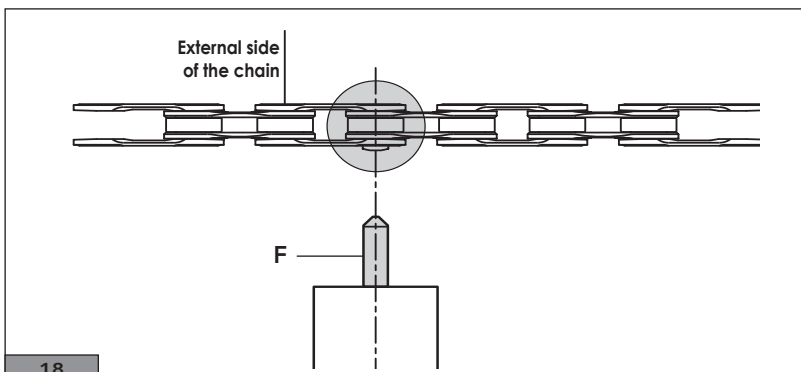
15



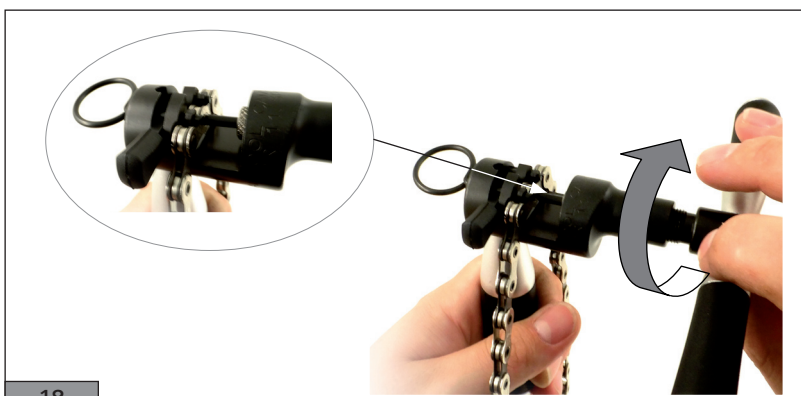
16



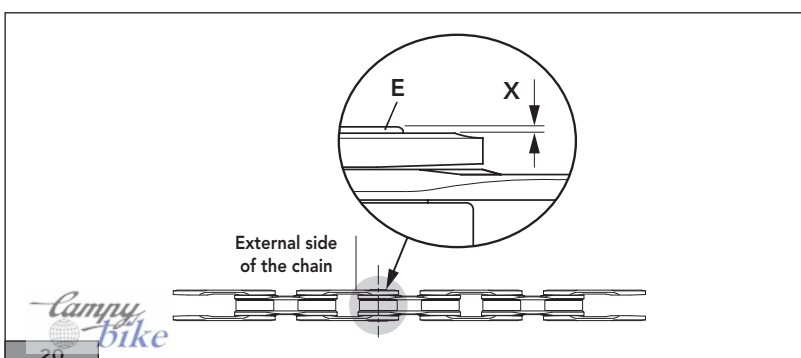
17



18

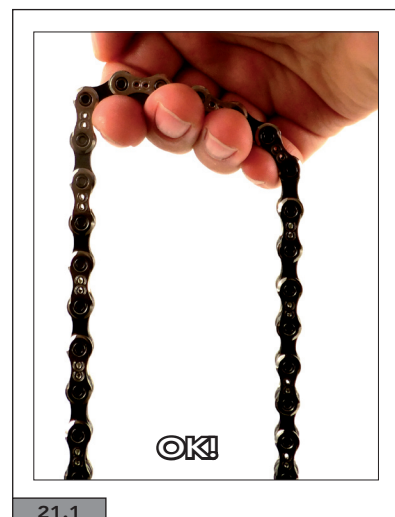
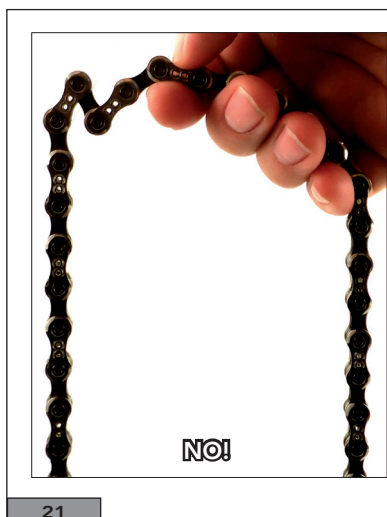


19

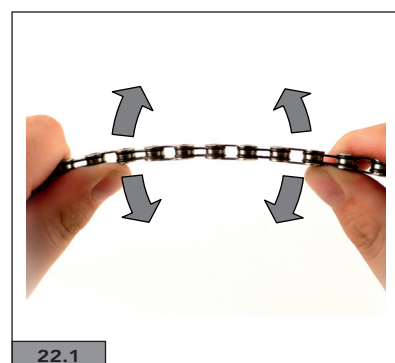
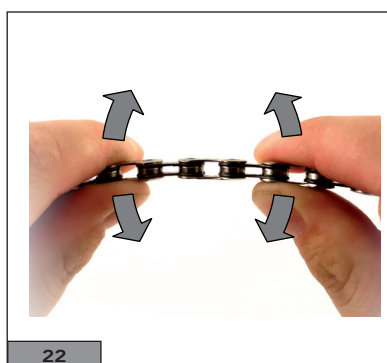


20

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



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

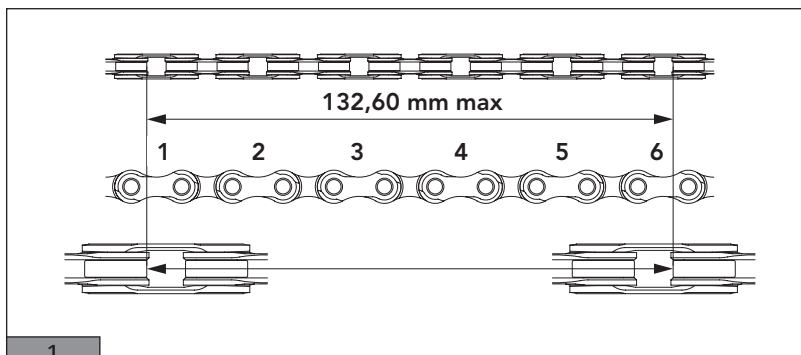
**Salt water environments (as found on winter roads and near the seaside) can cause galvanic corrosion on most bike parts. Carefully rinse, clean, dry and re-lubricate all exposed parts to avoid damage, malfunctions and accidents.**

## 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.

# ! WARNING!

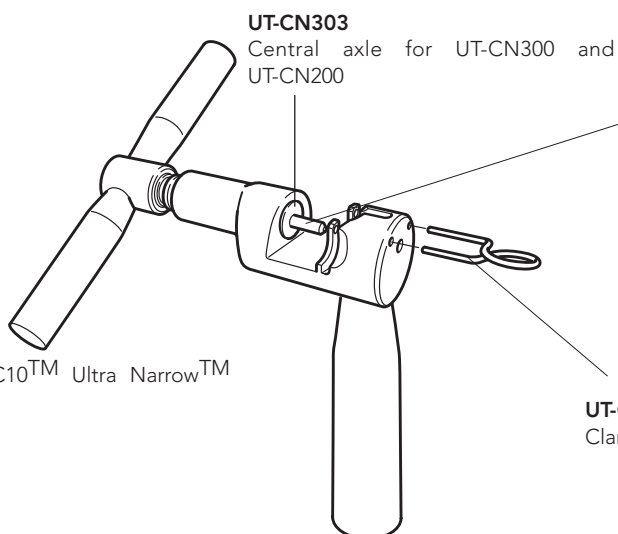
**Failure to timely replace the chain can result in unexpected chain failure while riding, resulting in an accident, personal injury or death.**



## 6 - SPARE PARTS

**10s  
CHAIN****CAMPY™ UT-CN200**

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

**UT-CN303**

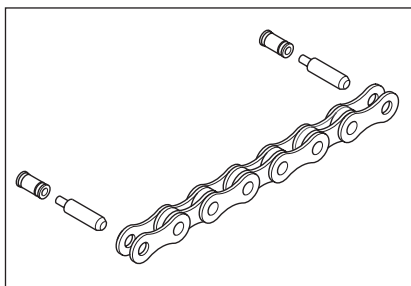
Central axle for UT-CN300 and UT-CN200

**UT-CN301**

Pusher for UT-CN300 and UT-CN200

**UT-CN202**

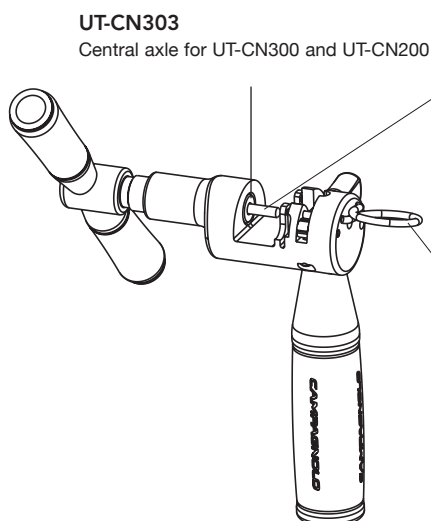
Clamping device for UT-CN200

**CN-RE400**

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

**11<sup>TM</sup>  
SPEED  
CHAIN****UT-CN300**

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

**UT-CN303**

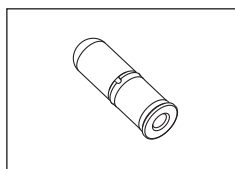
Central axle for UT-CN300 and UT-CN200

**UT-CN301**

Pusher for UT-CN300 and UT-CN200

**UT-CN302**

Clamping device for UT-CN300

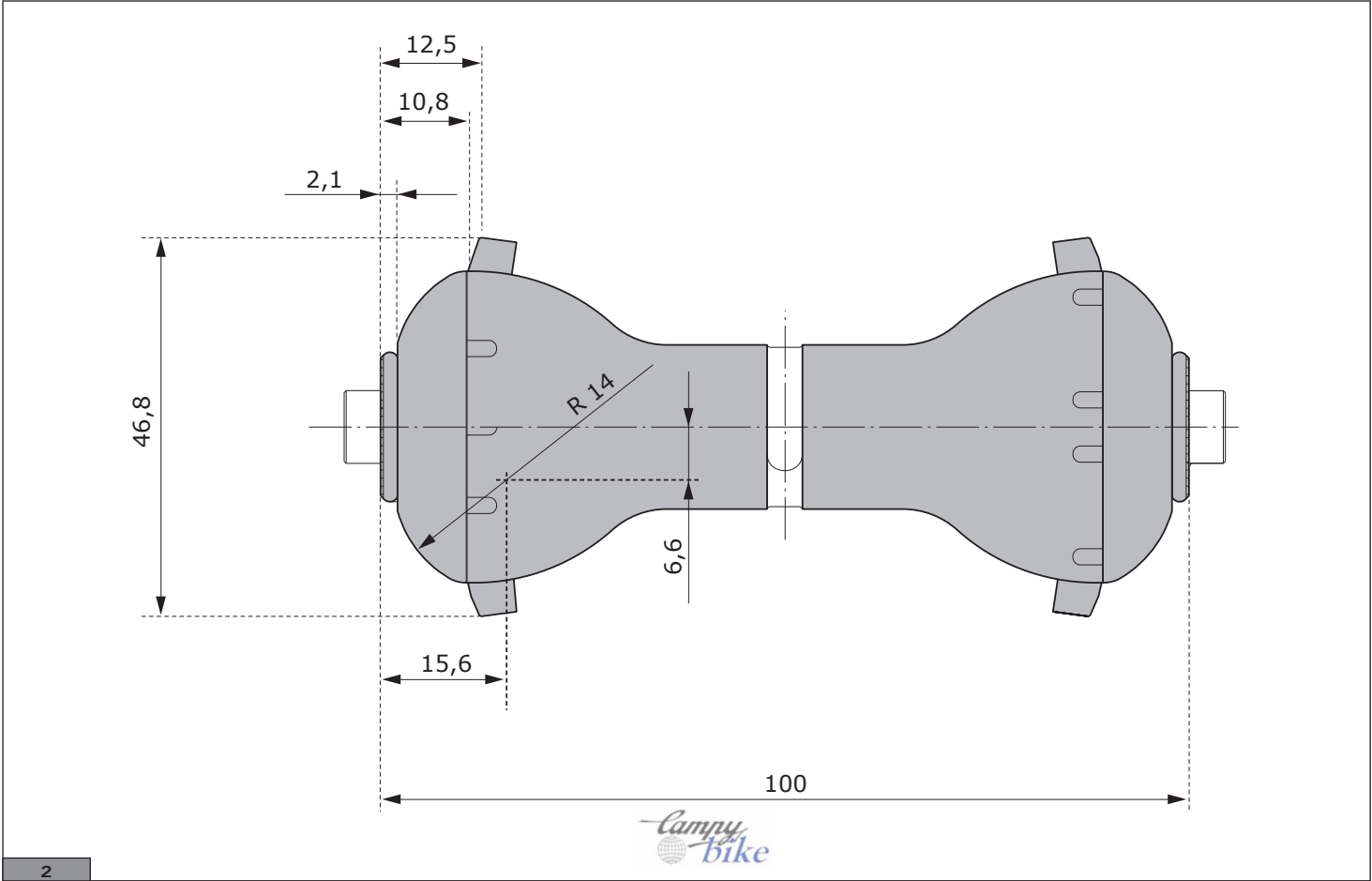
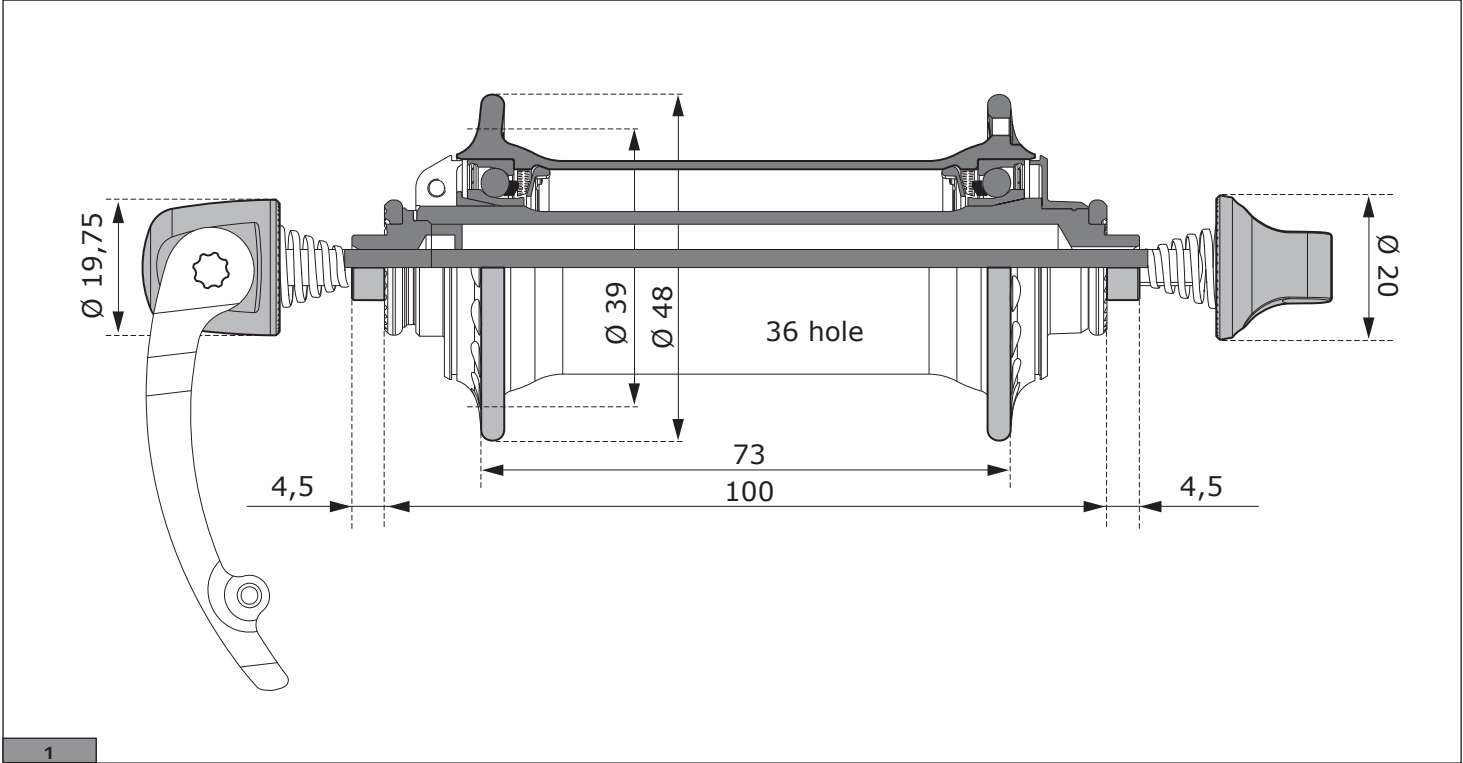
**5-CN-RE500**

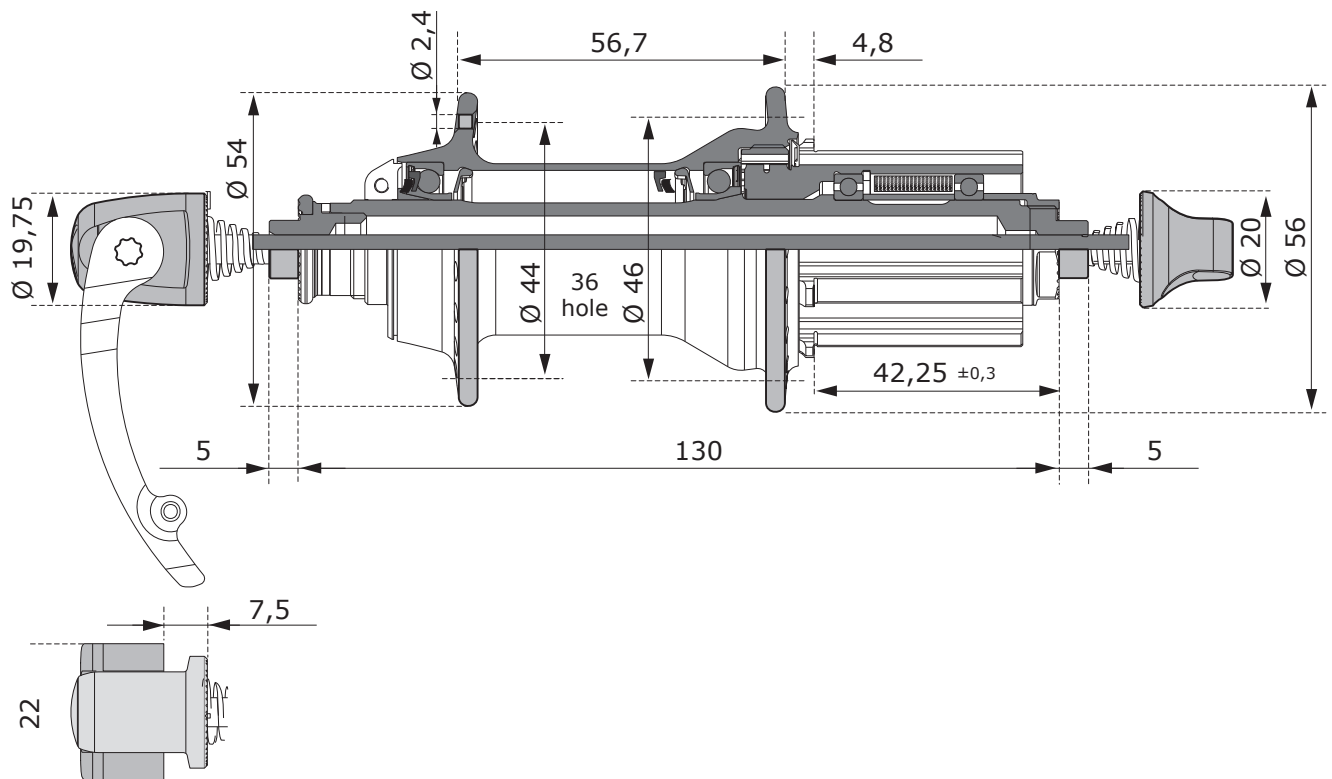
Ultra-Link™ for 11s chains only (5 pcs)

# HUBS

## 1 - TECHNICAL SPECIFICATIONS / INTERFACE WITH THE FRAME

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




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


# PRO FIT•PLUS PEDALS


## 1 - TECHNICAL SPECIFICATIONS

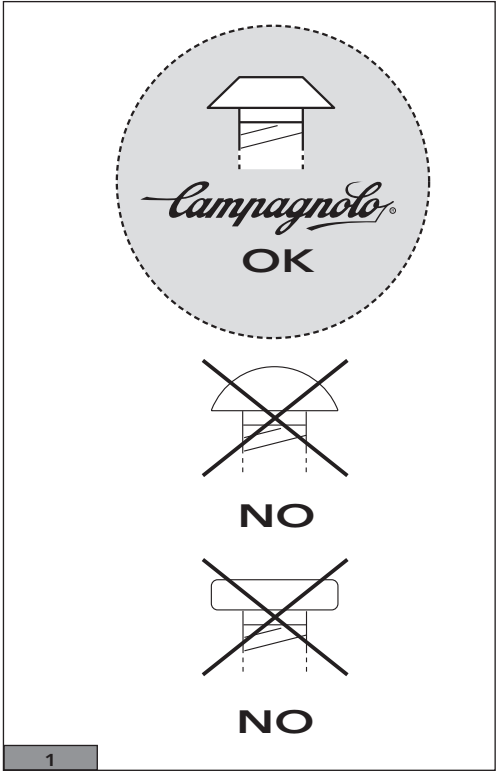
RIGHT PEDAL AXLE	LEFT PEDAL AXLE	AXLE THREADS
R	L	9/16 x 20 TPI

## 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.



## 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.

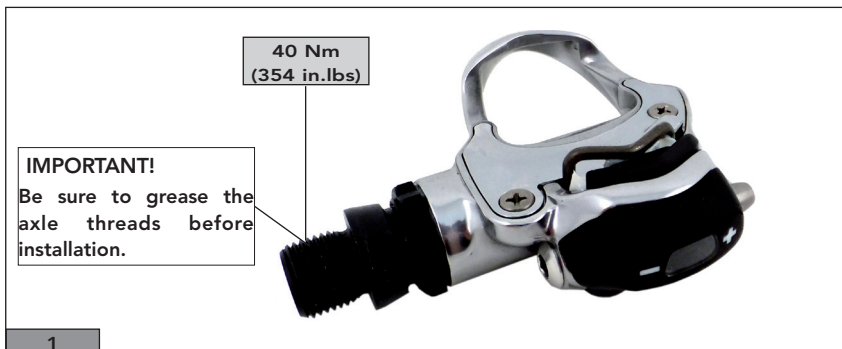
**IMPORTANT!**  
Campagnolo® Pro•Fit PLUS™ clipless pedals have 9/16" x 20 TPI threaded axles.  
The right pedal axle is marked with the letter "R", while the left pedal axle is marked with an "L".  
The right pedal will thread into the crankarm clockwise and the left pedal counter-clockwise.

## 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.

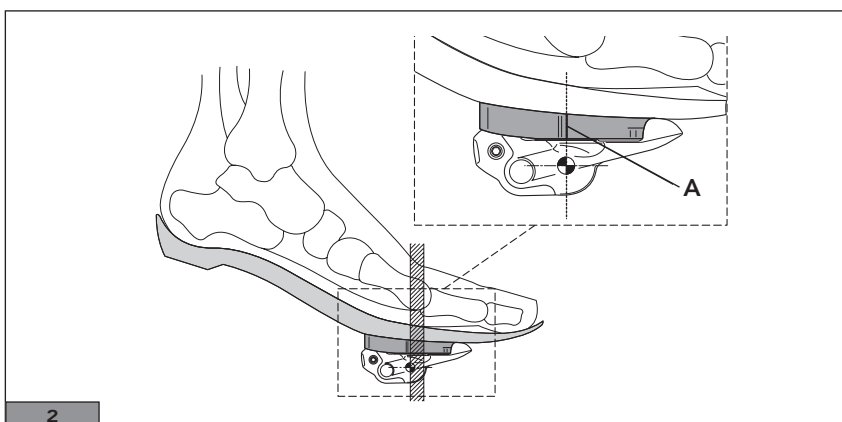
The pedals must be tightened to a torque of **40 Nm (354 in.lbs)**.



### 4.2 - CLEAT INSTALLATION

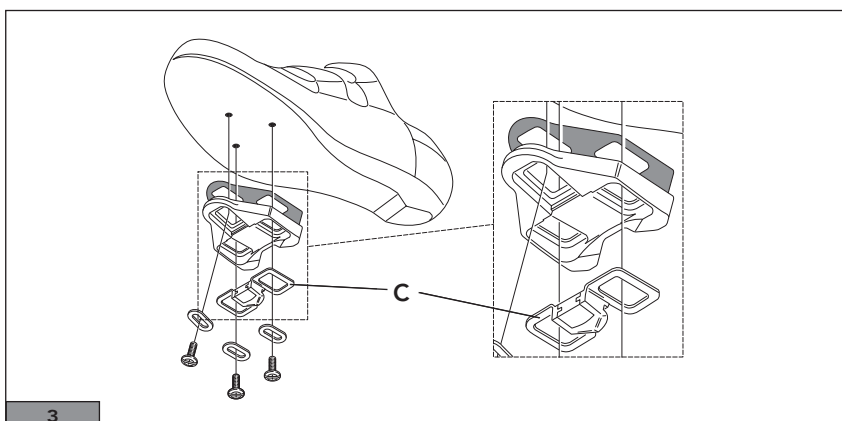
Campagnolo® Pro-Fit PLUS™ pedals are sold with cleats that provide lateral float. Correct alignment of the cleats will permit lateral movement without the feeling of being restricted on either side.

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).

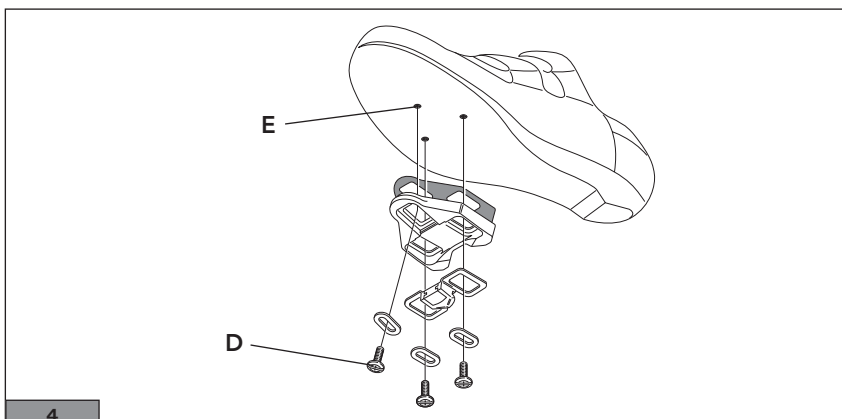


In order to make fore-aft positioning of the cleats easier, there are lines (A - Fig. 2) located on the sides of the cleats which correspond with the center of the pedal axle.

- 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.



- 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 lengths. Select the screw length 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.**

- 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.

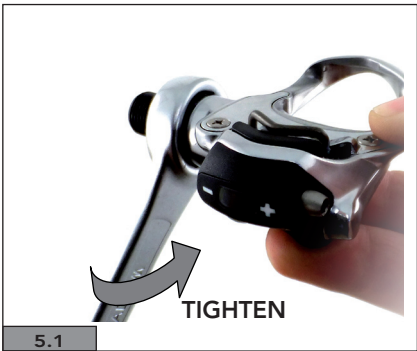
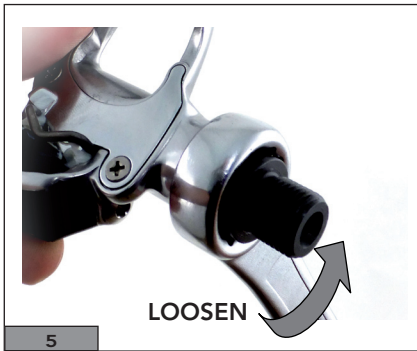
**! WARNING!**

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

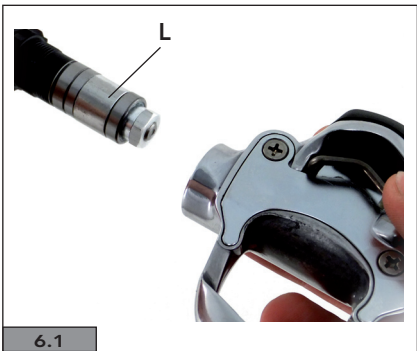
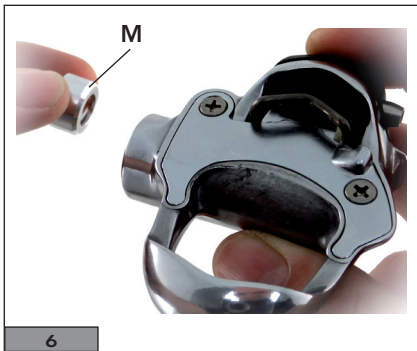
**4.3.2 - Removing and installing cartridges into pedal body**

- 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.

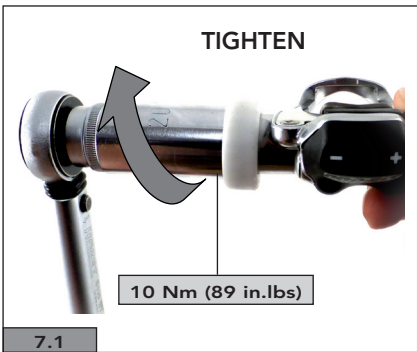
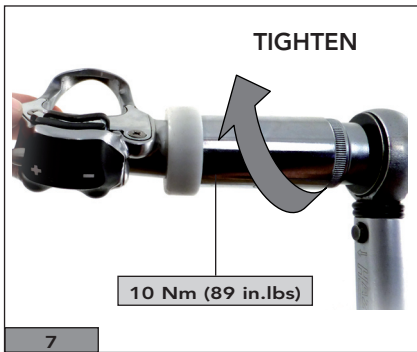


- Make sure the alloy bushing (M - Fig. 6) is in place at the inner end of the cartridge shaft.
- Insert the cartridge (L - Fig. 6.1) until the cartridge nut threads meet the pedal body threads.

- 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

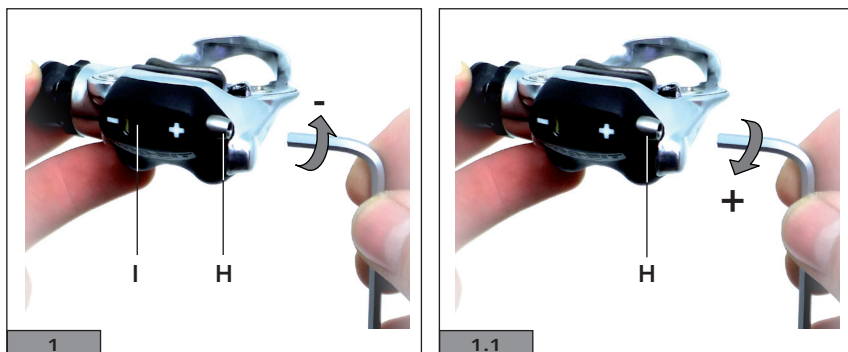
### ⚠ WARNING!

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 adjustment 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 adjustment 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 engaging 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.

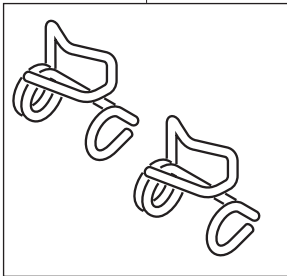
• **The life of the components depends on conditions of use and on the frequency and quality of maintenance. To keep the components in good condition, cleaning and lubrication must therefore be repeated frequently, especially if it is subjected to heavy-duty use (i.e. after washing your bicycle, after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

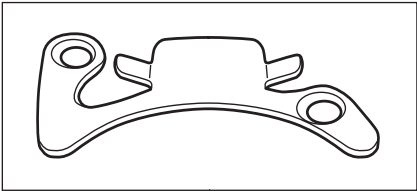
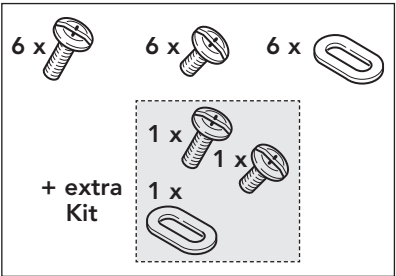
6 - SPARE PARTS

**PRO-FIT™ /  
PRO-FIT PLUS™**

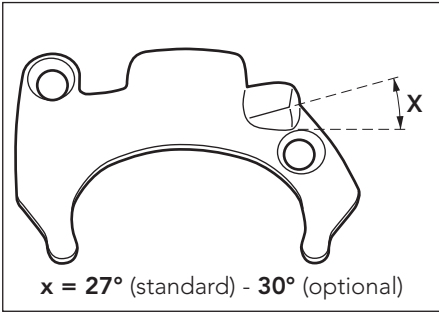
R + L: PD-RE105



PD-RE116



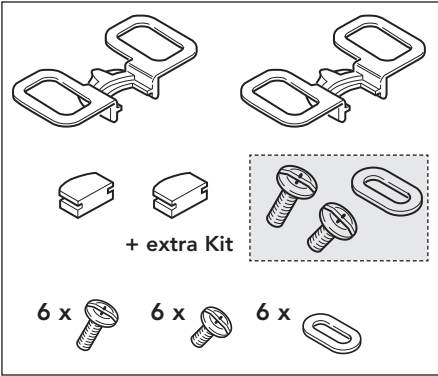
**PRO-FIT™  
PD-RE111**



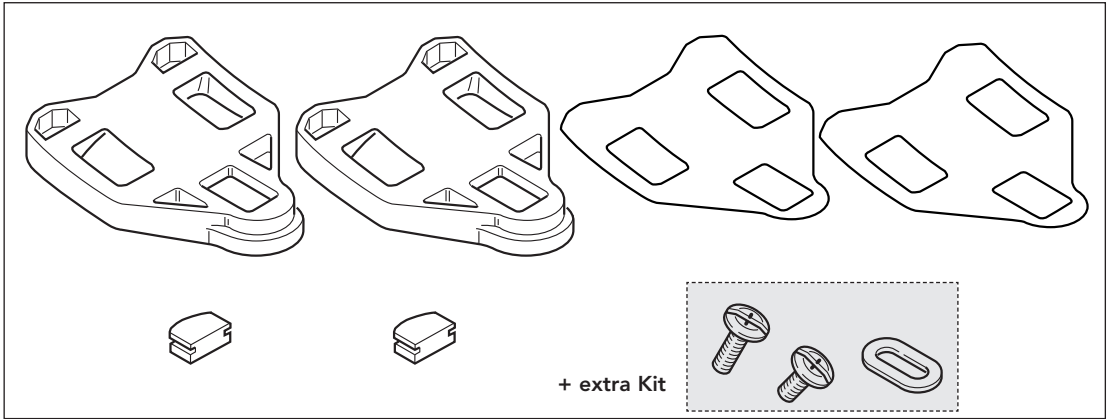
x = 27° (standard) - 30° (optional)

**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

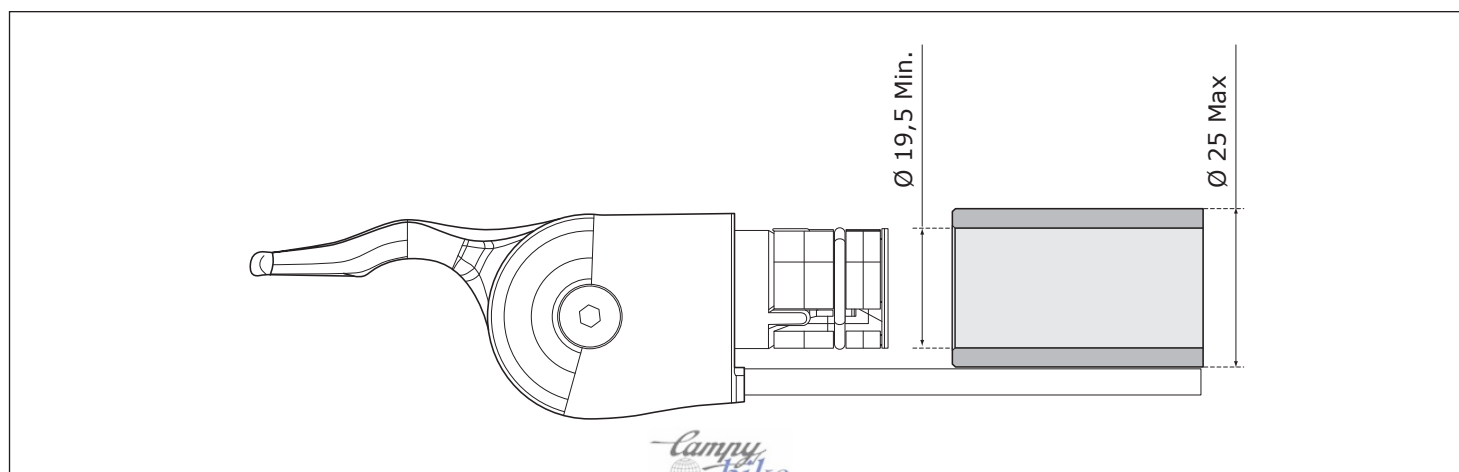
## 2 - COMPATIBILITY

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

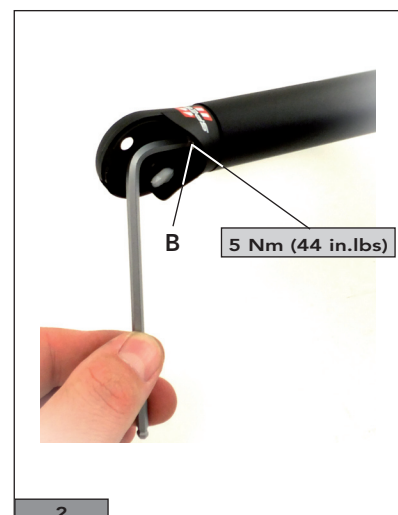
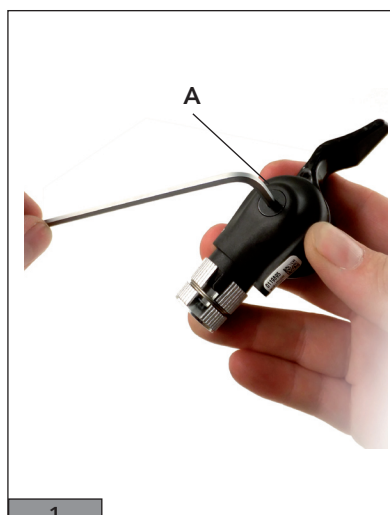
### WARNING

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)**.

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



### 4.1.1 - Tilt adjustment

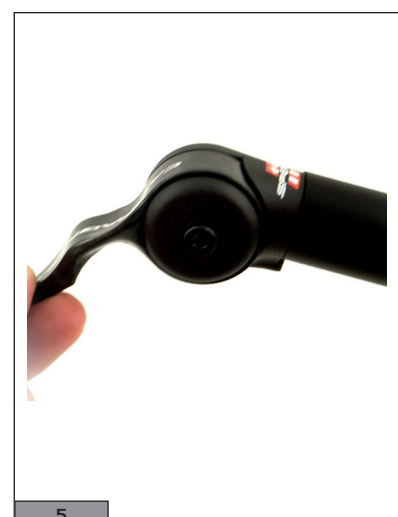
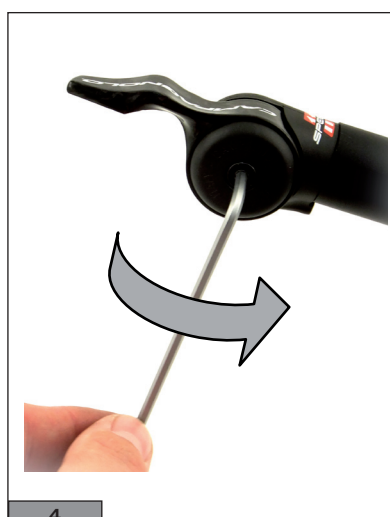
The Campagnolo BAR END controls let you change gear starting from the most aerodynamic position. After changing, the lever returns automatically to the "central" starting position.

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).

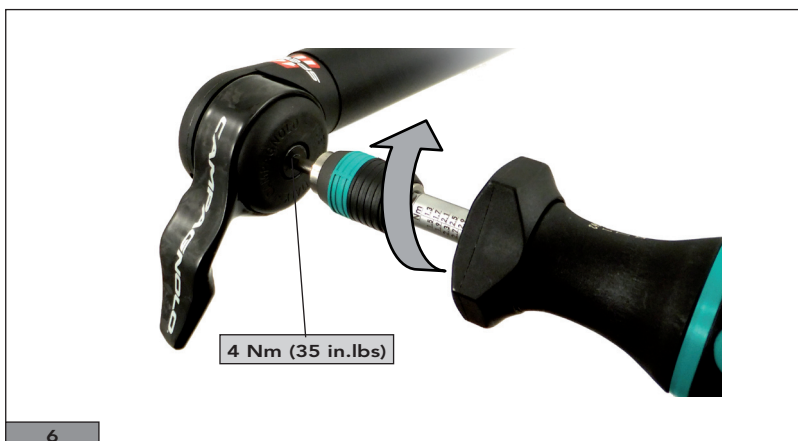
### ⚠ WARNING!

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



- 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)**.



## 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.

### 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

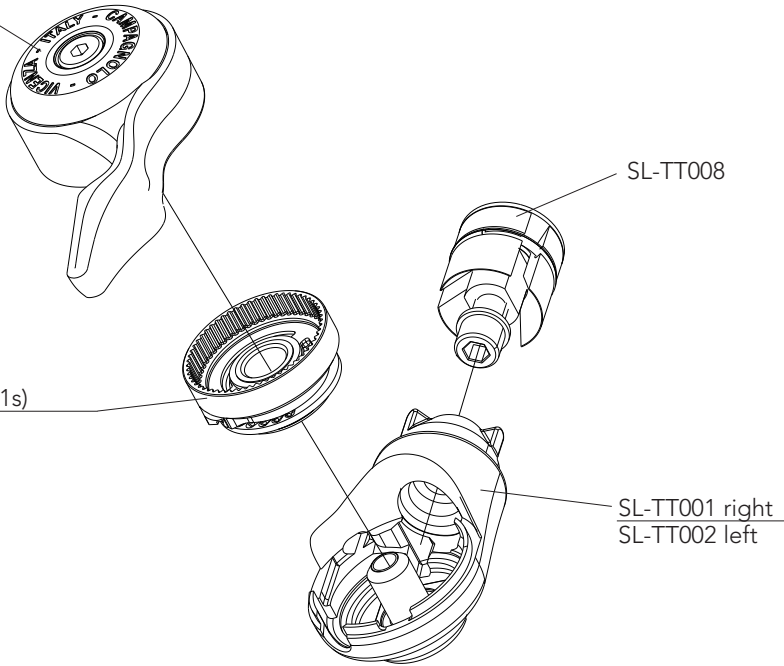
**BAR-END TT**

- 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

R: SL-TT003 (A) - SL-TT003C (C)  
L: SL-TT004 (A) - SL-TT004C (C)

R: SL-TT005 (10s) - SL-TT007 (11s)  
L: SL-TT006



# 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.

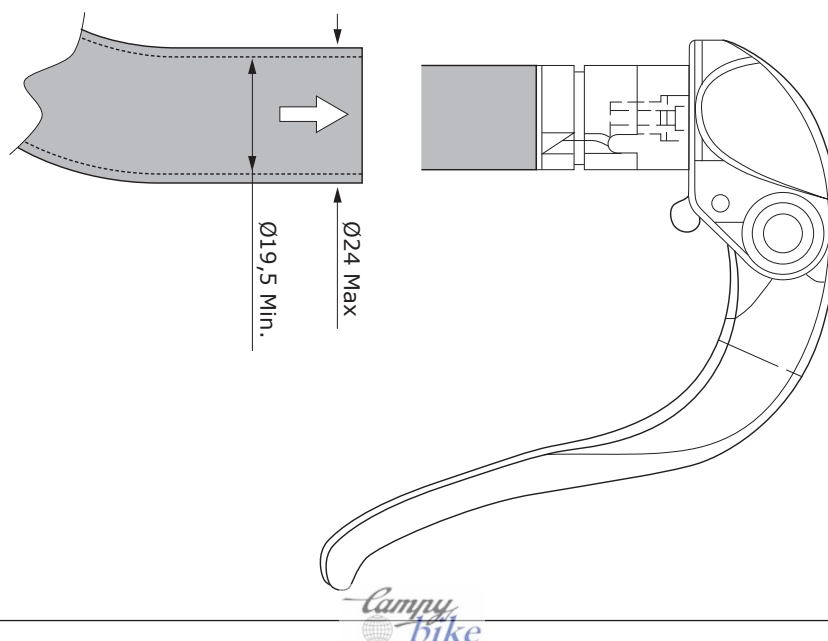
Carbon fiber time trial handlebar with aluminium inserts where the brakes are installed.

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.

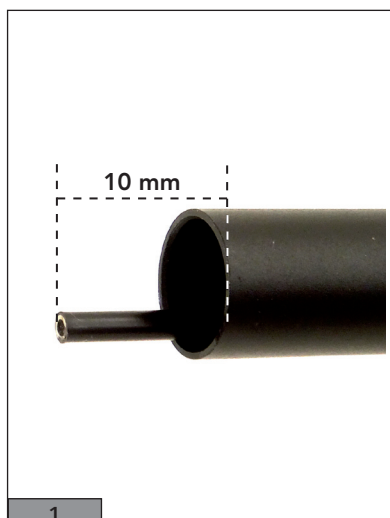
To cut the casings we suggest you to use the specific tool Park Tool CN-10.

- 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.

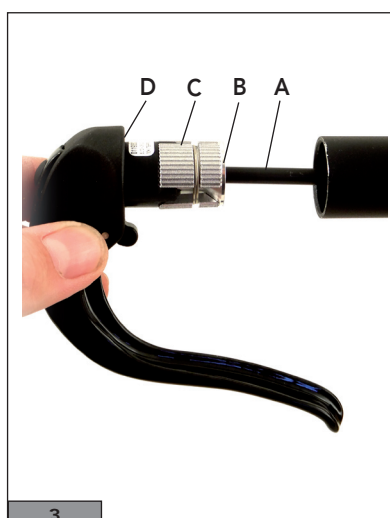
- Insert the expanding part (C – Fig. 3) of the lever into the handlebar bringing it level with the face (D – Fig. 3).
- Fix the lever with a 4 mm Allen key, tightening the screw (E – Fig. 4) fitted inside the lever itself, at **6-8 Nm (53 - 71 in. lbs)**.



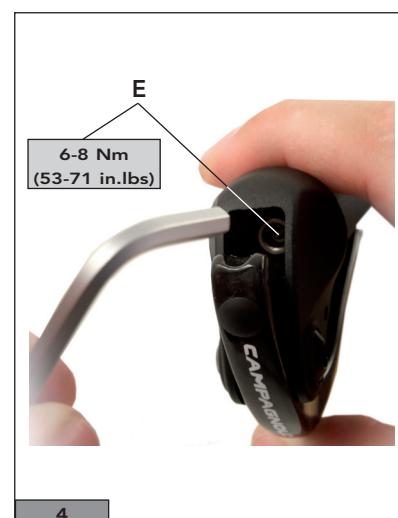
1



2



3



4

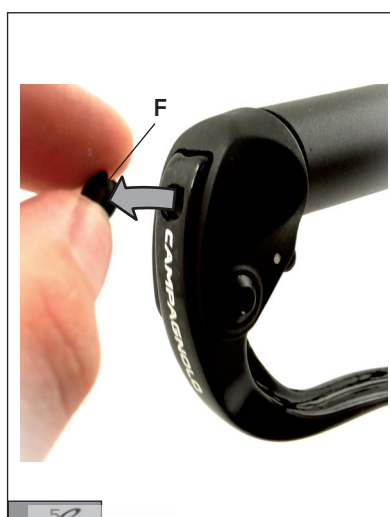
If a carbon fibre handlebar is used, it might be necessary to reduce the tightening torque in order not to damage the handlebar. Contact the manufacturer of the bike and of the handlebar to get all the necessary information on the correct tightening torques.

### 4.2 - ASSEMBLING AND FITTING THE CABLE

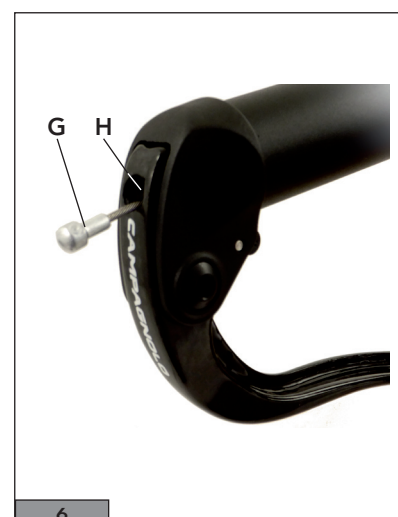
- Remove rubber cap (F – Fig. 5) from the front of the brake lever.

- 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.



5

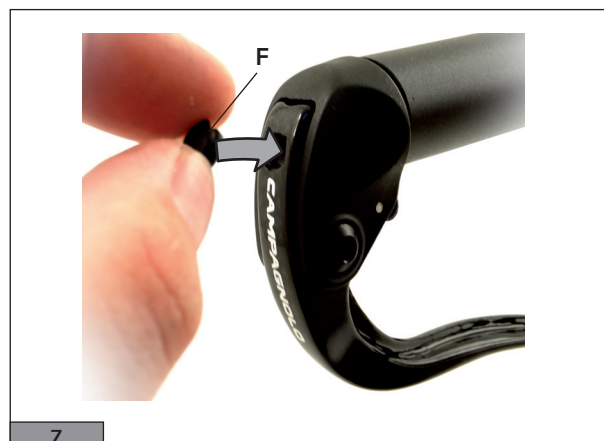


6

- 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.

If the bike is used in competitions, the cables and housings 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 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)

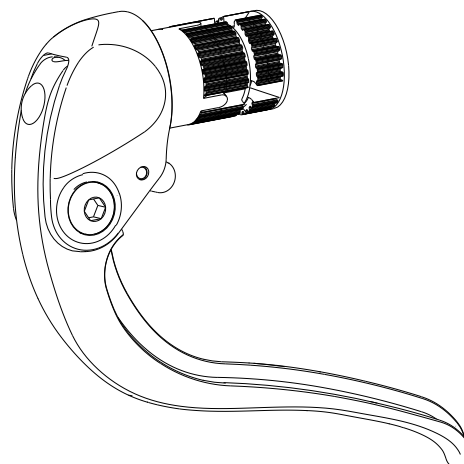
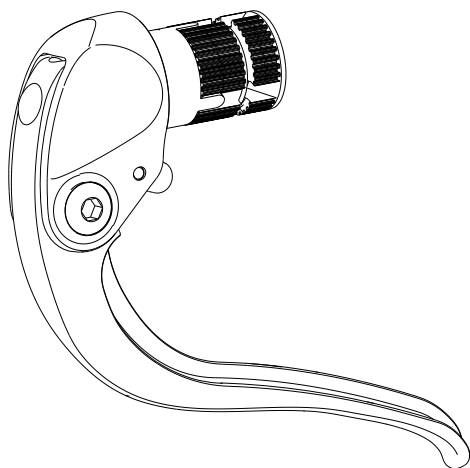
BL12-TTCGC (carbon)

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)



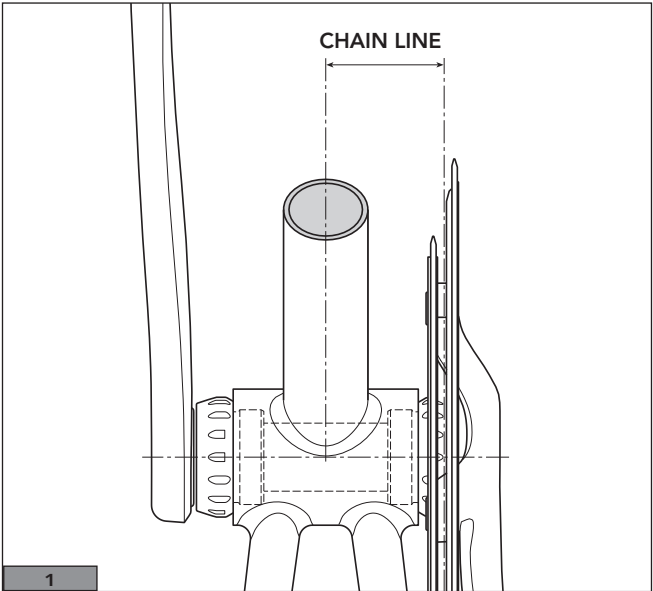
# CX CRANKSET

## 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 DERAILEUR	FRONT DERAILEUR
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.

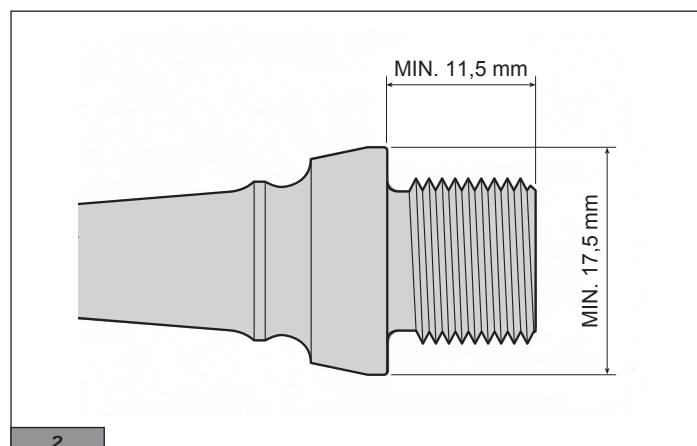
### ⚠ WARNING!

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).

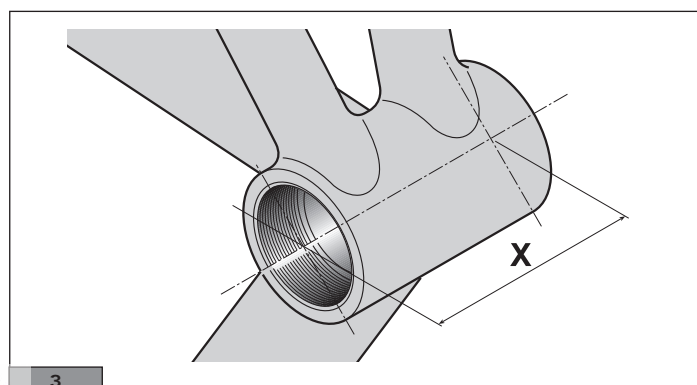


## 3 - INTERFACE WITH THE FRAME

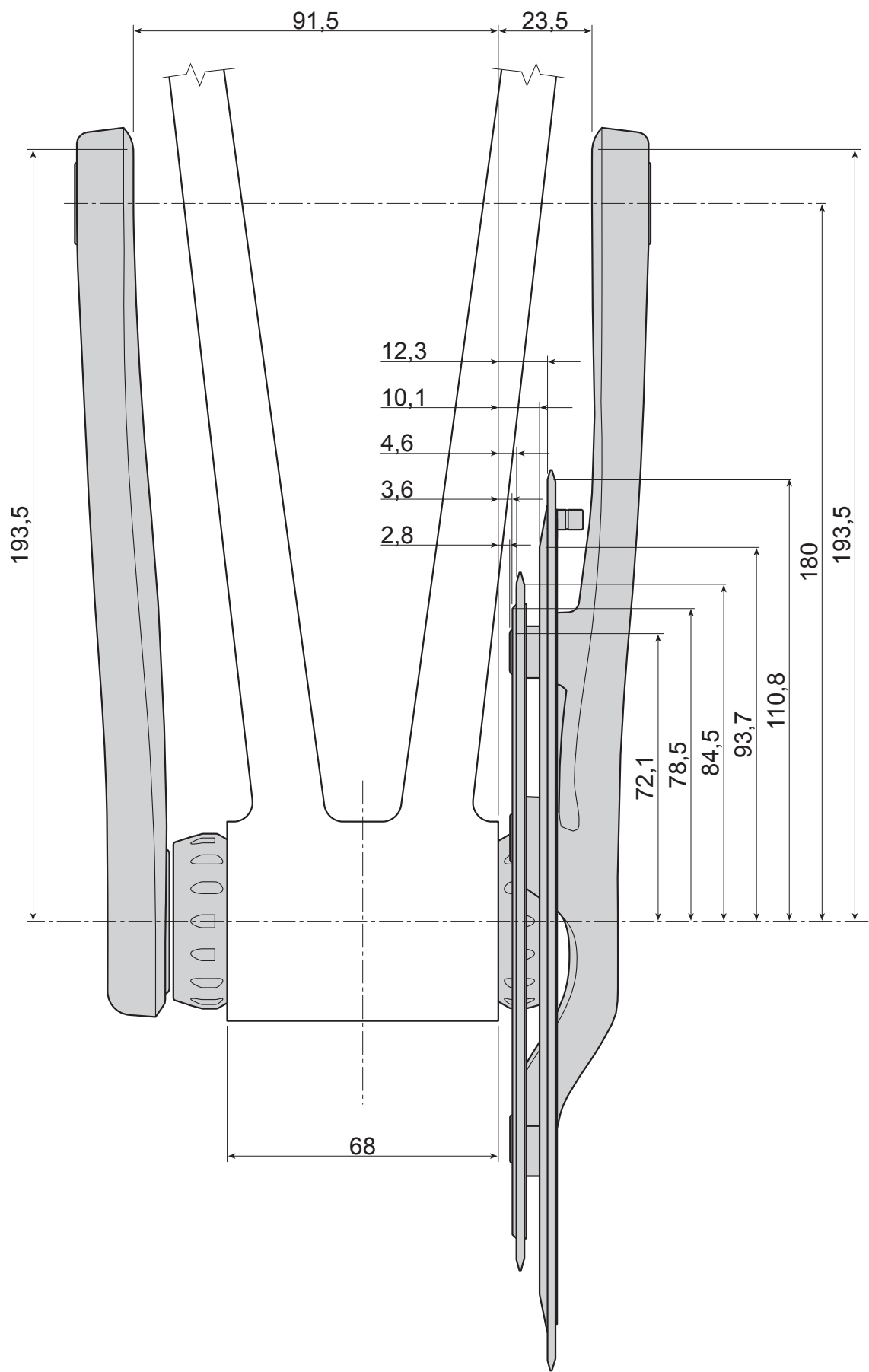
### 3.1 - COMPATIBILITY WITH BOTTOM BRACKET SHELLS

- 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



3.2 - DIMENSIONS FOR CX CRANKSETS

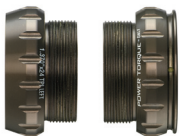


## 4 - ASSEMBLY AND MAINTENANCE

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.

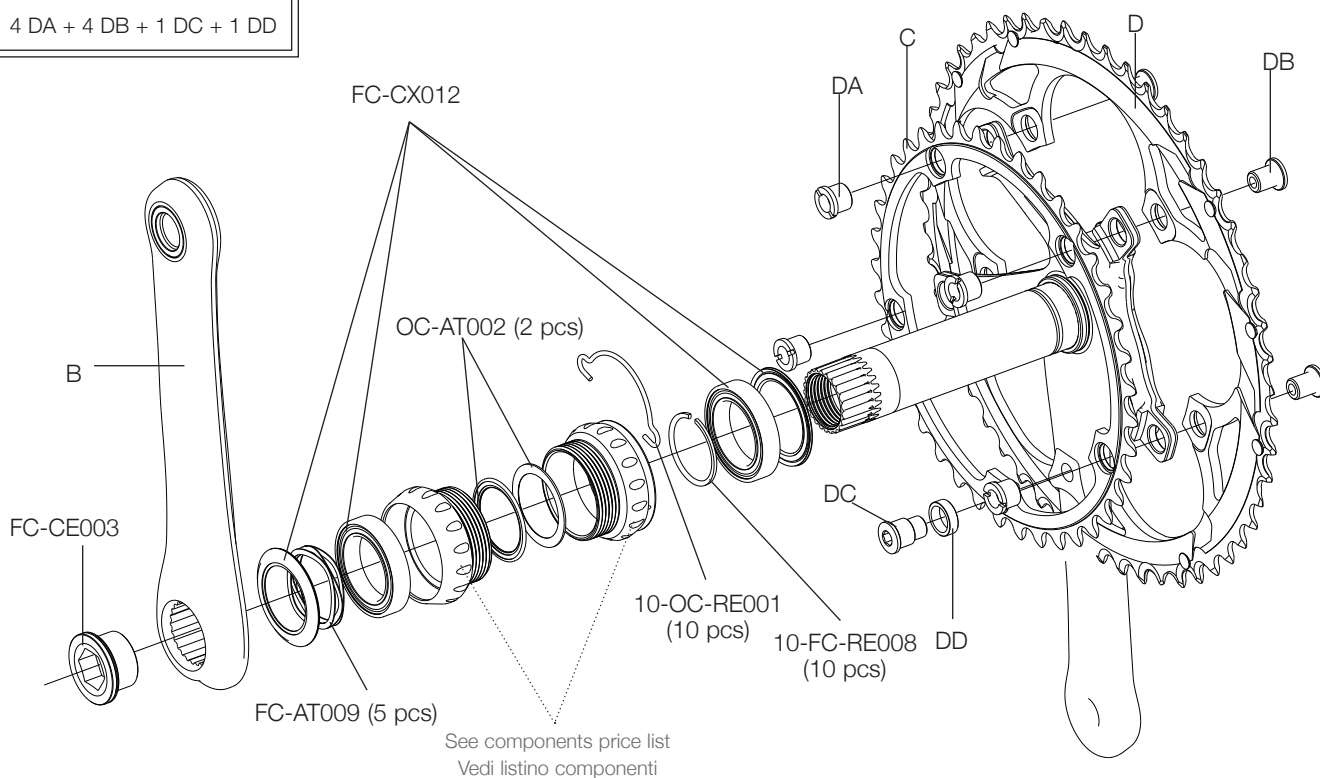
CRANKSET	Standard ITA	Standard ENG
		
		

## 5 - SPARE PARTS

**CX™ POWER-TORQUE™**  
**10s**  
**FC11-CXX...**

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

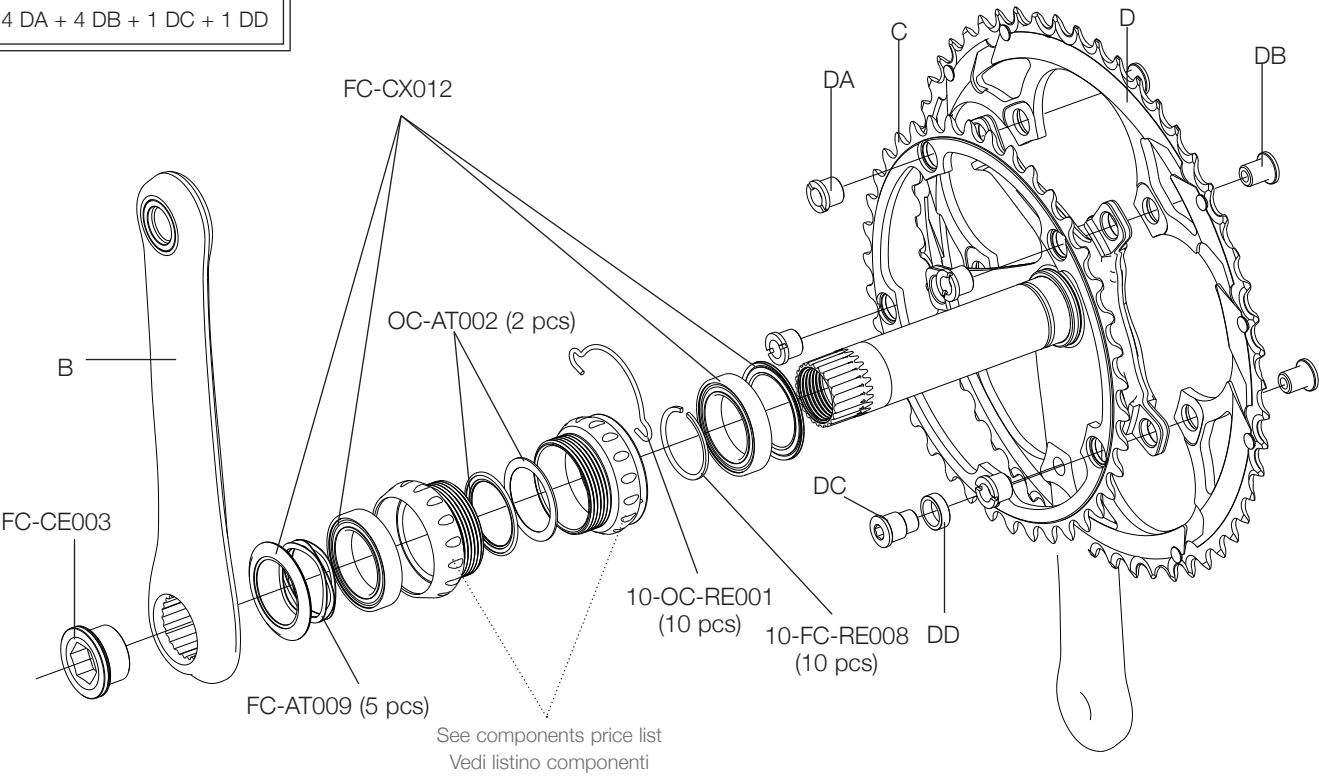
		CARBON	ALUMINIUM
B	170 mm	FC-CX799	FC-CX656
	172,5 mm	FC-CX801	FC-CX657
	175 mm	FC-CX803	FC-CX658
C	Z34	FC-CE334	FC-CX034
	Z36	FC-CX136	FC-CX036
D		FC-CX146	FC-CX046
		FC-CX150	FC-CX050



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



# 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

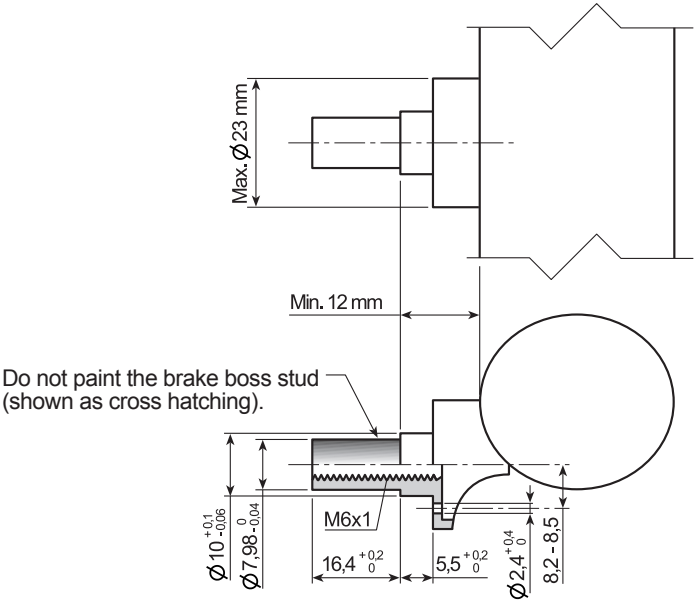
BRAKE PADS	COMPOSITE RIMS	ALUMINUM RIMS
BR-BO500X	<b>Only for composite rims.</b> The use of any other pad-rim combination could result in insufficient or uneven braking and lead to accidents, physical injury or death.	
BR-CX500		<b>Only for aluminium rims.</b> The use of any other pad-rim combination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



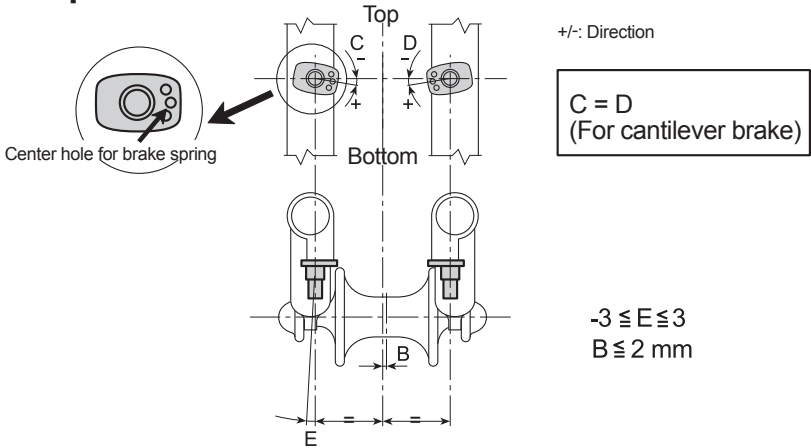
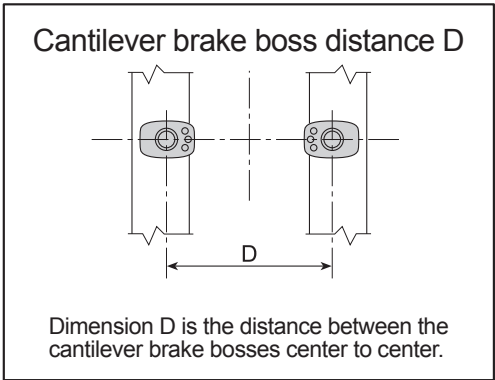
**WARNING!**

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

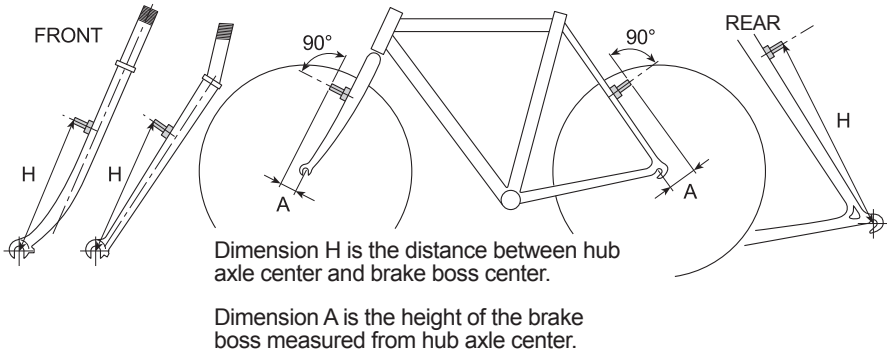
3 - INTERFACE WITH THE FRAME



Brake boss positions



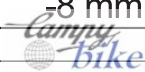
Frame mounting height for brake bosses



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

$H = 283 \pm 1$  mm

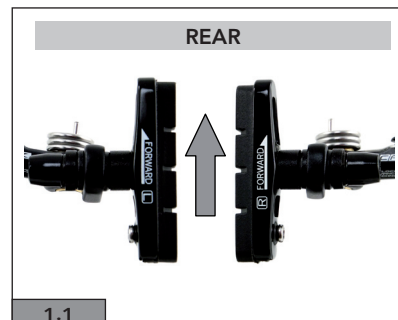
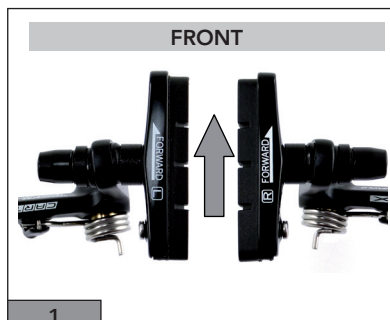
$-8$  mm  $\leq A \leq 70$  mm



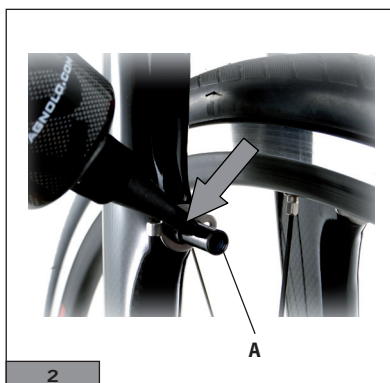
## 4 - ASSEMBLY

### 4.1 - BRAKE ASSEMBLY

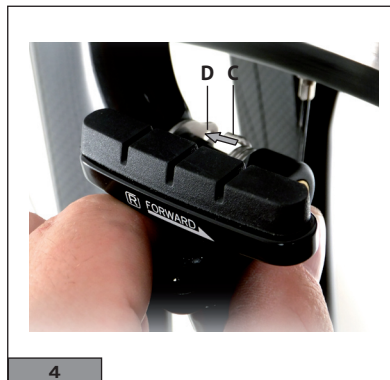
- Check the correct position of the pad holders in relation to the direction of the wheel rotation. (Fig. 1 / 1.1).



- Clean and grease the frame brake bosses (A – Fig. 2).
- Check that the springs (B – Fig. 3) are positioned correctly on the calipers.



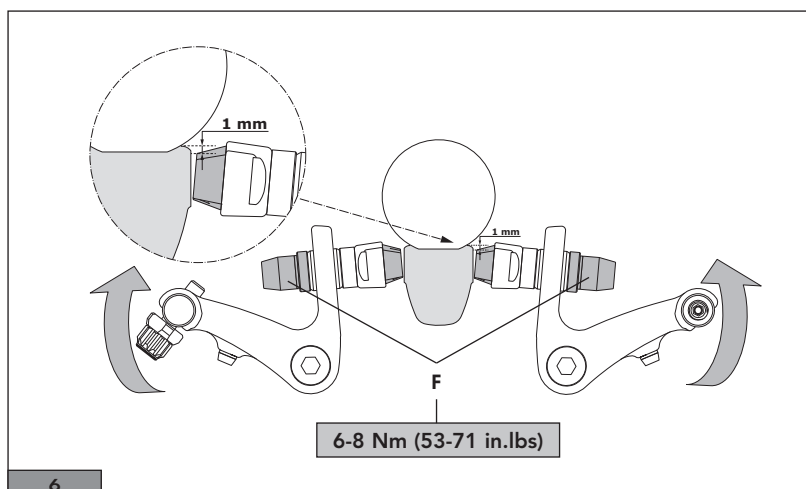
- Place the calipers on the bosses, inserting the spring end (C – Fig. 4) into the relative hole (D – Fig. 4).



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

#### 4.1.1 - Brake pad positioning

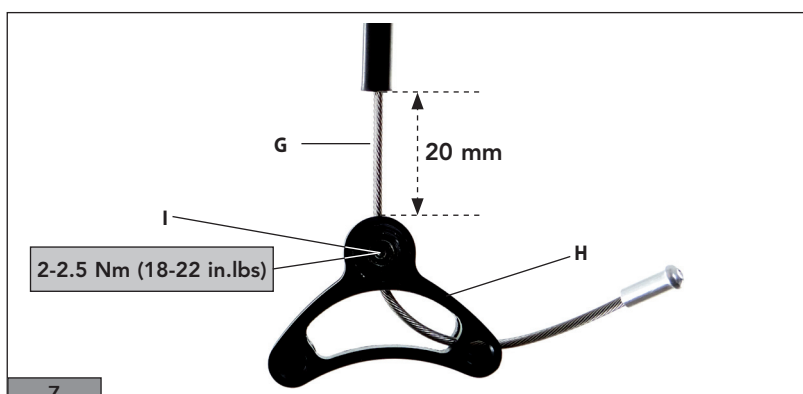
- Rotate the brake calipers so that the pads are in contact with the rim face (Fig. 6). The pad faces must be parallel to the rim surface.
- The pads must be central to the braking surface, so that there is at least 1mm from the edge of the rim (Fig. 6).
- Secure each brakeshoe by tightening each nut (F – Fig. 6) in at **6-8 Nm (53-71 in. lbs)**, using a 5 mm hexagonal key with spherical head.



### 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.



### ! WARNING!

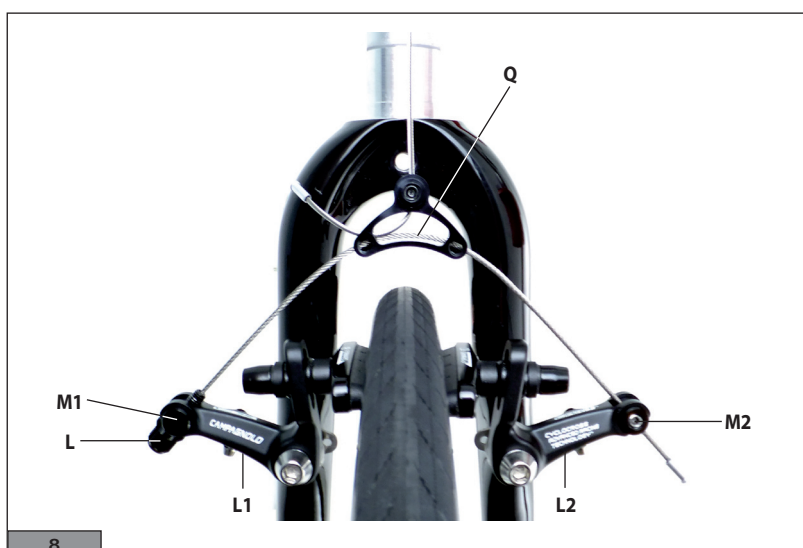
Please be sure that you tighten the cable sufficiently, without crushing the cable, so that it does not slip when brakes are applied. A loose or damaged cable can cause the brake system to malfunction resulting in an accident, personal injury or death.

### 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.



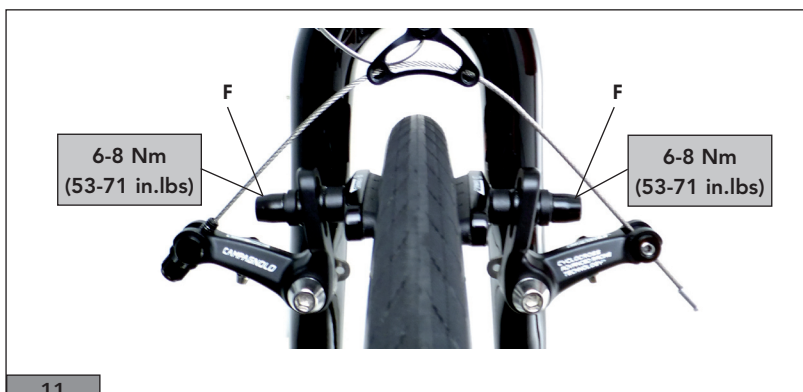
- Adjust the cable length operating the brake levers of the Ergopower control (Fig. 9).

- 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.



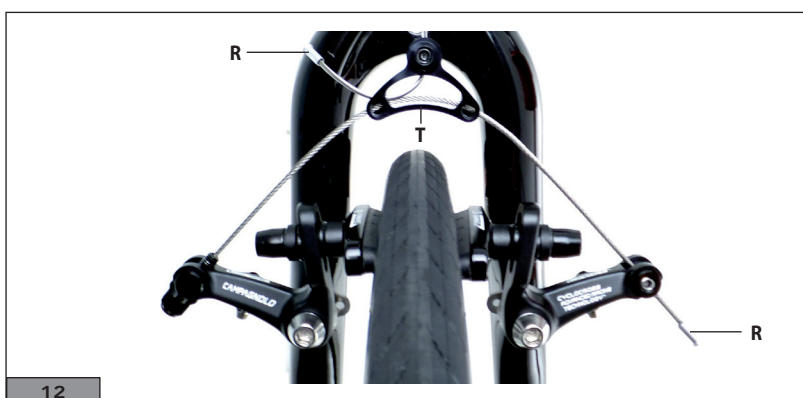
#### 4.1.4 - Fixing the pad holders

- 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).

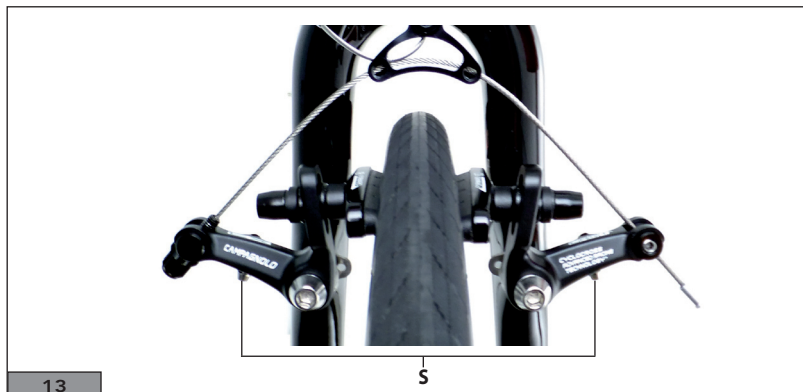


#### 4.1.5 - Final operations

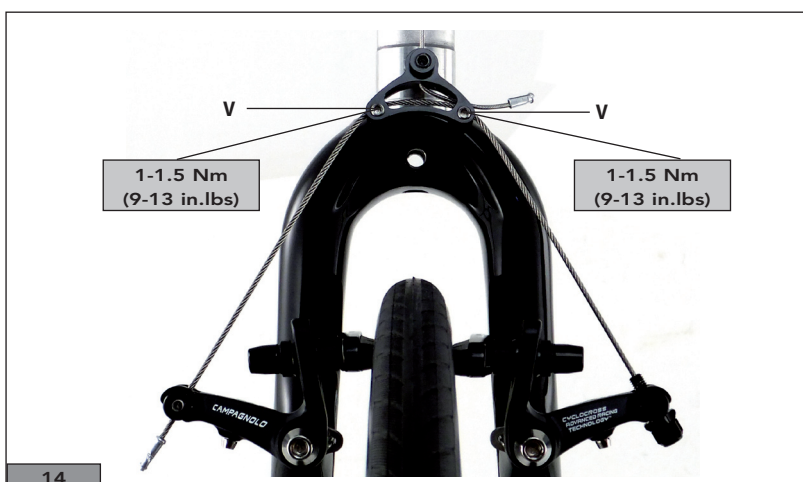
- Cut the cables for the central brake and for the triangle to the desired length.
- Insert and fix cables R at the ends (Fig. 12).



- 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.



- 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)**.



# 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.

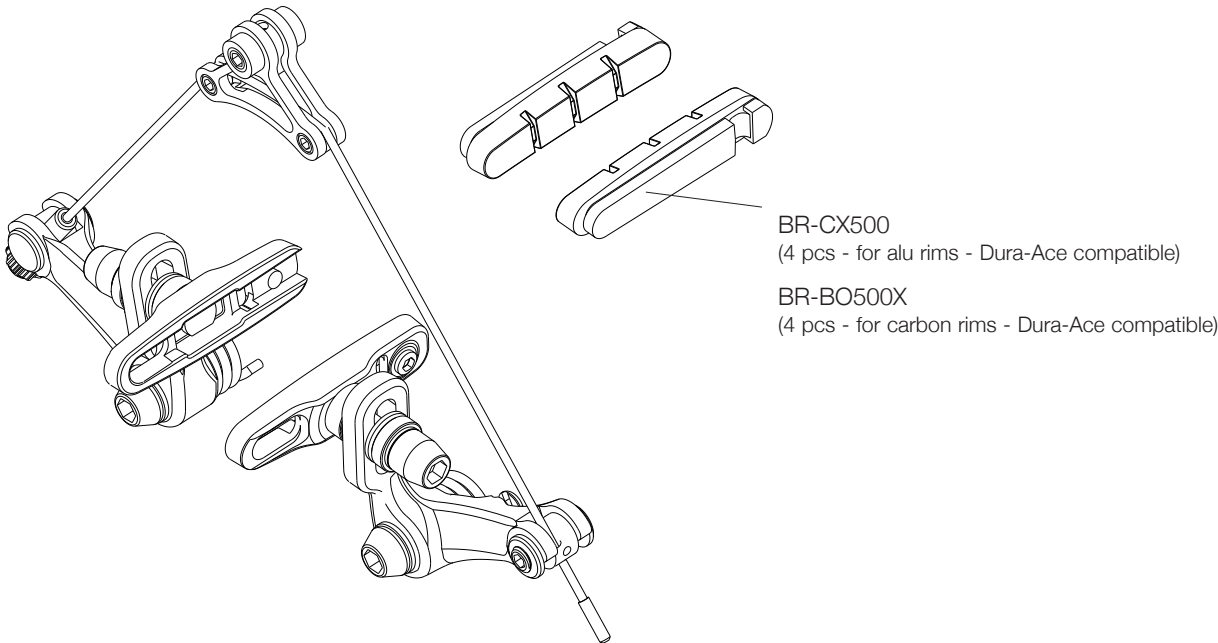
**NOTE**  
Never spray your bicycle with water under pressure. Pressurized water, even from the nozzle of a small garden hose, can pass seals and enter into your Campagnolo® components, damaging them beyond repair. Wash your bicycle and Campagnolo® components by wiping them down with water and neutral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



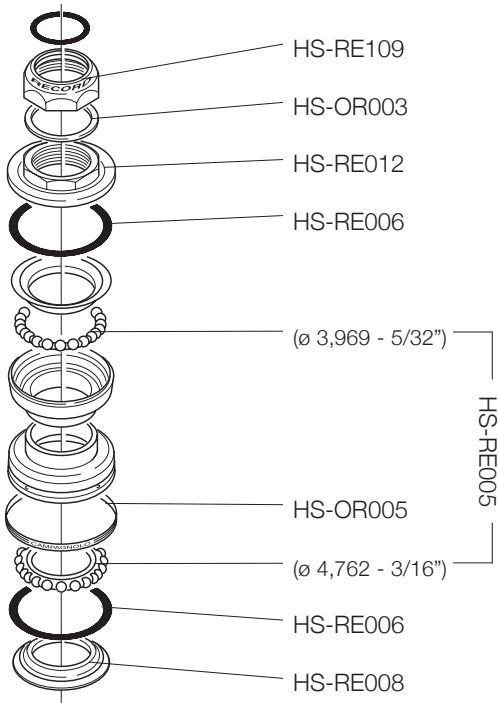
# RECORD PISTA

## 1 - TECHNICAL SPECIFICATIONS

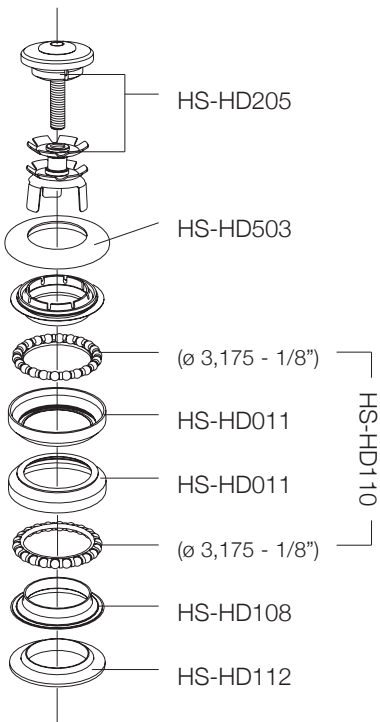
COMPONENT	OPTIONS	FEATURES
<b>RECORD™ PISTA™ front hub</b>	32, 36 holes	light alloy body – lubrication port - small flanges - O.L.D. 100 mm
<b>RECORD™ PISTA™ rear hub</b>	32, 36 holes	light alloy body – lubrication port - small flanges - O.L.D. 120 mm
<b>RECORD™ PISTA™ crankset</b>	165, 170 mm 47, 48, 49, 50, 51, 52	requires b.b. L. 111 mm (asymmetrical)
<b>RECORD™ PISTA™ bottom bracket</b>	ITA, ENG	axle L. 111 mm (asymmetrical) - composite and light alloy cartridge - light alloy cups - without sealings
<b>RECORD™ Pro-Fit Plus™ pedals</b>		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
<b>RECORD™ headset</b>		BC 1"x24tpi - height 36.5 mm - light alloy with steel inserts - cup and cone system
<b>RECORD™ Threadless™ headset</b>		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
<b>RECORD™ Hiddenset™ headset</b>	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

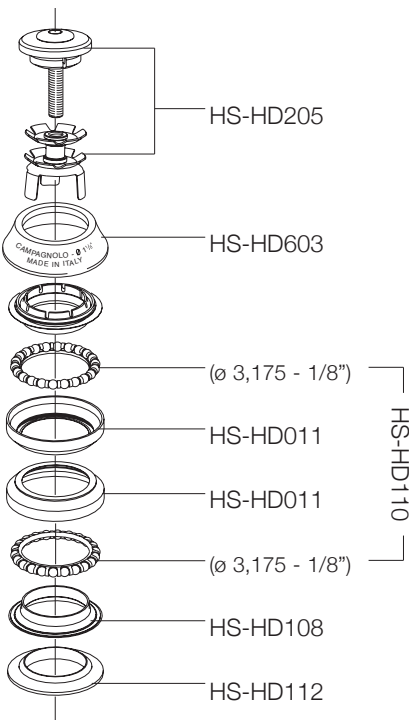
**RECORD™**  
**HS7-RE**



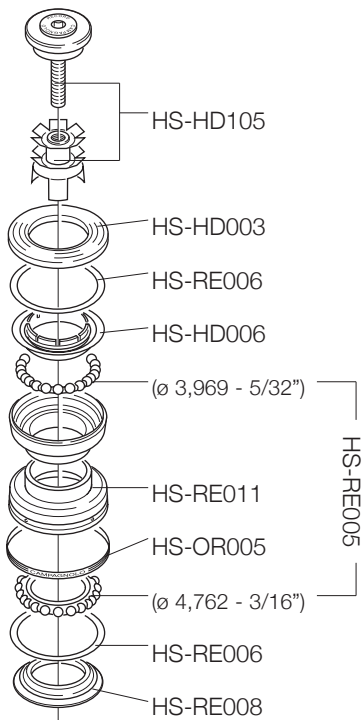
**RECORD™**  
**Hiddenset™**  
**1 1/8": HS03-REHIOS**

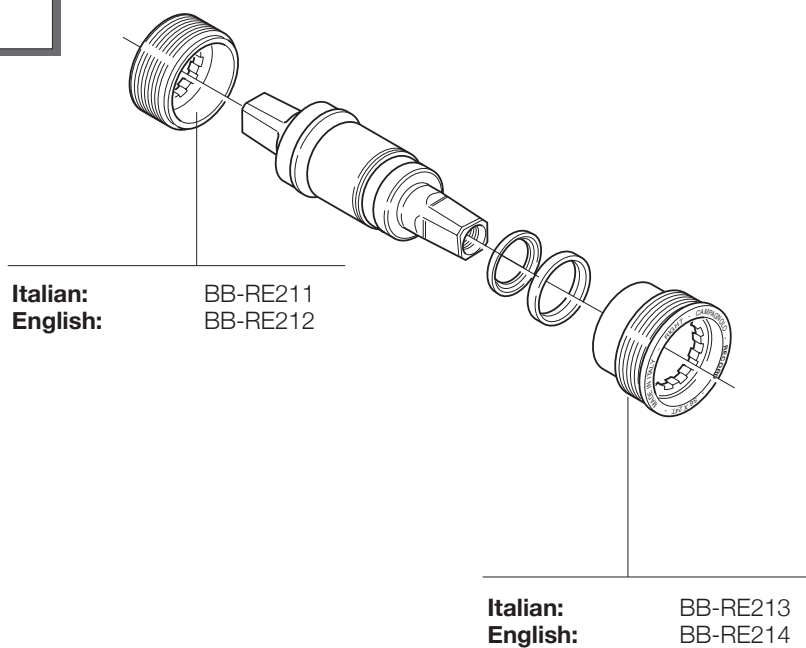


**RECORD™**  
**Hiddenset™ TTC™**  
**1 1/8": HS03-REHIOST**



**RECORD™**  
**Threadless™**  
**1": HS00-RETH**

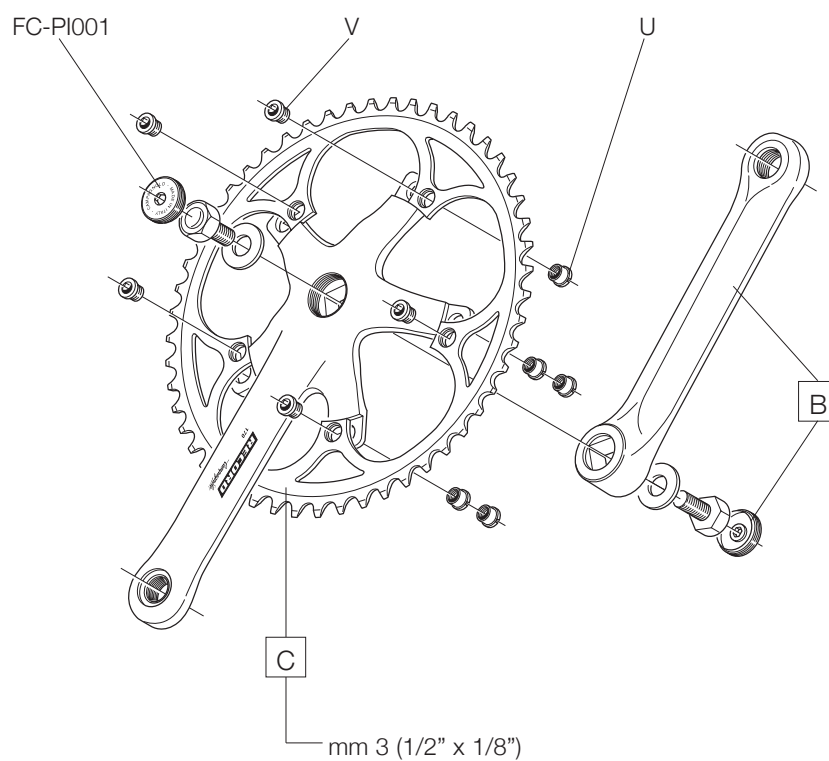


**RECORD™****PISTA™****111 mm  
BB01-REPIIT****RECORD™****PISTA™****FC01-REPI...****FC-PI100  
KIT VITI / SCREWS&NUTS**

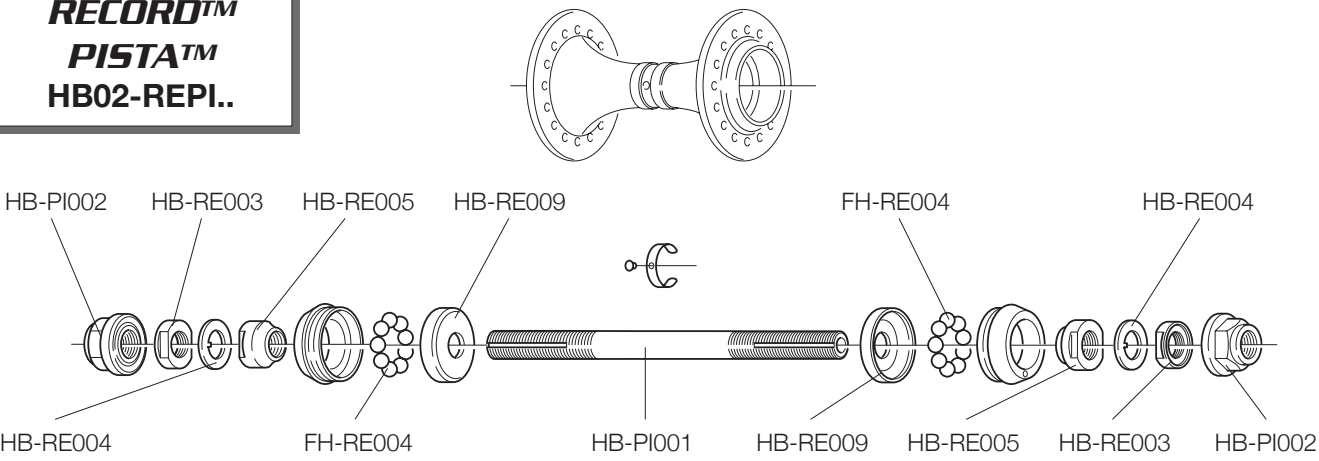
5 U + 5 V

<b>B</b>	165 mm	FC-PI465
	170 mm	FC-PI470

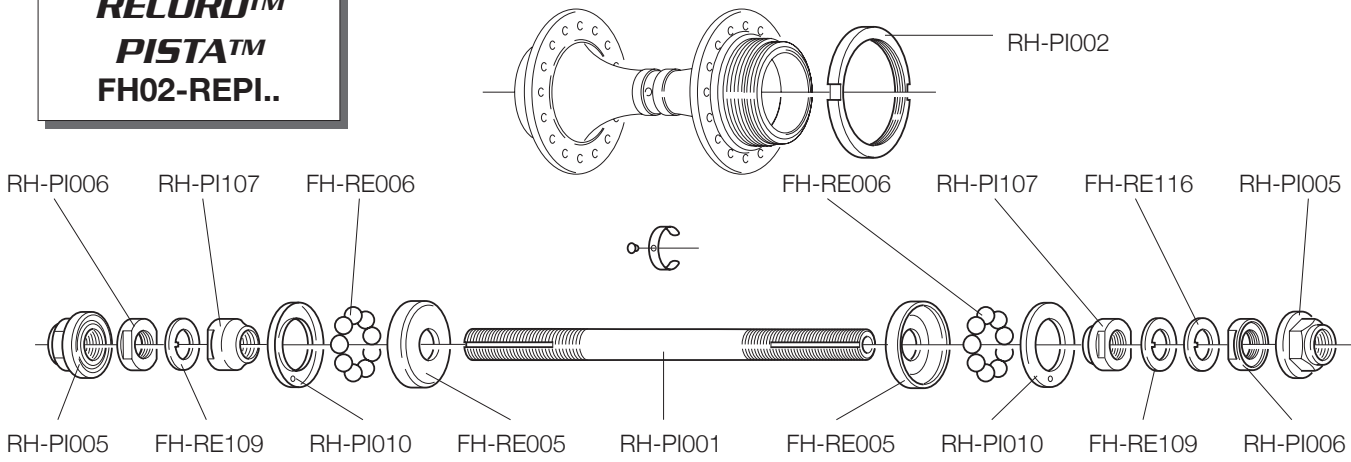
<b>C</b>	Z47	FC-PI047
	Z48	FC-PI048
	Z49	FC-PI049
	Z50	FC-PI050
	Z51	FC-PI051
	Z52	FC-PI052



**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	1,50	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	1,75	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.

## NOTE

[illegible]

## SPARE PARTS

## SAFETY RECOMMENDATIONS

### A - BEFORE EVERY RIDE

- Check to be sure that all quick release fasteners, nuts and bolts are properly adjusted. Bounce the bicycle on the ground and listen and look for anything which may be loose.
- Be sure that your tires are inflated to the correct pressure and that there is no damage whatsoever in the tread or sidewall.
- Be sure that none of the spokes are damaged or loose.
- Be sure that your wheels are perfectly centered. Spin the wheels to be sure that they do not wobble up and down or from side to side, and that they do not make contact with the brake pads while rotating.
- Check your brake pads and cables to be sure they are in good condition.
- Test your brakes in the beginning of your ride to make sure that they are operating properly.
- Check all reflectors to make sure that they are clean, straight, and securely mounted.
- Learn and follow the local bicycle laws and regulations, and obey all traffic signals, signs and laws while you ride.

**DO NOT RIDE YOUR BICYCLE IF IT DOES NOT PASS THIS PRE-RIDE TEST. CORRECT ANY CONDITION BEFORE YOU RIDE!**

### B - GENERAL SAFETY RECOMMENDATIONS

- Be sure that the periodic maintenance schedule is strictly followed.
- Always use original Campagnolo® spare parts.
- Wear clothes which are snug-fitting and which make you visible to traffic, such as neon, fluorescent, or other bright colors.
- Avoid biking at night, because it is more difficult for you to be seen by traffic, and it is more difficult for you to see obstructions on the ground. If you do ride at night, you should equip your bicycle with and use a headlight and a taillight.
- 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. Also bear in mind that because of the progressive drying of the braking surface during braking itself, braking power may vary sharply. 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.
- Campagnolo S.r.l. reminds you to always wear a properly fitted and fastened bicycle helmet that has been approved by ANSI or SNELL.
- If you ever have any comments, questions, or concerns, please contact your nearest Campagnolo® dealer.

## NEUTRON™ ULTRA™ clincher

## LOW PROFILE

INTENDED USE	WHEEL CODES	DESCRIPTION	WEIGHT
This product has been designed and manufactured to be fitted and used only on "racing" or "cyclocross" bikes (if they bear the CX mark), 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 <b>and is therefore expressly forbidden.</b>	WH7-NECFRU	FRONT+REAR Campagnolo FW body	1.470
	WH12-NECFRXU	FRONT+REAR HG type FW body	1.509
	WH7-NECFU	front	630
	WH7-NECRU	rear Campagnolo FW body	840
	WH12-NECRXU	rear HG type FW body	879

RIM			
	FRONT	FRONT RIM	WH-403NE (with labels)
	REAR	REAR RIM	WH-404NE (with labels)
		RIM-TAPE	2-WH-RT01 (18 mm - 2 pieces)
		LABEL KIT	LAB-NECC07 (for a pair of front+rear wheels)
		VALVE HOLE	6,5 mm
		DIAMETER	700C (622 x 15C)
		TYRE SECTION	See section table and inflation pressures on page 205

HUBS			
QUICK-RELEASES	QR11-20BFR	front + rear	

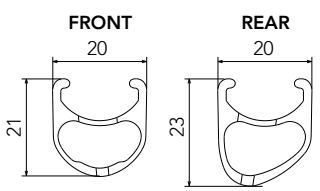
SPOKES			
COMPLETE FRONT KIT	KIT-33NE	22 front spokes + 22 nuts + 22 nut supporting plates	
COMPLETE REAR KIT	KIT-34NE	12 rear right spokes + 12 rear left spokes + 24 nuts + 24 nut supporting plates	
MINI-KIT	KIT-500NE	2 front spokes + 2 rear right spokes + 2 rear left spokes + 6 nuts + 6 nut supporting plates	
NUTS	10-WH-010BO	10 pieces	
NUT SUPPORTING PLATES	10-WH-011EU	10 pieces	

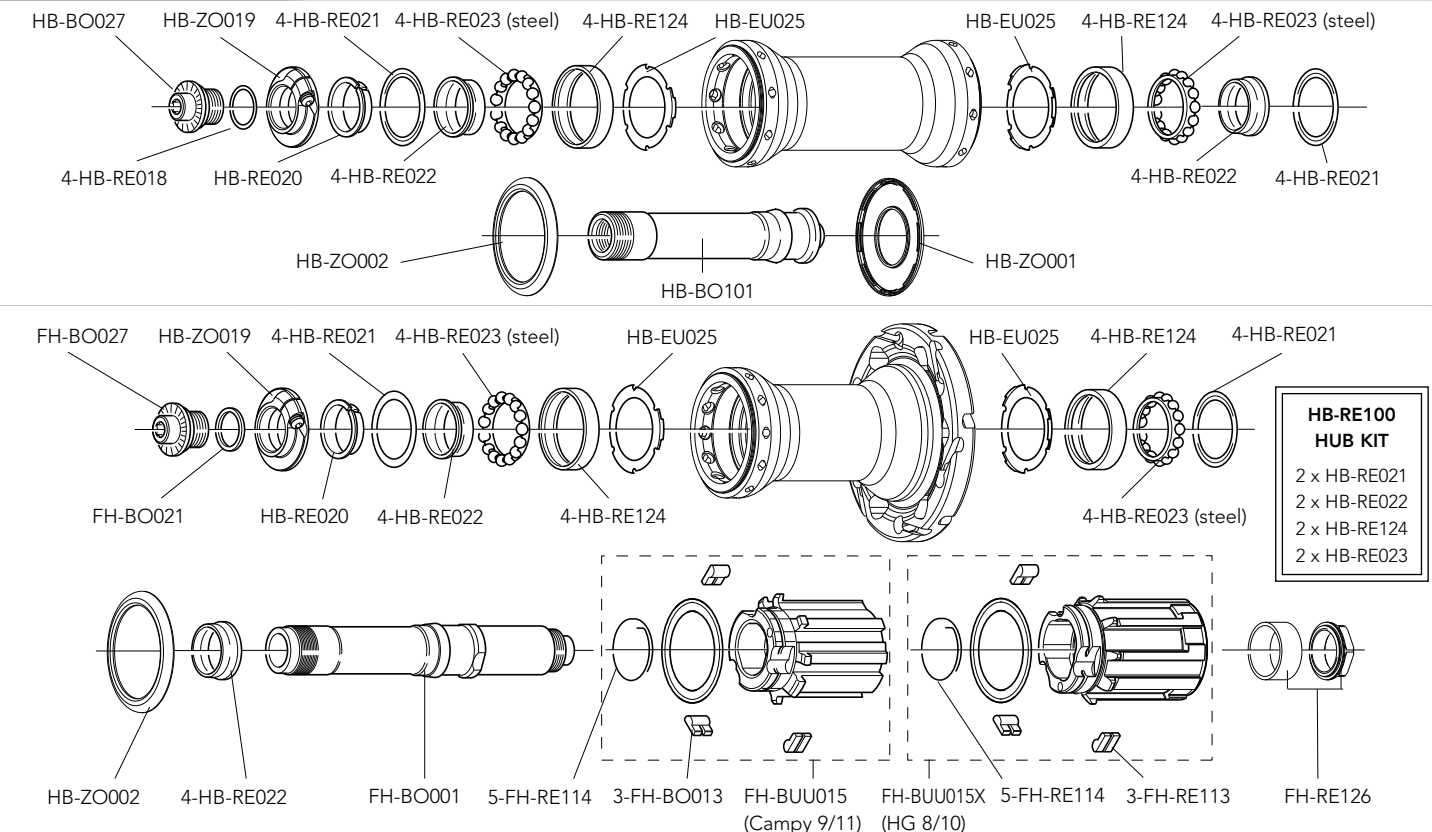
NOTES

HYPERON™ ONE clincher


LOW PROFILE

INTENDED USE	WHEEL CODES	DESCRIPTION	WEIGHT
This product has been designed and manufactured to be fitted and used only on "racing" or "cyclocross" bikes (if they bear the CX mark), 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 <b>and is therefore expressly forbidden.</b>	WH10-HYCFR1	FRONT+REAR Campagnolo FW body+brake shoes BR-BO500	1.380
	WH10-HYCFRX1	FRONT+REAR HG type FW body+brake shoes BR-BO500X	1.419
	WH10-HYCF1	front+brake shoes BR-BO500	615
	WH10-HYCFX1	front+brake shoes BR-BO500X	615
	WH10-HYCR1	rear Campagnolo FW body+brake shoes BR-BO500	765
	WH10-HYCRX1	rear HG type FW body+brake shoes BR-BO500X	804

RIM	
	FRONT RIM REAR RIM RIM-TAPE LABEL KIT VALVE HOLE DIAMETER TYRE SECTION BRAKE SHOES CLINCHER REMOVAL LEVER
	WH-003HY1 (with labels) WH-004HY1 (with labels) 2-WH-RT02 (2 pieces) LAB-HY1C10 (for a pair of front+rear wheels) 6,5 mm 622 X 13C See section table and inflation pressures on page 205 for carbon rims - BR-BO500 (for Campagnolo brakes) - BR-BO500X (for Shimano brakes) WH-109HYC ( 6 pieces)

HUBS		
		
QUICK-RELEASES	QR12-BUUBFR	front + rear

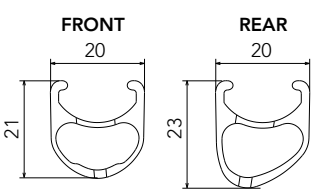
SPOKES		
COMPLETE FRONT KIT	KIT-03HY1	22 front spokes + 22 nuts + 22 front nut supporting plates
COMPLETE REAR KIT	KIT-04HY1	12 rear right spokes + 12 rear left spokes + 24 nuts + 24 rear nut supporting plates
MINI-KIT	KIT-100HY1	2 front spokes + 2 rear right spokes + 2 rear left spokes + 6 nuts + 2 front nut supporting plates + 4 rear nut supporting plates
NUTS	10-WH-010BO	10 pieces
FRONT NUT SUPPORTING PLATES	10-WH-011HY	10 pieces
REAR NUT SUPPORTING PLATES	10-WH-012HY	10 pieces

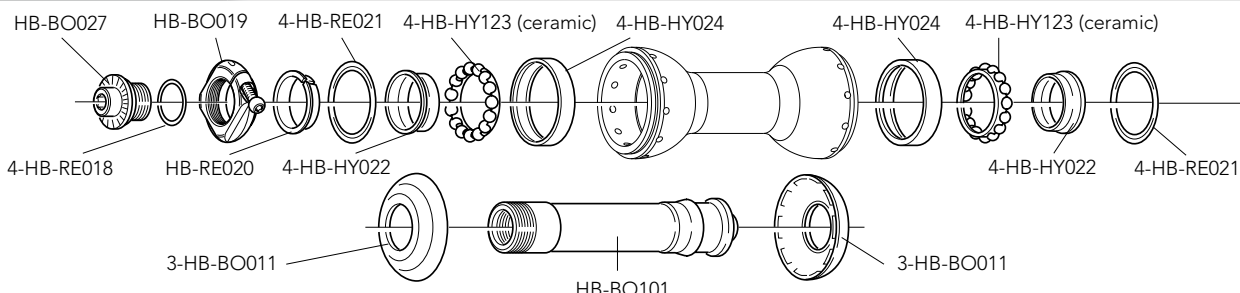
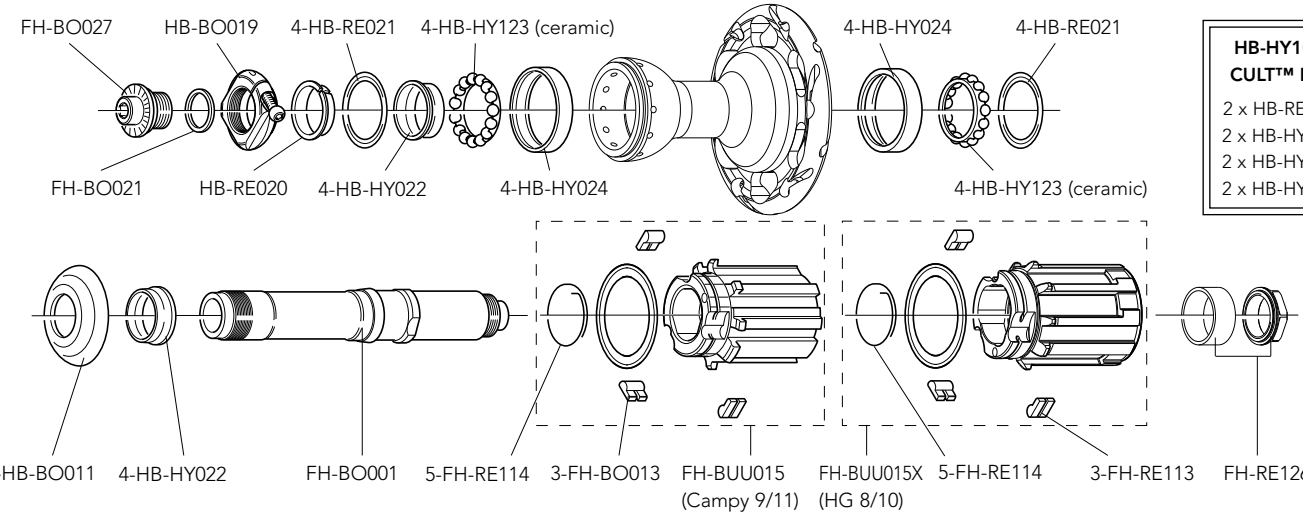
NOTES	
	

## HYPERON™ ULTRA™ TWO clincher


## LOW PROFILE

INTENDED USE	WHEEL CODES	DESCRIPTION	WEIGHT
This product has been designed and manufactured to be fitted and used only on "racing" or "cyclocross" bikes (if they bear the CX mark), 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 <b>and is therefore expressly forbidden</b>	WH9-HYCFR	FRONT+REAR Campagnolo FW body+brake shoes BR-BO500	1.345
	WH9-HYCFRX	FRONT+REAR HG type FW body+brake shoes BR-BO500X	1.384
	WH9-HYCF	front+brake shoes BR-BO500	580
	WH9-HYCFX	front+brake shoes BR-BO500X	580
	WH9-HYCR	rear Campagnolo FW body+brake shoes BR-BO500	765
	WH9-HYCRX	rear HG type FW body+brake shoes BR-BO500X	804

RIM		
	FRONT RIM	WH-203HYU (with labels)
	REAR RIM	WH-104HYU (with labels)
	RIM-TAPE	2-WH-RT02 (16 mm - 2 pieces)
	LABEL KIT	LAB-HYUC09 (for a pair of front+rear wheels)
	VALVE HOLE	6,5 mm
	DIAMETER	622 X 13C
	TYRE SECTION	See section table and inflation pressures on page 205
	BRAKE SHOES	for carbon rims - BR-BO500 (for Campagnolo brakes) - BR-BO500X (per Shimano brakes)
	CLINCHER REMOVAL LEVER	WH-109HYC (6 pieces)

HUBS		
		
		
		<b>HB-HY100 CULT™ KIT</b> 2 x HB-RE021 2 x HB-HY022 2 x HB-HY024 2 x HB-HY123
QUICK-RELEASES	QR12-BUUBFR	front + rear

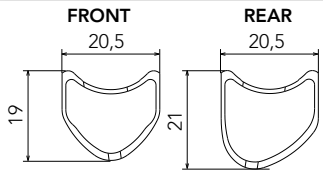
SPOKES		
COMPLETE FRONT KIT	KIT-13HYU	22 front spokes + 22 nuts + 22 front nut supporting plates
COMPLETE REAR KIT	KIT-14HYU	12 rear right spokes + 12 rear left spokes + 24 nuts + 24 rear nut supporting plates
MINI-KIT	KIT-400HYU	2 front spokes + 2 rear right spokes + 2 rear left spokes + 6 nuts + 2 front nut supporting plates + 4 front nut supporting plates
NUTS	10-WH-010BO	10 pieces
FRONT NUT SUPPORTING PLATES	10-WH-011HY	10 pieces
REAR NUT SUPPORTING PLATES	10-WH-012HY	10 pieces

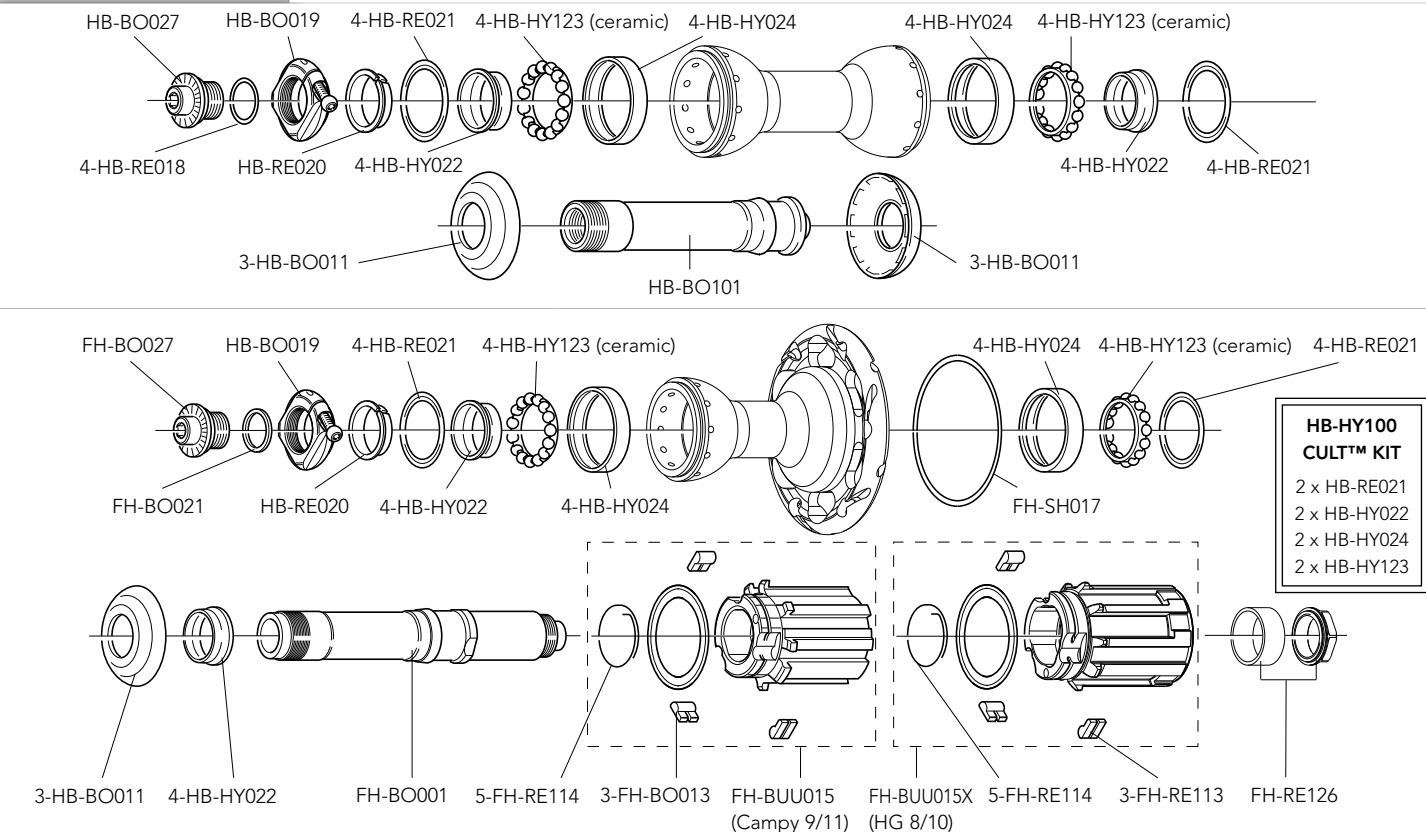
NOTES


HYPERON™ ULTRA™ TWO tubular

LOW PROFILE

INTENDED USE	WHEEL CODES	DESCRIPTION	WEIGHT
This product has been designed and manufactured to be fitted and used only on "racing" or "cyclocross" bikes (if they bear the CX mark), 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 <b>and is therefore expressly forbidden</b>	WH9-HYTFR	FRONT+REAR Campagnolo FW body+brake shoes BR-BO500	1.231
	WH9-HYFRX	FRONT+REAR HG type FW body+brake shoes BR-BO500X	1.270
	WH9-HYTF	front+brake shoes BR-BO500	536
	WH9-HYTFX	front+brake shoes BR-BO500X	536
	WH9-HYTR	rear Campagnolo FW body+brake shoes BR-BO500	695
	WH9-HYTRX	rear HG type FW body+brake shoes BR-BO500X	734

RIM	
	FRONT RIM REAR RIM LABEL KIT VALVE HOLE DIAMETER TYRE BRAKE SHOES
WH-201HY (with labels) WH-202HY (with labels) LAB-HYT9 (for a pair of front+rear wheels) 6,5 mm 634 mm See recommended tyre manufacturer inflation pressure for carbon rims - BR-BO500 (for Campagnolo brakes) - BR-BO500X (for Shimano brakes)	

HUBS	
	
QUICK-RELEASES	QR12-BUUBFR front + rear

SPOKES	
COMPLETE FRONT KIT COMPLETE REAR KIT MINI-KIT	KIT-01HY KIT-02HY KIT-100HY
NUTS NUT SUPPORTING PLATES	10-WH-010BO 10-WH-011HY
22 front spokes + 22 nuts + 22 nut supporting plates 12 rear right spokes + 12 rear left spokes + 24 nuts + 24 nut supporting plates + 12 barrels 2 front spokes + 2 rear right spokes + 2 rear left spokes + 6 nuts + 6 nut supporting plates + 2 barrels 10 pieces 10 pieces	

NOTES

**WARNING!**

Because of the high temperatures reached when breaking, we recommend you use only glue for tubular tires specifically for carbon fibre rims.

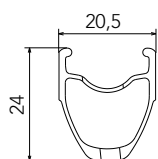


## KHAMSIN™ clincher

## MEDIUM PROFILE

INTENDED USE	WHEEL CODES	DESCRIPTION	WEIGHT
This product has been designed and manufactured to be fitted and used only on "racing" or "cyclocross" bikes (if they bear the CX mark), 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 <b>and is therefore expressly forbidden</b>	WH11-KHCFRB	FRONT+REAR Campagnolo FW body	1.873
	WH12-KHCFRXB	FRONT+REAR HG type FW body	1.912
	WH11-KHCFB	front	828
	WH11-KHCRB	rear Campagnolo FW body	1.045
	WH12-KHCRXB	rear HG type FW body	963
	<b>RED&amp;BLACK</b>		
	WH12-KHCFRRB	FRONT+REAR Campagnolo FW body	1.873
	WH12-KHCFRXRB	FRONT+REAR HG type FW body	1.912
	WH12-KHCFRB	front	828
	WH12-KHCRRB	rear Campagnolo FW body	1.045
	WH12-KHCRXRB	rear HG type FW body	963

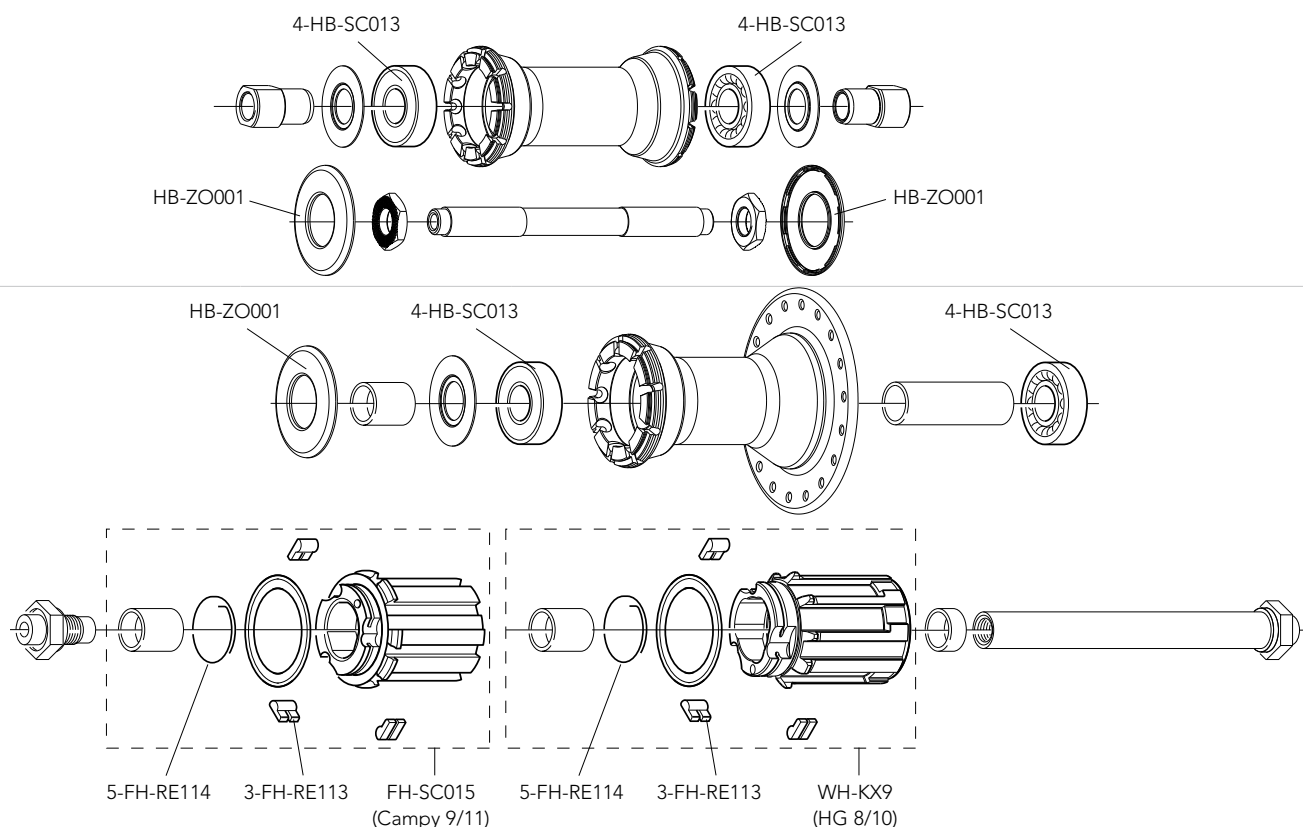
## RIM



RIM-TAPE  
LABEL KIT  
VALVE HOLE  
DIAMETER  
TYRE SECTION

2-WH-RT01 (18 mm - 2 pieces)  
LAB-KHCB11 (BLACK - front+rear) - LAB-KHCRB12 (RED&BLACK - front+rear)  
6,5 mm  
700C (622 x 15C)  
See section table and inflation pressures on page 205

## HUBS



QUICK-RELEASES	QR8-40BFR QR12-40RFR	black - front + rear red - front + rear
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## SPOKES

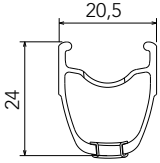
COMPLETE FRONT KIT	KIT-23KHB	24 front spokes + 24 nipples
COMPLETE REAR KIT	KIT-24KHB	18 rear right spokes + 9 rear left spokes + 27 nipples
MINI-KIT	KIT-300KHB	2 front spokes + 2 rear right spokes + 2 rear left spokes + 6 nipples
NIPPLES	50-WH-NZO	50 pieces

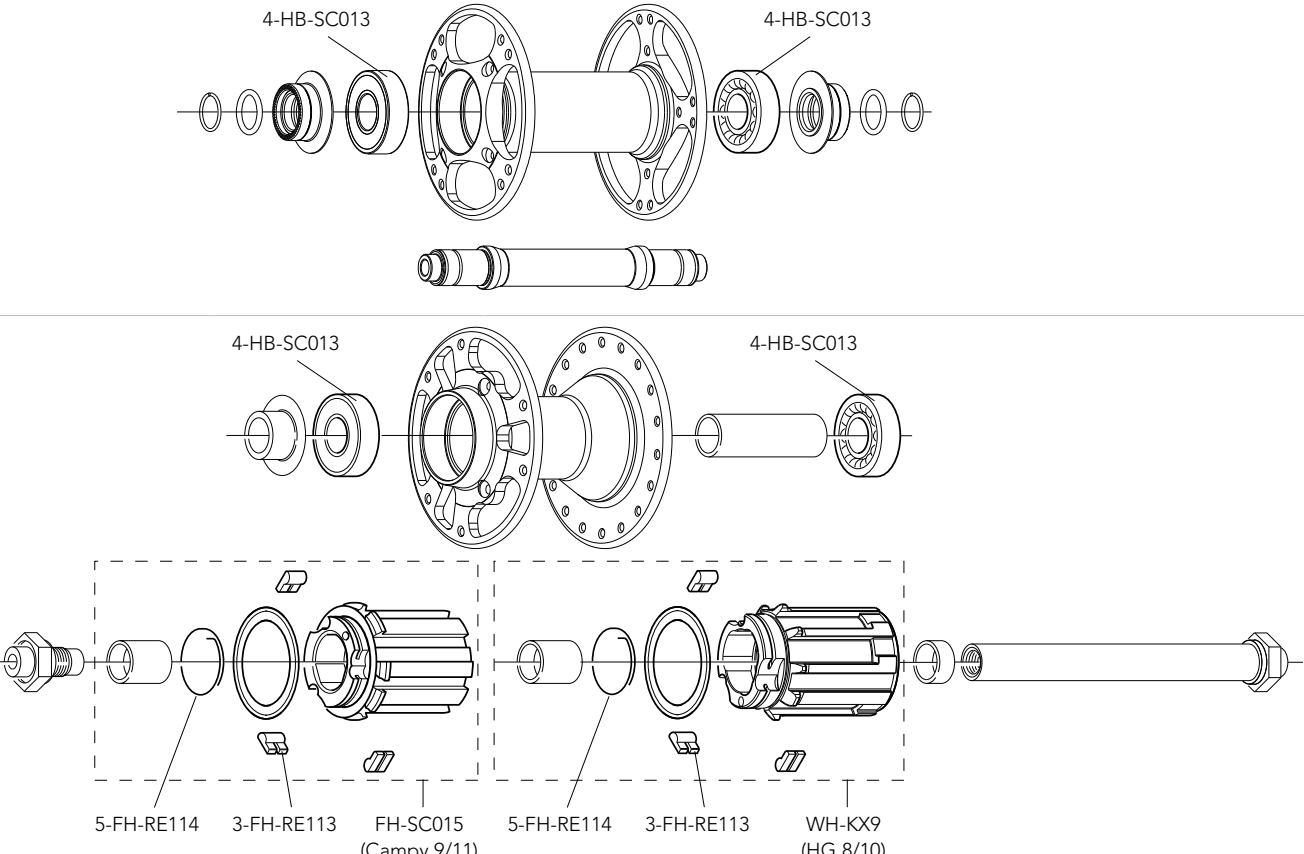
## NOTES

VENTO™ REACTION™ clincher


MEDIUM PROFILE

INTENDED USE	WHEEL CODES	DESCRIPTION	WEIGHT
This product has been designed and manufactured to be fitted and used only on "racing" or "cyclocross" bikes (if they bear the CX mark), 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 <b>and is therefore expressly forbidden</b>	WH10-VECFRB	FRONT+REAR Campagnolo FW body	1.827
	WH12-VECFRXB	FRONT+REAR HG type FW body	1.866
	WH10-VECFB	front	825
	WH10-VECRB	rear Campagnolo FW body	1.002
	WH12-VECRXB	rear HG type FW body	1.041

RIM		
	RIM-TAPE LABEL KIT VALVE HOLE DIAMETER TYRE SECTION	2-WH-RT01 (18 mm - 2 pieces) LAB-VECB11 (for a pair of front+rear wheels) 6,5 mm 700C (622 x 15C) See section table and inflation pressures on page 205

HUBS		
		
QUICK-RELEASES	QR8-40BFR	front + rear

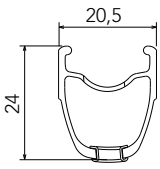
SPOKES		
COMPLETE FRONT KIT COMPLETE REAR KIT MINI-KIT NIPPLES	KIT-23VEB KIT-34VEB KIT-700VEB 50-WH-NZO	23 front spokes + 1 balancing spoke + 24 nipples 18 rear right spokes + 8 rear left spokes + 1 rear left balancing spoke + 27 nipples 3 front spokes + 5 rear spokes + 7 nipples 50 pieces

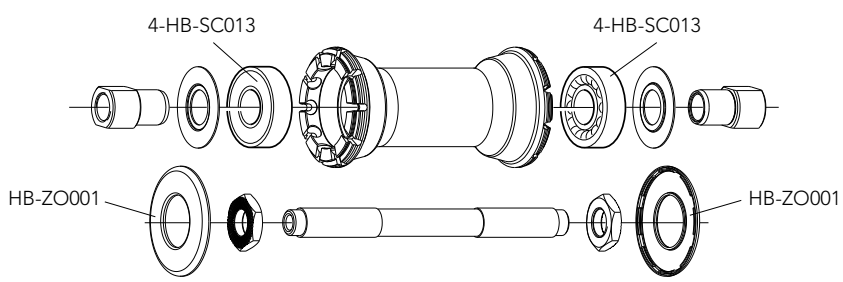
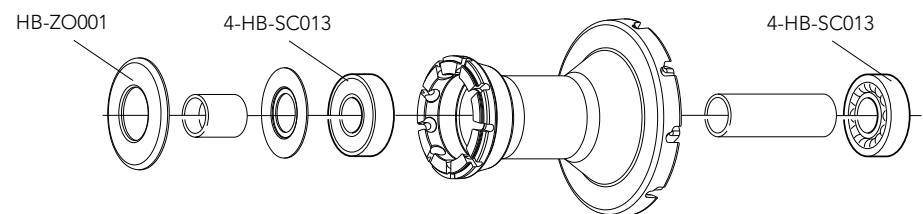
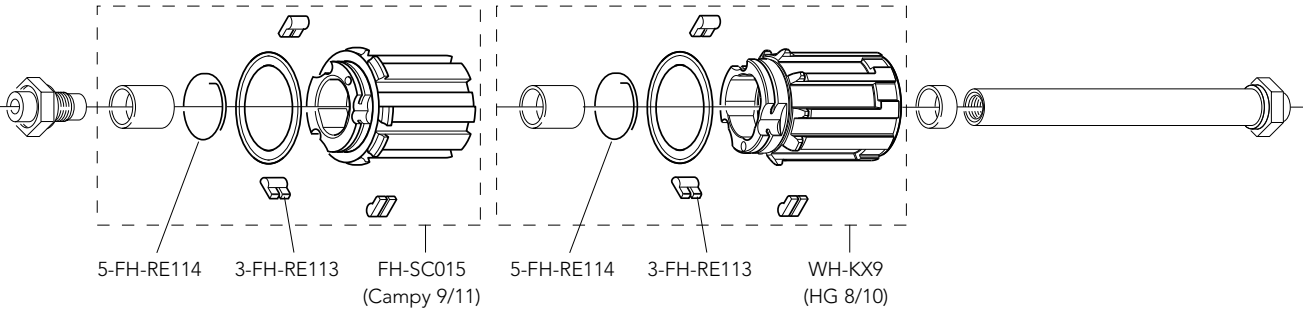
NOTES	
	

## SCIROCCO™ clincher


## MEDIUM PROFILE

INTENDED USE	WHEEL CODES	DESCRIPTION	WEIGHT
This product has been designed and manufactured to be fitted and used only on "racing" or "cyclocross" bikes (if they bear the CX mark), 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 <b>and is therefore expressly forbidden</b>	WH10-SCCFRB	FRONT+REAR Campagnolo FW body	1.795
	WH12-SCCFRXB	FRONT+REAR HG type FW body	1.834
	WH10-SCCFB	front	775
	WH10-SCCRB	rear Campagnolo FW body	1.020
	WH12-SCCRXB	rear HG type FW body	1.059

RIM			
	RIM-TAPE LABEL KIT VALVE HOLE DIAMETER TYRE SECTION	2-WH-RT01 (18 mm - 2 pieces) LAB-SCCB11 (for a pair of front+rear wheels) 6,5 mm 700C (622 x 15C) See section table and inflation pressures on page 205	

HUBS			
			
			
			
QUICK-RELEASES	QR12-ZOBFR	front + rear	

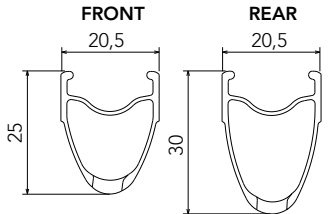
SPOKES			
COMPLETE FRONT KIT	KIT-43SCB	16 front spokes + 16 nipples	
COMPLETE REAR KIT	KIT-44SCB	14 rear right spokes + 7 rear left spokes + 21 nipples	
MINI-KIT	KIT-700SCB	2 front spokes + 2 rear right spokes + 2 rear left spokes + 6 nipples	
NIPPLES	50-WH-NZO	50 pieces	

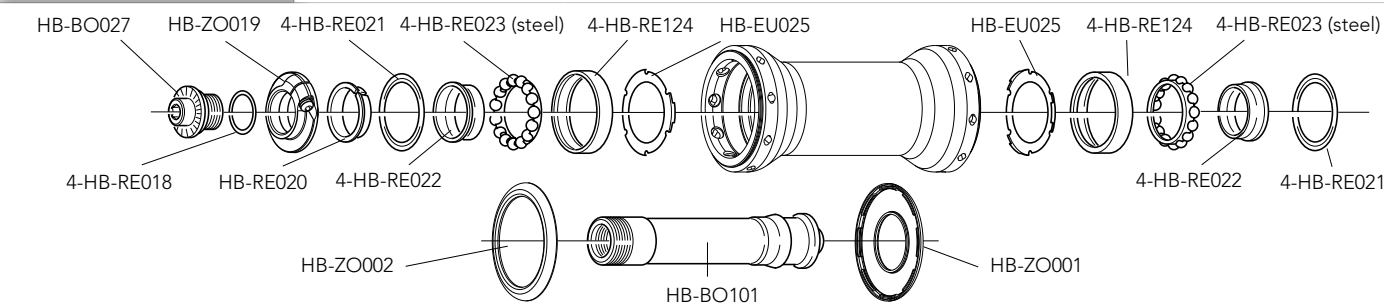
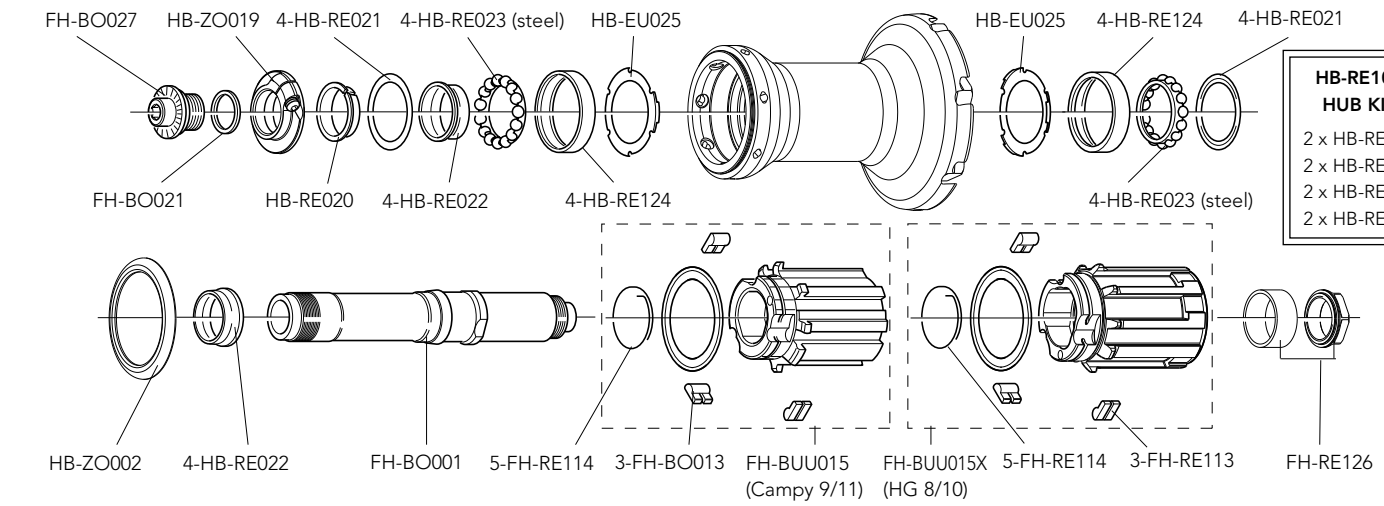
NOTES			
			

ZONDA™ clincher


MEDIUM PROFILE

INTENDED USE	WHEEL CODES	DESCRIPTION	WEIGHT
This product has been designed and manufactured to be fitted and used only on "racing" or "cyclocross" bikes (if they bear the CX mark), 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 <b>and is therefore expressly forbidden</b>	WH10-ZOCFRB	FRONT+REAR Campagnolo FW body	1.555
	WH10-ZOCFRXB	FRONT+REAR HG type FW body	1.594
	WH10-ZOCFB	front	670
	WH10-ZOCRB	rear Campagnolo FW body	885
	WH10-ZOCRXB	rear HG type FW body	924

RIM	
	FRONT RIM REAR RIM LABEL KIT VALVE HOLE DIAMETER TYRE SECTION
	WH-303ZOB (with labels) WH-304ZOB (with labels) LAB-ZOCB10 (for a pair of front+rear wheels) 6,5 mm 622 X 15C See section table and inflation pressures on page 205

HUBS	
	
	<div>HB-RE100 HUB KIT 2 x HB-RE021 2 x HB-RE022 2 x HB-RE124 2 x HB-RE023</div>
QUICK-RELEASES	QR12-ZOBFR
	front + rear

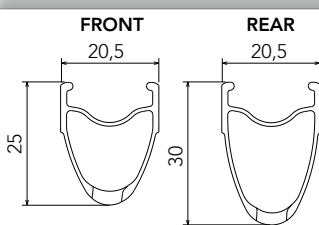
SPOKES	
COMPLETE FRONT KIT COMPLETE REAR KIT MINI-KIT NIPPLES SPOKE RING INSERT NIPPLE NIPPLE MAGNET SPOKE SPANNER	KIT-33ZOB KIT-34ZOB KIT-500ZOB 50-WH-NZO UT-WH010 UT-WH030 UT-WH050 UT-WH070
	16 front spokes + 16 nipples 14 rear right spokes + 7 rear left spokes + 21 nipples 2 front spokes + 2 rear right spokes + 2 rear left spokes + 6 nipples 50 pieces anti-rotation spokes magnet-attractor for nipple nipple-guide spoke wrenches

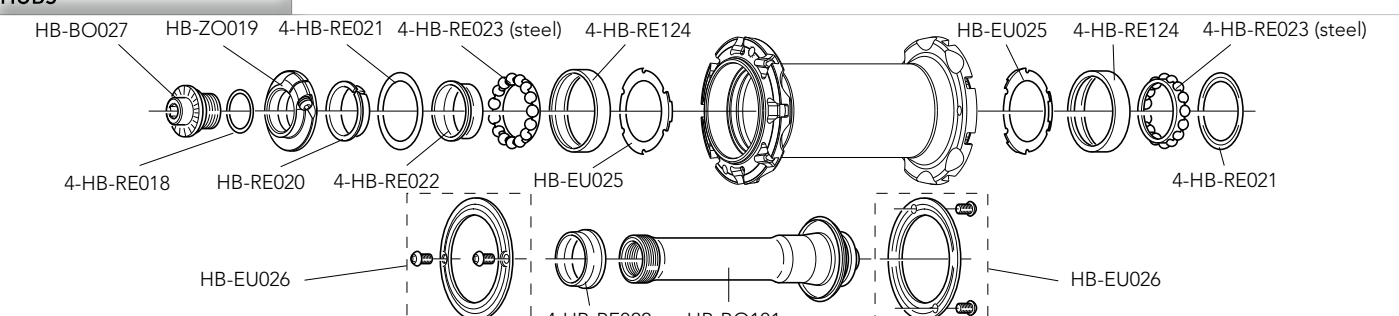
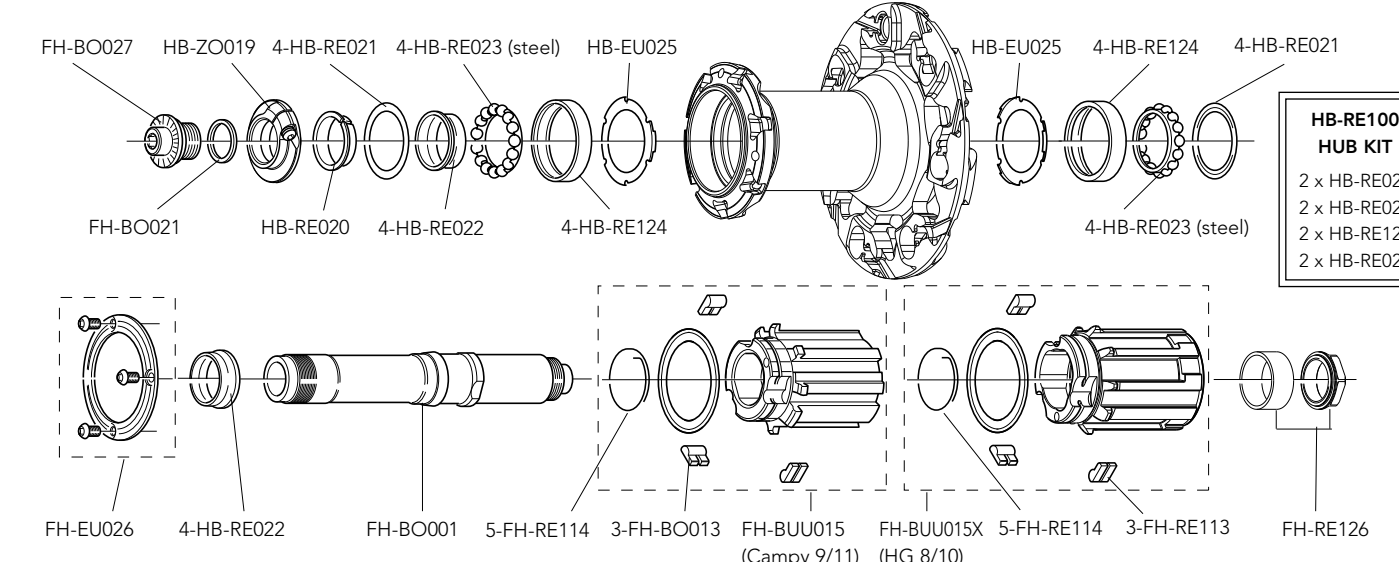
NOTES


## EURUS™ clincher

## MEDIUM PROFILE

INTENDED USE	WHEEL CODES	DESCRIPTION	WEIGHT
This product has been designed and manufactured to be fitted and used only on "racing" or "cyclocross" bikes (if they bear the CX mark), 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 <b>and is therefore expressly forbidden</b>	WH12-EUCFRB	FRONT+REAR Campagnolo FW body	1.482
	WH12-EUCFRXB	FRONT+REAR HG type FW body	1.521
	WH12-EUCFB	front	634
	WH12-EUCRB	rear Campagnolo FW body	848
	WH12-EUCRXB	rear HG type FW body	887

RIM		
	FRONT RIM REAR RIM LABEL KIT VALVE HOLE DIAMETER TYRE SECTION	WH-503EUB (with labels) WH-504EUB (with labels) LAB-EUCB12 (for a pair of front+rear wheels) 6,5 mm 622 X 15C See section table and inflation pressures on page 205

HUBS		
		
		
QUICK-RELEASES	QR11-20BFR	front + rear

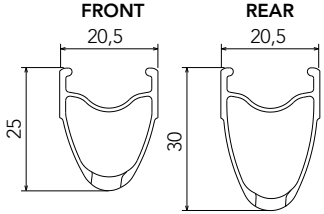
SPOKES		
COMPLETE FRONT KIT. COMPLETE REAR KIT. COMPLETE FRONT/REAR LEFT SPOKE COMPLETE REAR RIGHT SPOKE NIPPLES SPOKE RING INSERT NIPPLE NIPPLE MAGNET SPOKE SPANNER	KIT-13SHB KIT-24SHB WH-105SHB WH-107SHB 10-WH-015SH UT-WH010 UT-WH030 UT-WH050 UT-WH070	16 front/rear left spokes + 16 nipples 14 rear right spokes + 7 front/rear left spokes + 21 nipples spoke + nipples spoke + nipples 10 pieces anti-rotation spokes magnet-attractor for nipple nipple-guide spoke wrenches

## NOTES

SHAMAL™ ULTRA™ clincher

MEDIUM PROFILE

INTENDED USE	WHEEL CODES	DESCRIPTION	WEIGHT
This product has been designed and manufactured to be fitted and used only on "racing" or "cyclocross" bikes (if they bear the CX mark), 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 <b>and is therefore expressly forbidden</b>	WH12-SHCFRB	FRONT+REAR Campagnolo FW body	1.425
	WH12-SHCFRXB	FRONT+REAR HG type FW body	1.464
	WH12-SHCFB	front	605
	WH12-SHCRB	rear Campagnolo FW body	820
	WH12-SHCRXB	rear HG type FW body	859
	<b>DARK LABEL</b>		
	WH12-SHCFRBDK	FRONT+REAR Campagnolo FW body	1.425
	WH12-SHCFRXBDK	FRONT+REAR HG type FW body	1.464
	WH12-SHCFBDK	front	605
	WH12-SHCRBDK	rear Campagnolo FW body	820
	WH12-SHCRXBDK	rear HG type FW body	859

RIM	
	FRONT RIM REAR RIM LABEL KIT VALVE HOLE DIAMETER TYRE SECTION
	WH-203SHB (with standard labels) - WH-203SHBDK (with DARK labels) WH-204SHB (with standard labels) - WH-204SHBDK (with DARK labels) LAB-SHCB12 (front+rear) - LAB-SHCB12DK (front+rear DARK) 6,5 mm 622 X 15C See section table and inflation pressures on page 205

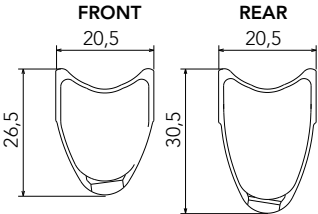
HUBS		
QUICK-RELEASES	QR11-20BFR	front + rear

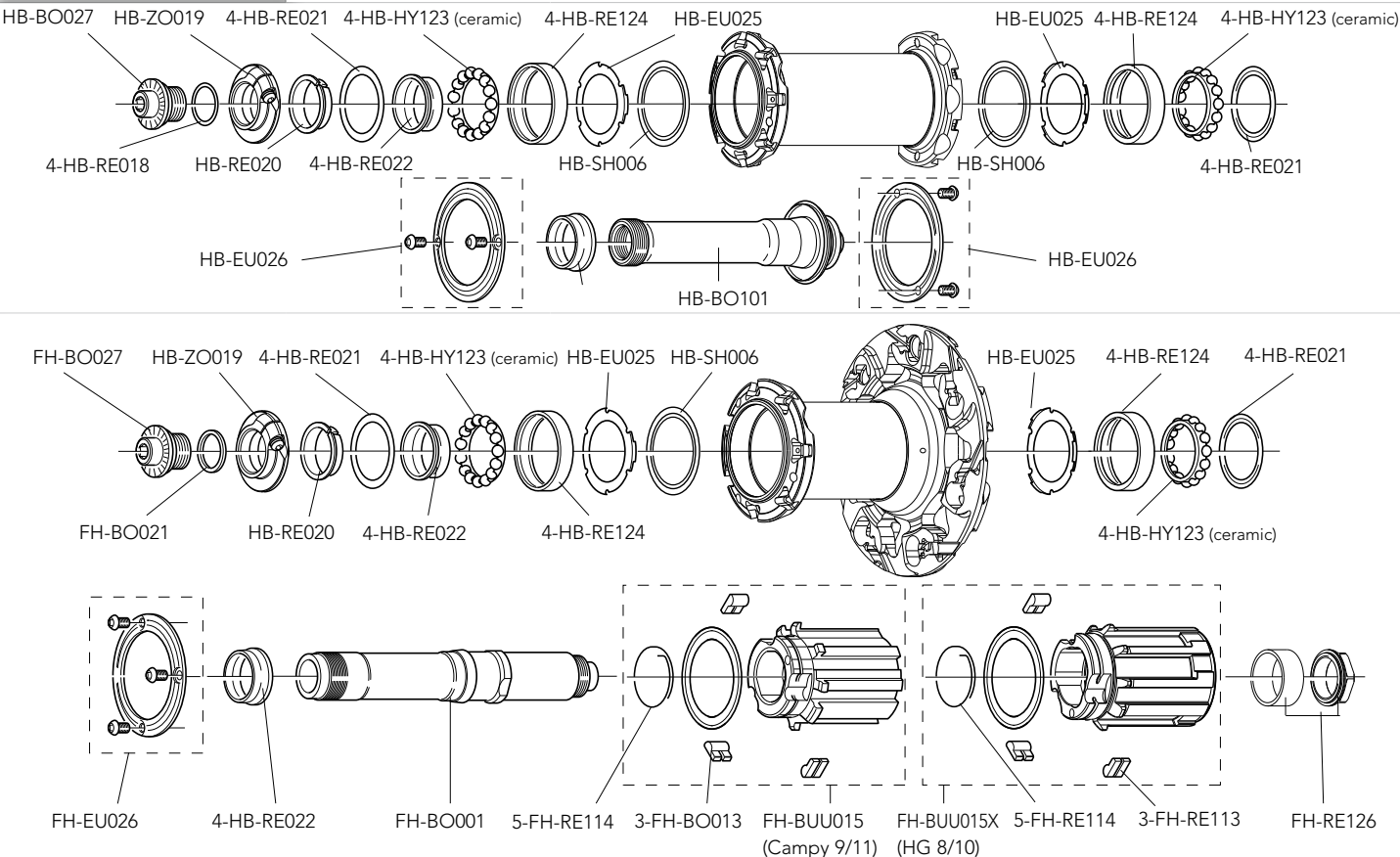
SPOKES		
COMPLETE FRONT KIT.	KIT-13SHB	16 front/rear left spokes + 16 nipples
COMPLETE REAR KIT.	KIT-24SHB	14 rear right spokes + 7 front/rear left spokes + 21 nipples
COMPLETE FRONT/REAR LEFT SPOKE	WH-105SHB	spoke + nipples
COMPLETE REAR RIGHT SPOKE	WH-107SHB	spoke + nipples
NIPPLES	10-WH-015SH	10 pieces
SPOKE RING	UT-WH010	anti-rotation spokes
INSERT NIPPLE	UT-WH030	magnet-attractor for nipple
NIPPLE MAGNET	UT-WH050	nipple-guide
SPOKE SPANNER	UT-WH070	spoke wrenches

## SHAMAL™ ULTRA™ tubular

## MEDIUM PROFILE

INTENDED USE	WHEEL CODES	DESCRIPTION	WEIGHT
This product has been designed and manufactured to be fitted and used only on "racing" or "cyclocross" bikes (if they bear the CX mark), 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 <b>and is therefore expressly forbidden</b>	WH12-SHTFRB	FRONT+REAR Campagnolo FW body	1.440
	WH12-SHTFRXB	FRONT+REAR HG type FW body	1.479
	WH12-SHTFB	front	615
	WH12-SHTRB	rear Campagnolo FW body	825
	WH12-SHTRXB	rear HG type FW body	864

RIM		
	FRONT RIM REAR RIM LABEL KIT VALVE HOLE DIAMETER TYRE SECTION	WH-201SHB (with labels) WH-202SHB (with labels) LAB-SHCB12 (for a pair of front+rear wheels) 6,5 mm 634 mm See recommended tyre manufacturer inflation pressure

HUBS		
		QUICK-RELEASES QR11-20BFR front + rear

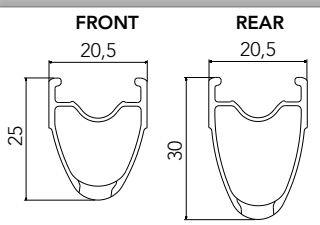
SPOKES		
COMPLETE FRONT KIT. COMPLETE REAR KIT. COMPLETE FRONT/REAR LEFT SPOKE COMPLETE REAR RIGHT SPOKE NIPPLES SPOKE RING INSERT NIPPLE NIPPLE MAGNET SPOKE SPANNER	KIT-13SHB KIT-24SHB WH-105SHB WH-107SHB 10-WH-015SH UT-WH010 UT-WH030 UT-WH050 UT-WH070	16 front/rear left spokes + 16 nipples 14 rear right spokes + 7 front/rear left spokes + 21 nipples spoke + nipples spoke + nipples 10 pieces anti-rotation spokes magnet-attractor for nipple nipple-guide spoke wrenches

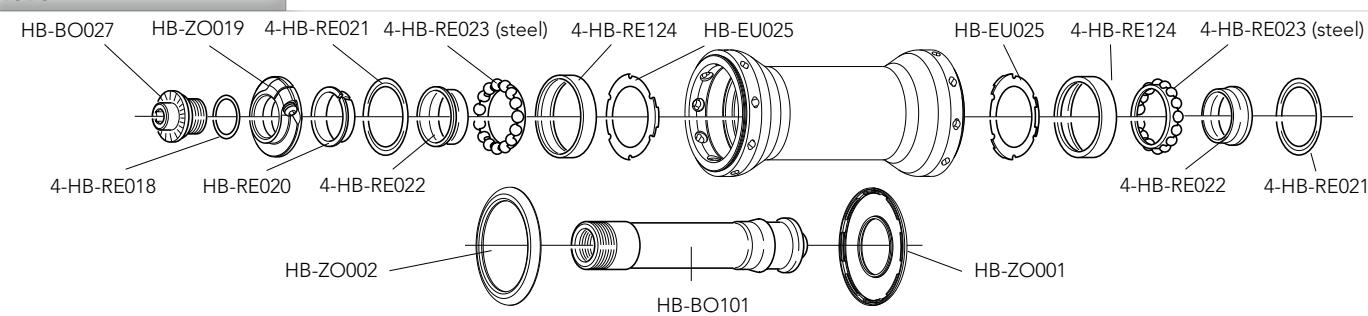
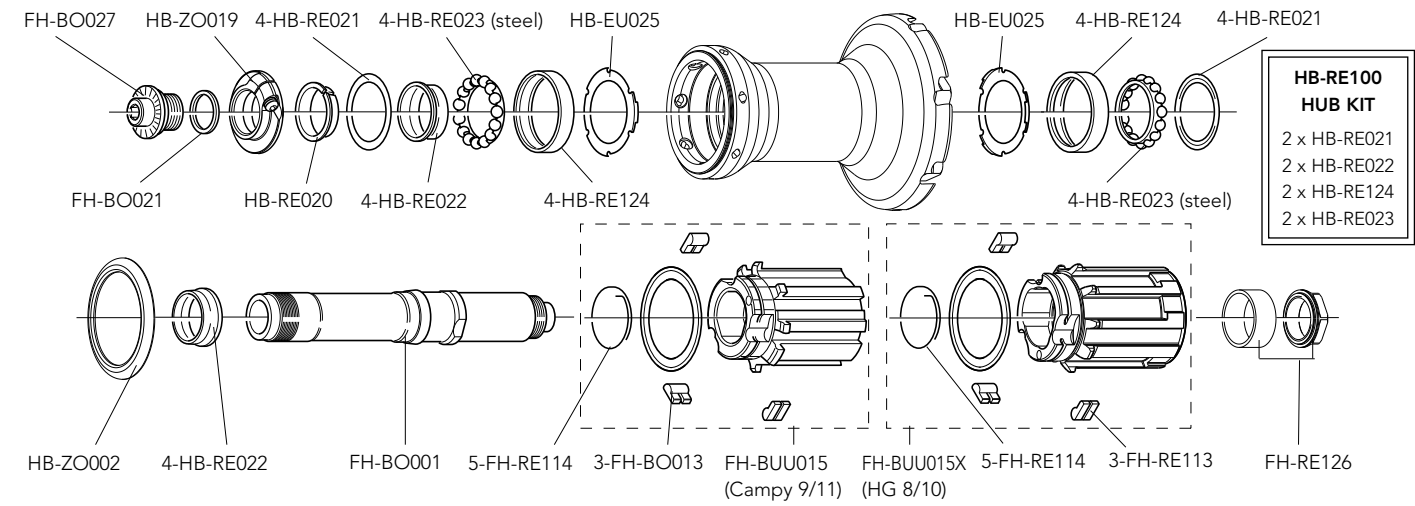
NOTES


ZONDA™ 2-Way Fit™


MEDIUM PROFILE

INTENDED USE	WHEEL CODES	DESCRIPTION	WEIGHT
This product has been designed and manufactured to be fitted and used only on "racing" or "cyclocross" bikes (if they bear the CX mark), 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 <b>and is therefore expressly forbidden</b>	WH10-ZO2FRB	FRONT+REAR Campagnolo FW body	1.580
	WH10-ZO2FRXB	FRONT+REAR HG type FW body	1.619
	WH10-ZO2FB	front	680
	WH10-ZO2RB	rear Campagnolo FW body	900
	WH10-ZO2RXB	rear HG type FW body	939

RIM		
	FRONT RIM	WH-013ZOB (with labels)
	REAR RIM	WH-014ZOB (with labels)
	LABEL KIT	LAB-ZO2B10 (for a pair of front+rear wheels)
	VALVE HOLE	6,5 mm
	2-WAY FIT™ VALVE	WH-SH001
	VALVE HOLE BUSHING	5-WH-SH002 (for valve seat reduction - 5 pieces)
	DIAMETER	634 mm
	TYRE SECTION	See recommended tyre manufacturer inflation pressure

HUBS		
		
		
QUICK-RELEASES	QR11-20BFR	front + rear

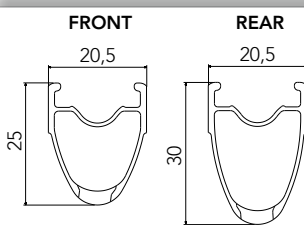
SPOKES		
COMPLETE FRONT KIT	KIT-33ZOB	16 front spokes + 16 nipples
COMPLETE REAR KIT	KIT-34ZOB	14 rear right spoke + 7 SPOKES post sx + 21 nipples
MINI-KIT	KIT-500ZOB	2 front spokes + 2 rear right spokes + 2 rear left spokes + 6 nipples
NIPPLES	50-WH-NZO	50 pieces
SPOKE RING	UT-WH010	anti-rotation spokes
INSERT NIPPLE	UT-WH030	magnet-attractor for nipple
NIPPLE MAGNET	UT-WH050	nipple-guide
SPOKE SPANNER	UT-WH070	spoke wrenches

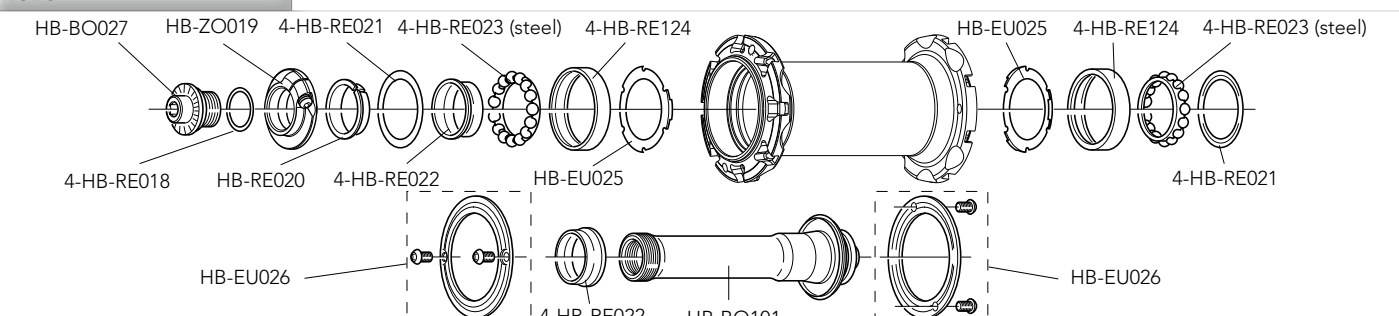
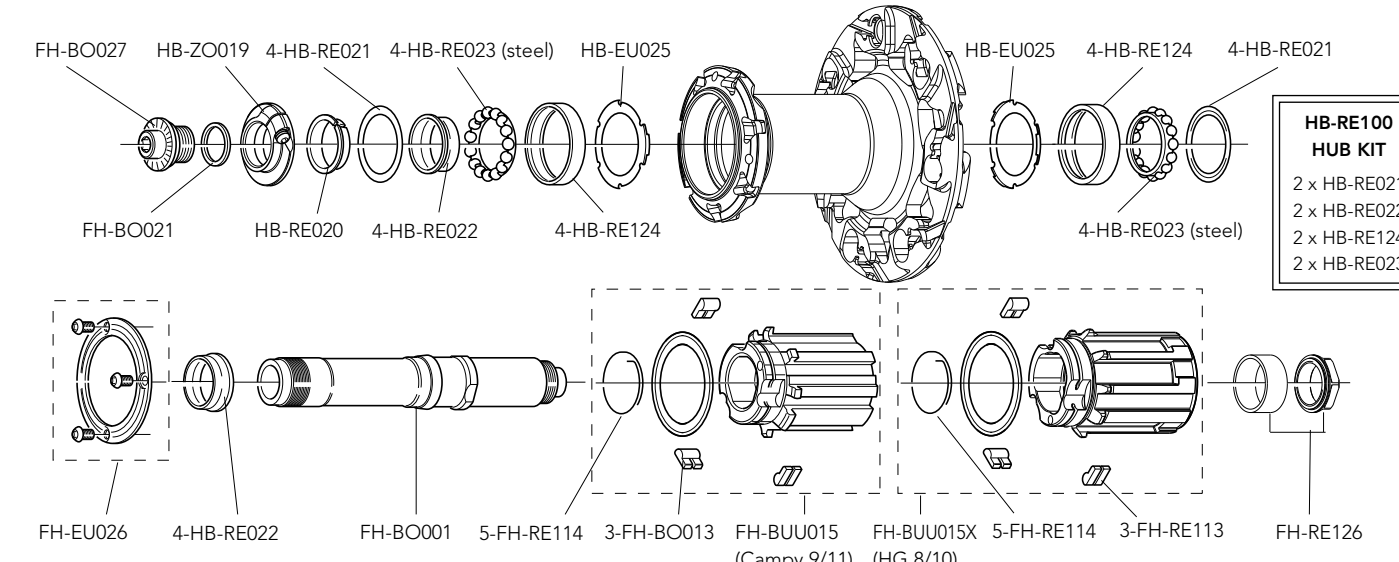
NOTES


## EURUS 2-Way Fit™

## MEDIUM PROFILE

INTENDED USE	WHEEL CODES	DESCRIPTION	WEIGHT
This product has been designed and manufactured to be fitted and used only on "racing" or "cyclocross" bikes (if they bear the CX mark), 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 <b>and is therefore expressly forbidden</b>	WH12-EU2FRB	FRONT+REAR Campagnolo FW body	1.500
	WH12-EU2FRXB	FRONT+REAR HG type FW body	1.539
	WH12-EU2FB	front	643
	WH12-EU2RB	rear Campagnolo FW body	857
	WH12-EU2RXB	rear HG type FW body	896

RIM			
	FRONT	FRONT RIM	WH-113EUB (with labels)
	REAR	REAR RIM	WH-114EUB (with labels)
		LABEL KIT	LAB-EU2B12 (for a pair of front+rear wheels)
		VALVE HOLE	6,5 mm
		2-WAY FIT™ VALVE	WH-SH001
		VALVE HOLE BUSHING	5-WH-SH002 (for valve seat reduction - 5 pieces)
		DIAMETER	634 mm
		TYRE SECTION	See recommended tyre manufacturer inflation pressure

HUBS			
			
			
QUICK-RELEASES		QR11-20BFR	front + rear

SPOKES		
COMPLETE FRONT KIT.	KIT-13SHB	16 front/rear left spokes + 16 nipples
COMPLETE REAR KIT.	KIT-24SHB	14 rear right spokes + 7 front/rear left spokes + 21 nipples
COMPLETE FRONT/REAR LEFT SPOKE	WH-105SHB	spoke + nipples
COMPLETE REAR RIGHT SPOKE	WH-107SHB	spoke + nipples
NIPPLES	10-WH-015SH	10 pieces
SPOKE RING	UT-WH010	anti-rotation spokes
INSERT NIPPLE	UT-WH030	magnet-attractor for nipple
NIPPLE MAGNET	UT-WH050	nipple-guide
SPOKE SPANNER	UT-WH070	spoke wrenches

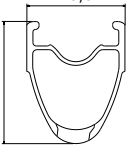
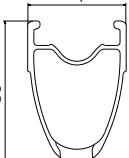
## NOTES

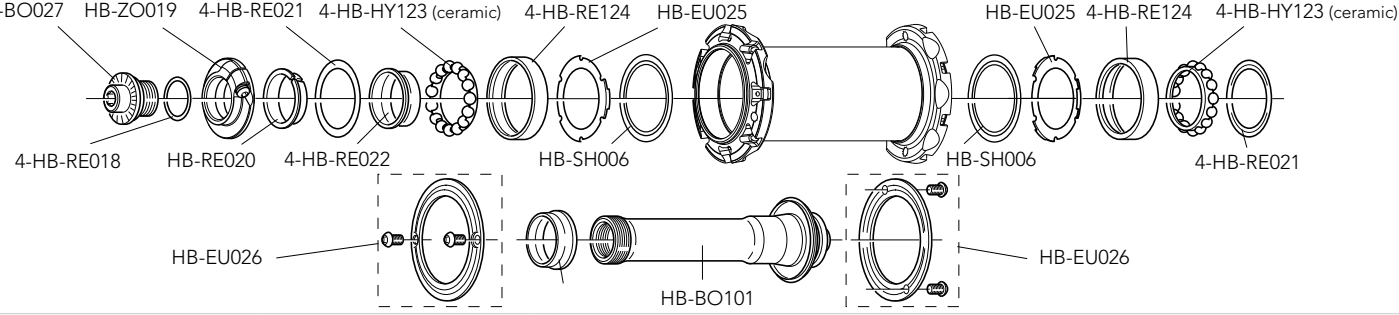
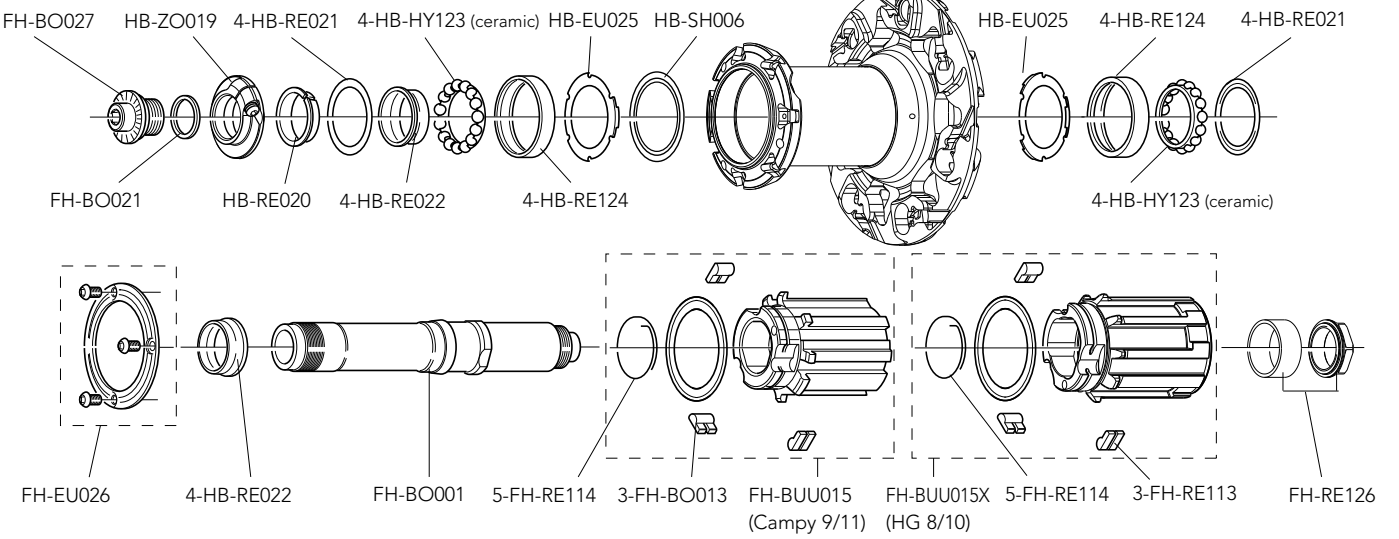


SHAMAL™ ULTRA™ 2-Way Fit™

MEDIUM PROFILE

INTENDED USE	WHEEL CODES	DESCRIPTION	WEIGHT
This product has been designed and manufactured to be fitted and used only on "racing" or "cyclocross" bikes (if they bear the CX mark), 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 <b>and is therefore expressly forbidden</b>	WH12-SH2FRB	FRONT+REAR Campagnolo FW body	1.440
	WH12-SH2FRXB	FRONT+REAR HG type FW body	1.479
	WH12-SH2FB	front	615
	WH12-SH2RB	rear Campagnolo FW body	825
	WH12-SH2RXB	rear HG type FW body	864
	<b>DARK LABEL</b>		
	WH12-SH2FRBDK	FRONT+REAR Campagnolo FW body	1.440
	WH12-SH2FRXBDK	FRONT+REAR HG type FW body	1.479
	WH12-SH2FBDK	front	615
	WH12-SH2RBDK	rear Campagnolo FW body	825
	WH12-SH2RXBDK	rear HG type FW body	864

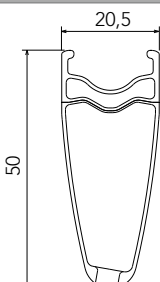
RIM	
<div><div>FRONT</div><div>20,5</div><div>25</div></div> <div><div>REAR</div><div>20,5</div><div>30</div></div>	FRONT RIM REAR RIM LABEL KIT VALVE HOLE 2-WAY FIT™ VALVE VALVE HOLE BUSHING DIAMETER TYRE SECTION  WH-113SHB (with standard labels) - WH-113SHBDK (with DARK labels) WH-114SHB (with standard labels) - WH-114SHBDK (with DARK labels) LAB-SH2B12 (front+rear) - LAB-SH2B12DK (front+rear DARK) 6,5 mm WH-SH001 5-WH-SH002 (for valve seat reduction - 5 pieces) 634 mm See recommended tyre manufacturer inflation pressure

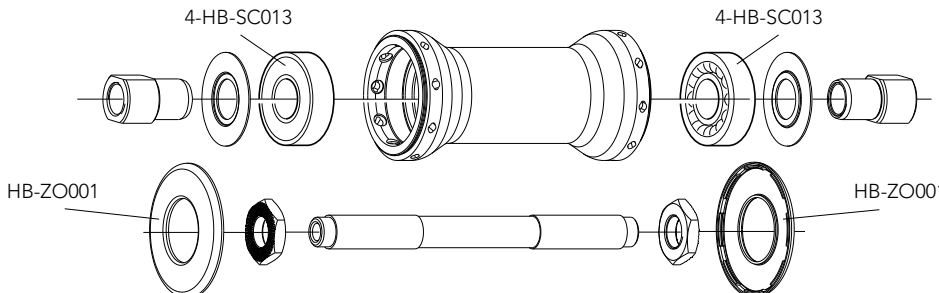
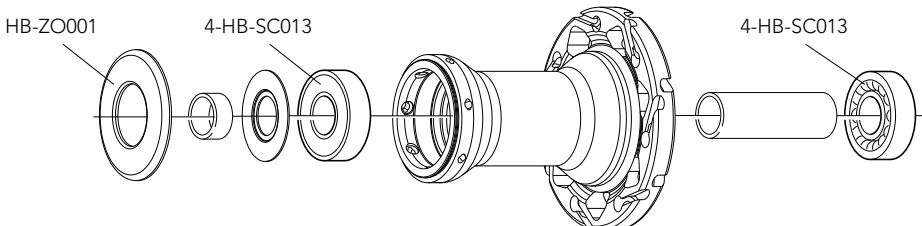
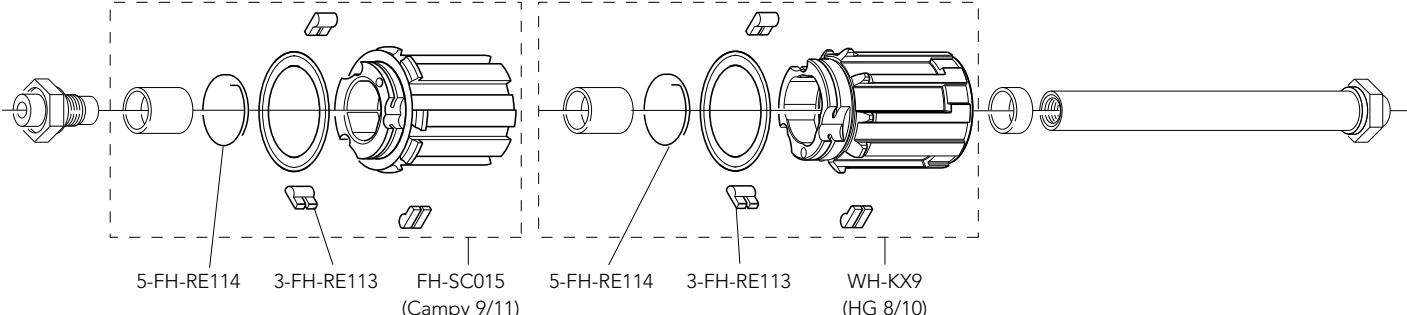
HUBS	
	
	
QUICK-RELEASES	QR11-20BFR front + posteriore

SPOKES	
COMPLETE FRONT KIT. COMPLETE REAR KIT. COMPLETE FRONT/REAR LEFT SPOKE COMPLETE REAR RIGHT SPOKE NIPPLES SPOKE RING INSERT NIPPLE NIPPLE MAGNET SPOKE SPANNER	KIT-13SHB KIT-24SHB WH-105SHB WH-107SHB 10-WH-015SH UT-WH010 UT-WH030 UT-WH050 UT-WH070  16 front/rear left spokes + 16 nipples 14 rear right spokes + 7 front/rear left spokes + 21 nipples spoke + nipples spoke + nipples 10 pieces anti-rotation spokes magnet-attractor for nipple nipple-guide spoke wrenches

**BULLET™ clincher (H50 - standard bearings)****HIGH PROFILE**

INTENDED USE	WHEEL CODES	DESCRIPTION	WEIGHT
This product has been designed and manufactured to be fitted and used only on "racing" or "cyclocross" bikes (if they bear the CX mark), 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 <b>and is therefore expressly forbidden</b>	WH12-BUCFR	FRONT+REAR Campagnolo FW body	1.755
	WH12-BUCFRX	FRONT+REAR HG type FW body	1.794
	WH12-BUCF	front	785
	WH12-BUCR	rear Campagnolo FW body	970
	WH12-BUCRX	rear HG type FW body	1.009

RIM		
	FRONT RIM REAR RIM LABEL KIT VALVE HOLE VALVE EXTENSION DIAMETER TYRE	WH-003BUU (no labels) WH-004BUU (no labels) LAB-BU12 (front+rear) 6,5 mm UT-WH130M (male extension) - UT-WH130F (female extension) 700C (622 x 15C) See section table and inflation pressures on page 205

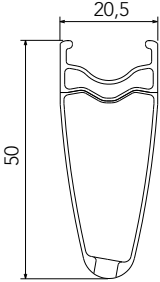
HUBS		
		
		
		
QUICK-RELEASES	QR12-ZOBFR	front + rear

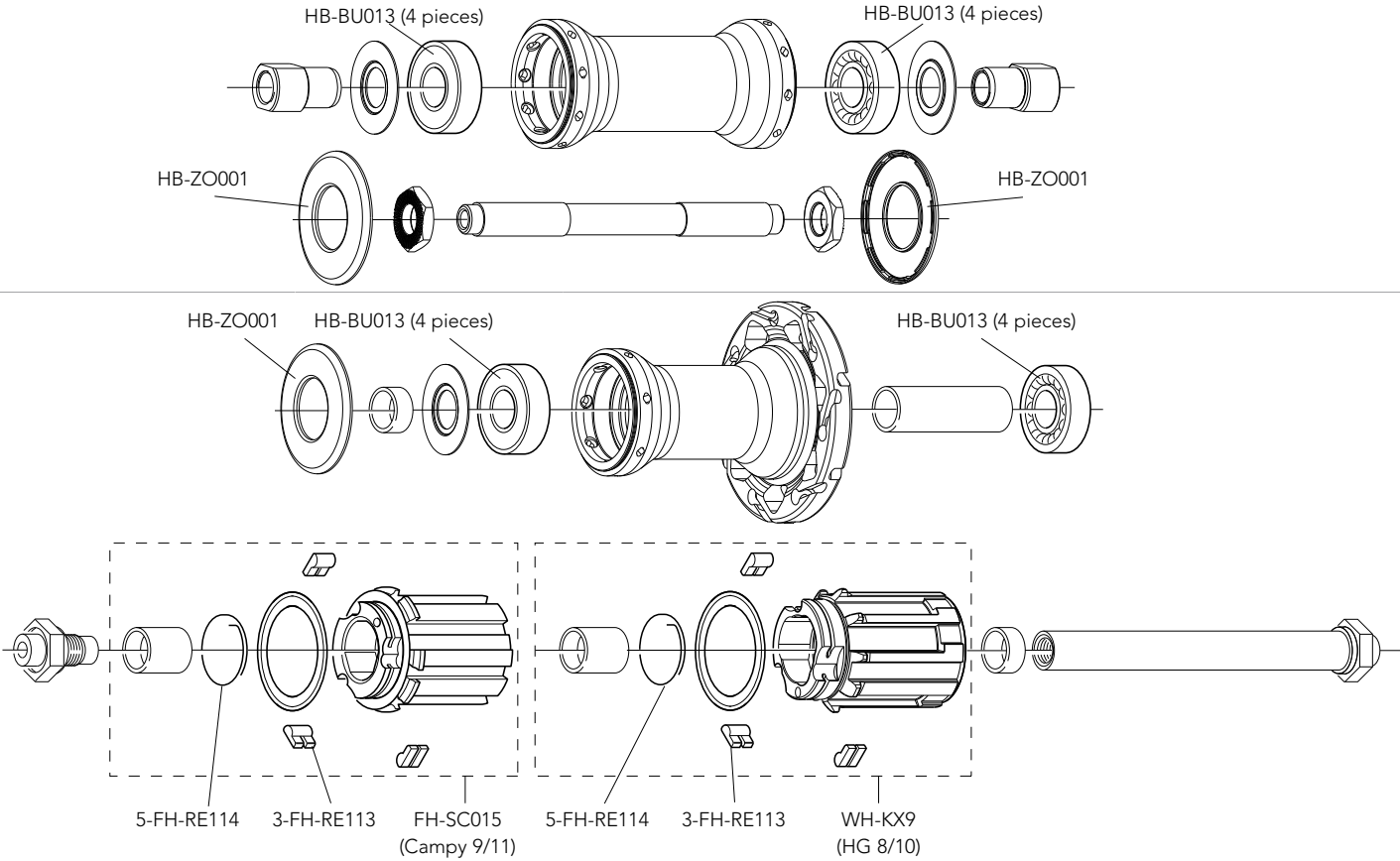
SPOKES		
COMPLETE FRONT KIT COMPLETE REAR KIT MINI-KIT NIPPLES SPOKE RING INSERT NIPPLE NIPPLE MAGNET SPOKE SPANNER	KIT-03BU KIT-04BU KIT-500BU WH-015BU UT-WH010 UT-WH160 UT-WH050 UT-WH090	18 front spokes + 18 nuts + 18 nut supporting plates 14 right rear spokes + 7 rear left spokes + 21 nuts + 21 nut supporting plates 2 front spokes + 2 right rear spokes + 2 rear left spokes + 6 nuts + 6 nut supporting plates 10 pieces anti-rotation spokes magnet-attractor for nipple nipple-guide spoke wrenches

BULLET™ clincher (H50 - USB™ bearings)

HIGH PROFILE

INTENDED USE	WHEEL CODES	DESCRIPTION	WEIGHT
This product has been designed and manufactured to be fitted and used only on "racing" or "cyclocross" bikes (if they bear the CX mark), 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 <b>and is therefore expressly forbidden</b>	WH12-BUCFRU	FRONT+REAR Campagnolo FW body	1.755
	WH12-BUCFRXU	FRONT+REAR HG type FW body	1.794
	WH12-BUCFU	front	785
	WH12-BUCRU	rear Campagnolo FW body	970
	WH12-BUCRXU	rear HG type FW body	1.009

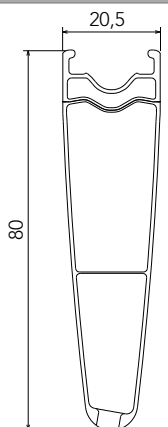
RIM		FRONT RIM REAR RIM LABEL KIT VALVE HOLE VALVE EXTENSION DIAMETER TYRE	WH-003BUU (no labels) WH-004BUU (no labels) LAB-BU12 (front+rear) 6,5 mm UT-WH130M (male extension) - UT-WH130F (female extension) 700C (622 x 15C) See section table and inflation pressures on page 205
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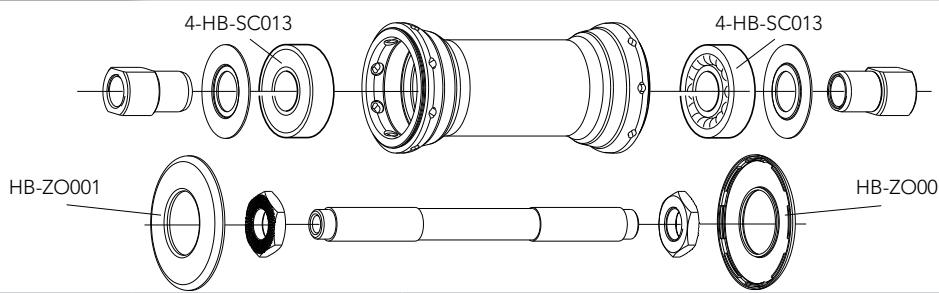
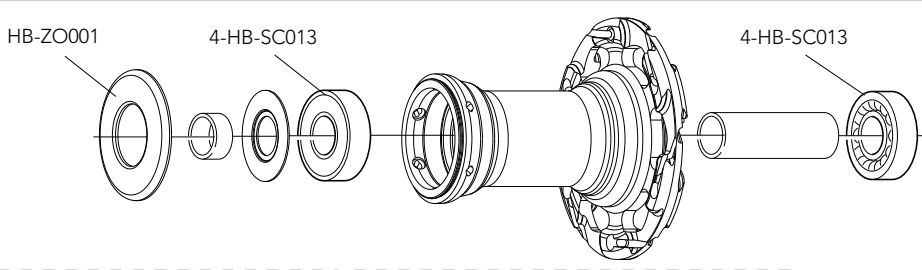
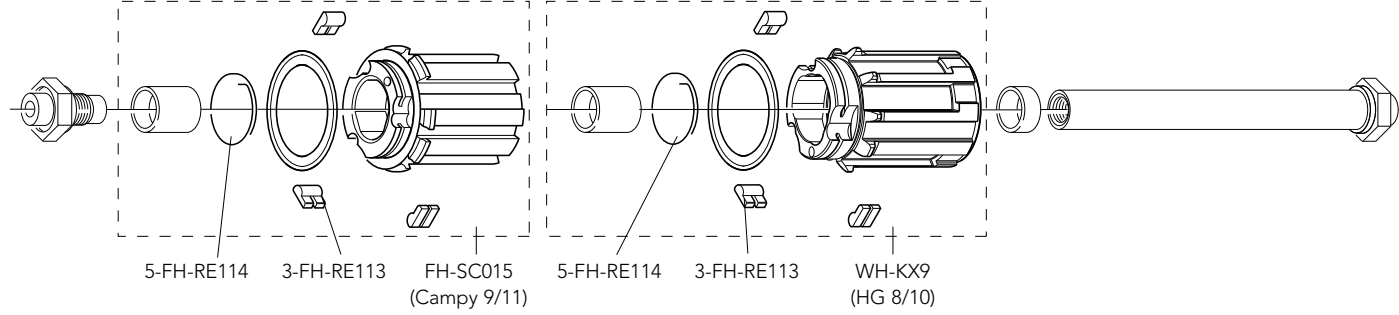
HUBS		QUICK-RELEASES	QR12-ZOBFR	front + rear
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SPOKES	COMPLETE FRONT KIT COMPLETE REAR KIT MINI-KIT NIPPLES SPOKE RING INSERT NIPPLE NIPPLE MAGNET SPOKE SPANNER	KIT-03BU KIT-04BU KIT-500BU WH-015BU UT-WH010 UT-WH160 UT-WH050 UT-WH090	18 front spokes + 18 nuts + 18 nut supporting plates 14 rear right spokes + 7 rear left spokes + 21 nuts + 21 nut supporting plates 2 front spokes + 2 rear right spokes + 2 rear left spokes + 6 nuts + 6 nut supporting plates 10 pieces anti-rotation spokes magnet-tractor for nipple nipple-guide spoke wrenches
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**BULLET™ clincher (H80 - standard bearings)****HIGH PROFILE**

INTENDED USE	WHEEL CODES	DESCRIPTION	WEIGHT
This product has been designed and manufactured to be fitted and used only on "racing" or "cyclocross" bikes (if they bear the CX mark), 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 <b>and is therefore expressly forbidden</b>	WH12-BUCFR80	FRONT+REAR Campagnolo FW body	1.930
	WH12-BUCFRX80	FRONT+REAR HG type FW body	1.969
	WH12-BUCF80	front	865
	WH12-BUCR80	rear Campagnolo FW body	1.065
	WH12-BUCRX80	rear HG type FW body	1.104

RIM		
	FRONT RIM REAR RIM LABEL KIT VALVE HOLE VALVE EXTENSION DIAMETER TYRE	WH-003BUU80 (no labels) WH-004BUU80 (no labels) LAB-BU1280 (front+rear) 6,5 mm UT-WH140M (male extension) - UT-WH140F (female extension) 700C (622 x 15C) See section table and inflation pressures on page 205

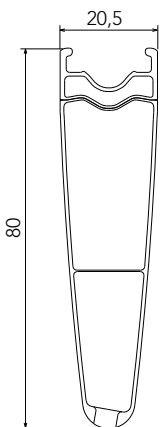
HUBS		
		
		
		
QUICK-RELEASES	QR12-ZOBFR	front + rear

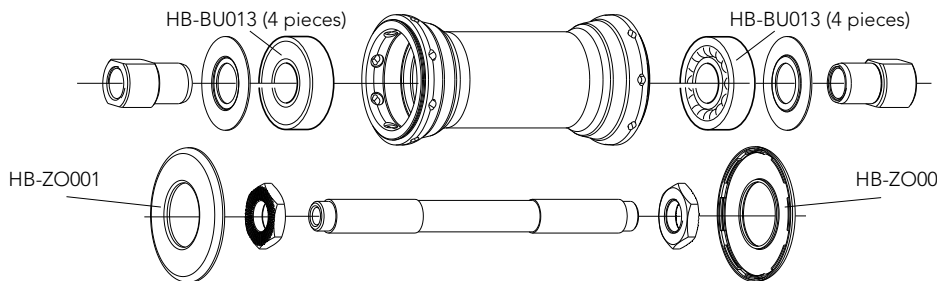
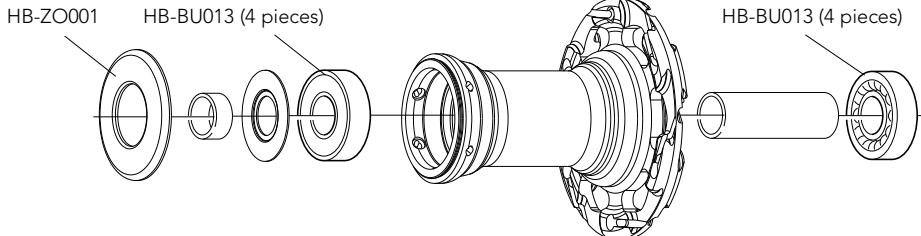
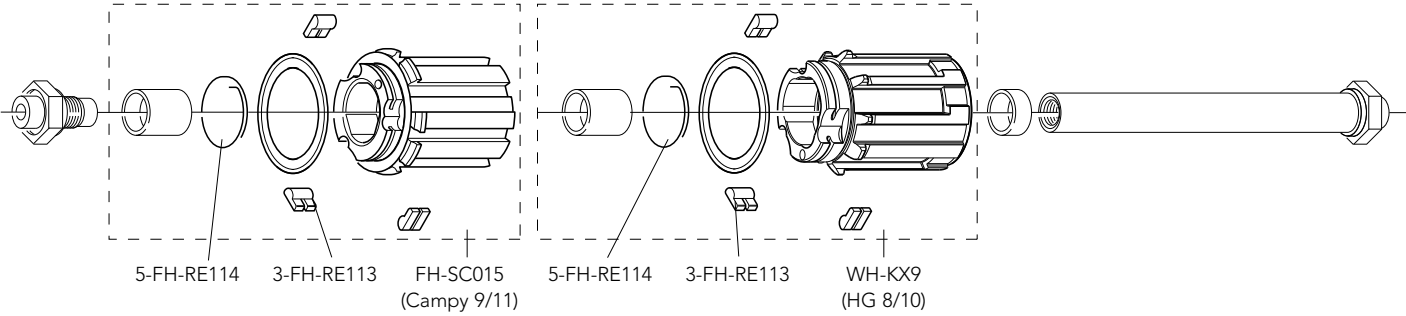
SPOKES		
COMPLETE FRONT KIT COMPLETE REAR KIT MINI-KIT NIPPLES SPOKE RING INSERT NIPPLE NIPPLE MAGNET SPOKE SPANNER	KIT-03BU80 KIT-04BU80 KIT-500BU80 WH-015BU UT-WH010 UT-WH160 UT-WH050 UT-WH090	16 front spokes + 16 nuts + 16 nut supporting plates 12 rear right spokes + 6 rear left spokes + 18 nuts + 18 nut supporting plates 2 front spokes + 2 rear right spokes + 2 rear left spokes + 6 nuts + 6 nut supporting plates 10 pieces anti-rotation spokes magnet-attractor for nipple nipple-guide spoke wrenches

BULLET™ clincher (H80 - USB™ bearings)

HIGH PROFILE

INTENDED USE	WHEEL CODES	DESCRIPTION	WEIGHT
This product has been designed and manufactured to be fitted and used only on "racing" or "cyclocross" bikes (if they bear the CX mark), 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 <b>and is therefore expressly forbidden</b>	WH12-BUCFRU80	FRONT+REAR Campagnolo FW body	1.930
	WH12-BUCFRXU80	FRONT+REAR HG type FW body	1.969
	WH12-BUCFU80	front	865
	WH12-BUCRU80	rear Campagnolo FW body	1.065
	WH12-BUCRXU80	rear HG type FW body	1.104

RIM			
	FRONT RIM REAR RIM LABEL KIT VALVE HOLE VALVE EXTENSION DIAMETER TYRE	WH-003BUU80 (no labels) WH-004BUU80 (no labels) LAB-BU1280 (front+rear) 6,5 mm UT-WH140M (male extension) - UT-WH140F (female extension) 700C (622 x 15C) See section table and inflation pressures on page 205	

HUBS		
		
		
		
QUICK-RELEASES	QR12-ZOBFR	front + rear

SPOKES			
COMPLETE FRONT KIT COMPLETE REAR KIT MINI-KIT NIPPLES SPOKE RING INSERT NIPPLE NIPPLE MAGNET SPOKE SPANNER	KIT-03BU KIT-04BU KIT-500BU WH-015BU UT-WH010 UT-WH160 UT-WH050 UT-WH090	18 front spokes + 18 nuts + 18 nut supporting plates 14 rear right spokes + 7 rear left spokes + 21 nuts + 21 nut supporting plates 2 front spokes + 2 rear right spokes + 2 rear left spokes + 6 nuts + 6 nut supporting plates 10 pieces anti-rotation spokes magnet-attractor for nipple nipple-guide spoke wrenches	

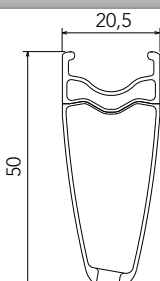
## MAXIMUM OPERATING PRESSURE

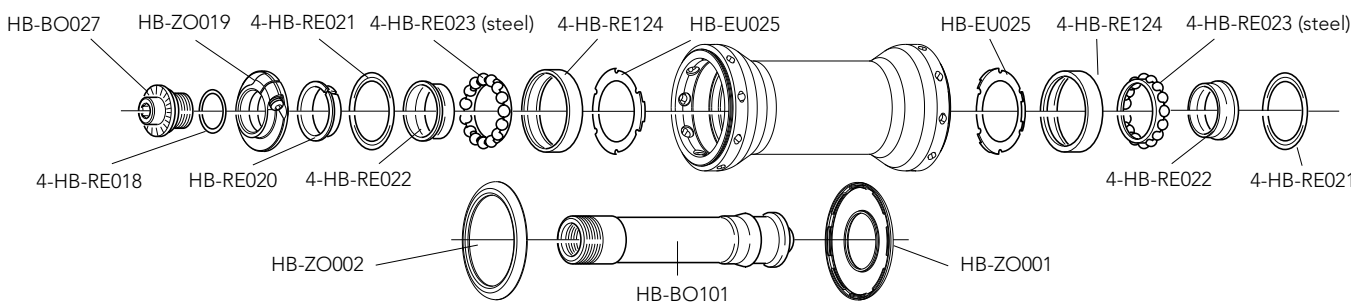
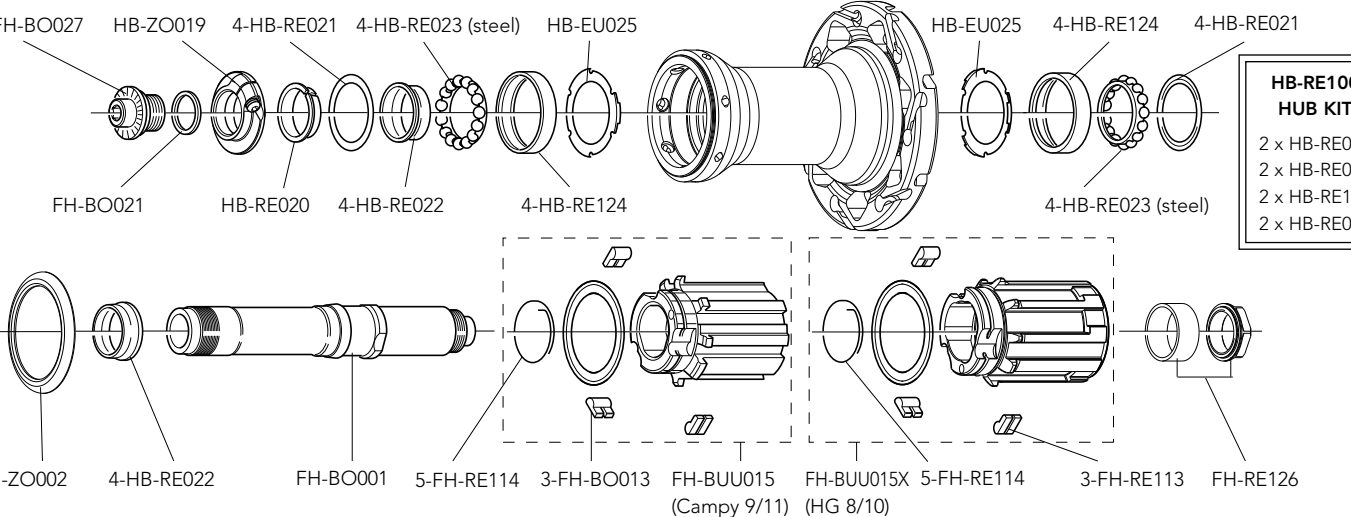
			RIM DIMENSION			
			13C		15C	
TYRE WIDTH	mm	in.	BAR	PSI	BAR	PSI
	18	0,70	10,0	146		
	20	0,80	9,5	138		
	23	0,90	9,5	138	9,5	138
	25	1,00	9,0	131	9,0	131
	28	1,10			8,0	117
	30	1,20			7,0	103
	32	1,25			6,7	99
	35	1,30			6,3	93

## BULLET™ ULTRA clincher (H50 - standard bearings)

## HIGH PROFILE

INTENDED USE	WHEEL CODES	DESCRIPTION	WEIGHT
This product has been designed and manufactured to be fitted and used only on "racing" or "cyclocross" bikes (if they bear the CX mark), 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 <b>and is therefore expressly forbidden</b>	WH12-BUUCFR	FRONT+REAR Campagnolo FW body	1.590
	WH12-BUUCFRX	FRONT+REAR HG type FW body	1.629
	WH12-BUUCF	front	727
	WH12-BUUCR	rear Campagnolo FW body	863
	WH12-BUUCRX	rear HG type FW body	902
	<b>DARK LABEL</b>		
	WH12-BUUCFRDK	FRONT+REAR Campagnolo FW body	1.590
	WH12-BUUCFRXDK	FRONT+REAR HG type FW body	1.629
	WH12-BUUCFDK	front	727
	WH12-BUUCRDK	rear Campagnolo FW body	863
	WH12-BUUCRXDK	rear HG type FW body	902

RIM		
	FRONT RIM REAR RIM LABEL KIT VALVE HOLE VALVE EXTENSION DIAMETER TYRE	WH-003BUU (no labels) WH-004BUU (no labels) LAB-BUU12 (front+rear) - LAB-BUU12DK (front+rear DARK) 6,5 mm UT-WH130M (male extension) - UT-WH130F (female extension) 700C (622 x 15C) See section table and inflation pressures on page 205

HUBS		
		
 <div style="border: 1px solid black; padding: 5px; width: fit-content; margin-top: 10px;"> <b>HB-RE100 HUB KIT</b>            2 x HB-RE021            2 x HB-RE022            2 x HB-RE124            2 x HB-RE023         </div>		
QUICK-RELEASES	QR12-BUUBFR	front + rear

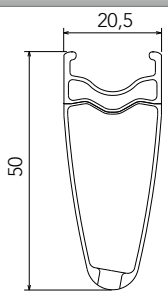
SPOKES		
COMPLETE FRONT KIT COMPLETE REAR KIT MINI-KIT NIPPLES SPOKE RING INSERT NIPPLE NIPPLE MAGNET SPOKE SPANNER	KIT-03BUU KIT-04BUU KIT-500BUU WH-015BUU UT-WH010 UT-WH160 UT-WH050 UT-WH090	18 front spokes + 18 nuts + 18 nut supporting plates 14 rear right spokes + 7 rear left spokes + 21 nuts + 21 nut supporting plates 2 front spokes + 2 rear right spokes + 2 rear left spokes + 6 nuts + 6 nut supporting plates red - 10 pieces anti-rotation spokes magnet-attractor for nipple nipple-guide spoke wrenches

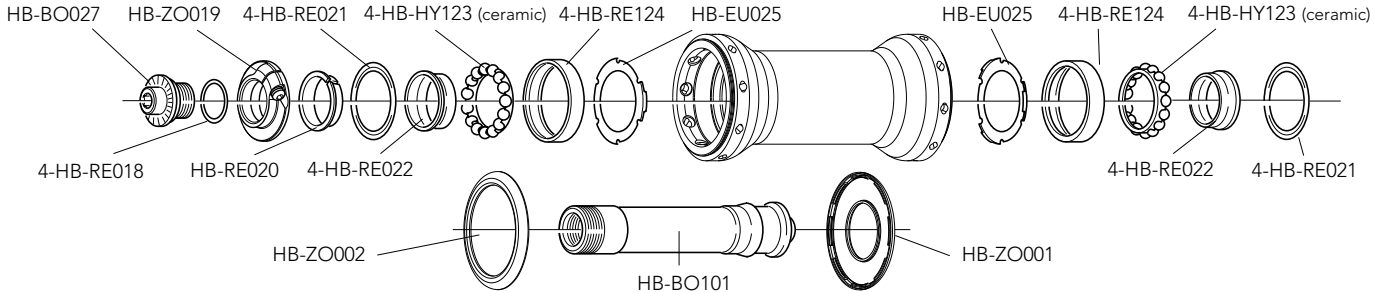
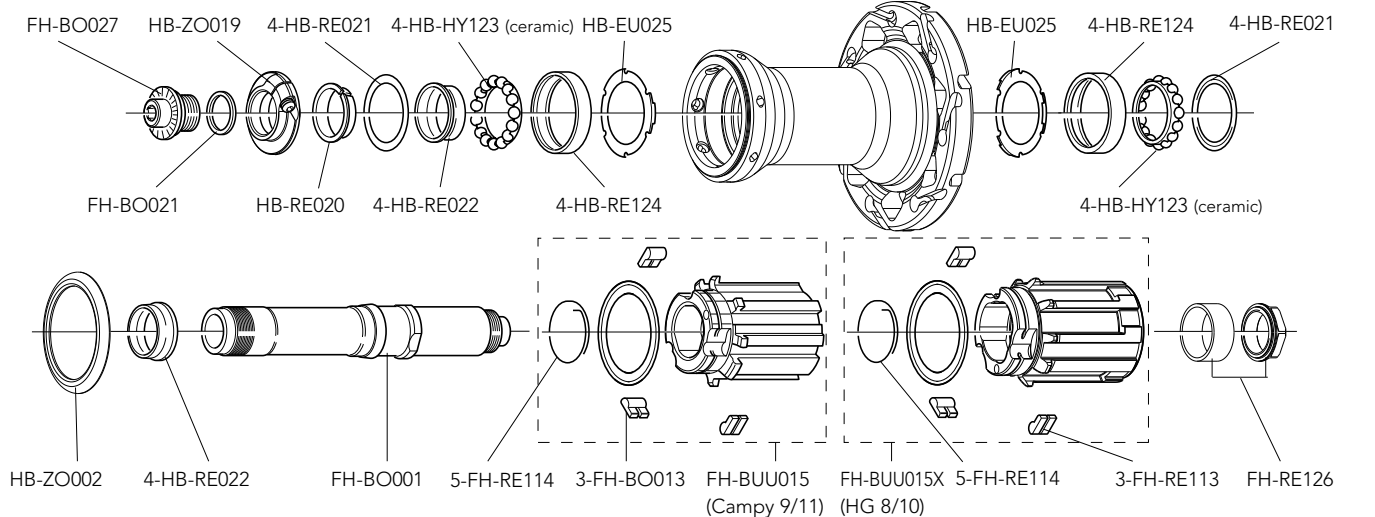
NOTES	
	

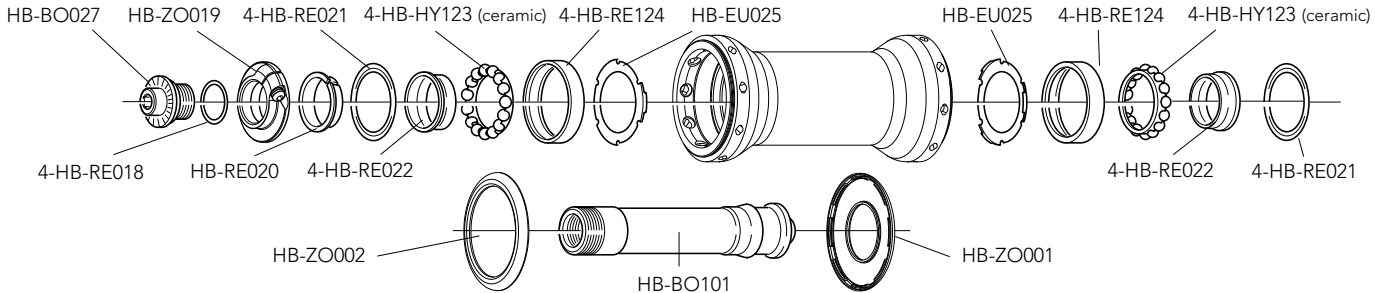
BULLET™ ULTRA clincher (H50 - USB™ bearings)

HIGH PROFILE

INTENDED USE	WHEEL CODES	DESCRIPTION	WEIGHT
This product has been designed and manufactured to be fitted and used only on "racing" or "cyclocross" bikes (if they bear the CX mark), 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 <b>and is therefore expressly forbidden</b>	WH12-BUUCFRU	FRONT+REAR Campagnolo FW body - <b>USB</b>	1.590
	WH12-BUUCFRXU	FRONT+REAR HG type FW body - <b>USB</b>	1.629
	WH12-BUUCFU	front - <b>USB</b>	727
	WH12-BUUCRU	rear Campagnolo FW body - <b>USB</b>	863
	WH12-BUUCRXU	rear HG type FW body - <b>USB</b>	902
	<b>DARK LABEL</b>		
	WH12-BUUCFRUDK	FRONT+REAR Campagnolo FW body - <b>USB</b>	1.590
	WH12-BUUCFRXUDK	FRONT+REAR HG type FW body - <b>USB</b>	1.629
	WH12-BUUCFUDK	front - <b>USB</b>	727
	WH12-BUUCRUDK	rear Campagnolo FW body - <b>USB</b>	863
	WH12-BUUCRXUDK	rear HG type FW body - <b>USB</b>	902

RIM		FRONT RIM REAR RIM LABEL KIT VALVE HOLE VALVE EXTENSION DIAMETER TYRE	WH-003BUU (no labels) WH-004BUU (no labels) LAB-BUU12 (front+rear) - LAB-BUU12DK (front+rear DARK) 6,5 mm UT-WH130M (male extension) - UT-WH130F (female extension) 700C (622 x 15C) See section table and inflation pressures on page 205
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HUBS		
QUICK-RELEASES	QR12-BUUBFR	front + rear

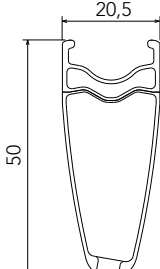
SPOKES		18 front spokes + 18 nuts + 18 nut supporting plates 14 rear right spokes + 7 rear left spokes + 21 nuts + 21 nut supporting plates 2 front spokes + 2 rear right spokes + 2 rear left spokes + 6 nuts + 6 nut supporting plates red - 10 pieces anti-rotation spokes magnet-attractor for nipple nipple-guide spoke wrenches
COMPLETE FRONT KIT	KIT-03BUU	
COMPLETE REAR KIT	KIT-04BUU	
MINI-KIT	KIT-500BUU	
NIPPLES	WH-015BUU	
SPOKE RING	UT-WH010	
INSERT NIPPLE	UT-WH160	
NIPPLE MAGNET	UT-WH050	
SPOKE SPANNER	UT-WH090	

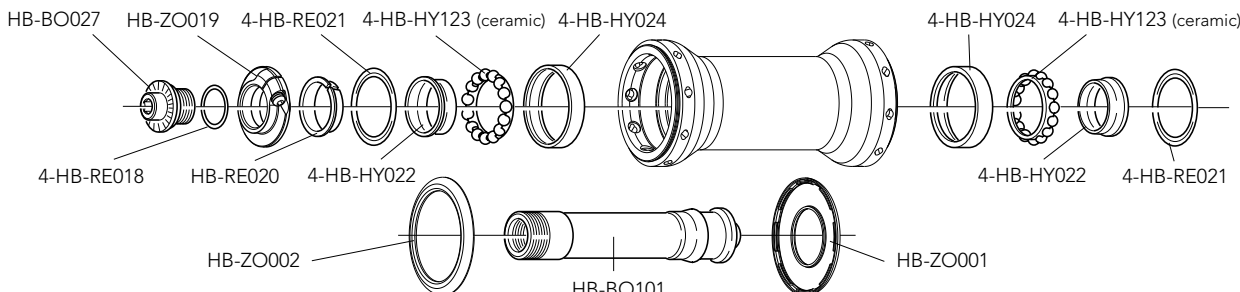
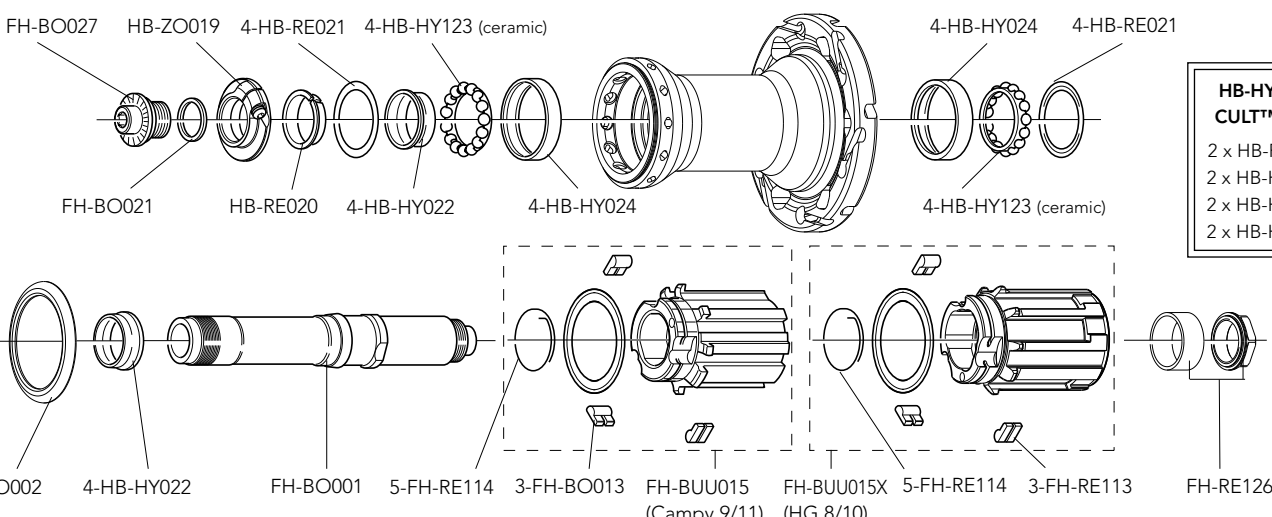
NOTES	
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## BULLET™ ULTRA clincher (H50 - CULT™ bearings)

## HIGH PROFILE

INTENDED USE	WHEEL CODES	DESCRIPTION	WEIGHT
This product has been designed and manufactured to be fitted and used only on "racing" or "cyclocross" bikes (if they bear the CX mark), 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 <b>and is therefore expressly forbidden</b>	WH12-BUUCFRC	FRONT+REAR Campagnolo FW body - <b>CULT</b>	1.590
	WH12-BUUCFRXC	FRONT+REAR HG type FW body - <b>CULT</b>	1.629
	WH12-BUUCFC	front - <b>CULT</b>	727
	WH12-BUUCRC	rear Campagnolo FW body - <b>CULT</b>	863
	WH12-BUUCRXC	rear HG type FW body - <b>CULT</b>	902
	<b>DARK LABEL</b>		
	WH12-BUUCFRCDK	FRONT+REAR Campagnolo FW body - <b>CULT</b>	1.590
	WH12-BUUCFRXC DK	FRONT+REAR HG type FW body - <b>CULT</b>	1.629
	WH12-BUUCFC DK	front - <b>CULT</b>	727
	WH12-BUUCRC DK	rear Campagnolo FW body - <b>CULT</b>	863
	WH12-BUUCRXC DK	rear HG type FW body - <b>CULT</b>	902

RIM		
	FRONT RIM REAR RIM LABEL KIT VALVE HOLE VALVE EXTENSION DIAMETER TYRE	WH-003BUU (no labels) WH-004BUU (no labels) LAB-BUU12 (front+rear) - LAB-BUU12DK (front+rear DARK) 6,5 mm UT-WH130M (male extension) - UT-WH130F (female extension) 700C (622 x 15C) See section table and inflation pressures on page 205

HUBS		
		
 <div data-bbox="1364 1321 1524 1512" style="border: 1px solid black; padding: 5px;"> <b>HB-HY100 CULT™ KIT</b>            2 x HB-RE021            2 x HB-HY022            2 x HB-HY024            2 x HB-HY123         </div>		
QUICK-RELEASES	QR12-BUUBFR	front + rear

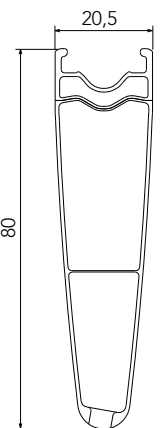
SPOKES		
COMPLETE FRONT KIT COMPLETE REAR KIT MINI-KIT NIPPLES SPOKE RING INSERT NIPPLE NIPPLE MAGNET SPOKE SPANNER	KIT-03BUU KIT-04BUU KIT-500BUU WH-015BUU UT-WH010 UT-WH160 UT-WH050 UT-WH090	18 front spokes + 18 nuts + 18 nut supporting plates 14 rear right spokes + 7 rear left spokes + 21 nuts + 21 nut supporting plates 2 front spokes + 2 rear right spokes + 2 rear left spokes + 6 nuts + 6 nut supporting plates red - 10 pieces anti-rotation spokes magnet-attractor for nipple nipple-guide spoke wrenches

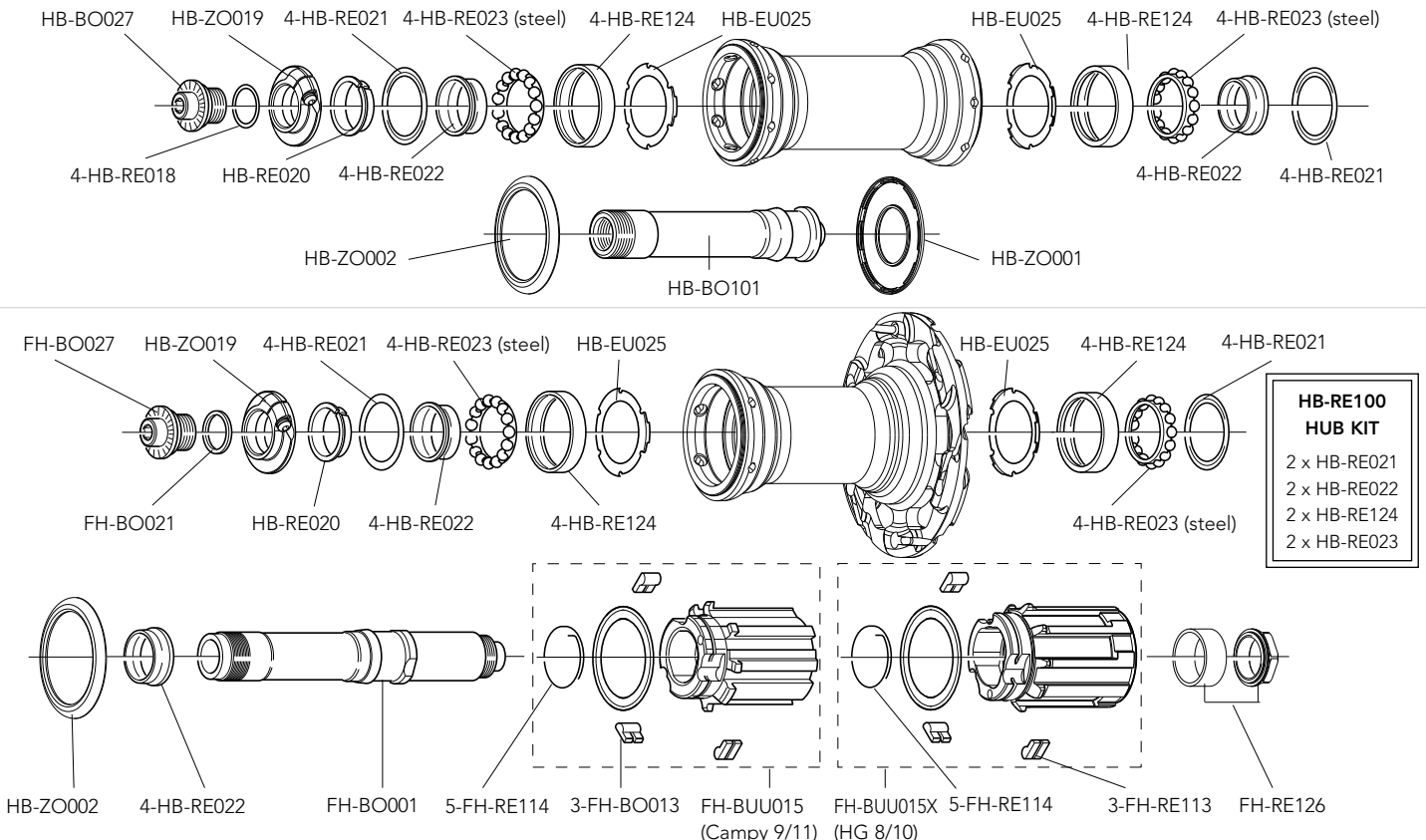
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BULLET™ ULTRA clincher (H80 - standard bearings)

HIGH PROFILE

INTENDED USE	WHEEL CODES	DESCRIPTION	WEIGHT
This product has been designed and manufactured to be fitted and used only on "racing" or "cyclocross" bikes (if they bear the CX mark), 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 <b>and is therefore expressly forbidden</b>	WH12-BUUCFR80	FRONT+REAR Campagnolo FW body	1.770
	WH12-BUUCFRX80	FRONT+REAR HG type FW body	1.809
	WH12-BUUCF80	front	815
	WH12-BUUCR80	rear Campagnolo FW body	955
	WH12-BUUCRX80	rear HG type FW body	994
	<b>DARK LABEL</b>		
	WH12-BUUCFR80DK	FRONT+REAR Campagnolo FW body	1.770
	WH12-BUUCFRX80DK	FRONT+REAR HG type FW body	1.809
	WH12-BUUCF80DK	front	815
	WH12-BUUCR80DK	rear Campagnolo FW body	955
	WH12-BUUCR80XDK	rear HG type FW body	994

RIM AND SPOKES		
	<p>FRONT RIM REAR RIM LABEL KIT VALVE HOLE VALVE EXTENSION DIAMETER TYRE</p> <p>COMPLETE FRONT KIT COMPLETE REAR KIT MINI-KIT</p> <p>NIPPLES SPOKE RING INSERT NIPPLE NIPPLE MAGNET SPOKE SPANNER</p>	<p>WH-003BUU80 (<b>no labels</b>) WH-004BUU80 (<b>no labels</b>) LAB-BUU1280 (front+rear) - LAB-BUU1280DK (front+rear DARK) 6,5 mm UT-WH140M (male extension) - UT-WH140F (female extension) 700C (622 x 15C) See section table and inflation pressures on page 205</p> <p>KIT-03BUU80 (16 front spokes + 16 nuts + 16 nut supporting plates) KIT-04BUU80 (12 rear right spokes+6 rear left spokes+18 nuts+18 nut supporting plates) KIT-500BUU80 (2 front spokes+2 rear right spokes+2 rear left spokes+6 nuts+6 nut supporting plates) WH-015BUU (red - 10 pieces) UT-WH010 (anti-rotation spokes) UT-WH160 (magnet-attractor for nipple) UT-WH050 (nipple-guide) UT-WH090 (spoke wrenches)</p>

HUBS		
		
QUICK-RELEASES	QR12-BUUBFR	front + rear

NOTES

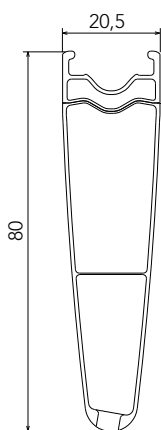


## BULLET™ ULTRA clincher (H80 - USB™ bearings)

## HIGH PROFILE

INTENDED USE	WHEEL CODES	DESCRIPTION	WEIGHT
This product has been designed and manufactured to be fitted and used only on “racing” or “cyclocross” bikes (if they bear the CX mark), 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 <b>and is therefore expressly forbidden</b>	WH12-BUUCFRU80	FRONT+REAR Campagnolo FW body - <b>USB</b>	1.770
	WH12-BUUCFRXU80	FRONT+REAR HG type FW body - <b>USB</b>	1.809
	WH12-BUUCFU80	front - <b>USB</b>	815
	WH12-BUUCRU80	rear Campagnolo FW body - <b>USB</b>	955
	WH12-BUUCRXU80	rear HG type FW body - <b>USB</b>	994
	<b><u>DARK LABEL</u></b>		
	WH12-BUUCFRU80DK	FRONT+REAR Campagnolo FW body - <b>USB</b>	1.770
	WH12-BUUCFRXU80DK	FRONT+REAR HG type FW body - <b>USB</b>	1.809
	WH12-BUUCFU80DK	front - <b>USB</b>	815
	WH12-BUUCRU80DK	rear Campagnolo FW body - <b>USB</b>	955
WH12-BUUCRXU80DK	rear HG type FW body - <b>USB</b>	994	

## RIM AND SPOKES



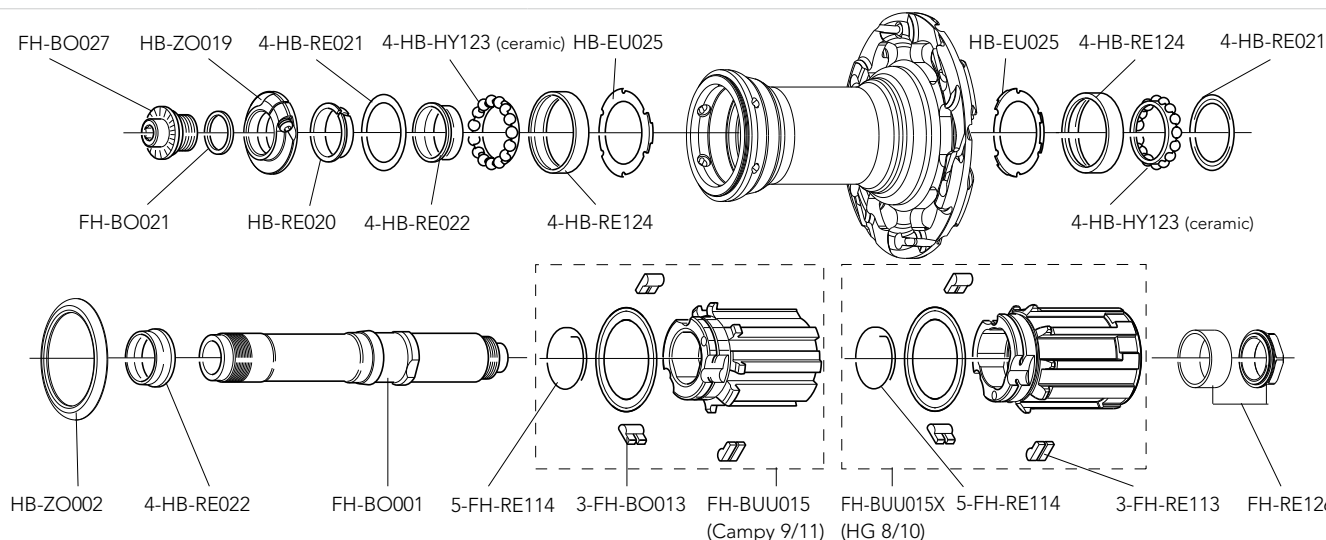
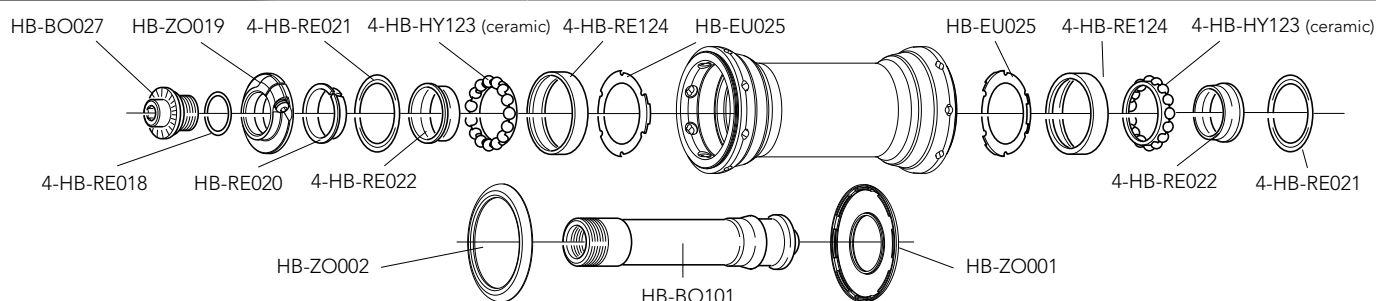
FRONT RIM  
REAR RIM  
LABEL KIT  
VALVE HOLE  
VALVE EXTENSION  
DIAMETER  
TYRE

COMPLETE FRONT KIT  
COMPLETE REAR KIT  
MINI-KIT  
NIPPLES  
SPOKE RING  
INSERT NIPPLE  
NIPPLE MAGNET  
SPOKE SPANNER

WH-003BUU80 **(no labels)**  
 WH-004BUU80 **(no labels)**  
 LAB-BUU1280 (front+rear) - LAB-BUU1280DK (front+rear DARK)  
 6,5 mm  
 UT-WH140M (male extension) - UT-WH140F (female extension)  
 700C (622 x 15C)  
 See section table and inflation pressures on page 205

KIT-03BUU80 (16 front spokes + 16 nuts + 16 nut supporting plates)  
KIT-04BUU80 (12 rear right spokes+6 rear left spokes+18 nuts+18 nut supporting plates)  
KIT-500BUU80 (2 front spokes + 2 rear right spokes + 2 rear left spokes + 6 nuts + 6 nut supporting plates)  
WH-015BUU (red - 10 pieces)  
UT-WH010 (anti-rotation spokes)  
UT-WH160 (magnet-attractor for nipple)  
UT-WH050 (nipple-guide)  
UT-WH090 (spoke wrenches)

## HUBS



QUICK-RELEASES	QR12-BUUBFR	front + rear
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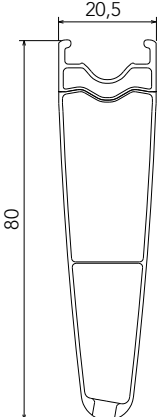
## NOTES

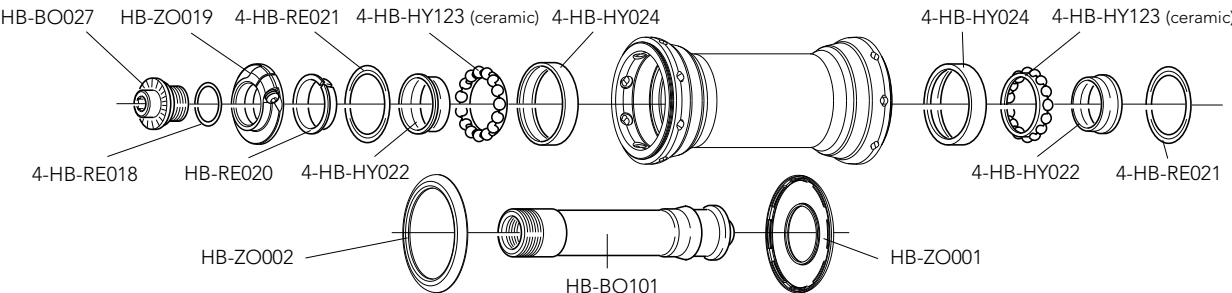
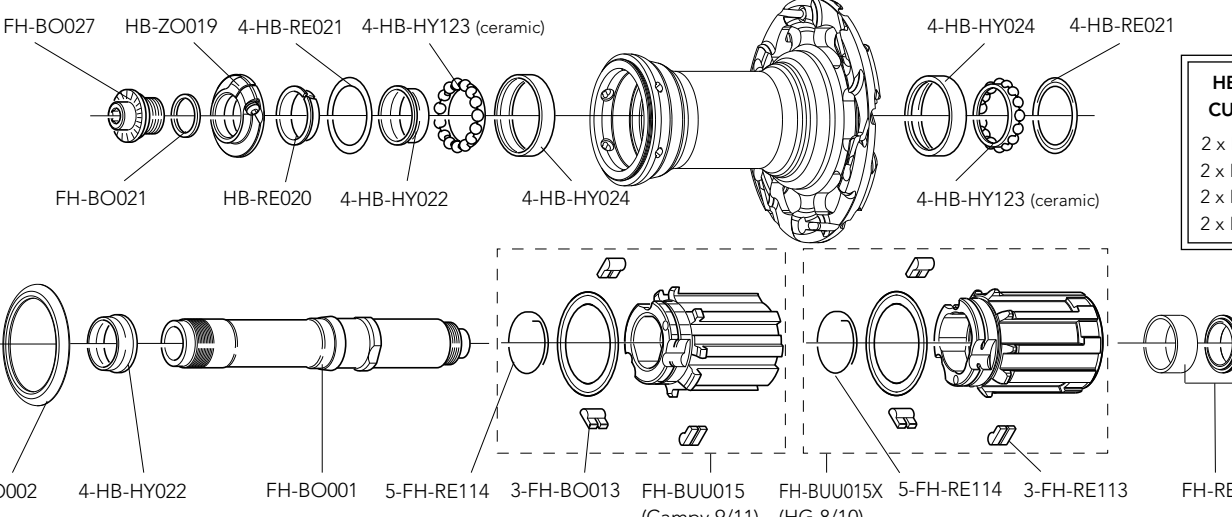


BULLET™ ULTRA clincher (H80 - CULT™ bearings)

HIGH PROFILE

INTENDED USE	WHEEL CODES	DESCRIPTION	WEIGHT
This product has been designed and manufactured to be fitted and used only on "racing" or "cyclocross" bikes (if they bear the CX mark), 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 <b>and is therefore expressly forbidden</b>	WH12-BUUCFRC80	FRONT+REAR Campagnolo FW body - <b>CULT</b>	1.770
	WH12-BUUCFRXC80	FRONT+REAR HG type FW body - <b>CULT</b>	1.809
	WH12-BUUCFC80	front - <b>CULT</b>	815
	WH12-BUUCRC80	rear Campagnolo FW body - <b>CULT</b>	955
	WH12-BUUCRXC80	rear HG type FW body - <b>CULT</b>	994
	<b>DARK LABEL</b>		
	WH12-BUUCFRC80DK	FRONT+REAR Campagnolo FW body - <b>CULT</b>	1.770
	WH12-BUUCFRXC80DK	FRONT+REAR HG type FW body - <b>CULT</b>	1.809
	WH12-BUUCFC80DK	front - <b>CULT</b>	815
	WH12-BUUCRC80DK	rear Campagnolo FW body - <b>CULT</b>	955
	WH12-BUUCRXC80DK	rear HG type FW body - <b>CULT</b>	994

RIM AND SPOKES		
	FRONT RIM REAR RIM LABEL KIT VALVE HOLE VALVE EXTENSION DIAMETER TYRE  COMPLETE FRONT KIT COMPLETE REAR KIT MINI-KIT  NIPPLES SPOKE RING INSERT NIPPLE NIPPLE MAGNET SPOKE SPANNER	WH-003BUU80 ( <b>no labels</b> ) WH-004BUU80 ( <b>no labels</b> ) LAB-BUU1280 (front+rear) - LAB-BUU1280DK (front+rear DARK) 6,5 mm UT-WH140M (male extension) - UT-WH140F (female extension) 700C (622 x 15C) See section table and inflation pressures on page 205  KIT-03BUU80 (16 front spokes + 16 nuts + 16 nut supporting plates) KIT-04BUU80 (12 rear right spokes+6 rear left spokes+18 nuts+18 nut supporting plates) KIT-500BUU80 (2 front spokes + 2 rear right spokes + 2 rear left spokes + 6 nuts + 6 nut sup- porting plates) WH-015BUU (red - 10 pieces) UT-WH010 (anti-rotation spokes) UT-WH160 (magnet-attractor for nipple) UT-WH050 (nipple-guide) UT-WH090 (spoke wrenches)

HUBS		
		
		
<div>HB-HY100 CULT™ KIT 2 x HB-RE021 2 x HB-HY022 2 x HB-HY024 2 x HB-HY123</div>		
QUICK-RELEASES	QR12-BUUBFR	front + rear

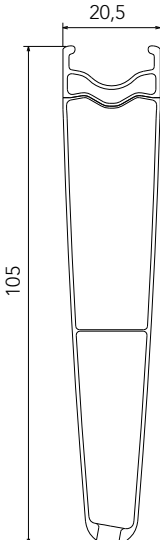
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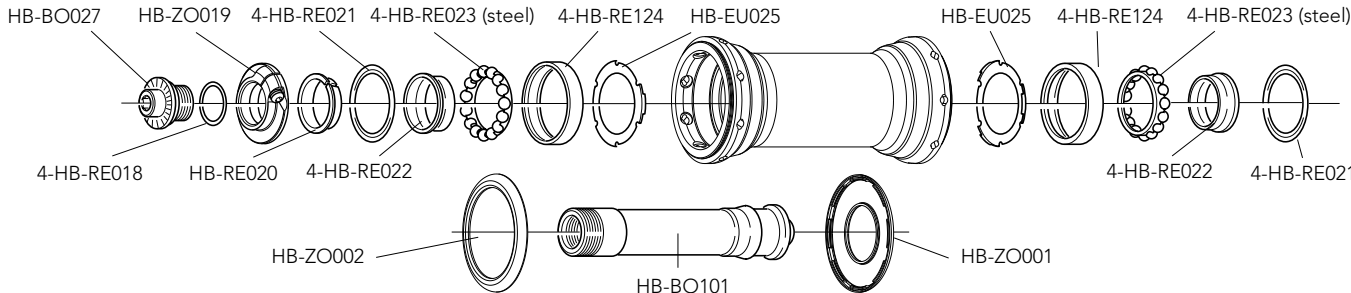
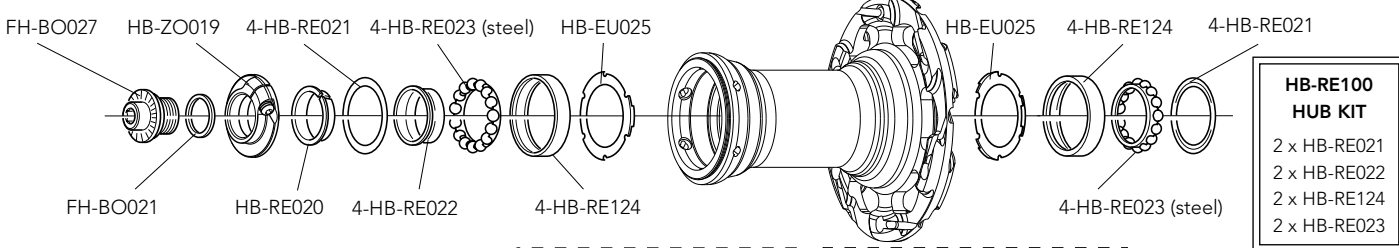
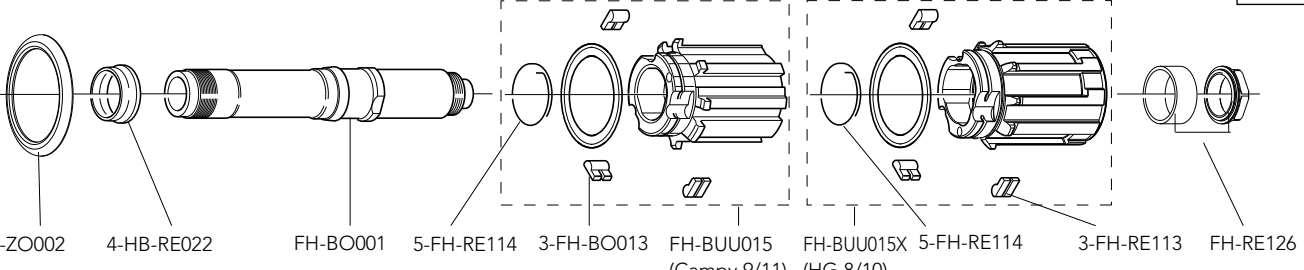


## BULLET™ ULTRA clincher (H105 - standard bearings)

## HIGH PROFILE

INTENDED USE	WHEEL CODES	DESCRIPTION	WEIGHT
This product has been designed and manufactured to be fitted and used only on "racing" or "cyclocross" bikes (if they bear the CX mark), 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 <b>and is therefore expressly forbidden</b>	WH12-BUUCFR105	FRONT+REAR Campagnolo FW body	1.960
	WH12-BUUCFRX105	FRONT+REAR HG type FW body	1.999
	WH12-BUUCF105	front	910
	WH12-BUUCR105	rear Campagnolo FW body	1.050
	WH12-BUUCRX105	rear HG type FW body	1.089
	<b>DARK LABEL</b>		
	WH12-BUUCFR105DK	FRONT+REAR Campagnolo FW body	1.960
	WH12-BUUCFRX105DK	FRONT+REAR HG type FW body	1.999
	WH12-BUUCF105DK	front	910
	WH12-BUUCR105DK	rear Campagnolo FW body	1.050
	WH12-BUUCR105XDK	rear HG type FW body	1.089

RIM AND SPOKES	
 <p>FRONT RIM REAR RIM LABEL KIT VALVE HOLE VALVE EXTENSION DIAMETER TYRE</p> <p>COMPLETE FRONT KIT COMPLETE REAR KIT MINI-KIT</p> <p>NIPPLES SPOKE RING INSERT NIPPLE NIPPLE MAGNET SPOKE SPANNER</p>	<p>WH-003BUU105 (no labels) WH-004BUU105 (no labels) LAB-BUU12105 (front+rear) - LAB-BUU12105DK (front+rear DARK) 6,5 mm UT-WH150M (male extension) - UT-WH150F (female extension) 700C (622 x 15C) See section table and inflation pressures on page 205</p> <p>KIT-03BUU105 (16 front spokes + 16 nuts + 16 nut supporting plates) KIT-04BUU105 (12 rear right spokes+6 rear left spokes+18 nuts+18 nut supporting plates) KIT-500BUU105 (2 front spokes + 2 rear right spokes + 2 rear left spokes + 6 nuts + 6 nut supporting plates) WH-015BUU (red - 10 pieces) UT-WH010 (anti-rotation spokes) UT-WH160 (magnet-attractor for nipple) UT-WH050 (nipple-guide) UT-WH090 (spoke wrenches)</p>

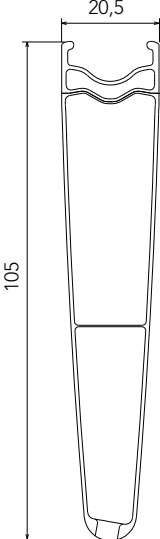
HUBS	
	
	
 <p>(Campy 9/11) (HG 8/10)</p>	
QUICK-RELEASES	QR12-BUUBFR front + rear

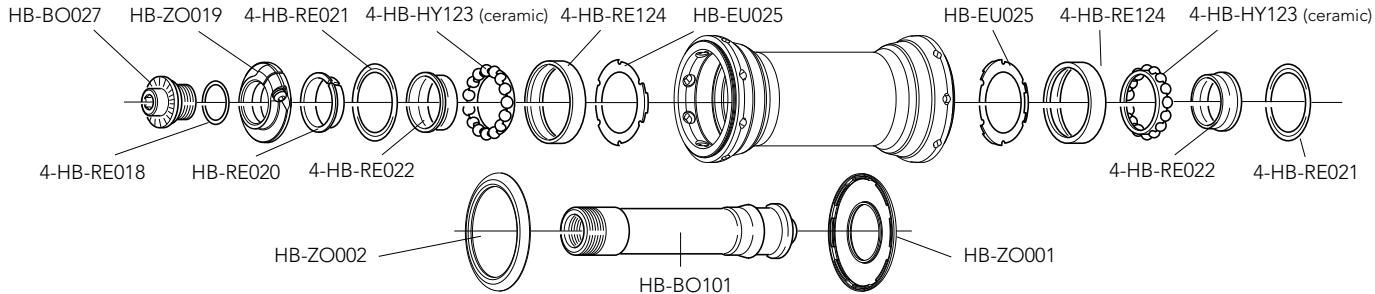
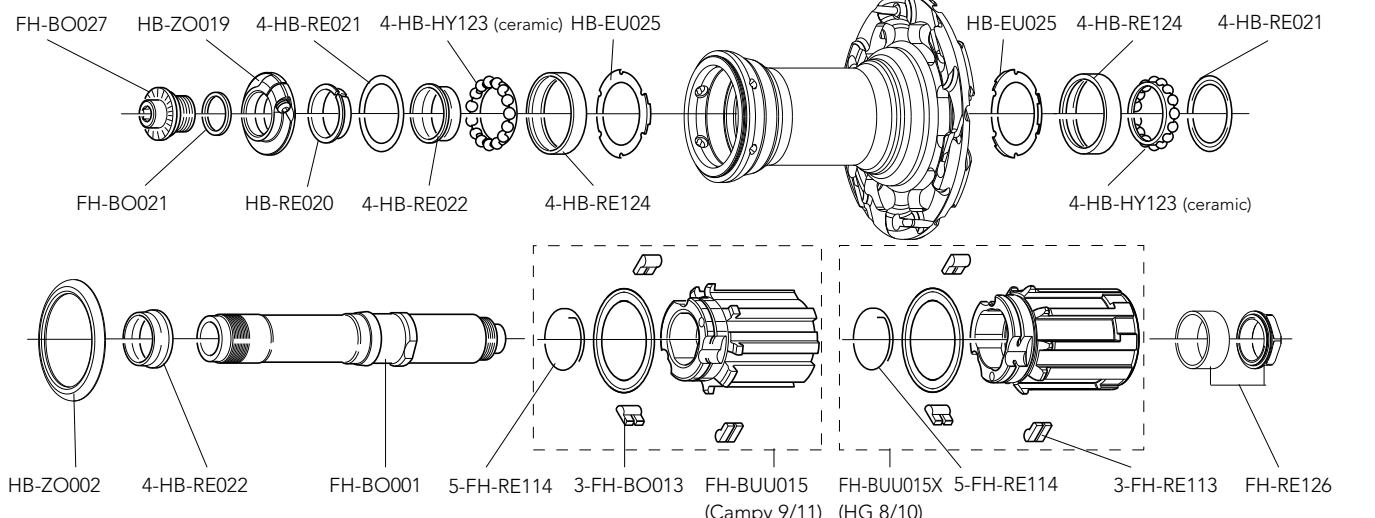
## NOTES

BULLET™ ULTRA clincher (H105 - USB™ bearings)

HIGH PROFILE

INTENDED USE	WHEEL CODES	DESCRIPTION	WEIGHT
This product has been designed and manufactured to be fitted and used only on "racing" or "cyclocross" bikes (if they bear the CX mark), 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 <b>and is therefore expressly forbidden</b>	WH12-BUUCFRU105	FRONT+REAR Campagnolo FW body - <b>USB</b>	1.960
	WH12-BUUCFRXU105	FRONT+REAR HG type FW body - <b>USB</b>	1.999
	WH12-BUUCFU105	front - <b>USB</b>	910
	WH12-BUUCRU105	rear Campagnolo FW body - <b>USB</b>	1.050
	WH12-BUUCRXU105	rear HG type FW body - <b>USB</b>	1.089
	<b>DARK LABEL</b>		
	WH12-BUUCFRU105DK	FRONT+REAR Campagnolo FW body - <b>USB</b>	1.960
	WH12-BUUCFRXU105DK	FRONT+REAR HG type FW body - <b>USB</b>	1.999
	WH12-BUUCFU105DK	front - <b>USB</b>	910
	WH12-BUUCRU105DK	rear Campagnolo FW body - <b>USB</b>	1.050
	WH12-BUUCRXU105DK	rear HG type FW body - <b>USB</b>	1.089

RIM AND SPOKES		
	FRONT RIM REAR RIM LABEL KIT VALVE HOLE VALVE EXTENSION DIAMETER TYRE  COMPLETE FRONT KIT COMPLETE REAR KIT MINI-KIT  NIPPLES SPOKE RING INSERT NIPPLE NIPPLE MAGNET SPOKE SPANNER	WH-003BUU105 (no labels) WH-004BUU105 (no labels) LAB-BUU12105 (front+rear) - LAB-BUU12105DK (front+rear DARK) 6,5 mm UT-WH150M (male extension) - UT-WH150F (female extension) 700C (622 x 15C) See section table and inflation pressures on page 205  KIT-03BUU105 (16 front spokes + 16 nuts + 16 nut supporting plates) KIT-04BUU105 (12 rear right spokes+6 rear left spokes+18 nuts+18 nut supporting plates) KIT-500BUU105 (2 front spokes + 2 rear right spokes + 2 rear left spokes + 6 nuts + 6 nut supporting plates) WH-015BUU (red - 10 pieces) UT-WH010 (anti-rotation spokes) UT-WH160 (magnet-attractor for nipple) UT-WH050 (nipple-guide) UT-WH090 (spoke wrenches)

HUBS		
		
		
QUICK-RELEASES	QR12-BUUBFR	front + rear

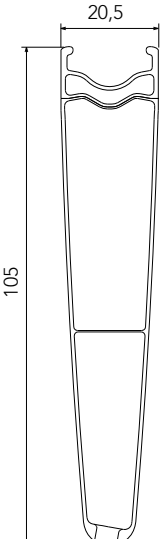
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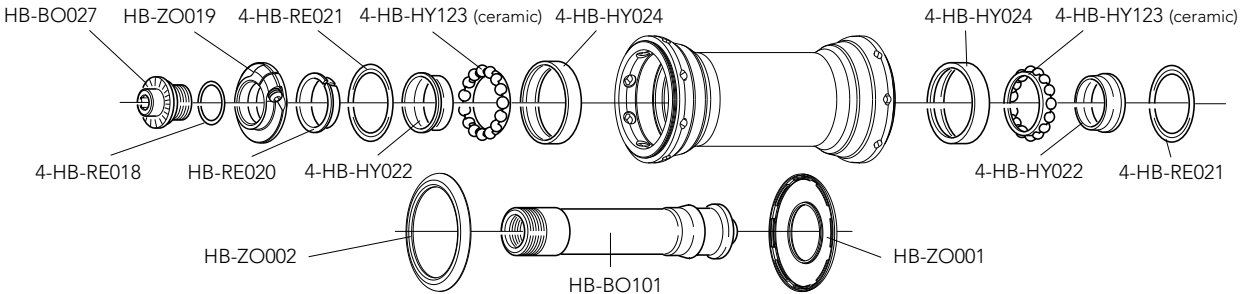
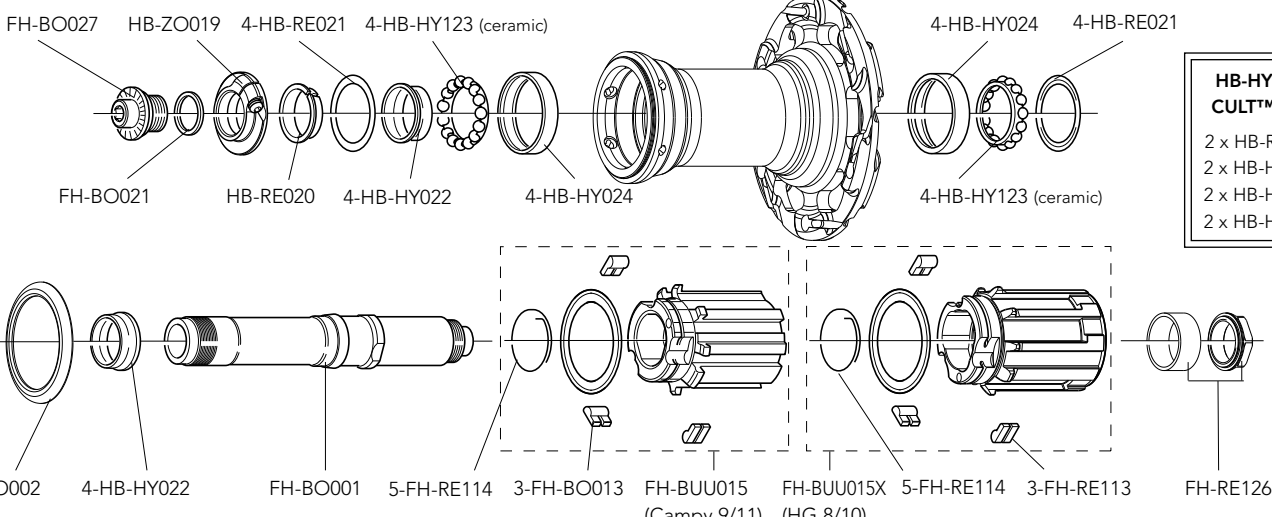


## BULLET™ ULTRA clincher (H105 - CULT™ bearings)

## HIGH PROFILE

INTENDED USE	WHEEL CODES	DESCRIPTION	WEIGHT
This product has been designed and manufactured to be fitted and used only on "racing" or "cyclocross" bikes (if they bear the CX mark), 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 <b>and is therefore expressly forbidden</b>	WH12-BUUCFRC105	FRONT+REAR Campagnolo FW body - <b>CULT</b>	1.960
	WH12-BUUCFRXC105	FRONT+REAR HG type FW body - <b>CULT</b>	1.999
	WH12-BUUCFC105	front - <b>CULT</b>	910
	WH12-BUUCRC105	rear Campagnolo FW body - <b>CULT</b>	1.050
	WH12-BUUCRXC105	rear HG type FW body - <b>CULT</b>	1.089
	<b>DARK LABEL</b>		
	WH12-BUUCFRC105DK	FRONT+REAR Campagnolo FW body - <b>CULT</b>	1.960
	WH12-BUUCFRXC105DK	FRONT+REAR HG type FW body - <b>CULT</b>	1.999
	WH12-BUUCFC105DK	front - <b>CULT</b>	910
	WH12-BUUCRC105DK	rear Campagnolo FW body - <b>CULT</b>	1.050
	WH12-BUUCRXC105DK	rear HG type FW body - <b>CULT</b>	1.089

RIM AND SPOKES		
 <p>FRONT RIM REAR RIM LABEL KIT VALVE HOLE VALVE EXTENSION DIAMETER TYRE</p> <p>COMPLETE FRONT KIT COMPLETE REAR KIT MINI-KIT</p> <p>NIPPLES SPOKE RING INSERT NIPPLE NIPPLE MAGNET SPOKE SPANNER</p>	<p>WH-003BUU105 (no labels) WH-004BUU105 (no labels) LAB-BUU12105 (front+rear) - LAB-BUU12105DK (front+rear DARK) 6,5 mm UT-WH150M (male extension) - UT-WH150F (female extension) 700C (622 x 15C) See section table and inflation pressures on page 205</p> <p>KIT-03BUU105 (16 front spokes + 16 nuts + 16 nut supporting plates) KIT-04BUU105 (12 rear right spokes+6 rear left spokes+18 nuts+18 nut supporting plates) KIT-500BUU105 (2 front spokes + 2 rear right spokes + 2 rear left spokes + 6 nuts + 6 nut supporting plates) WH-015BUU (red - 10 pieces) UT-WH010 (anti-rotation spokes) UT-WH160 (magnet-attractor for nipple) UT-WH050 (nipple-guide) UT-WH090 (spoke wrenches)</p>	

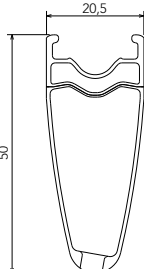
HUBS		
	 <div style="border: 1px solid black; padding: 5px; width: fit-content;"> <b>HB-HY100 CULT™ KIT</b>  2 x HB-RE021  2 x HB-HY022  2 x HB-HY024  2 x HB-HY123 </div>	
QUICK-RELEASES	QR12-BUUBFR	front + rear

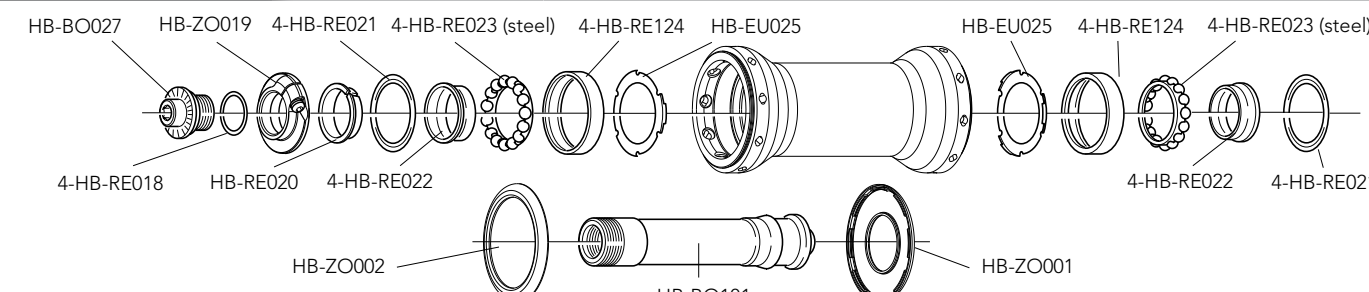
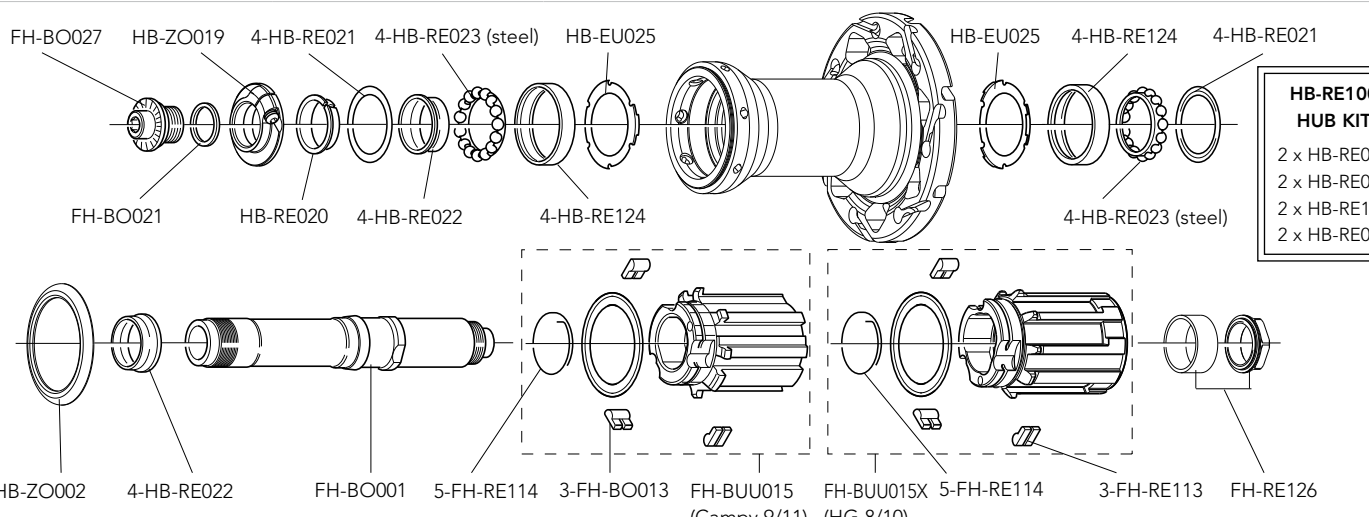
## NOTES

BULLET™ ULTRA 2-Way Fit™ (H50 - standard bearings)

HIGH PROFILE

INTENDED USE	WHEEL CODES	DESCRIPTION	WEIGHT
This product has been designed and manufactured to be fitted and used only on "racing" or "cyclocross" bikes (if they bear the CX mark), 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 <b>and is therefore expressly forbidden</b>	WH12-BUU2FR	FRONT+REAR Campagnolo FW body	1.590
	WH12-BUU2FRX	FRONT+REAR HG type FW body	1.629
	WH12-BUU2F	front	727
	WH12-BUU2R	rear Campagnolo FW body	863
	WH12-BUU2RX	rear HG type FW body	902
	<b>DARK LABEL</b>		
	WH12-BUU2FRDK	FRONT+REAR Campagnolo FW body	1.590
	WH12-BUU2FRXDK	FRONT+REAR HG type FW body	1.629
	WH12-BUU2FDK	front	727
	WH12-BUU2RDK	rear Campagnolo FW body	863
	WH12-BUU2RXDK	rear HG type FW body	902

RIM		FRONT RIM REAR RIM LABEL KIT VALVE HOLE 2-WAY FIT™ VALVE VALVE HOLE BUSHING VALVE EXTENSION DIAMETER TYRE	WH-013BUU (no labels) WH-014BUU (no labels) LAB-BUU12 (front+rear) - LAB-BUU12DK (front+rear DARK) 6,5 mm WH-SH001 5-WH-SH002 (for valve seat reduction - 5 pieces) UT-WH100M (male extension) - UT-WH130F (female extension) 634mm See recommended tyre manufacturer inflation pressure
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HUBS		
		
		
QUICK-RELEASES	QR12-BUUBFR	front + rear

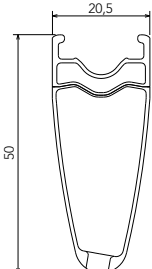
SPOKES	COMPLETE FRONT KIT COMPLETE REAR KIT MINI-KIT NIPPLES SPOKE RING INSERT NIPPLE NIPPLE MAGNET SPOKE SPANNER	KIT-03BUU KIT-04BUU KIT-500BUU WH-015BUU UT-WH010 UT-WH160 UT-WH050 UT-WH090	18 front spokes + 18 nuts + 18 nut supporting plates 14 rear right spokes + 7 rear left spokes + 21 nuts + 21 nut supporting plates 2 front spokes + 2 rear right spokes + 2 rear left spokes + 6 nuts + 6 nut supporting plates red - 10 pieces anti-rotation spokes magnet-attractor for nipple nipple-guide spoke wrenches
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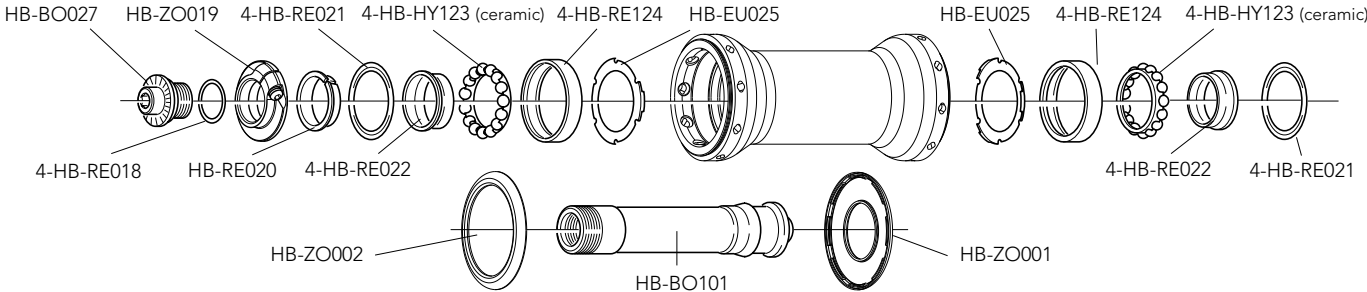
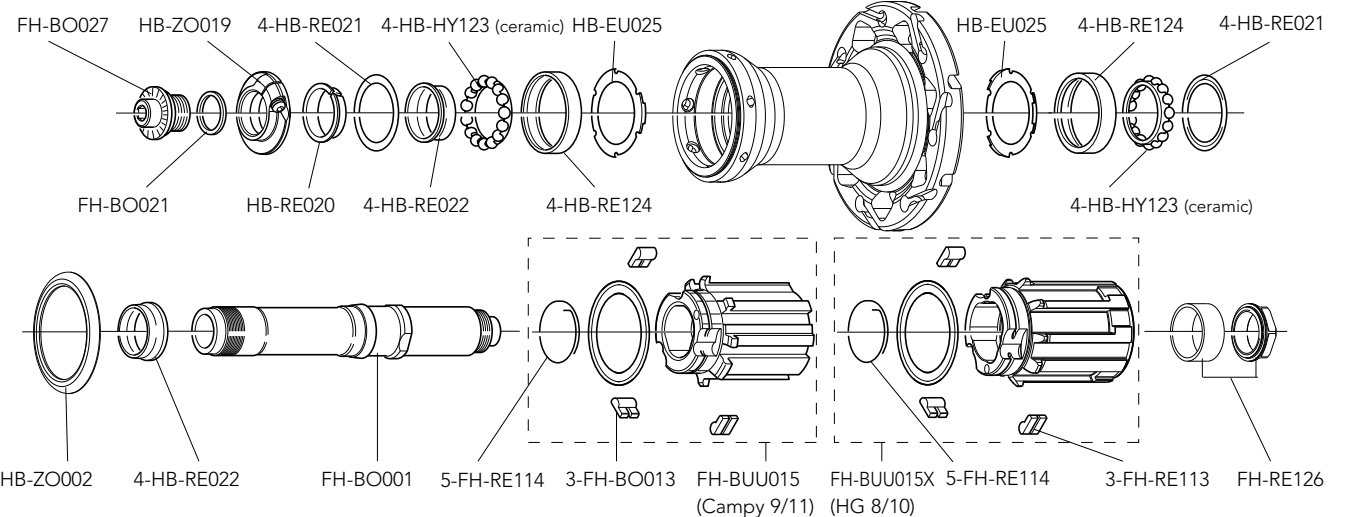
NOTES	
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## BULLET™ ULTRA 2-Way Fit™ (H50 - USB™ bearings)

## HIGH PROFILE

INTENDED USE	WHEEL CODES	DESCRIPTION	WEIGHT
This product has been designed and manufactured to be fitted and used only on "racing" or "cyclocross" bikes (if they bear the CX mark), 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 <b>and is therefore expressly forbidden</b>	WH12-BUU2FRU	FRONT+REAR Campagnolo FW body - <b>USB</b>	1.590
	WH12-BUU2FRXU	FRONT+REAR HG type FW body - <b>USB</b>	1.629
	WH12-BUU2FU	front - <b>USB</b>	727
	WH12-BUU2RU	rear Campagnolo FW body - <b>USB</b>	863
	WH12-BUU2RXU	rear HG type FW body - <b>USB</b>	902
	<b>DARK LABEL</b>		
	WH12-BUU2FRUDK	FRONT+REAR Campagnolo FW body - <b>USB</b>	1.590
	WH12-BUU2FRXUDK	FRONT+REAR HG type FW body - <b>USB</b>	1.629
	WH12-BUU2FUDK	front - <b>USB</b>	727
	WH12-BUU2RUDK	rear Campagnolo FW body - <b>USB</b>	863
	WH12-BUU2RXUDK	rear HG type FW body - <b>USB</b>	902

RIM		
	FRONT RIM REAR RIM LABEL KIT VALVE HOLE VALVE 2-Way Fit™ VALVE HOLE BUSHING VALVE EXTENSION DIAMETER TYRE	WH-013BUU (no labels) WH-014BUU (no labels) LAB-BUU12 (front+rear) - LAB-BUU12DK (front+rear DARK) 6,5 mm WH-SH001 5-WH-SH002 (for valve seat reduction - 5 pieces) UT-WH100M (male extension) - UT-WH130F (female extension) 634mm See recommended tyre manufacturer inflation pressure

HUBS		
		
		
QUICK-RELEASES	QR12-BUUBFR	front + rear

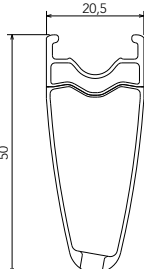
SPOKES		
COMPLETE FRONT KIT COMPLETE REAR KIT MINI-KIT NIPPLES SPOKE RING INSERT NIPPLE NIPPLE MAGNET SPOKE SPANNER	KIT-03BUU KIT-04BUU KIT-500BUU WH-015BUU UT-WH010 UT-WH160 UT-WH050 UT-WH090	18 front spokes + 18 nuts + 18 nut supporting plates 14 rear right spokes + 7 rear left spokes + 21 nuts + 21 nut supporting plates 2 front spokes + 2 rear right spokes + 2 rear left spokes + 6 nuts + 6 nut supporting plates red - 10 pieces anti-rotation spokes magnet-attractor for nipple nipple-guide spoke wrenches

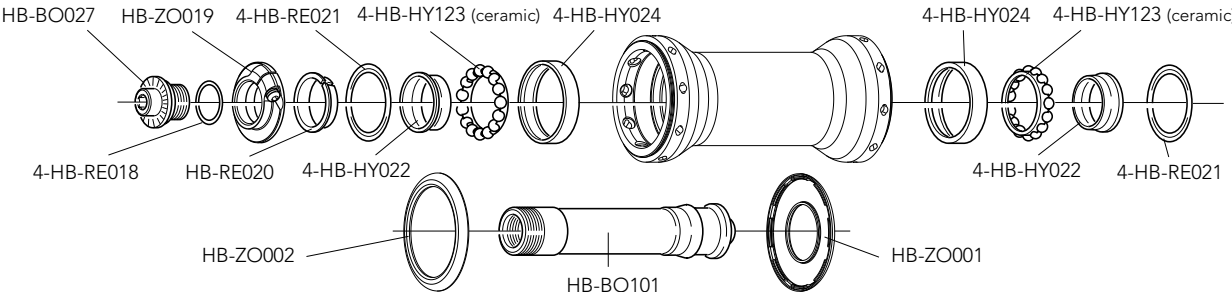
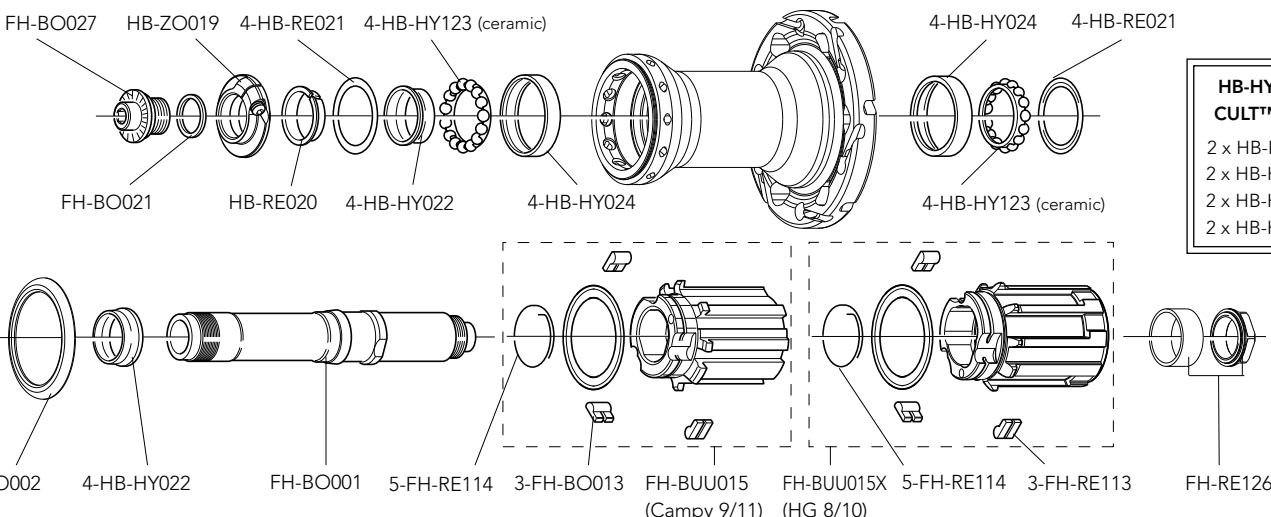
NOTES	
	

BULLET™ ULTRA 2-Way Fit™ (H50 - CULT™ bearings)

HIGH PROFILE

INTENDED USE	WHEEL CODES	DESCRIPTION	WEIGHT
This product has been designed and manufactured to be fitted and used only on "racing" or "cyclocross" bikes (if they bear the CX mark), 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 <b>and is therefore expressly forbidden</b>	WH12-BUU2FRC	FRONT+REAR Campagnolo FW body - <b>CULT</b>	1.590
	WH12-BUU2FRXC	FRONT+REAR HG type FW body - <b>CULT</b>	1.629
	WH12-BUU2FC	front - <b>CULT</b>	727
	WH12-BUU2RC	rear Campagnolo FW body - <b>CULT</b>	863
	WH12-BUU2RXC	rear HG type FW body - <b>CULT</b>	902
	<b>DARK LABEL</b>		
	WH12-BUU2FRCDK	FRONT+REAR Campagnolo FW body - <b>CULT</b>	1.590
	WH12-BUU2FRXCDK	FRONT+REAR HG type FW body - <b>CULT</b>	1.629
	WH12-BUU2FCDK	front - <b>CULT</b>	727
	WH12-BUU2RCDK	rear Campagnolo FW body - <b>CULT</b>	863
	WH12-BUU2RXCDK	rear HG type FW body - <b>CULT</b>	902

RIM		FRONT RIM REAR RIM LABEL KIT VALVE HOLE 2-Way Fit™ VALVE VALVE HOLE BUSHING VALVE EXTENSION DIAMETER TYRE	WH-013BUU (no labels) WH-014BUU (no labels) LAB-BUU12 (front+rear) - LAB-BUU12DK (front+rear DARK) 6,5 mm WH-SH001 5-WH-SH002 (for valve seat reduction - 5 pieces) UT-WH100M (male extension) - UT-WH130F (female extension) 634mm See recommended tyre manufacturer inflation pressure
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HUBS		
		
		
<div>HB-HY100 CULT™ KIT 2 x HB-RE021 2 x HB-HY022 2 x HB-HY024 2 x HB-HY123</div>		
QUICK-RELEASES	QR12-BUUBFR	front + rear

SPOKES	COMPLETE FRONT KIT COMPLETE REAR KIT MINI-KIT NIPPLES SPOKE RING INSERT NIPPLE NIPPLE MAGNET SPOKE SPANNER	KIT-03BUU KIT-04BUU KIT-500BUU WH-015BUU UT-WH010 UT-WH160 UT-WH050 UT-WH090	18 front spokes + 18 nuts + 18 nut supporting plates 14 rear right spokes + 7 rear left spokes + 21 nuts + 21 nut supporting plates 2 front spokes + 2 rear right spokes + 2 rear left spokes + 6 nuts + 6 nut supporting plates red - 10 pieces anti-rotation spokes magnet-attractor for nipple nipple-guide spoke wrenches
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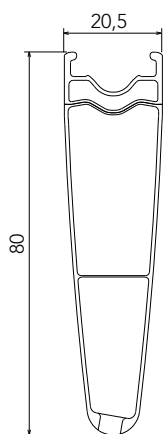
NOTES	
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## BULLET™ ULTRA 2-Way Fit™ (H80 - standard bearings)

## HIGH PROFILE

INTENDED USE	WHEEL CODES	DESCRIPTION	WEIGHT
This product has been designed and manufactured to be fitted and used only on "racing" or "cyclocross" bikes (if they bear the CX mark), 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 <b>and is therefore expressly forbidden</b>	WH12-BUU2FR80	FRONT+REAR Campagnolo FW body	1.770
	WH12-BUU2FRX80	FRONT+REAR HG type FW body	1.809
	WH12-BUU2F80	front	815
	WH12-BUU2R80	rear Campagnolo FW body	955
	WH12-BUU2RX80	rear HG type FW body	994
	<b>DARK LABEL</b>		
	WH12-BUU2FR80DK	FRONT+REAR Campagnolo FW body	1.770
	WH12-BUU2FRX80DK	FRONT+REAR HG type FW body	1.809
	WH12-BUU2F80DK	front	815
	WH12-BUU2R80DK	rear Campagnolo FW body	955
	WH12-BUU2R80XDK	rear HG type FW body	994

## RIM AND SPOKES



FRONT RIM  
REAR RIM  
LABEL KIT  
VALVE HOLE  
2-Way Fit™ VALVE  
VALVE HOLE BUSHING  
VALVE EXTENSION  
DIAMETER  
TYRE

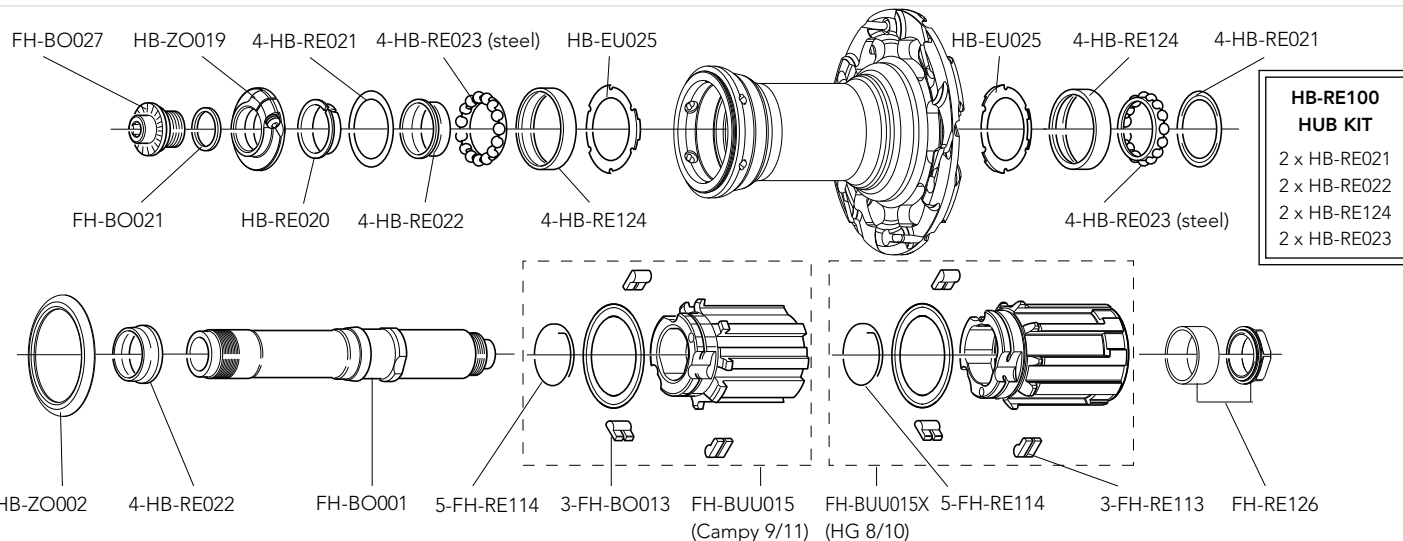
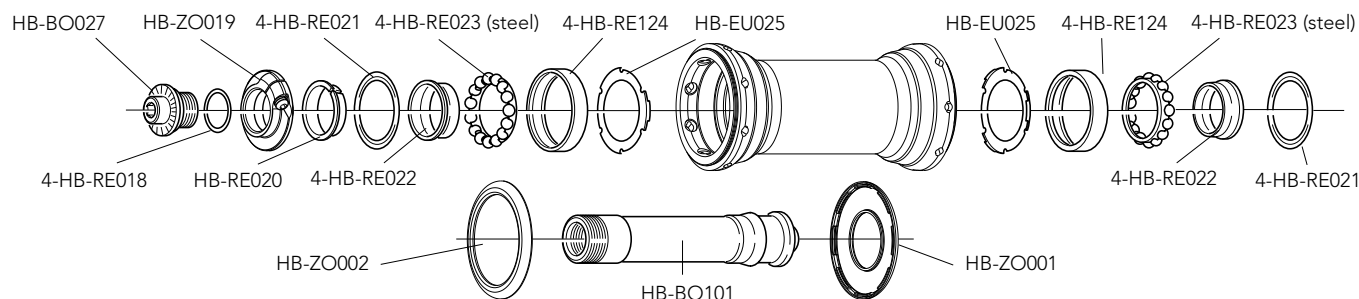
COMPLETE FRONT KIT  
COMPLETE REAR KIT  
MINI-KIT

NIPPLES  
SPOKE RING  
INSERT NIPPLE  
NIPPLE MAGNET  
SPOKE SPANNER

WH-013BUU80 (no labels)  
WH-014BUU80 (no labels)  
LAB-BUU1280 (front+rear) - LAB-BUU1280DK (front+rear DARK)  
6,5 mm  
WH-SH001  
5-WH-SH002 (for valve seat reduction - 5 pieces)  
UT-WH110M (male extension) - UT-WH140F (female extension)  
634mm  
See recommended tyre manufacturer inflation pressure

KIT-03BUU80 (16 front spokes + 16 nuts + 16 nut supporting plates)  
KIT-04BUU80 (12 rear right spokes+6 rear left spokes+18 nuts+18 nut supporting plates)  
KIT-500BUU80 (2 front spokes+2 rear right spokes+2 rear left spokes+6 nuts+6 nut supporting plates)  
WH-015BUU (red - 10 pieces)  
UT-WH010 (anti-rotation spokes)  
UT-WH160 (magnet-attractor for nipple)  
UT-WH050 (nipple-guide)  
UT-WH090 (spoke wrenches)

## HUBS



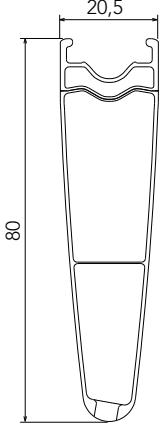
QUICK-RELEASES	QR12-BUUBFR	front + rear
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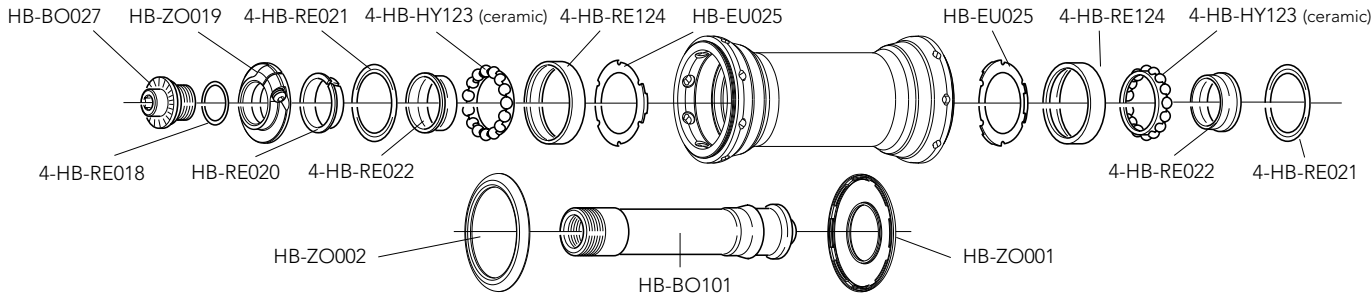
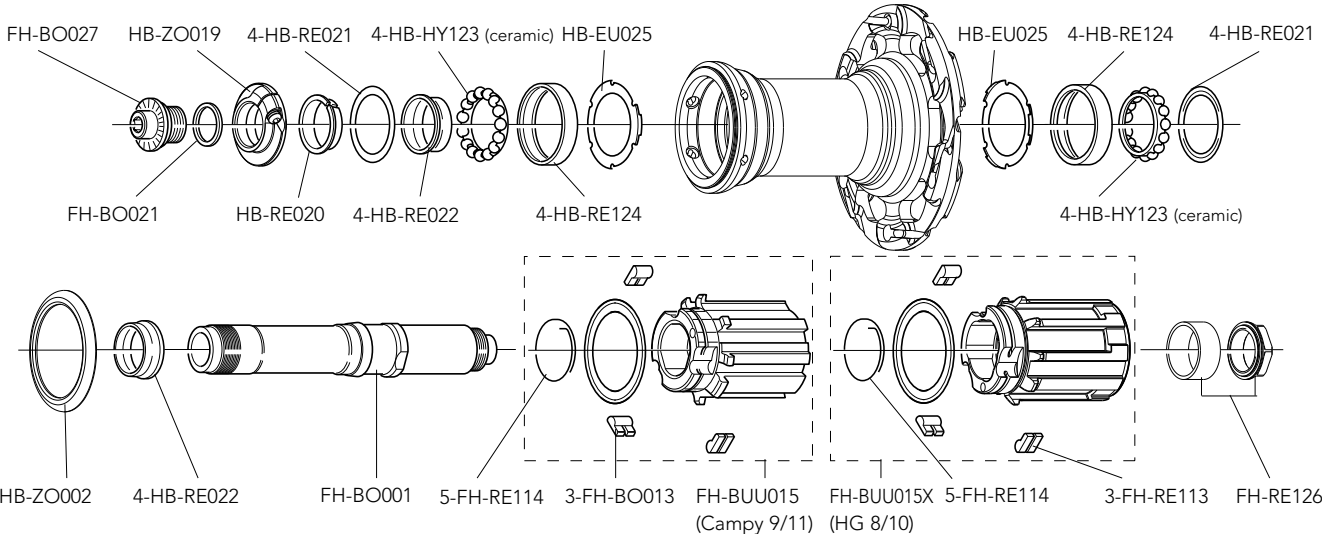
## NOTES

BULLET™ ULTRA 2-Way Fit™ (H80 - USB™ bearings)

HIGH PROFILE

INTENDED USE	WHEEL CODES	DESCRIPTION	WEIGHT
This product has been designed and manufactured to be fitted and used only on "racing" or "cyclocross" bikes (if they bear the CX mark), 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 <b>and is therefore expressly forbidden</b>	WH12-BUU2FRU80	FRONT+REAR Campagnolo FW body - <b>USB</b>	1.770
	WH12-BUU2FRXU80	FRONT+REAR HG type FW body - <b>USB</b>	1.809
	WH12-BUU2FU80	front - <b>USB</b>	815
	WH12-BUU2RU80	rear Campagnolo FW body - <b>USB</b>	955
	WH12-BUU2RXU80	rear HG type FW body - <b>USB</b>	994
	<b>DARK LABEL</b>		
	WH12-BUU2FRU80DK	FRONT+REAR Campagnolo FW body - <b>USB</b>	1.770
	WH12-BUU2FRXU80DK	FRONT+REAR HG type FW body - <b>USB</b>	1.809
	WH12-BUU2FU80DK	front - <b>USB</b>	815
	WH12-BUU2RU80DK	rear Campagnolo FW body - <b>USB</b>	955
	WH12-BUU2RXU80DK	rear HG type FW body - <b>USB</b>	994

RIM AND SPOKES	
	<div>FRONT RIM</div> <div>REAR RIM</div> <div>LABEL KIT</div> <div>VALVE HOLE</div> <div>2-Way Fit™ VALVE</div> <div>VALVE HOLE BUSHING</div> <div>VALVE EXTENSION</div> <div>DIAMETER</div> <div>TYRE</div> <div> </div> <div>COMPLETE FRONT KIT</div> <div>COMPLETE REAR KIT</div> <div>MINI-KIT</div> <div> </div> <div>NIPPLES</div> <div>SPOKE RING</div> <div>INSERT NIPPLE</div> <div>NIPPLE MAGNET</div> <div>SPOKE SPANNER</div>
	<div>WH-013BUU80 (<b>no labels</b>)</div> <div>WH-014BUU80 (<b>no labels</b>)</div> <div>LAB-BUU1280 (front+rear) - LAB-BUU1280DK (front+rear <b>DARK</b>)</div> <div>6,5 mm</div> <div>WH-SH001</div> <div>5-WH-SH002 (for valve seat reduction - 5 pieces)</div> <div>UT-WH110M (male extension) - UT-WH140F (female extension)</div> <div>634mm</div> <div>See recommended tyre manufacturer inflation pressure</div> <div> </div> <div>KIT-03BUU80 (16 front spokes + 16 nuts + 16 nut supporting plates)</div> <div>KIT-04BUU80 (12 rear right spokes+6 rear left spokes+18 nut+18 nut supporting plates)</div> <div>KIT-500BUU80 (2 front spokes + 2 rear right spokes + 2 rear right spokes + 6 nuts + 6 nut supporting plates)</div> <div>WH-015BUU (red - 10 pieces)</div> <div>UT-WH010 (anti-rotation spokes)</div> <div>UT-WH160 (magnet-attractor for nipple)</div> <div>UT-WH050 (nipple-guide)</div> <div>UT-WH090 (spoke wrenches)</div>

HUBS		
		
		
QUICK-RELEASES	QR12-BUUBFR	front + rear

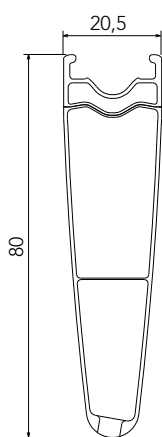
NOTES

## BULLET™ ULTRA 2-Way Fit™ (H80 - CULT™ bearings)

## HIGH PROFILE

INTENDED USE	WHEEL CODES	DESCRIPTION	WEIGHT
This product has been designed and manufactured to be fitted and used only on "racing" or "cyclocross" bikes (if they bear the CX mark), 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 <b>and is therefore expressly forbidden</b>	WH12-BUU2FRC80	FRONT+REAR Campagnolo FW body - <b>CULT</b>	1.770
	WH12-BUU2FRXC80	FRONT+REAR HG type FW body - <b>CULT</b>	1.809
	WH12-BUU2FC80	front - <b>CULT</b>	815
	WH12-BUU2RC80	rear Campagnolo FW body - <b>CULT</b>	955
	WH12-BUU2RXC80	rear HG type FW body - <b>CULT</b>	994
	<b>DARK LABEL</b>		
	WH12-BUU2FRC80DK	FRONT+REAR Campagnolo FW body - <b>CULT</b>	1.770
	WH12-BUU2FRXC80DK	FRONT+REAR HG type FW body - <b>CULT</b>	1.809
	WH12-BUU2FC80DK	front - <b>CULT</b>	815
	WH12-BUU2RC80DK	rear Campagnolo FW body - <b>CULT</b>	955
	WH12-BUU2RXC80DK	rear HG type FW body - <b>CULT</b>	994

## RIM AND SPOKES



FRONT RIM  
REAR RIM  
LABEL KIT  
VALVE HOLE  
2-Way Fit™ VALVE  
VALVE HOLE BUSHING  
VALVE EXTENSION  
DIAMETER  
TYRE

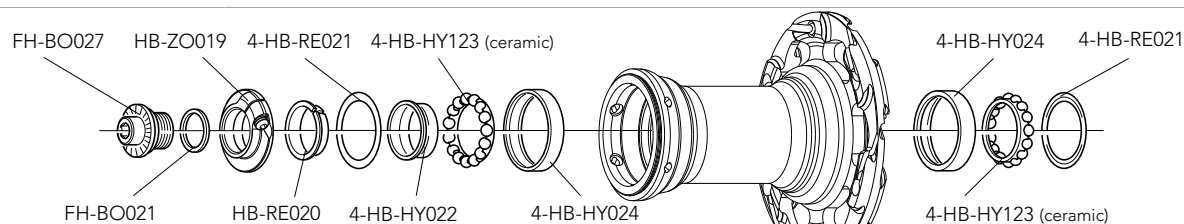
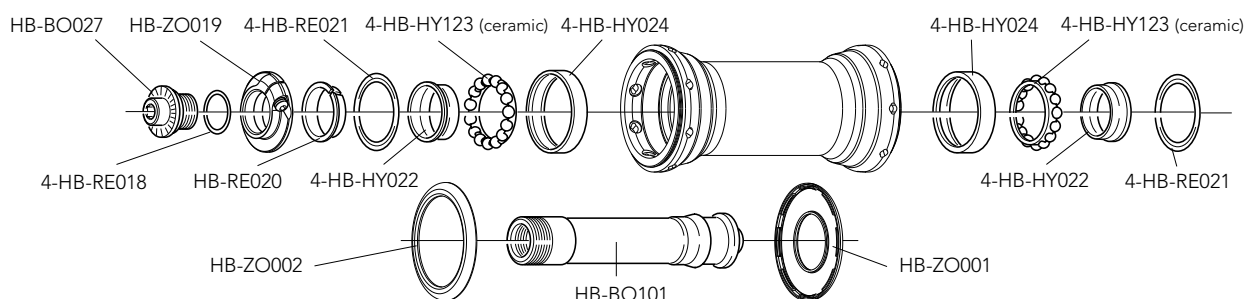
COMPLETE FRONT KIT  
COMPLETE REAR KIT  
MINI-KIT

NIPPLES  
SPOKE RING  
INSERT NIPPLE  
NIPPLE MAGNET  
SPOKE SPANNER

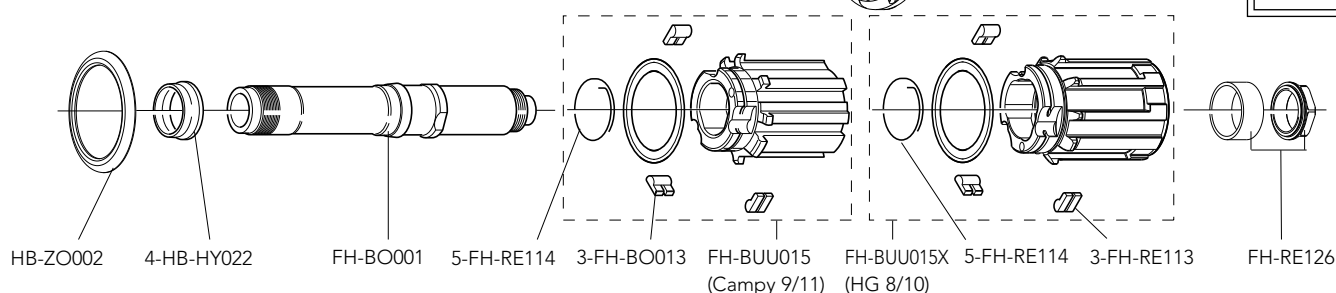
WH-013BUU80 (no labels)  
WH-014BUU80 (no labels)  
LAB-BUU1280 (front+rear) - LAB-BUU1280DK (front+rear DARK)  
6,5 mm  
WH-SH001  
5-WH-SH002 (for valve seat reduction - 5 pieces)  
UT-WH110M (male extension) - UT-WH140F (female extension)  
634mm  
See recommended tyre manufacturer inflation pressure

KIT-03BUU80 (16 front spokes + 16 nuts + 16 nut supporting plates)  
KIT-04BUU80 (12 rear right spokes+6 rear left spokes+18 nuts+18 nut supporting plates)  
KIT-500BUU80 (2 front spokes + 2 rear right spokes + 2 rear left spokes + 6 nuts + 6 nut supporting plates)  
WH-015BUU (red - 10 pieces)  
UT-WH010 (anti-rotation spokes)  
UT-WH160 (magnet-attractor for nipple)  
UT-WH050 (nipple-guide)  
UT-WH090 (spoke wrenches)

## HUBS



**HB-HY100  
CULT™ KIT**  
2 x HB-RE021  
2 x HB-HY022  
2 x HB-HY024  
2 x HB-HY123



QUICK-RELEASES

QR12-BUUBFR

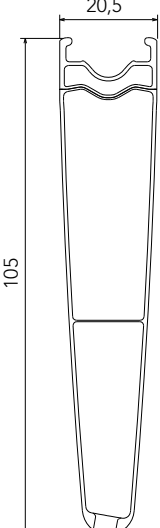
front + rear

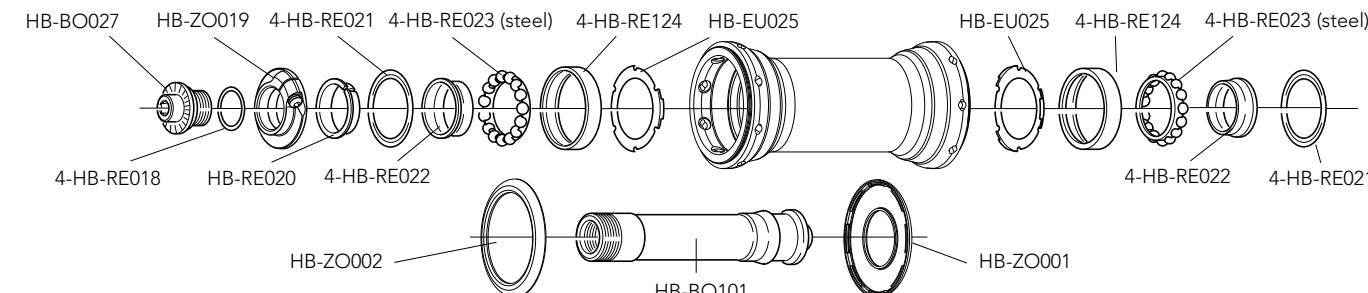
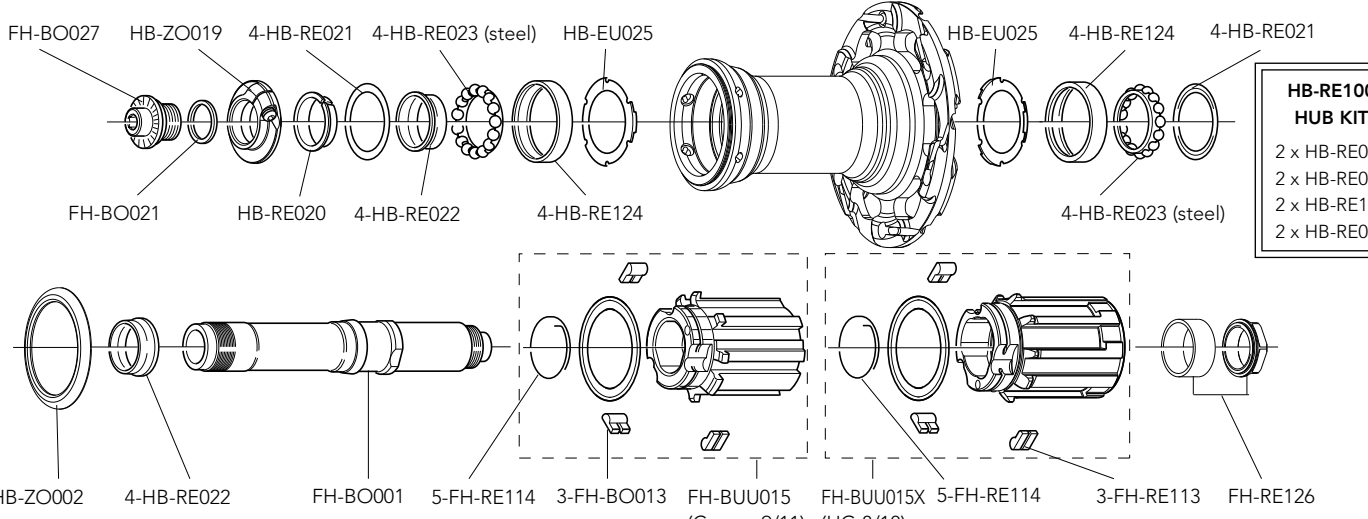
## NOTES

BULLET™ ULTRA 2-Way Fit™ (H105 - standard bearings)

HIGH PROFILE

INTENDED USE	WHEEL CODES	DESCRIPTION	WEIGHT
This product has been designed and manufactured to be fitted and used only on "racing" or "cyclocross" bikes (if they bear the CX mark), 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 <b>and is therefore expressly forbidden</b>	WH12-BUU2FR105	FRONT+REAR Campagnolo FW body	1.960
	WH12-BUU2FRX105	FRONT+REAR HG type FW body	1.999
	WH12-BUU2F105	front	910
	WH12-BUU2R105	rear Campagnolo FW body	1.050
	WH12-BUU2RX105	rear HG type FW body	1.089
	<b>DARK LABEL</b>		
	WH12-BUU2FR105DK	FRONT+REAR Campagnolo FW body	1.960
	WH12-BUU2FRX105DK	FRONT+REAR HG type FW body	1.999
	WH12-BUU2F105DK	front	910
	WH12-BUU2R105DK	rear Campagnolo FW body	1.050
	WH12-BUU2R105XDK	rear HG type FW body	1.089

RIM AND SPOKES	
	<div>FRONT RIM</div> <div>REAR RIM</div> <div>LABEL KIT</div> <div>VALVE HOLE</div> <div>2-Way Fit™ VALVE</div> <div>VALVE HOLE BUSHING</div> <div>VALVE EXTENSION</div> <div>DIAMETER</div> <div>TYRE</div> <div> </div> <div>COMPLETE FRONT KIT</div> <div>COMPLETE REAR KIT</div> <div>MINI-KIT</div> <div> </div> <div>NIPPLES</div> <div>SPOKE RING</div> <div>INSERT NIPPLE</div> <div>NIPPLE MAGNET</div> <div>SPOKE SPANNER</div>
	<div>WH-013BUU105 (no labels)</div> <div>WH-014BUU105 (no labels)</div> <div>LAB-BUU12105 (front+rear) - LAB-BUU12105DK (front+rear DARK)</div> <div>6,5 mm</div> <div>WH-SH001</div> <div>5-WH-SH002 (for valve seat reduction - 5 pieces)</div> <div>UT-WH120M (male extension) - UT-WH150F (female extension)</div> <div>634mm</div> <div>See recommended tyre manufacturer inflation pressure</div> <div> </div> <div>KIT-03BUU105 (16 front spokes + 16 nuts + 16 nut supporting plates)</div> <div>KIT-04BUU105 (12 rear right spokes+6 rear left spokes+18 nuts+18 nut supporting plates)</div> <div>KIT-500BUU105 (2 front spokes + 2 rear right spokes + 2 rear left spokes + 6 nuts + 6 nut supporting plates)</div> <div>WH-015BUU (red - 10 pieces)</div> <div>UT-WH010 (anti-rotation spokes)</div> <div>UT-WH160 (magnet-attractor for nipple)</div> <div>UT-WH050 (nipple-guide)</div> <div>UT-WH090 (spoke wrenches)</div>

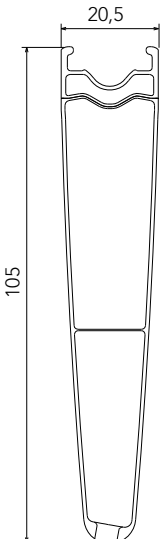
HUBS		
		
		
<div>HB-RE100 HUB KIT</div> <div>2 x HB-RE021</div> <div>2 x HB-RE022</div> <div>2 x HB-RE124</div> <div>2 x HB-RE023</div>		
QUICK-RELEASES	QR12-BUUBFR	front + rear

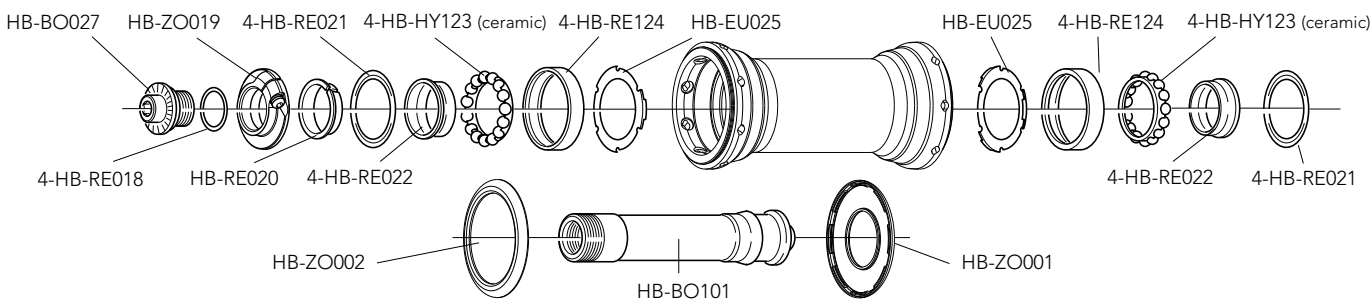
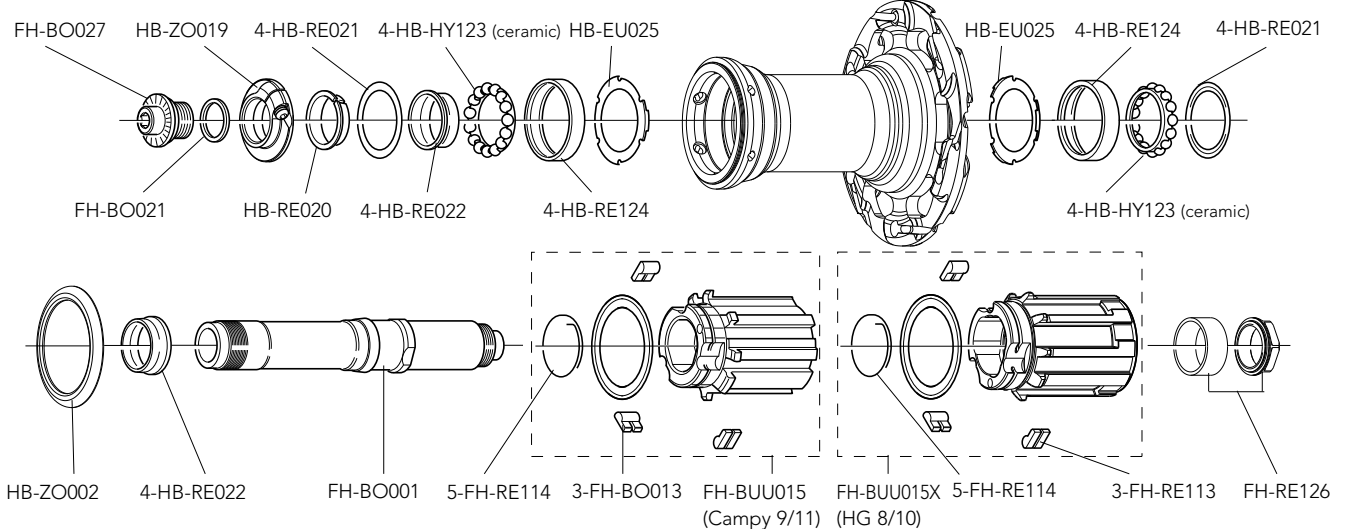
NOTES	
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## BULLET™ ULTRA 2-Way Fit™ (H105 - USB™ bearings)

## HIGH PROFILE

INTENDED USE	WHEEL CODES	DESCRIPTION	WEIGHT
This product has been designed and manufactured to be fitted and used only on "racing" or "cyclocross" bikes (if they bear the CX mark), 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 <b>and is therefore expressly forbidden</b>	WH12-BUU2FRU105	FRONT+REAR Campagnolo FW body - <b>USB</b>	1.960
	WH12-BUU2FRXU105	FRONT+REAR HG type FW body - <b>USB</b>	1.999
	WH12-BUU2FU105	front - <b>USB</b>	910
	WH12-BUU2RU105	rear Campagnolo FW body - <b>USB</b>	1.050
	WH12-BUU2RXU105	rear HG type FW body - <b>USB</b>	1.089
	<b>DARK LABEL</b>		
	WH12-BUU2FRU105DK	FRONT+REAR Campagnolo FW body - <b>USB</b>	1.960
	WH12-BUU2FRXU105DK	FRONT+REAR HG type FW body - <b>USB</b>	1.999
	WH12-BUU2FU105DK	front - <b>USB</b>	910
	WH12-BUU2RU105DK	rear Campagnolo FW body - <b>USB</b>	1.050
	WH12-BUU2RXU105DK	rear HG type FW body - <b>USB</b>	1.089

RIM AND SPOKES		
	FRONT RIM REAR RIM LABEL KIT VALVE HOLE 2-Way Fit™ VALVE VALVE HOLE BUSHING VALVE EXTENSION DIAMETER TYRE  COMPLETE FRONT KIT COMPLETE REAR KIT MINI-KIT  NIPPLES SPOKE RING INSERT NIPPLE NIPPLE MAGNET SPOKE SPANNER	WH-013BUU105 (no labels) WH-014BUU105 (no labels) LAB-BUU12105 (front+rear) - LAB-BUU12105DK (front+rear DARK) 6,5 mm WH-SH001 5-WH-SH002 (for valve seat reduction - 5 pieces) UT-WH120M (male extension) - UT-WH150F (female extension) 634mm See recommended tyre manufacturer inflation pressure  KIT-03BUU105 (16 front spokes + 16 nuts + 16 nut supporting plates) KIT-04BUU105 (12 rear right spokes+6 rear left spokes+18 nuts+18 nut supporting plates) KIT-500BUU105 (2 front spokes + 2 rear right spokes + 2 rear left spokes + 6 nuts + 6 nut supporting plates) WH-015BUU (red - 10 pieces) UT-WH010 (anti-rotation spokes) UT-WH160 (magnet-attractor for nipple) UT-WH050 (nipple-guide) UT-WH090 (spoke wrenches)

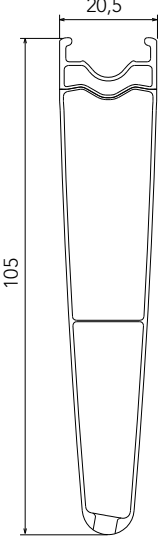
HUBS		
	HB-BO027 HB-ZO019 4-HB-RE021 4-HB-HY123 (ceramic) 4-HB-RE124 HB-EU025 4-HB-RE018 HB-RE020 4-HB-RE022 HB-ZO002 HB-BO101 HB-ZO001	HB-EU025 4-HB-RE124 4-HB-HY123 (ceramic) 4-HB-RE022 4-HB-RE021
	FH-BO027 HB-ZO019 4-HB-RE021 4-HB-HY123 (ceramic) HB-EU025 FH-BO021 HB-RE020 4-HB-RE022 4-HB-RE124 HB-ZO002 4-HB-RE022 FH-BO001 5-FH-RE114 3-FH-BO013 FH-BUU015 FH-BUU015X 5-FH-RE114 3-FH-RE113 FH-RE126 (Campy 9/11) (HG 8/10)	HB-EU025 4-HB-RE124 4-HB-RE021 4-HB-HY123 (ceramic)
QUICK-RELEASES	QR12-BUUBFR	front + rear

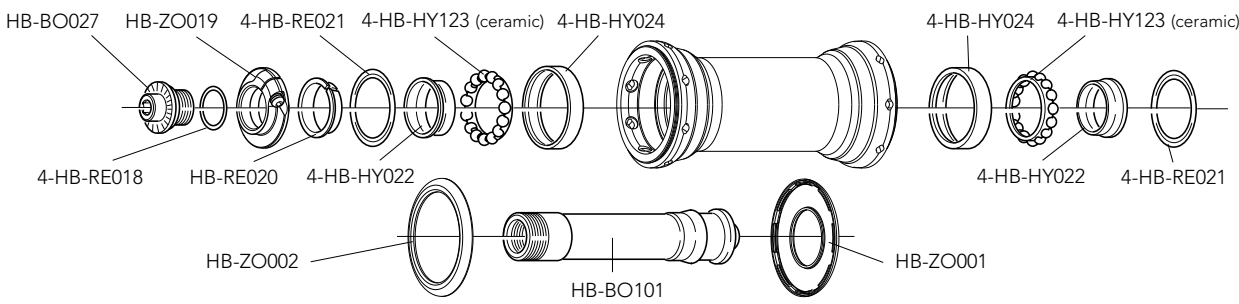
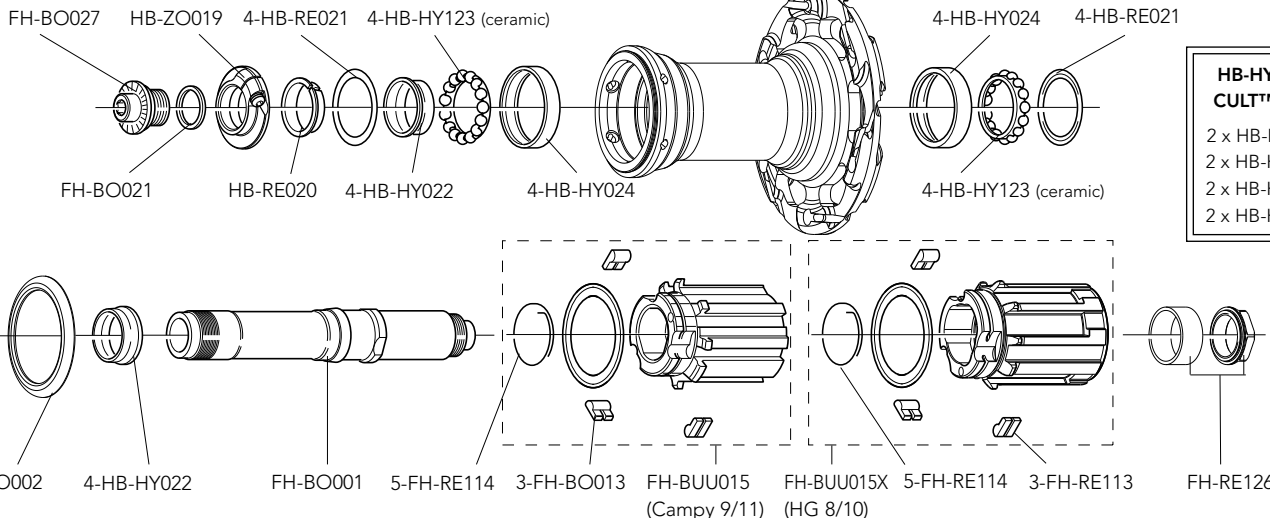
NOTES


BULLET™ ULTRA 2-Way Fit™ (H105 - CULT™ bearings)

HIGH PROFILE

INTENDED USE	WHEEL CODES	DESCRIPTION	WEIGHT
This product has been designed and manufactured to be fitted and used only on "racing" or "cyclocross" bikes (if they bear the CX mark), 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 <b>and is therefore expressly forbidden</b>	WH12-BUU2FRC105	FRONT+REAR Campagnolo FW body - <b>CULT</b>	1.960
	WH12-BUU2FRXC105	FRONT+REAR HG type FW body - <b>CULT</b>	1.999
	WH12-BUU2FC105	front - <b>CULT</b>	910
	WH12-BUU2RC105	rear Campagnolo FW body - <b>CULT</b>	1.050
	WH12-BUU2RXC105	rear HG type FW body - <b>CULT</b>	1.089
	<b>DARK LABEL</b>		
	WH12-BUU2FRC105DK	FRONT+REAR Campagnolo FW body - <b>CULT</b>	1.960
	WH12-BUU2FRXC105DK	FRONT+REAR HG type FW body - <b>CULT</b>	1.999
	WH12-BUU2FC105DK	front - <b>CULT</b>	910
	WH12-BUU2RC105DK	rear Campagnolo FW body - <b>CULT</b>	1.050
	WH12-BUU2RXC105DK	rear HG type FW body - <b>CULT</b>	1.089

RIM AND SPOKES	
	<div>FRONT RIM</div> <div>REAR RIM</div> <div>LABEL KIT</div> <div>VALVE HOLE</div> <div>2-Way Fit™ VALVE</div> <div>VALVE HOLE BUSHING</div> <div>VALVE EXTENSION</div> <div>DIAMETER</div> <div>TYRE</div> <div> </div> <div>COMPLETE FRONT KIT</div> <div>COMPLETE REAR KIT</div> <div>MINI-KIT</div> <div> </div> <div>NIPPLES</div> <div>SPOKE RING</div> <div>INSERT NIPPLE</div> <div>NIPPLE MAGNET</div> <div>SPOKE SPANNER</div>
	<div>WH-013BUU105 (no labels)</div> <div>WH-014BUU105 (no labels)</div> <div>LAB-BUU12105 (front+rear) - LAB-BUU12105DK (front+rear DARK)</div> <div>6,5 mm</div> <div>WH-SH001</div> <div>5-WH-SH002 (for valve seat reduction - 5 pieces)</div> <div>UT-WH120M (male extension) - UT-WH150F (female extension)</div> <div>634mm</div> <div>See recommended tyre manufacturer inflation pressure</div> <div> </div> <div>KIT-03BUU105 (16 front spokes + 16 nuts + 16 nut supporting plates)</div> <div>KIT-04BUU105 (12 rear right spokes+6 rear left spokes+18 nuts+18 nut supporting plates)</div> <div>KIT-500BUU105 (2 front spokes + 2 rear right spokes + 2 rear left spokes + 6 nuts + 6 nut supporting plates)</div> <div>WH-015BUU (red - 10 pieces)</div> <div>UT-WH010 (anti-rotation spokes)</div> <div>UT-WH160 (magnet-attractor for nipple)</div> <div>UT-WH050 (nipple-guide)</div> <div>UT-WH090 (spoke wrenches)</div>

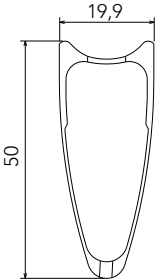
HUBS		
		
		
<div>HB-HY100 CULT™ KIT 2 x HB-RE021 2 x HB-HY022 2 x HB-HY024 2 x HB-HY123</div>		
QUICK-RELEASES	QR12-BUUBFR	front + rear

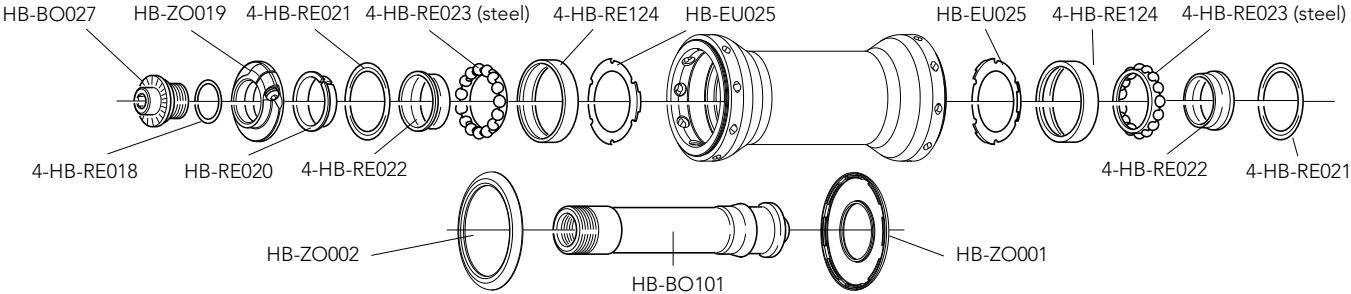
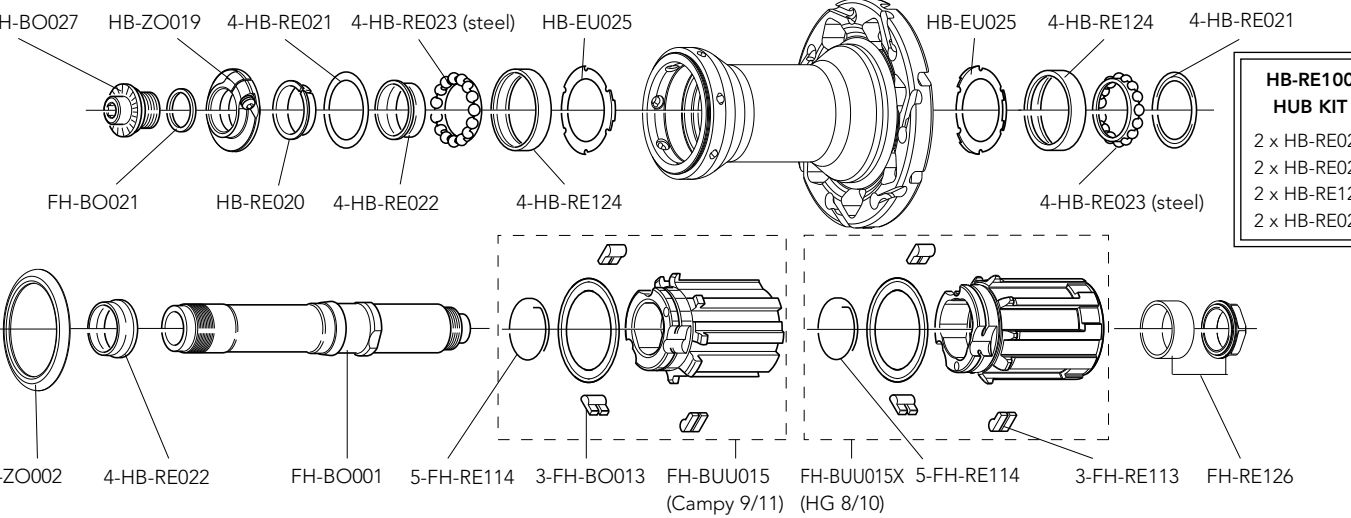
NOTES


## BORA™ ONE tubular

## LOW PROFILE

INTENDED USE	WHEEL CODES	DESCRIPTION	WEIGHT
This product has been designed and manufactured to be fitted and used only on "racing" or "cyclocross" bikes (if they bear the CX mark), 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 <b>and is therefore expressly forbidden</b>	WH10-BOTFR1	FRONT+REAR Campagnolo FW body+brake shoes BR-BO500	1.350
	WH10-BOTFRX1	FRONT+REAR HG type FW body+brake shoes BR-BO500X	1.389
	WH10-BOTF1	front+brake shoes BR-BO500	590
	WH10-BOTFX1	front+brake shoes BR-BO500X	590
	WH10-BOTR1	rear Campagnolo FW body+brake shoes BR-BO500	760
	WH10-BOTRX1	rear HG type FW body+brake shoes BR-BO500X	799
	<b>DARK LABEL</b>		
	WH12-BOTFR1DK	FRONT+REAR Campagnolo FW body+brake shoes BR-BO500	1.350
	WH12-BOTFRX1DK	FRONT+REAR HG type FW body+brake shoes BR-BO500X	1.389
	WH12-BOTF1DK	front+brake shoes BR-BO500	590
	WH12-BOTFX1DK	front+brake shoes BR-BO500X	590
	WH12-BOTR1DK	rear Campagnolo FW body+brake shoes BR-BO500	760
	WH12-BOTRX1DK	rear HG type FW body+brake shoes BR-BO500X	799

RIM		
	FRONT RIM REAR RIM LABEL KIT VALVE HOLE VALVE EXTENSION DIAMETER TYRE BRAKE SHOES	WH-001BO1 (with standard labels) - WH-001BO1DK (with DARK labels) WH-002BO1 (with standard labels) - WH-002BO1DK (with DARK labels) LAB-BO1T10 (front+rear) - LAB-BO1T10DK (front+rear DARK) 6,5 mm UT-HU130 634 mm See recommended tyre manufacturer inflation pressure for carbon rims - BR-BO500 (per Campagnolo brakes) - BR-BO500X (per Shimano brakes)

HUBS		
		
	<b>HB-RE100 HUB KIT</b> 2 x HB-RE021 2 x HB-RE022 2 x HB-RE124 2 x HB-RE023	(Campy 9/11) (HG 8/10)
QUICK-RELEASES	QR12-BUUBFR	front + rear

SPOKES		
COMPLETE FRONT KIT	KIT-01BO1	18 front spokes + 18 nuts + 18 nut supporting plates
COMPLETE REAR KIT	KIT-02BO1	14 rear right spokes + 7 rear left spokes + 21 nuts + 21 nut supporting plates
MINI-KIT	KIT-100BO1	2 front spokes + 2 rear right spokes + 2 rear left spokes + 6 nuts + 6 nut supporting plates
NUTS	10-WH-010BO	10 pieces
NUT SUPPORTING PLATES	10-WH-011BO	10 pieces

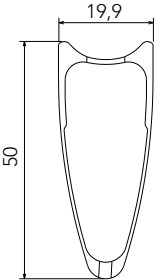
 **WARNING!**

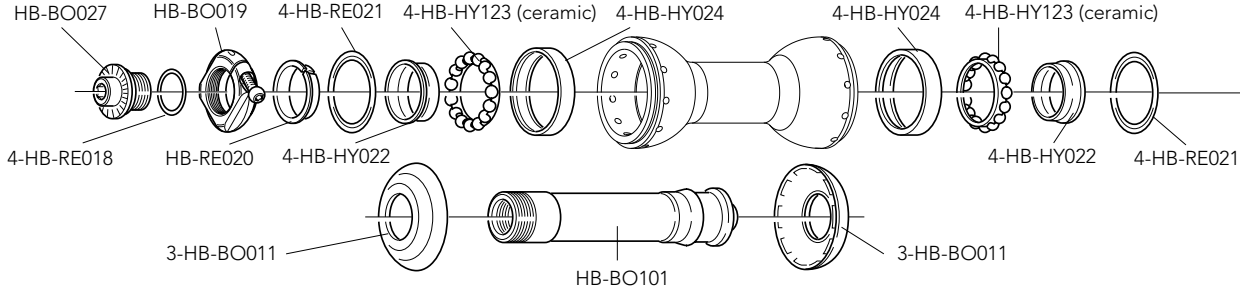
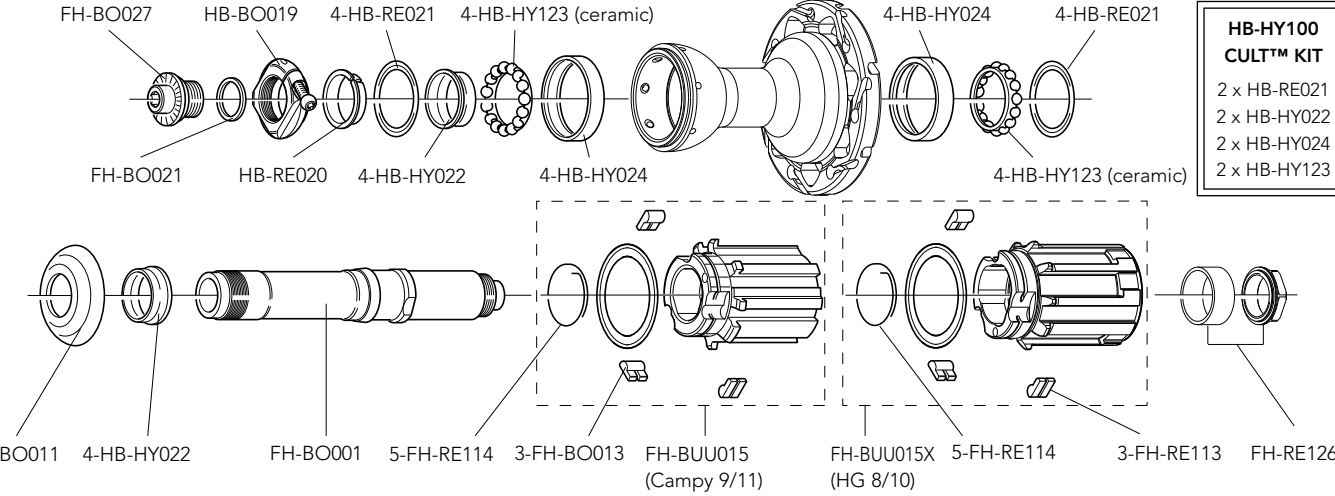
Because of the high temperatures reached when breaking, we recommend you use only glue for tubular tires specifically for carbon fibre rims.

BORA™ ULTRA™ TWO tubular

HIGH PROFILE

INTENDED USE	WHEEL CODES	DESCRIPTION	WEIGHT
This product has been designed and manufactured to be fitted and used only on "racing" or "cyclocross" bikes (if they bear the CX mark), 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 <b>and is therefore expressly forbidden</b>	WH9-BOTFR	FRONT+REAR Campagnolo FW body+brake shoes BR-BO500	1.310
	WH9-BOTFRX	FRONT+REAR HG type FW body+brake shoes BR-BO500X	1.344
	WH9-BOTF	front+brake shoes BR-BO500	565
	WH9-BOTFX	front+brake shoes BR-BO500X	565
	WH9-BOTR	rear Campagnolo FW body+brake shoes BR-BO500	745
	WH9-BOTRX	rear HG type FW body+brake shoes BR-BO500X	779
	<b>DARK LABEL</b>		
	WH12-BOTFRDK	FRONT+REAR Campagnolo FW body+brake shoes BR-BO500	1.310
	WH12-BOTFRXDK	FRONT+REAR HG type FW body+brake shoes BR-BO500X	1.344
	WH12-BOTFDK	front+brake shoes BR-BO500	565
	WH12-BOTFXDK	front+brake shoes BR-BO500X	565
	WH12-BOTRDK	rear Campagnolo FW body+brake shoes BR-BO500	745
	WH12-BOTRDK	rear HG type FW body+brake shoes BR-BO500X	779

RIM		
	FRONT RIM REAR RIM LABEL KIT VALVE HOLE VALVE EXTENSION DIAMETER TYRE BRAKE SHOES	WH-601BO (with standard labels) - WH-101BODK (with DARK labels) WH-502BO (with standard labels) - WH-102BODK (with DARK labels) LAB-BOT9 (front+rear) - LAB-BOT12DK (front+rear DARK) 6,5 mm UT-HU130 634 mm See recommended tyre manufacturer inflation pressure for carbon rims - BR-BO500 (per Campagnolo brakes) - BR-BO500X (per Shimano brakes)

HUBS		
		
		
QUICK-RELEASES	QR12-BUUBFR	front + rear

SPOKES		
COMPLETE FRONT KIT	KIT-31BO	18 front spokes + 18 nuts + 18 nut supporting plates
COMPLETE REAR KIT	KIT-42BO	14 rear right spokes + 7 rear left spokes + 21 nuts + 21 nut supporting plates
MINI-KIT	KIT-400BO	2 front spokes. + 2 rear right spokes + 2 rear left spokes + 6 nuts + 6 nut supporting plates
NUTS	10-WH-010BO	10 pieces
NUT SUPPORTING PLATES	10-WH-011BO	10 pieces

**WARNING!**

Because of the high temperatures reached when breaking, we recommend you use only glue for tubular tires specifically for carbon fibre rims.

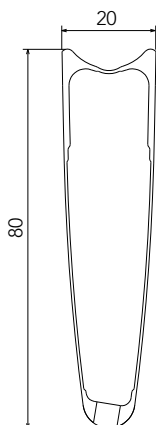


## BORA™ ULTRA™ 80 tubular

## HIGH PROFILE

INTENDED USE	WHEEL CODES	DESCRIPTION	WEIGHT
This product has been designed and manufactured to be fitted and used only on "racing" or "cyclocross" bikes (if they bear the CX mark), 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 <b>and is therefore expressly forbidden</b>	WH12-BOTFR80	FRONT+REAR Campagnolo FW body+brake shoes BR-BO500	1.540
	WH12-BOTFRX80	FRONT+REAR HG type FW body+brake shoes BR-BO500X	1.579
	WH12-BOTF80	front+brake shoes BR-BO500	715
	WH12-BOTFX80	front+brake shoes BR-BO500X	715
	WH12-BOTR80	rear Campagnolo FW body+brake shoes BR-BO500	825
	WH12-BOTRX80	rear HG type FW body+brake shoes BR-BO500X	864
	<b>DARK LABEL</b>		
	WH12-BOTFR80DK	FRONT+REAR Campagnolo FW body+brake shoes BR-BO500	1.540
	WH12-BOTFRX80DK	FRONT+REAR HG type FW body+brake shoes BR-BO500X	1.579
	WH12-BOTF80DK	front+brake shoes BR-BO500	715
	WH12-BOTFX80DK	front+brake shoes BR-BO500X	715
	WH12-BOTR80DK	rear Campagnolo FW body+brake shoes BR-BO500	825
	WH12-BOTRX80DK	rear HG type FW body+brake shoes BR-BO500X	864

## RIM AND SPOKES



FRONT RIM  
REAR RIM  
LABEL KIT  
VALVE HOLE  
VALVE EXTENSION  
DIAMETER  
TYRE  
BRAKE SHOES

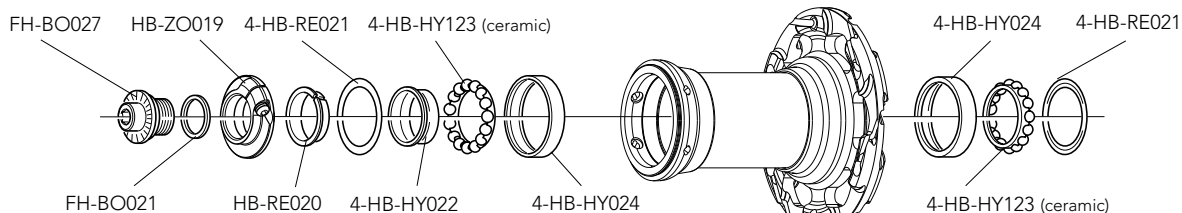
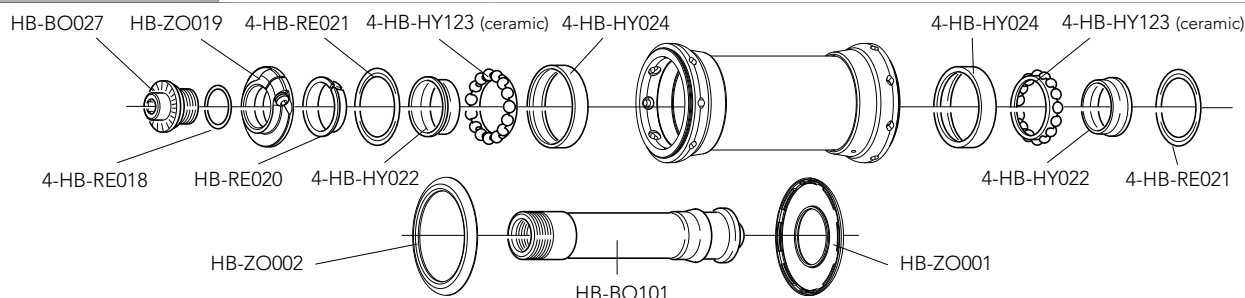
COMPLETE FRONT KIT  
COMPLETE REAR KIT  
MINI-KIT

NIPPLES  
SPOKE RING  
INSERT NIPPLE  
NIPPLE MAGNET  
SPOKE SPANNER

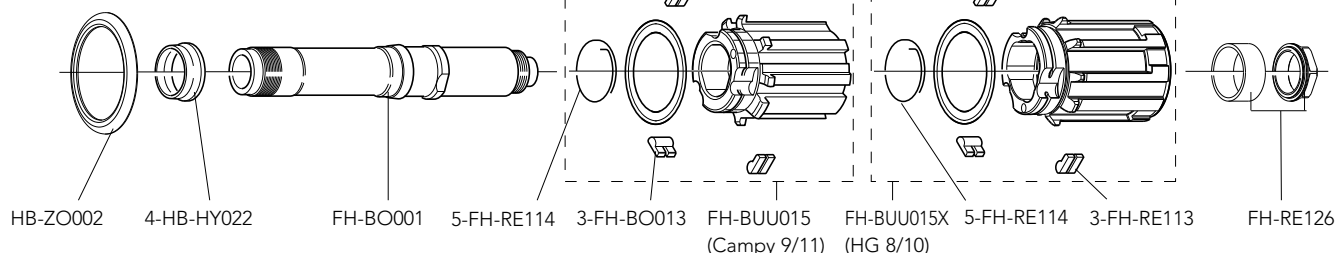
WH-001BO80 (no labels)  
WH-002BO80 (no labels)  
LAB-BOT1280 (front+rear) - LAB-BOT1280DK (front+rear DARK)  
6,5 mm  
UT-WH160M (male extension) - UT-WH160F (female extension)  
634 mm  
See recommended tyre manufacturer inflation pressure  
for carbon rims - BR-BO500 (per Campagnolo brakes) - BR-BO500X (per Shimano brakes)

KIT-03BUU80 (16 front spokes + 16 nuts + 16 nut supporting plates)  
KIT-04BUU80 (12 rear right spokes+6 rear left spokes+18 nuts+18 nut supporting plates)  
KIT-500BUU80 (2 front spokes + 2 rear right spokes + 2 rear left spokes + 6 nuts + 6 nut supporting plates)  
WH-015BUU (red - 10 pieces)  
UT-WH010 (anti-rotation spokes)  
UT-WH160 (magnet-attractor for nipple)  
UT-WH050 (nipple-guide)  
UT-WH090 (spoke wrenches)

## HUBS



**HB-HY100  
CULT™ KIT**  
2 x HB-RE021  
2 x HB-HY022  
2 x HB-HY024  
2 x HB-HY123



## QUICK-RELEASES

QR12-BUUBFR

front + rear

**WARNING!**

Because of the high temperatures reached when breaking, we recommend you use only glue for tubular tires specifically for carbon fibre rims.

GHIBLI™ ULTRA™ tubular

HIGH PROFILE

INTENDED USE	WHEEL CODES	DESCRIPTION	WEIGHT
This product has been designed and manufactured to be fitted and used only on "racing" or "cyclocross" bikes (if they bear the CX mark), 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 <b>and is therefore expressly forbidden</b>	WH9-GHR28X	rear road	1.010
	WH9-GHPF28	front track 28"	955
	WH9-GHPR28	rear track 28"	995

RIM	
RIM	disc profile tensile-structure in aramidic fibre Braking surface in aluminium
TYRE	See recommended tyre manufacturer inflation pressure

HUBS

REAR ROAD

FH-BO027 HB-BO019 4-HB-RE021 4-HB-HY123 (ceramic) 4-HB-HY123 (ceramic) 4-HB-RE021

FH-BO021 HB-RE020 4-HB-HY022 (4 pcs.)

4-HB-HY022 (4 pcs.) FH-GH001 5-FH-RE114 3-FH-BO013 FH-GH015 FH-RE126

FRONT TRACK

HB-PI002 HB-RE003 HB-RE005 HB-RE009

HB-RE004 FH-RE004 HB-PI001 HB-RE009 HB-RE005 HB-RE003 HB-PI002

REAR TRACK

RH-PI010 FH-RE009 RH-PI107 FH-RE005

RH-PI005 RH-PI006 FH-RE109 FH-RE006 RH-PI001 FH-RE005 RH-PI107 RH-PI006 FH-RE006 FH-RE116 RH-PI010

QUICK-RELEASES

QR12-BUUBFR

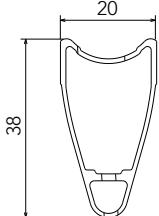
front + rear

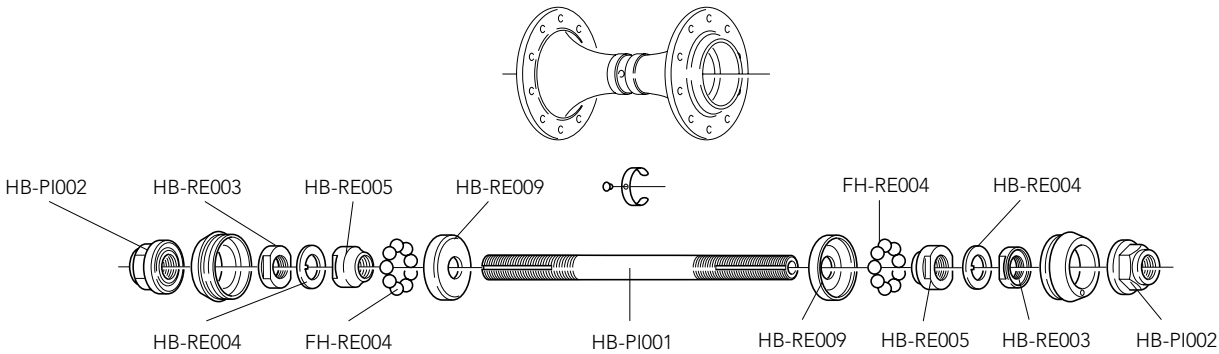
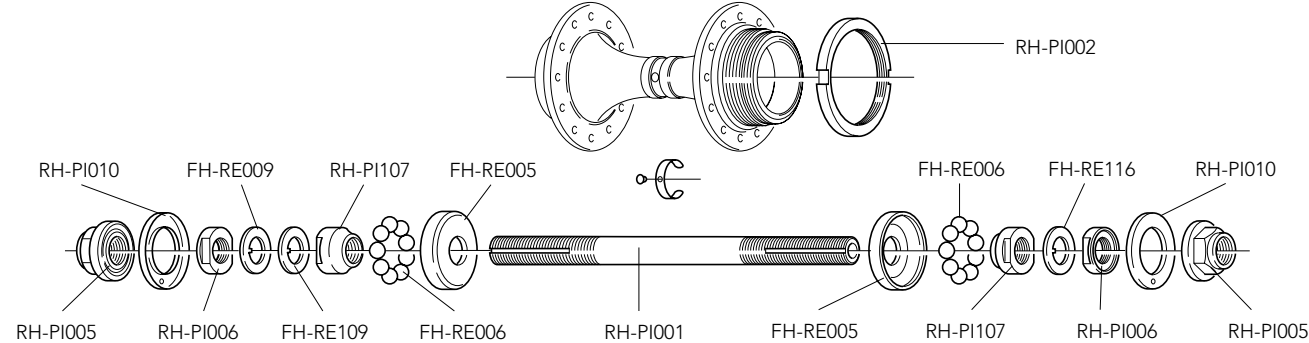
NOTES

## PISTA™ tubular


## HIGH PROFILE

INTENDED USE	WHEEL CODES	DESCRIPTION	WEIGHT
This product has been designed and manufactured to be fitted and used only on "racing" or "cyclocross" bikes (if they bear the CX mark), 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 <b>and is therefore expressly forbidden</b>	WH02-PTF WH02-PTR	front rear	995 1.040

RIM			
	FRONT RIM	WH-001PI (with labels)	
	REAR RIM	WH-002PI (with labels)	
	LABEL KIT	LAB-PIT07 (for a pair of front+rear wheels)	
	VALVE HOLE	6,5 mm	
	VALVE EXTENSION	UT-HU100	
	DIAMETER	634 mm	
	TYRE SECTION	See recommended tyre manufacturer inflation pressure	

HUBS			
			
			

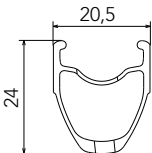
SPOKES			
COMPLETE FRONT KIT	KIT-01PI	20 front spokes + 20 nuts + 20 nut supporting plates	
COMPLETE REAR KIT	KIT-02PI	24 rear spokes + 24 nuts + 24 nut supporting plates	
MINI-KIT	KIT-100PI	2 front spokes + rear spokes + 6 nuts + 6 nut supporting plates	
NUTS	10-WH-010BO	10 pieces	
NUT SUPPORTING PLATES	10-WH-011EU	10 pieces	

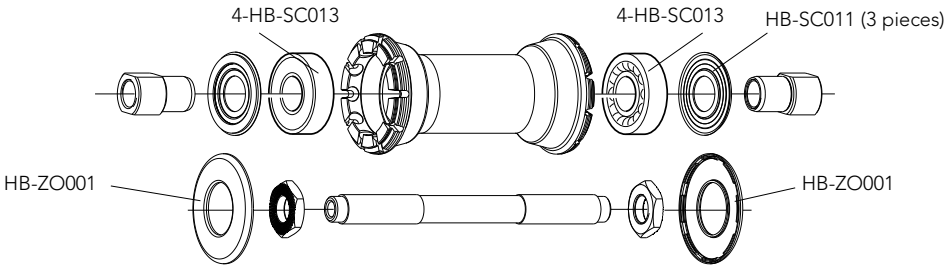
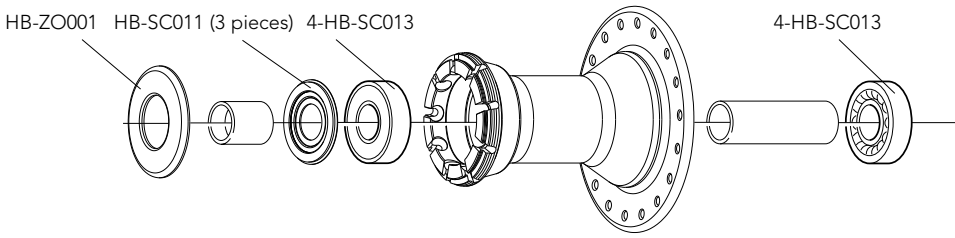
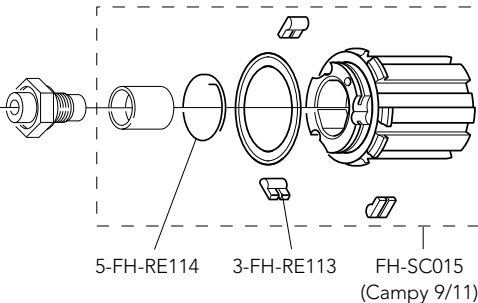
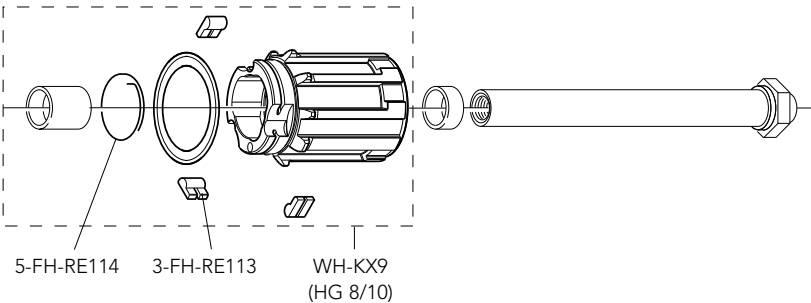
NOTES			
			

KHAMSIN™ CX clincher


CYCLOCROSS - MEDIUM PROFILE

INTENDED USE	WHEEL CODES	DESCRIPTION	WEIGHT
This product has been designed and manufactured to be fitted and used only on "racing" or "cyclocross" bikes (if they bear the CX mark), 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 <b>and is therefore expressly forbidden</b>	WH11-KHXCFRB	FRONT+REAR Campagnolo FW body	1.873
	WH12-KHXCFRXB	FRONT+REAR HG type FW body	1.912
	WH11-KHXCFB	front	828
	WH11-KHXCRB	rear Campagnolo FW body	1.045
	WH12-KHXCRXB	rear HG type FW body	1.084

RIM		RIM-TAPE LABEL KIT VALVE HOLE DIAMETER TYRE SECTION	2-WH-RT01 (18 mm - 2 pieces) LAB-KHXCB11 (for a pair of front+rear wheels) 6,5 mm 700C (622 x 15C) See section table and inflation pressures on page 205*  * These wheels are designed to mount cyclo-cross up to 35 mm tyres. We highly recommend complying with maximum pressures indicated on cyclo-cross tyres. Do no use 29" MTB tyres.
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HUBS		
		
QUICK-RELEASES	QR8-40BFR	black - front + rear

SPOKES		
COMPLETE FRONT KIT COMPLETE REAR KIT MINI-KIT NIPLES	KIT-23KHB KIT-24KHB KIT-300KHB 50-WH-NZO	24 front spokes + 24 nipples 18 rear right spokes + 9 rear left spokes + 27 nipples 2 front spokes + 2 rear right spokes + 2 rear left spokes + 6 nipples 50 pieces

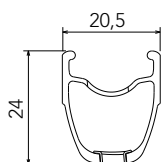
NOTES


## VENTO™ REACTION™ CX clincher

## CYCLOCROSS - MEDIUM PROFILE

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	WH12-VEXCFRXB	FRONT+REAR HG type FW body	1.866
	WH11-VEXCFB	front	825
	WH11-VEXCRB	rear Campagnolo FW body	1.002
	WH12-VEXCRXB	rear HG type FW body	1.041

## RIM

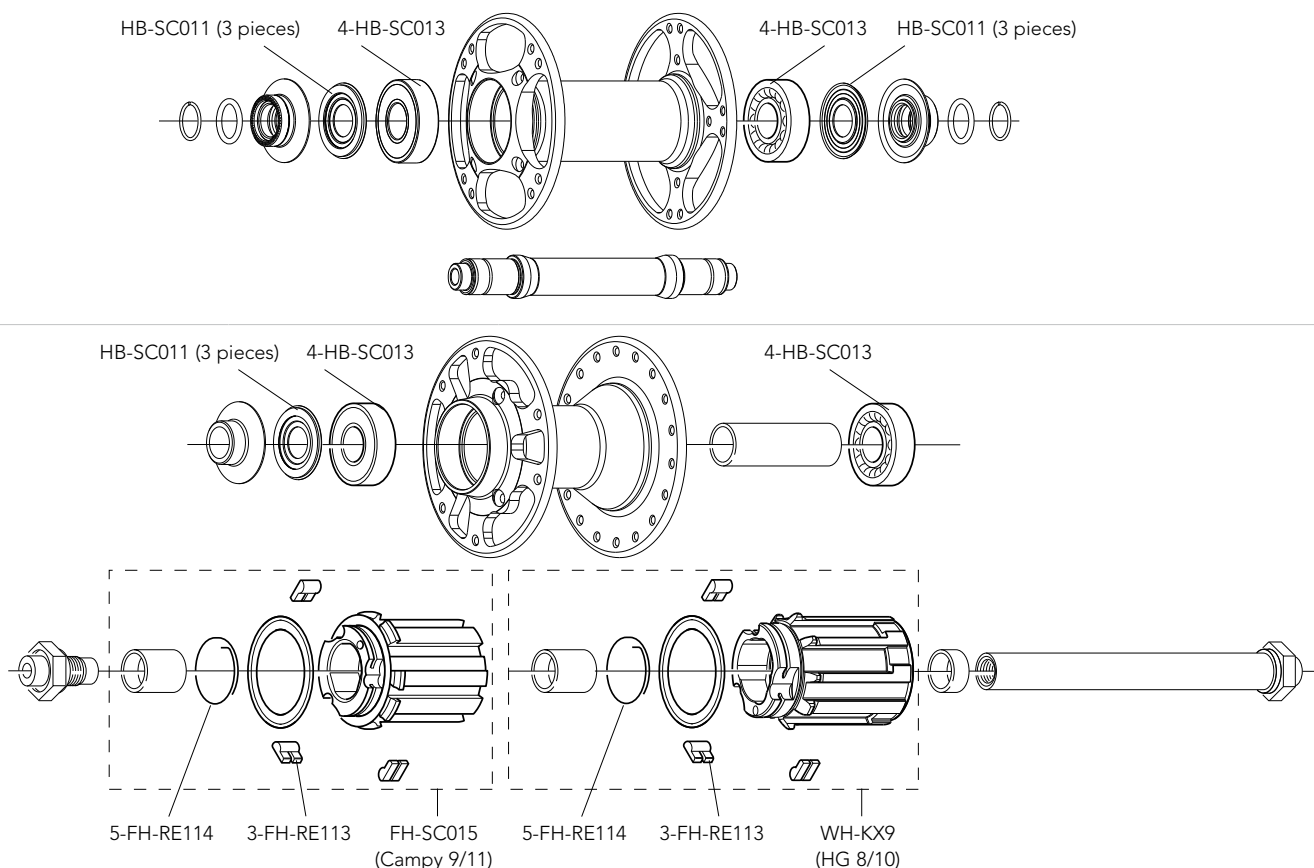


RIM-TAPE  
LABEL KIT  
VALVE HOLE  
DIAMETER  
TYRE SECTION

2-WH-RT01 (18 mm - 2 pieces)  
LAB-VEXCB11 (for a pair of front+rear wheels)  
6,5 mm  
700C (622 x 15C)  
See section table and inflation pressures on page 205\*

\* These wheels are designed to mount cyclo-cross up to 35 mm tyres. We highly recommend complying with maximum pressures indicated on cyclo-cross tyres.  
Do not use 29" MTB tyres.

## HUBS



QUICK-RELEASES	QR8-40BFR	front + rear
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## SPOKES

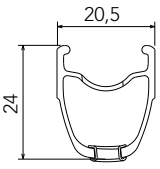
COMPLETE FRONT KIT	KIT-23VEB	23 front spokes + 1 special spoke + 24 nipples
COMPLETE REAR KIT	KIT-34VEB	18 rear right spokes + 8 rear left spokes + 1 rear left special spoke + 27 nipples
MINI-KIT	KIT-700VEB	3 front spokes + 5 rear spokes + 7 nipples
NIPLES	50-WH-NZO	50 pieces

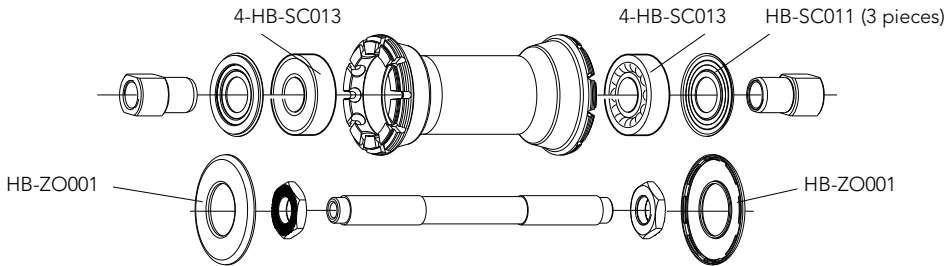
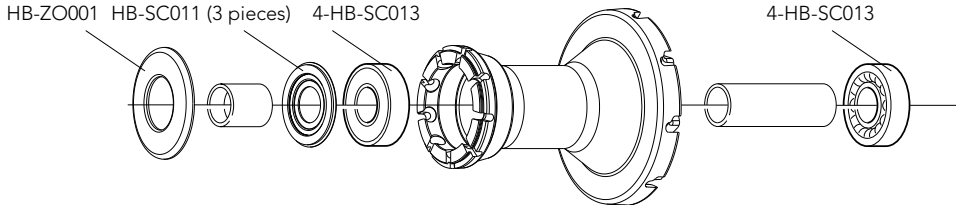
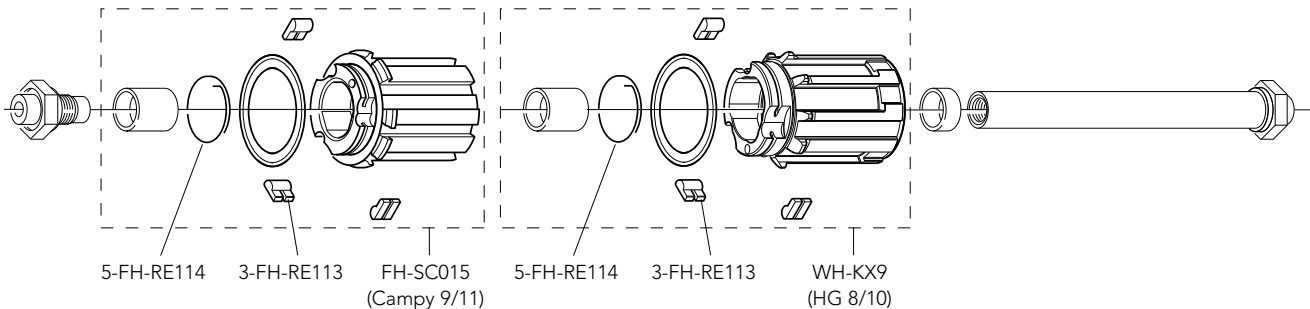
## NOTES

SCIROCCO™ CX clincher


CYCLOCROSS - MEDIUM PROFILE

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	WH12-SCXCFRXB	FRONT+REAR HG type FW body	1.834
	WH11-SCXCFB	front	775
	WH11-SCXCRB	rear Campagnolo FW body	1.020
	WH12-SCXCRXB	rear HG type FW body	1.059

RIM			
	RIM-TAPE LABEL KIT VALVE HOLE DIAMETER TYRE SECTION	2-WH-RT01 (18 mm - 2 pieces) LAB-SCXCB11 (for a pair of front+rear wheels) 6,5 mm 700C (622 x 15C) See section table and inflation pressures on page 205*	
		* These wheels are designed to mount cyclo-cross up to 35 mm tyres. We highly recommend complying with maximum pressures indicated on cyclo-cross tyres. Do no use 29" MTB tyres.	

HUBS		
		
		
		
QUICK-RELEASES	QR12-ZOBFR	front + rear

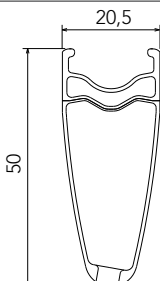
SPOKES			
COMPLETE FRONT KIT	KIT-43SCB	16 front spokes + 16 nipples	
COMPLETE REAR KIT	KIT-44SCB	14 rear right spokes + 7 rear left spokes + 21 nipples	
MINI-KIT	KIT-700SCB	2 front spokes + 2 rear right spokes + 2 rear leeft spokes + 6 nipples	
NIPLES	50-WH-NZO	50 pieces	

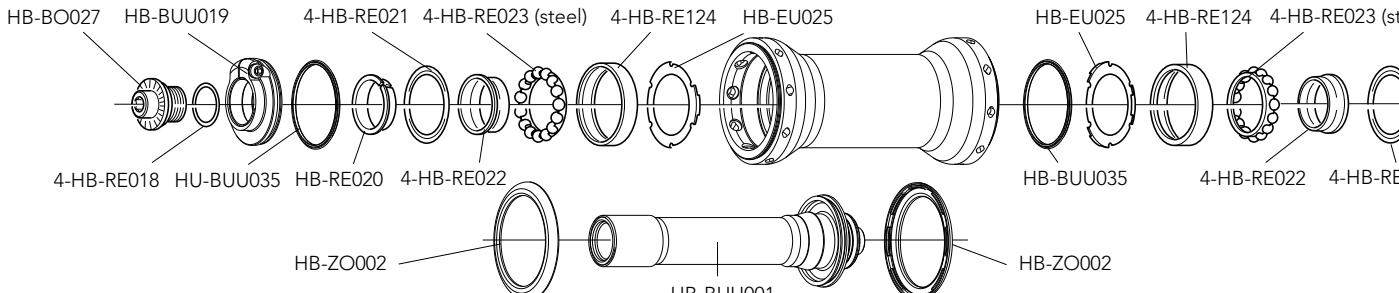
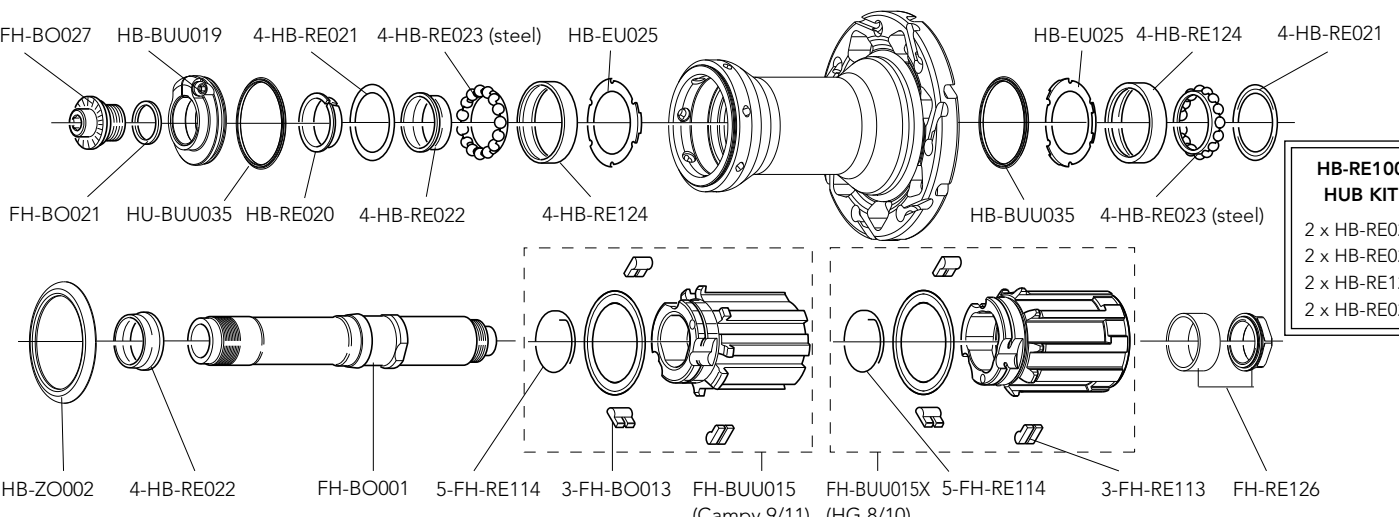
NOTES			
			

## BULLET™ ULTRA CX clincher (H50)

## CYCLOCROSS - HIGH PROFILE

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	WH12-BUUXCFRX	FRONT+REAR HG type FW body	1.649
	WH12-BUUXCF	front	737
	WH12-BUUXCR	rear Campagnolo FW body	873
	WH12-BUUXCRX	rear HG type FW body	912

RIM			
	FRONT RIM	WH-003BUU (no labels)	
	REAR RIM	WH-004BUU (no labels)	
	LABEL KIT	LAB-BUU12 (front+rear) - LAB-BUU12DK (front+rear DARK)	
	VALVE HOLE	6,5 mm	
	VALVE EXTENSION	UT-WH130M (male extension) - UT-WH130F (female extension)	
	DIAMETER	700C (622 x 15C)	
	TYRE	See section table and inflation pressures on page 205*	
		* These wheels are designed to mount cyclo-cross up to 35 mm tyres. We highly recommend complying with maximum pressures indicated on cyclo-cross tyres. Do no use 29" MTB tyres.	

HUBS			
			
			
<div style="border: 1px solid black; padding: 5px; width: fit-content;"> <b>HB-RE100 HUB KIT</b>            2 x HB-RE021            2 x HB-RE022            2 x HB-RE124            2 x HB-RE023         </div>			
QUICK-RELEASES	QR12-BUUBFR	front + rear	

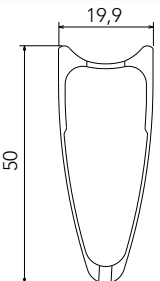
SPOKES			
COMPLETE FRONT KIT	KIT-03BUU	18 front spokes + 18 nuts + 18 nut supporting plates	
COMPLETE REAR KIT	KIT-04BUU	14 rear right spokes + 7 rear left spokes + 21 nuts + 21 nut supporting plates	
MINI-KIT	KIT-500BUU	2 front spokes + 2 rear right spokes + 2 rear left spokes + 6 nuts + 6 nut supporting plates	
NIPPLES	WH-015BUU	red - 10 pieces	
SPOKE RING	UT-WH010	anti-rotation spokes	
INSERT NIPPLE	UT-WH160	magnet-attractor for nipple	
NIPPLE MAGNET	UT-WH050	nipple-guide	
SPOKE SPANNER	UT-WH090	spoke wrenches	

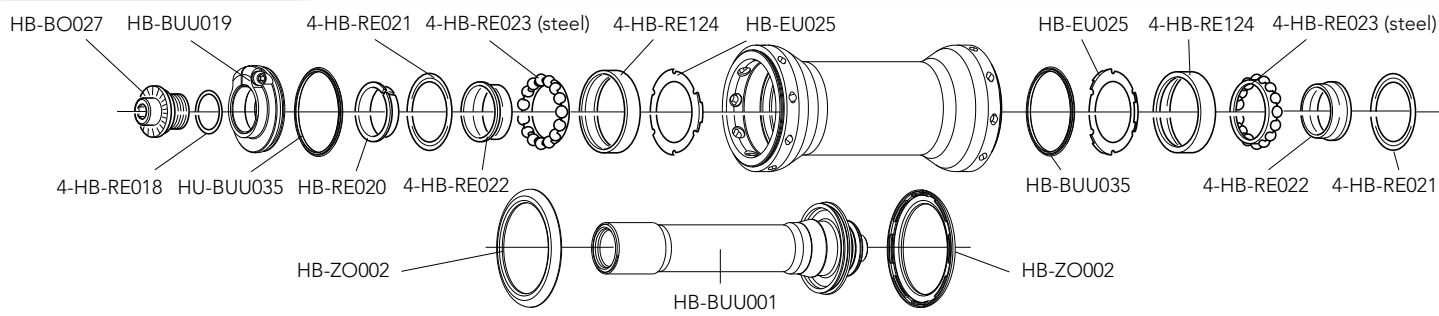
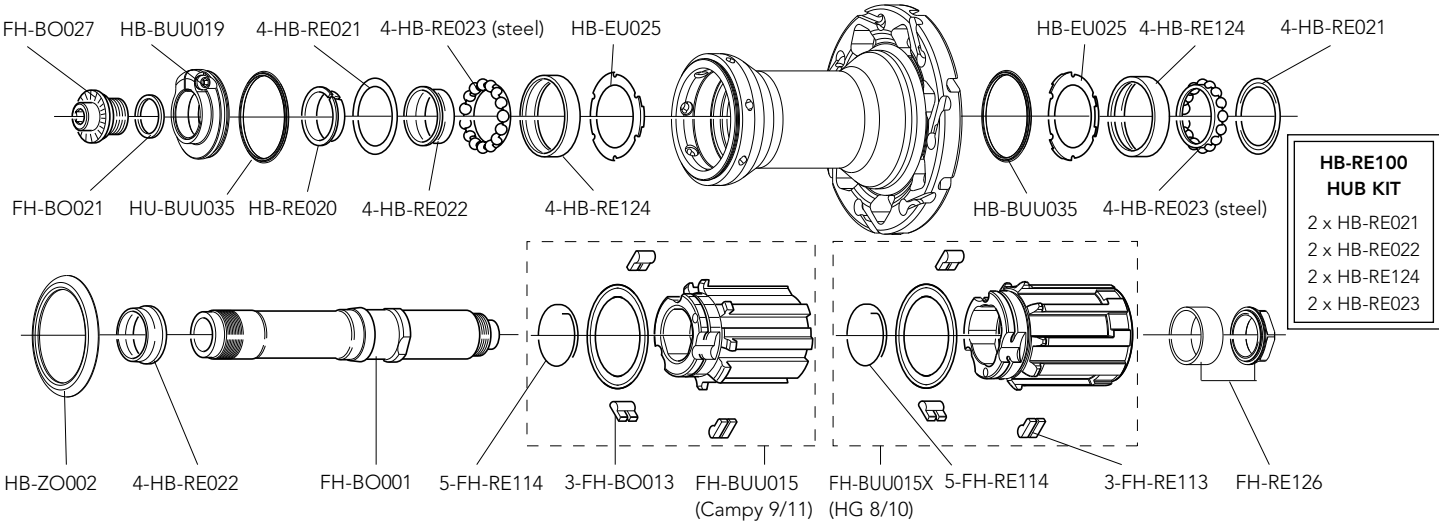
NOTES			
			

BORA™ ONE CX tubular

CYCLOCROSS - HIGH PROFILE

INTENDED USE	WHEEL CODES	DESCRIPTION	WEIGHT
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	WH12-BOXTRX1	FRONT+REAR HG type FW body+brake shoes BR-BO500X	1.389
	WH12-BOXTF1	front+brake shoes BR-BO500	590
	WH12-BOXTFX1	front+brake shoes BR-BO500X	590
	WH12-BOXTR1	rear Campagnolo FW body+brake shoes BR-BO500	760
	WH12-BOXTRX1	rear HG type FW body+brake shoes BR-BO500X	799

RIM		
	FRONT RIM REAR RIM LABEL KIT VALVE HOLE VALVE EXTENSION DIAMETER TYRE BRAKE SHOES	WH-001BO1 (with labels) WH-002BO1 (with labels) LAB-BO1T10 (front+rear) 6,5 mm UT-HU130 634 mm See recommended tyre manufacturer inflation pressure for carbon rims - BR-BO500 (per Campagnolo brakes) - BR-BO500X (per Shimano brakes)

HUBS		
		
		
<div>HB-RE100 HUB KIT 2 x HB-RE021 2 x HB-RE022 2 x HB-RE124 2 x HB-RE023</div>		
QUICK-RELEASES	QR12-BUUBFR	front + rear

SPOKES		
COMPLETE FRONT KIT COMPLETE REAR KIT MINI-KIT NUTS PIASTRINE	KIT-01BO1 KIT-02BO1 KIT-100BO1 10-WH-010BO 10-WH-011BO	18 front spokes + 18 nuts + 18 nut supporting plates 14 rear right spokes + 7 rear left spokes + 21 nuts + 21 nut supporting plates 2 front spokes + 2 rear right spokes + 2 rear left spokes + 6 nuts + 6 nut supporting plates 10 pieces 10 pieces

**WARNING!**

Because of the high temperatures reached when breaking, we recommend you use only glue for tubular tires specifically for carbon fibre rims.



## MAXIMUM OPERATING PRESSURE

			RIM DIMENSION			
			13C		15C	
TYRE WIDTH	mm	in.	BAR	PSI	BAR	PSI
	18	0,70	10,0	146		
	20	0,80	9,5	138		
	23	0,90	9,5	138	9,5	138
	25	1,00	9,0	131	9,0	131
	28	1,10			8,0	117
	30	1,20			7,0	103
	32	1,25			6,7	99
	35	1,30			6,3	93