

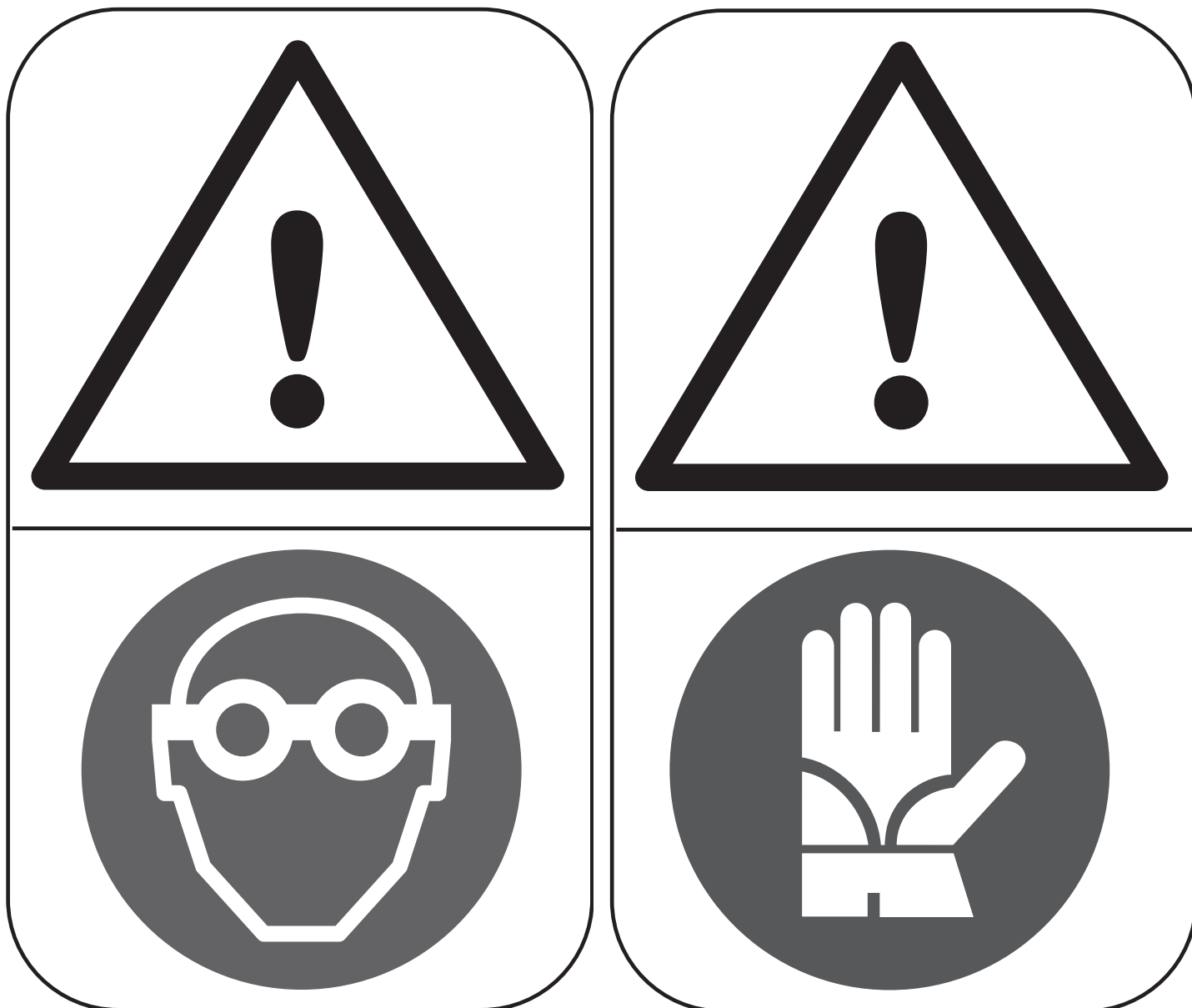


**TECHNICAL MANUAL**

**12s CRANKSET**

## WARNING!

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



**THIS TECHNICAL MANUAL IS INTENDED FOR USE BY PROFESSIONAL MECHANICS.**



Anyone who is not professionally qualified to assemble bicycles should not attempt to install and operate on the components because of the risk of carrying out incorrect operations that could cause the components to malfunction with the consequent risk of accidents, physical injury or even death.

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

# 12s CRANKSET

## 1 - TECHNICAL SPECIFICATIONS

CHAINRINGS		BOLT CIRCLE DIAMETER	CHAIN LINE	CHAINRING CENTRE DISTANCE	MINIMUM CHAINSTAY LENGTH
SUPER RECORD WIRELESS (with or without Power Meter)	45/29	88 mm ( $\emptyset$ chainring min.)	45,8 mm	8 mm	410 mm (frames for disc brakes)
	48/32				
SUPER RECORD S WIRELESS (with or without Power Meter)	50/34	121 mm ( $\emptyset$ chainring max.)	44,5 mm	8 mm	405 mm (frames for traditional brakes)
	45/29				
	48/32				
	50/34				
	52/36				
53/39					
54/39					
SUPER RECORD RECORD	50/34	112 mm ( $\emptyset$ chainring min.)	44,5 mm	8 mm	410 mm (frames for disc brakes)
	52/36	145 mm ( $\emptyset$ chainring max.)			
	53/39				
CHORUS	48/32	96 mm ( $\emptyset$ chainring min.)	44,5 mm	8 mm	410 mm (frames for disc brakes)
	50/34	123 mm ( $\emptyset$ chainring max.)			
	52/36				

### WARNING!



Combinations other than those provided for in the table could cause the drivetrain to malfunction and could be the cause of accidents, physical injury or even death.

## 1.1 - MEASUREMENT OF THE CHAIN LINE

Chain line for double crankset (Fig.1)

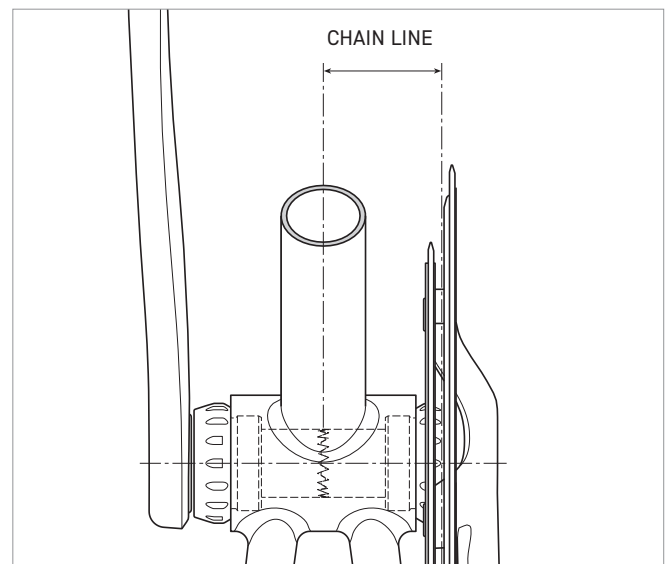


Fig.1

## 2 - COMPATIBILITY

The following compatibility table shows which components are to be combined with each other and the marking on the components themselves.

DRIVETRAINS	ULTRA-TORQUE CRANKSET	REAR DERAILLEUR	CHAIN	ERGOPOWER CONTROL LEVERS
	MARKING			
<b>SUPER RECORD WIRELESS</b> (with or without Power Meter)	FC23-SR12	FD23-SR12WRL	R12	EP23-SRD12
<b>SUPER RECORD S WIRELESS</b> (with or without Power Meter)	FC23-SR12	FD23-SR12WRL FD01	R12	EP23-SRD12
<b>SUPER RECORD</b>	F	FG	R12	FG
<b>RECORD</b>	G	FG	R12	FG
<b>CHORUS</b>	FG	FG	C12	FG

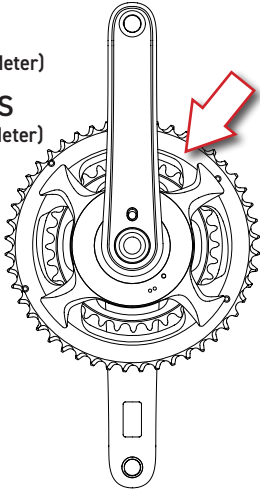
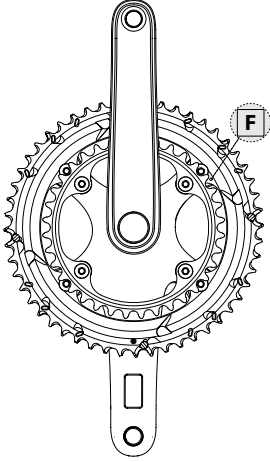
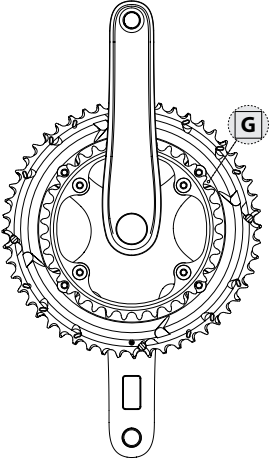
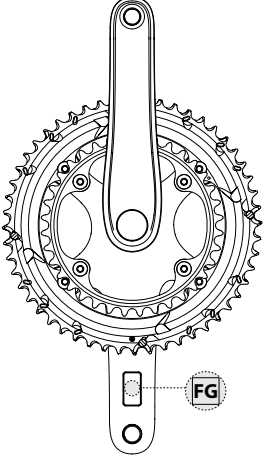
### WARNING!



Combinations other than those provided for in the table could cause the drivetrain to malfunction and could be the cause of accidents, physical injury or even death.

The use of components that do not belong to the correct range may significantly reduce the overall performance of the drivetrain and it is therefore advisable not to mix components from the old ranges with those from the new one.

### MARKING ON THE ULTRA-TORQUE 12S CRANKSET

<p><b>SUPER RECORD</b> (with or without Power Meter)</p> <p><b>SUPER RECORD S</b> (with or without Power Meter)</p> 	<p><b>SUPER RECORD</b></p> 
<p><b>RECORD</b></p> 	<p><b>CHORUS</b></p> 

ULTRA-TORQUE CRANKSET	SEMIAXLES	ENTRANCE SIDE OF THE CENTRAL SCREW	CENTRAL SCREW
SUPER RECORD WIRELESS (with or without Power Meter) SUPER RECORD	TITANIUM	LEFT	TITANIUM
			turn anti-clockwise
SUPER RECORD S WIRELESS (with or without Power Meter)	STEEL	LEFT	STEEL
			turn clockwise
RECORD	STEEL	LEFT	STEEL
			turn clockwise
CHORUS	STEEL	LEFT	STEEL
			turn clockwise



**WARNING!**

Combinations other than those provided for in the table could cause the drivetrain to malfunction and could be the cause of accidents, physical injury or even death.

## 2.1 - PIVOT PEDAL COMPATIBILITY



**WARNING!**

Do not put washers between the pedal axle and hand crank as they would give rise to abnormal tensions in the interface area. Such tensions could lead to premature breaks and be the cause of accidents, physical injuries or even death.



**WARNING!**

The stop chain ring of the pedal pivot must respect the dimensions indicated in Fig.1. These conditions are necessary to minimise the possibility of abnormal tensions in the hand cranks. Such tensions could lead to premature breaks and be the cause of accidents, physical injuries or even death.

**NOTE**

Q-factor: 145.5 mm (nominal value).

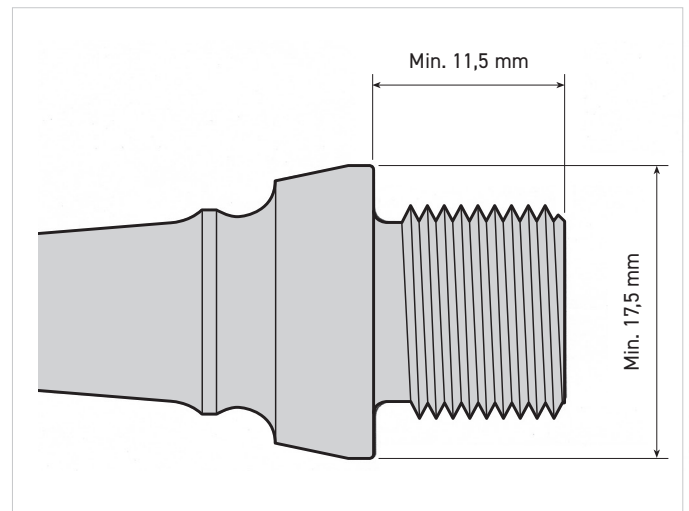


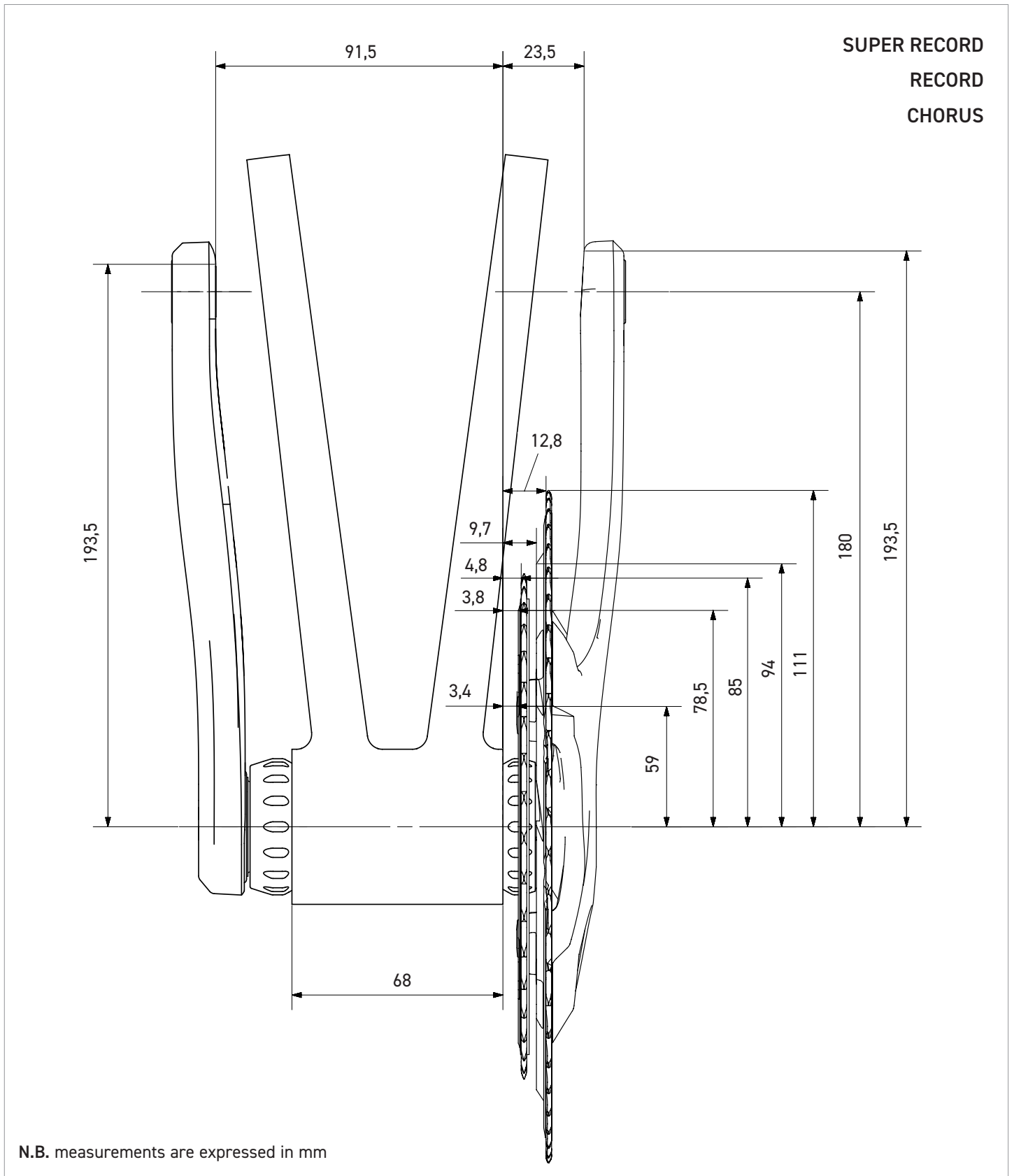
Fig.1

**PEDAL THREAD**

9/16x20 TPI

## 3 - INTERFACE WITH THE FRAME

### 3.1 - ULTRA - TORQUE CRANKSET ENCUMBRANCES (WITH ULTRA-TORQUE CUPS)



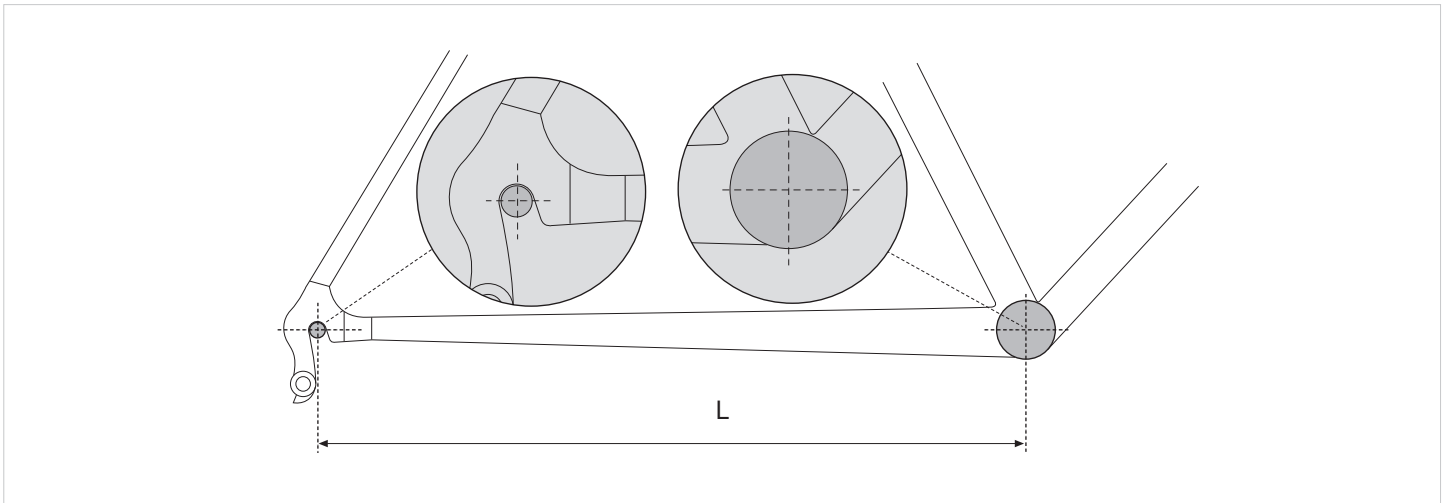
#### Note

The compatibility between the bottom bracket shells and the relative bottom bracket cups is indicated in the "Bottom bracket cup" chapter of the technical manual.

## 3.2 - ULTRA - TORQUE CRANKSET ENCUMBRANCES (WITH PRO-TECH CUPS)

For more information on the SUPER RECORD WIRELESS crankset dimensions (with or without Power Meter) / SUPER RECORD S WIRELESS crankset dimensions (with or without Power Meter), refer to the Technical manual "Frame/Handlebar Interface and Specifications - Super Record Wireless", Chapter "5.1 - Pro-Tech Crankset Dimensions".

## 3.3 - MINIMUM CHAINSTAY LENGTH



### FRAMES FOR TRADITIONAL BRAKES

L = 405 mm min.

### FRAMES FOR DISC BRAKES

L = 410 mm min.

## 4 - ASSEMBLY

After installing the bottom bracket cups specific for your Ultra-Torque crankset in the bottom bracket shell (to understand the exact compatibility, refer to the "Bottom bracket cup" chapter of the technical manual):

- Insert the right hand crank fully down in the bottom bracket shell (fig. 1).
- Push the spring to make the two ends enter in the small holes (fig. 2).

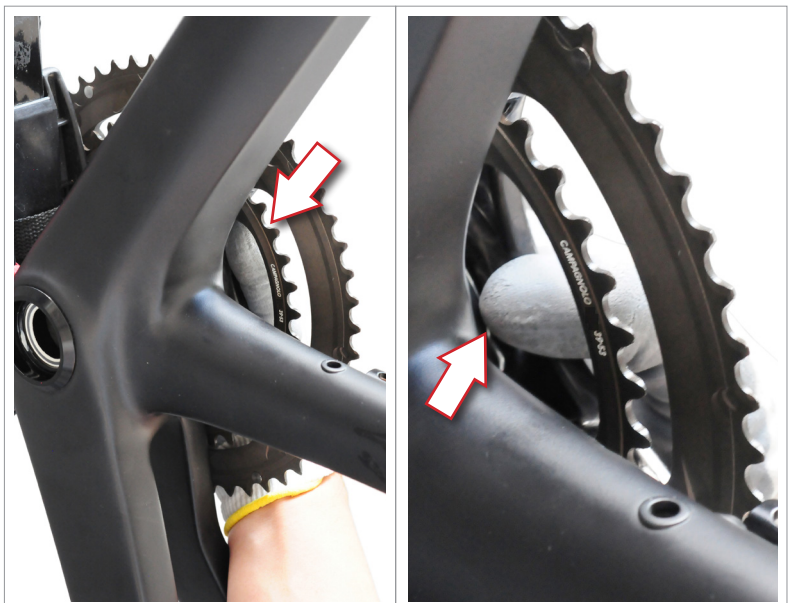


Fig.1

Fig.2

**NOTE**

For the Super Record Wireless crankset with Power Meter / Super Record S Wireless crankset with Power Meter, use the safety spring with short ends (Fig. 3).

• Insert a tool into the hole, placing it near the safety spring, and turn the hand crank until the end reaches the positioning hole (Fig. 4).

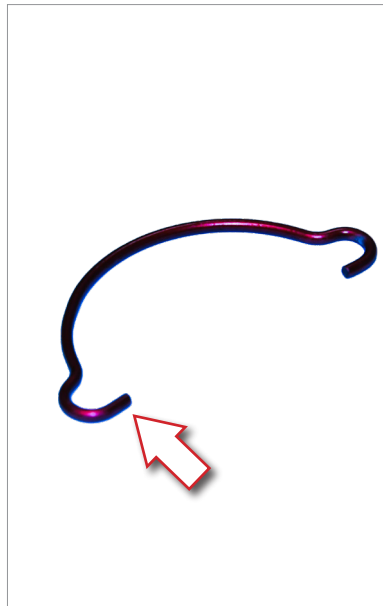


Fig.3



Fig.4

• Move the right hand crank to the side as if to extract it from the bottom bracket, to ensure that the spring was positioned correctly and is retaining the hand crank (Fig. 5).

• Insert the wave washer (Fig.6) in the space for the left bottom bracket cup bearing.

• Insert the left hand crank in the bottom bracket shell.

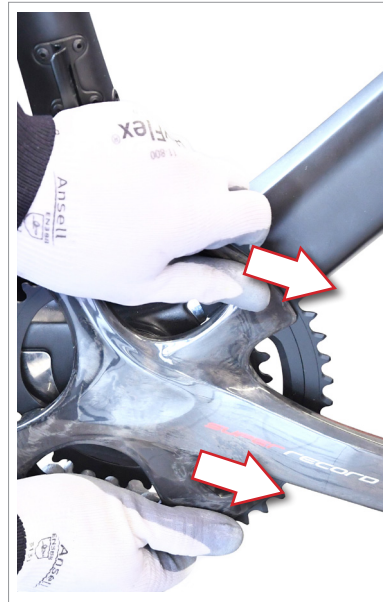


Fig.5

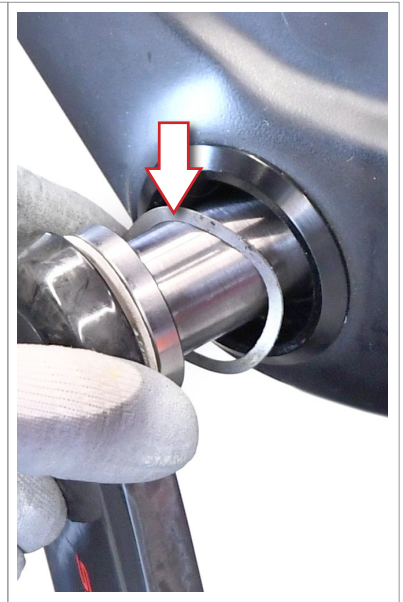


Fig.6

• Using the Campagnolo® UT-BB110 tool or a suitable 10 mm hexagonal insert with a length of at least 65 mm, engage the fastening screw (Fig. 7) in the semi-axle of the left-hand hand crank until it goes through the hole at the inner end of the semi-axle itself. Then engage the thread of the semi-axle of the right-hand hand crank.

**WARNING!**

Use the special screw code FC-SR008 (for the Super Record / Super Record Wireless crankset) - FC-RE107 (for the Super Record S Wireless/ Record / Chorus crankset). The use of a different screw could be the cause of malfunction or breakage, accidents, physical injury or even death.

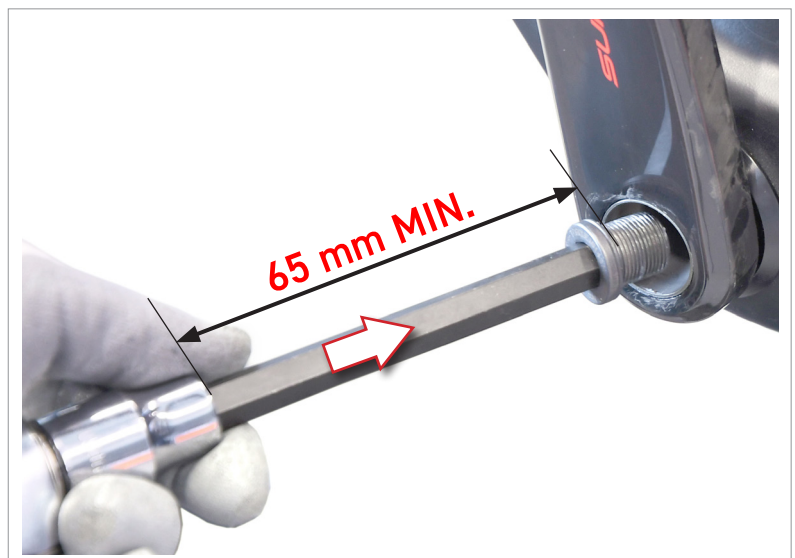


Fig.7



- Make sure that the hand cranks are correctly aligned (Fig. 8).

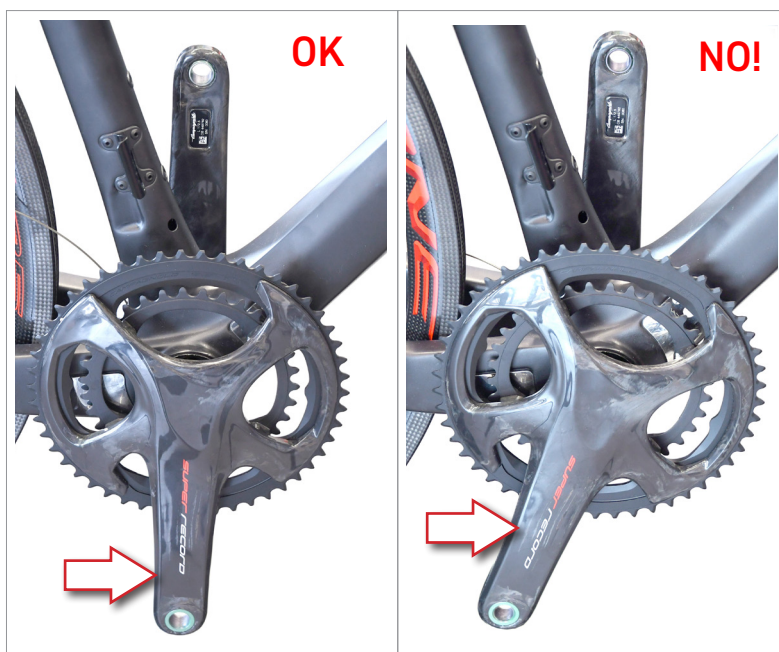


Fig.8

- Use one hand to hold the left-hand hand crank in the correct position, tighten manually the fastening screw (Fig. 7) until it the semi-axles engage, **THEN APPLY A TORQUE WRENCH** (to the 10 mm hexagonal insert) and tighten to a torque of **42 Nm - 60 Nm (372 in.lbs - 531 in.lbs)** (Fig.9).

**WARNING:** the titanium central screw FC-SR008 mounted exclusively on the Ultra-Torque Super Record / Super Record Wireless crankset, with titanium semi-axles, has a left-hand thread (to tighten, turn anti-clockwise, to loosen, turn clockwise).

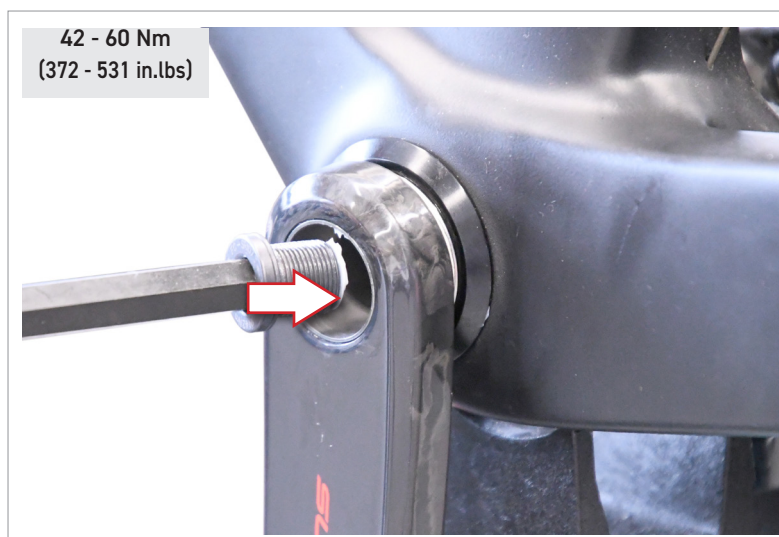


Fig.9



**OBSERVE THE TIGHTENING DIRECTION INDICATED BY THE ARROW ON THE HEAD OF THE CENTRAL SCREW.**



### DANGER!

Never use fixed Allen wrenches in place (Fig. 10) of a torque wrench because, in addition to not being able to set the correct tightening torque, they are often shorter than 65 mm, which may result in partial engagement on the screw head with the possibility of damaging the screw and generating cracks. Screw breakage during use may lead to malfunction or breakage, accidents, physical injuries or death.



Fig.10

## 5 - CRANKSET MAINTENANCE

- Maintenance intervals are strictly approximate and may vary significantly in relation to the intensity and conditions of use (for example: competitions, rain, winter roads with salt, weight of the athlete, etc.). Schedule the appropriate maintenance with your mechanic.
- Periodically check that the central screw and the chainring screws are tightened with the correct torque values:
  - central screw: **42 Nm - 60 Nm (372 in.lbs - 531 in.lbs)**
  - chainring retaining screws: **8 Nm (71 in.lbs)**



### WARNING!

Remember, **EACH TIME** you change the chainrings, to also replace the chainring fixing screws.

- Contact a Campagnolo Service Centre to replace the bearings.
- **SUPER RECORD 12s crankset:** Lubricate the hub bearings and the ball bearings with specific grease for bearing (approximately every 4,000 km).  
The bearings of the Campagnolo® SUPER RECORD 12s bottom brackets are CULT™ (with ceramic ball bearings and stainless steel races).
- **SUPER RECORD WIRELESS / SUPER RECORD S WIRELESS / RECORD / CHORUS crankset:** Clean and lubricate the bearings and semi axles and lubricate the bearing housings in the bottom bracket cups with specific synthetic grease for bearings (approximately every 4000 km).



### WARNING!

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

- Dirt seriously damages the bicycle and its components. Wash, clean and dry your bicycle carefully after use.
- Never wash your bicycle using pressurised water.  
Pressurised water - even from a normal garden hose - may infiltrate through the seals and into your Campagnolo®, components, causing irreparable damage to them.  
Wash your bicycle and the Campagnolo® components by delicately cleaning with soap and water.
- Clean the crankset and the bottom bracket cups with specific products for the bicycle. **Never use non-neutral solvents or detergents.**



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



### WARNING!

Saline conditions (such as roads in winter and in coastal areas) may cause galvanic corrosion in the majority of the exposed components of the bicycle. To prevent damage, malfunction and the consequent risk of accident, rinse, clean, dry and re-lubricate all components subject to corrosion.

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

## 6 – PERIODIC MAINTENANCE TABLE

Maintenance intervals are strictly approximate and may vary significantly in relation to the intensity and conditions of use (for example: competitions, rain, winter roads with salt, weight of the athlete, etc.).

Schedule the appropriate maintenance with your customer.

PROCEDURE	MILEAGE IN KM (MAX)	TIME (MAX)	CONTROL METHOD
Check screws are tightened to the correct torque	2000	2 MONTHS	TORQUE WRENCH
Check chainring wear	2000		
Check the smoothness and replace the bearings if necessary, grease the bearing housing, grease the semi-axle ends	4000	6 MONTHS	