

***velo***

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# IMPORTANT INFORMATION

This manual is intended to assist Cervélo retailers in setting up and customizing the 2019 S3 bicycle. This manual is not intended for consumer use, and requires the use of the specified tools to ensure proper assembly.

Failure to use the specified parts and to follow the supplied assembly instructions may result in a loss of control while riding and serious injury. This manual is an overview of the steps required to assemble this bicycle and to make any desired modifications as set forth in this manual. This manual assumes that the retailer has the minimum required background and skill level required of all professional bicycle mechanics. See <https://www.probma.org/>

**NOTE:** Cervélo strongly recommends that all assembly and adjustment procedures be performed by an authorized Cervélo retailer. If you are a Cervélo S3 consumer/purchaser reading this manual we suggest that before attempting to undertake any of the procedures in this manual that you consult your authorized Cervélo retailer, or visit us at [www.cervelo.com/support](http://www.cervelo.com/support)

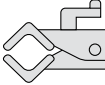

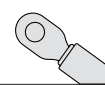

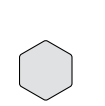






# LIST OF TOOLS & SUPPLIES

This manual outlines a number of procedures for making optional adjustments to the S3 which differ from the way the bicycle is originally sold by Cervélo. The following tools and parts listed are required for these adjustments. These parts are only available for purchase through Cervélo retailers. Cervélo strongly recommends that all assembly and adjustment procedures be performed by an authorized Cervélo retailer.

All parts available for separate purchase are noted in this manual with Cervélo part numbers listed in ALL- CAPS FORMAT, with a full listing provided on page 3.

**NOTE:** All non-proprietary components such as those from Shimano or SRAM are available from your local distributor.

**NOTE:** This manual was developed to compliment the Cervélo General User Manual, and is intended as a supplement to the assembly and installation instructions supplied by the component manufacturers (provided with this bicycle).

Tools		Tools	
	Bicycle workstand (types which secure bike by the seatpost, or pro-type stand with fork mount)		Philips-head screwdriver
	Torque wrench(es) with 2.5Nm to 15Nm range and adaptors:		Slot-head screwdriver
	Allen (Hex) head inserts: 2mm, 2.5mm, 3mm, 4mm, 5mm, 6mm, 8mm, 10mm		Pedal wrench
	Cable cutters		4th hand brake cable tool
	Pliers		Di2 wire tool – Shimano
			Good quality bicycle grease

# 2019 S3 PARTS LIST

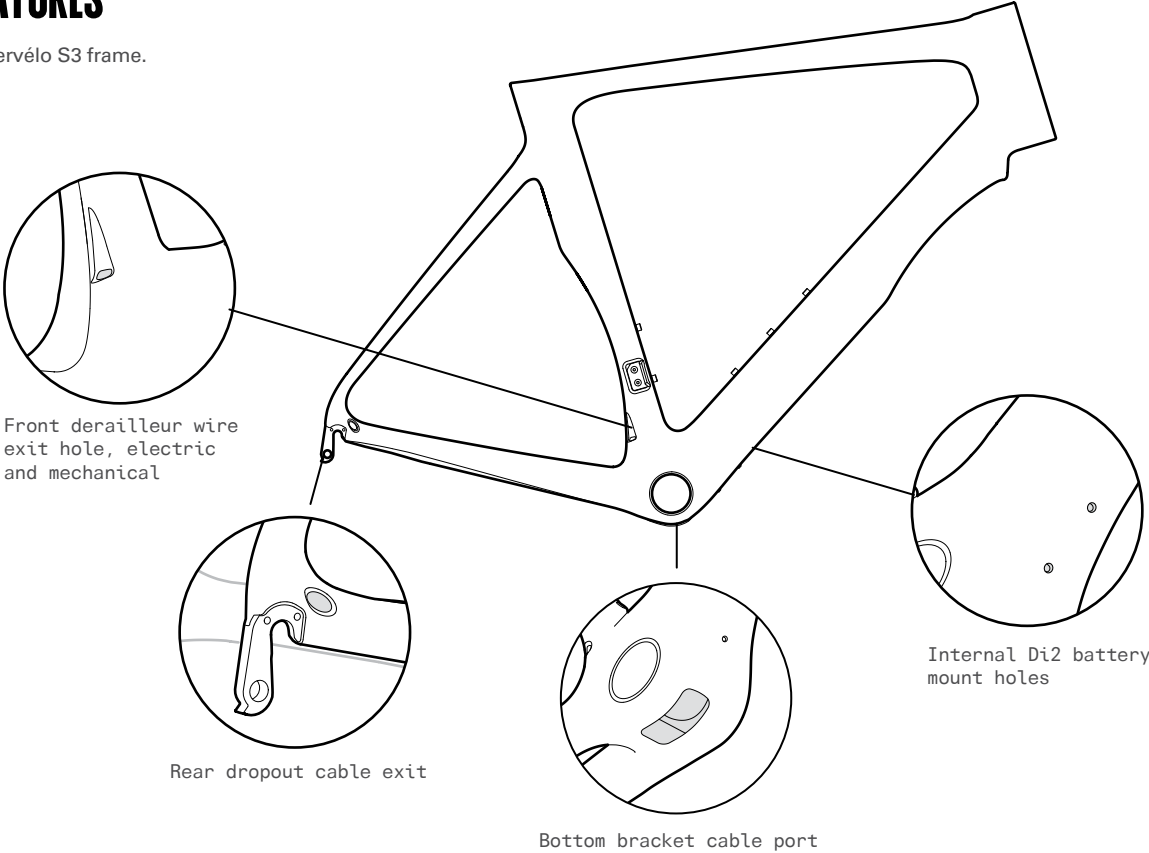
Item Description	Cervélo Part No.
Fork Clamp Wedge Kit	FKI-0E0S3
Front Derailleur Mount w/Bolts	FDM-0E0
Rear Brake Booster	BRP-BOOSTER
ST029 Stem 80mm w/ Top Cap	ST-A029-80
ST029 Stem 90mm w/ Top Cap	ST-A029-90
ST029 Stem 100mm w/ Top Cap	ST-A029-100
ST029 Stem 110mm w/ Top Cap	ST-A029-110
ST029 Stem 120mm w/ Top Cap	ST-A029-120

Item Description	Cervélo Part No.
ST029 Stem 130mm w/ Top Cap	ST-A029-130
ST029 Stem Top Cap	STC-A029
AB09 Carbon Handlebar 380mm	HB-AB09-38
AB09 Carbon Handlebar 400mm	HB-AB09-40
AB09 Carbon Handlebar 420mm	HB-AB09-42
AB09 Carbon Handlebar 440mm	HB-AB09-44
ST029 Stem Spacer Kit 40mm	SS-A029-KIT
ST029 Headset Bearing Cap	BC-A029

Item Description	Cervélo Part No.
ST029 Headset 1-1/4 - 1-3/8	HS-A029
SP20 Carbon Seatpost 0mm Offset w/Head	SP-SP20-ZERO
SP20 Carbon Seatpost 25mm Offset w/Head	SP-SP20-25MM
Seatpost Clamp Assembly S2/S3	SPC-0E0S2S3
BB Cable Guide/Cover	BBG-0E0
Internal Battery Mount Assembly	MT-BINT

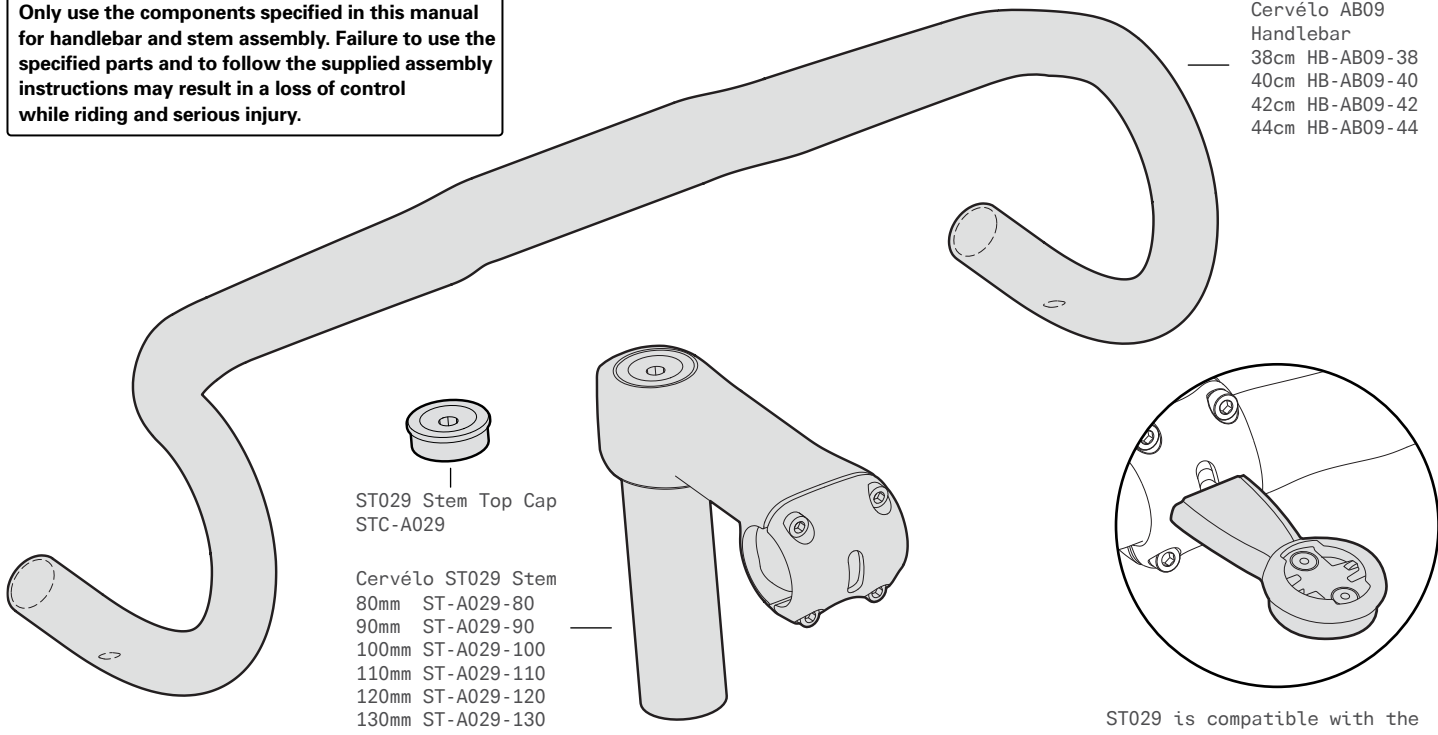
# FRAME FEATURES

A guide to the Cervélo S3 frame.



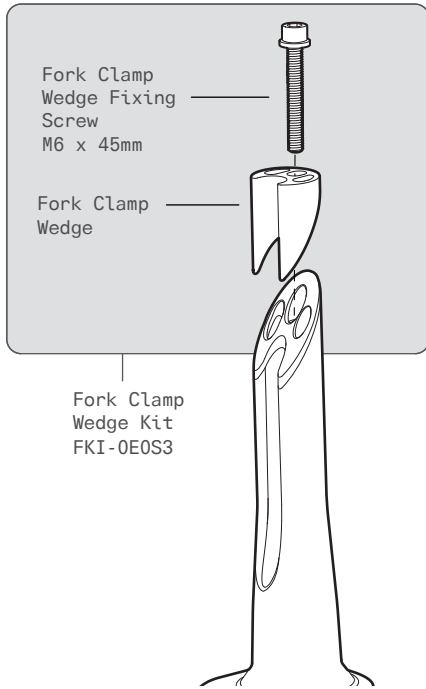
# HANDLEBAR & STEM COMPONENTS

**⚠ WARNING**  
Only use the components specified in this manual for handlebar and stem assembly. Failure to use the specified parts and to follow the supplied assembly instructions may result in a loss of control while riding and serious injury.

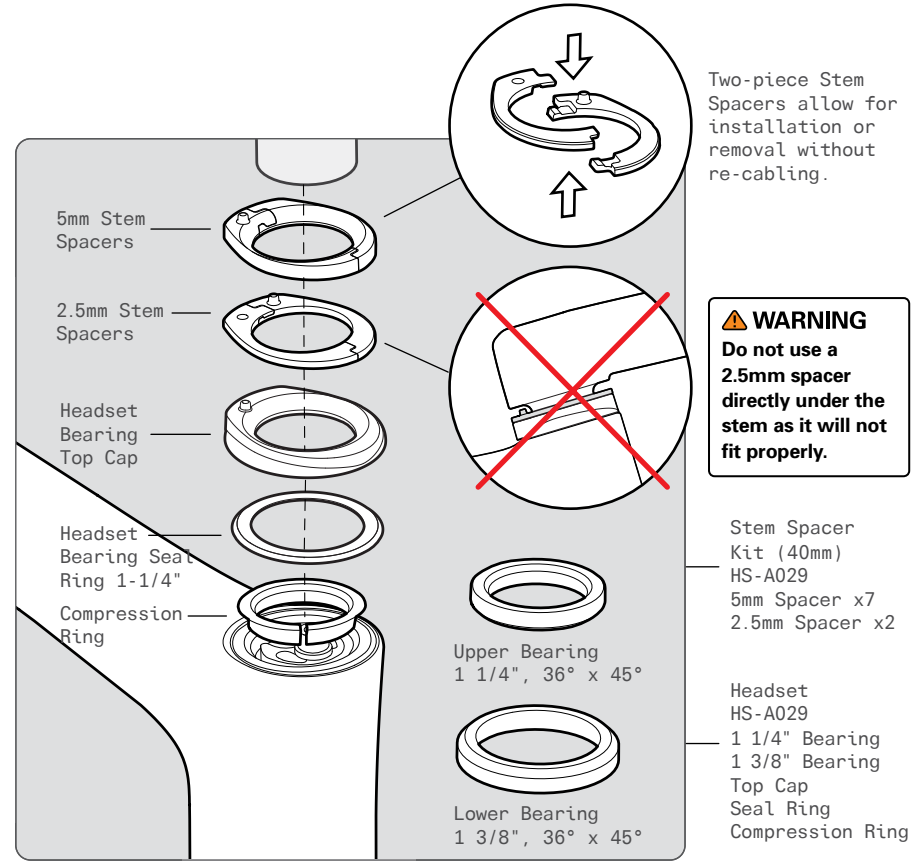


ST029 is compatible with the Bar Fly 4 Direct Max and Bar Fly Direct Mini Garmin stem mounts.

# FORK & HEADSET COMPONENTS

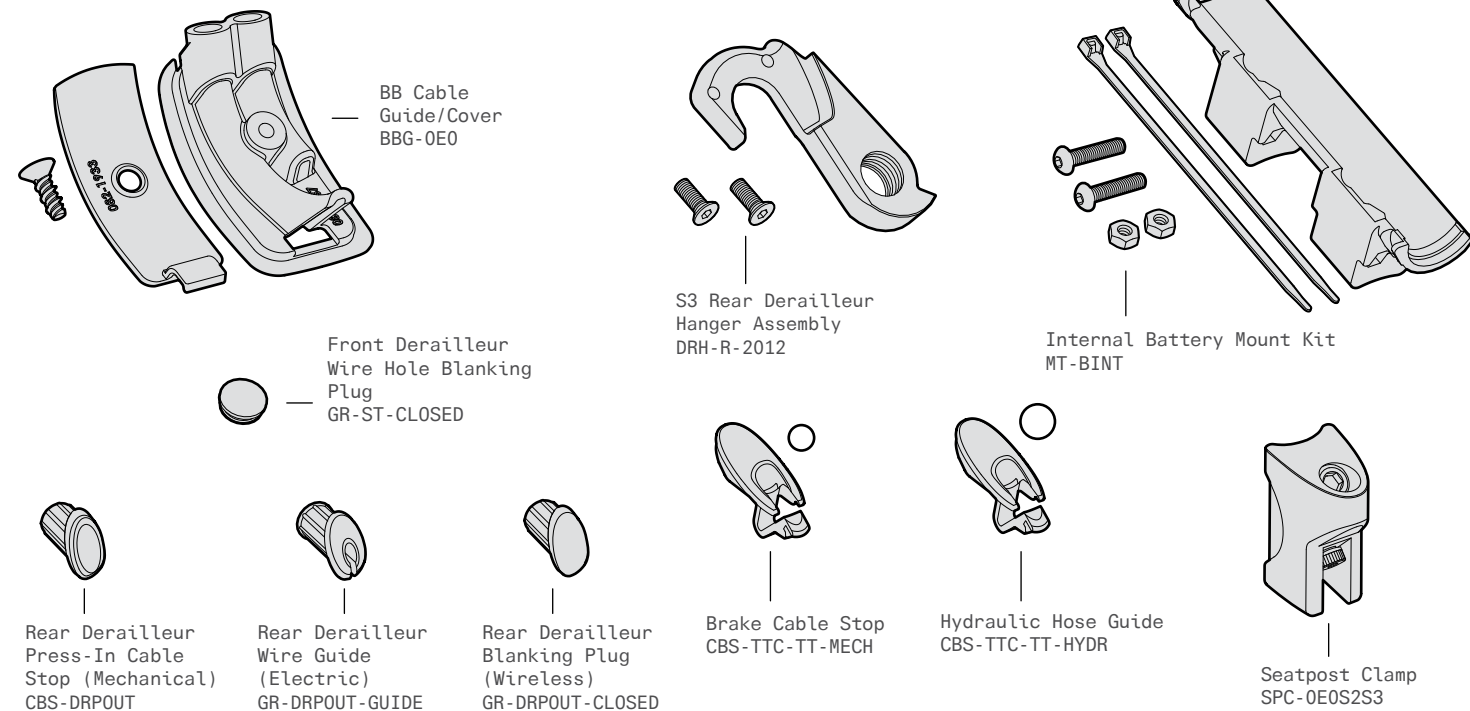


**⚠ WARNING**  
Your Cervélo frame & fork have been designed to work together. Do not attempt to install an alternative fork.



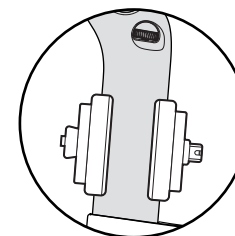
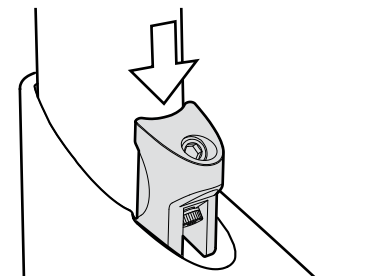
## SMALL PARTS

Designed to accommodate electronic, mechanical and hydraulic controls, the S3 frame is engineered to provide seamless integration of all shifting systems, regardless of method or brand. In order to do so, you will require the parts shown below:

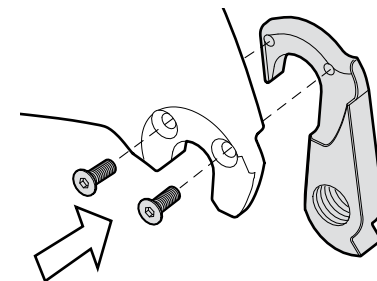


## FRAME PREPARATION

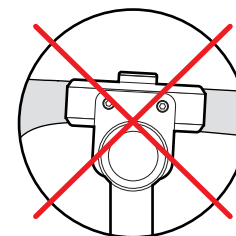
1. Apply carbon paste to both frame and seatpost.
2. Insert Seatpost Clamp (SPC-0E0S2S3) fully into frame so it is fully flush with the top tube.
3. Adjust height and torque to 8Nm maximum.



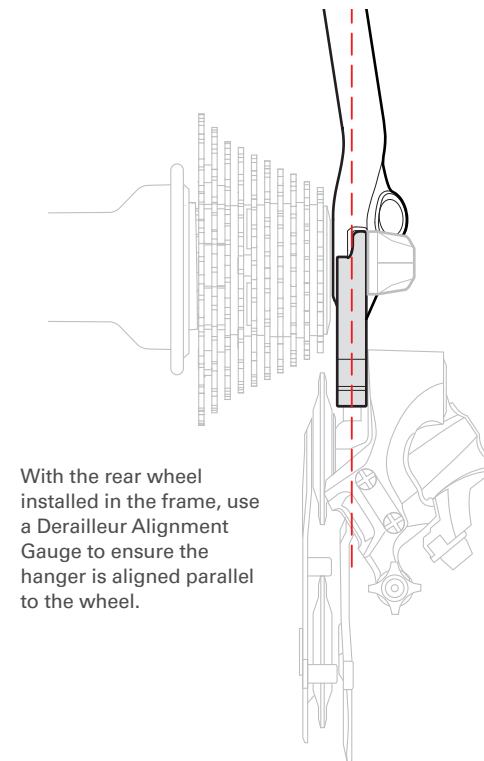
**⚠ WARNING**  
Hold the frame using a secured seatpost only.



Apply Loctite 242 to the fixing screws, and tighten the screws equally to a maximum of 1 Nm.



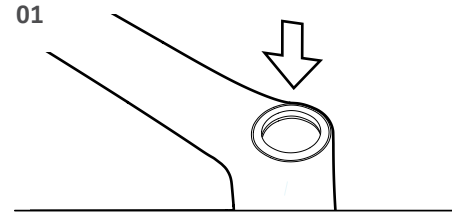
**⚠ WARNING**  
Clamping the top tube can damage the frame and void your warranty.



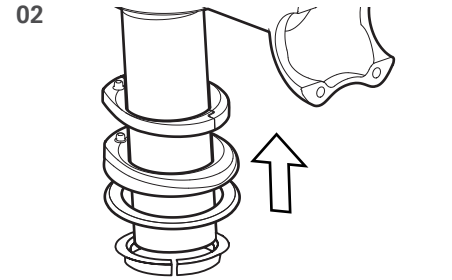
With the rear wheel installed in the frame, use a Derailleur Alignment Gauge to ensure the hanger is aligned parallel to the wheel.

# S3 ASSEMBLY OVERVIEW\*

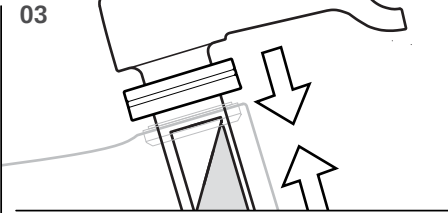
NOTE: See the following pages for more detailed assembly instructions.



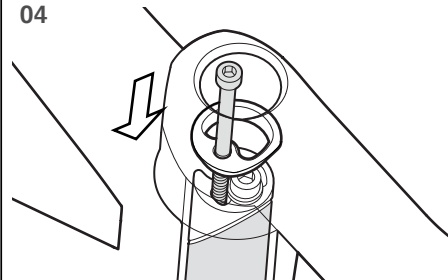
Install lightly greased upper headset bearing into frame.



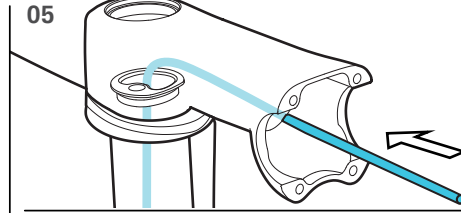
Place desired stem spacers, headset top cap, seal ring and compression ring on stem steerer for later installation.



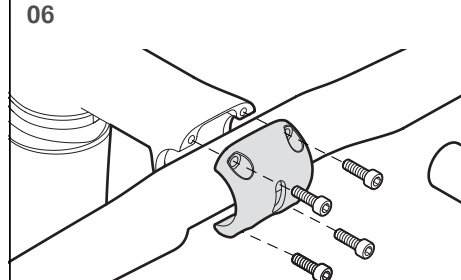
Apply carbon assembly compound to outside of the fork steerer and to inside of the stem steerer where they will contact. With lightly greased lower bearing in place, install the fork into the frame and stem steerer.



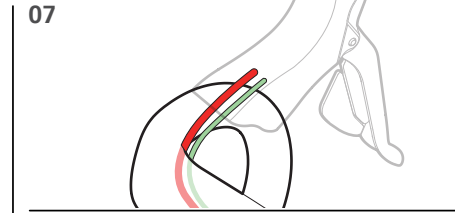
Install the lightly greased M5 x 100mm preload screw. Tighten to remove any play in the bearings.



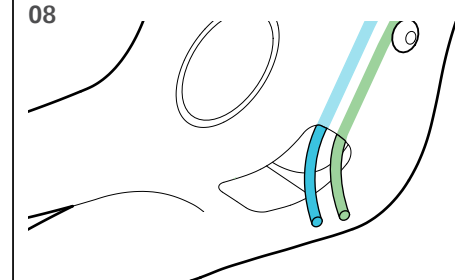
Starting at the stem mouth, slide enough shifter housing through the stem steerer system, so that it reaches from the shifter to the BB Cable Port. Repeat this for 2nd shifter housing, identifying which housing is front and rear.



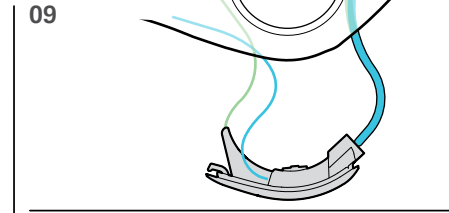
With shifters installed on bar, attach the bar to the stem ensuring that shifter housings are on the appropriate side of the faceplate. Apply carbon assembly compound to contact area between the bar and the stem faceplate.



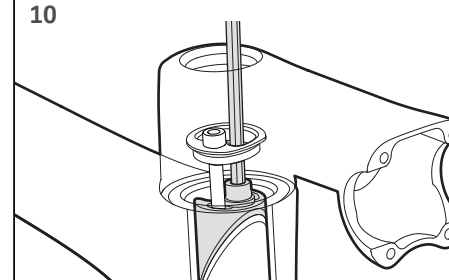
Locate shifter and brake housing ends at shifters. Pull and/or push gently, so the hose and housing travel through the system.



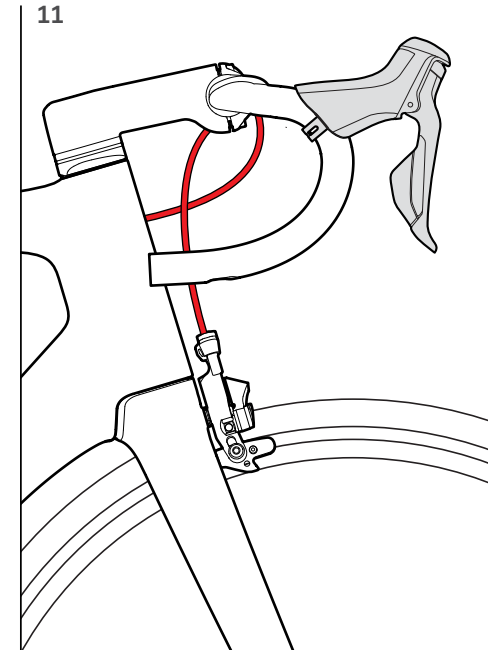
Trim the shifter housing at the leading edge of the BB Cable Port and install cables as per manufacturers instructions.



Install housing with ferrules into the BB Cable Guide and route shifter cables accordingly through the frame.



Straighten stem and fix into place by tightening the Fork Clamp Wedge.

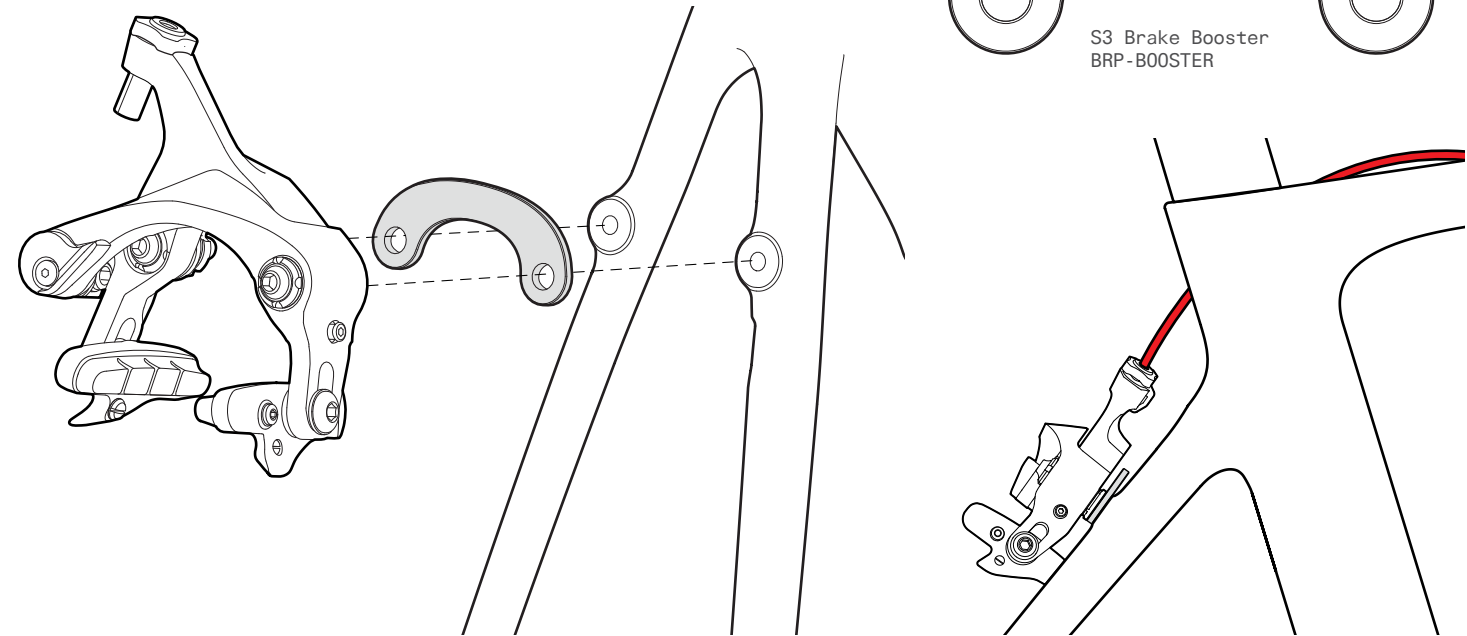


Connect the remaining controls and complete assembly.

\*Mechanical cabling shown

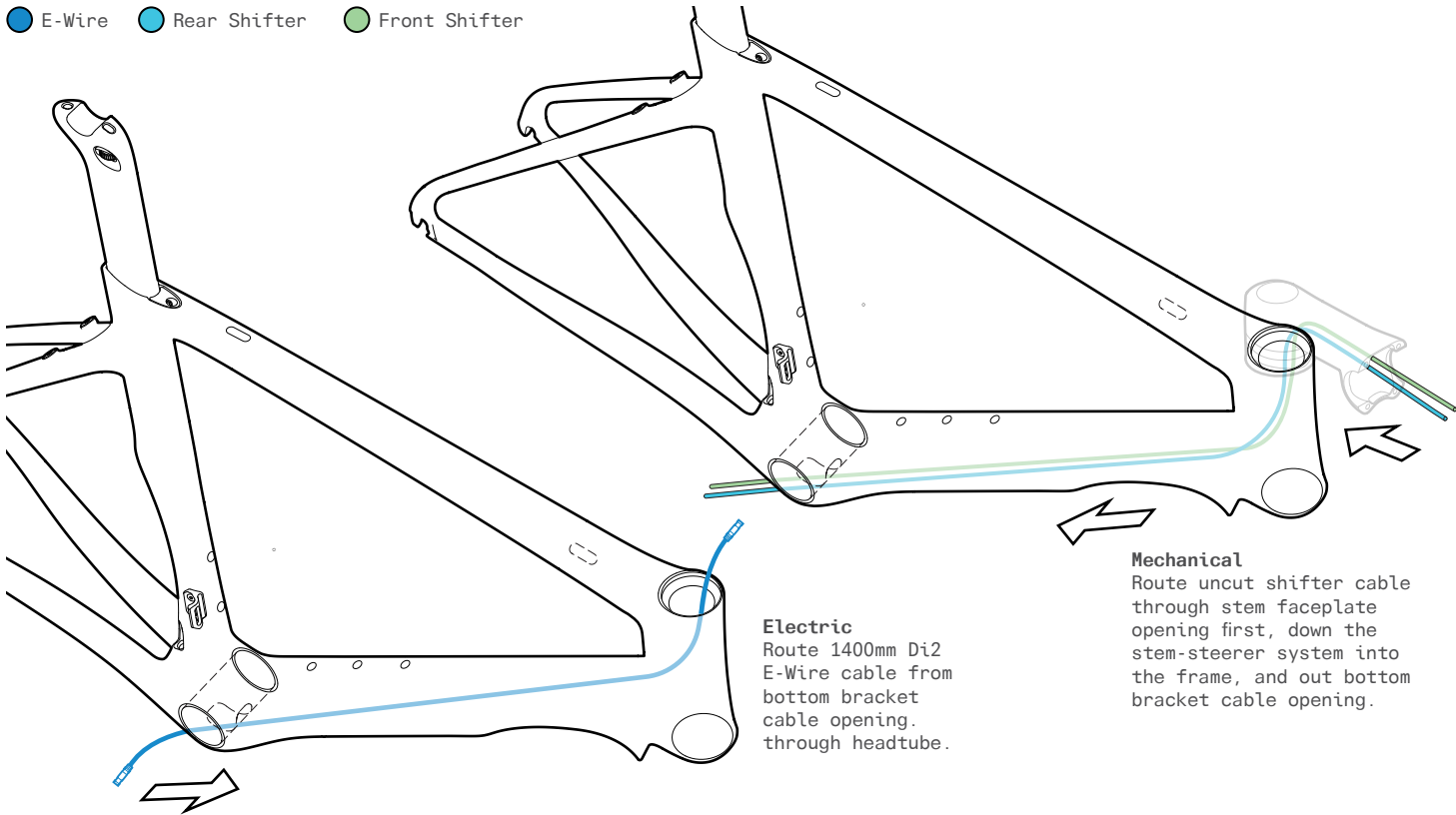
# REAR BRAKE INSTALLATION

The 2019 S3 uses direct-mount rim brake calipers. With the rear caliper Cervélo has added a brake booster to improve braking performance. **This brake booster (BRP-BOOSTER) must be installed to ensure optimum brake performance.** The front brake does not require this part. For detailed installation information, please refer to the component manufacturer's service center or website.



# ELECTRIC & MECHANICAL CABLE OVERVIEW

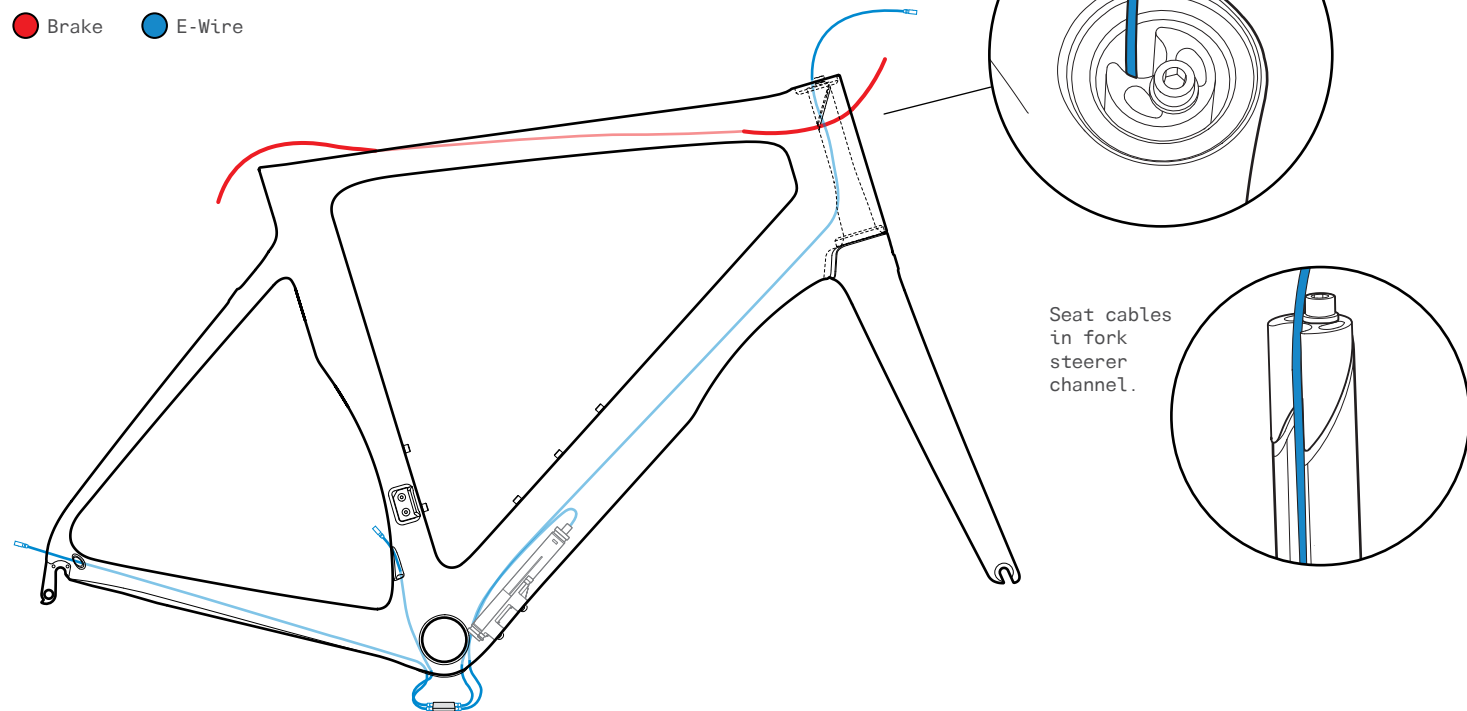
● E-Wire   ● Rear Shifter   ● Front Shifter



## ELECTRIC CABLE ROUTING

These routing illustrations are intended as a supplement to the manufacturer's installation instructions only. Please refer to the component manufacturer's service center or website for further information.

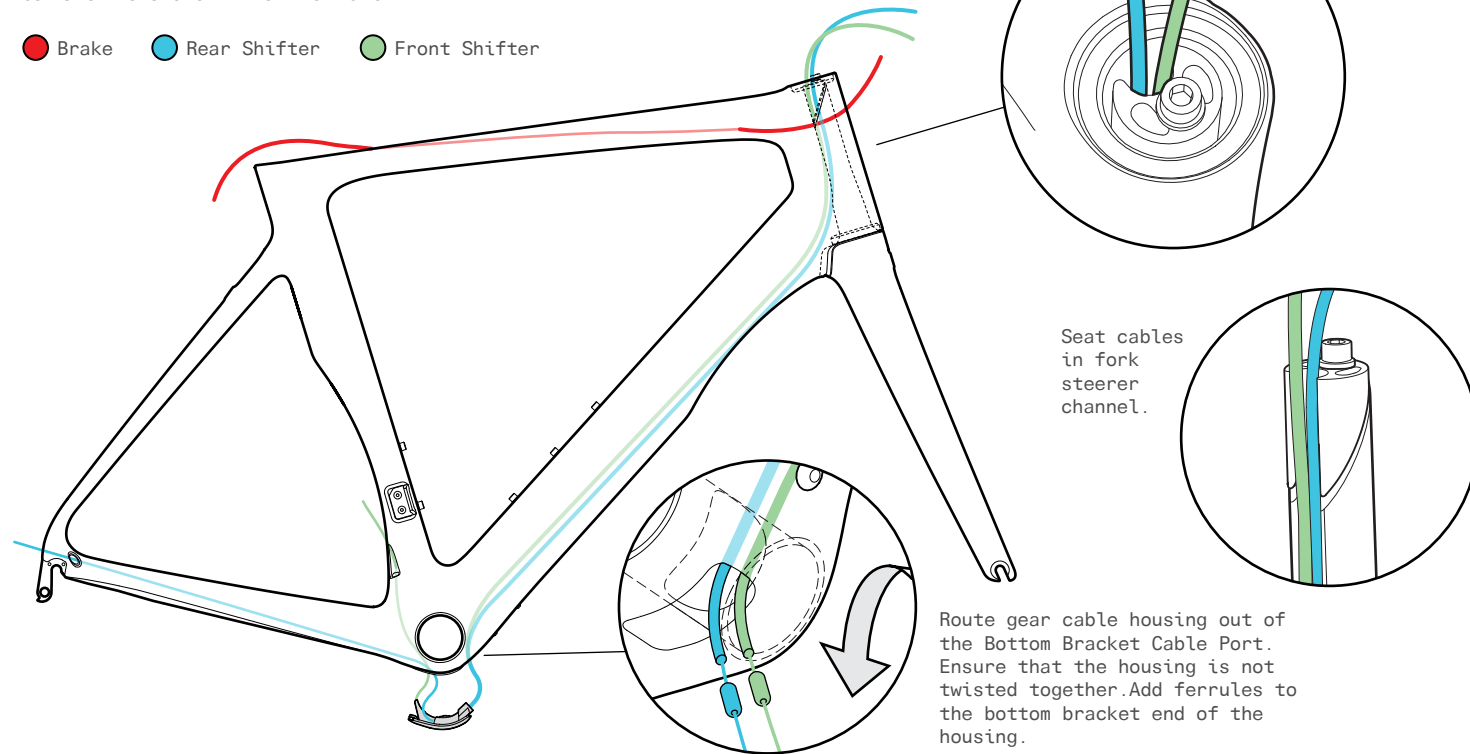
● Brake ● E-Wire



## MECHANICAL CABLE ROUTING

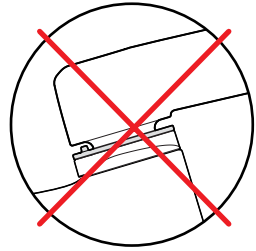
These routing illustrations are intended as a supplement to the manufacturer's installation instructions only. Please refer to the component manufacturer's service center or website for further information.

● Brake ● Rear Shifter ● Front Shifter

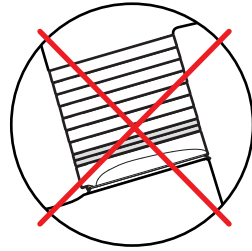




## ST029 STEM STACK

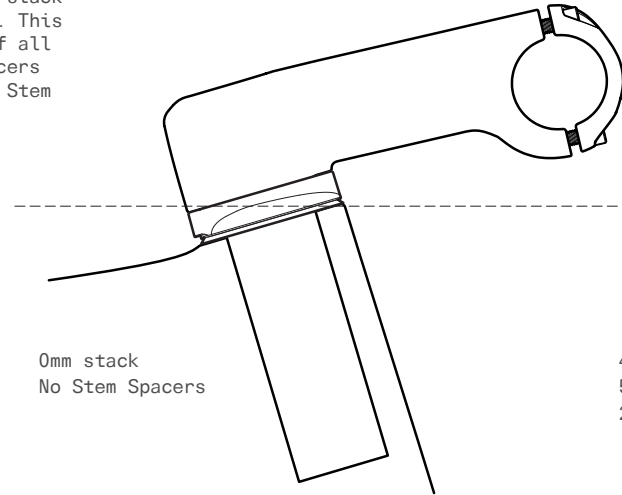


**⚠ WARNING**  
Do not place 2.5mm spacers directly under the stem as it will interfere with headset adjustment.

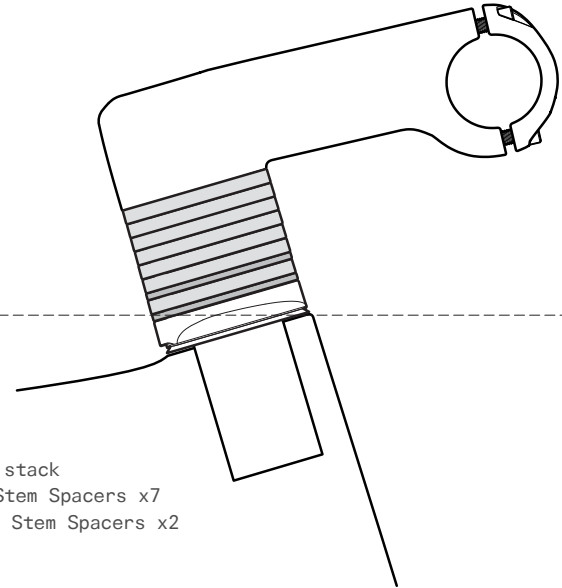


**⚠ WARNING**  
Do not stack 2.5mm spacers directly on top of each other as it will interfere with headset adjustment.

**NOTE:** Maximum stem stack adjustment is 40mm. This requires the use of all seven 5mm Stem Spacers plus the two 2.5mm Stem Spacers.



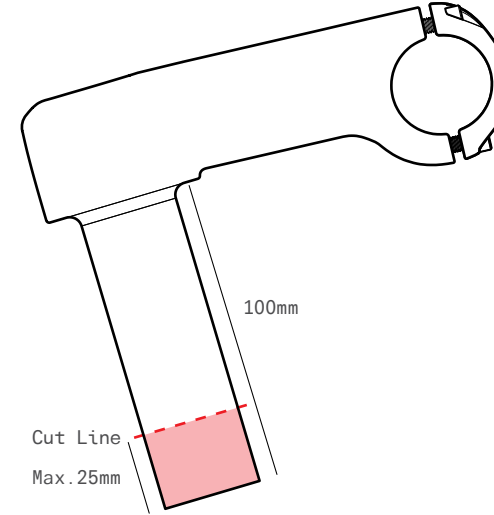
0mm stack  
No Stem Spacers



40mm stack  
5mm Stem Spacers x7  
2.5mm Stem Spacers x2

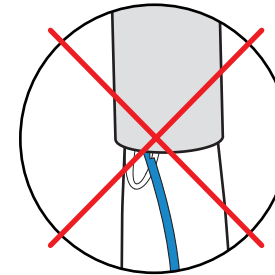
## ST029 STEM CUTTING INSTRUCTIONS

With 48cm and 51cm S3 frames, the stem steerer will need to be cut to place the stem in the lowest stack position. Stems for size 54cm to 61cm frames do not require cutting.

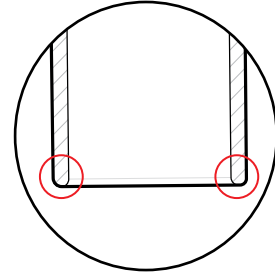


**⚠ WARNING**  
If the stem steerer is cut to achieve a lower position, the minimum insert line on the stem steerer must be moved up by the same amount to ensure proper clamping.

1. Use a light coloured grease pencil to accurately mark the cut-off location on the stem steerer from 5mm to 25mm off the bottom edge. **See table on page 19 for the exact number based on the combination of frame size and desired spacer stack.**
2. Insert the ST029 in the ParkTool SG-6 Saw Guide (or equivalent) so that the cut-off line can be seen clearly through the blade guide in the tool.
3. Using a blade designed specifically for cutting metal; proceed with cutting the stem steerer (as per ParkTool's instructions).
4. Carefully file the cut end removing any burrs, adding a radius to both the inside and outside of the cut edge.



**⚠ WARNING**  
The stem steerer must not bottom out/contact the tapered portion of the fork steerer. Damage to the fork or the brake hose caused by the stem steerer could result in a loss of control while riding and potentially serious injury.



**⚠ WARNING**  
Ensure inside and outside of cut edge is smooth and free of fork damaging burrs. Damage to the fork or the brake hose caused by the stem steerer could result in a loss of control while riding and potentially serious injury.

# ST029 STEM CUT CALCULATOR

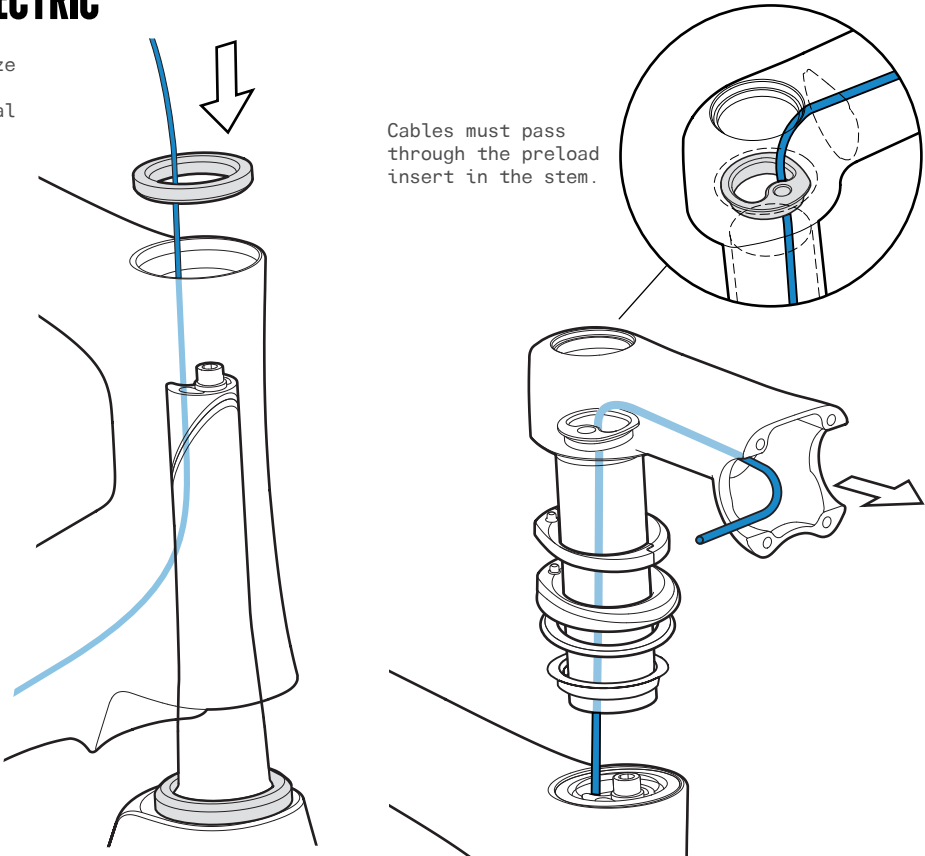
Frame Size*	48cm		51cm	
Spacer Stack (mm)	Removed Length of Stem Steerer	Resulting Max Spacer Stack Possible	Removed Length of Stem Steerer	Resulting Max Spacer Stack Possible
0mm (slammed)	25mm	15mm	5mm	35mm
5mm	20mm	20mm	0mm	40mm
10mm	15mm	25mm	0mm	40mm
15mm	10mm	30mm	0mm	40mm
20mm	5mm	35mm	0mm	40mm
25mm	0mm	40mm	0mm	40mm
30mm	0mm	40mm	0mm	40mm
35mm	0mm	40mm	0mm	40mm
40mm (max allowable)	0mm	40mm	0mm	40mm

\*Size 54cm frames & above required no Stem Steerer cutting.

# FORK & STEM INSTALLATION - ELECTRIC

**Note:** It is recommended that you familiarize yourself with the steering system before complete installation, by performing a trial assembly without hoses or control cables present.

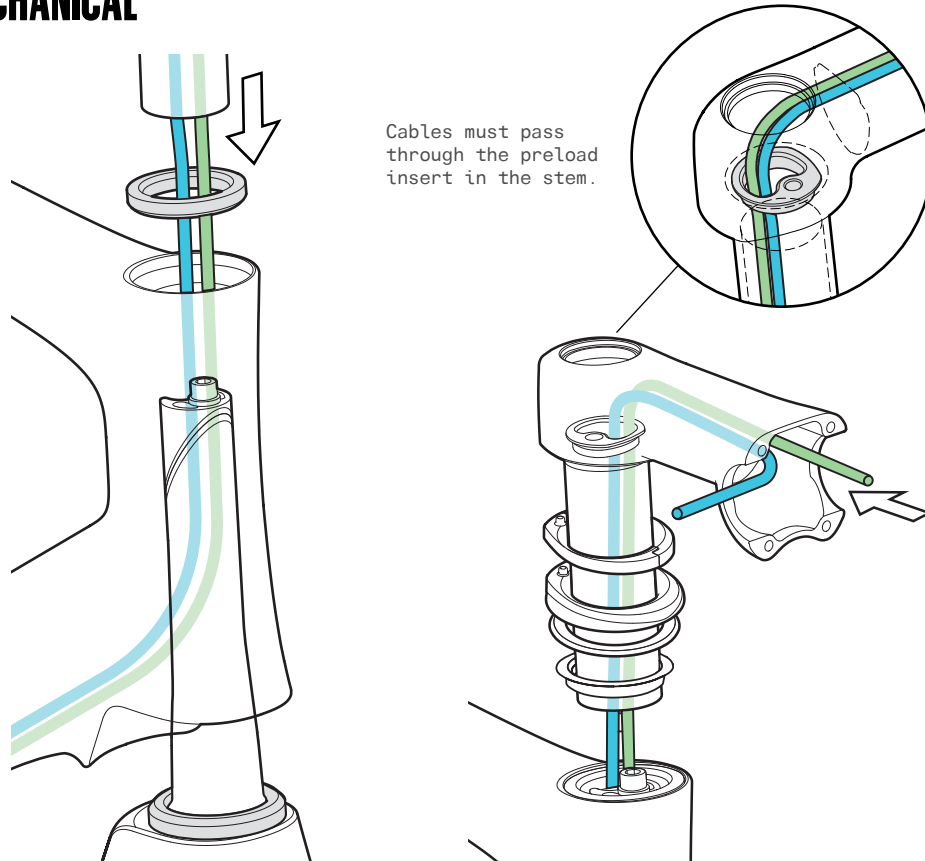
1. Route E-Wire through frame so that it is exposed at both the upper opening of the headtube, and the BB-Cable opening.
2. Install lightly greased upper bearing into fame.
3. Install lightly greased lower bearing onto fork.
4. Install desired stem spacers followed by bearing top cap, seal ring and compression ring onto the stem. **Do not place a 2.5mm stem spacer directly under the stem.**
5. Apply carbon assembly compound to the outside of the fork steerer and to the inside of the stem steerer where they will be in contact.
6. Slide stem over exposed e-wire, and onto fork steerer ensuring that the compression ring mates with bearing. E-wire should appear through the upper opening of the stem.
7. Apply light pressure to seat fork and stem, and install preload screw to lock the system. Tighten to remove any play in the bearings (**see page 20**).
8. Pull E-Wire though the stem, so that it appears through the face-plate opening.



## FORK & STEM INSTALLATION - MECHANICAL

**Note:** It is recommended that you familiarize yourself with the steering system before complete installation, by performing a trial assembly without hoses or control cables present.

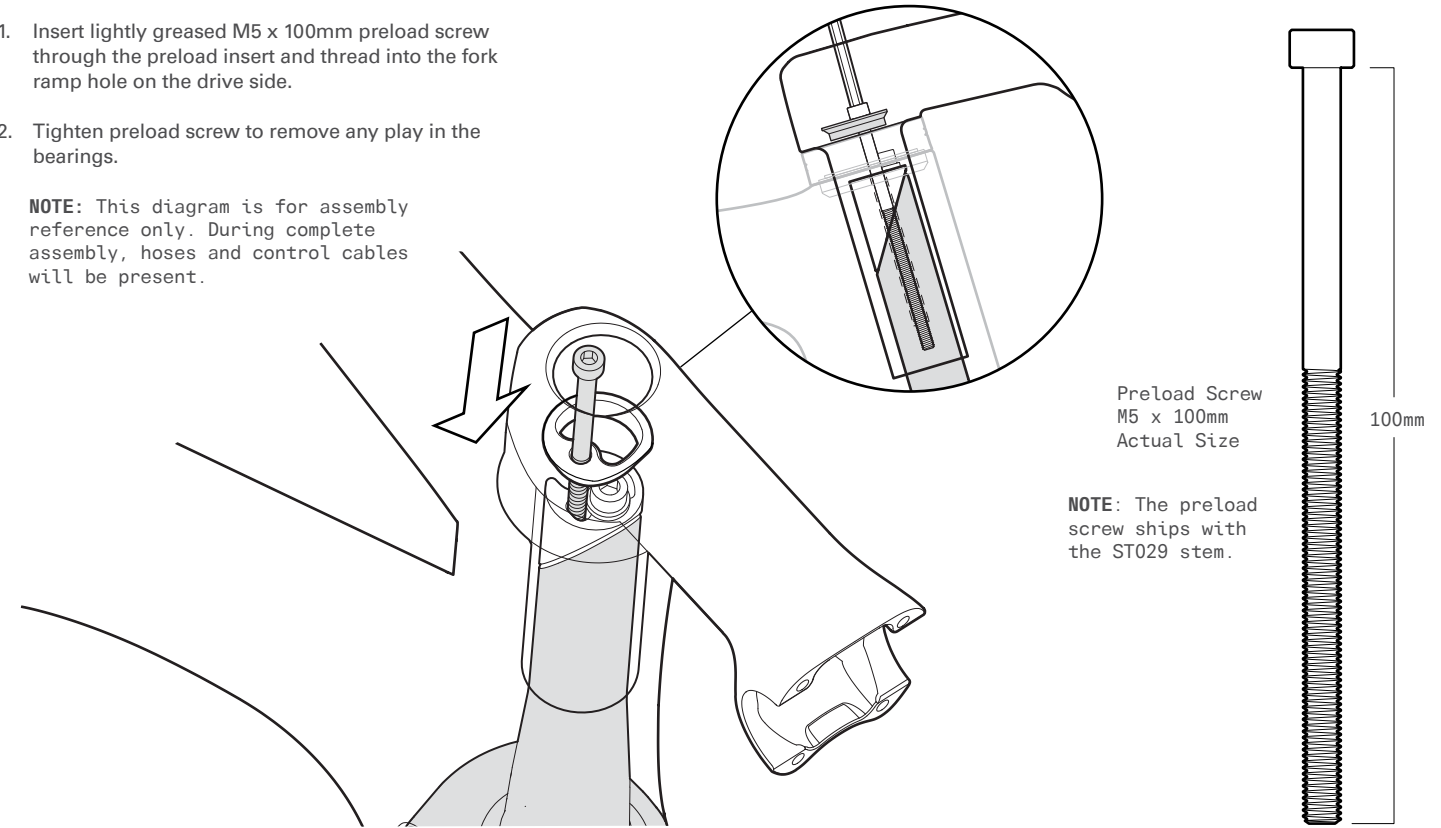
1. Install lightly greased upper bearing into frame.
2. Install lightly greased bottom bearing onto fork.
3. Install desired stem spacers followed by bearing top cap, and compression ring with seal ring onto the stem. **Do not place a 2.5mm stem spacer directly under the stem.**
4. Apply carbon assembly compound to the outside of the fork steerer and to the inside of the stem steerer where they will be in contact.
5. Install the fork into the stem steerer.
6. Apply light pressure to seat fork and stem, and install preload screw to lock the system. Tighten to remove any play in the bearings (**see page 20**).
7. Starting at the mouth of the stem, feed shifter housing, one at a time, through the stem, so that it reaches from the shifter to the BB Cable Port.



## HEADSET ADJUSTMENT

1. Insert lightly greased M5 x 100mm preload screw through the preload insert and thread into the fork ramp hole on the drive side.
2. Tighten preload screw to remove any play in the bearings.

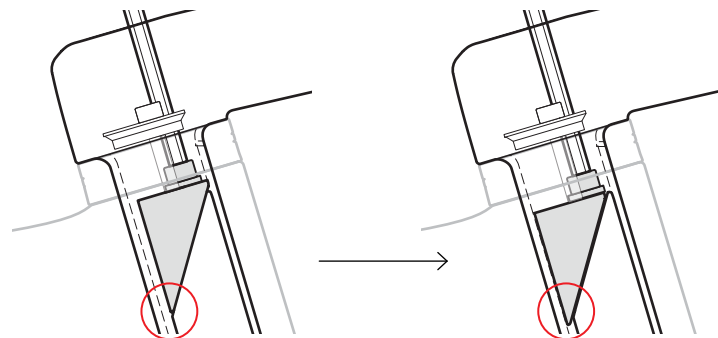
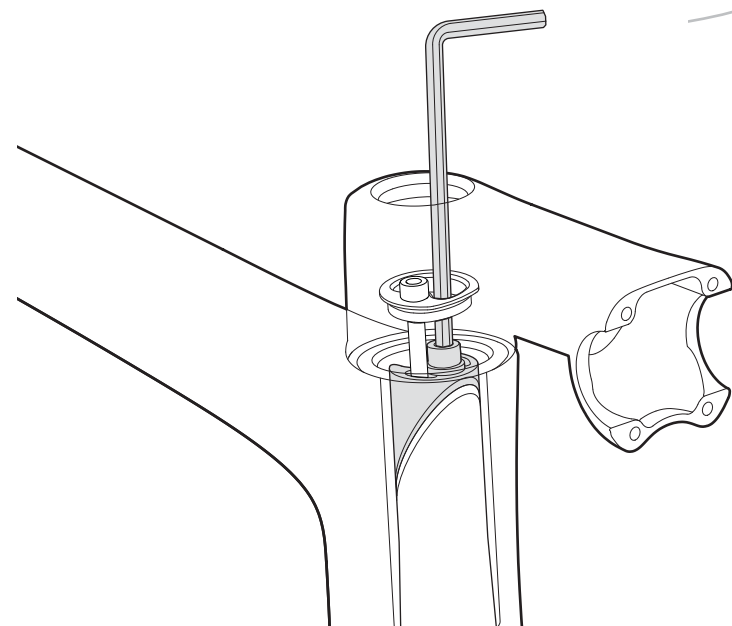
**NOTE:** This diagram is for assembly reference only. During complete assembly, hoses and control cables will be present.



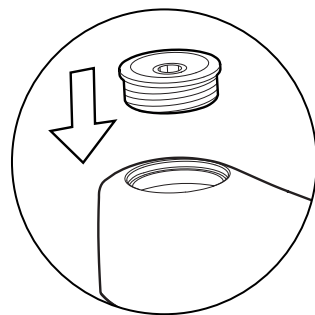
## STEM TIGHTENING

Align stem with the front wheel and tighten Fork Wedge Clamp. Tighten the lightly greased Fork Wedge Fixing Screw to 12Nm.

**NOTE:** This diagram is for assembly reference only. During complete assembly, hoses and control cables will be present.



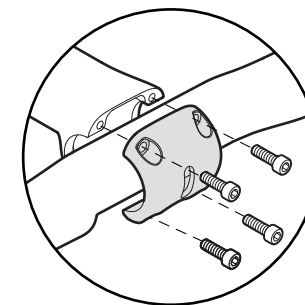
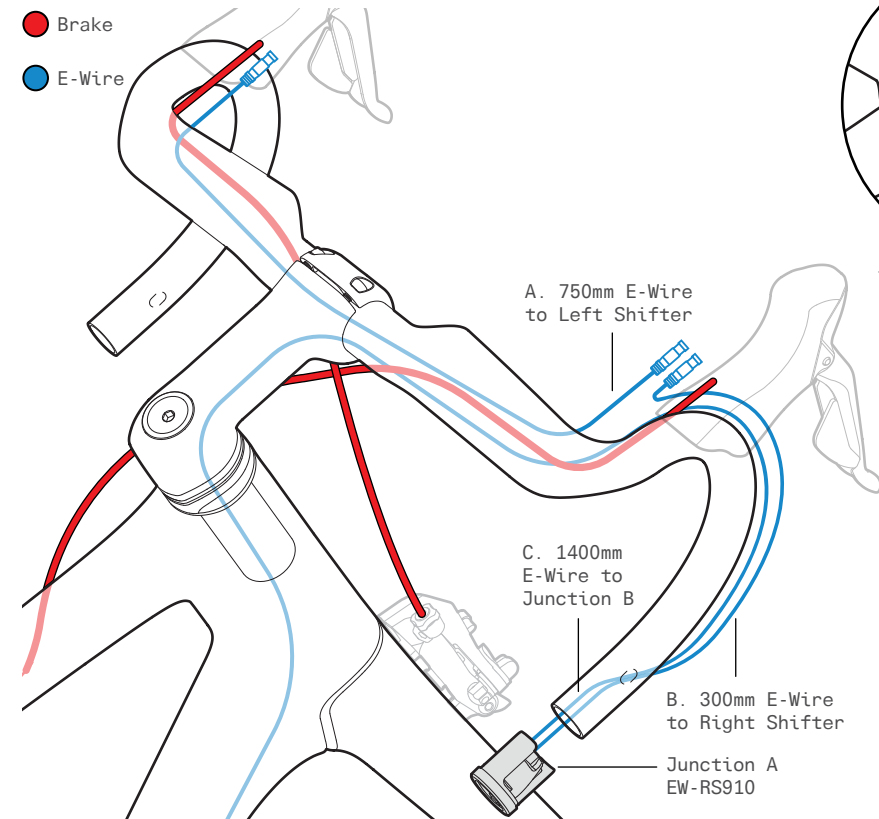
Fork Wedge Clamp expands to press against the stem steerer to secure the fork.



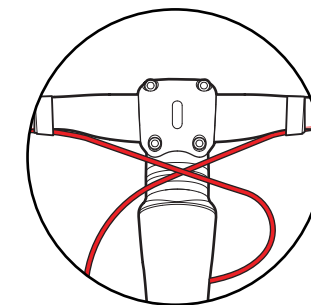
Install lightly greased Stem Top Cap (STC-A029) to finish. Tighten to 1-2Nm.

## HANDLEBAR CABLE ROUTING - ELECTRIC

● Brake  
● E-Wire



Tighten stem faceplate bolts to 6Nm.



Brake housing should exit the channel on the underside of the handlebar before the stem.

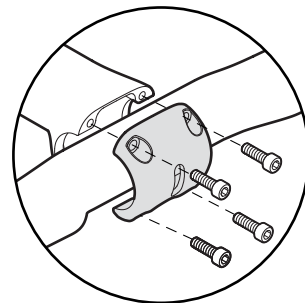
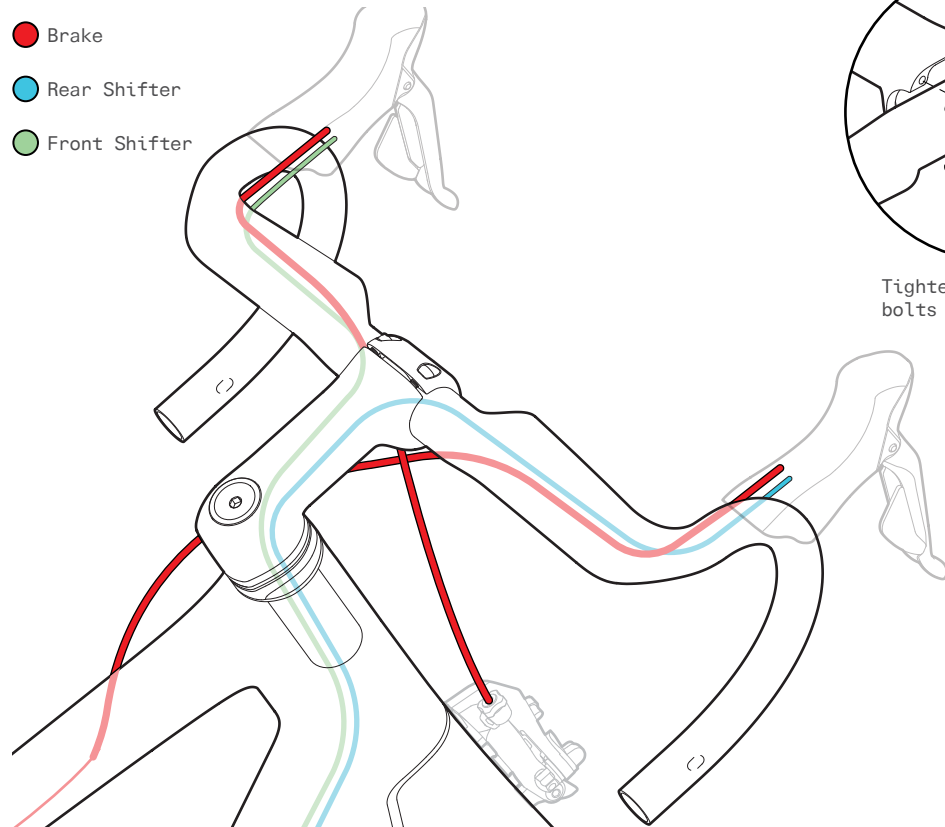
1. Install shifters on handlebar and connect Left and Right using the 750mm E-Wire A.
2. Install 300mm E-Wire B connecting Junction A (EW-RS910) to Right shifter.
3. Thread 1400mm E-Wire C from frame, through stem, connecting it to Junction A.
4. Place brake housing and E-Wires in the appropriate channels of the handlebar. (note that brake housing should exit the channel before the stem).
5. Apply carbon assembly compound to the contact area between the handlebar and the stem faceplate.
6. Attach handlebar to stem, and attach brake and shifting controls as per manufacturer's instructions.

## HANDLEBAR CABLE ROUTING - MECHANICAL

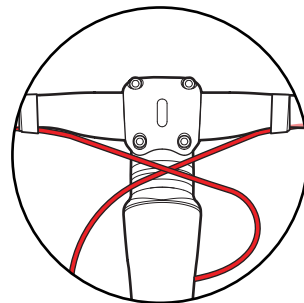
● Brake

● Rear Shifter

● Front Shifter



Tighten stem faceplate bolts to 6Nm.

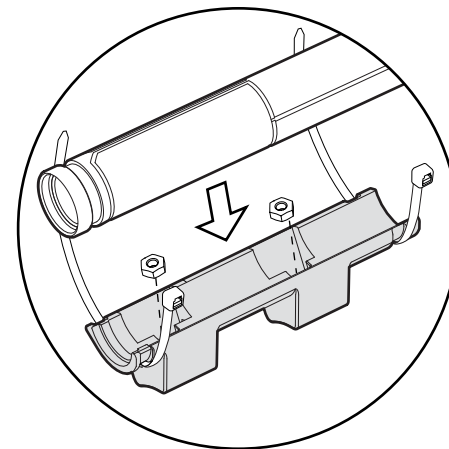


Brake housing should exit the channel on the underside of the handlebar before the stem.

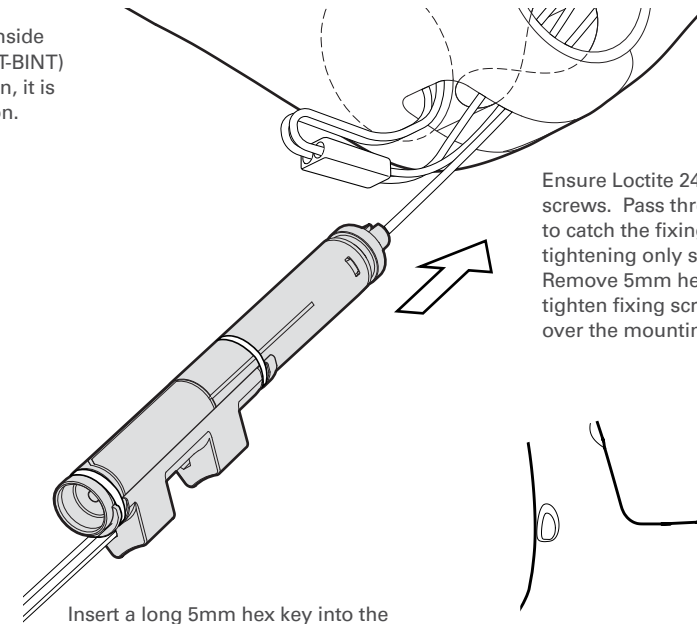
1. Install shifters on handlebar.
2. Place brake housing and E-Wires in the appropriate channels of the handlebar. (note that brake housing should exit the channel before the stem).
3. Apply carbon assembly compound to the contact area between the handlebar and the stem faceplate.
4. Attach handlebar to stem, and attach brake and shifting controls as per manufacturer's instructions.

## DI2 BATTERY INSTALLATION

The battery for your Shimano Di2 system mounts inside the down tube using the Internal Battery Mount (MT-BINT) designed to fit this frame. As this is a sealed location, it is important to test the system prior to final installation.



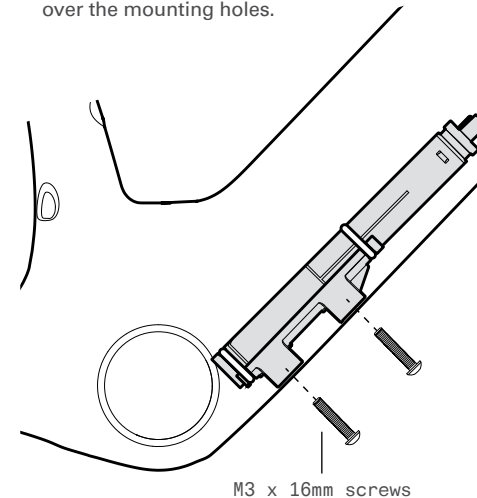
Press the two M3 fixing nuts into the holder through the upper holes. Attach battery to mount using two zip ties, and install.



Insert a long 5mm hex key into the lower end of the holder to work as an insertion tool.

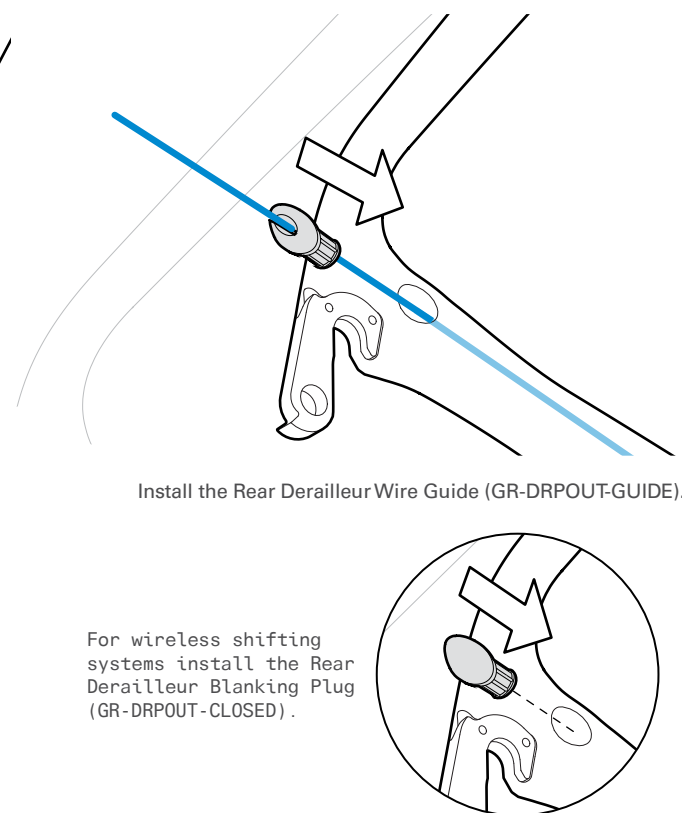
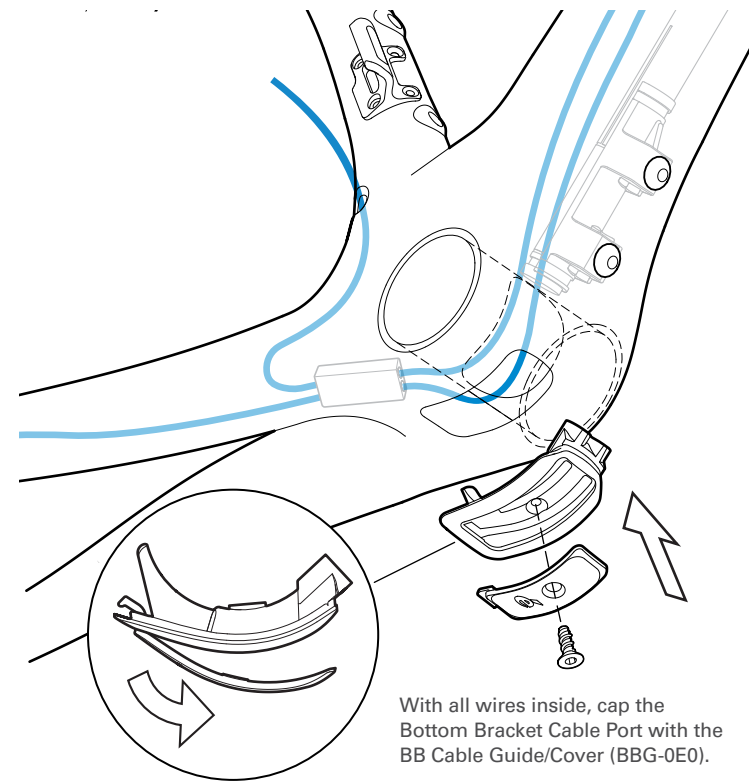
Pass the battery and holder assembly through the opening in the bottom bracket shell and position it, in the down tube, so that the fixing nuts are located over the mounting holes.

Ensure Loctite 242 is applied to the M3 fixing screws. Pass through the mounting holes to catch the fixing nuts in the battery holder, tightening only slightly to hold in place. Remove 5mm hex key. Using 2mm hex key, tighten fixing screws to maximum of 2.5Nm over the mounting holes.

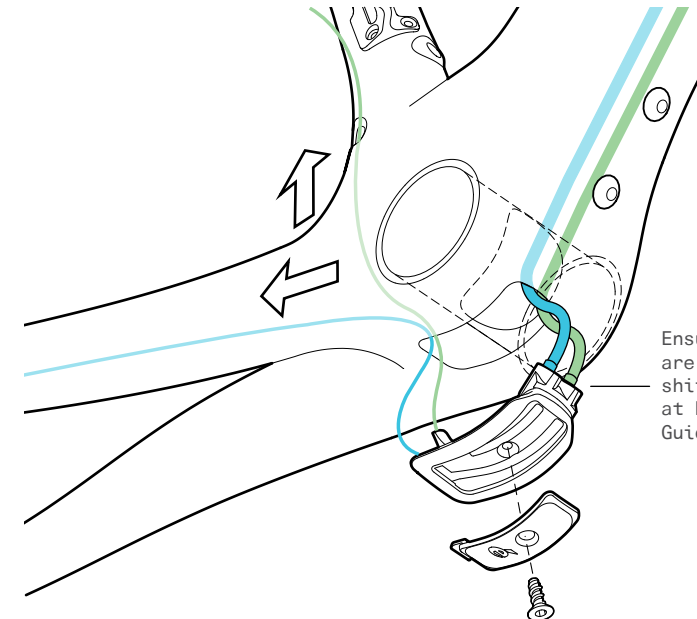


M3 x 16mm screws

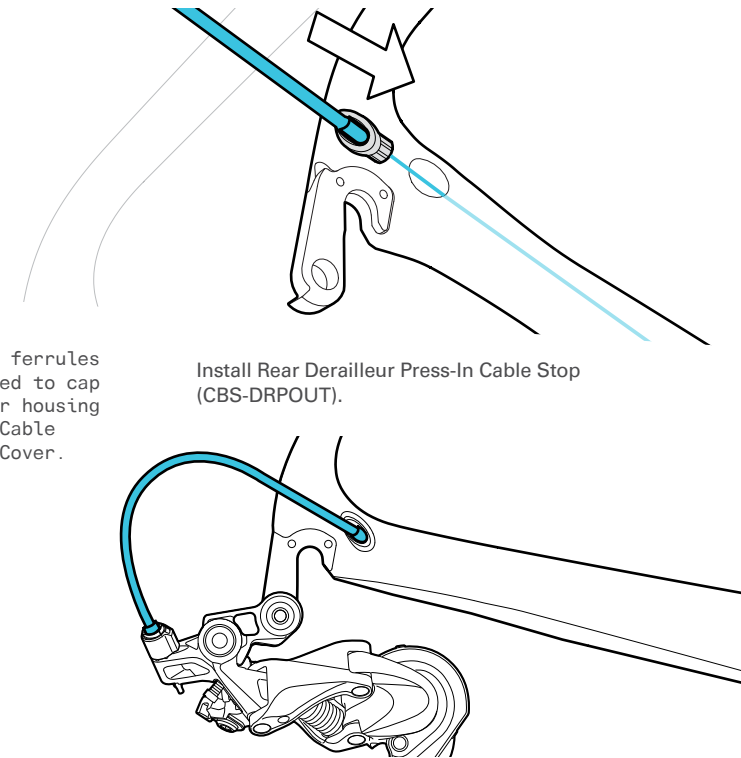
## ELECTRIC CABLE INSTALLATION



## MECHANICAL CABLE INSTALLATION



The front cable travels across the non-drive side slot, and in the direction of the seat tube. The rear cable travels along the drive side slot, and along the chainstay. When complete, fix the BB Cable Guide/Cover (BBG-0E0) into place.

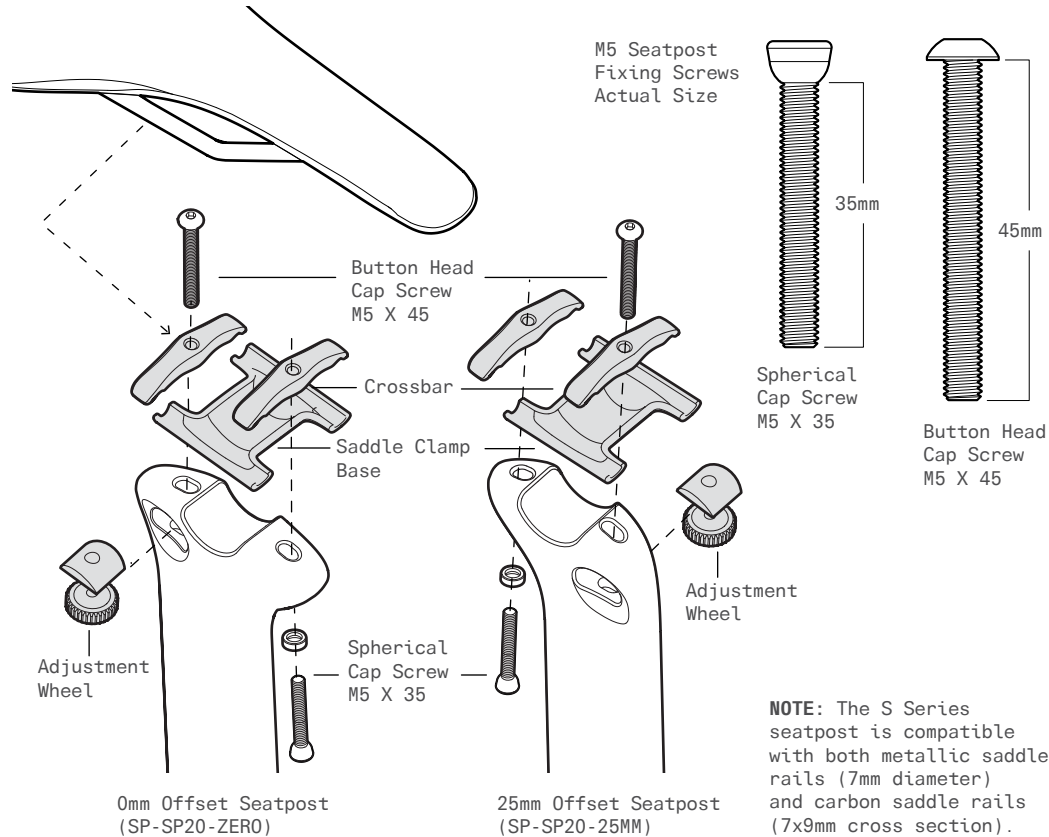


As per manufacturer's instructions, install rear derailleur on rear derailleur hanger, cut appropriate housing length, and attach cable.



## SEATPOST ASSEMBLY

1. Ensure Loctite 242 is applied to threads below the head of the 45mm button head cap screw. Install cross bar on 45mm button head cap screw and torque to 3Nm.
2. Ensure Loctite 242 is applied to both fixing screw threads.
3. Install the curved washer and adjustment dial in the seatpost cutout.
4. Install the button head cap screw with crossbar installed, and turn the dial until threads are engaged.
5. Install the spherical washer on the 35mm spherical cap screw, so that the concave face, mates with the convex surface of the screw.
6. Install cross bar.
7. Apply light coat of carbon assembly compound to the radius on the upper face of the seatpost.
8. Install the lower saddle clamp base, as per the diagram.
9. Locate saddle rails between upper and lower clamping surfaces.
10. Establish desired saddle angle by first using adjustment wheel.
11. Tighten opposing angle adjusting screw to secure saddle at 8-9Nm.



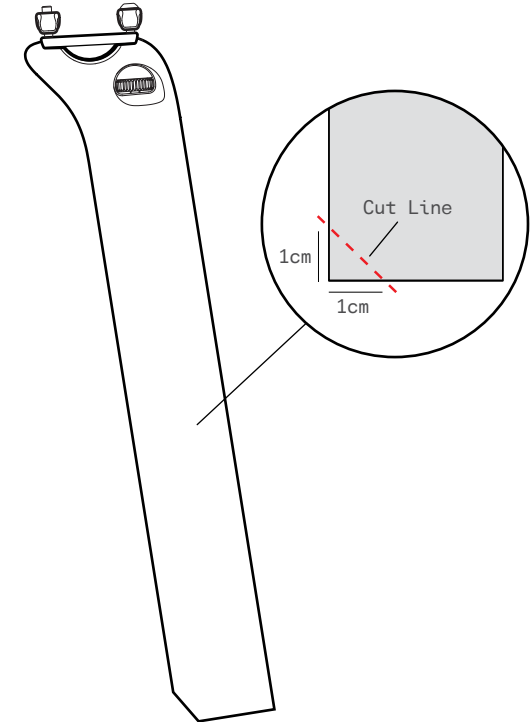
## SEATPOST CUTTING INSTRUCTIONS

**Note:** It is essential that all Cervélo Aero Seatposts, have a 45 degree chamfer cut on the rear trailing edge of the post. If trimming is required after fitting, the following method is recommended.

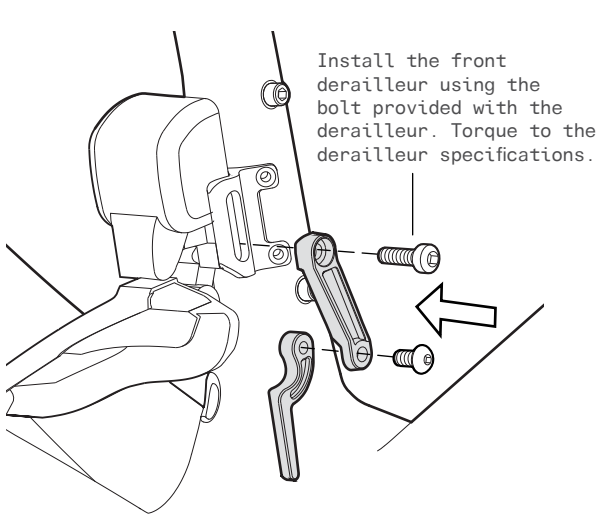
1. Taking care to maintain the minimum required seatpost insertion of 6.5cm and maximum of 8.5cm, carefully measure and use a light coloured grease pencil to accurately mark the cut-off location on the seatpost.
2. Insert the S Series Seatpost in the ParkTool SG-7.2 Saw Guide (or equivalent) so that the cut-off line can be seen clearly through the blade guide in the tool.
3. Using a blade designed specifically for cutting carbon composite materials (or a fine tooth blade with greater than 32 teeth per inch); proceed with cutting the Seatpost (as per Park Tool's instructions).
4. Use fine grit sandpaper to carefully remove any fraying or burring from the cut end. Reposition clamp approximately 10cm from the cut end.
5. With a grease pencil, mark a point 1cm from the cut end on the trailing edge of the Seatpost, and another 1cm from the back, on the bottom edge. Draw a line connecting them, forming a 45 degree guideline.
6. Placing the blade of your saw on the grease pencil mark, very carefully proceed to cut, resulting in a 45 degree chamfer being cut onto the trailing edge of the Seatpost.
7. Carefully sand the end and after applying carbon assembly compound, return to the frame.

### ⚠ WARNING

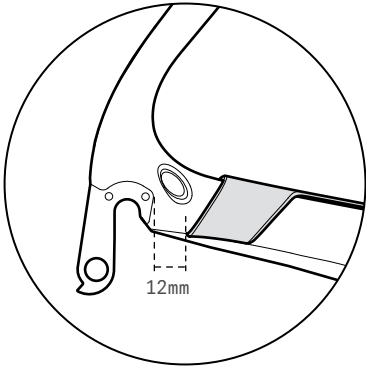
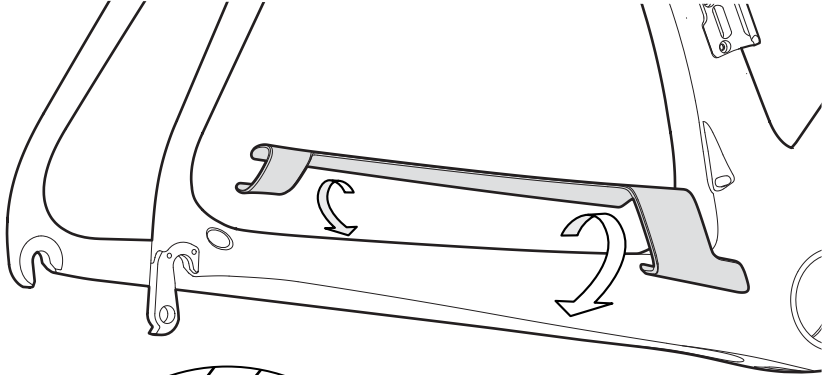
If trimming is required, final length should allow for a minimum 6.5cm of seatpost remaining in the frame. Failure to meet this requirement, may result in damage to the frame not covered by warranty policy, or serious injury to rider.



# FRAME PROTECTION INSTALLATION



Install the front derailleur using the bolt provided with the derailleur. Torque to the derailleur specifications.



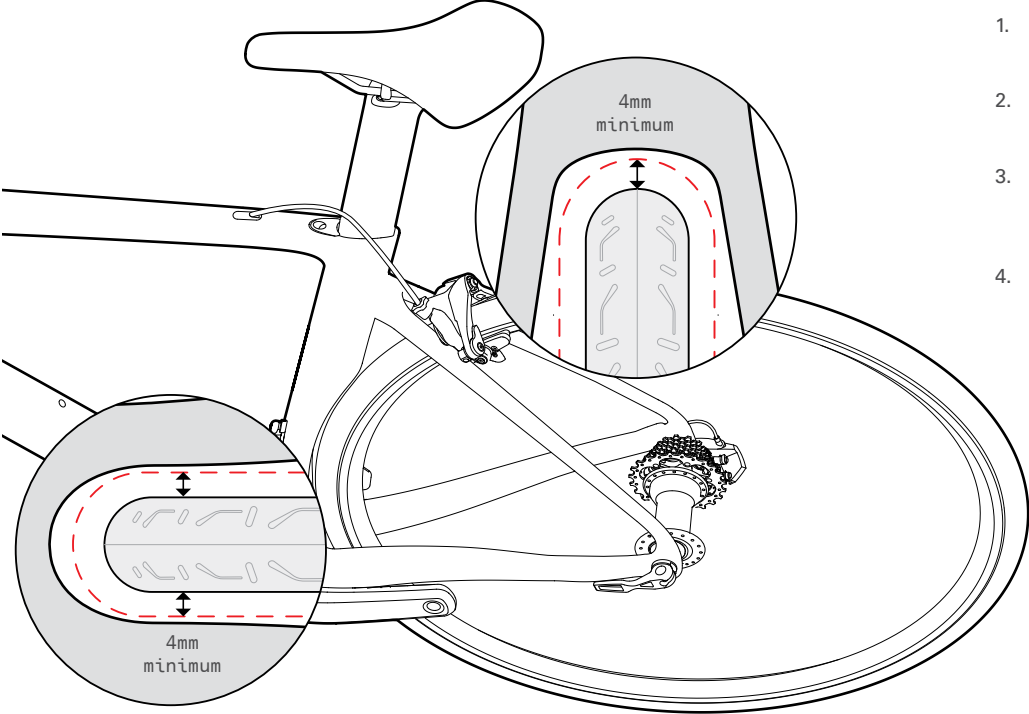
Clean the chain stay using isopropyl alcohol. Install the Chain Stay Guard by removing adhesive backing, and fixing the guard to the frame. The bottom rearward edge should be approximately 12mm from the front edge of the Rear Derailleur Hanger.

Install chain catcher when installing the front derailleur. Complete final adjustment with the chain in the small chainring and largest cassette cog. Tighten the connecting bolt to 4Nm.

**NOTE:** Installation of the chain catcher is recommended as it will prevent damage to the frame in the case that the chain is dropped inside the chainrings.

# TIRE CLEARANCE

Your Cervélo bicycle complies with the ISO 4210-2:4.10.2 standard for tire clearance. In order to comply with these safety standards and maintain your Limited Lifetime Warranty, a minimum of 4mm of clearance must remain between the tire and any frame element. Due to the growing complexity of tire and rim interfaces, Cervélo recommends identifying the available space before choosing a tire.



1. Measure the space between the chainstays at the bottom bracket junction.
2. Measure the space between the seatstays at the top of the tire.
3. Using the smallest of those two numbers, subtract 8mm (4mm per side) to determine the remaining space.
4. With the tire installed and fully inflated on your wheel, measure the tire width to ensure that it fits.

**⚠ WARNING**  
Contact between the tire and the frame or fork may result in a loss of control while riding and potentially serious injury. Failure to follow these guidelines may result in damage to the frame not covered by Cervélo Limited Lifetime Warranty.



# ***2019 S3 RETAILER ASSEMBLY MANUAL***

CER-S3R-V3 2019-02-18

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