

CY22 Moterra Neo

Owner's Manual Supplement

 **WARNING**

**READ THIS SUPPLEMENT AND YOUR
CANNONDALE BICYCLE OWNER'S MANUAL.**

Both contain important safety information. Keep
both for future reference.

Safety Messages

In this manual, particularly important information is presented in the following ways:

DANGER

Indicates a hazardous situation which, if not avoided, will result in death or serious injury.




WARNING

Indicates a hazardous situation which, if not avoided, may result in death or serious injury.

CAUTION

Indicates special precautions that must be taken to avoid damage.

SYMBOLS:

	NGLI-2 synthetic grease	Apply NGLI-2 synthetic grease.
	Anti-Seize Lubricant	Apply Permetex® Anti-Seize Lubricant
	Medium-strength removable thread lock	Apply Loctite® 242 (blue) or equivalent.
N·m	Tightening torque in Newton meters.	

ILLUSTRATIONS:

Throughout this manual, all product images, graphics, and figures shown are for illustration purposes only and may not be an exact representation of the product.

Cannondale Supplements

This manual is a “supplement” to your [Cannondale Bicycle Owner’s Manual](#).

This supplement provides additional and important model specific safety, maintenance, and technical information. It may be one of several important manuals/supplements for your bike; obtain and read all of them.

Please contact your Authorized Cannondale Dealer immediately if you need a manual or supplement or have a question about your bike. You may also contact us using the appropriate country/region/location information.

Download available manuals or supplements from our website: <http://www.cannondale.com>.

Contacting Cannondale

Cannondale USA

Cycling Sports Group, Inc.
1 Cannondale Way
Wilton, CT 06897, USA
1-800-726-BIKE (2453)

CSG Europe (Woudenberg)

Cycling Sports Group Europe B.V.
Geeresteinselaan 57
3931JB Woudenberg
The Netherlands
PH: 00.31.541.200374

International Distributors

Consult our website to identify the appropriate Cannondale Dealer for your region.

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Your Cannondale Dealer

To make sure your bike is serviced and maintained correctly, and that you protect applicable warranties, please coordinate all service and maintenance through your Authorized Cannondale Dealer.

NOTICE

Unauthorized service, maintenance, or repair parts can result in serious damage and void your warranty.

This manual includes information for the following Collection 2022 models:

- Moterra Neo Carbon
- Moterra Neo Carbon LT
- Moterra Neo EQ
- Moterra Neo Alloy

Safety Information

Intended Use



The intended use of all models is ASTM CONDITION 4, All-Mountain.

WARNING

Understand your bike and its intended use. Using your bike the wrong way is dangerous.

Please read your [Cannondale Bicycle Owner's Manual](#) for more information about Intended Use and Conditions 1-5.

What is an E-Bike?

Electric bikes, also known as “E-Bikes,” are bicycles equipped with an electric pedal-assist drive system. E-Bikes share components common with pedal-only bikes.

What is a Drive System?

The drive-assist system consists of a drive unit, a battery, a computer control, and various electronic components (harness wires, sensors, and switches). There are many different drive-assist systems for differing uses and bike types. Likewise there are various drive-assist system manufacturers (Shimano, BOSCH, Bafang, Yamaha, etc.)

How does the Drive System work?

It is important to know that when the drive-assist system is turned ON, the drive unit engages to provide power only while you are pedaling.

The amount of power provided by the drive unit depends on your pedaling force and on the assistance mode/level you set with the handlebar control unit. At anytime, if you stop pedaling, the drive-assist will dis-engage.

In all modes/levels, the drive-assist system power reduces progressively and cuts off as the bike reaches the maximum allowable speed. The drive-assist re-engages when speed drops below the maximum allowable speed as long as the pedals are turning.

Whenever the drive-assist system is turned OFF, you can pedal the bike normally. The drive system will not engage.

WARNING

Understand your bike, its drive-assist system, and the intended use of both. Using your bike the wrong way is dangerous.

Drive System

WARNING

MANUFACTURER'S INSTRUCTIONS - In addition to this supplement, you must read and follow the manufacturer's instructions for all components of the drive-assist system:

Drive Unit	Battery
Display/Control Unit	Charger

Manufacturers' instructions contain important operations, service and maintenance information.

Servicing

WARNING

This supplement may include procedures beyond the scope of general mechanical aptitude.

Special tools, skills, and knowledge may be required. Improper mechanical work increases the risk of an accident. Any bicycle accident has risk of serious injury, paralysis or death.

To minimize risk we strongly recommend that owners always have mechanical work done by an Authorized Cannondale Dealer.

No Modification

WARNING

DO NOT MODIFY THIS BICYCLE/DRIVE SYSTEM IN ANY WAY FOR ANY REASON. Doing so can result in severe damage, in faulty or in dangerous operating conditions, or in violation of local laws.

Dealers and Owners MUST NOT change, alter, or modify in any way the original components of the bicycle or drive-assist system (e.g., the specified sizing of the gear ratios, i.e., the front chainrings and rear cogs).

Attempts to "hot-rod" or to "improve" the speed of the bike are dangerous to the rider. Use only specified Cannondale and/or manufacturer drive-assist service and replacement parts.

Trailers or Child Carrier or Child Seats

WARNING

Do not attach a trailer, CHILD CARRIER or child seat to this bicycle.

Attachment of a trailer or child seat to this bicycle can result in a serious accident leading to serious injury or death.

Operation

WARNING

Always wear an approved bicycle helmet and all other protective gear (e.g., gloves, pads, and cycling shoes).

Importance of practice & rider training - before you ride this bike, practice riding in a safe area free from hazards. Take time to learn the bike's controls and performance. Practice the controls and to gain the experience necessary to avoid the many hazards you will encounter while riding.

Do not ride "hands-off" - Keep your hands on the handlebars when riding the bike. If you remove your hands from the handlebar while riding, you can lose control of the bicycle and crash.

Changing the assistance level while riding: Changing the drive-assistance level while riding will increase or decrease the acceleration of the bike. You should anticipate this change in speed and react appropriately depending on the riding conditions such as on slippery trails, tight turns, or unstable or uneven surfaces. Set assistance level to "eco" (lowest assist) or to "off" before descending technical trails, (e.g., tight downhill switchbacks).

When not riding: Turn the drive system off to prevent unauthorized use.

Do not ride the e-bike without the battery. Make sure the battery is fully charged before every ride to help ensure adequate battery power for necessary lighting and for the drive system.

Do not remove any lighting or reflectors and do not ride if they do not work.

Do not allow children to operate or to come into contact with the e-bike or its parts.

Only turn the drive system on when you are seated ready to ride.

Accidental activation: Always disconnect the battery from the bike before working on the bicycle. If you transport the bike by car or by airplane, obey local regulations regarding transporting a bicycle with a drive system battery. Accidental activation of the bicycle drive system can result in serious injury.

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Wired system control: If the drive system control device is detached from the mount or if the cables are disconnected or damaged, the drive system will automatically shut off. If this happens, you will have to stop the bike, turn the system off, re-attach the computer to the base, and then turn the system back on to resume operation.

Wireless system control: In wireless control systems, the operation of the drive system is controlled using radio frequencies without physical attachment. Therefore, ON/OFF activation is determined by software programming. Please consult the manufacturer's instructions for information on preventing accidental activation or on restarting the drive system in the event of a recovery from a drive system fault.

Your insurance policies - Your insurance policies (e.g., liability, property, and injury) may not provide coverage for accidents involving the use of this bicycle. To determine if coverage is provided, you should contact your insurance company or agent. Also, make sure your speed e-bike is insured and registered according to the local laws.

Ride sensibly and safely around others - the application of power by means of the electric motor assist means that riders can reach high speed. Riding faster increases the risks of serious accidents.

Watch out for other vehicles, cyclists, pedestrians, and animals where you ride. Always operate under control and at a safe speed. Others may not be aware of you. It is your responsibility to anticipate and to react to avoid accidents.

E-bikes are heavier than ordinary bikes - always park the bike in a suitable safe area away from children, cars or animals that may come into contact with it. Park the bike so that it cannot fall over and possibly result in injuries.

Do not ride into or attempt to ride through water or to submerge any part of the bike. If you ride through water you can lose control of the bike or the drive-assist system can become disabled or damage.

You can be severely injured, paralyzed, or killed in an accident if you ignore these warnings.

Batteries & Chargers

DANGER

Battery Damage Following: Flooding, Water-Intrusion, Submersion, Very Hard Impacts

If your electric bike lithium battery has been immersed or soaked by severe storm flooding, or water leakage in your home, you should immediately put that battery outdoors. Choose a place that, should the battery catch fire, the fire will not ignite a building, a vehicle or be any sort of safety risk. These large format batteries, containing enough energy to propel a rider 20 MPH or more for many miles, will release that energy as heat when they short circuit upon being immersed. Maybe not immediately, but they are very dangerous and must be removed to a safe location and monitored. If immersed or soaked, get them out of the house or building now!

WARNING

REPLACEMENT - Only use the battery pack and charger indicated in the “Specifications” section of this supplement. Do not use other batteries or chargers. Do not use the charger to charge other batteries.

PREVENT DAMAGE - Do not drop the battery or charger. Do not open, disassemble, or modify the battery or charger. There are no user-serviceable parts inside.

Keep the battery out of intense sunlight and away from heat. Excessive heat will damage the battery.

Keep battery away from paper clips, coins, keys, nails, screws, or other small metal items to prevent shorting exposed battery contacts. Shorting battery contacts can cause severe burns, fire, or an explosion.

STORAGE & TRANSPORTATION - When the battery is not in use in the bicycle, its transportation is subject to hazardous materials regulation. Special packaging and labeling requirements may exist. Contact local authorities for specific requirements. Never transport a damaged battery. Insulate battery contacts before packaging. Package the battery inside a shipping container to prevent damage. The battery must be removed before flying and may be subject to special handling by the air carrier.

CHARGING - Bring the battery and charger indoors and allow to reach room temperature before charging. Make sure charger and A/C outlet are the same voltage.

Locate both charger and battery indoors in a clean, dry area with good ventilation to charge. Make sure the area is free from combustibles to avoid fire from sparks or from over-heating. Keep charger ventilation openings unobstructed. Do not cover the charger or the battery.

Disconnect the battery from the charger unit when fully charged. Do not leave a fully-charged battery connected to the charger. Unplug the charger from the wall outlet when not in use.

Maintain the battery and the charger as directed by the manufacturer’s instructions.

DISPOSAL- Battery pack and charger contain regulated materials and must be disposed/discarded in accordance with national and/or with local laws. Do not discard the battery/charger into fire, into water, or into ordinary household waste/garbage. Instead, take to a waste facility/recycler.

FAILURE TO OBSERVE THESE WARNINGS CAN RESULT IN ELECTRICAL FIRES, EXPLOSIONS, SEVERE BURNS, OR ELECTROCUTION.

Rear Shocks

WARNING

Select only compatible shocks and forks for your bike. Do not modify your bike in any way to mount one.

Have your shock or fork installed by a professional bike mechanic

Riding with the wrong rear shock can damage the frame. You could have a serious accident. Make sure the total travel, eye-to-eye length, and stroke length of the rear shock you select meet the “Specifications” listed in this manual.

When selecting different shocks or forks for your bike, make sure that the shock or fork you select is compatible with your bike’s design and how you will use your bike.

You can be severely injured, paralyzed or killed in an accident if you ignore this warning.

Minimum Seat Post Insert

WARNING

Make sure at least 100 mm of the seat post is inserted into the frame at all times.

Failure to insert the seat post at least 100 mm can place a very high stress on the seat tube top tube junction causing the frame to fail while riding.

Remove the seat post. Measure 100 mm from the bottom of the seat post. Use a permanent marker to mark the post at 100 mm.

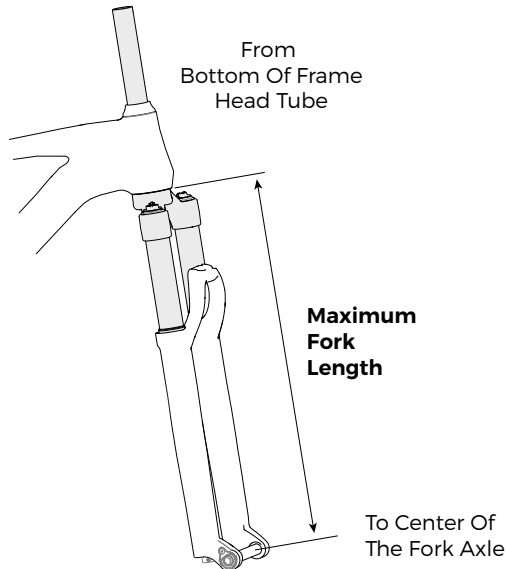
When adjusting the seat post height in the seat tube, never adjust the seat post so that the line you mark is above the top edge of the seat tube.

You must also be aware that bicycle seat posts are permanently marked by the manufacturer with a “minimum insert” line on the seat post itself. You must not rely on this marking as an indication of the proper minimum seat post insertion depth.

You can be severely injured, paralyzed or killed in an accident if you ignore this warning.

Maximum Fork Length

Maximum Fork Length is an important frame safety testing specification for front suspension mountain bikes. You must observe the measurement when installing headset parts, headset adapters, installing and adjusting a fork, and selecting replacement forks.



WARNING

You must select a replacement fork not only based on head tube diameter but the critical factor of frame maximum fork length.

Do not exceed maximum fork length. Exceeding the MAXIMUM FORK LENGTH limit can overload the frame causing it to break while riding.

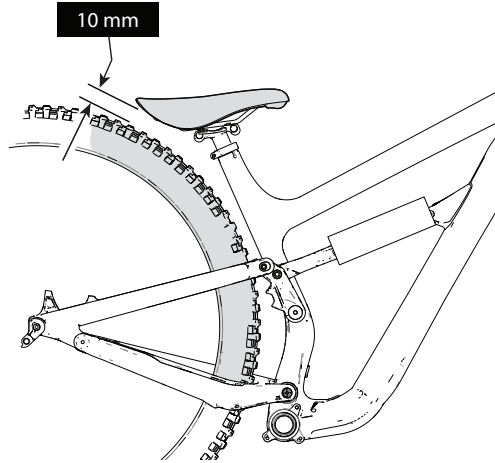
Your retailer MUST follow and observe this specification for your bike. For Maximum Fork Length specifications for Cannondale bicycles, see www.cannondale.com.

You can be severely injured, paralyzed or killed in an accident if you ignore this warning.

Rear Tire Clearance : Full Suspension

Applies to:

- saddles
- seat posts
- rear racks
- Dropper posts
- any accessory with possible collision with the moving tire.



To check clearance:

1. Release all the air from the rear shock. Remove the coil spring from coil shocks. spring coil (removal should only be done by a professional bike mechanic). Do not disconnect or remove the shock.
2. Compress the suspension fully with the tire inflated to its maximum inflation pressure.
3. At various points across the tire, measure the distance between the tire and the component or accessory.
4. If there is less than 10 mm of clearance available, the component or accessory must be adjusted or changed until there is at least 10 mm of clearance.



WARNING

Maintain 10 mm of clearance between rear tire, any rear rack, saddle, seat post, frame seat tube, or any mounted accessory.

Check following saddle or seat post adjustments.

If you have questions maintaining tire clearances for parts of your bike consult with an Authorized Dealer or a professional cycling mechanic.

You can be severely injured, paralyzed or killed in an accident if you ignore this warning.

Rear Rack

 **WARNING**

LOADING LIMIT (TOTAL): 10 kg, 22 lbs. Do not overload the rack. Do not carry a passenger.

UNDERSTAND THAT ADDING ON A RACK WILL AFFECT HOW YOUR BIKE HANDLES; YOU MUST COMPENSATE. A loaded rack bag will affect the handling (e.g., steering, stability, braking, acceleration, etc.) of your bike. You must learn to compensate for the handling effects of the loaded items. If you use multiple racks and or cycling bags, distribute all weight across racks evenly.

DO NOT MODIFY: The rack or bike frame must not be cut, drilled, or modified in any way.

PERIODIC INSPECTION REQUIRED: The rack and frame mounting points must be periodically inspected for damage as part of your routine bicycle maintenance.

SECURE RACK CONTENTS: You must make sure that all items placed in the rack are secure and cannot be thrown out or shifted in the rack while riding. You must prevent any parts of the contents, the straps, or the tie-downs used to secure the rack contents from interfering with your ability to steer the bicycle or to use any of its controls. **REMOVE ALL** items in the rack when the bicycle is placed on an automobile rack. Make sure the strap ends/hooks are secured at the frame or rack tie-down points.

YOU CAN BE SEVERELY INJURED, PARALYZED, OR KILLED IN AN ACCIDENT IF YOU IGNORE THESE WARNINGS.

Technical Information

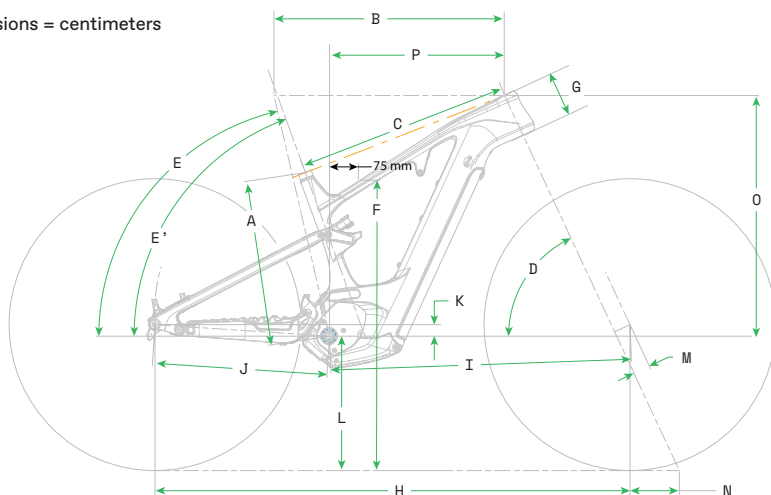
Specifications - Carbon Frame

Item	Specification
Models	Moterra Neo Carbon, Moterra Neo Carbon LT
Drive System	Bosch Performance Line CX
Battery	Bosch PowerTube 750Wh
Drive-Assist Owner's Manual	https://www.bosch-ebike.com/
Rear Travel	150mm
Head Tube	UPR: 1-1/2" LWR: 1.8"
Headset	ACROS 1.5-1.8 Integrated w/Internal Cable Routing K35012 1.5-1.8 Int Hdset 28.6/52-60/45.83
Bottom Bracket: Type/Width	Bosch Drive Unit
Front Derailleur	N/A
Seat Post: Dia./Binder	31.6mm/34.9mm
▲ Min. Seat Post Insert	100mm
Max. Seat Post Insert	SM: 235mm MD: 260mm LG-XL: 280mm
Tire Size x Max. Tire Width (measured)	SM FT: 29 x 2.6" SM RR: 27.5 x 2.6" MD-LG FT+RR: 29 x 2.6"
▲ Max. Fork Length	583mm
Rear Shock: Eye-to-Eye / Stroke / Bushing Width	230mm COIL / 60mm / Frame: M8 x 20mm Yoke: N/A
Sag	25%, 15mm
Chain Guide	e*thirteen CG3UPM-100 Bosch Gen4
Rear Brake: Mount Type / Min./Max. Rotor Dia.	Post Mount / 180mm / 220mm
Rear Axle: Type/Length	Maxle UDH 148mm, M12x1.0P, 180mm Overall Length
Chain Line	55mm
▲ Intended Use	ASTM CONDITION 4: All-Mountain
▲ Max. Weight Limit: Total (Rider+All Equipment)	305lbs/138kg
Additional Technical Features	"SRAM Universal Derailleur Hanger Stem and Headset Internal Cable Routing Stem: K28112 Headset: K35012"

All Specifications subject to change without notice.

Geometry - Moterra Neo Carbon

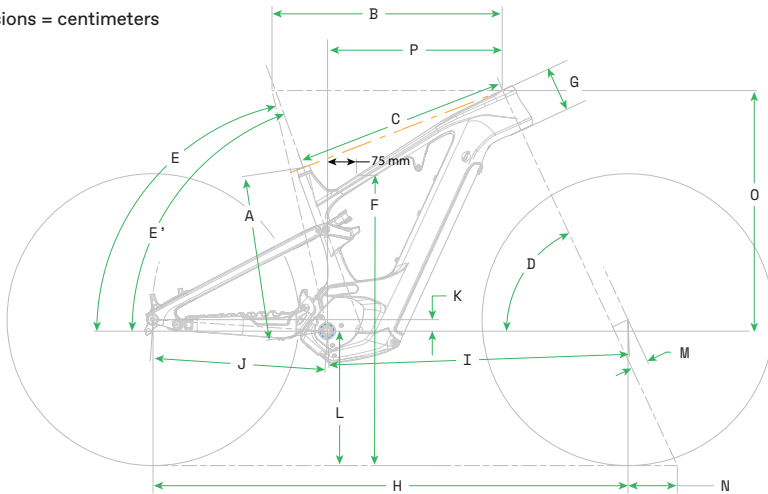
Dimensions = centimeters



	Size	SM	M	L	XL
	Wheel Size (inches)	29F/27.5R	29	29	29
A	Seat Tube Length	40	43	46	49
B	Top Tube Horizontal	57.7	60.0	63.2	66.9
C	Top Tube Actual	54	55	58.5	62.1
D	Head Tube Angle	65	65.0	65	65
E	Seat Tube Angle Effective	77	77.0	77	77
E'	Seat Tube Angle Actual	70.5	70.0	70.5	71
F	Standover	75.5	75.5	76	77
G	Head Tube Length	10.5	11.5	12.5	13.5
H	Wheelbase	120.9	123.5	127	130.9
I	Front Center	75.8	78.2	81.6	85.5
J	Chain Stay Length	45.2	45.5	45.5	45.5
K	Bottom Bracket Drop	1.8	3.0	3	3
L	Bottom Bracket Height	35	35	35	35
M	Fork Rake	4.4	4.4	4.4	4.4
N	Trail	12.8	12.8	12.8	12.8
O	Stack	61.7	62.6	63.5	64.4
P	Reach	43.5	45.5	48.5	52
	Head Tube Height	56.3	56.3	56.3	56.3
	Rear Travel	15.6	15	15	15
	Shock Eye-to-Eye	23	23	23	23
	Rear Stroke	6	6	6	6
	Recommended Sag %	25	25	25	25

Geometry - Moterra LT

Dimensions = centimeters



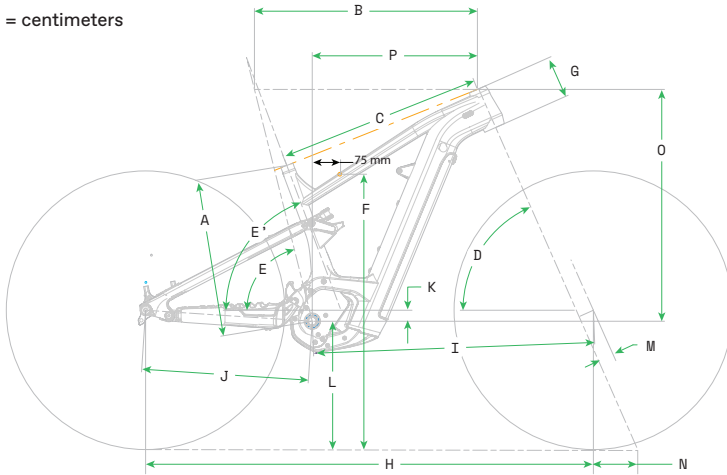
	Size	SM	MD	LG	XL
	Wheel Size (inches)	29F/27.5R	29F/27.5R	29F/27.5R	29F/27.5R
A	Seat Tube Length	40	46	46	49
B	Top Tube Horizontal	58	60.2	63.4	67.1
C	Top Tube Actual	54	55.5	58.5	62.1
D	Head Tube Angle	64.1	64.2	64.2	64.2
E	Seat Tube Angle Effective	76.1	76.2	76.2	76.2
E'	Seat Tube Angle Actual	69.6	69.2	69.7	70.2
F	Standover	76.3	76.3	76.7	77.7
G	Head Tube Length	10.5	11.5	12.5	13.5
H	Wheelbase	121.7	124.2	127.6	131.5
I	Front Center	76.6	79	82.4	86.3
J	Chain Stay Length	45.2	45.2	45.2	45.2
K	Bottom Bracket Drop	1.1	1.1	1.1	1.1
L	Bottom Bracket Height	35.6	35.6	35.6	35.6
M	Fork Rake	4.4	4.4	4.4	4.4
N	Trail	13.5	13.5	13.5	13.5
O	Stack	62.3	63.3	64.2	65.1
P	Reach	42.6	44.6	47.6	51.1
	Head Tube Height	58.3	58.3	58.3	58.3
	Rear Travel	16.3	16.3	16.3	16.3
	Shock Eye-to-Eye	23	23	23	23
	Rear Stroke	6.3	6.3	6.3	6.3
	Recommended Sag %	25	25	25	25

Specification - Alloy Frame

Item	Specification
Models	Moterra Alloy, Moterra EQ
Drive System	Bosch Performance Line CX
Battery	Bosch Powertube 750Wh
Drive-Assist Owner's Manual	https://www.bosch-ebike.com/us/
Rear Travel	150mm EQ: 127mm
Head Tube	UPR: 1 1/8in. LWR: 1 1/2in.
Headset	FSA Orbit C-40 ACB No. 42 IS42 top IS 52 lower
Bottom Bracket: Type/Width	Bosch Drive unit
Front Derailleur	N/A
Seat Post: Dia./Binder	31.6mm/34.9mm
▲ Min. Seat Post Insert	100mm
Max. Seat Post Insert	SM: 235mm MD: 250mm LG/XL: 280mm
Tire Size x Max. Tire Width	29in. x 2.6in. (measured) 27.5in. x 2.6in. (measured)
▲ Max. Fork Length	571mm
Rear Shock: Eye-to-Eye / Stroke / Bushing Width	230mm/60mm/Frame: M8×20mm Yoke: Bare EQ: 230mm/50mm/Frame M8×20mm Yoke: Bare
Sag	25%
Rear Brake: Mount Type / Min./Max. Rotor Dia.	Post Mount / 180mm / 220 mm
Rear Axle: Type/Length	UDH Maxle TA/148×12mm x 1.0P, 180mm Overall Length
Chainline:	55mm
▲ Intended Use	ASTM CONDITION 4: All-Mountain
▲ Max. Weight Limit: Total (Rider+All Equipment)	305 lbs/138 kg
Additional Technical Features	SRAM UDH Rear Derailleur

Geometry - Moterra Neo Alloy / Moterra Neo EQ

Dimensions = centimeters



	Size	SM	MD	LG	XL
	Wheel Size (inches)	29F/27.5R	29	29	29
A	Seat Tube Length	40	43	46	49
B	Top Tube Horizontal	58.3	60.8	63.5	67.2
C	Top Tube Actual	53.9	55.9	58.6	62.4
D	Head Tube Angle	65	65	65	65
E	Seat Tube Angle Effective	77	77	77	77
E'	Seat Tube Angle Actual	69.8	69.5	69.5	69.5
F	Standover	75.4	75.4	76.3	77
G	Head Tube Length	11.5	11.5	12.5	13.5
H	Wheelbase	119.6	122	124.9	128.8
I	Front Center	74.5	76.7	79.6	83.5
J	Chain Stay Length	45.2	45.5	45.5	45.5
K	Bottom Bracket Drop	1.6	3	3	3
L	Bottom Bracket Height	34.1	35	35	35
M	Fork Rake	4.4	4.4	4.4	4.4
N	Trail	11.1	12.1	12.1	12.1
O	Stack	61.8	63.1	64.1	65
P	Reach	42.8	45	47.5	51
	Head Tube Height	56.3	56.3	56.3	56.3
	Rear Travel	15	15	15	15
	Shock Eye-to-Eye	23	23	23	23
	Rear Stroke - Alloy	6	6	6	6
	Rear Stroke - EQ	5	5	5	5
	Recommended Sag %	25	25	25	25

Drive System Parts of Your E-Bike



Identification

- | | |
|-------------------------------|------------------|
| 1. Drive unit | 4. Charge port |
| 2. Drive Controls/
Display | 5. Wheel Sensor |
| 3. Internal Battery | 6. Serial number |



(Actual bike appearance will differ)

Serial Number

The serial number (8) is located on the bottom bracket. It is a 7-character barcode. See inset.

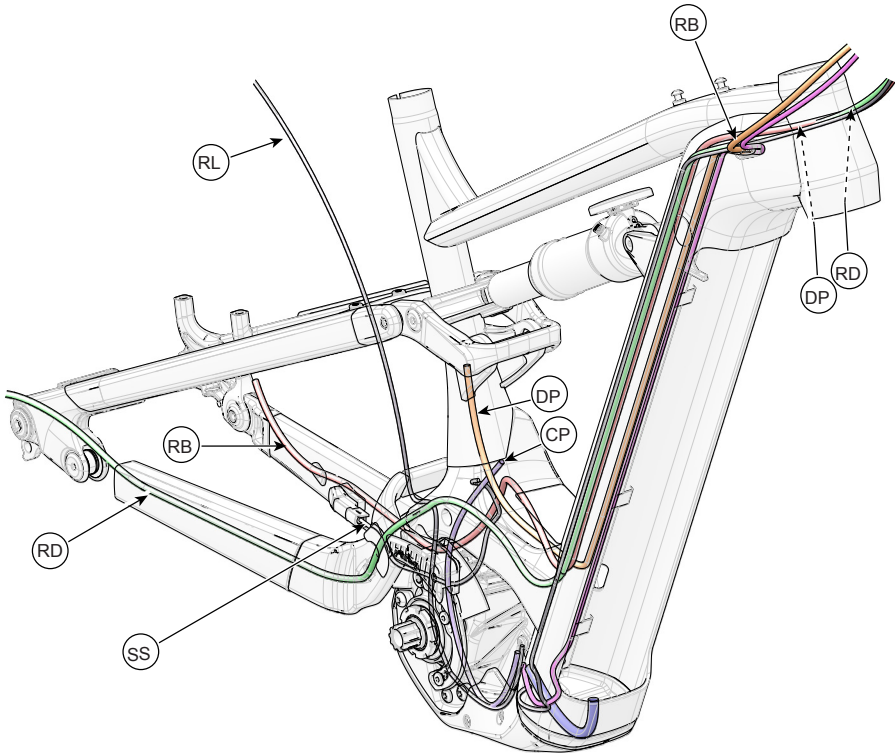
Bike Registration

To register your bike:

Go to the Product Registration section of our website at www.cannondale.com

Frame Serial Number

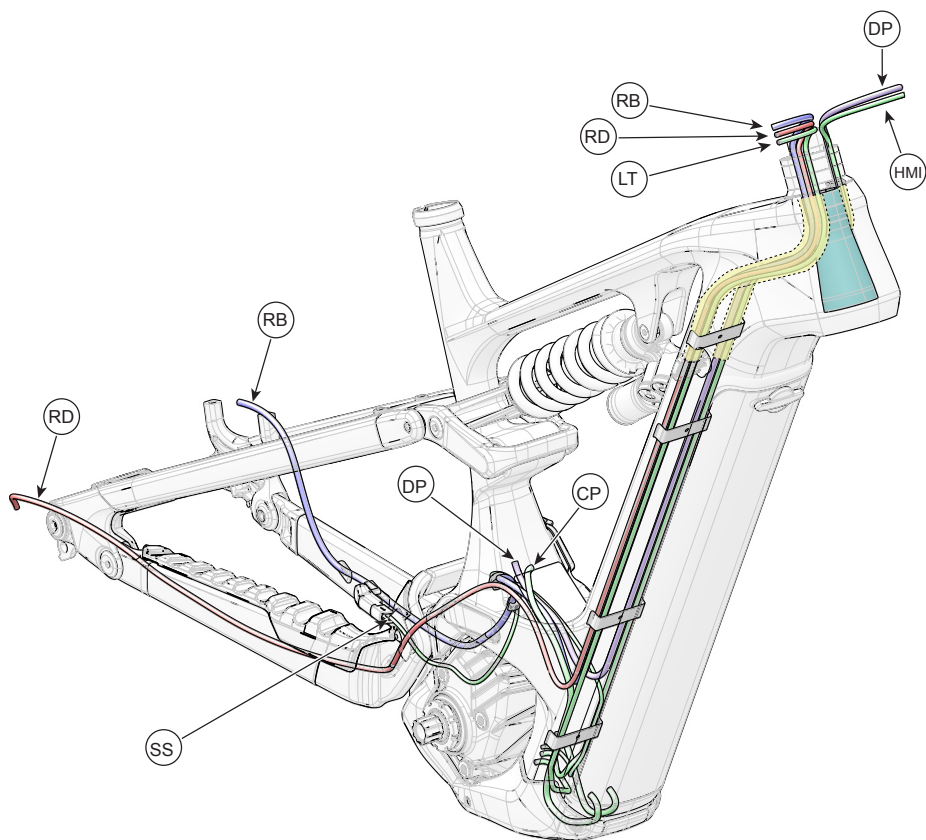
Routing - Alloy



Identification

- RD - Rear derailleur
- RB - Rear brake
- SS - Sensor
- DP - Dropper post
- CP - Charge port
- RL - Rear lighting

Routing - Carbon

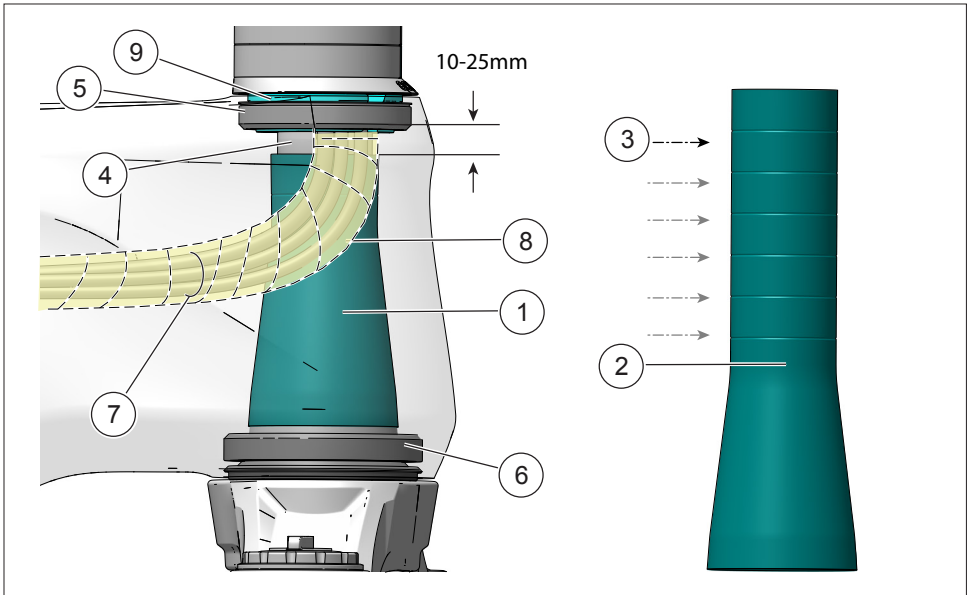


Identification

RD - Rear derailleur
 RB - Rear brake
 SS - Sensor
 DP - Dropper post
 CP - Charge port

HMI - Bosch controller
 LT - Light (option)

Fork Sleeve & Cable Wrap - Carbon



Identification

- | | | |
|---------------------------|------------------|-----------------------|
| 1. Fork sleeve (sized) | 4. Fork steerer | 7. Internal cables |
| 2. Fork sleeve (un-sized) | 5. Upper bearing | 8. Cable wrap |
| 3. Trim lines | 6. Lower bearing | 9. Headset dust cover |

Fork sleeve

The fork sleeve (1) and placement of cable wrap (8) is required on carbon frames.

The fork sleeve placed over the fork steerer prevents direct cable contact with a moving steerer.

The fork sleeve must be sized to the correct height depending on the headtube length. The fork sleeve height should be within 10-25mm of the bottom of the upper headtube bearing as shown.

Cable wrap

In addition to the fork sleeve, the cables between the headset bearing dust cover and the first cable clamp in the downtube must be fitted with cable wrap.

See **WARNING** on next page.

Fork Sleeve and Cable Wrap

WARNING

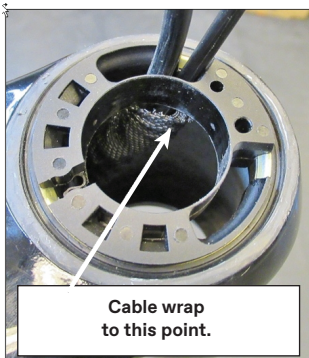
For internal headtube routing headset:

Fork Sleeve and Cable Wrap: When servicing this bike, first be very careful to make the bundle of wires and brake lines as compact as possible. When replacing wires and/or brake lines be very careful with measuring and cutting lengths. The important goal is to make a compact bundle that minimizes contact or rubbing between the bundle and the sleeve on the steering tube. The fork sleeve is required. Second, after making a compact bundle that minimizes contact or rubbing between the bundle and the sleeve on the steering tube, then add the cable wrap. Do not cross wrapped cables behind the steerer. The cable wrap is required additional protection, not a substitute for proper, careful set up of wires and brake lines.

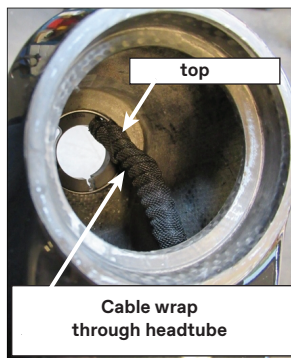
INSPECTION: A careful inspection of all cables, wires, cable wrap, sleeve, headset parts, frame interior, and the fork steerer should be performed by a professional bicycle mechanic every 6 months. If any damage or worn parts are found during the inspection, any contributing factor must be corrected and any damaged parts must be replaced with new parts. The frame headtube and downtube must also be inspected for cable rub wear as part of this process.

YOU CAN BE SEVERELY INJURED, PARALYZED, OR KILLED IN AN ACCIDENT IF YOU IGNORE THESE WARNINGS.

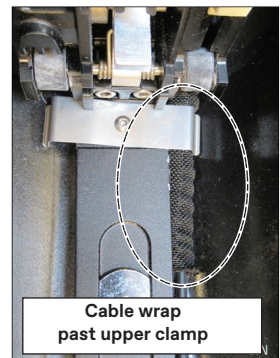
Top headtube



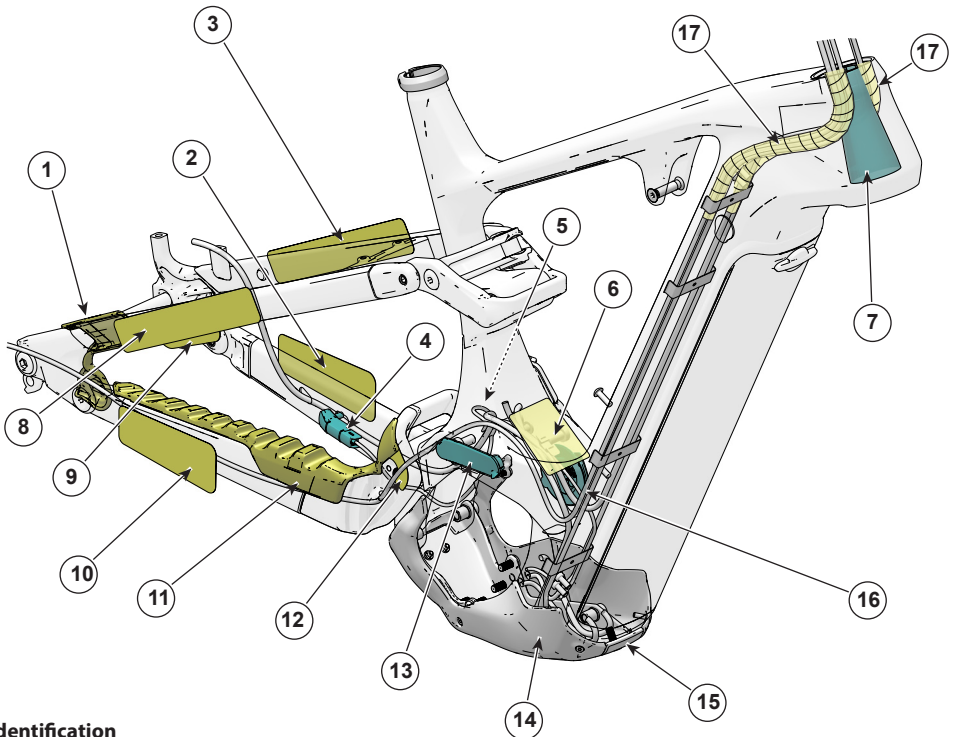
Inside headtube



Inside downtube



Guards/Protectors



Identification

- | | | |
|-----------------------|---------------------------|-------------------------|
| 1. CS, inner, | 8. SS, outer, | shown) |
| 2. CS, outer, | 9. SS, inner, | 15. Skid Plate |
| 3. SS, outer, | 10. CS, outer, | 16. Motor, thermal |
| 4. Speed sensor cover | 11. CS, upper | 17. Cable wrap (carbon) |
| 5. CS front, | 12. CS, front, | |
| 6. ST, upper | 13. Bolt cover (carbon) | |
| 7. Sleeve | 14. Motor covers (carbon) | |

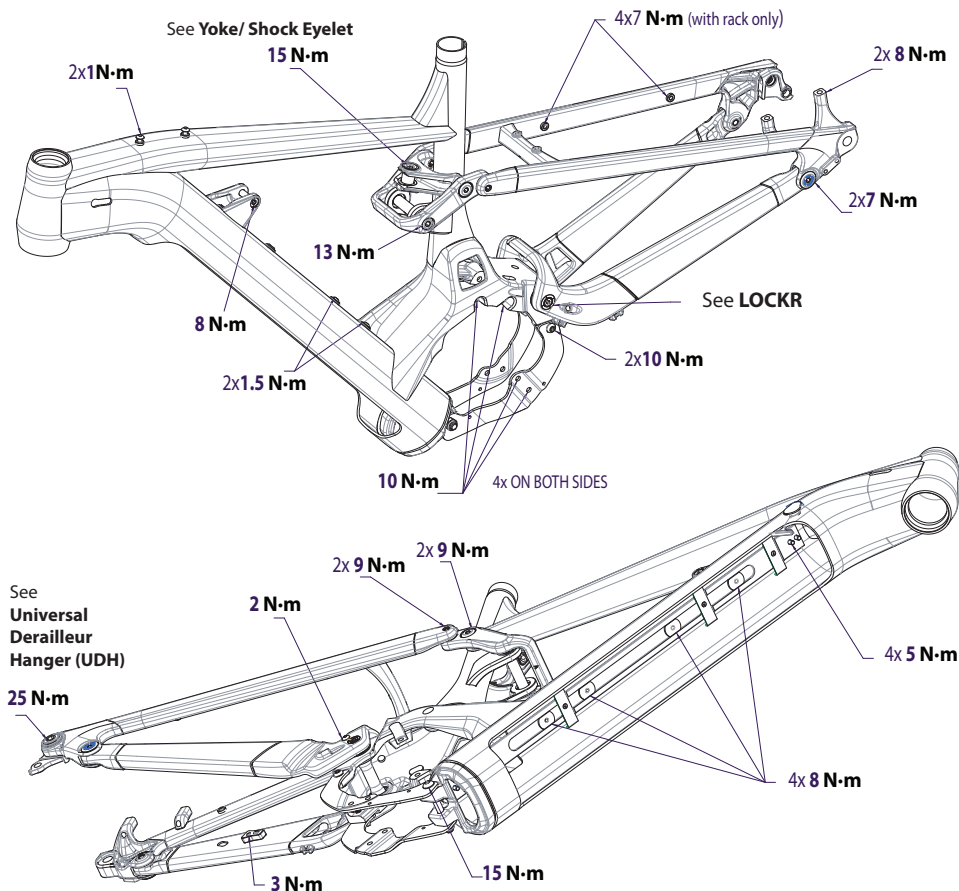
NOTICE

Damaged, loose, missing, or incorrectly-positioned protectors can lead to frame damage. Damage of this type is not covered by the Cannondale Limited Warranty. Make sure all frame protectors and guards are present, are installed correctly, and are in good condition.

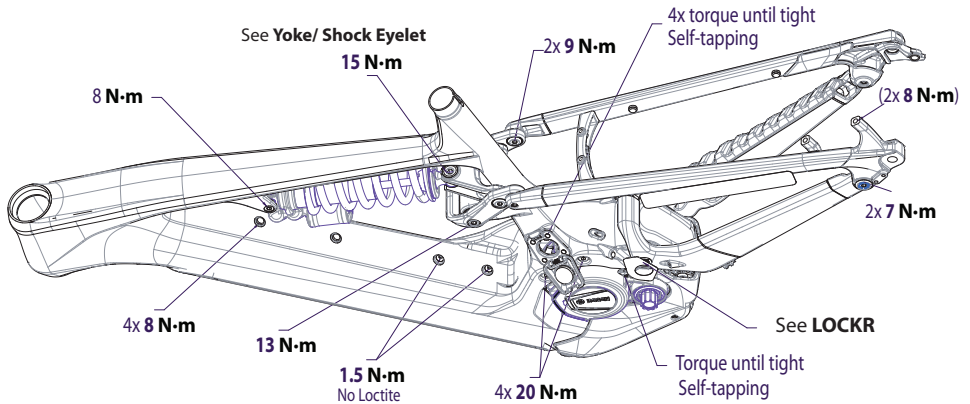
Tightening Torques

The following diagrams list tightening torques and locations for the frame fasteners (bolts, screws, nuts) on your bicycle. Setting the correct torque is very important to your safety and to the durability and performance of your bicycle. Always use a calibrated torque wrench! Follow the manufacturer torque instructions for all the components of your bike. Some fasteners have a pre-applied threadlock patch, the effectiveness of which is reduced after repeated removals and re-installations of said fasteners. Renew the application of threadlock as required.

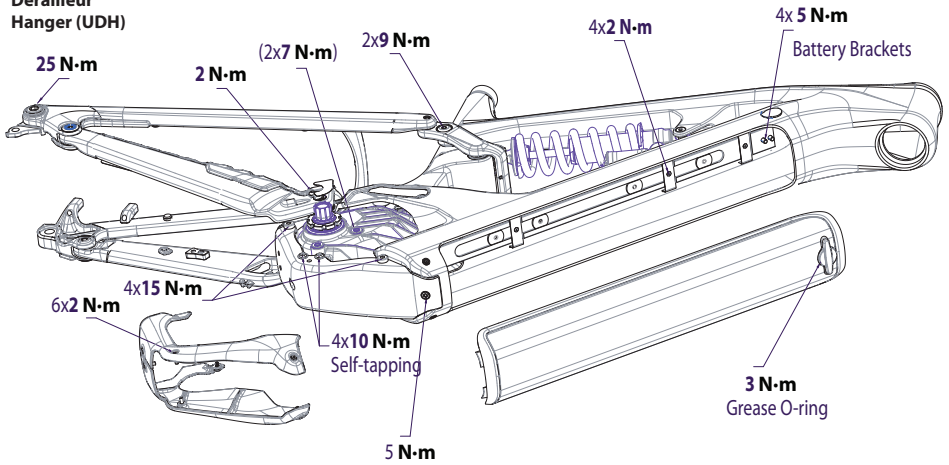
Alloy Frame



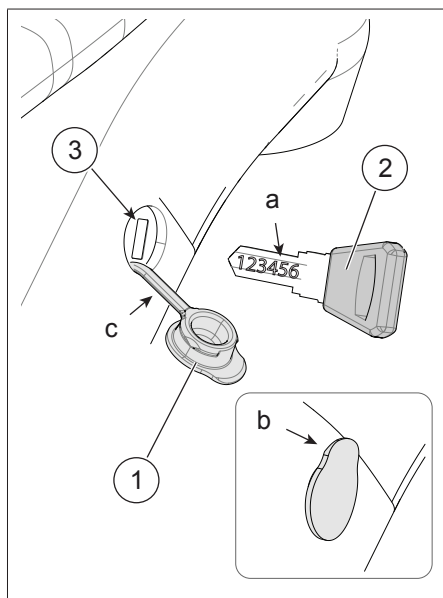
Carbon Frame



See
Universal
Derailleur
Hanger (UDH)



Key



The key (2) unlocks the internal battery mount mechanism. See “Downtube Battery.”

To access the key slot (3), lift out the key cap (1) tab (b) from the frame hole. The tether (c) retains the cap; do not pull it completely from the frame.

When completed, remove the key and return the key cap, making sure it is pressed in completely as shown above (inset).

NOTICE

Don't ride with the key in the battery lock.

Always remove the key from the lock after using it. Keys may be stolen or break off accidentally in the lock. Keep your spare key in a safe place.

Keep the Key Clean

After multiple rides and bike washes, the battery lock can become dry and difficult to use. To maintain, whenever you lubricate your bike chain, place a few drops of chain oil on the key, insert the key and operate the lock, then remove and wipe the key clean.

Record Key Number

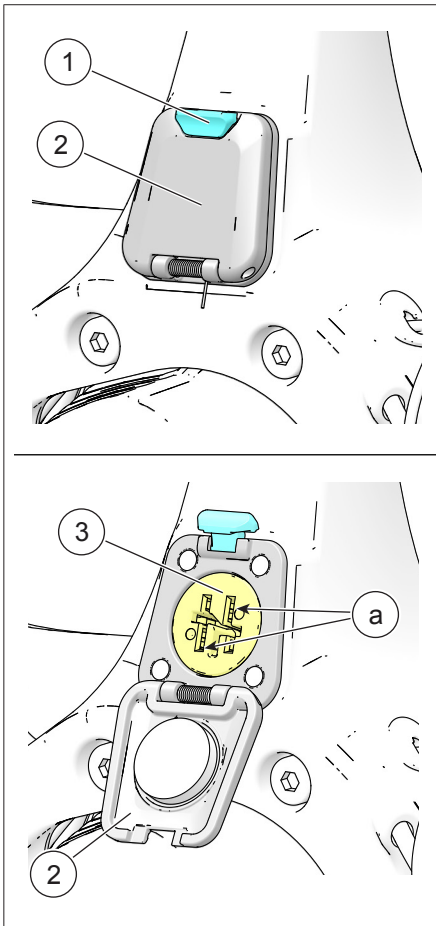
Be sure to write down the key serial number (a) on the line below.

The serial number is required to order spares and replacements .

Replacement keys are obtained from the key manufacturer.

Key Serial Number

Battery Charging Port



The battery charging port (1) is located on the left side of the seatube.

The charging port enables the battery to be charged with the battery installed in the bicycle.

To connect to the charger cable to the port connector:

1. Place the bike and charger in a secure area where both will remain undisturbed while the battery is charging.
2. Lift up the cover latch (1) and lower the cover (2).
3. Attach the specified charging cable to the connector (3). Follow the manufacturer's charging instructions for the duration of charging.
4. Disconnect the charger cable from the port close the cover and the latch.
5. Disconnect the charger from its source of power.

WARNING

Follow the drive system manufacturer's instructions for charging and handling the battery.

Be sure to inspect the condition of the battery in accordance with manufacturer's specifications before charging.

Do not insert objects other than the charge plug into charging socket (a).

Incorrect charging or handling can result in a fire or explosion, resulting in serious injury or death.

NOTICE

Always make sure the port cover is closed and latched when the charging cable is not inserted.

Downtube Battery

The drive system battery (3) is housed within the bicycle downtube. The battery can be removed for charging or charged via the battery charge port. See page 21.

To remove the battery:

1. Secure the bike upright to prevent it from falling over.
2. Make sure the bike drive system is OFF.
3. Turn the battery cover knob (2) counter-clockwise to release the battery cover (1) from the frame.
4. Remove the key cover (8) and insert the key (7) into the key slot.

Turn the key clockwise to permit the release of the battery.

5. Allow the top of the battery to move forward. Press the safety catch button (5) and lift the battery out of the frame.

To install the battery:

1. Secure the bike upright to prevent it from falling over.
2. Turn the key clockwise to release the battery frame latch.
3. Insert the lower parts of the battery so that the battery socket engages with the frame connector (4).

4. Press in on the top of the battery causing the ramp and lock to engage fully.
6. Remove the key.
7. Install the battery cover (1) and secure it with the cover knob (2).

NOTICE

Do not ride the bike without the battery cover installed. Dirt, water, and other contaminants can enter the frame and/or damage the battery.

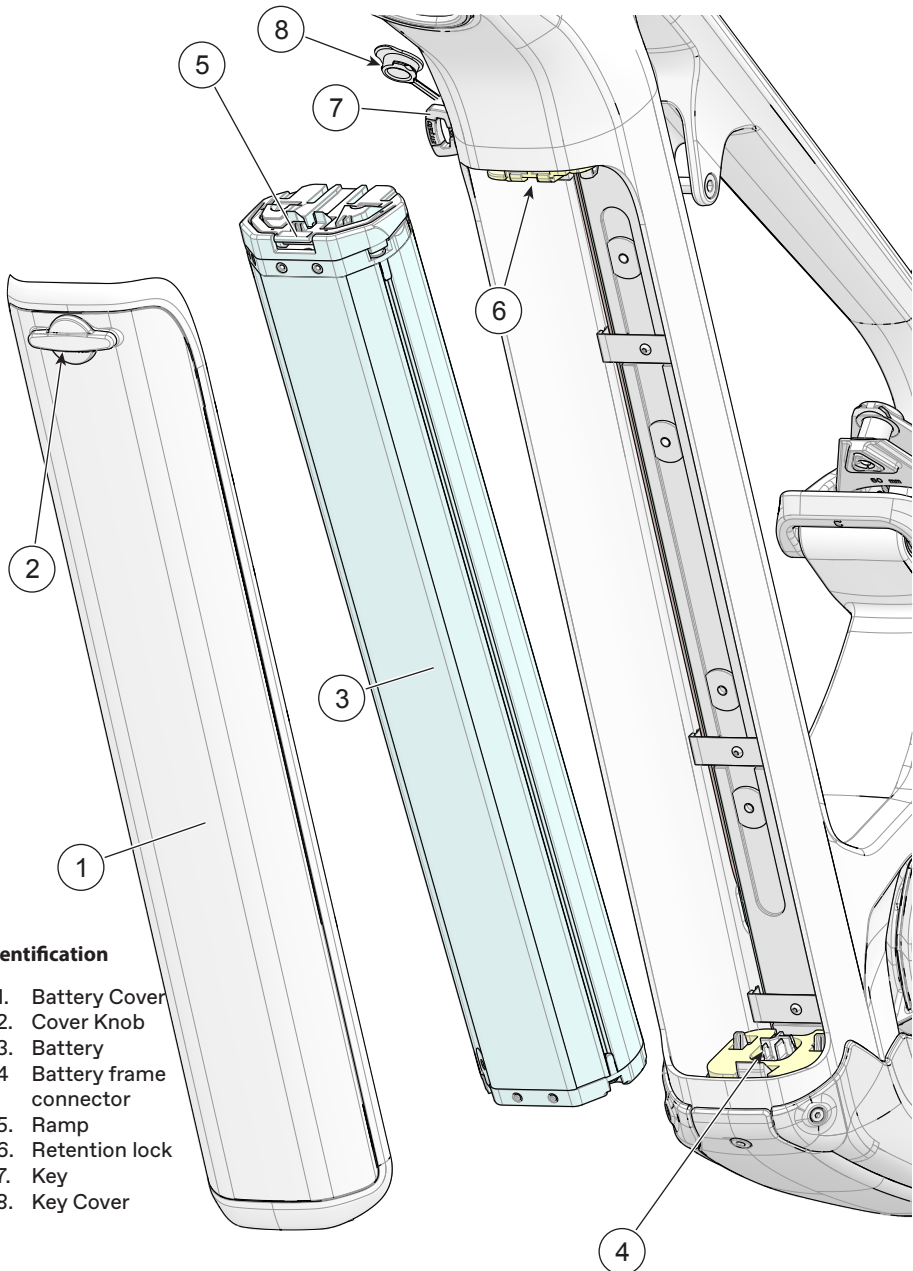
WARNING

Periodically, check to make sure the battery is securely mounted inside the frame and the cover is closed securely.

Check the battery after any fall or impact. Check for loose or damaged parts.

If you take the battery out, replace and secure the battery cover on the frame.

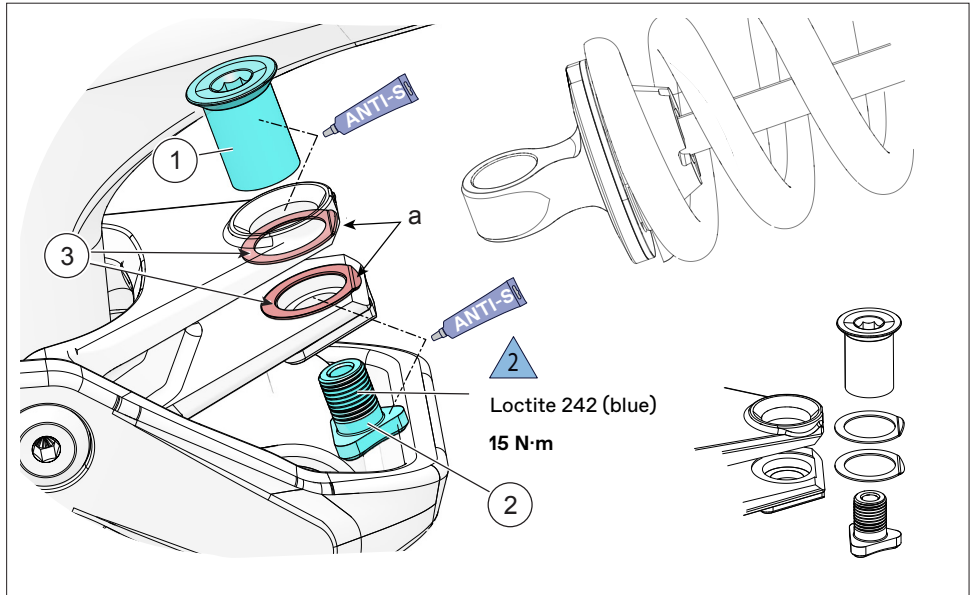
If damage is found, do not ride the bike. Have any damaged part replaced with a new one.



Identification

- 1. Battery Cover
- 2. Cover Knob
- 3. Battery
- 4. Battery frame connector
- 5. Ramp
- 6. Retention lock
- 7. Key
- 8. Key Cover

Yoke / Shock Eyelet



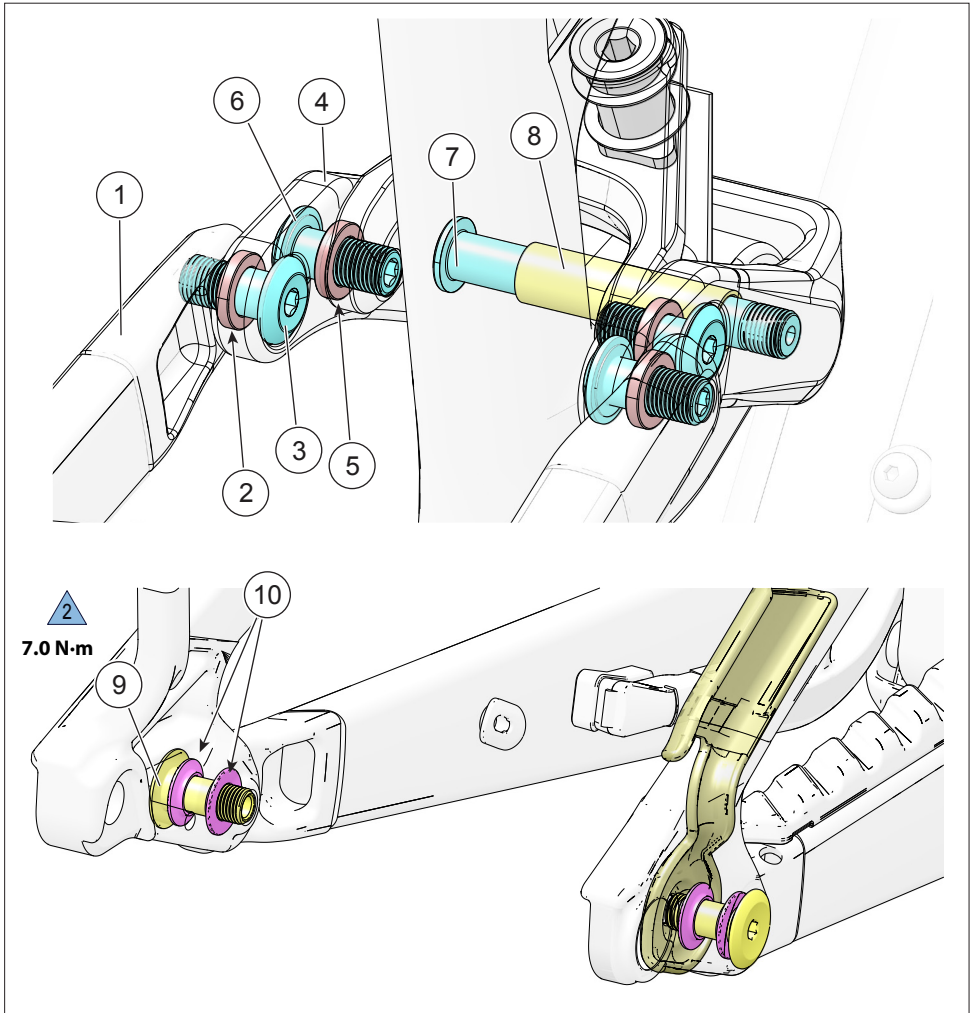
Identification

- 1. Bolt (female)
- 2. Bolt (male)
- 3. Spacers (2X)
- a. Spacer tab

The following is standard maintenance and should be repeated as often as necessary to ensure a quiet bike:

1. Disconnect the rear shock from the yoke and clean the yoke bolts, eyelet, and the shock eyelet surfaces with isopropyl alcohol and a clean shop towel.
2. Apply anti-seize thread lubricant (Permatex®) to all contact surfaces including the inside chamfer on the yoke bolts. Do not use grease - grease does not perform as well as anti-seize.
3. Clean the smaller (male) yoke bolt and apply a 3 mm-wide band of Loctite 242 (blue) at the first few threads.
4. Make sure the spacers are located between the yoke and the shock eyelet. Notice that the spacer tabs are positioned to the front and on the yoke as pictured above.
5. Tighten to 15 N-m. Hold the large (female) yoke bolt with an inserted hex key and tighten the smaller (male) yoke bolt.

Seatstay / Link / Yoke



Identification

- | | | |
|------------------------------|---------------------------------|-------------------------|
| 1. Seatstay | 6. Link Yoke Bolt (2X) | 10. Bearing Spacer (4x) |
| 2. Seatstay link Spacer (2X) | 7. Link Axle Bolt | |
| 3. Seatstay Bolt (2X) | 8. Bearing Spacer | |
| 4. Frame Link | 9. Seatstay Chainstay Bolt (2X) | |
| 5. Link Yoke Spacer (2X) | | |

LockR Axle

Be sure to support the bike or swingarm to prevent personal injury or bike damage when removing/disconnecting linkages of an axle.

To remove the LockR :

1. Loosen the screw 4-6 turns using a T25 Torx key.
2. Tap head of screw with a rubber mallet to un-seat the wedge bolt located on the opposite side.
3. Remove the screw and wedge bolt from the still-installed axle.
4. If the axle did not come out with the screw, insert a 5 mm hex key and turn to free and remove it. If the wedge still sticks, insert a wooden or plastic dowel into the drive side and drive it out.
5. To remove the axle, insert a 6 mm hex key on the non-drive side and turn counter-clockwise until it can be removed.

To install the LockR:

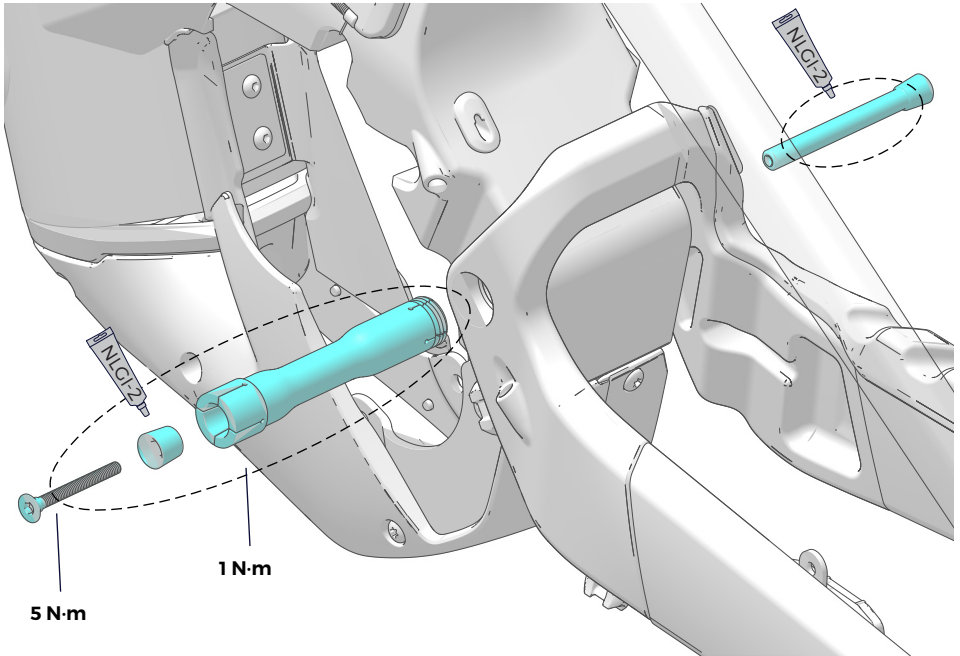
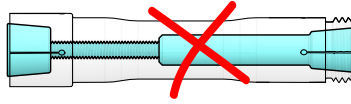
1. Disassemble and clean all parts of the LockR axle. Do not install it assembled.

Inspect the parts for damage (e.g., burrs, scratches, deformity, and wear). Replace the entire LockR assembly if any damage is found.
2. Apply a light coating of a high-quality bicycle bearing grease to all parts.
3. Align the linkage and bearing and insert the threaded end of the pivot axle (1) into the non-drive side.
4. Tighten the inserted pivot axle to 1 N·m using a 6 mm hex key fitted torque wrench from the non-drive side.

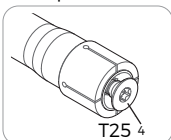
NOTICE

Use a calibrated torque wrench.
Exceeding 1 N·m will result in permanent damage to the LockR pivot system.

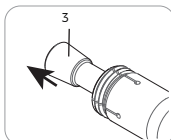
**DO NOT
INSTALL
ASSEMBLED**



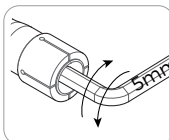
Unthread &
tap mallet



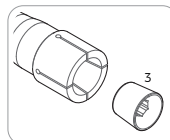
dislodge &
remove



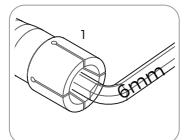
Insert 5mm &
turn to free



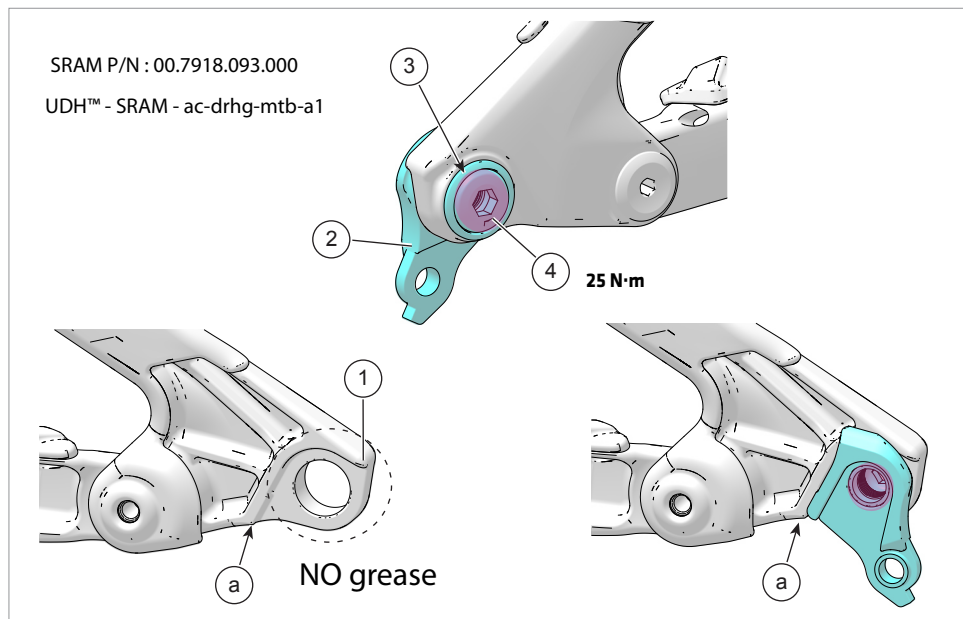
Remove



Unthread
Remove



Universal Derailleur Hanger (UDH)



Identification

- | | |
|----------------|----------------------|
| 1. UDH dropout | 4. UDH Bolt |
| 2. UDH hanger | a. UDH rotation stop |
| 3. UDH washer | |

Replacement

Before installing a new /replacement hanger, sure to clean any dirt or debris on the dropout with a nylon brush (old toothbrush). Inspect the area for any damage especially after a crash or impact. Take corrective action when required. Use a good-quality torque wrench and tighten to the specified torque.

NOTICE

Follow the manufacturer instructions when mounting the UDH hanger to the frame.

SRAM - <https://www.sram.com/en/sram/models/ac-drhg-mtb-a1>

Replacement Parts

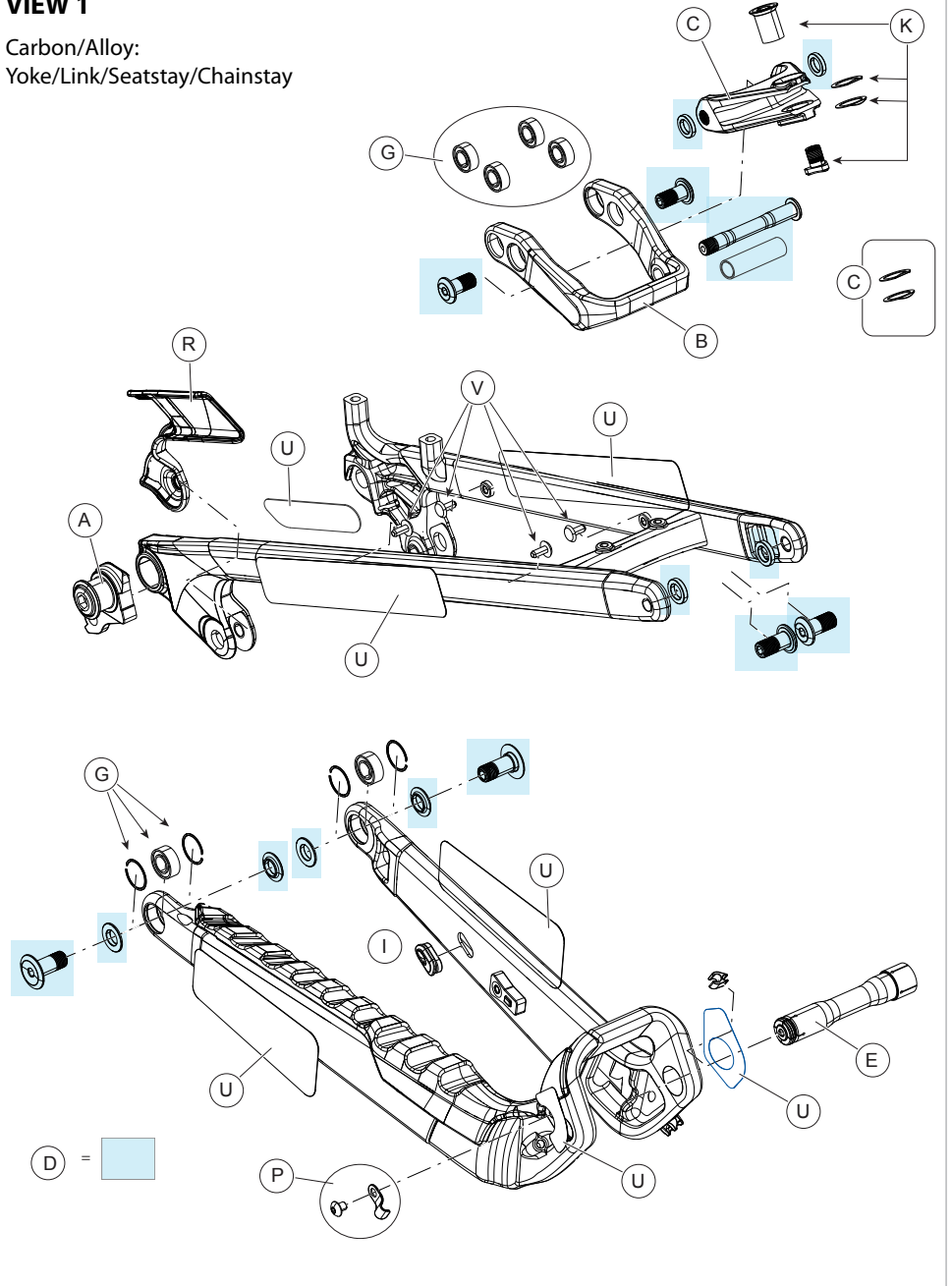
Service Kits

Item	Kit #	Kit Description	View
A		SRAM UDH	1
B	K91042	Moterra Neo Alloy Link	1
	K91002	Moterra Neo Carbon Link	
C	K91012SM	Moterra Neo Yoke SM	1
	K91032MD	Moterra Neo Alloy Yoke MD	1
	K91022MD	Moterra Neo Carbon Yoke MD	1
	K91012LG	Moterra Neo Yoke L/XL	1
D	K36002	Moterra Neo Link/CS/SS/Pivot Hardware	1
E	K36012	Expanding Axle Hardware 97mm	1
F	K36022	Moterra Neo/Habit Shock Bolts Upper	2
G	K36032	Moterra Link/CS/SS/Pivot Bearings	1
H	K34211	Neo Key Cover	2,3
I	KP312/	Open Oval Grommet x10	1,2
J	K32042	Moterra Neo Alloy HT Cable Grommet Qty2	2
K	K36042	Moterra Neo/Habit Yoke Bolts w/ Shims	1
L	K76042	Moterra Neo DT Bottom Exit Batt Rail	2
M	K32052	Neo Alloy Rail Cable Guides Qty4	2
N	K34012	Battery Cover DT Bottom Exit 750wh	2
O	K76012	Neo Latching Charge Port Holder	2
P	K32032	Moterra Neo CS Cable Guide	1
Q	K34072	Moterra Neo CS Protector	1
R	K34082	Moterra Neo SS Protector	1

Item	Kit #	Kit Description	View
S	K34122	Moterra Neo Alloy Gen4 Motor Cover	2
T	K76062	Neo Motor Mount Bolts Qty8	2
U	K34102	Moterra Neo Clear Frame Protection	1,2
V	K34112	Moterra Neo Rear Rack Grommets	1
W	K13022	Moterra Neo Rear Rack	4
Y	K11012	Moterra Neo Rear Fender	4
Z	K76072	Moterra Neo Rear Rack/Fender Mount Kit	4
AA	K76082	Moterra Neo Alloy Motor Mount Bracket	2
BB	K34062	Moterra Neo Gen4 Skid Plate - Carbon	3
CC	K34092	Moterra Neo Carbon Gen4 Motor Cover	3
DD	K76052	Moterra Neo Carbon Motor Bolt Cover	3
EE	K28112	eMTB Internal Routing Stem 35×45 - Carbon	3
FF	K35012	1.5-1.8 Int Hdset 28.6/52-60/45.83 - Carbon	3
GG	K35052	HT Internal Routing Sleeve 1.8 - Carbon	3
HH	2222	Nylon Anti-Wear Wrap - Carbon	3

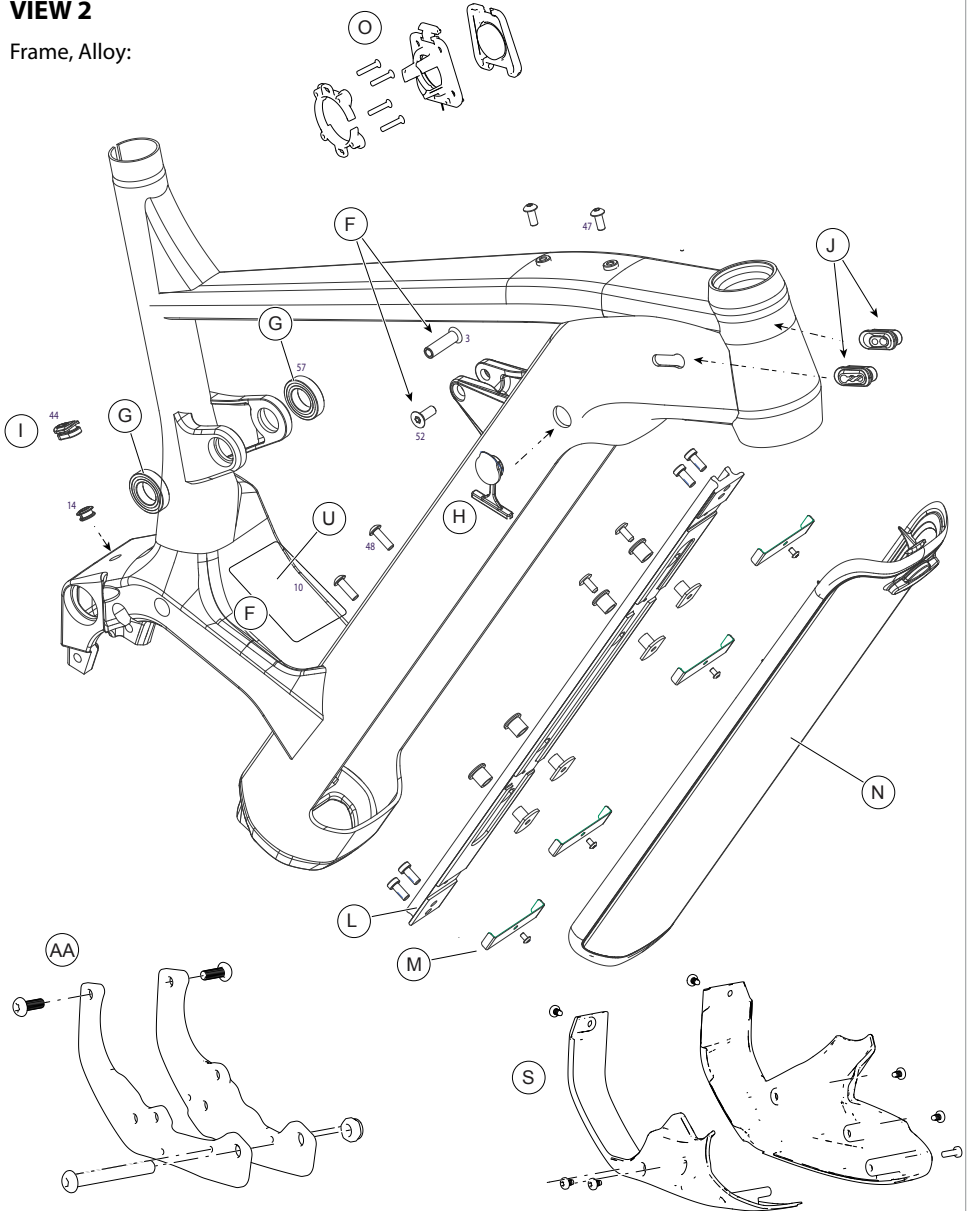
VIEW 1

Carbon/Alloy:
Yoke/Link/Seatstay/Chainstay



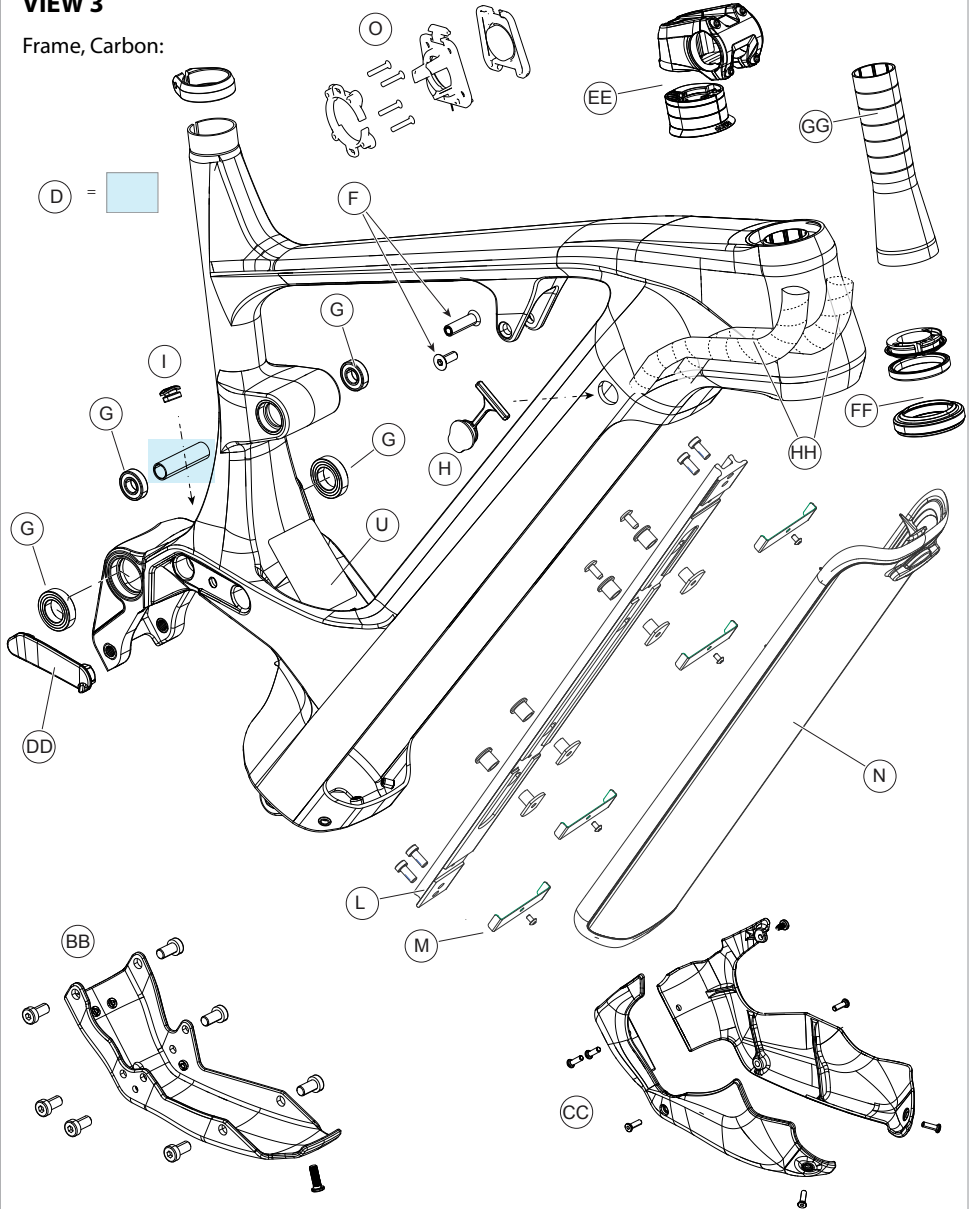
VIEW 2

Frame, Alloy:



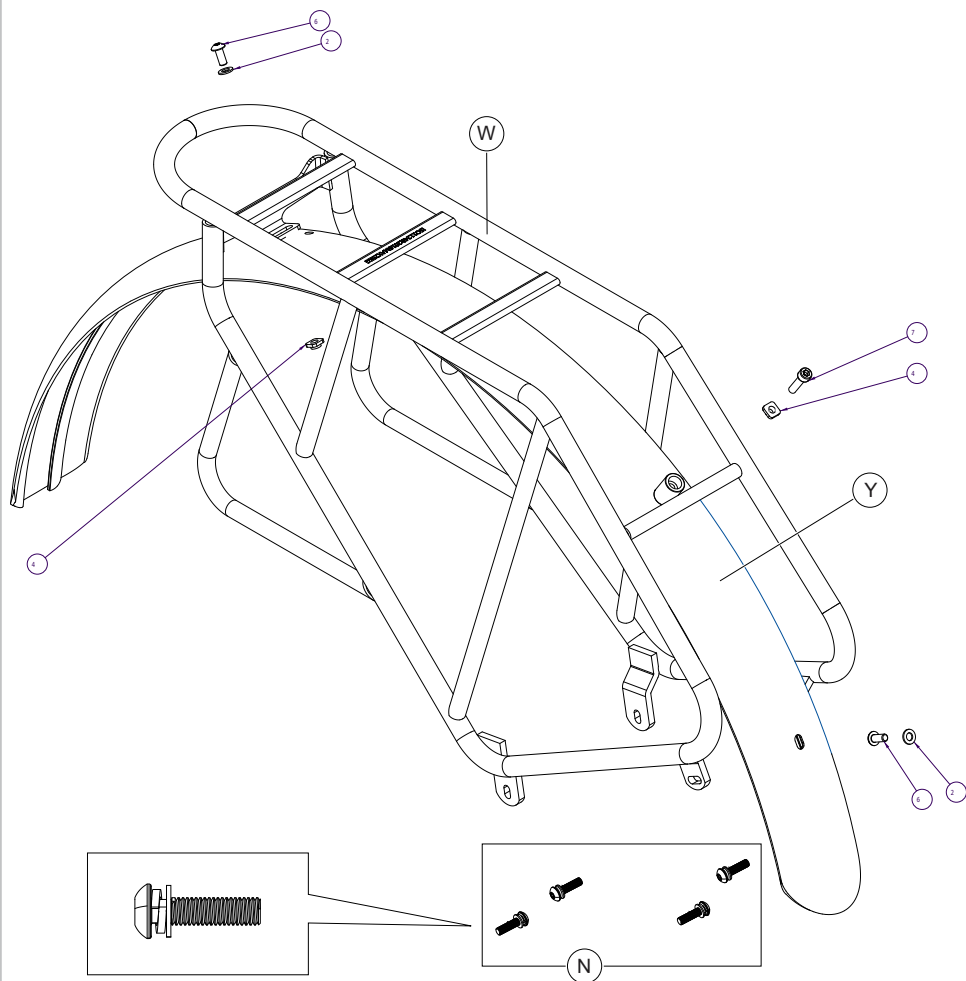
VIEW 3

Frame, Carbon:



VIEW 4

Accessories, Alloy/Carbon:



Maintenance

The following table lists only supplemental maintenance items. Please consult your [Cannondale Bicycle Owner's Manual](#) for more information on basic bike maintenance.

Schedule

OWNER	HOW OFTEN
CHECK: Guards and Protectors, drive system, shielding, secure attachment of battery and key covers.	Before and after each ride
INSPECT: Clean and visually inspect entire bike frame/ swingarm/linkage assembly for cracks or damage.	
CHECK : Tightening torques for components found in this supplement.	Every few ride or after each hard ride.

PROFESSIONAL BICYCLE MECHANIC	HOW OFTEN
Disassemble, clean, inspect, re-grease, replace worn or damaged parts in the following assemblies: Main Pivot, LockR, Chainstay/Seatstay Pivot, Shock Link Assy, Service affecting the drive system and related components as defined by the manufacturer.	In wet, muddy, sandy conditions every 25 hrs. In dry, conditions every 50 hrs.
INSPECT and REPLACE - The headtube sleeve, nylon anti-wear wrap. See WARNING on page 20.	Every 6 months

WARNING

Any part of a poorly maintained bike can break or malfunction leading to an accident where you can be killed, severely injured or paralyzed.

Frequent checks are necessary to identify the problems that can lead to an accident. See "Inspect For Safety" in your [Cannondale Bicycle Owners Manual](#).

Cleaning Your Bike

When cleaning your bike:

USE ONLY A MILD SOAP AND WATER SOLUTION. Clean water and a common dish washing liquid will work best.

COVER SENSITIVE AREAS WITH A CLEAN PLASTIC BAG. Secured temporarily with a rubber band or masking tape, a bag can prevent water damage to various bike components (e.g., bearings, electrical controls, connections and sensors, seals, and fork/shock adjustment features).

SPRAY OFF BEFORE WIPING. To preserve the appearance of paint, finish, and decals, use a low pressure water hose to first spray off heavy soils and dirt.

CLOSE ALL COVERS.

NOTICE

DO NOT power wash or spray water under high pressure to clean. Power washing will force contaminants into parts where they will promote corrosion, immediately damage, or result in accelerated wear.

DO NOT use compressed air to dry.

DO NOT use abrasive or harsh chemical cleaners/solvents which can damage the finish or attack and destroy both the outside and internal parts.

When rinsing, avoid directing the spray directly at shock/fork adjusters or bearings.

WARNING

Power-down the drive system and detach both the main and any extended range batteries from the frame before performing cleaning or any work to the bicycle.

Do not clean the bicycle while connected to the charger. Move the bicycle to an area away from sources of electrical energy or electric appliances.

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