

> **SYNAPSE HI-MOD/CARBON.**

(PATENT PENDING)

OWNER'S MANUAL SUPPLEMENT.

cannondale

SAFETY INFORMATION

About This Supplement

Cannondale Owner's Manual Supplements provide important model specific safety, maintenance, and technical information. They are not replacements for your Cannondale Bicycle Owner's Manual.

This supplement may be one of several for your bike. Be sure to obtain and read all of them.

If you need a manual or supplement, or have a question about your bike, please contact your Cannondale Dealer immediately, or call us at one of the telephone numbers listed on the back cover of this manual.

You can download Adobe Acrobat PDF versions of any Cannondale Owner's Manuals or Supplements from our website: www.cannondale.com.


- This manual is not a comprehensive safety or service manual for your bike.
- This manual does not include assembly instructions for your bike.
- All Cannondale bikes must be completely assembled and inspected for proper operation by a Cannondale Dealer before delivery to the owner.

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 retailer.

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

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

NOTICE Indicates special precautions that must be taken to avoid damage.

TIP A TIP provides helpful information.

This manual meets EN standards 14764, 14766, and 14781.

Vélo certifié conforme aux exigences du décret N 95-937 du 24 août 1995 norme NFR030

Important Composites Message

WARNING

Your bike (frame and components) is made from composite materials also known as "carbon fiber."

All riders must understand a fundamental reality of composites. Composite materials constructed of carbon fibers are strong and light, but when crashed or overloaded, carbon fibers do not bend, they break.

For your safety, as you own and use the bike, you must follow proper service, maintenance, and inspection of all the composites (frame, stem, fork, handlebar, seat post, etc.) Ask your Cannondale Dealer for help.

We urge you to read PART II, Section D. "Inspect For Safety" in your Cannondale Bicycle Owner's Manual BEFORE you ride.

YOU CAN BE SEVERELY INJURED, PARALYZED OR KILLED IN AN ACCIDENT IF YOU IGNORE THIS MESSAGE.

Intended Use



The intended use of all models is **ASTM CONDITION 1, High-Performance Road.**

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.

Inspection & Crash Damage Of Carbon Frames/Forks

WARNING

AFTER A CRASH OR IMPACT:

Inspect frame carefully for damage (See PART II, Section D. Inspect For Safety in your Cannondale Bicycle Owner's Manual.)

Do not ride your bike if you see any sign of damage, such as broken, splintered, or delaminated carbon fiber.

ANY OF THE FOLLOWING MAY INDICATE A DELAMINATION OR DAMAGE:

- An unusual or strange feel to the frame
- Carbon which has a soft feel or altered shape
- Creaking or other unexplained noises,
- Visible cracks, a white or milky color present in carbon fiber section

Continuing to ride a damaged frame increases the chances of frame failure, with the possibility of injury or death of the rider.

Repainting Or Refinishing

WARNING

Repainting, painting over, retouching, or refinishing your frame or fork can result in severe damage leading to an accident. You can be severely injured, paralyzed or killed.

Refinishing chemicals : Solvents, and strippers can attack, weaken, or destroy the important composite chemical bonds holding your frame together.

Using abrasives or sanding the frame/fork structure, original paint, decals, or coatings through the use of mechanical actions such as plastic or glass bead blasting or other abrasive methods such as sanding or scraping can remove frame material or weaken it.

Bicycle Repair / Work Stands

The clamping jaws of a bike stand can generate a crushing force strong enough to seriously damage your frame.

NOTICE

Never place your bike in a bike stand by clamping the frame.

Place your bike in a stand by extending the seat post and positioning the stand clamp on the extended seat post. Don't extend beyond the MINIMUM INSERT line marked on the seat post.

Since your carbon seat post can also be damaged by clamping force, adjust the stand clamp for the minimum clamping force needed to secure the bike.

Also, before clamping, clean the post and protect the seat post finish with a rag.

If you have an old un-used seat post, use it instead of your regular post to mount your bike in a stand.

Tightening Torques

Correct tightening torque for the fasteners (bolts, screws, nuts) on your bicycle is very important to your safety. Correct tightening torque for the fasteners is also important for the durability and performance of your bicycle. We urge you to have your Dealer correctly torque all fasteners using a torque wrench. If you decide to torque fasteners yourself always use a torque wrench.

Find Tightening Torque Information

The wide range of bicycle models and components used means that a listing of tightening torque would be out of date by the time it was published. Many fasteners should be installed with a thread locking adhesive such as Loctite®.

To determine correct tightening torque and any adhesive application for a fastener we ask you to check:

- Markings on the component. Many components are marked. On-product marking is becoming common.
- Torque specs in the component manufacturers instructions shipped with your bicycle.
- Torque specs listed on the websites of component manufacturers.
- With your Dealer. Dealers have access to current data and have experience with correct torque for most fasteners.

Trainers

If you ride a trainer that requires removal of the front wheel and clamps the fork dropouts: Be sure your fork quick release is tight! Relative movement will wear parts, weaken and damage your bike.

If you ride a trainer that holds the bike up by clamping the rear quick release between two cones: Take off the nice, lightweight quick release that came with your bike. Substitute a heavy, classic all steel quick release and clamp it tight! Relative movement will wear parts, weaken and damage your bike. Note that many modern quick releases will not fit the clamping cones in this kind of trainer because their shapes are incompatible.

Be particularly cautious with a carbon frame or fork. Carbon is relatively soft, not abrasion resistant. If there is any relative movement, carbon will wear quickly.

If you ride a trainer a lot, consider using an old bike: Corrosion from sweat will take it's toll. Weight is irrelevant. Save wear on your expensive components.

Ask your dealer for help with trainers, the right one and the correct way to use it.

NOTICE

TRAINERS - Improperly mounting a bike in a trainer, or using one that is not compatible with your particular bike frame can cause serious damage.

WATER BOTTLES - An impact, crash, or loose bottle cage can result in damage to your frame.

This kind of damage is not covered by the Cannondale Limited Warranty.

Water Bottles

Side impacts to a water bottle or cage can result in damage threaded inserts due to the leverage on a very small area. In a crash, certainly the last thing you should be worried about is saving the threaded inserts in your frame. However, when you are storing or transporting your bike, take steps to prevent situations where a water bottle may be hit or bumped by a strong force that would cause damage. Remove bottle and cage when you are packing your bike for travel.

Periodically check the attachment of the bottle cage; tighten the cage bolts if necessary. Don't ride with a loose bottle cage. Riding with loose cage bolts can produce a rocking motion or vibration of the attached cage. A loose cage will damage the insert and possibly lead to the inserts to pull out. It may be possible to repair a loose insert, or install another insert only if the frame is undamaged. Replacement requires the use of a special tool. If you notice damage to the threaded insert, please ask your Cannondale Dealer for help.

Building Up A Frameset

Before building up a frameset, consult with your Cannondale Dealer and the component manufacturers, and discuss your riding style, ability, weight, and interest in and patience for maintenance.

Make sure the components chosen are compatible with your bike and intended for your weight and riding style.

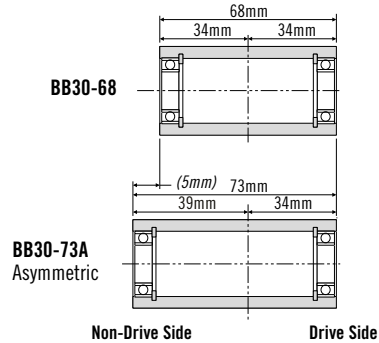
Generally speaking, lighter weight components have shorter lives. In selecting lightweight components, you are making a trade-off, favoring the higher performance that comes with less weight over longevity. If you choose more lightweight components, you must inspect them more frequently. If you are a heavier rider or have a rough, abusive or "go for it" riding style, buy heavy duty components.

Read and follow the component manufacturers warnings and instructions.

BOTTOM BRACKET

Crankset Compatibility

The bottom bracket shell width is BB30-73A cranksets.
See www.BB30standard.com



Bearing Maintenance

Shell bearings (1) are sealed cartridge type and do not require lubrication. Inspect bearing condition annually (at a minimum) and anytime the crankset assembly is disassembled or serviced. The bearings are a press fit within the shell. Old bearings should not be reinstalled if removed. Replace both bearings at the same time. Replacements circlips (2) are available if the circlips become damaged. The circlips can be lifted from the BB groove (a) by lifting the hooked end with a thin blade screwdriver.

NOTICE

DO NOT FACE, MILL OR MACHINE THE BOTTOM BRACKET SHELL FOR ANY REASON. Doing so can result in serious damage and possibly a ruined bike frame.

BB Cable Guide

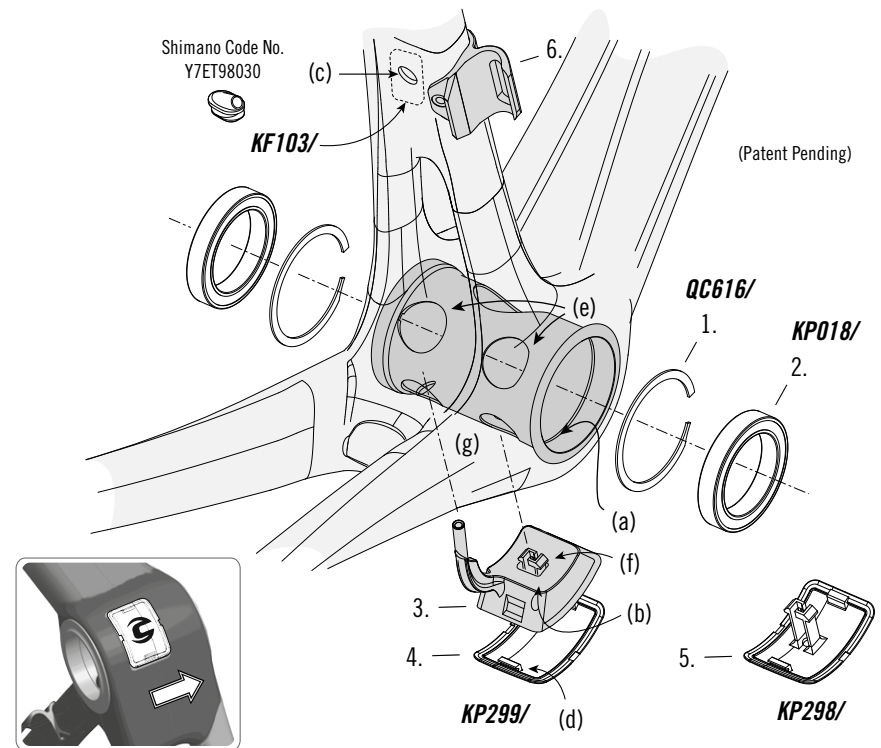
To remove the BB cable guide (3), remove the cables first. Use a small thin blade screwdriver to lift off the cover (4). Insert the screwdriver into the guide slot (b) and turn it clockwise – this retracts the claws (f) of the cable guide and allows the guide to be removed from the shell slot (g). **When replacing the guide cover, be sure to align the cover tabs (d) with the slots in the cable guide correctly; they are offset. The opening of the "C" faces the left crankarm.**

When Shimano Di2 cables are installed the cable guide is not used. In its place, install the alternate cover (5). The BB shell internal windows (e) enable routing of the various Di2 cables. When cables are routed, be sure to position them so they are not in contact with crankset parts. The exit hole (c) will accept the Shimano fitting; it is open when not in use. You can cover this opening with a small piece of the clear **KF103/** guard material, if desired.

73mm Standard Adapter - **KF368/**

NOTICE

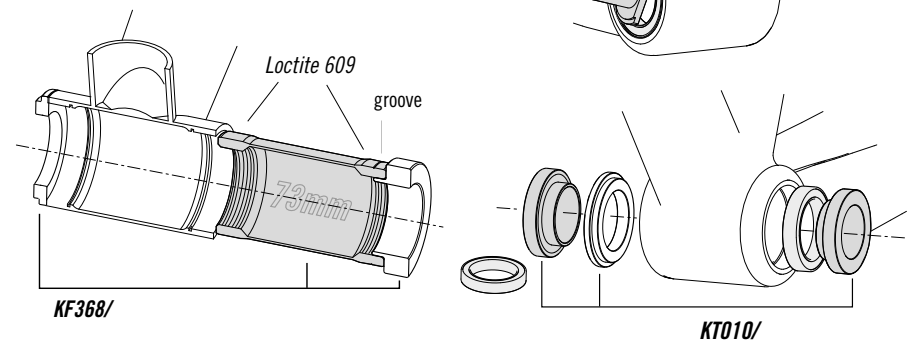
SERIOUS FRAME DAMAGE - All Adapters must be installed by a professional bike mechanic. No adapter should be used as a frame repair part. Adapters should only be used in undamaged frames in good condition. Improper installation or removal can result in damage and void applicable frame warranty. The adapter is removable, however, repeated removal and reinstallation could result in damage to the SI BB shell and is not recommended. Damage caused by improper removal is not covered under your warranty.



Cannondale Tools

KT011/ is a bearing removal tool.

KT010/ is a set of bearing installation tools to be used with a standard headset press.

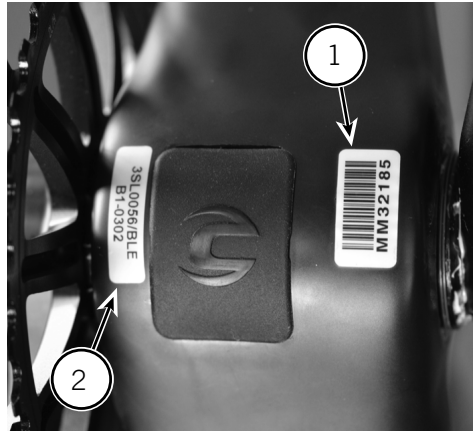


SERIAL NUMBER

The serial number located on the bottom bracket. It is a 7-character barcode (1). Use this serial number to register your bike. See your Cannondale Bicycle Owner's Manual for more information on warranty registration.

www.cannondale.com/registerbike/

Other codes (2) on the BB shell are related to production including model year, frame type, frame size, and color coding. The same product code may appear on many bikes and does not uniquely identify your frame.



CHAINSTAY PROTECTION

The chainstay plate *KP304/* located on the right chainstay just behind the chain rings, protects the chainstay from damage in the event the chain is dropped from the chain ring. Contact your Cannondale Dealer for a replacement if it becomes missing or damaged.



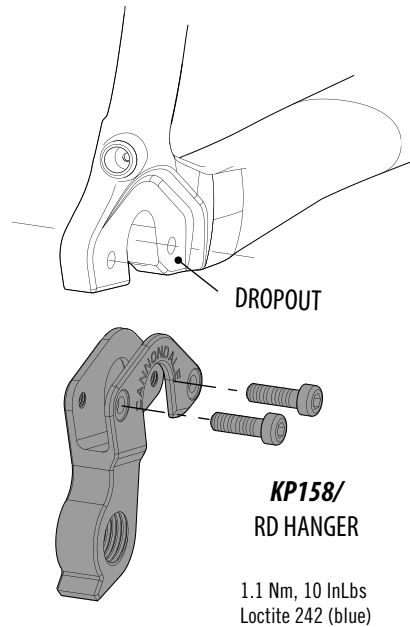
REAR DERAILLEUR HANGER

To replace:

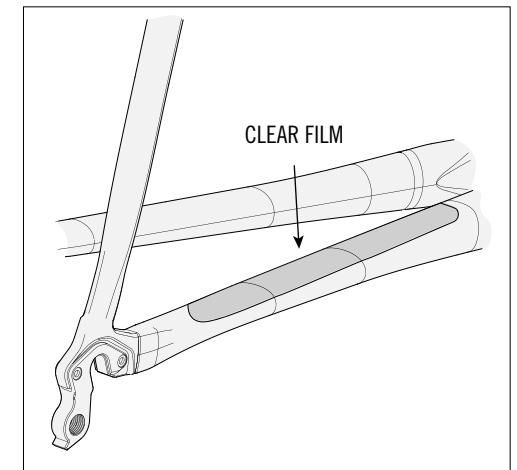
Remove the mounting screws and remove the old hanger from the dropout. Clean the area around the dropout and inspect the frame carefully for any cracks or damage. If you find damage have the frame inspected by your Cannondale Dealer.

If the dropout is un-damaged, apply a light film of bike grease to both sides of the dropout. This will help minimize any noise or "creaking" that might result from very slight movement between the dropout and hanger during movement of the derailleur.

Slide the new hanger *KP158/* onto the dropout. Apply Loctite to the screw threads and tighten to the specified torque.



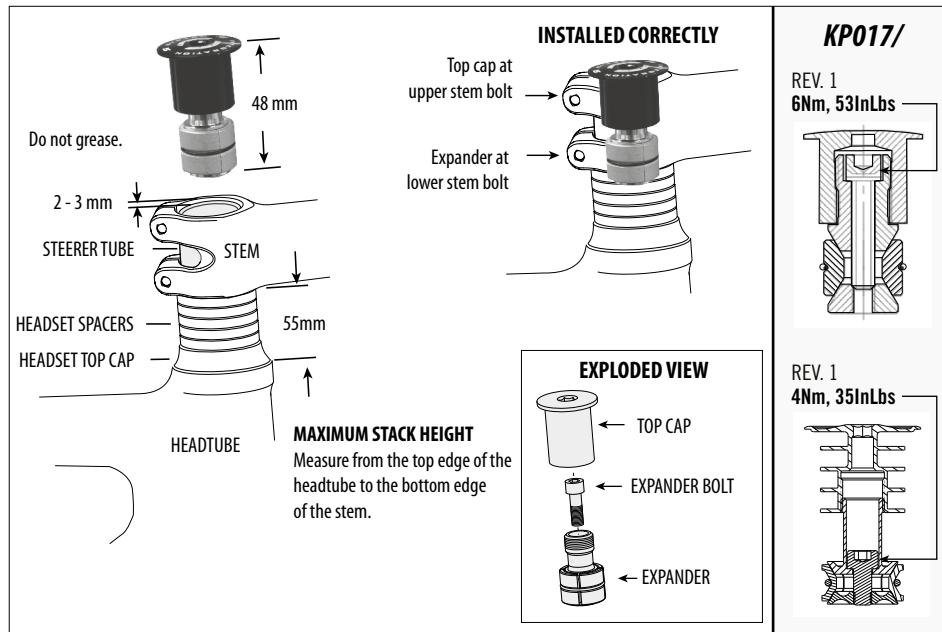
The clear adhesive film protector applied to the top surface of the right chainstay provides limited protection against frame or finish damage caused by the chain. Replacements are available through a Cannondale Dealer.



NOTICE

Do not use a derailleur hanger alignment tool. If bending adjustment is necessary, remove the hanger from the frame first!

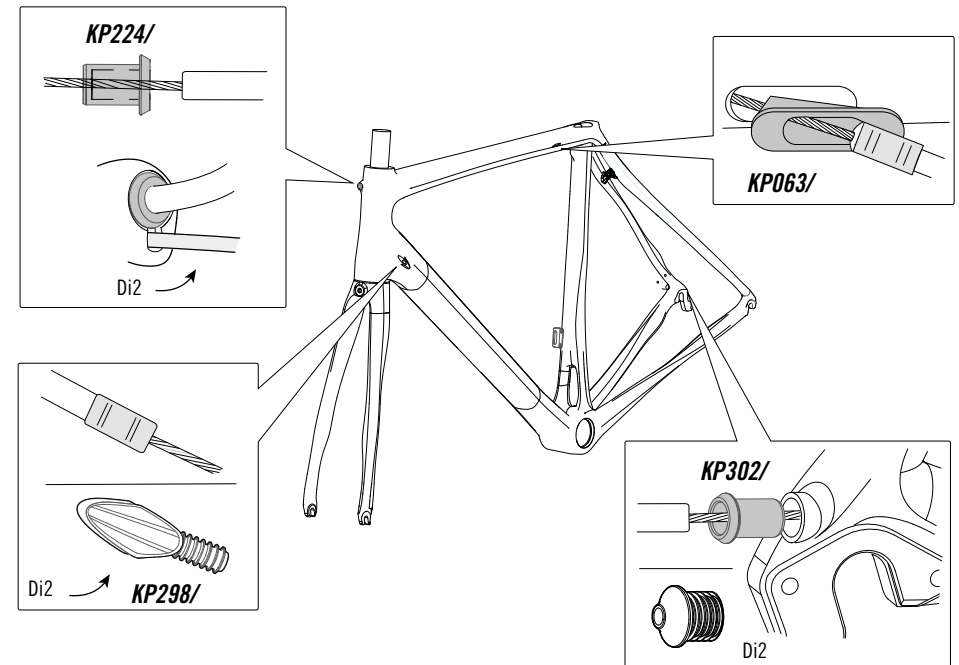
SI COMPRESSION ASSEMBLY *KP017*/INSTRUCTIONS



The following procedure should only be completed by a professional bike mechanic.

1. Assemble the fork, headset, spacers, and stem without tightening the stem bolts onto the head tube. When the system is assembled, the carbon steerer tube should be 2-3 mm below the top of the stem. All spacers must be located below the stem and within the maximum stack height as shown. No spacers may be used above the stem.
2. Set-up the compression assembly before inserting it. Adjust the length so that the expander is located at lower stem bolt. The top cap and the expander end provides critical support to the carbon steerer when tightening the stem bolts. Adjust the length by threading the top cap on the expander parts.
3. When the assembly is the correct length, insert it into the steerer tube. It is designed to fit snugly inside the steerer. Insert an Allen key through the access hole in the TOP CAP and into the EXPANDER BOLT. Tighten to the specified torque.
4. Now, to set bearing preload, insert a 6mm allen key into the hex shape in the TOP CAP itself. Turn the entire top cap clockwise to increase preload. Turning it counter-clockwise will decrease the preload. When the headset preload feels correct, turn the stem to align the handlebar and tighten the stem fork clamp bolts to the torque specified for the stem. Consult the stem manufacturer's instructions. The torque values for components are often marked on the part.

CABLE ROUTING



The top tube guide **KP063/** is removable so that brake cable may be routed inside the tube. The guide is secured in the tube opening by the installed brake cable tension. Make sure the guide is seated properly in the top tube opening when installing and connecting the rear brake.

Be sure to use ferrules on DT housing ends.

When using Shimano Di2, the DT openings are fitted with rubber seals included in **KP298/**. Notice the small opening below the rear brake headtube inlet. This is for Di2 cabling. The rear derailleur exit is also included in the Di2 kit.

SEAT POST

To adjust saddle height:

1. Insert 4mm Allen key through cover (1) into binder bolt (2). Turn counter clockwise to loosen clamp. Hold cover in place while turning or removing the allen key.



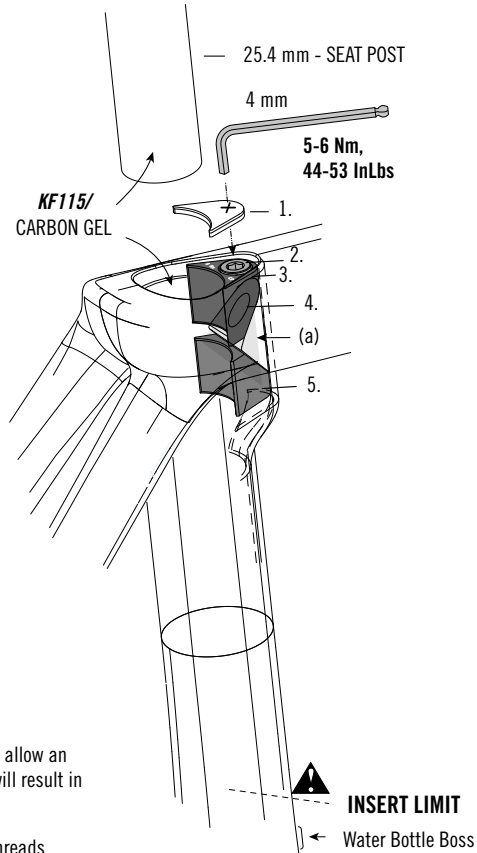
2. Set saddle height and tighten the binder bolt to 5-6Nm, 44- 53 In Lbs.

Please Note:

- The seatpost size is 25.4mm. Do not use adapters or shims.
- The seatpost **MINIMUM INSERT** depth is 100mm.
- The frame **INSERT LIMIT** varies with frame size. Do not allow an installed seatpost to touch the water bottle boss. This will result in damage.
- Periodically, remove the seat post and grease the bolt threads, washer (3) and wedge faces with standard bike grease (avoid applying carbon gel to these areas).

Apply carbon gel inside the seat tube and on the seat post before inserting the seatpost.

- If the removable cover (1) comes out, press it back in.
- The center wedge (a) cannot be removed. The upper (3) and lower wedge could drop into the seat tube, if the bolt (2) is un-threaded completely. Invert the seat tube and allow them to drop out if this happens. Unless you are removing the clamp assembly parts to clean them, there is no need to completely un-thread the bolt.



For more information about carbon fiber seat posts, see also "APPENDIX D. Care and Maintenance of Carbon Fiber Seat Posts" in your Cannondale Bicycle Owner's Manual.

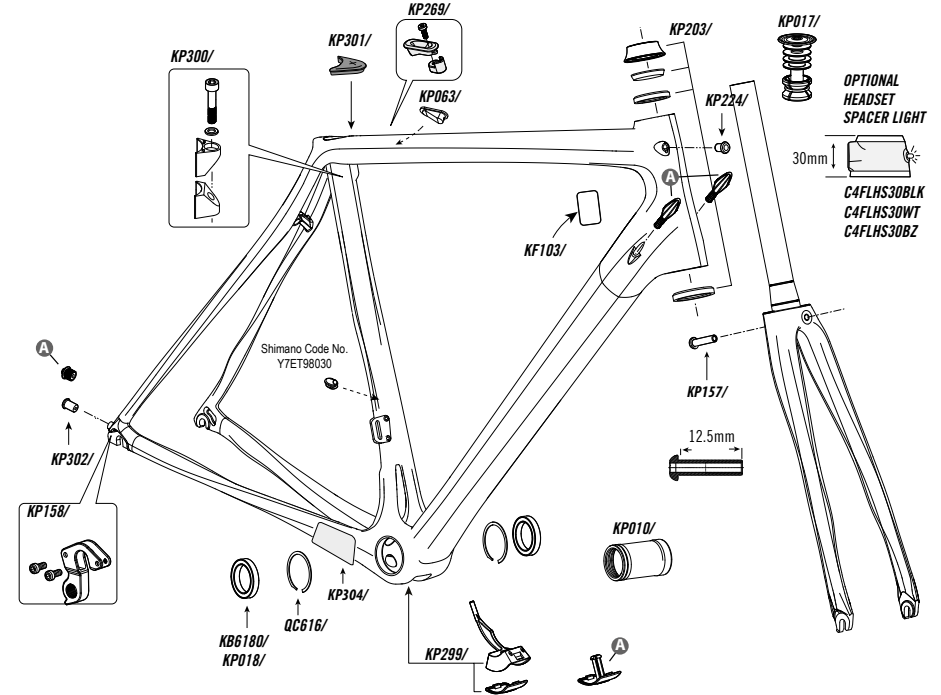


WARNING

THE SEAT POST MUST ONLY BE CUT BY A PROFESSIONAL BIKE MECHANIC. Incorrectly cutting the seat post can result in damage leading to an accident.

REPLACEMENT PARTS

The following replacement part kits are available through a Cannondale Dealer:



FORK	
KP017/	KIT COMP ASSY 23 6ID EXPANDER
KP203/	KIT HEADSET NEW SYNAPSE CRB / SUPERSIX EVO CRB
KP157/	KIT BRAKE BOLT 12 5MM

FRAME PARTS	
KP158/	KIT DER HANGER RD CAAD10
KP224/	KIT GUIDE BRAKE H-TUBE SUPERSIX EVO
A KP298/	KIT DI2 SYNAPSE PLUGS BB COVER
KP299/	KIT SYNAPSE BB CABLE GUIDE MECH.
KP302/	KIT DROPOUT CABLE STOP (20X)

FRAME ACCESSORIES	
KF103/	KIT GUARD SCUFFGUARD 8PK
KF367/	KIT CH STAY PROTECT SYNAPSE
KA048/	KIT QR SKEWER TRAINER 130MM

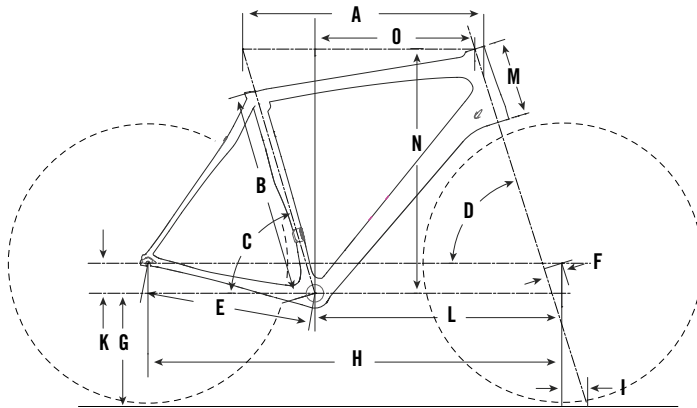
SEATPOST ASSEMBLY	
KP300/	KIT SYNAPSE SEATPOST WEDGE ASSEMBLY
KP301/	KIT SYNAPSE WEDGE COVER (10X)
KF115/	KIT GEL DYNAMIC CARBN SEATPOST

SEATPOST	
C703011110	SEATPOST C2 25.4X350 15 BQ
C703011010	SEATPOST C2 25.4X350 00 BQ
C703011111	SEATPOST C3 25.4X350 15 BQ
C703011011	SEATPOST C3 25.4X350 00 BQ

BOTTOM BRACKET	
KB6180/	KIT BEARING BB SI 2PCS
KP018/	KIT BEARING BB SI CERAMIC 2PCS
QC616/	KIT CIRCLIPS (2) BB SI
KP010/	KIT ADAPTER SIBB TO 73MM TAP
KP250/	KIT SPINDLE-SL2 ROAD 109

TOOLS	
KF368/	KIT TOOL SIBB/73 ADP INSTALL
KF366/	KIT TOOL SI BB ADAPTER EXTRACT

GEOMETRY & SPECIFICATIONS



	Sizes (cm)	WOMEN'S					MEN'S					
		44	48	51	54	56	48	51	54	58	61	
A	Horizontal Top Tube Length (cm)	49.0	50.5	52.0	53.5	55.0	51	52.5	54.2	56	58	60
B	Measured Size (cm)*	38	40.5	43	46	49	43	46	49	51	54	57.5
C	Seat Tube Angle (degrees)	75.3°	74.9°	74.5°	74.1°	73.7°	74.6°	74.3°	73.9°	73.5°	73.0°	72.5°
D	Head Tube Angle (degrees)	69.7°	70.6°	71.3°	72.0°	72.7°	70.8°	71.3°	72.0°	72.5°	73.0°	73.5°
E	Chain Stay Length (cm)	41	41	41	41	41	41	41	41	41	41.3	41.3
F	Fork Rake (Cm)	5.5	5.5	5.5	5.0	5.0	5	4.5	4.5	4.5	4.5	4.5
G	Bottom Bracket Height (cm)	26.5	26.5	26.5	26.7	26.7	26.5	26.5	26.7	26.7	27.0	27.0
H	Wheelbase (cm)	98.1	98.5	99.0	99.1	99.5	97.6	98.6	99.0	100.0	101.3	102.8
I	Trail (cm)	6.7	6.1	5.7	5.8	5.4	6.6	6.2	6.3	6.0	5.7	5.7
J	Standover at Top Tube Midpoint (cm)	70.0	72.9	75.0	77.8	79.8	72.7	75.1	78.3	80.2	82.4	85.0
K	Bottom Bracket Drop (cm)	7.5	7.5	7.5	7.3	7.3	7.5	7.5	7.3	7.3	7.0	7.0
L	Front Center Distance (cm)	57.8	58.2	58.7	58.7	59.2	57.3	58.3	58.7	59.6	60.6	62.0
M	Head Tube Length (cm)	12.0	13.5	15.0	16.5	18.0	12.5	14.5	16.5	18.5	20.7	23.0
N	Stack (cm)**	51.6	53.3	55.0	56.7	58.4	52.9	54.9	57.0	59.0	61.1	63.1
O	Reach (cm)	35.6	36.2	36.8	37.4	38.0	36.2	37.0	37.8	38.6	39.4	40.2
Intended Use		ASTM Condition 1, High-Performance Road										
Bottom Bracket		BB30, 73A mm w/Adapter										
Headset		(upper 1 1/8 Campy, Hiddenset, lower 1 1/4 Cannondale) - KP203/										
Headset Compression Assembly		Cannondale SI - KP017/										
Seatpost		25.4 mm										
Seat Binder		Cannondale - KF300/ , 5-6.0 Nm, 44-53.0 In Lbs										
Rear Derailleur Hanger		Cannondale - KP158/										
Dropout Spacing		Front 100 mm, Rear 130 mm										
Front Derailleur		Bolt On										
Maximum Weight Limit		Rider (275lbs/125kg), Luggage ¹ (10lbs/4.5kg), Total(285/129kg)										

* The measured size is from the center of the bottom bracket to the top of the top tube, measured along the seat tube axis. All sizes have a slightly sloping top tube.

** Stack is measured vertically from the center of the BB to the top of the head tube, reach is measured horizontally from the center of the BB to the top of the head tube.

1. Seat Bag /Handlebar Bag Only



WARNING! READ THIS SUPPLEMENT AND YOUR CANNONDALE BICYCLE OWNER'S MANUAL. BOTH CONTAIN IMPORTANT SAFETY INFORMATION. KEEP BOTH FOR FUTURE REFERENCE.

CANNONDALE USA

Cycling Sports Group, Inc.
172 Friendship Road,
Bedford, Pennsylvania, 15522-6600, USA
(Voice): 1-800-BIKE-USA
(Fax): 814-623-6173
custserv@cyclingsportsgroup.com

CANNONDALE EUROPE

Cycling Sports Group Europe, B.V.
mail: Postbus 5100
visits: Hanzepoort 27
7570 GC, Oldenzaal, Netherlands
(Voice): +41 61.4879380
(Fax): 31-5415-14240
servicedeskeurope@cyclingsportsgroup.com

CANNONDALE UK

Cycling Sports Group
Vantage Way, The Fulcrum,
Poole, Dorset, BH12 4NU
(Voice): +44 (0)1202 732288
(Fax): +44 (0)1202 723366
sales@cyclingsportsgroup.co.uk

CANNONDALE AUSTRALIA

Cycling Sports Group
Unit 8, 31-41 Bridge Road
Stanmore NSW 2048
Phone: +61 (0)2 8595 4444
Fax: +61 (0) 8595 4499
askus@cyclingsportsgroup.com.au

CANNONDALE JAPAN

Namba Sumiso Building 9F,
4-19, Minami Horie 1-chome,
Nishi-ku, Osaka 550-0015, Japan
(Voice): 06-6110-9390
(Fax): 06-6110-9361
cjcustserv@cannondale.com

WWW.CANNONDALE.COM

© 2013 Cycling Sports Group
129387 (04/13)