

2019

Force / Sensor

Owner's Manual Supplement



 **WARNING**

READ THIS SUPPLEMENT AND YOUR GT BICYCLE OWNER'S MANUAL. Both contain important safety information. Keep both for future reference.

Safety Messages

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




WARNING

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

NOTICE

Indicates special precautions that must be taken to avoid damage.

The following symbols are used in this manual:

Symbol	Name	Description
	NGLI-2 synthetic grease	Apply NGLI-2 synthetic grease.
	Carbon gel	Apply carbon gel (friction paste) KF115/
	Medium-strength removable thread lock	Apply Loctite® 242 (blue) or equivalent.

GT Supplements

This manual is a “supplement” to your [GT 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 GT 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.

You can download Adobe Acrobat PDF versions of any manual/supplement from our website: <http://www.gtbikes.com>.

Contacting GT

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1-800-726-BIKE (2453)

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International Distributors

Consult the following website to identify the appropriate GT Dealer for your region.

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Your GT 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 GT Dealer.

NOTICE

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

SAFETY INFORMATION

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 GT Dealer for help.

We urge you to read PART II, Section D. “Inspect For Safety” in your [GT Bicycle Owner’s Manual](#) BEFORE you ride.

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

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 [GT 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.

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

Servicing

WARNING

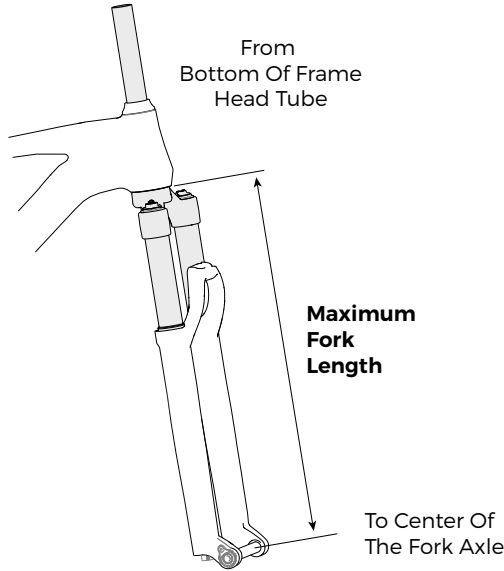
This supplement may include procedures beyond the scope of general mechanical aptitude.

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 GT Dealer.

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 GT bicycles, see www.gtbikes.com.

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

Tire Size x Maximum Width

WARNING

Observe the Tire Size x Maximum Width for your bike found in the “Specifications” page of this manual.

Mounting the wrong size tires can result in the tires hitting the fork or frame when riding. If this happens, you can lose control of your bike and you can be thrown off, a moving tire can be stopped because it touches the fork or frame.

Do not mount oversized tires, ones that rub or hit the fork or frame, ones that result in too little clearance, or ones that can hit the fork or frame when the suspension is fully compressed or when riding.

Take care that the tires you select are compatible with your bike's fork or frame design. Also, be sure to follow the manufacturer's recommendations of your front fork and rear shocks.

When you are considering tires for your bike consider...

The actual measured size of a tire may be different than its sidewall marking. Each time you mount a new tire, take the time to inspect the actual clearance between the rotating tire and all parts of the frame. The U.S. Consumer Product Safety Commission (CPSC) requires at least 1/16" (1.6 mm) tire clearance from any part of the bike. Allowing for lateral rim flex and a wheel or rim that is out-of-true will likely mean choosing a rear tire that provides even more clearance than the CPSC recommends.

Ask your dealer for the right tires for your bike and its particular components!

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

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.

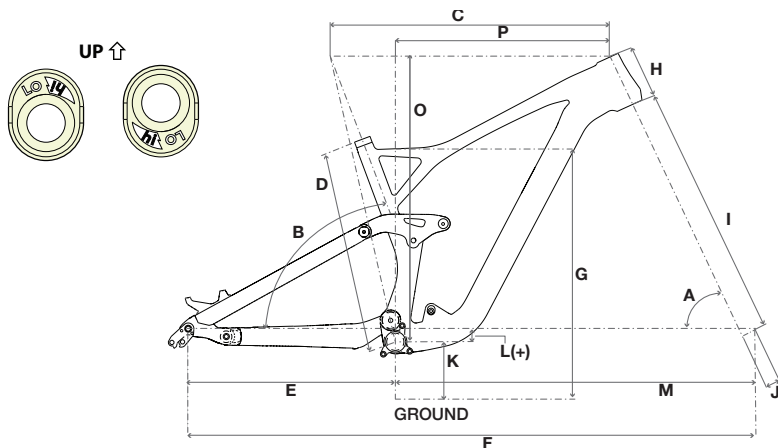
You must also be aware that bicycle seat posts are permanently marked by the manufacturer with a "minimum insert" line on the seat post itself. You must not rely on this marking as an indication of the proper minimum seat post insertion depth.

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

TECHNICAL INFORMATION

Specifications

Item	Specification	
Model	Force	Sensor
Wheel Size	27.5 in	29 in
Rear Travel	150 mm	130 mm
Head Tube	UPR: 1-1/8 in, LWR: 1-1/2 in	
Headset	Integrated, 1-1/8 in - 1-1/2 in	
Bottom Bracket: Type/ Width	BSA / 73 mm	
Front Derailleur	N/A	
Seat Post: Dia./Binder	31.6 mm/ 34.9 mm	
▲ Min. Seat Post Insert	100 mm	
▲ Tire Size x Max. Width (measured)	27.5 in x 2.5 in	29 in x 2.35 in
▲ Max. Fork Length	550 mm	540 mm
Rear Shock: Eye-To-Eye / Stroke / Bushing Width	185 mm x 55 mm Metric Trunnion	185 mm x 50 mm Metric Trunnion
Sag (measured at shock)	12.5 mm	12 mm
Chain Guide	ISCG 05	
Rear Brake: Mount Type / Min/Max Rotor Dia.	Post Mount / 180 mm / 203 mm	
Rear Axle: Type/Length	Maxle TA / 148 x 12mm, 180 mm Length	
▲ Intended Use	ASTM CONDITION 4, All-Mountain	
▲ Max. Weight Limit Total (rider+all equipment):	305 lbs / 138 kg	

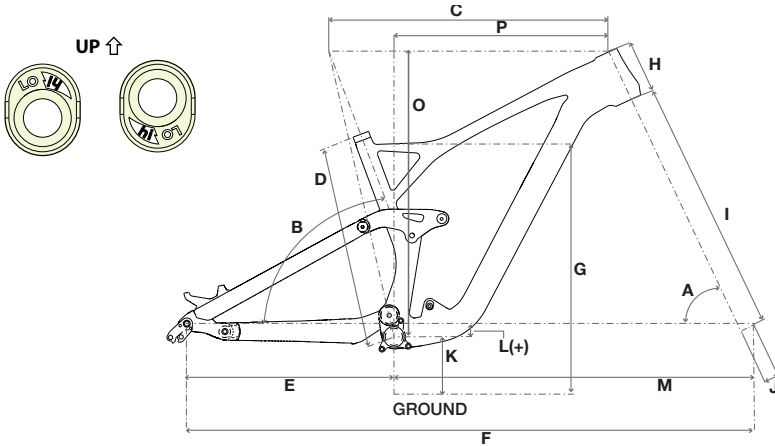


Dimensions = millimeter

Geometry - Force 27.5

Frame Size		S		M		L		XL	
Flip Chip Orientation		hi	LO	hi	LO	hi	LO	hi	LO
D	Seat Tube Length	400	400	430	430	480	480	520	520
C	Top Tube Horizontal	566.46	568	593.27	595	620.09	621	646.9	648
A	Head Tube Angle	65.5°	65°	65.5°	65°	65.5°	65°	65.5°	65°
B	Seat Tube Angle	76°	75.5°	76°	75.5°	76°	75.5°	76°	75.5°
G	Standover	740.4	740.4	750.3	750.3	760.2	760.2	795.1	795.1
H	Head Tube Length	102	102	110	110	118	118	126	126
F	Wheelbase	116.28	164	1190.60	1192	1218.91	1221	1247.23	1249
M	Front Center	730	730	758	758	787	787	815	815
E	Chainstay Length	432.4	435	434.4	435	434.4	435	434.5	435
L	Bottom Bracket Drop	13.7	20	13.7	20	13.7	20	13.7	20
K	Bottom Bracket Height	345.3	339	345.3	339	345.3	339	345.3	339
J	Fork Rake	44	44	44	44	44	44	44	44
L	Stack	587.41	591	594.68	599	601.97	606	609.25	613
M	Reach	420	415	445	440	470	465	495	490

All Specifications subject to change without notice.



Dimensions = millimeter

Geometry - Sensor 29

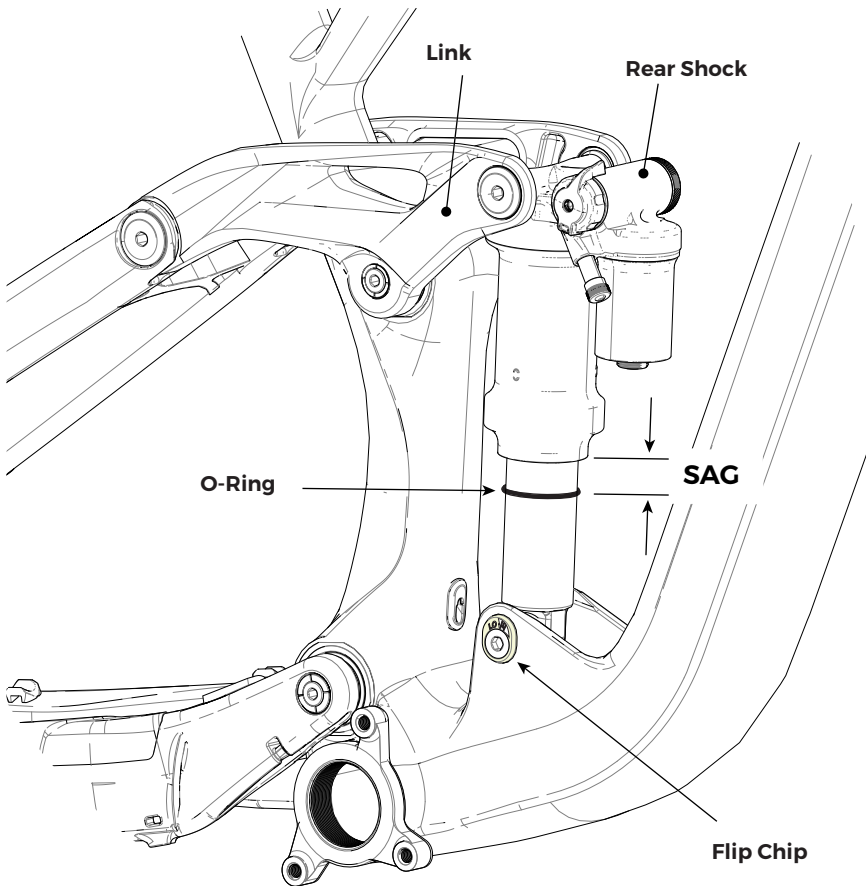
Frame Size		S		M		L		XL	
Flip Chip Orientation		hi	LO	hi	LO	hi	LO	hi	LO
D	Seat Tube Length	392	392	400	400	430	430	480	480
C	Top Tube Horizontal	565	567	592	593	619	620	647	647
A	Head Tube Angle	65.98°	65.5°	65.97°	65.5°	65.96°	65.5°	65.95°	65.5°
B	Seat Tube Angle	76.48°	76°	76.47°	76°	76.46°	76°	76.45°	76°
G	Standover	750	740	760	760	770	770	805	805
H	Head Tube Length	102	102	110	110	118	118	126	126
F	Wheelbase	1164.76	1166	1193.07	1194	1221.39	1222	1249.71	1251
M	Front Center	731.94	732	760.24	760	788.54	789	816.84	817
E	Chainstay Length	433.62	435	433.62	435	433.62	435	433.62	435
L	Bottom Bracket Drop	20.86	27	20.78	27	20.7	27	20.62	27
K	Bottom Bracket Height	356.56	349	356.72	349	356.8	349	356.9	349
J	Fork Rake	51	51	51	51	51	51	51	51
L	Stack	583.86	587	591.97	595	598.54	602	605.36	609
M	Reach	424.91	420	449.86	445	474.8	470	499.75	495

All Specifications subject to change without notice.

Rear Shock

Consult the rear shock's owner's manual in order to set the recommended SAG. The orientation of the Flip Chip does not influence SAG.

25%	Force	Sensor
SAG	12.5 mm	12 mm

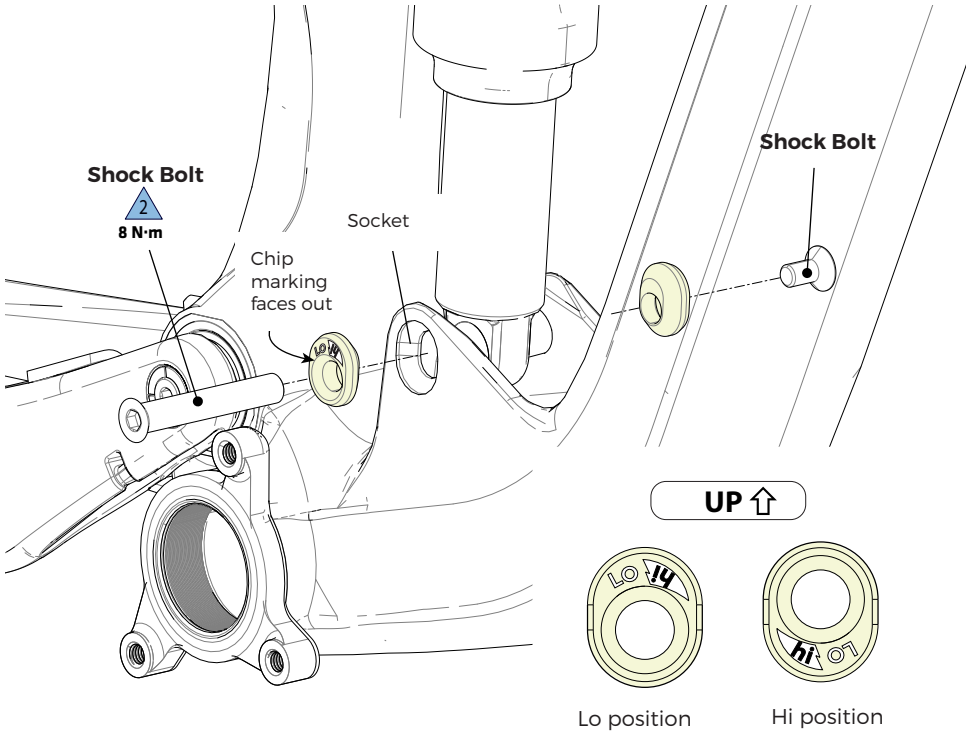


NOTICE

Mount shocks in orientation shown: reservoir/controls forward and facing up as shown. Consult your GT Dealer.

Flip Chip Orientation

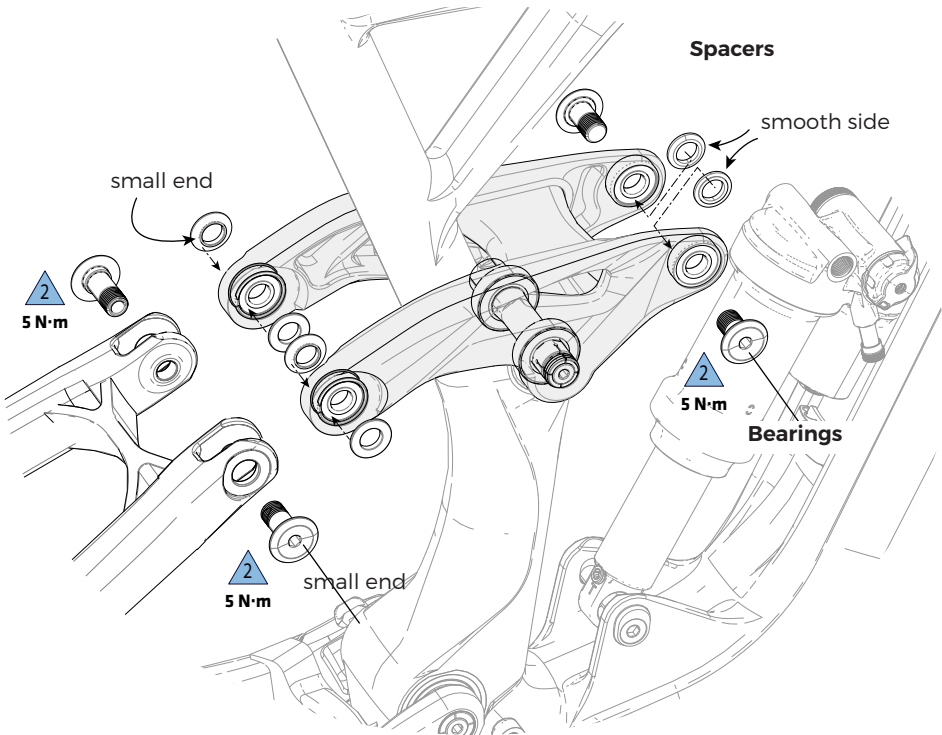
The orientation of the Flip Chip will change the bottom bracket height, head tube angle, seat tube angle. Resulting changes to the values can be found in the "Geometry" section.



Setting

1. Place the bike in a workstand.
2. Support the rear wheel to prevent swingarm dropping when shock is disconnected.
3. Remove the lower shock mounting bolts.
4. Change the Flip Chip orientation in the frame sockets. See inset.
5. Install and tighten the shock bolts to the specified torque.

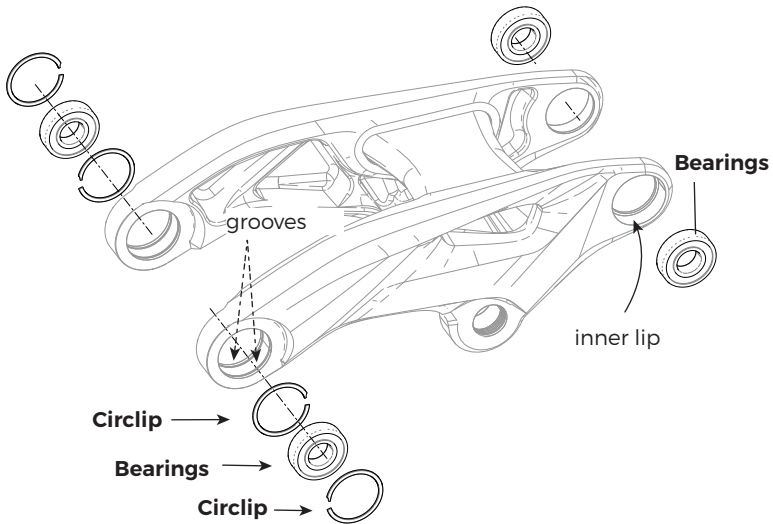
Link Assembly



Connecting the Link

To prevent mis-alignment and/or potential damage, follow this assembly order routine:

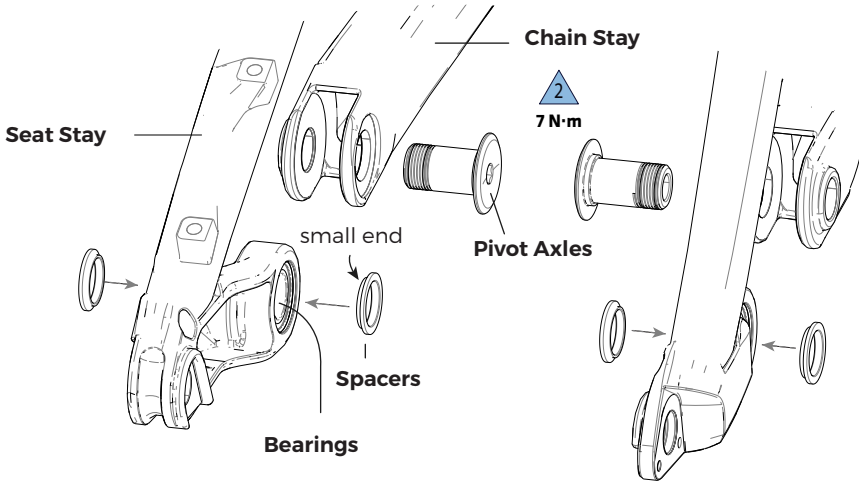
1. Connect link to frame with the LockR pivot.
2. Connect the rear shock, make sure the smooth side of the spacers face the shock. Only finger tighten the bolts.
3. Connect the seat stay, make sure the small end of the spacers face the bearings. Only finger tighten the bolts.
4. In a cross-pattern, tighten all bolts to the specified torque in increments.



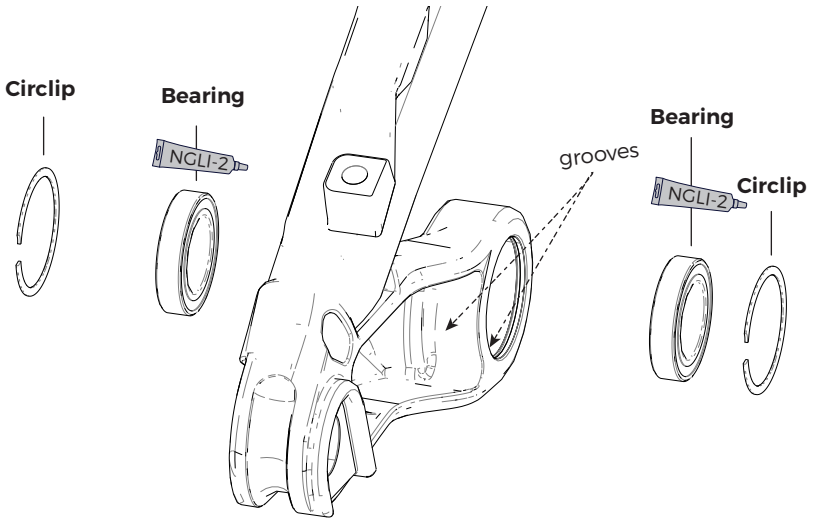
Inspection

- The condition of the bearings, should be inspected periodically. These are normal wear parts so plan to have them replaced as they wear-out.
- To inspect the bearings, disconnect the link to expose the bearings. Rotate the inner race of each bearing with your finger. The rotation should feel smooth without binding. Each bearing should be fixed securely in the opening. Check to make sure each circlip is seated in the grooves. The front bearings should be seated against the inner lip.
- Inspection frequency should be based upon how and where you ride. Evidence of damage would be excessive play, visible wear, or corrosion of bearings.
- If you find any damage to the parts, discontinue riding until all the parts (bearings, pivot axles, spacers) can be replaced. This will help prevent damage elsewhere.
- Do not re-use removed bearings; if removed replace all bearings with new ones.

Dropouts



- When connecting the seat stays to the chain stay, make sure the small end of spacers face the bearings. The flat side of the spacers should face out, as shown.
- When tightening the axles, insert the 5 mm hex key completely into the axle to prevent damage when turning the bolt.
- Always clean and re-apply the specified thread lock to the bolt threads.
- Tighten with a torque wrench to the specified torque.



- The condition of the bearings, pivot axles, and spacers should be inspected periodically. These are normal wear parts so plan to have them replaced as they wear-out.
- To inspect the bearings, remove the pivot to expose the bearings. There are two bearings in each dropout. Rotate each bearing with your finger. The rotation should feel smooth without binding. Each bearing should be fixed securely in the opening. Check to make sure each circlip is seated in the groove.s
- Inspection frequency should be based upon how and where you ride. Evidence of damage would be excessive play, visible wear, or corrosion of bearings.
- If you find any damage to the parts, discontinue riding until all the parts (bearings, pivot axles, spacers) can be replaced. This will help prevent damage elsewhere.
- Do not re-use removed bearings; if removed replace all bearings with new ones.



LockR

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 from the frame:

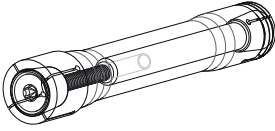
1. Loosen the screw 4-6 turns using a T25 Torx key.
2. Tap head of screw with a rubber mallet to un-seat the wedge bolt located on the opposite side..
3. Remove the screw and wedge bolt from the still installed axle.
4. If it did not come out with the screw, insert a 5 mm hex key and turn to free and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

To install the LockR from the frame:

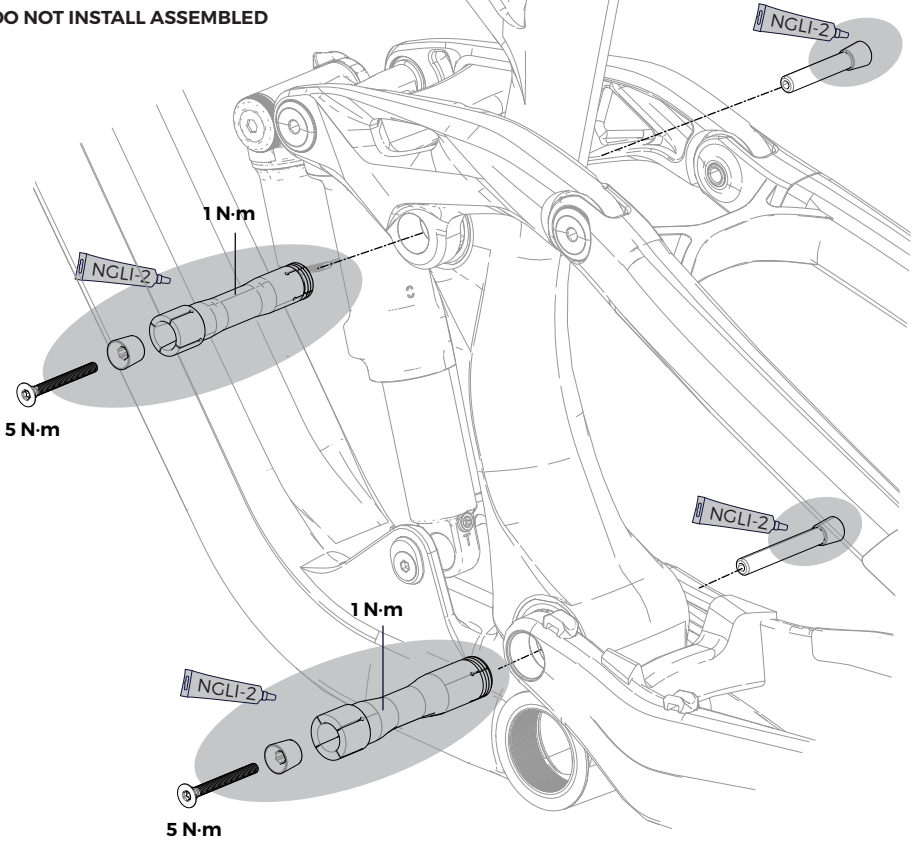
1. Disassemble and clean all parts of the LockR axle. Do not install it assembled. Inspect the parts for damage (burrs, scratches, deformity, wear). Replace the entire LockR assembly if any damage is found.
2. Apply a light coating of a high-quality bicycle bearing grease to all parts.
3. Align the linkage 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 Nm using a 6 mm hex key fitted torque wrench from the non-drive side.

NOTICE

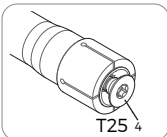
Use a calibrated torque wrench. Exceeding 1 N-m will result in permanent damage to the LockR pivot system.



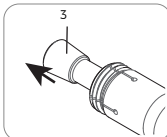
DO NOT INSTALL ASSEMBLED



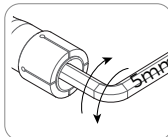
Unthread &
tap mallet



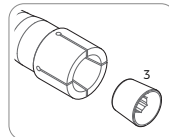
dislodged &
remove



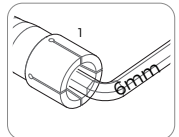
Insert 5mm &
turn to free



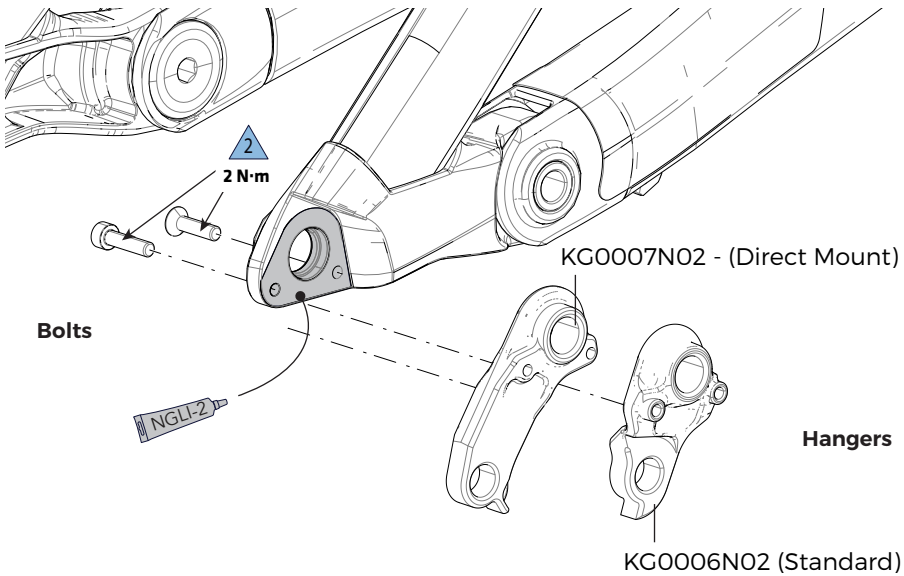
Remove



Unthread
Remove

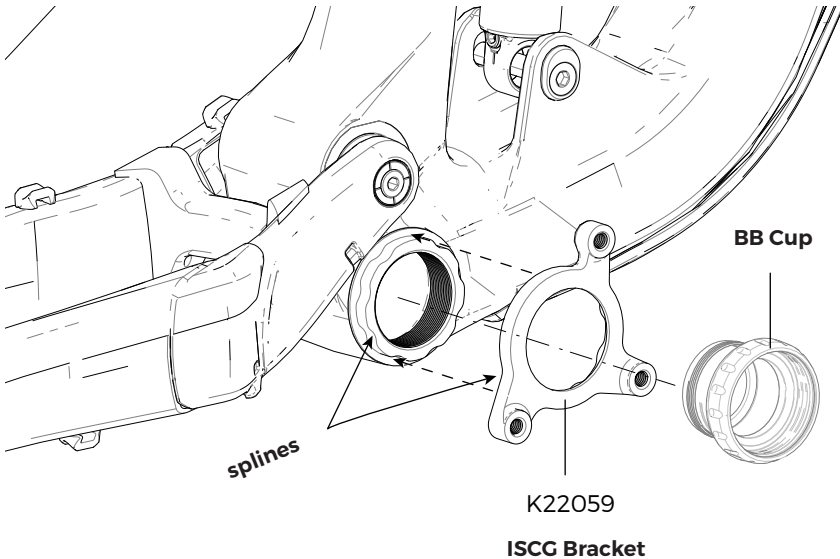


Hanger Replacement



- Before installing a new hanger, be sure to clean any dirt or debris on the dropout with a nylon brush (old toothbrush).
- Inspect the area for any damage.
- Lightly grease the dropout surface.
- Always clean and re-apply the specified thread lock to the bolt threads.
- Tighten with a torque wrench to the specified torque.

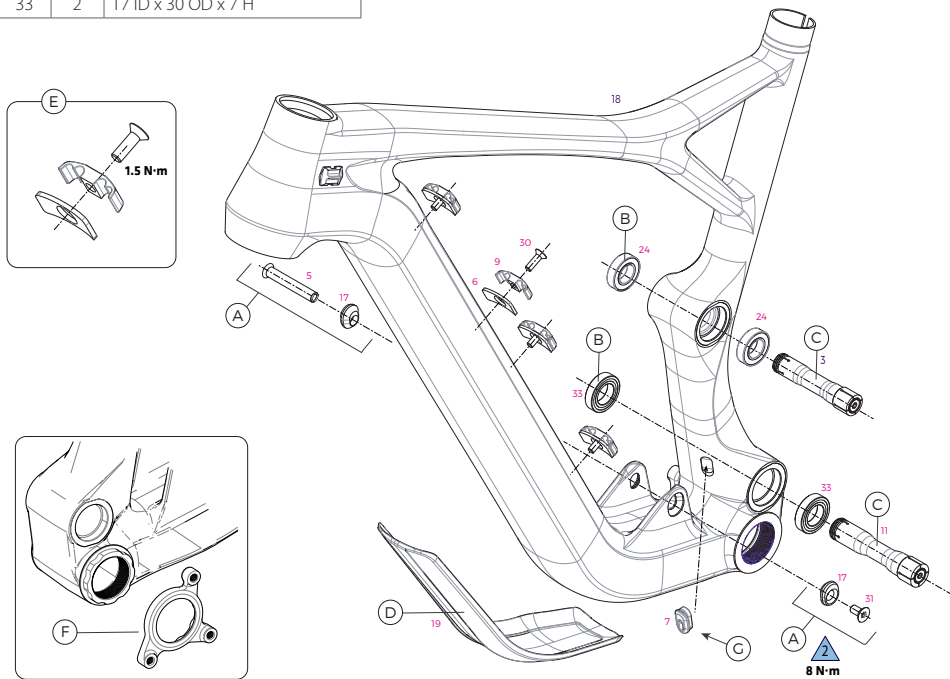
ISCG Tab Instructions



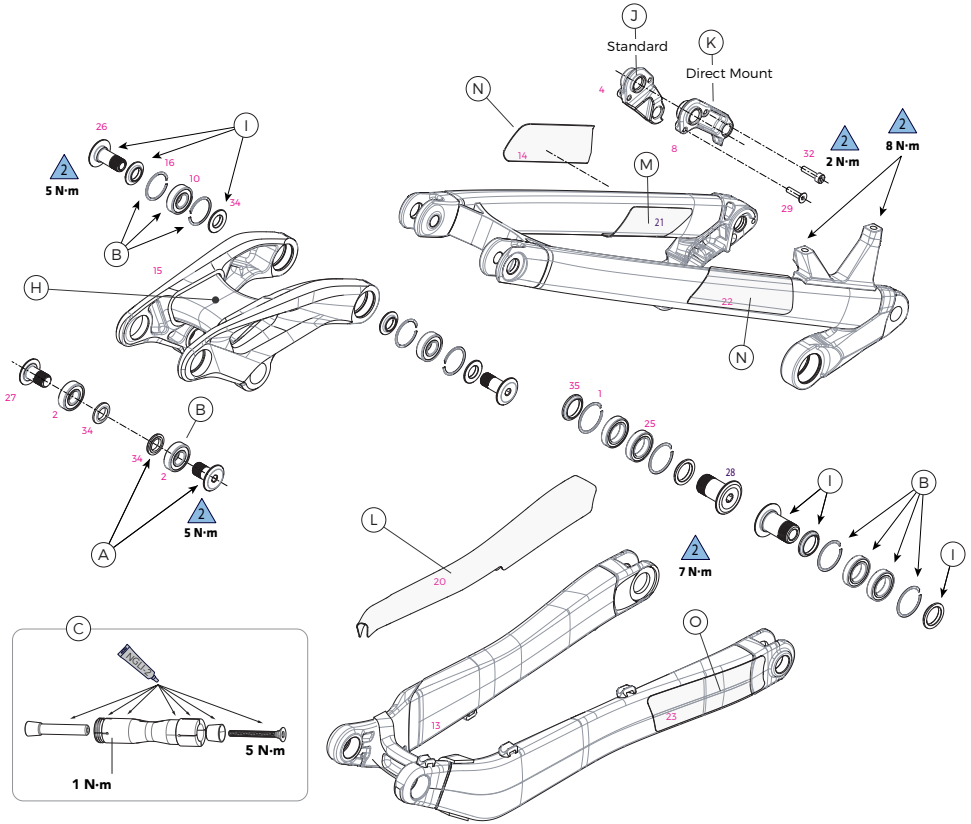
- On alloy frame models, the ISCG mounting tabs are fixed permanently to the frame and cannot be removed
- On carbon frames, the ISCG mount fits onto a spline. Correct positioning is certain due to the splines alignment. The tab is secured by the threaded cup of the bottom bracket bearing cup.
- You should periodically check both the bottom bracket parts to make sure they are tightened according to the specification.
- When replacing or servicing the removable ISCG guide, be sure to clean the frame splines and the guide parts. Lightly grease before reinstallation.

REPLACEMENT PARTS

No.	QTY	Bearing Dimension (mm)
10	4	10 ID x 22 OD x 6 H
24	2	15 ID x 24 OD x 5 H
25	4	15 ID x 28 OD x 7 H
33	2	17 ID x 30 OD x 7 H



ID	Part Number	Description	FORCE	SENSOR
A	K36038	Force/Sensor Shock Bolts and Flip Chips	✓	✓
B	K36008	Force/Sensor Pivot Link CS Bearings	✓	✓
C	K36009	Expanding Axle Hardware 79mm and 87mm	✓	✓
D	K34009	Force/Sensor DT Protector	✓	✓
E	K32008	GT Mountain Cable Guide x4	✓	✓
F	K22059	GT ISCG Mount 3 Bolt	✓	✓
G	CK3187U000S	Grommets	✓	✓

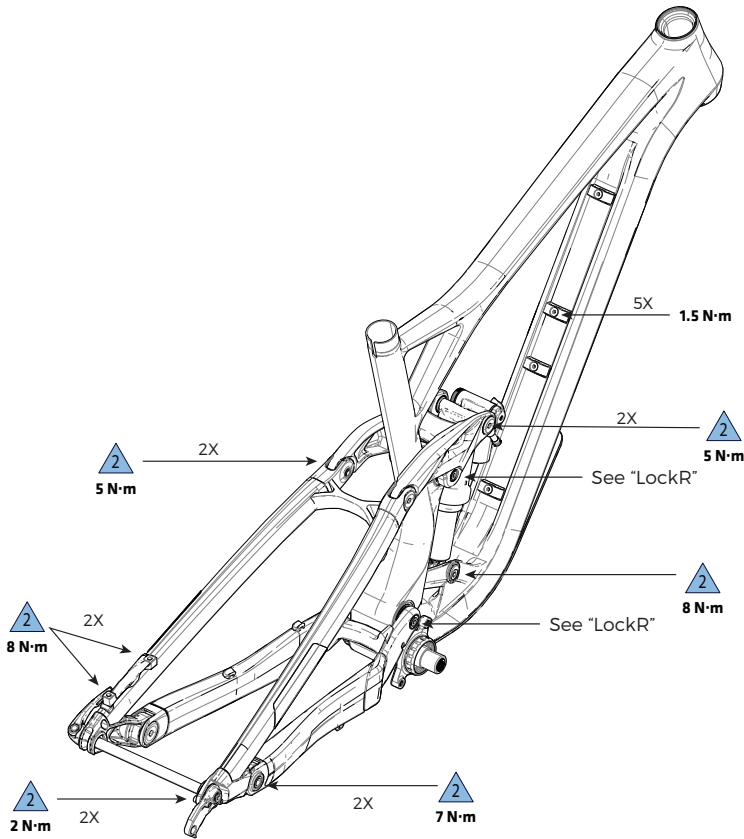


ID	Part Number	Description	FORCE	SENSOR
H	K36069	Force Suspension Link 27.5 BLK	✓	
	K36059	Sensor Suspension Link 29/27.5+ BLK		✓
I	K36028	Force/Sensor Link CS Hardware	✓	✓
J	KG0006N02	Derailleur Hanger TA ST SS 056	✓	✓
K	KG0007N02	Derailleur Hanger TA DM SS 057	✓	✓
L	K34019	Force/Sensor CS Protector	✓	✓
M	K34029	Force/Sensor SS Protector	✓	✓
N	K34039	Force/Sensor SS Heel Rub Guard	✓	✓
O	K34049	Force/Sensor CS Heel Rub Guard	✓	✓
--	K34279	Force/Sensor Shock and ST Rub Protectors	✓	✓
--	K34269	Force/Sensor Link CS Pivot Covers	✓	✓

Tightening Torques

Correct tightening torque for the fasteners (bolts, screws, nuts) on your bicycle is very important to your safety, 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 tighten fasteners yourself always use a calibrated torque wrench!



MAINTENANCE

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

Item	Frequency
<p>Cable Routing - Make sure control cables are in place, undamaged and attached securely.</p> <p>Frame Protection - Check the various frame protectors (downtube, headtube, chainstay, swingarm on your bike. Make sure they are in place and in good condition.</p>	<p>Before first ride</p>
<p>Damage Inspection - Clean and visually inspect entire bike frame/swing arm/linkage assembly for cracks or damage.</p>	<p>Before and after each ride</p>
<p>Check Tightening Torques - In addition to other component specific tightening torques for your bike. tighten according to the "Tightening Torques" information listed in this supplement.</p>	<p>Every few rides</p>
<p>Disassemble, clean, inspect, re-grease, replace worn or damaged parts in the following assemblies:</p> <ul style="list-style-type: none"> · SHOCK LINK · PIVOT AXLES · FRAME PIVOT BEARINGS 	<p>In wet, muddy, sandy conditions every 25 hrs.</p> <p>In dry, conditions every 50 hrs.</p>
<p>Fork and Shock- Consult the manufacturer's owner's manual for maintenance requirements.</p>	

 **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 [GT Bicycle Owners Manual](#).

WWW.GTBICYCLES.COM

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Force /Sensor Owner's Manual Supplement
134937 Rev. 1

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