

## RAIL 29

TECH MANUAL

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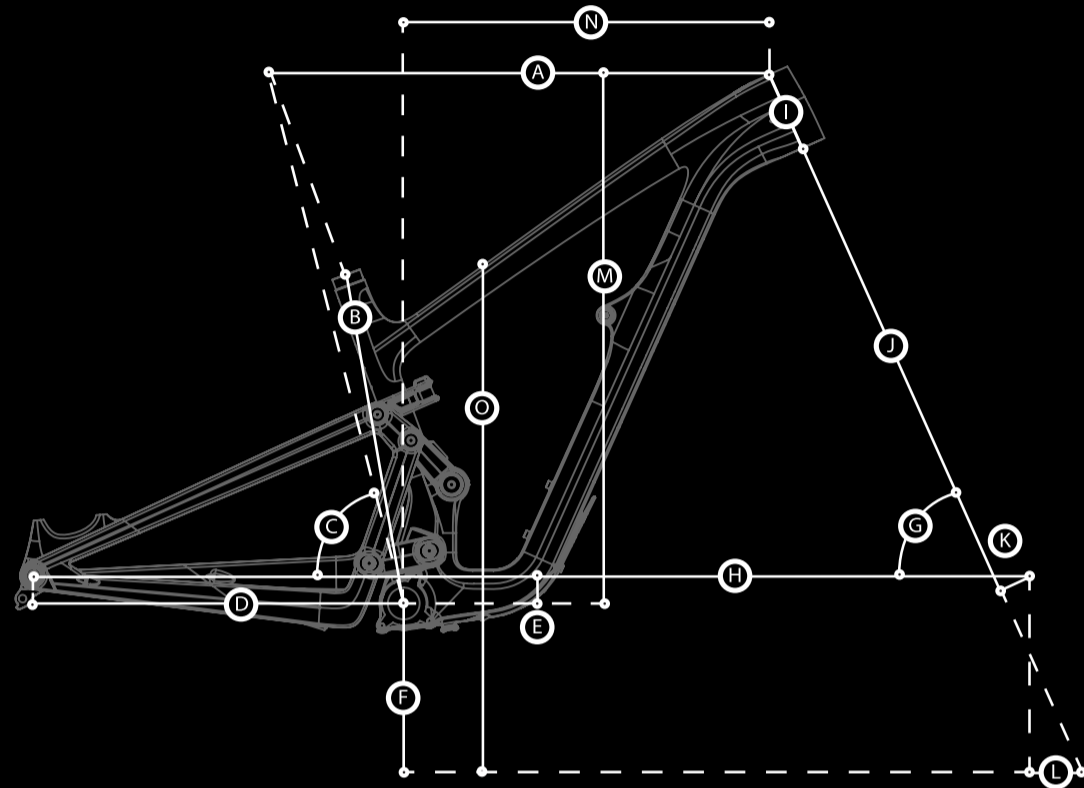
# PREFACE

This manual is to serve as guidance for service and specification of Revel Rail 29 (model year 2022+). This document includes component compatibility and instructions on linkage service and frame features. If there are any questions about specific component compatibility please reach out to Revel's customer support line at [\(970\)-456-7336](tel:(970)456-7336) or email at [Contact@revelbikes.com](mailto:Contact@revelbikes.com).

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# GEO & USER SPECIFICATION



FRAME GEO	Small - 5'1" - 5'7"	Medium - 5'6" - 5'10"	Large - 5'9" - 6'2"	X-Large 6'1" - 6'7"
(A) EFFECTIVE TOP TUBE LENGTH	585mm	606mm	630mm	658mm
(B) SEAT TUBE LENGTH	393.5mm	415.5mm	453.5mm	482.5mm
(C) SEAT TUBE ANGLE (EFFECTIVE/ACTUAL)	76°/69°	76°/69°	76°/70°	76°/70°
(D) CHAIN STAY LENGTH	436mm	436mm	436mm	436mm
(E) BOTTOM BRACKET DROP	31mm	31mm	31mm	31mm
(F) BOTTOM BRACKET HEIGHT	348mm	348mm	348mm	348mm
(G) HEAD TUBE ANGLE	65°	65°	65°	65°
(H) WHEEL BASE	1181mm	1202mm	1228mm	1257mm
(I) HEAD TUBE LENGTH	95mm	98mm	108mm	118mm
(J) AXLE TO CROWN	576mm	576mm	576mm	576mm
(K) FORK OFFSET	44mm	44mm	44mm	44mm
(L) TRAIL	123mm	123mm	123mm	123mm
(M) STACK	625mm	628mm	637mm	646mm
(N) REACH	427mm	447mm	469mm	494mm
(O) STANDOVER	716mm	719mm	728mm	756mm

## User Specification

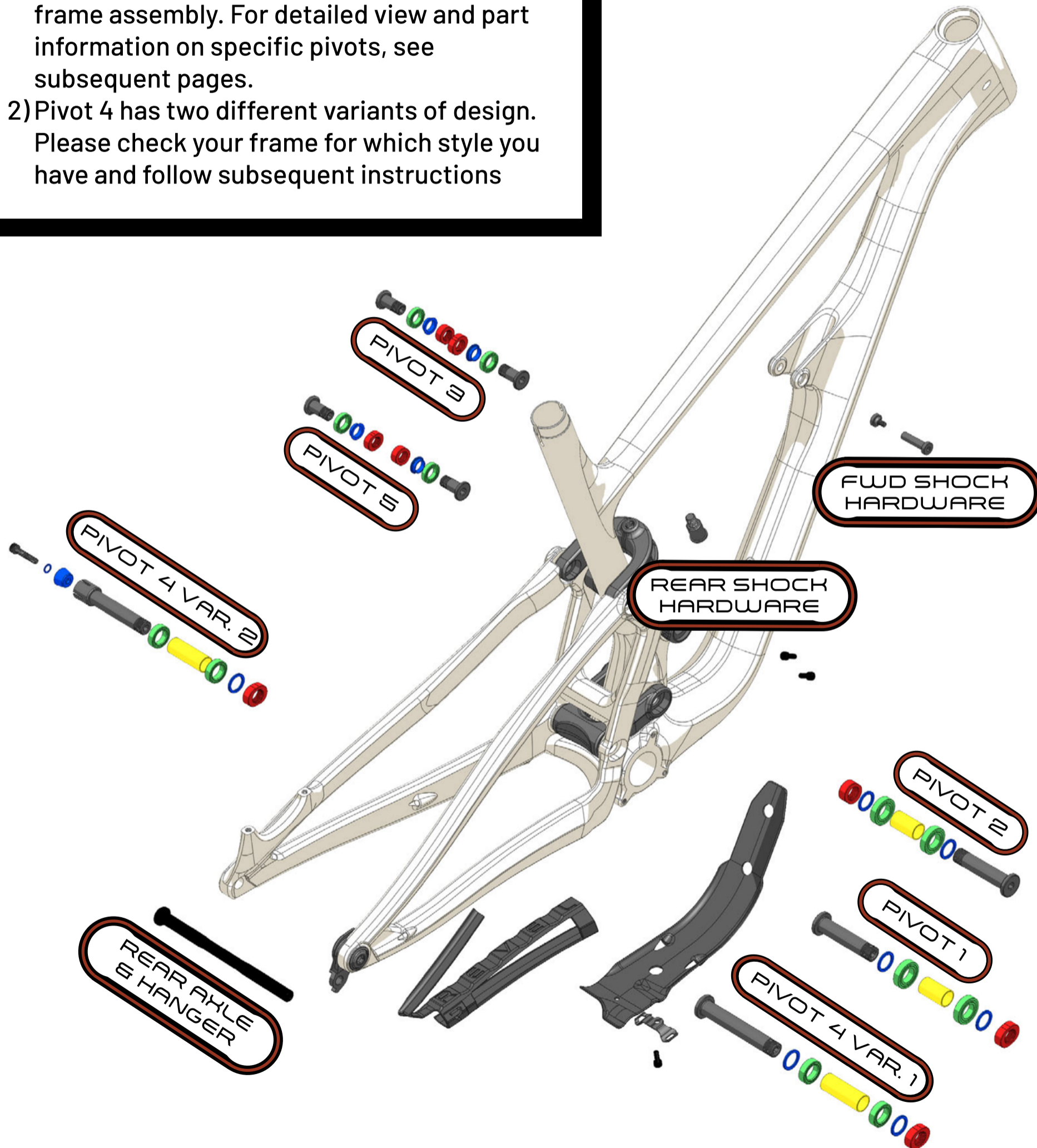
- 1) Headset - IS 42/52
- 2) Pivot Hardware - Torque pivots to value specified on bolt head. See assembly drawing for additional assembly instructions, and hardware and bearing specification.
- 3) Threaded BB - BSA, 73mm Shell Width.
- 4) Crankset - 52mm minimum Chainline. 36T Max chainring size. See BB manufacturers' frame fit specification for appropriate spacer configuration.
- 5) Rear Dropout - Boost Spacing (148mm X 12mm), 177 X M12 X P1.0 Axle, Sram Universal Derailleur Hanger (UDH), Sram Transmission compatible
- 6) Rear Disc Brake - Post mount, 180mm/220mm max rotor size, torque bolts to manufacturer specification.

- 7) Shock - 230mm X 60mm Shock size. No DU Bushing on rear of shock. 22.2mm X 8.0mm Spacer on front of shock.
- 8) Seat Post - 31.6mm Dia post. 34.9mm Dia. Clamp size. Internal routing guides provided for dropper post.
- 9) Tire Limit Size - 29" X 2.4" max tire size. All tires must be checked for appropriate clearance prior to use.
- 10) Bottle Cage Bosses - 2 Sets of bosses. 1 set located along top of down tube. 1 set located along bottom of down tube.
- 11) Fork - 160mm min travel/170mm max travel.

# EXPLODED VIEW

## NOTES

- 1) Table shows total quantity of parts used on frame assembly. For detailed view and part information on specific pivots, see subsequent pages.
- 2) Pivot 4 has two different variants of design. Please check your frame for which style you have and follow subsequent instructions



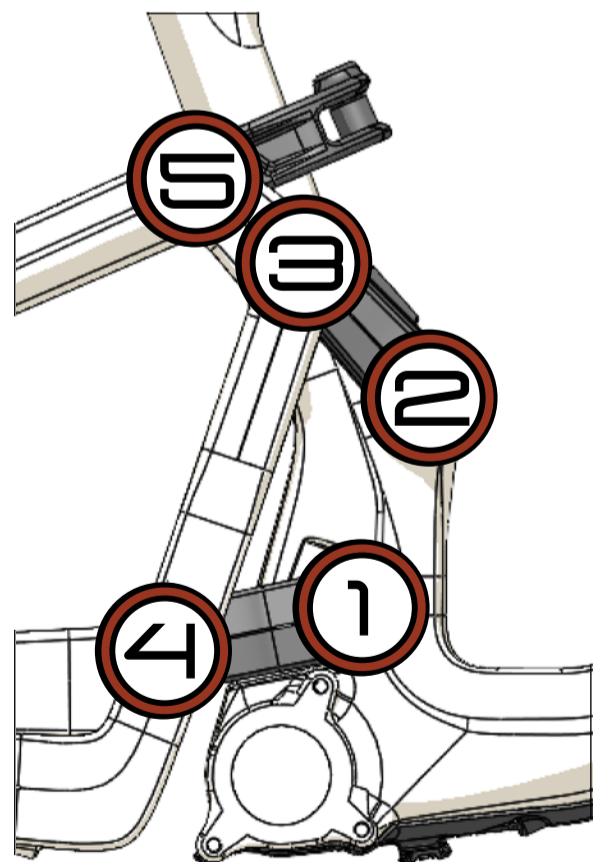
	PART NUMBER	QTY.	ASSEMBLY	TORQUE
1	320-10021-0011-XX REVEL 29150 FRONT TRIANGLE LARGE	1		
2	320-10021-0013-XX REVEL 29150 REAR TRIANGLE	1		
3	320-10021-0014-XX REVEL 29150 LOWER LINK	1		
4	320-10021-0015-XX REVEL 29150 UPPER LINK	1		
5	320-10021-0016-XX REVEL 29150 SHOCK LINK	1		
6	310-BEA22-0501 BOLU BEARING 6902 V2RD 15X28X7	4	GREASE	
7	310-10021-0058 HARDWARE PIVOT SPACER 21X15.2X2	6		
8	310-10021-0060 HARDWARE AXLE NUT M15X1.0X8.6	3		
9	310-10021-0061 HARDWARE AXLE SPACER 15.20X17.20X47.25	1	GREASE	
10	310-10021-0062 HARDWARE AXLE SPACER 15.20X17.20X29.85	2		
11	310-10021-0063 HARDWARE PIVOT AXLE M15X1.0X71	2	GREASE TO SHAFT SUB LOCTITE 243 FOR PATCH LOCK ON THREADS	15 Nm
12	310-10021-0065 HARDWARE PIVOT AXLE M15X1.0X97	1		
13	310-BEA18-0106 BOLU BEARING 6801V2RD 12X21X5	4	GREASE	
14	310-10021-0088 HARDWARE PIVOT SPACER 17.5X12.1X4.8	4		
15	310-10021-0066 HARDWARE PIVOT AXLE M12X1.0X28	4	GREASE TO SHAFT SUB LOCTITE 243 FOR PATCH LOCK ON THREADS	15 Nm
16	310-10021-0084 HARDWARE AXLE NUT M12X1.0X7.5	4		
17	310-10021-0056 AXLE 12X1.0X177 REVEL UDH	1	GREASE	13 Nm
18	SRAM UDH HANGER	1		25 Nm
19	310-10021-0051 HARDWARE SHOCK PIVOT AXLE M5X0.8X33.5	1		
20	310-10021-0077 HARDWARE SHOCK EYELET BOLT M10X1.25	1	TI PREP	15 Nm
21	320-10021-0017 REVEL 29150 FRONT TRIANGLE DOWNTUBE PROTECTOR	1	3M VHB TAPE	
22	310-10021-0068 HARDWARE BB CABLE CLAMP	1		2 Nm
23	310-BEA22-0502 BOLU BEARING 3802V 2RD 15X24X7	2	GREASE	
24	310-10021-0050 HARDWARE SHOCK PIVOT BOLT M5X0.8X14	1		
25	320-10021-0018 REVEL 29150 CHAINSTAY PROTECTOR	1	3M VHB TAPE	
26	HARDWARE SOCKET HEAD CAP SCREW M5X0.8X14	5		2 Nm
27	310-10021-0091 HARDWARE PIVOT AXLE COLLET M15X1.0X97	1	GREASE TO SHAFT; SUB LOCTITE 243 FOR PATCH LOCK ON THREADS	15 Nm
28	HARDWARE SOCKET HEAD CAP SCREW M6X1.0X30MM	1	LOCTITE 243	12 Nm
29	310-10021-0092 HARDWARE WASHER 10X6.4X1.0	1		
30	310-10021-0089 HARDWARE COLLET WEDGE 20 DEGREE	1	GREASE TO OUTER SURFACE	

# LINKAGE SERVICE

Things to note before/after service:

- 1) Ensure all bolts are torqued to spec listed in this manual and on bolt head.
- 2) All bolts are right hand threaded but have hex profiles on either end. If turning the bolt from the threaded side, turning counter clockwise will tighten the bolt
- 3) Bolts come with Nylock patch installed. This serves the function of thread locker and can be reused for multiple installations. Verify condition of patch before assembly. If patch looks worn or damaged add Blue Loctite 243.
- 4) It is easier to tighten linkage assembly to torque once it has been fully assembled. Similarly it is easier to break bolts free when linkage is fully assembled.
- 5) All images shown in exploded views of pivots correspond to exploded view on Page 4 of Tech Manual.

See diagram below for pivot location numbers:



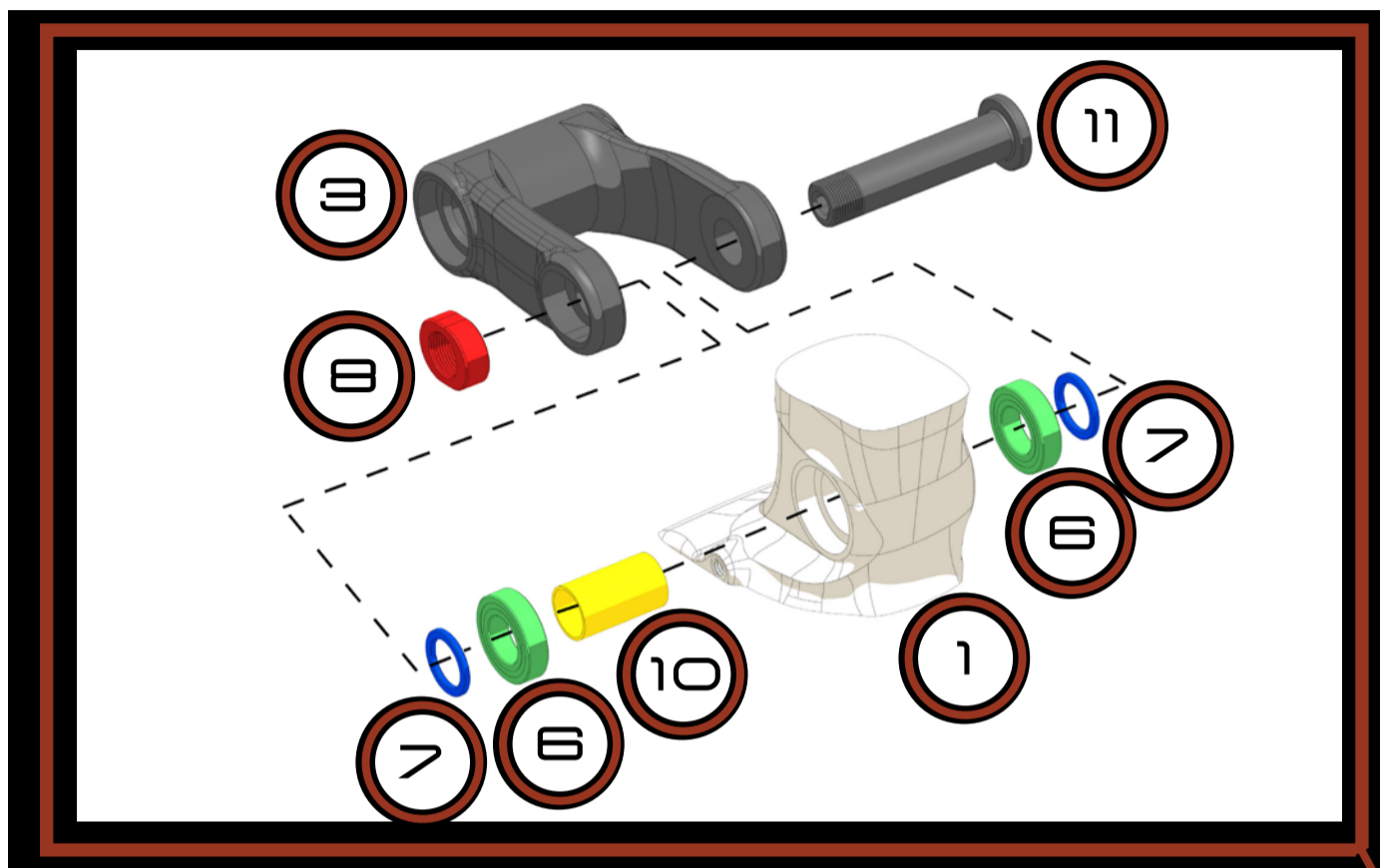
Tools Needed:

- 1) 4mm Hex Key
- 2) 5mm Hex Key
- 3) 6mm Hex Key
- 4) 8mm Hex Key
- 5) Torque Wrench
- 6) Grease
- 7) Titanium Anti-Seize Compound

Additional tools needed when performing a full bearing replacement:

- 8) Bearing Puller (Slide Hammer)
  - 8a) 12mm Bearing Collet
  - 8b) 15mm Bearing Collet
- 9) Bearing Press
  - 9a) 12mm ID Bearing Drift (Ensure largest diameter on drift measures less than or equal to 21mm) [ Used on Pivot 1, Pivot 2, Pivot 3 & Pivot 5 ]
  - 9b) 15mm ID Bearing Drift (Ensure largest diameter on drift measures less than or equal to 24mm) [ Used on Pivot 4 ]

# PIVOT 1



## NOTES

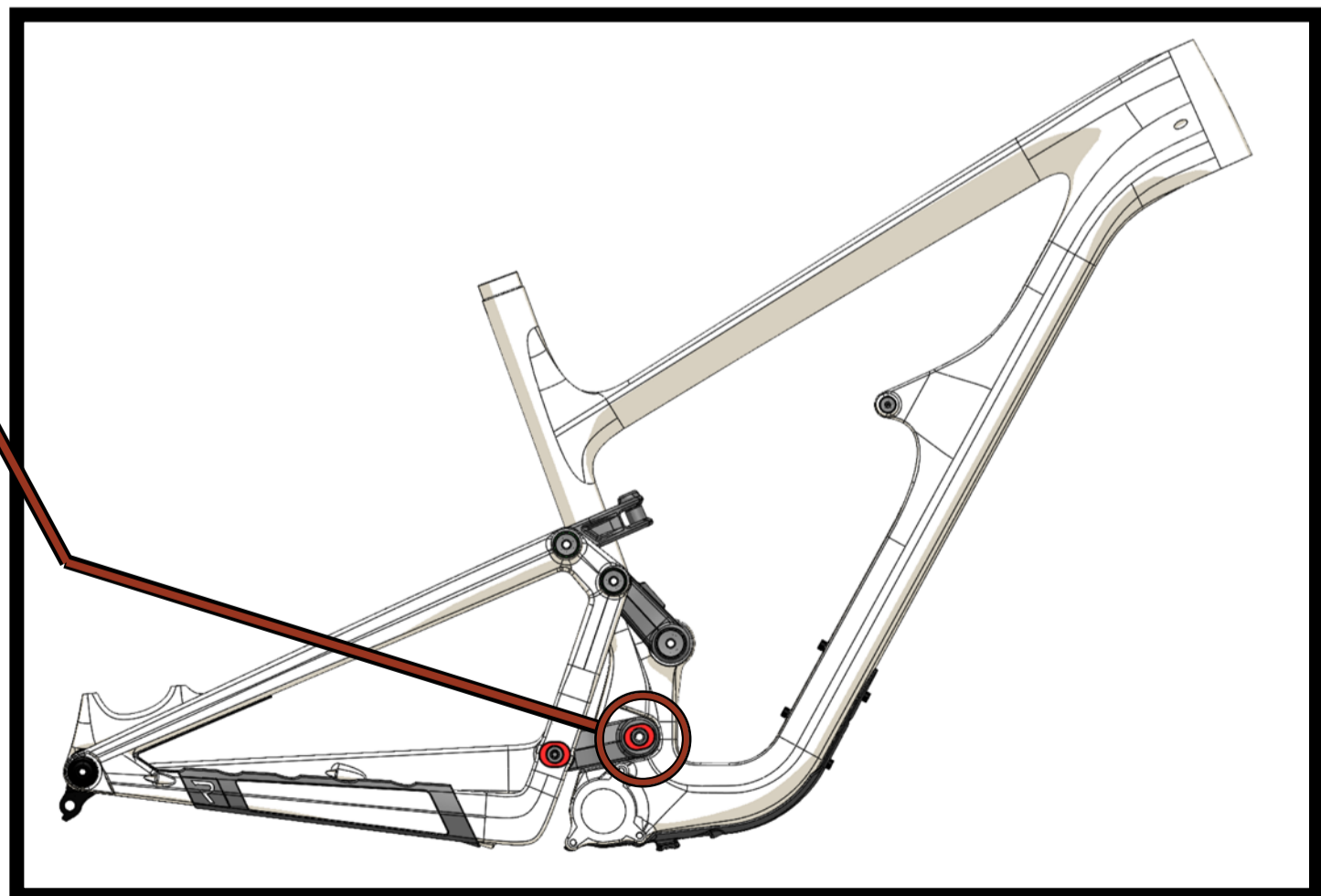
- 1) Torque axle to 15 Nm.
- 2) Apply grease to axle shaft (DO NOT apply grease to threads).

	PART NUMBER	QTY.
1	320-10021-0011-XX REVEL 29150 FRONT TRIANGLE LARGE	1
3	320-10021-0014-XX REVEL 29150 LOWER LINK	1
6	310-BEA22-0501 BOLU BEARING 6902 V2RD 15X28X7	2
7	310-10021-0058 HARDWARE PIVOT SPACER 21X15.2X2	2
8	310-10021-0060 HARDWARE AXLE NUT M15X1.0X8.6	1
10	310-10021-0062 HARDWARE AXLE SPACER 15.20X17.20X29.85	1
11	310-10021-0063 HARDWARE PIVOT AXLE M15X1.0X71	1

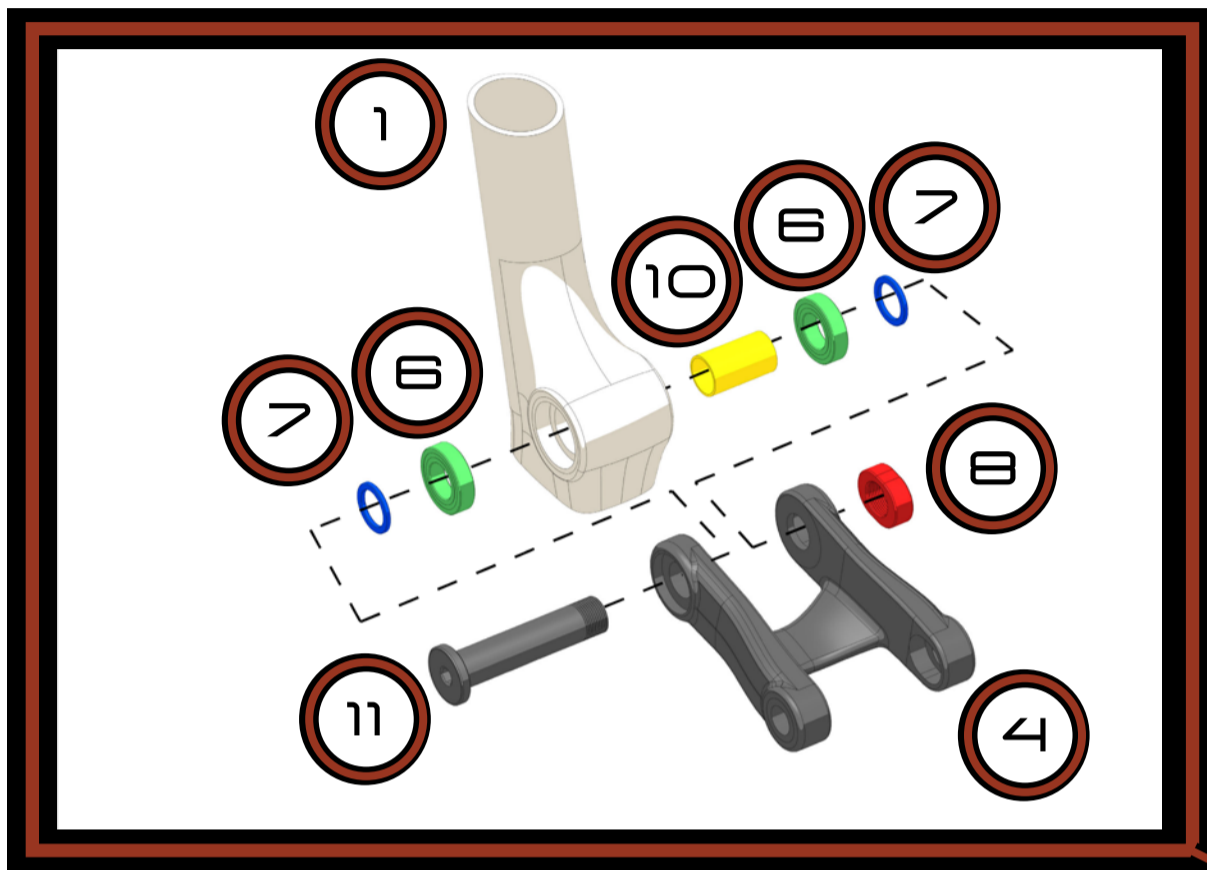
## TOOLS NEEDED

6mm Hex Key

Grease



# PIVOT 2



## NOTES

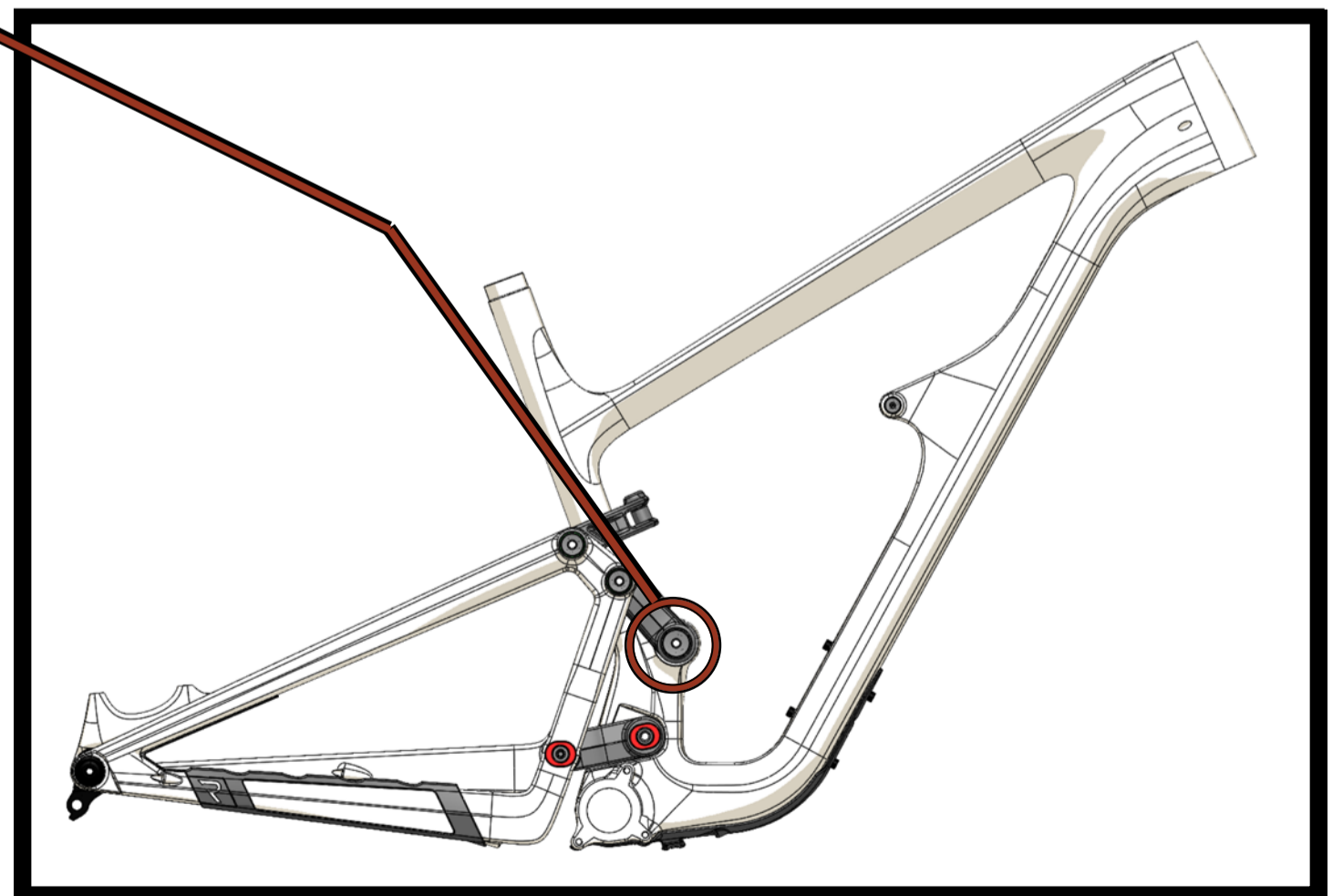
- 1) Torque axle to 15 Nm.
- 2) Apply grease to axle shaft (DO NOT apply grease to threads).

	PART NUMBER	QTY.
1	320-10021-0011-XX REVEL 29150 FRONT TRIANGLE LARGE	1
4	320-10021-0015-XX REVEL 29150 UPPER LINK	1
6	310-BEA22-0501 BOLU BEARING 6902 V2RD 15X28X7	2
7	310-10021-0058 HARDWARE PIVOT SPACER 21X15.2X2	2
8	310-10021-0060 HARDWARE AXLE NUT M15X1.0X8.6	1
10	310-10021-0062 HARDWARE AXLE SPACER 15.20X17.20X29.85	1
11	310-10021-0063 HARDWARE PIVOT AXLE M15X1.0X71	1

## TOOLS NEEDED

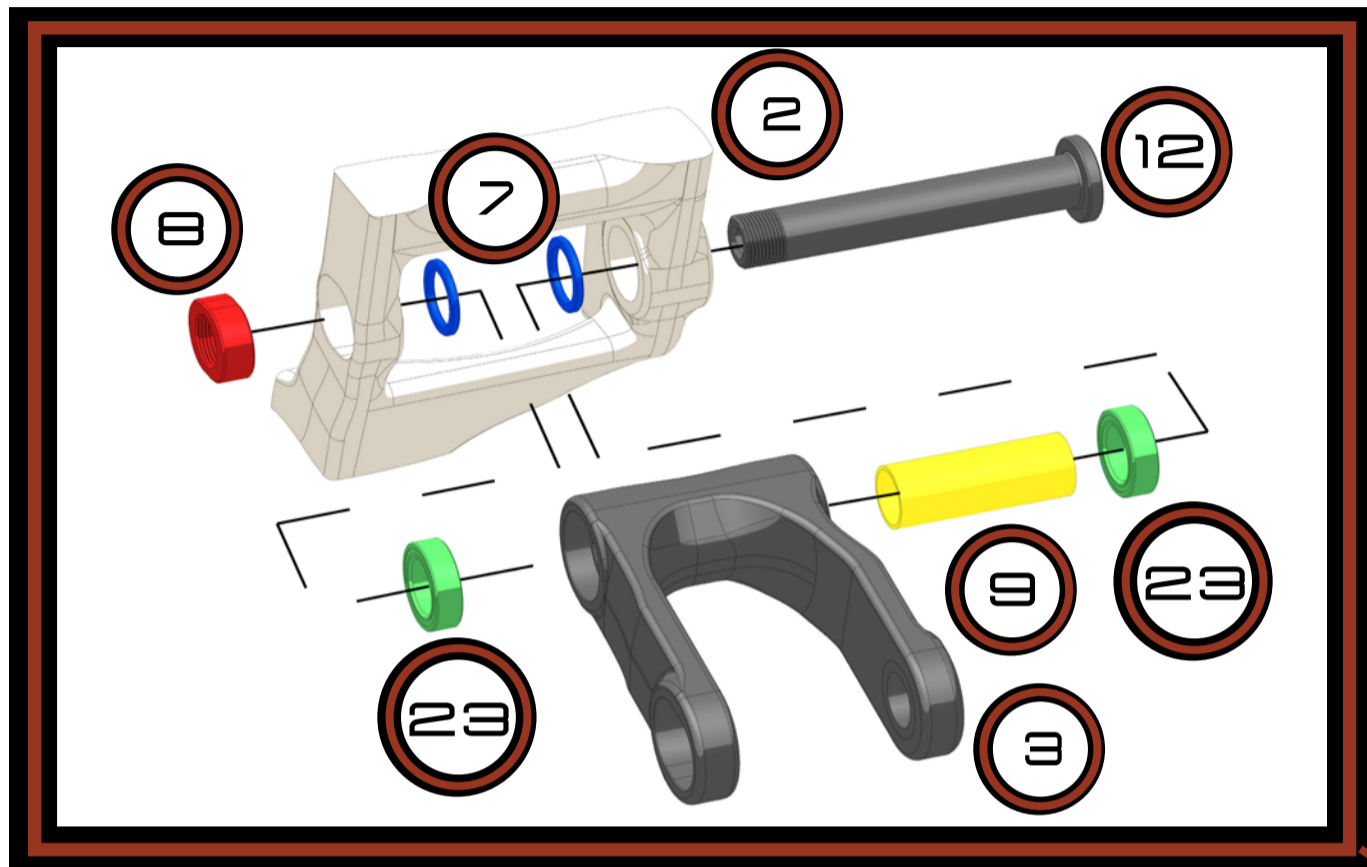
6mm Hex Key

Grease





# PIVOT 4 VARIANT 1



## NOTES

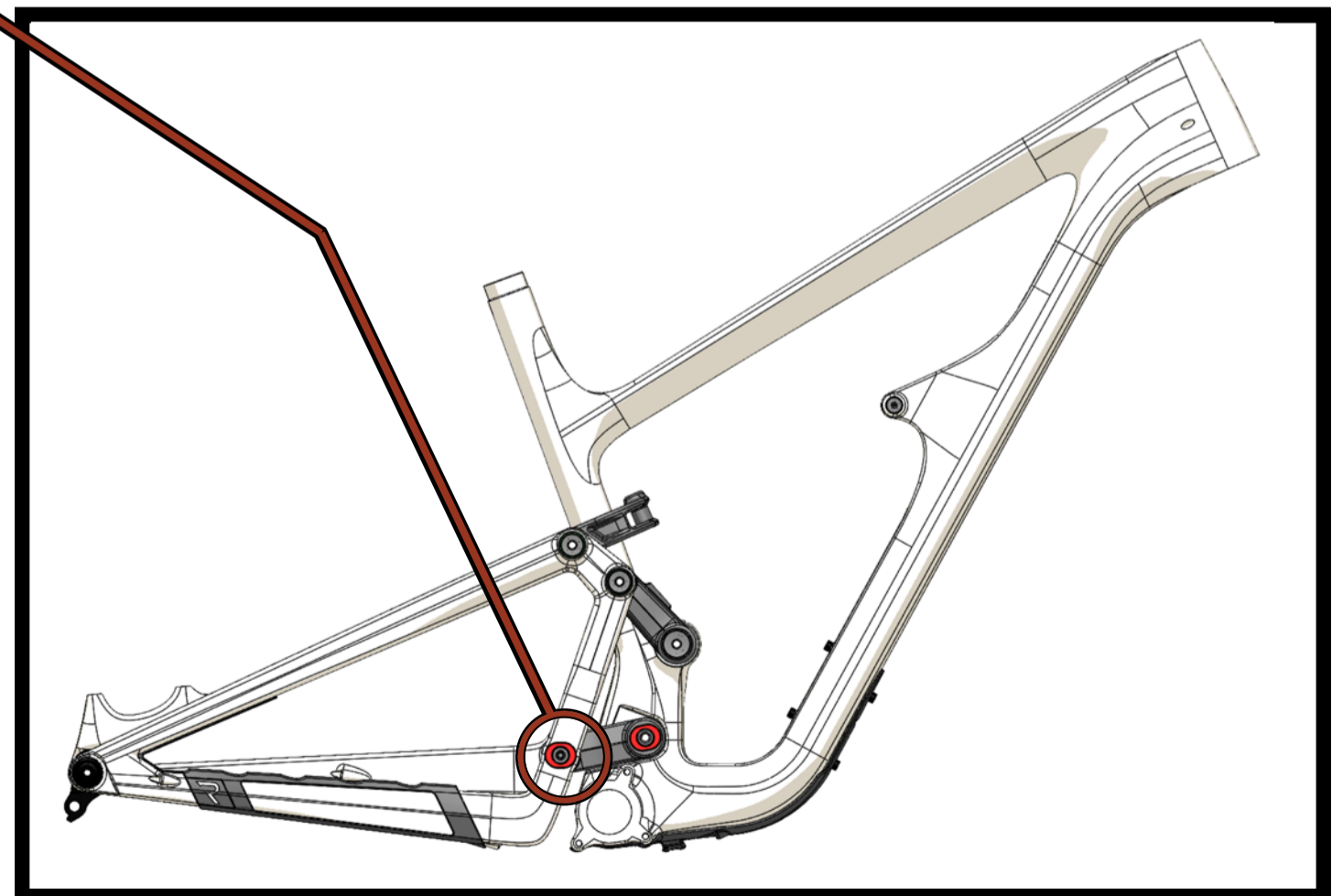
- 1) Torque axle to 15 Nm.
- 2) Apply grease to axle shaft (DO NOT apply grease to threads).

	PART NUMBER	QTY.
2	320-10021-0013-XX REVEL 29150 REAR TRIANGLE	1
3	320-10021-0014-XX REVEL 29150 LOWER LINK	1
7	310-10021-0058 HARDWARE PIVOT SPACER 21X15.2X2	2
8	310-10021-0060 HARDWARE AXLE NUT M15X1.0X8.6	1
9	310-10021-0061 HARDWARE AXLE SPACER 15.20X17.20X47.25	1
12	310-10021-0065 HARDWARE PIVOT AXLE M15X1.0X97	1
23	310-BEA22-0502 BOLU BEARING 3802V 2RD 15X24X7	2

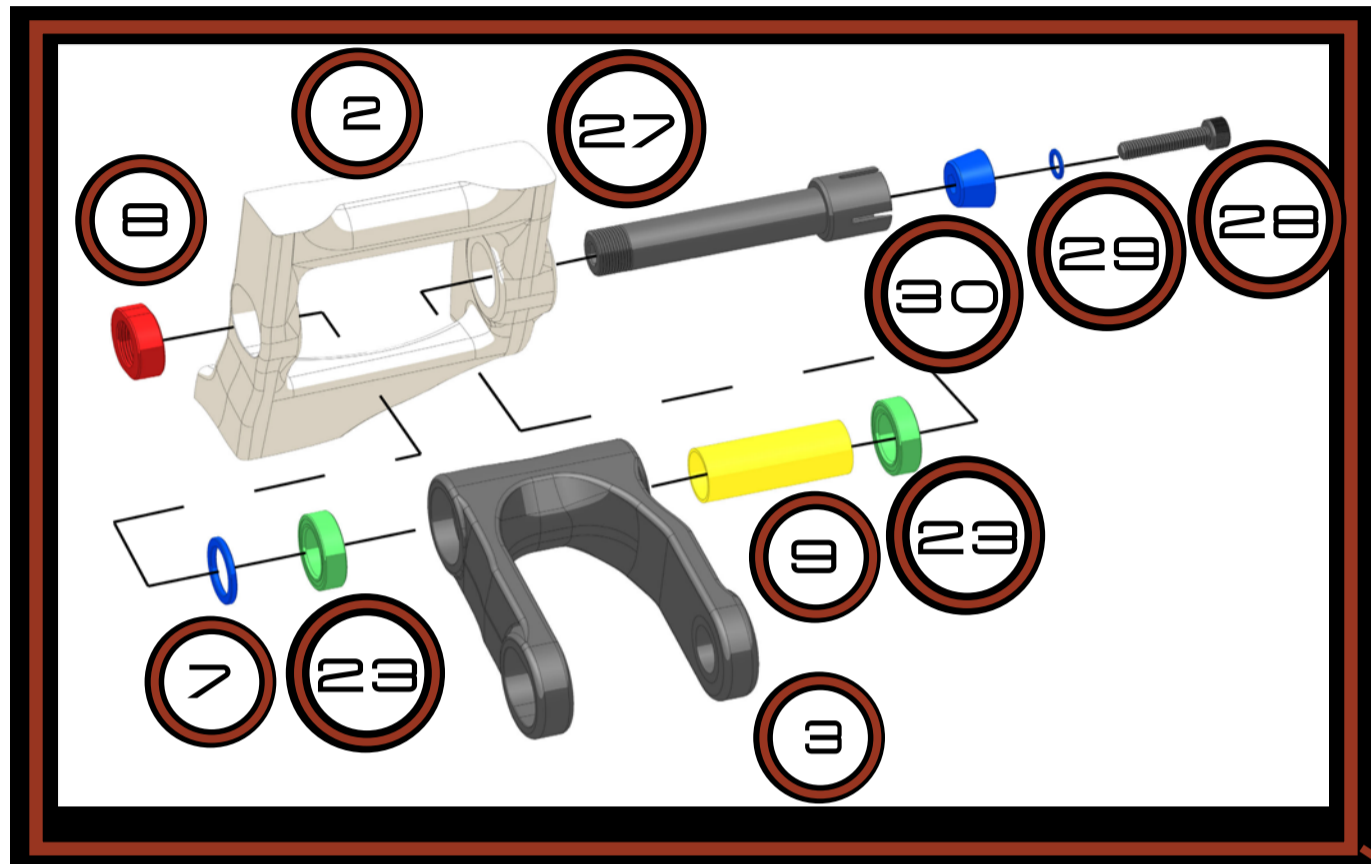
## TOOLS NEEDED

6mm Hex Key

Grease



# PIVOT 4 VARIANT 2



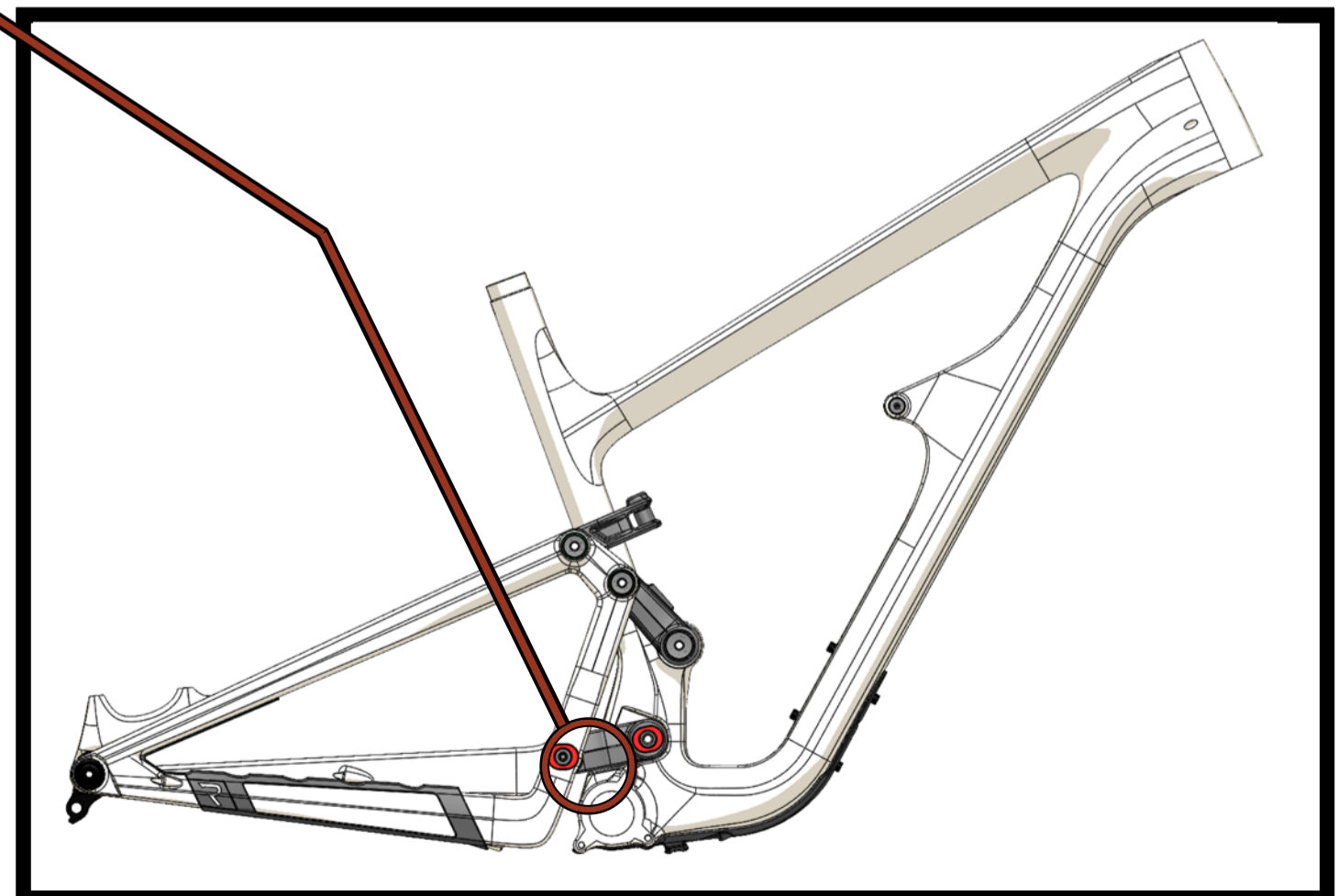
## NOTES

- 1) Torque axle to 15 Nm
- 2) Torque collet wedge to 12 Nm.
- 3) Only one washer is used on this pivot. It sits on the drive side of bike, between lower link and rear triangle.
- 4) Apply grease to axle shaft (DO NOT apply grease to threads).
- 5) Pivot 4 makes assembly of rear triangle to front triangle easier if performed before Pivot 3 & Pivot 5.

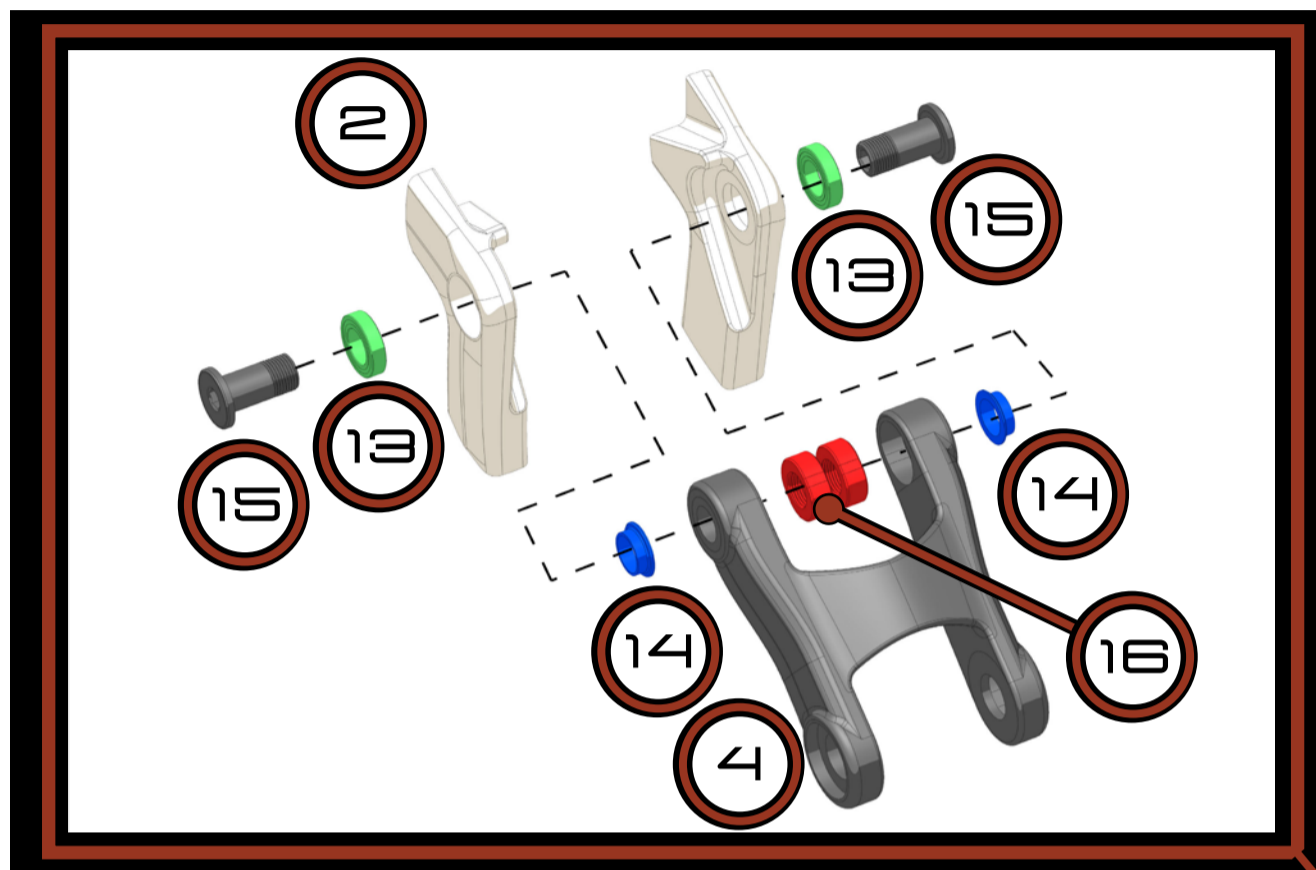
	PART NUMBER	QTY.
2	320-10021-0013-XX REVEL 29150 REAR TRIANGLE	1
3	320-10021-0014-XX REVEL 29150 LOWER LINK	1
7	310-10021-0058 HARDWARE PIVOT SPACER 21X15.2X2	1
8	310-10021-0060 HARDWARE AXLE NUT M15X1.0X8.6	1
9	310-10021-0061 HARDWARE AXLE SPACER 15.20X17.20X47.25	1
23	310-BEA22-0502 BOLU BEARING 3802V 2RD 15X24X7	2
27	310-10021-0091 HARDWARE PIVOT AXLE COLLET M15X1.0X97	1
28	HARDWARE SOCKET HEAD CAP SCREW M6X1.0X30MM	1
29	310-10021-0092 HARDWARE WASHER 10X6.4X1.0	1
30	310-10021-0089 HARDWARE COLLET WEDGE 20 DEGREE	1

## TOOLS NEEDED

8mm Hex Key  
5mm Hex Key  
Grease



# PIVOT 3



## NOTES

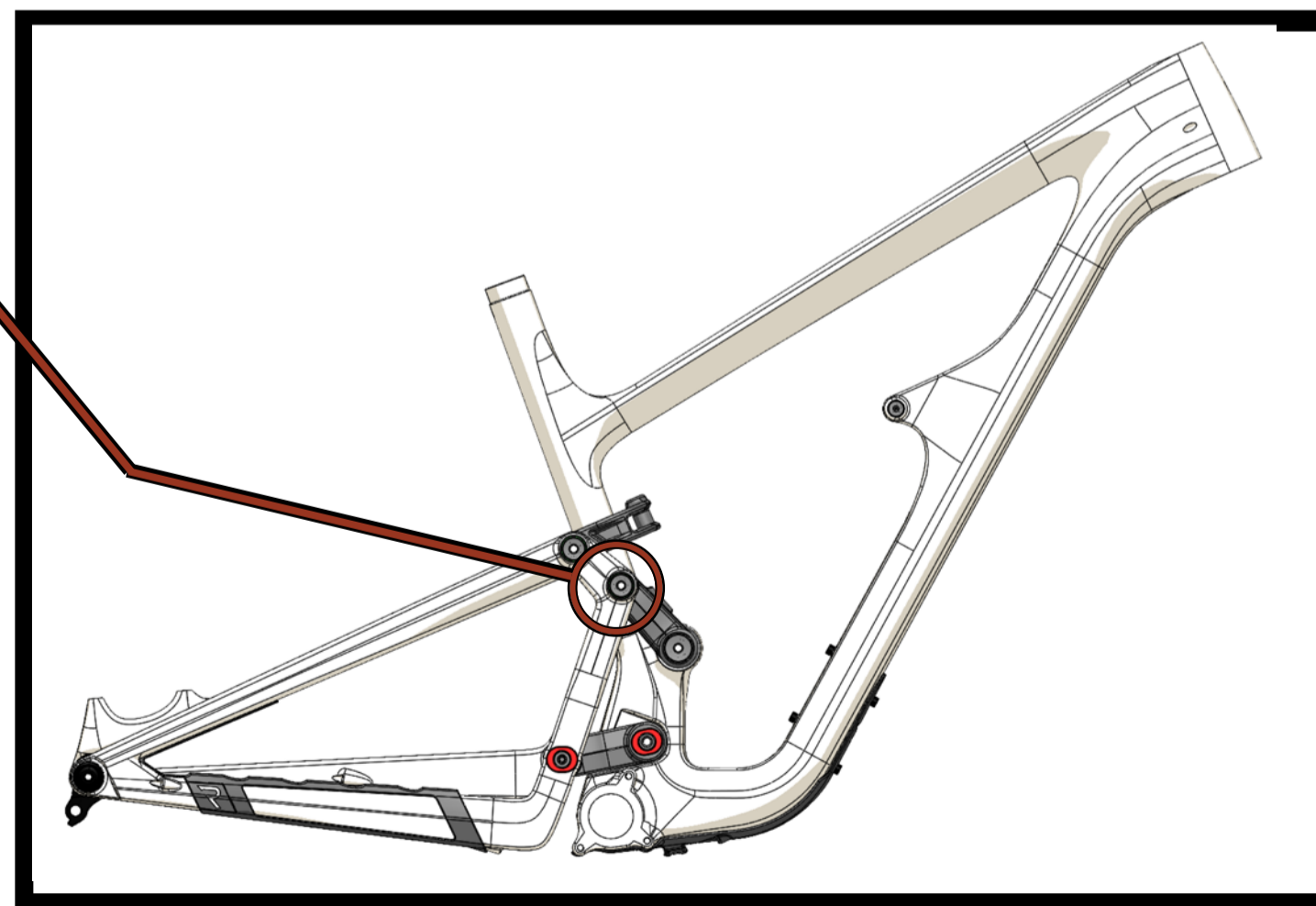
- 1) Torque axle to 15 Nm.
- 2) Apply grease to axle shaft (DO NOT apply grease to threads).
- 3) Front triangle and rear triangle must be assembled before upper link is connected to rear triangle.

	PART NUMBER	QTY.
2	320-10021-0013-XX REVEL 29150 REAR TRIANGLE	1
4	320-10021-0015-XX REVEL 29150 UPPER LINK	1
13	310-BEA18-0106 BOLU BEARING 6801V2RD 12X21X5	2
14	310-10021-0088 HARDWARE PIVOT SPACER 17.5X12.1X4.8	2
15	310-10021-0066 HARDWARE PIVOT AXLE M12X1.0X28	2
16	310-10021-0064 HARDWARE AXLE NUT M12X1.0X7.5	2

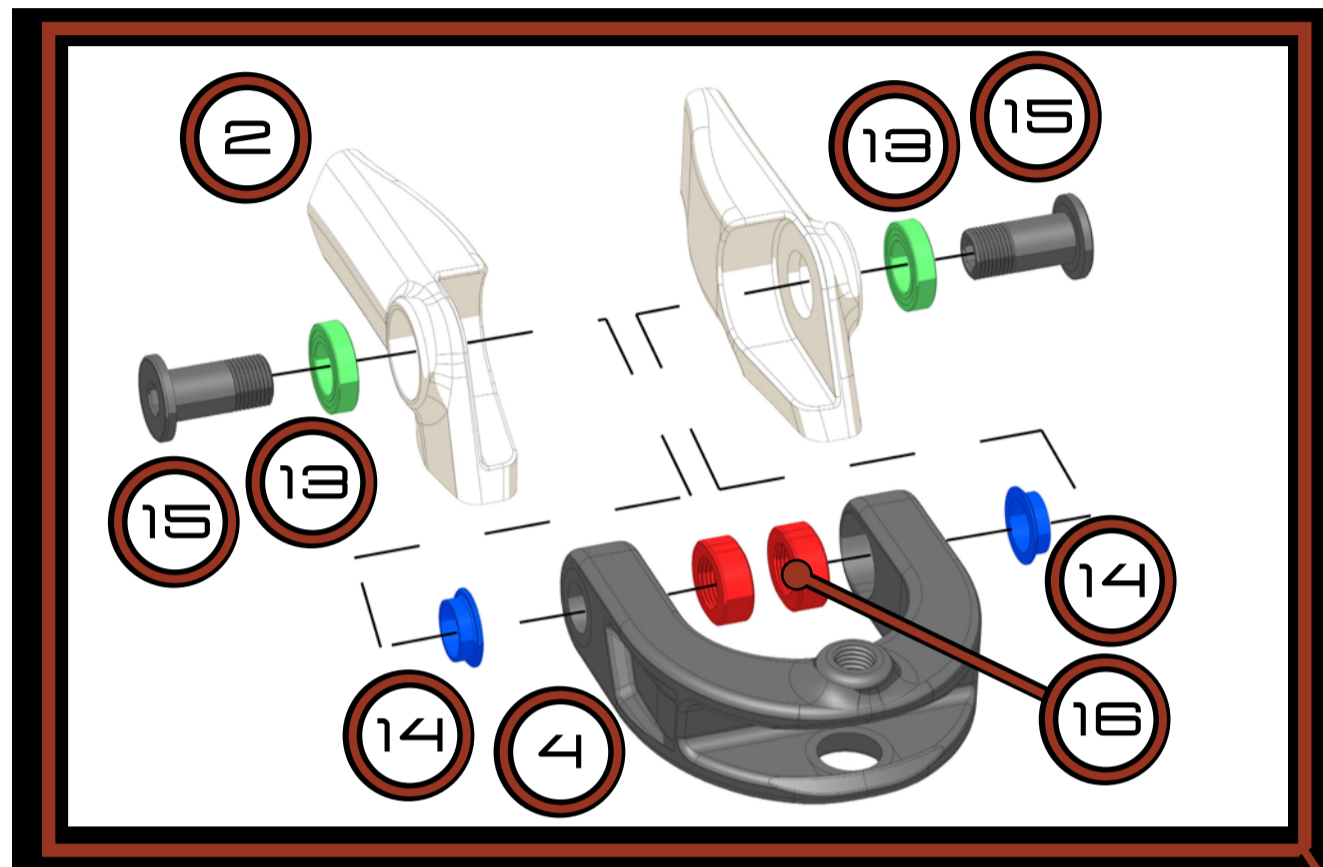
## TOOLS NEEDED

6mm Hex Key

Grease



# PIVOT 5



## NOTES

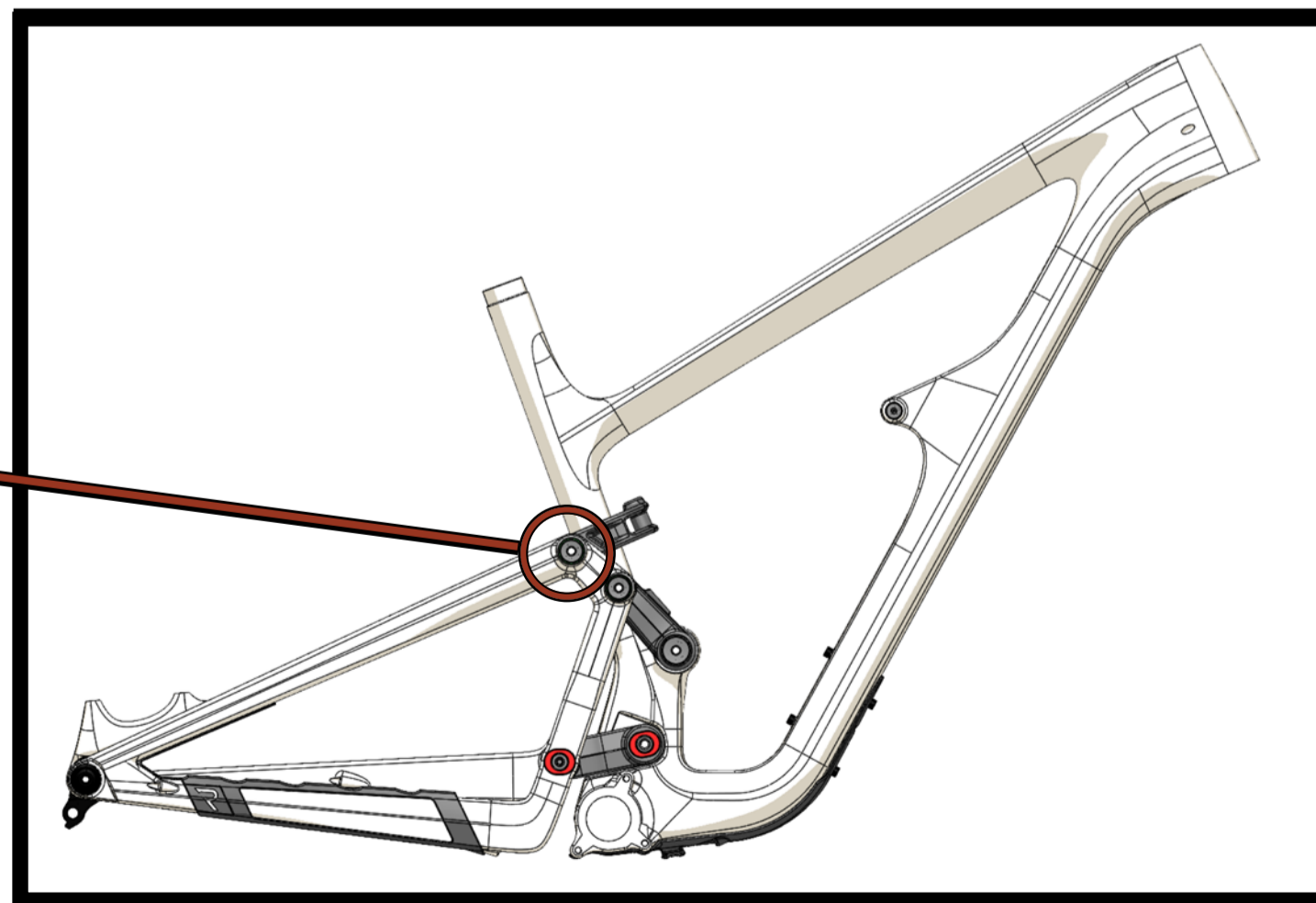
- 1) Torque axle to 15 Nm.
- 2) Apply grease to axle shaft (DO NOT apply grease to threads).
- 3) Front triangle and rear triangle must be assembled before upper link is connected to rear triangle.

	PART NUMBER	QTY.
2	320-10021-0013-XX REVEL 29150 REAR TRIANGLE	1
4	320-10021-0015-XX REVEL 29150 UPPER LINK	1
13	310-BEA18-0106 BOLU BEARING 6801V2RD 12X21X5	2
14	310-10021-0088 HARDWARE PIVOT SPACER 17.5X12.1X4.8	2
15	310-10021-0066 HARDWARE PIVOT AXLE M12X1.0X28	2
16	310-10021-0064 HARDWARE AXLE NUT M12X1.0X7.5	2

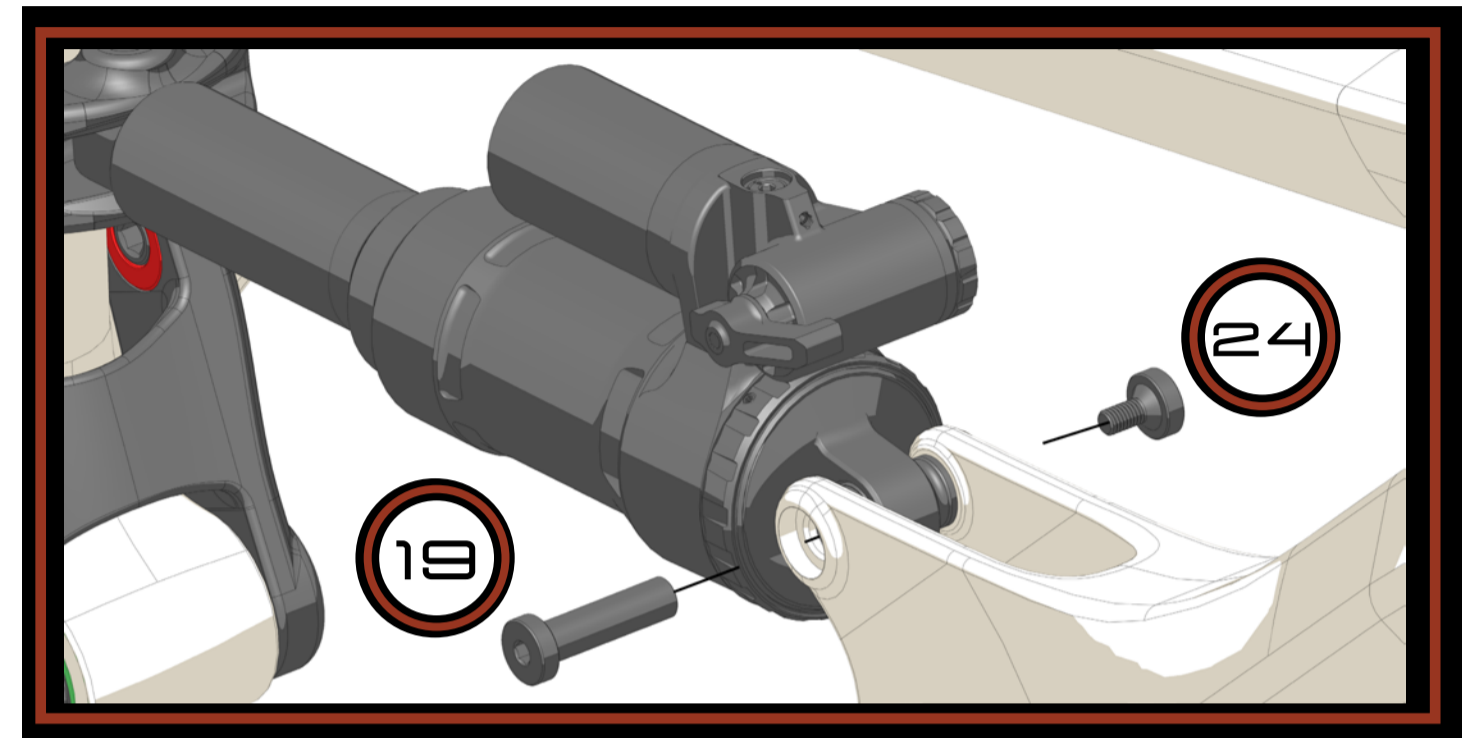
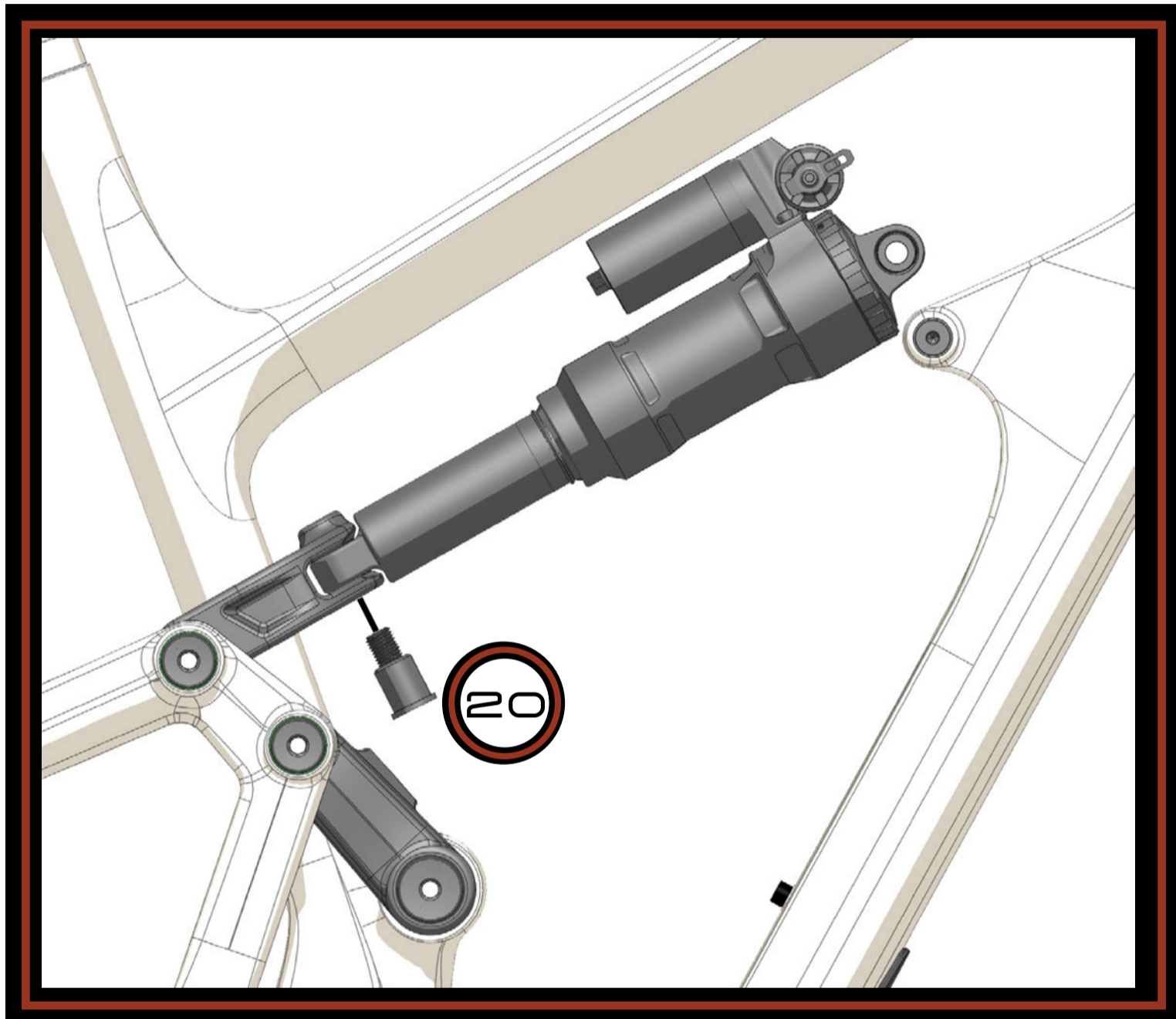
## TOOLS NEEDED

6mm Hex Key

Grease



# SHOCK INSTALL



	PART NUMBER	QTY.
1	320-10021-0011-XX REVEL 29150 FRONT TRIANGLE LARGE	1
5	320-10021-0016-XX REVEL 29150 SHOCK LINK	1
19	310-10021-0051 HARDWARE SHOCK PIVOT AXLE M5X0.8X33.5	1
20	310-10021-0077 HARDWARE SHOCK EYELET BOLT M10X1.25	1
24	310-10021-0050 HARDWARE SHOCK PIVOT BOLT M5X0.8X14	1

## NOTES

- 1) Torque forward shock bolt to 10 Nm.
- 2) Torque rear shock bolt to 15 Nm.
- 3) Apply titanium anti-seize to threads on rear shock bolt.
- 4) Install rear shock to shock yoke, first then rotate shock down into forward shock mount.

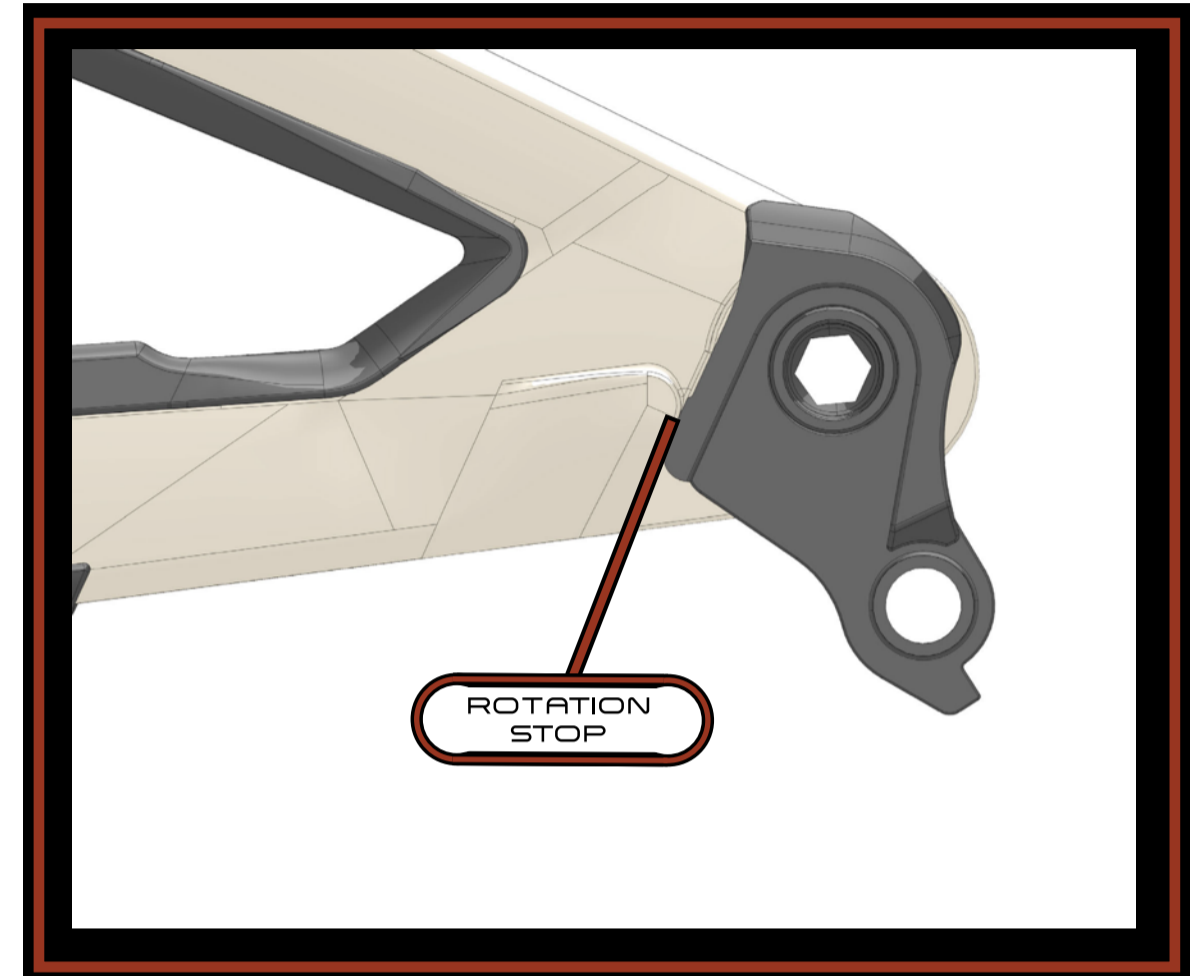
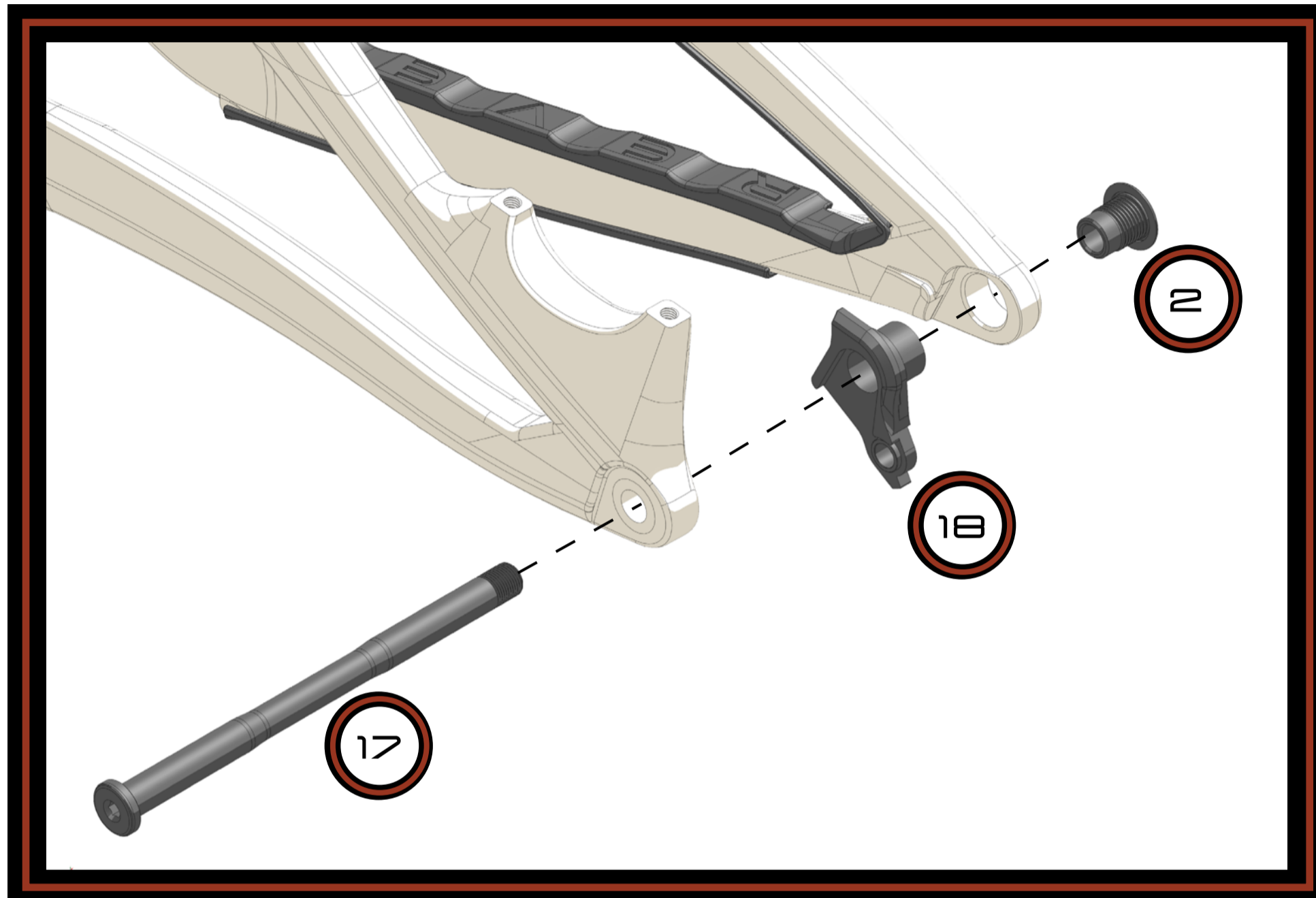
## TOOLS NEEDED

8mm Hex Key

4mm Hex Key

Titanium Anti-Seize Compound

# UDH HANGER & AXLE INSTALL



	PART NUMBER	QTY.
2	320-10021-0013-XX REVEL 29150 REAR TRIANGLE	1
17	310-10021-0056 AXLE 12X1.0X177 REVEL UDH	1
18	SRAM UDH HANGER	1

## NOTES

- 1) Torque UDH hanger to 25 Nm. **NOTE:** UDH hanger is left-hand threaded.
- 2) Ensure UDH hanger is rotated fully forward and resting on rotation stop.
- 3) Torque Revel UDH compatible axle to 13 Nm.
- 4) DO NOT apply grease to frame, UDH hanger or UDH bolt threads.
- 5) Apply grease to axle shaft (DO NOT apply grease to threads).
- 6) DO NOT torque axle to torque spec without wheel installed.

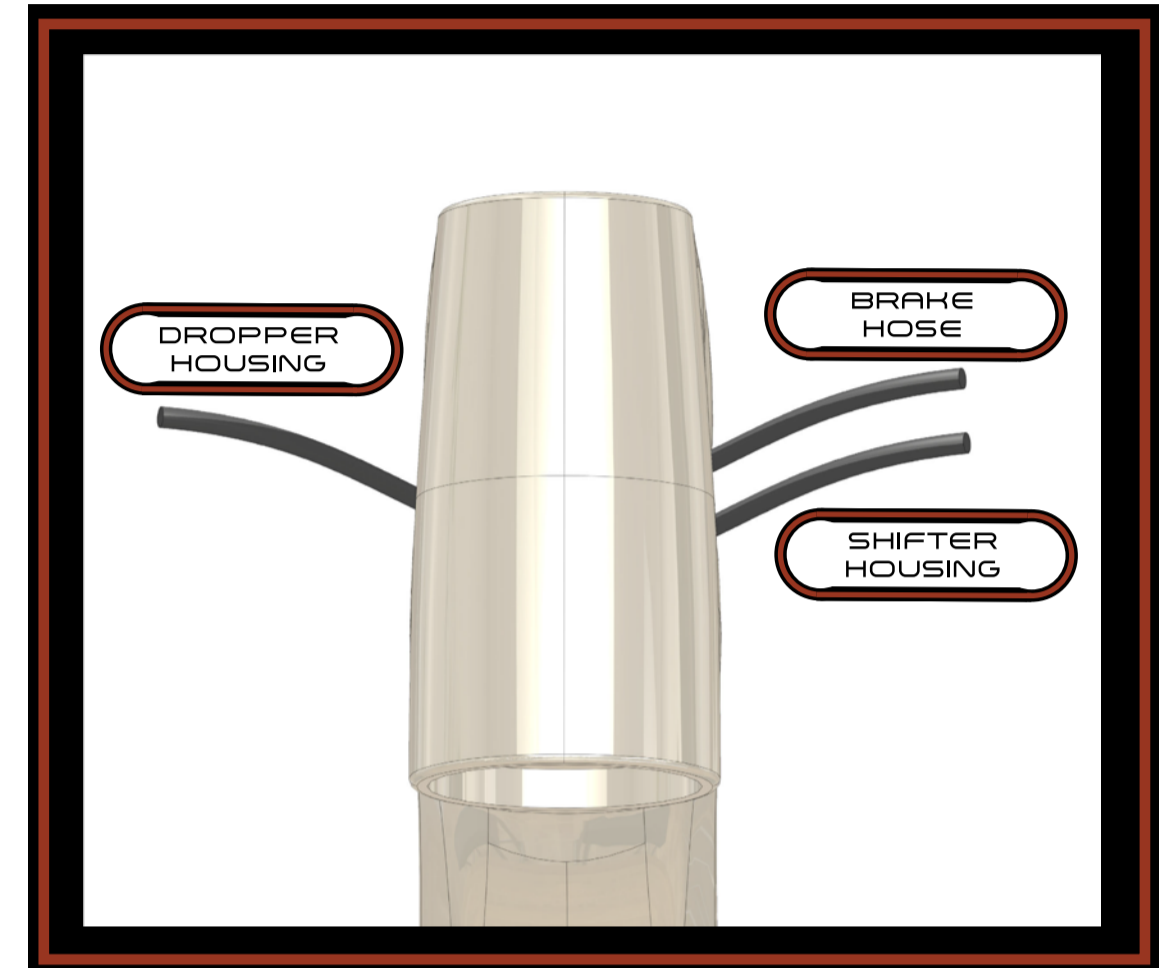
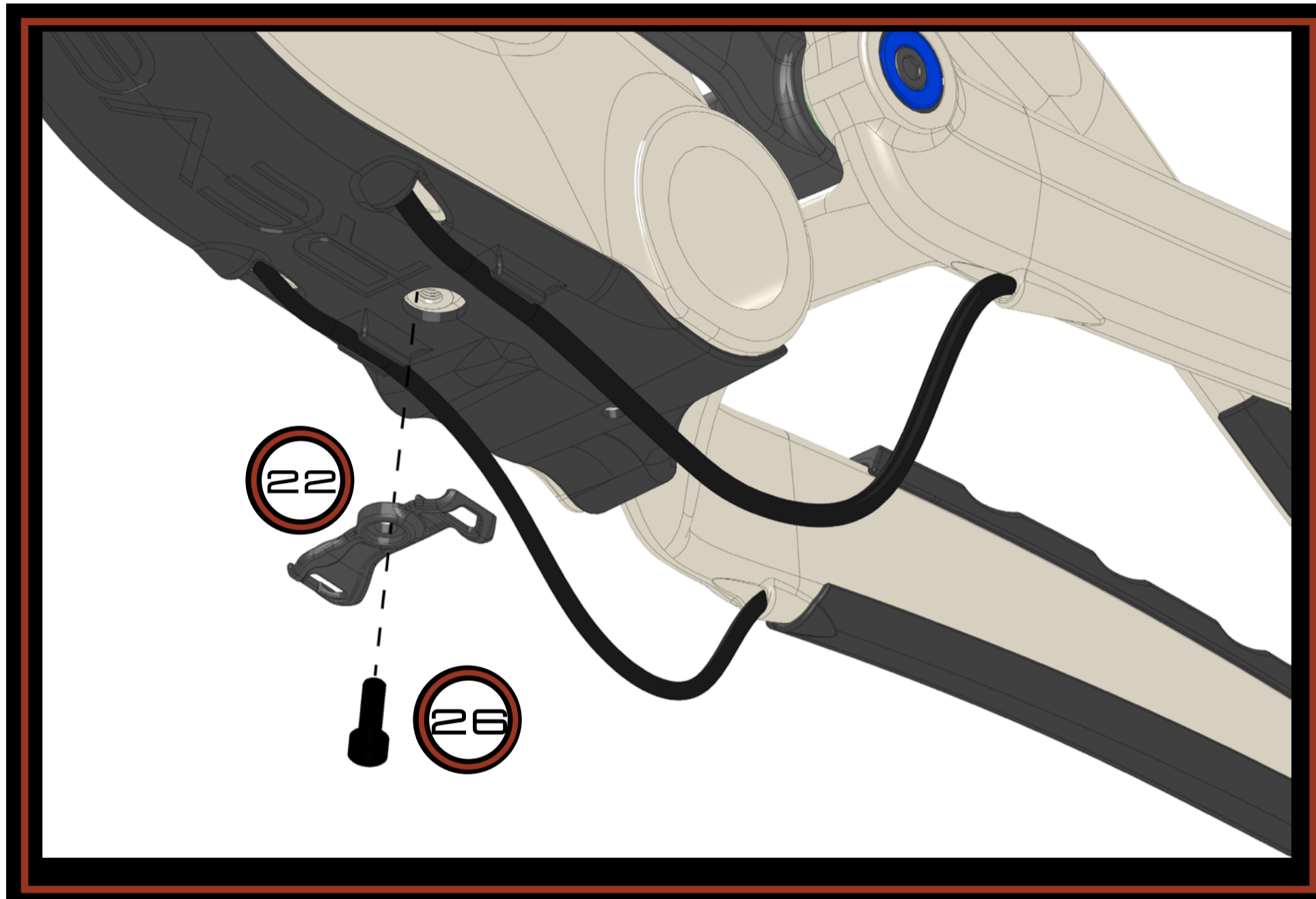
## TOOLS NEEDED

8mm Hex Key

5mm Hex Key

Grease

# INTERNAL ROUTING



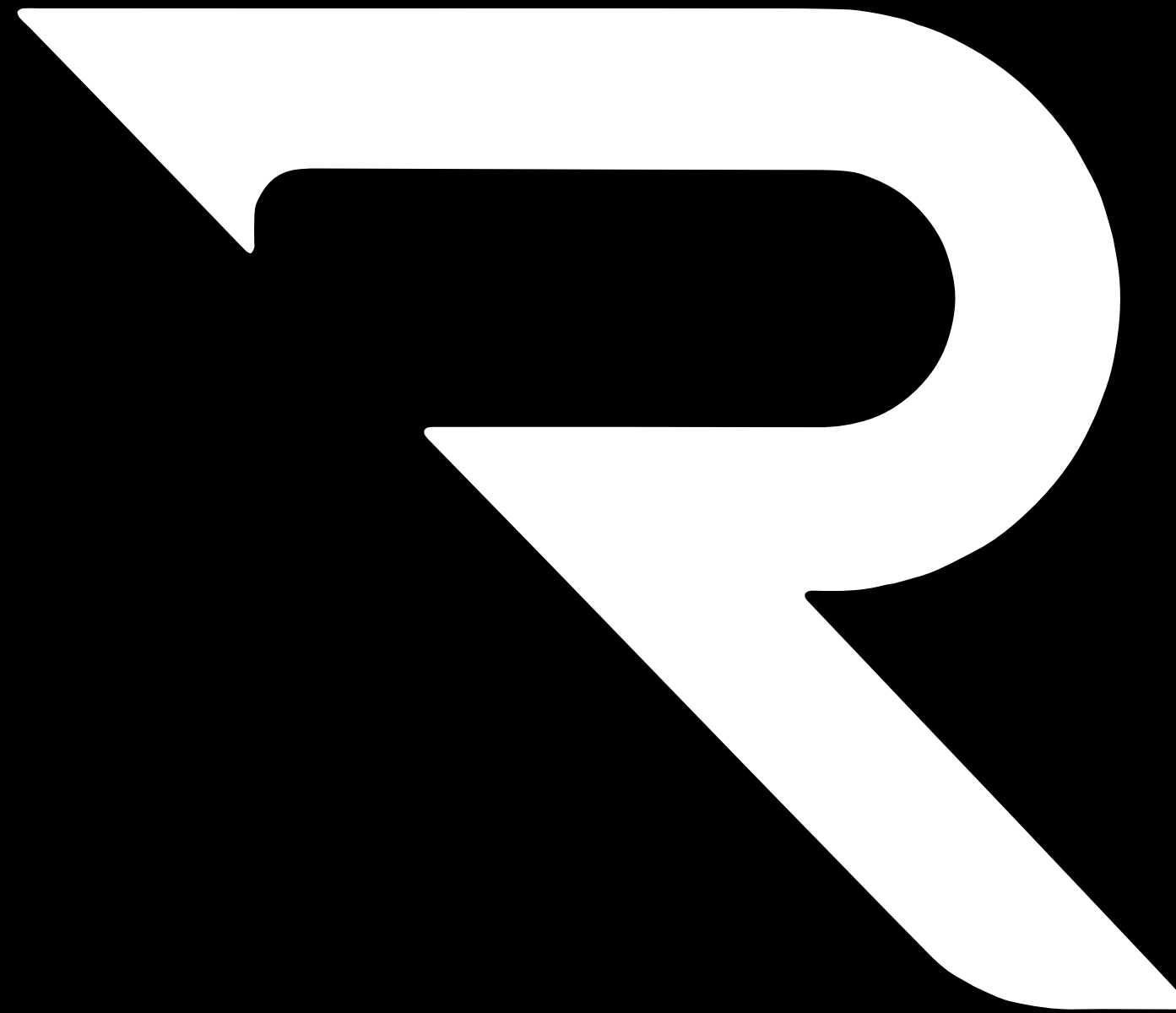
	PART NUMBER	QTY.
22	310-10021-0068 HARDWARE BB CABLE CLAMP	1
26	HARDWARE SOCKET HEAD CAP SCREW M5X0.8X14	1

## NOTES

- 1) Torque Cable Clamp Bolt to 2 Nm
- 2) When sizing shifter housing and brake hose leave 40mm (1.57") extra length to account for cable growth during suspension travel

## TOOLS NEEDED

4mm Hex Key



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