

MY21 Mayhem 150 Frames  
Assembly Instructions and Maintenance Manual



**SPOT**

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# Warning

Like any sport, bicycling involves risk of injury and damage. By choosing to ride a bicycle, you assume the responsibility for that risk, so you need to know—and to practice—the rules of safe and responsible riding and of proper use and maintenance. Proper use and maintenance of your bicycle reduces the risk of injury or death.

All bicycles should be assembled and maintained by an authorized bicycle mechanic. If you are not qualified to assemble, inspect, and maintain your bicycle, please visit your favorite local bike shop or contact Spot for a referral to a qualified bicycle technician in your area.

This guide covers the details specific to your Living Link™ suspension frame. It does not address complete bicycle assembly, fitting, inspection, maintenance, or riding techniques. Please refer to the Spot Brand Bicycle Owner’s Manual for further details.

Under no circumstances shall Spot Brand LLC be held liable for direct, incidental, or consequential damages, including, without limitation, damages for personal injury property damage, or economic losses, whether based on contract, warranty, negligence, product liability, or and other theory.

## A Note on Intended Use

The American Society for Testing and Materials (ASTM) has established a classification standard for bicycle use, outlined in document ASTM F2043. It is important to use any bicycle within its intended use classification to ensure rider safety, equipment longevity, and warranty coverage. The Spot Mayhem 150 mountain bikes are classified within Level 4 of this standard:

<b>1</b>	This is a set of conditions for the operation of a bicycle on a regular paved surface where the tires are intended to maintain ground contact.
<b>2</b>	This is a set of conditions for the operation of a bicycle that includes Condition 1 as well as unpaved and gravel roads and trails with moderate grades. In this set of conditions, contact with irregular terrain and loss of tire contact with the ground may occur. Drops are intended to be limited to 15cm (6") or less.
<b>3</b>	This is a set of conditions for operation of a bicycle that includes Condition 1 and Condition 2 as well as rough trails, rough unpaved roads, and rough terrain and unimproved trails that require technical skills. Jumps and drops are intended to be less than 61cm (24").
<b>4</b>	This is a set of conditions for operation of a bicycle that includes Conditions 1, 2, and 3, or downhill grades on rough trails at speeds less than 40 km/h (25 mph), or both. Jumps are intended to be less than 122cm (48").
<b>5</b>	This is a set of conditions for operation of a bicycle that includes Conditions 1, 2, 3, and 4; extreme jumping; or downhill grades on rough trails at speeds in excess of 40 km/h (25 mph); or a combination thereof.

# Rear Shock Setup—Fox Float X2

## High and Low Speed Compression Damping

- HSC—6mm Hex, 8 clicks, LSC 3mm Hex, 16 clicks
- Increases firmness and support on the compression (downward) stroke of the shock
- Increase HSC for more support on big hits and jump landings
- Increase LSC for more support on bermed turns and hard pedaling efforts
- Softer- best for lighter riders, less aggressive riding
- Firmer- best for heavier riders, more aggressive riding
- Spot recommends starting with both adjusters fully open. Add compression damping as necessary to tune out excessive suspension motion and resist hard bottoming

## Climb/Lockout Lever

- 2 positions— Open, Firm
- Spot recommends leaving the lever in the open mode at all times, including climbing, due to the efficiency of Living Link. Locking the suspension for climbing will only make the ride bumpy!

## Travel Indicator O-Ring

- The shock will push the o-ring up the damper body as it compresses
- Measure from the shock can to the o-ring to determine your max travel usage.
- The Mayhem 150 will show 65mm at max travel

## Air spring pressure

- Use included shock pump to increase/decrease air pressure
- Sets sag / “ride height”
- Spot recommends starting by setting the rear shock air spring pressure to 90% of your riding weight (with helmet, pack, gear, etc.) in pounds. For example, if you weigh 180lbs ready to ride, you would inflate your rear shock to  $0.90 \times 180 = 162\text{psi}$ .
- Increase pressure (up to +25psi) if you are bottoming out frequently. If adding air pressure does not prevent frequent bottom outs, you may need to upsize your **VOLUME SPACER**.
- Decrease pressure (up to -15psi) if you are never using full travel. If reducing air pressure does not allow you to access full travel you may need to downsize your **VOLUME SPACER**.

## High and Low Speed Rebound Damping

- Adjusts return speed “rebound” of suspension
- Turn clockwise to slow the rebound, counterclockwise to speed up.
- Adjustment settings are referenced from “full slow”. To adjust, turn the red rebound knob clockwise until it stops, then slowly unwind the knob while counting each time it clicks.
- Spot recommended rebound settings— based on air spring pressure:

Pressure (psi)	Low Speed Rebound Setting (clicks from full slow)	High Speed Rebound Setting (clicks from full slow)
80-100	16-18	7-8
100-120	14-16	6-7
120-140	12-14	5-6
140-160	10-12	5-6
160-180	8-10	4-5
180-200	7-9	3-4
200-220	6-8	3-4
220-240	4-6	2-3
240-260	2-4	2-3
260-280	1-3	1-2
280-300	1-2	0-1

- Increase rebound speed if the bike feels rough and low on fast sections with successive bumps
- Decrease rebound speed if the bike feels “bucky”, like riding a pogo stick on successive bumps.

## Volume Spacers

- Air volume spacers are installed in the shock to control how the spring forces increase as the shock is compressed
- A larger volume spacer will make the shock more progressive and harder to bottom out on big hits and landings
- A smaller volume spacer will make the shock more linear and easier to access full travel.
- Changing volume spacers is a simple process. Instructions for swapping spacers can be found here:

[Fox Shock Volume Spacers](#)



# Rear Shock Setup—Fox Float X

## Rebound Damping Aduster

- Adjusts return speed “rebound” of suspension
- Turn clockwise to slow the rebound, counterclockwise to speed up.
- Adjustment settings are referenced from “full slow”. To adjust, turn the red rebound knob clockwise until it stops, then slowly unwind the knob while counting each time it clicks.
- Spot recommended rebound settings— based on air spring pressure:

Pressure (psi)	Rebound Setting (clicks from full slow)
100	10
100-120	10
120-140	9
140-160	8
160-180	7
180-200	6
200-220	5
220-240	4
240-260	3
260-280	2
280-300	1

- Increase rebound speed if the bike feels rough and low on fast sections with successive bumps
- Decrease rebound speed if the bike feels “bucky”, like riding a pogo stick on successive bumps.

## Air spring pressure

- Use included shock pump to increase/decrease air pressure
- Sets sag / “ride height”
- Spot recommends starting by setting the rear shock air spring pressure to 90% of your riding weight (with helmet, pack, gear, etc.) in pounds. For example, if you weigh 180lbs ready to ride, you would inflate your rear shock to 162psi ( $0.9 \times 180 = 162$ ).
- Increase pressure (up to +25psi) if you are bottoming out frequently. If adding air pressure does not prevent frequent bottom outs, you may need to upsize your **VOLUME SPACER**.
- Decrease pressure (up to -15psi) if you are never using full travel. If reducing air pressure does not allow you to access full travel you may need to downsize your **VOLUME SPACER**.

## Compression Damping—12 Clicks

- Increases firmness and support on the compression (downward) stroke of the shock
- Turn clockwise to increase firmness for more support on hard hits or jump landings
- Softer is best for lighter riders and less aggressive riding. Firmer is best for heavier riders and more aggressive riding.
- Spot recommends starting with the softest setting and adding support as necessary to reduce unnecessary suspension motion and hard bottoming.

## Climb/Lockout Lever

- 2 positions— Open, Firm
- Spot recommends leaving the lockout lever in the open mode at all times, including climbing, due to the efficiency of Living Link. Locking the suspension for climbing will only make the ride bumpy!

## Volume Spacers

- Air volume spacers are installed in the shock to control how the spring forces increase as the shock is compressed
- A larger volume spacer will make the shock more progressive and harder to bottom out on big hits and landings
- A smaller volume spacer will make the shock more linear and easier to access full travel.
- Changing volume spacers is a simple process. Instructions for swapping spacers can be found here:

[Fox Shock Volume Spacers](#)

## Travel Indicator O-Ring

- The shock will push the o-ring down the damper body as it compresses
- Measure from the shock can to the o-ring to determine your max travel usage.
- The Mayhem 150 will show 65mm at max travel



# Rear Shock Setup—Fox Float DPX2

## Compression Damping—12 Clicks

- Increases firmness and support on the compression (downward) stroke of the shock
- Turn clockwise to increase firmness for more support on hard hits or jump landings
- Softer is best for lighter riders and less aggressive riding. Firmer is best for heavier riders and more aggressive riding.
- Spot recommends starting with the softest setting and adding support as necessary to reduce unnecessary suspension motion and hard bottoming.

## Air spring pressure

- Use included shock pump to increase/decrease air pressure
- Sets sag / “ride height”
- Spot recommends starting by setting the rear shock air spring pressure to 100% of your riding weight (with helmet, pack, gear, etc.) in pounds. For example, if you weigh 180lbs ready to ride, you would inflate your rear shock to 180psi.
- Increase pressure (up to +25psi) if you are bottoming out frequently. If adding air pressure does not prevent frequent bottom outs, you may need to upsize your **VOLUME SPACER**.
- Decrease pressure (up to -15psi) if you are never using full travel. If reducing air pressure does not allow you to access full travel you may need to downsize your **VOLUME SPACER**.

## Volume Spacers

- Air volume spacers are installed in the shock to control how the spring forces increase as the shock is compressed
- A larger volume spacer will make the shock more progressive and harder to bottom out on big hits and landings
- A smaller volume spacer will make the shock more linear and easier to access full travel.
- Changing volume spacers is a simple process. Instructions for swapping spacers can be found here:

[Fox Shock Volume Spacers](#)

## Rebound Damping Aduster

- Adjusts return speed “rebound” of suspension
- Turn clockwise to slow the rebound, counterclockwise to speed up.
- Adjustment settings are referenced from “full slow”. To adjust, turn the red rebound knob clockwise until it stops, then slowly unwind the knob while counting each time it clicks.
- Spot recommended rebound settings— based on air spring pressure:

Pressure (psi)	Rebound Setting (clicks from full slow)
100	Full open
100-120	11
120-140	10
140-160	9
160-180	8
180-200	7
200-220	6
220-240	5
240-260	4
260-280	2
280-300	1

- Increase rebound speed if the bike feels rough and low on fast sections with successive bumps
- Decrease rebound speed if the bike feels “bucky”, like riding a pogo stick on successive bumps.



## Travel Indicator O-Ring

- The shock will push the o-ring down the damper body as it compresses
- Measure from the shock can to the o-ring to determine your max travel usage.
- The Mayhem 150 will show 65mm at max travel



# Fork Setup—Fox 38 GRIP2 Forks

## Low Speed Compression Damping Adjuster

- Increases firmness and support on slow compression (downward) stroke of the fork. Firmer settings will increase support for bermed turns and “g-out” style slow compressions.
- Approximately 16 clicks of adjustment
- Turn black dial clockwise to increase firmness
- Softer: best for lighter riders, less aggressive riding
- Firmer: best for heavier riders, more aggressive riding

## High Speed Compression Damping Adjuster

- Increases firmness and support on fast compression (downward) stroke of the fork. Firmer settings will increase support for square edge hits and landing jumps
- Approximately 8 clicks of adjustment
- Turn blue dial clockwise to increase firmness
- Softer: best for lighter riders, less aggressive riding
- Firmer: best for heavier riders, more aggressive riding

## Air spring pressure

- Use included shock pump to increase/ decrease air pressure
- Sets sag / “ride height”
- Spot recommends starting by setting the fork air spring pressure to 37% of your riding weight (with helmet, pack, gear, etc.) in pounds. For example, if you weigh 180lbs ready to ride, you would inflate your fork to  $0.37 \times 180 = 67\text{psi}$ .
- Increase pressure (up to +15psi) if you are bottoming out frequently. If adding air pressure does not prevent frequent bottom outs, you may need to upsize your **VOLUME SPACER**.
- Decrease pressure (up to -10psi) if you are never using full travel. If reducing air pressure does not allow you to access full travel you may need to downsize your **VOLUME SPACER**.

## Rebound Damping Adjusters- Under Black Cap

- Adjusts return speed “rebound” of suspension
- Turn clockwise to slow the rebound, counter-clockwise to speed up.
- Adjustment settings are referenced from “full slow”. To adjust, turn the red rebound knob clockwise until it stops, then slowly unwind the knob while counting each time it clicks.
- Spot recommended rebound settings— based on air spring pressure:

Pressure (psi)	Low Speed Rebound Setting (clicks from full slow)	High Speed Rebound Setting (clicks from full slow)
40	9	8
40-50	8	7
50-60	7	6
60-70	6	5
70-80	5	4
80-90	4	3
90-100	3	2
100-110	2	1
110-120	1	0

- Increase rebound speed if the bike feels rough and low on fast sections with successive bumps
- Decrease rebound speed if the bike feels “bucky”, like riding a pogo stick on successive bumps.

## Travel Indicator O-Ring

- The fork seal will push the o-ring up the stanchion tube as it compresses
- Measure from the seal to the o-ring to determine your max travel usage.
- The Mayhem 150 comes stock with a 160mm travel fork.

## Volume Spacers

- Air volume spacers are installed in the fork to control how the spring forces increase as the shock is compressed
- A larger volume spacer will make the fork more progressive and harder to bottom out on big hits and landings
- A smaller volume spacer will make the fork more linear and easier to access full travel.
- Changing volume spacers is a simple process. Instructions for swapping spacers can be found here:

[Fox Fork Volume Spacers](#)



# Fork Setup—Rockshox Zeb Select

## Compression Damping Adjuster

- Increases firmness and support on compression (downward) stroke of the fork. Firmer settings will increase support for bermed turns and landing jumps
- Approximately 20 clicks of adjustment
- Turn black dial clockwise to increase firmness
- Softer: best for lighter riders, less aggressive riding
- Firmer: best for heavier riders, more aggressive riding

## Air spring pressure

- Use included shock pump to increase/ decrease air pressure
- Sets sag / “ride height”
- Spot recommends starting by setting the fork air spring pressure to 30% of your riding weight (with helmet, pack, gear, etc.) in pounds. For example, if you weigh 180lbs ready to ride, you would inflate your fork to  $0.30 \times 180 = 54\text{psi}$ .
- Increase pressure (up to +15psi) if you are bottoming out frequently. If adding air pressure does not prevent frequent bottom outs, you may need to upsize your **VOLUME SPACER**.
- Decrease pressure (up to -10psi) if you are never using full travel. If reducing air pressure does not allow you to access full travel you may need to downsize your **VOLUME SPACER**.

## Rebound Damping Adjuster

- Adjusts return speed “rebound” of suspension
- Turn clockwise to slow the rebound, counter-clockwise to speed up.
- Adjustment settings are referenced from “full slow”. To adjust, turn the red rebound knob clockwise until it stops, then slowly unwind the knob while counting each time it clicks.
- Spot recommended rebound settings— based on air spring pressure:

Pressure (psi)	Low Speed Rebound Setting (clicks from full slow)
30	12
30-40	10
40-50	9
50-60	8
60-70	7
70-80	6
80-90	5
90-100	4
110-120	3

- Increase rebound speed if the bike feels rough and low on fast sections with successive bumps
- Decrease rebound speed if the bike feels “bucky”, like riding a pogo stick on successive bumps.

## Travel Indicator O-Ring

- The fork seal will push the o-ring up the stanchion tube as it compresses
- Measure from the seal to the o-ring to determine your max travel usage.
- The Mayhem 150 comes stock with a 160mm travel fork.

## Volume Spacers

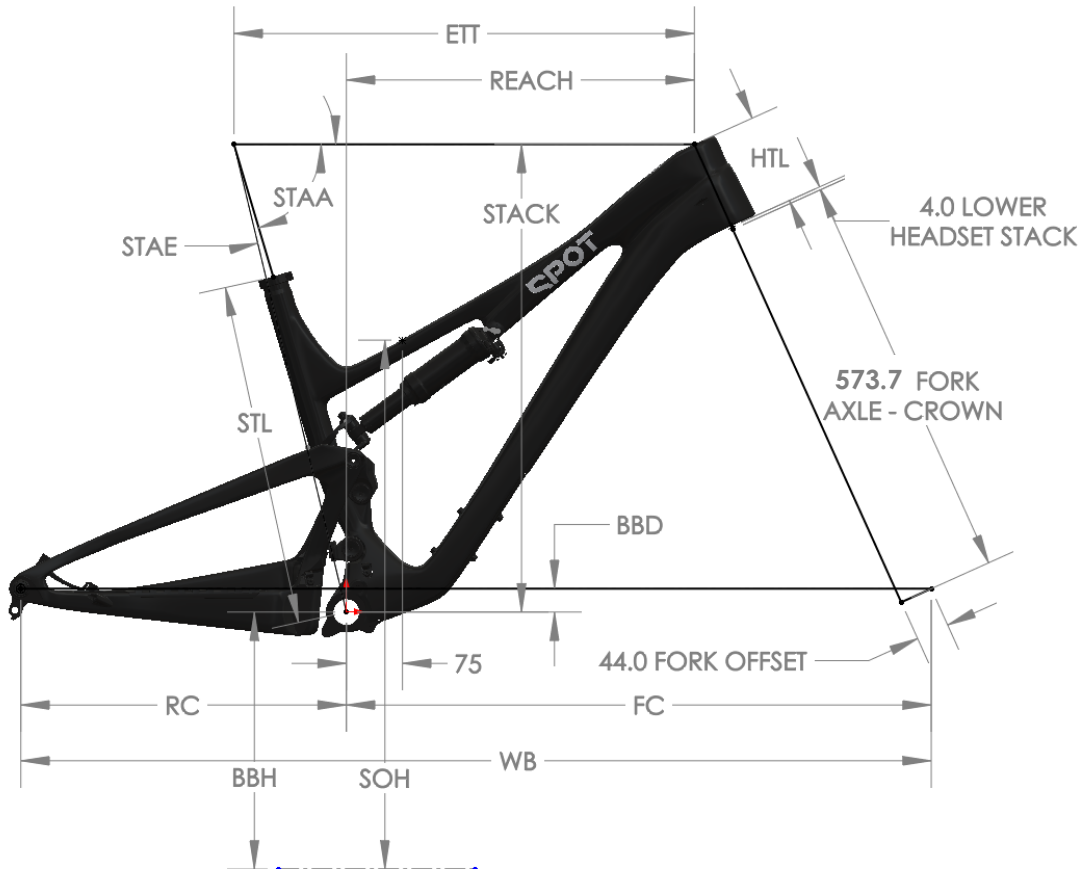
- Air volume spacers are installed in the fork to control how the spring forces increase as the shock is compressed
- A larger volume spacer will make the fork more progressive and harder to bottom out on big hits and landings
- A smaller volume spacer will make the fork more linear and easier to access full travel.
- Changing volume spacers is a simple process. Instructions for swapping spacers can be found here:

[Rockshox Fork Bottomless Tokens](#)





# Mayhem 150 Frame Geometry



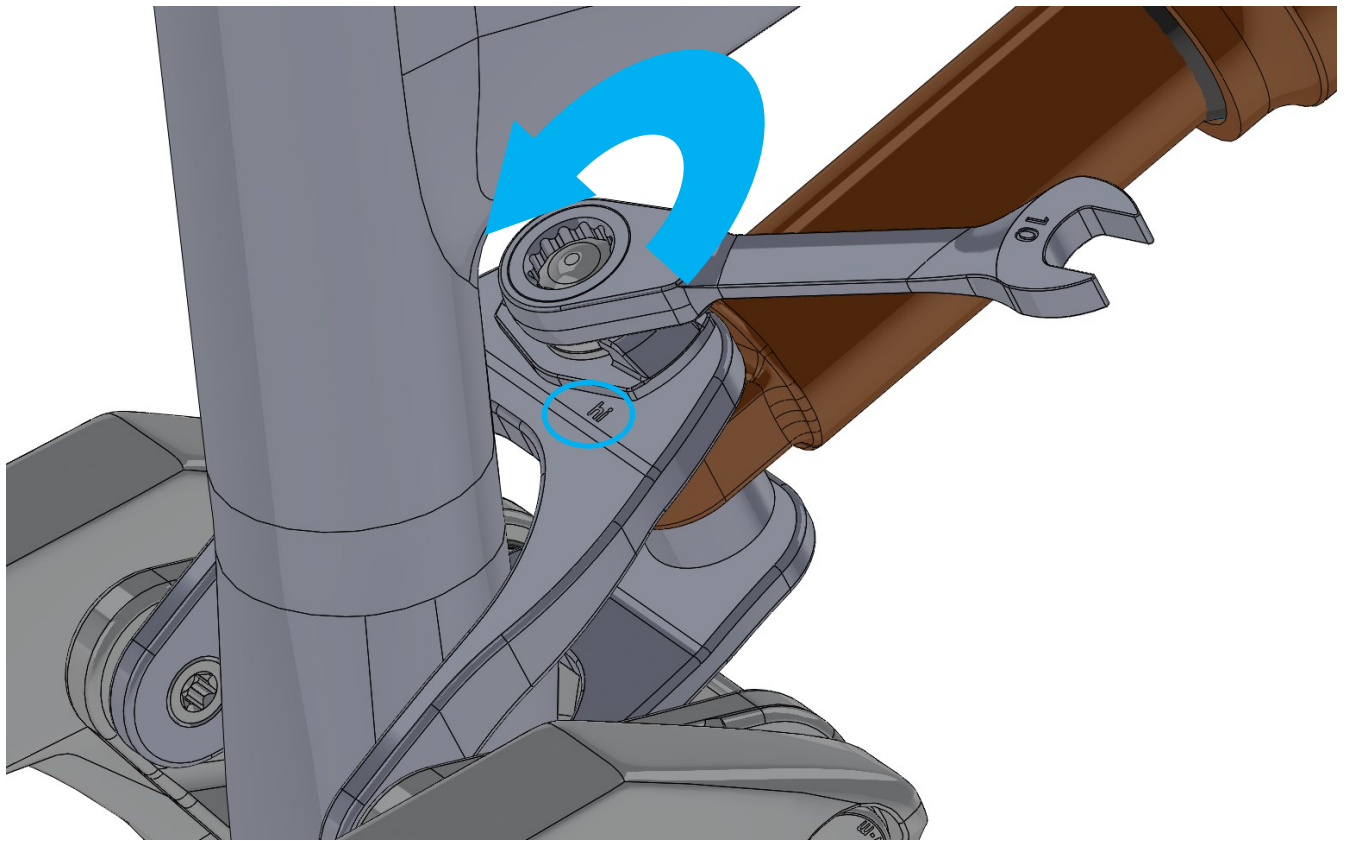
STL: SEAT TUBE LENGTH  
 ETT: EFFECTIVE TOP TUBE LENGTH  
 HTL: HEAD TUBE LENGTH  
 HTA: HEAD TUBE ANGLE  
 STAE: EFFECTIVE SEAT TUBE ANGLE  
 STAA: ACTUAL SEAT TUBE ANGLE  
 WB: WHEEL BASE  
 SOH: STAND OVER HEIGHT  
 BBD: BOTTOM BRACKET DROP  
 BBH: BOTTOM BRACKET HEIGHT (2.35 TIRE)  
 RC: REAR CENTER LENGTH  
 FC: FRONT CENTER LENGTH  
 REACH: HORIZONTAL FROM BB TO HEAD TUBE  
 STACK: VERTICAL FROM BB TO HEAD TUBE TOP

GEOMETRY - HIGH MODE													
SIZE	STL (mm)	STL (in)	ETT (mm)	ETT (in)	HTA	HTL (mm)	HTL (in)	STAE	STAA	WB (mm)	WB (in)	SOH (mm)	SOH (in)
S	350	13.8	545	21.5	65.0	90	3.5	77.5	74.5	1171	46.1	705	27.8
M	400	15.7	577	22.7	65.0	100	3.9	77.5	74.5	1205	47.4	705	27.8
L	450	17.7	610	24.0	65.0	110	4.3	77.5	74.5	1238	48.7	705	27.8
XL	490	19.3	642	25.3	65.0	120	4.7	77.5	74.5	1274	50.2	705	27.8

SIZE	BBD (mm)	BBD (in)	BBH (mm)	BBH (in)	RC (mm)	RC (in)	FC (mm)	FC (in)	REACH (mm)	REACH (in)	STACK (mm)	STACK (in)
S	27	1.1	348	13.7	440	17.3	731	28.8	410	16.1	611	24.1
M	27	1.1	348	13.7	440	17.3	765	30.1	440	17.3	620	24.4
L	27	1.1	348	13.7	440	17.3	798	31.4	470	18.5	630	24.8
XL	27	1.1	348	13.7	440	17.3	834	32.8	500	19.7	638	25.1

# Mayhem 150 Geometry Adjuster Operation

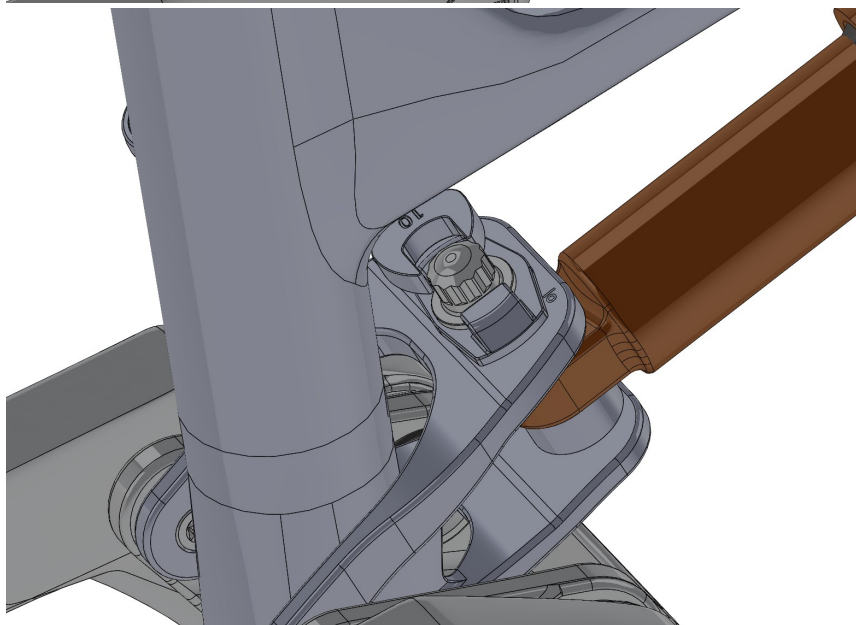
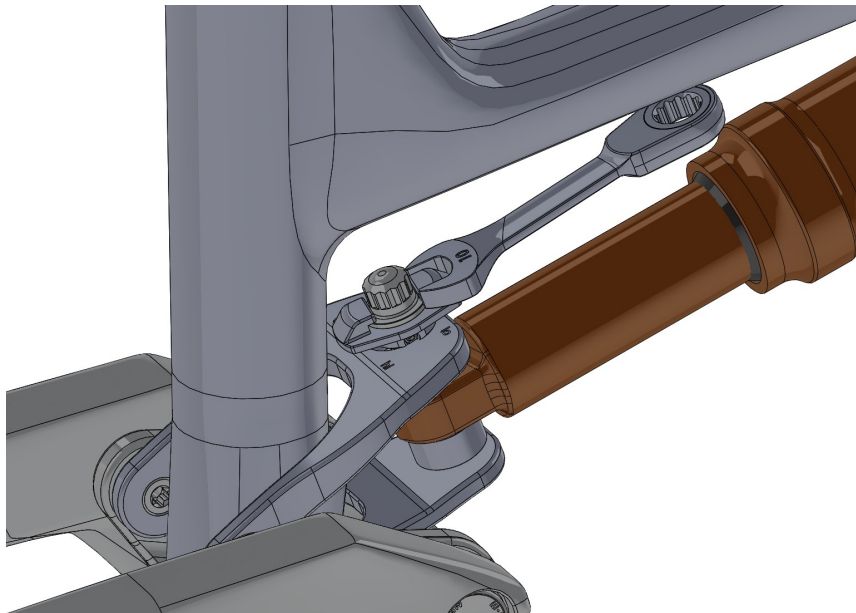
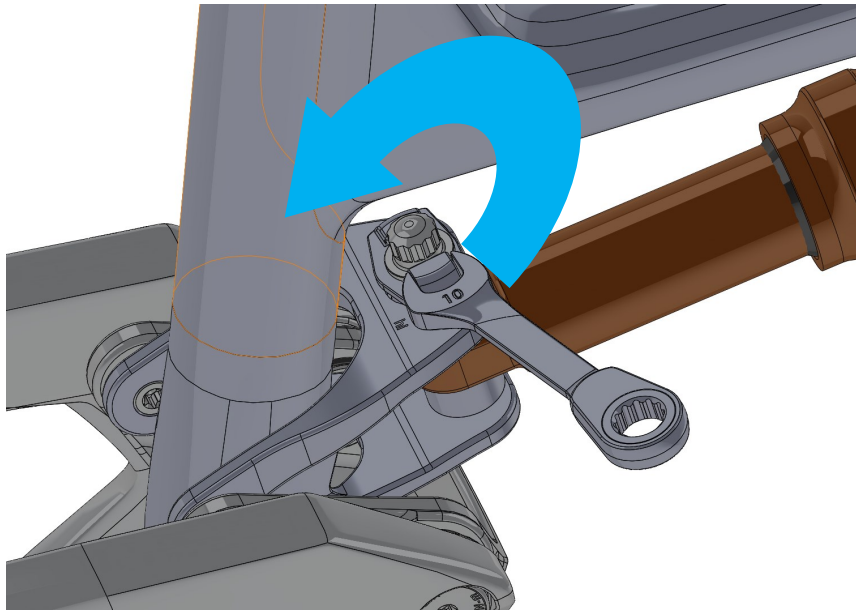
Your Mayhem frame can quickly and easily be switched between a High Mode and a Low Mode to fine tune its handling behavior. The High Mode will provide quicker steering response and better pedal clearance, which can be beneficial at lower speeds and when pedaling along rougher terrain. The Low Mode delivers more relaxed steering and a lower center of gravity, which will make the bike more stable at higher speeds and in faster corners. Follow the instructions below to switch between the modes. The selected mode is indicated on the top of the shock yoke adjacent to the adjuster cap.



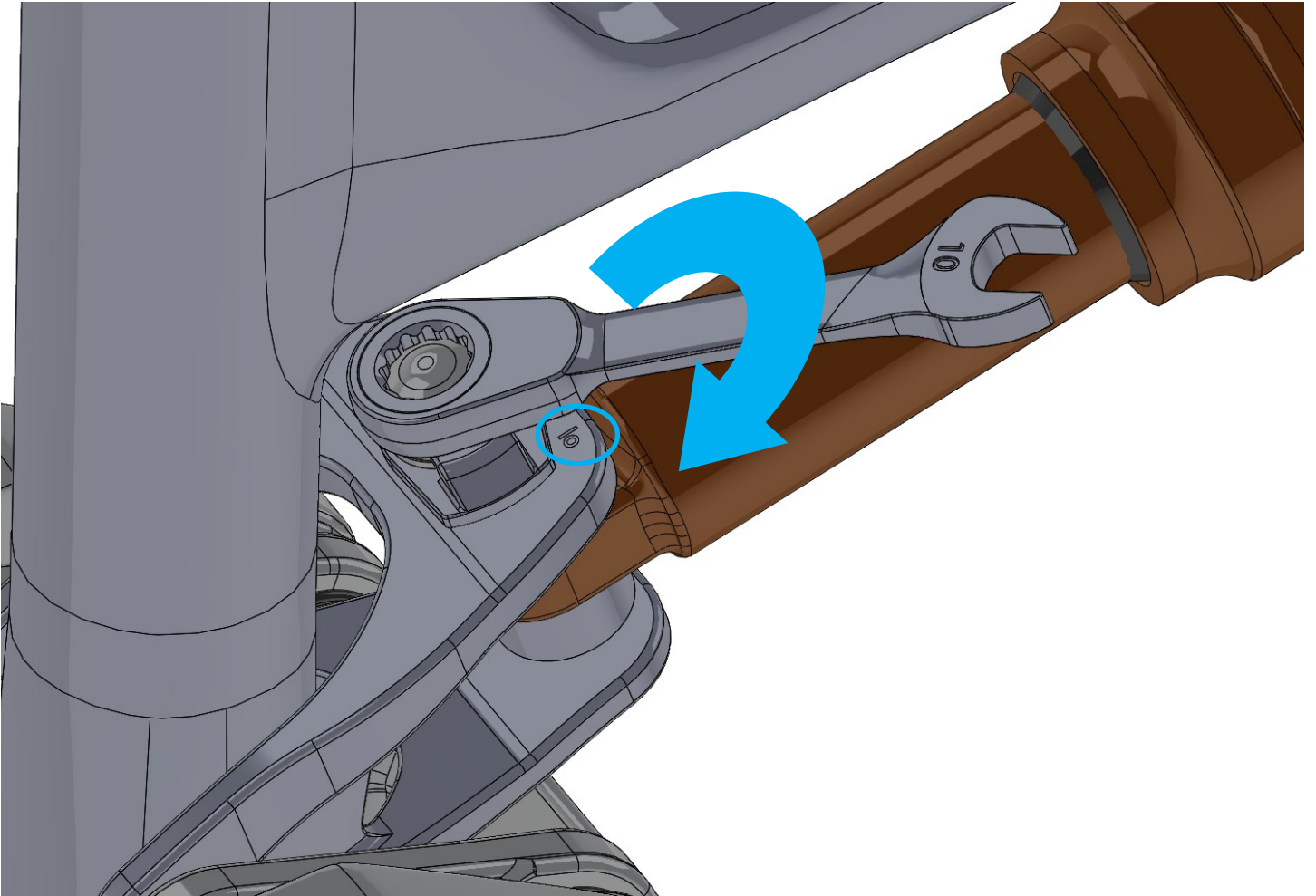
Switching from High Mode to Low Mode will slacken the head tube and seat tube angles by  $\sim 0.5^\circ$  and lower the bottom bracket by 7mm (1/4in).

1. Using a 10mm 12-point wrench, unscrew the rear shock nut two full turns ( $720^\circ$ ). Hold a finger underneath the shock yoke at the pin to ensure that unscrewing the nut causes the adjuster cap to rise, instead of pushing the pin down out of the yoke.

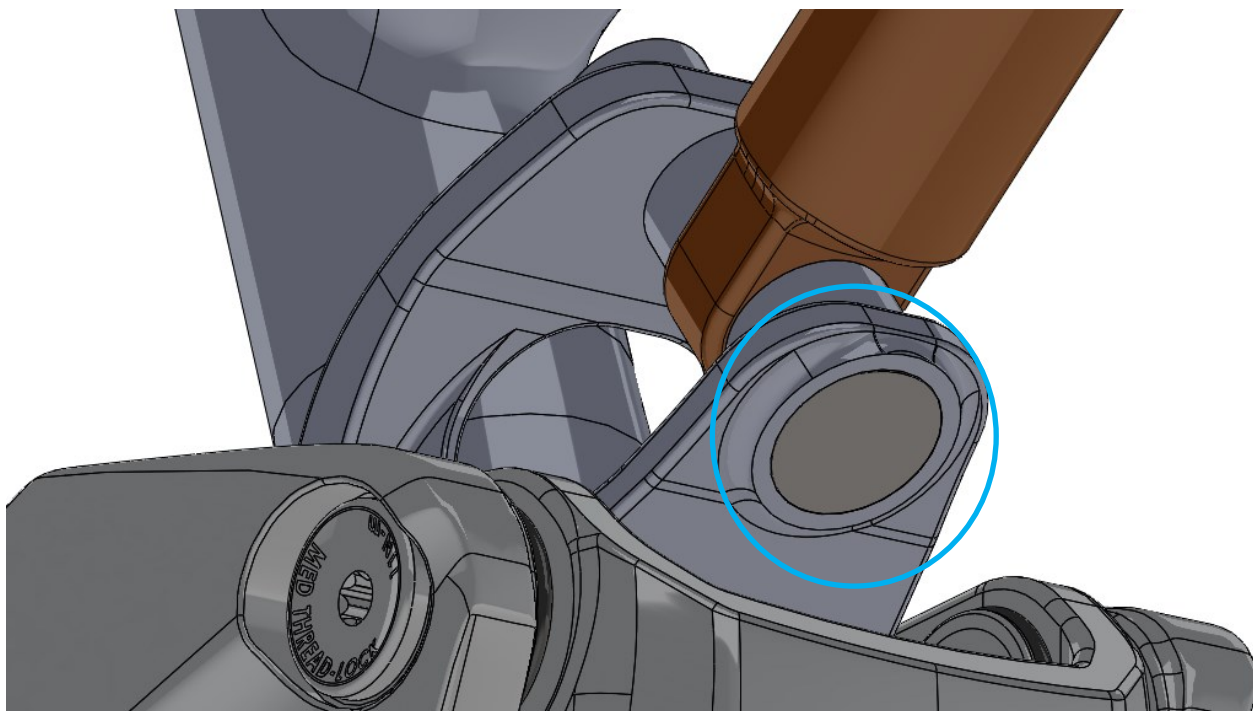
2. Use the open end of the wrench to turn the adjuster cap 180°. Either direction will work.



3. Once turned to the desired setting, tighten the nut using the closed 12-point end of the 10mm wrench. Torque to approximately 12N-m (106in-lb).



4. **IMPORTANT:** Before continuing to ride, verify that the round head of the shock pin is fully seated into the round pocket on bottom of the shock yoke:



A video showing the operation of the geometry adjuster can be found here:

[Spot Mayhem 130 / 150 Geometry Adjuster](#)

# Mayhem 150 Frame Component Compatibility

Your Mayhem frame was designed to work with the following components. Other components may be compatible, but fitment is not guaranteed. For questions regarding component compatibility of parts not listed below please contact Spot.

COMPONENT	FIT, STANDARD
HEADSET	UPPER: ZS44, LOWER: ZS56
BOTTOM BRACKET	BSA THREADED, 73mm SHELL WIDTH
SEATPOST	31.6, INTERNAL DROPPER ROUTING
CHAINRING	>51mm CHAINLINE, 30-34t RING
REAR HUB	12 X 148, SRAM UDH MAXLE INCLUDED
REAR BRAKE	160mm STANDARD POST MOUNT, 180mm MAX ROTOR DIAMETER
REAR TIRE	29 X 2.5" / 64mm MAX WIDTH. ACTUAL TIRE WIDTHS CAN VARY FROM PRINTED SIZES
REAR SHOCK	230 X 65, FRONT EYELET Ø8 X 25mm, REAR EYELET OPEN, NO BUSHINGS
FORK TRAVEL	160-170mm
WATER BOTTLE	2X BOTTLE MOUNTS, ONE ABOVE AND ONE BELOW DOWNTUBE
SEATPOST COLLAR	35.0mm INNER DIAMETER
CHAINGUIDE	ISCG-05 MOUNTS, UPPER GUIDE MUST BE MINIMAL SIZE



## Tools Required for Assembling a Frame into a Bicycle:

(Complete bikes delivered from Spot will not require these steps.)

- Hex wrenches / bits: 4mm, 5mm, 6mm
- Torx wrenches / bits: T25, T30
- 10mm 12 point box wrench or 10mm 12point socket (with ratchet)
- Torque wrench, 4Nm (35in-lb) to 14Nm (124in-lb) range
- Headset Press
- Bottom Bracket Installation Tools—may vary by BB brand and model
- High-Pressure Waterproof Grease—we recommend Motorex 3000®
- Isopropyl or denatured alcohol—90% or higher concentration

## Tools Required For Rear Triangle Removal/Replacement:

- Torx wrenches / bits, sizes: At least two T30 tools including one L-wrench
- Torque wrench with T30 Torx bit, 4Nm (35in-lb) to 14Nm (124in-lb) range
- Round pin punch, flat tip, 8-10mm diameter
- Hammer
- Isopropyl or denatured alcohol—90% or higher concentration
- Medium strength (blue) thread locking compound, such as Loctite 243 (blue)

## Tools Required For Pivot Bearing Replacement:

(In addition to the tools listed above)

- PVC, or other plastic tubes:
  - 27-30mm inner diameter, 45-55mm long
  - 23-25mm inner diameter, 25-30mm long
- An assortment of sockets and extensions for bearing removal, 20-22mm outer diameter for main pivot bearings, 13-14mm outer diameter for shock yoke pivot bearings
- Several spacers to support the main pivot clevis and upper link for bearing removal and installation. These can be made from any hard material, wood, plastic, PVC pipe etc. The only requirements are that they fit into the required openings, are sturdy enough to support the parts, and are the following widths:
  - Main Pivot: 62mm (2.44in)
  - Upper Link Shock Pivot and SS Pivot: 57mm (2.24in)
  - Upper Link Seat Tube Pivot: 44mm (1.73in)See pages 35 and 37-38 for illustrations of these spacers' function.
- Arbor press or bench vise for bearing installation

## Pivot Bearing and O-Ring Specifications:

- Main Pivot Bearings, QTY 2: Enduro 3802 LLU MAX
- Seat Tube Pivot Bearings, QTY 2: Enduro 3802 LLU MAX
- Seat Stay Pivot Bearings, QTY 2: Enduro 3802 LLU MAX
- Shock Yoke Pivot Bearings, QTY 2: Enduro DR 1017 RS MAX
- Main Pivot O-Rings, QTY 4: 1.5 X 18 EPDM
- Seat Tube Pivot O-Rings, QTY 4: 1.5 X 18 EPDM
- Seat Stay Pivot O-Rings, QTY 4: 1.5 X 18 EPDM
- Shock Yoke Pivot O-Rings, QTY 4: 1.5 X 13 EPDM

For individual parts and a complete exploded assembly diagram, please see the last 3 pages of this manual.

# Leaf Spring Related Precautions

The Living Link leaf spring, and its associated hardware, which include the 8 T30 Torx fasteners, main pivot clevis, and cap hardware are to be treated as integral to the rear triangle of the frame.

## Do not attempt to remove or modify the leaf spring!

Doing so is likely to damage the leaf spring, hardware, and possibly the rear triangle itself. Any questions or concerns regarding the leaf spring should be directed to Spot:

[www.spotbikes.com](http://www.spotbikes.com)

[customerservice@spotbikes.com](mailto:customerservice@spotbikes.com)

303-278-3955

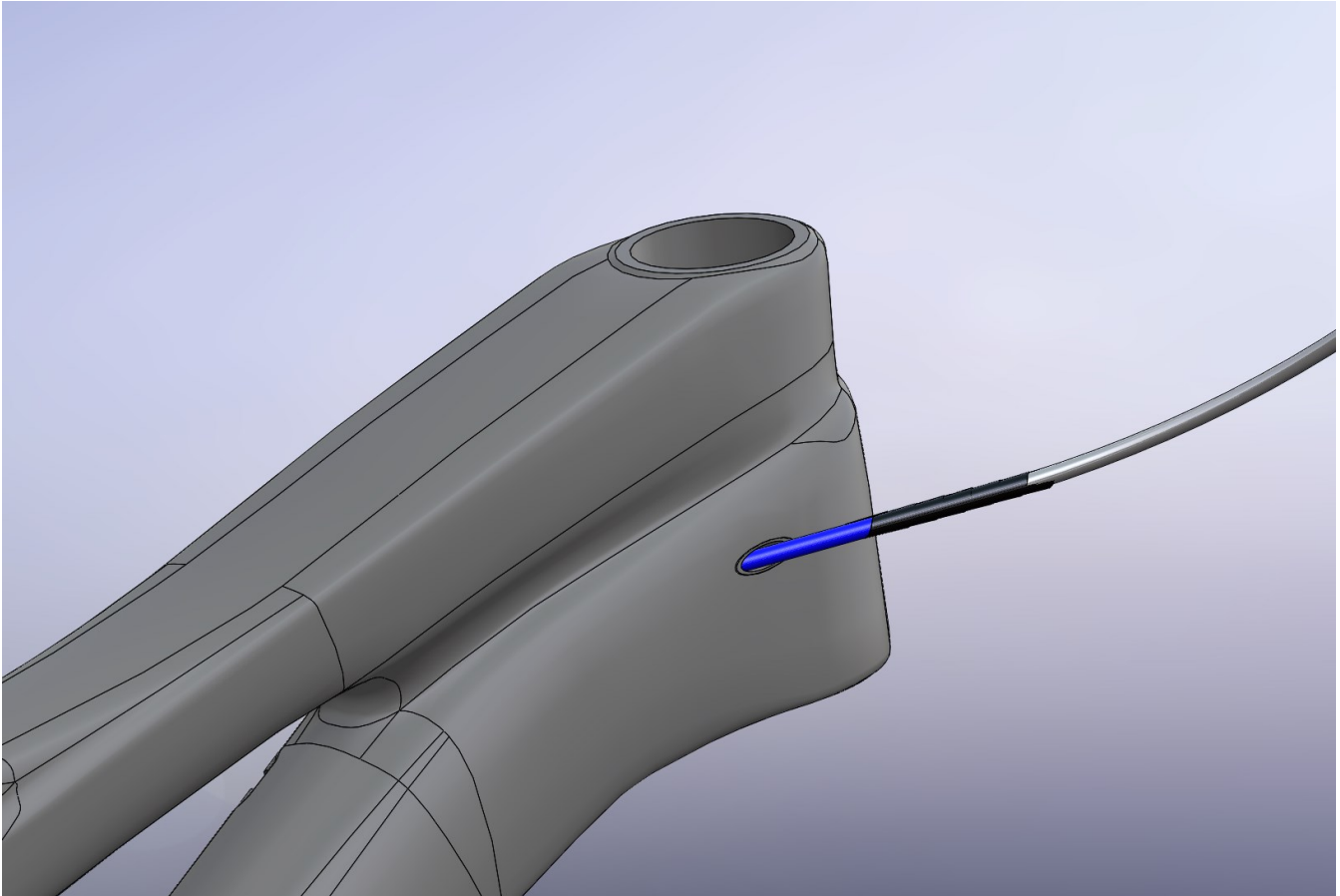
It is recommended to periodically check the torque on the 8 leaf spring mounting fasteners. This should be done approximately every 100 hours of ride time, or once per year, depending on which occurs sooner.

1. Fit your torque wrench with a T30 Torx bit and the shortest extension required to reach the fasteners.
2. Clamp the bicycle securely in a work stand and remove the rear wheel.
3. Remove the forward shock pivot screw and pin, and swing the shock down and outwards. Very carefully compress the rear suspension by lifting the rear triangle at the rear dropout area. The leaf spring will initially resist compression, but once past mid travel, it will tend to pull the rear swingarm upward. Let the suspension come to rest in the upward position to gain access to the leaf spring mounting screws. **Do not over-compress the suspension causing a back-bend in the leaf spring. This could damage the leaf spring and lead to failure.**
4. Turning the torque wrench clockwise (as seen looking at the head of the fastener) and verify that all 8 fasteners are at or above 12N-m (106in-lb).

# Internal Dropper Seatpost Routing

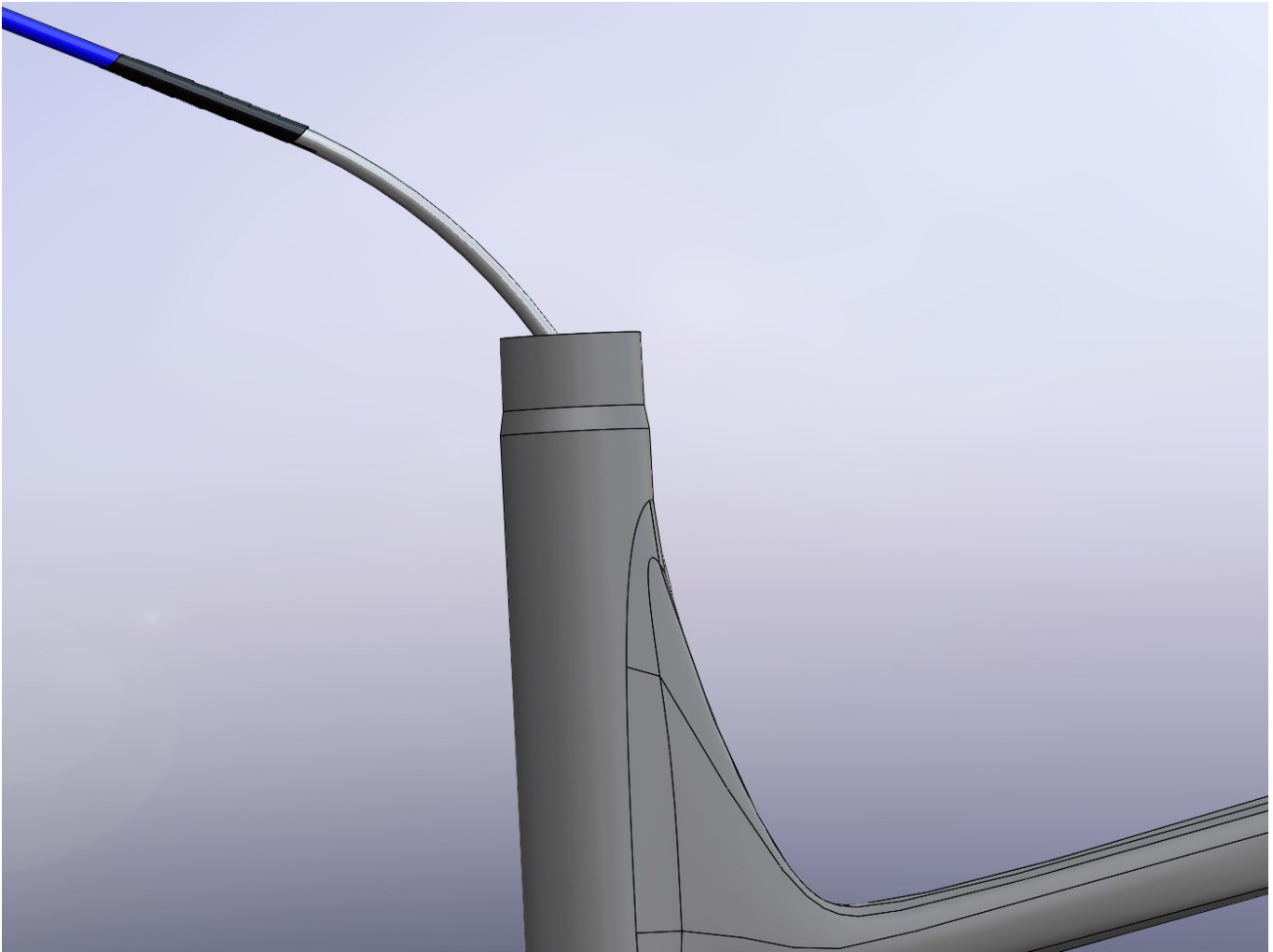
## IMPORTANT:

Your Mayhem frame is supplied with a guide tube installed in place of the dropper seatpost cable to ease installation. Please do not remove the guide tube until the dropper seatpost cable is installed.



1. Make sure your seatpost collar is installed on the frame. The seatpost cable housing is easiest to install by feeding from the head tube to the seat tube, but can be fed starting at the seat tube if necessary. Tape the seatpost cable housing to the guide tube at the head tube end. Make sure to clean the end of the cable housing and the guide tube with alcohol before taping. Tape the two together in line, and wrap the tape several times around the junction for sufficient contact.
2. While feeding the seatpost cable housing into the frame, gently pull the guide tube out of the seat tube. If excessive resistance is met, the tape joint may be too bulky and should be reduced. The cable housing must curve around a relatively small radius between the seat tube and the down tube.

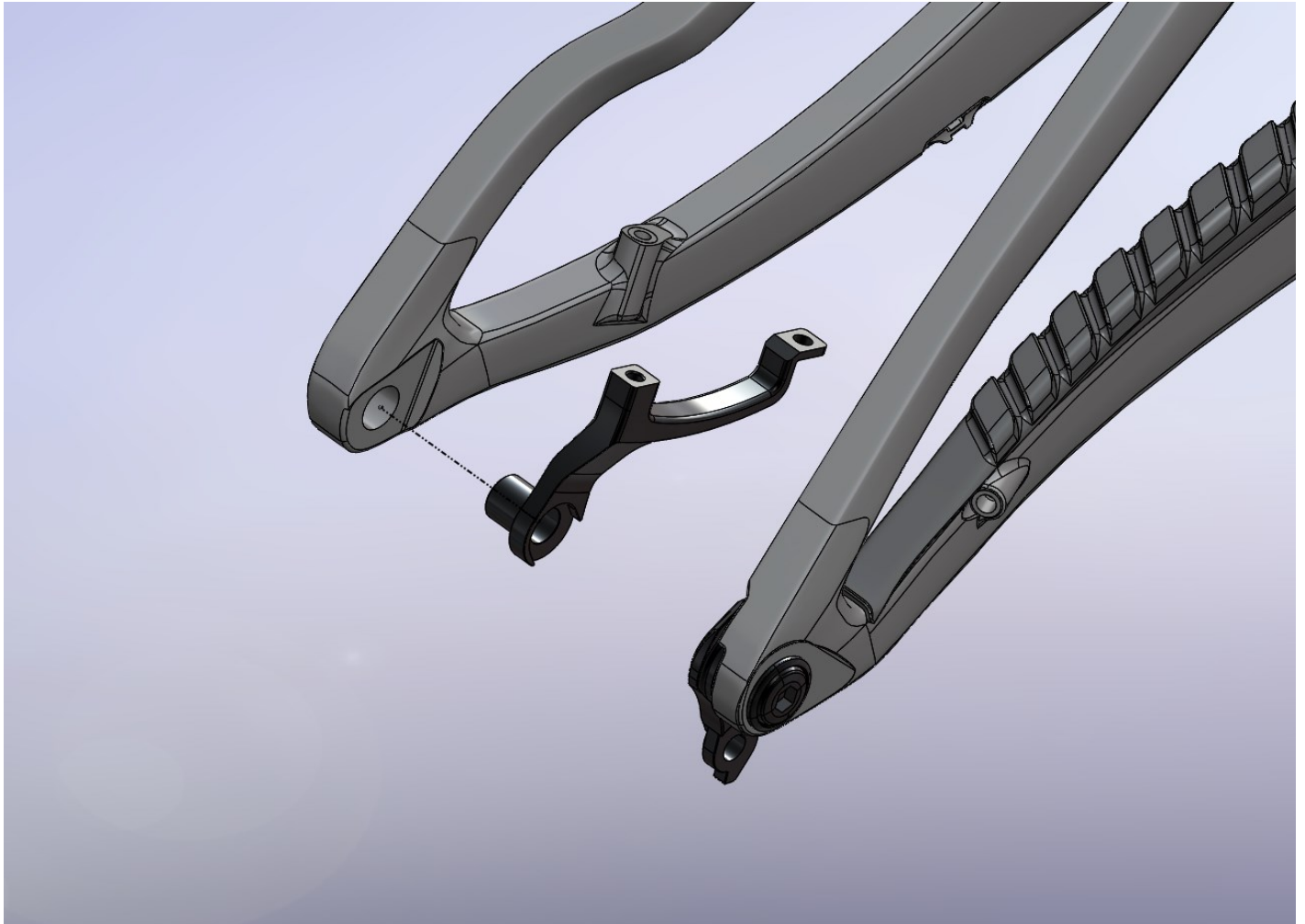
3. Continue to feed the seatpost cable housing while gently pulling the guide tube from the seat tube. When the seatpost cable housing emerges from the port, remove the tape and store the guide tube in a safe place.



4. Proceed to install your dropper seatpost per the seatpost manufacturer's instructions. *You may wish to install other components on the frame before completing the dropper post installation.*

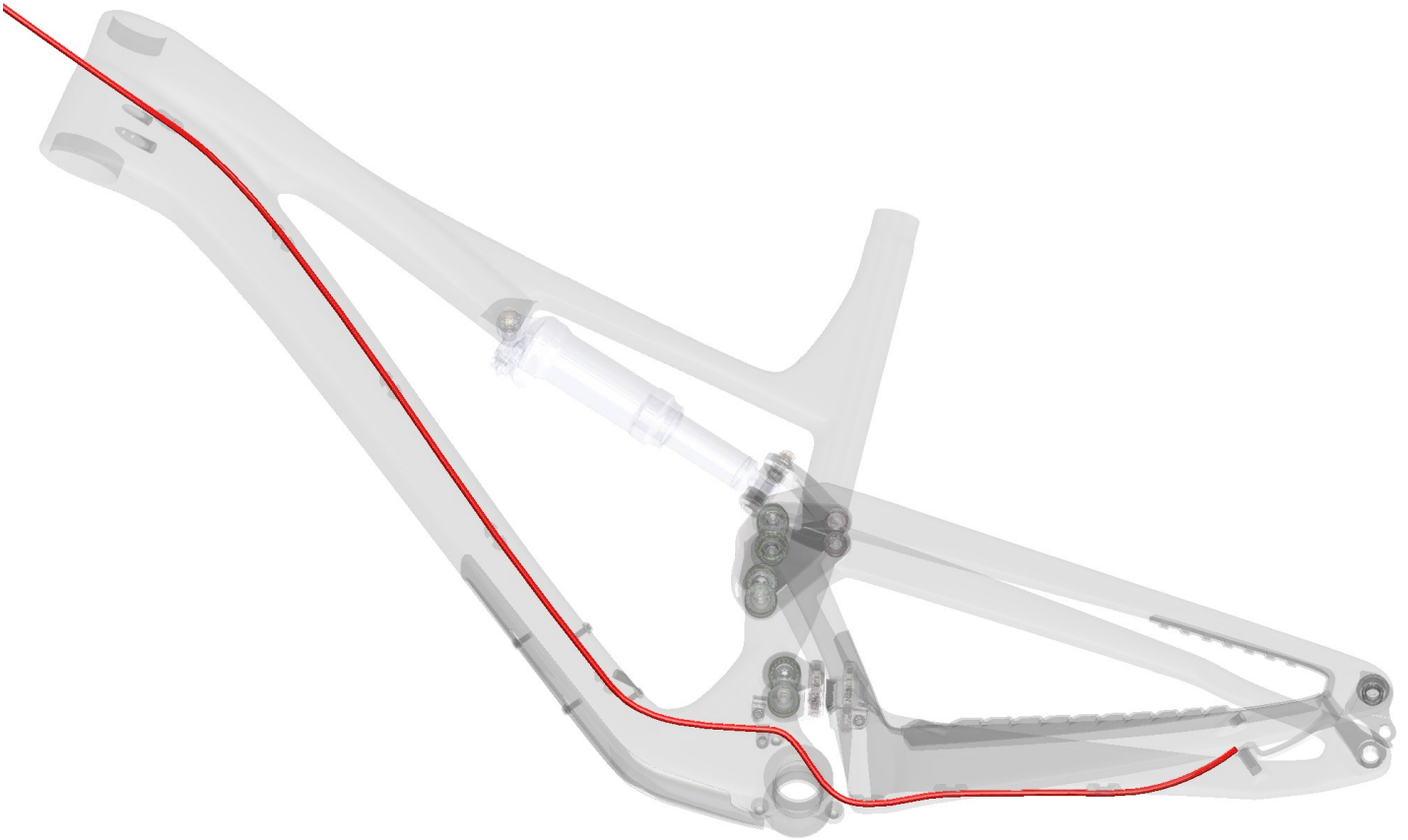
## Rear Brake Hose Routing

1. Begin by installing the rear brake caliper bracket, caliper and any applicable adapter if using a rotor larger than 160mm. Please note the Mayhem frame is not compatible with rotors larger than 180mm in the rear. The brake caliper bracket slides into the axle bore and is secured by installing the forward caliper mounting screw.
2. Route the rear brake line starting from the caliper, attaching it to the rear triangle using the supplied zip ties on the cable saddles.



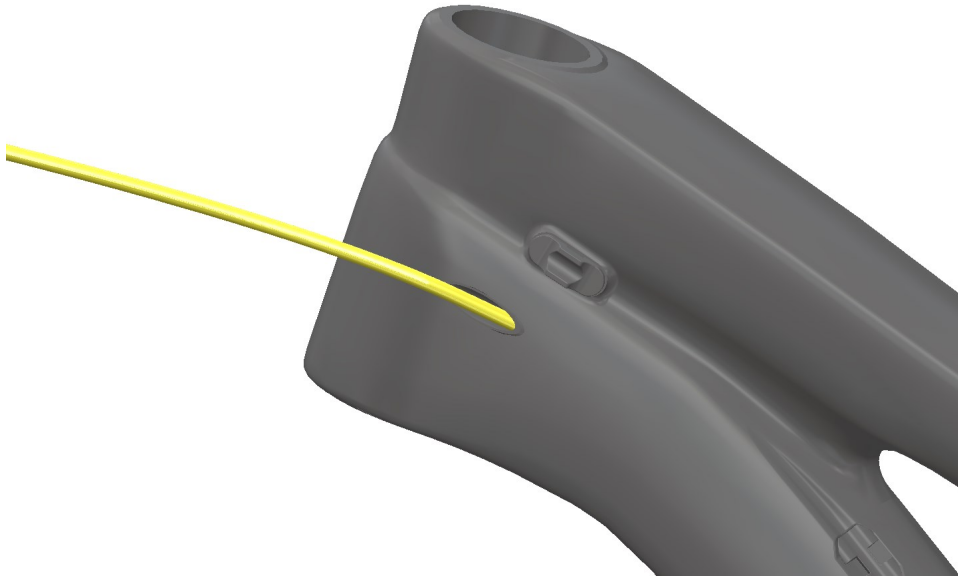


3. Leaving a small amount of slack between the front and rear triangle, continue to route the line up the down tube along the groove using the supplied p-clip and zip ties.
4. Make any changes to brake line length according to the brake manufacturer's instructions.



# Rear Derailleur Cable Routing

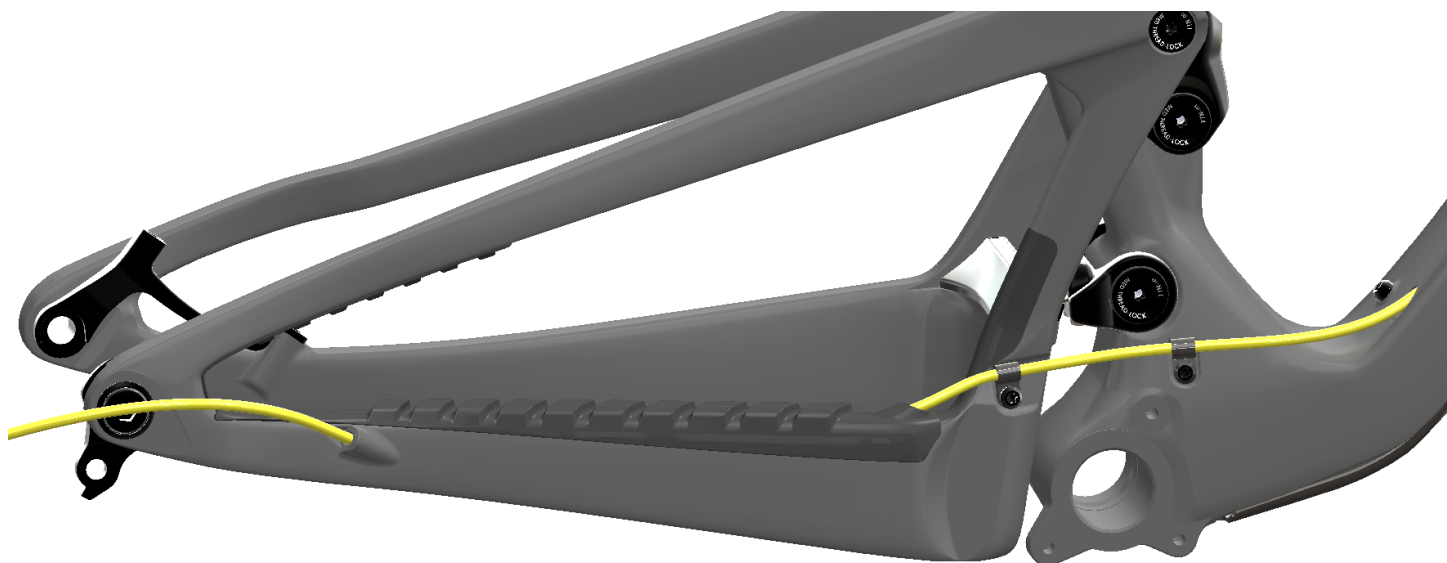
1. Begin by feeding the rear derailleur cable housing into the port at the head tube as shown:



2. The housing will emerge from the corresponding port atop the down tube above the bottom bracket area:



3. Continue routing the cable into the drive side chain stay through the port in the protector as shown. Once enough cable has emerged from the rear port on the chainstay, affix the cable to the front and rear triangle with the supplied p-clips. Be sure to leave a little slack between the front and rear triangles to accommodate suspension motion.



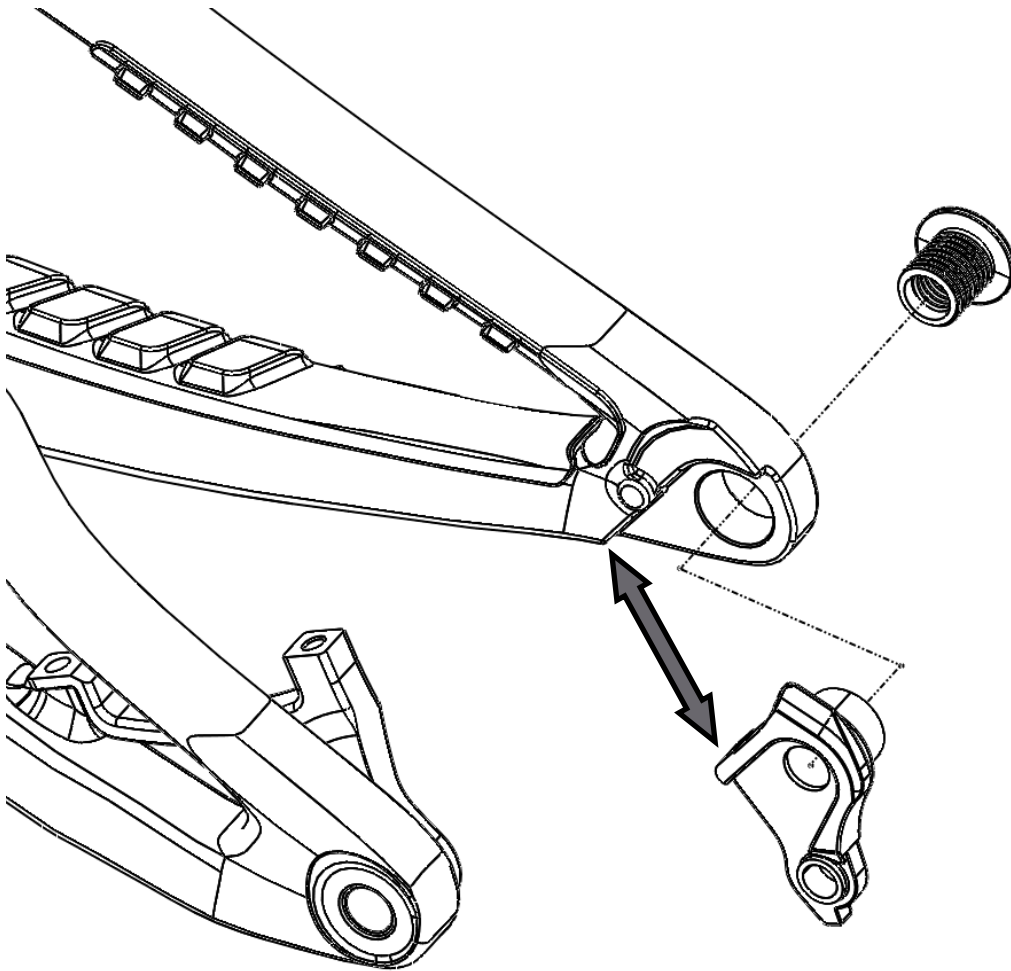
# Bottom Bracket Installation

1. Observe the bottom bracket manufacturer's requirements for cup position, any required spacers, and take care to observe the left/right orientation of each cup.
2. Tighten each bottom bracket cup into its respective side of the frame and torque to the bottom bracket manufacturer's specification.

# Rear Derailleur Hanger Removal/Replacement

The Mayhem 130 and 150 frames use a standard SRAM UDH (“Universal Derailleur Hanger”), which is available from [spotbikes.com](http://spotbikes.com), or any SRAM parts retailer.

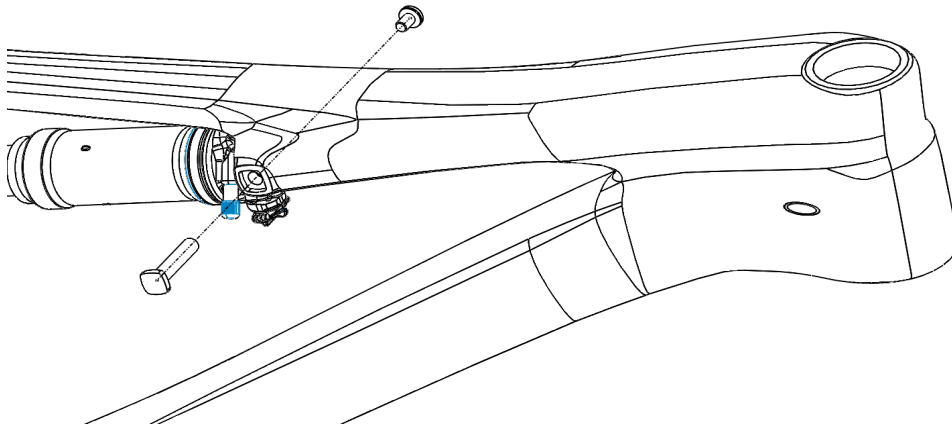
1. Remove the rear wheel and the rear derailleur from the frame. It should not be necessary to remove the chain or cable/housing from the derailleur:



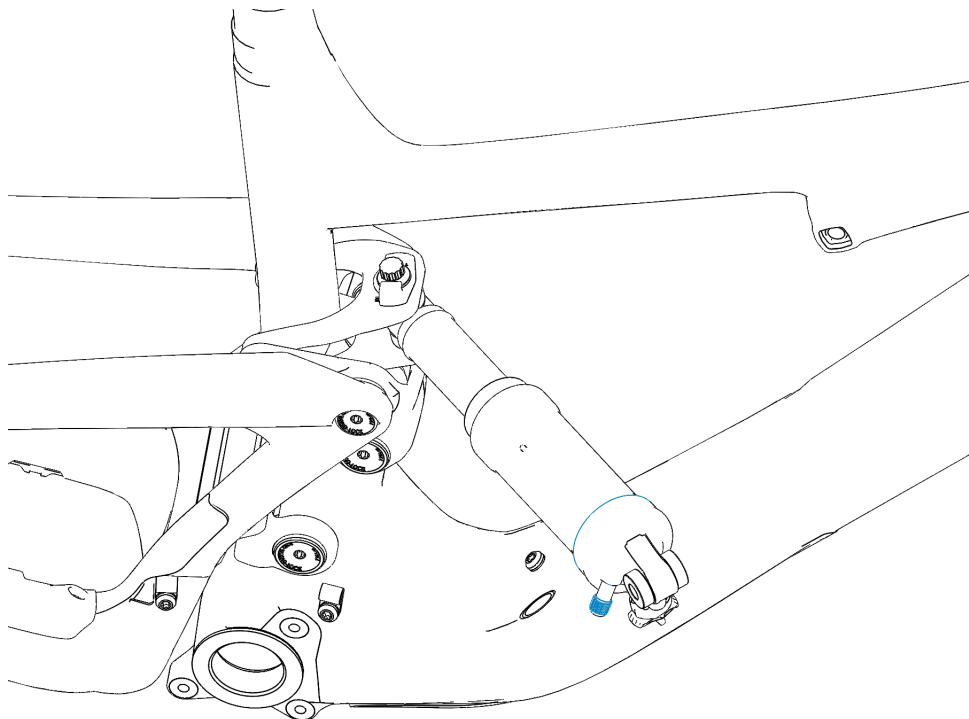
2. The derailleur hanger is removed using a 8mm hex tool on the outboard screw. The screw is reverse threaded– it must be turned **CLOCKWISE** to remove. When replacing the derailleur hanger, clock the hanger with the front lower face against the stop molded into the frame as directed by the arrow above. Torque: 25.0Nm (220in-lb) **COUNTER CLOCKWISE** to tighten.

# Rear Shock Removal/Replacement

1. Secure the bike/frame in a work stand and remove the rear wheel from the frame. This will make access to the rear shock mounting hardware easier in step 5.
2. Using a T30 Torx tool on the non-drive side, remove the forward shock pivot pin and screw.

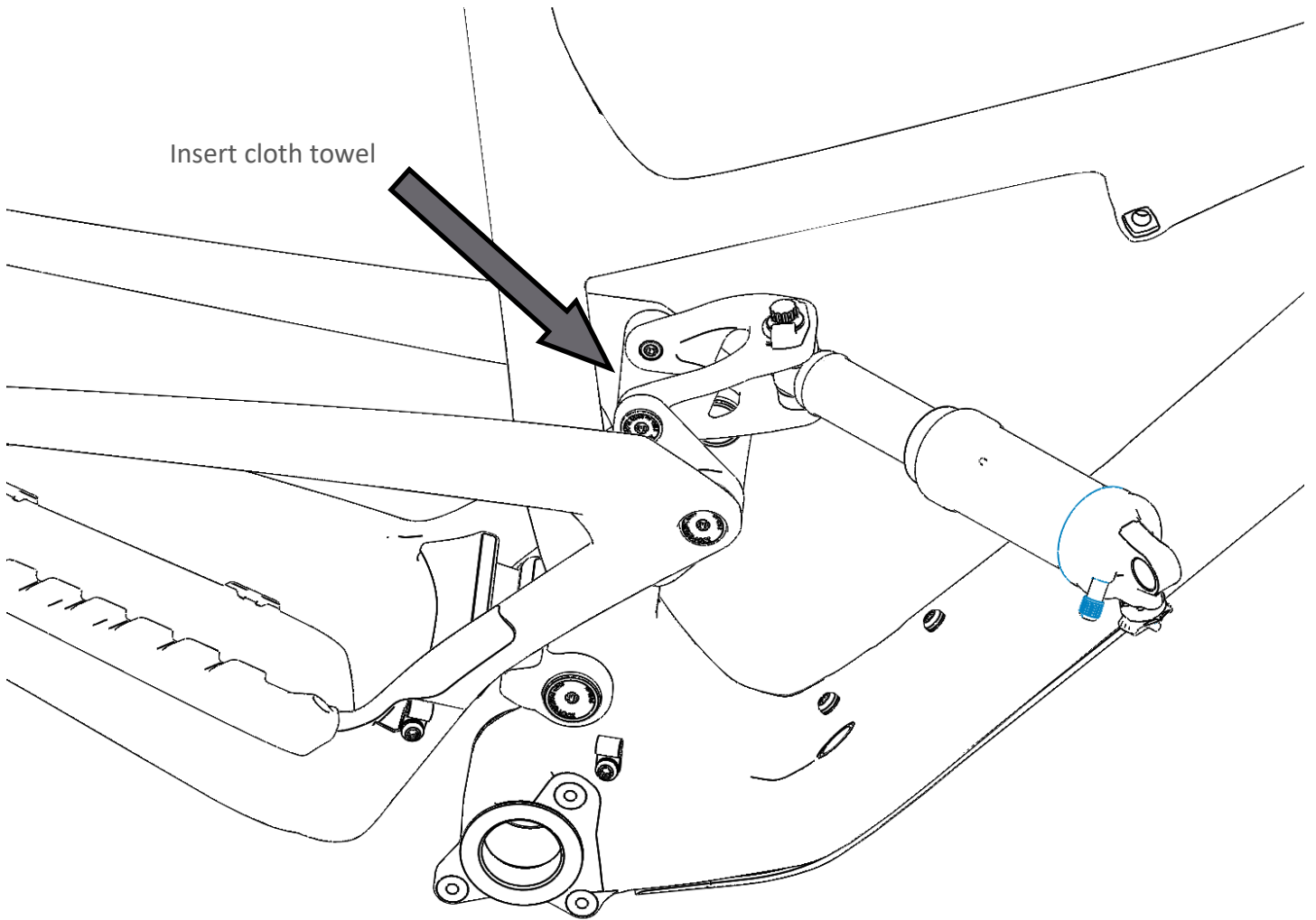


3. Swing the shock downward from its forward mount being careful not to collide the shock with the down tube
4. Swing the shock to the drive side of the frame for better access to the rear mounting hardware. You will feel some resistance if the rear mounting hardware is torqued to spec.

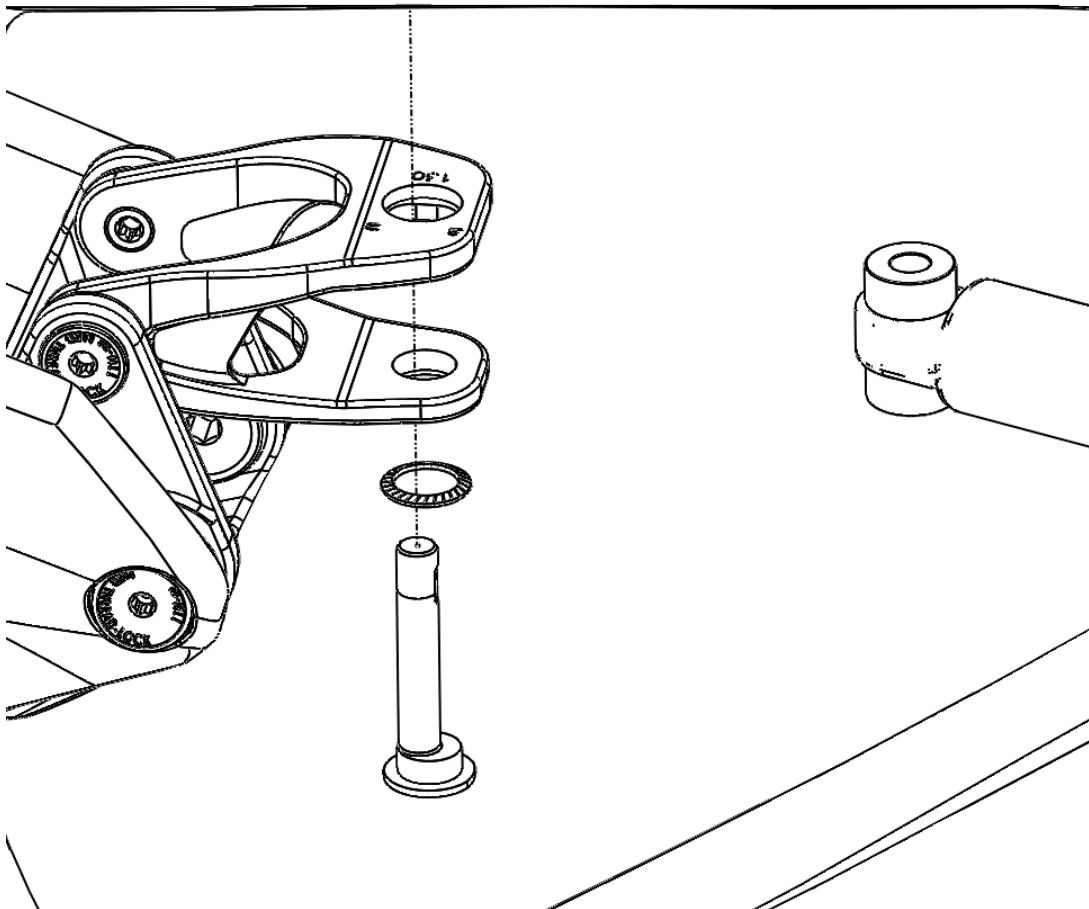
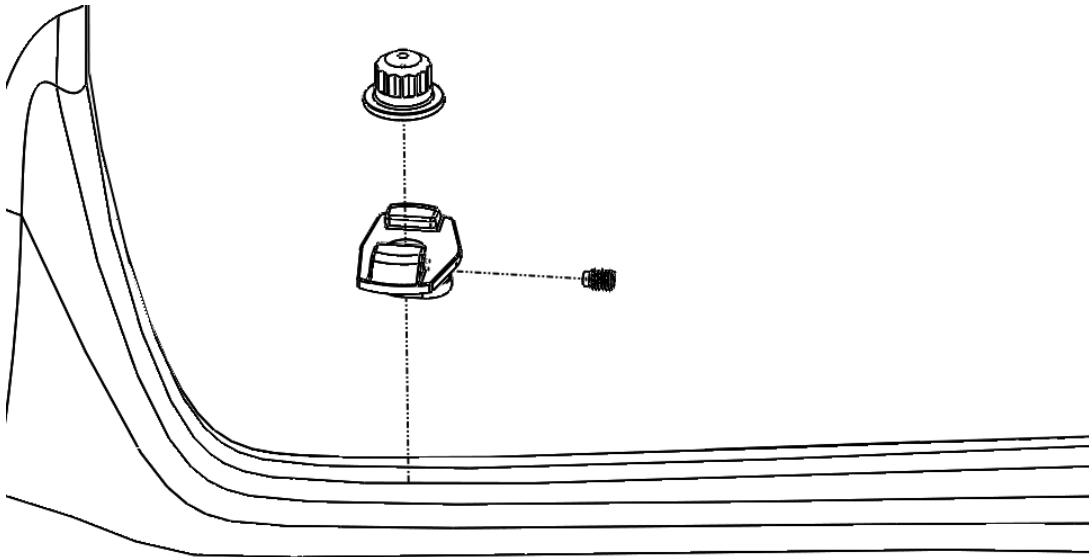




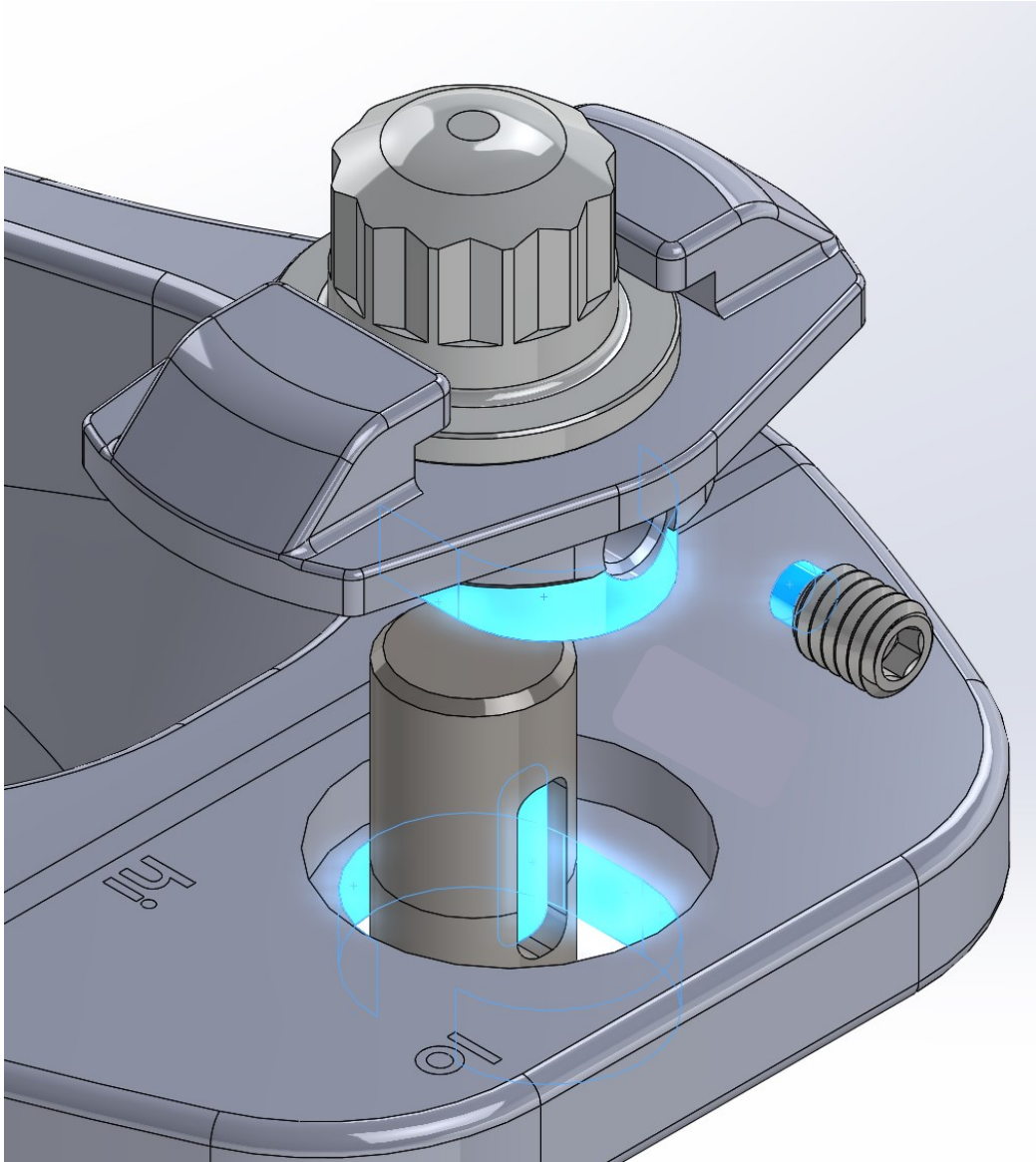
5. Slowly lift the rear triangle at the rear axle to rotate the upper linkage forward. The leaf spring will initially resist, but as the suspension compresses past halfway, it will pull the suspension into its fully compressed position. This will provide easier access to the rear shock mounting hardware. Stuff a cloth shop towel into the area between the shock yoke and the seat tube to protect the paint from any accidental collision with the shock yoke.



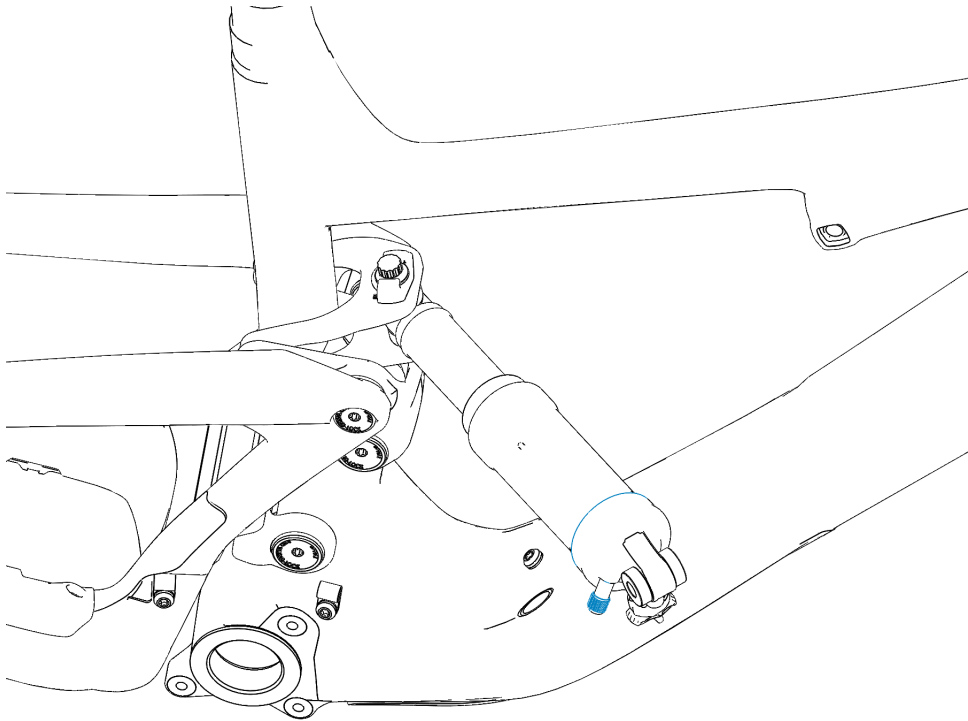
6. Using a 10mm closed end 12-point wrench, unscrew the upper nut from the rear shock mounting hardware two full turns. This nut will lift the geometry adjuster cap upward and expose the set screw that aligns the geometry adjuster cap and shock pin. The set screw is easiest to access when the geometry adjuster is in “lo” mode. Back the set screw out two full turns and continue unscrewing the nut until the geometry adjuster cap can slide off the pin. Slide the rear shock pin downward out of the shock yoke, taking care to clear the link. Careful to not lose the spacer just under the head of the shock pin. Then slide the shock forward and sideways to free



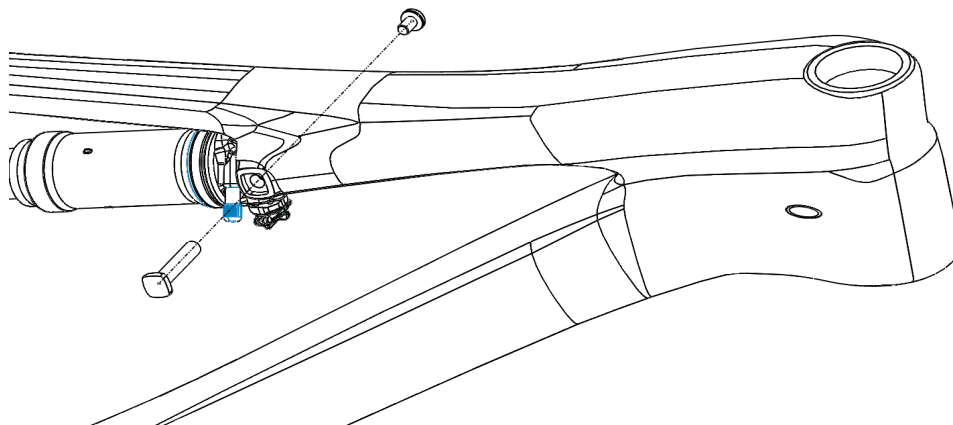
- Shock installation is the reverse of removal. It is important to observe the orientation of the adjuster cap and shock pin as the shock pin is keyed and will only assemble if aligned properly with the adjuster cap set screw.



8. Once the rear shock mounting hardware has been reinstalled, torque the 10mm cap nut to 12N-m (106in-lb). Gently return the rear triangle/suspension to it's full extended position by pulling downward near the rear axle and remove the protective cloth towel from the linkage.

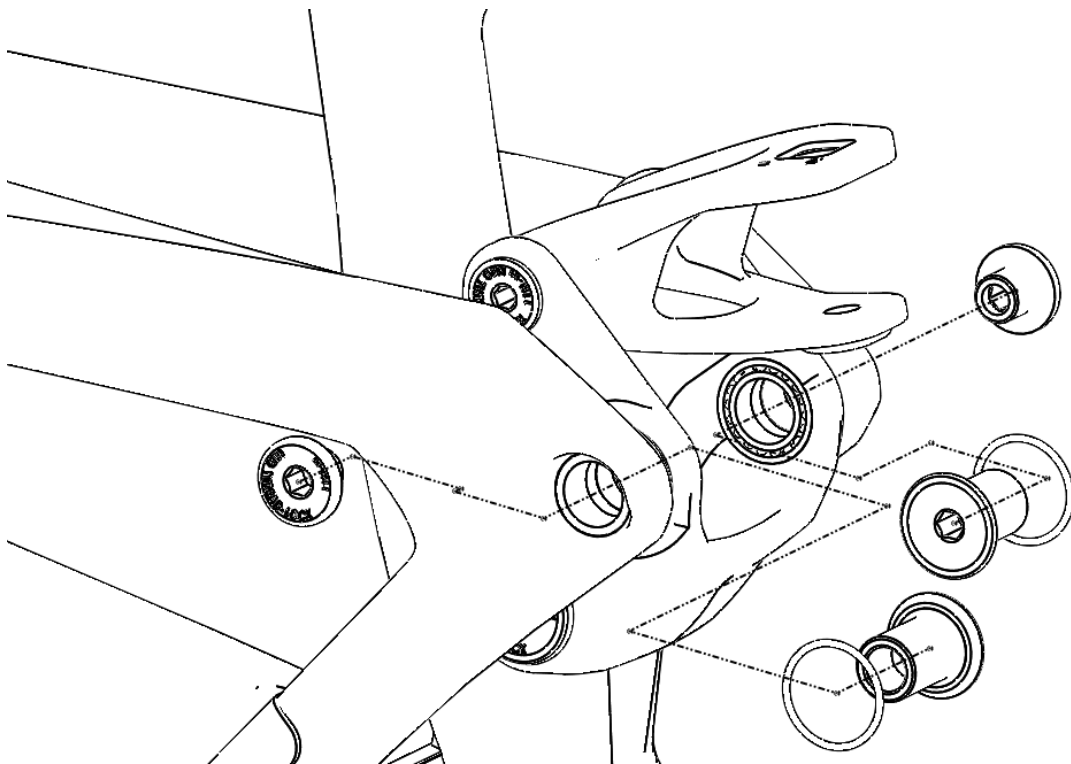
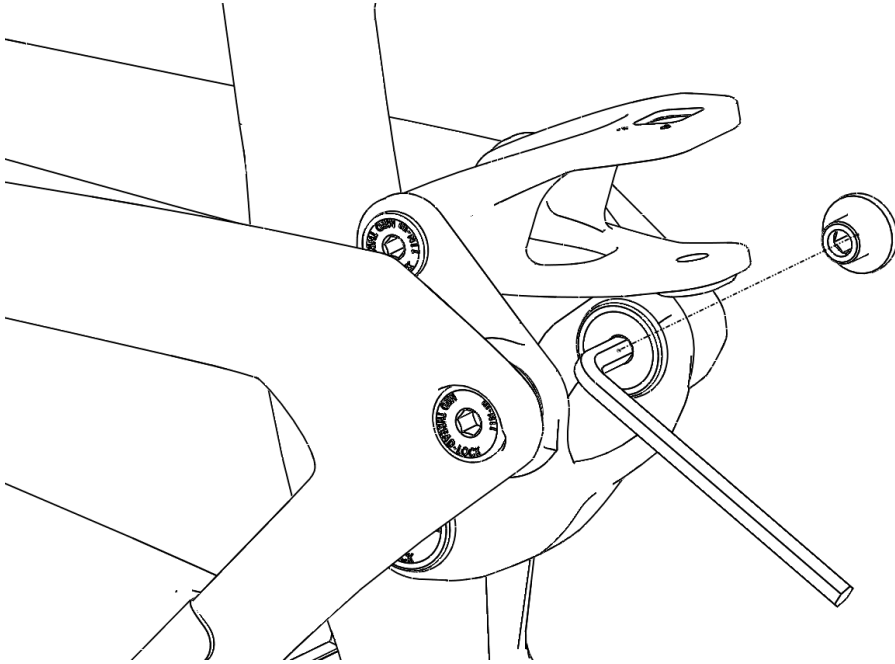


9. Swing the forward eyelet of the shock into the mounting tabs on the top tube. Reinstall the shock pin with the head on the drive side. Install and torque the screw to 10-11 N-m (88-97in-lb).

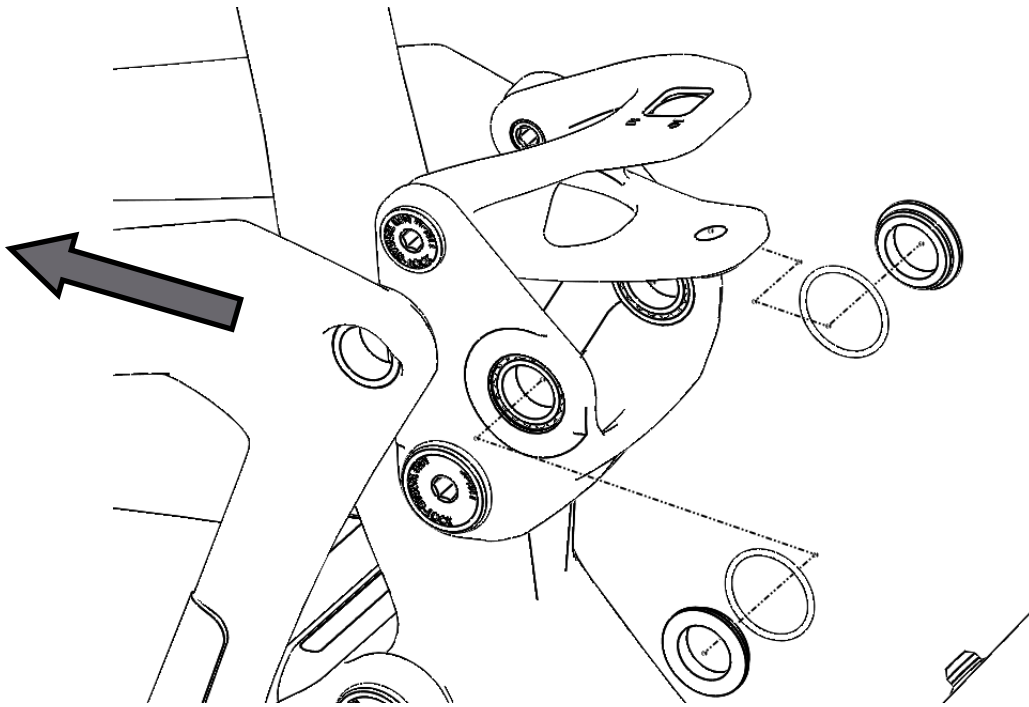


# Rear Triangle Removal

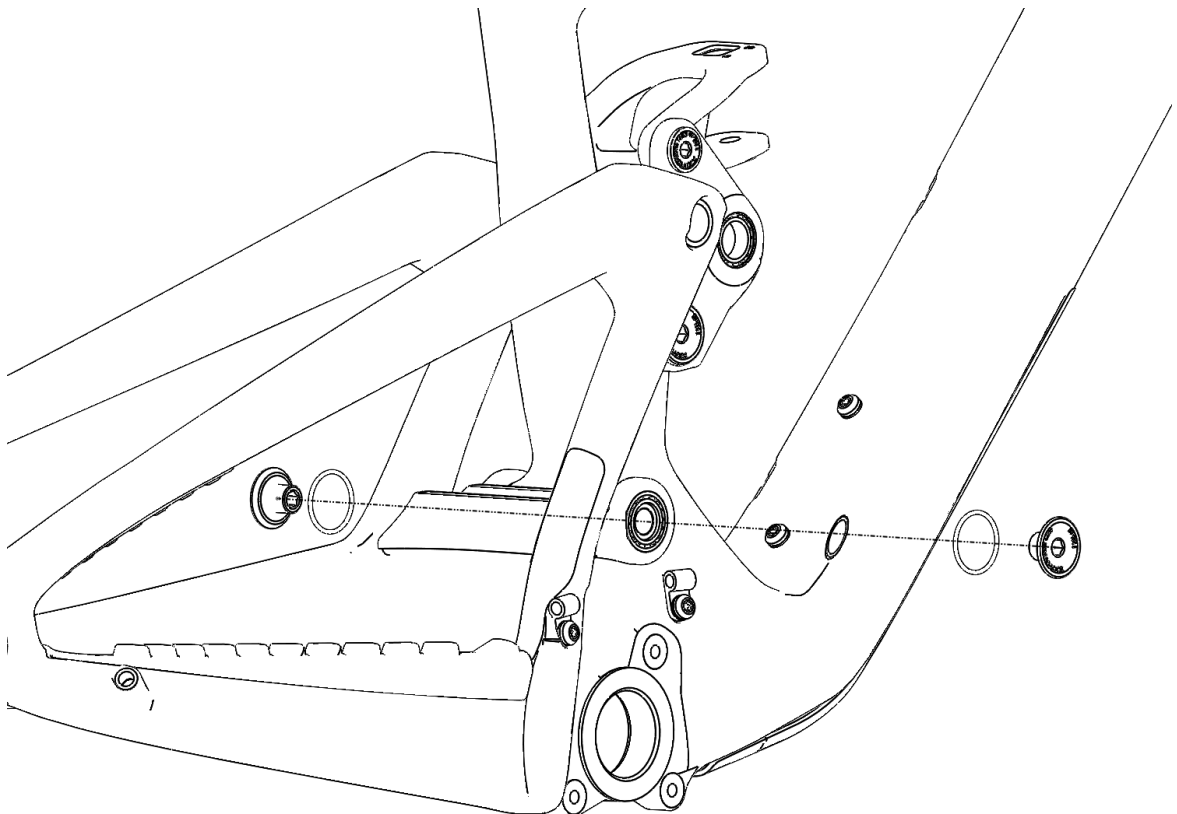
1. Remove the shock from the frame by following the directions in the previous section of this manual. Insert a cloth towel between the shock yoke and the front of the seat tube to prevent paint damage in the event of an accidental collision.
2. Using a T30 Torx L wrench and another T30 Torx tool, remove the link axles and o-rings from the rear triangle/link pivot.



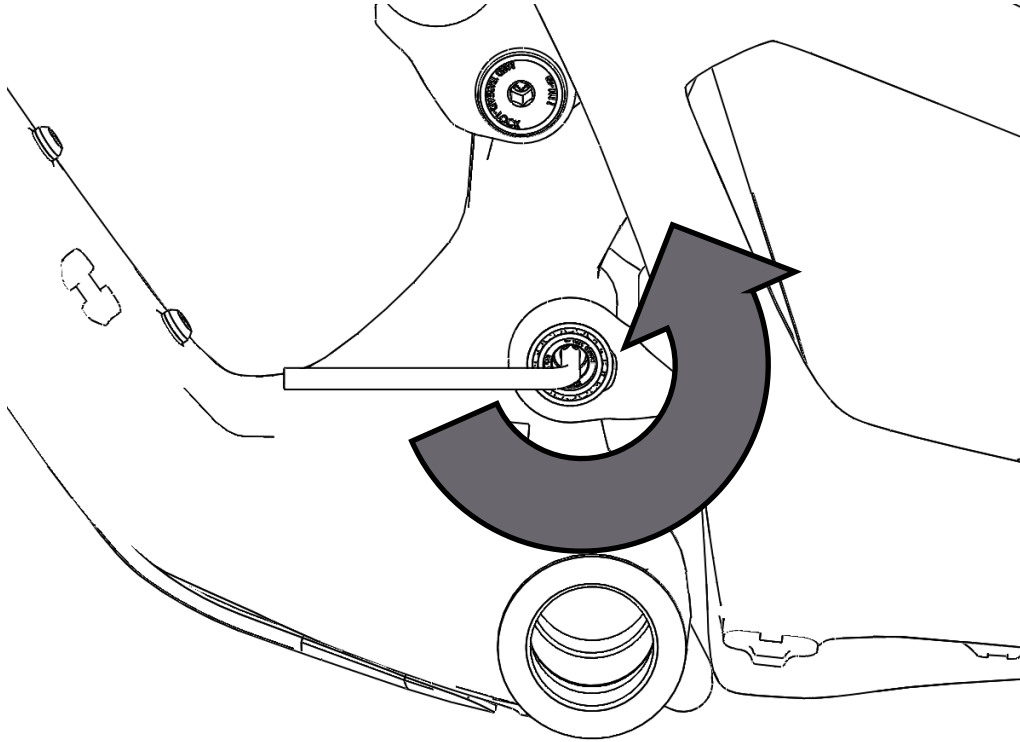
3. While holding onto the upper link, gently rotate the rear triangle rearward and remove the pivot washers and o-rings from between the rear triangle and link:



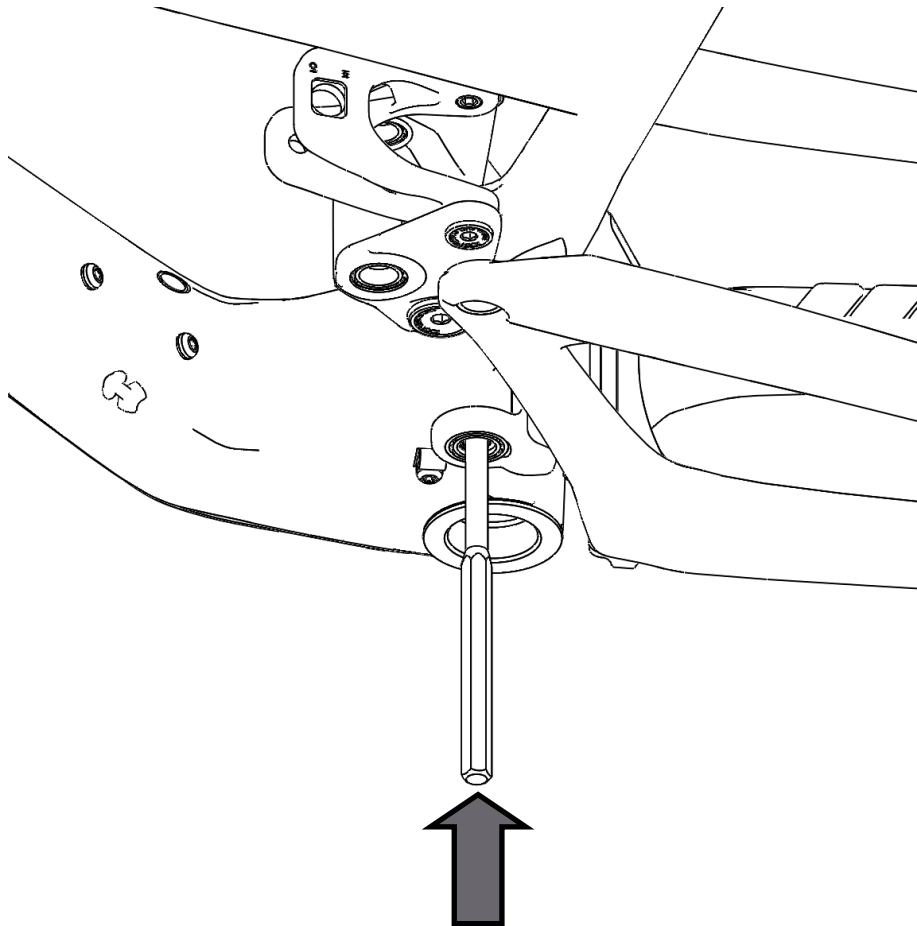
4. Using a T30 Torx tool, remove the main pivot caps and o-rings:



5. Using a T30 Torx tool, loosen the preload screw from the pivot axle 5-6 full turns:

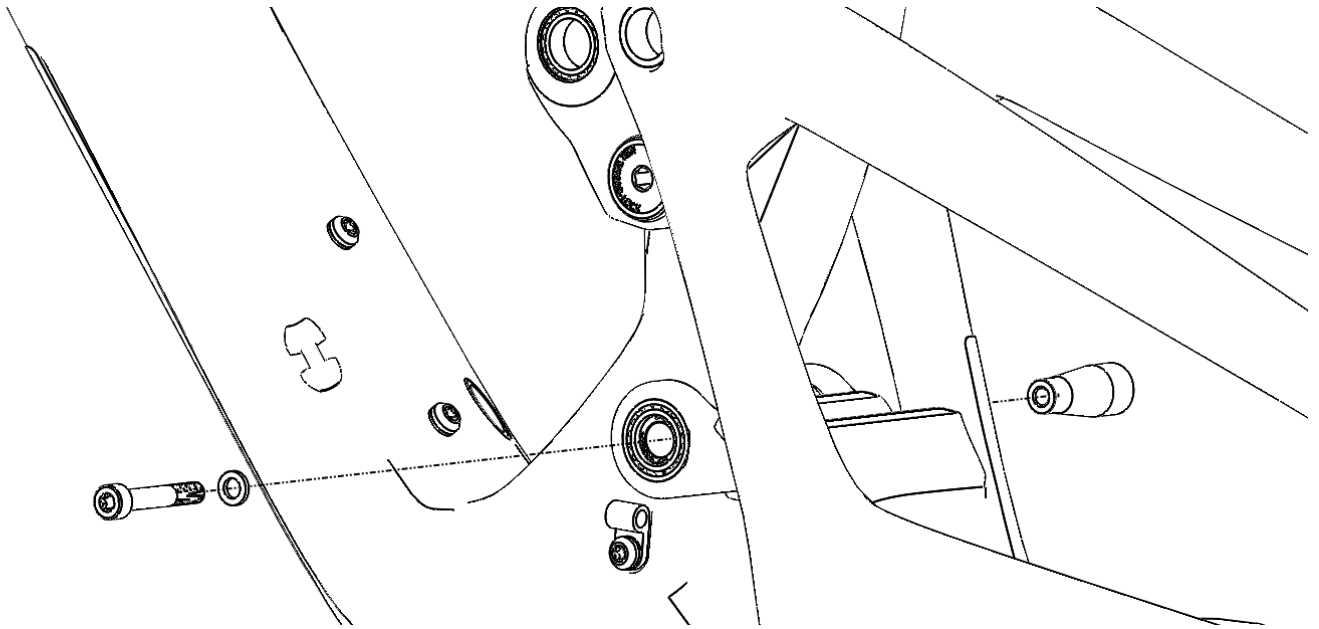


6. Position a pin punch tool against the head of the preload screw, and sharply strike the punch tool with a hammer to unseat the pivot axle on the drive side of the frame:

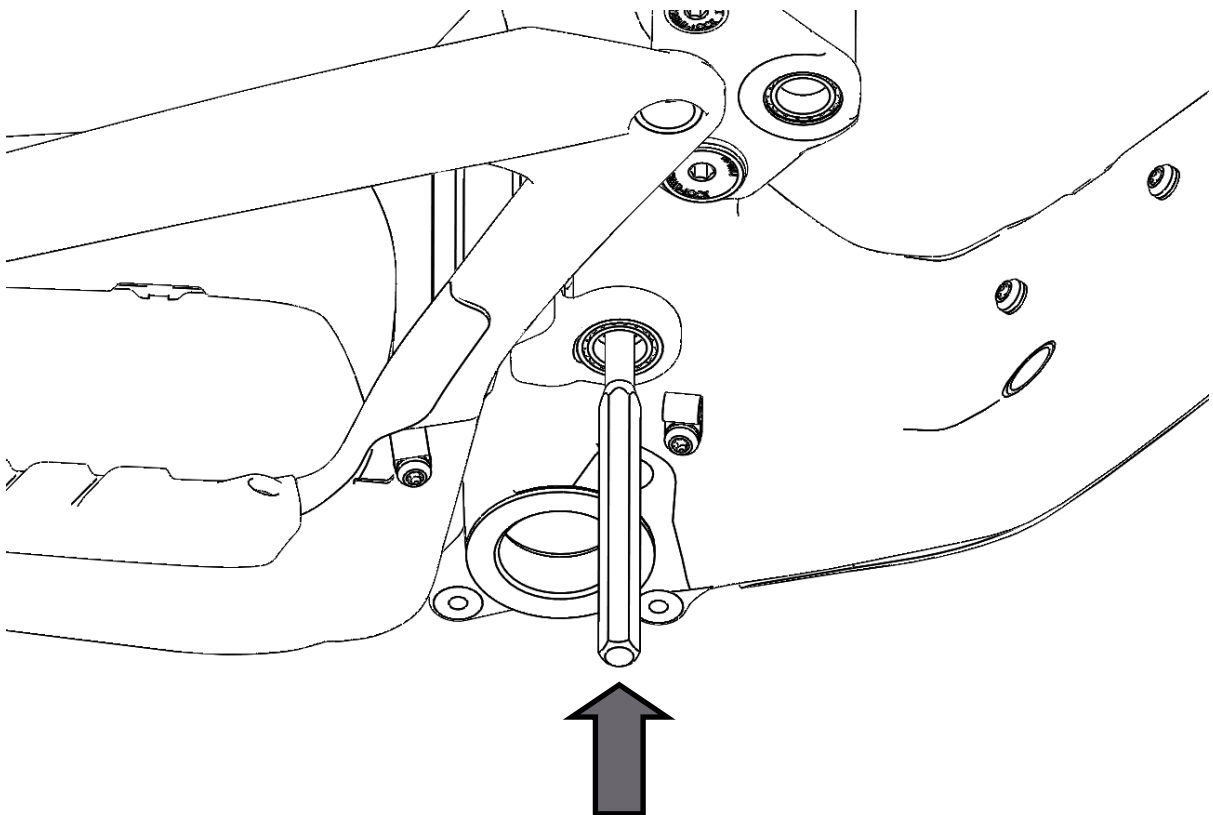




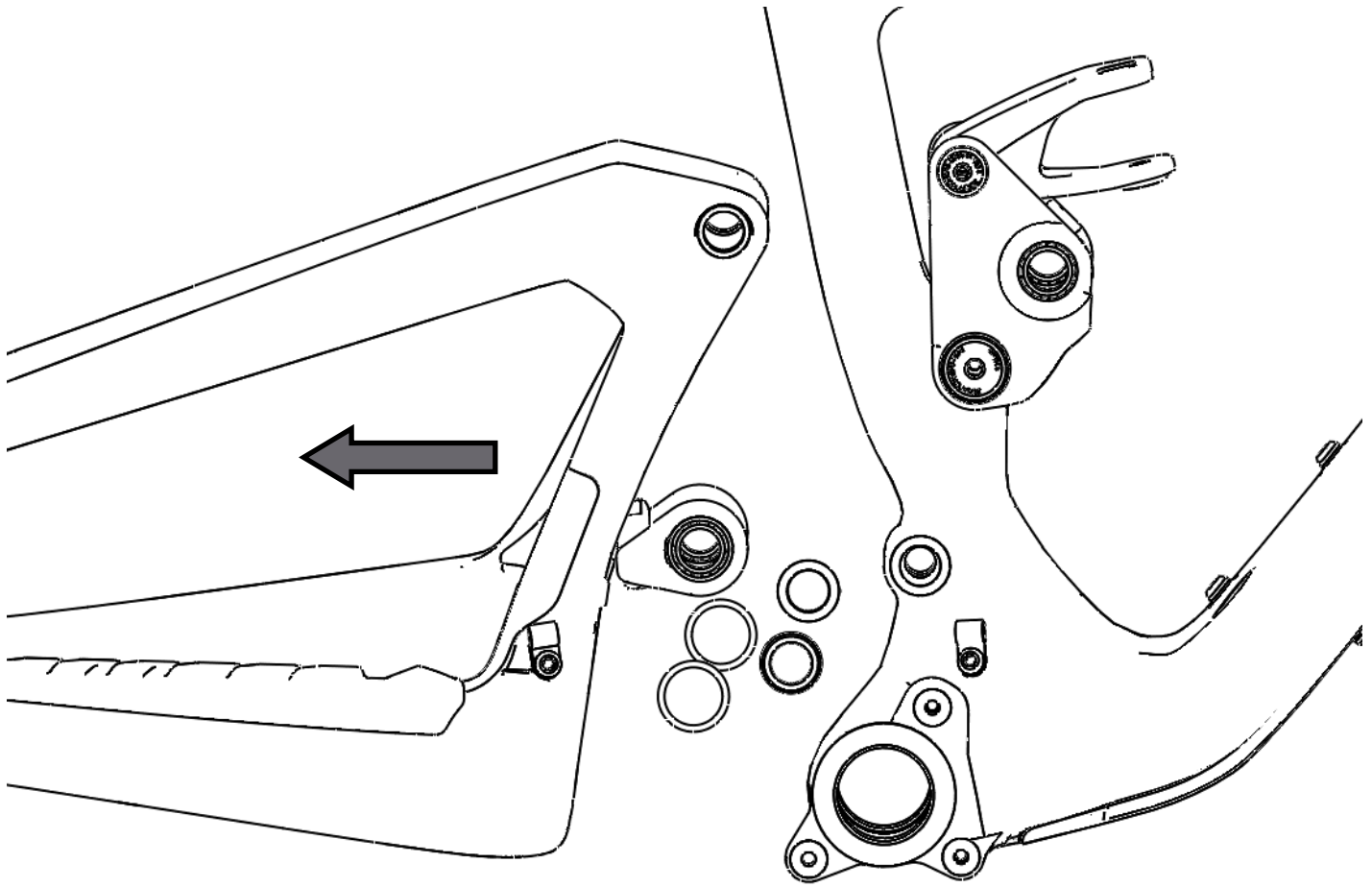
7. Unscrew the preload screw from the drive side pivot axle and remove the screw, washer and axle from the frame:



8. Insert the punch tool into the main pivot bore from where the drive side pivot axle was removed. Ensure firm, even contact with the inner face of the non-drive side pivot axle. Strike the punch sharply with a hammer to unseat the non-drive side pivot axle and remove:

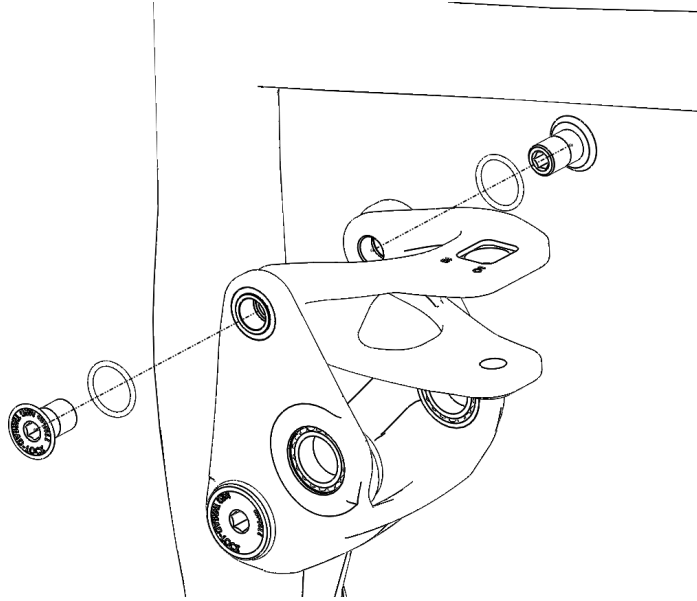


9. The rear triangle is now able to pull free from the front triangle. Place a hand under the main pivot yoke while slowly pulling the rear triangle rearward to catch the inner pivot washers and o-rings:

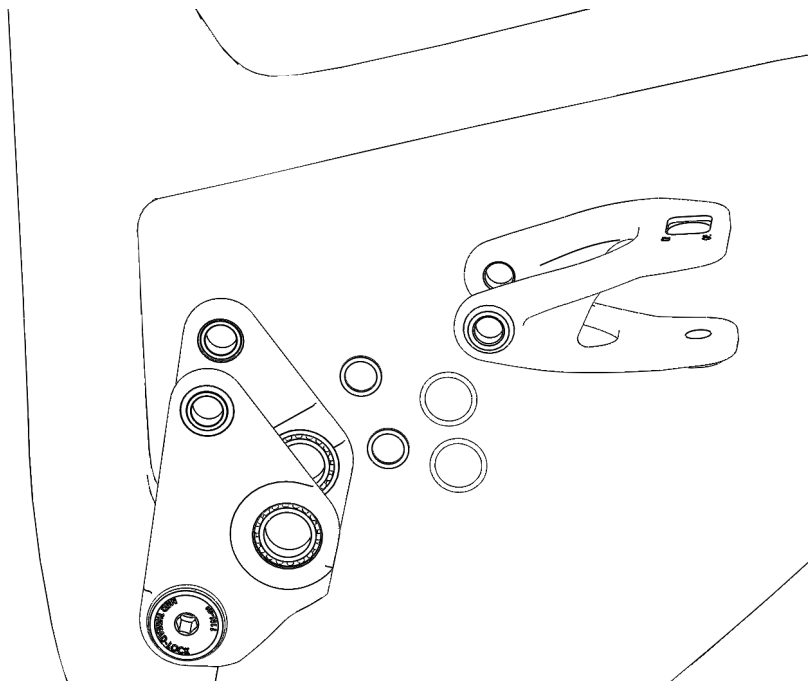


# Shock Yoke and Link Removal

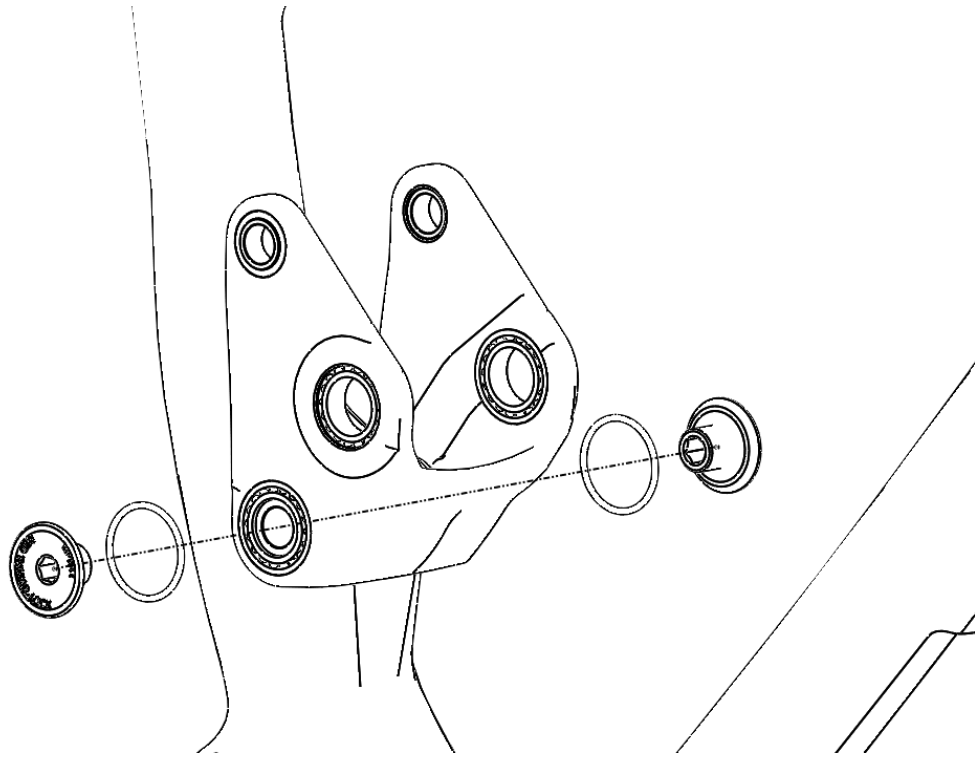
1. Remove the shock, and perform steps 1-3 of rear triangle removal as directed previously in this manual. Using a T30 Torx tool, remove the shock yoke axles and o-rings from the link pivot as shown:



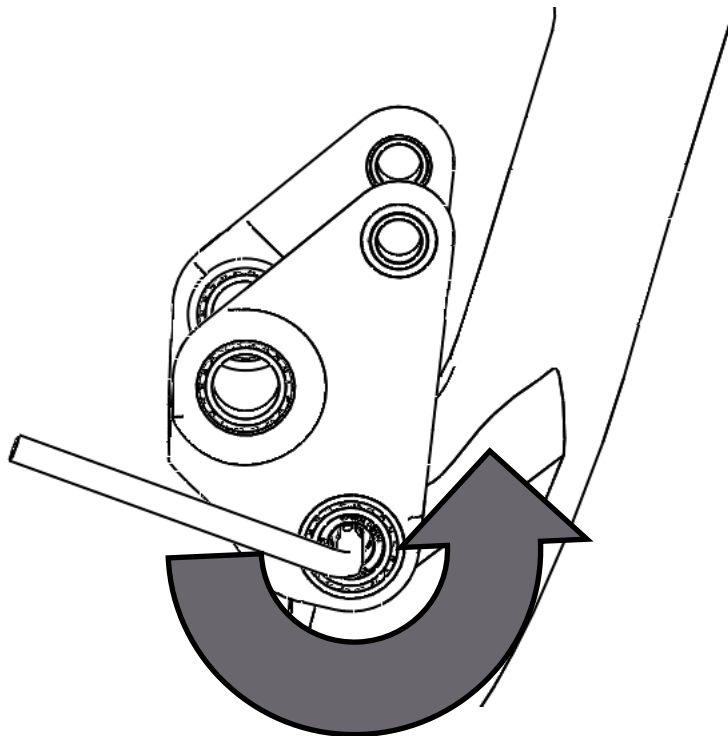
2. Pull the shock yoke forward to free it from the link. Be careful to catch and not lose the inner o-rings and spacer washers from between the shock yoke and link:



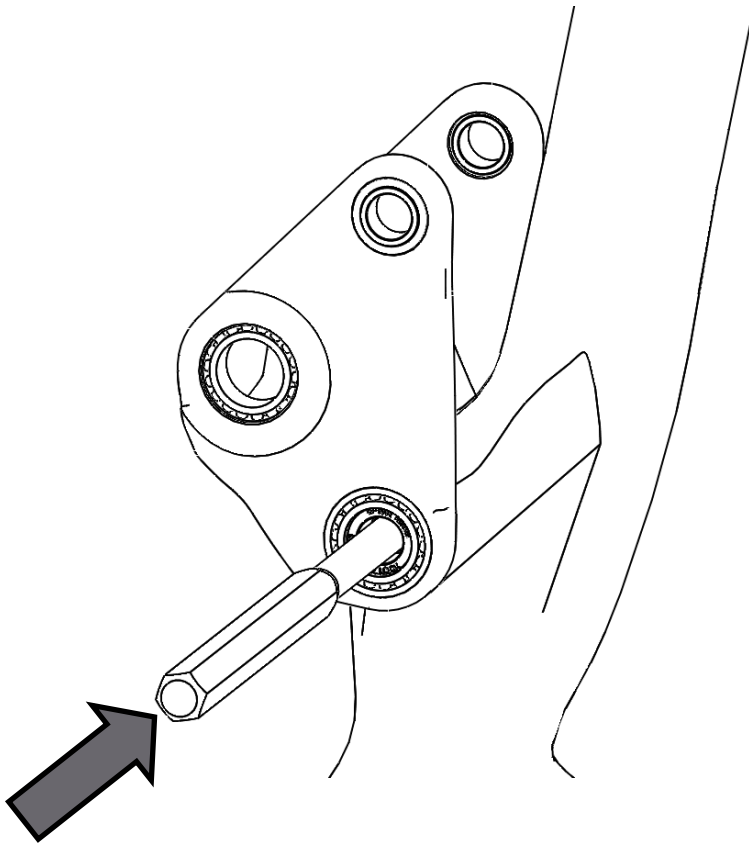
3. Using a T30 Torx tool, unscrew and remove the pivot caps and o-rings from the seat tube pivot:



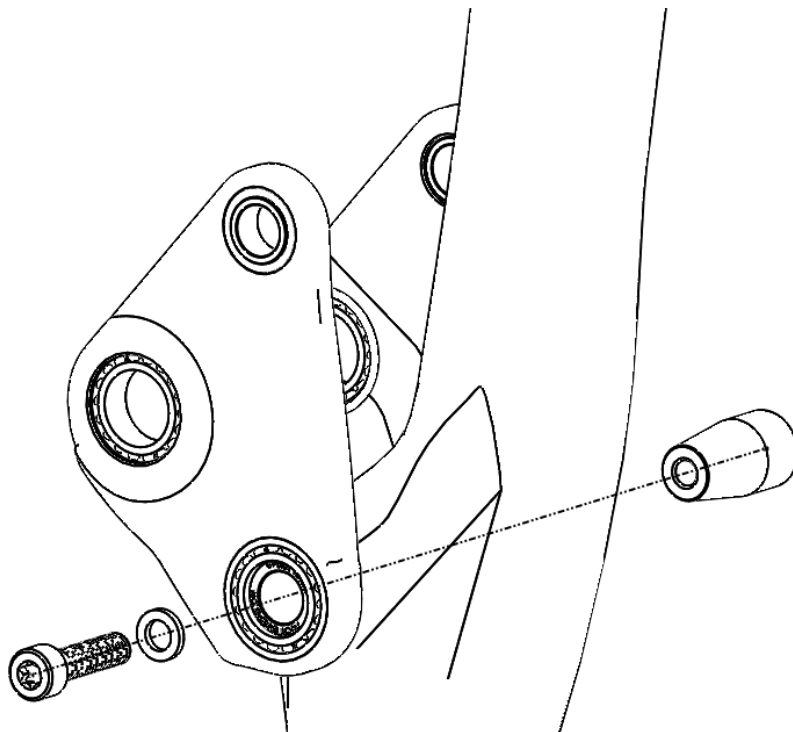
4. Using a T30 Torx tool, loosen the preload screw from the pivot axle 5-6 full turns:



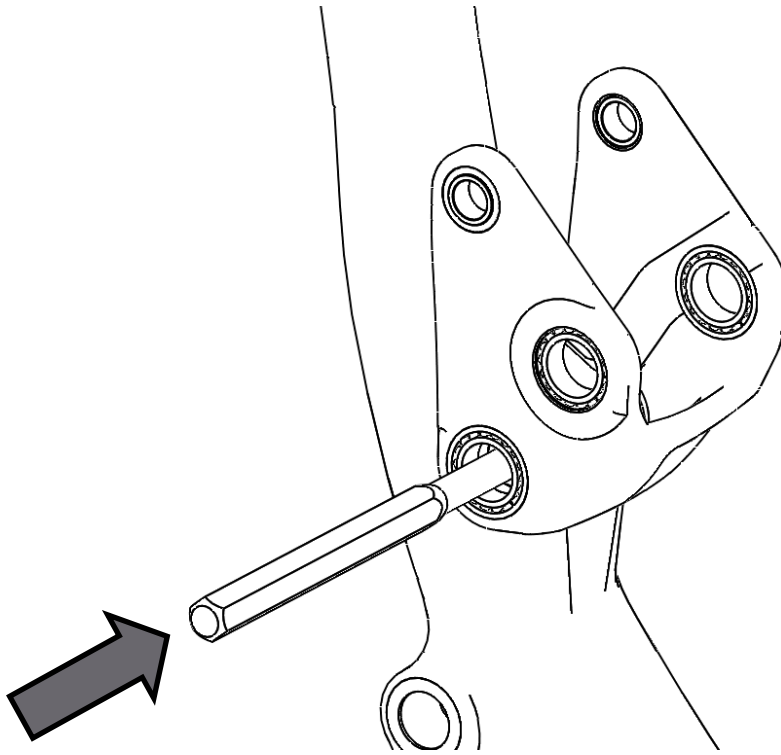
5. Position the pin punch tool against the head of the preload screw, and sharply strike the punch tool with a hammer to unseat the pivot axle on the drive side of the frame:



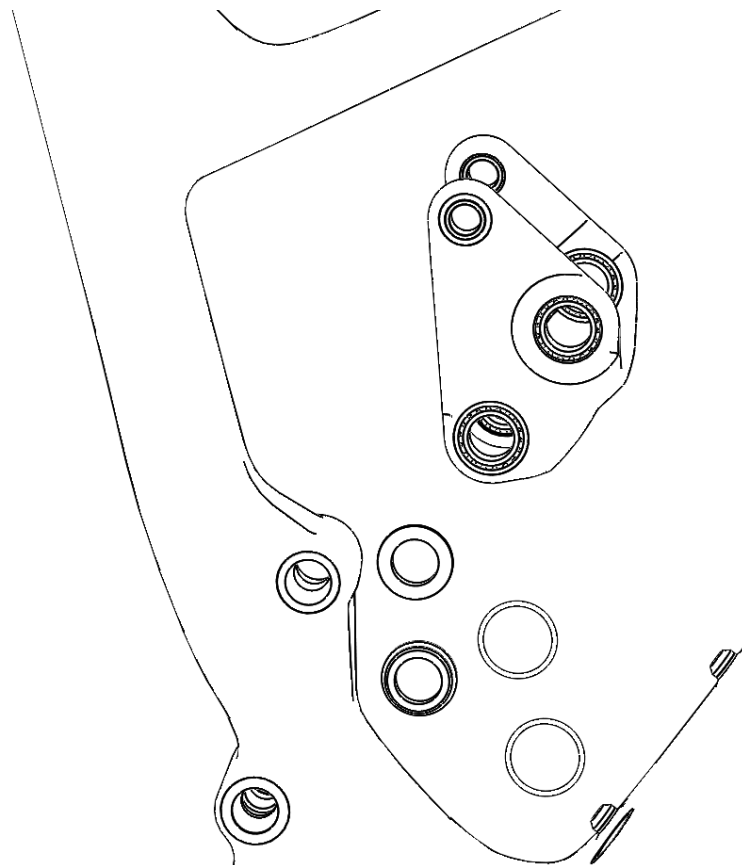
6. Unscrew the preload screw from the drive side pivot axle and remove the screw, washer and axle from the frame:



7. Insert the punch tool into the seat tube pivot bore from where the drive side pivot axle was removed. Ensure firm, even contact with the inner face of the non-drive side pivot axle. Strike the punch sharply with a hammer to unseat the non-drive side pivot axle and remove:

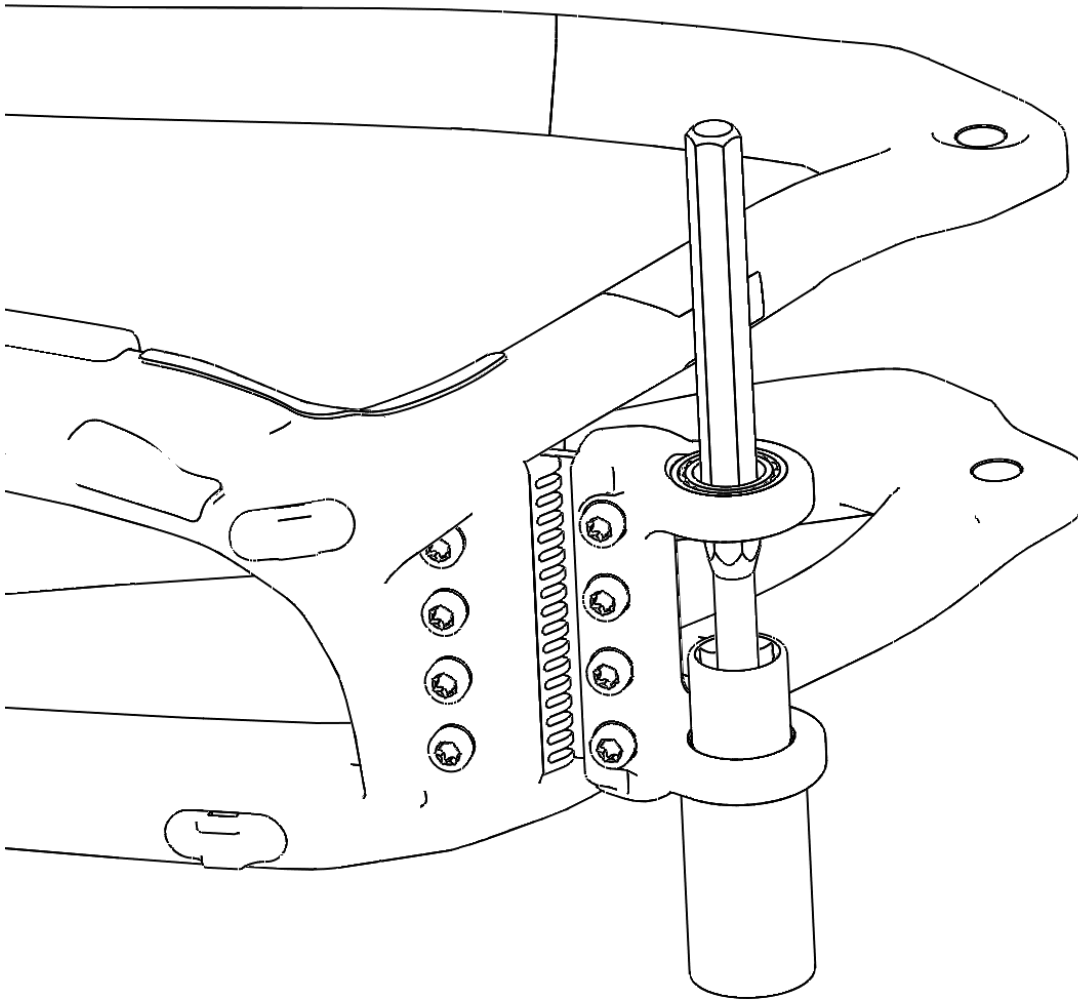


8. The link is now free to slide forward and away from the front triangle. Place a hand under the seat tube pivot to catch the inner pivot washers and o-rings:



# Main Pivot Bearing Replacement

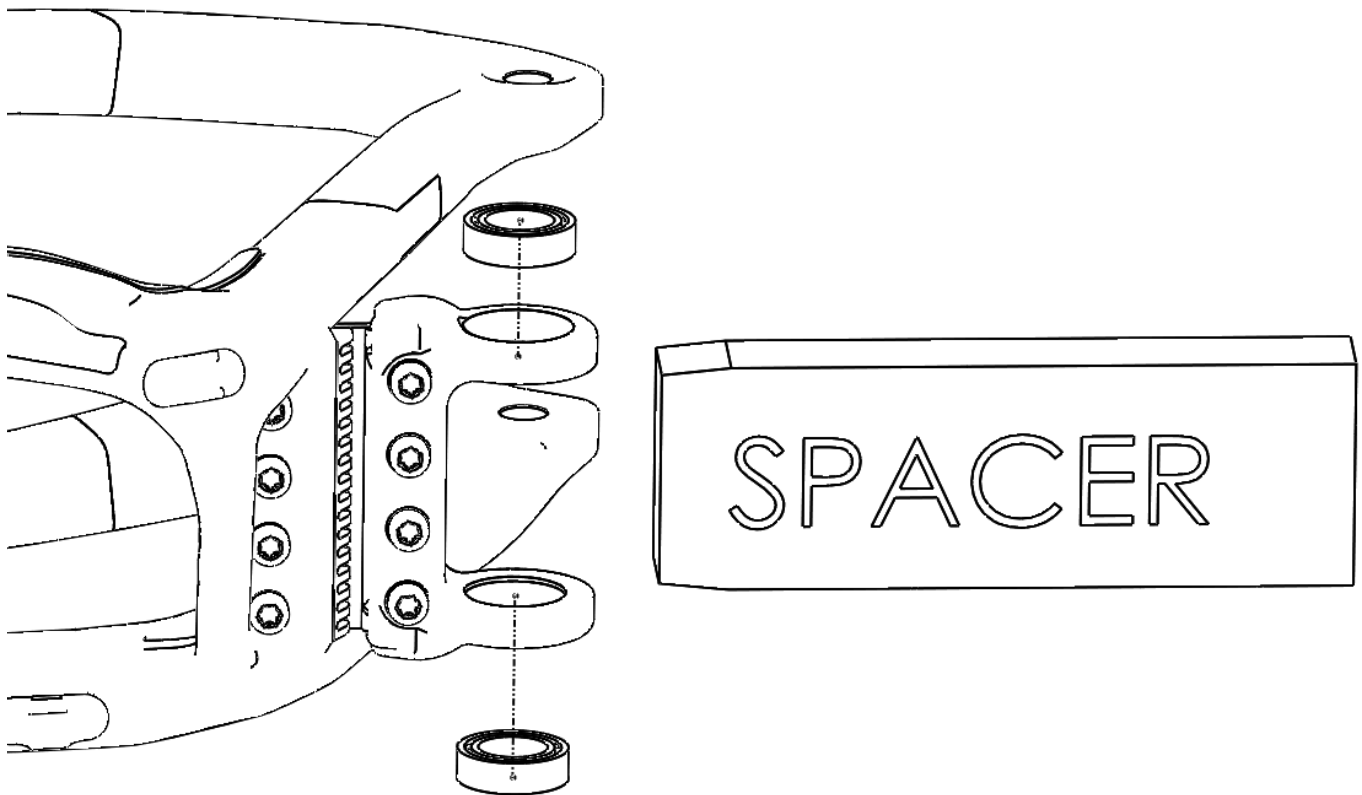
1. Set the rear triangle assembly on one side, on a work bench with a protective cloth to prevent scratching the frame finish. Support the pivot yoke as shown by your 27-30mm ID plastic tube. Combine your 20-22mm outer diameter socket with an extension, punch, or other implement as shown. Begin gently tapping with the hammer to push the bearing out of the frame and into the tube:



2. Remove the remaining main pivot bearing by flipping the rear triangle over and repeating.

3. Once the old bearings are removed, thoroughly clean the bearing bores in the pivot yoke with isopropyl alcohol. As with removal, there are a few different techniques that can be used to install the bearings. We recommend using an arbor press, but a bench vise, or even a piece of threaded rod with nuts and washers on either end will do the job. If using a press or a vise, It is ***absolutely necessary*** to support the yoke between the bearing hoops with a spacer. This can be another plastic tube, block of wood, or any non-marring solid piece that will support the hoops and keep them from bending as the bearings are pressed in. Press the bearings until they are flush with the outer surface of the yoke, taking care not to mar the finish of the yoke or frame.

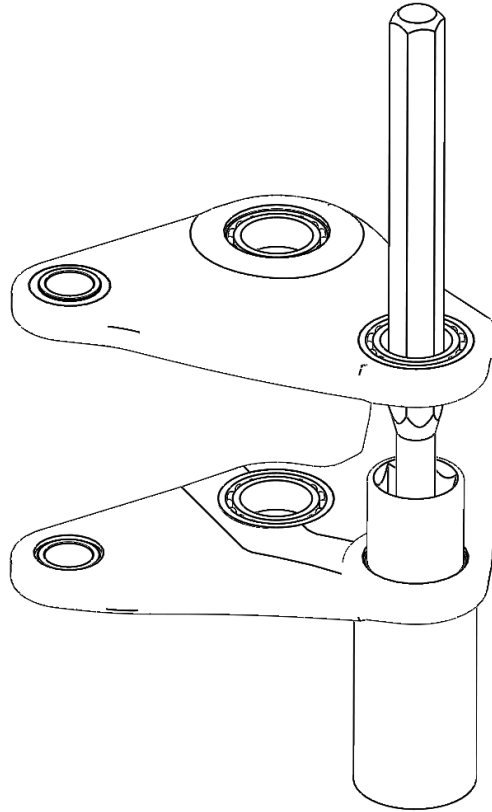
**IMPORTANT: NEVER INSTALL BEARINGS USING A HAMMER OR ANY OTHER MEANS OF IMPACT!**





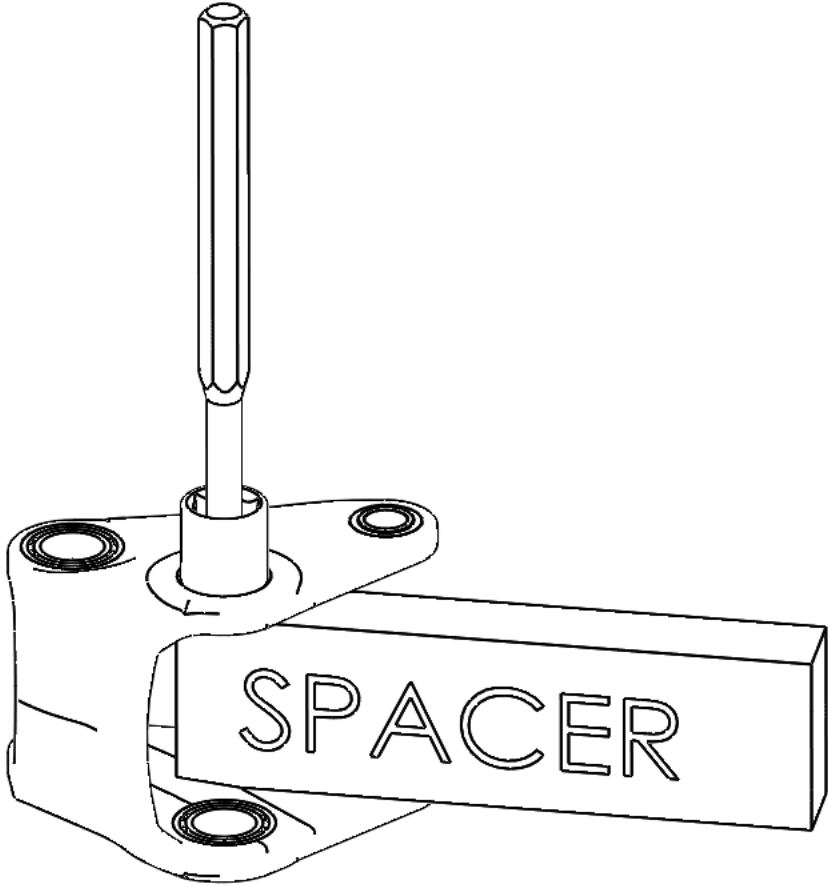
# Rocker Link Bearing Replacement

1. The seat tube pivot bearings in the rocker link are removed by pressing them outboard, away from the centerline of the frame. Support the link as shown by your 27-30mm ID plastic tube. Combine your 20-22mm outer diameter socket with an extension, punch, or other implement as shown. Begin gently tapping with the hammer to push the bearing out of the link and into the tube:



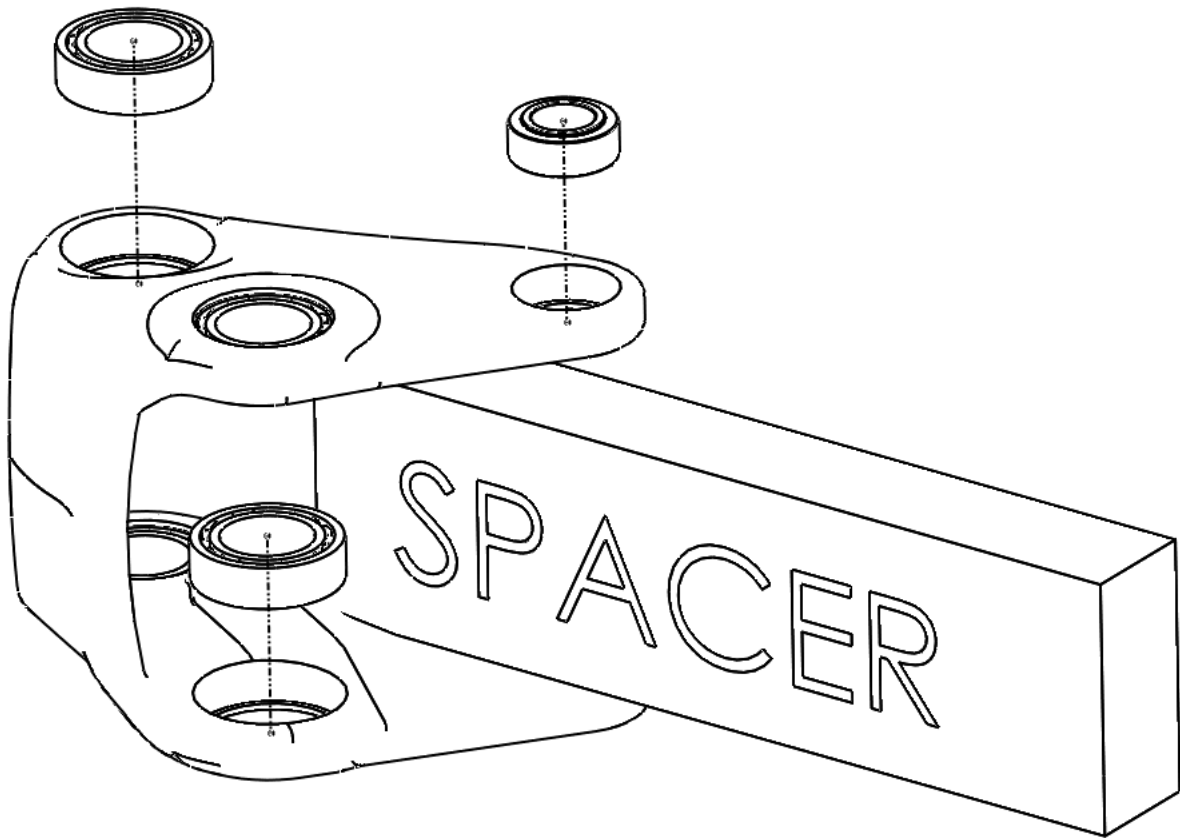
2. The shock yoke bearings in the link are removed in the same manner, but require smaller 13-14mm socket and 23-25mm ID tube.

3. The seat stay bearings in the link are removed towards the centerline of the frame. Use a spacer block to support the link while tapping out the bearings.



4. Once the old bearings are removed, thoroughly clean the bearing bores in the rocker link with isopropyl alcohol. Similar to the main pivot bearings, there are a few different techniques that can be used for installation. We recommend using an arbor press, but a bench vise, or even a piece of threaded rod with nuts and washers on either end will do the job. Press the bearings until they reach the bottom of their bores, taking care not to mar the finish of the link:

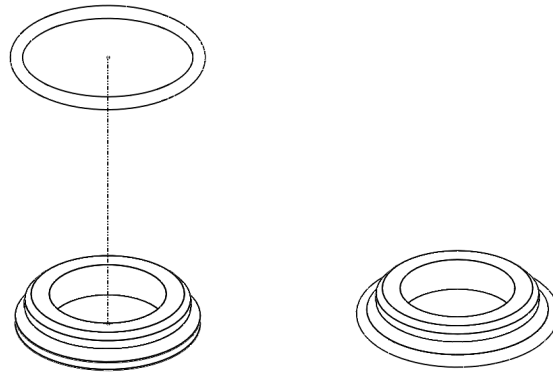
**IMPORTANT: NEVER INSTALL BEARINGS USING A HAMMER OR ANY OTHER MEANS OF IMPACT!**



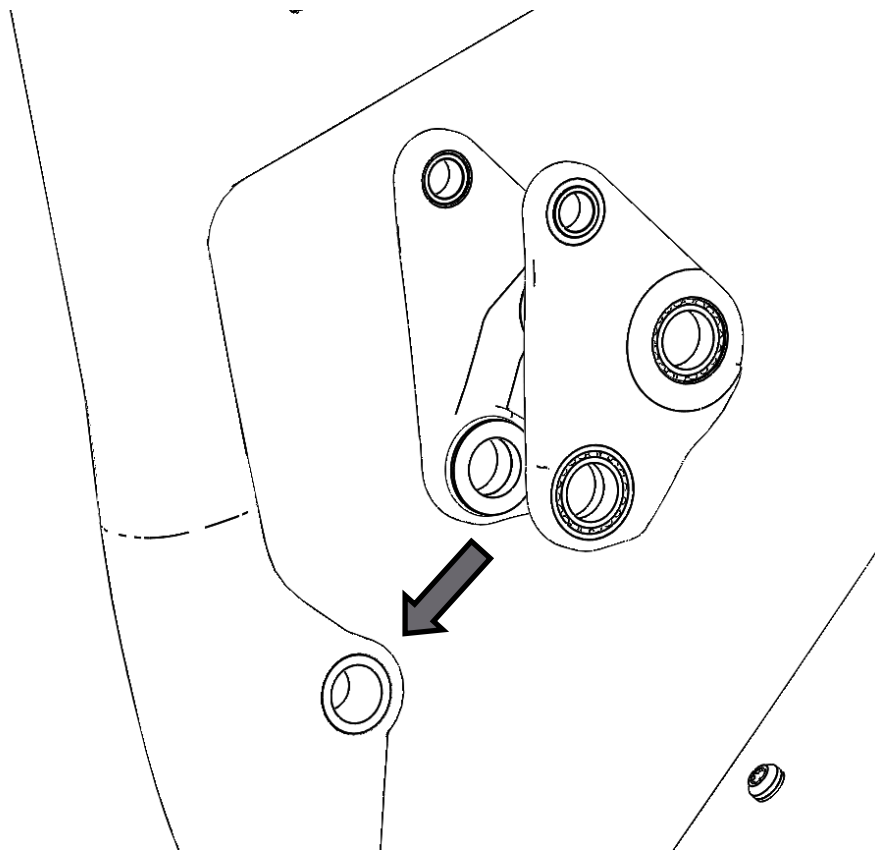
When pressing in bearings from the outboard side of the link, be sure to support the link with a spacer block to prevent link damage.

# Rocker Link Reinstallation

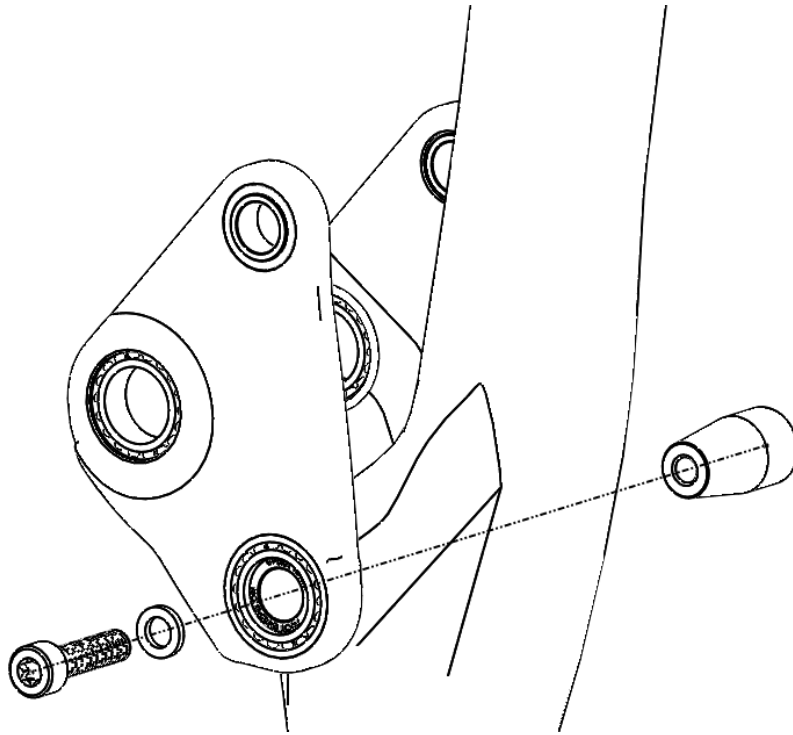
1. Prepare to reinstall the upper link by fitting new 1.5 X 18mm inner diameter o-rings to the washers to be installed between the link and the seat tube. The easiest way to do this is to lay the washer on a flat surface with the flat side down. Then push the o-ring down from the top until it sits in the installation groove:



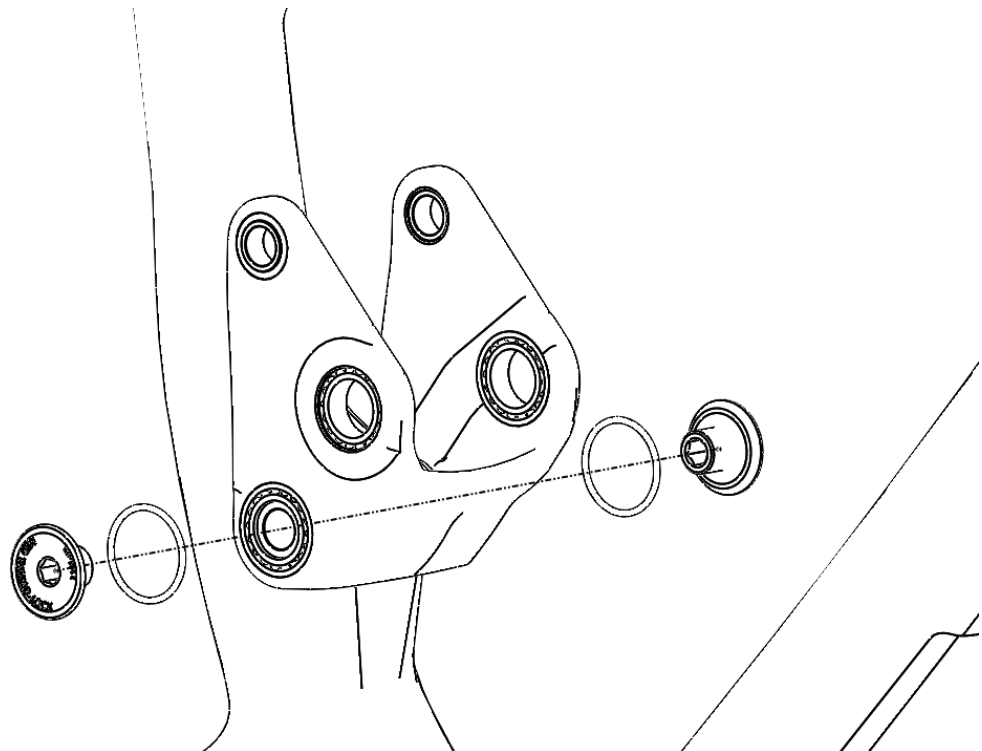
2. Insert the washers, with o-rings positioned in the installation grooves, into the inboard lower bearing recesses on the link assembly. A small application of grease can help to keep them in place for link installation. Being careful not to drop the washers/o-rings, and carefully slide the link assembly rearward onto the seat tube at the pivot boss::



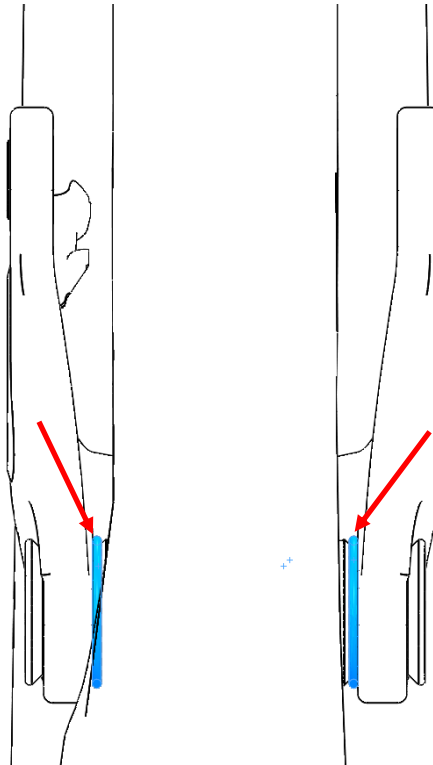
3. Insert the pivot axles, washer and preload screw into the seat tube pivot as shown. Note that the drive side pivot axle is shorter than it's corresponding part used in the main pivot. Do not apply thread locker to the preload screw, do not grease the conical axles. Torque to 10N-m (88in-lb) using a T30 Torx tool:



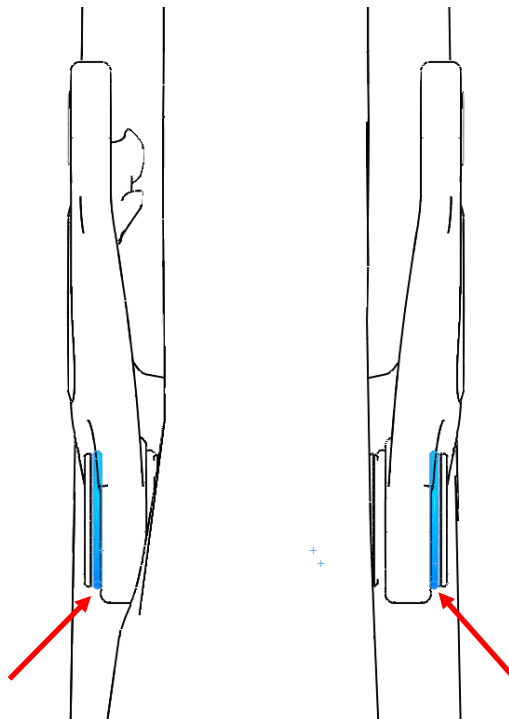
4. Install the two outer pivot caps as shown. Apply medium thread locker and torque to 11N-m (97in-lb) using a T30 Torx tool:



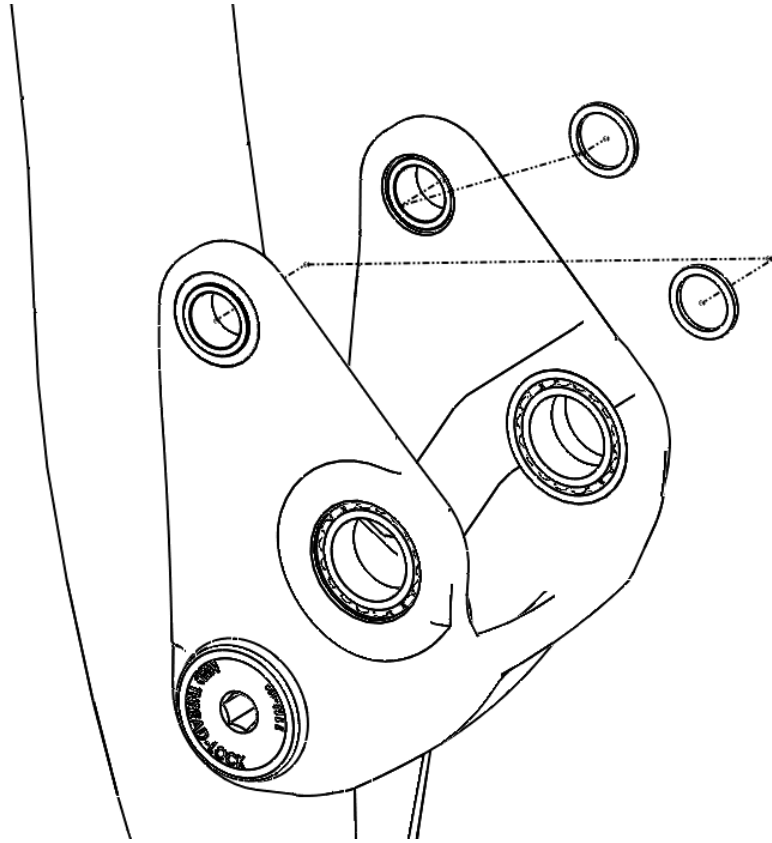
5. Using a pick, small screwdriver, or even a fingernail, move the inner o-rings from the installation groove outward into the sealing position against the link as shown here:



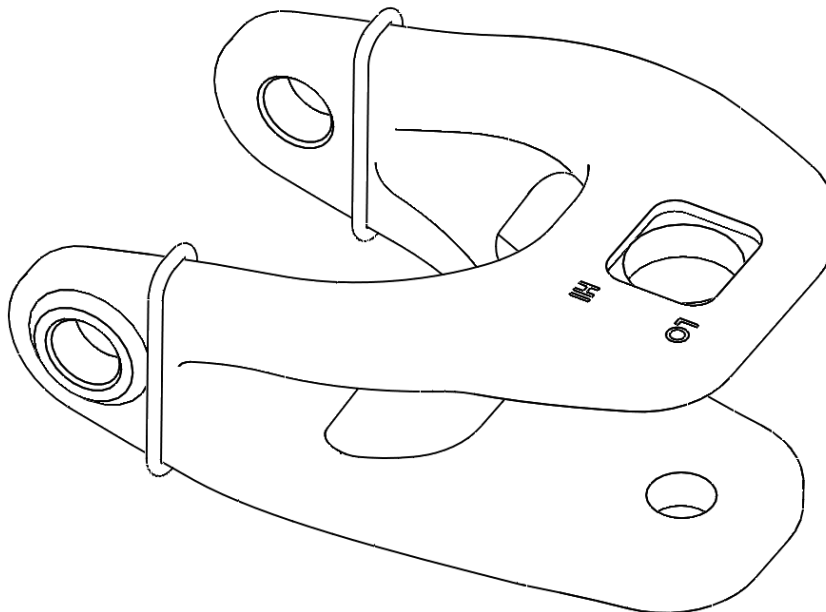
6. Install the outer pair of o-rings (1.5 X 18mm inner diameter):



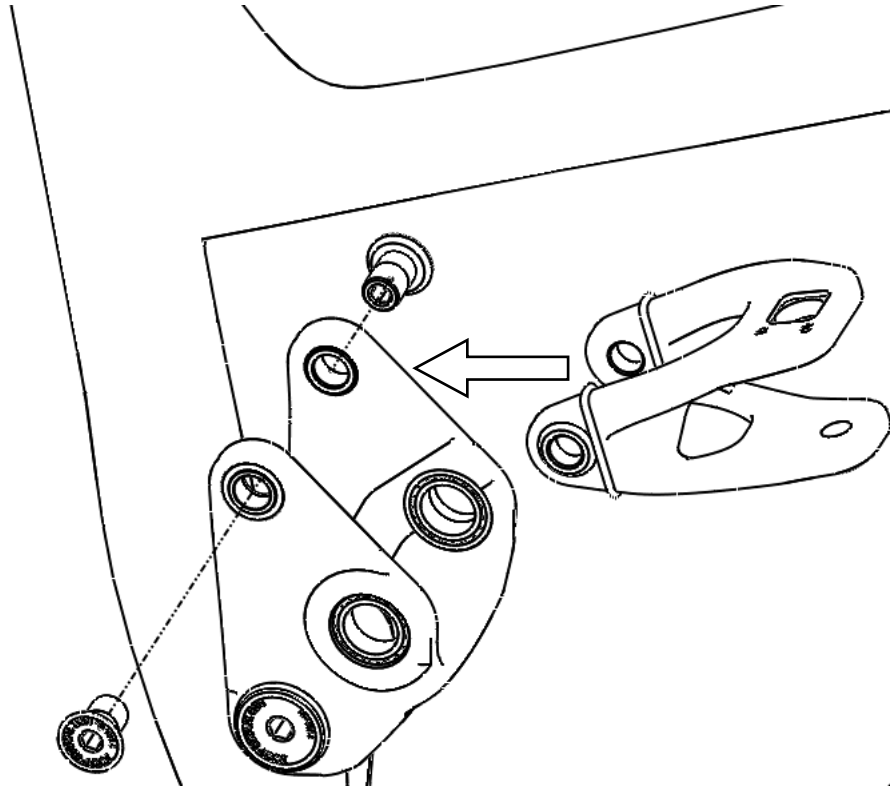
7. Insert the two shock yoke spacer washers into the inner recesses of the link at the shock yoke pivot. A small dab of grease in the bearing recess will help hold them in place until the yoke is installed:



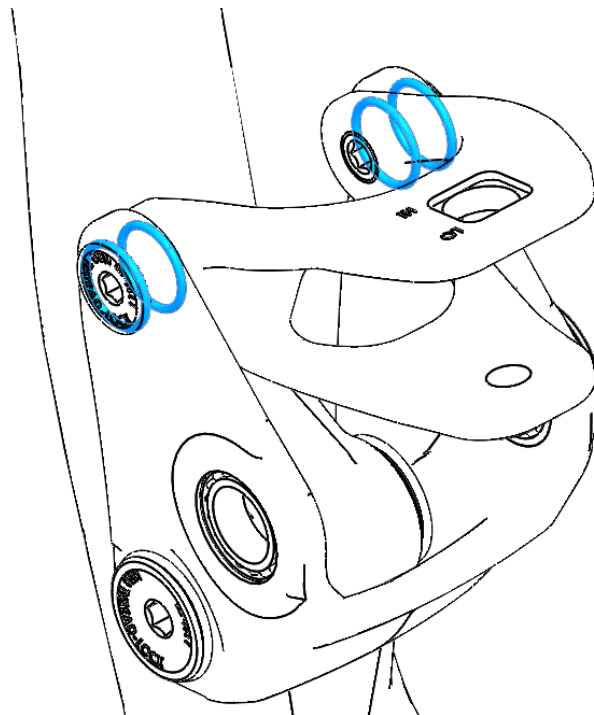
8. Stretch a 1 X 13mm o-ring over each leg of the shock yoke, past the conical pivot bosses:



9. Apply fresh medium thread locker to the pivot yoke axles. Slide the pivot yoke into the upper link and align the yoke with the upper pair of link bearings. Install the pivot yoke axles and torque to 11N-m (91in-lb) using a T30 Torx tool:



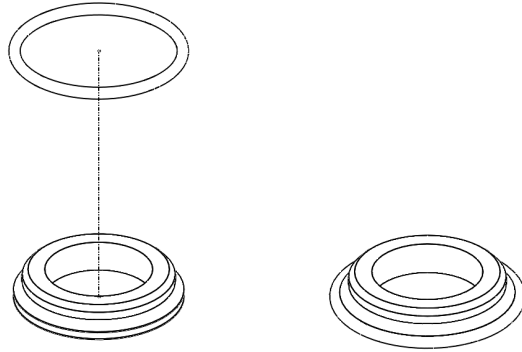
10. Using a pick tool, small screwdriver, or fingernail, pull the inner o-rings into the seal position between the yoke and the link. Install the outer pair of 1 X 13mm o-rings on the heads of the pivot axles as shown:



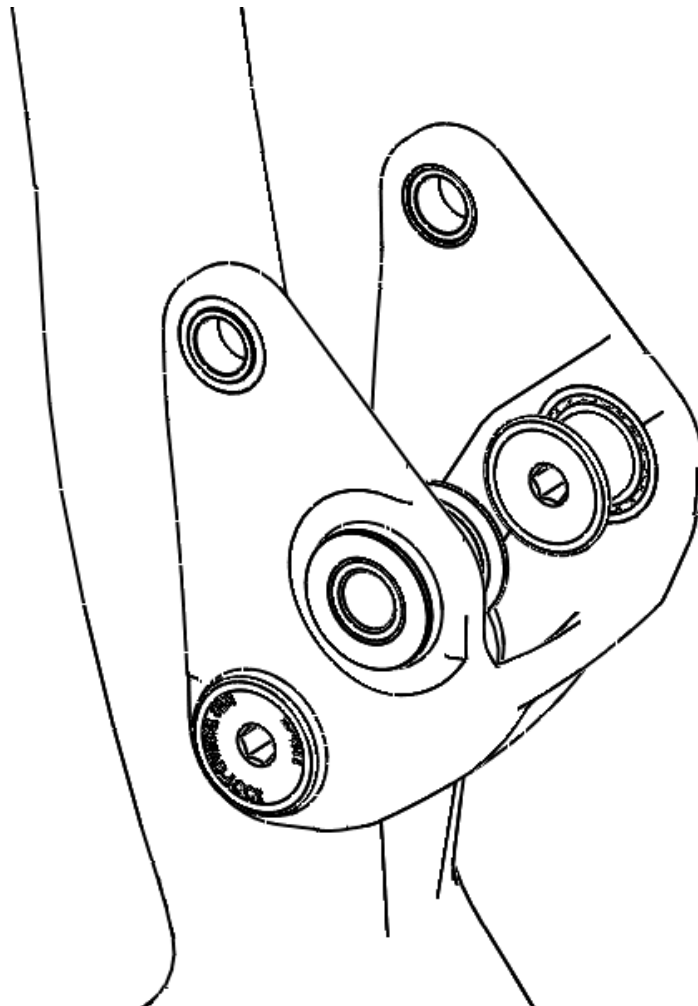


# Rear Triangle Reinstallation

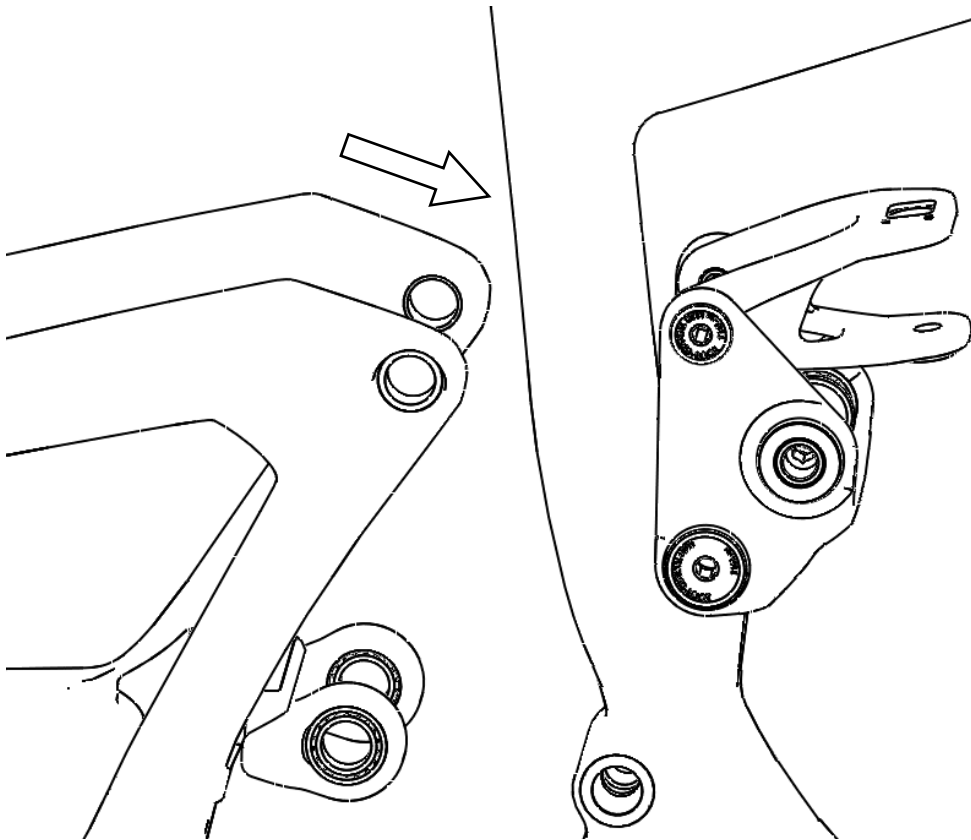
1. To replace the rear triangle, begin by fitting new 1.5 X 18mm inner diameter EPDM o-rings onto the washers as shown. The easiest way to do this is to lay the washer on a flat surface with the flat side down. Then push the o-ring down from the top until it sits in the installation groove:



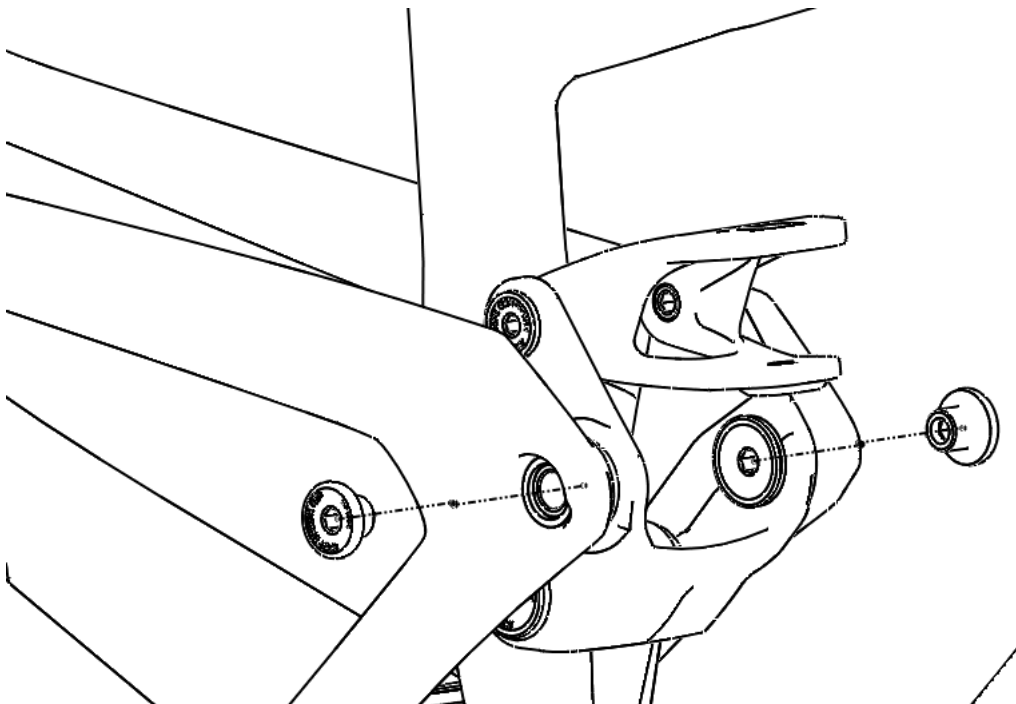
2. Insert the upper pivot axles into the link from the inboard side so that they slightly protrude to the outboard side. Slide the washers, with o-rings, onto the ends of the axles from the outboard side:



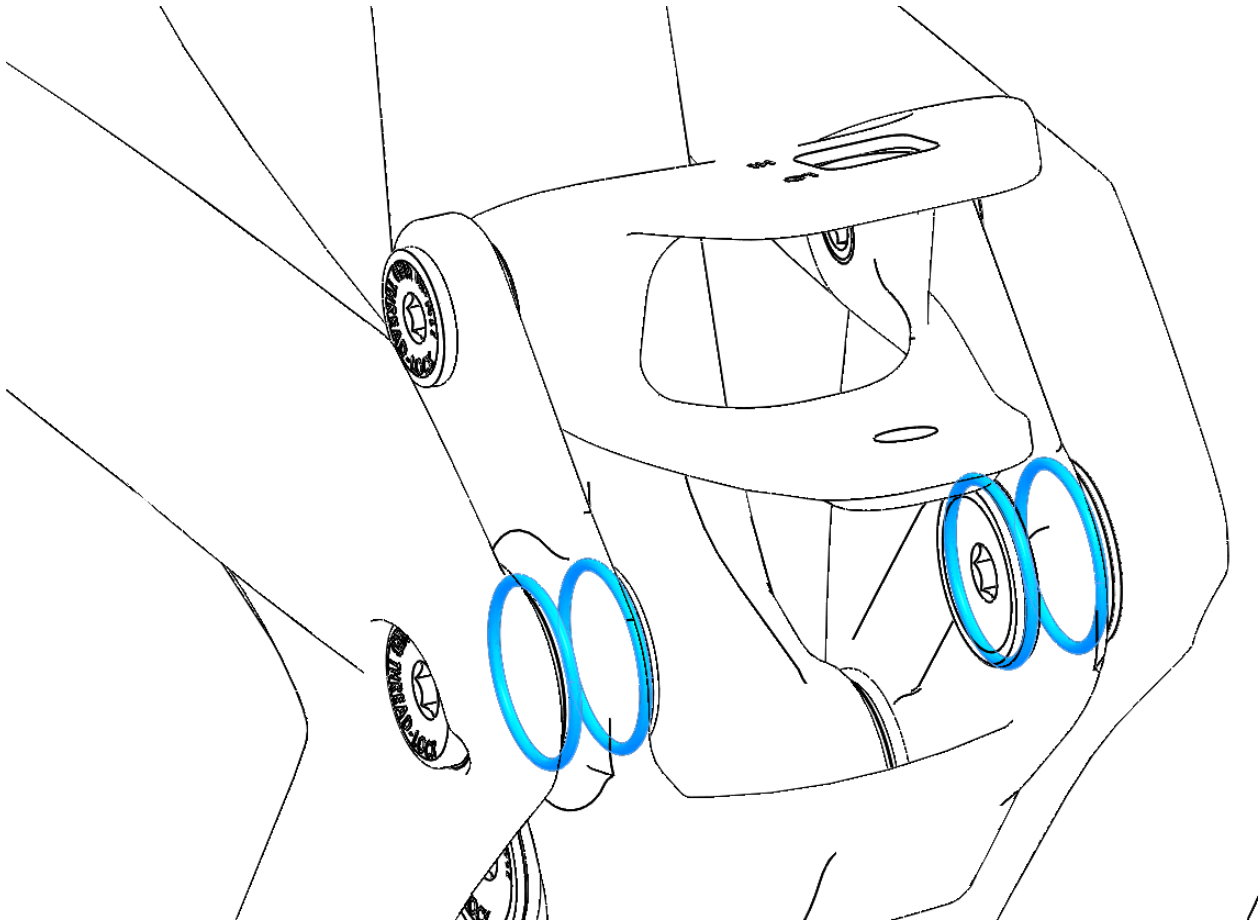
- Slide the rear triangle assembly onto the upper pivot of the link, and push the link axles outward to hold the rear triangle in place:



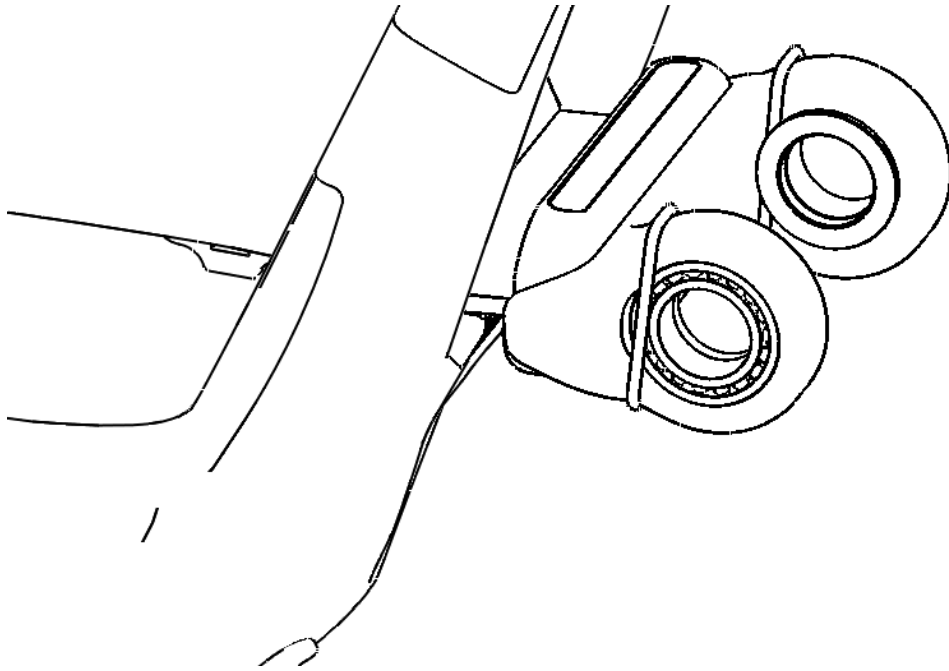
- Install the upper pivot caps with medium strength thread locker. Torque to 11N-m (97 in-lb) using T30 Torx tools:



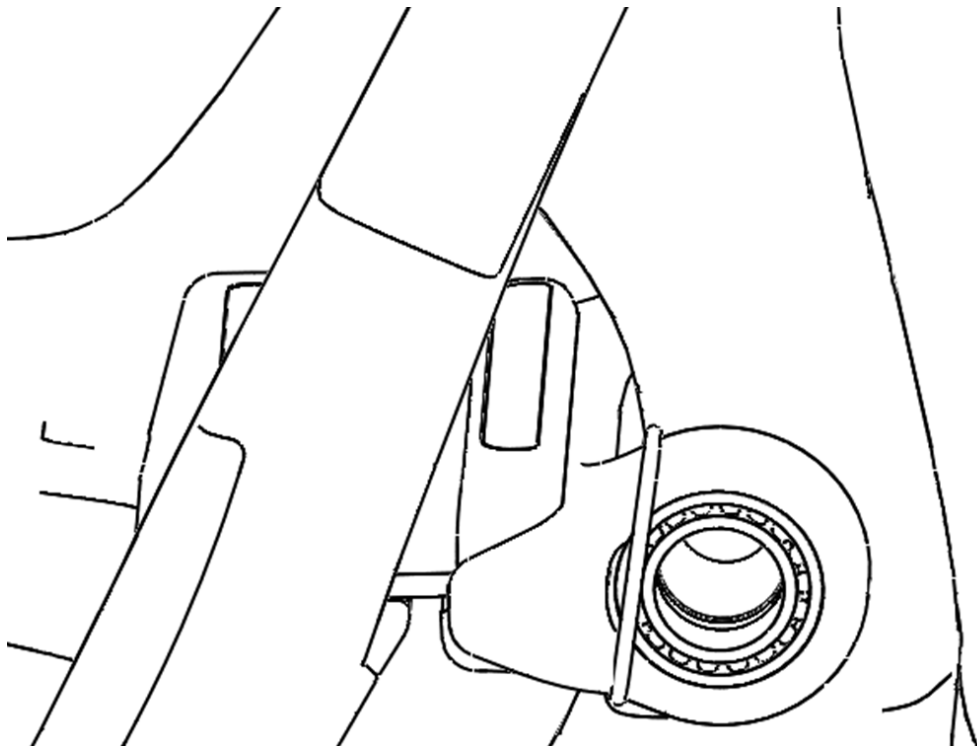
- Using a pick, small screwdriver, or even a fingernail, move the o-rings from the installation groove inward into the sealing position against the sides of the link. Install the inner 1 X 18mm o-rings on the heads of the pivot axles as shown here:



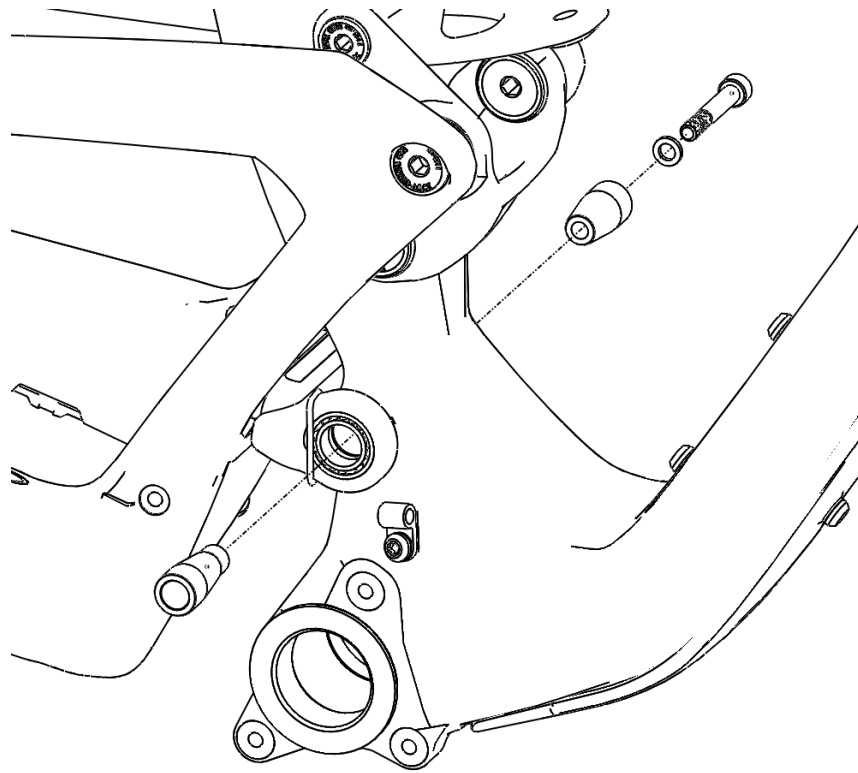
- Stretch two 1.5 X 18mm inner diameter o-rings over the hoops of the main pivot bearings to prepare for installation. Install the inner washers, with the conical faces outboard– flat faces inboard, into the inboard bearing recesses in the main pivot clevis. The o-rings will help hold the washers in position and vice versa. A small dab of grease on each washer can help it stay in place for installation.



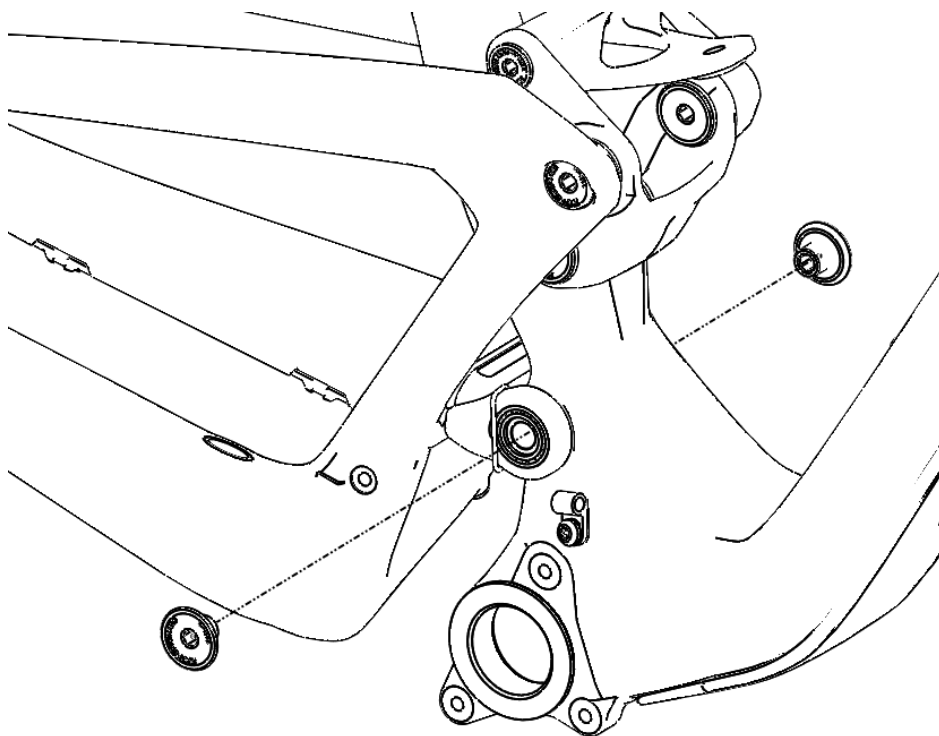
- Swing the rear triangle into place aligning the clevis to the main pivot:



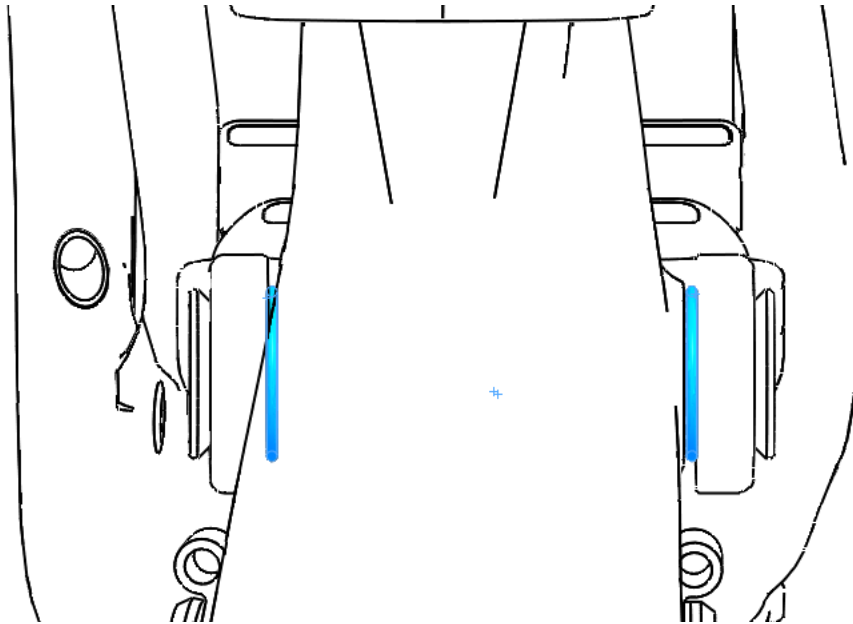
8. Insert the pivot axles, washer and preload screw into the main pivot as shown. Note that the drive side pivot axle and preload screw are longer than their corresponding parts used in the seat tube pivot. Do not apply thread locker to the preload screw, do not grease the conical axles. Torque to 10N-m (88in-lb) using a T30 Torx tool:



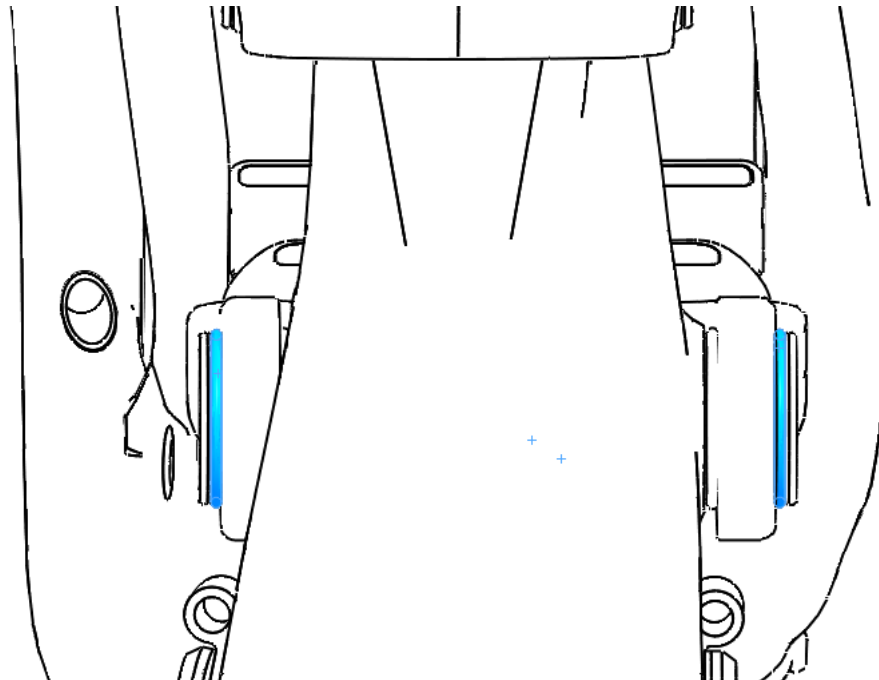
9. Install the two outer pivot caps as shown. Apply medium thread locker and torque to 11N-m (97in-lb) using a T30 Torx tool:



10. Pull the inboard o-rings into place between the pivot clevis and the frame:

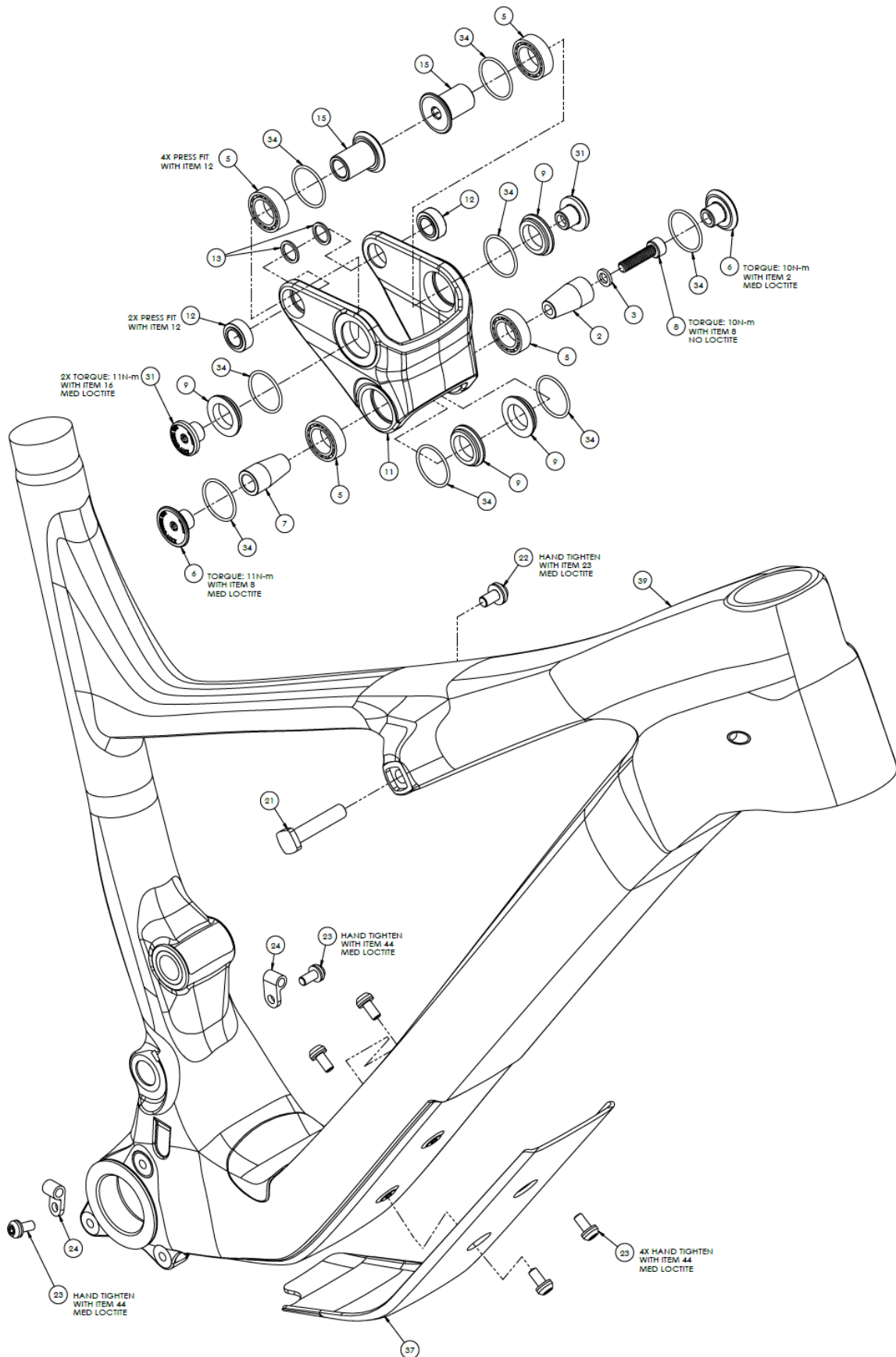


11. Install the outer 1.5 X 18mm inner diameter o-rings over the pivot caps as shown:

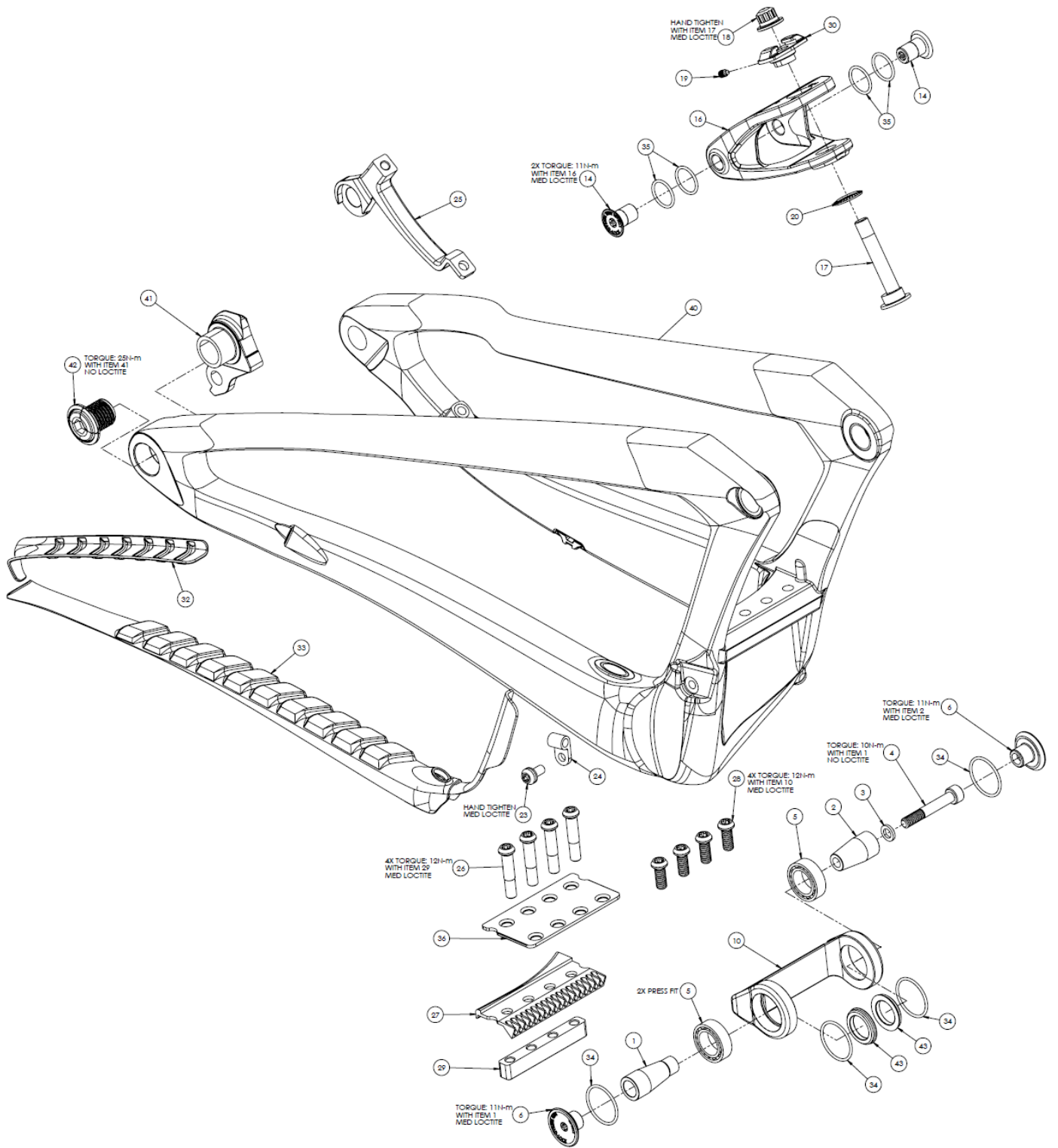


12. The final step is to re-install the rear shock as directed in the shock removal/replacement section starting on page 20 of this manual.

# Mayhem 150 Frame Parts Reference



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# Mayhem 150 Frame Parts Reference

ITEM NO.	PART NUMBER	DESCRIPTION	QTY.
1	FS90102	PIVOT AXLE CONE, DS LOWER	1
2	FS90093	PIVOT AXLE CONE, NDS	2
3	FS80012	WASHER, M6 HIGH COLLAR	2
4	FS90147	M6 X 38 TORX CAP SCREW	1
5	FS80005	BEARING, ENDURO 3802 LLU MAX	6
6	FS90091	PIVOT CAP, 15mm	4
7	FS90090	PIVOT AXLE CONE, DS UPPER	1
8	FS90089	M6 X 24 TORX CAP SCREW	1
9	FS90088	WASHER, 15mm	4
10	FS90168	2020 MAYHEM PIVOT YOKE	1
11	FS90174	2020 MAYHEM UPPER LINK	1
12	FS80002	BEARING, ENDURO 1017 2RS MAX	2
13	FS90170	2020 MAYHEM SHOCK YOKE WASHER	2
14	FS90148	2020 MAYHEM SHOCK YOKE PIVOT AXLE	2
15	FS90149	2020 MAYHEM UPPER LINK PIVOT AXLE	2
16	FS90230	M150 SHOCK YOKE V.2	1
17	FS90231	2022 MAYHEM SHOCK PIN, R	1
18	FS90048	SHOCK PIVOT NUT	1
19	FS90236	SET SCREW, M4X6 DOG TIP	1
20	FS90237	M12 SERRATED LOCK WASHER	1
21	FS90165	2020 MAYHEM 150 SHOCK PIN, F	1
22	FS80003	M6 X 11 TORX	1
23	FS80006	M5 X 13 TORX	7
24	FS80007	P-CLIP	3
25	FS90083	BRAKE MOUNT	1
26	FS90228	LEAF SPRING SCREW R	4
27	FS90234	LEAF SPRING SPOOLER, MAYHEM	1
28	FS90210	LEAF SPRING SCREW F	4
29	FS90227	LEAF SPRING LOWER CAP, R	1
30	FS90172	2022 MAYHEM POSITION SWITCH	1
31	FS90150	2020 MAYHEM UPPER PIVOT CAP	2
32		SS PROTECTOR	1
33		CHAINSTAY PROTECTOR	1
34	FS80017	O-RING 1.5 X 18	12
35	FS80010	O-RING 1.5 X 12	4
36	FS90151	2020 MAYHEM LEAF SPRING	1
37	FS90154	2020 MAYHEM DT PROTECTOR	1
38	FS90153	2020 MAYHEM STRUT PROTECTOR	1
39	FS90179	2020 MAYHEM 150 FRONT TRIANGLE, L	1
40	FS90176	2020 MAYHEM REAR TRIANGLE	1
41	SRAM 00.7918.089.000	SRAM UDH RD HANGER	1
42	INC W/ RD HANGER	SRAM UDH HANGER SCREW	1
43	FS90025	PIVOT WASHER, MAIN	2