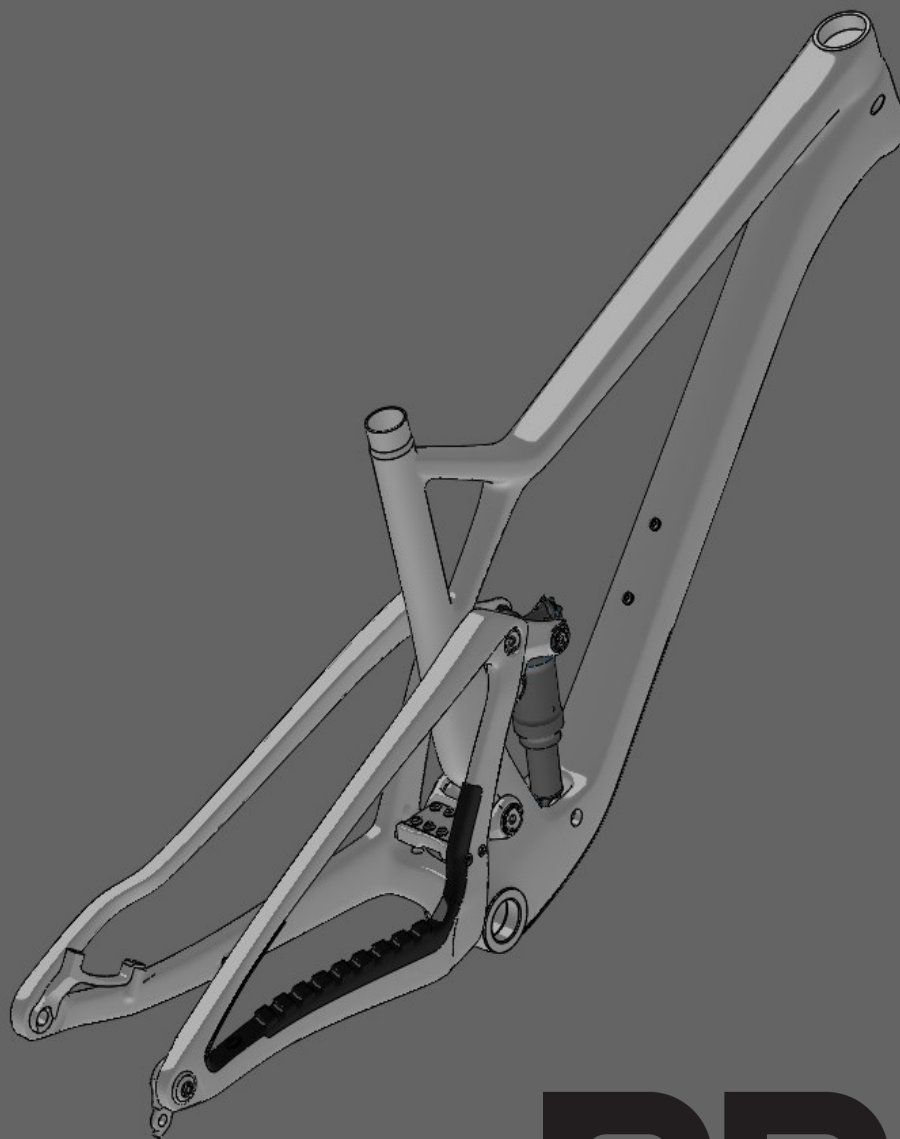


Ryve 115 Frame  
Suspension Setup, Assembly Instructions  
and  
Maintenance Manual



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

Under no circumstances shall Spot Brand INC 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 Ryve 115 mountain bike are classified within Level 3 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.

# Setting Shock Air Pressure

Sag should be set to 25 – 30% of total shock travel

To achieve the best performance from your FOX suspension, adjust the air pressure to attain your proper sag setting. Sag is the amount your suspension compresses under your weight with all your riding gear. Sag range should be set to 25–30% of total shock travel.

Watch the sag setup video at [ridefox.com/sagsetup](http://ridefox.com/sagsetup)

Your shock has a 4 digit ID code on the shock body. Use this number on the Help page at [www.ridefox.com](http://www.ridefox.com) to find out more information about your shock, including shock travel.

Turn the 3-position lever to the OPEN mode.

1. Start by setting the shock air pressure (psi):

**Ryve 115: 100% of Riding Weight** (including shoes, helmet, pack, water, etc.)

With the air pump attached to the shock valve, slowly cycle your shock through 25% of its travel 10 times after you reach your desired pressure. This will equalize the positive and negative air chambers and will change the pressure on the pump gauge. Refill the air pressure to match the corresponding percentage of riding weight. **Do not exceed 300 psi (20.7 bar), the maximum FLOAT air pressure!**

2. Sit still on the bike in your normal riding position, using a wall or a tree for support.

3. Pull the sag indicator o-ring up against the rubber air sleeve seal.

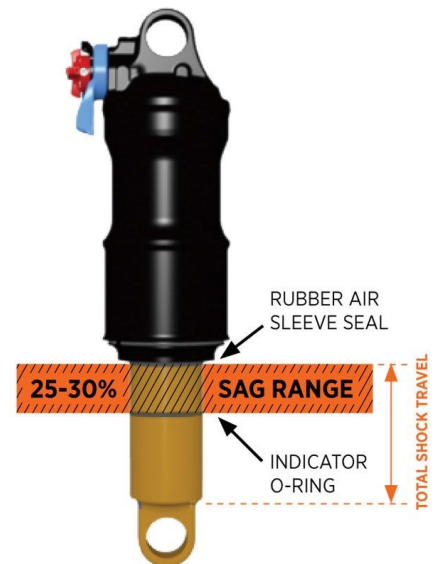
4. Carefully dismount the bike without bouncing.

5. Measure the distance between the sag indicator o-ring and the rubber air sleeve seal. Compare your measurement to the 'Suggested Sag Measurements' table.

6. Add or remove air pressure until you reach your desired sag measurement.

7. You can fine tune the shock pressure slightly to match your riding style and preferences— less air will lower ride height and feel softer, more air will raise ride height and feel firmer. **Spot does not recommend using air pressure values less than 90% of riding weight as the air spring may not offer adequate support to resist hard bottom outs. Hard bottoming will shorten frame life, component life, and potentially cause loss of control. For more shock air tuning options, visit [www.spotbikes.com](http://www.spotbikes.com).**

Ryve 115 Suggested Sag Measurements		
Shock Stroke	25% Sag (Firm)	30% Sag (Plush)
45mm (1.77in)	11mm (.44in)	13.5mm (.53in)



Recommended Air Pressure for Setting Sag—Fox Float DPS Evol		
Riding Weight (lbs)	Riding Weight (kgs)	Pressure (psi)
120	55	120
130	59	130
140	64	140
150	68	150
160	73	160
170	77	170
180	82	180
190	86	190
200	91	200
210	95	210
220	100	220
230	105	230
240	109	240

# Setting Shock Rebound Damping

Rebound controls how fast the shock extends after compressing

The rebound adjustment is dependent on the air pressure setting. For example, higher air pressures require more rebound damping. Use your air pressure to help find your rebound setting.

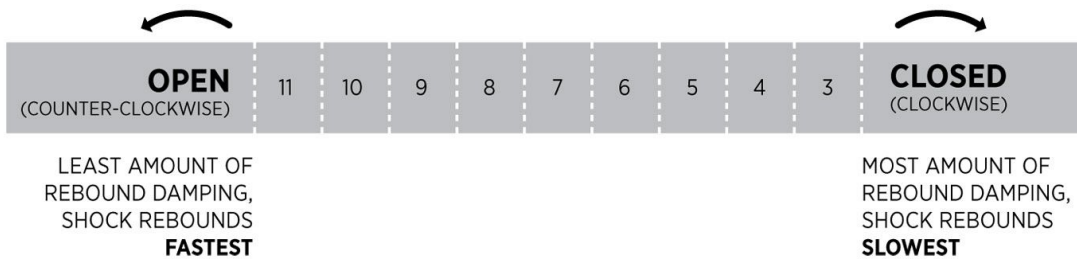
Turn your rebound knob to the closed position (full clockwise) until it stops. Then back it out (counter-clockwise) to the number of clicks shown in the table below.

## REBOUND



**Rebound** controls the rate of speed at which the shock extends after compressing.

Suggested Starting Points for Setting Rebound Damping	
Pressure (psi)	Rebound Setting (clicks from full slow)
<100	10
100-120	9
120-140	8
140-160	7
160-180	6
180-200	5
200-220	4
220-240	3
240-260	2
260-280	Closed

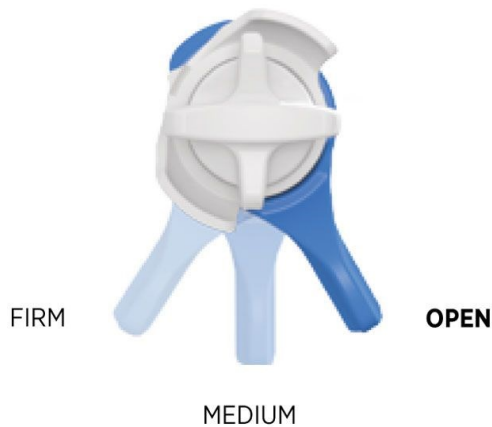


# Adjusting Compression Damping

Easy on-the-fly adjustments for unprecedented control and performance

**3-Position Lever:** The 3-position lever is useful to make on-the-fly adjustments to control shock performance under significant changes in terrain, and is intended to be adjusted throughout the ride. You can use the OPEN mode during rough descending, the MEDIUM mode for undulating terrain, and the FIRM mode for smooth climbing.

Spot recommends using the OPEN mode for the majority of off-road riding. The Living Link suspension system is very efficient. No pedal platforms or lockouts are necessary to get the most out of the system!



**Open Mode Adjust:** Open mode adjust is useful to control shock performance during rider weight shifts, G-outs, and slow inputs. Open mode adjust provides 3 additional fine tuning adjustments for the OPEN mode. Lift the open mode adjuster, rotate it to the 1, 2, or 3 position, and press it in to lock the position. Setting 1 will have a more plush feel and setting 3 will have a firmer feel.

Spot Recommends beginning with the open mode adjust set to 1, heavier or more aggressive riders may appreciate the increased support from modes 2 or 3.



# Setting Fork Pressure

Sag should be set to 15 – 20% of total fork travel

To achieve the best performance from your suspension fork, adjust the air pressure to attain your proper sag setting. Sag is the amount your suspension compresses under your weight and riding gear. Sag range should be set to 15–20% of total fork travel.

Watch the sag setup video at [ridefox.com/sagsetup](https://ridefox.com/sagsetup)

1. Unscrew the air cap on top of the left fork leg counter-clockwise to expose the Schrader valve.
2. Attach a shock pump to the Schrader valve.
3. Pump your fork to the appropriate pressure as listed in the suggested air pressure table.
4. Using your fork's sag setting o-ring on the left upper tube (or temporarily install a zip tie to the upper tube), slide the o-ring (or zip tie) down against the fork dust wiper.

Rotate the large 3-Position knob to the full open position.

- Dressed to ride (including a filled hydration pack, if you use one), position your bike next to a wall or table to support yourself. Mount your bicycle. Assume your riding position for at least 10 seconds, allowing the suspension to fully settle. Make sure you distribute your weight evenly between the saddle, handlebars and pedals.
- While in your riding position, slide the o-ring (or zip tie) down against the fork dust wiper.
- Dismount your bike without bouncing, to avoid further moving of the o-ring or zip tie. Measure the distance between the dust wiper and the o-ring or zip tie. This is your sag measurement. Suggested sag measurements are listed in the table below.
- Add or remove air pressure until your sag measurement is between 15-20% of your fork's total travel.
- Repeat steps 2-8 and recheck sag measurement.
- When sag measurement is correct, screw the air cap on clockwise until snug.

Ryve 115 Suggested Starting Points for Setting Sag		
Fork Travel	15% Sag (firm)	20% Sag (plush)
130mm	19.5mm	26mm
Recommended Air Pressure for Setting Sag Fox 34		
Riding Weight (lbs)	Riding Weight (kgs)	Pressure (psi)
<140	<64	56
140-160	64-73	60
160-180	73-82	68
180-200	82-91	76
200-220	91-100	84
>220	>100	88



# Setting Fork Rebound Damping

## Rebound damping controls how fast the fork extends after compressing

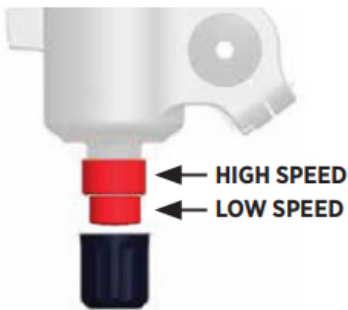
The rebound adjustment is dependent on the air pressure setting. For example, higher air pressures require more rebound damping. The rebound damping is controlled by the two red knobs on the bottom of the right side fork leg.

Use your air pressure to find your rebound setting. Turn your rebound knobs to the closed position (full clockwise) until it stops. Then back them out (counter-clockwise) to the number of clicks shown in the table below.

Rebound settings can vary based on rider preference. If the fork feels too bouncy—like it springs like a pogo stick on big bumps, increase the rebound damping to slow the return. If the fork feels harsh, and rides lower and lower through successive bumps, reducing the rebound damping will increase the return speed and allow the fork to recover for the next bump.

### REBOUND

**Rebound** controls the rate of speed at which the fork extends after compressing.



Suggested Starting Points for  
Setting Rebound Damping—Fox Forks

Pressure (psi)	Low Speed Rebound Setting (clicks from full slow)	High Speed Rebound Setting (clicks from full slow)
54-59	9	8
59-64	8	7
64-73	7	6
73-82	6	5
82-86	5	4
86-95	4	3
95-100	3	2
100-109	2	1
109-113	1	0



# Setting Fork Compression Damping

## Fox 34 Factory Series—GRIP2 damper

Easy on-the-fly adjustments for unprecedented control and performance

**High Speed Compression Adjust:** High-speed compression adjustment is useful to control fork performance during bigger hits, landings, and square-edged bumps. High speed compression adjust provides 8 additional fine tuning adjustments for the OPEN mode. Setting 8 will have a more plush feel and setting 1 will have a firmer feel.

Spot recommends beginning with the high speed compression adjust set wide open or 8 clicks out (counter-clockwise) from fully closed (clockwise). Add more high speed compression damping by turning clockwise one click at a time. If the fork becomes too firm, back the high speed compression adjust off to retain comfort.

**Low Speed Compression Adjust:** Low speed compression adjust is useful to control fork performance under rider weight shifts, G-outs, and slow inputs. Low speed compression adjust provides 16 additional fine tuning adjustments for the OPEN mode. Setting 16 will have a more plush feel and setting 1 will have a firmer feel.

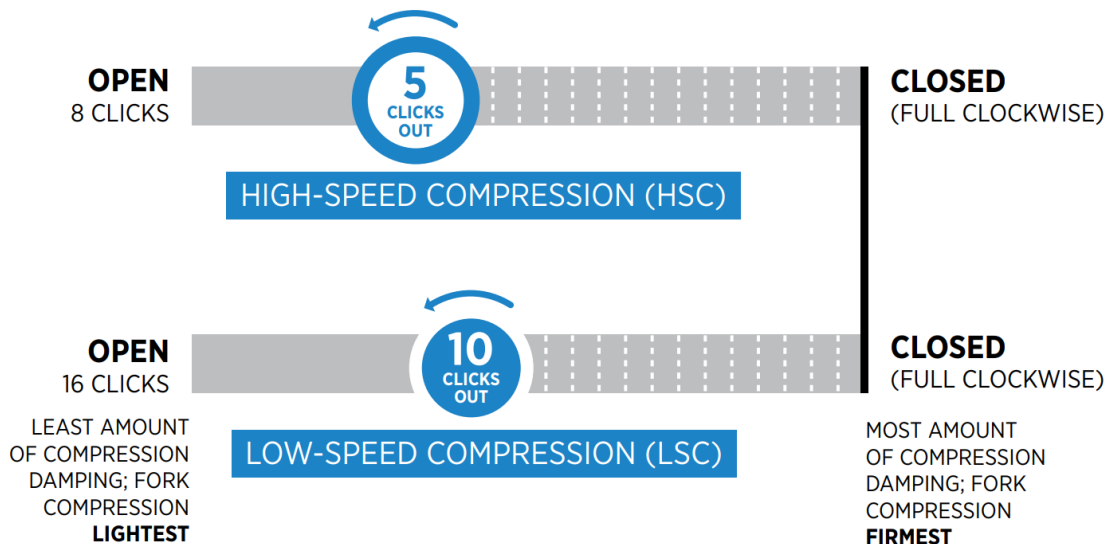
Spot recommends beginning with the low speed compression adjust set wide open or 16 clicks out (counter-clockwise) from fully closed (clockwise). Add more low speed compression damping by turning clockwise one click at a time. If the fork becomes too firm, back the low speed compression adjust off to retain comfort.



**High-speed compression** adjustment is useful to control fork performance during bigger hits, landings, and square-edged bumps.



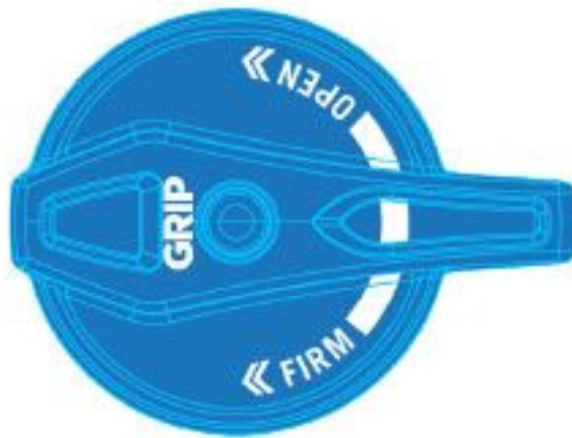
**Low-speed compression** adjustment is useful to control fork performance during rider weight shifts, G-outs, and other slow inputs.



# Setting Fork Compression Damping

## Fox 34 Performance Series—GRIP damper

**3-Position Micro Adjust:** The 3-position lever is useful to make on-the-fly adjustments to control fork performance under significant changes in terrain, and is intended to be adjusted throughout the ride. Turning the lever to the full counter-clockwise position sets the fork in the Open mode. Turning the lever to the middle detent position sets the fork in the Medium mode. Turning the lever to the full clockwise position sets the fork in Firm mode. The positions between the Open, Medium, and Firm modes can be utilized to fine tune your compression damping.



Spot recommends beginning with the 3-position lever fully open, and fine tuning between fully open and the middle position.

# Suspension Tuning

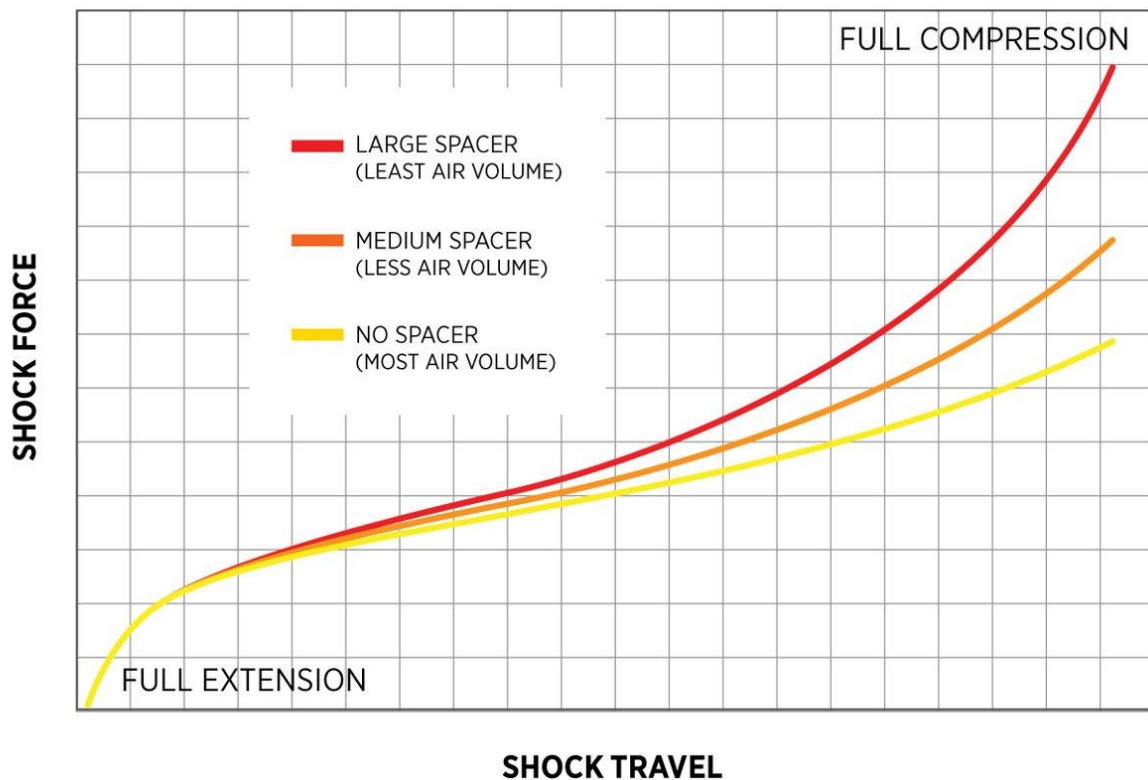
Modern high performance mountain bikes are designed to be ridden by riders of all abilities over a wide variety of terrain. Two riders that weigh the same may require vastly different suspension tuning. Settings that work well for an aggressive rider in rough terrain will produce a harsh ride for a smoother rider on moderate terrain. Here are some guidelines to make sure you're getting the best possible ride quality out of your Spot Living Link bike:

- Set your fork and shock pressures according to the guidelines on pages 4 and 7. These are starting points! Monitor your travel indicator o-rings on your first ride or two in terrain you'll typically ride.
- If you find that you're easily using all the travel and reaching a hard "bottom out", try increasing your air pressure 5psi at a time until you no longer, or very seldom reach full travel. The goal should be to use almost all of the travel on the roughest sections or jumps and drops. Bottoming out should be the exception, not the rule.
- If, conversely, you find that you're using much less than full travel, try decreasing your air pressure 5psi at a time until you're using almost full travel frequently.
- Set your fork and shock rebound damping according to the guidelines on pages 5 and 8. These are also starting points! Monitor the rebound reaction fork and shock over the first few rides.
- If the suspension feels "bouncy" and uncontrolled, this may be due to a lack of rebound damping. This can also be felt the handlebars coming back too fast, or a lack of traction in bumpy corners. Try increasing the rebound damping by turning the adjusters clockwise one click at a time until the bouncy feeling goes away.
- If the suspension feels harsh over successive bumps and extended rough sections, this may be a result of too much rebound damping. If the suspension cannot return fast enough before the next bump, there won't be enough suspension travel left to adequately absorb successive impacts. This is called "packing up". This can also be felt as the handlebars feeling too low in rough sections or the bike feeling sluggish or slow to react to inputs. Try decreasing the rebound damping by turning the adjusters counter-clockwise one click at a time until the ride quality is improved over successive bumps.
- Compression adjustment should be addressed after air pressure and rebound damping are set to your ride preferences. Start with your fork and shock compression adjustments wide open— turned fully counter-clockwise. If you feel like there is excessive motion in the fork or the shock during bumps, hard corners, or g-outs (big dips that compress the suspension), you may benefit from adding compression damping. Try increasing compression damping one click at a time by turning the adjusters clockwise. Increased compression damping will typically increase the speed that the bike can tackle rough terrain, but it's up to the rider to absorb more of the energy of each impact. This is a personal preference! Strong, heavier riders charging rough terrain at high speeds can likely go faster with the increased control that compression damping provides. Conversely, lighter riders in more moderate terrain will find a more comfortable ride with less compression damping.

In addition to the external adjustments described above, there is one simple internal adjustment that can be made to complete the tuning of your suspension. Air springs derive their spring force from pressurizing air in a closed chamber. A large chamber will have a very linear spring response, a smaller chamber will be more progressive– the force will ramp up much higher as you compress it farther. By changing the volume of the chamber, you can change the progression of the air spring force at a given pressure setting. Your fork and shock both use air volume spacers as a tuning parameter. They are easy to change by following the simple instructions linked below.

- If you find that you have to increase your air pressure well above the recommended levels to avoid bottoming out, you should install a larger air volume spacer (or additional spacers in the case of the fork). This will also potentially increase ride comfort and improve small bump compliance if you find that the increased bottom out support allows you to lower your air pressure setting.
- If you find that you have to decrease your air pressure well below the recommended levels to use full travel, you should remove or reduce the size of your air volume spacer. This will increase control and ride comfort by making the suspension travel easier to access.

## TYPICAL AIR SPRING CURVES



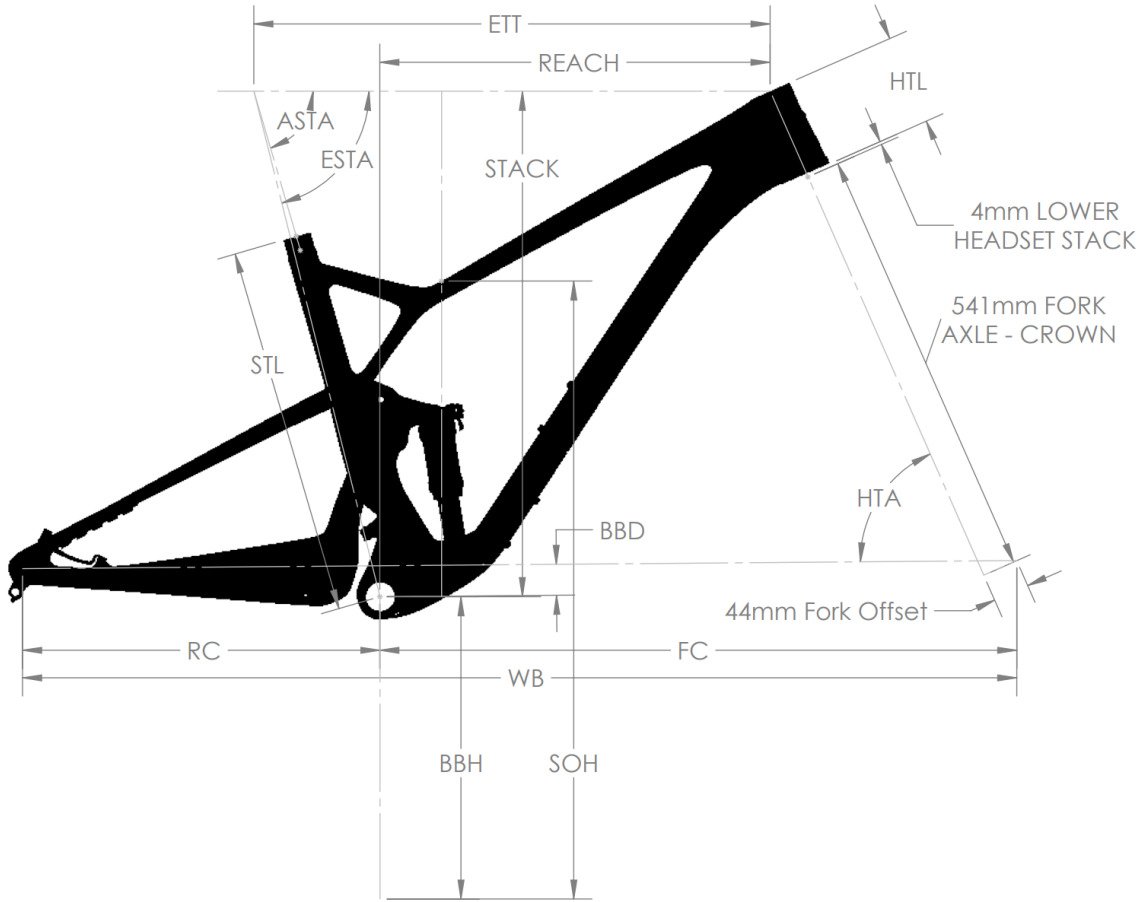
You Spot bike is delivered with our recommended size and quantity of volume spacers in the fork and rear shock. Additional volume spacers can be sourced online or from your local bike shop. Use these FOX part numbers to find the correct spacers:

- Fox 34 Fork volume spacer, FOX PN: 803-01-667
- FLOAT DPS (9mm shaft) Air Spring Volume Tuning Kit is available from FOX: PN 803-01-250
- Changing volume spacers is a **simple procedure** that can be performed by the end user. In the case of Spot suspension frames, the shock doesn't even need to be removed from the bike. For instructions on this procedure, please visit the Fox website:

<http://www.ridefox.com/help.php?m=bike&id=555#tuningwithairvolumespacers>

# Ryve 115 Frame Geometry

Ryve 115 models use a 165 X 45mm Trunion Mount shock.



## MEASUREMENT KEY

STL: SEAT TUBE LENGTH  
 ETT: EFFECTIVE TOP TUBE LENGTH  
 HTL: HEAD TUBE LENGTH  
 ESTA: EFFECTIVE SEAT TUBE ANGLE  
 ASTA: ACTUAL SEAT TUBE ANGLE  
 WB: WHEELBASE

SOH: STAND OVER HEIGHT  
 BBD: BOTTOM BRACKET DROP  
 BBH: BOTTOM BRACKET HEIGHT (2.4 TIRE)  
 RC: REAR CENTER  
 FC: FRONT CENTER  
 REACH: HORIZONTAL FROM BB TO TOP TUBE  
 STACK: VERTICAL FROM BB TO HEAD TUBE TOP

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	360	14.2	580	22.8	66.2	90	3.5	75	71.8	1152	45.4	718	28.3
M	400	15.7	607	23.9	66.2	100	3.9	75	71.9	1181	46.5	725	28.5
L	450	17.7	628	24.7	66.2	110	4.3	76	73.7	1215	47.8	723	28.5
XL	490	19.3	646	25.4	66.2	120	4.7	77.3	75.8	1249	49.2	721	28.4

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	34	1.3	336	13.2	435	17.1	717	28.2	420	16.5	597	23.5
M	34	1.3	336	13.2	435	17.1	747	29.4	445	17.5	606	23.9
L	34	1.3	336	13.2	435	17.1	780	30.7	475	18.7	616	24.3
XL	34	1.3	336	13.2	435	17.1	814	32	505	19.9	625	24.6

# Ryve 115 Frame Component Compatibility

Your Ryve 115 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, 182mm SRAM MAXLE INCLUDED
REAR BRAKE	160mm STANDARD POST MOUNT, 180mm MAX ROTOR DIAMETER
REAR TIRE	29 X 2.4" MAX WIDTH. ACTUAL TIRE WIDTHS CAN VARY FROM PRINTED SIZES
REAR SHOCK	RYVE 115: 165 X 45mm, TRUNNION UPPER, 8X25 LOWER EYELET
FORK TRAVEL	120-130mm
WATER BOTTLE	2X BOTTLE MOUNTS, ONE ABOVE AND ONE BELOW DOWNTUBE
SEATPOST COLLAR	35.0mm INNER DIAMETER

# Ryve 115 Frame Assembly

## Tools Required (May Vary by Component Selection):

- Hex Wrench: 5mm
- Torx Wrench: (at least two)T30
- Torque wrench with capability of at least 25N-m (221 in-lb)
- Headset Press
- Bottom Bracket Installation Tools—may vary by BB brand and model; meant to fit torque wrench
- High-Lubricity Waterproof Grease—we recommend Motorex 300 Series
- Strong, thin adhesive tape—electrical tape, packaging tape, etc.

# Internal Dropper Seatpost Routing

## IMPORTANT:

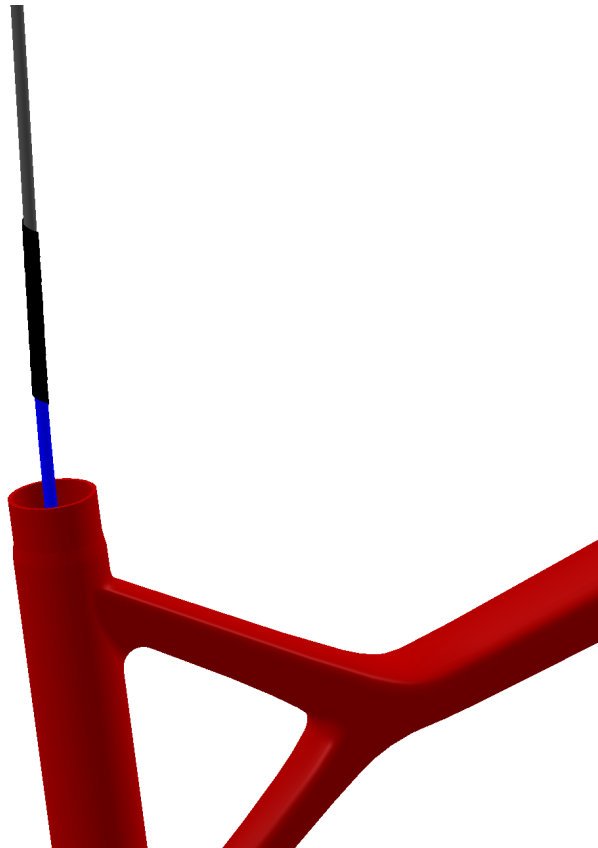
Install your internal dropper seatpost cable housing/hydraulic hose before installing the bottom bracket assembly.



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. The internal routing conduit will guide the housing through the frame and out the seat tube. You can also tape the seatpost cable housing to the lead tube and pull it through. Make sure to clean the end of the cable housing and the lead tube with alcohol before taping. Tape the two together in line, and wrap the tape several times around the junction for sufficient contact.



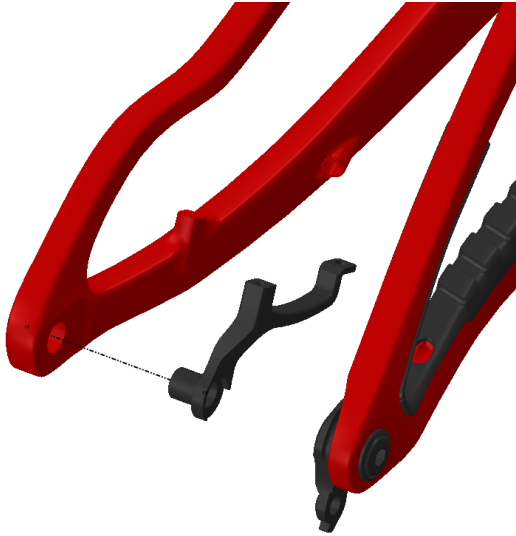
2. Continue to feed the seatpost cable housing while gently pulling the lead tube. When the seatpost cable housing emerges from the port, remove the tape and store the lead tube in a safe place.



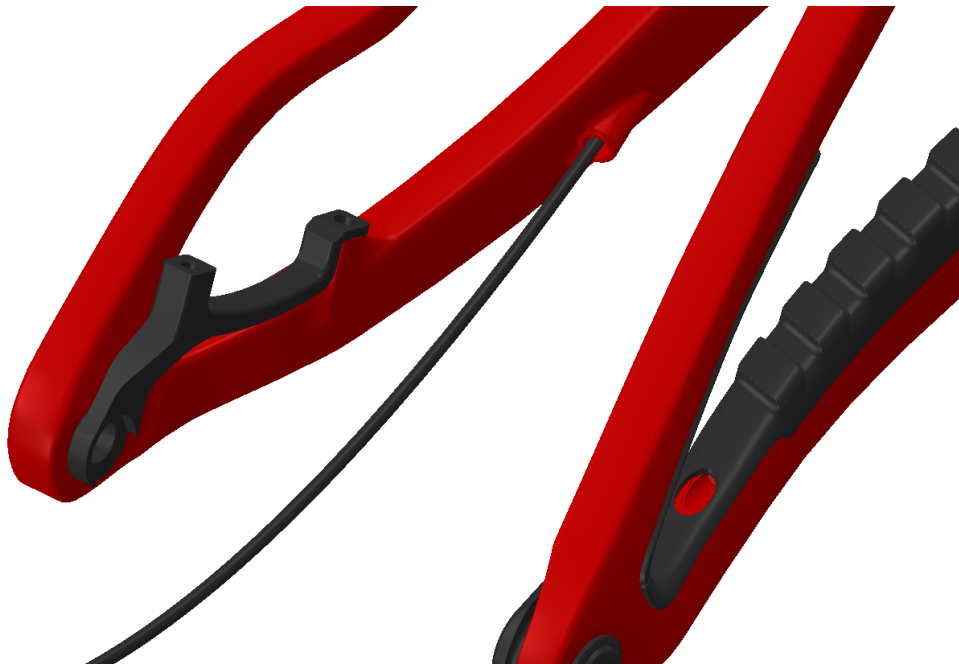
3. Proceed to install your dropper seatpost per the seatpost manufacturer's instructions. *You may wish to install other components on the frame before completing the dropper post installation.*

## Rear Brake Hose Routing

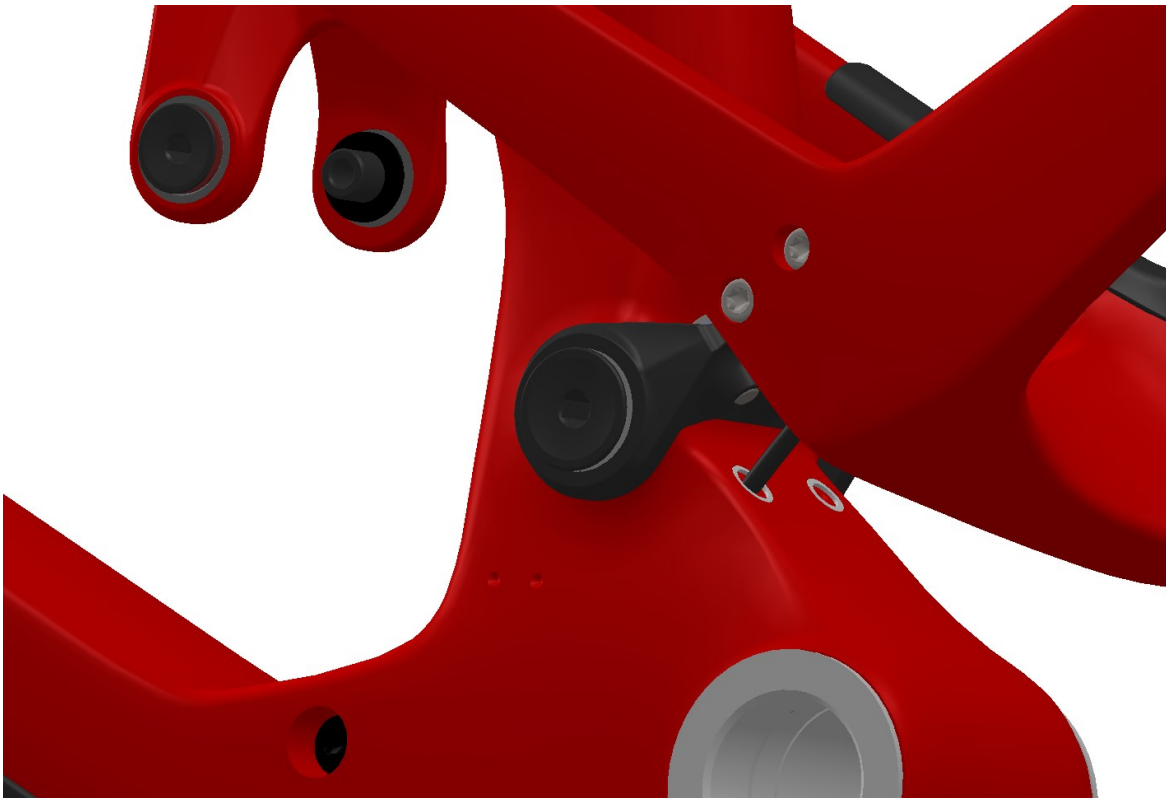
1. Begin by removing the upper shock hardware as it will make installation of the rear brake housing easier. Please note the Ryve 115 frame is not compatible with rotors larger than 180mm. The brake caliper bracket slides into the axle bore and is secured by installing the forward caliper mounting screw. Do not mount the caliper until brake hose is fully routed through the frame.



2. If the lever is connected to the hose, cut the hose close to the lever and plug. Follow manufacturer recommendations for plugging/capping the brake hose before internally routing. Once the hose is plugged, begin feeding the brake hose into the port on the non-drive side chainstay.



3. The brake hose will exit the non-drive side port at the front of the rear triangle. With the upper shock hardware removed, swing the rear triangle forward to give more space in between the front and rear triangle. Feed the brake hose into the non-drive side port on the front triangle just above the bottom bracket.

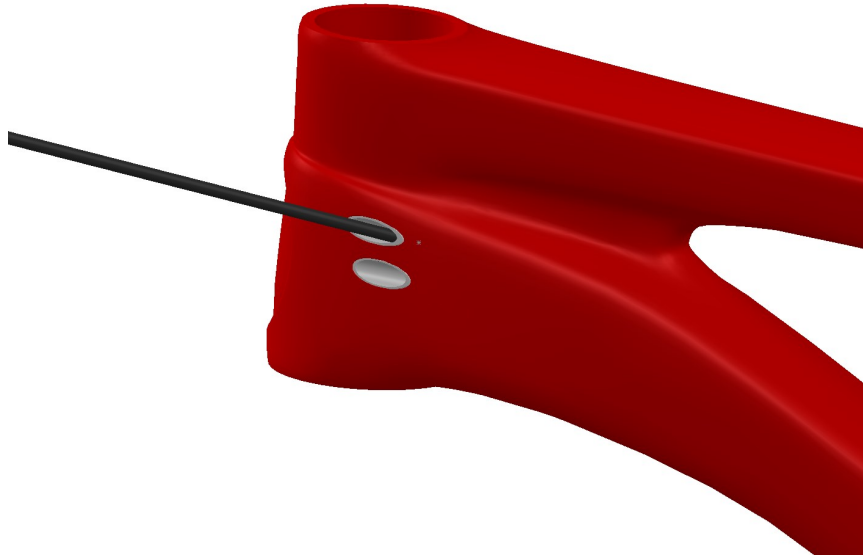


4. The brake hose will exit at the headtube on the non-drive side from the lower of the two ports. At this point, mount the caliper, lever and reinstall your brake hose to the desired length.



# Rear Derailleur Cable Routing

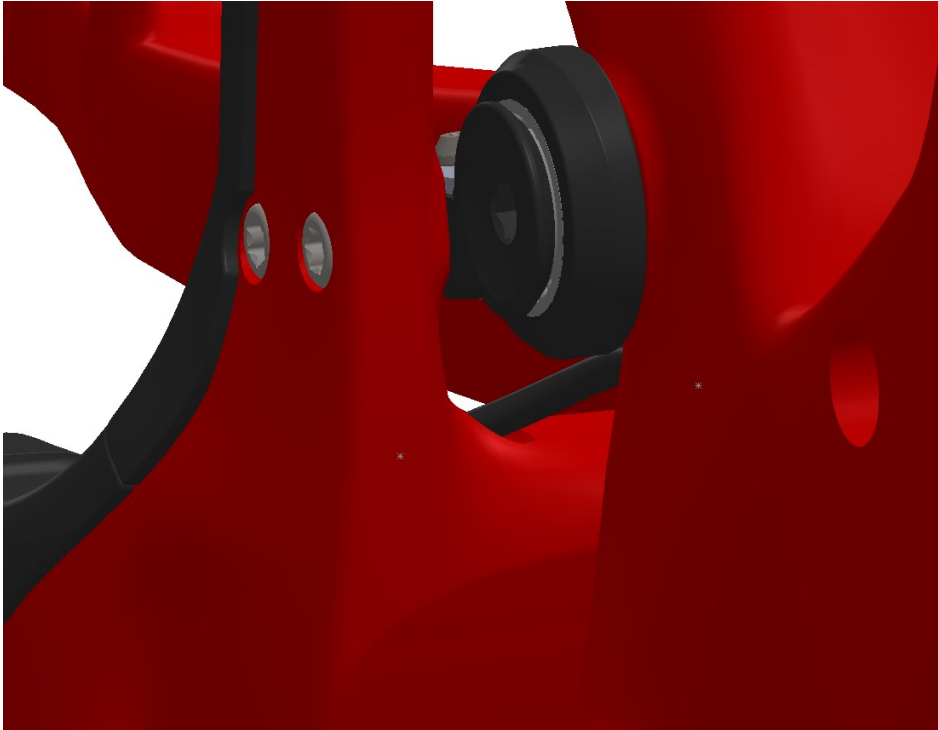
1. Begin by feeding the rear derailleur cable housing into the upper port at the head tube as shown. Having the upper shock hardware removed so that the rear triangle can swing forward will help to access the rear triangle housing ports.



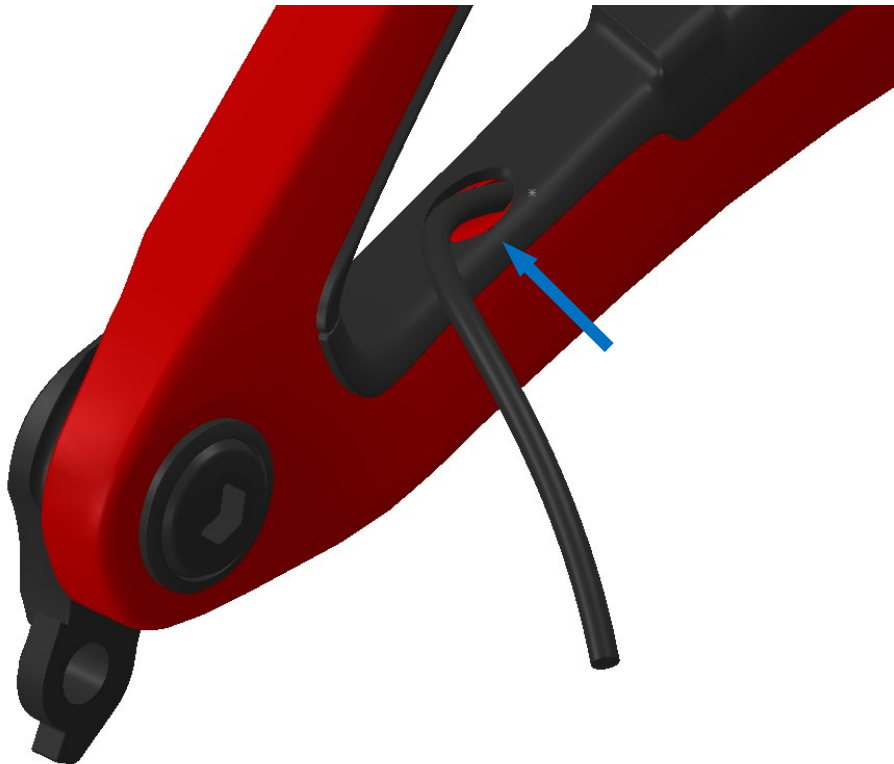
2. The housing will emerge from the corresponding port behind the seat tube, just above bottom bracket.



2. Insert the housing into the drive side port on the rear triangle . The housing will exit the rear triangle at the drive side chain stay.



3. You will need to cut the knockout cover off of the chainstay protector before feeding the housing through entirely. This can be done using a razor blade or a hobby knife.



# Bottom Bracket Installation

## **IMPORTANT:**

**If using an internal dropper seatpost cable/hose, install the seatpost cable/hose before installing the bottom bracket assembly**

1. Observe the bottom bracket manufacturer's requirements for cup position and take care to observe the left/right orientation of each cup.
2. Apply light grease to the bottom bracket shell threads.
3. Using a manufacturer recommended bottom bracket installation tool, thread each cup into its respective side one at a time.
4. Using a torque wrench and correct tool attachment, torque the driveside cup counter-clockwise to the specified torque, and clockwise for the non-driveside cup.
5. Wipe away any excess grease displaced by the installation process.

# Maintenance

## Tools Required For Rear Triangle Removal/Replacement:

- Hex Wrenches/Bits: 6mm, 8mm
- Torx Wrench/Bits: T30
- Torque wrench with 4Nm (36in-lb) to 14Nm (120in-lb) range: 6mm bit, T30 bit
- 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
  - Round pin punch, flat tip, 4-6mm (up to 1/4") diameter
  - An assortment of sockets and extensions for bearing removal, 20-22mm outer diameter for main pivot bearings, 13-14mm outer diameter for upper pivot bearings
  - Several spacers to support the main pivot clevis and rocker 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)
    - Rocker Link Main Pivot and SS Pivot: 43mm (1.7in)
    - Rocker Link Shock Trunnion Pivot: 61mm (2.4in)
- See pages 38-42 for illustrations of these spacers' function.
- Arbor press or bench vise for bearing installation

For individual parts and a complete exploded assembly diagram, please see pages 52-54 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 spooler 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)

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

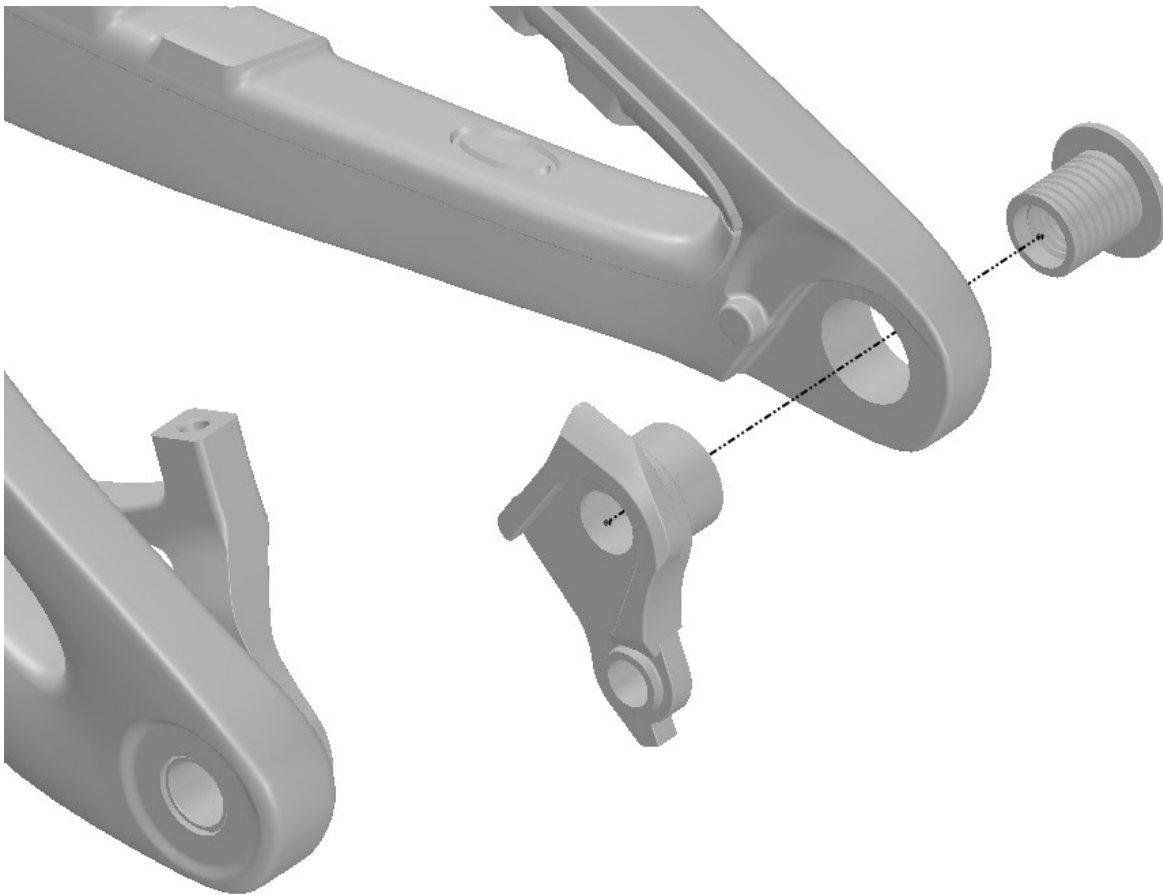
303-278-3955

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 inner most fasteners.
2. Clamp the bicycle securely in a work stand and remove the rear wheel.
3. Turning the torque wrench clockwise (as seen looking at the head of the fastener) and verify that the inner four fasteners are at or above 12N-m (108in-lb). Once you have a feel for how tight 12N-m feels like, use a standard T30 L-Bend wrench to access the outer four fasteners and check torque. This allows torque to be checked on all eight fasteners without disassembling the frame.

# Rear Derailleur Hanger Removal/Replacement

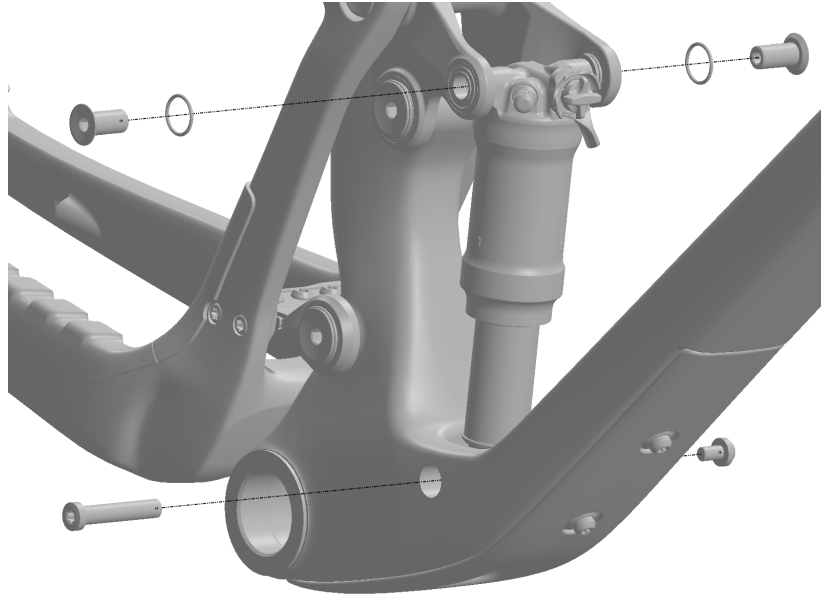
1. Remove the rear wheel and the rear derailleur from the frame. It should not be necessary to remove the chain or cable/housing from the derailleur:



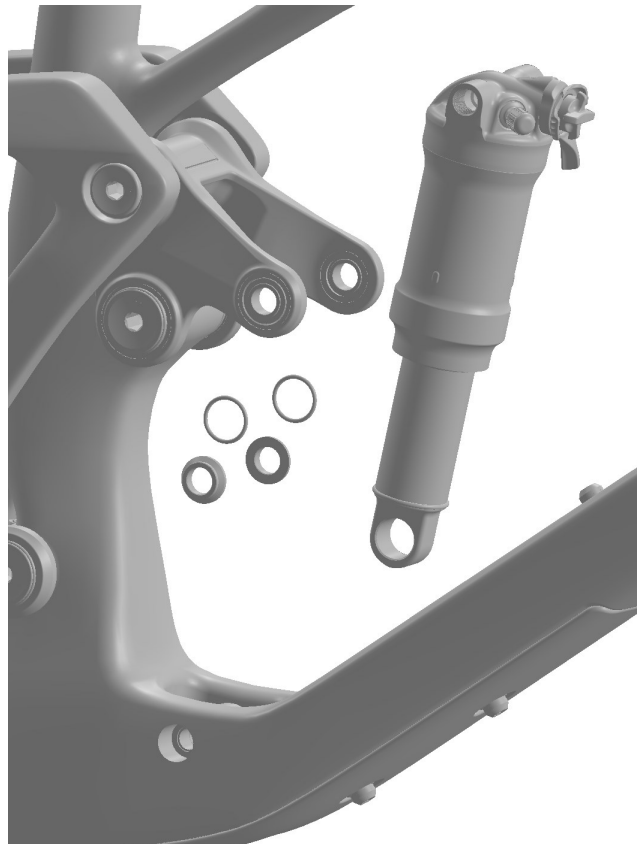
2. The derailleur hanger is removed using a 8mm hex tool on the outboard cap. Turn the cap clockwise to unscrew, then remove the axle sleeve and hanger from the inboard side.  
Torque: 25Nm (221in-lb)

# Rear Shock Removal/Replacement

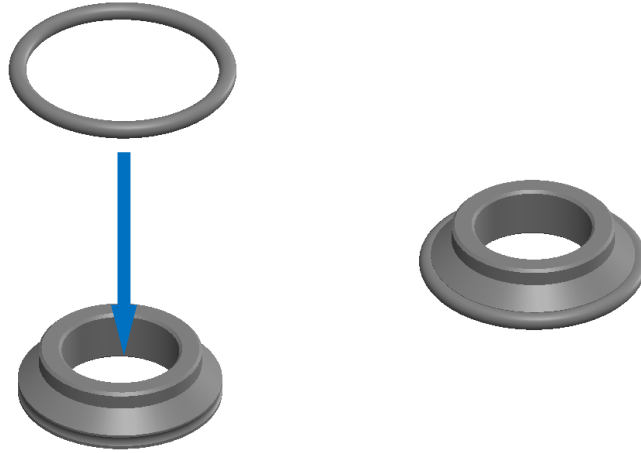
1. Using T30 torx tools on both sides, remove the lower shock pivot pin and screw.
2. Using a 5mm hex tool remove both upper trunnion mounting screws and o-rings:



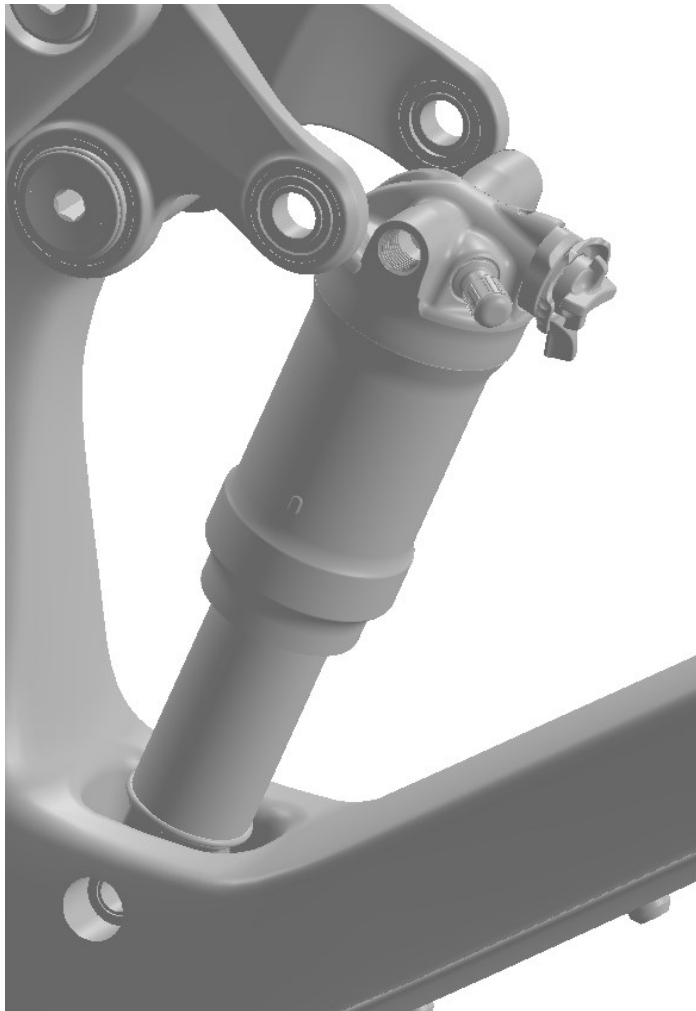
3. Slide the shock upward and forward to remove
4. Keep a hand under the trunnion pivot area of the link to catch the washers and o-rings:



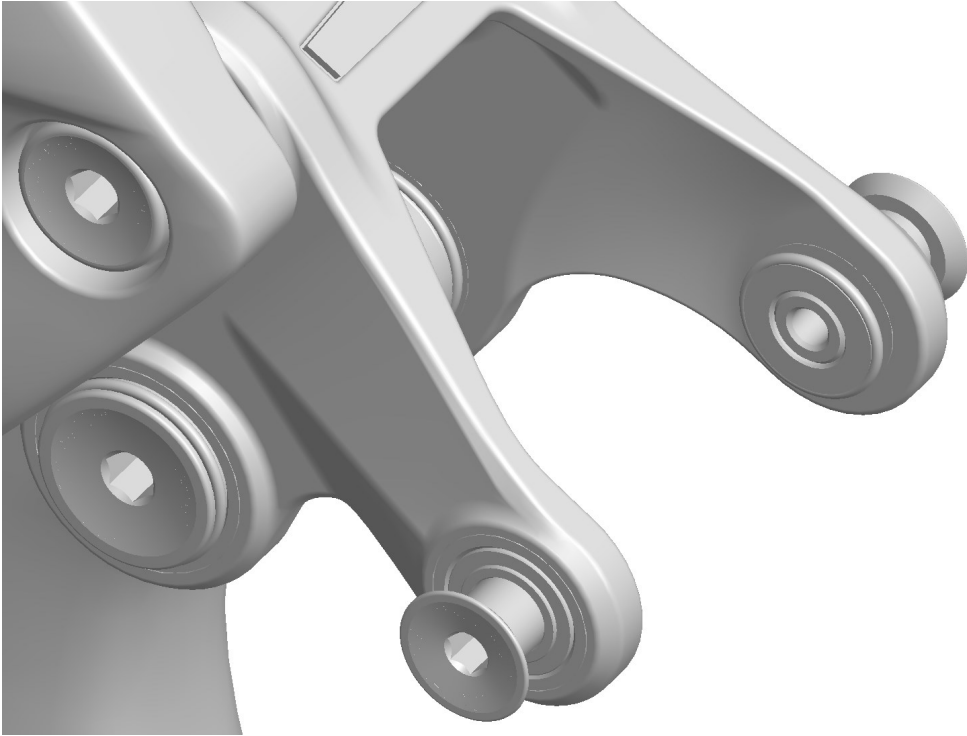
5. To replace the rear shock, begin by fitting new 1.5 X 12 inner diameter EPDM o-rings onto the washers as shown. The easiest way to do this is to lay the washer on a flat surface with the flat side down. Then push the o-ring down from the top until it sits in the installation groove:



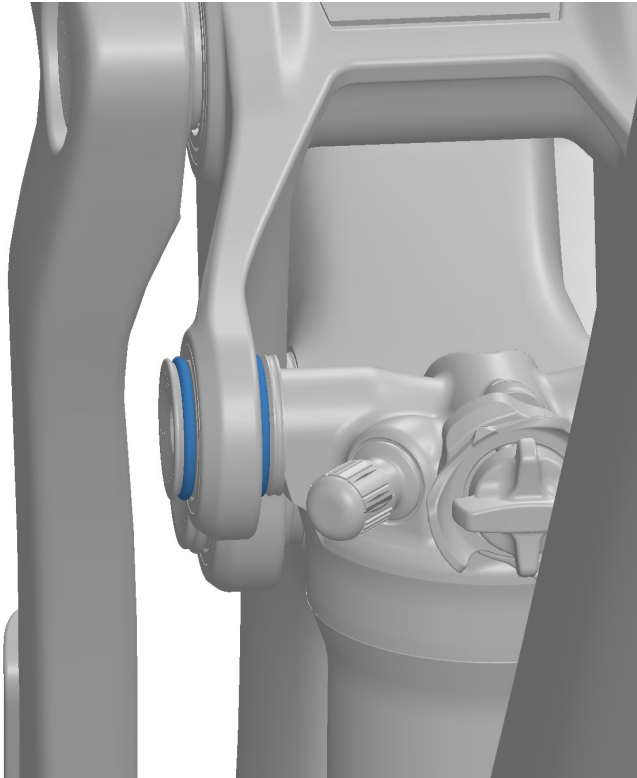
6. Insert the rear shock into the frame and tighten the lower pivot pin hardware to 11N-m (97in-lb) using T30 torx tools. Ensure medium strength thread locker is used on lower hardware screw.



6. Apply medium strength thread locker to the trunnion screws and insert them into the link so that they slightly protrude to the inboard side. Slide the washers, with o-rings, onto the ends of the screws from the inboard side:

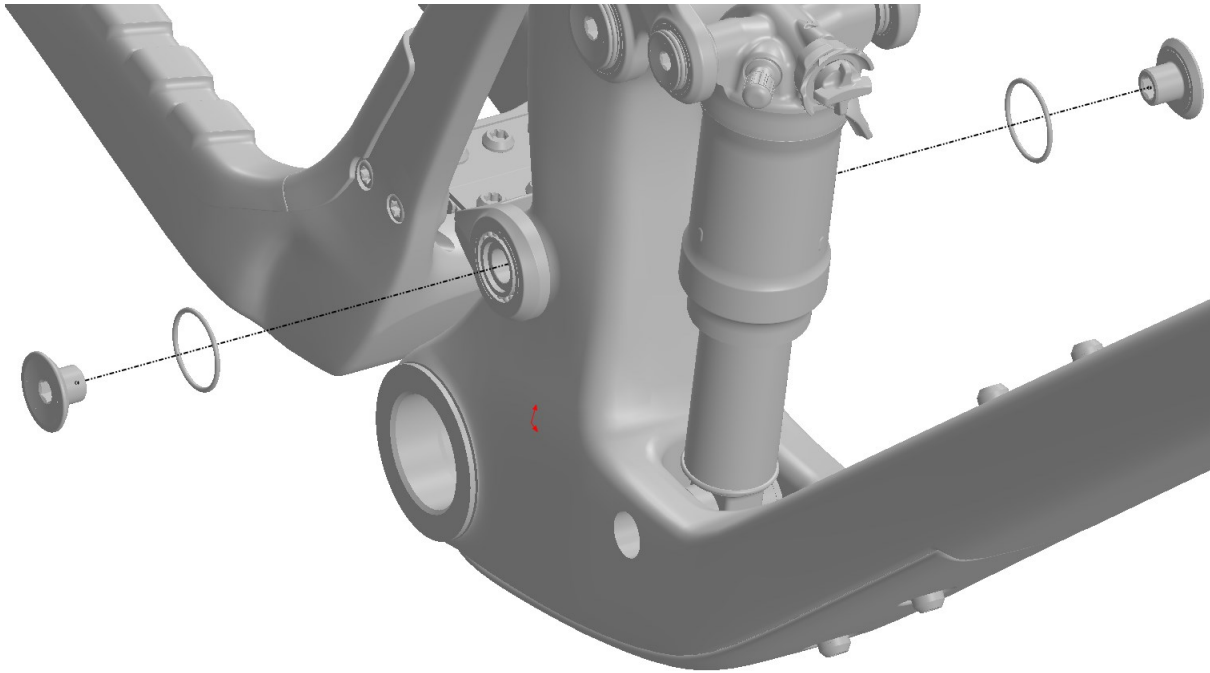


7. Slide the shock into the link and torque screws to 11 N-m(97in-lb) . Using a pick tool or fingernail, push the inboard o-rings from the installation groove to the taper so they rest against the inboard sides of the link. Install the outboard 1.5 X 12 inner diameter o-rings over the heads of the trunnion screws as shown:

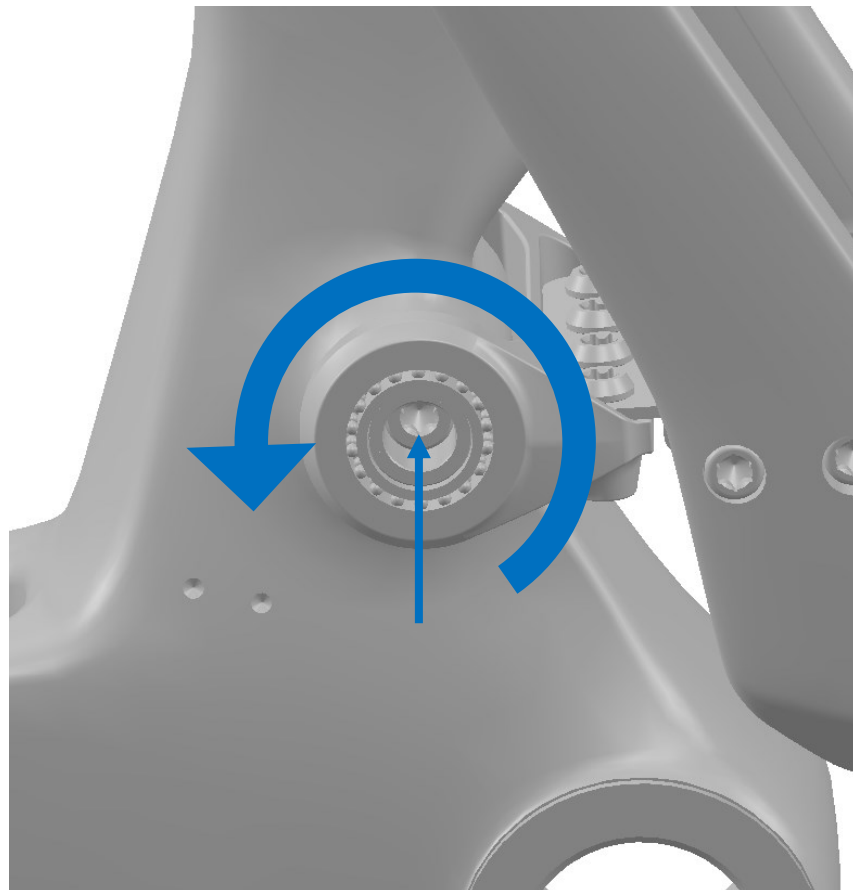


# Rear Triangle Removal

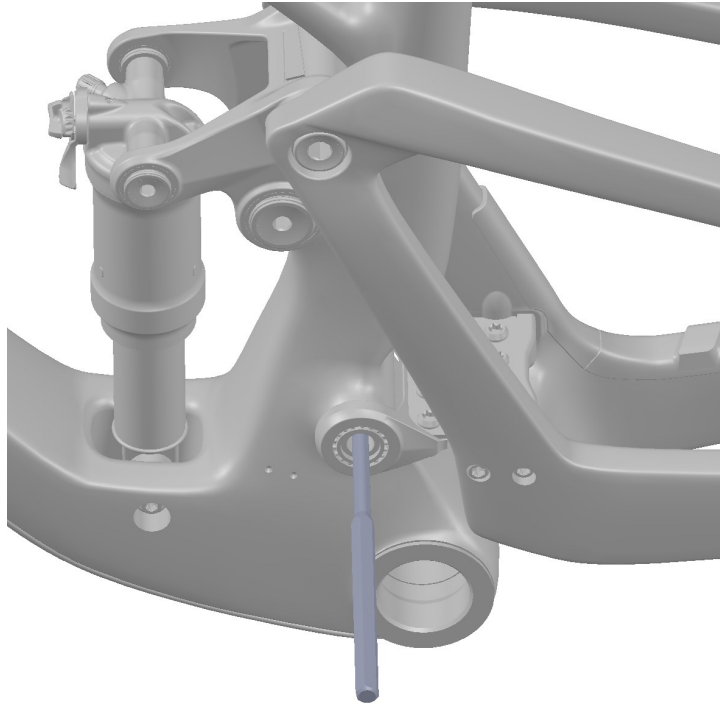
1. Using a 6mm hex tool, remove the main pivot caps and o-rings:



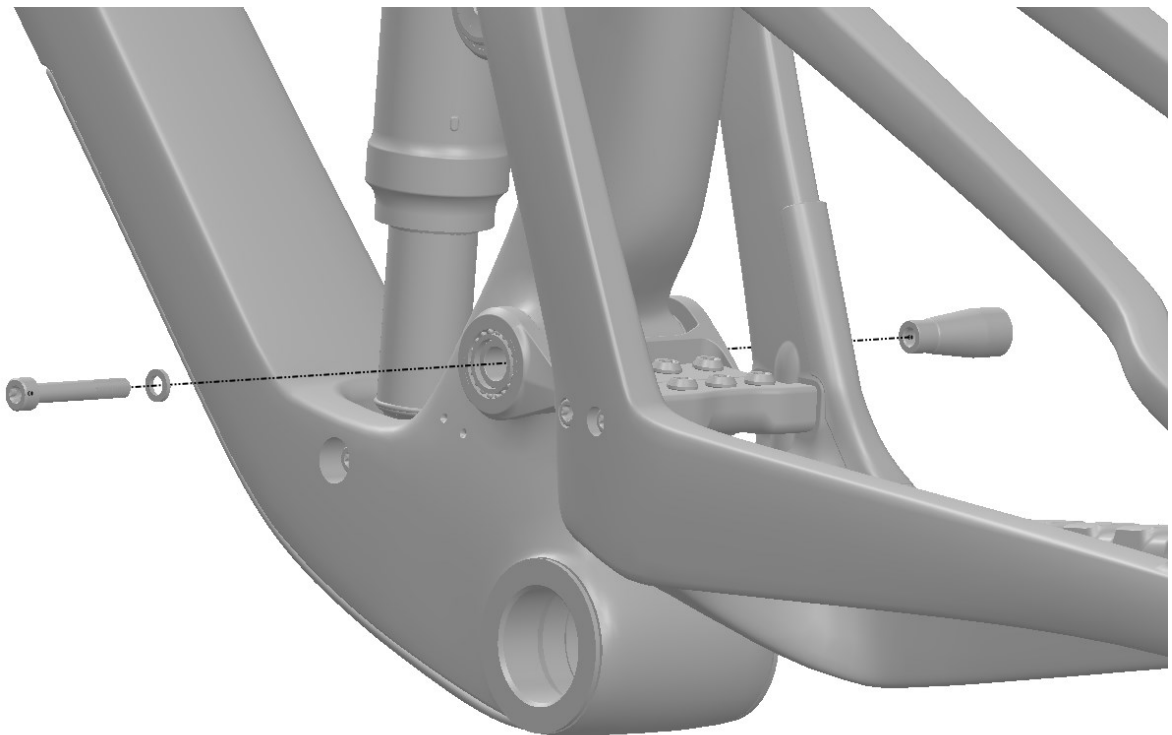
2. Using a T30 Torx tool, loosen the preload screw from the pivot axle 5-6 full (360 degrees) turns:



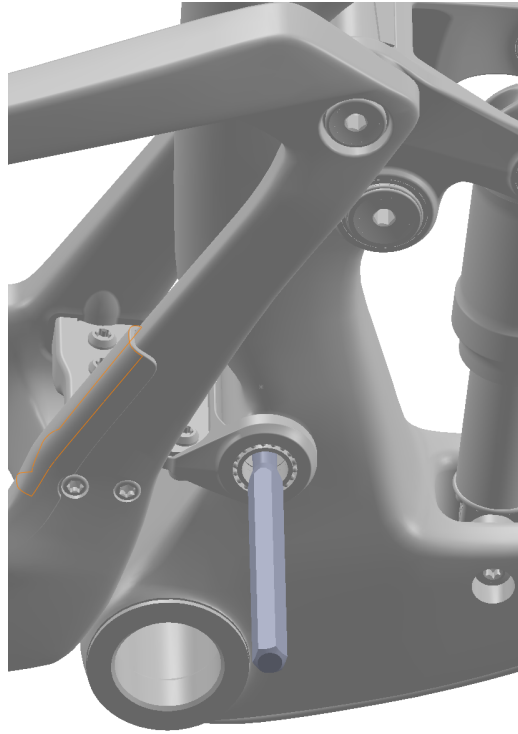
3. Position a the pin punch tool against the head of the preload screw, and sharply strike the punch tool with a hammer to unseat the pivot axle on the drive side of the frame:



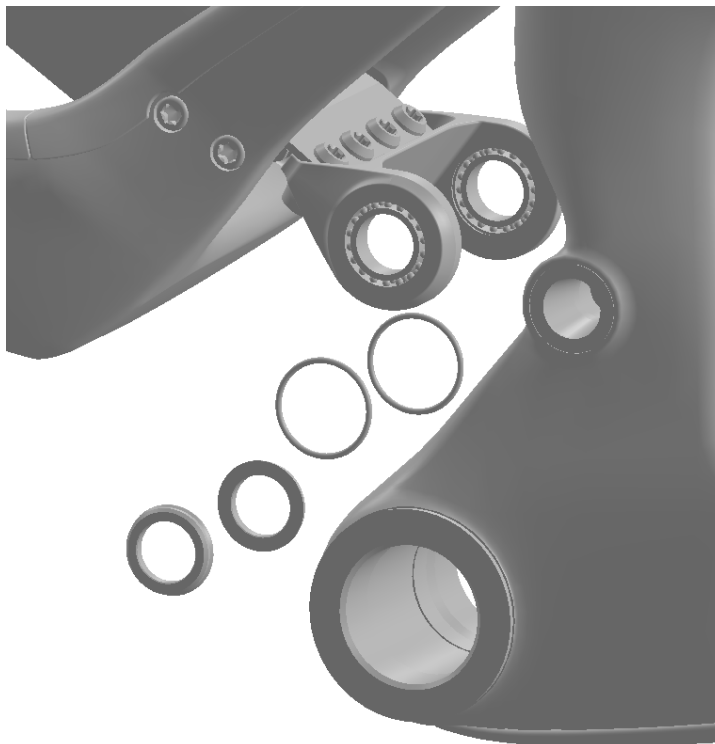
4. Unscrew the preload screw from the drive side pivot axle and remove the screw, washer and axle from the frame:



5. 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:

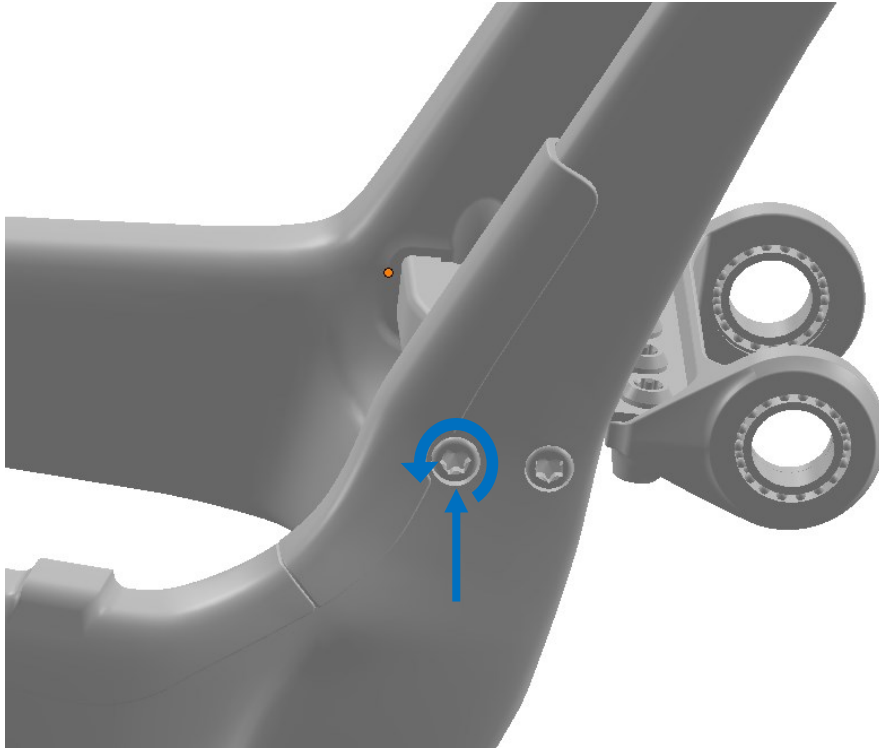


6. The rear triangle is now able to swing upward away from the front triangle. Place a hand under the main pivot yoke while slowly swinging the rear triangle up and rearward to catch the inner pivot washers and o-rings:

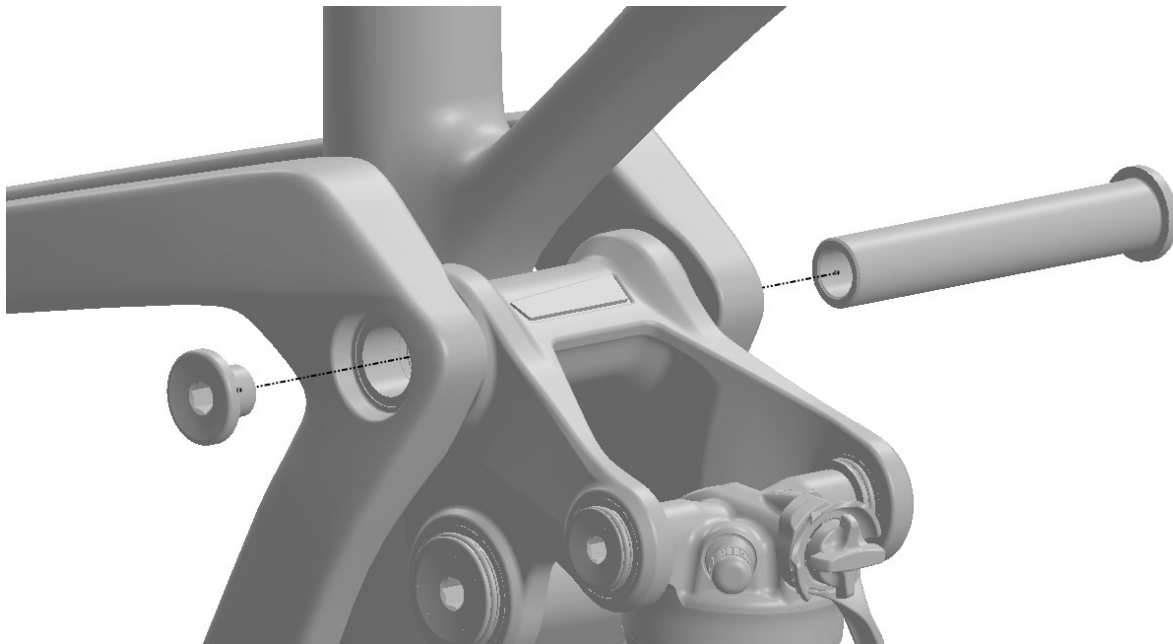




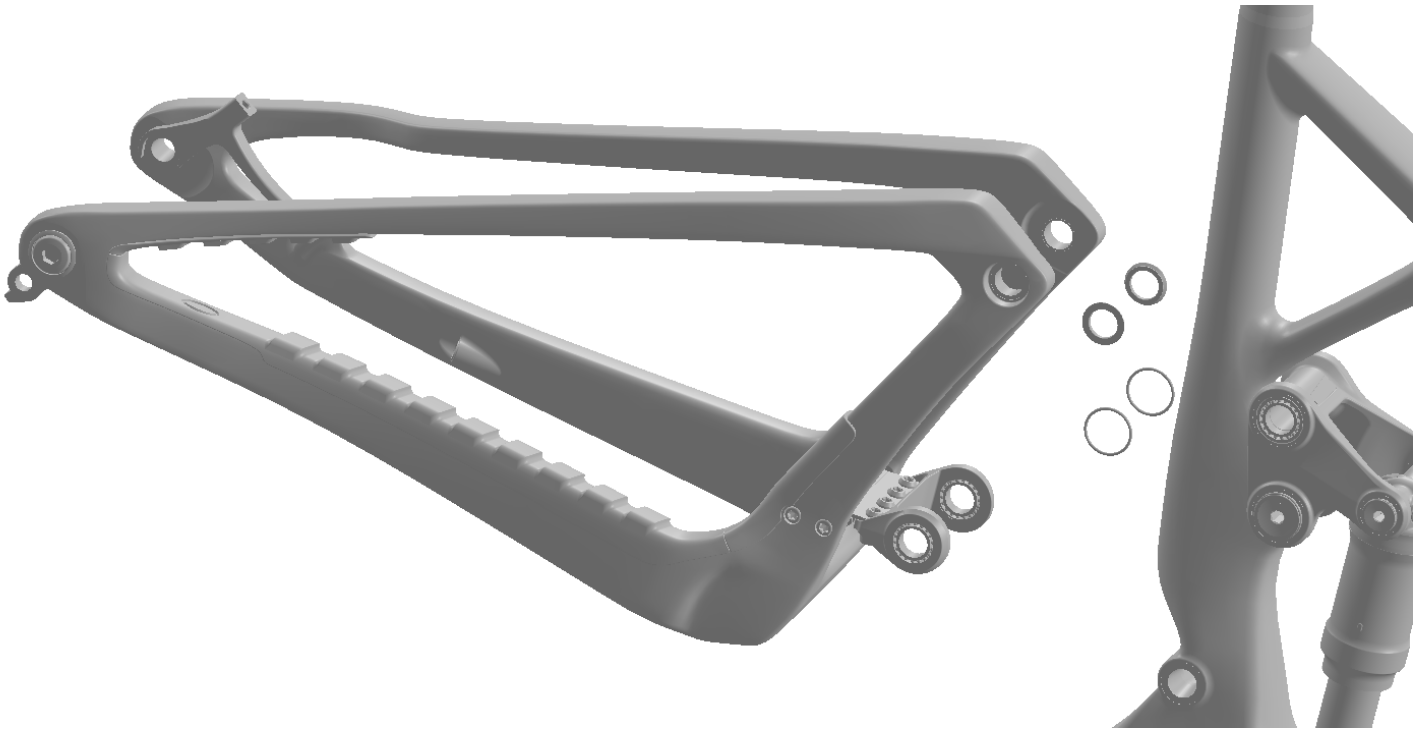
7. Loosen the four leaf spring mounting screws two full (360 degrees) turns using a T30 torx tool. This will help alleviate pressure in the frame and ease removal.



8. Remove the upper pivot hardware from the seat stay / rocker link pivot using a 6mm and 8mm hex tools. The inboard o-rings will come off when the rear triangle is pulled away from the link.

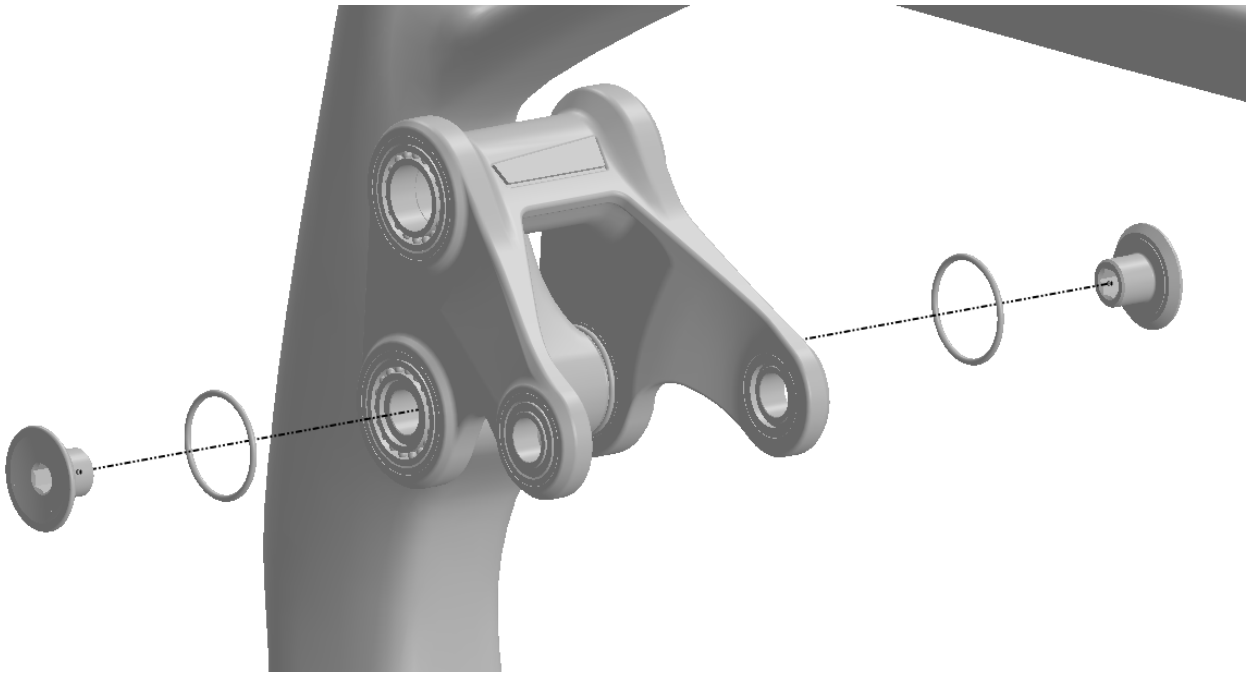


8. Once the upper pivot hardware is removed, the rear triangle assembly can be separated from the frame. Place a hand under the upper link while pulling the rear triangle rearward to catch the inner washers and o-rings from the upper link:

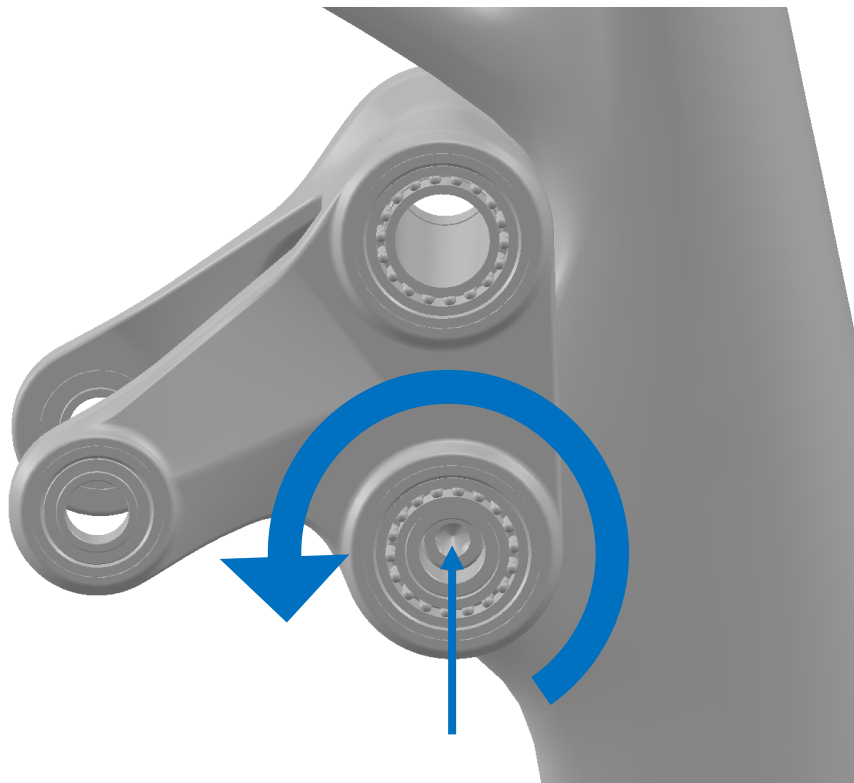


# Rocker Link Removal

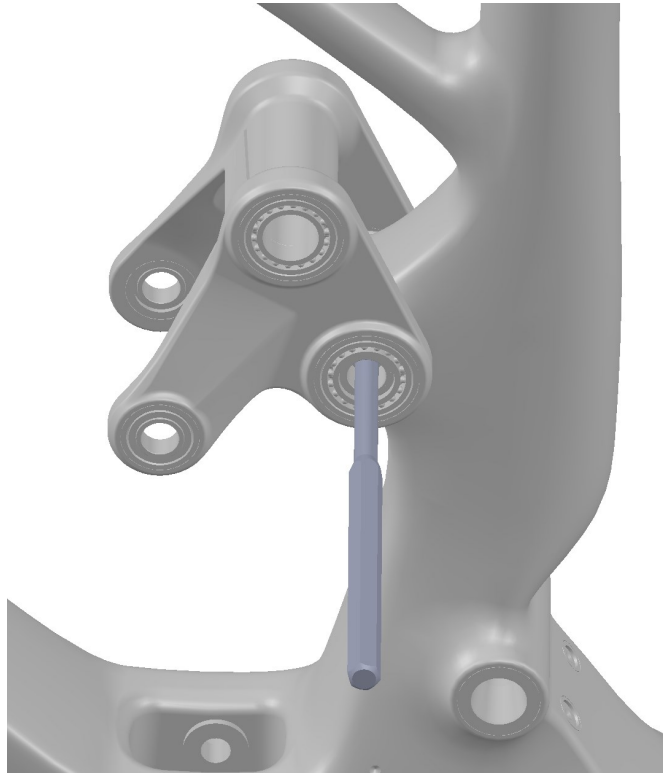
1. Remove the shock as directed on page 27 of this manual. Using a 6mm hex tool, remove the pivot caps and o-rings from the link pivot as shown:



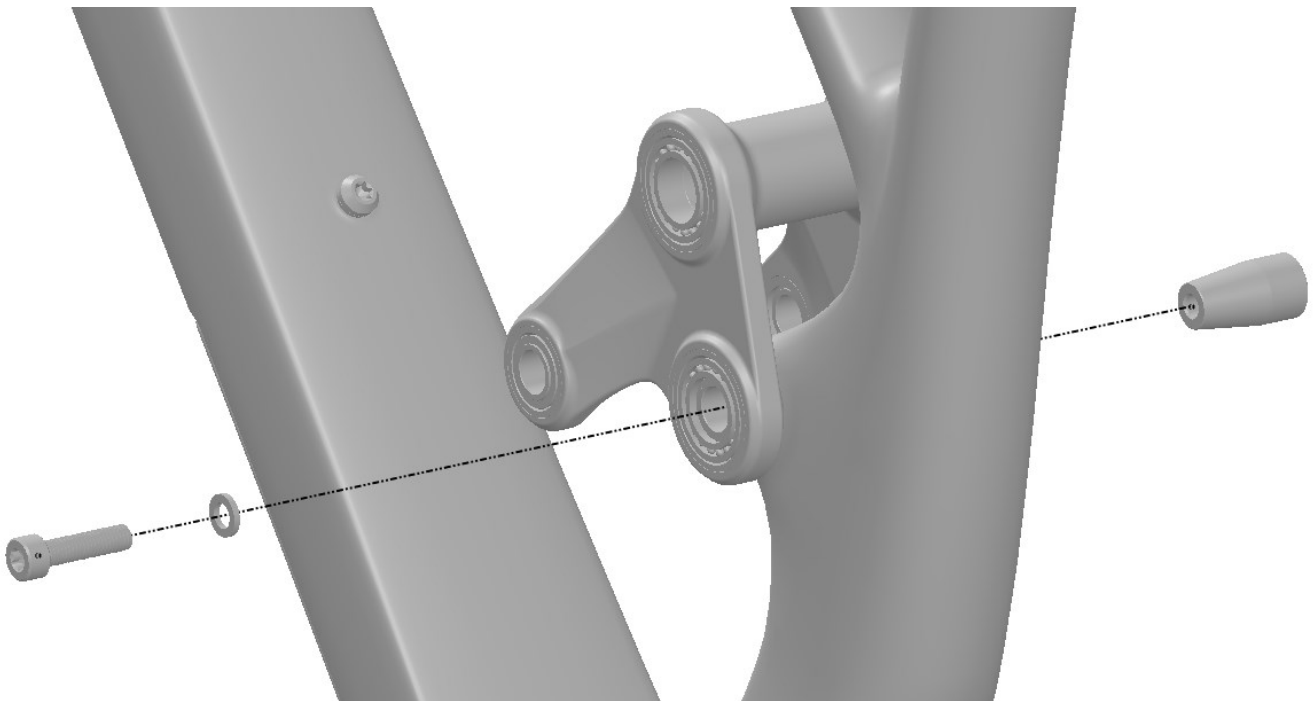
2. Using a T30 Torx tool, loosen the preload screw from the pivot axle 5-6 full (360 degrees) turns:



3. 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:



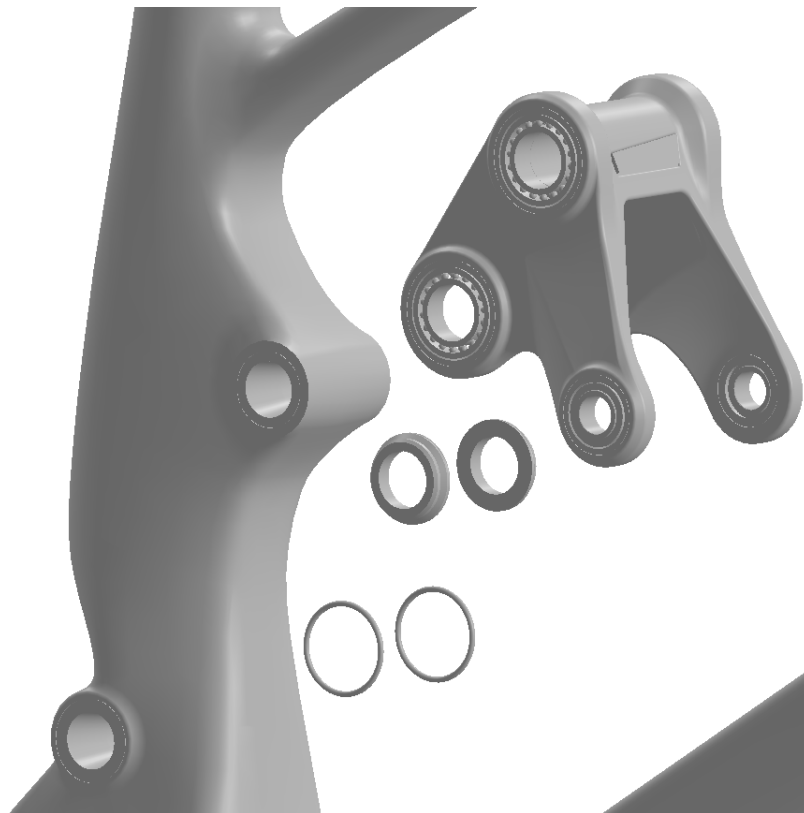
4. Unscrew the preload screw from the drive side pivot axle and remove the screw, washer and axle from the frame:



5. 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 drift punch sharply with a hammer to unseat the non-drive side pivot axle and remove:

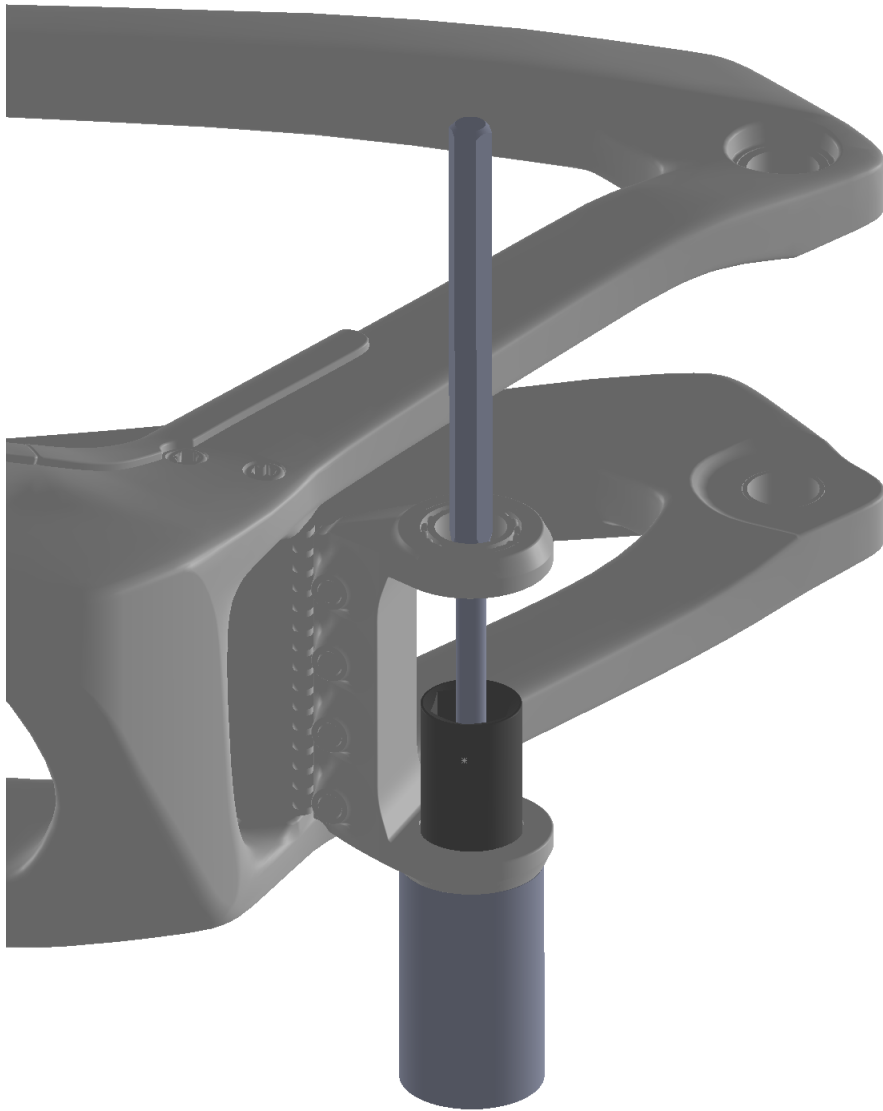


6. The rocker link is now free to slide forward and away from the front triangle. Place a hand under the seat tube pivot to catch the inner pivot washers and o-rings:



# Main Pivot Bearing Replacement

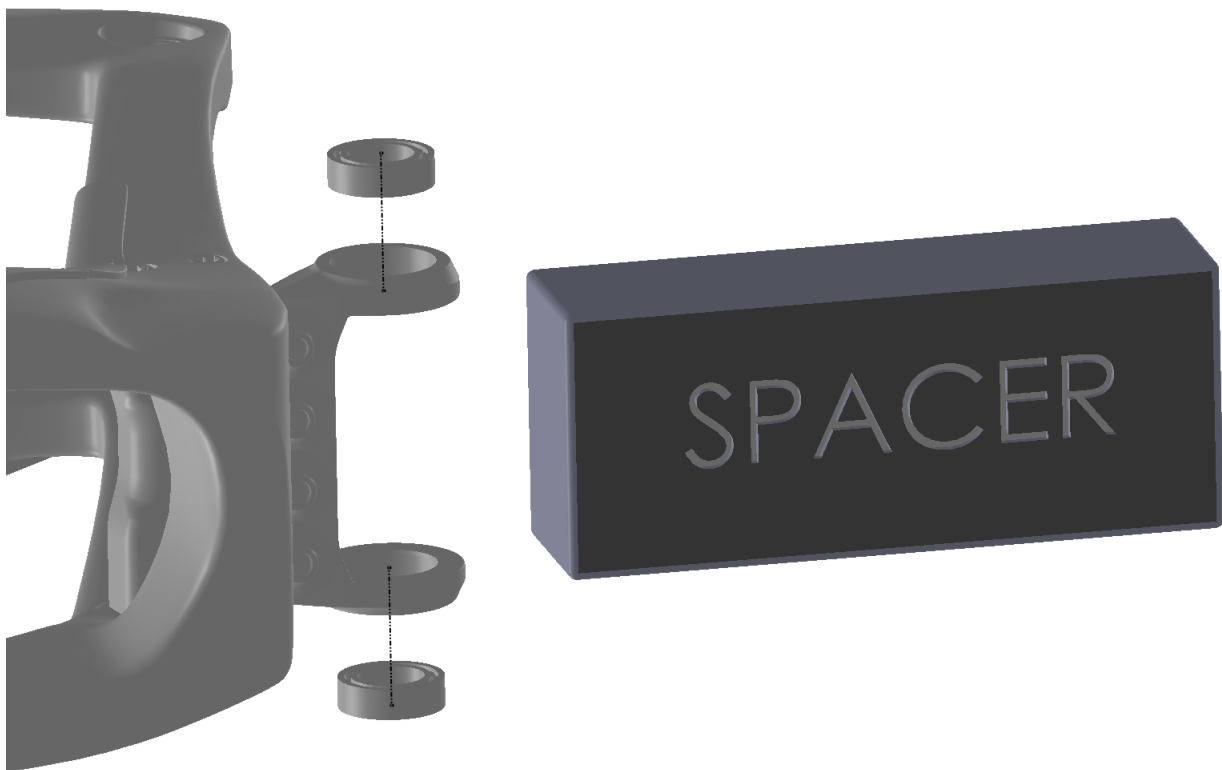
1. Set the rear triangle assembly on one side, on a work bench with a protective cloth to prevent scratching the frame finish. Support the pivot yoke as shown by your 27-30mm ID plastic tube. Combine your 20-22mm outer diameter socket with an extension, punch, or other implement as shown. Begin gently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

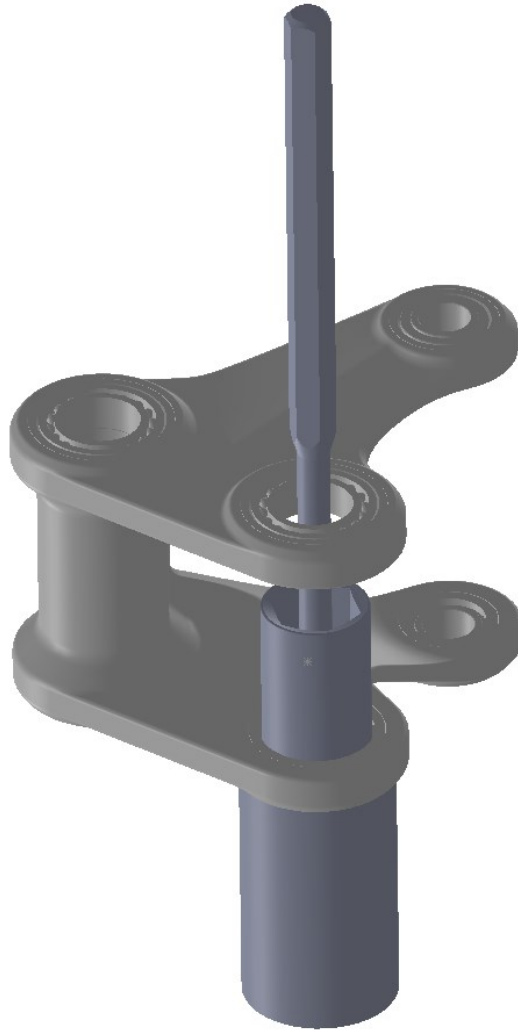
3. Once the old bearings are removed, thoroughly clean the bearing bores in the pivot yoke with isopropyl alcohol. As with removal, there are a few different techniques that can be used to install the bearings. We recommend using an arbor press, but a bench vise, or even a piece of threaded rod with 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

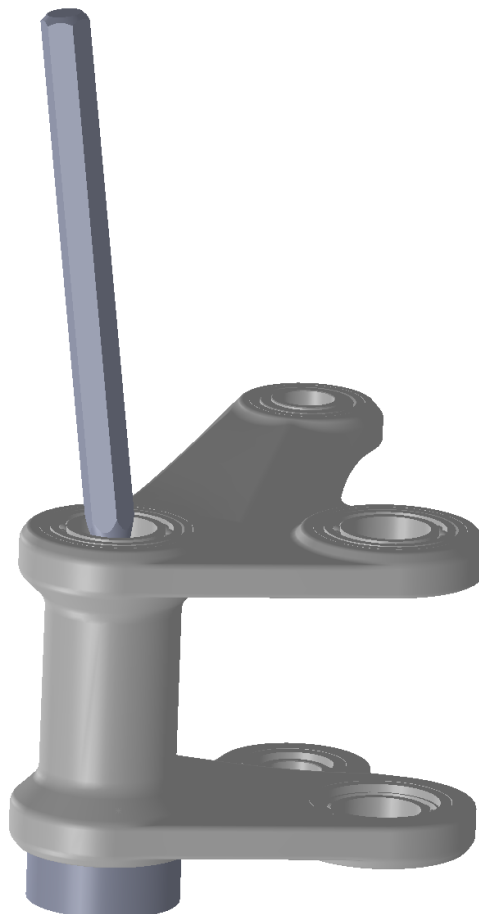
1. The main bearings in the rocker link are removed by pressing them outboard, away from the centerline of the frame. Support the pivot yoke as shown by your 27-30mm ID plastic tube. Combine your 20-22mm outer diameter socket with an extension, punch, or other implement as shown. Begin gently tapping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



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

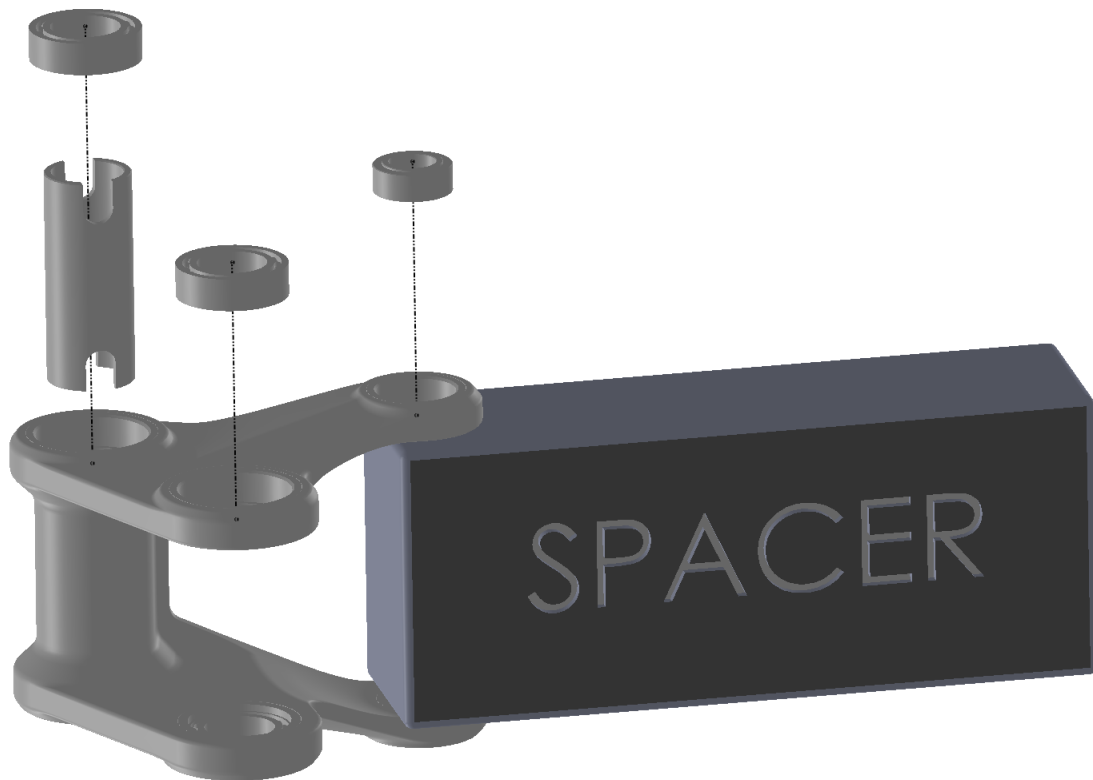


3. The seat stay bearings in the link are removed by using a small diameter punch (up to 1/4"). The quill between the bearing has opposing slots that the punch sets in for striking. Alternate slots with each strike to tap the bearing out without damaging the link. Support the pivot yoke using a 27-30mm ID plastic tube.



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:

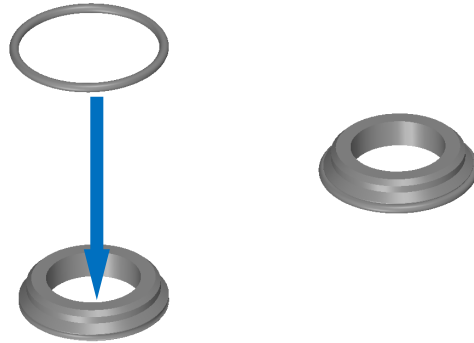
**IMPORTANT: NEVER INSTALL BEARINGS USING A HAMMER OR ANY OTHER MEANS OF IMPACT!**



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

# Rocker Link Reinstallation

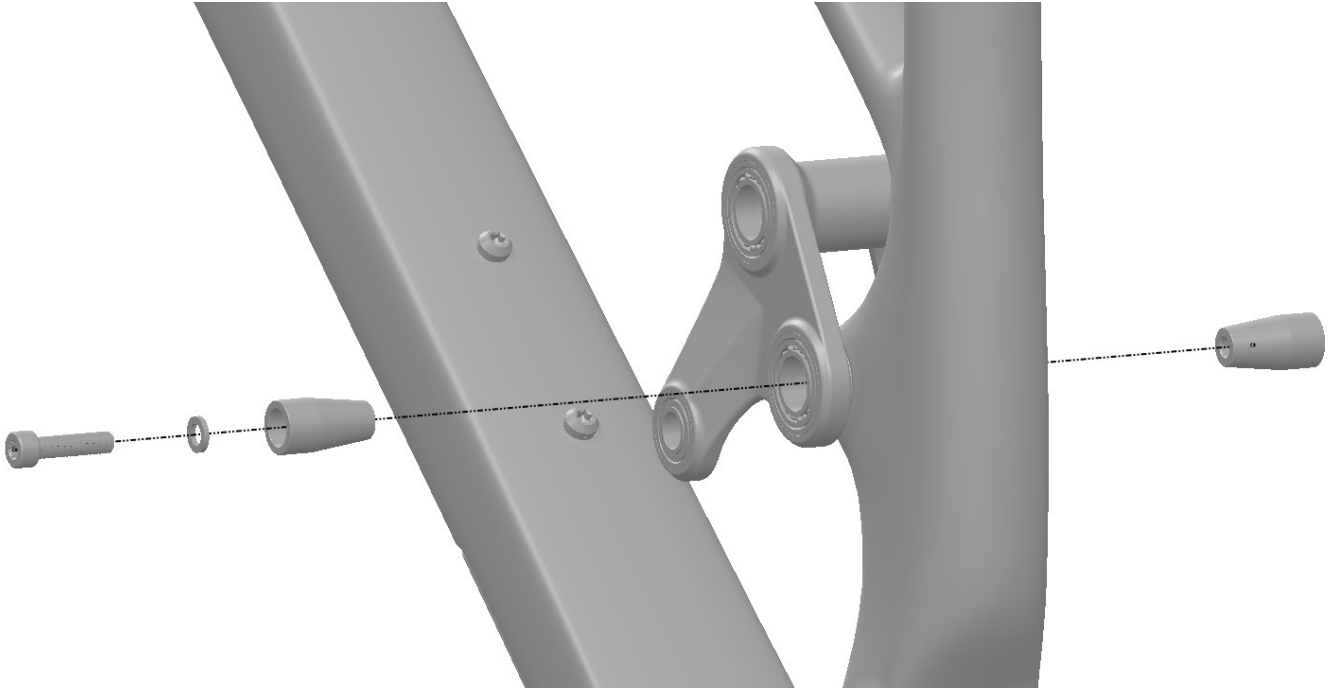
1. Prepare to reinstall the upper link by fitting new 1.5 X 19mm inner diameter o-rings to the washers to be installed between the link and the seat tube. The easiest way to do this is to lay the washer on a flat surface with the flat side down. Then push the o-ring down from the top until it sits in the installation groove:



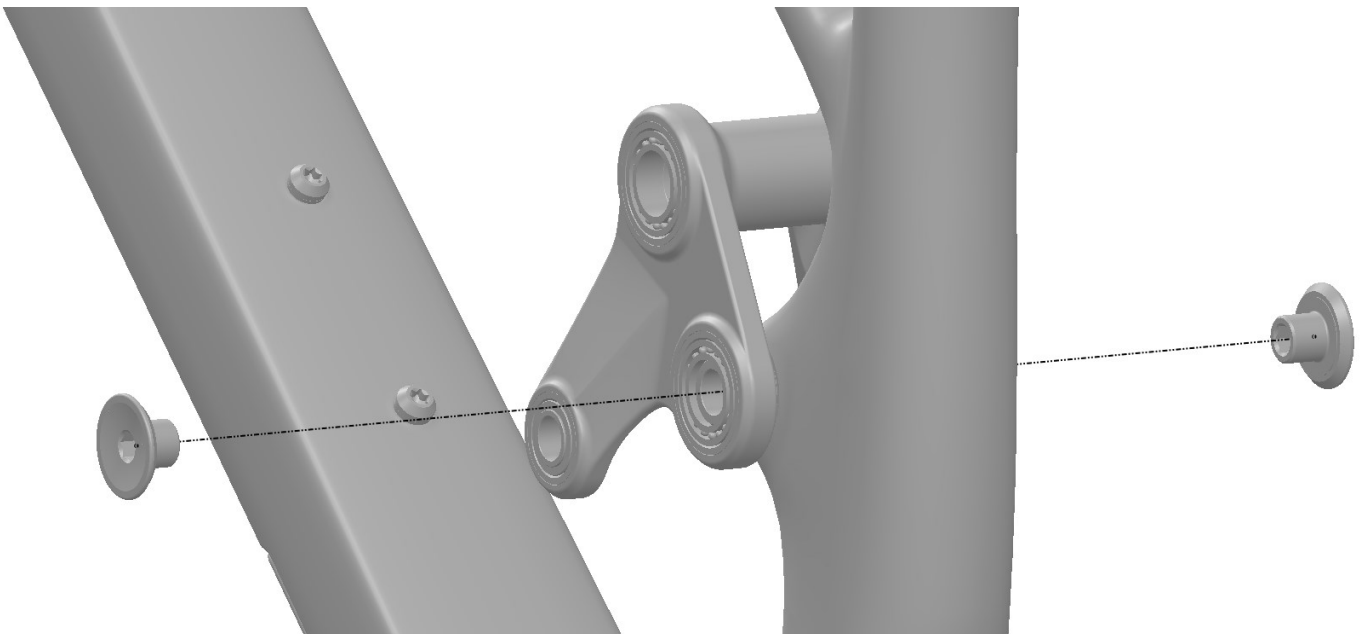
2. Insert the washers, with o-rings positioned in the installation grooves, into the inboard lower bearing recesses on the link assembly. A small application of grease can help to keep them in place for link installation. Being careful not to drop the washers/o-rings, and carefully slide the link assembly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



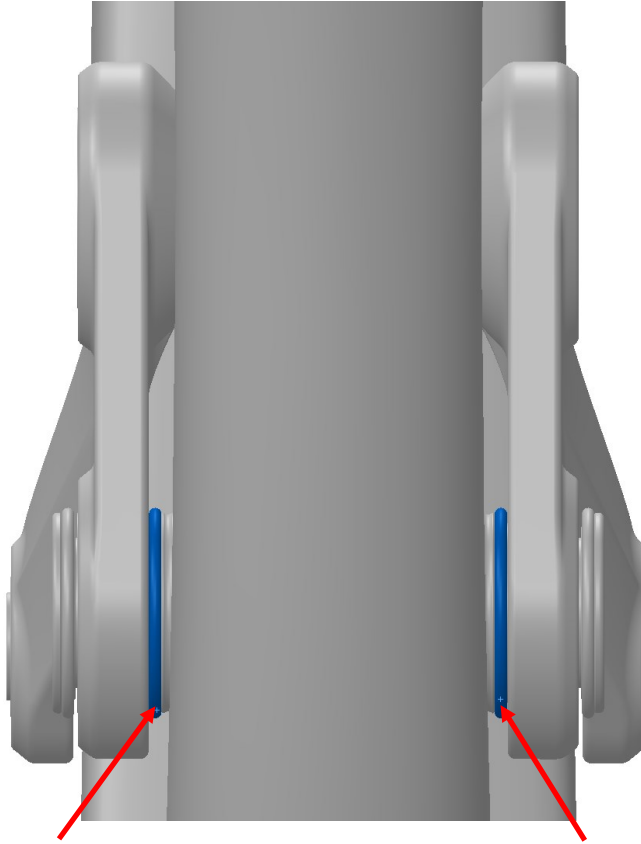
3. Insert the pivot axles, washer and preload screw into the seat tube pivot as shown. Note that the drive side pivot axle is shorter than it's corresponding part used in the main pivot. Do not apply thread locker to the preload screw, do not grease the conical axles. Torque to 10N-m (86in-lb) using a T30 Torx tool:



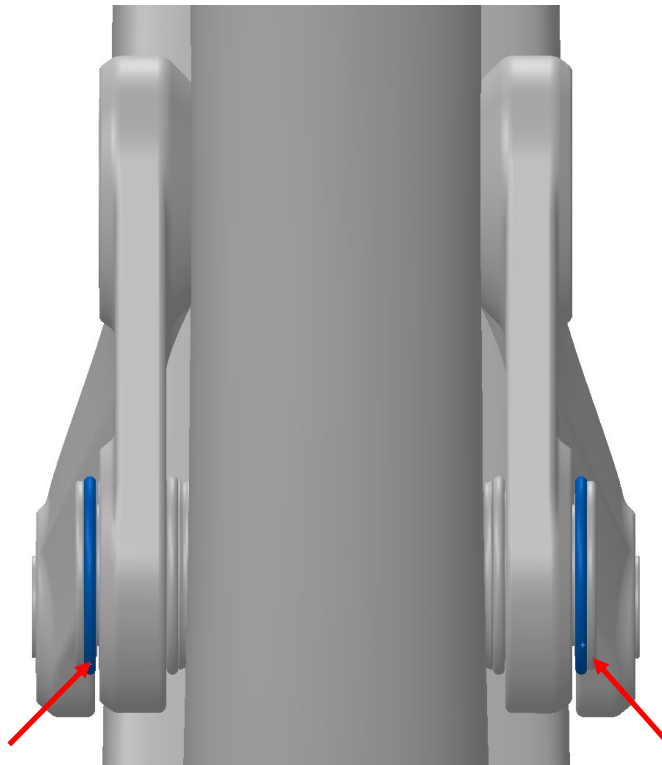
4. Install the two outer pivot caps as shown. Apply medium thread locker and torque to 11N-m (97in-lb) using a 6mm hex tool:



- 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:

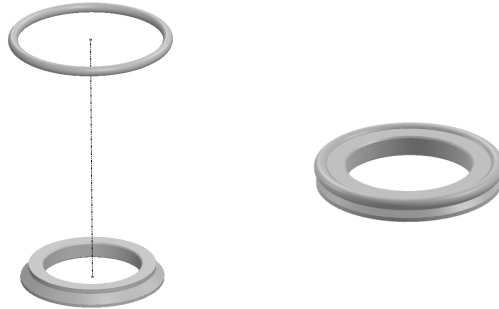


- Install the outer pair of o-rings (1.5 X 19mm inner diameter):



# Rear Triangle Reinstallation

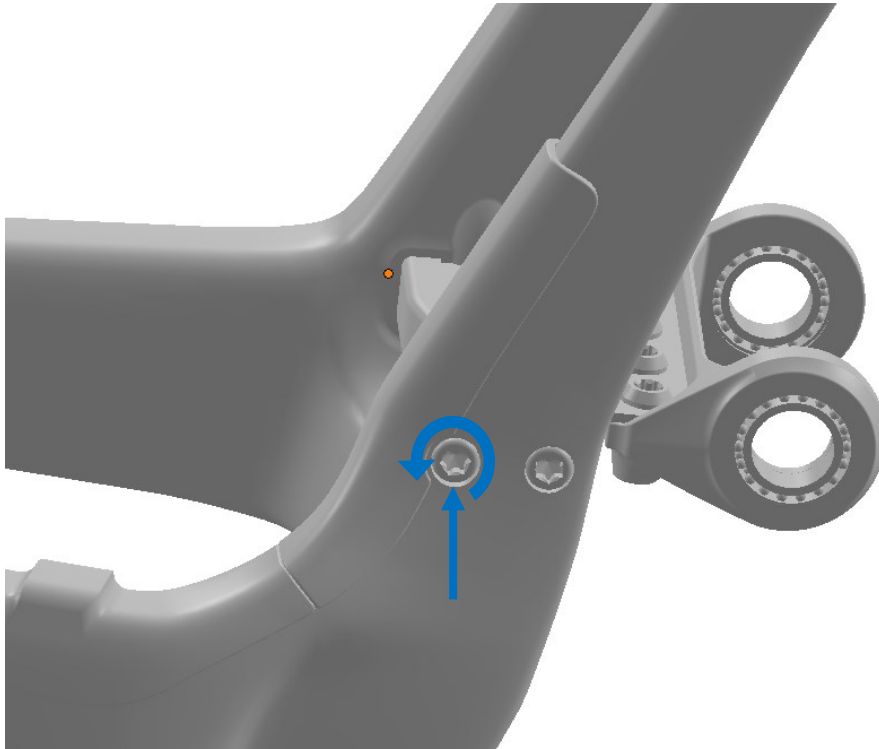
1. To replace the rear triangle, begin by fitting new 1.5 X 19mm inner diameter EPDM o-rings onto the washers as shown. The easiest way to do this is to expand the o-ring around the washer rather than sliding it down on top.



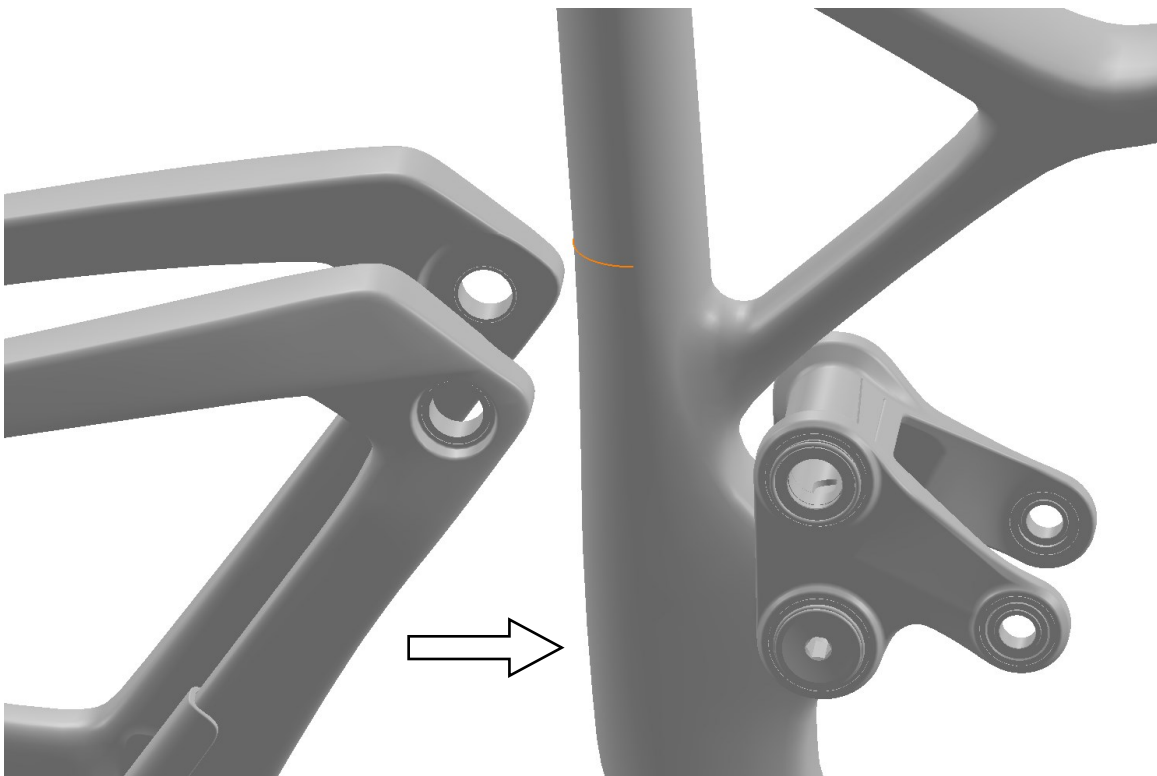
2. Place the washers with O-rings over the upper pivot bearings. They will need to be held in place while the rear triangle is installed. A small application of grease can help to keep them in place.



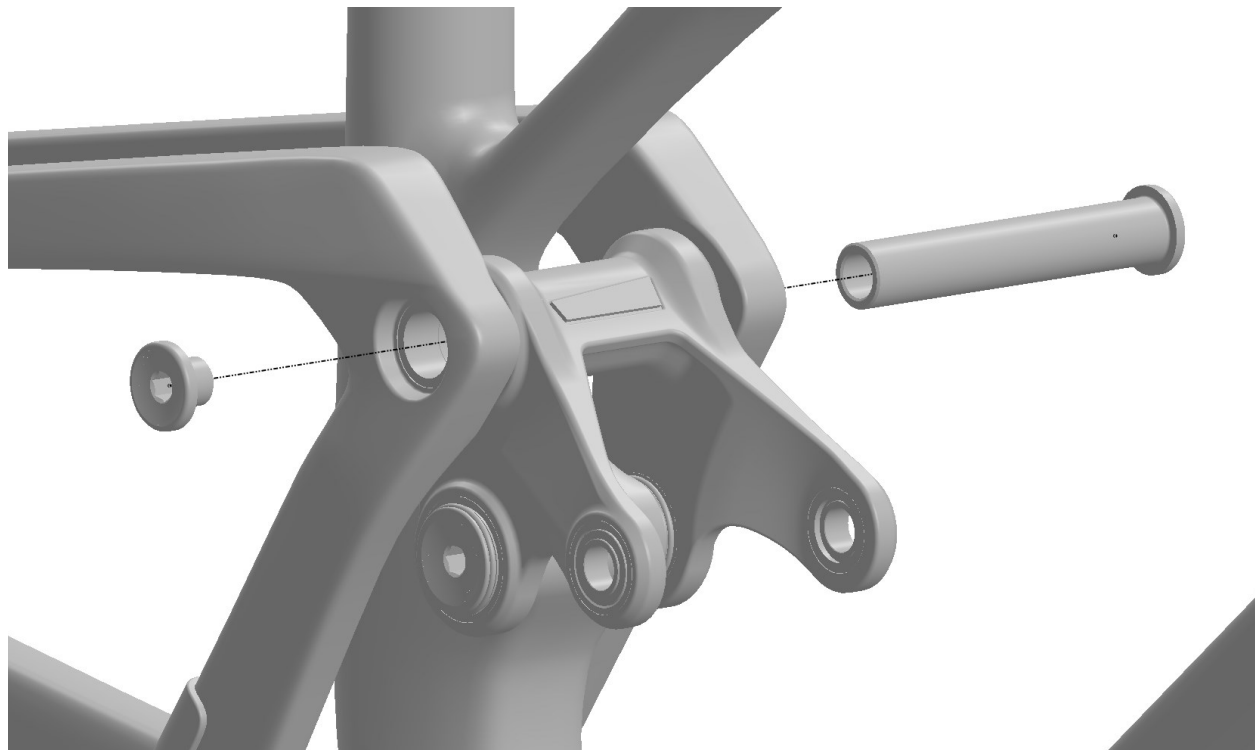
3. Loosen the four leaf spring mounting screws two full turns using a T30 torx tool.



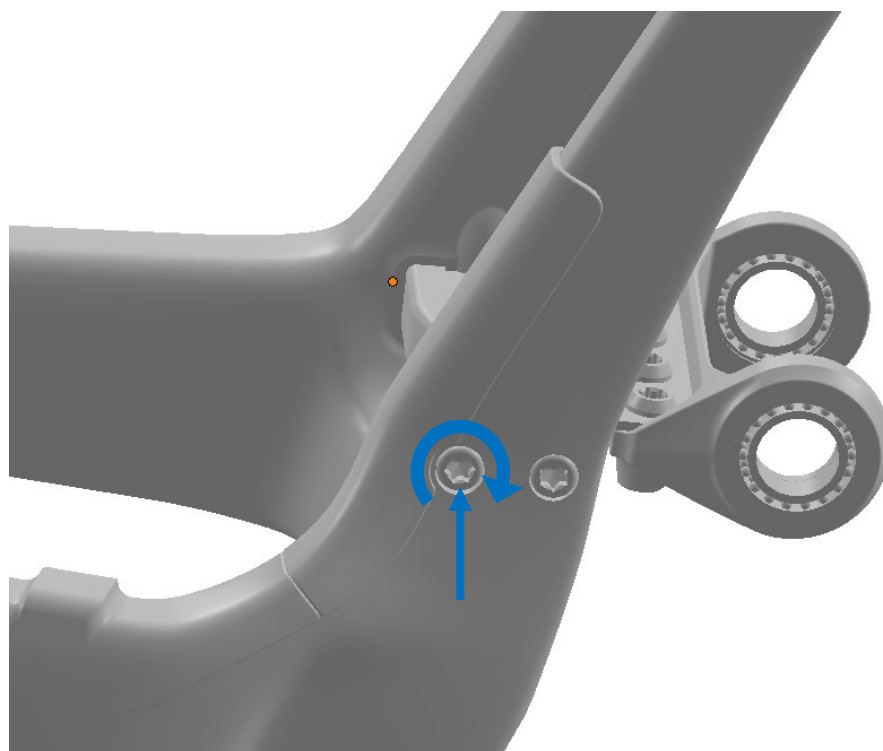
4. Slide the rear triangle assembly onto the upper pivot of the link. Be careful when sliding the seatstays over the link, as it may be necessary to lightly spread the pivot points apart to fit over the washers.



5. Install the upper pivot axle and screw with medium strength thread locker. Torque to 11N-m(97in-lb) using a 6mm and 8mm hex tools.

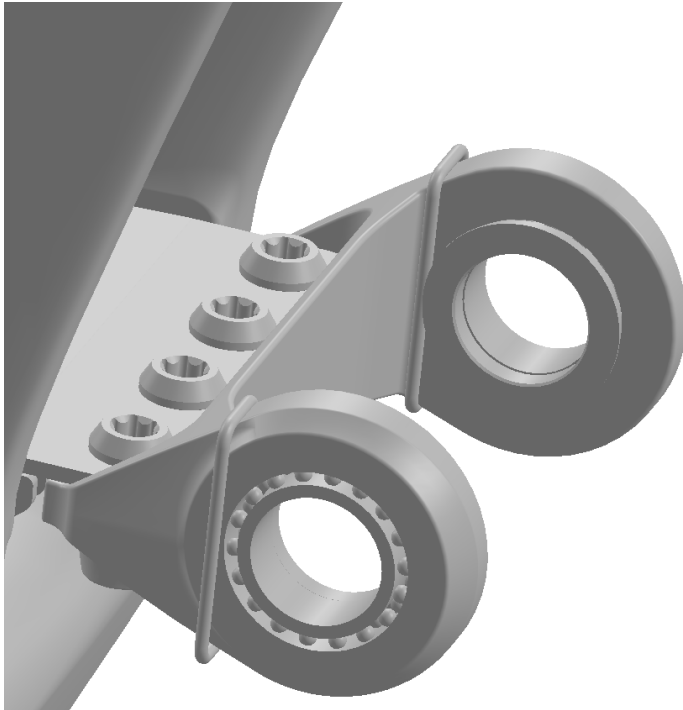


6. Torque the four leaf spring mounting screws to 12N-m(106in-lb) using a T30 torx tool.

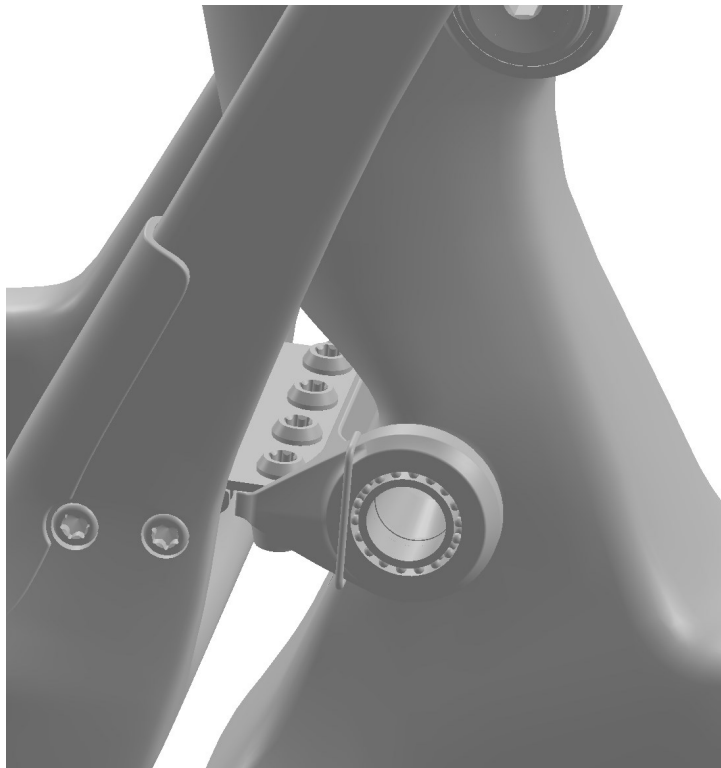




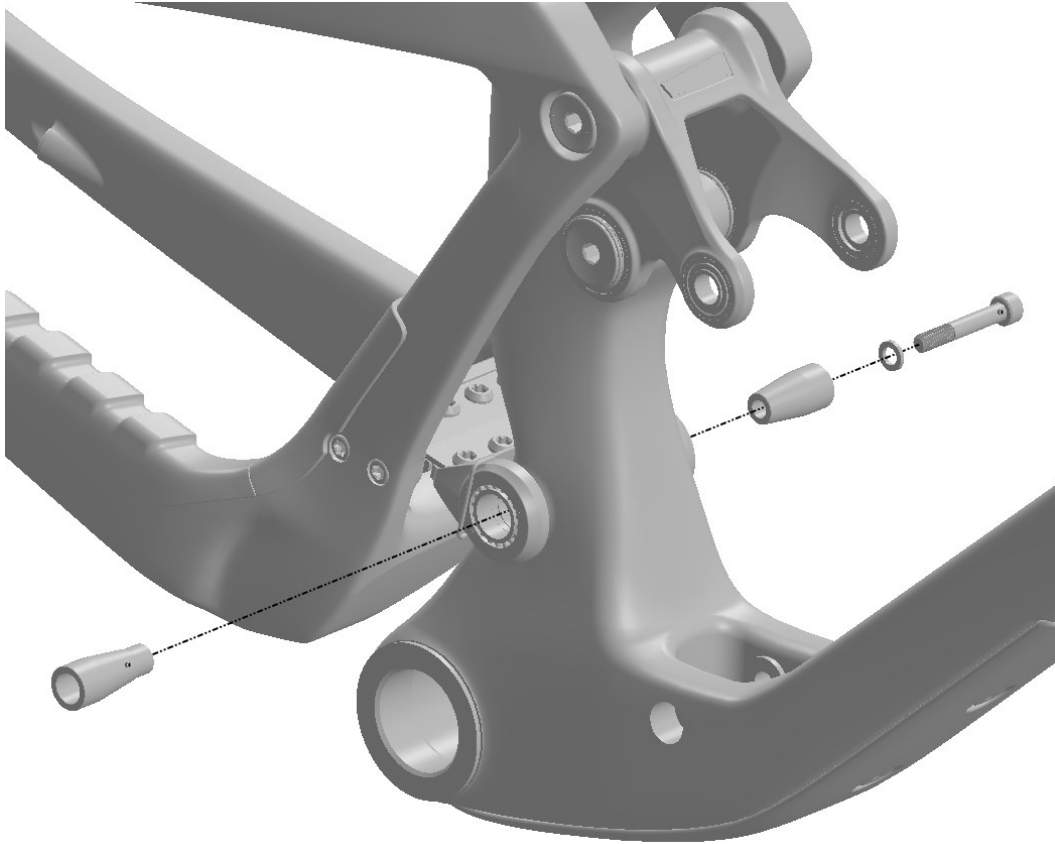
7. Stretch two 1.5 X 19mm inner diameter o-rings over the hoops of the main pivot bearings to prepare for installation. Install the inner washers, with the conical faces outboard— flat faces inboard, into the inboard bearing recesses in the main pivot clevis. The o-rings will help hold the washers in position and vice versa. A small dab of grease on each washer can help it stay in place for installation.



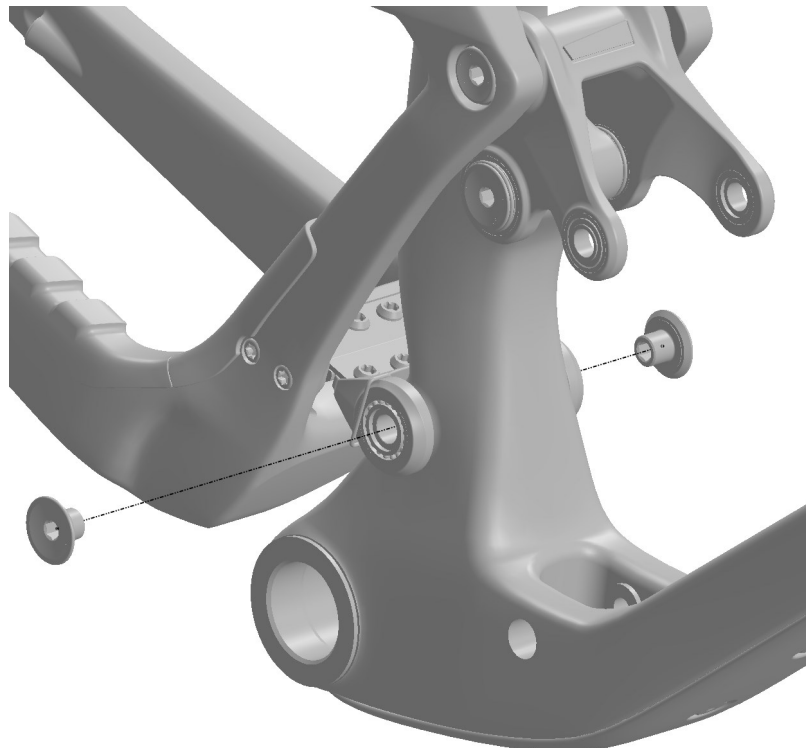
8. Swing the rear triangle into place aligning the clevis to the main pivot:



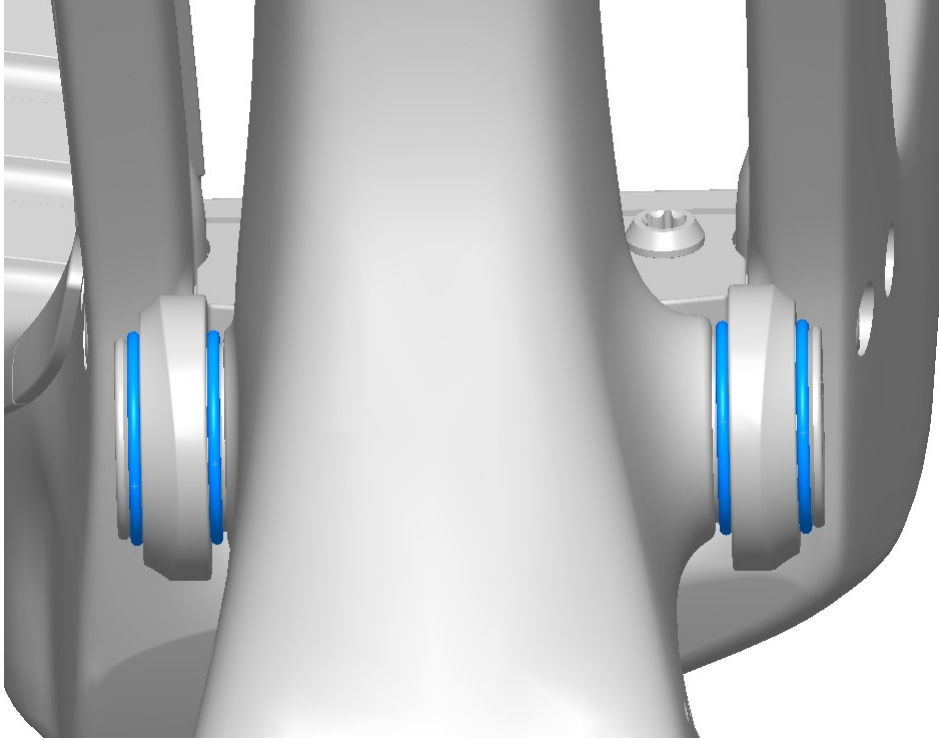
9. Insert the pivot axles, washer and preload screw into the main pivot as shown. Note that the drive side pivot axle is longer than it's corresponding part used in the seat tube pivot. Do not apply thread locker to the preload screw, do not grease the conical axles. Torque to 10N-m (86in-lb) using a 6mm hex tool:



10. Install the two outer pivot caps as shown. Apply medium thread locker and torque to 11N-m (97in-lb) using a 6mm hex tool:



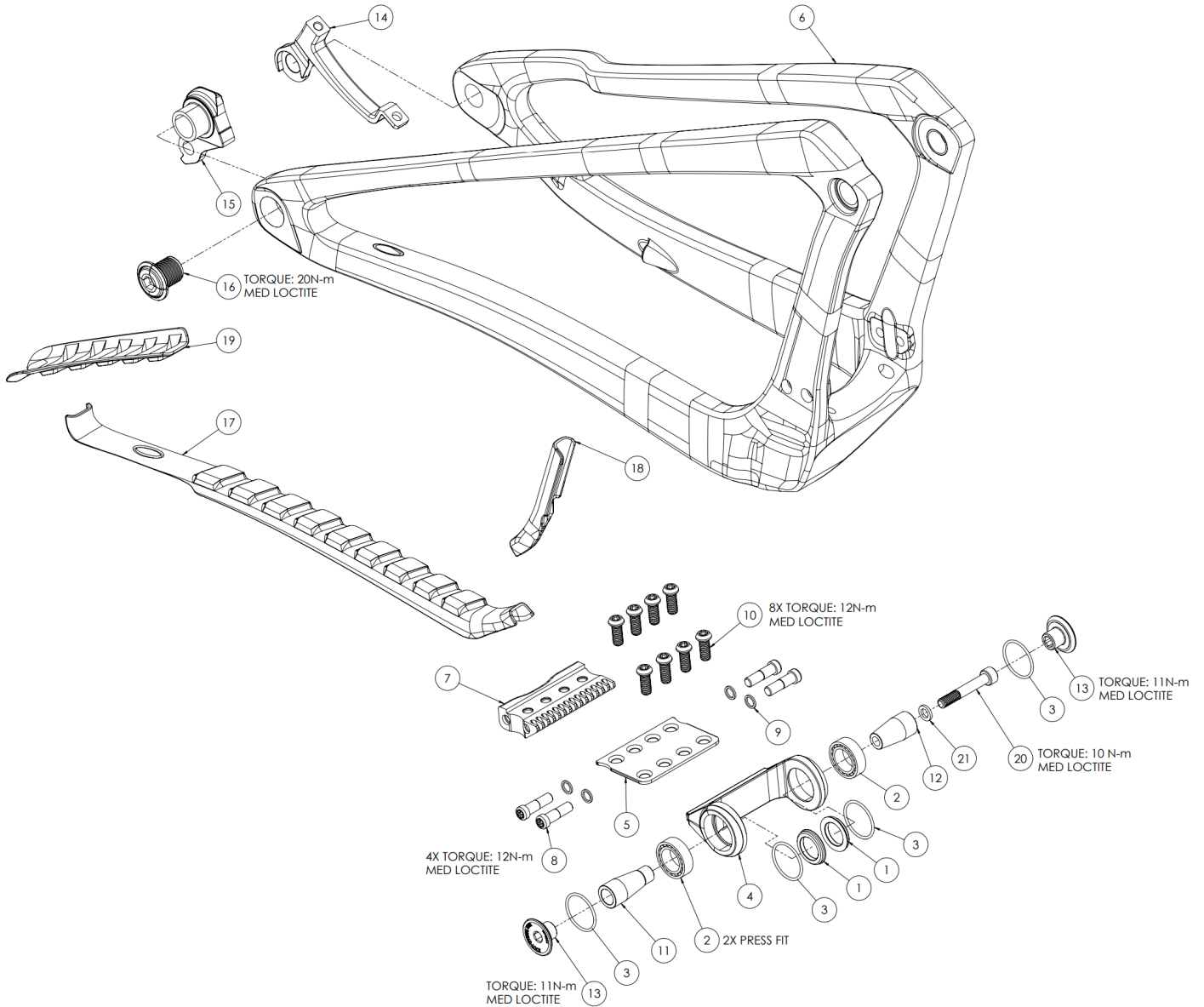
11. Pull the inboard o-rings into place between the pivot clevis and the frame and install the outer 1.5 X 19mm inner diameter o-rings over the pivot caps.



12. The final step is to re-install the rear shock as directed in the shock removal/replacement section starting on page 28 of this manual.



# Ryve 115 Frame Parts Reference



# SPOT

# Ryve 115 Frame Parts Reference

ITEM NO.	PART NUMBER	DESCRIPTION	QTY.
1	FS90025	MAIN PIVOT WASHER	2
2	FS80005	BEARING, ENDURO 3802 LLU MAX	6
3	FS80017	O-RING 1.5 X 19	10
4	FS90209	MAIN PIVOT YOKE	1
5	FS90204	LEAF SPRING	1
6	FS90221	REAR TRIANGLE	1
7	FS90211	LEAF SPRING SPOOLER	1
8	FS90160	LEAF SPRING MOUNTING SCREW	4
9	FS90059	LEAF SPRING MOUNTING SCREW WASHER	4
10	FS90210	LEAF SPRING SCREW, 16L	8
11	FS90102	PIVOT AXLE CONE, DS LOWER	1
12	FS90093	PIVOT AXLE CONE, NDS	2
13	FS90091	PIVOT CAP	4
14	FS90083	BRAKE MOUNT	1
15	SRAM 00.7918.089.000	SRAM UDH RD HANGER	1
16	INC W/ RD HANGER	SRAM UDH MOUNTING SCREW	1
17	FS90212	CS PROTECTOR	1
18	FS90214	STRUT PROTECTOR	1
19	FS90213	SS PROTECTOR	1
20	FS90147	T30 SCREW, M6 X 34	1
21	FS80012	M6 WASHER, HIGH COLLAR	2
22	FS90208	UPPER PIVOT AXLE	1
23	FS90205(R)/FS90206(B)	ROCKER LINK	1
24	FS90207	BEARING QUILL	1
25	FS90150	SS PIVOT CAP	1
26	FS90090	PIVOT AXLE CONE, DS UPPER	1
27	FS90089	T30 SCREW, M6 X 24	1
28	FS90092	SHOCK PIVOT AXLE	2
29	FS80015	O-RING 1.5 X 12	4
30	FS80002	BEARING, ENDURO 1017 2RS MAX	2
31	FS90015	SHOCK PIVOT WASHER	2
32	FS90088	ST PIVOT WASHER	2
33		FRONT TRIANGLE	1
34		SHOCK	1
35	FS8003	SCREW M6 X 11	1
36		6.1 X 14.5 X 1 WASHER	1
37	FS90084	SHOCK PIN	1
38	FS90215	DT PROTECTOR	1
39	FS80006	SCREW, M5 X 13	4
40	FS90222	SS PIVOT WASHER	2

