

**ROCKSHOX**

**BOXXER**

2024+ BoXXer



SERVICE MANUAL



# **SAFETY FIRST!**

We care about YOU. Please, always wear your safety glasses and protective gloves when servicing RockShox products.

Protect yourself! Wear your safety gear!

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## RockShox Service

We recommend that you have your RockShox suspension serviced by a qualified bicycle mechanic. Servicing RockShox suspension requires knowledge of suspension components, as well as the use of specialized tools and lubricants/fluids. Failure to follow the procedures outlined in this service manual may cause damage to your component and void the warranty.

Visit [www.sram.com/service](http://www.sram.com/service) for the latest *RockShox Spare Parts Catalog* and technical information. For order information, please contact your local SRAM distributor or dealer.

Information contained in this publication is subject to change at any time without prior notice.

Your product's appearance may differ from the pictures contained in this publication.



For recycling and environmental compliance information, please visit: [www.sram.com/en/company/about/environmental-policy-and-recycling](http://www.sram.com/en/company/about/environmental-policy-and-recycling).

## Part Preparation

Remove the component from the bicycle before service.

Disconnect and remove the remote cable or hydraulic hose from the fork or rear shock, if applicable. For additional information about RockShox remotes, user manuals are available at [www.sram.com](http://www.sram.com).

Clean the exterior of the product with mild soap and water to avoid contamination of internal sealing part surfaces.

## Service Procedures

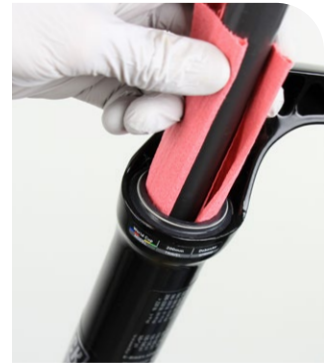
The following procedures should be performed throughout service, unless otherwise specified.

Clean the part with RockShox Suspension Cleaner or isopropyl alcohol and a clean, lint-free shop towel. For hard to reach places (e.g. upper tube, lower leg), wrap a clean, lint-free shop towel around a non-metallic dowel to clean the inside.

Clean the sealing surface on the part and inspect it for scratches.

### ⚠ WARNING - CRASH HAZARD

DO NOT use vinegar of any type to clean any part of a RockShox suspension product. Vinegar can cause permanent damage to parts which can, over time, result in product structural failure, serious injury, and possibly death.

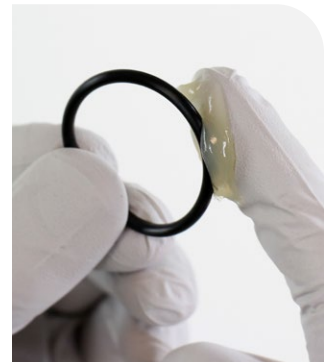
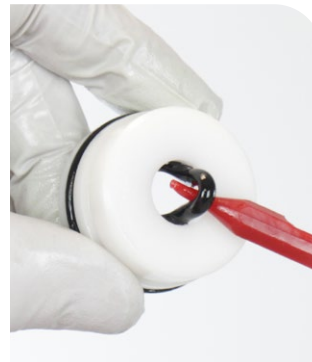


Replace the o-ring or seal with a new one from the service kit. Use your fingers or a pick to pierce and remove the old seal or o-ring.

Apply grease to the new seal or o-ring.

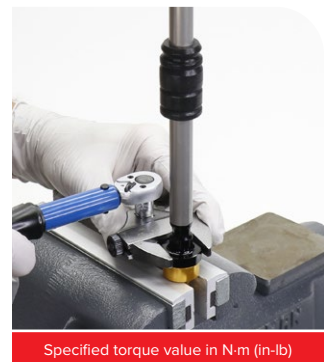
### NOTICE

Do not scratch any sealing surfaces when servicing the product. Scratches can cause leaks. Consult the spare parts catalog to replace the damaged part.



Use aluminum soft jaws when placing a part in a bench vise.

Tighten the part with a torque wrench to the torque value listed in the red bar. When using a crowfoot socket and torque wrench, install the crowfoot socket at 90 degrees to the torque wrench.



Specified torque value in N-m (in-lb)

## Model Code Identification

Product model code and specification details can be identified with the serial number on the product. Model codes can be used to identify the product type, series name, model name, and product version associated with the production model year. Product details can be used to identify spare parts, service kit, and lubricant compatibility.

Model Code example: **FS-BXR-ULT-D1**

**FS** = Product Type - **Front Shock/Suspension**

**BXR** = Platform/Series - **BoXXer**

**ULT** = Model - **Ultimate**

**D1** = Version - (**D** - fourth generation, **1** - first iteration)

To identify the model code, locate the serial number on the product and enter it into the **Search by Model Name or Serial Number** field at [www.sram.com/service](http://www.sram.com/service).

## Warranty and Trademark

For SRAM Warranty information, visit: [www.sram.com/warranty](http://www.sram.com/warranty).

For SRAM Trademark information, visit: [www.sram.com/website-terms-of-use](http://www.sram.com/website-terms-of-use).

### Parts

- 2024+ (D1) BoXXer - 200 Hour Service Kit
- 2024+ (D1) BoXXer - DebonAir+ ButterCups Upgrade Kit - Complete air spring assembly with ButterCups installed (includes complete air spring assembly, sealhead, and ButterCups) - replaces Base air spring assembly without ButterCups
- 2024+ (D1) BoXXer - Charger 3 RC2 Upgrade Kit - Complete damper assembly with ButterCups installed - replaces Base Charger 3 RC damper assembly without ButterCups

### Safety and Protection Supplies

- Apron
- Clean, lint-free shop towels
- Nitrile gloves
- Oil pan
- Safety glasses

### Lubricants and Fluids

- Maxima PLUSH 7wt Suspension Oil
- Maxima PLUSH Dynamic Suspension Lube Heavy
- Maxima PLUSH Dynamic Suspension Lube Light
- RockShox Suspension Cleaner or isopropyl alcohol
- SRAM Butter Grease
- Threadlocker Loctite 242 - Blue (or equivalent)
- Threadlocker Loctite 2760 - Red (or equivalent)

### RockShox Tools

- RockShox Bleed Syringe
- RockShox Dust Seal Installation Tool (38 mm) or [RockShox x Abbey Bike Tools 38 mm Flangeless Dust Seal Installation Tool](#)
- RockShox Rear Shock Vise Blocks (3-hole)
- RockShox Reverb Vise Blocks
- RockShox Shock Pump
- RockShox Top Cap/Cassette Tool (3/8" / 24 mm) or [RockShox x Abbey Bike Tools Top Cap/Cassette Tool](#)

### Bicycle Tools

- Bicycle work stand
- Downhill tire lever
- Shock pump
- Vise blocks (Park Tool AV-5)

### Common Tools

- Adjustable or open end wrench: 23, 25, 28, 33 mm
- Bench vise
- Crowfoot socket (open end or adjustable): 23, 25, 28, 33 mm
- Dowel:  $\leq 14$  mm diameter (air spring shaft),  $\leq 33$  mm diameter (upper tube, lower leg)
- Flat aluminum soft jaw inserts
- Hex bit sockets: 1.5, 2.5, 3, 4, 5, 6 mm
- Hex wrenches: 1.5, 2.5, 3, 4, 5, 6, 8 mm
- Pick (metallic) - retaining ring - air spring
- Pick (non-metallic) - o-rings and seals
- Plastic mallet
- Plastic tube (split loom conduit) or similar - air spring and damper shaft protective cover
- Ruler or measuring tape
- Socket wrench
- Strap wrench - rubber strap
- Torque wrench
- TORX bit socket: T25
- TORX wrench: T25

## SAFETY INSTRUCTIONS

Always wear safety glasses and nitrile gloves when working with suspension oil.

Place an oil pan on the floor underneath the area where you will be working on the shock or suspension fork.

## Recommended Service Intervals

Regular service is required to keep your RockShox product working at peak performance. Follow this maintenance schedule and install the service parts included in each service kit that corresponds with the Service Hours Interval recommendation below. For spare part kit contents and details, refer to the *RockShox Spare Parts Catalog* at [www.sram.com/service](http://www.sram.com/service).

Service Hours Interval	Maintenance	Benefit
Every ride	Clean dirt from upper tubes and wiper seals	Extends wiper seal lifespan
		Minimizes damage to upper tubes
		Minimizes lower leg contamination
Every 50 hours	Perform lower leg service	Restores small bump sensitivity
		Reduces friction
		Extends bushing lifespan
Every 100 hours	Perform spring lubrication service	Extends suspension lifespan
		Restores small bump sensitivity
		Reduces friction
Every 200 hours	Perform damper and spring service	Extends suspension lifespan
		Restores small bump sensitivity
		Restores damping performance

## Record Your Settings

Use the table below to record your suspension settings to return your suspension to its pre-service settings. Record your service dates to track service intervals.

Service Hours Interval	Date of Service	Air Pressure	LSC (RC2, RC) setting - Count the number of clicks while turning the LSC adjuster fully counterclockwise.	HSC (RC2) setting - Count the number of clicks while turning the HSC adjuster fully counterclockwise.	Rebound setting - Count the number of clicks while turning the rebound adjuster fully counterclockwise.
50					
100					
150					
200					

## Torque Values

Fork Model	Part	Tool	Torque	
Air Spring				
Ultimate	Base	Top cap into upper tube (air spring)	RockShox Top Cap/Cassette Tool (or standard cassette tool)	7.3 N•m (65 in-lb)
Ultimate	Base	Bottomless Token	8 mm hex bit socket	4 N•m (35 in-lb)
Ultimate	Base	Air spring sealhead to air spring tube	33 mm crowfoot	17 N•m (150 in-lb)
Ultimate	-	ButterCups shaft end plate - end plate to shaft - DebonAir+ air spring	TORX T25 bit socket	4 N•m (32 in-lb)
Ultimate	-	ButterCups housing (upper) to ButterCups housing (lower) - DebonAir+ air spring	25 mm crowfoot	14 N•m (125 in-lb)
Damper				
Ultimate	Base	Top cap	RockShox Top Cap/Cassette Tool (or standard cassette tool)	7.3 N•m (65 in-lb)
Ultimate	Base	Top Cap to Compression Damper IFP Tube to Coupler to Damper Tube to rebound damper sealhead	RockShox Top Cap/Cassette Tool (or standard cassette tool)	14 N•m (125 in-lb)
Ultimate	-	Cam set screw - compression damper adjuster (HSC) x2 - Charger 3 RC2	1.5 mm hex bit socket	0.56 N•m (5 in-lb)
Ultimate	-	IFP Tube to IFP Coupler to damper cartridge tube - Charger 3 RC2	28 mm crowfoot	14 N•m (125 in-lb)
Ultimate	-	Piston nut - compression damper - Charger 3 RC2	3 mm hex bit socket	1.13 N•m (10 in-lb)
-	Base	Retaining screw - compression adjuster knob - Charger 3 RC	2.5 mm hex bit socket	0.56 N•m (5 in-lb)
Ultimate	-	Retaining screw - Low Speed Compression adjuster knob - Charger 3 RC2	2.5 mm hex bit socket	0.56 N•m (5 in-lb)
Ultimate	-	Set screw - High Speed Compression adjuster knob - Charger 3 RC2	2.5 mm hex bit socket	0.28 N•m (2.5 in-lb)
Ultimate	Base	Set screw - rebound adjuster knob	2.5 mm hex bit socket	0.84 N•m (7.5 in-lb)
Ultimate	-	ButterCups housing shaft end plate - end plate to shaft - Charger 3 RC2 damper	TORX T25 bit socket	5 N•m (45 in-lb)
Ultimate	-	ButterCups housing (upper) to ButterCups housing (lower) - Charger 3 RC2 damper	25 mm crowfoot	14 N•m (125 in-lb)
Lower Leg				
Ultimate	Base	Lower Leg Plug	4 mm hex bit socket	2 N•m (17 in-lb)
Ultimate	Base	Bolt - Fender	2.5 mm hex bit socket	1 N•m (9 in-lb)
Ultimate	Base	Bolt - brake hose clamp to lower leg	2.5 mm hex bit socket	0.45 N•m (4 in-lb)
Ultimate	Base	Bottom bolt - air spring and damper	5 mm hex bit socket	7.3 N•m (65 in-lb)
Ultimate	Base	Maxle DH	6 mm hex bit socket	12.5-14.7 N•m (110-130 in-lb)
Crowns				
Ultimate	Base	Lower crown bolts (x4)	4 mm hex bit socket	10 N•m (88 in-lb)
Ultimate	Base	Upper crown bolts (x3)	4 mm hex bit socket	10 N•m (88 in-lb)

# Oil Volume and Lubricant

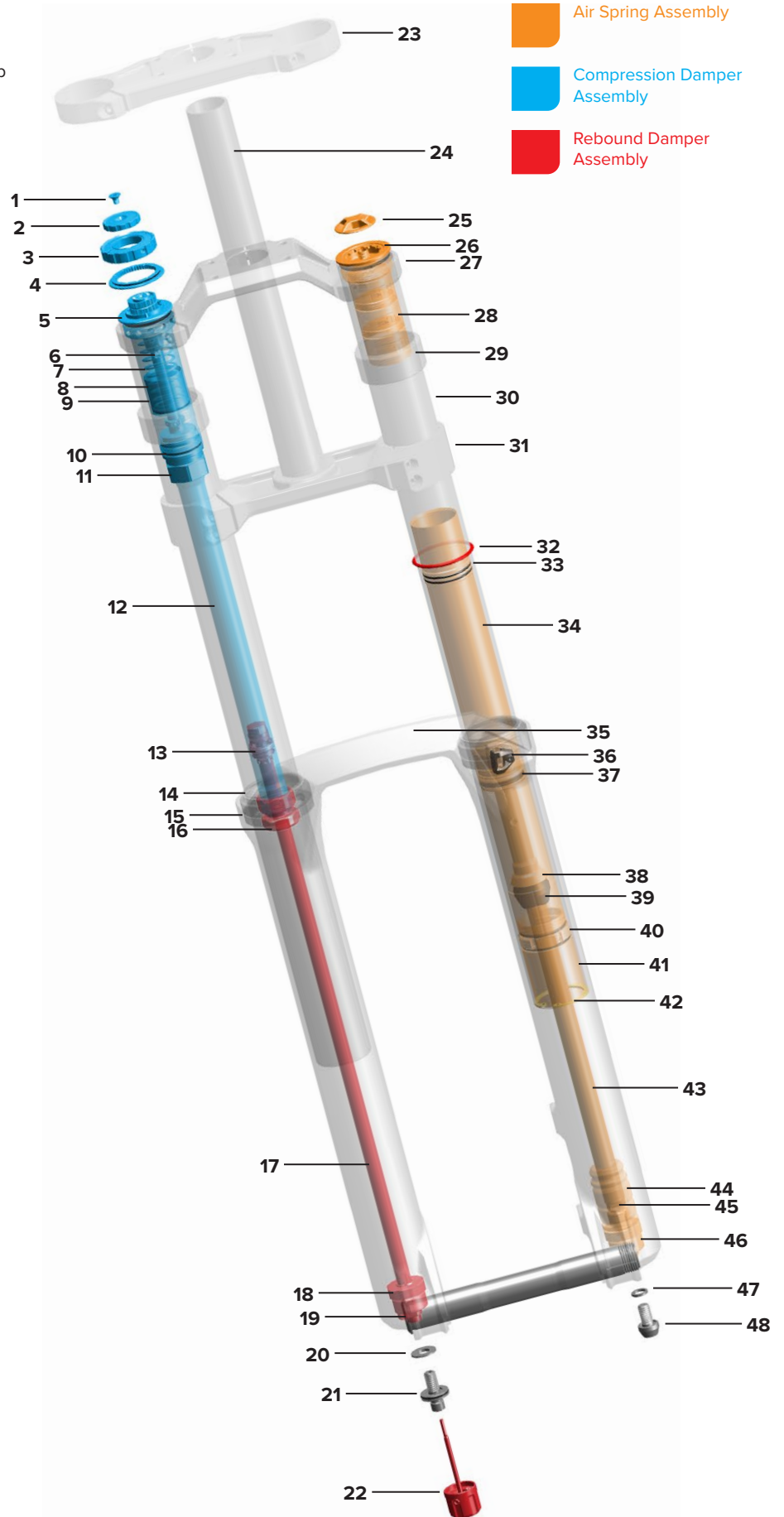
Model Year	Fork	Model	Damper				Spring							
			Damper	Upper Tube		Lower Leg		Spring	Upper Tube			Lower Leg		
				Oil Weight	Volume (mL)	Oil	Volume (mL)		Oil	Volume (mL)	Grease	Oil	Volume (mL)	
														(+)
2024+	BoXXer	Ultimate	Charger 3 RC2 with ButterCups	Maxima PLUSH 7wt	Bleed	Maxima PLUSH Dynamic Suspension Lube Light	40	DebonAir+ with ButterCups	Maxima PLUSH Dynamic Suspension Lube Heavy	3	1	SRAM Butter Grease Grease air piston	Maxima PLUSH Dynamic Suspension Lube Light	20
		Base	Charger 3 RC					DebonAir+						

Use ONLY RockShox, SRAM, and Maxima suspension oils/fluids and grease, unless otherwise specified. Use of any other lubricants can damage seals and decrease performance.

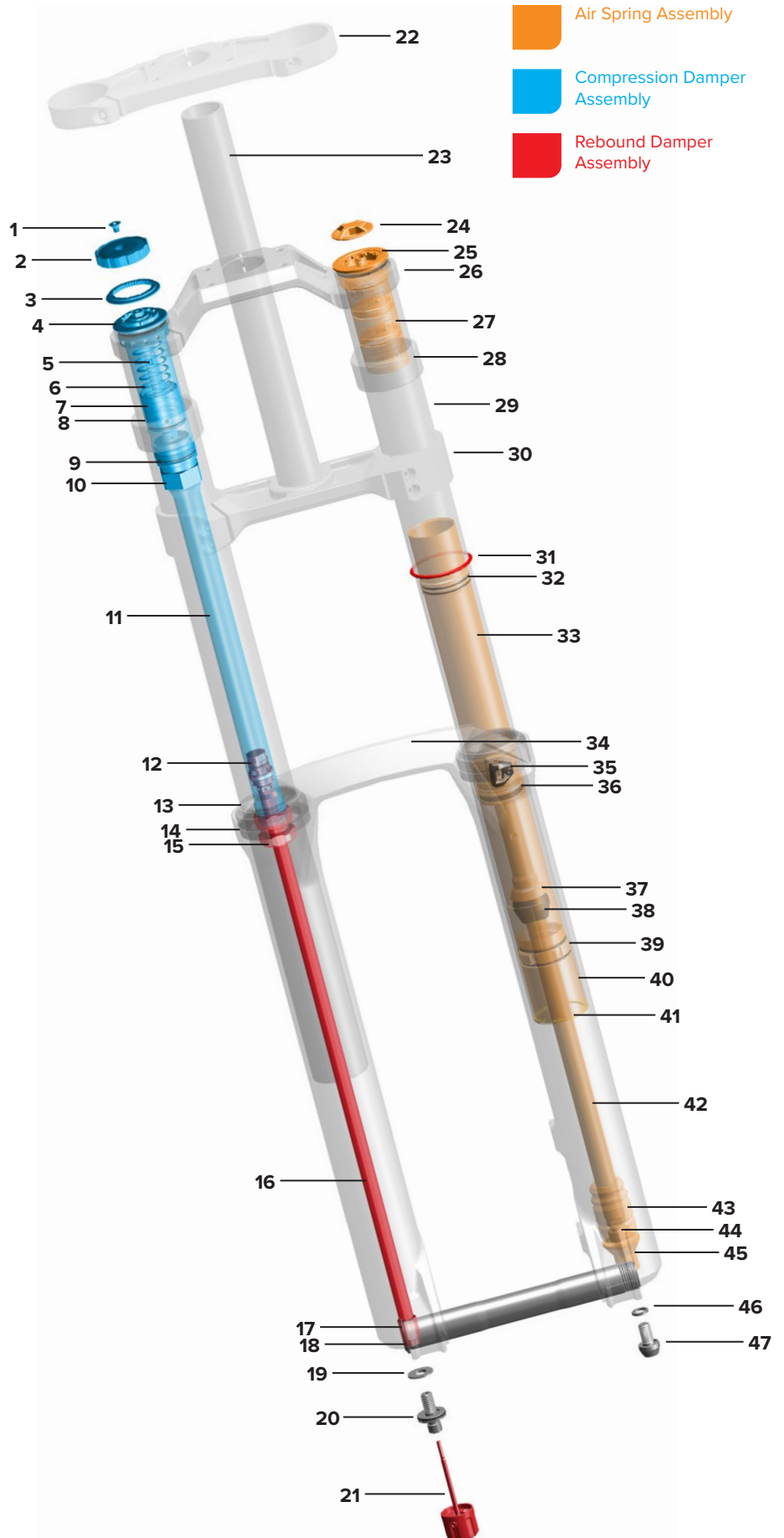
# Exploded View

## 2024+ (D1) BoXXer Ultimate - Charger 3 RC2

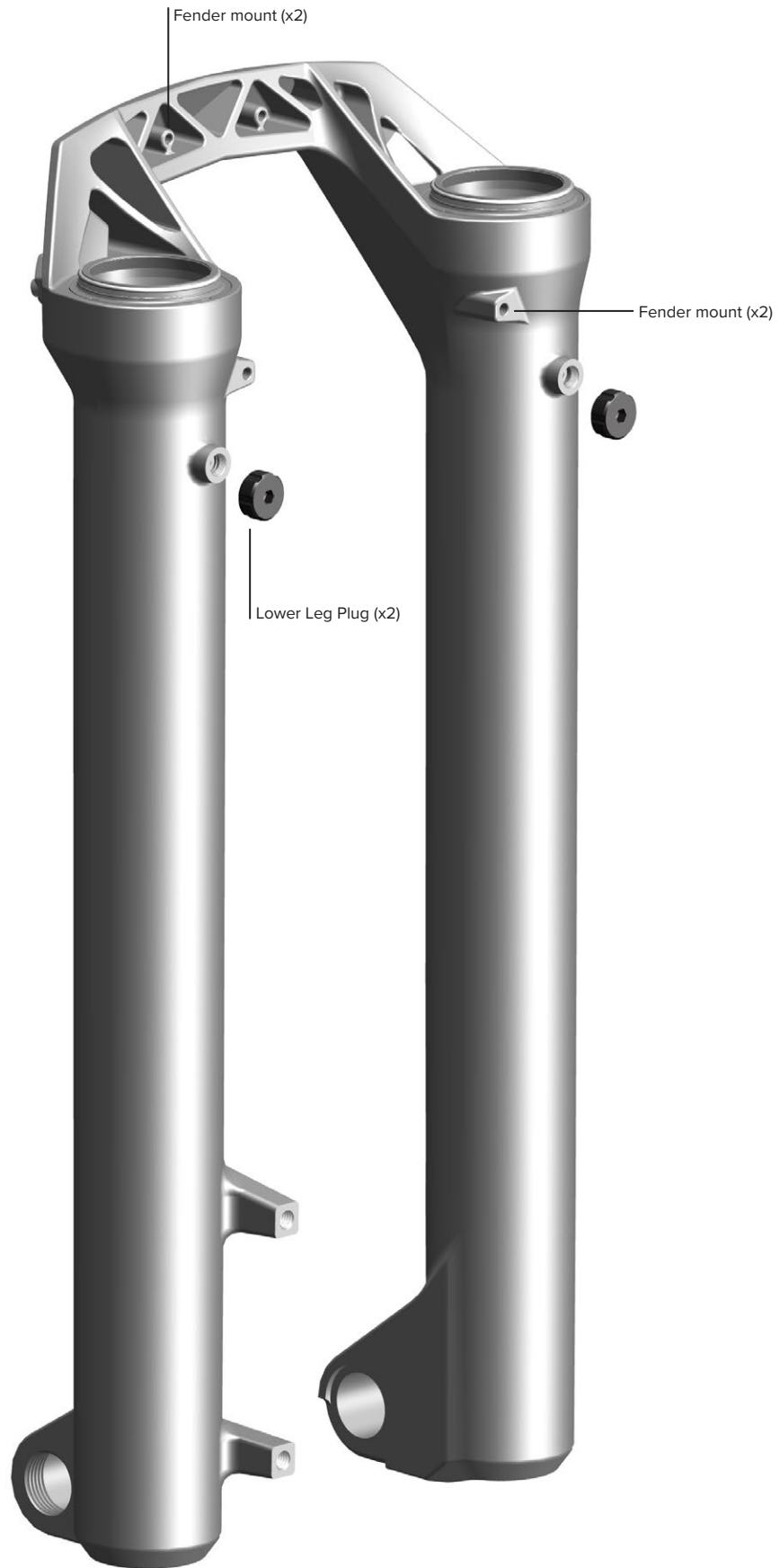
1. Retaining screw
2. Low speed compression (LSC) adjuster knob
3. High speed compression (HSC) adjuster knob
4. Detent plate
5. Compression damper top cap
6. Bleed port
7. IFP spring
8. Internal floating piston (IFP)
9. IFP tube
10. Compression damper
11. IFP tube coupler
12. Damper tube
13. Rebound damper piston
14. Dust wiper seal
15. Foam ring
16. Rebound damper sealhead
17. Rebound damper shaft
18. ButterCups (damper shaft)
19. Maxle DH
20. Crush washer
21. Rebound bottom bolt
22. Rebound adjuster knob
23. Upper crown - short (optional)
24. Steerer tube
25. Air cap
26. Air spring top cap
27. Upper crown - tall
28. Bottomless Token(s) 35 mm grey (optional)
29. Frame bumper (x2)
30. Upper tube
31. Lower crown
32. Sag o-ring
33. Air spring tube o-ring (x2)
34. Air spring tube (DebonAir+ Twin Tube)
35. Lower leg arch
36. Brake hose guide
37. Air spring piston
38. Top out cup
39. Top out bumper
40. Air spring sealhead
41. Sealhead spacer
42. Retaining ring
43. Air spring shaft
44. Jounce Bumper
45. Shaft spacer
46. ButterCups (air shaft)
47. Crush washer
48. Air spring bottom bolt

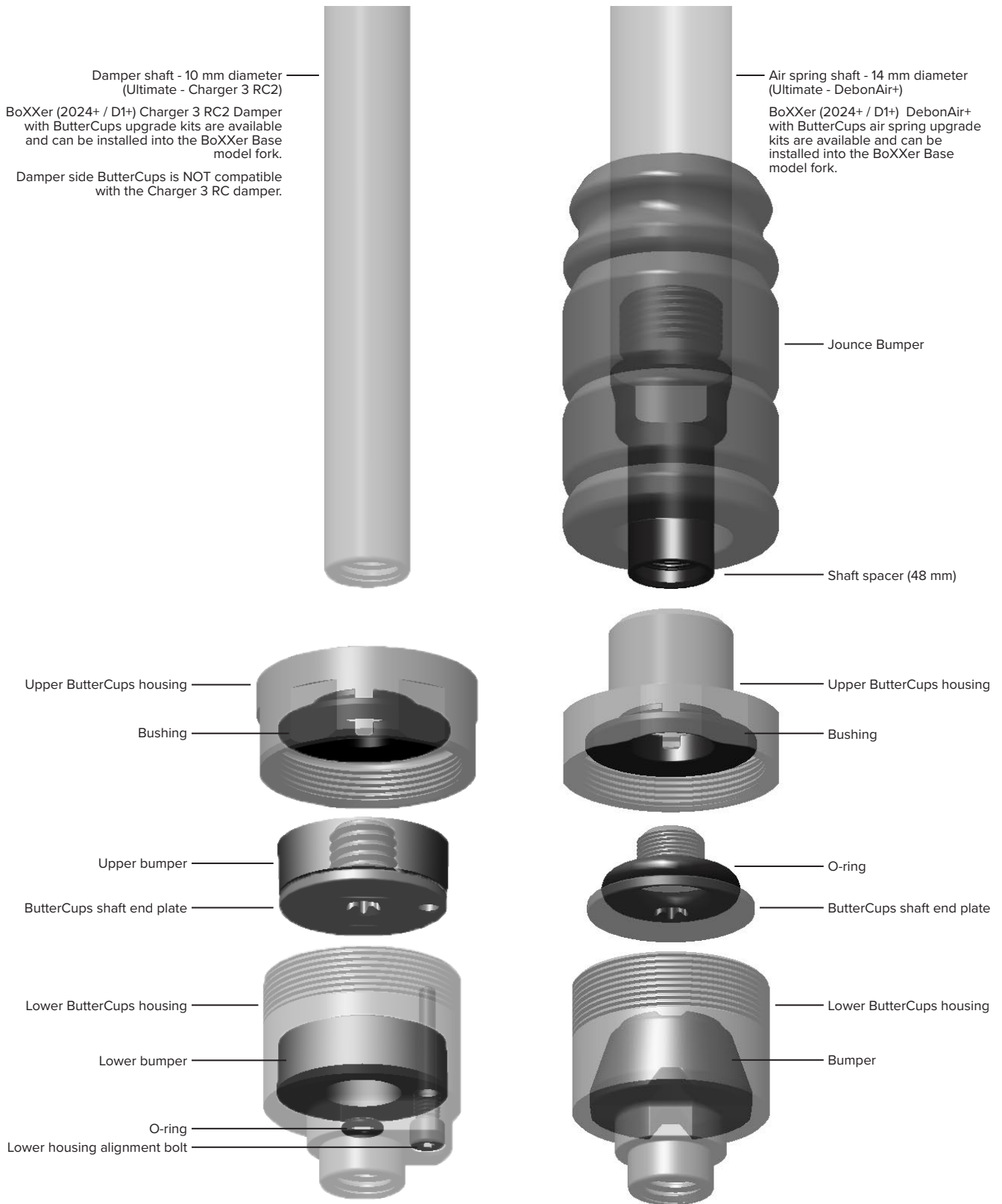


1. Retaining screw
2. Low speed compression (LSC) adjuster knob
3. Compression detent plate
4. Compression damper top cap
5. Bleed port
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7. Internal floating piston (IFP)
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36. Air spring piston
37. Top out cup
38. Top out bumper
39. Air spring sealhead
40. Sealhead spacer
41. Retaining ring
42. Air spring shaft
43. Jounce Bumper
44. Shaft spacer
45. Jounce Bumper perch
46. Crush washer
47. Air spring bottom bolt









## Fork Removal

Remove the BoXXer upper tubes and lower leg assembly from the bicycle. Removal from the bicycle provides easy access to internal components and is more convenient than working around a complete bicycle.

- 1 Secure the bicycle in a sturdy bicycle work stand.



- 2 To assist with post-service fork installation, [record](#) fork upper tube and crown positions as indicated with the upper tube crown height gradients.

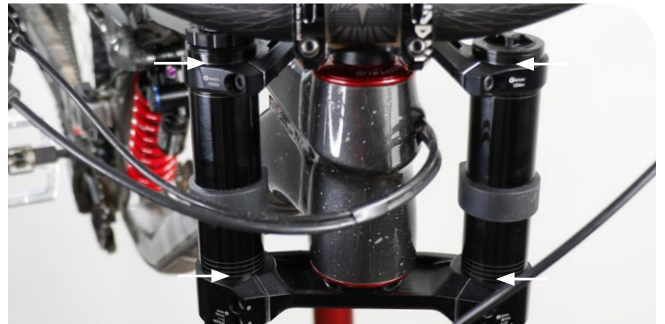
**Optional:** Take a photo of the gradients on each side, at the upper and lower crowns, for future reference.



Upper Tube / Crown Height Gradient Position - Damper Side

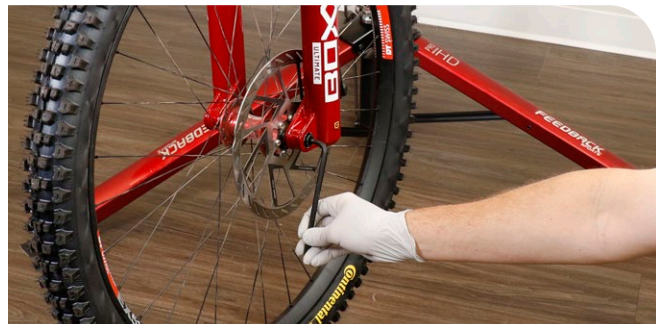


Upper Tube / Crown Height Gradient Position - Spring Side



Upper Tube / Crown Height Gradient Position

- 3 Loosen and unthread the spring side Maxle DH counterclockwise three full turns.

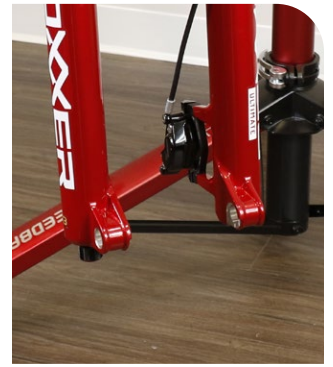
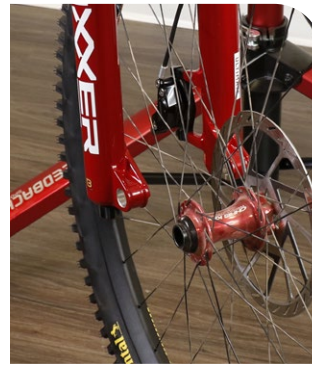
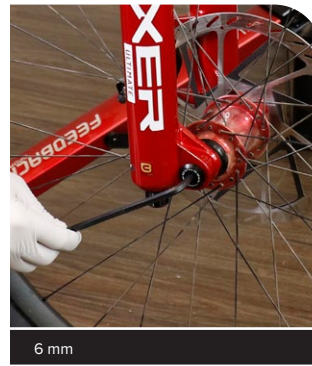


6 mm

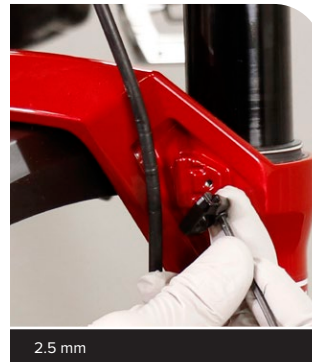
**4** On the damper side of the lower leg, unthread the Maxle DH counterclockwise and remove it from lower leg.

Remove the wheel.

Clean the Maxle DH.

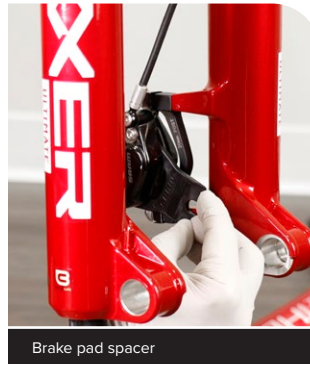


**5** Remove the brake hose guide and bolt, and set them aside.

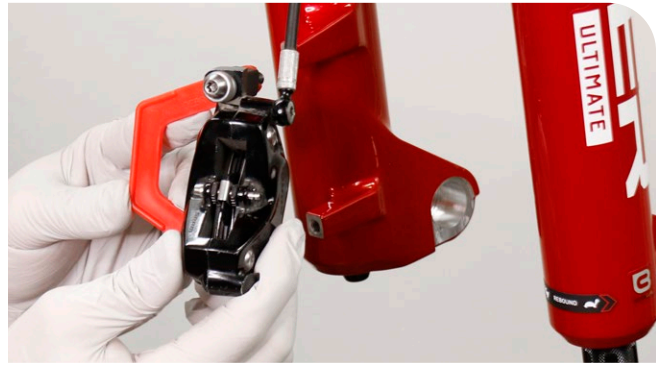


**6** Insert a brake pad spacer into the brake caliper to prevent the caliper pistons from advancing.

Remove the brake caliper. Temporarily secure the brake caliper and brake hose away from the fork.

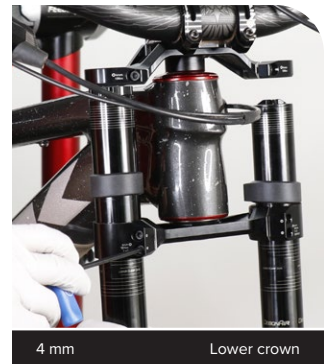
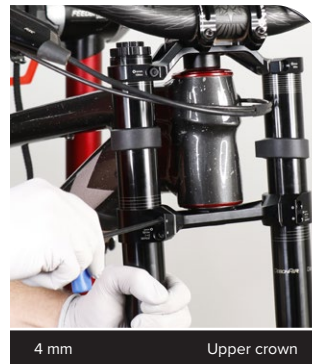
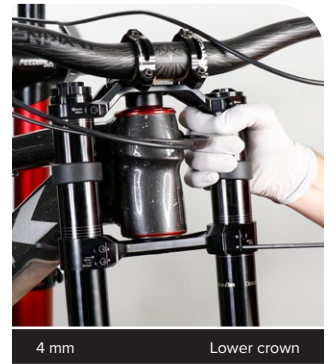
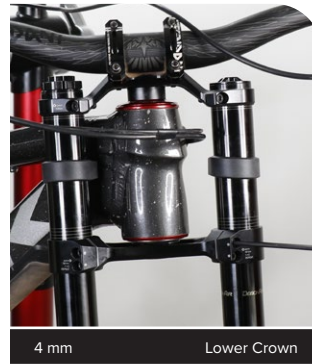
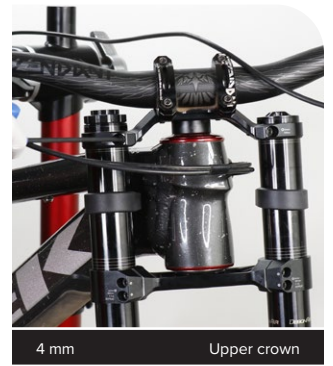
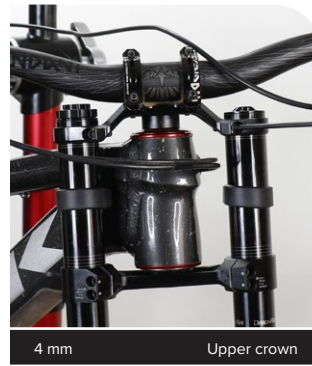


Brake pad spacer





- 7** Loosen both upper crown upper tube bolts, and all four lower crown upper tube bolts.



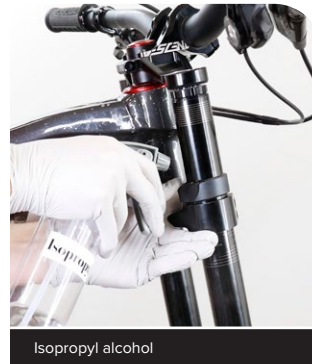
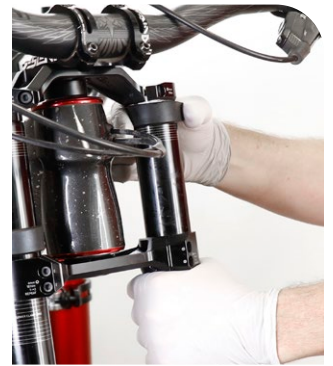
- 8** Slide the upper tubes down.  
*Some bicycle frames include integrated frame bumpers. Remove the bumpers as needed.*  
Tighten one lower crown bolt to temporarily hold the upper tubes in place while you remove the frame bumpers.



**9** Use your thumb to pry the thickest section of each frame bumper away from the upper tubes. Spray isopropyl alcohol between each bumper and onto the upper tube.

Twist each frame bumper back and forth until it is loose on the upper tube. Slide the bumpers to the top of the upper tubes and remove them. Spray additional isopropyl alcohol as needed.

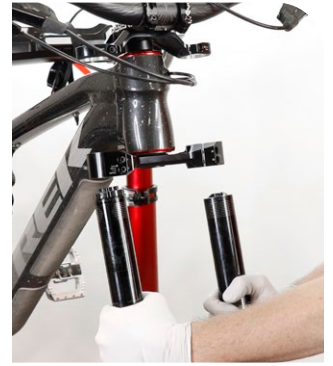
Loosen the air spring side lower crown bolt and slide the upper tube down if necessary to remove the bumper.



**10** Slide the upper tubes out of the lower crown and remove the fork from the bicycle.

Clean the upper tubes and the inside surface of the upper and lower crowns.

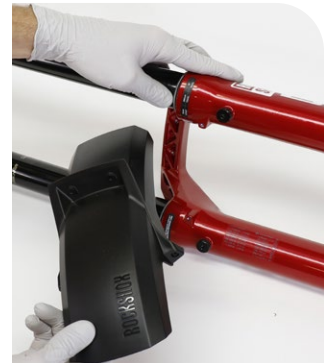
Remove the bicycle from the bicycle work stand and set it aside.





If installed, remove the fender before performing service.

- 1 Remove each fender bolt (x4).  
Remove the fender.  
Clean the fender and fender bolts.

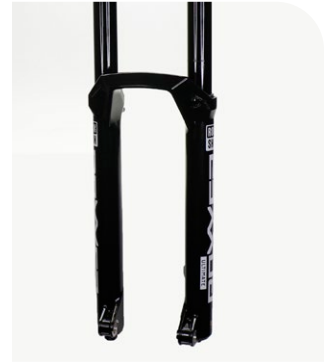
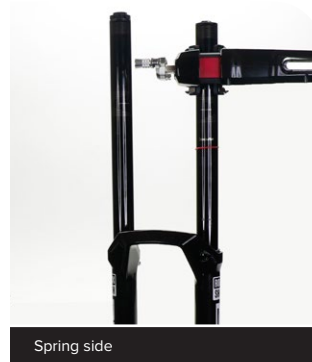


Ultimate is pictured in this section. Procedures are the same for Base unless otherwise described.

**100 Hour Service / Travel Change / DebonAir+ with ButterCups Upgrade:** only the air spring side upper tube assembly needs to be removed from the lower leg assembly.

**Charger 3 RC2 with ButterCups Upgrade:** Only the damper side upper tube assembly needs to be removed from the lower leg assembly.

**1** Clamp the air spring side upper tube into the bicycle work stand.



**2** Remove the air valve cap.



**3** The positive and negative air chambers must be depressurized simultaneously.

While holding the lower leg arch and pushing the lower leg down, depress the Schrader valve and slowly release air pressure.

Slowly allow the lower leg to compress while applying opposing pressure until you feel a sudden decrease in compressing resistance, then hold the lower leg in place to allow both air chambers to depressurize.

Push the lower leg down to extend the fork until there is no resistance and the fork can be fully extended.

Release any remaining air pressure.

**⚠ CAUTION - EYE HAZARD**

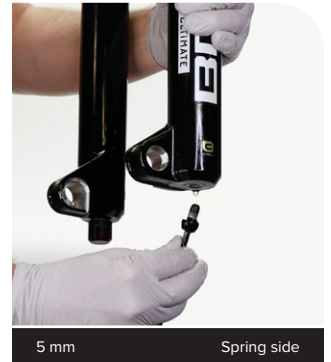
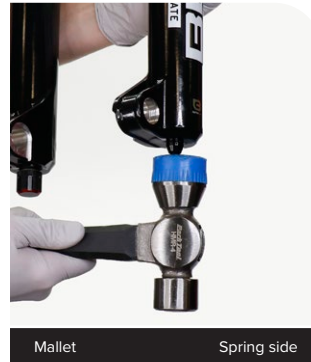
Verify all pressure is removed from the fork before proceeding. Failure to do so can result in injury and/or damage to the fork. Wear safety glasses.



- 4** Place an oil pan beneath the fork to catch the draining oil.  
Loosen the spring side bottom bolt 3 to 4 turns.



- 5** Strike the spring side bottom bolt to dislodge the shaft from the lower leg. The bolt head should contact the bottom of the lower leg.  
Remove the bottom bolt. Clean the bolt and set it aside.



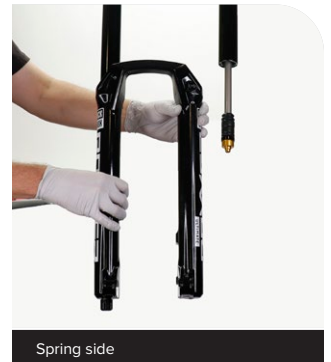
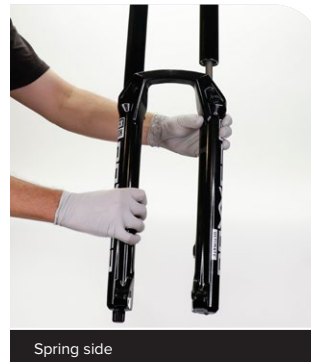
- 6** Push the lower leg downward until oil begins to drain. Continue pushing downward to remove the lower leg.

The air spring shaft should be nearly fully extended. If the air spring is fully compressed and the shaft nut is inside the upper tube, pressurize the air spring, reinstall the lower leg, compress the fork a few times to pressurize the negative air chamber, and repeat the depressurization process (step 3).

*If the lower leg does not slide off of the upper tube or if oil does not drain from either side, the press fit of the air shaft into the lower leg may still be engaged. Reinstall the bottom bolt 2 to 3 turns and repeat the previous step.*

#### **NOTICE**

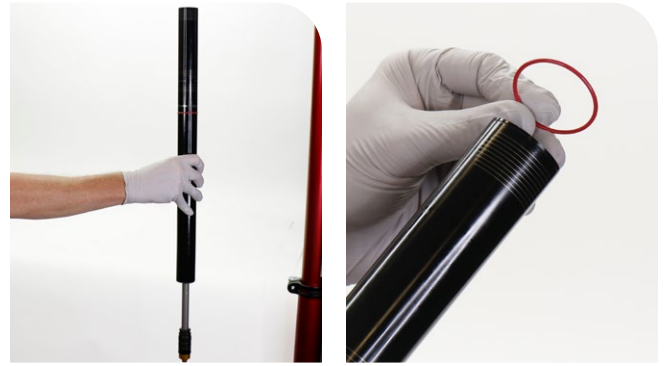
Do not strike the fork arch with any tool when removing the lower leg as this could damage the lower leg.



**7** Remove the air spring upper tube assembly from the bicycle work stand.

Remove the sag o-ring.

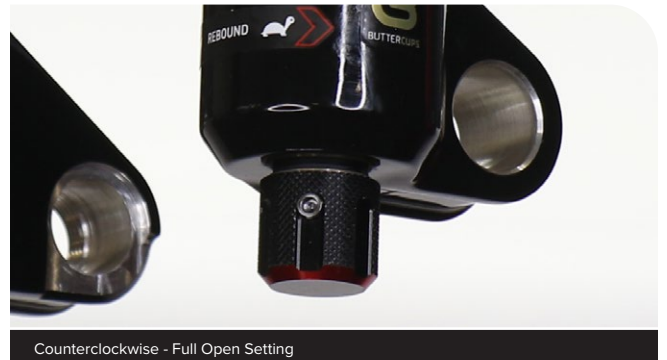
Set the air spring upper tube aside.



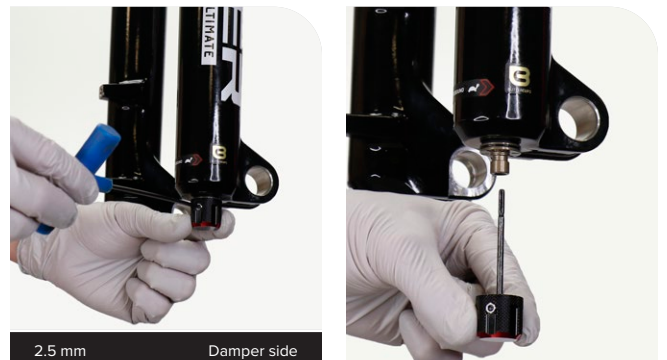
**8** Clamp the damper upper tube into the bicycle work stand.



**9** Turn the rebound adjuster knob counterclockwise until it stops. This is the full open/fast rebound setting.



**10** Loosen the rebound adjuster set screw and remove the rebound adjuster knob. Do not remove the set screw.



**11** Loosen the damper side bottom bolt 3 to 4 turns.



**12** Strike the damper side bottom bolt to dislodge the shaft from the lower leg. The bolt head should contact the bottom of the lower leg. Remove the bottom bolt. Clean the bolt and set it aside.



**13** Push the lower leg downward until oil begins to drain. Continue pushing downward to remove the lower leg. Remove the upper tube from the bicycle work stand and set it aside.

*If the lower leg does not slide off of the upper tube or if oil does not drain from either side, the press fit of the damper shaft into the lower leg may still be engaged. Reinstall the bottom bolt 2 to 3 turns and repeat the previous step.*

### NOTICE

Do not strike the fork arch with any tool when removing the lower leg as this could damage the lower leg.



**50 HOUR SERVICE** Proceed to [Lower Leg Service](#).

**100 HOUR SERVICE** Proceed to [Lower Leg Service](#).

**200 HOUR SERVICE** Proceed to [Lower Leg Seal Service](#).

**TRAVEL CHANGE BoXXer Ultimate and BoXXer Base:** Proceed to [Air Spring Removal](#).

**UPGRADE - DEBONAIR+ AIR SPRING WITH BUTTERCUPS BoXXer Base:** Proceed to [Air Spring Removal](#).

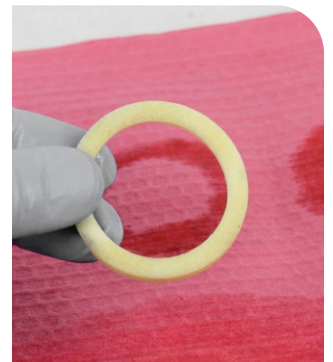
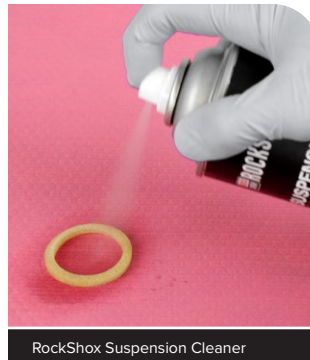
**UPGRADE - CHARGER 3 RC2 DAMPER WITH BUTTERCUPS BoXXer Base:** Proceed to [Damper Service - Charger 3 RC](#).



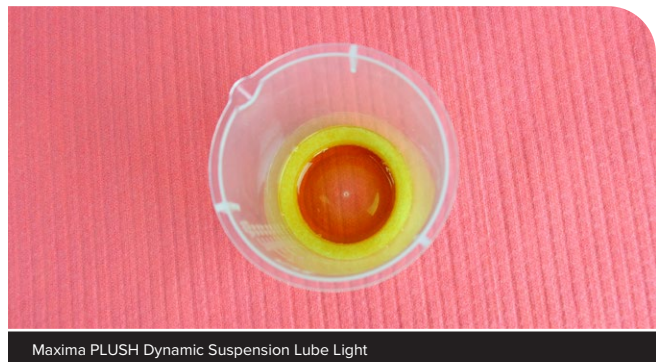
**1** Remove the foam rings.



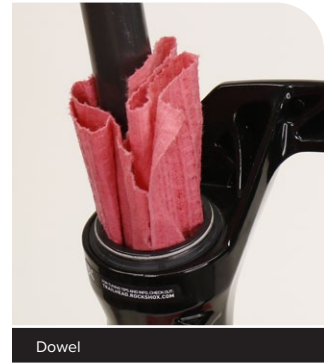
**2** Clean the foam rings.  
Replace the foam rings if worn, damaged, or excessively contaminated.



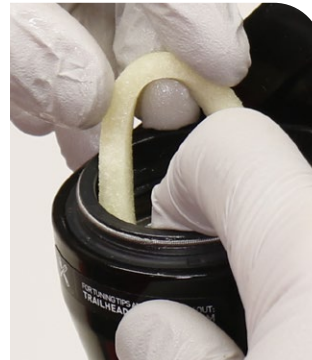
**3** Soak the foam rings in Maxima PLUSH Dynamic Suspension Lube Light.



- 4 Clean the inside and outside of the lower leg.  
Clean the wiper seals.



- 5 Install the foam rings under the wiper seals.  
Confirm the foam rings are installed evenly and square in the space under the wiper seals and do not protrude out of the groove.



**50 HOUR SERVICE** Continue 50 Hour Service with [Lower Leg Installation](#).

**100 HOUR SERVICE** Continue 100 Hour Service with [Air Spring Removal](#).

- 1 Remove and discard the foam rings.  
Remove the outer wire springs from the dust wiper seals.



Pick





**2** Stabilize the lower leg on a bench top. Position a shop towel over the edge of the wiper seal and the lower leg to protect the lower leg.

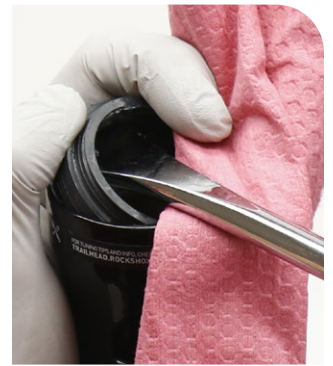
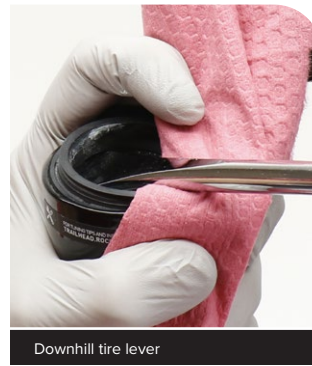
Place the tip of a downhill tire lever under the wiper seal. Press down on the downhill tire lever handle to remove the seal.

Repeat on the other side. Discard the wiper seals.

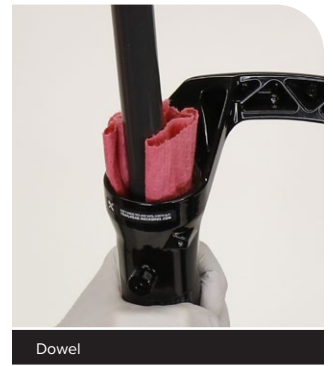
### NOTICE

Keep the lower leg stable. Do not allow the lower leg to twist in opposite directions, compress toward each other, or be pulled apart. This will damage the lower leg.

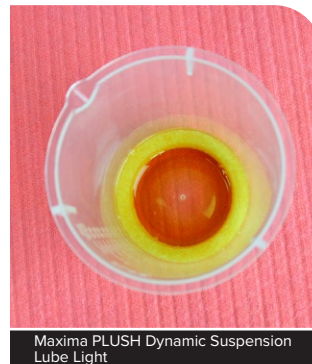
Do not damage the inner wiper seal groove with the DH tire lever when removing the dust wiper seal.



**3** Clean the lower leg.



**4** Soak new foam rings in Maxima PLUSH Dynamic Suspension Lube Light.  
Install the new foam rings into the lower leg.



**5** Remove the outer wire spring from each new dust wiper seal and set them aside.



**6** Insert the narrow end of a new wiper seal into the recessed end of the RockShox 38 mm Dust Seal Installation Tool.

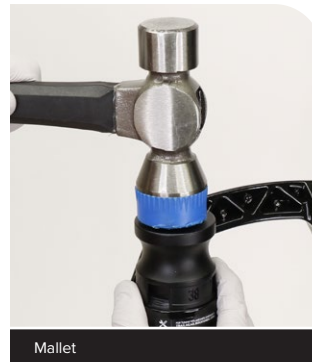


**7** Stabilize the lower leg on a bench top. Hold the lower leg steady and press, or tap with a mallet, the wiper seal into the lower leg until the top of the seal is flush with the top of the lower leg.

Repeat on the other side.

**NOTICE**

Only press, or tap with a mallet, the wiper seal into the lower leg until it is flush with the top surface of the lower leg. Pressing the wiper seal below the top surface of the lower leg will compress the foam ring.



**8** Install the outer wire springs.



- 9 Apply a light coat of grease to the inside surface of each dust wiper seal.



**100 HOUR SERVICE** Proceed to [Air Spring Service, Travel Change, and ButterCups Upgrade.](#)

**200 HOUR SERVICE** Proceed to [Air Spring Service, Travel Change, and ButterCups Upgrade.](#)

A BoXXer Ultimate air spring assembly is pictured in this section. Procedures are the same for BoXXer Base unless otherwise pictured or described.

## 100/200 Hour Service Air Spring Removal

### ⚠ WARNING - EYE HAZARD

Verify all air pressure is removed from the fork before proceeding. Depress the Schrader valve again to remove any remaining air pressure. Failure to do so can result in injury and/or damage to the fork.

### NOTICE

Inspect each part for scratches. Do not scratch any sealing surfaces when servicing your suspension. Scratches can cause leaks.

When replacing seals and o-rings, use your fingers or a pick to remove the seal or o-ring. Spray RockShox Suspension Cleaner or isopropyl alcohol onto each part and clean with a clean lint-free shop towel.

Apply SRAM Butter Grease to the new seals and o-rings.



SRAM Butter Grease

- 1 Clamp the spring side upper tube into the bicycle work stand.



Spring side

- 2** Confirm the air spring has been fully depressurized before removing the top cap.

Cycle the air spring shaft in and out slowly while depressing the Schrader to allow air to bypass the air tube dimple. Repeat slowly until fully depressurized and no resistance or negative air pressure is felt.

**⚠ CAUTION - EYE HAZARD**

Verify all pressure is removed from the fork before proceeding. Failure to do so can result in injury and/or damage to the fork. Wear safety glasses.



- 3** Remove the air spring top cap. Press down firmly when loosening the top cap.

**NOTICE**

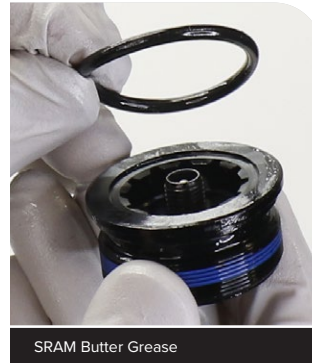
The fork top caps are tightened to a high torque value. Ensure the fork is held securely in the bicycle stand. To avoid damage to the top cap, press the top cap / cassette tool squarely and firmly down when loosening. Use a socket wrench with a long handle for extra leverage.

Clean the upper tube threads.

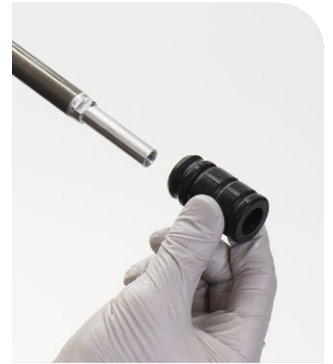
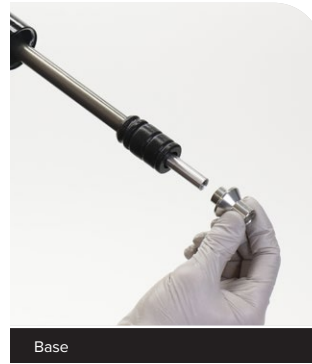




- 4** Remove the top cap o-ring and discard it.  
Apply grease to a new o-ring and install it.



- 5** **BoXXer Base:** Remove the Jounce Bumper perch from the air spring shaft.  
Remove the Jounce Bumper.  
**200 Hour Service:** Discard the Jounce Bumper.  
**100 Hour Service / Travel Change only:** Clean the Jounce Bumper.



- 6** Install a section of protective split plastic tube, or a shop towel, around the air spring shaft to protect the shaft surface during retaining ring removal. Remove the plastic tube after retaining ring removal.

**NOTICE**

Do not scratch the air spring shaft. Scratches can cause air to leak. Replace the air spring assembly if a scratch is visible.

Remove the retaining ring.

Remove the split plastic tube or shop towel from the shaft.



Ultimate Split plastic tube



Split plastic tube



Base Split plastic tube



Split plastic tube



Ultimate Retaining ring pliers



Retaining ring pliers



Base Retaining ring pliers



Retaining ring pliers



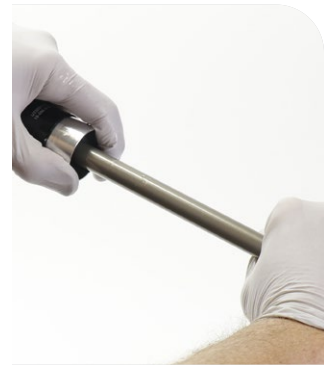
Ultimate



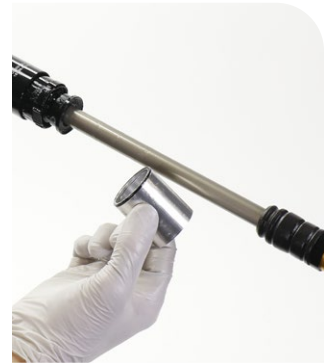
Base



- 7** Pull the air spring shaft from the upper tube. Stop when the sealhead spacer is exposed.



- 8** Remove the sealhead spacer from the air spring tube and set it aside.



- 9** Pull the air spring shaft again and remove the air spring and air spring tube assembly from the upper tube.



Spring side



Spring side

- 10** Remove the sag o-ring.  
 Clean the inside and outside of the air spring side upper tube.  
 Inspect the inside and outside of the air spring side upper tube for damage.

**NOTICE**

Scratches on the inside surface of the air spring upper tube can cause air to leak. Replace the air spring upper tube if a scratch is visible.



RockShox Suspension Cleaner

Dowel

RockShox Suspension Cleaner

- 100 HOUR SERVICE Ultimate - ButterCups Removal:** Proceed to [ButterCups Removal - DebonAir+ - Ultimate](#).
- 200 HOUR SERVICE Ultimate - ButterCups Removal:** Proceed to [ButterCups Removal - DebonAir+ - Ultimate](#).
- 100 HOUR SERVICE BoXXer Base - Spring Service:** Proceed to [Remove Air Spring from Air Spring Tube](#).
- 200 HOUR SERVICE BoXXer Base - Spring Service:** Proceed to [Remove Air Spring from Air Spring Tube](#).

**TRAVEL CHANGE**

- BoXXer Ultimate:** Proceed to [ButterCups Removal DebonAir+ - Ultimate](#).
- BoXXer Base:** Proceed to [Remove Air Spring from Air Spring Tube](#).
- UPGRADE - DEBONAIR+ AIR SPRING WITH BUTTERCUPS BoXXer Base:** Proceed to [Remove Air Spring from Air Spring Tube](#).

**100 Hour Service:** Remove and clean parts; do not discard any parts.

- 1** Clamp the lower ButterCups housing into a vise with Reverb Vise Blocks on the wrench flats, with the air spring oriented upward.

Hold the air spring shaft for support and unthread the upper ButterCups housing (25 mm) from the lower ButterCups housing.

**NOTE:** If the upper ButterCups housing cannot be unthreaded apply heat to the ButterCups assembly around the joint with a heat gun to soften the threadlocker.

**NOTICE**

If heat is applied, to avoid damage, do not apply heat to the plastic bushing or overheat any of the parts. Only use a heat gun.



Adjustable or 25 mm open end wrench



- 2** Remove the air spring assembly from the lower ButterCups housing and set it aside.



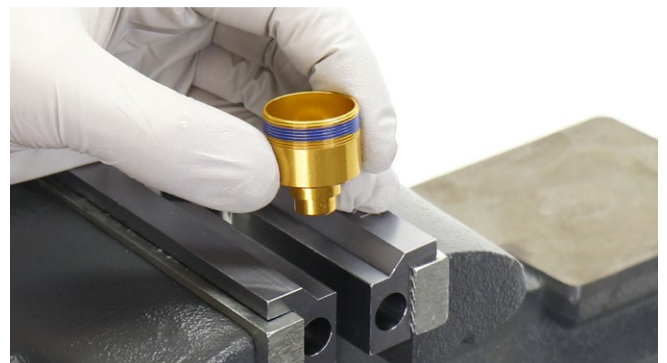
- 3** Remove the ButterCups bumper from the lower ButterCups housing.



Pick (non-metallic)



- 4** Remove the lower ButterCups housing from the vise. Clean the lower ButterCups housing.



**5** Clean the air spring shaft; remove all grease and oil.

Clamp the air spring shaft (14 mm diameter), 12 mm - 15 mm below the end of the shaft, into the 14 mm slot of the Park Tool AV-5 Vise Blocks with the air piston oriented downward.

Clamp the air spring shaft only tight enough so it does not spin when the ButterCups shaft end plate is removed.

**NOTICE**

Do not scratch the air spring shaft. Scratches can cause air to leak. Replace the air spring assembly if a scratch is visible.

Do not clamp the air spring shaft in the middle of the shaft. Clamping force will damage the air spring shaft. If the air spring shaft is damaged, the air spring assembly must be replaced.

Unthread and remove the ButterCups shaft end plate from the air spring shaft.

**NOTE:** If the end plate cannot be unthreaded, apply heat to the end plate and spring shaft with a heat gun to soften the threadlocker.

**NOTICE**

If heat is applied, to avoid damage, first remove the o-ring then apply light heat to the parts. Do not overheat and burn the air spring shaft surface. Only use a heat gun; do not use a flame.



Park Tool AV-5 Vise Blocks (14 mm)



T25



Park Tool AV-5 Vise Blocks (14 mm)

**6** Remove the ButterCups shaft end plate o-ring.



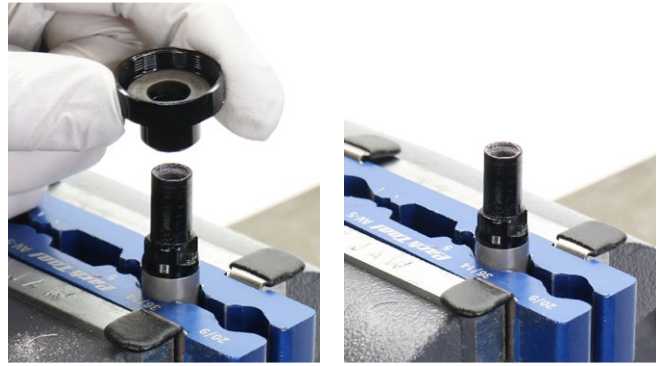
Pick (non-metallic)



Pick (non-metallic)

**7** Remove the upper ButterCups housing and bushing assembly from the air spring shaft and set it aside.

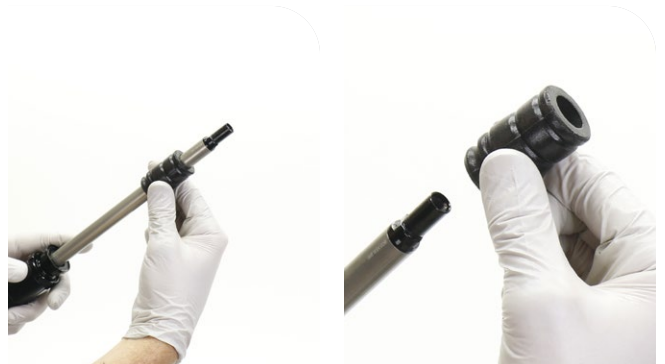
Remove the air spring shaft from the vise and vise blocks.



Clean the threads in the shaft spacer.



**8** Remove the Jounce Bumper.



Clean the air spring shaft.



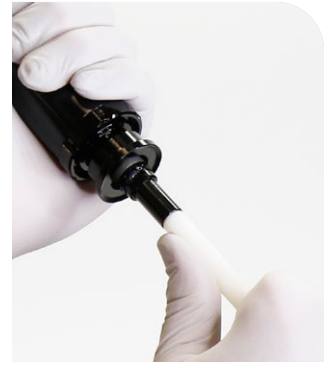
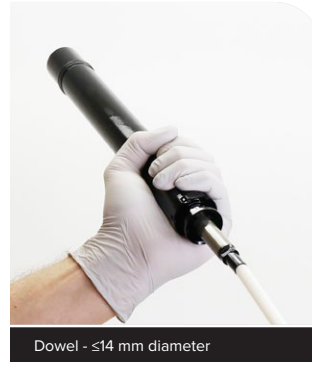
RockShox Suspension Cleaner

 Continue with [Remove Air Spring from Air Spring Tube](#).



BoXXer Ultimate pictured. Procedures are the same for BoXXer Base.

**1** Insert a dowel into the end of the air spring shaft.



Dowel - ≤14 mm diameter

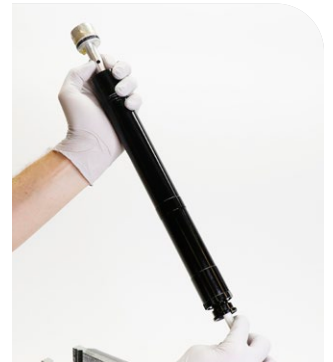
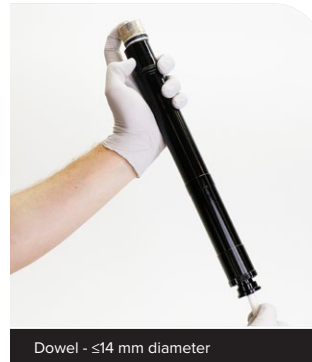
**2** Push the air spring shaft into and through the sealhead using the dowel to prevent the edges of the air spring shaft from contacting, and possibly scratching, the inside surface of the air spring tube.

Continue to push the air spring shaft into the air spring tube until the air spring piston exits the top of the tube.

Remove the air spring shaft/piston assembly from the air spring tube.

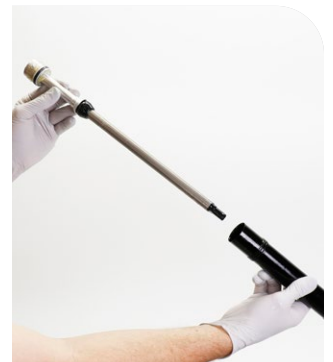
**NOTICE**

Do not scratch the inner surface of the air spring tube. Scratches will cause air to leak. If the inner surface of the air spring tube is scratched, it must be replaced.



Dowel - ≤14 mm diameter

**Travel Change and ButterCups Upgrade:** Set the original air spring assembly aside. It will not be reinstalled.



**100 HOUR SERVICE** Proceed to [Air Spring Sealhead and Tube Service](#).

**200 HOUR SERVICE** Proceed to [Air Spring Sealhead and Tube Service](#).

**TRAVEL CHANGE** Proceed to [Air Spring Service](#).

**UPGRADE - DEBONAIR+ AIR SPRING WITH BUTTERCUPS** BoXXer Base: Proceed to [Air Spring Sealhead and Tube Service](#).

## Air Spring Travel Change (optional)

Maximum fork travel can be changed by replacing the stock air spring shaft/piston assembly with a shorter or longer air spring shaft/piston assembly. If maximum travel is increased or reduced, a longer or shorter air spring shaft/piston assembly must be installed. For example, to change travel on a fork with a maximum of 180 mm of travel to a maximum of 200 mm of travel, a 200 mm air spring shaft/piston assembly must be installed.

**BoXXer Ultimate:** The [ButterCups assembly](#) must be removed from the original air spring shaft/piston assembly, and installed onto new the longer or shorter travel change replacement air spring shaft assembly.

**BoXXer Base:** To change travel, install a BoXXer Ultimate DebonAir+ with ButterCups Upgrade kit in the preferred travel. After the air spring shaft is installed, the ButterCups assembly must be installed.

It may also be necessary to add or remove Bottomless Tokens if travel is changed. Refer to [Air Spring Travel Change and Bottomless Tokens](#) for details.

Refer to the *RockShox Spare Parts Catalog* at [www.sram.com/service](http://www.sram.com/service) for available air spring travel change and ButterCups damper and air spring Upgrade kits. For part ordering information, please contact your local SRAM distributor or dealer.

For air spring travel change, proceed to [Air Spring Service](#).

## DebonAir+ Bottomless Tokens

Bottomless Tokens can be added to, or removed from the DebonAir+ top cap to fine-tune the bottom-out feel and spring curve. Use the table below to help determine the number of Bottomless Tokens that can be used with each maximum fork travel option. If fork travel is changed from stock, it may be necessary to add or remove Bottomless Tokens.

Refer to the *RockShox Suspension Tuning and Setup Guide* for more details. Refer to the *RockShox Spare Parts Catalog* at [www.sram.com/service](http://www.sram.com/service) for available air spring and Bottomless Token kits. For part ordering information, please contact your local SRAM distributor or dealer.

27.5" Boost / 29" Boost		
Fork Travel (mm)	Bottomless Tokens (grey) Factory Installed	Bottomless Tokens (grey) Maximum
200	0	6
190	0	6
180	1	6

## DebonAir+ Bottomless Tokens Installation (optional)

Bottomless Tokens reduce air volume in your fork and create greater ramp at the end of the fork travel. Add or remove Tokens to tune your fork's bottomless feel. Do not install more than the maximum number of Bottomless Tokens for your fork.

Install Bottomless Token(s) onto the air spring top cap, as desired. Thread a Bottomless Token into another Bottomless Token, and/or into the bottom of the top cap, and tighten.



8 mm

4 N-m (35 in-lb)

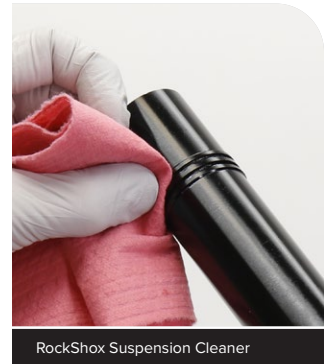
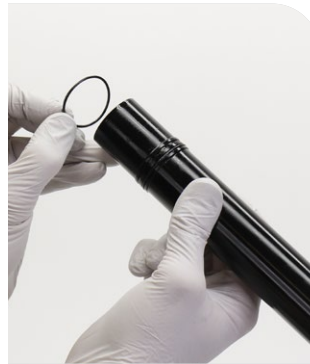
Top cap / cassette tool



**100 Hour Service:** Do not discard seals. Clean, apply grease, and reinstall each.

**200 Hour Service:** Discard all seals, apply grease to new seals, and install each.

- 1 Remove the two o-rings from the outside of the air spring tube.  
Clean the o-ring grooves.

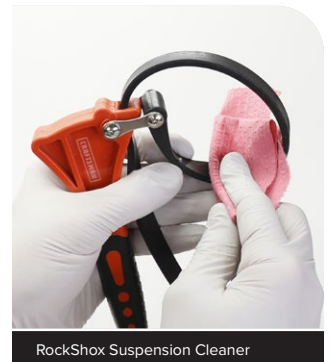


RockShox Suspension Cleaner

- 2 Clean the outside of the air spring tube and remove all grease and oil. Clean the inside surface of the rubber strap on a rubber strap wrench. The air spring tube and rubber strap must be clean and dry to unthread it from the sealhead.



RockShox Suspension Cleaner

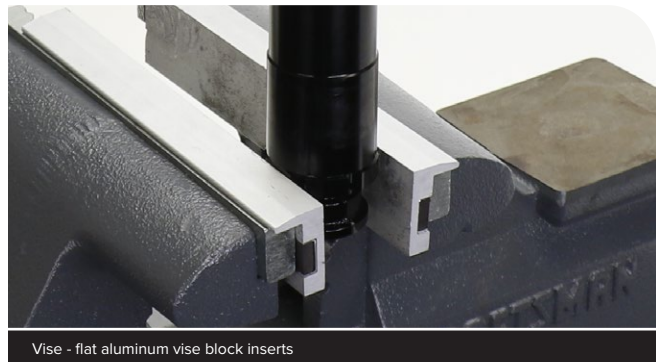


RockShox Suspension Cleaner

- 3 Clamp the air sealhead in a vise on the flats.

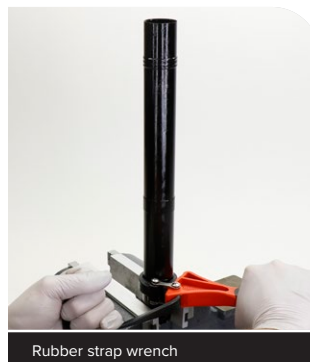
**NOTICE**

To avoid permanent damage, DO NOT clamp the air spring tube in a vise.



Vise - flat aluminum vise block inserts

- 4 Unthread the air spring tube from the sealhead.



Rubber strap wrench



**5** Clean the threads in the air spring tube.

Clean the inside surface of the air spring tube and inspect it for scratches. If the inside surface of the air spring tube is scratched it must be replaced.

**NOTICE**

Scratches on the inside surface of the air spring tube can cause air to leak. Replace the air spring tube if a scratch is visible.



RockShox Suspension Cleaner or isopropyl alcohol



RockShox Suspension Cleaner or isopropyl alcohol

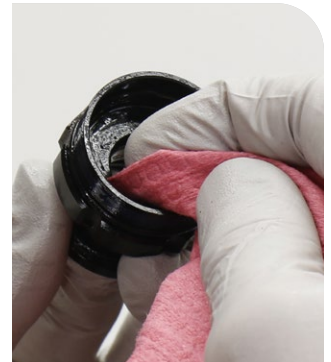


**6** Remove the air sealhead inner quad ring seal.

Clean the seal groove.



Pick (non-metallic)



**7** Inspect the sealhead bushing and the air spring shaft for wear or damage.

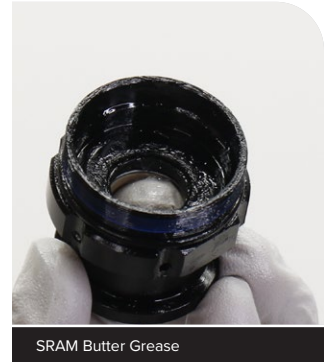
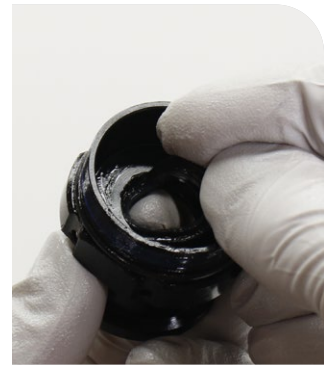
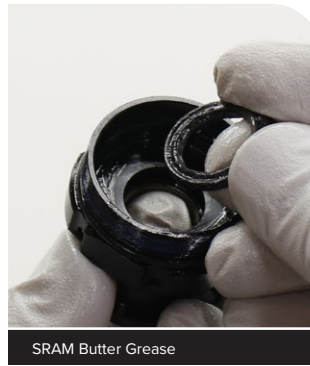
If the sealhead bushing is worn, the sealhead assembly must be replaced.

**NOTICE**

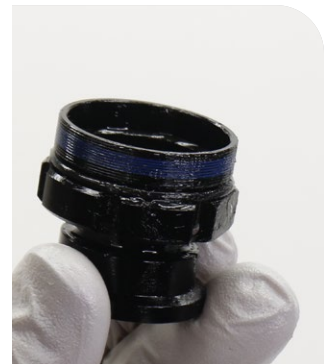
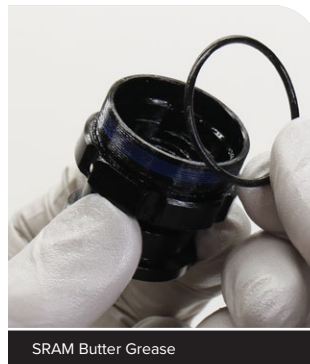
If the sealhead bushing and/or the air spring shaft are worn or damaged, both must be replaced to prevent air spring pressure loss. Do not reassemble the air spring if the sealhead bushing and/or the air spring shaft are worn or damaged.



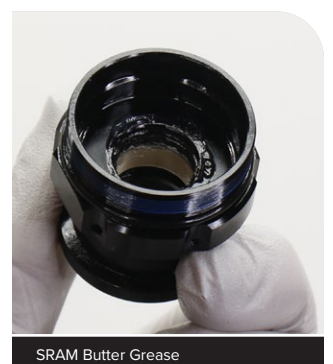
**8** Apply grease to the inner quad seal and install it into the sealhead.



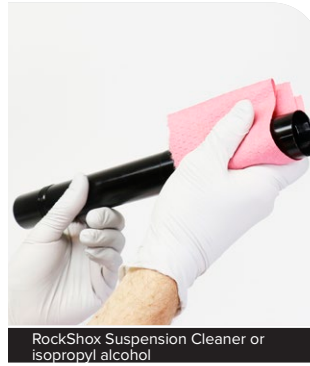
**9** Remove the outer o-ring and clean the groove.  
Apply grease to the outer o-ring and install it.



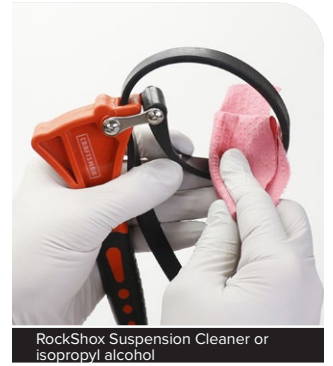
**10** Apply grease to the inner bushing and quad ring seal.



- 11** Clean the inside surface of the rubber strap on a rubber strap wrench. The air spring tube and rubber strap must be clean and dry to tighten the sealhead to the specified torque.

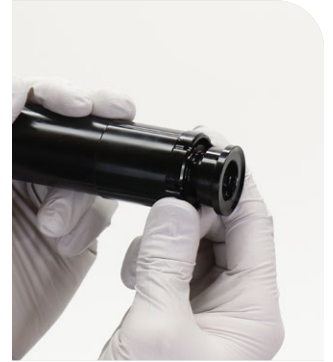


RockShox Suspension Cleaner or isopropyl alcohol



RockShox Suspension Cleaner or isopropyl alcohol

- 12** Thread the sealhead onto the air spring tube.



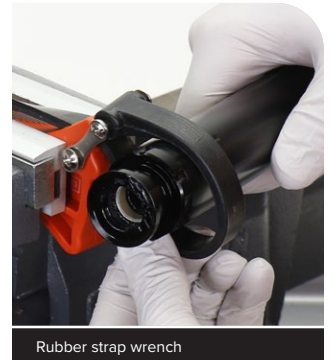
- 13** Clamp a rubber strap wrench in a vise. Secure the end of the air spring tube nearest to the sealhead in the rubber strap and cinch the rubber strap tight around the air spring tube. Tighten the sealhead to the specified torque.

**NOTICE**

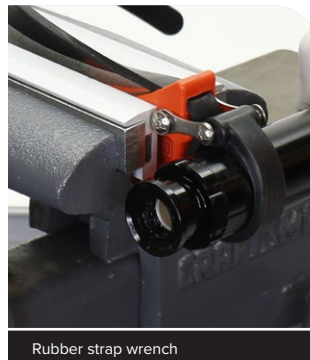
To avoid permanent damage, DO NOT clamp the air spring tube into a vise.



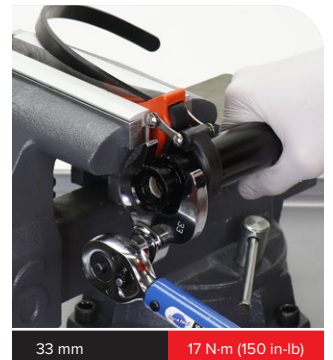
Rubber strap wrench



Rubber strap wrench



Rubber strap wrench



33 mm

17 N·m (150 in-lb)

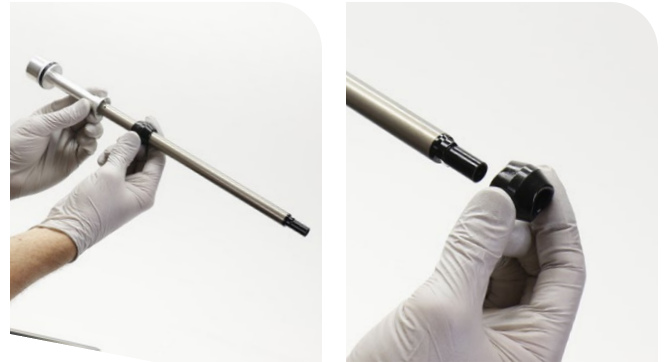
A BoXXer Ultimate air spring assembly is pictured in this section. Procedures are the same for BoXXer Base unless otherwise pictured or described.

**100 Hour Service:** Remove, clean, lubricate, and reinstall backup rings, quad ring seal, and top out bumper.

**200 Hour Service:** Remove and discard original backup rings, quad ring seal, and top out bumper. Install new backup rings, quad ring seal, and top out bumper.

**Travel Change and ButterCups Upgrade:** Travel change and ButterCups Upgrade include a new air spring assembly with new dry parts. Parts must be removed, lubricated, and reinstalled before installation. Remove and lubricate new backup rings, quad ring seal, and top out bumper.

- 1** Remove the bottom out bumper.  
**200 Hour Service:** Discard bumper.



- 2** Clean and inspect the air spring shaft for wear or damage.

### NOTICE

If the sealhead bushing and/or the air spring shaft are worn or damaged, both must be replaced to prevent air spring pressure loss. Do not reassemble the air spring if the sealhead bushing and/or the air spring shaft are worn or damaged.





**3** Remove the thick backup ring (upper), quad ring seal, and thin backup ring (lower) from the air piston.

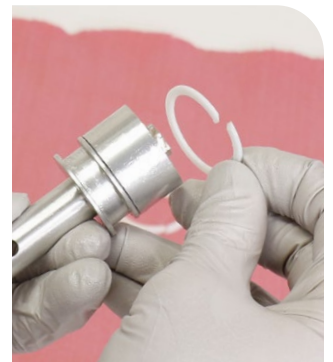
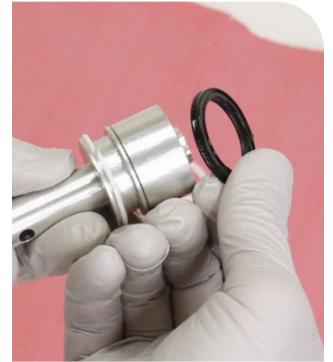
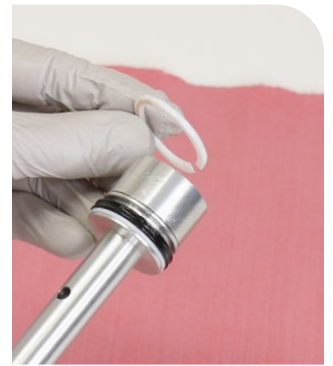
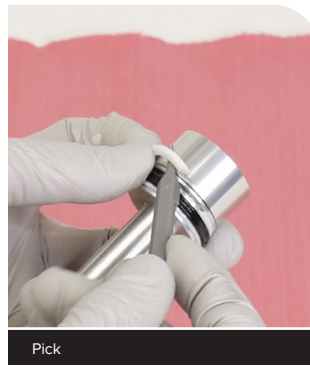
**100 Hour Service and ButterCups Upgrade:** Clean, lubricate, and reinstall backup rings, and quad ring seal.

**200 Hour Service:** Discard original backup rings, quad ring seal.

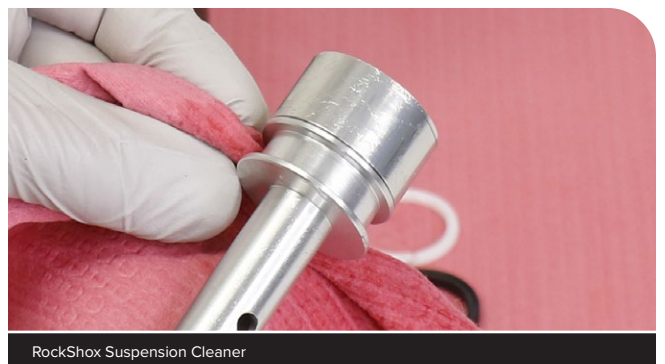
**Travel Change:** Lubricate, and reinstall new backup rings, and quad ring seal.

**NOTICE**

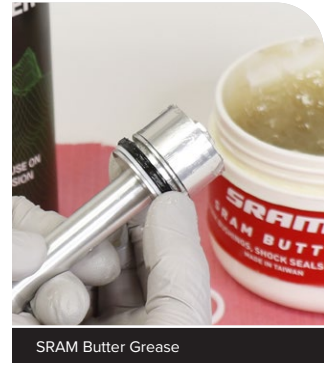
Do not scratch the air piston. Scratches will cause air to leak.  
Replace the air spring assembly if a scratch is visible.



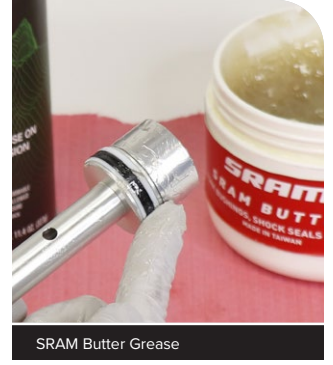
**4** Clean the air piston.



- 5** Install the thin backup ring (lower) onto the air piston.  
Apply grease to the quad ring seal and install it onto the air piston above the backup ring.  
Install the thick backup ring (upper) tapered end upward, above the quad ring seal.



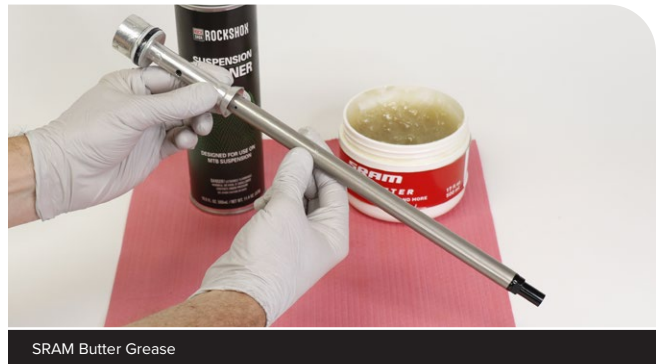
SRAM Butter Grease



SRAM Butter Grease



- 6** Apply a liberal amount of grease to the air spring shaft.



SRAM Butter Grease

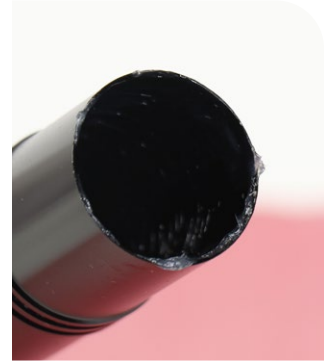
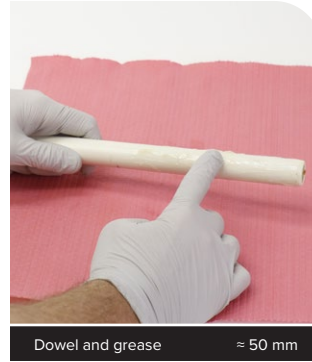


- 7 Apply a thin layer of grease to the top out bumper and install it onto the air spring shaft.

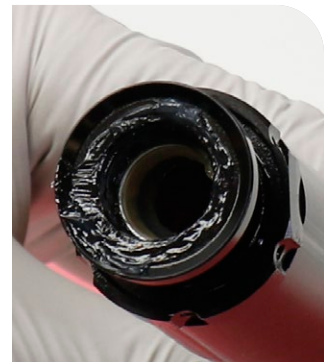
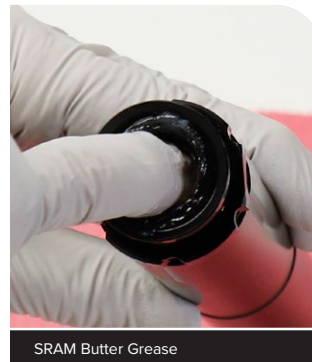


A BoXXer Ultimate air spring assembly is pictured in this section. Procedures are the same for BoXXer Base unless otherwise picture or described.

- 1 Apply a liberal amount of SRAM Butter Grease evenly around the end of a clean plastic dowel, approximately 50 mm from one end.  
Use the dowel to evenly apply the grease to the inside surface of the air spring tube, approximately halfway into the tube from the top of the tube.



- 2 Apply grease to the sealhead inner bushing and quad ring seal.



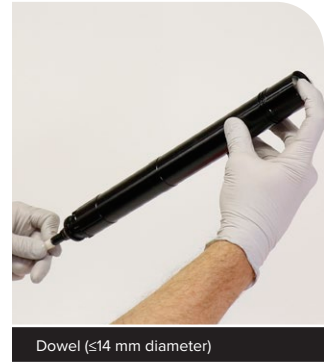
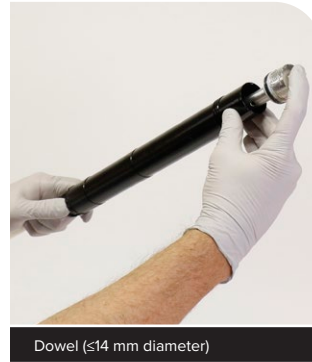
- 3 Inject 1 mL of Maxima PLUSH Suspension Lube Heavy (one drop) into the air spring tube (negative air spring chamber).



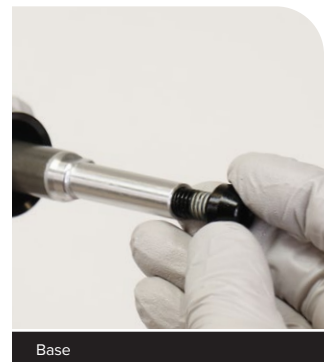
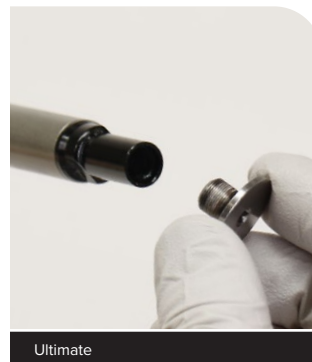
**4** Insert a dowel ( $\leq 14$  mm diameter) into the sealhead until it exits the top end of the air spring tube.

Position the end of the air spring shaft onto the end of the dowel and use the dowel to guide the air spring shaft into the air spring tube and through the sealhead.

Press the air spring piston into the air spring tube and push it down into the tube while guiding the end of the air spring shaft into and through the sealhead.



To assist with positioning the air spring in the air spring tube, thread either the ButterCups end plate (Ultimate) or the air spring bottom bolt (Base) into the threaded shaft end.

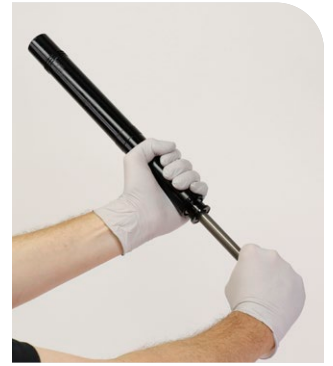


**6** Slowly push/pull the air spring shaft into and out of the air spring tube gradually extending the shaft.

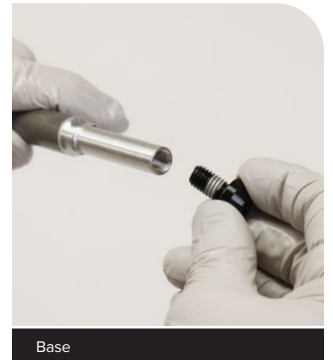
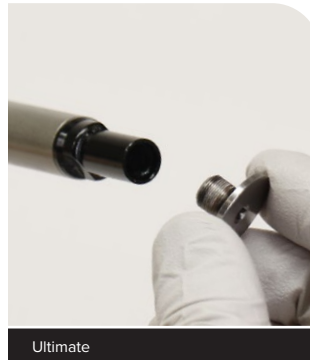
As the air piston seal passes the dimple inside the middle of the air spring tube, air bypassing the piston seal and the air spring tube dimple should be heard and felt.

Continue to slowly compress and extend the air spring shaft until all air pressure has bypassed the dimple and there is no air pressure in the negative air chamber. The air spring shaft should be able to fully extend when complete.

Pull the air spring shaft until the piston stops against the sealhead and the spring does not compress under negative pressure.

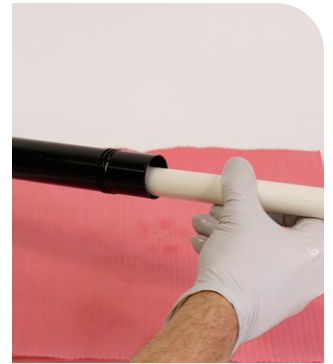
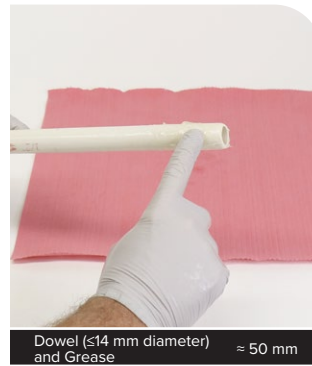


Remove the ButterCups end plate (Ultimate) or the air spring bottom bolt (Base).

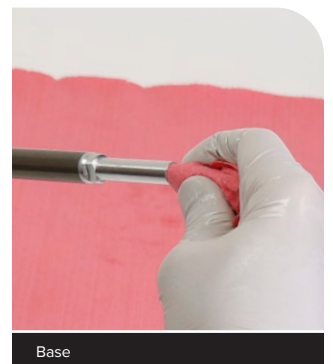


**7** Apply a liberal amount of SRAM Butter Grease evenly around the end of a clean plastic dowel, approximately 50 mm from one end.

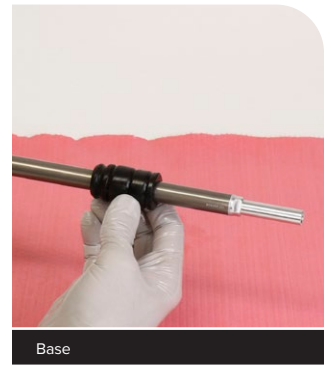
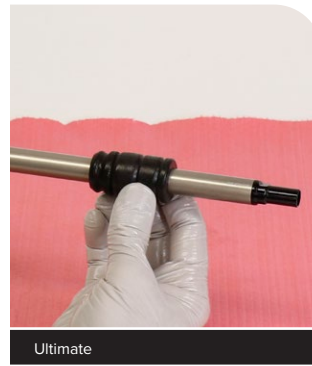
Use the dowel to evenly apply the grease to the inside surface of the air spring tube, approximately 25% into the tube from the top of the tube.



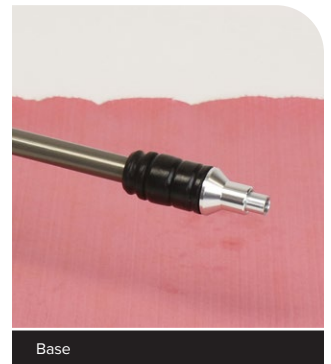
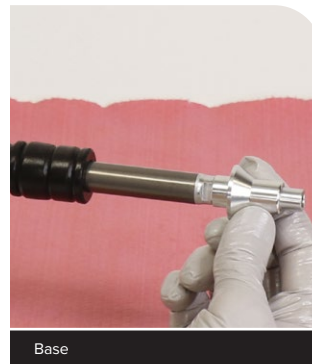
**8** Remove the grease from the air spring shaft spacer inner threads.



**9** Install the Jounce Bumper, tapered end toward the sealhead.



**10** **BoXXer Base:** Install the Jounce Bumper perch (48 mm shaft spacer). Slide the Jounce Bumper to the perch.



**100 HOUR SERVICE** **BoXXer Ultimate:** Continue with [ButterCups Installation](#).

**200 HOUR SERVICE** **BoXXer Ultimate:** Continue with [ButterCups Installation](#).

**TRAVEL CHANGE** **BoXXer Ultimate:** Proceed to [ButterCups Installation](#).

**UPGRADE - DEBONAIR+ AIR SPRING WITH BUTTERCUPS** Proceed to [ButterCups Installation](#).

**100 HOUR SERVICE** **BoXXer Base:** Continue with [Air Spring/Air Spring Tube Installation](#).

**200 HOUR SERVICE** **BoXXer Base:** Continue with [Air Spring/Air Spring Tube Installation](#).

**TRAVEL CHANGE** **BoXXer Base** Proceed to [ButterCups Installation](#).



- 1 Clean the air spring shaft; remove all grease and oil.  
Clamp the air spring shaft (14 mm diameter), 12 mm - 15 mm below the end of the shaft, into the 14 mm slot of the Park Tool AV-5 Vise Blocks with the air piston oriented downward.

Clamp the air spring shaft only tight enough so it does not spin when the ButterCups shaft end plate is removed.

**NOTICE**

Do not scratch the air spring shaft. Scratches can cause air to leak. Replace the air spring assembly if a scratch is visible.

Do not clamp the air spring shaft in the middle of the shaft. Clamping force will damage the air spring shaft. If the air spring shaft is damaged, the air spring assembly must be replaced.

Install the ButterCups upper housing onto the air spring shaft.



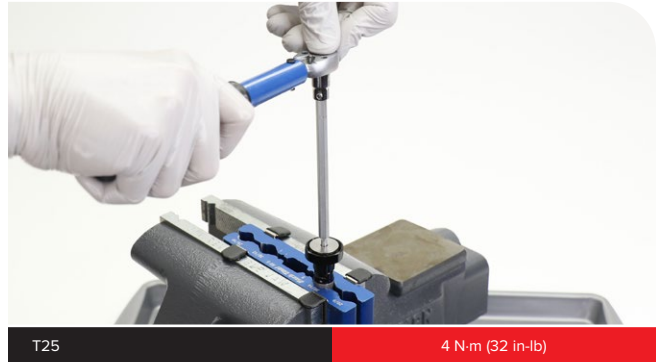
- 2 Install a new o-ring onto the upper ButterCups housing.



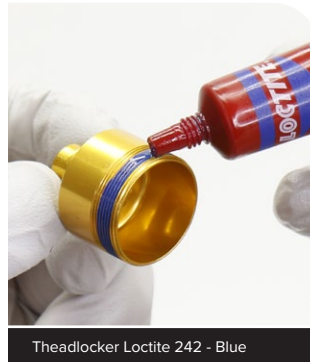
- 3 Apply Loctite Threadlocker 2760 (red), or equivalent, to the first two to three full threads of the ButterCups shaft end plate.



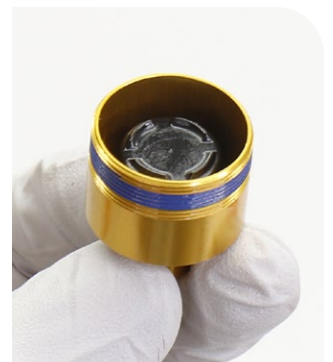
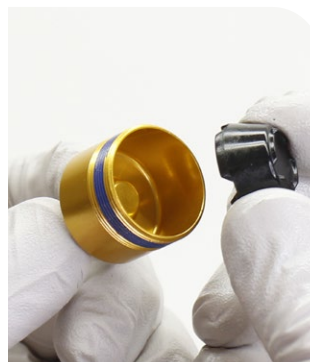
- 4** Install and thread the ButterCups shaft end plate into the air shaft spacer (T25). Tighten the end plate to the specified torque.



- 5** Apply Loctite Threadlocker Blue 242 (blue), or equivalent, to three full outer threads on the lower ButterCups housing.

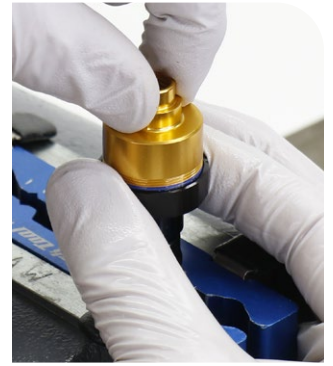
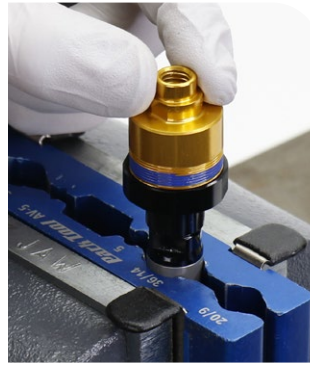


- 6** Install a new ButterCups bumper into the lower ButterCups housing, wide end first.



**7** Position the lower ButterCups housing and bumper onto the ButterCups end plate.

Slide the upper ButterCups housing and bushing assembly up and thread it onto the lower ButterCups housing finger tight.



**8** Remove the air shaft from the vise and vise blocks.

Clamp the lower ButterCups housing into a vise with Reverb Vise Blocks on the wrench flats.

Tighten the upper ButterCups housing onto the lower housing.



Flat Vise Blocks



25 mm

14 N·m (125 in-lb)

**1** **200 Hour Service:** Remove the o-ring from the air spring sealhead spacer and discard it.

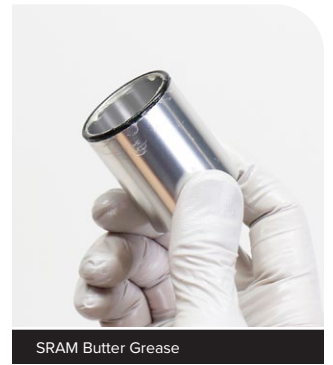
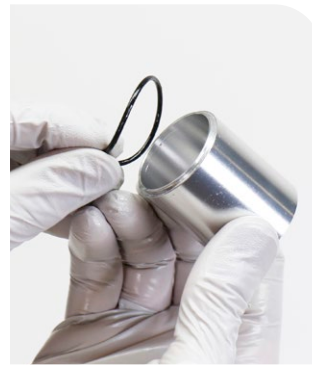
Clean the spacer.

Apply grease to a new o-ring and install it onto the spacer.

**100 Hour Service / Travel Change / ButterCups Upgrade:** Remove the o-ring from the air spring sealhead spacer and clean the o-ring.

Clean the spacer.

Apply grease to the o-ring and install it onto the spacer.

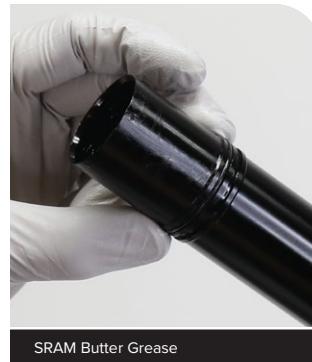


SRAM Butter Grease

**2** Apply grease to the two exterior o-rings and install them onto the air spring tube.

**200 Hour Service:** Install new o-rings.

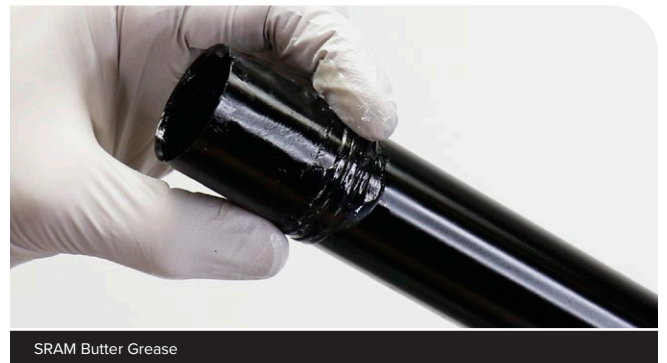
Apply a liberal amount of grease to the two o-rings and the end the air spring tube.



SRAM Butter Grease



SRAM Butter Grease



SRAM Butter Grease

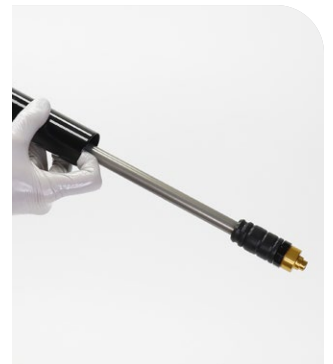
**3** Apply grease around the inside of the upper tube.



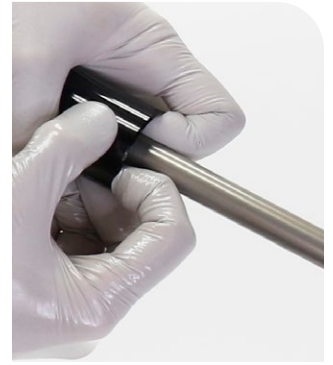
SRAM Butter Grease

**4** Insert the air spring tube, o-rings first, into the bottom end (non-threaded end) of the upper tube.

Firmly push the air spring tube/air spring assembly into the upper tube until it stops. Only push the air spring tube and sealhead; do not push the air spring shaft into the air spring tube.



- 5** Insert the sealhead spacer into the upper tube, o-ring end first, and push it into the upper tube step until it stops against the air spring sealhead.



The spacer is seated fully when the retaining ring groove is visible.





- 6** Install a section of protective split plastic tube, or a shop towel, around the air spring shaft to protect the shaft surface during retaining ring installation.

**NOTICE**

Do not scratch the air spring shaft. Scratches can cause air to leak. Replace the air spring assembly if a scratch is visible.

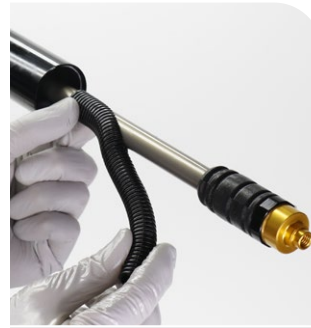
Eyelet retaining rings have a sharper edged side and a rounder edged side. Installing retaining rings with the sharper edged side facing the tool will allow for easier installation and removal.

Guide the retaining ring with your finger to prevent scratching the air shaft.

Place the tips of the retaining ring pliers into the eyelets of the retaining ring, then use the pliers to push the sealhead into the upper tube while installing the retaining ring into the groove.

Confirm the retaining ring is properly seated in the retaining ring groove by using the retaining ring pliers to rotate the retaining ring and sealhead back and forth a few times.

Remove the split plastic tube or shop towel from the shaft.



Ultimate Split plastic tube



Split plastic tube



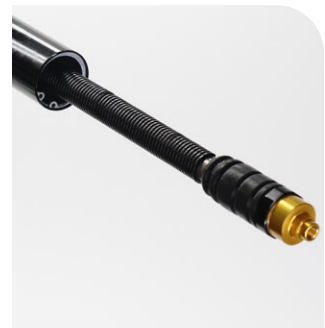
Base Split plastic tube



Split plastic tube



Ultimate Retaining ring pliers



Base Retaining ring pliers



Ultimate

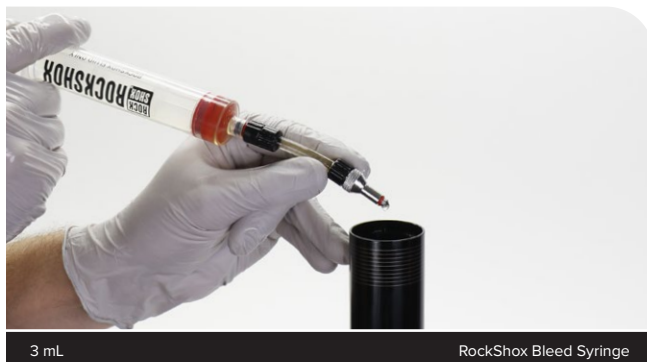


Base

- 7** Inject or pour 3 mL Maxima PLUSH Dynamic Suspension Lube Heavy into the top of air spring upper tube, and into the air spring tube inside the upper tube. Oil will mix with the grease in the air spring tube.

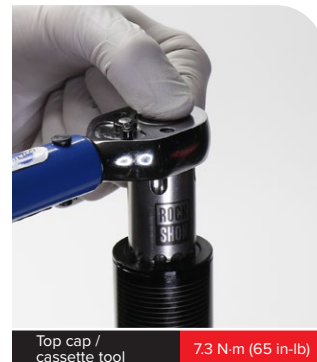
### NOTICE

To ensure proper air spring lubrication, inject oil into the air spring tube inside the upper tube, and not on the inner sides of the upper tube.



- 8** Install the air spring top cap into the upper tube and tighten it. Press down firmly when tightening the top cap.

Add or remove [Bottomless Tokens](#) as needed before the top cap is installed. Do not exceed the maximum number of Bottomless Tokens.



- 9** Install the sag o-ring.



**100 HOUR SERVICE** Proceed to [Lower Leg Installation](#) to install the air spring side upper tube into the lower leg.

**200 HOUR SERVICE** Proceed to the appropriate damper service section.

**BoXXer Ultimate - Charger 3 RC2 Damper:** [Damper Service - Charger 3 RC2](#)

**BoXXer Base - Charger 3 RC Damper:** [Damper Service - Charger 3 RC](#)

**TRAVEL CHANGE** Proceed to [Lower Leg Installation](#) to install the air spring side upper tube into the lower leg.

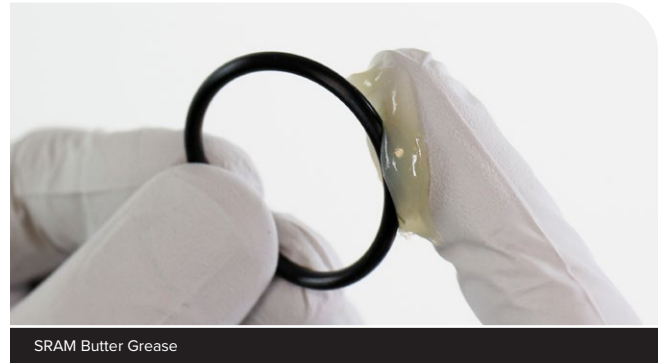
**UPGRADE - DEBONAIR+ AIR SPRING WITH BUTTERCUPS** Proceed to [Lower Leg Installation](#) to install the air spring side upper tube into the lower leg.

**NOTICE**

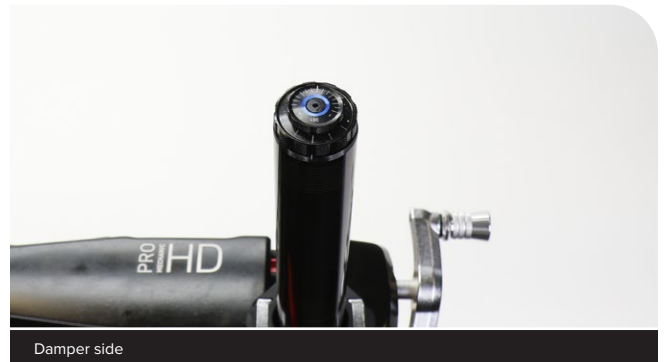
Inspect each part for scratches. Do not scratch any sealing surfaces when servicing your suspension. Scratches can cause leaks.

When replacing seals and o-rings, use your fingers or a pick to remove the seal or o-ring. Spray RockShox Suspension Cleaner or isopropyl alcohol onto each part and clean with a clean lint-free shop towel.

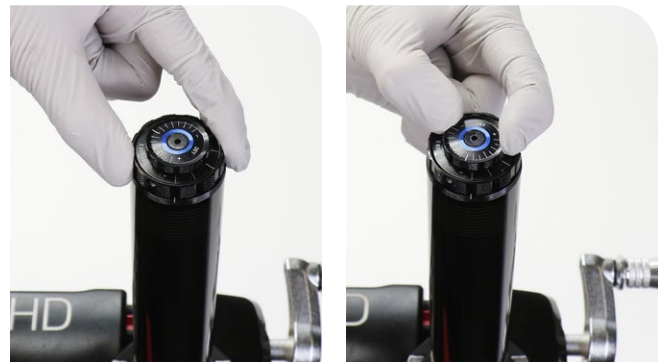
Apply SRAM Butter Grease to the new seals and o-rings.



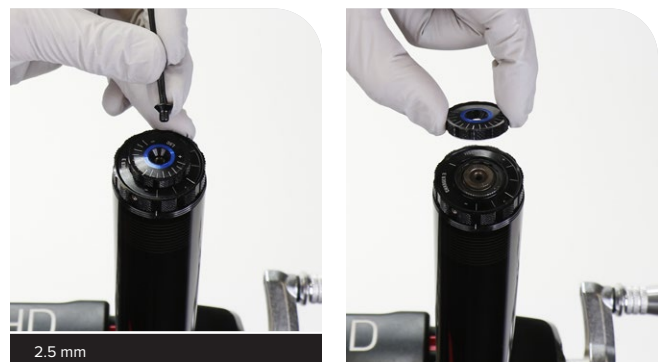
- 1 Clamp the damper side upper tube into the bicycle work stand.



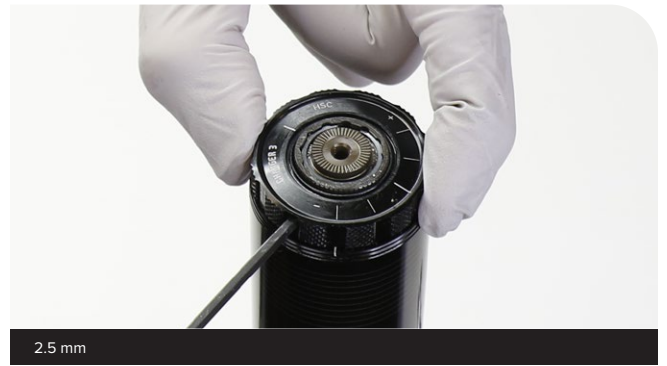
- 2 Rotate the compression adjuster knobs counterclockwise, to the full open positions, until they stop.



- 3 Remove the (LSC) Low Speed Compression Adjuster Knob retaining screw.  
Remove the (LSC) Low Speed Compression Adjuster Knob.



- 4** Loosen the (HSC) High Speed Compression Adjuster Knob set screw.  
Do not remove the set screw.



- 5** Remove the (HSC) High Speed Compression Adjuster Knob.  
Remove the detent plate.



- 1 Unthread the damper top cap and remove the damper assembly. Press down firmly when loosening the top cap.

**NOTICE**

The fork top caps are tightened to a high torque value. Ensure the fork is held securely in the bicycle stand. To avoid damage to the top cap, press the top cap / cassette tool squarely and firmly down when loosening. Use a socket wrench with a long handle for extra leverage.



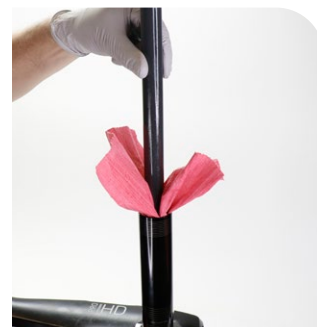
Top cap / cassette tool



- 2 Clean the inside and outside of the upper tube.  
Clean the upper tube threads.



RockShox Suspension Cleaner



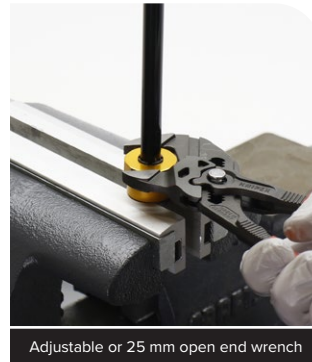
Dowel

- 1 Clamp the lower ButterCups housing into a vise with Reverb Vise Blocks on the wrench flats, with the damper oriented upward.  
Hold the damper shaft for support and unthread the upper ButterCups housing (25 mm) from the lower housing.

**NOTE:** If the upper ButterCups housing cannot be unthreaded apply heat to the ButterCups assembly around the threaded joint with a heat gun to soften the threadlocker.

**NOTICE**

If heat is applied, to avoid damage, do not apply heat to the plastic bushing or overheat any of the parts. Only use a heat gun; do not use a flame.



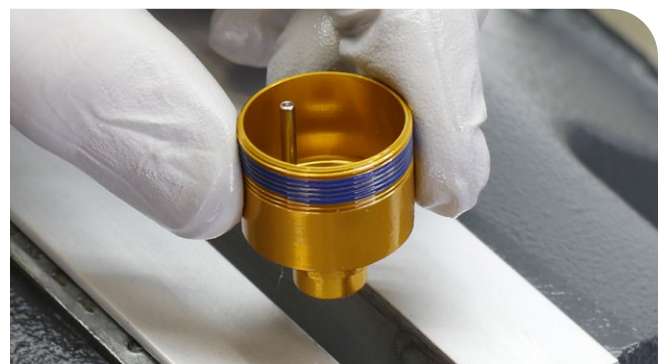
- 2 Remove the damper assembly from the lower cup and set it aside.



- 3 Remove the lower ButterCups bumper from the lower ButterCups housing and discard it.  
Do not remove the alignment bolt.



- 4 Remove the lower ButterCups housing from the vise. Clean the lower ButterCups housing.





- 5** Clamp the damper shaft into the 10 mm slot of the Reverb Vise Blocks or RockShox Rear Shock Vise Blocks with the damper oriented downward.

Clamp the damper shaft only tight enough so it does not spin when the ButterCups shaft end plate is removed.

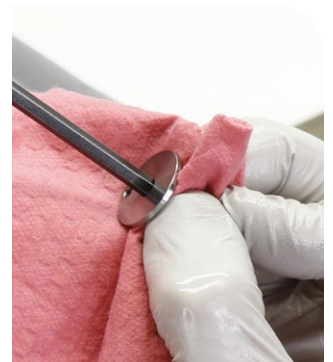
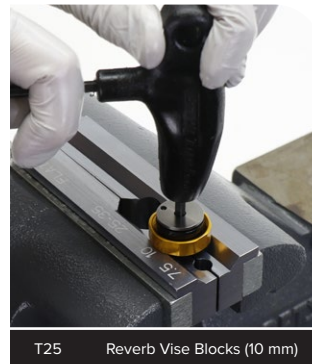
### NOTICE

Scratches can cause oil to leak. Replace the rebound damper assembly if a scratch is visible.

Do not clamp the rebound damper shaft in the middle of the shaft. Clamping force will damage the damper shaft. If the damper shaft is damaged, the rebound damper assembly must be replaced.

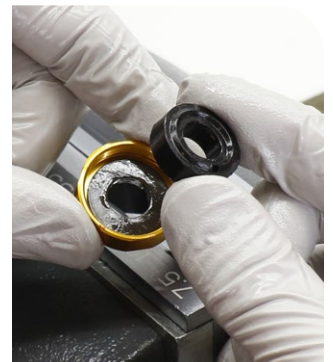
Unthread and remove the ButterCups shaft end plate from the damper shaft.

Clean the end plate.

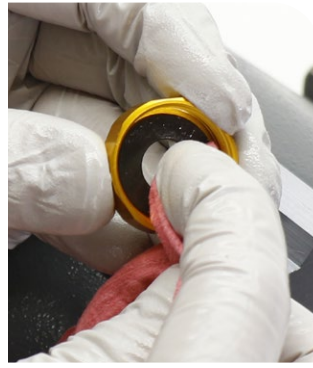


- 6** Remove the upper ButterCups bumper and discard it.  
Remove the upper ButterCups housing and bushing assembly from the damper shaft.

Clean the shaft threads.



**7** Clean the upper and lower ButterCups housings.



- 1 Clamp the damper IFP tube coupler (red) in a vise with Reverb Vise Blocks, top cap oriented upward.



Hold and secure the IFP tube with an open end wrench (28 mm).

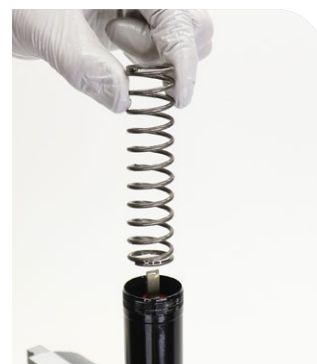
**⚠ WARNING**

The top cap is spring loaded by the IFP spring. To prevent the spring and top cap from ejecting outward when it is unthreaded, press down on the socket wrench and top cap while unthreading the top cap.

Unthread the top cap from the IFP tube. Press down on the socket wrench and top cap until the top cap is completely unthreaded.



- 2 Remove the top cap and IFP spring from the IFP tube.  
Clean the top cap assembly.



- 3 Remove the damper assembly from the vise.  
Clamp the cartridge tube, on the wrench flats, into the vise with the rebound damper shaft oriented upward.  
Secure a shop towel under the rebound sealhead.

**NOTICE**

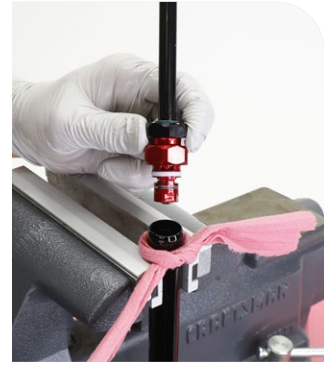
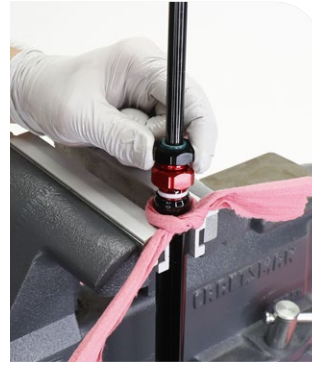
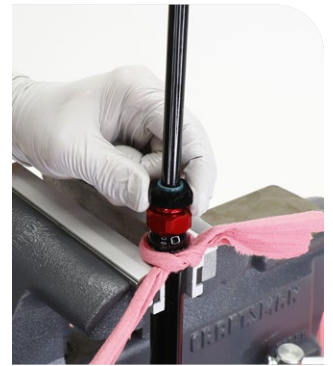
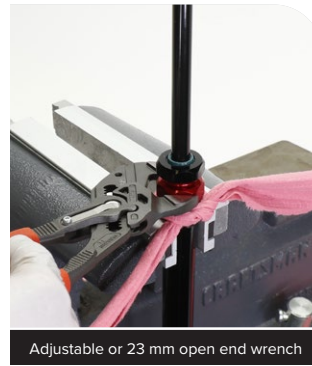
Place an oil pan below the vise to collect oil that drips.



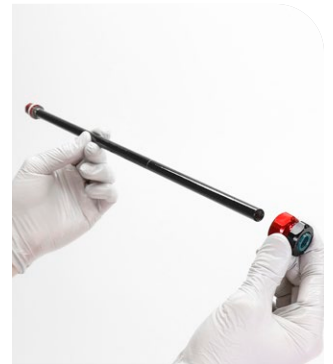
- 4 Unthread and remove the sealhead and rebound damper from the cartridge tube.

**NOTICE**

To avoid separation of the two seahead sections, only unthread the sealhead from the cartridge tube at the red section.



- 5 Remove the sealhead assembly from the rebound damper.  
Discard the sealhead assembly.



- 6 Clean the rebound damper assembly, check for scratches on the shaft, and set it aside.

**NOTICE**

Scratches can cause oil to leak. Replace the rebound damper assembly if a scratch is visible.

Do not remove the glide ring (solid white band) from the rebound piston. The glide ring is not replaceable. If the glide ring is removed, the piston is permanently damaged and the complete rebound damper must be replaced.



- 7 Remove the cartridge tube from the vise and pour the damper oil into an oil pan.



Oil pan

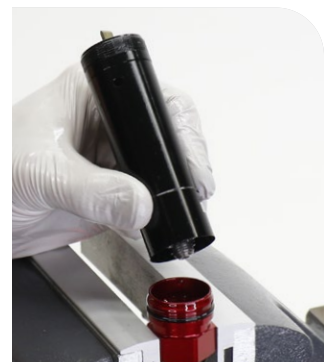
- 8 Clamp the IFP tube coupler (red) in the vise. Unthread and remove the IFP tube assembly from the IFP coupler (red). Remove the IFP coupler from the vise and set it aside.

**NOTICE**

If an adjustable pliers wrench is used, to avoid permanent damage to the IFP tube, do not squeeze/clamp the IFP tube excessively with the pliers wrench.



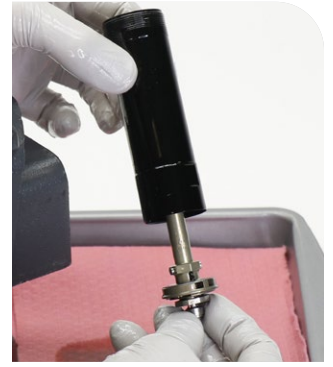
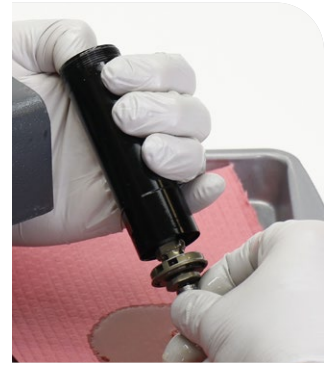
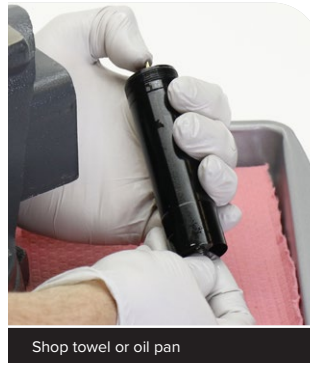
28 mm or adjustable open end wrench





**9** The IFP tube assembly may contain damping oil. Hold the IFP tube assembly, with the exterior hex end downward, over shop towel or oil pan to collect the oil.

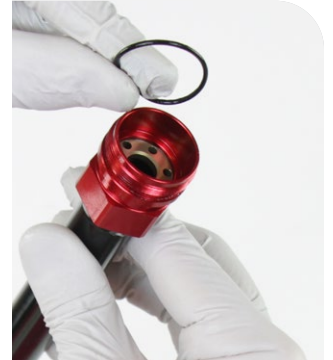
From the exterior threaded end of the IFP tube, press the adjuster tab and push the compression damper assembly out of the IFP tube until the piston assembly exits the IFP tube. Oil will drain onto the shop towel or oil pan.



**10** Remove the cartridge tube from the vise.

Remove the outer o-ring from the red cartridge tube coupler and discard it.

Clean the o-ring groove.



RockShox Suspension Cleaner

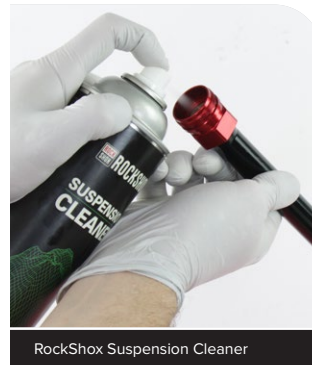


- 11 Spray RockShox Suspension Cleaner into the cartridge tube and set upright on a shop towel to drain.

Inspect the inside of the cartridge tube for scratches.

**NOTICE**

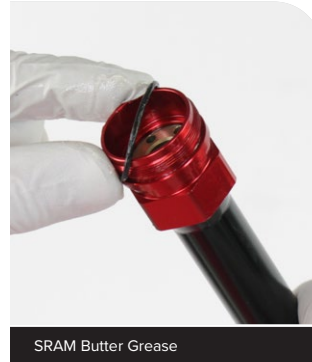
Scratches can cause oil to leak. [Replace the cartridge tube](#) if a scratch is visible.



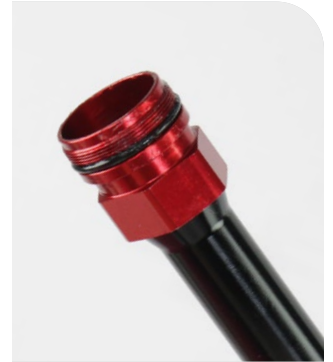
RockShox Suspension Cleaner



- 12 Apply grease to a new o-ring and install it onto the red coupler. Set the cartridge tube aside.

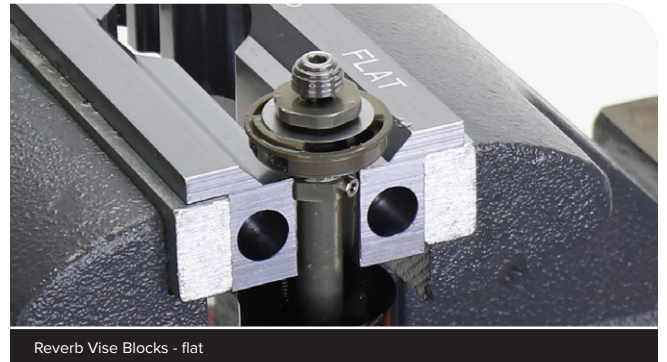


SRAM Butter Grease



- 13 With the piston above the Reverb Vise Blocks, lightly clamp the compression damper hex cam into the vise. Do not clamp on the set screws.

The IFP tube should be below the vise blocks.



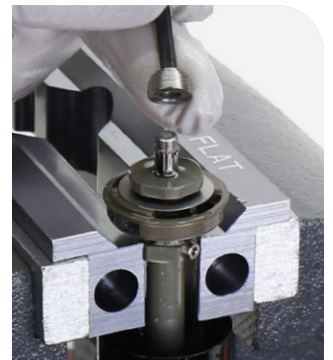
Reverb Vise Blocks - flat

- 14 Unthread and remove the (HSC) High Speed Compression nut from the compression damper assembly.

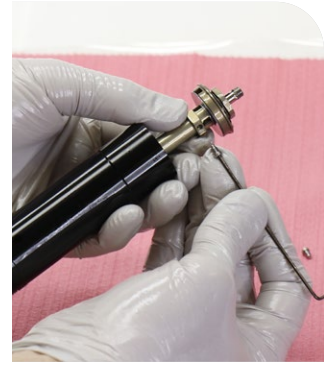
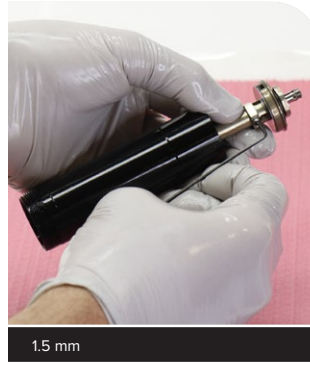
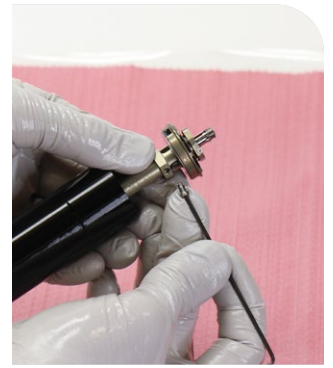
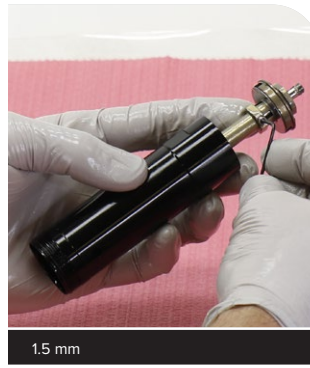
Set the nut aside.



3 mm



- 15** Remove the compression damper assembly and IFP tube from the vise.  
Unthread and remove each cam set screw (x2).  
Set the set screws aside.



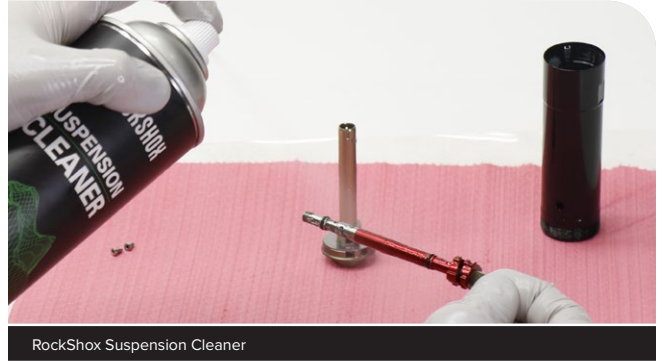
- 16** Remove the (LSC) Low Speed Compression assembly from the (HSC) High Speed Compression/piston assembly.



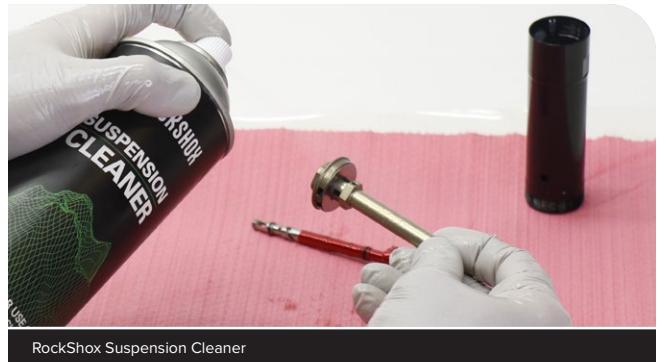
- 17** Remove the (HSC) High Speed Compression/piston assembly from the IFP tube.



- 18** Spray each assembly with RockShox Suspension Cleaner or isopropyl alcohol.



RockShox Suspension Cleaner

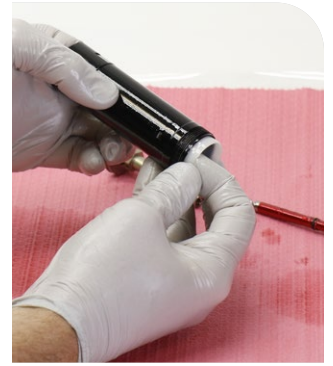


RockShox Suspension Cleaner

19 Push the IFP out of the IFP tube and remove it.

**NOTICE**

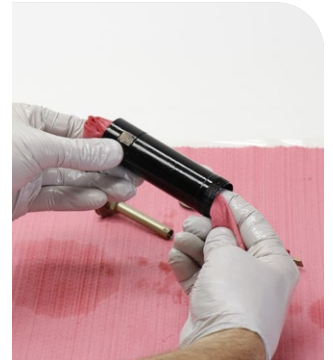
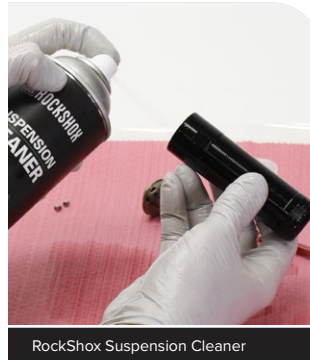
Do not scratch the inside surface of the IFP tube. Scratches can cause oil to leak. Replace the IFP tube if a scratch is visible.



20 Clean the IFP tube and inspect it for scratches. Set the IFP tube aside.

**NOTICE**

Do not scratch the inside surface of the IFP tube. Scratches can cause oil to leak. Replace the IFP tube if a scratch is visible.

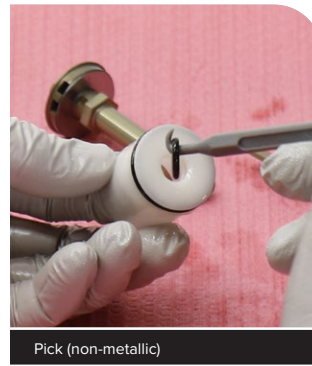




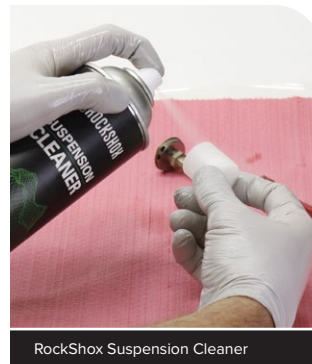
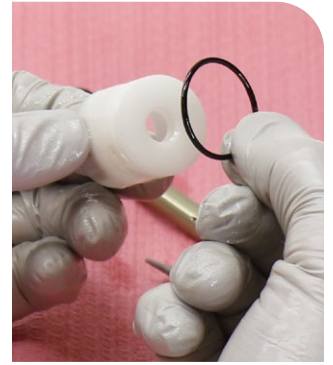
- 21** Remove the inner and outer IFP o-rings and discard them.  
Clean the IFP and inspect it for scratches.

**NOTICE**

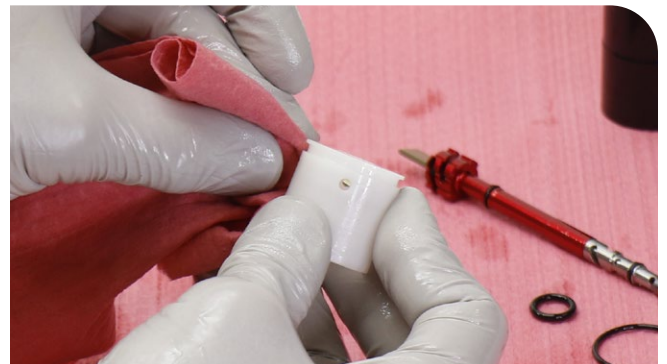
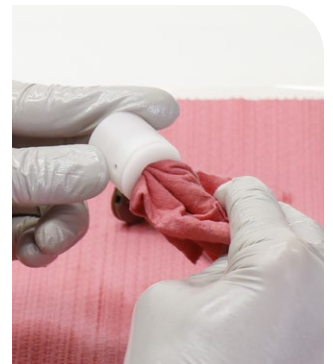
Do not scratch the o-ring grooves in the IFP. Scratches will cause oil to leak. The IFP must be replaced if a scratch is visible in the o-ring grooves.



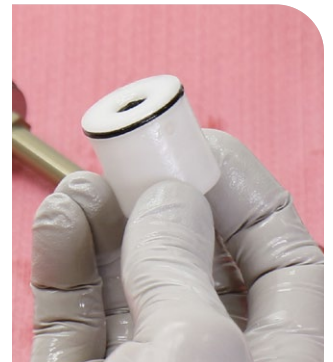
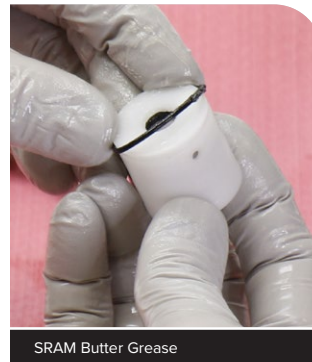
Pick (non-metallic)



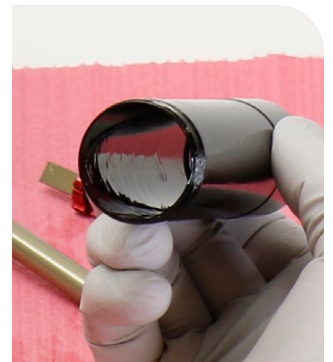
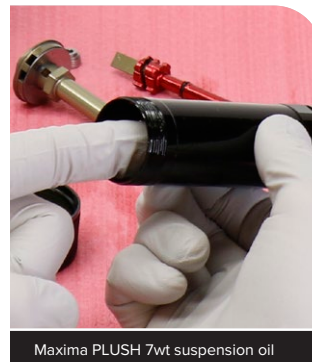
RockShox Suspension Cleaner



- 1 Apply grease to the new inner and outer IFP o-rings and install them onto the IFP.



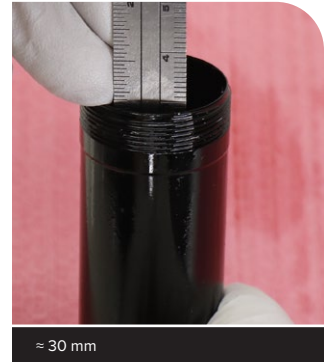
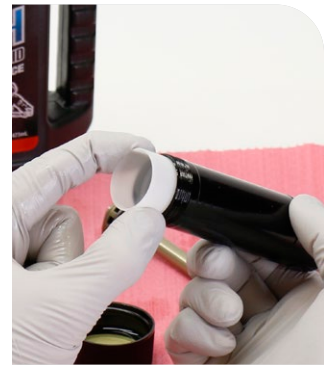
- 2 Apply a thin coat of suspension oil to the inner surface of the IFP tube.





**3** Insert and install the IFP into the IFP tube, flat end/outer o-ring first, into the outer threaded end of the IFP tube.

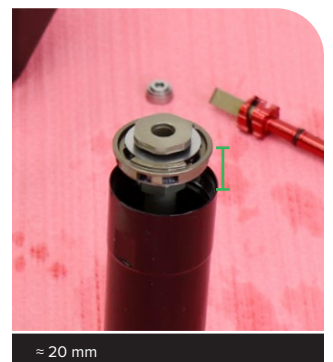
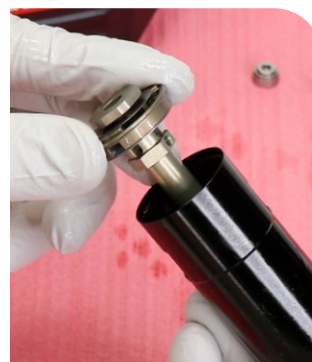
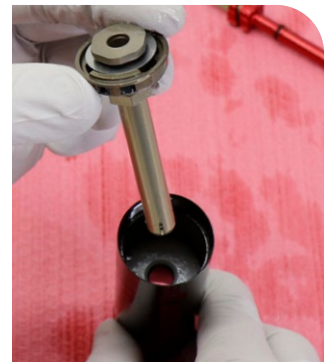
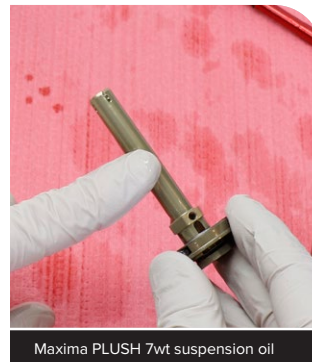
Press the IFP into the IFP tube until it is approximately 30 mm from the end of the opposite (internal threads) end of the tube.



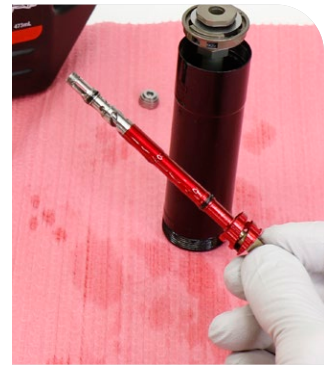
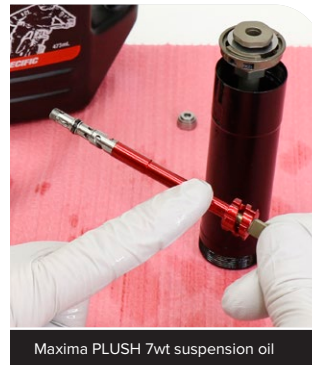
**4** Apply a light coat of suspension oil to the (HSC) High Speed Compression/piston assembly shaft (outer/wider shaft).

From the hex end of the IFP tube, insert the (HSC) High Speed Compression/piston assembly into and through the center of the IFP.

Press it into the IFP until the piston assembly is approximately 20 mm above the internal thread end of the IFP tube.



- 5** Apply suspension oil to the (LSC) Low Speed Compression/piston assembly shaft and o-rings (inner/narrow shaft).



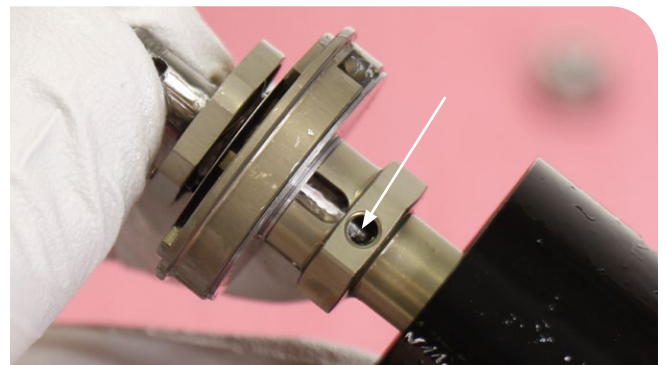
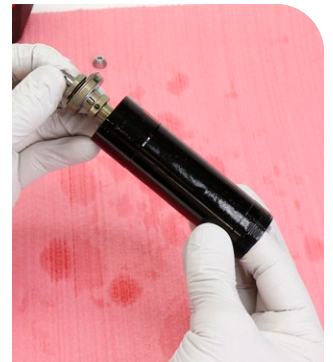
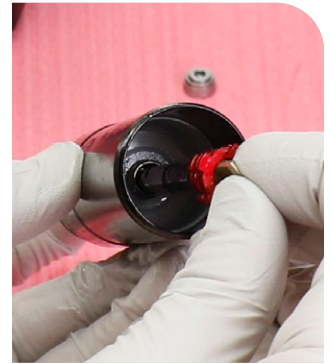
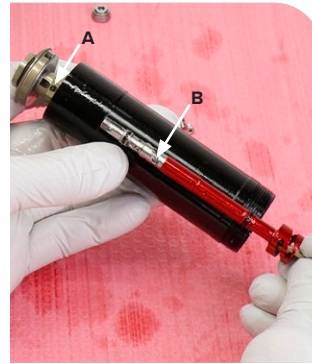
- 6** Align the bolt hole (A) in the (HSC) High Speed Compression assembly with the adjustment groove stop (B) in the (LSC) Low Speed Compression shaft assembly.

Hold the piston to keep it from moving.

From the external threaded end of the IFP tube, insert the (LSC) Low Speed Compression shaft assembly, silver narrow end first, into the (HSC) High Speed Compression/piston assembly shaft.

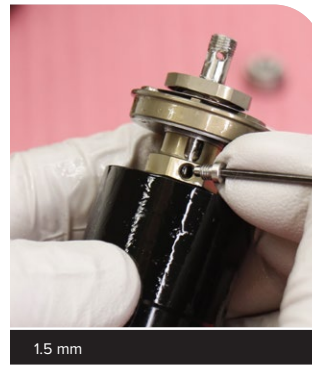
Push the (LSC) Low Speed Compression/piston assembly until the narrow silver shaft end protrudes through the piston bolt, until it stops, snaps into place, and is completely seated. The narrow end of the LSC shaft should protrude through the piston bolt.

Confirm the bolt hole in the (HSC) High Speed Compression assembly with the adjustment groove stop in the (LSC) Low Speed Compression shaft assembly are aligned. The bolts cannot be installed if they are misaligned.

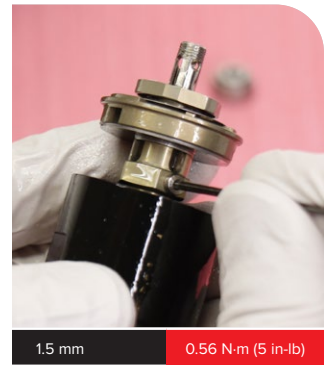


**7** Install each cam set screw (2 total) evenly finger tight. Tighten each to the specified torque.

The set screws secure the (LSC) Low Speed Compression shaft in the (HSC) High Speed Compression shaft.

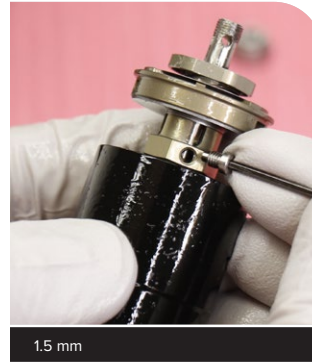


1.5 mm

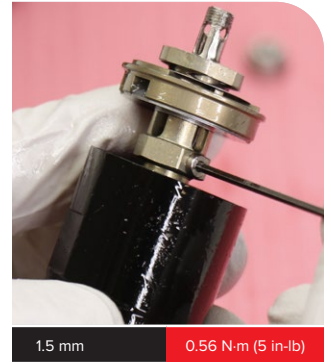


1.5 mm

0.56 N·m (5 in-lb)



1.5 mm



1.5 mm

0.56 N·m (5 in-lb)

**8** Pull the piston up until it is above the end of the IFP tube.

Clamp the (HSC) High Speed Compression assembly into the vise at the cam hex wrench flats. The piston should be above the vise blocks and the IFP tube should be below the vise blocks.

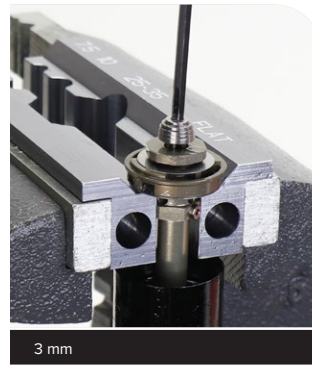
Do not clamp on the set screws.



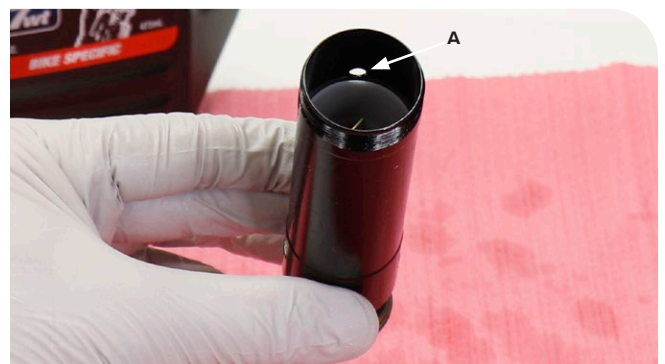
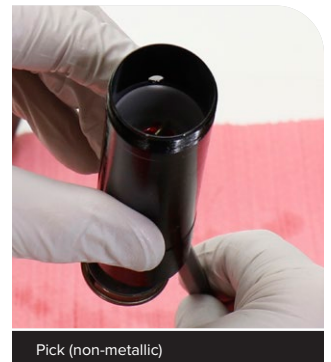
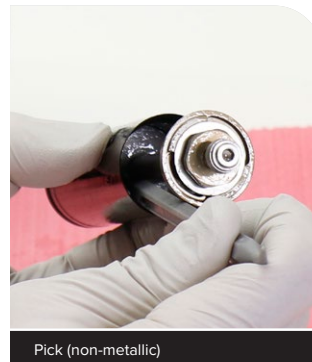
Reverb Vise Blocks



- 9** Install the compression nut onto the inner (LSC) Low Speed Compression rod end and tighten it.
- The LSC adjuster will rotate when the nut is tightened. Rotate it counterclockwise back to full extension after the nut is tightened. Remove the assembly from the vise.



- 10** **Set the IFP:** Using a non-metallic pick, push the IFP evenly into the IFP tube until the hollow end (opposite side) is just below the IFP tube bleed port hole (A). The IFP should not cover the bleed port hole.



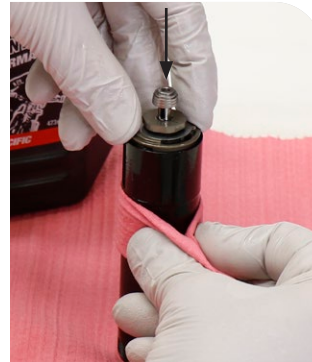
**11** Push the piston down until it is approximately 10 mm above the end of the IFP tube.

Inject suspension oil into the IFP tube until it is full. Oil will fill the IFP tube above the IFP and below the piston.



**12** Hold a shop towel around the IFP tube.

Push the piston down and into the IFP tube until it stops.

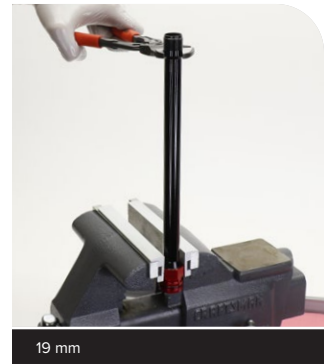


## Replace Cartridge Tube (optional)

Replace the cartridge tube if it is damaged.

- 1 If the cartridge tube requires replacement, the IFP tube coupler must be removed.

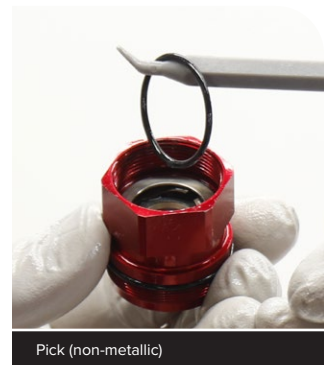
Clamp the coupler in the vise. Unthread the cartridge tube from the coupler.



Remove the cartridge tube.



- 2 Remove the o-rings from the coupler.

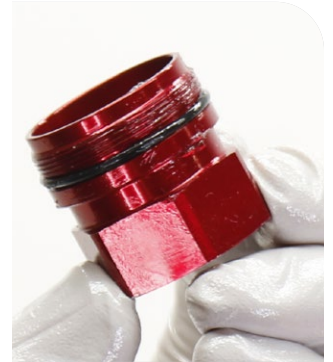
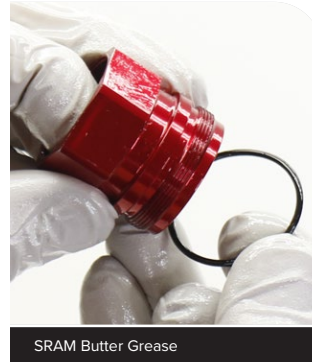
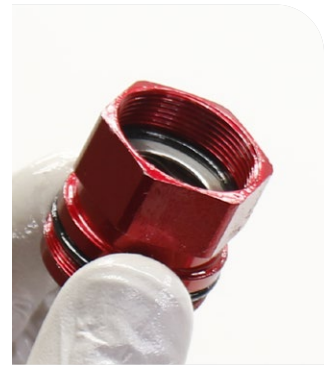
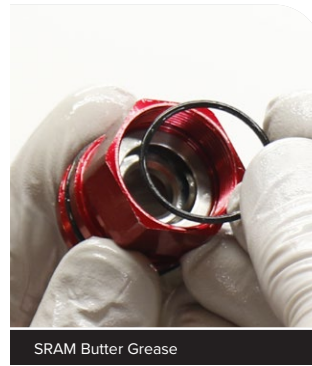


- 3 Clean the coupler.

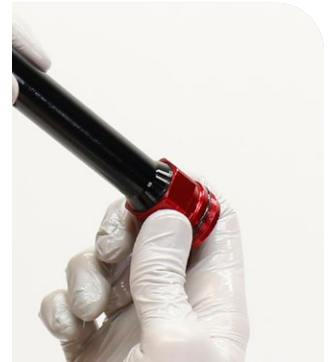




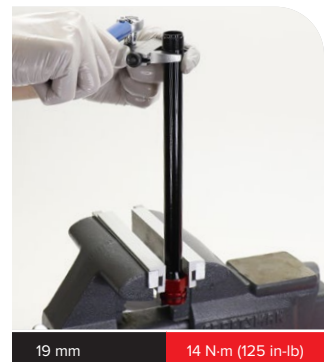
- 4** Apply grease to a new o-rings and install them into the coupler. Install the coupler spacer.



- 5** Thread the coupler onto a new cartridge tube hand tight. Do not tighten the cartridge tube with a wrench. The cartridge tube and coupler will be tightened to the specified torque when the IFP coupler and compression damper top cap are tightened to the specified torque.



- 6** Clamp the coupler in a vise. Tighten the cartridge to the coupler to the specified torque.



- 1** Hold the IFP tube secure so it does not move.  
Thread the IFP tube coupler onto the IFP tube and tighten it hand tight.



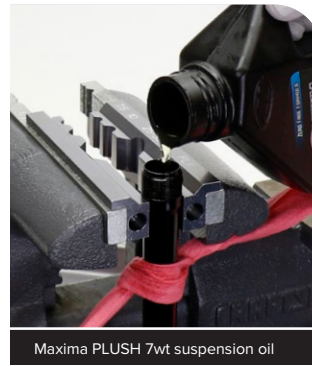
- 2** Clamp the cartridge tube assembly into the vise at the wrench flats with the IFP tube/assembly oriented downward.



- 3** Tighten the IFP tube and IFP coupler onto the cartridge tube. When tightened, the IFP tube, IFP coupler, and cartridge tube will all be tightened to the same torque.



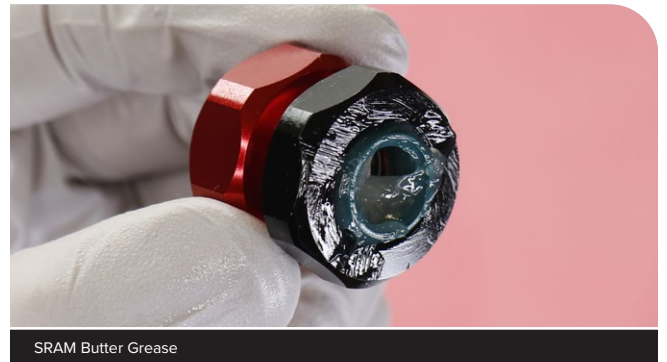
- 4** Secure a shop towel around the cartridge tube.  
Pour suspension oil into the cartridge tube until it is full.



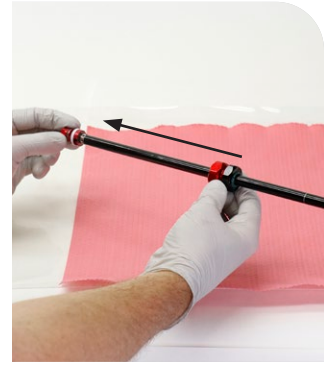
Remove any bubbles if visible.



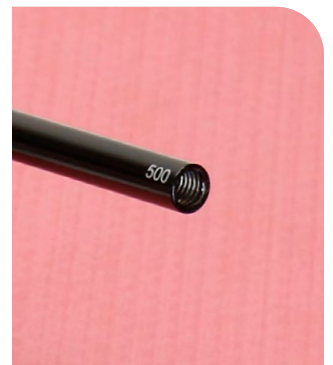
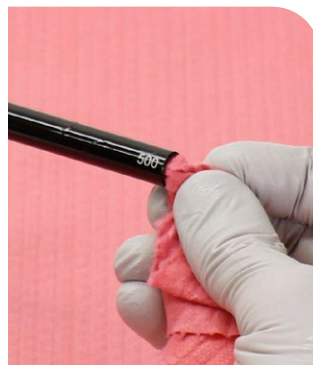
- 5** Apply grease to the wiper seal on the new rebound damper sealhead assembly.



- 6** Install the sealhead assembly onto the rebound damper shaft and slide it to the rebound piston until it stops.



- 7** Clean the grease from the shaft threads.





**8** Insert the rebound adjuster knob in the rebound shaft and rotate counterclockwise until it stops. This is the full open rebound setting.



**9** Secure a shop towel around the damper tube to absorb displaced oil. While pulling up on the rebound damper to maintain contact with the sealhead, insert the rebound damper piston into the cartridge tube. Continue to apply opposing pressure to the sealhead with the rebound damper and thread the sealhead onto the end of the cartridge tube until it is hand tight.

**NOTICE**

Do not push the rebound damper into the cartridge tube while threading the sealhead onto the cartridge tube.



**10** Tighten the sealhead to the specified torque. Tighten the red section of the sealhead to the cartridge tube.

**NOTICE**

Scratches can cause oil to leak. Replace the rebound damper assembly if a scratch is visible.

Remove the damper from the vise.

Clean damper assembly.



23 mm

14 N.m (125 in-lb)

**NOTICE**

The BoXXer Ultimate Charger 3 RC2 damper shaft ButterCups assembly is NOT compatible with the BoXXer Base Charger 3 RC rebound damper shaft. Do NOT install a damper shaft ButterCups assembly onto a BoXXer Base Charger 3 RC damper shaft.

- 1** Clamp the damper shaft into the 10 mm slot of the Reverb Vise Blocks or RockShox Rear Shock Vise Blocks.

Clamp the damper shaft only tight enough so it does not spin when the ButterCups shaft end plate is tightened.

Install the upper ButterCups housing and a new bumper.

**NOTICE**

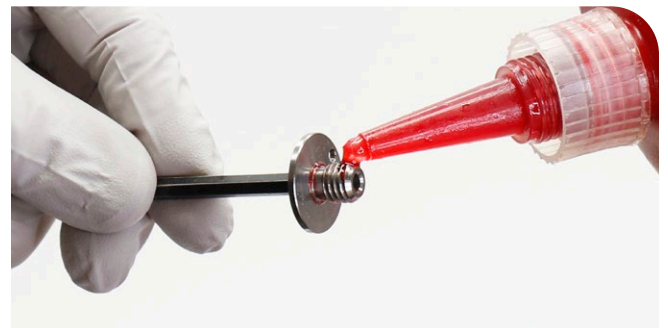
Do not clamp the rebound damper shaft in the middle of the shaft. Clamping force will damage the damper shaft. If the damper shaft is damaged, the rebound damper assembly must be replaced.



Reverb Vise Blocks (10 mm)



- 2** Apply Threadlocker Loctite 2760 (red), or equivalent, to the first three full threads on the end of the end plate.

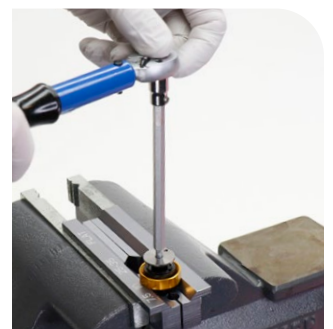


Threadlocker Loctite 2760 - Red

- 3** Thread the ButterCups shaft end plate into the damper shaft and tighten it.



T25 Reverb Vise Blocks (10 mm)



T25 5 N·m (45 in·lb)



- 4** Install the lower ButterCups housing bumper into the lower ButterCups housing, wide side down, in alignment with the bolt.



- 5** Apply Threadlocker Loctite 242 (blue), or equivalent, to three full outer threads on the lower ButterCups housing.

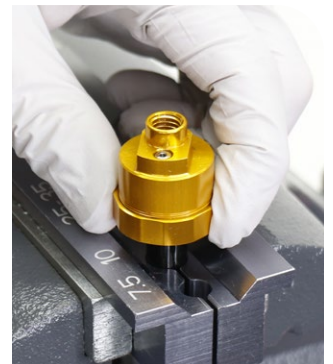
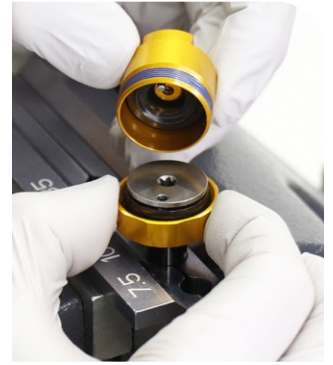


**6** Align the holes in the bumper and end plate.

Install the lower ButterCups housing/bumper assembly onto the ButterCups shaft end plate; insert the bolt through the end plate bolt hole.

Slide lower cup to the upper bumper end plate, and position the alignment bolt through the hole on the end plate.

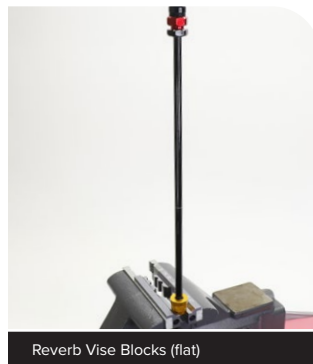
Thread the upper ButterCups housing onto the lower ButterCups housing finger tight.



**7** Remove the rebound damper shaft from the vise and vise blocks.

Clamp the lower ButterCups housing into a vise with RockShox Vise Blocks on the wrench flats, damper oriented upward.

Tighten the upper ButterCups housing onto the lower housing.



- 1 Rotate the adjuster tab counterclockwise until it stops. This is the full open position.  
Insert the IFP coil spring into the IFP damper tube. The spring will rest on top of the IFP.



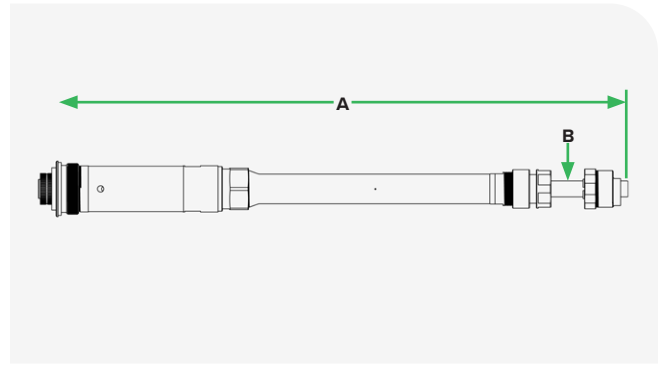
- 2 Position the ButterCups end on a flat surface.  
**Optional:** Clamp the ButterCups shaft end in the vise with Reverb Vise Blocks for added stability if needed.



**3** To purge oil from above the IFP, the IFP must be manually compressed into the IFP tube with the IFP spring, while the rebound damper is compressed and cycled into the cartridge damper tube.

Locate the bleed line (C) on the rebound damper shaft. During the bleed process, the damper should be compressed to the bleed line (C), and no further.

A - Total Damper Length (mm) when Compressed	B - Rebound Shaft / Fork Model Reference Number (printed on rebound damper shaft)
553	500



**4** Place a shop towel over the IFP spring.

Press the IFP coil spring down and into the IFP tube about half way, and hold it steady. This pushes the IFP into the IFP tube and applies opposing force, creating pressure within the cartridge tube.



**5** While still holding the IFP spring compressed, slowly compress the damper until the rebound sealhead is even with the bleed line (A) on the rebound damper shaft. During the bleed process, the rebound damper must not be compressed further than the bleed line (A) on the rebound damper shaft.

A small amount of oil should purge from the bleed hole in the IFP tube.

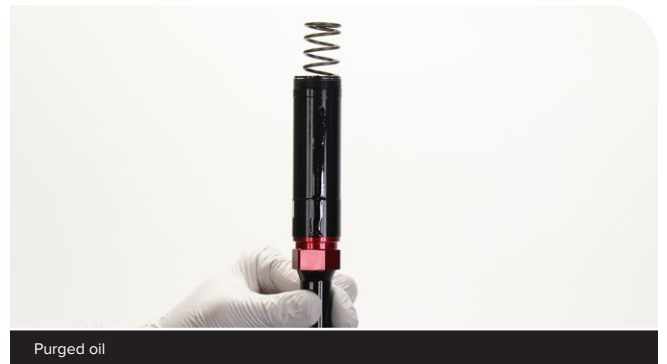
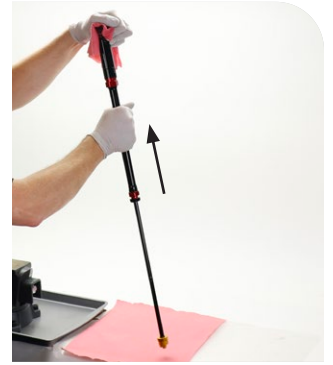
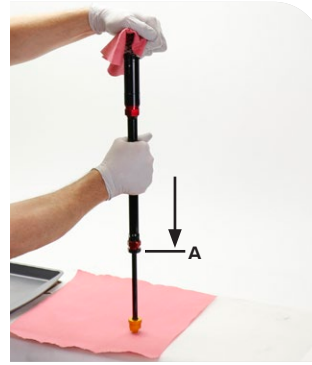
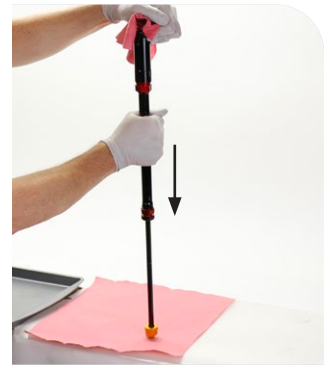
Lift the damper up slowly, while maintaining pressure on the IFP spring, and allow the rebound damper to extend. Compressing the IFP will apply opposing pressure in the damper to allow the rebound damper to extend fully.

**Repeat this process 2 more times (3 total).**

The IFP tube may contain a small amount of oil after oil is purged from the bleed port. Pour out any remaining oil from the IFP tube into an oil pan before installing the top cap.

**⚠ CAUTION**

Oil may exit the cartridge tube bleed hole. Wear safety glasses and keep your eyes and face away from the bleed hole when compressing the rebound damper.



**6** Clamp the red coupler in the vise.

Align the keyed end of the compression adjuster under the top cap (A), with the (LSC) Low Speed Compression damper adjuster tab (B).

While pushing down firmly and evenly, visually confirm the (LSC) Low Speed Compression adjuster tab engages the mating (LSC) Low Speed Compression damper adjuster tab.

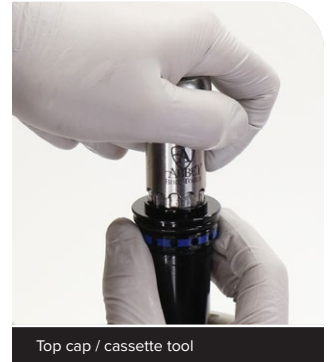
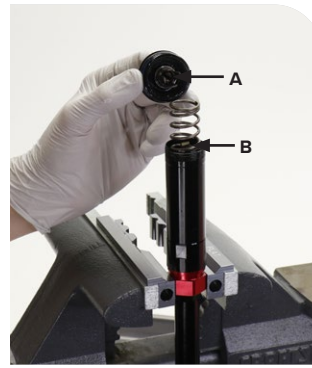
Press the top cap down, compress the IFP spring, align the keyed parts, and engage the top cap threads slowly when the keyed parts are aligned and engaged.

Press down with the top cap tool and slowly thread the top cap onto the cartridge tube.

### NOTICE

The top cap threads will not engage if the keyed adjuster parts are not aligned and engaged.

Do not cross-thread the top cap and IFP tube.



Top cap / cassette tool

**7** When the threads are engaged properly, thread the top cap onto the IFP tube and tighten to torque.



Top cap / cassette tool

14 N·m (125 in·lb)

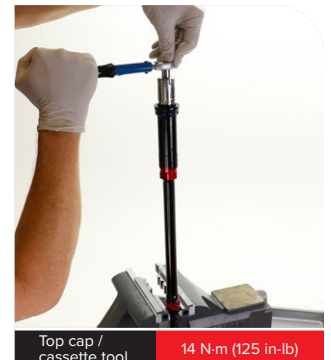
**8** Remove the damper from the vise.

With the rebound damper shaft oriented downward, clamp the rebound sealhead into the vise at the wrench flats.

Tighten the compression damper top cap to the specified torque.



Reverb Vise Blocks (flat)



Top cap / cassette tool

14 N·m (125 in·lb)



- Temporarily install the LSC adjuster knob onto the compression adjuster. Install and tighten the retaining screw finger tight.  
Rotate the (LSC) Low Speed Compression adjuster clockwise until it stops. This is the firmest LSC compression setting.

**⚠ CAUTION**

Oil may exit the cartridge tube bleed hole. Wear safety glasses and keep your eyes and face away from the bleed hole when compressing the rebound damper.

Cover the bleed hole with a shop towel.

During the damper test process, the rebound damper must not be compressed further than the bleed line on the damper shaft.

Push the rebound damper into the cartridge tube slowly. Firm and consistent resistance should be felt with no gaps in movement. Do not push the rebound damper in further than the bleed line on the rebound damper shaft.

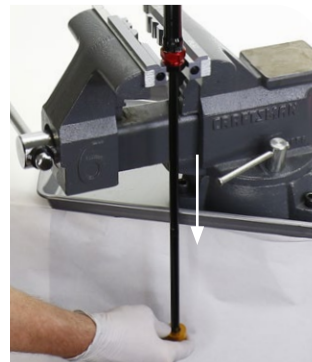
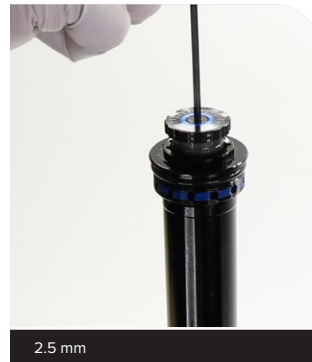
A small amount of oil may purge from the bleed port.

Rotate the LSC compression adjuster counterclockwise to the full open setting and repeat the compression test. Light consistent resistance should be felt with no gaps in movement.

If gaps are felt during compression, repeat the oil fill and bleed process. If the assembly process was successful, set the compression damper to the open setting.

Wipe away any oil from the damper assembly.

Remove the LSC adjuster knob when the test is complete.



- 1 Remove the o-ring from the top cap.  
Clean the top cap threads and o-ring groove.



Apply grease to a new top cap o-ring and install it.



- 2 Install the damper assembly into the damper side upper tube. Use your fingers to guide the damper and damper shaft into the upper tube without scratching the shaft.



- 3 Thread the top cap into the upper tube and tighten it. Press down firmly when tightening the top cap.



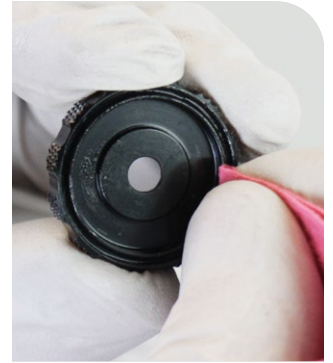
Top cap / cassette tool

7.3 N·m (65 in·lb)

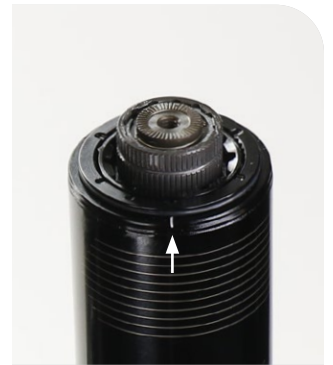
- 1 Remove the glide ring from the compression adjuster knob and discard it.

Clean the groove.

Install a new glide ring.



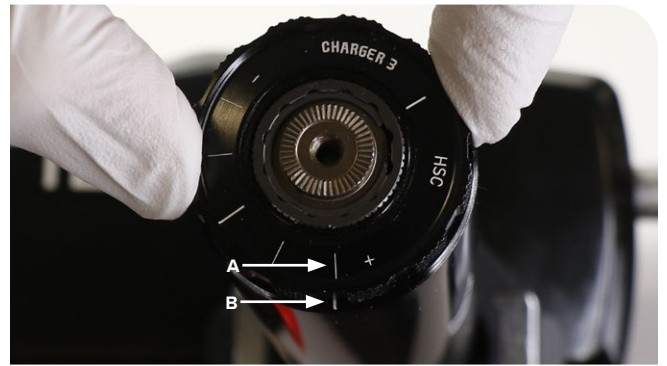
- 2 Install the High Speed Compression (HSC) knob detent plate.



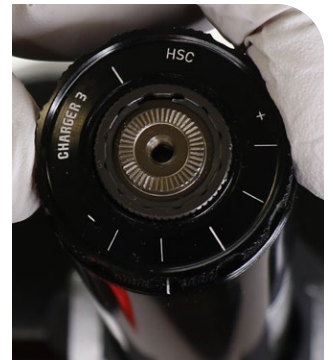
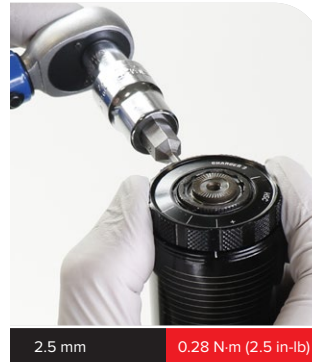
- 3 Rotate the (HSC) High Speed Compression adjuster cam **clockwise**, by hand, until it stops.



- 4 Install the HSC knob and align the (+) alignment mark (A) with the alignment mark (B) on the detent plate at the back of the crown.



- 5 Tighten the HSC knob set screw.  
Check function - Rotate the knob counterclockwise and confirm each detent alignment mark aligns with the alignment mark on the detent plate. Rotate the HSC adjuster knob back to the full clockwise closed position.





**6** Temporarily install the LSC adjuster knob in any position and tighten the bolt. When tightened, the internal LSC adjuster will rotate to the full clockwise closed position.

Hold the large HSC knob, loosen and unthread the LSC adjuster knob bolt. The LSC knob and adjuster will rotate to the full counterclockwise open position.



**7** Rotate and position the LSC adjuster knob to the full open (-) LSC setting/position. Align the LSC (A) and HSC (B) adjuster knob alignment marks as pictured.

Hold the LSC knob and tighten the bolt finger tight. Do not allow the knob to rotate.

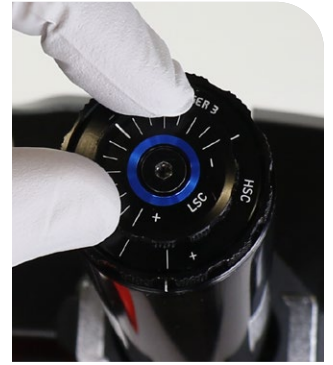
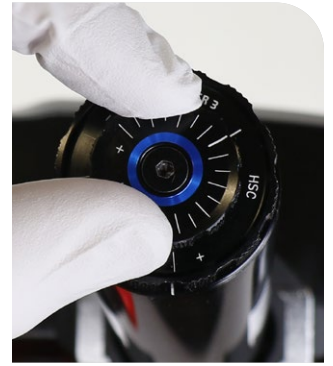


Tighten the LSC adjuster knob retaining screw. The knob will rotate to the full clockwise closed position when the bolt is tightened.



**8** Rotate the LSC adjuster knob back to the full counterclockwise open position to check function.

Check function. Rotate the LSC knob and confirm each detent alignment mark aligns with the alignment mark on the HSC knob.



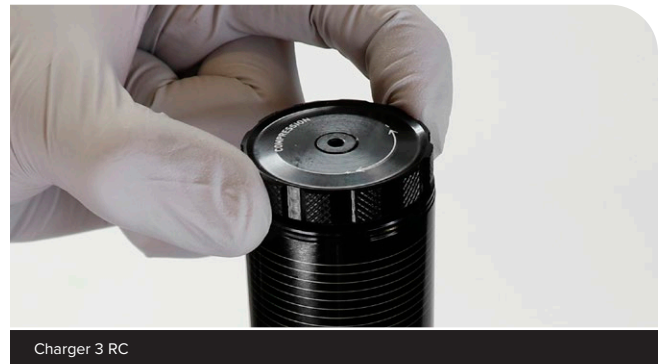
**200 HOUR SERVICE** Proceed to [Lower Leg Installation](#).

**UPGRADE - CHARGER 3 RC2 DAMPER WITH BUTTERCUPS** Proceed to [Lower Leg Installation](#).

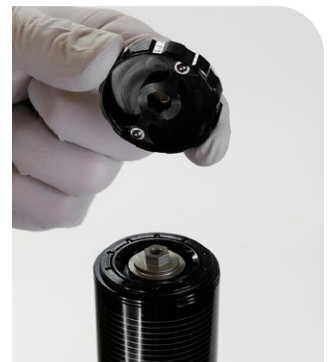
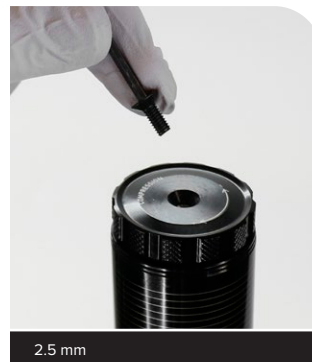
**1** Clamp the damper side upper tube into the bicycle work stand.



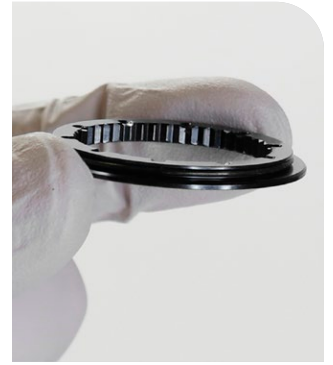
**2** The compression damper must be in the full CLOSED position for disassembly.  
Rotate the compression adjuster knob clockwise, to the full CLOSED position, until it stops.



**3** Remove the retaining screw and remove the compression adjuster knob. Clean the compression adjuster knob and set it aside.



- 4** Remove the compression detent plate.  
Remove the o-ring from the compression detent plate and discard it.  
Clean the compression detent plate.  
Install a new o-ring (do not apply grease).

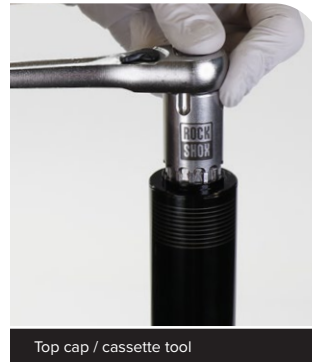


- 1 Unthread the damper top cap and remove the damper assembly. Press down firmly when loosening the top cap.

**NOTICE**

The fork top caps are tightened to a high torque value. Ensure the fork is held securely in the bicycle stand. To avoid damage to the top cap, press the socket tool squarely and firmly down when loosening. Use a socket wrench with a long handle for extra leverage.

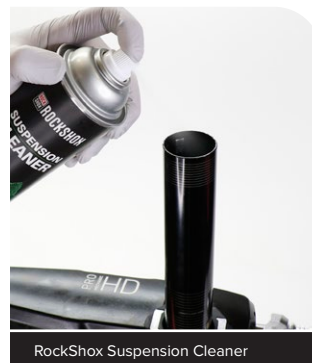
To prevent scratching the rebound damper shaft, use your fingers to protect and guide the shaft as you remove the damper assembly from the upper tube.



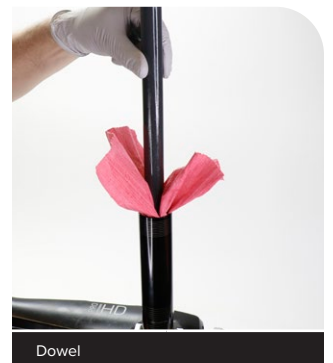
Top cap / cassette tool



- 2 Clean the inside and outside of the upper tube.  
Clean the upper tube threads.



RockShox Suspension Cleaner



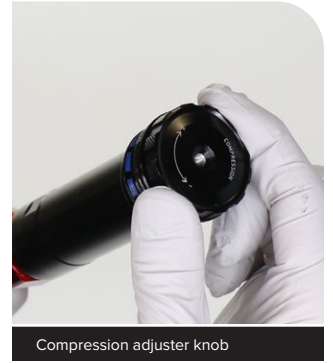
Dowel



**UPGRADE - CHARGER 3 RC2 DAMPER WITH BUTTERCUPS** Proceed to [Damper Installation - Charger 3 RC2](#).



- 1 Confirm the compression damper is in the full closed position. Use the compression adjuster knob to rotate the hex compression adjuster to the full closed position.



Compression adjuster knob

- 2 Clamp the damper IFP tube coupler (red) in a vise with Reverb Vise Blocks, top cap oriented upward.

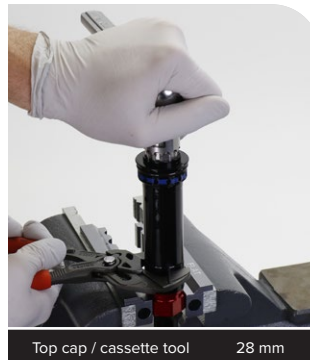


Reverb Vise Blocks - flat

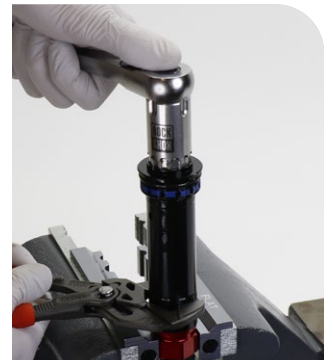
Hold and secure the IFP tube with an open end wrench. Press down on the socket wrench firmly and square. Quickly and firmly unthread the top cap and break the bond from the IFP tube. **Do not unthread the top cap; only break it free from the IFP tube.**

**NOTICE**

Compression damper internals can be permanently damaged if the top cap is completely unthreaded at this point. Do not unthread the top cap.



Top cap / cassette tool 28 mm



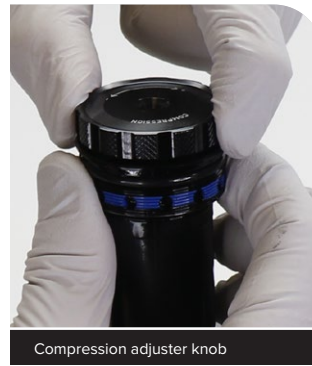
- 3** Place the compression adjuster knob on the hex adjuster. Hold the hex adjuster on the compression top cap in the full clockwise CLOSED position with the compression adjuster knob. Use the adjuster knob to prevent the hex adjuster from rotating counterclockwise when the top cap is unthreaded.

**NOTICE**

To prevent internal binding and damage, the internal compression adjuster needle cannot rotate with the top cap as the top cap is unthreaded.

Unthread the top cap by hand while holding the hex compression adjuster in the full closed position with the adjuster knob. The adjuster knob should stay in the full clockwise closed position as the top cap is unthreaded. Do not allow the compression adjuster knob to rotate counterclockwise.

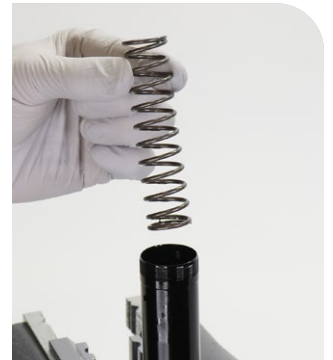
The top cap is spring-loaded. Apply downward pressure on the adjuster knob to prevent the top cap from ejecting from when the top cap is completely unthreaded.



Compression adjuster knob



- 4** Remove the top cap and IFP spring.

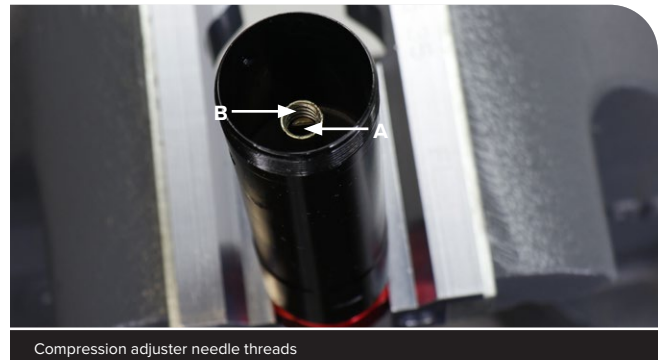


- 5** Confirm the inner compression adjuster needle (A) is threaded into the compression adjuster (B) and it has not unthreaded when the top cap was unthreaded.

Approximately three inner threads should be visible.

**NOTICE**

If the compression adjuster needle is not held in place, and prevented from rotating with the top cap, the needle will unthread before the top cap and will bind with the top cap adjuster tab causing permanent damage to the compression adjuster tab and top cap assembly.



Compression adjuster needle threads

- 6** Remove the damper assembly from the vise.  
Clamp the cartridge tube, on the wrench flats, into the vise with the rebound damper shaft oriented upward.  
Secure a shop towel around the cartridge tube under the sealhead to absorb oil.

**NOTICE**

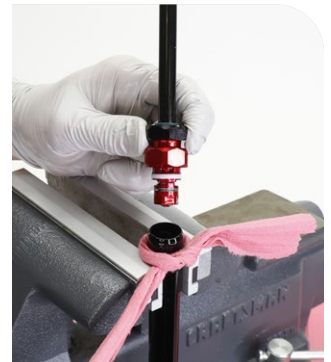
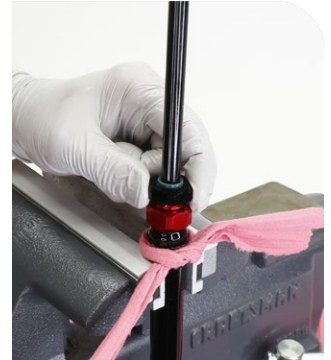
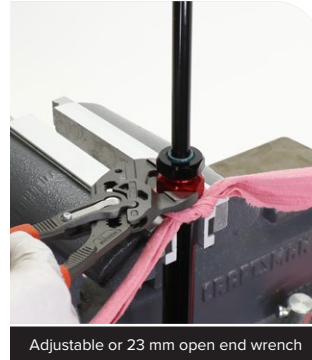
Place an oil pan below the vise to collect oil that drips.



- 7** Unthread and remove the sealhead and rebound damper from the cartridge tube.

**NOTICE**

To avoid separation of the two seahead sections, do not unthread the black section of the sealhead from the red section.



- 8 Clamp the rebound shaft into the 10 mm slot in the Reverb Vise Block or RockShox Rear Shock Vise Block.

**NOTICE**

Do not clamp the rebound damper shaft in the middle of the shaft. Clamping force will damage the damper shaft. If the damper shaft is damaged, the rebound damper assembly must be replaced.

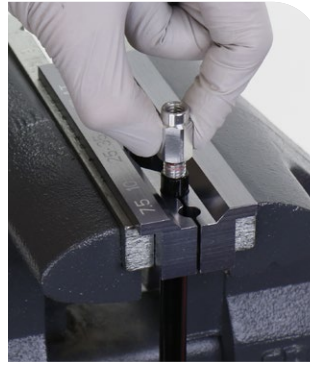
Unthread and remove the rebound damper shaft spacer.



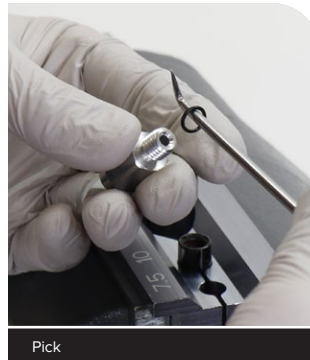
Reverb Vise Blocks - 10 mm



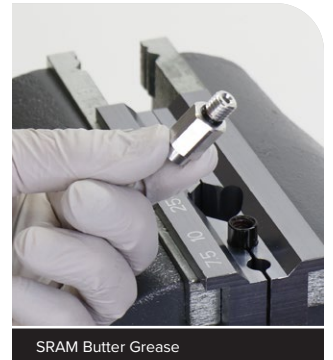
12 mm



- 9 Remove the o-ring and discard it. Clean the threads.  
Apply grease to a new o-ring and install it onto the shaft spacer.



Pick

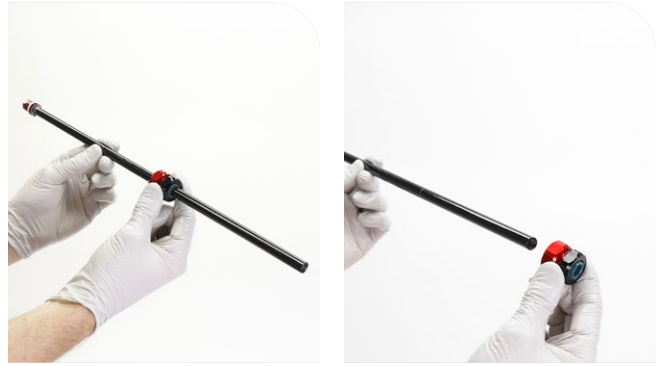


SRAM Butter Grease

- 10 Clean the rebound damper threads.



- 11** Remove the sealhead assembly from the rebound damper.  
Discard the sealhead assembly.



- 12** Clean the rebound damper assembly, check for scratches on the shaft, and set it aside.

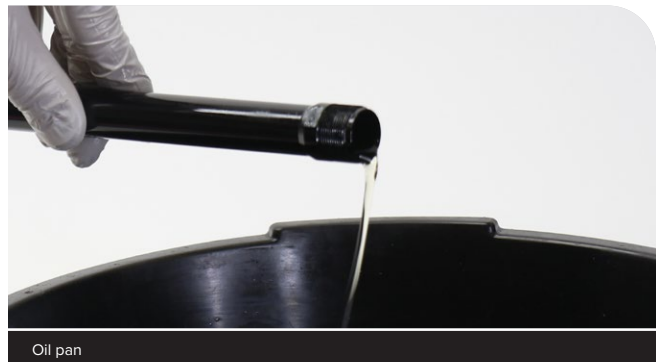
**NOTICE**

Scratches can cause oil to leak. Replace the rebound damper assembly if a scratch is visible.

Do not remove the glide ring (solid white band) from the rebound piston. The glide ring is not replaceable. If the glide ring is removed, the piston is permanently damaged and the complete rebound damper must be replaced.



- 13** Remove the cartridge tube from the vise and pour the damper oil into an oil pan.





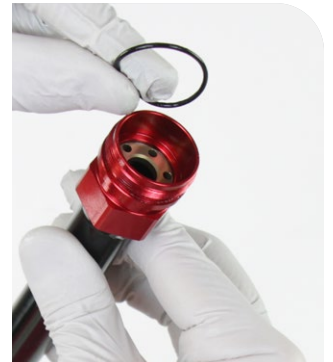
- 14** Clamp the IFP tube coupler (red) hex wrench flats.  
Unthread and remove the IFP tube assembly from the IFP coupler (red).  
Remove the cartridge tube from the vise.

**NOTICE**

If an adjustable pliers wrench is used, to avoid permanent damage to the IFP tube, do not squeeze/clamp the IFP tube excessively with the pliers wrench.



- 15** Remove the cartridge tube from the vise.  
Remove the outer o-ring from the red cartridge tube coupler and discard it.  
Clean the o-ring groove.

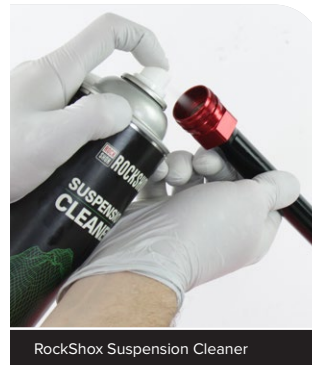


**16** Spray RockShox Suspension Cleaner into the cartridge tube and set it upright on a shop towel to drain.

Inspect the inside of the cartridge tube for scratches.

**NOTICE**

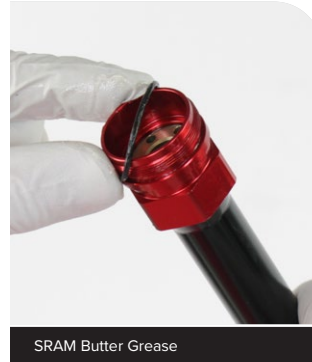
Scratches can cause oil to leak. [Replace the cartridge tube](#) if a scratch is visible.



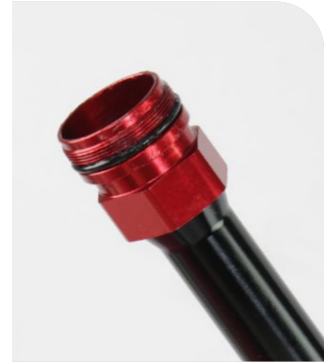
RockShox Suspension Cleaner



**17** Apply grease to a new o-ring and install it onto the red coupler.

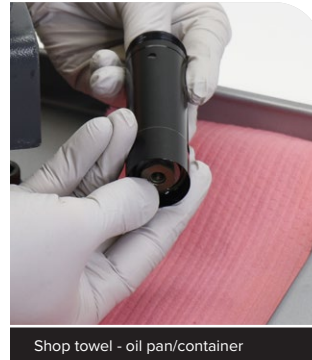


SRAM Butter Grease

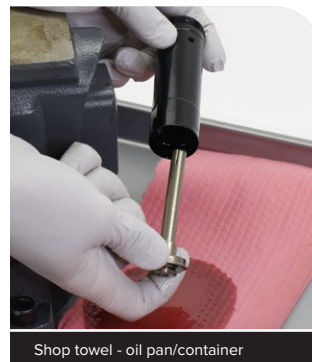
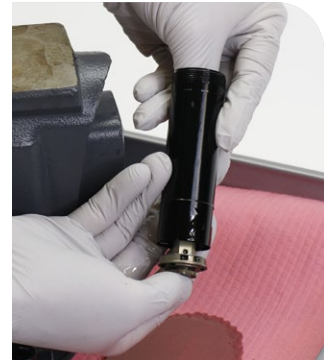


**18** The IFP tube assembly contains damping oil. Hold the IFP tube assembly, with the exterior hex end downward, over shop towel or oil pan to collect the oil.

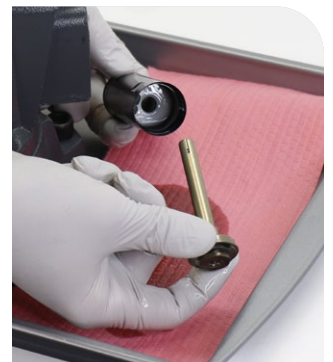
From the exterior threaded end of the IFP tube, press and push the compression damper assembly out of the IFP tube until the piston assembly exits the IFP tube. Oil will drain onto the shop towel or oil pan.



Shop towel - oil pan/container



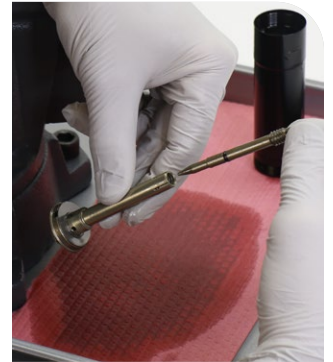
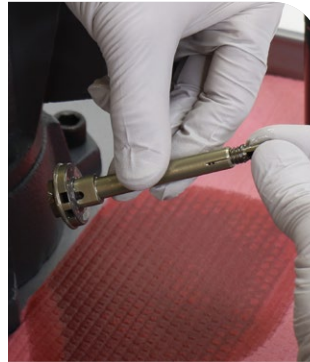
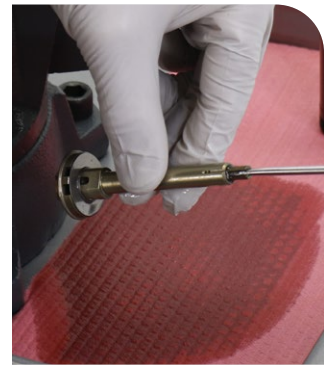
Shop towel - oil pan/container



**19** Unthread the compression adjuster needle and remove it from the inner IFP tube.



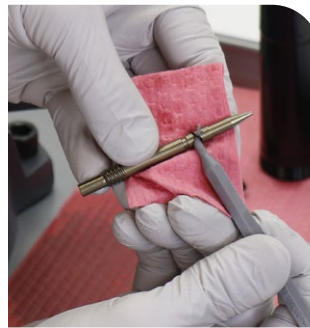
Flat blade screwdriver



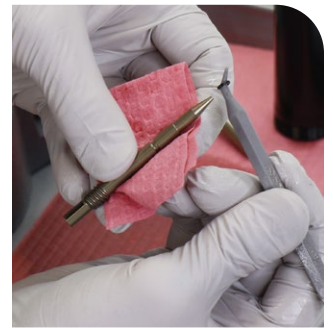
**20** Remove the o-ring from the compression adjuster needle and discard it.

Clean the compression adjuster needle.

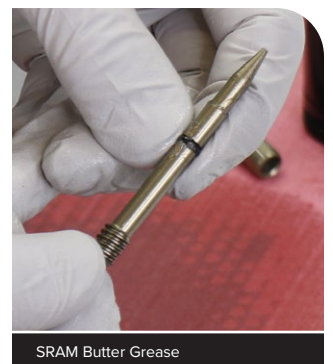
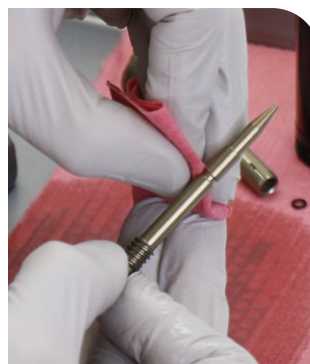
Apply grease to a new o-ring and install it onto the compression adjuster needle.



Pick (non-metallic)



Pick (non-metallic)



SRAM Butter Grease

**21** Spray RockShox Suspension Cleaner into the inner IFP tube and onto the piston assembly.

Dry the assembly with compressed air and set it aside. Do not disassemble.



RockShox Suspension Cleaner

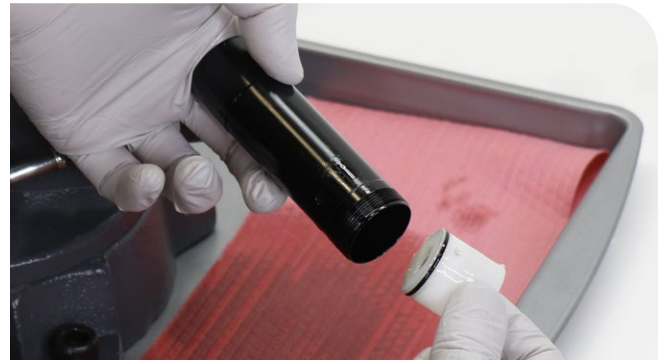


Compressed air

**22** Push the IFP out of the IFP tube and remove it.

**NOTICE**

Do not scratch the inside surface of the IFP tube. Scratches can cause oil to leak. Replace the IFP tube if a scratch is visible.





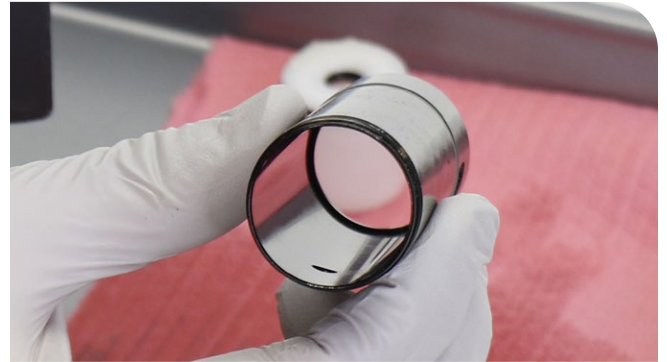
- 23** Clean the IFP tube and inspect it for scratches.  
Set the IFP tube aside.

**NOTICE**

Do not scratch the inside surface of the IFP tube. Scratches can cause oil to leak. Replace the IFP tube if a scratch is visible.



RockShox Suspension Cleaner

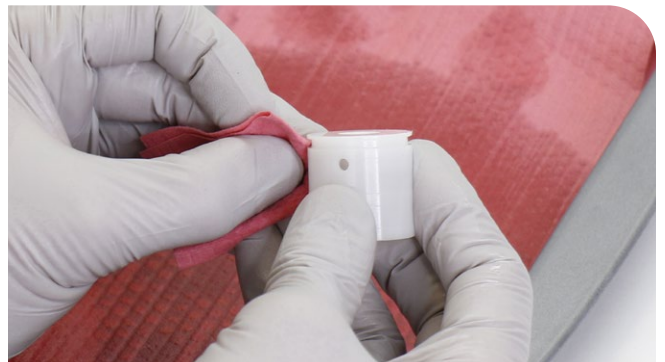
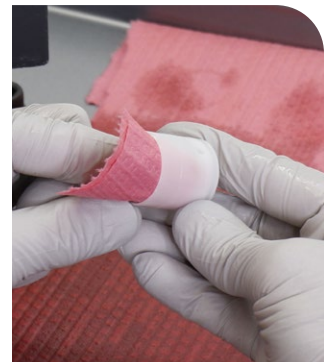
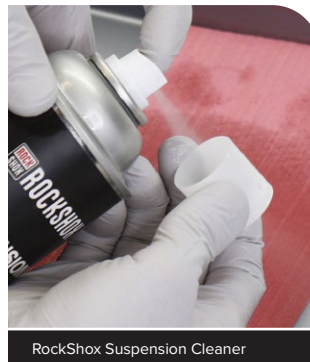
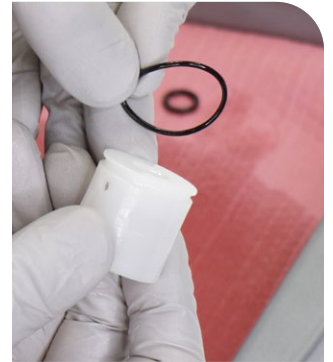
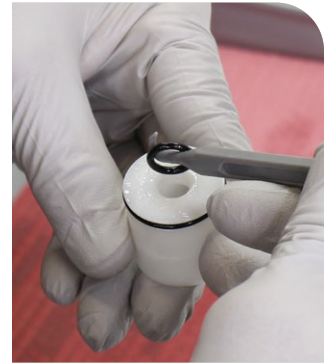
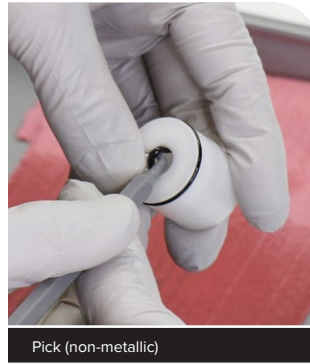




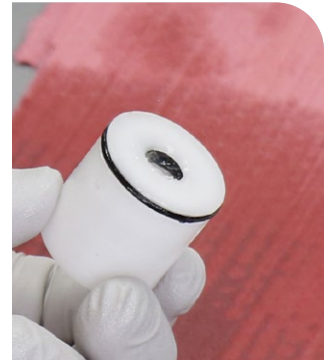
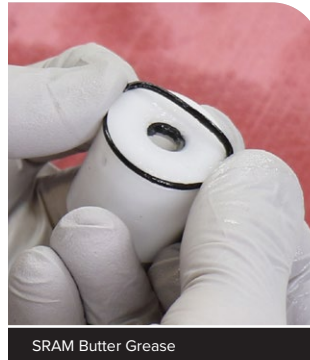
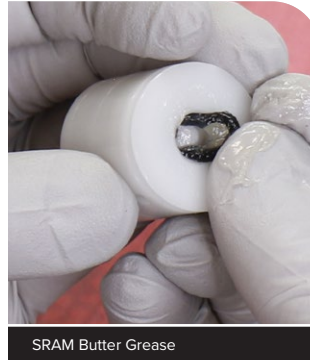
- 24** Remove the inner and outer IFP o-rings and discard them.  
Clean the IFP and inspect it for scratches.

**NOTICE**

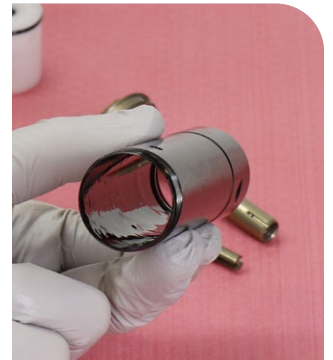
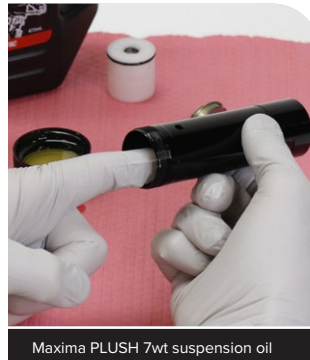
Do not scratch the o-ring grooves in the IFP. Scratches will cause oil to leak. The IFP must be replaced if a scratch is visible in the o-ring grooves.



- 1 Apply grease to the new inner and outer IFP o-rings and install them onto the IFP.

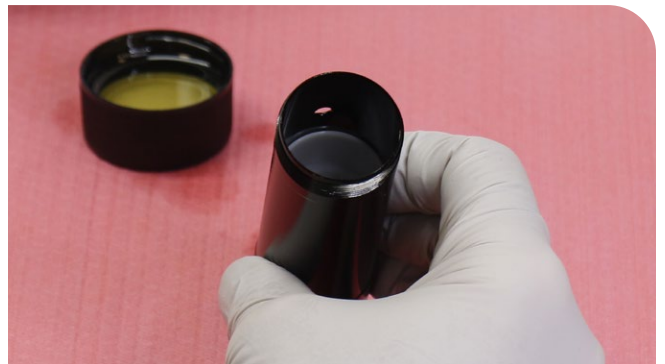
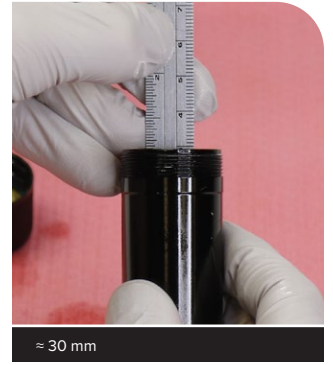
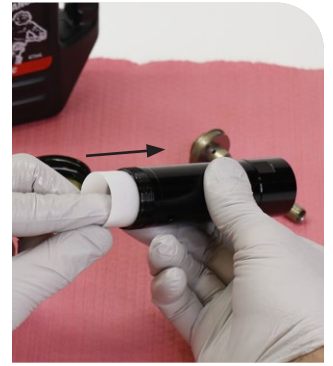


- 2 Apply a thin coat of suspension oil to the inner surface of the IFP tube.

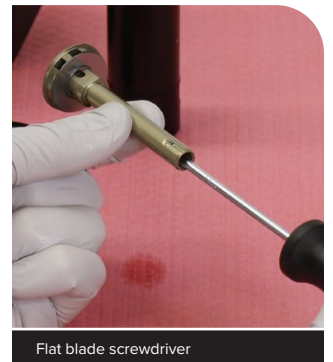
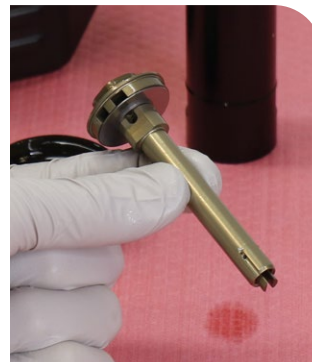
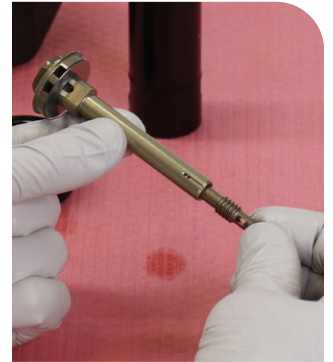
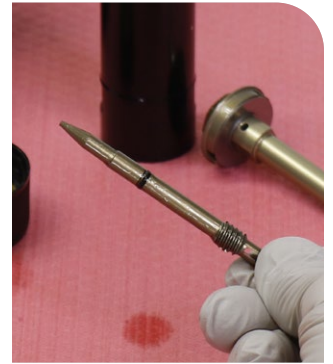
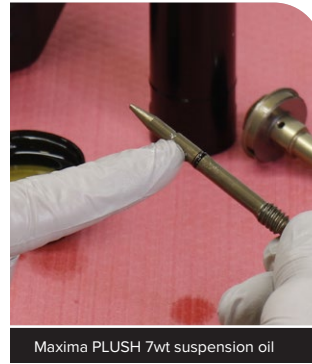


**3** Insert and install the IFP into the IFP tube, flat end/outer o-ring first, into the outer threaded end of the IFP tube.

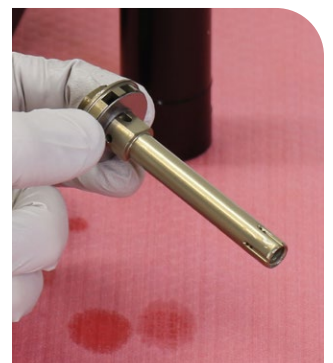
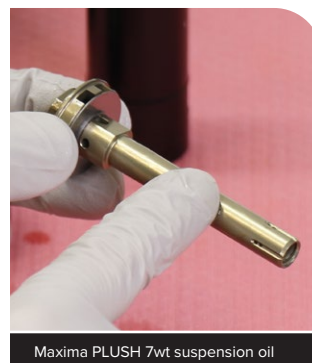
Press the IFP into the IFP tube until it is approximately 30 mm from the end of the opposite (internal threads) end of the tube.



- 4** Apply a light coat of oil onto the compression adjuster needle. Insert the compression adjuster needle into the inner IFP tube and thread it clockwise until it stops. Rotate the adjuster needle counterclockwise one rotation.



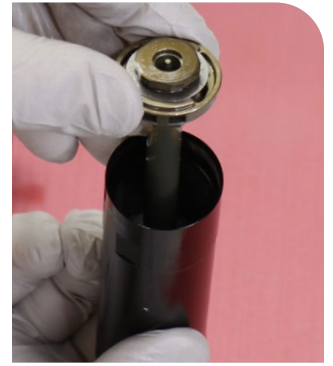
- 5** Apply a light coat of suspension oil to the outside of the compression adjuster.



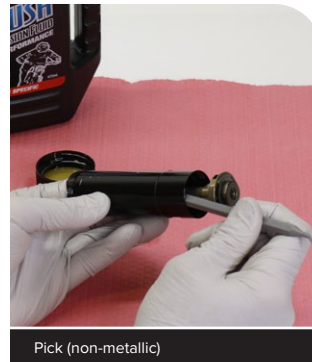


**6** From the inner threaded end of the IFP tube, insert the compression piston assembly into and through the center of the IFP.

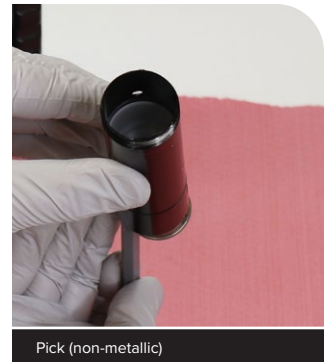
Press it into the IFP until the piston assembly is approximately 15 mm above the internal thread end of the IFP tube.



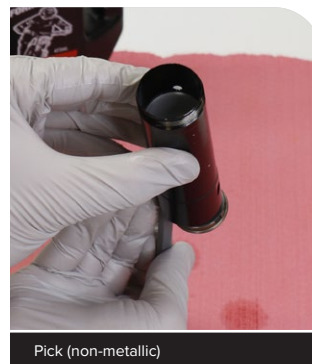
**7** **Set the IFP:** Using a non-metallic pick, push the IFP evenly into the IFP tube until the hollow end (opposite side) is just below the IFP tube bleed port hole (A). The IFP should not cover the bleed port hole.



Pick (non-metallic)



Pick (non-metallic)



Pick (non-metallic)





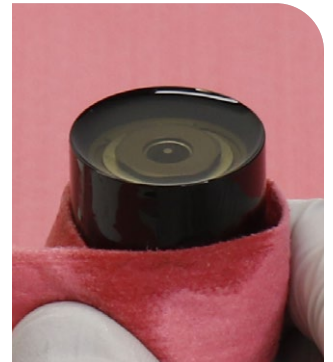
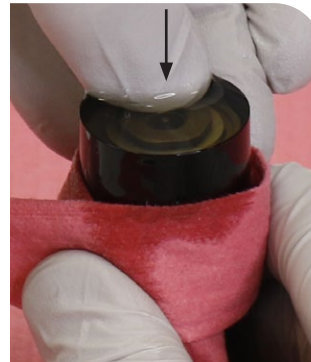
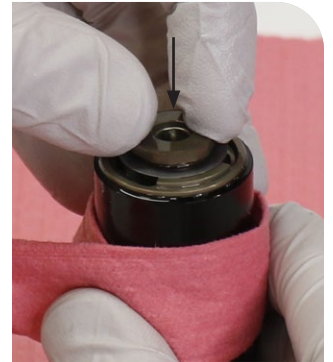
**8** Push the piston down until it is approximately 10 mm above the end of the IFP tube.

Inject suspension oil into the IFP tube until it is full. Oil will fill the IFP tube above the IFP and below the piston.



**9** Hold a shop towel around the IFP tube.

Push the piston down and into the IFP tube until it stops. The piston will stop when it contacts the step in the IFP tube.

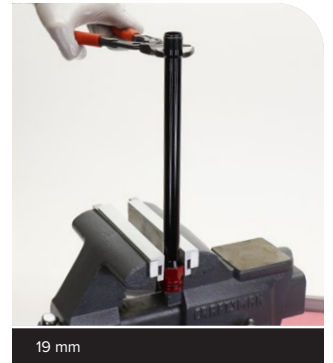


## Replace Cartridge Tube (optional)

Replace the cartridge tube if it is damaged.

- 1 If the cartridge tube requires replacement, the IFP tube coupler must be removed.

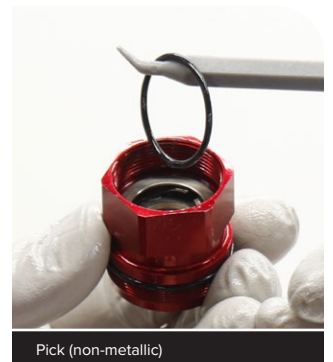
Clamp the coupler in the vise. Unthread the cartridge tube from the coupler.



Remove the cartridge tube.



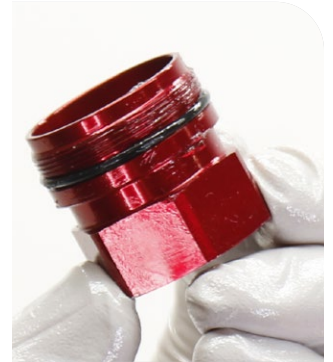
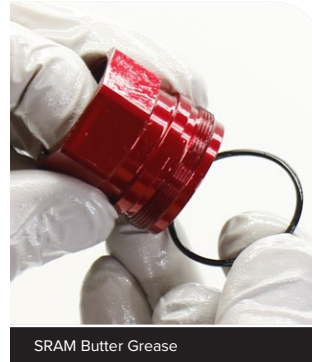
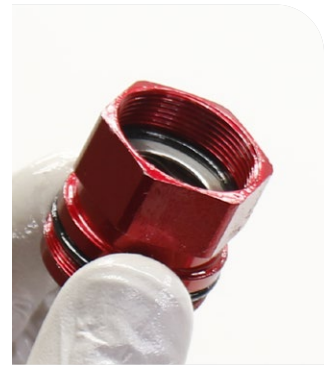
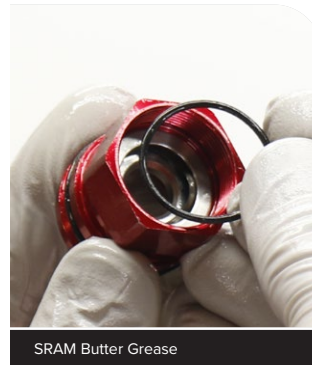
- 2 Remove the o-rings from the coupler.



- 3 Clean the coupler.



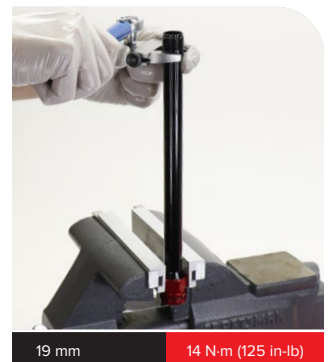
- 4** Apply grease to a new o-rings and install them into the coupler. Install the coupler spacer.



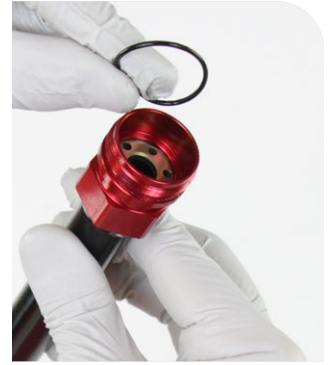
- 5** Thread the coupler onto a new cartridge tube hand tight. Do not tighten the cartridge tube with a wrench. The cartridge tube and coupler will be tightened to the specified torque when the IFP coupler and compression damper top cap are tightened to the specified torque.



- 6** Clamp the coupler in a vise. Tighten the cartridge to the coupler to the specified torque.

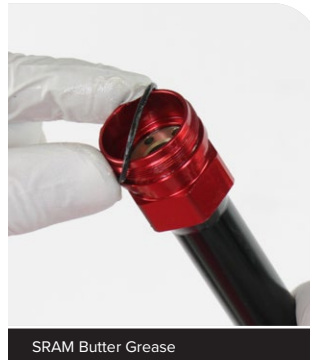


- 1 Remove the outer o-ring from the red cartridge tube coupler and discard it.  
Clean the o-ring groove.

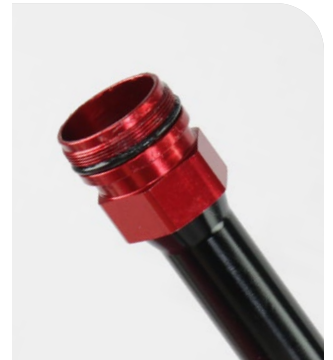


RockShox Suspension Cleaner

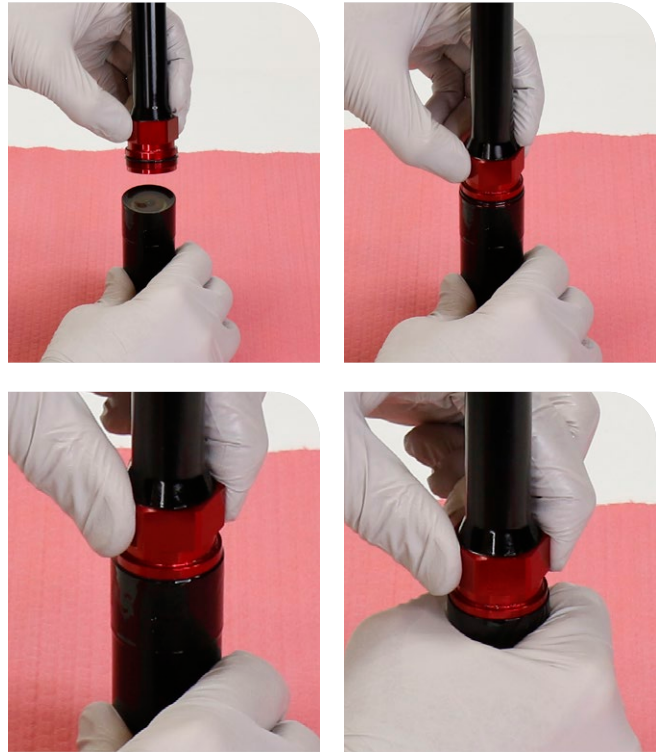
- 2 Apply grease to a new o-ring and install it onto the red coupler.



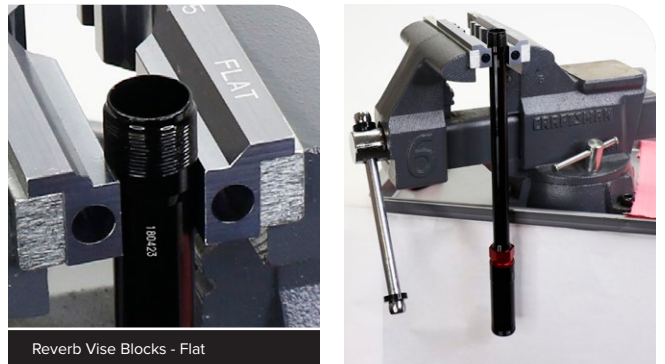
SRAM Butter Grease



- 3** Hold the IFP secure so it does not move.  
Thread the IFP tube coupler onto the IFP tube and tighten it hand tight.



- 4** Clamp the cartridge tube assembly into the vise at the wrench flats with the IFP tube/assembly oriented downward.

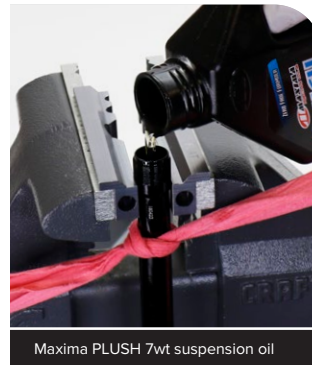


- 5** Tighten the IFP tube and IFP coupler onto the cartridge tube. When tightened, the IFP tube, IFP coupler, and cartridge tube will all be tightened to the same torque.





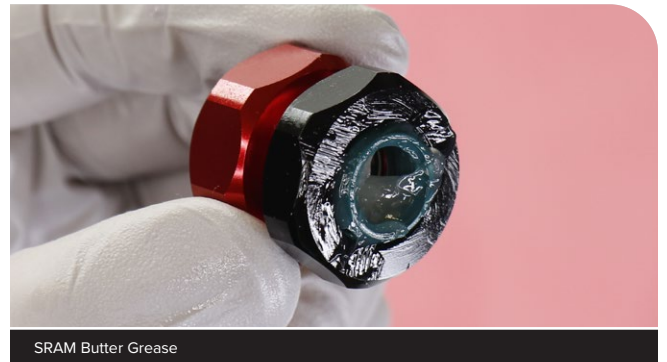
- 6** Secure a shop towel around the cartridge tube.  
Pour suspension oil into the cartridge tube until it is full.



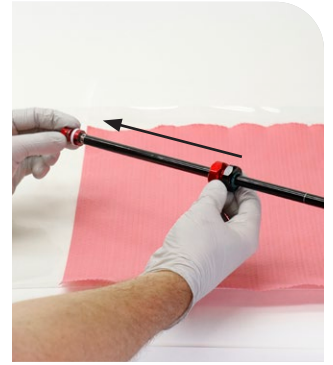
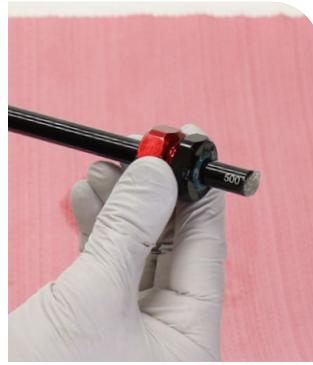
Remove any bubbles if visible.



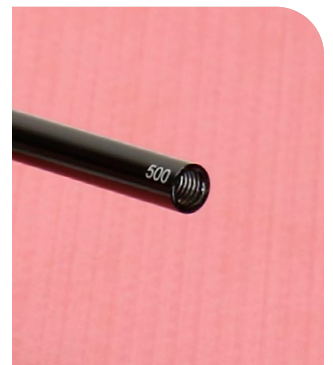
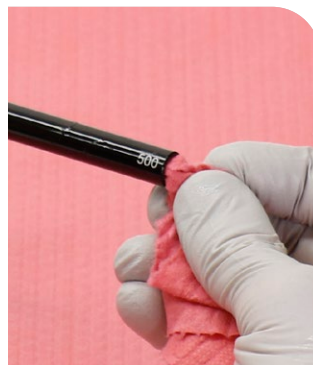
- 7** Apply grease to the wiper seal on the new rebound damper sealhead assembly.



- 8 Install the sealhead assembly onto the rebound damper shaft and slide it to the rebound piston until it stops.



- 9 Clean the grease from the shaft threads.



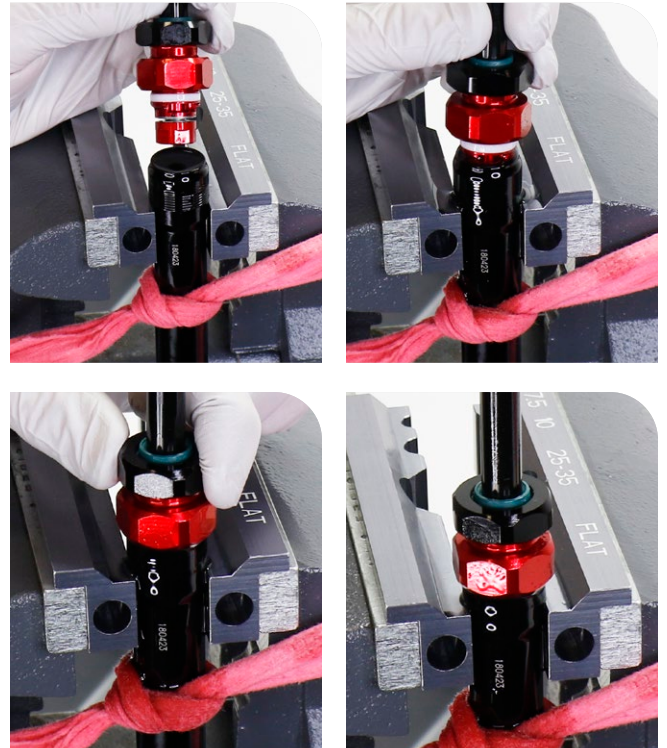
- 10 Insert the rebound adjuster knob in the rebound shaft and rotate counterclockwise until it stops. This is the full open rebound setting.



- 11 While pulling up on the rebound damper to maintain contact with the sealhead, insert the rebound damper piston into the cartridge tube. Continue to apply opposing pressure to the sealhead with the rebound damper and thread the sealhead onto the end of the cartridge tube until it is hand tight.

**NOTICE**

Do not push the rebound damper into the cartridge tube while threading the sealhead onto the cartridge tube.

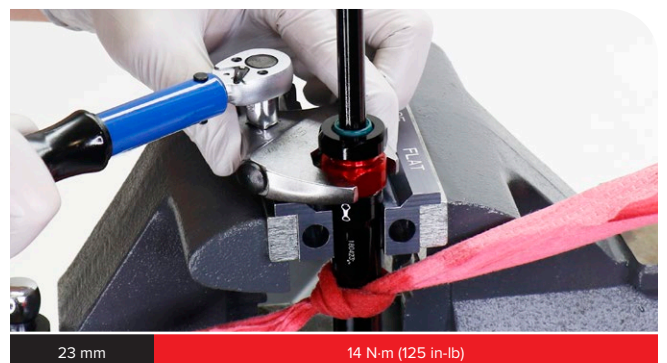


- 12 Tighten the sealhead to the specified torque. Tighten the red section of the sealhead to the cartridge tube.

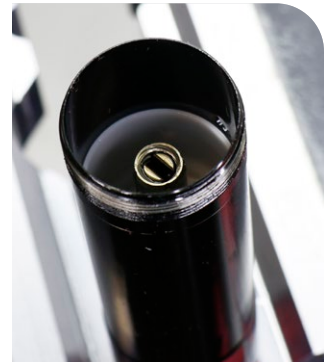
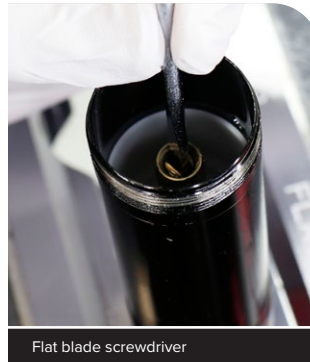
**NOTICE**

Scratches can cause oil to leak. Replace the rebound damper assembly if a scratch is visible.

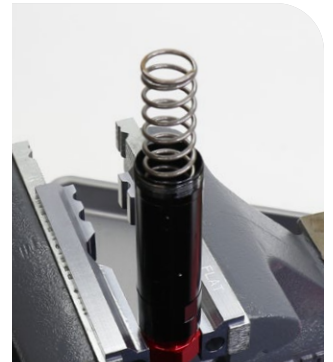
Remove the damper from the vise.  
Clean damper assembly.



- 1 Rotate the compression adjuster needle counterclockwise until the top edge of the needle is one thread below the top edge of the inner IFP tube.



- 2 Insert the IFP coil spring into the IFP damper tube. The spring will rest on top of the IFP.



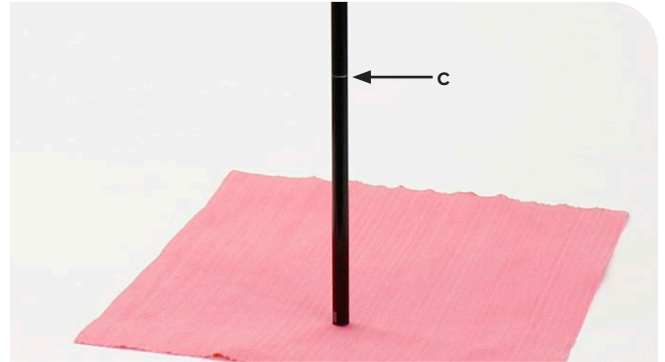
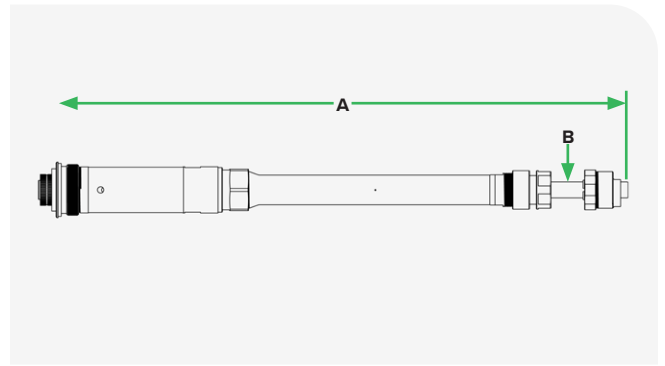
- 3 Position the rebound damper shaft end on a flat surface.



- 4** To purge oil from above the IFP, the IFP must be manually compressed into the IFP tube with the IFP spring, while the rebound damper is compressed and cycled into the cartridge damper tube.

Locate the bleed line (C) on the rebound damper shaft. During the bleed process, the damper should be compressed to the bleed line (C), and no further.

A - Total Damper Length (mm) when Compressed	B - Rebound Shaft / Fork Model Reference Number (printed on rebound damper shaft)
553	500



- 5** Place a shop towel over the IFP spring.

Press the IFP coil spring down and into the IFP tube about half way, and hold it steady. This pushes the IFP into the IFP tube and applies opposing force, creating pressure within the cartridge tube.

Do not allow the spring to release suddenly.





- 6** While holding the IFP spring compressed, slowly compress the damper until the rebound sealhead is even with the bleed line (A) on the rebound damper shaft. During the bleed process, the rebound damper must not be compressed further than the bleed line (A) on the rebound damper shaft.

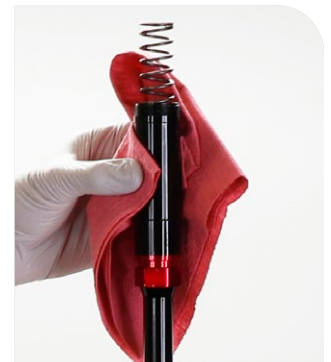
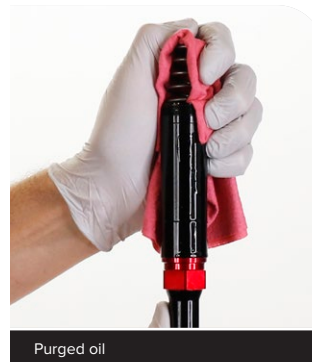
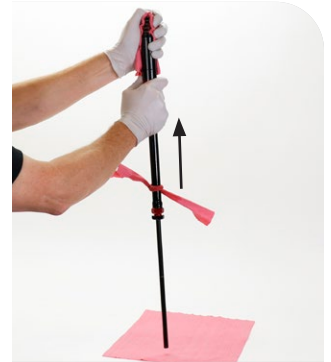
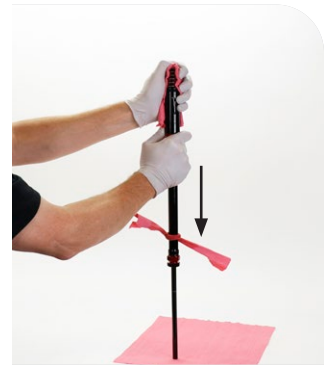
A small amount of oil should purge from the bleed hole in the IFP tube. Lift the damper up slowly, while maintaining pressure on the IFP spring, and allow the rebound damper to extend. Compressing the IFP will apply opposing pressure in the damper to allow the rebound damper to extend fully.

**Repeat this process 2 more times (3 total).**

Slowly release pressure from the IFP spring.

**⚠ CAUTION**

Oil may exit the IFP tube bleed hole. Wear safety glasses and keep your eyes and face away from the bleed hole when compressing the rebound damper.



- 7** Clamp the red coupler in the vise. Align the compression adjuster tab under the top cap (A), with the compression damper adjuster needle.

While pushing down firmly and evenly, visually confirm the compression adjuster tab engages the mating compression damper adjuster needle.

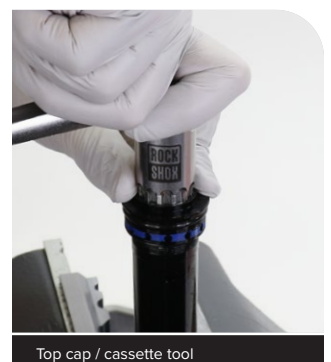
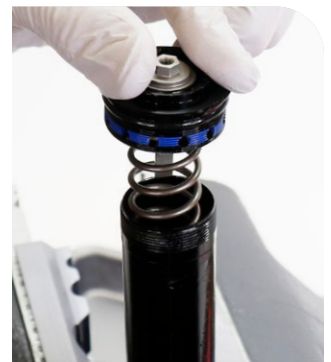
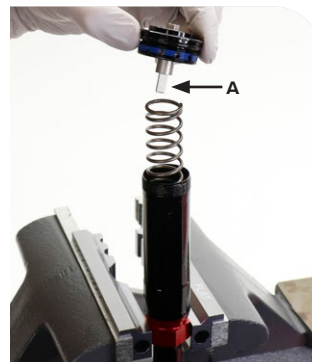
Press the top cap down, compress the IFP spring, align the keyed parts, and engage the top cap threads slowly when the keyed parts are aligned and engaged.

Press down with the top cap tool and slowly thread the top cap onto the cartridge tube.

**NOTICE**

The top cap threads will not engage if the keyed adjuster parts are not aligned and engaged.

Do not cross-thread the top cap and IFP tube.



- 8 When the threads are engaged properly, thread the top cap onto the IFP tube and tighten to torque.



Top cap / cassette tool

14 N·m (125 in·lb)

- 9 Remove the damper from the vise.  
With the rebound damper shaft oriented downward, clamp the rebound sealhead into the vise at the wrench flats.  
Tighten the compression damper top cap to the specified torque.



Reverb Vise Blocks (flat)



Top cap /  
cassette tool

14 N·m (125 in·lb)

## Test Compression - Charger 3 RC

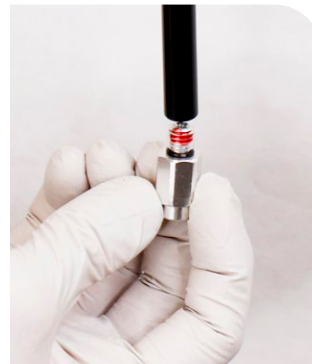
- 1 Apply Threadlocker Loctite 2760 (red), or equivalent, to the first two threads on the shaft spacer.



Threadlocker Loctite 2760 - Red



- 2 Thread the shaft spacer onto the end of the rebound damper shaft.



**3** Use the compression adjuster knob to rotate the compression adjuster clockwise until it stops. This is the firmest compression setting.

**⚠ CAUTION**

Oil may exit the cartridge tube bleed holes. Wear safety glasses and keep your eyes and face away from the bleed holes when compressing the rebound damper.

Cover the bleed hole with a shop towel.

During the damper test process, the rebound damper must not be compressed further than the bleed line on the damper shaft.

Push the rebound damper into the cartridge tube slowly. Firm and consistent resistance should be felt with no gaps in movement. Do not push the rebound damper in further than the bleed line on the rebound damper shaft.

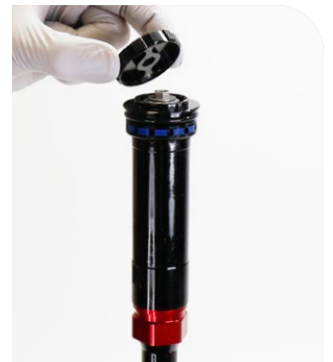
A small amount of oil may purge from the bleed port.

Rotate the compression adjuster counterclockwise to the full open setting and repeat the compression test. Light consistent resistance should be felt with no gaps in movement.

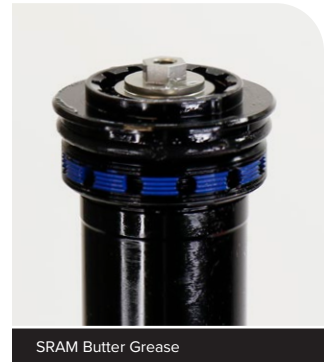
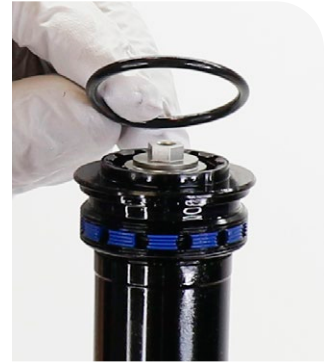
If gaps are felt during compression, repeat the oil fill and bleed process. If the assembly process was successful, set the compression damper to the open setting.

Wipe away any oil from the damper assembly.

Remove the LSC adjuster knob when the test is complete.



- 1 Remove the o-ring from the top cap.  
Clean the top cap threads and o-ring groove.  
Apply grease to a new o-ring and install it.

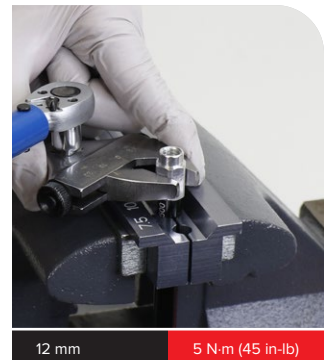
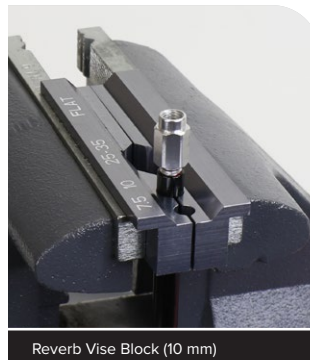


- 2 Clamp the rebound shaft, nearest to the end of the shaft, into the 10 mm slot in the Reverb Vise Block or RockShox Rear Shock Vise Block.  
Tighten the rebound damper shaft spacer to the specified torque.

**NOTICE**

Scratches can cause oil to leak. Replace the rebound damper assembly if a scratch is visible.

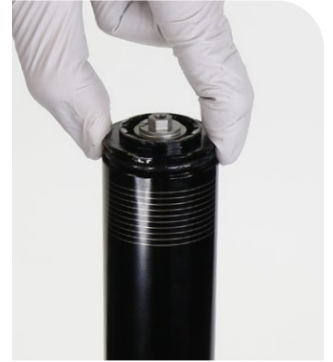
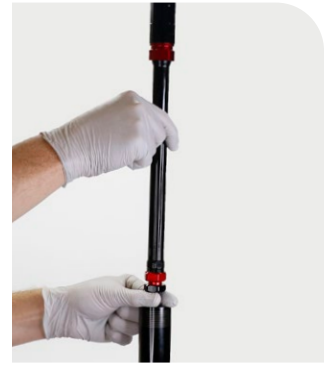
Do not clamp the rebound damper shaft in the middle of the shaft. Clamping force will damage the damper shaft. If the damper shaft is damaged, the rebound damper assembly must be replaced.





**3** Install the damper assembly into the damper side upper tube. Use your fingers to guide the damper and damper shaft into the upper tube without scratching the shaft.

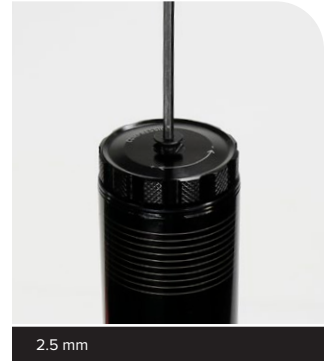
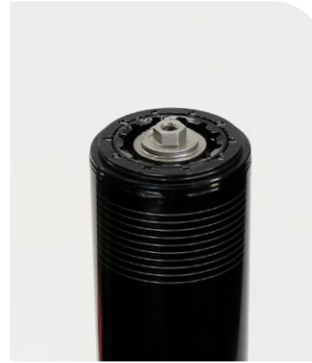
Thread the top cap into the upper tube and tighten it. Press down firmly when tightening the top cap.



Top cap / cassette tool

7.3 N·m (65 in-lb)

- 1 Install the compression adjuster detent plate.  
Install the compression adjuster knob.



Install and tighten the retaining screw.



# Lower Leg Assembly

Ultimate Charger 3 RC2 is pictured. Procedures are the same for Base Charger 3 RC.

**1** **200 Hour Service** Remove the old crush washers from each bottom bolt.

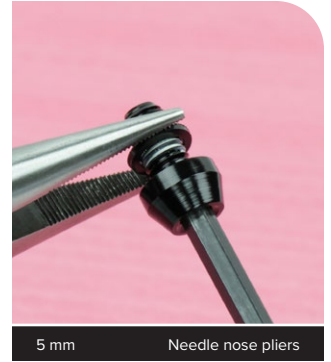
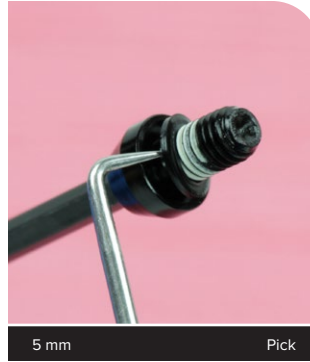
Hold the crush washer with needle nose pliers and unthread it from the bolt by turning the bolt counterclockwise. Discard the crush washers.

Clean the bolts and install new crush washers.

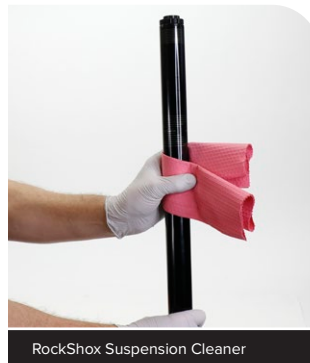
### NOTICE

Do not damage the bolt threads.

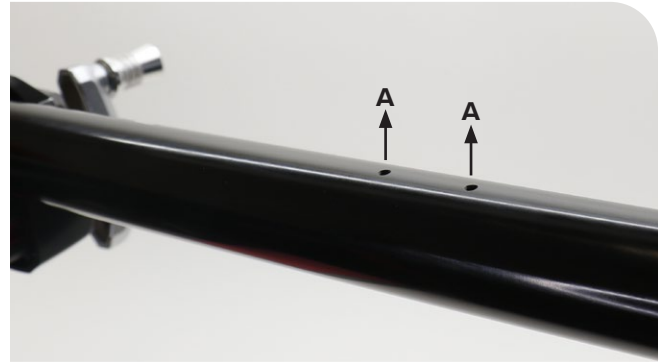
Do not reuse crush washers or crush washer retainers. Dirty or damaged crush washers can cause oil to leak from the fork.



**2** Clean each upper tube.



- 3** Clamp the damper side upper tube, near the top cap, into the bicycle stand and orient the two holes (A) in the upper tube upward. If the two holes are oriented downward, oil will drip through the holes when suspension oil is injected into the bottom of the lower leg. Angle the upper tube slightly upward.



- 4** Apply grease to the inner surface of the dust wiper seals.

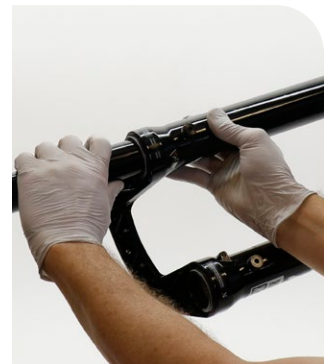


- 5 Install the damper side lower leg onto the upper tube and slide it just enough to engage the upper bushing.

**NOTICE**

Make sure the wiper seal slides onto the upper tube without folding the outer lip of the seal.

The inside bottom of the lower leg should not contact the damper shaft (Base) or ButterCups (Ultimate). A gap between the shaft end (Base) or ButterCups (Ultimate), and the lower leg bolt holes should be visible.





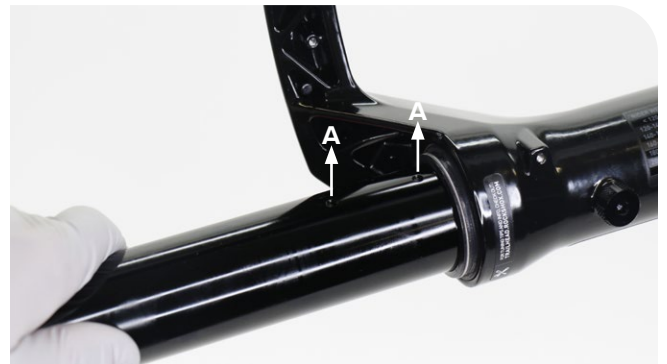
**6** Install the air spring side upper tube into the lower leg. Slide the upper tube into the lower leg just enough to engage the upper bushing.

Orient the two holes (A) in the upper tube upward. If the two holes are oriented downward, oil will drip through the holes when suspension oil is injected into the bottom of the lower leg.

**NOTICE**

Make sure the wiper seal slides onto the upper tube without folding the outer lip of the seal.

The inside bottom of the lower leg should not contact the damper shaft (Base) or ButterCups (Ultimate). A gap between the shaft end (Base) or ButterCups (Ultimate), and the lower leg bolt holes should be visible.



- 7** With the lower leg bottom bolt holes oriented slightly upward, inject Maxima PLUSH Dynamic Suspension Lube Light into each lower leg through the bottom bolt holes.

Wipe away any oil from the lower leg.

**NOTICE**

Do not exceed the recommended oil volume per leg as this can damage the fork.



Maxima PLUSH Dynamic Suspension Lube Light

Damper Side - 40 mL



Maxima PLUSH Dynamic Suspension Lube Light

Spring Side - 20 mL

- 8** Wipe away any oil from the lower leg bottom bolt holes.



Damper side



Spring side

**9** Slide the lower leg assembly onto each upper tube until it stops. Use a small hex wrench or pick to align the shaft spacer (Base) or ButterCups (Ultimate) into each bottom bolt hole.

The shaft spacer or ButterCups threaded ends should be visible and centered in each bottom bolt hole.

Verify each threaded shaft end is centered and seated in the lower leg bottom bolt hole, and no gap is visible between the lower leg and the shaft spacer (Base) or ButterCups (Ultimate) threaded shaft end.



Damper side



Damper side



Spring side



Spring side

**10** Install each bottom bolt and tighten them to the specified torque.



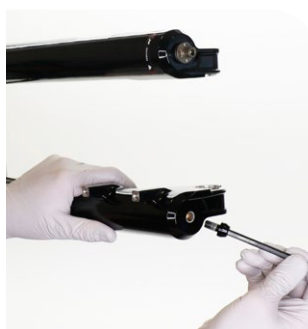
5 mm

Damper side



5 mm

7.3 N-m (65 in-lb)



5 mm

Spring side



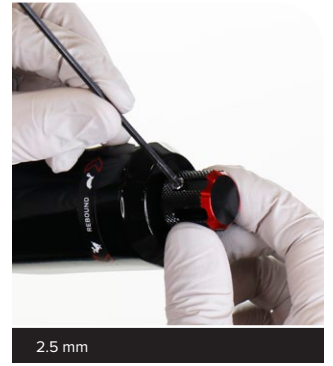
5 mm

7.3 N-m (65 in-lb)

**11** Install the rebound damper knob and tighten the set screw.

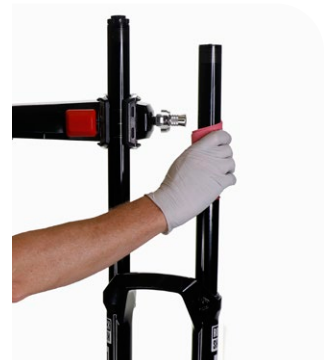
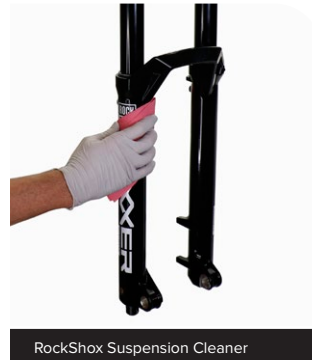
*Do not over-tighten the set screw. Over-tightening will seize the adjuster knob and it will not turn.*

Refer to your pre-service recorded rebound setting to adjust the rebound damping.



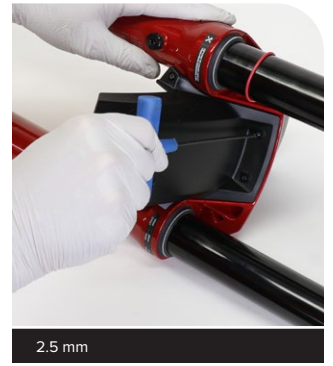
**12** Clean the entire fork.

Remove the fork from the bicycle work stand and set it aside.



## Fender Installation (optional)

- 1 Install each fender bolt (x4) and tighten each to the specified torque.



2.5 mm



2.5 mm

1.0 N·m (9 in-lb)





## Fork Installation

Use the upper tube height gradients to position the upper tubes in the correct position, evenly on both upper tubes.

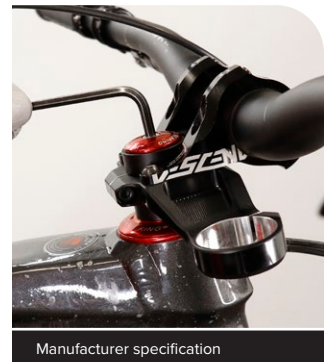
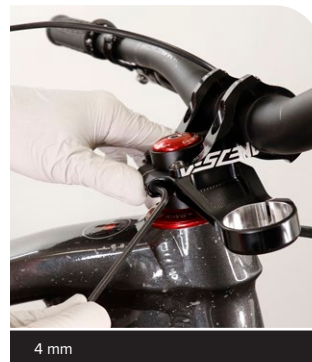
- 1 Pressurize the air spring to 50-75 psi to extend the upper tube.



- 2 Secure the bicycle in a bicycle work stand.



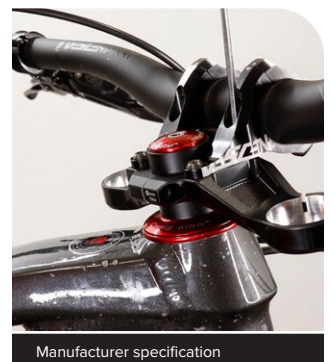
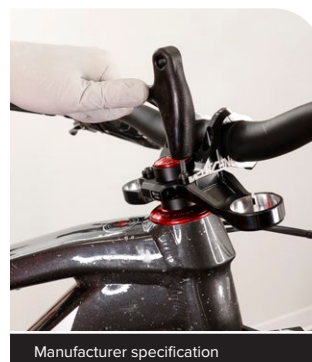
- 3 Loosen the upper crown center pinch bolt one full rotation.  
Loosen the headset top cap bolt one full rotation.



Loosen the each stem bolt one full rotation. (Direct mount pictured.)

Steerer tube stem: Loosen the stem steerer tube pinch bolt one full rotation.

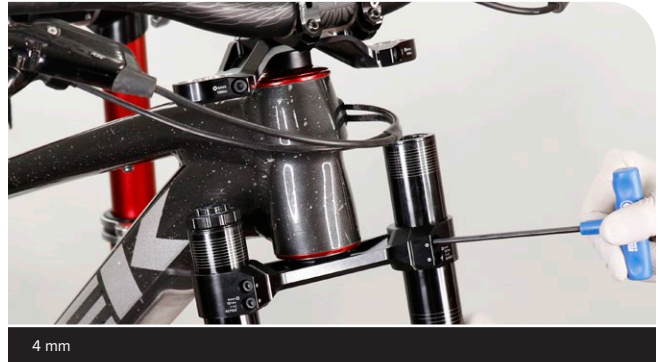
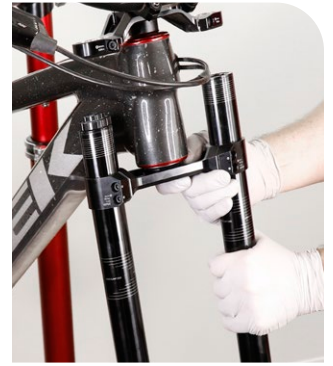
Do not remove any of the bolts.



**4** Slide each upper tube through the lower crown. Leave enough clearance between the upper tube and upper crown to install the frame bumpers.

*Some bicycle frames include integrated frame bumpers. Install the RockShox bumpers as needed.*

Tighten one of the lower crown bolts to temporarily hold the tubes in place while you install the bumpers.

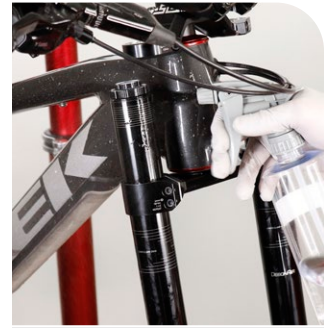


- 5** Spray isopropyl alcohol on the inner surface of each frame bumper and onto the upper tubes.

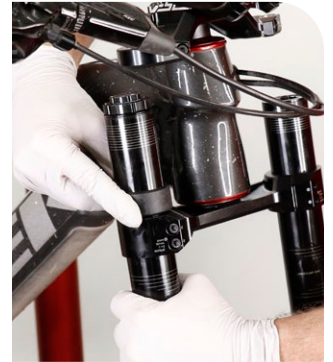
Reinstall the frame bumpers onto the upper tubes. Bumper position can be adjusted later.



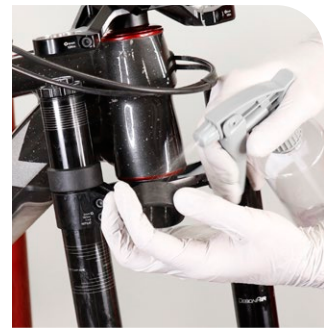
Isopropyl alcohol



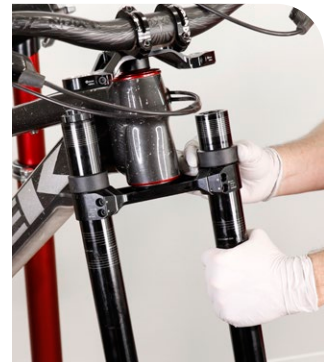
Isopropyl alcohol



Isopropyl alcohol



Isopropyl alcohol



**6** Slide one upper tube, either side, up and into the upper crown until the top edge of the lower crown is set to the original position with the upper tube crown height gradient. Tighten lower crown bolt finger tight.

Repeat on the other side.

Use the upper tube crown height gradients at the lower crown to set the position of each upper tube to the original position and confirm both upper tubes are set equally to the same lower crown gradient position.



Spring Side



Spring Side



4 mm



Damper Slide



4 mm

**7** Confirm the lower crown is even with or above the lowest lower crown upper tube crown height gradient. If the lowest gradient is not visible, adjust each upper tube down until at least the bottom edge of the lowest gradient is visible.

**⚠ WARNING**

Do not position any part of the lower crown outside the upper tube lower crown height gradients.



Correct - Within lower crown gradient



Incorrect - Not within lower crown gradient



**8** Tighten each lower crown bolt to the specified torque. Either side, spring or damper, can be tightened first. Tighten one side first, then tighten the other side.

**Spring Side:** Tighten the lower crown bolts, top bolt first, lower bolt second. **Repeat this sequence once more.**

**Damper Side:** Tighten the lower crown bolts, top bolt first, lower bolt second. **Repeat this sequence once more.**

Refer to the *2024+ BoXXer User Manual* for complete fork installation procedures and specifications.



4 mm 10 N-m (88 in-lb)



4 mm 10 N-m (88 in-lb)



4 mm 10 N-m (88 in-lb)



4 mm 10 N-m (88 in-lb)

**9** Confirm the lower crown upper tube height gradients on both upper tubes are set to the same position on each side.

Confirm the lower crown is even with or above the lowest lower crown upper tube crown height gradient. If the lowest gradient is not visible, adjust each upper tube down until at least the bottom edge of the lowest gradient is visible.

**⚠ WARNING**

Do not position any part of the lower crown outside the upper tube lower crown height gradients.

The upper crown height gradients may not be in the same original position because the steerer tube top cap has been loosened. When the top cap is tightened, the upper tubes will be set to the original position in the upper crown.



Lower Crown / Upper Tube Crown Height Gradient Position



## 10 Final Check - Crown Position Specifications:

**1. Check Lower Crown Position** - Measure the distance from the top of each upper tube to the top of the lower crown (at the upper tube). This distance must be between 120 mm (minimum) and 132.6 mm (maximum).

Lower Crown Position Specifications	
Minimum	Maximum
120 mm	132.6 mm

**2. Check Total Stack Height** - Measure the distance from the bottom of the upper crown (at the steerer tube) to the top of the lower crown (at the steerer tube).

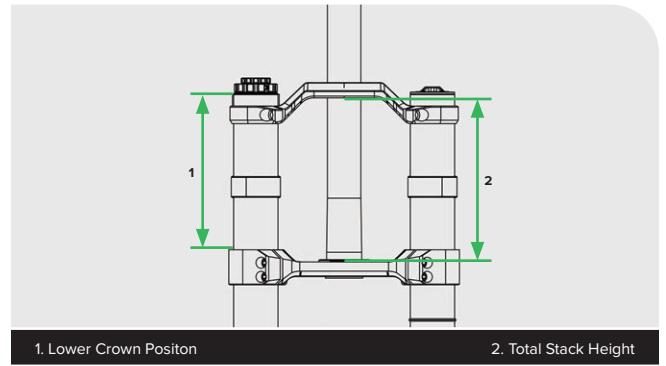
Total Stack Height - measurement from bottom of upper crown to top of lower crown closest to the steerer tube.

Adjust the position of the upper crown (add or remove headset spacers) and/or each upper tube until the upper tubes are positioned within specification and the upper crown stack height measurement is within specification.

Total Stack Height Position Specifications		
Upper Crown	Minimum	Maximum
Tall	106.8 mm	147 mm
Short	106.8 mm	127 mm

### ⚠ WARNING

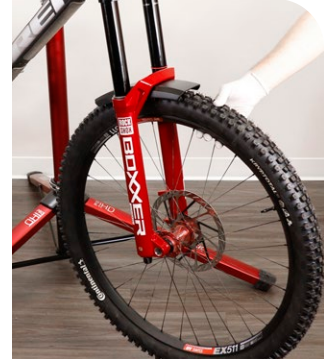
The length of the upper tubes measured from the top of the upper tube to the top of the lower crown must be **not less than 120 mm** and **not greater than 132.6 mm**. Tire contact with the lower crown and/or damage to the fork while riding may result in loss of control and serious injury to the rider.



## Set Upper Tube Alignment

The upper tubes must be aligned in the upper and lower crowns before the upper crown bolts can be tightened.

- 1 Install the wheel.



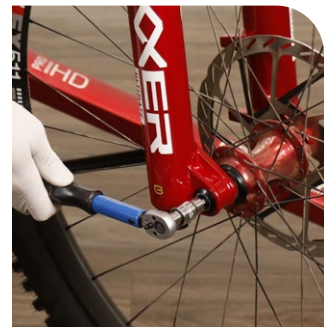
- 2 Apply grease the outside axle threads.

Install the threaded end of the Maxle DH through the damper side of the lower leg, and through the hub until it engages the threads in the spring side lower leg dropout.

Thread the Maxle DH into the lower and tighten it to the specified torque.



SRAM Butter Grease



6 mm 12.5-14.7 N-m (110-130 in-lb)

- 3 Tighten the Maxle DH bolt on the spring side to the specified torque.

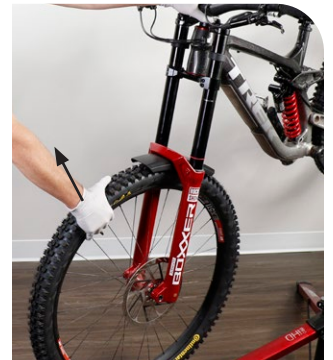
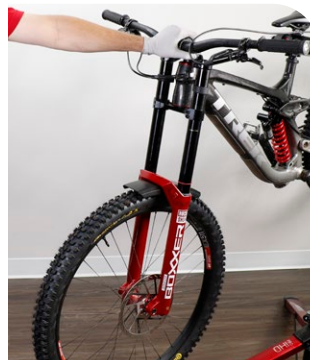


6 mm

12.5-14.7 N-m (110-130 in-lb)

- 4 With the fork centered, grip the frame head tube with one hand, and the front wheel with other hand.

Quickly and firmly, pull the front wheel forward and upward while applying opposing pressure to the headtube to properly align the upper tubes squarely and evenly in the crowns.



## Complete Fork Installation

- 1 Tighten the steerer tube top cap to the manufacturer's specified torque.

When the top cap is tightened, the upper crown should slide downward on each upper tube, and the top edge of the upper crown should be set to the original height gradient position on each upper tube.



- 2 Check the position of each upper tube crown height gradient above the top edge of the upper crown, on each side. The gradients should be in the same position on each side.

### **⚠ WARNING**

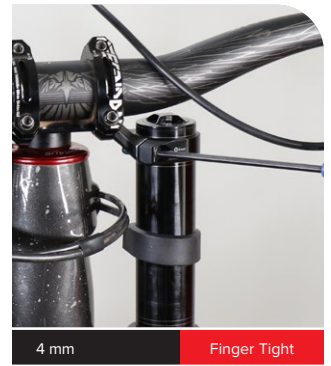
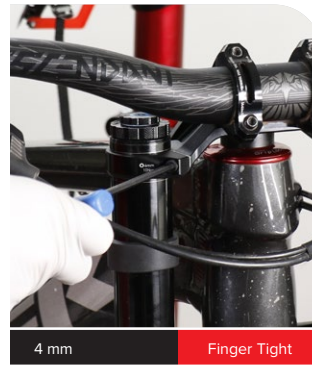
Do not position any part of the upper crown below the lowest crown height gradient on the upper tube, or above the top edge of each upper tube.



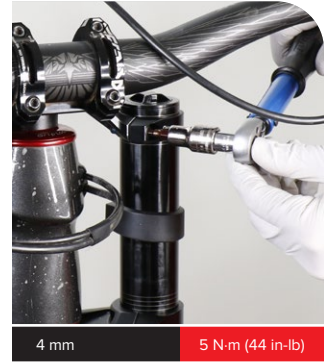
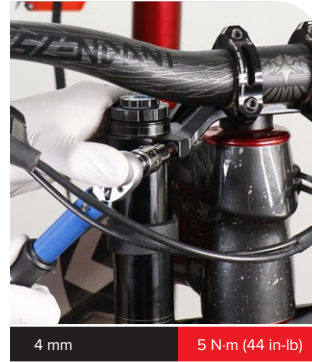
- 3 Tighten the upper crown steerer tube bolt to the specified torque.



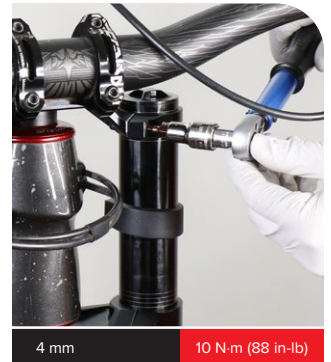
- 4** Tighten each upper crown bolt in the following order.  
 Tighten the damper side bolt finger tight.  
 Tighten the spring side bolt finger tight.



Tighten the damper side bolt to 5 N-m.  
 Tighten the spring side bolt to 5 N-m.



Tighten the damper side bolt to 10 N-m.  
 Tighten the spring side bolt to 10 N-m.



- 5** Tighten the stem bolts according to the manufacturer's specifications.  
 Direct mount stem pictured.  
 Steerer tube stem - tighten the steerer tube bolt(s) to the manufacturer's specifications.





**6** Reinstall the brake caliper according to the brake manufacturer's instructions.



Manufacturer specification

Manufacturer specification

**7** Install the brake hose guide and tighten the bolt.



2.5 mm

0.45 N·m (4 in-lb)



**8** Pressurize the air spring to 50% of the original air pressure.

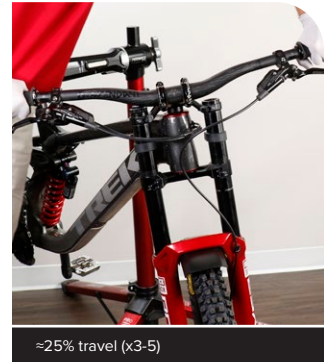
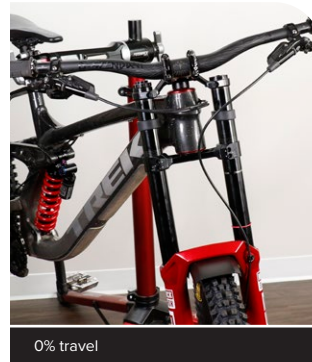
Slowly compress the fork to approximately  $\approx 25\%$  travel 3-5 times to equalize the positive and negative air chambers.

Pressurize the air spring to 100% of the original air pressure.

Compress the fork 3-5 more times to equalize pressure again, then pressurize to the original air pressure once more.

Refer to the *2024+ BoXXer User Manual* for more details about setting air pressure and damper adjustments.

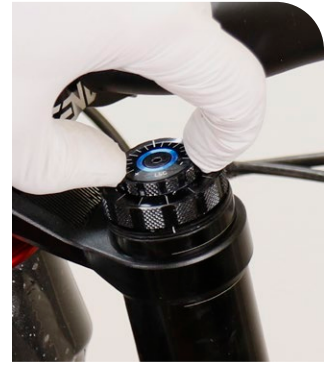
*You may see a drop in the indicated air pressure on the pump gauge while filling the air spring; this is normal.*



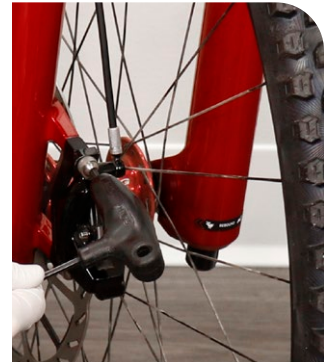
**9** Install the air valve cap.



- 10** Refer to your pre-service recorded settings to adjust the rebound and compression settings on the fork. Adjust as needed after air pressure is set.



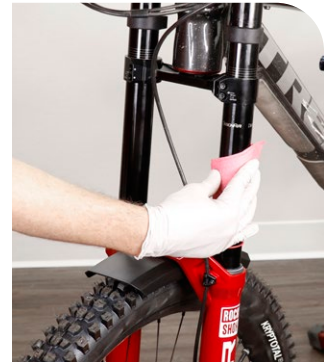
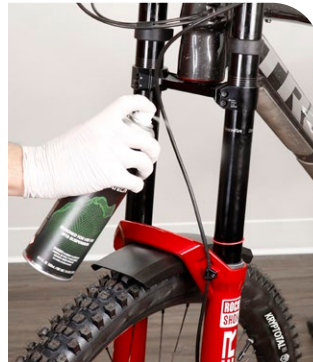
- 11** Make any final brake hose and brake caliper adjustments as needed.



- 12** Make any final frame bumper adjustments as needed. Tighten the frame bumpers to the specified torque.



- 13** Clean the entire fork.



This concludes the service of your RockShox suspension fork.

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