

English

USER MANUAL

Future Shock 3.0



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SPECIALIZED BICYCLE COMPONENTS

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1. INTRODUCTION

THIS USER MANUAL CONTAINS IMPORTANT INFORMATION. PLEASE READ IT CAREFULLY AND STORE IT IN A CONVENIENT PLACE.

This manual was drafted in the English language (original instructions) and has been translated into other languages as applicable (translation of original instructions).

This user manual is specific to your Specialized Future Shock 3.0 front suspension or bicycle equipped with a Future Shock 3.0 front suspension and should be read in addition to the Specialized Bicycle Owner's Manual ("Owner's Manual"). It contains important safety, performance, and technical information that you should read before your first ride and keep for reference. You should also read the entire Owner's Manual because it has additional important general information and instructions which you should follow. If you do not have a copy of the Owner's Manual, you can download it at no cost at www.specialized.com, or obtain it from the nearest Authorized Specialized Retailer or Specialized Rider Care.

Additional safety, performance, and service information for specific components such as suspension or pedals on your bicycle, or for accessories such as helmets or lights, may also be available. Make sure that your Authorized Specialized Retailer has given you all the manufacturers' literature that was included with your bicycle or accessories. If there is a difference between the instructions in this manual and the information provided by a component manufacturer, please refer to your Authorized Specialized Retailer.

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1.1. Warranty

Please refer to the written warranty provisions provided with your bicycle, or visit www.specialized.com/warranty to download the latest version. A copy is also available at your Authorized Specialized Retailer.

1.2. Intended Use

The Specialized Future Shock front suspension is intended and tested for General Purpose Riding (Condition 2) use only. For more information on intended use and structural weight limits for your bicycle frame and components, please refer to the Owner's Manual.

2. SYMBOLS

When reading this user manual, note the various important symbols and warnings explained below:



WARNING! The combination of this symbol and word indicates a potentially hazardous situation that, if not avoided, could result in serious injury or death. Many of the warnings say “you may lose control and fall.” Because any fall can result in serious injury or even death, we do not always repeat the warning of possible injury or death.



CAUTION: The combination of the safety alert symbol and the word CAUTION indicates a potentially hazardous situation that, if not avoided, may result in minor or moderate injury, or is an alert against unsafe practices.

The word **CAUTION** used without the safety alert symbol indicates a situation that, if not avoided, could result in serious damage to the bicycle or the voiding of your warranty.



This symbol alerts the reader to information that is particularly important.



This symbol means high-quality grease should be applied as illustrated.



This symbol means high-quality carbon assembly paste should be applied as illustrated.



Tech tips are useful tips and tricks regarding installation and use.

3. GENERAL NOTES ABOUT ASSEMBLY

The Future Shock comes pre-installed on all bicycle models for which it's equipped.

This manual is not intended as a comprehensive assembly, use, service, repair, or maintenance guide. Please see an Authorized Specialized Retailer for all service, repairs, or maintenance.



WARNING! Due to the high degree of complexity of the Future Shock, proper assembly requires a high degree of mechanical expertise, skill, training and specialty tools. Therefore, it is essential that the assembly, maintenance and troubleshooting be performed by an Authorized Specialized Retailer.



WARNING! The Future Shock suspension and the proprietary components that work with the Future Shock are specific to Specialized bicycles equipped with the Future Shock. Only use originally supplied components and hardware at all times. Use of other components or hardware will compromise the integrity and strength of the assembly. Future Shock-specific components should only be used on Specialized bicycles designed for Future Shock. Failure to follow this warning could result in serious injury or death.



The Future Shock is available in damped and undamped models, depending on the bicycle. Installation is the same for both models. In order to successfully install the Future Shock, it is very important to follow the order of operations as outlined in this manual. Modifying the order of assembly will result in a longer build process.

3.1. Bolt size / tools / torque specifications

WARNING! Correct tightening force on fasteners (nuts, bolts, screws) on your bicycle is important for your safety. If too little force is applied, the fastener may not hold securely. If too much force is applied, the fastener can strip threads, stretch, deform or break.



Either way, an incorrect tightening force can result in component failure, which can cause you to lose control and fall. Where indicated, ensure that each bolt is torqued to specification. After your first ride, and consistently thereafter, recheck the tightness of each bolt to ensure secure attachment of the components.

LOCATION	TOOL	TORQUE	
		Nm	in-lbf
Future Stem steerer clamp bolts	4 mm hex	5	44
Top cap bolt	2 mm hex	1	9
Headset collar pinch bolt (side)	4 mm hex	4	35
Headset collar locator bolt (front)	2.5 mm hex	1	9
Headset collar locking screw (upper)	2.5 mm hex	1	9
Adjuster knob set screw (Future Shock 3.3 only)	2 mm hex	2.5	22
Damper bolt (Future Shock 3.2)	4 mm hex	5	44
Damper bolt (Future Shock 3.3)	22 mm hex socket	5	44
Preload bulkhead (all models)	22 mm hex socket	6	53

4. INSTALLING THE FORK & FUTURE SHOCK



The Specialized Future Shock cartridge and headset are designed as an integrated unit and are only intended for use with compatible frames and forks. Only use the specified parts when assembling the front end of a Future Shock equipped bicycle.



WARNING! The fork steerer tube is pre-cut to the size of the frame. Do not cut the fork, use a fork that is too short, or use a fork that has a different steerer tube length than the original. Ensure that the size matches the size of the frame.



All Future Shocks are interchangeable on Future Shock bicycles; however, there are certain fitment limitations. See section 7 for more information.

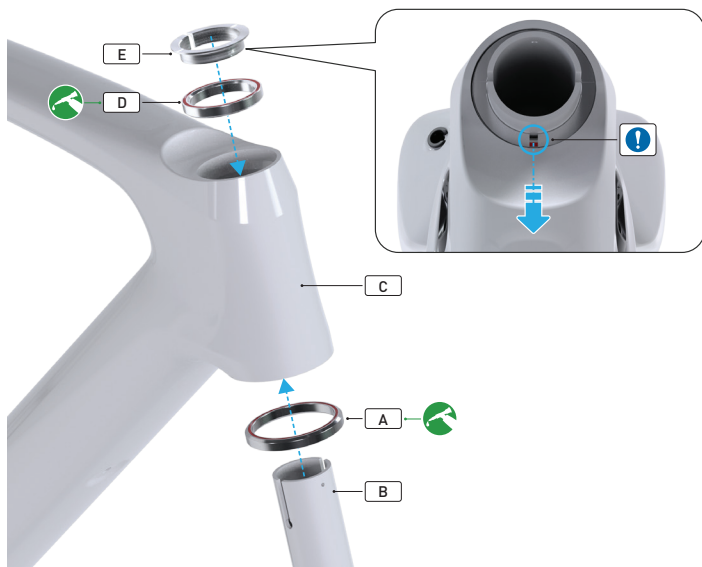


Future Shock bicycles are equipped with a custom headset cap. Different bicycle models may have different shape caps. Be sure to use the correct option for your bicycle.



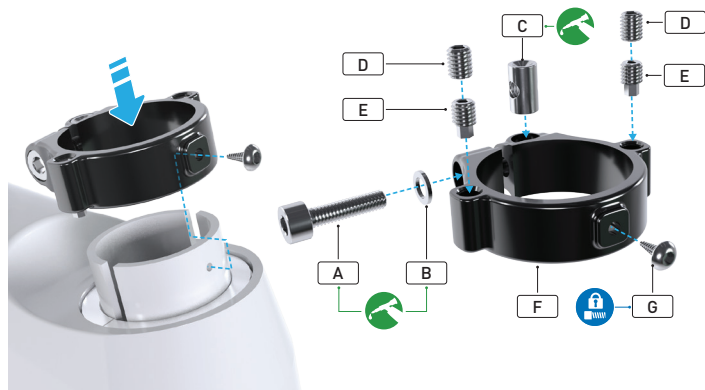
Some bolts are factory treated with a threadlocker patch. When reinstalling bolts, be sure to follow thread-prep guidelines for Loctite and grease application noted in the instructions.

Required tools	
2 and 2.5 mm hex keys	3 mm open-end wrench (provided)
2, 2.5, 3, and 4 mm hex bits	High-quality grease
22 mm socket or open-ended wrench	High-quality carbon assembly paste
Torque wrench	Blue Loctite 243



- Grease then install the lower bearing (A) on the fork steerer tube (B). Insert the steerer tube into the head tube (C), then grease and install the upper bearing (D) and compression ring (E) on the steerer tube.

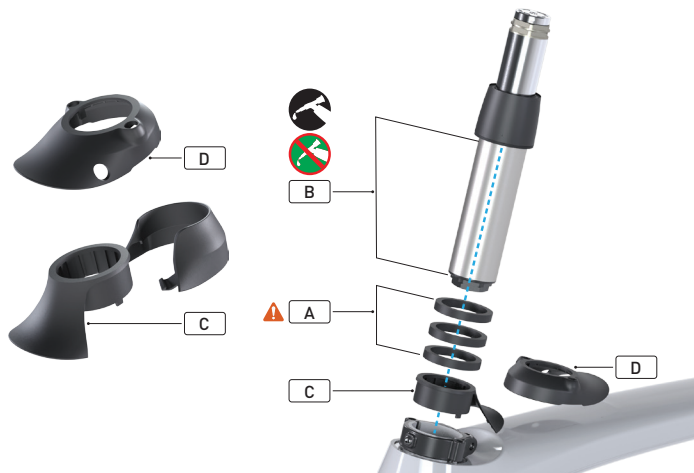
CAUTION: Ensure the compression ring slot is facing toward the rear of the bicycle. Do not place the slot near the headset preload bolts.



- Grease the headset collar pinch bolt (A), then install the bolt, washer (B), and barrel nut (C). Don't tighten the bolt yet.
- Insert the lower (E) and upper (D) headset locking screws. Don't tighten them yet.
- Install the headset collar (F) onto the steerer tube with the pinch bolt head facing the drive-side of the bicycle as shown.
- Apply a small amount of blue Loctite to the threads of the headset collar locator bolt (G), then thread it through the collar into the steerer tube. Using a torque wrench and 2.5 mm hex bit, torque the bolt to 1 Nm / 9 in-lbf.



WARNING! To ensure the collar and steerer tube bolt holes are aligned, place a 2 mm hex key through the holes before installing the locator bolt. Misalignment can damage the steerer tube. Additionally, ensure that the headset locking screws are backed out before installing the collar.



- Install 0-15 mm of steerer tube spacers (A) on the cartridge assembly (B).
- Install the short headset cover (D) or rear half of the tall headset cover (C), whichever one you're using.
- Apply a thin layer of carbon assembly paste around the entire surface of the bottom half of the chassis, then insert the cartridge assembly into the steerer tube. Do not use grease.

WARNING! Do not exceed the 30 mm max stack above the headset collar/fork steerer tube. This includes spacers (e.g. 15 mm tall headset cover plus three 5 mm headset spacers).

WARNING! Ensure there is no grease between the steerer tube and the cartridge. Grease can cause the cartridge to slip, which can result in a loss of control.

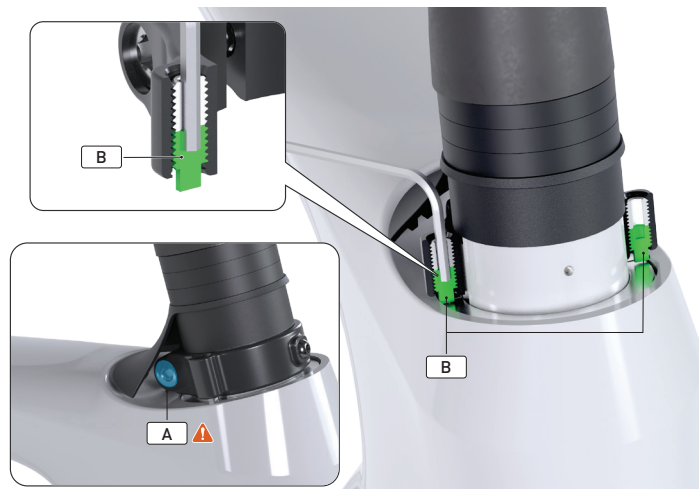


- **For non-Future Stems:** Install a stem shim (S234800001) on the cartridge for all standard 1-1/8" stems. The shim slot needs to align with the mark on the Future Shock toward the back of the bicycle. You should be able to read the text through the shim slot.

i The Future Stem is compatible with both the previous generation of Future Shocks (with the shim) and the new generation of Future Shocks (no shim).



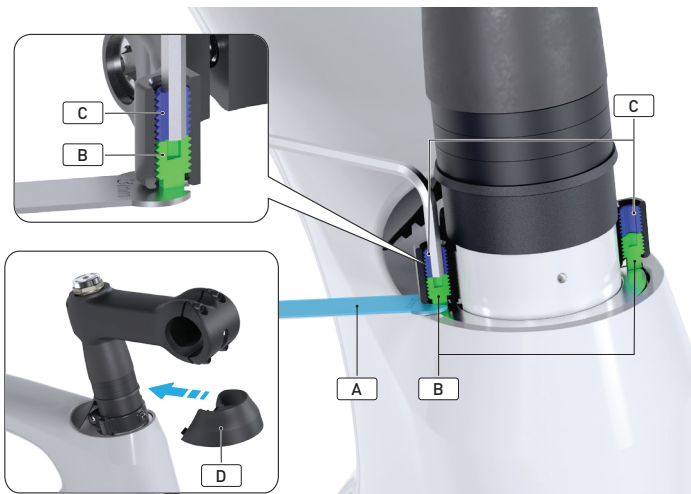
- Install the stem on the cartridge, then align the stem slot with the alignment graphic on the Future Shock.
- Align the stem and Future Shock with the front wheel rotating it slightly in the steerer if necessary.
- Torque the stem bolts (A) to the manufacturer's specification (5 Nm / 44 in-lbf for Future Stems).



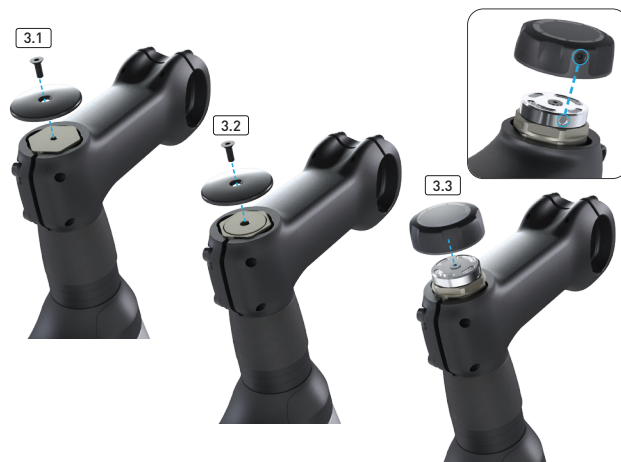
- While pressing the stem downward, use a torque wrench and 4 mm hex bit to torque the headset collar pinch bolt (A) to 4 Nm / 35 in-lbf.
- Using a 2 mm hex key, adjust the lower headset collar locking screws (B). Gradually and evenly, alternate between the two screws while engaging the front brake and rocking the bicycle back-and-forth until any movement/looseness is eliminated and the headset rotates freely.



WARNING! Do not tighten the headset collar pinch bolt without the cartridge installed. An improperly installed and/or tightened collar may cause you to lose control and fall.



- Place the provided 3 mm open-ended wrench (A) on one of the bottom of the lower headset collar locking screws (B). Using a torque wrench and 2.5 mm hex bit, torque the upper locking screw (C) to 1.0 Nm / 9 in-lbf to lock it in place. Repeat the process on the other side. **DO NOT GREASE THE LOCKING SCREWS!**
- Install the front half of the headset cover (D) if using the tall, 2-piece cover.
- Install the handlebar and brakes according to the brake manufacturer's instructions.



- **Future Shock 3.1 and 3.2:** Install the top cap. Using a torque wrench and 2 mm hex bit, torque the bolt to 1 Nm / 9 in-lbf.
- **Future Shock 3.3 only:** To install the adjuster knob, align the hole in the knob with your desired counterbore on the adjuster assembly. Using a torque wrench and 2 mm hex bit, torque the adjuster knob screw to 2.5 Nm / 22 in-lbf.

i The adjuster knob must be removed before a stem is installed.

5. SPRING & PRELOAD SPACER REPLACEMENT

Using spacers to increase preload reduces sag while increasing the spring rate reduces how frequently you bottom out.

You can change the springs and/or preload spacers to tune the Future Shock to your weight and dynamics preference. Follow the instructions below for your Future Shock model.

All of these adjustments can be made with the Future Shock installed on the bicycle and without need to adjust the headset.

Required tools

Torque wrench with 22 mm socket or 22 mm cone wrench	Needle nose pliers or pick*
2 mm and 4 mm hex keys	

*Only required for the 3.2 and 3.3 models

Spring	Spring rate	
	kg/mm	lb/in
Soft (blue)	2.3	129
Medium (black)	2.6	146
Firm (yellow)	2.9	162



The medium spring comes pre-installed on all Future Shock models.



Preload spacers can be found in the small parts box for your bicycle. No preload spacers come pre-installed on the Future Shock.

5.1. Tuning guide

There are many variables that affect which spring and how many preload spacers a rider should use, including rider weight, terrain, and preferred stiffness levels.

Use the table to help tune your Future Shock 3.0 to your preferred comfort level.



The spring rates in the table reflect using 0 preload spacers on the low end of the weight range and up to 3 preload spacers on the high end of the weight range. Using 4-5 spacers provides extra stiffness; however, we do not recommend using that many preload spacers as a starting point.

Additionally, Future Shock 3.3 has an adjuster knob you can use to control the damping. Turn the knob counterclockwise to the open position for a softer ride over rougher terrain. Turn the knob clockwise to the closed position for a firmer ride on smoother surfaces.



Turning the knob to the closed position does not lock out the Future Shock.

Find your weight on the table, then choose the spring that puts your weight in the first 1/3 to 2/3 of the bar associated to a spring. For example, if you weigh 70 kg / 154 lb, you should start with the medium black spring. If you weigh 90 kg / 198 lb, you should start with the yellow spring.

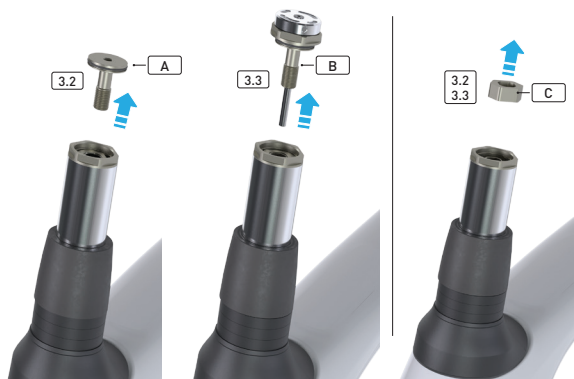
Rider weight (kg)	50	55	60	65	70	75	80	85	90	95	100	105	110	115	120	125	
Rider weight (lb)	110	121	132	143	154	165	176	187	198	209	220	231	243	254	265	275	
Firm 2.9 kg/mm					yellow spring range												
Medium 2.6 kg/mm			black spring range														
Soft 2.3 kg/mm	blue spring range																

5.2. Changing springs and/or adding spacers

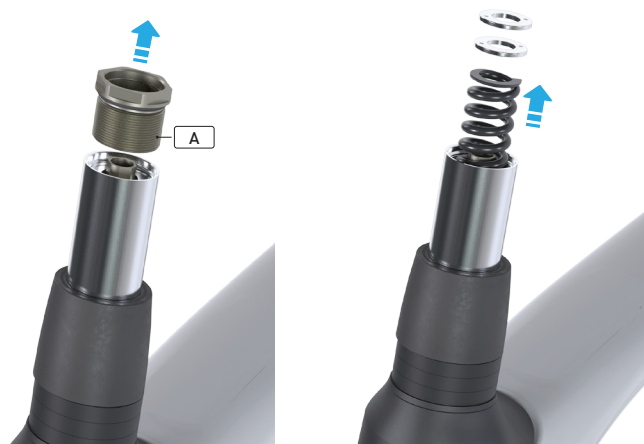
- **Future Shock 3.1 & 3.2:** Using a 2 mm hex key, remove the top cap (see install instructions on page 8).
- **Future Shock 3.3:** Using a 2 mm hex key, remove the adjuster knob (see install instructions on page 8).
- **For all models:** Using the 4 mm hex key, remove the stem (see install instructions on page 7). If your bicycle is equipped with a non-Future stem (see install instructions on page 6), also remove the stem shim.



You can leave the handlebar attached to the stem during this process.



- **Future Shock 3.2:** Using a 4 mm hex key, remove the damper bolt (A).
- **Future Shock 3.3:** Using a 22 mm socket or cone wrench, remove the adjuster assembly (B).
- **Future Shock 3.2 & 3.3:** Using a pair of needle-nose pliers, remove the key plate (C).



All Future Shock models

- Using the 22 mm hex socket or cone wrench, remove the preload bulkhead (A).
- Remove the preload spacers (if you previously installed any) and spring.



If you previously installed spacers, make sure there aren't any stuck in the preload bulkhead. If necessary, use a pick to get them out.



- **All models:** Lightly grease the sides and faces/ends of your desired spring, then install the spring and your preferred amount of preload spacers. The spacers can be installed directly onto the spring or in the bulkhead with grease. The minimum is zero preload spacers, which replicates the minimal preload on Future Shock 1.5 and 2.0. The maximum is five.
- **All models:** Reinstall the preload bulkhead over the spring and spacers.
- **All models:** Using a torque wrench and 22 mm socket, torque the preload bulkhead to 6 Nm / 53 in-lbf.
- **Future Shock 3.2 and 3.3:** Replace the key plate over the damper shaft making sure it's sitting flat in the bore.

i A loose fit is OK. If there's significant preload, push down on the Future Shock chassis to ensure the parts are correctly aligned.

CAUTION: Do not exceed the maximum capacity of five preload spacers as this could damage the system.

- **Future Shock 3.2:** Reinstall the damper bolt. Using a torque wrench and 4 mm hex key, torque the bolt to 5 Nm / 44 in-lbf.
- **Future Shock 3.3:** Reinstall the adjuster assembly. Using a torque wrench and 22 mm hex socket, torque the assembly to 5 Nm / 44 in-lbf.
- **All models:** Reinstall the stem. If using a non-Future Stem, reinstall the stem shim. Torque the bolts to the manufacturer's specification.
- **Future Shock 3.1 & 3.2:** Reinstall the top cap. Using a torque wrench and 2 mm hex bit, torque the top cap bolt to 1 Nm / 9 in-lbf.
- **Future Shock 3.3:** Reinstall the adjuster knob. Using a torque wrench and a 2 mm hex bit, torque the set screw to 2.5 Nm / 22 in-lbf.

6. REPLACING THE BOOT

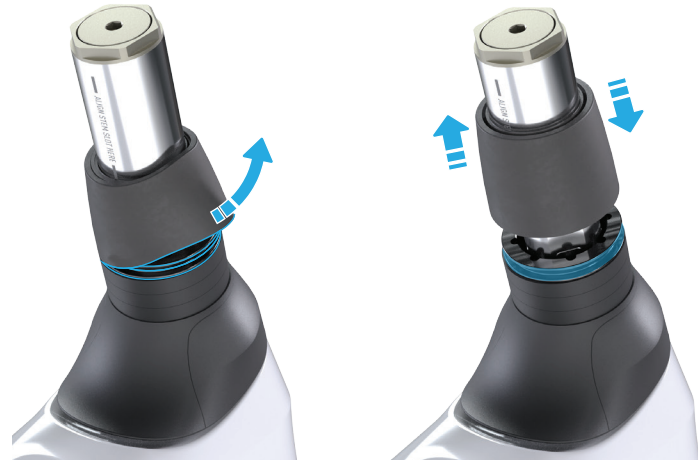
Damaged Future Shock boots must be replaced immediately to prevent water ingress, which can damage the Future Shock. The boot can be replaced without disassembling the Future Shock; however, if you don't feel comfortable completing this service, please see an Authorized Specialized Retailer.

Required tools

2 mm and 4 mm hex keys	2 mm and 4 mm hex bit
Torque wrench	Replacement boot (S223100001)



Before replacing the boot, remove the stem as outlined in section 5. When the boot replacement is complete, reinstall the stem as outlined in section 4.



- Peel back the bottom of the boot from the seal cap (the upper bulkhead of the outer tube).
- Slide the damaged boot up and off of the inner tube.
- Slide the new boot down over the inner tube until it's fully seated on the lip of the inner tube.
- Stretch the bottom of the boot into the gland on the seal cap (highlighted).
- Make sure the lip is properly seated in the seal cap gland and isn't twisted.

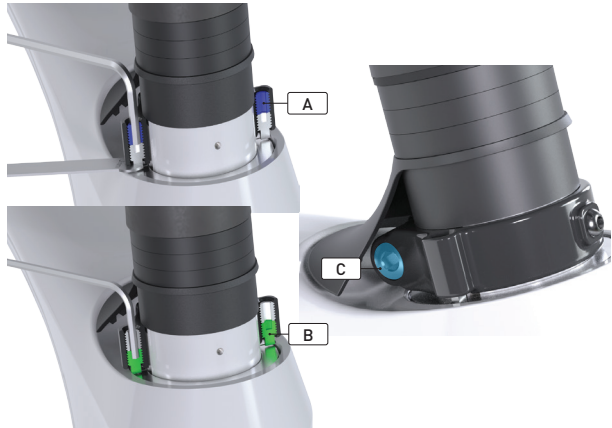


If there are any lumps in the boot, you can remove them by pulling up on the boot and re-seating it in the seal cap gland.

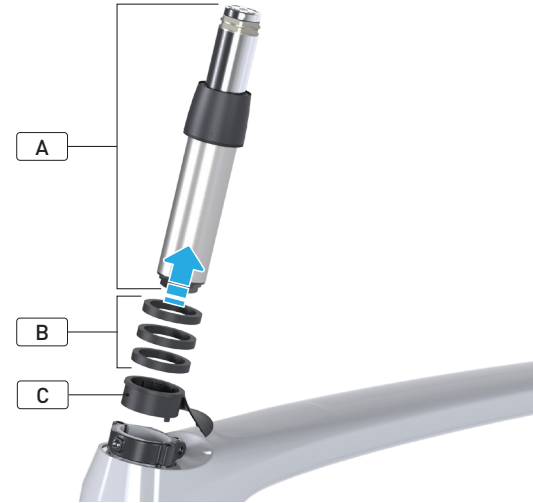
7. RETROFITTING THE FUTURE SHOCK 3.0

You can replace your Future Shock 1.5 or 2.0 with a Future Shock 3.0 model. For more information on your bicycle's compatibility, visit the Specialized Support Center at www.specialized.com/support.

- Remove the top cap or adjuster knob depending on your model (see install instructions on page 8).
- Using a 4 mm hex key, remove the stem and stem shim if using one (see install instructions on page 7).
- If you're using the 2-piece tall headset cover, remove the front piece (see install instructions on page 8).



- Using a 2.5 mm hex key, loosen the upper locking screws (A) followed by the lower locking screws (B).
- Using a 4 mm hex key, loosen the headset collar pinch bolt (C).



- Remove the Future Shock cartridge (A), any steerer tube spacers (B), and the short headset cover (or the rear of the 2-piece tall cover if using that one - C).
- Follow the steps in section 4. **INSTALLING THE FORK & FUTURE SHOCK** to install your Future Shock 3.0 model.

8. SMALL PARTS & COMPONENTS

Part number	Description
S172500021	Headset spacer
S192500018	Headset collar assembly
S172500020	Headset collar pinch bolt
S172500018	Headset collar compression ring
S172500033	Headset collar upper locking screw
S172500017	Headset collar locator bolt
S172500023	Headset collar barrel nut
S223100001	Future Shock boot
S223100005	Future Shock 3.3 adjuster knob and bolt
S223100007	Future Shock 3.1 & 3.2 top cap and bolt
S189900090	Future Shock 2-piece headset cover (tall)
S192500010	Future Shock 2-piece headset cover (short)
S192500011	Future Shock 1-piece headset cover
S234800001	Future Shock stem shim
S233100002	Preload spacers
S233100001	Future Shock spring kit