XTrainer Shock Manual

Removing the shock components and reassembly including shock lowering

2015-2020

All work must be performed by trained technician.

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Introduction

The procedures in this manual must take place in a clean environment using professional and some specific tools.

Use caution not to damage the surface of the shock body, shaft, or any suspension components.

When using a the bench vise, always use protective jaws made from brass, aluminum or plastic. Always clean suspension components before assembly, using appropriate solvents and lint free towels to prevent contamination. Replace common wear parts such as seals, gaskets, bushings and O-rings every service interval.

CAUTION:

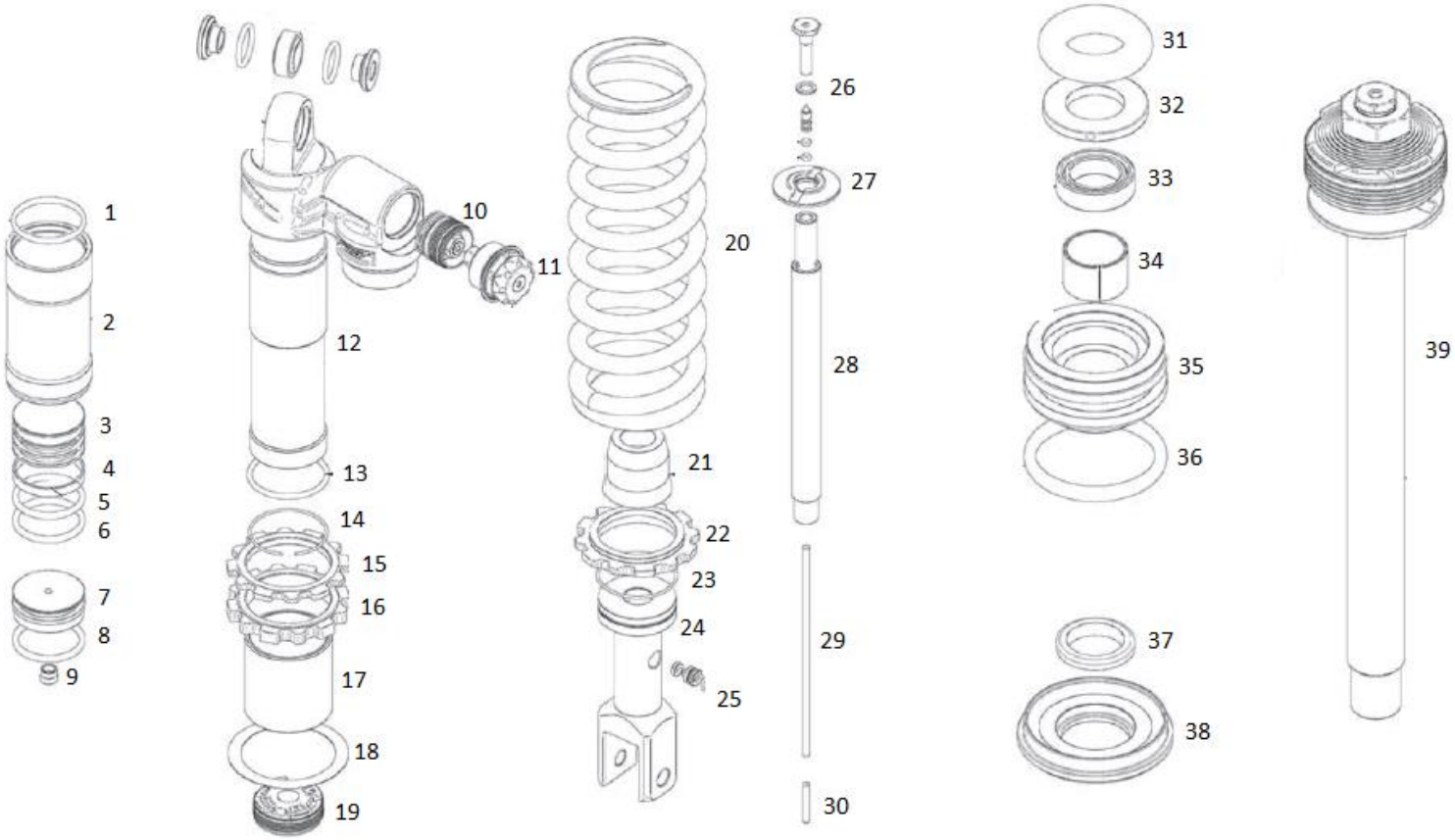
Always wear protective eyewear, gloves and appropriate clothing. Before you perform any maintenance, be sure to completely read and carefully follow the detailed instructions described in this manual.

The shock absorber unit contains highly compressed gas. Incorrect disassembly/assembly of the shock may cause serious damage, injury, or death to the rider and property.

Special tools

	Spring seat collar spanner wrench
AB- 15038	Aluminum shock shaft clamp
AB- 15036	Shock adjuster removal tool
	Race Tech schrader valve tool
	2.5mm Pin spanner wrench
	Nitrogen gauge
	Nitrogen with regulator

Diagram



1. Circlip
2. Reservoir
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6. O-ring
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35. Shaft case guide
36. O-ring
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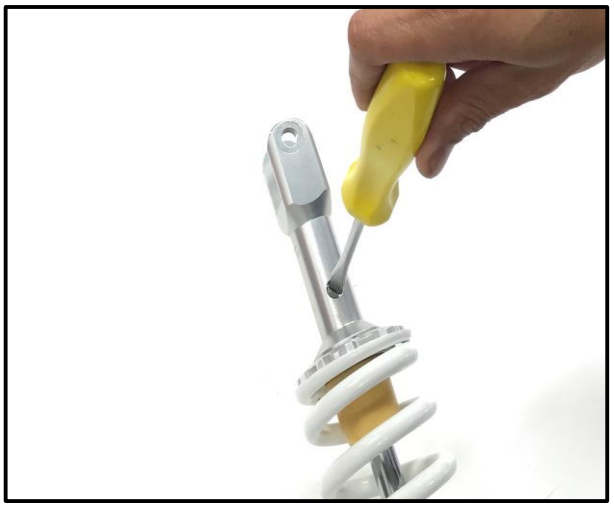
Recording the Adjustment Settings

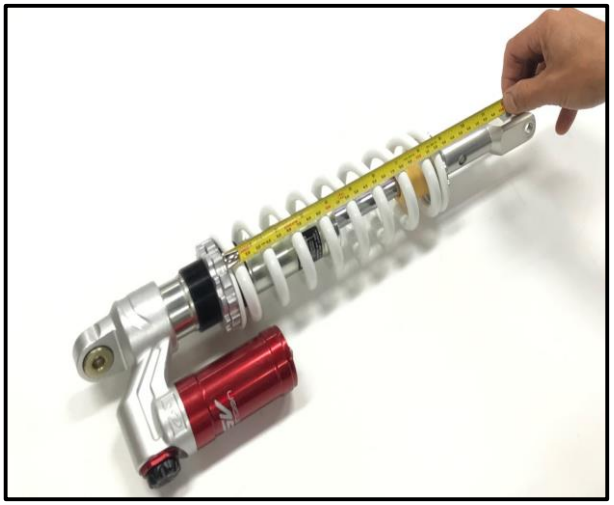


Check and record the location of the rebound adjustment.
To do this, turn the screw clockwise until it stops, noting the number of “clicks ”made by the screw.
Then turn the screw counter-clockwise until fully open.

Check and record the position of the compression adjustment knob “clicks”.

Note the adjustment direction arrows on the knob. The compression adjustment arrows changed in 2018 to clockwise, with older models counter-clockwise.

Turn the compression knob to full soft after recording your setting.



Measure and record the set length of the coil spring under preload.

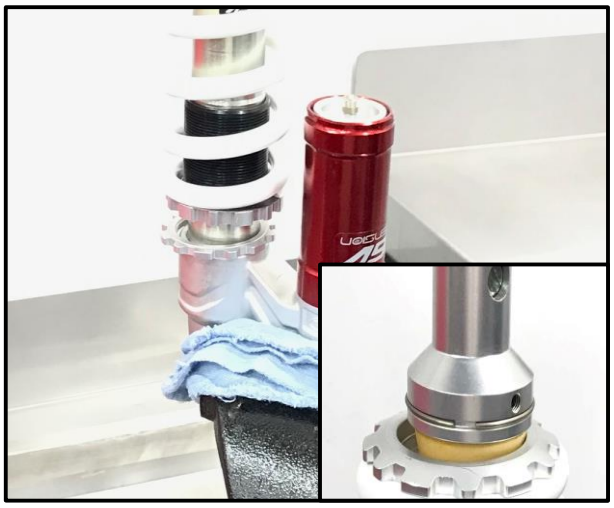
Coil Spring Removal

Place and tighten the shock upside down in the bench vise, using soft jaws with one of the methods shown in the photos.

Loosen the spring seat lock nut collar using spanner wrenches.

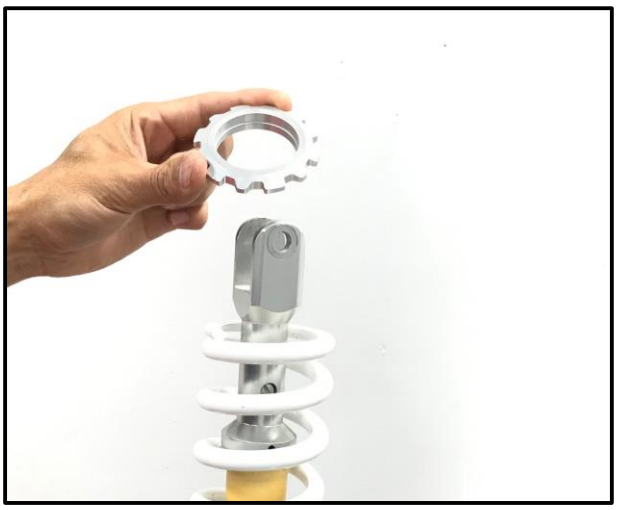
Unscrew the spring seat lock nut collar.

Loosen the spring seat adjusting nut collar, removing any coil spring tension.

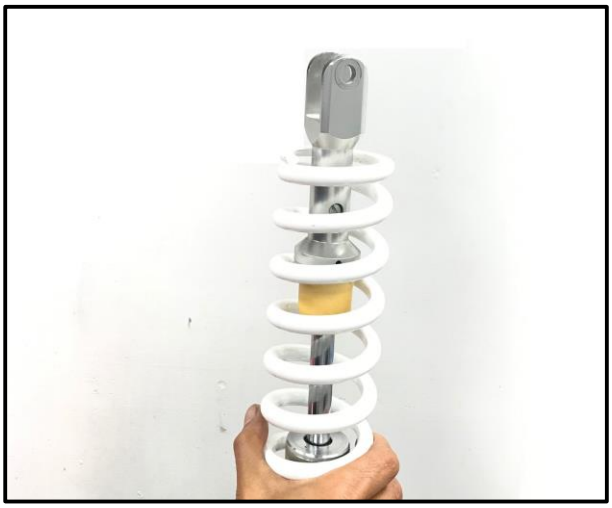


The coil spring should be low enough to allow the spring seat circlip to be lowered and expose the spring seat circlip.

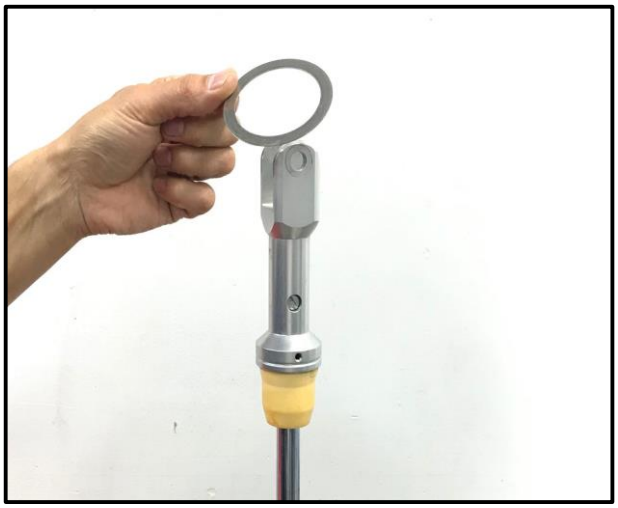
Remove the circlip.



Remove the spring seat collar.



Remove the coil spring.



Remove the thin metal spring seat washer from the spring seat adjusting nut collar.

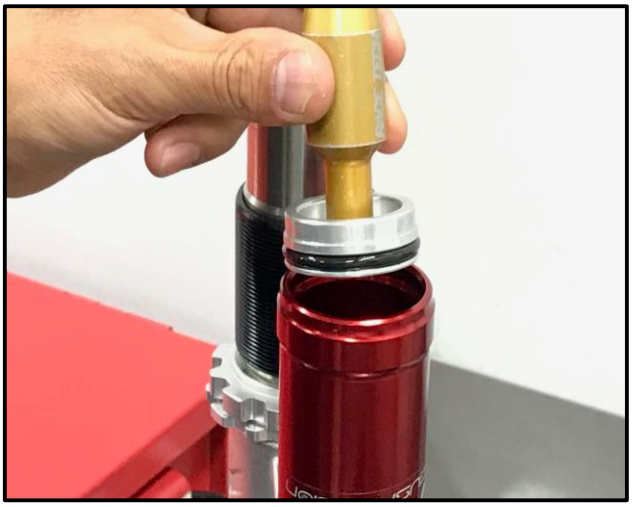
Shock Disassembly

Unscrew the steel cap from the schrader valve on the reservoir.

Press the center of the schrader needle valve to release all nitrogen pressure.

Press down on reservoir cap to expose the circlip.

Using a pick, remove the seal case retaining circlip. Be careful not to scratch the inside of the reservoir.



Remove the reservoir cap using the removal tool, then remove the O-ring.

Lightly tap on the shock body cap with a 3/8 Chisel to unseat it from the shock body.

The seal head needs to be pushed down to expose the seal case retaining circlip.

Fully compress the shaft assembly to expose the circlip.

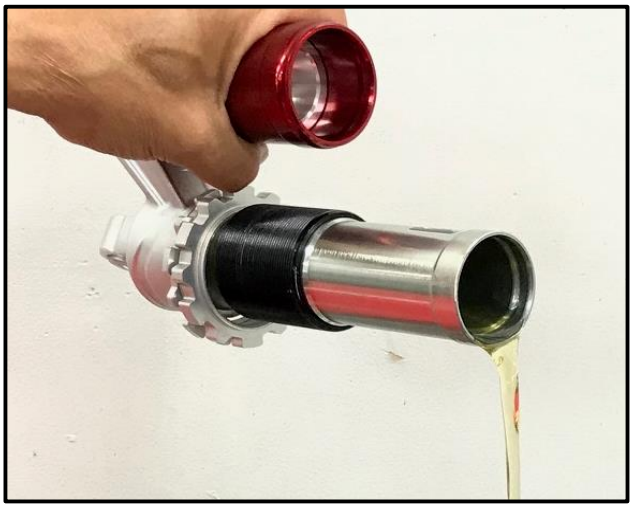
1” PVC was modified and used in the photo to aid the seal case guide to compress.

Using a pick, remove the seal case retaining circlip from the shock body. Careful not to scratch the inside body, or shaft.

Secure the shock by the clevis in a bench vise with soft jaws.

Use a rubber mallet to tap on the reservoir to slowly remove the shaft assembly from the shock body.

Once the seal head has cleared the circlip groove, slowly pull the shock body away from the shaft assembly with a twisting motion.

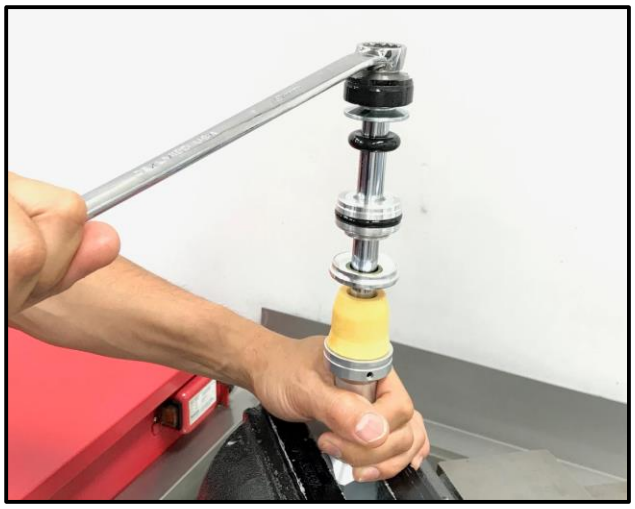


Completely drain the oil from the reservoir and shock body.

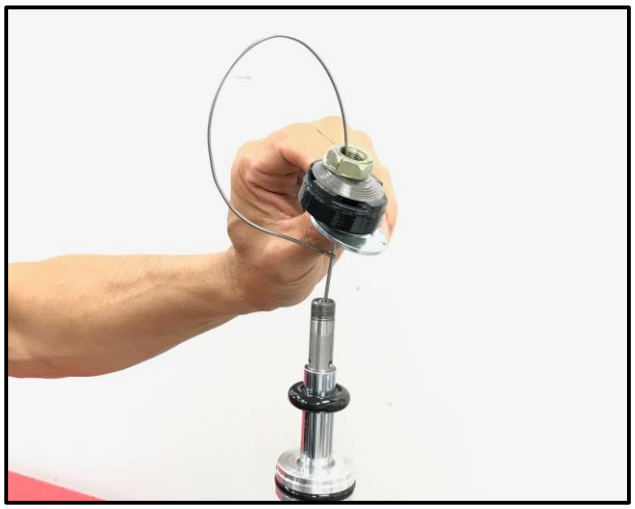
Compress the floating piston into the reservoir until it is fully bottomed.

It is a good idea to cover the body with a towel as this can cause oil to spray out.

Valve Piston Disassembly



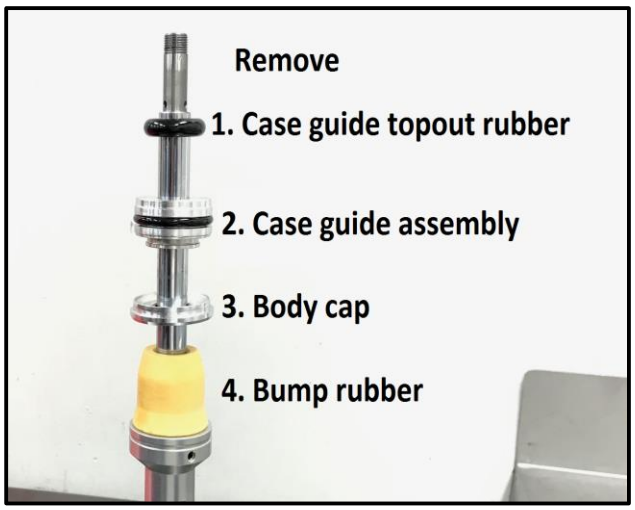
Secure the shaft assembly in a vise at the clevis, then loosen the 19mm shaft nut.



Place a wire, or cable tie through the shaft nut and into the end of shaft.

Slowly raise the complete piston assembly with valve shims, including the case guide stop through the wire and secure it from losing the orientation.

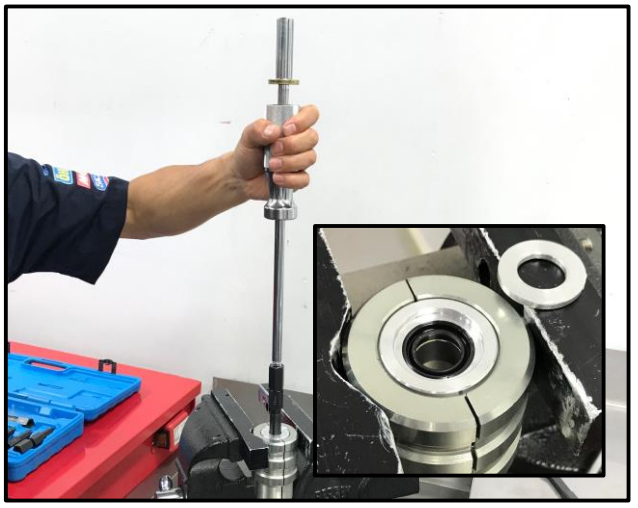
Shaft Component Disassembly



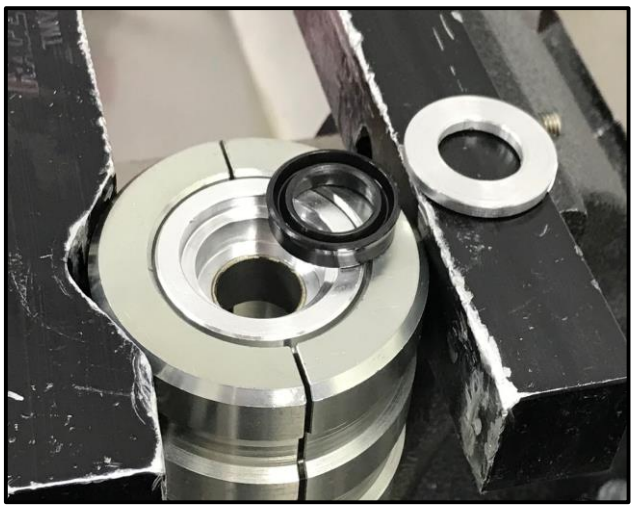
Remove the components from the shaft. Clean and inspect the shaft for nicks, burrs, or damage.

Clean and inspect the shaft components, replace any worn, or damaged parts.

Case Guide Disassembly



Secure the case guide assembly in a vise with appropriate tooling.
Using a blind bearing puller, remove the aluminum oil seal cap.



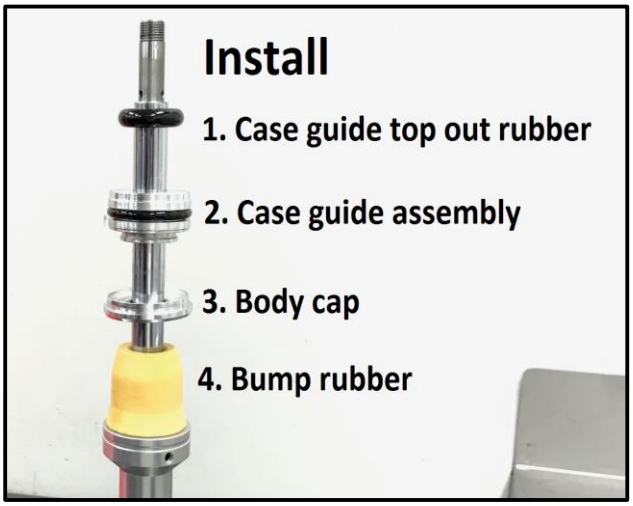
Remove the oil seal, noting the oil seal direction. Clean and inspect the case guide assembly for wear, or damage.

Case Guide Assembly

Install the new O-ring and case guide oil seal with the cavity facing up.

Reinstall the oil seal cap with the circular groove facing down towards the oil seal (B).

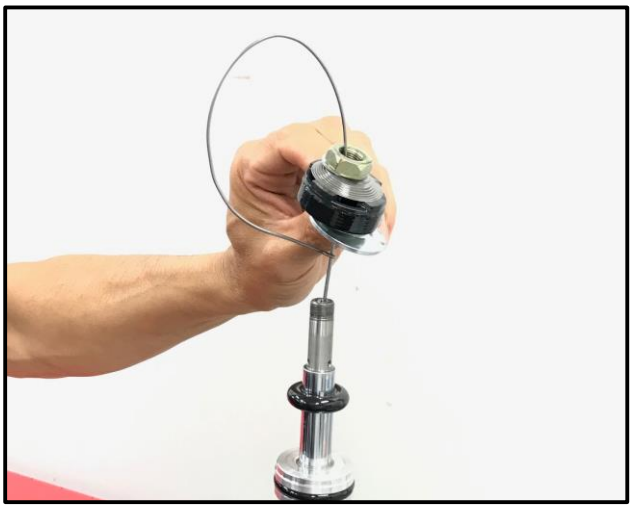
Shaft Component Assembly



Reinstall these components in order making sure to grease the oil seal. Make sure the bump rubber has its widest side facing down towards the clevis.

Valve Piston Assembly

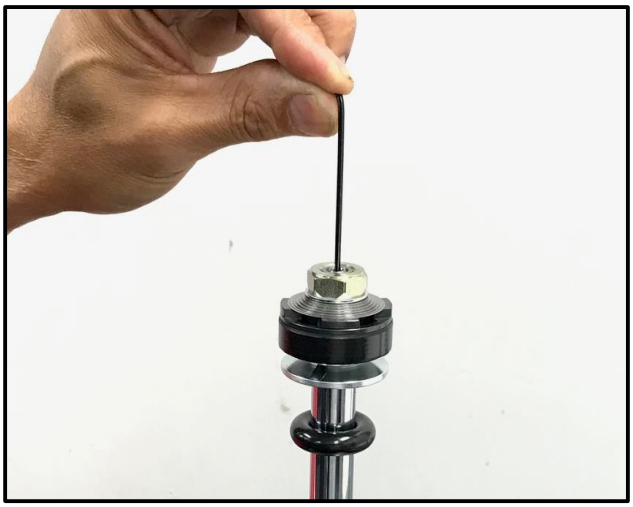
Note: *If lowering, the lowering spacer should be installed prior to installing the piston assembly.* ***See page 24***



Insert the wire, or cable tie with the piston, valve shims and stop onto the end of the shaft.

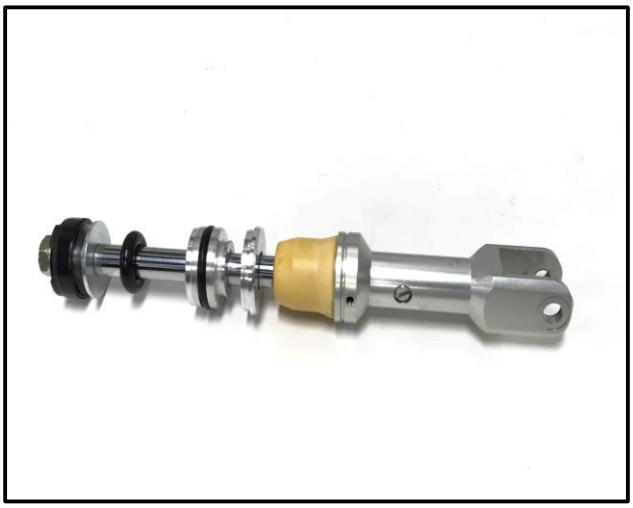
Apply high strength thread locker to the threads.

Tighten the nut to 34Nm.



First, make sure the rebound screw is completely backed out counter-clockwise.

Use a 2mm Allen wrench to push on the rebound adjusting rod. Fully seating the needle prevents bleeding problems in assembly.



Completely reassembled shaft assembly.

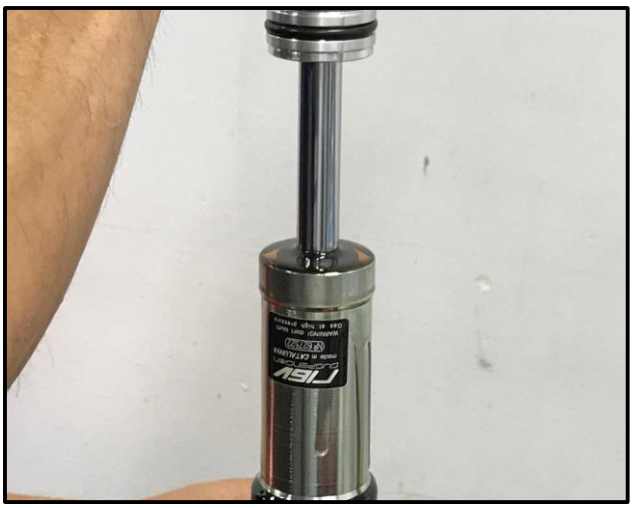
Shock Assembly

It is recommended to pre-bleed the shaft assembly using a ratio-rite and a **5 wt**. shock fluid, or equivalent before starting the assembly bleeding process.

Completely fill the shock body with **5 wt.** shock fluid.

With the shock body completely filled with shock fluid, remove the shaft assembly from the ratio–rite and submerge the shaft assembly into the shock body.

Move shaft up and down to bleed any air out of the shock. **During the bleeding procedure you must keep the floating piston fully bottomed while moving the shaft.** This will maintain backpressure in the shock body, helping to remove any trapped air. Bleed process usually takes 30 minutes, or until all air is completely bled.



With the floating piston fully bottomed, raise the shaft assembly to <u>full extension</u> without drawing any air into the shock.

Apply grease to the case guide O-ring.

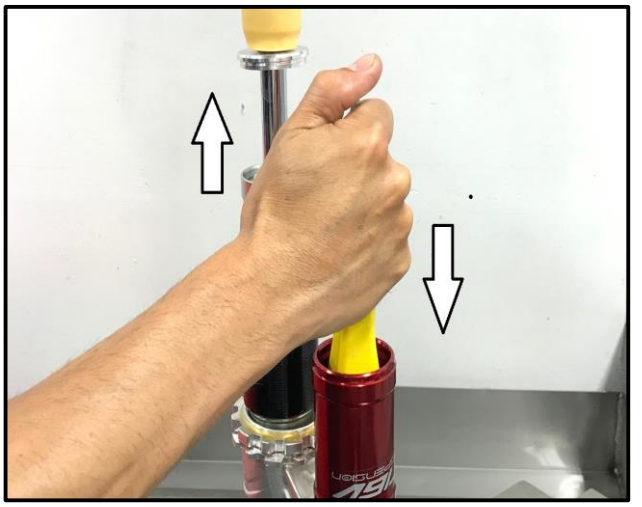
<u>DO NOT MOVE THE SHAFT ASSEMBLY THEREAFTER</u>.

Maintaining the shaft at full extension, slowly lower the case guide until it bottoms onto the case guide top-out rubber.

Compress only the case guide assembly into the shock body past the circlip groove, never the shaft assembly.

Compressing the case guide past the circlip groove will raise the floating piston inside the reservoir to approximately 50%.

Insert the case guide body circlip into the shock body circlip groove. Assure the circlip is completely seated.



Push downward on the floating piston, causing the shaft assembly to fully extend in the body and seat the case guide circlip.

Install and grease the new reservoir cap O-ring.

Using the cap installation tool, insert the cap into the reservoir far enough to expose the reservoir circlip groove.

Install the circlip making sure it is fully seated.

Charging the Reservoir

Install the proper nitrogen gauge and fill the reservoir with nitrogen gas ONLY.

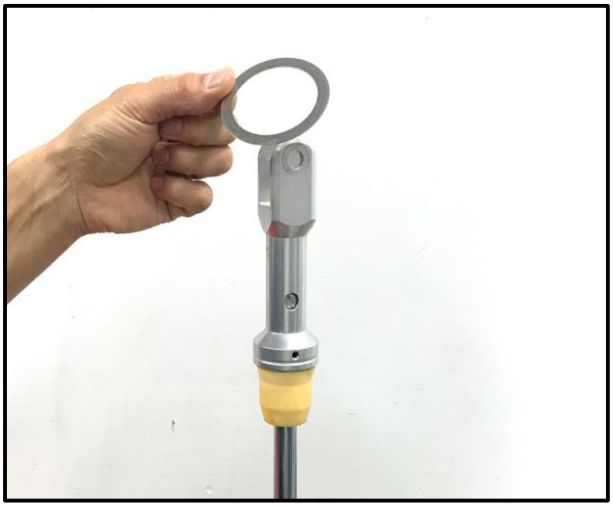
Recommended Nitrogen pressure:
150 psi or 10 bar.

Before installing the steel schrader cap, it is recommended to check the schrader valve for air leaks by applying oil over the needle area.

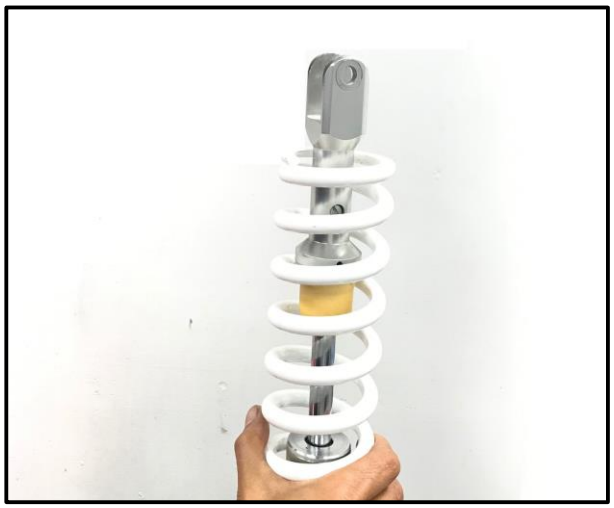
If leaking, inspect the schrader needle by tightening or replacing.

Position the body cap flush onto the shock body. Using a rubber mallet, seat the body cap circumference until fully seated.

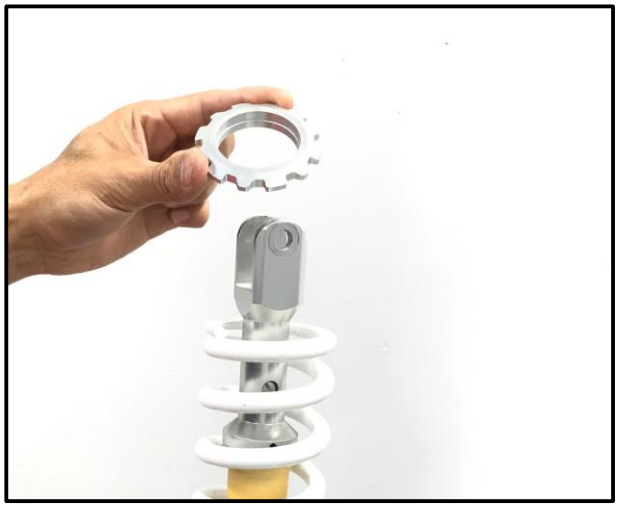
Coil Spring Installation



Install the thin metal spring seat washer on the spring seat adjusting nut collar.



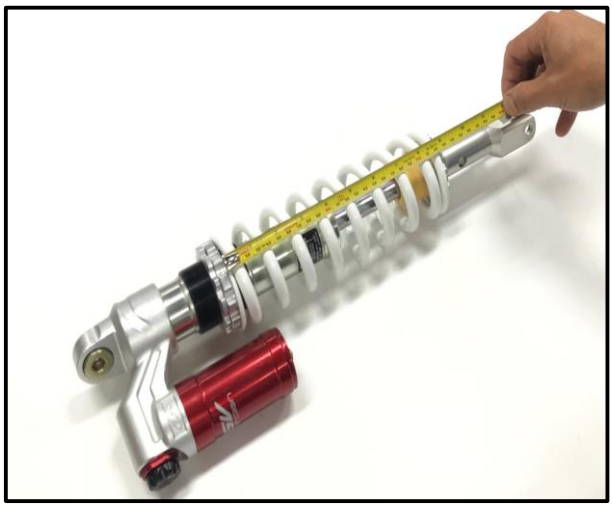
Install the coil spring.



Install the spring seat collar.

Install the spring seat circlip.

While holding the coil spring up, thread the spring seat adjusting collar and thread it upward until there is neutral tension on the spring.



Tighten the adjusting collar until you reach your recorded spring preload.

Recommended spring pre-load is
Min 5mm
Max 15mm
Recommended 8mm

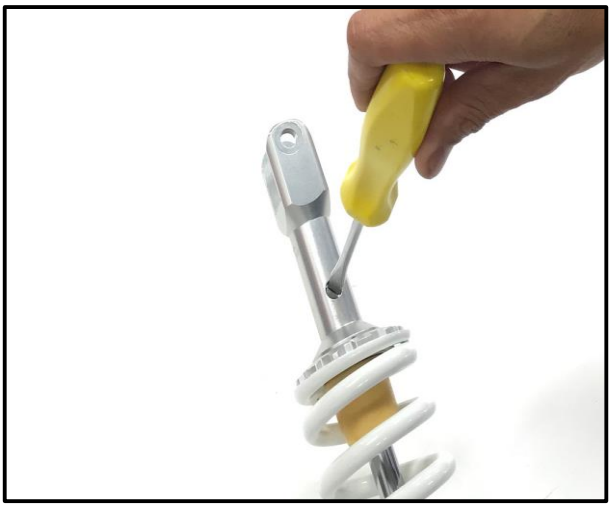
Install the spring seat lock nut collar.

Thread the lock nut collar up to the adjuster collar and tighten both together with two spanner wrenches.

External Setting Adjustments

Note the adjustment direction arrows on the compression knob.

First, adjust the compression to full stiff/hard. Next, adjust the compression knob to your recorded, or desired amount of adjustment setting.



From fully closed/hard, turn the rebound adjuster clockwise to the recorded amount of adjustment.

Shock Lowering

1. Review the entire manual.

2. Follow the disassembly pages 4-12 for access to the area where the lowering spacer is located on the shaft.

3. The photo below shows the location for the stock spacer and new lowering spacer dimensions.

4. Follow the shock assembly instructions pages 14-23 to finish the assembly procedure.