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**INSTALL INSTRUCTIONS:**

**Fox rear shock tuning kit  
2017-2020 Can-Am Maverick  
X3 MAX X RS  
SKU: 470-90723**



**PARTS LIST FOR SKU: 470-90723**

QUANTITY	PART #	DESCRIPTION
2	6438	Inner bypass body
2	6309	Negative spring, guideless
2	Thrust-washer	1.375X.875X.02 thrust washer
2	FOX-SHIMSTACK-R-COMP24	Compression shim stack
2	FOX-SHIMSTACK-R-REB20	Rebound shim stack
2	FOX-SHIMSTACK-DSC-5	DSC shim stack
1	Fox Endcap kit	Reservoir end cap kit with Schrader valves
1	Fox-Oil-8OZ	8 oz race oil for top off

**WARNING**

Please read this entire instruction sheet before beginning installation. Proper installation of these components requires a qualified mechanic and shock absorber technician. Always wear safety glasses when using power tools, and take appropriate precautions when working under a vehicle. If these instructions are not properly followed you may jeopardize your, and your passenger's safety, and severe vehicle damage may also result from improper installation.

**TECH NOTES**

- These instructions are not detailed in the tear down and re-assembly of the shocks, they are merely to summarize the installation of the included kit components.
- It is necessary to open the shocks up to gain access to the shock internals to install this kit, shock absorber is under nitrogen pressure. Do not attempt to open the shocks up nor install if you are not a qualified shock technician nor have the proper tools to work on these specific shocks. A power supply must be applied to the live valve in order to hold it open so the shocks can be opened up.
- This application is only for 2017-2020 Can-Am Maverick X3 MAX X RS that were equipped OEM with Fox Internal Bypass Shocks, 2.5" front and 3.0" rear.
- If shocks are thoroughly used, it is recommended to tear shocks completely apart and install rebuild kits and fresh shock oil, along with installing this kit. Rebuild kits and shock oil sold separately, as well as service labor to install this kit and rebuild kits.
- Comp pyramid stack 1)1.8x6SB, 2)1.8x15, 2)1.6x15, 2)1.42x15, 1)1.35x15, 1)1.25x15, 1)1.1x15, 1).95x15
- Rebound pyramid stack 1)1.6x15, 1)1.42x15, 1)1.35x12, 1)1.25x12, 1)1.1x12, 1).95x12

**REQUIREMENTS**

- Installation requires a qualified mechanic and shock absorber technician
- Shock absorber must be bled of air properly and recharged with nitrogen after re-assembly.
- Read instructions carefully and study the pictures before attempting installation.
- Check the parts and any hardware packages against the parts list to assure that your kit is complete.

### **Installation:**

1. Remove the springs and spring hardware. Turn both the DSC adjusters counterclockwise till they stop in order to open them all the way up. Release the nitrogen from the reservoir.
2. After opening up the shock absorber, and removing the shaft assembly from the body, pull out the inner body from the oil bath inside the main body. Stand the OEM inner body up next to the Cognito inner body and be sure the overall length is the same, if it is not the same double check the application of this kit against your RZR and call Cognito customer support.
3. Wipe the oil from the inner body, heat up the screws and the area of the body around the screws holding the check valves in place so that the screws can be removed without stripping or breaking them.
4. Clean the threaded holes on the new inner body and clean the screws so they are oil free and dry, add the most minimum amount of thread locker to the screws and transfer the check valves to the new inner body and fasten with the screws to the new body, if the screws are aluminum with hex only tighten to 2inch/lbs. Do not place in the oil bath yet, need 10 minutes for thread locker to dry.
5. Mark the piston top with a 'T'. Remove the piston from the shaft. Remove the negative spring and plastic negative spring guides from the shaft. On 4 seat cars, remove the OEM spacer that takes the place of the negative spring and discard. Install one thrust washer onto the shaft and then a new Cognito guideless negative spring. The thrust shim is protecting the aluminum seal head from the new guideless negative spring.
6. Remove the OEM shim stacks from the piston and replace with the Cognito shim stacks. Be sure to install the rebound shim stack on the top of the piston, and the compression shim stack to the bottom of the piston. Retain the large thick OEM backup washer between the shaft and the smallest compression shim. Before installing the piston nut, make sure the OEM washer is under the nut and that the nut will not run out of thread. If you can see the last thread above the washer, add another washer so the nut does not run out of thread which would prevent the nut from clamping the piston assembly to the shaft. Tighten the nut to 30 ft.lbs.
7. The OEM reservoir end caps do not have Schrader valves as you already know. This kit contains new reservoir end caps with Schrader valves to ease service and nitrogen fill/release. Remove OEM end caps. Be sure floating piston in the reservoir is at proper height, the easiest way is to push the piston down till it bottoms out then pull it back up ½", Remember the power supply needs to be applied to the live valve to while moving the floating piston. Install the new end caps.
8. Re-assemble the shock, use the top off oil provided.
9. Once the shock is back together, hold the shock in a vice so the OEM Dual Speed Compression adjuster (DSC) is pointing straight up. Remove the DSC, remove the nut holding the 4-shim stack in place. Remove the three 1.1" diameter shims paying attention to the smaller diameter shim leaving it in place. Replace the three 1.1" shims with the three thicker shims in the DSC shim stack supplied, again making sure the small diameter shim is in the proper place. Pour a little oil in the hole, install the new DSC.
10. Charge the shock with nitrogen to 200 PSI. Check your work, install new Cognito spring kit along with your newly tuned shocks.

## **Shock Set-up on vehicle:**

### **Front**

- Ride height in front is measured from the ground up to the flat gusset under the rear pivot of the lower control arm, with no one in the car. Roll the car forward and backward a few times to make sure it is settled out before measuring. Ride height is changed with the preload setting, the preload is adjusted via the preload adjusting ring at the top of the spring. It may have either a pinch bolt keeping it in place or a jam nut ring just above it. Be sure the crossover rings are up above the spring divider before measuring and adjusting ride height.
  - With Cognito Long Travel suspension,
    - if 2 people will occupy, this height should be 1/2 of the measured diameter of the tire plus 1.0" For example, tire measures 32", so for 2 occupant ride height will be 17.0"
    - if 1 person will occupy, this height should be 1/2 of the measured diameter of the tire plus 3/4" For example, tire measures 32", so for 1 occupant ride height will be 16.3/4"
- Crossover ring setting for the front shocks is determined by the gap in between the spring divider and the crossover ring. This distance should be 3/4" for the front shocks while at the ride height set above. This is a good starting point, and this can be fine-tuned for several different scenarios or types of riding or racing.
- There are several bump steer delete/reducing tie rod kits on the market, including the one Cognito offers. Therefore, setting the toe adjustment will be done at the ride heights described above and will be assumed to be correct at operating ride height after occupants are in the vehicle.
- Setting the adjusters, there are no clicks/detents in turning these adjusters. They have 4 full turns, lefty loosey, righty tighty. Full loose is full soft, full tight is full stiff. Start in the middle and fine tune as desired.

### **Rear**

- Ride height is measured from the ground up to the flat surface at the very rear of the chassis under the stock tow hook, with no one in the car. Roll the car forward and backward a few times to make sure it is settled out before measuring. Ride height is changed with the preload setting, the preload is adjusted via the preload adjusting ring at the top of the spring. It may have either a pinch bolt keeping it in place or a jam nut ring just above it. Be sure the crossover rings are up above the spring divider before measuring and adjusting ride height.
  - With Cognito Long Travel suspension,
    - if 2 people will occupy, this height should be 1/2 of the measured diameter of the tire plus 1.0" For example, tire measures 32", so for 2 occupant ride height will be 17"
    - if 1 person will occupy, this height should be 1/2 of the measured diameter of the tire plus 3/4" For example, tire measures 32", so for 1 occupant ride height will be 16.3/4"
- Crossover ring setting for the rear shocks is determined by the gap in between the spring divider and the crossover ring. This distance should be 3" for the rear shocks while at the ride height set above.

This is a good starting point, and this can be fine-tuned for several different scenarios or types of riding or racing.

- Setting the adjusters, there are no clicks/detents in turning these adjusters. They have 4 full turns, lefty loosey, righty tighty. Full loose is full soft, full tight is full stiff. Start in the middle and fine tune as desired.

**WARRANTY / RETURN POLICY / SAFETY**

**Cognito Limited Lifetime Warranty**

Cognito Motorsports, Inc. hereinafter “Cognito,” warrants to the original retail purchaser, that its suspension products are free from workmanship and material defects for as long as the purchaser owns the vehicle on which the product(s) were originally installed. This warranty will be void if any modifications are made to the components, including alterations to the surface finish, i.e.; painting, powder coating, plating, and/or welding, or if they are improperly installed. Cognito truck suspension products are not designed nor intended to be installed on “competition” vehicles used in race applications, stunt or for exhibition purposes that are outside of the intended operating conditions specified by the manufacturer. Racing and competition are defined as any contests between two or more vehicles; or vehicles competing individually on off road circuits in timed events (whether or not such contests are for an award or prize).

This warranty does not include coverage for police, taxi, government or commercial vehicles, and the warranty does not cover Cognito products sold outside of the USA. Cognito’s obligations under this warranty are specified and applied at its sole discretion, and warranty coverage is limited to repair or replacement of the defective product(s). Any and all costs of removal, installation or reinstallation; freight charges, incidental or consequential damages associated with the covered products are expressly excluded from this warranty.

The following items are exempt from Cognito limited warranty coverage: bushings, bump stops, tie-rod ends (Heim joints) and limiting straps. These parts are “consumables” and designed to wear as a normal part of their duty cycle, therefore they are not considered defective when worn. The aforementioned products are warranted separately against defects in workmanship, for 60 days from the date of purchase. As a condition of warranty validation, respective Cognito suspension components must be installed as a complete system (not combined with non-Cognito hardware or ancillary parts). Any substitutions or omission of required components will void the warranty. Some minor cosmetic wear and imperfections may occur to parts during shipping, which is not covered under this warranty. This limited warranty does not apply to any components that have been subjected to collision damage, negligence, alteration, abuse, or misuse, and coverage does not extend to products manufactured by third-party companies. Cognito reserves the right to supersede, discontinue, or change the design, finish, part number and/or application of its parts when deemed necessary, without notice.

**Return Policy**

Product returns will not be accepted without prior written approval from an authorized Cognito representative. All products being returned must be shipped via trackable, prepaid freight. Returned products are subject to a 25% percent restocking fee. The eligible return period for products purchased directly from Cognito is 30 days from the verified date when the product(s) were originally received by the purchaser.

**Product Safety Advisory**

The installation of Cognito steering and suspension components will modify your vehicle’s original factory equipment and geometry, which may cause it to handle differently than a stock (unaltered) vehicle. Installation of these components is not intended to strengthen nor reinforce the vehicle’s frame, nor are they designed to increase rollover protection. It is necessary to periodically inspect all suspension and drive train components for proper attachment, torque specifications, operation, and for any potential unusual wear or damage. Installation of these parts will modify the height of the vehicle and may raise the center of gravity. Modifying vehicle height combined with off road operation may increase your vehicle’s susceptibility to rollover conditions, which may cause serious injury or death. Many states regulate allowable vehicle height modifications, and it is your responsibility to know and comply with the legal requirements specified by the laws where you reside. Modifications to your vehicle’s ride height may also affect the ride quality, driver input response, trackability and handling, and wear to your vehicle’s suspension components and tires.