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INSTALL INSTRUCTIONS:
OE Replacement Ball Joint Front Lower Control Arm Kit for 2017-2024 Can-Am X3 (and MAX) X RS, RC, MR UTVs

PARTS LIST FOR SKU: 370-90905

QUANTITY	PART #	DESCRIPTION
1	8659	CANAM X3 Driver Lower Adjustable High Clearance OE Replacement Arm
1	8660	CANAM X3 Passenger Lower Adjustable OE Replacement Arm
2	90906	UTV ADJUSTABLE RODEND KIT, Uses OEM Ball Joint
1	**HP9186**	CANAM X3 FCA PIVOT BUSHING KIT

PARTS LIST FOR HP9186

QUANTITY	PART #	DESCRIPTION
4	5042	CRUSH SLEEVE CANAM X3
8	POLY-BUSHING-91800	CANAM X3 PIVOT BUSHING

WARNING

Please read this entire instruction sheet before beginning installation. Proper installation of these components requires a qualified mechanic. 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 frame, suspension or tire damage may also result from improper installation.

REQUIREMENTS

- Installation requires a qualified mechanic.
- Read instructions carefully and study the pictures before attempting installation.
- **OEM ball joints are required for the installation of this kit and are not included**. If in good condition, the ball joints from the OEM control arms can be reused.

TECHNICAL INFORMATION

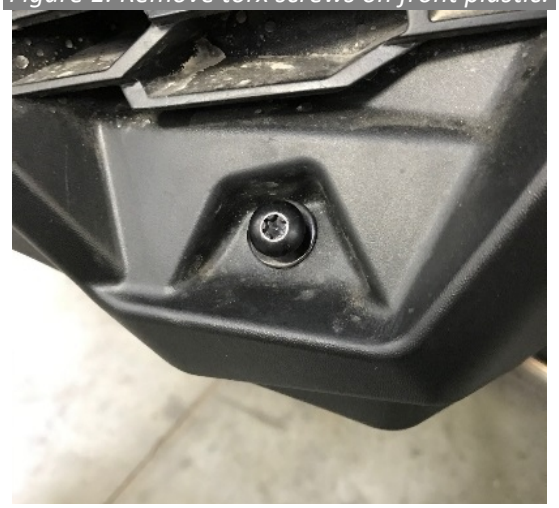
- Check the parts and hardware packages against the parts list to assure that your kit is complete.

INSTALLATION

1. Raise the front of the X3 up by the frame so that the suspension droops out and tires are off the ground, then support with jack stands. Remove front wheels using a 19mm socket.

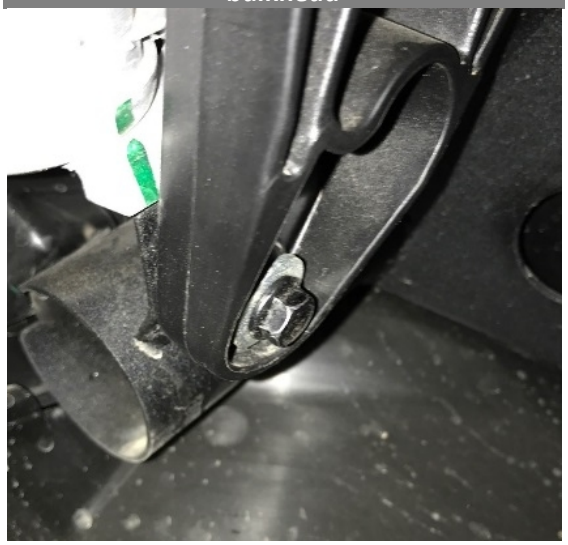
2. On the front plastic, remove the four Torx screws using a T30 Torx bit. See Figure 1.

Figure 1: Remove torx screws on front plastic.



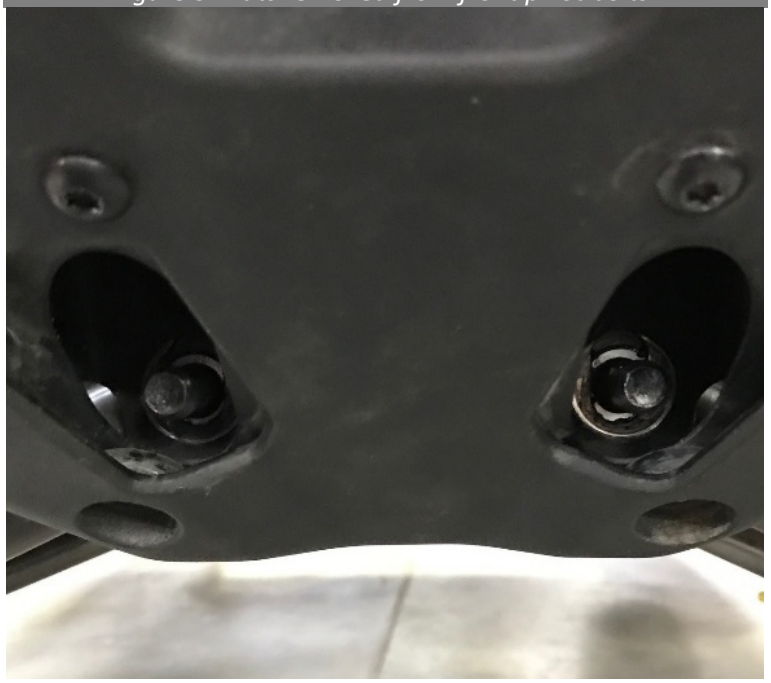
3. Using a 10mm wrench and socket, remove the two bolts behind the front plastics holding the radiator bracket to the front bulkhead. See Figure 2.

Figure 2: Bolts holding radiator bracket to bulkhead



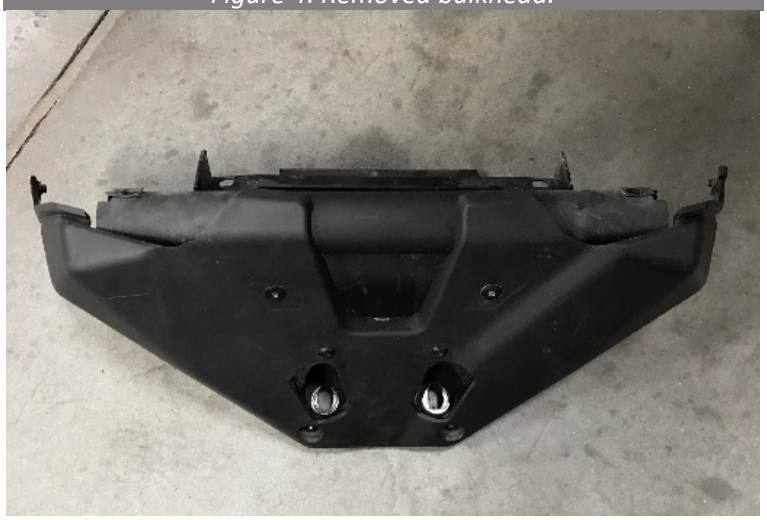
4. Remove the nuts on the front upper and lower control arms that mount through the bulkhead. The front lower pivot bolt nuts holding are accessible from the front of the car with an 18mm deep socket. You will need an 18mm wrench and socket to remove the nuts on the front upper pivot bolts. The bolts do not need to be removed, just the nuts. See Figure 3.

Figure 3: Nuts removed from front pivot bolts.



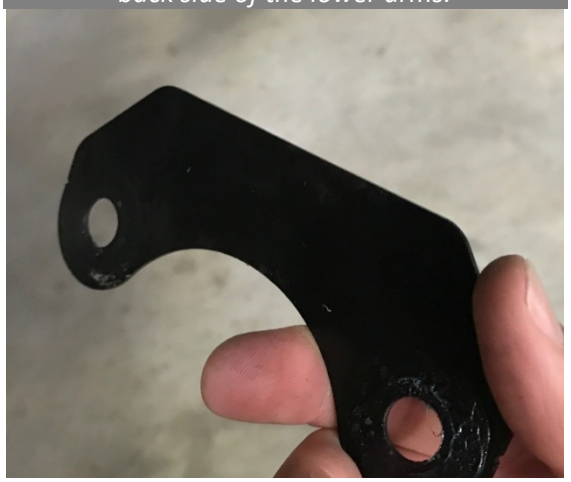
5. Lift up on the front plastic and remove the front bulkhead. See Figure 4

Figure 4: Removed bulkhead.



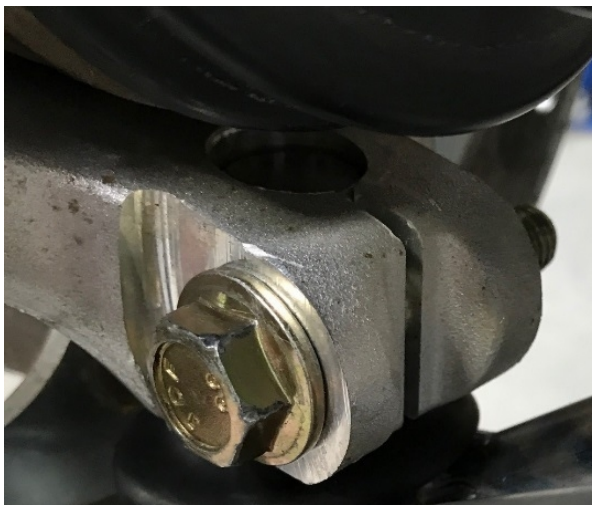
6. Remove the nuts off the back lower pivot bolts with an 18mm socket and take off the OEM gusset plate as shown in Figure 5.

Figure 5: OEM gusset plate connecting the back side of the lower arms.



7. Using a 15mm socket and wrench, remove the pinch bolts holding the lower ball joints to the spindle like in Figure 6

Figure 6: Pinch bolt holding ball joint to spindle.



8. Tap on the lower arm and remove the ball joint from the spindle. Slide the arm off of the lower pivot bolts. Use caution when sliding the arm off. The OEM bushing retainers tend to catch on the bolt threads.

9. If reusing the ball joints from the OEM control arms, you must remove the retaining clip from the bottom of the ball joint and press the ball joint out through the top of the OEM control arm. DO NOT press on the center cap of the ball joint, or it may damage it.

10. From the top, press the ball joint into the Cognito rod end. Install the retaining clip. DO NOT press on the ball joint stud or boot. Press only on the machined face. See figure 7 and 8.

Figure 7: Top of Rod End

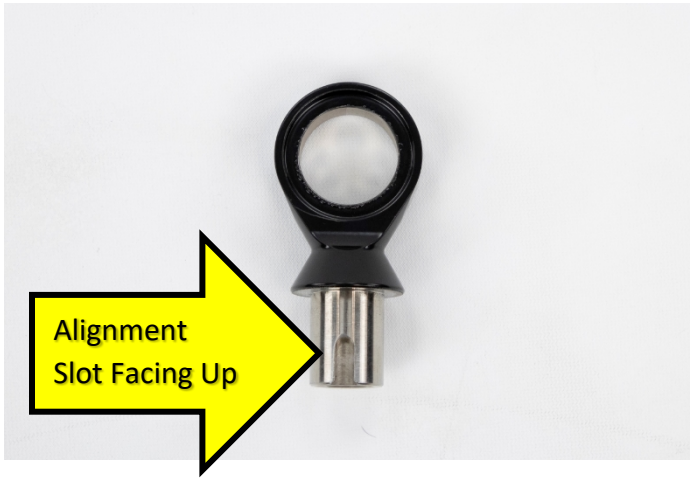
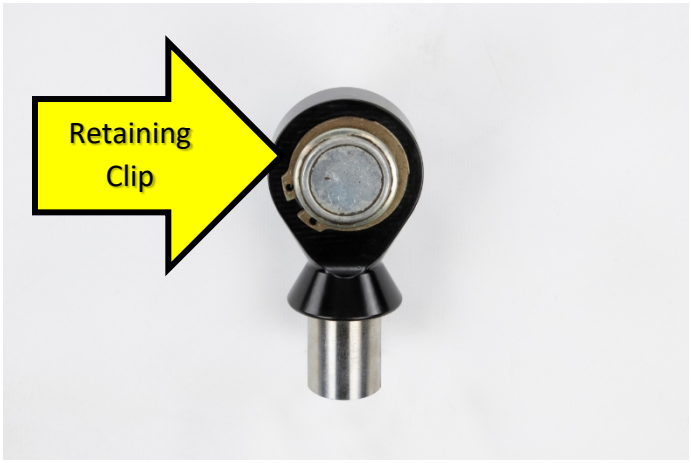


Figure 8: Ball Joint Installed in Rod End



11. Bolt the ball joint rod end assembly to the control arm with the included ½" 12 point bolt with a lock washer, and no camber shims, tighten to 80 ft.lbs. You will notice the rod end will only go into the control arm one way which is designated by the pin and slot. This is there simply to keep the rod end aligned for assembly, once the bolt is tight there is no load on the pin. After putting the vehicle back on the ground we will check camber and shim as needed.

12. Open the hardware pack included containing bushings and crush sleeves. Push the bushings into each end of the Cognito lower arm pivot tubes. Thoroughly grease the inside of the bushings and the outside of the crush sleeves. Push the crush sleeves into the bushings and you are now ready to install the Cognito arms.

13. Slide the new arms over the pivot bolts and put the OEM gusset plate back onto the rear lower pivot bolts that was removed in Step 6. You can thread the nuts on but do not tighten until told to do so.

14. Slide the ball joint studs into the spindle lining up the groove in the stud with the pinch bolt hold and insert the pinch bolts. Tighten to 35 ft.lbs.

15. Lift up on the front plastics and radiator and maneuver the front bulkhead back in through the front pivot bolts. Tighten the front pivot bolts to 77 ft.lbs.

16. Tighten the rear lower pivot nuts at this point to 77 ft.lbs.

17. Using the OEM hardware, fasten the radiator support bracket back to the bulk head as well as the four torx screws removed in Step 2.

18. Install tires and torque lug nuts to manufactures specification of 89 ft.lbs

19. Put the car back on the ground and settle the suspension by driving back and forth a few feet.

20. To check and adjust camber you need to park the car on a level surface then get the left front tire heading straight and look at camber, then get the right front tire heading straight and look at its camber. Whichever side has the most negative camber will be the side that needs no shims. If the other side of the car is leaned over less or has positive camber, you can remove the bolt holding the lower rod end in place and install a shim then fasten back together. 1 thin shim is about .15degrees, 1 thick shim is about .35 degrees. Stack the shims as needed to refine your camber setting.

21. Double check that all bolts are tight before riding. Periodically maintain the pivot bushings by cleaning pivot bushings and crush sleeves and then re-greasing them.

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 warrantied 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.