

Z1 OFF-ROAD FRONT UPPER CONTROL ARMS INSTALLATION MANUAL



This Installation Manual is intended for the following models:	
2005-2015	Nissan Xterra
2005-2012	Nissan Pathfinder
2005+	Nissan Frontier
2004-2024	Nissan Titan (non-XD)
2004+	Nissan Armada
2004-2015	Infiniti QX56/QX80

PROLOGUE:

Study these instructions completely before proceeding to assembly. The installer must have a thorough knowledge of automotive systems operation. If unfamiliar with any of the concepts outlined in this instruction, we recommend the installation be completed by a qualified professional.

!WARNING!

Extreme caution should be taken when performing maintenance or performance upgrades to your vehicle. Please observe and abide by any Warning or Caution labels placed on the various components and tools used when servicing your vehicle. If you have any questions regarding installation or the various components included with the Z1 Off-Road Front Upper Control Arms, consult with a Professional Mechanic or contact Z1 Off-Road for more information.

PARTS INCLUDED:

Item	Quantity	Description
1	1	Assembled Driver FUCA
2	1	Assembled Passenger FUCA

TOOLS REQUIRED:

- Hydraulic Jack
- (2) 2-Ton (or greater) Jack Stands
- Ratchet w/ Extension(s)
- Assorted Metric Sockets (up to 21mm)
- Assorted Metric Wrenches (up to 28mm)
- Crescent Wrench
- Torque Wrench
- 2mm & 5mm Allen head wrench or socket
- Ball-Joint Separator Tool or Hammer
- Bungee Cord or Strong Zip Tie
- Grease Gun
- Zip Lock Bags or Magnetic Tray

SAFETY REQUIREMENTS:

- Always wear safety glasses and any necessary protective garments. If using any fluids, chemicals, or solvents, a respirator is recommended.
- Always use properly rated jack stands when working under your vehicle.
- Always keep limbs and parts away from moving drivetrain parts.
- Always turn the ignition to the OFF position and disconnect the **NEGATIVE** battery terminal.
- Only operate drivetrain in safe space and well-ventilated areas.

BEFORE YOU BEGIN:

Remove contents from the Z1 Off-Road Front Upper Control Arms and verify that **ALL** necessary hardware/parts are present.

The pictures in this installation manual are of a Nissan Frontier and Nissan Xterra. The process for installing the Z1 Off-Road Front Upper Control Arms on a Nissan Titan is almost identical and will follow this same procedure, except where noted in the instructions below.

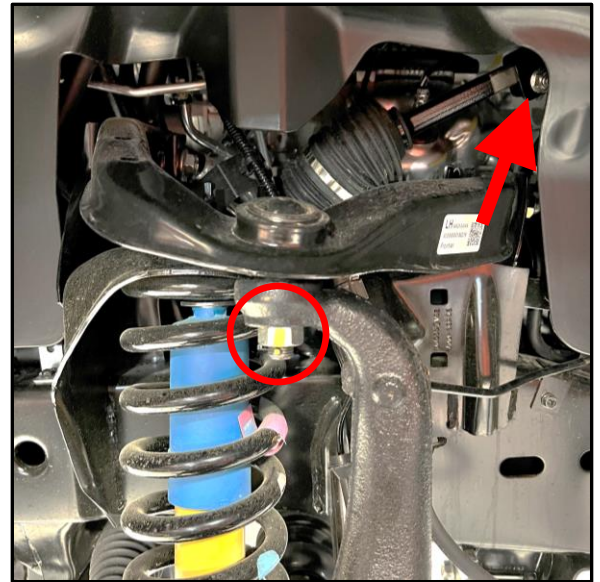
PROCEDURE:

1. Place the transmission in Park position (or in Reverse gear if equipped with a manual transmission). Apply the parking brake.
2. Loosen lug nuts on front wheels.
3. Locate proper jacking points on vehicle's chassis (refer to vehicle's Owner Manual). Raise and support vehicle using jack & jack stands.
4. Remove front lug nuts and wheels.
5. **For Titan / Armada / QX owners:** If present, remove the front fender liners for better access to the front upper control arms.

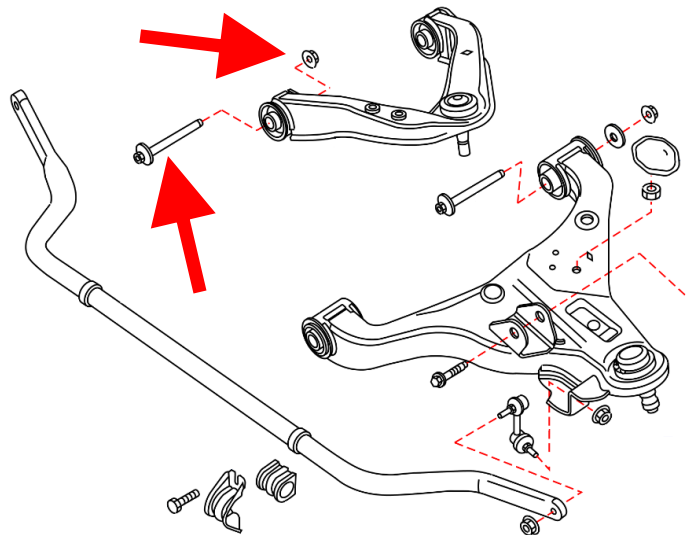
5. **For Frontier / Xterra owners:** On the driver's side of the vehicle, loosen the nut on the steering shaft and reposition the shaft out of the way (nut is shown at right).



Note: This shaft will prevent the bolt on the OEM upper control arm from being removed if not repositioned. Depending on your mileage and how loose the steering shaft is, you may need to completely remove the nut and bolt. **Secure** the steering wheel to prevent spinning or damage to the clock spring.



6. Remove the cotter pin on the upper ball-joint nut. Then remove the nut (circled at right).
7. Use a bungee cord or strong zip tie to hold the knuckle/upright to prevent it from stretching the brake line or wheel speed sensor.
8. Using a ball joint separator tool (or hammer) separate the ball-joint and upper control arm from the steering knuckle/upright.
9. Remove the OEM front upper control arm's mounting nuts and bolts (shown below).



10. Remove the OEM front upper control arm.
11. Repeat steps # 6-10 on opposite side of vehicle.
12. Locate Z1 Off-Road assembled Fronter Upper Control Arms. The part number is engraved on the back with "-DR" or "-PS" at the end, indicating driver or passenger.
13. Remove the cotter pin and castle nut, then remove the plastic boot cover (shown at right). This cover is only meant to protect the boot while in shipment, the control arm will not install if this plastic cover is not removed.
14. Thread heim-joint ends fully into the arm's double adjuster.
15. Position Z1 arms next to OEM arms.

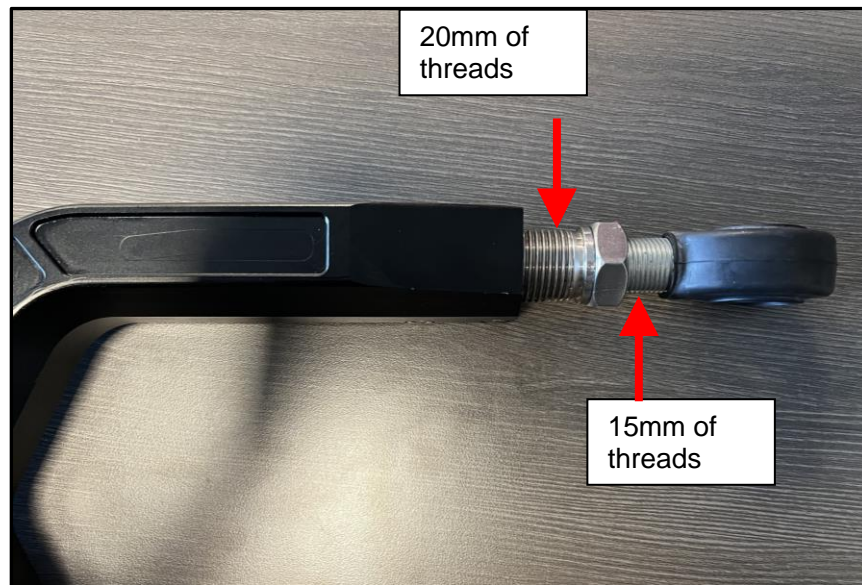


16. Using a 12mm socket and extensions, turn the double adjuster within the arm until the Z1 arm is the same length as the OEM arm. Make sure the heim joint is straight up and down, as shown in the picture below.



Note: If the adjuster is hard to turn, you may need to loosen the (2) hex socket bolts on the inside of the arm.

17. The maximum safe extension of the adjuster and heim joint is 20mm of exposed thread on the adjuster and 15mm of exposed thread on the heim joint end (see picture below).



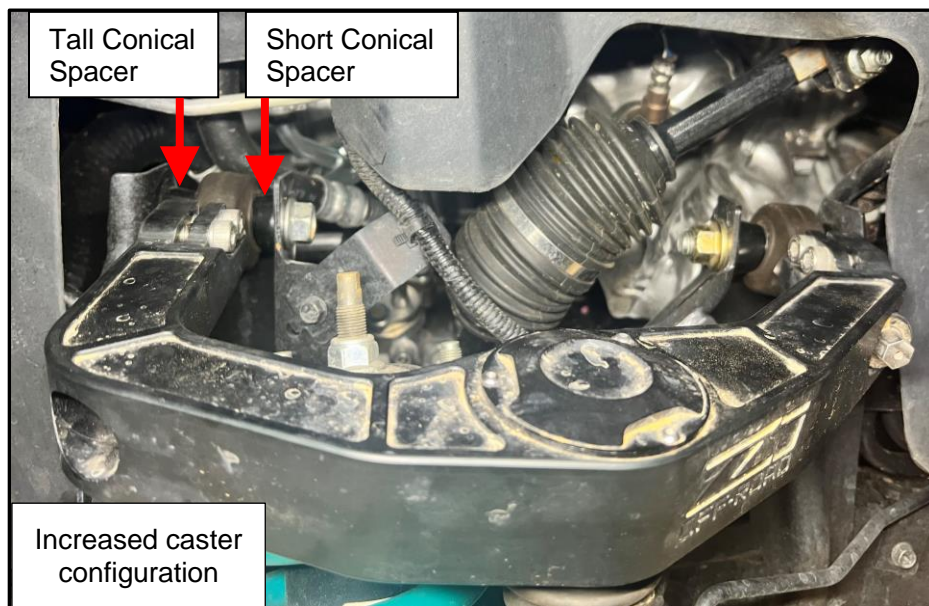
18. Once the Z1 arms are the same length as the OEM arms, tighten the (2) Allen head pinch bolts, switching back and forth until both bolts achieve **20ft-lbs**. Then, tighten the jam nuts on the heim-joints against the double adjusters with an adjustable wrench or 28mm.

19. Remove the (3) M3 button head screws on the ball-joint dust cover using a 2mm Allen head. Using red lithium axle grease or equivalent, add grease into the grease fitting on the ball joint. We added between 5-8 pumps on each side until we noticed some grease come out of the boot or the boot start to swell up. Depending on what pump you are using it may require more or less pumps. Do not overfill the boot to the point that it tears.



20. Reinstall the ball-joint dust cover and (3) M3 screws until snug.

21. Starting on either side of the vehicle, position the arm onto the vehicle with a conical spacer on each side of each heim joint.



Note: There are (2) different sized conical spacers that can be positioned in (2) configurations depending on your choosing. If you want maximum clearance (between the arm and strut mount/spring bucket) position the short conical spacer towards the front (opposite of image above). If you want increased caster angle, position the taller of the (2) conical spacers towards the front of the vehicle (as shown above). If you choose the increased caster angle with the large spacer in front, you may experience contact between the arm and strut mount/spring bucket at full droop.

22. Install mounting bolts and nuts that were removed in step #9 onto Z1 arms. Torque nuts to **98ft-lbs** for **Frontier** and **Xterra**. Torque nuts to **136ft-lbs** for **Titan** and **Armada**.

For Frontier and Xterra owners: Install the right-side bolt on the driver's side from the right, opposite of how it was removed. This will allow you to remove the bolt in the future without repositioning the steering rack.

23. Position Z1 arm's ball-joint onto the vehicles knuckle/upright and secure with the supplied castle nut and cotter pin. Torque nut to **58ft-lbs**.

24. **For Titan owners:** If removed, reinstall the front fender liners.

23. **For Frontier / Xterra / QX owners:** On the driver's side of the vehicle, position the steering shaft back in place and tighten the OEM nut and bolt to **20ft-lbs**.

24. Reinstall front wheels and lug nuts.

25. Properly lower vehicle onto the ground.

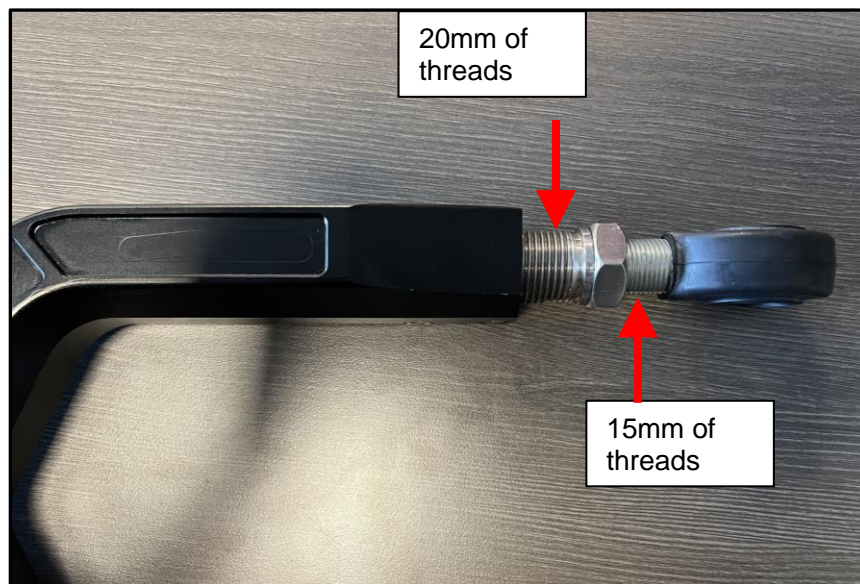
26. Torque lug nuts to **98ft-lbs**.

27. Perform an alignment. By setting the Z1 arms the same length as the OEM ones in step #16, your alignment should be close enough to what it was previously to drive to the alignment shop.



Installer Tip: To make tightening the jam nut easier, we recommend using a 28mm crows' foot and extensions or a 28mm stubby wrench. If you do not have fender liners (which allow more clearance), then an adjustable wrench is an acceptable substitute.

28. The maximum safe extension of the adjuster and heim joint is 20mm of exposed thread on the adjuster and 15mm of exposed thread on the heim joint end (see picture below).



END

Additional Technical Support:

Contact Z1 Off-Road at info@z1offroad.com
Or call 678-839-8019 between 9am and 6pm ET