2016-2020 Yamaha YXZ1000
+4.5” Rear Upper and Lower Control Arm Kit W/ Shock Tower
PART# 365-90079, 365-90106, & 365-900129

Introduction
- Installation requires a qualified mechanic.
- Read instructions carefully and study the pictures (if included) before attempting installation.
- Pictures in installation instructions may not display the latest version of arms.
- Check the parts and hardware packages against the parts list to assure that your kit is complete.
- Always wear safety glasses when using power tools.

Requirements
- **Stock rear wheels will not fit this control arm kit.** Must use 14” diameter wheel or larger, with minimum 5” back spacing.
- The stock rear shock spring retainer will need to be replaced with the supplied Cognito spring retainer.
- Requires longer axles (+4.5”) – contact Cognito for information.
- It is required to bleed the air out of the brake system after installation.

The OEM Yamaha control arms are lightweight and will suffice for light to moderate operating use. Under aggressive use and racing, there are a few areas that become problematic such as weak lower arm pivot bearings and loose upper pivot bushings. The Cognito control arm kit uses larger bushings and spherical bearings (uni-balls) on the lower control arm. The construction is of stronger material, slightly thicker, and a stronger design to handle abuse. Cognito’s kit widens the rear end by 4.5” per side and lengthens the wheel base to 92.25 inches from the center of the hubs. The rear upper Cognito arm is a “J-arm” design for strength and easy of removing the shock. Cognito Motorsports integrated a rear shock tower into the kit. When widening a vehicle, the suspension gains more up and down travel of the wheel. The use of our rear shock tower eliminates the extra up travel of the wheel to gain more ground clearance at full compression, while still gaining down travel of the wheel over stock. This instruction set is for the Yamaha YXZ1000 rear control arm, sway bar end link, and shock tower installation.

Parts List

365-90079 Rear Control Arms

- 8450 Driver Upper Arm
- 8451 Passenger Upper Arm
- 8452 Driver Lower Arm
- 8453 Passenger Lower Arm
- HP9175 Misalignment Spacers, Pivot Bushings and Sleeves
- HP9170 Cushion Clamp Kit
- HP9179 Rock Guard Kit
- Uniball pressed into each end of lower arm with retaining clips
- 6073 Rear Shock Spring Retainer (2)

365-90129 Rear Shock Tower

- 8470 Rear Shock Tower
- HP9184 Shock Tower Hardware

365-90106 Rear Brake Lines

- Rear Brake Lines

Installation Instructions

1. Raise the rear of the YXZ up by the frame so that the suspension droops out and tires are off the ground. Remove rear wheels.
2. Unbolt the sway bar end links from the lower arms.
3. Unbolt the brake caliper from the spindle, the axle nut from the spindle, brake lines from the T-block and caliper, and the control arms from the spindle. Then, remove the spindle and let the upper arm, caliper, and axle hang. Remove the axles.
4. Unbolt the shock from the lower arm and remove the lower arm.
5. Take out the upper shock bolts and remove the shocks from the vehicle. Remove the upper arms.
6. Locate the Cognito lower control arms. They may already have the spherical bearing and retaining clip installed, please verify at this time. Place the 2 wider misalignment spacers in the front uni-ball pivot bearing and the 2 smaller spacers in the rear uni-ball pivot bearing.
7. Mount the lower control arms in place with the factory pivot bolts. See the parts list above and the part # stamped on each arm to determine proper placement. Torque the pivot bolts to 40 ft.lbs.
8. Locate the Cognito upper control arms. Do not use any grease in this step as the Delrin bushings are supposed to stay fixed with the arm. Press a Delrin bushing into each end of the pivot tube. Each upper arm gets 2 Delrin bushings.
9. Now lubricate the inside of the Delrin bushings with grease, and then use the supplied Cognito steel crush sleeves and tap them into the greased bushings in the Cognito upper control arms with a plastic or rubber mallet. Crush sleeve will be a little tight inside of the bushings. This is to allow the bushings to break in

10. Mount the upper control arms in place with the factory pivot bolts. See the parts list above and the part # stamped on each arm to determine proper placement. Torque the pivot bolts to 40 ft.lbs.
11. With the axle in place (longer ones needed) install the control arms to the spindles just like stock, torque spindle pivot bolts locknuts to 40 ft.lbs. Tighten axle nut to 268 ft.lbs.
12. Install new brake lines. Route the brake lines and use the cushion clamp kit provided to fasten the brake lines to the upper arms as shown in Figure 2. Mount new t-block.

Figure 2: Route brake lines in front of the shock as shown.

13. Fasten the line under the upper arm and to the caliper. The banjo bolt gets a copper washer on both sides of the brake line fitting. See Figure 3.

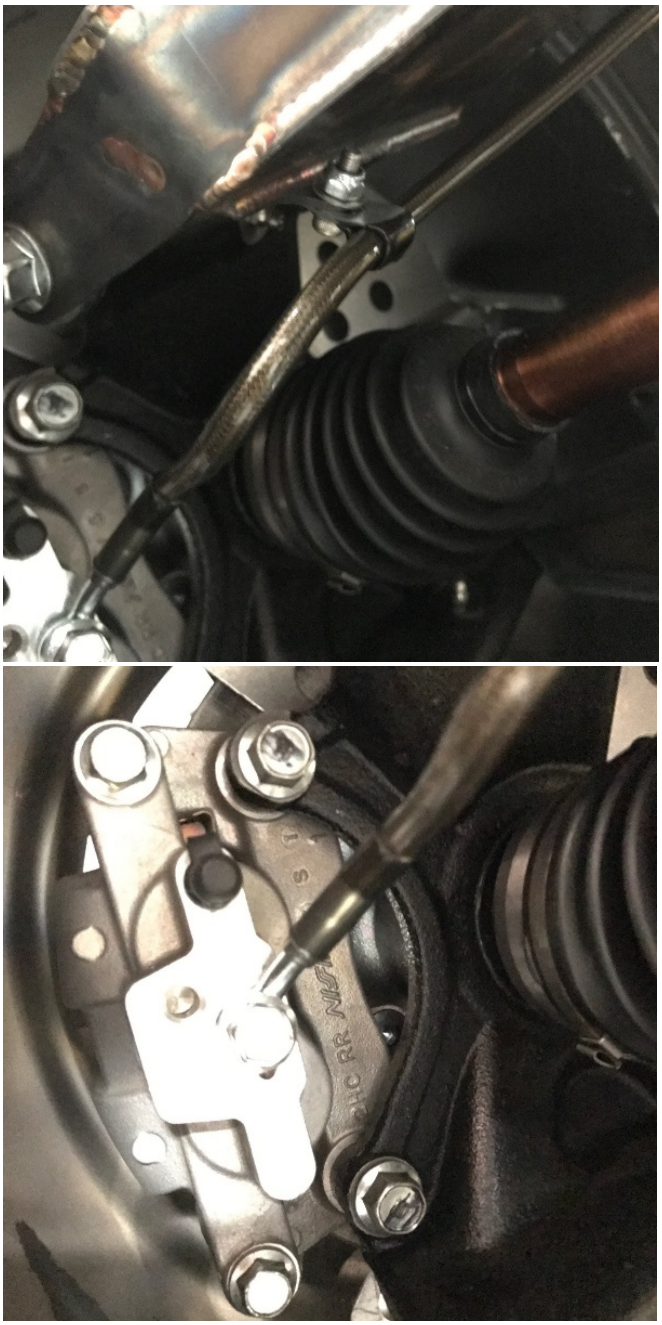

Figure 3: Brake line routing under arm.

14. To install the shock spring retainers on the rear shocks, loosen the jam rings on the shock body and screw them up approximately 2 inches. Remove the stock shock retainer and install the new supplied shock retainer. Screw the jam ring back down until hand tight against the shock. Do not tighten at this time as you will need to adjust the ride height.
15. With the shocks off the car, install the Cognito rear shock tower over the OEM tower. The shock tower hardware includes bolts, nuts, washers and spacers. The spacers go

where the old shock mounting holes are. Put a bolt through the old mounting holes and fasten with a washer and nut. Torque bolts to 59 ft.lbs.

16. Install the shocks to the new shock tower and lower arms. The OEM bolt is reused for bolting to the Cognito lower arm, add an additional M12 washer to either side of the bolt otherwise, it will be too short to thread. The upper mount uses the remaining bolts from the shock tower hardware. Torque to 59 ft.lbs.
17. Open HP9179 kit for the rock guards and install rock guards with ¼" hardware. Torque to 8 ft.lbs. See Figure 5.

Figure 5: Rock guards installed.

18. Install wheels and tires, make sure everything is tightened appropriately. Cycle the suspension to be sure there are no issues with the brake lines rubbing on anything.
19. Bleed the brake system before driving.
20. Adjust the shock preload to desired ride height, see the shock setup below for recommended ride heights and settings.

Shock Set-up on vehicle:

Cognito designs a shock tuning package, you can purchase and have a shock technician install, or you can also request a reference # from Cognito to send your shocks in for tuning at an additional labor charge. A tuning kit is need to make the shocks perform properly now that the motion ratio has changed due to the modifications to the width and travel of the car.

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 1.5" For example, tire measures 28.5", so for 2 occupant ride height will be 15.3/4"
        - if 1 person will occupy, this height should be 1/2 of the measured diameter of the tire plus 1" For example, tire measures 28.5", so for 1 occupant ride height will be 15.1/4"
- 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.
- Setting the toe adjustment will be done at the ride heights described above. The toe will be set outward slightly to accommodate for the change in ride height once the occupants are in the vehicle.
    - if 2 people will occupy, the toe should be set at 1/4" toe out
    - if 1 person will occupy, the toe should be set at 1/8" toe out
- Setting the adjusters, we like to start by back these out to full open on both knobs on the DSC and also the rebound screw. From there take both DSC adjusters in 2 full turns which is in center of the adjustment. Turn the rebound screw in 13 clicks which is centered. This is a good place to start and fine tuning can be done from there.

Rear

- Ride height is measured from the ground up to the flat surface at the very rear of the chassis, 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 1.5" For example, tire measures 28.5", so for 2 occupant ride height will be 15.3/4"
  - if 1 person will occupy, this height should be 1/2 of the measured diameter of the tire plus 1" For example, tire measures 28.5", so for 1 occupant ride height will be 15.1/4"
- 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 2" 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, we like to start by back these out to full open on both knobs on the DSC and also the rebound screw. From there take both DSC adjusters in 2 full turns which is in center of the adjustment. Turn the rebound screw in 13 clicks which is centered. This is a good place to start and fine tuning can be done from there.

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.