



## Installation Instructions Heavy Duty 429 Series Shocks for Yamaha Rhino

### ATTENTION

Statements in these instructions that are preceded by the following words are of special significance:

#### **Warning**

This means there is the possibility of injury to yourself or others.

#### **Caution**

This means there is the possibility of damage to the vehicle.

#### **Note**

*Information of particular importance has been placed in italics.*

### IMPORTANT NOTICE

Note: Please read the following instructions completely before starting installation!

Though these shocks are designed to operate with the shock shaft up or down, due to fitment constraints they must be mounted with the shaft up on this vehicle.

Follow instructions in an authorized shop manual or take the vehicle to a competent dealer.

The vehicle must be securely blocked to prevent it from falling when the shocks are removed. Failure to do so can cause serious damage and/or injury.

The use of wheel spacers with Progressive Suspension shocks is not recommended. Use of wheel spacers may damage the shocks/vehicle and void the warranty.

Progressive Suspension shocks are designed to work with the OEM (Original Equipment) chassis and wheels, use of these shocks with a chassis or wheels other than OEM may produce an unsatisfactory ride and void the warranty.

Make sure that proper bushings/sleeves are installed in the shocks. Improper bushings/sleeves can cause unsatisfactory and/or unsafe operation.

*Be sure to refer to instruction supplements provided in any included mounting hardware*

### Installation

1. Place a quality jack or sufficient blocks under the vehicle to securely lift the wheels slightly off the ground.
2. Using the vehicle manufacturers service manual, remove the old shocks and note location of mounting hardware. If additional accessories are installed on your vehicle, please refer to their mounting instructions for removal to gain access to your shocks.

#### **Warning**

Changing shock absorbers on any vehicle will change the handling characteristics of that vehicle. Care should be taken when operating the vehicle with the new shocks while getting accustomed to the new handling characteristics.

3. Before installing your new Progressive Suspension shocks, you need to check your tire to fender / chassis clearance. If the body work or tires are other than original equipment, you may need to trim the body work or install a travel limiter on the shocks.

3a. To check clearance, position each wheel so the measurement between the top (frame) and bottom (A-arm) shock mounting bolt holes are equal to the following dimensions;

- Front: 11.41" (290mm)
- Rear: 11.65" (296mm)

With each wheel in position, check to be sure there is no tire, fender or chassis contact. For the Front, be sure to turn the steering through its complete range of motion for a proper check. **Figure 1**

4. After correcting any clearance issues found in step 3, install the shocks (shaft up) using the original mounting hardware along with the proper included bushings, sleeves, and washers noted for each shock-eye below:

**FRONT-TOP/BOTTOM:** 2ea. of the bushings with the thinner 2mm flanges, 1ea. of the 32mm wide sleeves with the 10mm I.D., 2ea. of the 32mm O.D. X 2mm thick washers - installed as illustrated in **Figure 2**.

**REAR-TOP (& 2004 Bottom):** 2ea. of the bushings with the thicker 6mm flanges, 1ea. of the 40mm wide sleeves with the 12mm I.D., 2ea. of the 32mm O.D. X 2mm thick washers - installed as illustrated in **Figure 3**.

**REAR-BOTTOM (2005 & up):** 2ea. of the bushings with the thinner 2mm flanges, 1ea. of the 32mm wide sleeves with the 12mm I.D., 2ea. of the 32mm O.D. X 2mm thick washers - installed as illustrated in **Figure 2**.

5. Torque all shock mounting bolts to manufacturers specifications.

### Pre-Load Adjustment

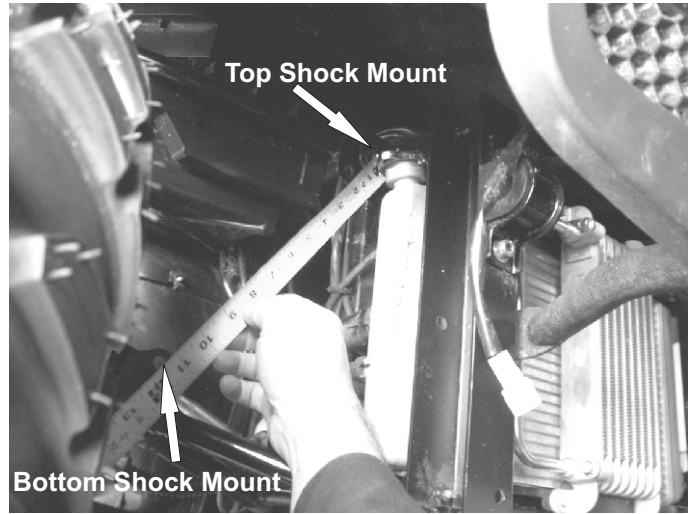
1. Your Progressive Suspension shocks come with the spring Pre-Load adjusted to the optimum setting for Heavy-Duty use. However, the pre-load is adjustable by means of a threaded Adjusting Ring and Lock Ring. **Figure 5**.

2. Using the provided spanner tool and 3/8 drive ratchet, loosen the Lock Ring away from the Adjusting Ring by threading it down the shock body.

3. To stiffen the ride, raise ride height and reduce sag, thread the Adjusting Ring up the shock body. Or to soften the ride, lower the ride height and increase sag, thread the Adjusting Ring down the shock body. **Figure 6**.

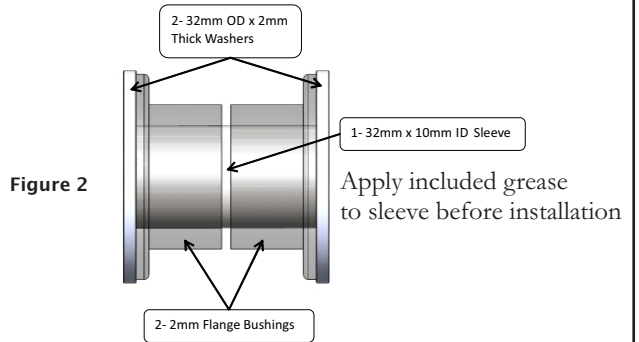
⚡ Caution ⚡

Measure Spring with shock fully extended		
Installed Spring length must not be		less than
FRONT		8.95"
REAR		9.87"

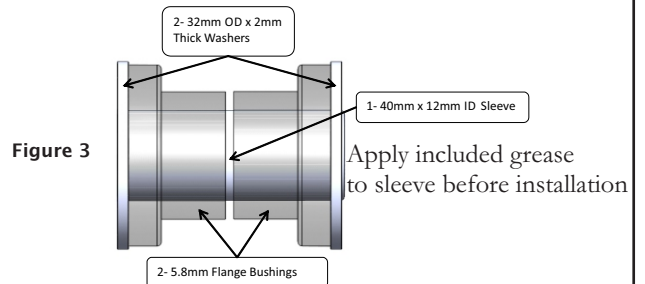


**Figure 1**

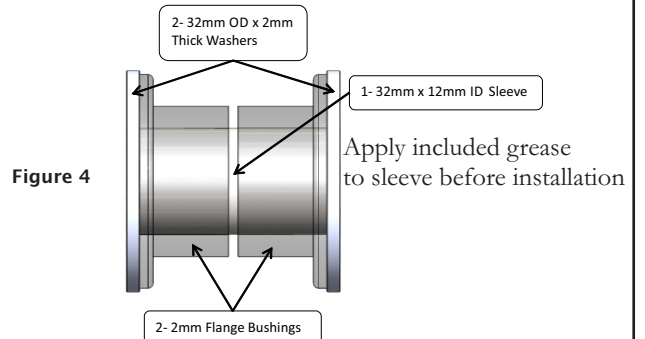
#### RHINOFRONT TOP & BOTTOM MOUNTS



#### RHINO REAR TOP MOUNTS (& 2004 Bottom Mounts)



#### RHINO REAR BOTTOM MOUNTS (2005 & UP ONLY)



### (Pre-Load Adjustment - cont.)

4. After Adjusting the Spring Pre-load, you must tighten the Lock Ring against the Adjusting Ring firmly.

### Sag

Sag is the amount the suspension compresses when the vehicle is loaded with driver/passenger and cargo compared to when the vehicle suspension is fully extended (shocks "Topped Out").

1. On flat level ground with all tires properly inflated. Place a jack under the front skid pan and raise the vehicle just to the point where the shocks stop extending (Top Out) Do not lift the wheels off the ground. Measure the ground clearance between the skid pan and ground. Note this front measurement. Lower the vehicle back down unto the ground.

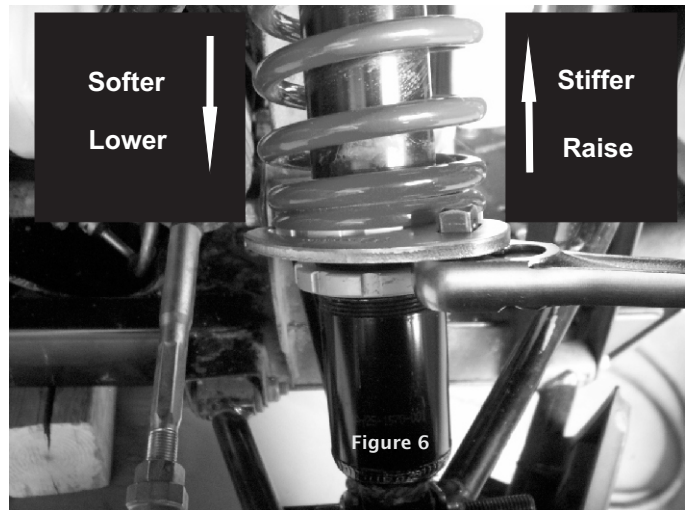
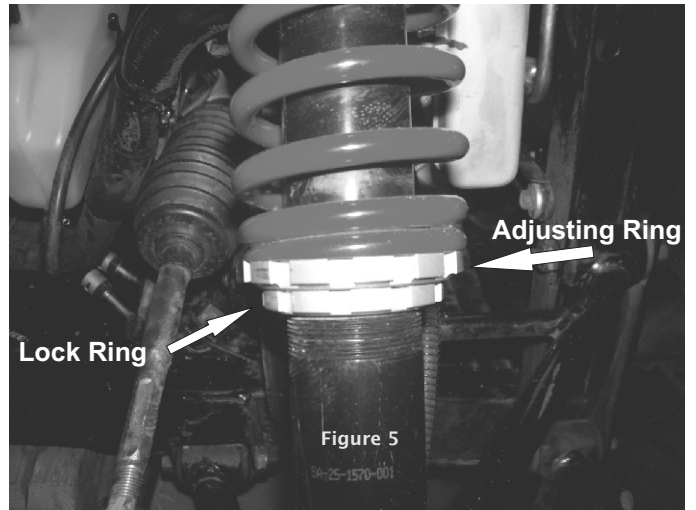
2. Repeat this process at the rear of the vehicle. note this Rear measurement.

3. Now with driver / passenger and cargo in the vehicle gently back the vehicle up several feet and then slowly drive back up the same spot. This eliminates tire scrub and allows the suspension to settle into position.

4. With the vehicle still loaded, take front and rear ground clearance measurements at the same spots you took the first set of measurements. Subtract the second measurement from the first one for the front and again for the rear. This difference is the Sag.

Recommended SAG is typically 20%-30% of the total suspension travel, in this case approximately 1.4" to 2.1" in the front and 1.7" to 2.5" in the rear. Refer to **Pre-Load Adjustment** section if you need to adjust your sag. Keep in mind these are Heavy-Duty shocks and optimum suspension performance & vehicle handling are directly related to proper sag, so if you will be operating your vehicle with a dramatically different load for any reason, we highly recommend that you check and readjust pre-load for proper sag.

### Drive and Enjoy





## Installation Instructions Heavy-Duty 429 Series Shocks for Polaris Ranger RZR

### ATTENTION

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#### **Caution**

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#### **Note**

*Information of particular importance has been placed in italics.*

### IMPORTANT NOTICE

Note: Please read the following instructions completely before starting installation!

Though these shocks are designed to operate with the shock shaft up or down, due to fitment constraints they must be mounted with the shaft up on this vehicle.

Follow instructions in an authorized shop manual or take the vehicle to a competent dealer.

The vehicle must be securely blocked to prevent it from falling when the shocks are removed. Failure to do so can cause serious damage and/or injury.

The use of wheel spacers with Progressive Suspension shocks is not recommended. Use of wheel spacers may damage the shocks/vehicle and void the warranty.

Progressive Suspension shocks are designed to work with the OEM (Original Equipment) chassis and wheels, use of these shocks with a chassis or wheels other than OEM may produce an unsatisfactory ride and void the warranty.

Make sure that proper bushings/sleeves are installed in the shocks. Improper bushings/sleeves can cause unsatisfactory and/or unsafe operation.

*Be sure to refer to instruction supplements provided in any included mounting hardware*

### Installation

1. Place a quality jack or sufficient blocks under the vehicle to securely lift the wheels slightly off the ground.
2. Using the vehicle manufacturers service manual, remove the old shocks and note location of mounting hardware. If additional accessories are installed on your vehicle, please refer to their mounting instructions for removal to gain access to your shocks.

#### **Warning**

Changing shock absorbers on any vehicle will change the handling characteristics of that vehicle. Care should be taken when operating the vehicle with the new shocks while getting accustomed to the new handling characteristics.

3. Before installing your new Progressive Suspension shocks, you need to check your tire to fender / chassis clearance. If the body work or tires are other than original equipment, you may need to trim the body work or install a travel limiter on the shocks.

3a. To check clearance, position each wheel so the measurement between the top (frame) and bottom (A-arm) shock mounting bolt holes are equal to the following dimensions;

Front: 11.41" (290mm)

Rear: 12.60" (320mm)

With each wheel in position, check to be sure there is no tire, fender or chassis contact. For the Front, be sure to turn the steering through its complete range of motion for a proper check. See **Figure 1**

4. After correcting any clearance issues found in step 3, install the shocks shaft up using the original mounting hardware along with the proper included sleeve(s) noted for each shock-eye below:

**TOP (front & rear):** 1ea. of the 30mm wide sleeves with the 10mm I.D. and 2ea. of the bushings with the thinner 3mm flanges - see **Figure 2**.

**BOTTOM (front & rear):** 1ea. of the 36mm wide sleeves with the 10mm I.D. and 2ea. of the bushings with the thicker 6mm flange - see **Figure 3**.

5. Torque all shock mounting bolts to manufacturers specifications.

### Pre-Load Adjustment

1. Your Progressive Suspension shocks come with the spring Pre-Load adjusted to the optimum setting for Heavy-Duty use. However, the pre-load is adjustable by means of a threaded Adjusting Ring and Lock Ring. See **Figure 4**.

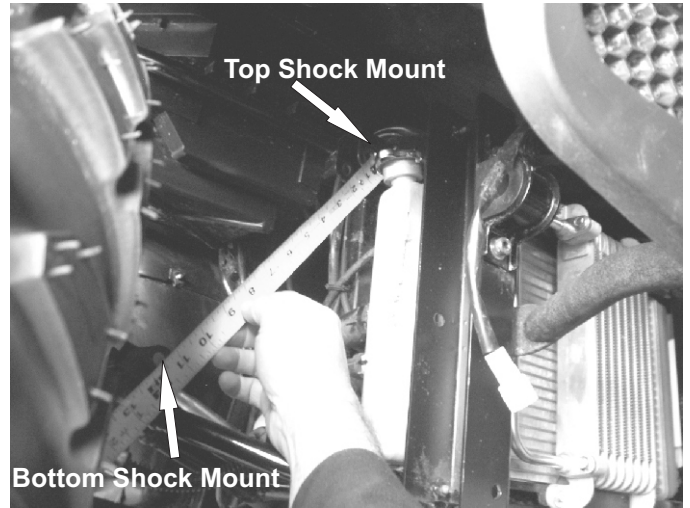
2. Using the provided spanner tool and 3/8 drive ratchet, loosen the Lock Ring away from the Adjusting Ring by threading it down the shock body.

3. To stiffen the ride, raise ride height and reduce sag, thread the Adjusting Ring up the shock body. Or to soften the ride, lower the ride height and increase sag, thread the Adjusting Ring down the shock body. **Figure 5**.

### Caution

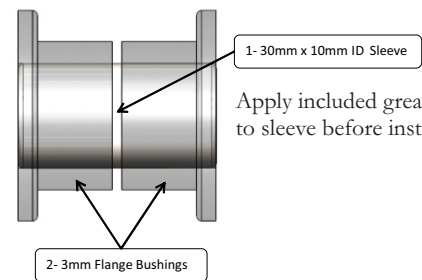
Measure spring with shock fully extended		
Installed Spring length must not be		less than
FRONT		9.42"
REAR		11.33"

4. After Adjusting the Spring Pre-load, you must tighten the Lock Ring against the Adjusting Ring firmly.



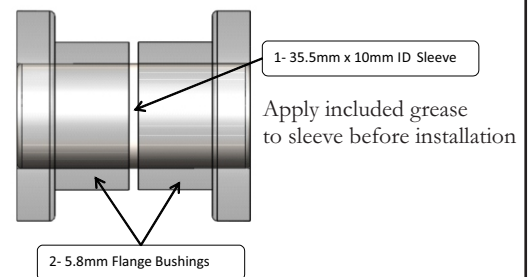
**Figure 1**

### RZR FRONT & REAR TOP MOUNTS



**Figure 2**

### RZR FRONT & REAR BOTTOM MOUNTS



**Figure 3**

## Sag

Sag is the amount the suspension compresses when the vehicle is loaded with driver/passenger and cargo compared to when the vehicle suspension is fully extended (shocks "Topped Out").

1. On flat level ground with all tires properly inflated. Place a jack under the front skid pan and raise the vehicle just to the point where the shocks stop extending (Top Out) Do not lift the wheels off the ground. Measure the ground clearance between the skid pan and ground. Note this front measurement. Lower the vehicle back down onto the ground.
2. Repeat this process at the rear of the vehicle. note this Rear measurement.
3. Now with driver / passenger and cargo in the vehicle gently back the vehicle up several feet and then slowly drive back up the same spot. This eliminates tire scrub and allows the suspension to settle into position.
4. With the vehicle still loaded, take front and rear ground clearance measurements at the same spots you took the first set of measurements. Subtract the second measurement from the first one for the front and again for the rear. This difference is the Sag.

Recommended SAG is typically 30%-40% of the total suspension travel, in this case approximately 2.3" to 4.0" in the front and 2.9" to 4.6" in the rear. Refer to **Pre-Load Adjustment** section if you need to adjust your sag. Keep in mind these are Heavy-Duty shocks and optimum suspension performance and vehicle handling are directly related to proper sag, so if you will be operating your vehicle with a dramatically different load for any reason, we highly recommend that you check and readjust pre-load for proper sag.

## Drive and Enjoy

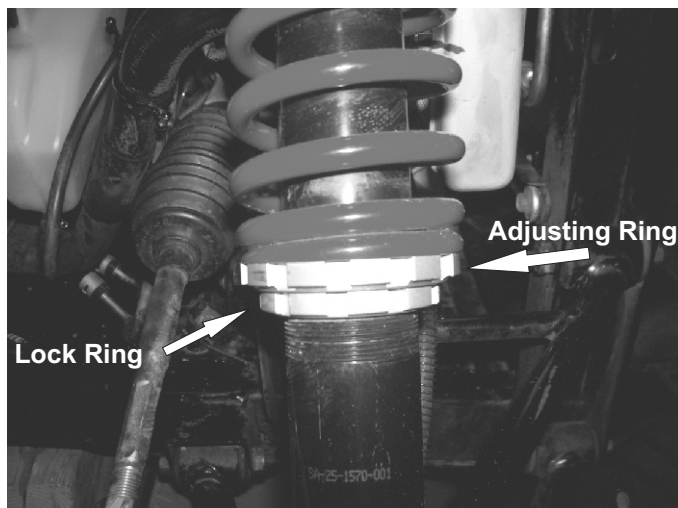


Figure 4

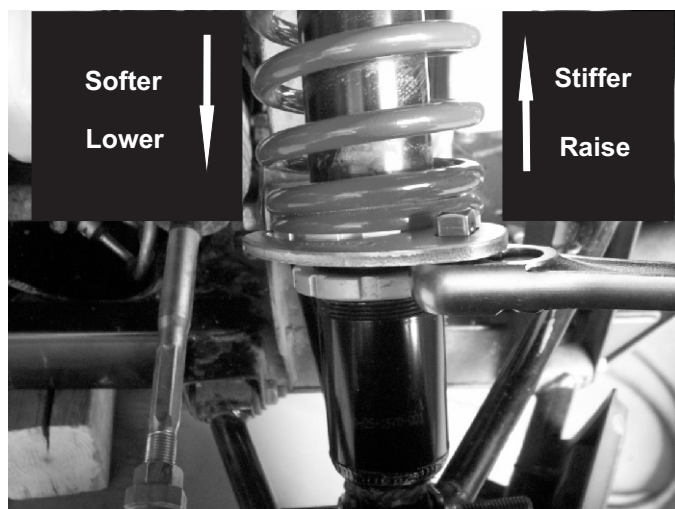


Figure 5