

# **CAMSO ATV R4S** **FOR ALL-TERRAIN VEHICLES**

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## **ADJUSTMENTS 2017**

1099-00-7728



FORMERLY  
CAMOPLAST  
SOLIDEAL

**ATV R4S**



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**Formerly Camoplast Solideal, Camso is the best of Camoplast and Solideal. To keep moving forward while staying true to our history, we're now Camso, the Road Free Company.**

## INTRODUCTION

These guidelines are designed to provide you with the information necessary to perform the required adjustments to the system. The right adjustments have a direct impact on performance and life of the system's components. It is important to follow closely the instructions contained in this document in order to make the correct sytem adjustments and thereby reach optimum system performance.

Follow all the instructions contained in this document. To make sure that every step has been performed, a checklist is provided at the end of the instructions to verify that all the adjustments have been made.

### IMPORTANT

The warranty does not apply if the track system was installed by someone other than a Camso dealer or authorized distributor.

### IMPORTANT

**Verifying your adjustments on the systems is mandatory after the first use of the vehicle; the track tension, alignment and angle of attack of each track system must be re-verified. Incorrect adjustments can decrease the performance of the systems and result in premature wear or breakage of certain components.**

## IMPORTANT

Before starting the installation, verify that serial numbers are identical on all 4 track systems. The serial number's last digit (0, 1, 2, 3) indicates the mounting position on the vehicle. Lay out the track systems accordingly. Refer to Figure 1 and Figure 2.

*NOTE: If Track System serial numbers do not match, contact your authorized Camso dealer / distributor.*

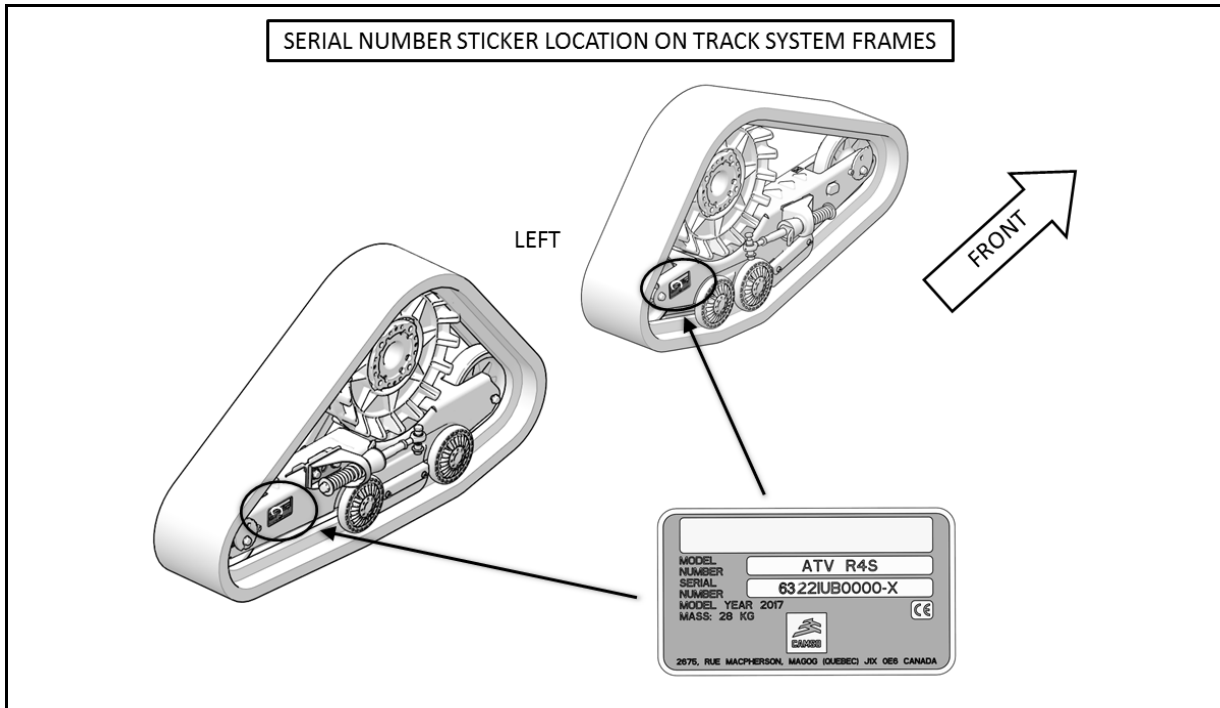


Figure 1

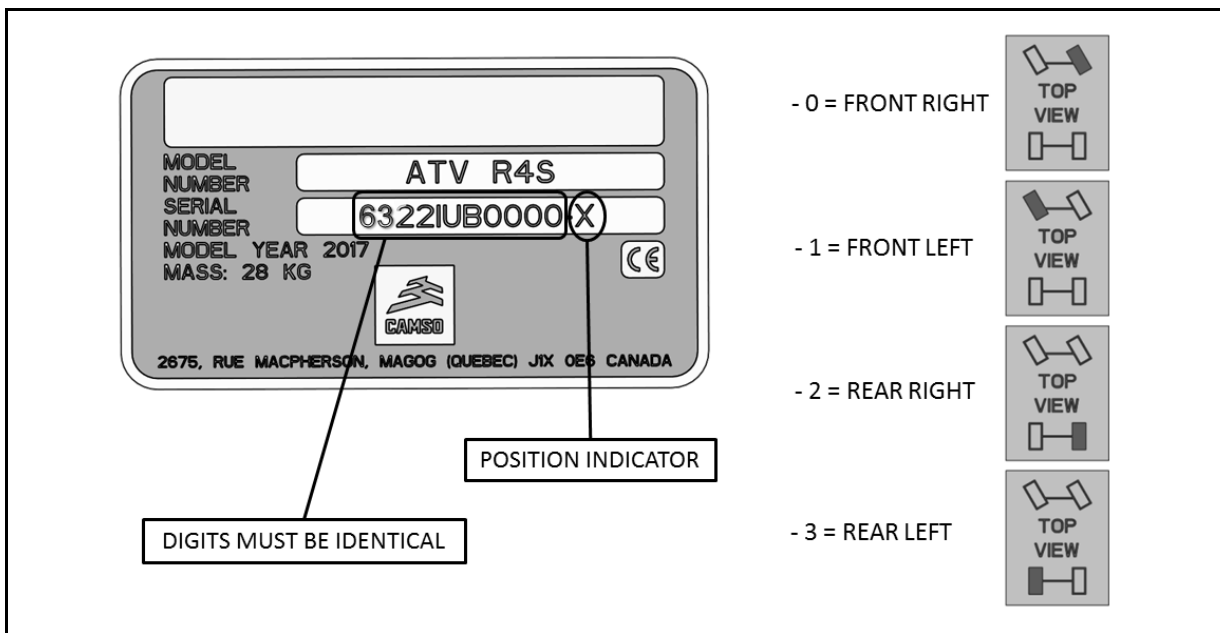


Figure 2

## ADJUSTMENTS

**NOTE:** To make the following adjustments, position the vehicle on a flat and level surface.

### ANGLE OF ATTACK - FRONT SYSTEMS

To obtain the correct angle of attack on front Track Systems, perform the following:

- Orient the steering wheel and Track Systems straight ahead
- Temporarily apply pressure to the front of the track to make stay flat on the ground
- Stabilizing arm (1) must be attached to front anchor bracket (2) mounted on vehicle. Figure 3.

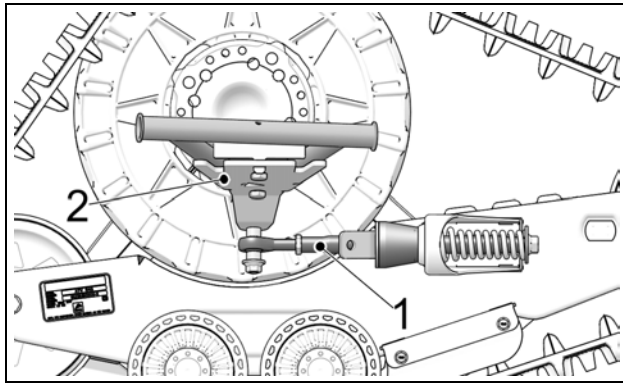


Figure 3

- A Bubble Level (1) is attached to the inside of the front frames. A perfectly centered bubble is needed to adjust the angle of attack correctly. See Figure 4.

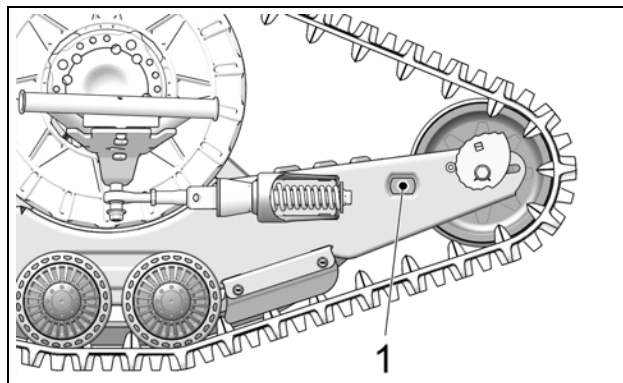


Figure 4

**NOTE:** Before each measurement, temporarily apply light pressure to the front of the track to make sure that it stays flat on the ground.

- Loosen jam nut (1). Adjust length of rod end (2) by rotating the steering limiter support plate on (3) the stabilizing arm. Use a 30 mm [1 3/16 in] wrench to rotate support plate to obtain a perfectly centered bubble in the level. Refer to Figure 5.

**NOTE:** The stabilizing arms on front Track Systems incorporate a steering limiter support plate (3) which is bent. This plate should be positioned inwards, towards the vehicle.

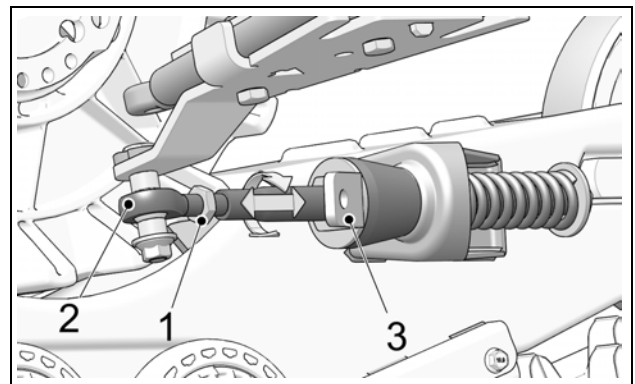


Figure 5

- When angle of attack is correctly set, tighten the jam nut (1) back against the stabilizing arm to 40 N•m [30lb•ft] of torque. See Figure 6.

**CAUTION:** Follow the recommended torque when tightening the jam nut. Overtightening the nut might damage the rod end.

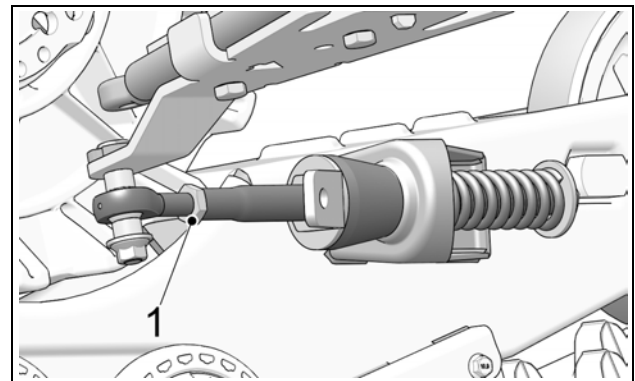


Figure 6

- Once the centered bubble in the level indicates that the angle of attack is correct, double-check the setting by validating the distance from the top of the back tires to the ground. Figure 7.

- Position a flat bar on top of the rear wheels of the front Track System and measure from the ground up to the flat bar as shown on Figure 7.

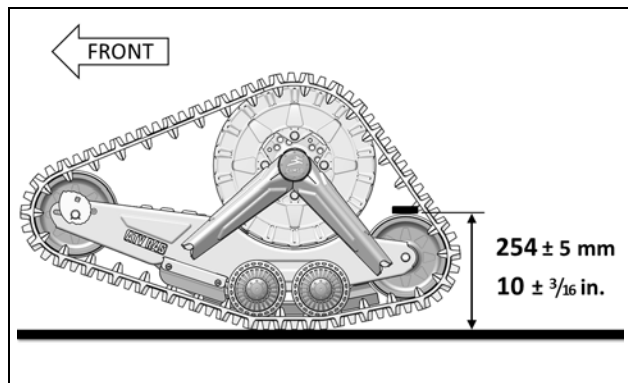


Figure 7

**NOTE:** Once adjustment of the angle of attack on the front systems is completed, verify once again to confirm the adjustment.

#### BASIC TUNING (Front Track Systems)

- An adjustment of more than **254 mm [10 in]**, measured with the flat bar, provides easier steering but produces a wobbling effect at high speed.
- An adjustment of less than **254 mm [10 in]**, measured with the flat bar, results in harder steering and more stability at high speed.

#### ANGLE OF ATTACK - REAR SYSTEMS

To obtain the correct angle of attack on rear Track Systems, perform the following:

#### RIGID AXLE OR TRAILING ARM SUSPENSION

**CAUTION:** Some vehicles require a particular adjustment. Refer to the *Installation Guidelines* specific to your vehicle model to confirm the adjustment.

- Stabilizing arm (1) must be attached to Track System and to rear anchor bracket (2) installed on vehicle. See Figure 8.

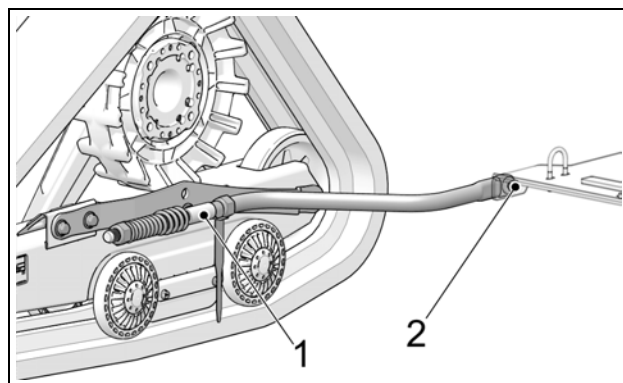


Figure 8

- Loosen the nut (3) compressing the spring of the stabilizing rod. See Figure 9.

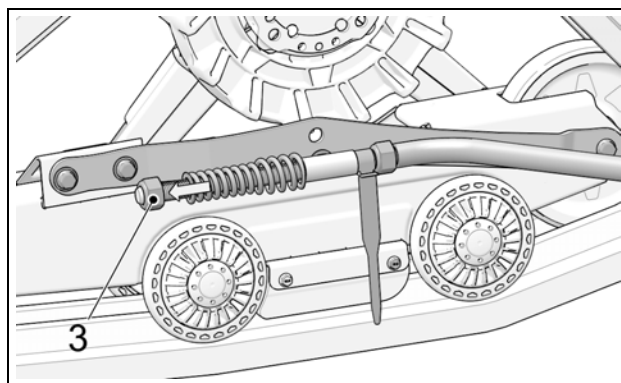


Figure 9

**NOTE:** Use the narrow part of the adjusting template provided with the stabilizing arm to make the adjustment.

- Set the nut (4) to obtain a distance of 10 mm between nut and stabilizing arm guide as shown on Figure 10.

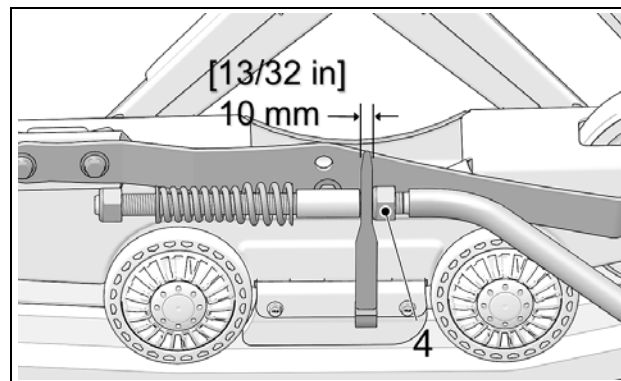


Figure 10

- Turn nut (3) until it comes in contact with the spring, then compress the spring by turning the nut 1 1/2 turns. See Figure 11.

## ADJUSTMENTS

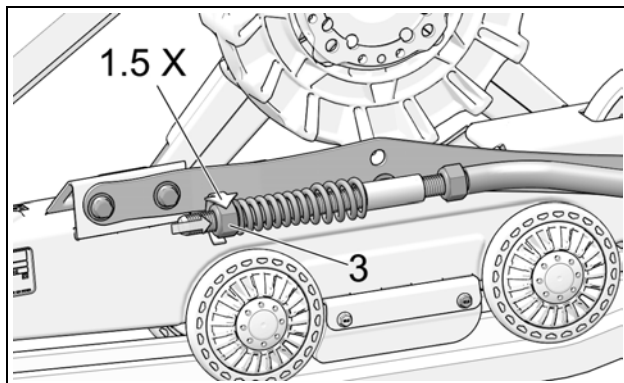


Figure 11

- **IMPORTANT:** Double-check the 10 mm minimum distance between nut and stabilizing arm guide. Re-adjust as needed. Figure 12.

*NOTE: Use the provided template to double-check the adjustment.*

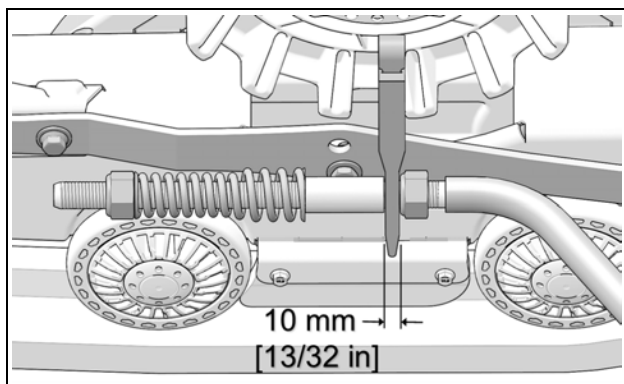


Figure 12

### INDEPENDENT SUSPENSION (IS)

- Stabilizing arm (1) must be attached to rear anchor bracket (2) installed on vehicle. Figure 13.

*NOTE: Actual Rear Anchor bracket (2) mounted on vehicle may differ from the one in the illustration.*

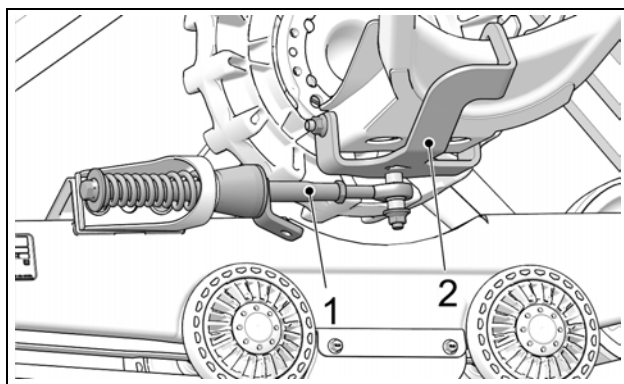


Figure 13

- Turn stabilizing arm nut to adjust length of rod end (1) and get rubber cone (2) to apply light pressure on anti-rotation retainer (3). Figure 14.

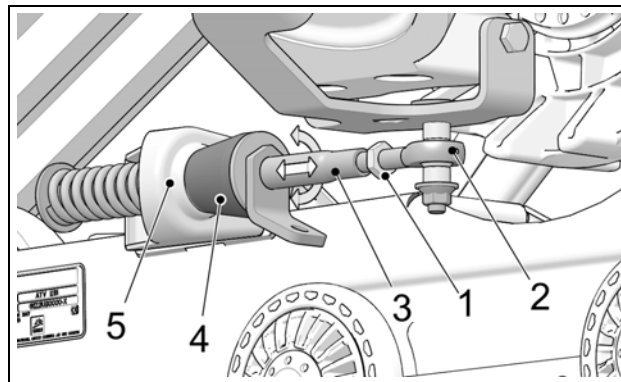


Figure 14

- Re-tighten jam nut (1) to 40 N•m [30 lb-ft] of torque when adjustment is complete. Figure 15.

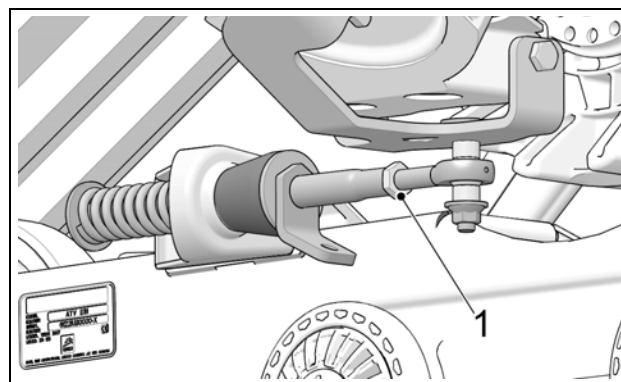


Figure 15

**CAUTION:** Tighten the jam nut to the recommended torque specification. Overtightening the nut might damage the rod end.

*NOTE: Once adjustment of the angle of attack on rear systems is complete, verify once again to confirm the adjustment setting.*

### BASIC TUNING (Rear Track Systems):

- The adjustment is **incorrect** when the stabilizing arm's rubber cone is compressed and deformed. The stabilizing arm's spring is then difficult or impossible to turn by hand.

### TRACK SYSTEM REMOVAL

**CAUTION:** Leaving the anti-rotation anchor brackets attached to the suspension arms, after having removed the Track Systems, could cause interference which might damage the vehicle. Remove all Track System anti-rotation mechanism components installed on the vehicle before reinstalling the wheels.

## ALIGNMENT

Parallelism must be adjusted with the ATV on the ground, driving the vehicle forward about 3 meters [10 ft.] and measuring toe-in distance. Refer to Figure 16.

**NOTE:** Every time the measurement has to be taken, drive in reverse, then, drive forward again on about 3 meters [10 ft.].

**CAUTION:** Verify condition of the steering system components before adjusting parallelism. Damaged components can prevent proper adjustment and impair proper operation of the system.

**CAUTION:** The parallelism adjustment of the front Track Systems is very important and is directly linked to the longevity of the system components. Users must follow attentively the adjustment and verification recommendations of this manual.

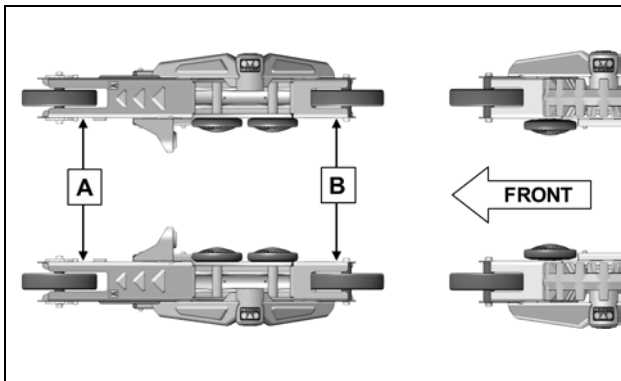


Figure 16

**Dimension A:** represents the distance between the inner front tires.

**Dimension B:** represents the distance between the inner back tires.

**Dimension A** must be equal to or greater than **dimension B** without exceeding 3 mm [1/8 inch].

**A - B = 0 to 3 mm [1/8 inch]**

## Adjustment Method

To adjust the ATV's steering system, first loosen coupling rod nuts (1), then screw or unscrew the coupling rod (2) an equal number of revolutions on both sides of the vehicle. Re-tighten nuts when adjustment is complete. See Figure 17.

**NOTE:** Starting with an open alignment setting provides a higher degree of precision in the adjustment.

**CAUTION:** Remember that some nuts have reverse threads before loosening a coupling rod nuts (1) on the vehicle's steering system. Make sure to unlock the nut in the proper rotational direction.

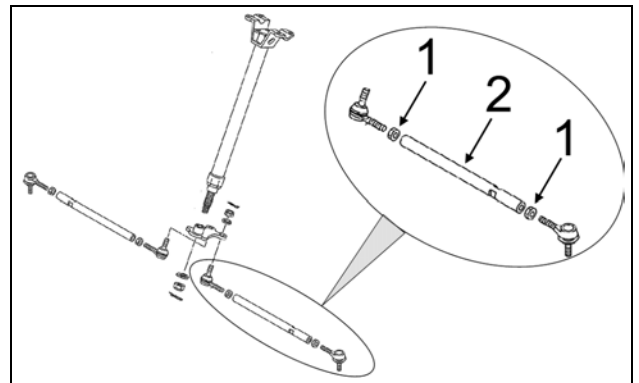


Figure 17

**NOTE:** Once the parallelism adjustment of the front Track Systems is completed, verify once more to confirm the adjustment setting.

## ADJUSTMENTS

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**Measure A:** Measure the distance inside the front ends of the front Track System frames. See Figures 18, 19 and 20.



Figure 18



Figure 19 (Distance inside front frames - front end)

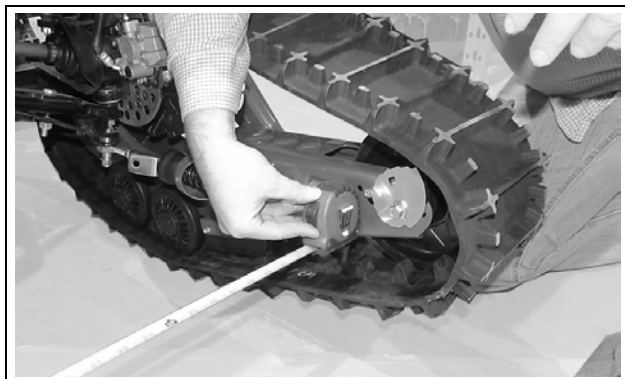


Figure 20

**Measure B:** Measure the distance inside the rear ends of the front Track System frames. See Figures 21, 22 and 23.

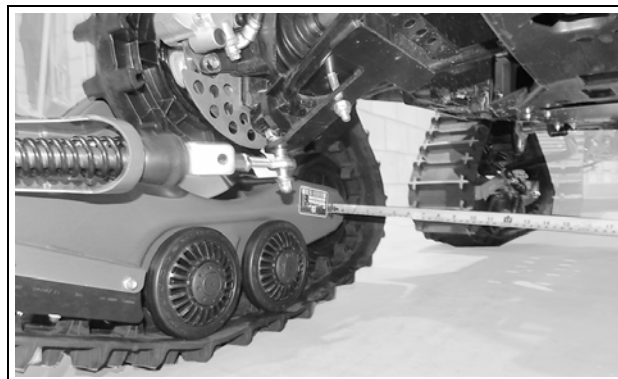


Figure 21

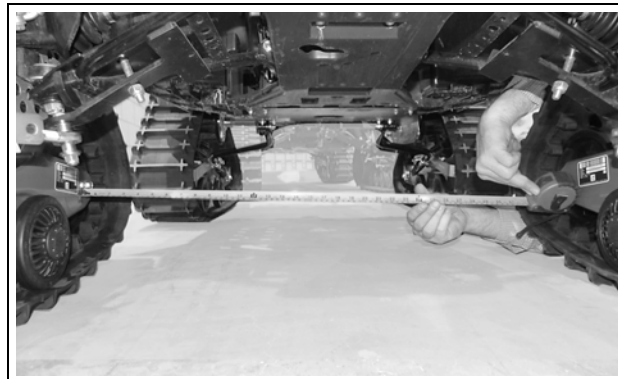


Figure 22 (Distance inside front frames - rear end)



Figure 23



## TRACK TENSION

- Loosen both tensioner-side wheel shaft bolts (1) to allow tensioner cams (2) to turn. Figure 24.

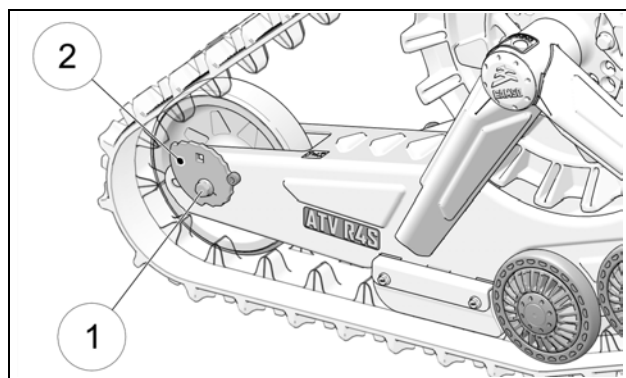


Figure 24

- Insert ratchet wrench extension with 3/8" drive (1) in tensioner cam's square hole. Figure 25.

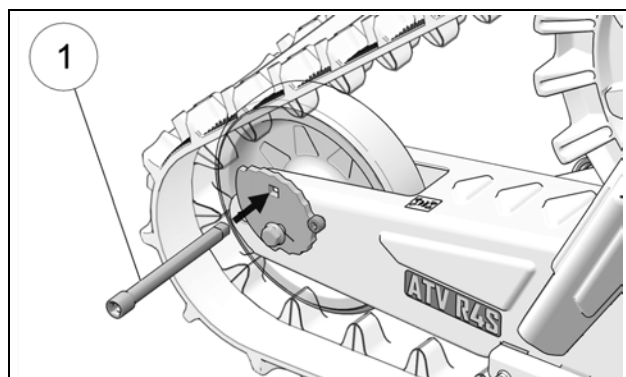


Figure 25

- Turn cams to adjust tension as close as possible to the recommended tension. Figure 26.

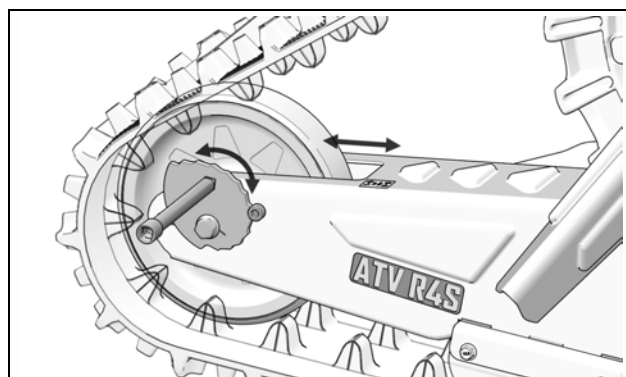


Figure 26

**CAUTION:** Tensioner cam adjustment position must identical on both sides of Track System. Verify adjustment by counting at which position each cam is set. Both positions must be the same.

- After having adjusted the tension and **verified cam positions**, re-tighten both wheel shaft bolts to 50 N-m (37 lb-ft) of torque.

The table below shows the force (1) applied and the deflection (2) which must occur to correctly set track tension. Refer also to Figure 28.

TRACK	FORCE	DEFLECTION
Front	13.5 kg [ 30 lb ]	17 mm [ 5/8" ]
Rear	13.5 kg [ 30 lb ]	17 mm [ 5/8" ]

## BASIC TUNING

- Higher rubber track tension reduces the risk of "derailing" and reduces drive "ratcheting".

*NOTE: Track tension set too high could cause premature wear on system components and is therefore not recommended.*

- Lower track tension provides better traction, a smoother ride and better fuel economy.

*NOTE: The track tension testing tool shown below in Figure 27 can be purchased through an authorized Camso dealer. Part #2000-00-3125.*



Figure 27

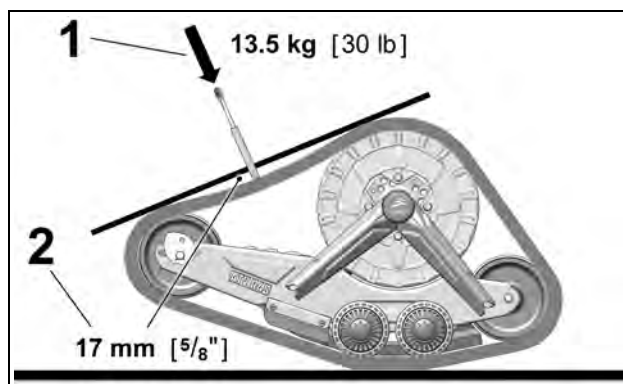


Figure 28

## Final Check

Ride at slow speed on a distance of about 1.5 km [1 mile]. Re-adjust as required.

**CAUTION:** Minor installation problems could present themselves on some vehicles due to interference between system components and the vehicle. Refer to the section entitled "Completion" in the Installation Guidelines for instructions on how to work out these installation problems.