

# CAMSO DTS 129

Dirt-to-snow  
bike conversion system

1099-00-8831

## ADJUSTMENTS 2020





## 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 system adjustments and thereby reach optimum system performance.

Follow all 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 adjustments have been made.

### IMPORTANT

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

### IMPORTANT

**Verification of adjustment settings on the System is mandatory after first use on the motorcycle. Tension of rubber track, tension of drive chains and angle of attack on suspension must be re-checked. Incorrect adjustments can decrease system performance and produce premature wear on certain components.**

## ADJUSTMENTS

**CAUTION:** Verification of adjustment settings on the system is mandatory after first use on the motorcycle. The rubber track tension, the suspension's angle of attack and the tension in the drive chains must be re-checked. Incorrect adjustments can decrease system performance and produce premature wear on certain components.

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

### ANGLE OF ATTACK - SUSPENSION

**CAUTION:** Adjust the suspension's limiter strap first before setting the rear system's angle of attack. Refer to the "SUSPENSION - LIMITER STRAP ADJUSTMENT" section in this manual.

**Adjustment principle:** When laying down the suspension on a flat surface, contact between track and suspension rail must happen at the same time along the entire length of the rail. Figure 1.

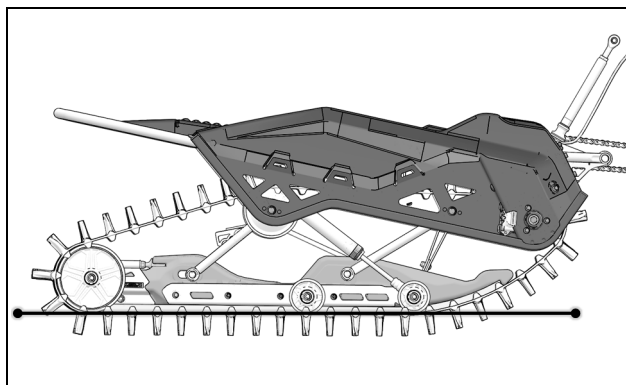


Figure 1

To set the suspension at the correct angle of attack, perform the following:

- The bike must be upright and stable, unable to tip over. There must not be any extra load on the bike.

**NOTE:** To check the suspension's angle of attack, lift the back of the motorcycle and lay it down slowly.

- Loosen the rod end's jam nut. Adjust the length of rod end (1) by turning the strut rod (2) using a 25 mm wrench. See Figure 2.

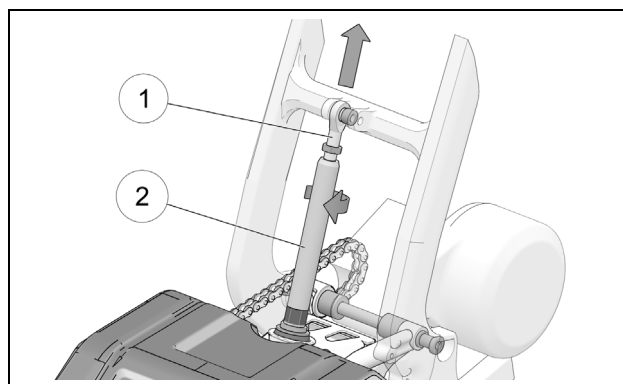


Figure 2

- Lift the back of motorcycle and lay it back down slowly. Check to see if suspension rail comes down at the same time along its entire length.
- Adjust rod end length until a perfect contact is obtained along the entire length of the suspension rail.

**NOTE:** Check pressure on the track's exterior treads. If the angle is correctly set, pressure will be evenly distributed at the front, center, and back of the rail. If setting is incorrect, a greater deformation of the front or back treads will be noticeable.

- Re-tighten the jam nut to 40 N-m [30 lb-ft] after the correct setting has been obtained.

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

**NOTE:** The rod end must not show more than 30 mm of threads following the setting of the suspension's angle of attack. If more than 30 mm of threads are visible, re-check the adjustment setting or consult the Installation Guidelines specific to your motorcycle model and verify the assembly order of strut rod components on the motorcycle frame.

## ADJUSTMENTS

### DRIVE CHAIN TENSION

- To make the following setting adjustments, the skin cover must be removed from the rear part of the system.

**CAUTION:** Some bolts secured on the frame must be loosened temporarily to adjust the drive chain tensioner.

- Loosen assembly bolts (1) and (2) on left side panel. Loosen bolt (3) by only a half-turn. By loosening bolts (1) and (2), the Chain Tensioner (4) will be able to pivot on its axis. Bolt (3) must be kept under clamp load. See Figure 3.

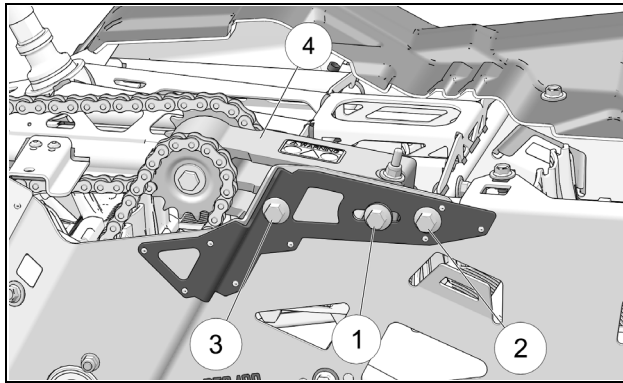


Figure 3

**NOTE:** Loosen bolt (3) by only a half-turn. This bolt must be kept under some clamp load while adjusting chain tension.

**NOTE:** It is important that the following steps be performed in the order prescribed to obtain the optimal tension setting in the drive chains.

- Adjust the primary drive chain tension (1) by turning adjustment nut (2) at the rear of the tensioner (3) to eliminate play in the primary chain. See Figure 4.

**NOTE:** Do not finalize the primary drive chain adjustment at this point. Eliminate play in the chain only.

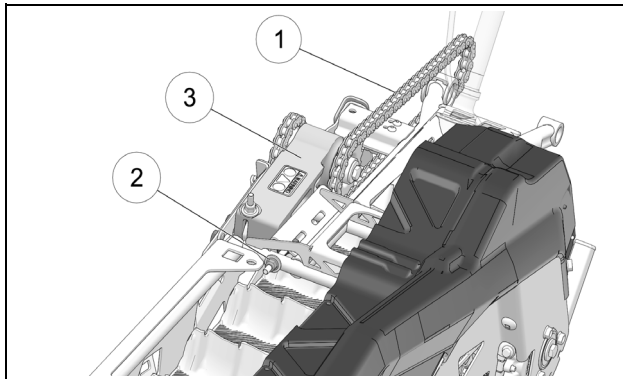


Figure 4

- Adjust next the tension in the secondary drive chain (1) by turning the vertical adjustment nut (2) on the chain tensioner. See Figure 5.

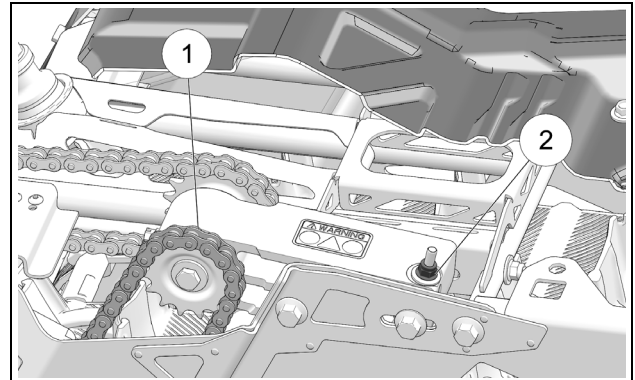


Figure 5

- Apply pressure at center of the two drive sprockets. The chain should have 3-6 mm (1/8-1/4 in.) of play. Re-adjust until the right amount of play is obtained. See Figure 6.

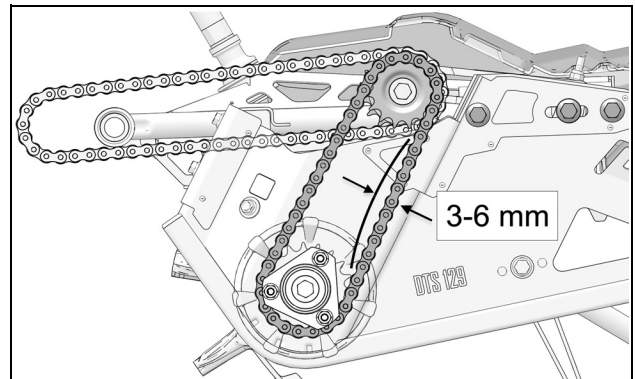


Figure 6

**NOTE:** Secondary drive chain tension must be set before finalizing primary drive chain tension adjustment.

- Once the secondary drive chain tension is set, finalize tension adjustment of primary drive chain. Apply pressure at center of the two drive sprockets. The chain should have 3-6 mm (1/8 - 1/4 in.) of play. Re-adjust until the right amount of play is obtained. See Figure 7.

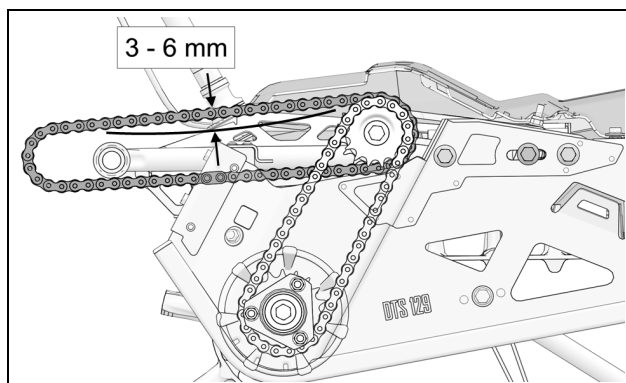


Figure 7

**CAUTION:** After having adjusted the primary drive chain and before tightening the mounting bolts, double-check the secondary drive chain tension. Re-adjust tension if chain deflection does not meet requirement.

- Re-tighten in sequence chain tensioner mounting bolts (1), (2) and (3) to 125 N-m [92 lb-ft] of torque. See Figure 8.

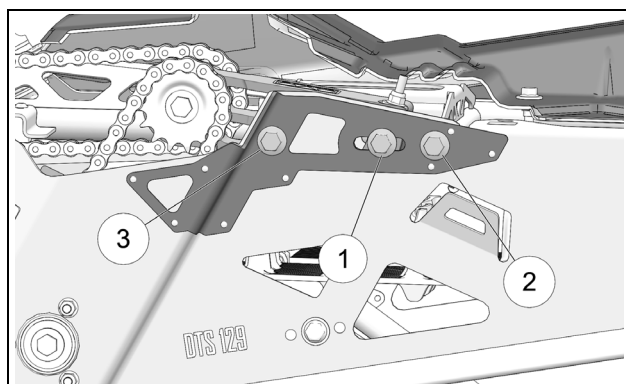


Figure 8

- Chain tension set too tight will result in loss of power and excessive mechanical stress put on drive system components. A chain tension set too tight is therefore not recommended. On the other hand, a chain that is tensioned tightly is less likely to come off and is also less likely to skip over sprocket teeth.

**CAUTION:** Drive chain tension set too tight can cause premature wear on drive sprockets and on the chain itself.

- Lower drive chain tension increases the risk of chains coming off or skipping over the drive sprocket teeth.
- Lower drive chain tension results in premature wear on drive sprocket teeth.

**NOTE:** Once the chain tension adjustments are done, double-check to make sure that the tension settings meet specifications.

## SUSPENSION ADJUSTMENT

The suspension can be adjusted to fit the rider's weight, personal preferences or use of the motorcycle.

**NOTE:** Camso recommends that the suspension spring adjustment be made in a workshop before using the motorcycle.

- Loosen and remove assembly bolt (1) and washer (2) from wheel (3) located next to long end of suspension spring. Remove wheel and spacer (4) from wheel shaft. Figure 9.

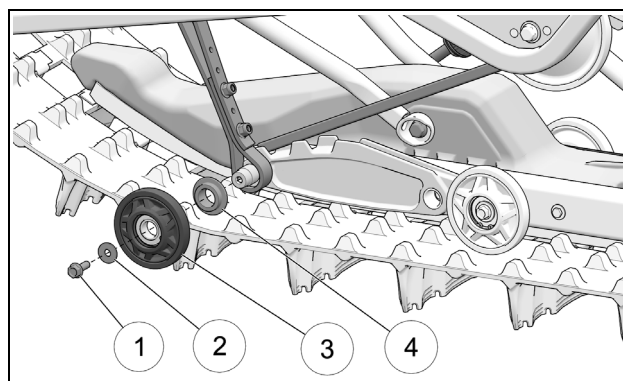


Figure 9

- Depress suspension to allow removal of limiter strap (1) from wheel shaft. See Figure 10.

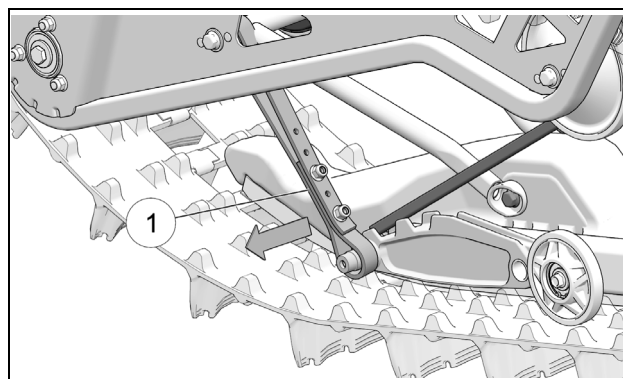


Figure 10

## ADJUSTMENTS

### **WARNING**

**Suspension spring tension is very high. Handle with care and use appropriate tools to avoid any risk of injury during spring calibration.**

- Using an appropriate tool, lift the long end of the spring (1) out of its groove to release the tension. See Figure 11.

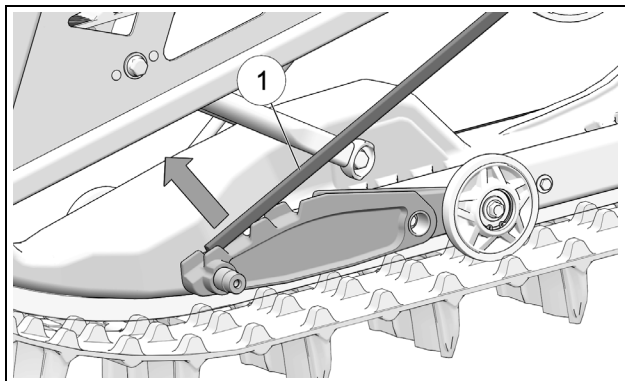


Figure 11

### Torsion Spring tension cam positions

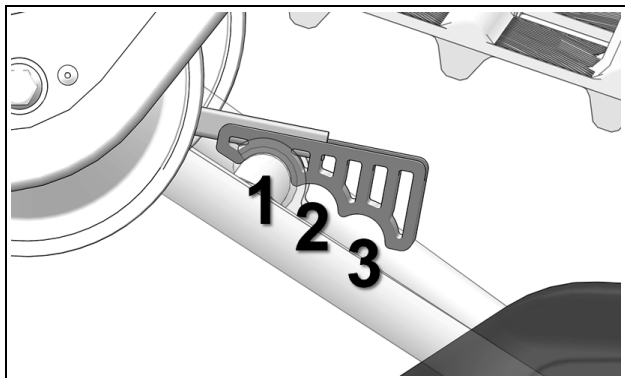


Figure 12

CAM POSITION	SPRING PRE-LOAD
1	Minimum
2	Medium
3	Maximum

- Position Tension Cam in its seat on the suspension arm. Move cam forward or backward depending on the level of stiffness desired in the suspension. See Figure 13.

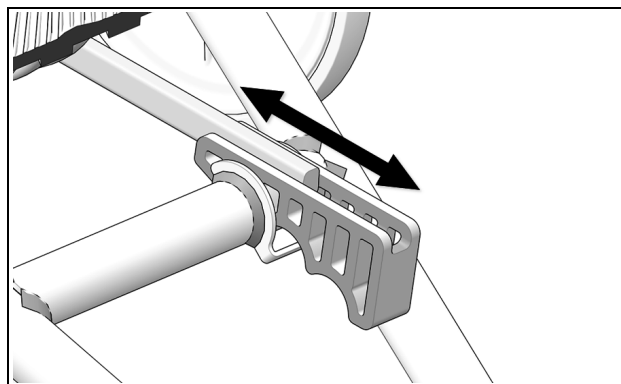


Figure 13

- Using an appropriate tool, re-install the long end of the spring in its groove.
- Depress the suspension and re-insert limiter strap on wheel shaft.
- Re-install spacer (1) and wheel (2) on shaft. Tighten bolt (3) to 27 N-m (20 lb-ft) of torque. See Figure 14.

**NOTE:** Be careful to place the spacer's (1) large diameter against the limiter strap.

**NOTE:** Grease shaft before re-installing wheel.

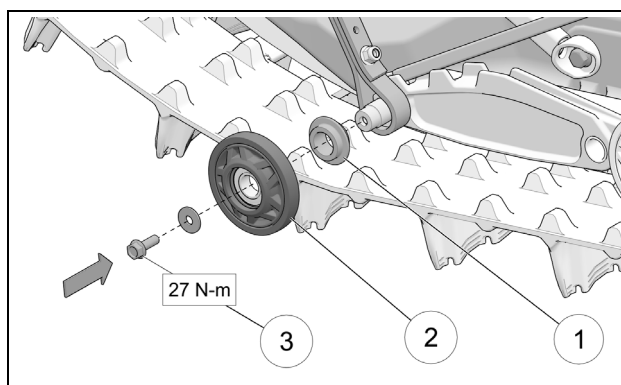


Figure 14

**CAUTION:** Track tension and angle of attack settings must be re-verified if Spring pre-load is changed.

## SUSPENSION - LIMITER STRAP ADJUSTMENT

Upon reception of the Conversion kit, you will find the Suspension Limiter Strap adjusted to the middle position.

- The Limiter Strap has 3 adjustment settings: Figure 15.

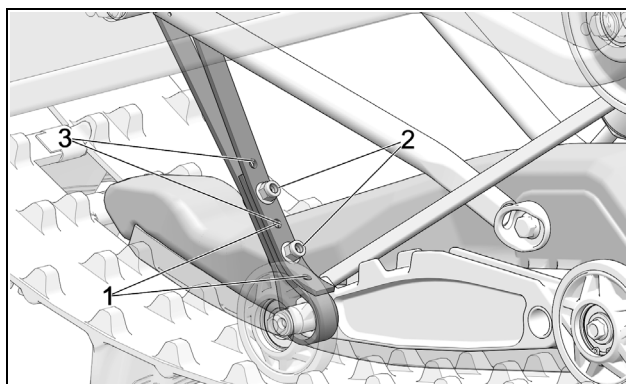


Figure 15

1. Long    2. Middle    3. Short

- The Limiter Strap adjustment impacts the suspension's calibration and the amount of ground pressure exerted by the ski.

Limiter Strap Settings		
Position	Type	Use
1	Short	- Excellent performance in powder snow. - More ground pressure exerted by ski.
2	Middle	- Factory setting: best overall setting.
3	Long	- Ski is lighter when accelerating. - Better shock absorption. - Better performance on hard or packed snow.

- A shorter Limiter Strap adjustment offers excellent performance in powder snow and better handling when going uphill, while providing for a more aggressive ski.
- A longer strap adjustment generally gives better performance on hard snow or packed trail, while lowering pressure produced by ski.

**CAUTION:** Angle of attack and Track tension settings must be re-verified following a change in suspension's Limiter Strap adjustment.

- Loosen and remove the two nuts (A) and washers (B) securing the Suspension Limiter Strap (C) assembly bolts. Figure 16.

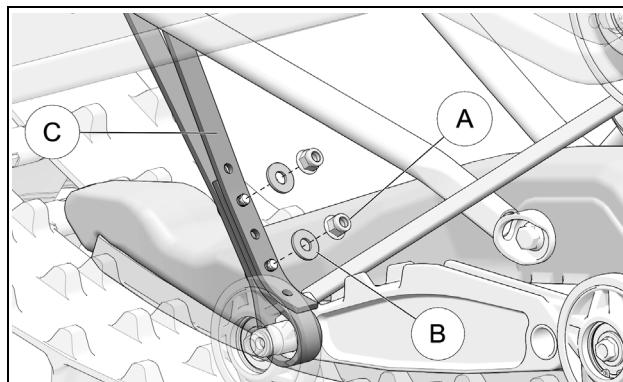


Figure 16

- Lift the end of the strap (C) off of the bolts, taking care that the bolts stay in their position. Figure 17.

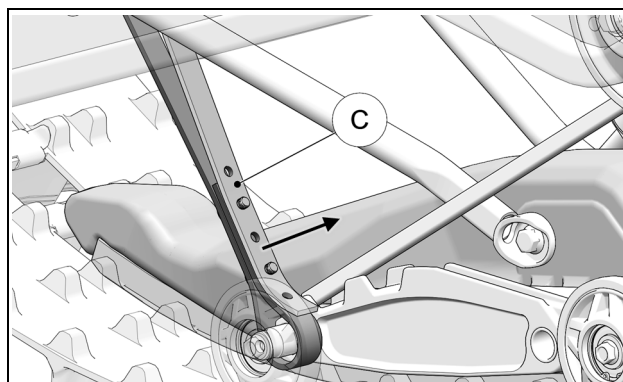


Figure 17

- Slide the free end of the strap up or down to align the holes of the desired position with the bolts in the strap. Figure 18.

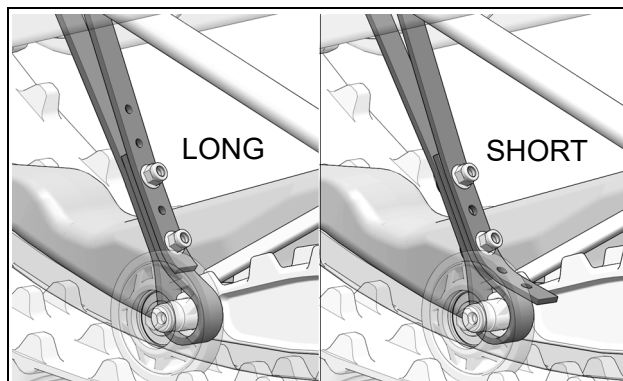


Figure 18

- Once the strap is set to the desired position, re-install nuts and washers, and tighten to 7 N-m (62 lb-in) of torque.

RUBBER TRACK TENSION

**CAUTION:** Track Tensioner assembly bolt (A) must be loosened before adjusting track tension. See Figure 19.

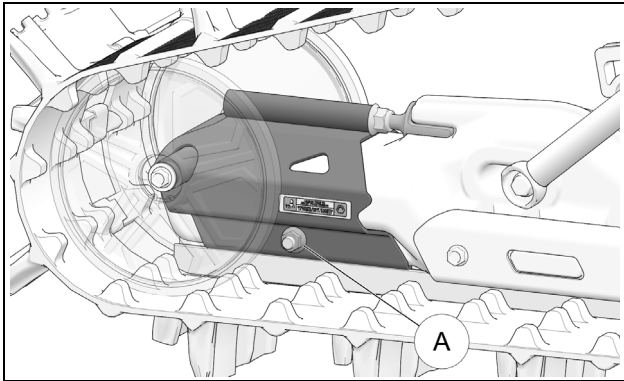


Figure 19

To adjust track tension, turn tension adjustment nut (B) clockwise or counter-clockwise to obtain the recommended track tension. See Figure 20.

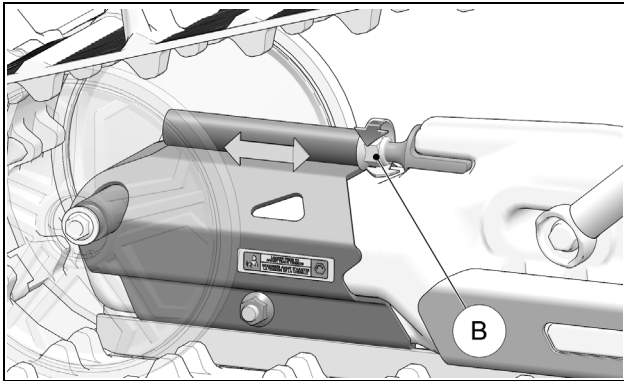


Figure 20

**CAUTION:** Make sure to re-tighten Track Tensioner assembly bolt (A) after completing track tension adjustment.

The table below shows the force applied and the deflection which must occur when track tension is correctly set. Refer also to Figure 21.

FORCE	DEFLECTION
6.8 kg [15 lbs]	19 mm [ $\frac{3}{4}$ in.]

BASIC TUNING

- A higher rubber track tension reduces drive “ratcheting”.
- NOTE: Track tension set too high could cause premature wear on system components.*
- A lower rubber track tension provides better traction, a smoother ride and better fuel economy.

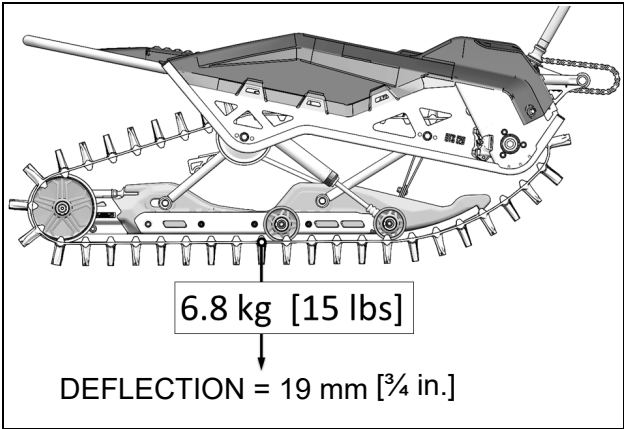


Figure 21

*NOTE: The track tension testing tool shown below in Figure 22 can be purchased through an authorized Camso dealer. The part number is 2000-00-3125.*



Figure 22

- Tighten assembly bolt (A) back to 35 N-m (25 lb-ft) of torque once Track tension is set. See Figure 19.

Final Check

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

**CAMSO DTS 129 CONVERSION SYSTEM  
INSTALLATION AND ADJUSTMENT CHECKLIST**

**\*\* Steps in this checklist are laid out in logical order. They should be performed in succession to optimize the Conversion System installation on the motorcycle. \*\***

**1 - COMPONENT INSTALLATION**

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**A - FRONT SKI INSTALLATION**

*\* Refer to INSTALLATION GUIDELINES sections entitled "Preparation of components" and "Conversion System Installation"*

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**B - REAR SYSTEM INSTALLATION**

*\* Refer to INSTALLATION GUIDELINES sections entitled "Preparation of components" and "Conversion System Installation"*

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**C - DRIVE CHAIN INSTALLATION**

*\* Refer to INSTALLATION GUIDELINES section entitled "Drive chain installation".*

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**2 - COMPONENT ADJUSTMENT**

**A - ANGLE OF ATTACK**

*\* Refer to ADJUSTMENTS section entitled "Angle of attack - Suspension"*

☐

**B - DRIVE CHAIN TENSION**

*\* Refer to ADJUSTMENTS section entitled "Drive chain tension"*

☐

**C - SUSPENSION**

*\* Refer to ADJUSTMENTS section entitled "Suspension adjustment"*

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**D - TRACK TENSION**

*\* Refer to ADJUSTMENTS section entitled "Rubber track tension"*

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**E - BRAKE SYSTEM VERIFICATION**

*\* Refer to INSTALLATION GUIDELINES section entitled "Brake system verification".*

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**3 - INTERFERENCE CHECK**

**IN THE EVENT OF INTERFERENCE BETWEEN THE MOTORCYCLE AND THE CONVERSION SYSTEM, SOME PARTS OF THE MOTORCYCLE MAY HAVE TO BE REMOVED OR MODIFIED. SEE THE INSTALLATION GUIDELINES' SECTION ENTITLED "MOTORCYCLE PREPARATION".**

**4 - TEST RUN**

**5 km (3 miles) TEST RUN**

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**5 - POST TEST RUN FINAL CHECKS**

**A - ANGLE OF ATTACK**

*\* Refer to ADJUSTMENTS section entitled "Angle of attack - Suspension"*

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**B - DRIVE CHAIN TENSION**

*\* Refer to ADJUSTMENTS section entitled "Drive chain tension"*

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**C - TRACK TENSION**

*\* Refer to ADJUSTMENTS section entitled "Rubber track tension"*

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