

# SERVICE GUIDE

CPB-407

## AGRICULTURAL TRACK

John Deere 9RX Series



JOHN DEERE



REMOVAL  
INSTALLATION  
INSPECTION  
ALIGNMENT



CAMSO

ROAD  
FREE  
COMPANY

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## Introduction

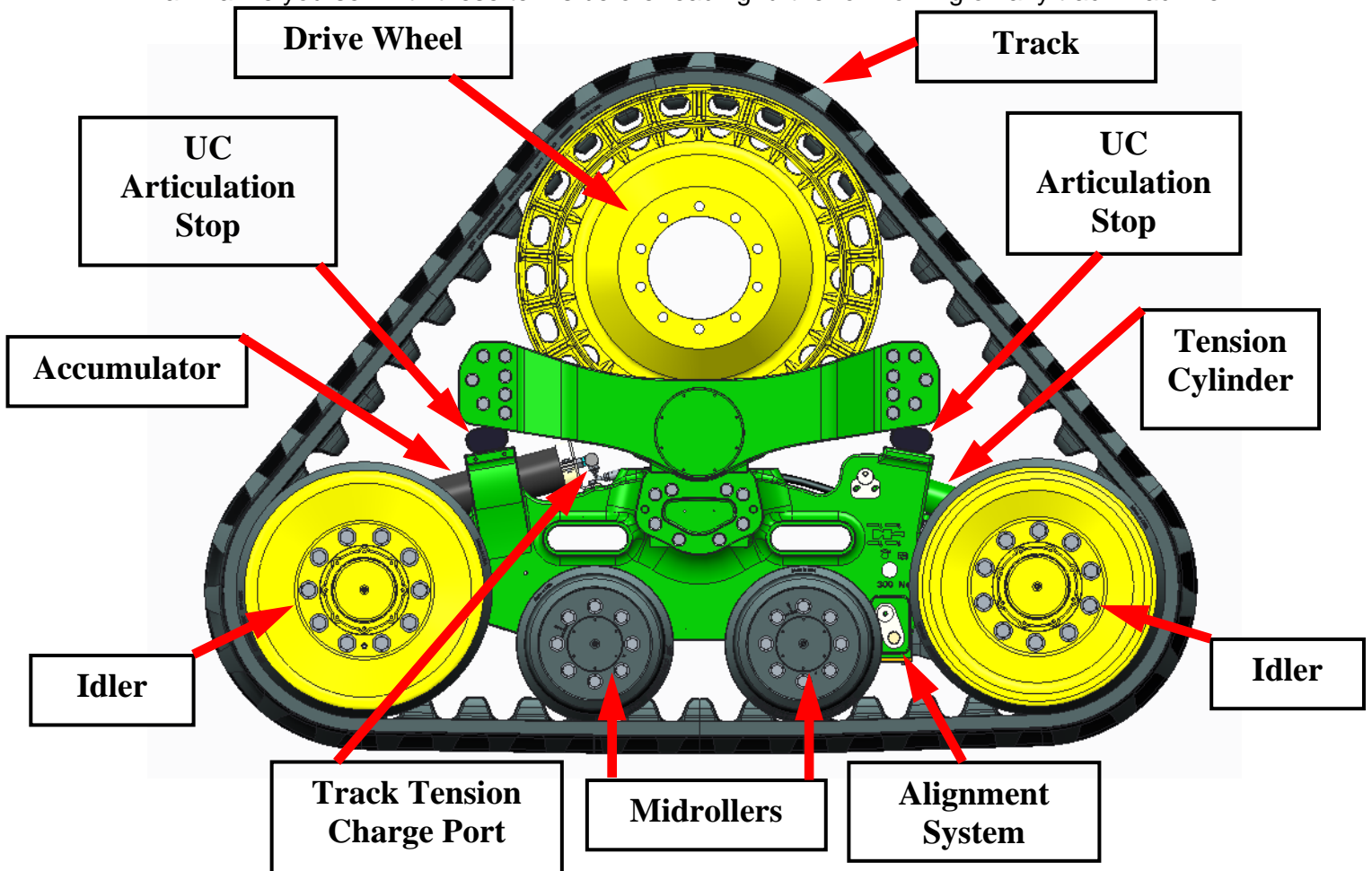
This service guide is intended for use by distributors and aftermarket dealers, and provides the information needed for basic track installation and service. Further details can be found in the John Deere operator's guide and service manuals, available from John Deere.

### Notice

When servicing track machines, review the operator's manual included in every machine and follow all manufacturers recommended safety precautions. Failure to follow safe procedures can result in injury or death.

## Track Terminology

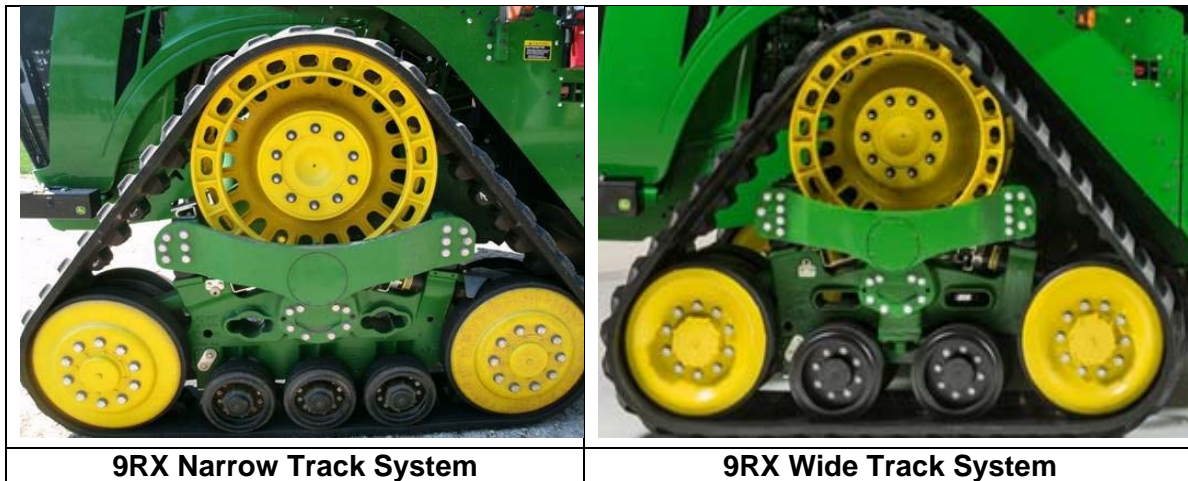
For reference with the rest of the following document, the terms used are referenced below. Familiarize yourself with these terms before reading further or working on any track machine.



9RX Wide undercarriage system shown above.

## Machine Overview

The 9RX Wide and 9RX Narrow track systems are designed by Camso for John Deere. These two systems are very similar in appearance and have many common components. Several major differences between the two systems would be the 9RX Narrow has (3) midrollers and offers a variable track spacing of 80 inches, 88 inches, or 120 inches. The 9RX Wide has (2) midrollers, a standard 88" spacing, and optional 120" track spacing. The tools used to remove and install tracks are similar between both machines.



## Time Estimates - Removal, Installation and Alignment

The time required to change a track depends a great degree on the skill of the technician and the tools available. Table 2 below lists estimated times for removal, installation, and alignment. This estimate is based on a service technician of average skills with the basic tools working on firm, level ground. Working in adverse conditions can take significantly longer. Experienced technicians will be able to work in a shorter time. Two people working together may cut total man hours as well.

Note: If undercarriage inspection reveals other required repair, the time required may be longer than indicated

Remove, Inspect & Install		Track Alignment		Total
Single Track (man hrs)	Machine (man hrs)	Single Track (man hrs)	Machine (man hrs)	Total Time (man hrs)
2	8	0 - .25	0-1	8-9

**Estimated man hours required for average track replacement and alignment**

## Tools Required

The table below lists both standard and specialized tools required for track removal, installation and alignment. Refer to publication CPB-330 [Technical Literature and Tooling List](#) for specialized tools available from Camso.

<b>Safety Glasses &amp; Steel Toe Shoes</b> <b>Ratcheting hoist / “Come Along”</b> <b>Selection of bars, nylon straps</b> <b><u>1/8” Thick Shim (Wide Series)</u></b> <b><u>3/16” Thick Shim (Narrow Series)</u></b> <b>Infrared Thermometer*</b> <b>Several large wood blocks</b>	<b>1” Air Impact Wrench (with 800 ft-lb capacity)</b> <b>Air Impact Socket Set (up to 1 ½”)</b> <b>Torque Wrench (800 ft-lb capacity)</b> <b>Air / Hydraulic Jack (min 15 Ton Capacity / 12” stroke)</b> <b>CST- 0100 Track Detensioning Kit*</b> <b>(2) [15 Ton Minimum] Support Stands</b>
<b>Tooling List (* denotes special track tools available from Camso)</b>	

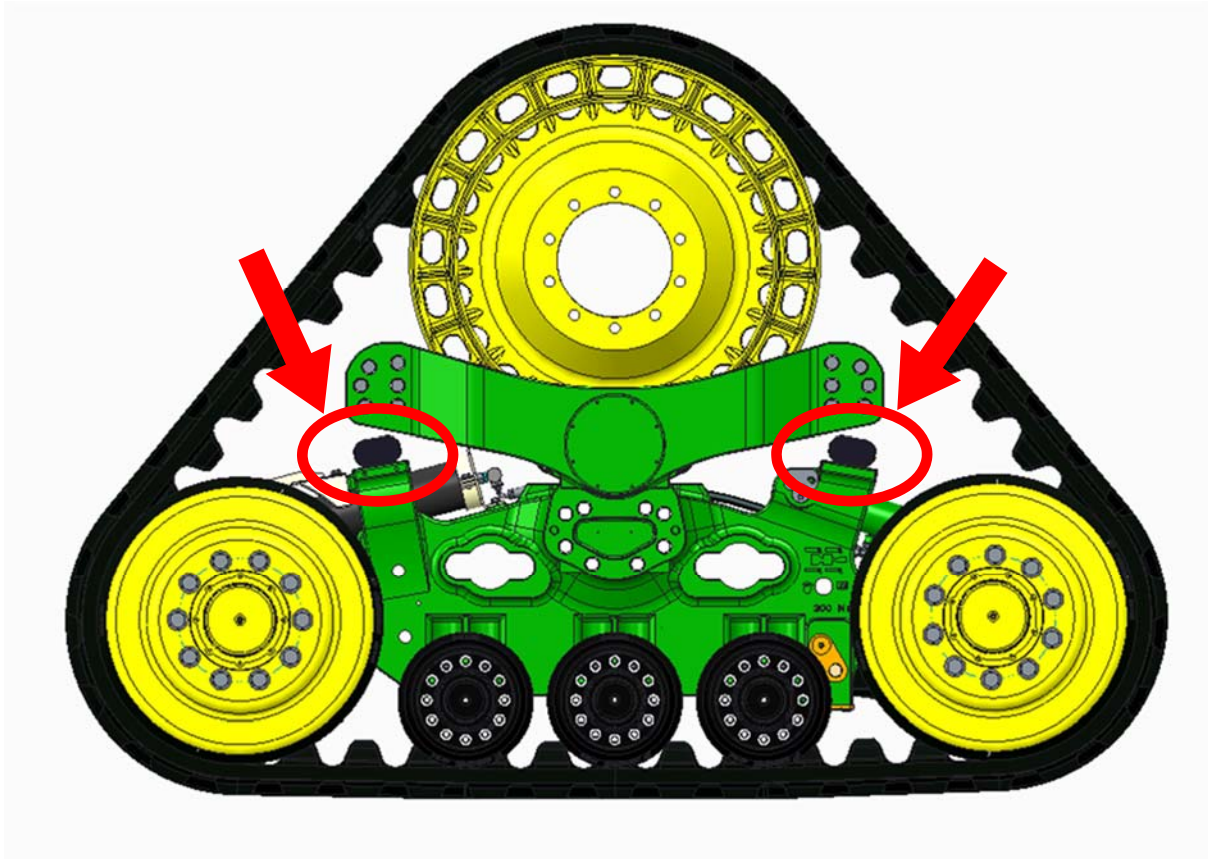
### Track De-tension Hose Kit

Below is shown the CST-120 Camso De-tension Hose Kit. Hose (A) and Ball valve (B) are used for all John Deere machines. The other components are used with other series machines.



## Tractor Preparation

**IMPORTANT:** Use caution when removing tracks as death or serious injury could result.



### ***WARNING – Pinch Point Can Cause Serious Injury***

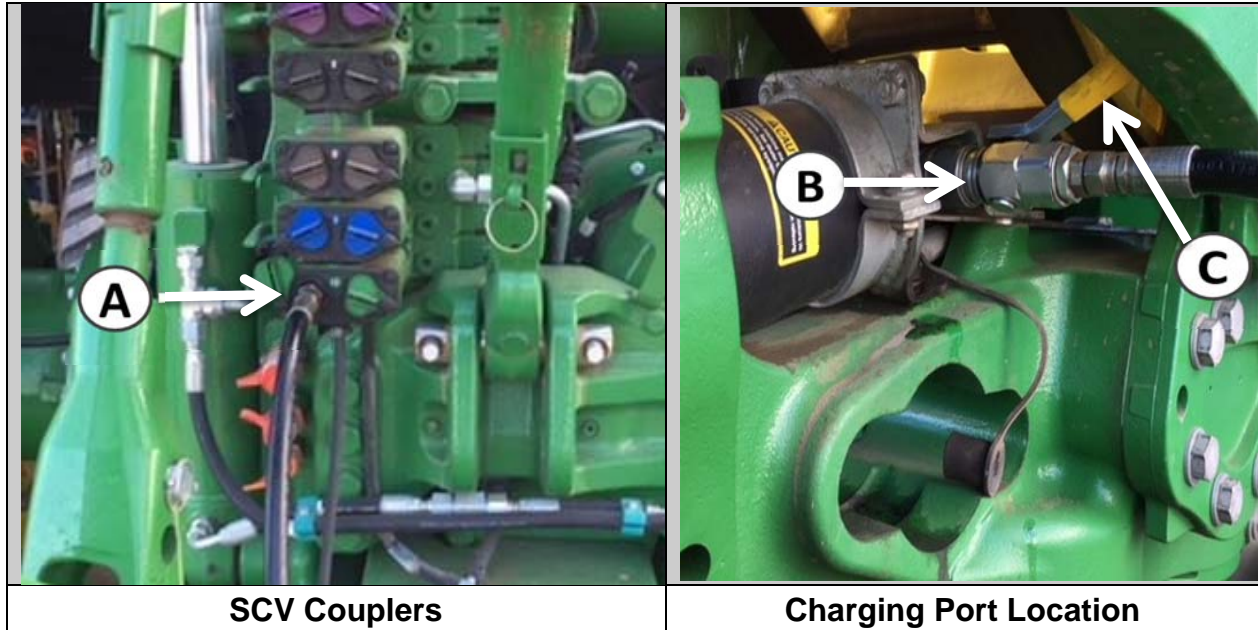
Be especially cautious whenever working on or around the undercarriage track system especially when the tractor or undercarriage assembly is elevated off the ground. The undercarriage can suddenly pitch forward or back creating pinch points between the undercarriage articulation bumper stops and track frame. Serious injury or death could result.

- 1) Perform the track change on a flat, firm surface, as the machine can be raised and stabilized much better than on soft ground. A hard surface also eases the process of sliding the track out from under the machine, and also allows use of a forklift if available.
- 2) Detach any implements. Never work on a tractor with an implement attached on either the drawbar or the 3-point hitch as this creates an unstable condition.
- 3) If possible, clean or power wash the undercarriage before working on it. Dirt and debris makes access to many of the bolts difficult.

## De-tension / Remove Track

**CAUTION:** Ensure that tractor is fully supported and stable using support stands of sufficient capacity before removing or installing tracks.

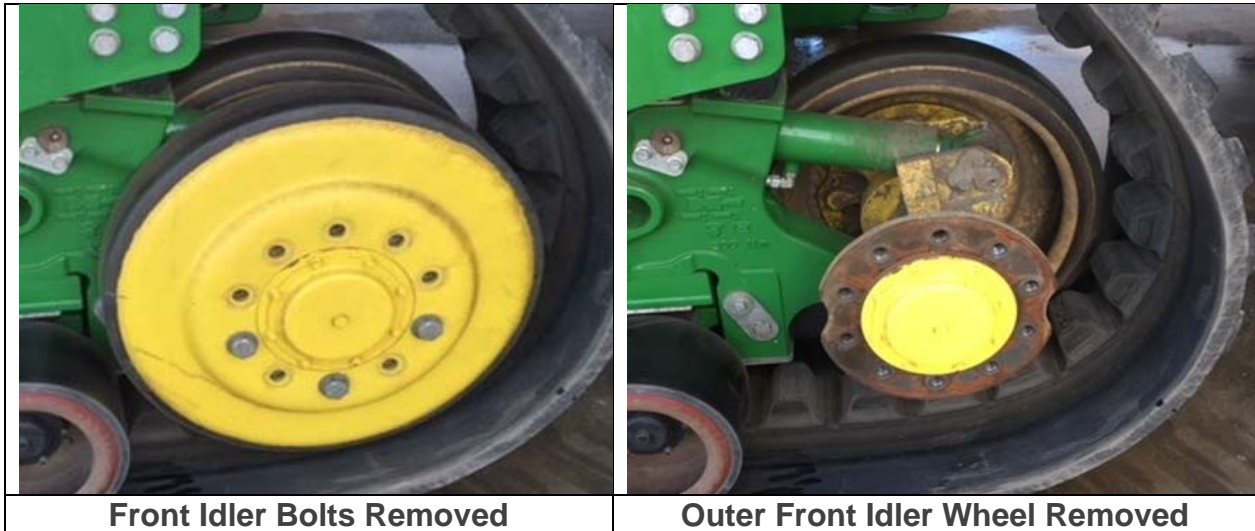
1) Jack up and place machine on support stands widely spaced apart for maximum stability but not in a location that could be in the way of track removal or installation.



2) De-tension track by attaching one end of the hydraulic de-tensioning hose **into return side of SCV coupler (A)**.

- a) Remove cap from hydraulic tension cylinder receptacle **(B)** and attach ball valve end of hose.
- b) Start engine.
- c) **Push** corresponding SCV cab lever **Forward** to **Float** position.
- d) Exit tractor and open ball valve **(C)** on tension hose.
- e) Allow track to de-tension for five minutes.
- f) Stop engine.
- g) Close ball valve **(C)** and remove hose from tension cylinder receptacle.

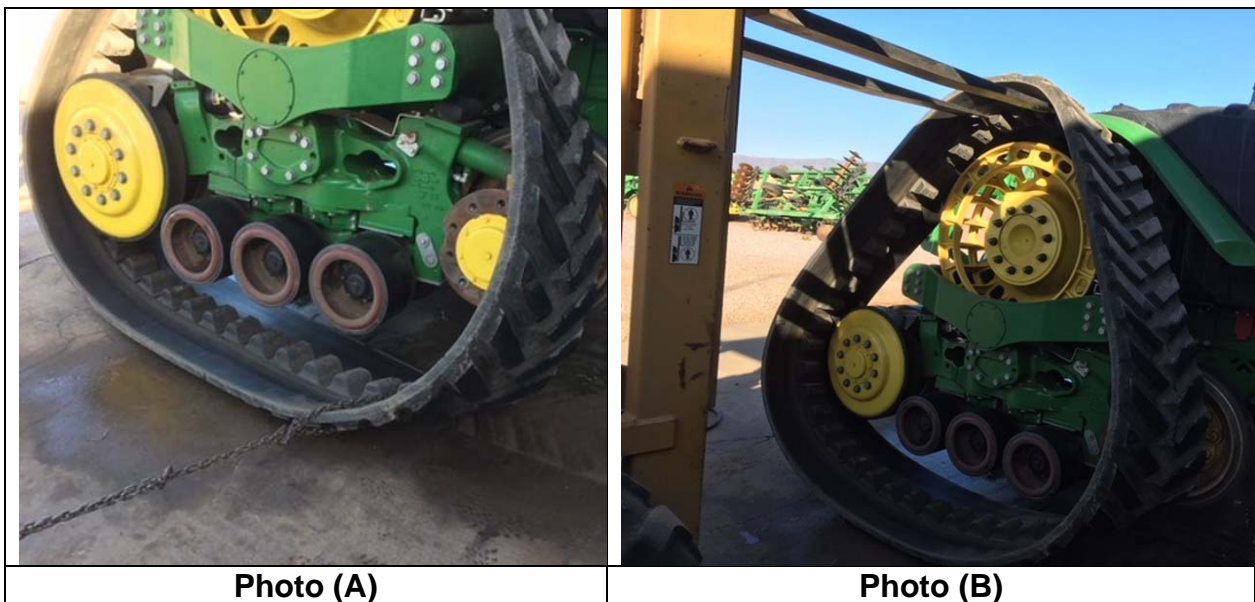
3) Remove front outer UC idler bolts and wheel.



4) Remove track. Removal of the track will require the use of a forklift as track weight can range between 600 lbs. (narrow track) and up to 1,200 lbs. (wide track).

Recommended procedure to remove track from undercarriage:

- a. After removing front **outer idler** use a bar to work the track off the remaining inboard front, and rear idlers. Then pull the bottom of the track out from beneath the midrollers as shown in **(Photo A)** below.
- b. Carefully using the tips of the fork lift tines, lift the top of the track up until the track drive lugs disengage the drive sprocket pockets. **(Photo B)**.
- c. Once the drive lugs clear the drive sprocket, carefully slide the track out from underneath the tractor fender and away from the machine.







**Tension Cylinder Rod Fully Retracted**

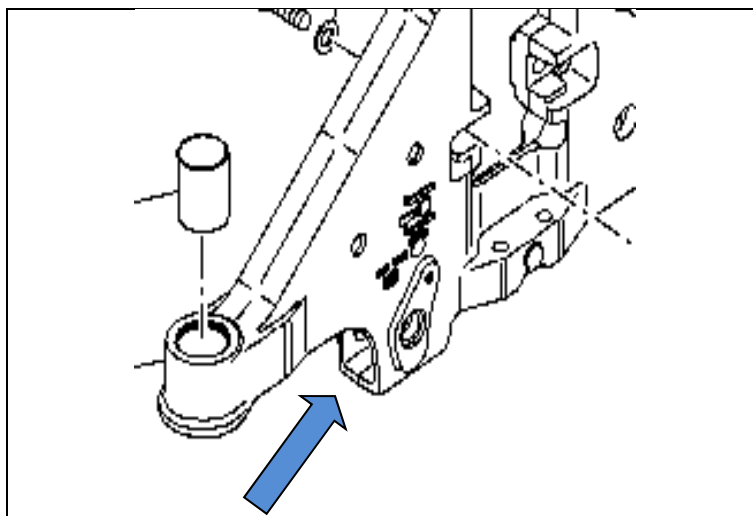
**NOTE:** Before attempting to remove track, make sure the tension link cylinder is fully retracted (< 1.0” of visible chrome) to allow enough slack for ease of track removal

## **Undercarriage Inspection**

The 9RX wide and 9RX narrow series undercarriage system have been designed for long life and maintenance free operation. Because of this, there is no need to check pins and bushings for wear or play. However, there are other checks that should be done to assure the track system is being properly maintained.

### **CLEAN OUT DIRT IN ALIGNMENT LEVER CAVITY**

Make sure to clean all dirt and debris out of this area. Packed dirt in this area will make alignment adjustment difficult if not impossible to complete if this area is not cleaned out.



**Alignment Arm Adjuster Lever Cavity**

## CHECK MIDROLLER CONDITION

Worn or damaged midrollers can damage the track if not replaced as soon as they meet replacement criteria.

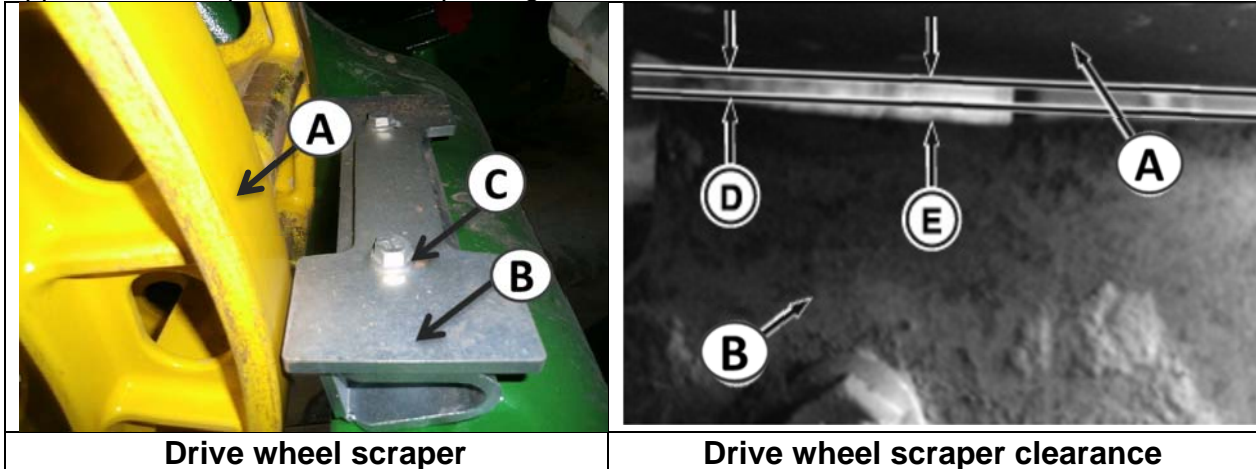
The replacement criteria for midrollers are as follows:

- More than 1/3 of the total rubber is missing around the entire midroller
- All the rubber is missing at any point all the way across the midroller
- Any flat spots are seen which may indicate midroller stopped turning

		
Rubber missing all the way across <b>Must be replaced</b>	Failure due to misalignment <b>Must be replaced</b>	Typical Normal Edge wear – less than 1/3 missing all the way around <b>Do not replace</b>

## CHECK / ADJUST DRIVEWHEEL SCRAPERS

Each drive wheel has a scraper to clean material build-up from the face of the drive wheel which can cause damage to the inner track carcass. Drive wheel scrapers are adjustable and can be flipped over to expose a new scraper edge if worn.



**IMPORTANT – Scraper adjustment should be checked on a daily basis, especially when operating in damp soil or sticky crop / plant residue conditions**

### Adjustment

Each drive wheel (A) has a scraper (B) to remove debris from the drive wheel and prevent damage to the inner track surface and drive lugs.

- 1) Measure clearance between scraper edge and drive wheel face. Minimum clearance is 3 mm (1/8 in) (D) and maximum clearance 5 mm (3/16 in) (E).
- 2) Loosen cap screws (C).
- 3) Position scraper 3 mm (1/8 in) from face of drive wheel and proceed to step 7. If any part of scraper edge exceeds 5 mm (3/16) clearance, proceed to step 4.
- 4) Remove cap screws.
- 5) Choose option for scraper service:
  - Grind scraper edge flat perpendicular to scraper side.
  - Flip scraper and use the new cutting edge.
- 6) Replace, and position scraper 3 mm (1/8 in) of clearance from face of drive wheel.
- 7) Tighten cap screws to 120 Nm (88 lb-ft).

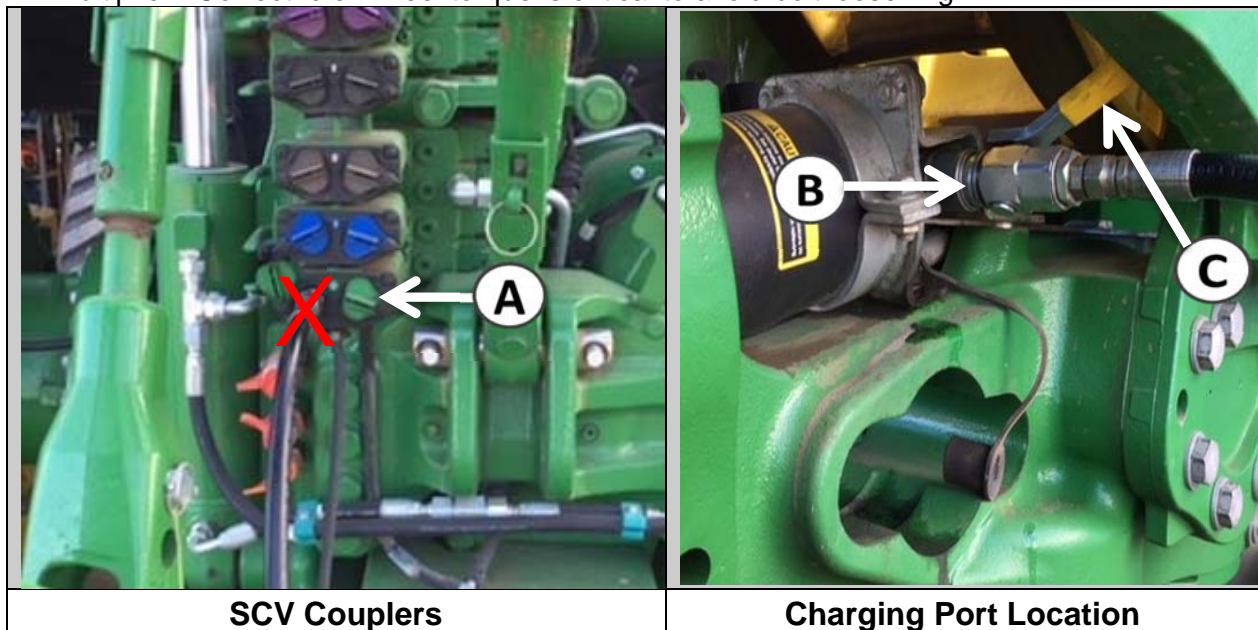
## Track Installation

Installation of track is basically the reverse order of the removal.

1. Utilizing a fork lift, carefully maneuver the new rubber track up and over the top of the drive wheel making sure the track drive lugs drop into the drive wheel pockets.
2. Using care to not damage the track, gently push the track underneath the midrollers and back around the inner front idler.

**IMPORTANT: Make sure the front tension link cylinder is fully retracted (< 1.0" of visible chrome) to allow enough slack for ease of track installation**

4. Reinstall outboard idler wheel. Torque front idler bolts in alternating cross pattern, to a final torque of 1070 Nm (790 ft-lbs). Note you will need to use a torque wrench with a torque multiplier. Correct Idler wheel torque is critical to avoid bolt loosening.

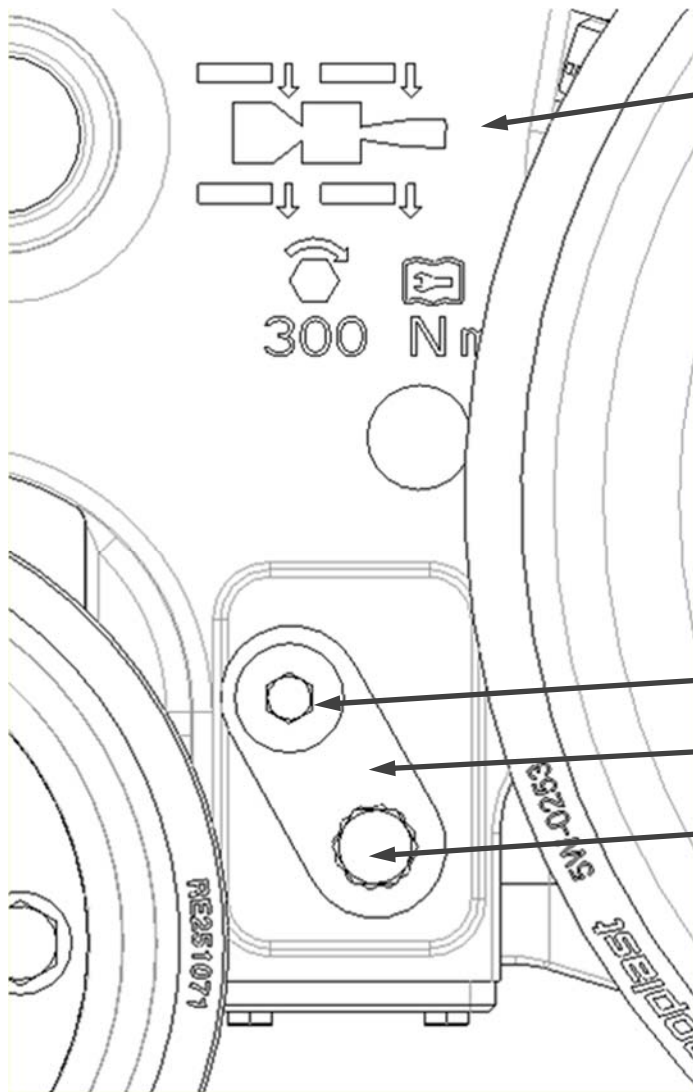


5. **Tension track** by attaching one end of the hydraulic tension hose in to the **extend side of the SCV coupler (A)**
  - a) Remove cap from hydraulic tension cylinder receptacle **(B)** and attach ball valve end of tension hose
  - b) Start engine
  - c) **Pull** corresponding SCV cab lever **Rearward** to **Extend** position
  - d) Exit tractor and open ball valve **(C)** on tension hose
  - e) Allow track to tension for three minutes
  - f) Push SCV cab lever back to neutral position
  - g) Stop engine
  - h) Exit tractor and close ball valve and disconnect hose from tension cylinder receptacle and SCV coupler
  - i) Replace cap on tension cylinder receptacle

## Track Alignment System

On tractors with alignment adjustment, it is very important to check the alignment after a track is installed. Tracks must always be aligned in order to maximize track and wheel life and reduce overall rolling resistance.

### Alignment system elements (Located on both sides of the track frame)



**Note:** Casting diagram illustrates direction track will move when tightening adjuster bolt.

Adjustment bolts are located on both inward and outboard side of UC frame.

**Track moves towards the adjustment bolt being tightened !**

● Lock Plate Spacer and Bolt

● Lock Plate

● Adjustment Bolt

**Alignment System Structure** - Transmits rotation to the front Idlers.

**Spacer, Bolt** – Retains the lock plate.

**Lock Plate** – Holds the adjustment bolt from turning.

**Adjustment Bolt(s)** - Controls the position of the track through toe in or toe out of the front idlers.

## Check Track Alignment

**IMPORTANT:** Tractor must be on the ground during alignment procedure. Any adjustment made while tractor is on stands will only be a rough approximation.

### NOTE

For use in this discussion, the inboard side of the drive lug is the lug side next to the machine frame, and the outboard side of the drive lug is the side away from machine.

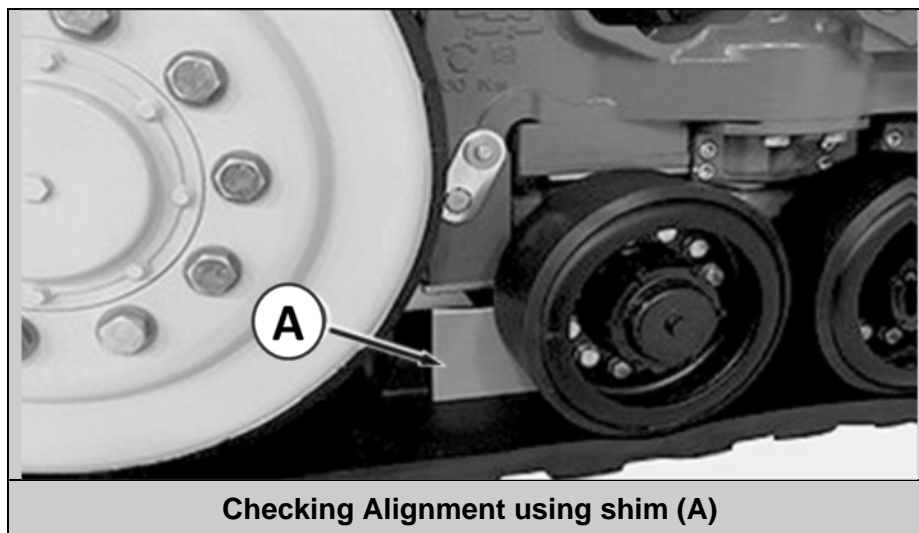
If the inboard side of the drive lug shows misalignment wear, the track must be adjusted outboard. If the outboard side of the drive lug shows misalignment wear, the track needs to be adjusted inboard.

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### Perform following procedure to check track alignment:

Drive tractor 150 ft. straight forward on level ground with no steering or brake input.

- 1) After 150 ft. shift to neutral and allow tractor to coast to a stop.
- 2) Select park and shut off tractor.
- 3) Use a fabricated metal shim to check clearance between front midroller and drive lug **(A)**



WIDE UNDERCARRIAGE SHIM      3 in (77mm) wide x 8 in. (204mm) long x **1/8 in** (3.2mm)  
NARROW UNDERCARRIAGE SHIM 3 in (77mm) wide x 8 in. (204mm) long x **3/16 in** (4.8mm)

- 4) If shim fits freely on both sides of drive lug, alignment is correct. No further alignment adjustment is required if shim fits freely on both sides of the drive lug and drive lug is not contacting front midroller - even if not equally centered in distance inboard to outboard sides.
- 5) If shim does not fit on one side, track adjustment is necessary.

## ***Track Alignment Adjustment***

For this example, if a track is running hard to the inside (inboard) edge of the drive lugs, the tracks needs to be adjusted outboard.

To adjust the track outboard:

1. Remove both, "***inboard and outboard***" UC lock plate bolts, spacers, and lock plates.

***Note:*** *It is very important that the alignment adjustment arm cavity be clear of mud or debris at this point. If packed material is in this area, the alignment arm will not be able to move, and the track alignment will be difficult or impossible to accomplish.*

2. Loosen the inboard side adjustment bolt 1 full turn, (on side you want track to move away from) turn CCW.
3. Then tighten the outboard adjustment bolt 1 full turn, or until tight (CW).

***Note:*** *One turn is the recommended increment. One half turn may be used as a final adjustment. Adjustments larger than one turn may result in unpredictable alignment results.*

4. Re-torque both inboard and outboard adjustment bolts to 300 N-m (221 lb-ft).
5. Operate the machine for a short period then recheck the alignment again as discussed above.
5. Once then alignment shim fits freely on both sides of the drive lug, alignment is correct
6. Re-install both inboard and outboard UC lock plates, spacer, and re-torque bolt to 130 N-m (95 lb-ft).

***IMPORTANT:*** Tracks will typically move side to side during operation, so some drive lug side contact is normal. Track does not need to be centered to achieve proper alignment. If track passes shim check, track alignment is correct.

## Warranty Information

After alignment and installation is completed, make sure to provide the end user the following Camso documents:

- Warranty Certificate
- Track Operational Guidelines Brochure
- Product Registration Card

It is highly recommended to take a few minutes to review the information in the brochure and the warranty certificate. Make sure to record track serial number(s) on the warranty certificate and on your work order and sales receipt for future reference.

## Summary

For additional information on the maintenance of the undercarriage, and on the procedures for servicing and rebuilding components in the track system, refer to the proper John Deere service or owner's manual.

Email any suggestions for improvements, clarifications, or errors, to [ag.productsupport@camso.co](mailto:ag.productsupport@camso.co).

For questions or technical support, please contact the Camso Customer Service desk through email, [ag.productsupport@camso.co](mailto:ag.productsupport@camso.co) or by calling toll free 1-844-226-7624 or 317-671-7327.



