

# Agricultural Track Service Procedures

Removal, Installation, Inspection and Alignment



## CNH STX Quadtrac Series

CPB-0303 8/1/2006



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## Introduction

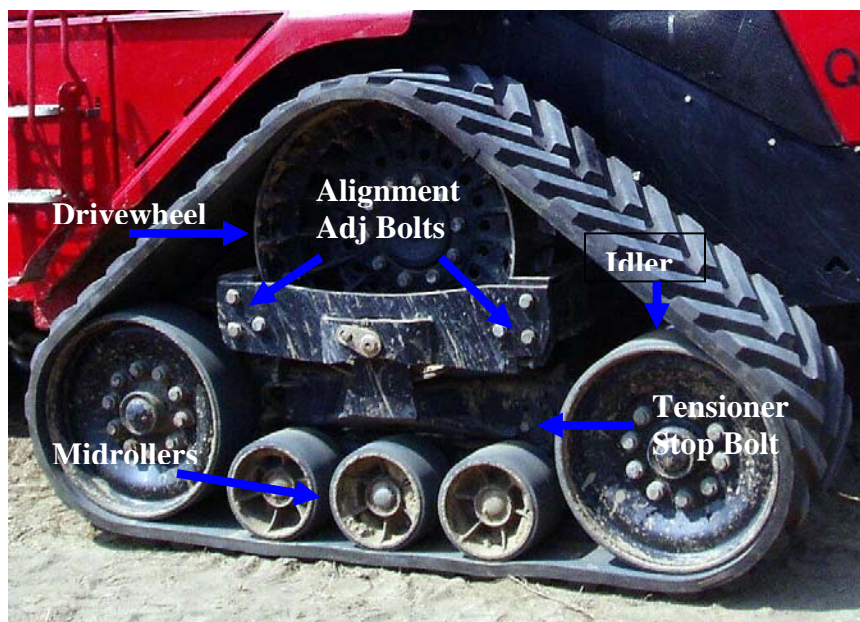
This service guide is intended for use for distributors and dealers, and provides the basic information needed for track installation and service. Whenever tracks are changed, they also require alignment in order to maximize overall track life.

### Notice

When servicing track machines, 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 above. Familiarize yourself with the terms below before reading further instructions or working on any tracked machine.



## General Tooling Requirements

Table 1 lists both the standard and specialized tools required for removal and installation of Camoplast tracks.

Safety Glasses and Steel Toed Shoes CNH # 31-3183 Tension Cylinder Drain valve Pilot Pins (for idler / idler weight installation) Air Impact Socket Set (up to 1 1/2") Ratcheting hoist / "Come Along" Selection of pry bars (1 at least 5 ft long) Infrared Thermometer* Torque Wrench (600 ft-lb capacity) (4) [15 Ton Minimum] Support Stands	1" Air Impact Wrench (with 450 ft-lb capacity) Several large wood blocks (2) Lifting Eyes Air / Hydraulic Jack (min 15 Ton Capacity / 12" stroke) Soap solution (Track installation) 15/16" or 24 mm combination wrench
<b>Table 1. Tooling List (* denotes special track tools)</b>	

## Time Estimates - Removal, Installation and Alignment

The time required to change a track depends to a great degree on the skill of the technician and the tools available. Table 2 lists average times for removal, installation, and alignment. This estimate is based on a service technician of average skills with the basic correct tools and working on firm, level ground. Working in adverse conditions can take significantly longer, while experienced technicians will be able to work in a shorter time. 2 individuals in general can cut total man hours as compared to 1 person. Note: If, as a result of the inspection of the machine parts need to be replaced on the undercarriage, then total time may be significantly longer than shown.

Track Removal, Inspection & Installation		Track Alignment		Total
Single Track (man hrs)	Machine (4 tracks) (man hrs)	Single Track (man hrs)	Machine (4 Tracks) (man hrs)	Machine Total Time (man hrs)
1.5 - 2	6 - 8	0 - 0.5*	0-1*	6 - 9

Table 2. Estimated man hours required for average complete track set installation and alignment

## Track Removal

### Tractor Preparation

1. If possible, always move the tractor to a flat, firm surface. The machine can be jacked much easier and will be more stable if the track removal and installation on a stable surface. A hard surface also makes it easier to slide the track out from under the machine, and allows use of a forklift if available.
2. Make sure that any implements are disconnected from the hitch or drawbar. Never work on a tractor with an implement attached or in the air, as this is an unstable condition.
3. Clean the tractor before working on it. Dirt and debris makes access to bolts difficult.
4. Once the tractor is positioned – shut down and remove the key. Do not start the machine while track undercarriage is disassembled or injury and machine damage could result.

### Important

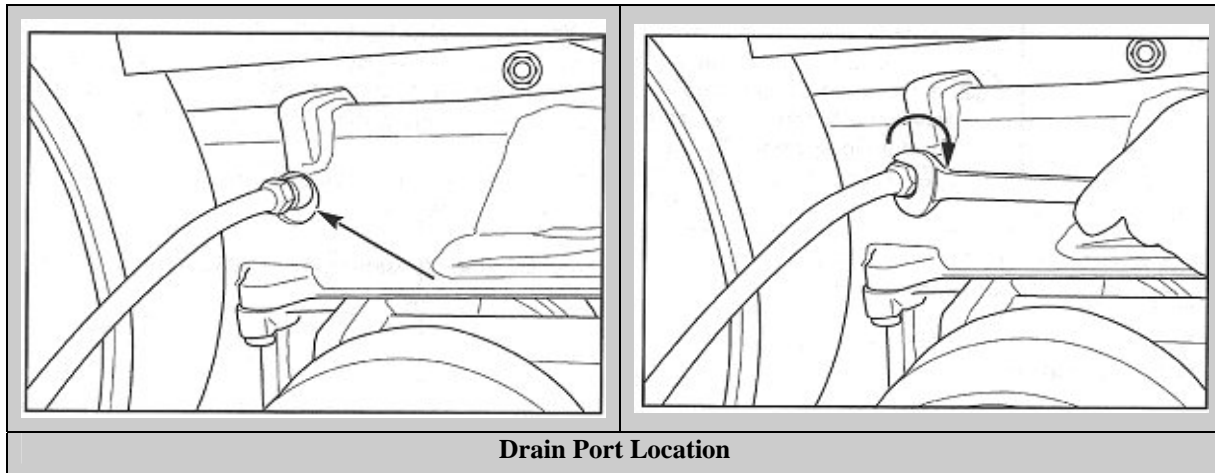
**Make sure to check the tensioner Stop Bolt is available to be installed if it has been removed, after detensioning tracks (for STX 375, 425, 440, 450, 500 models only).**

## ***Detension the track***

1. Obtain the 31-3183 Tension Cylinder Drain Valve. This is usually stored in the cab and comes with new machines. This drain valve/hose will safely remove pressure in the track tensioning system.



2. Locate the drain port on the undercarriage. Remove the dust cap. Make sure the drain valve is CLOSED. Then attach the drain valve hose to the coupling.



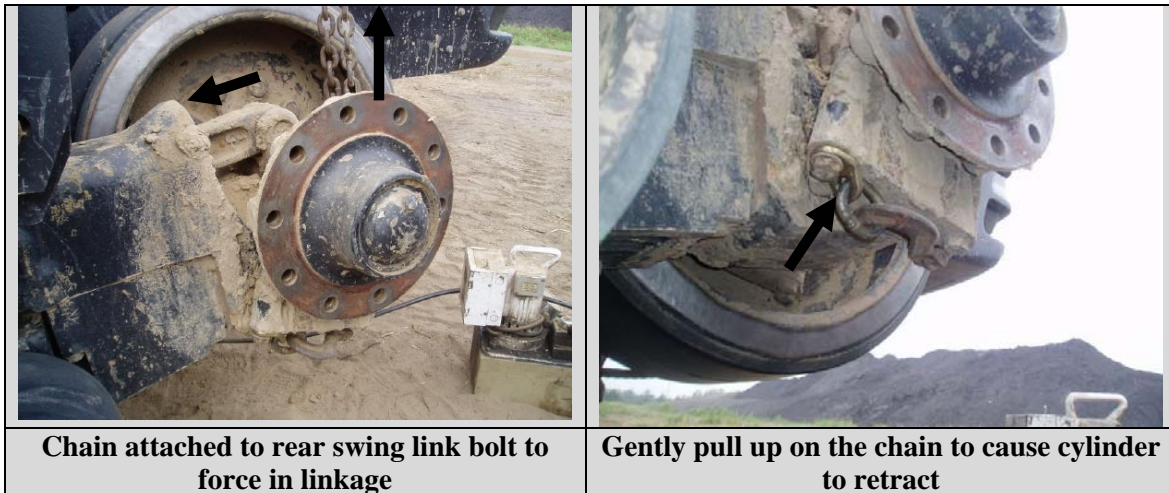
3. Insert the opposite end into a suitable drain bucket.
4. Using a 15/16" open end wrench, slowly turn the valve **CLOCKWISE** to open the valve and relieve the pressure in the tensioner. Leave this on for now as you will need to further retract the front tensioner later on.

## Remove Outside Idlers

- Remove both front and rear idler bolts and spacers. Then remove both idlers.



- If the tension cylinder is still partially extended. It will greatly help in track installation later if you use either a come-along or some other means to retract the tension cylinder as far as possible. One method is shown below to accomplish this. Others can be used.



- Remove the oil drain hose once the tensioner is fully retracted.

## Raise the Tractor / Remove Track



**Raising and supporting the tractor using hydraulic jack**

8. Raise the tractor undercarriage at least 8" above the ground. This allows enough clearance for the drive lugs to slide out from underneath the midrollers.



**Using a boom truck to work track off the drivewheel and rear idler simultaneously**

9. The best way to remove the tracks is to work the track off the inner idler while at the same time working out of the drivewheel groove. Slowly slide the track out from under the midrollers, and move to a suitable location.



**Using a boom truck to remove track**

10. Please note: removal of the track will require the use of either a forklift or a boom truck, as the tracks weigh approximately 1100 lbs. Use care when removing tracks, or injury could result.

# Undercarriage Inspection

## 1. Front Swing arm and Drivewheel Inspection



**Check the wear or play in the front idler bearings** - Any side to side movement of this joint indicates wear and bushings should be replaced at this time. Loose bushings will not allow the track to be properly, which can lead to rapid drive lug wear.

## 2. Midroller Condition

- A. Check the condition of the midroller seals. Look for any wet areas that indicate a leaking seal.
- B. Check condition if midroller rubber. Worn or damaged midrollers can damage the track if not replaced in a timely fashion.

The general guideline for replacement of a midroller is 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



### 3. Idler Condition



Check idlers for missing rubber or for cracks at the bolt holes. Use similar criteria as used for midroller replacement in order to determine if idlers should be replaced due to loss of rubber.

## Installation of Replacement Track

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



1. Using hoist or other means, carefully slide track under the midrollers while also lifting it over and into the drivewheel, but not yet engaging the teeth. You may have to use a pry bar to adjust the tracks so that the track drive lugs fall into the drive wheel slot.



**Track installation**

2. Work the track over the front inside idler wheel using a hoist or a forklift. Application of a soap solution to the inner front and rear idler may make the installation easier.



**Track installation**

3. Reinstall the front outside front and rear idler wheels. Torque wheel bolts to the values listed in the table below. Make sure to follow an alternate tightening sequence until bolts holds specified torque. **These should also be retorqued after 1<sup>st</sup> 3 hours of operation.**

<b>Torques</b>	<b>STX Series</b>
<b>Front Idler Bolts</b>	<b>315-345 ft-lbs*</b>

\*Lubricated with 10W30 oil

4. The opposite side track can be detensioned and the track removal procedure continued while still on the stands. If track installation is completed, however, then go to step 8.
5. Raise the end of the machine off the stands and remove the jack stands. Then lower the machine.
6. Start the tractor. Observe the track tensioner fill and the track tension increase to operational values.

## Stop Bolt Removal (STX375, 425, 440, 450, 500 only)



1. Remove the Tensioner stop bolt if **upper hole and bolt are vertically aligned** (see RH photo above). This needs to be done on certain models to make sure that full tension can be developed on the tracks. Keep the bolts in the cab in order to be able to replace them before the tracks are removed from the machine.



**Note: If Stop bolt is NOT in line vertically with upper hole ( staggered as shown above ), it does NOT need to be removed.**

Track installation is now completed. All that is left is to check and adjust alignment.

# Track Alignment

It is very important to check the alignment after a track is installed. Tracks must always be aligned in order to maximize drive lug and wheel life, as well as reducing overall rolling resistance. Note: **Failure to align the track may result in damage and or failure of the track in a short amount of time. Damage due to poor initial alignment is not warrantable.**

**Note**  
**Track misalignment will reduce the life of the drive lugs on the track. It is very important to align the tracks when new and periodically recheck them for proper alignment to maximize track life.**

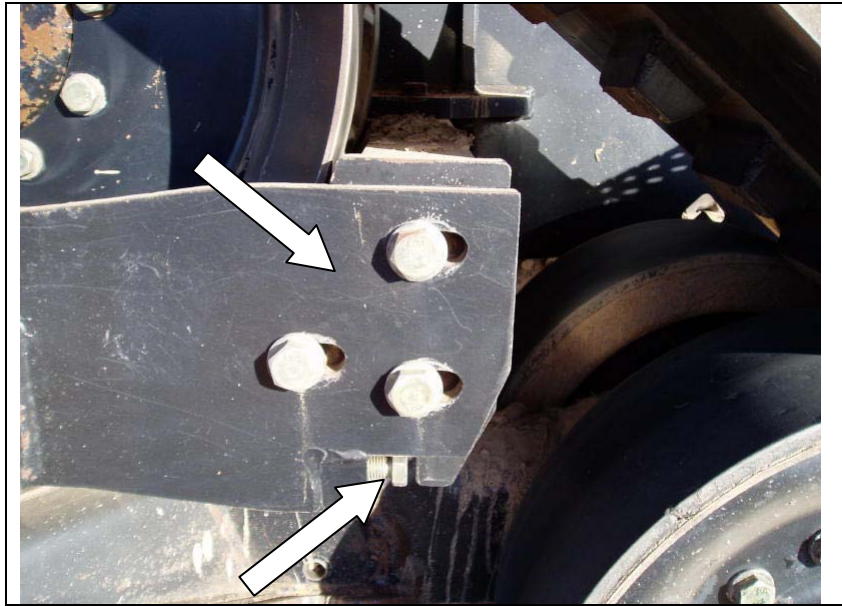
## Check Alignment

1. Drive the machine straight ahead at not faster than 5 MPH, on a flat surface, and with no steering input, for a distance of at least 400 feet.
2. Coast to a stop without steering or braking.
3. Observe the gap between the drive lugs and the rolling stock (midrollers and idlers) (see below). A track in alignment should have drive lugs running down the centerline on flat ground. If drive lugs are running to one side and contacting the rolling stock, then an alignment adjustment is probably needed.



## Adjustment

The alignment adjustment is done by moving the outer plate on the undercarriage. The alignment plate can be moved by use of adjustment bolts which are locked in place using locknuts.



1. Loosen the 3 front and 3 rear Adjustment plate bolts (top arrow) just enough to allow the washer to spin free.
2. Turn the appropriate adjusting bolt (bottom arrow) at least 1 full turn to move the yoke plate either forward or rearward depending on the change needed:
  - a. To move the track INWARD adjust the yoke plate rearward on the machine. This will move the plate back and should widen the exposed slot behind the bolt heads.
  - b. To move the track OUTWARD adjust the yoke plate forward on the machine. This will move the plate ahead and should widen the exposed bolt slot in front of the bolts.
3. Retighten the 6 adjustment bolts to 365 ft-lbs (500 N-m).
4. Recheck track alignment and repeat steps 1-3 as needed to center the track.

## ***Final Check***

Once the alignment of the drive lugs appears centered, a final active alignment check should be done.

1. Drive the tractor in a straight line at moderate speed without steering input approximately 400 m (1300 ft) or approximately ¼ mile.
2. Observe the drive lugs and if they are centered on the drivewheel and front and rear idlers. If slight adjustment is needed, loosen the plate bolts and move adjusting screw 1-2 turns.
3. Tighten and torque the plate bolts
4. Redo step 1 and adjust if needed until temperatures of the drive lug faces are similar on both sides.

**It is recommended alignment be rechecked again after 10-20 hours of operation. Some track alignment changes can be expected over time.**

## Summary

After alignment and installation is completed, provide customer the following documents:

- Warranty Certificate (appropriate for application – Ag or Scraper)
- Track Operational Guidelines Brochure
- Product Registration Card

Take a few minutes to review the information in the brochure, and to discuss the warranty coverage details. Also make sure to record track serial numbers on the warranty certificate for future reference.

For additional information on the maintenance of the undercarriage, and on the extended procedures for servicing and rebuilding these areas, refer to the proper OEM service or owners manual (available from the local OEM dealer)

Title	OEM Part Number
<i>STX Series Operators Manual</i>	<i>Rac 6-6282</i>

Email any suggestions for improvements, clarifications, or errors, to [Dwight.Furleigh@camoplast.com](mailto:Dwight.Furleigh@camoplast.com).