



VTS

Versatile Track System®

OWNER'S MANUAL

Rev. 050107

LOEGERING MFG. INC.
15514 37th Street SE
Casselton, ND 58012 USA
E-Mail: imi@loegering.com

Toll Free In the US: 800-373-5441
Tel: 701-347-5441
Fax: 701-347-4323
Internet: www.loegering.com

Foreword

This manual contains safety, operation, maintenance, and adjustment information. The procedures are designed to provide the best performance of the machine in an effective and economical way. In order to obtain it, remember the next basic rules.

- This manual should be stored in the operator's compartment of any machine where this attachment is used.
- Before inspection, maintenance, or operating the VTS, read and understand this manual completely.
- Since all of the explanations in this manual may not be thoroughly understood at first, repeat reading it until abilities as an operator are obtained and developed for proper operation.
- Further abilities as an operator outside of descriptions in this manual can be obtained from experience during normal operations and under proper supervision.
- Because of continuing improvement and advancement of product design, the shape of the attachment in the illustrations may be partly different from your machine. Whenever a question arises regarding your machine, or this publication, please consult your local Loegering dealer or Loegering Mfg. at 701-347-5441 for the latest information.

CONTENTS


-Serial Number Location		Page 4
-Safety information:		Page 5
Section 1-1	General Safety	Page 6
Section 1-2	Safe Operation	Page 7
Section 1-3	Safe Maintenance	Page 7
Section 1-4	Safety Symbols	Page 8
-Nomenclature:		Page 9
-Installation:		Page 10
Section 2-1	Installing the VTS: Safety	Page 10
Section 2-2	Installing the VTS: Preparations	Page 11
Section 2-3	Installing Wheel Spacers	Page 12-13
Section 2-4	Installing the VTS	Page 14-15
Section 2-5	Inspection of the VTS before use	Page 16
-Maintenance:		Page 17
Section 3-1	When Required Maintenance	Page 17-19
Section 3-2	Replacement Safety	Page 20
Section 3-3	Replacing Hub and Torsion Tube	Page 21
Section 3-4	Replacing the Down Stop	Page 22
Section 3-5	Replacing Tension Arm Assy.	Page 22-24
Section 3-6	Replacing the Rubber Track	Page 24-28
-VTS Parts 50+		Page 29-30
-VTS Parts 50+ Drawings		Page 30-32
-VTS Parts 65+ & 85+		Page 33-34
-VTS Parts 65+ & 85+ Drawings		Page 34-35
-VTS Torque Specifications		Page 36
-MSDS Information		Page 37-41

Serial Number Location


Always provide the serial number of your VTS when ordering parts, requesting service, requesting warranty, or any other information.

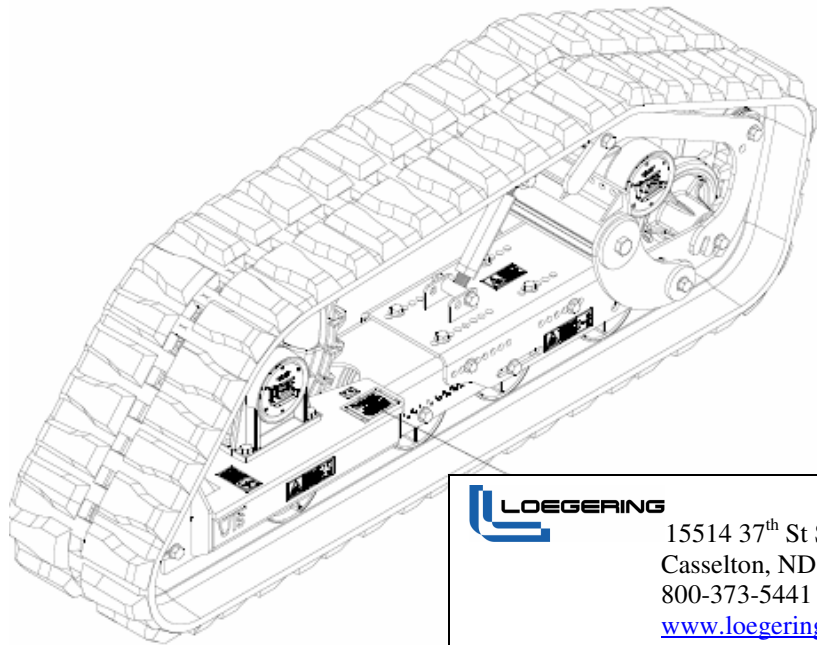
The serial number plate is located on top of the tunnel near the rear hub. Please record the serial number in the space provided and on the warranty registration card.

Serial Numbers: Right VTS _____ Left VTS _____

 **CAUTION**

1. Read and understand the Operator's Manual before using this equipment.
2. Stop engine, place all controls in neutral, set park brake, remove ignition key before servicing, adjusting, repairing, or unplugging.
3. Keep hands and feet away from moving parts.
4. Make certain everyone is clear before operating the machine. Keep people away.


P/N 402045




 **LOEGERING**
15514 37th St SE
Casselton, ND 58012
800-373-5441
www.loeering.com
Model #: LSBxx-x
Serial #: 1x-xxxxxx-xxx
Date of Mfg: xx-xx (MM-YY)
Weight (lbs.): xxxx
Capacity: xxxxxxxx
Patent: xxxxxxxx

SAFETY INFORMATION




We offer you basic and important rules and precautions for safe operation.

Read, understand, and observe them before starting operation. This is the most essential way to prevent accidents.

Wrong operation, inspection, or maintenance can cause personal injury or death.

Throughout this manual and on the VTS, precautions are provided with  marks and classified by the words “**Danger**”, “**Warning**”, and “**Caution**” according to their extent of danger.

The classification is as follows:

-  **DANGER:** indicates an imminently hazardous situation which, if not avoided, will cause death.
-  **WARNING:** indicates a potentially hazardous situation which, if not avoided could result in death or serious injury.
-  **CAUTION:** indicates a potentially hazardous situation which, if not avoided, could result in minor or moderate injury. It may also be used to alert against possible damage to the machine and its components.

We have made every effort for you to prevent accidents during operation, however, we cannot be held responsible for predicting every kind of danger in all operating conditions. It is the owner or user of the machine who is responsible for **ALWAYS** paying attention to operate the machine; as well as reading and understanding this manual enough to obtain the essential knowledge and skills fundamental to correct machine operation.

WARNING

- **BEFORE** inspection, operation, or maintenance of the VTS, be sure to read and understand this manual.
- Incorrect operation or maintenance of the machine can cause an accident and serious injury or death.
- Keep this manual on hand during operation so that you can immediately consult it when necessary. If it should be missing or damaged, contact Loegering Mfg. for a replacement.
- There are various kinds of federal, state, and local regulations that effect construction and industrial machinery. Since the regulations are subject to change, and differ from one locale to another, it is impossible for us to provide such information in this manual. It is the responsibility of the owner or user to be familiar with the regulations.
- Specifications and materials of the VTS are subject to change without any obligation on the part of the manufacturer.

SAFETY

SAFETY TIPS

This section explains tips which you will find throughout this manual and on the VTS Track System. Periodically check labels and plates containing those tips for damage. If they are damaged, clean or replace them. For replacement, contact Loegering.

1-1 GENERAL

OBSERVE THE BASICS FOR SAFE AND EFFECTIVE OPERATION.

The operator’s knowledge, skills, and experience are the most important to utilize the machine and VTS. Therefore, be sure to understand operation procedures and to take necessary training.

OPERATOR SHOULD BE QUALIFIED.

Only qualified operators should operate the machine, and those operators should only do so when physically and mentally alert.

The operator should be familiar with the hazards and necessary safety measures unique to the operation of VTS.

READ AND UNDERSTAND THE INSTRUCTIONS AND WARNINGS.

This manual, plates, and labels on the machine contain necessary instructions and warnings for safe operation. Read and understand all safety instructions and warnings, failure to do so can result in injury or death. Loegering will be glad to answer any questions. If the manual, plate, or label is missing or damaged, contact Loegering for a replacement.

Remember that the safety tips that we provide cannot cover every kind of danger that you may encounter during operation.

WEAR PROPER WORKING CLOTHES.

Wear working clothes that fit closely. Avoid loose jackets, shirt sleeves, rings, and other jewelry that may get caught in moving parts of the VTS. Always wear protective items such as hard hats, safety glasses, and ear protection as required.

PERFORM “WALK-AROUND” INSPECTION.

Walk around the machine to check for any safety concerns before operation of the machine.

PERFORM SYSTEM CHECK.

Use the VTS slowly at first to ensure proper operation of all moving parts. Slow operation allows the operator to notice potential safety hazards before they occur.

SAFETY

1-2 OPERATION

CONDUCT ALL MANEUVERS WITH THE VTS CAREFULLY.

Avoid making sharp turns with the VTS installed. Sharp turns or standing pivot turns will reduce the usable life of your VTS system.

CAREFULLY LOAD AND UNLOAD THE MACHINE.

The VTS system can increase the width of your machine. Always ensure that the trailer is the correct size to prevent damage to trailers and/or the VTS.

CAPACITIES

When using the VTS system the machine will be able to push and lift larger loads; however, Loegering Mfg. recommends you do not exceed the manufacture’s push and lift maximums.

The maximum machine weight for the large VTS is 10,500 lbs (4,763 kg). Maximum for the small VTS is 7,500 lbs (3402 kg).

1-3 MAINTENANCE

PERFORM MAINTENANCE CAREFULLY.

Maintenance work can be hazardous if not done in a careful manner. All personnel should realize the hazards and strictly follow safe practices. Before performing any maintenance or repair work, consult the instruction manual.

BE CAREFUL AROUND MOVING PARTS.

Stay clear of all rotating or moving parts such as sprockets and rollers. Do not allow any object to come near moving parts. The object could be thrown out of the undercarriage.

ALWAYS CLEAN THE VTS

Maintain the cleanliness of the machine and VTS to ensure proper and safe operation. Remove dirt, debris, and any tools used for maintenance from the undercarriage system.

ALWAYS USE APPROPRIATE SAFETY EQUIPMENT.

Wear personal safety equipment when necessary and use mechanical lifting devices to aid in the service and maintenance of the VTS.

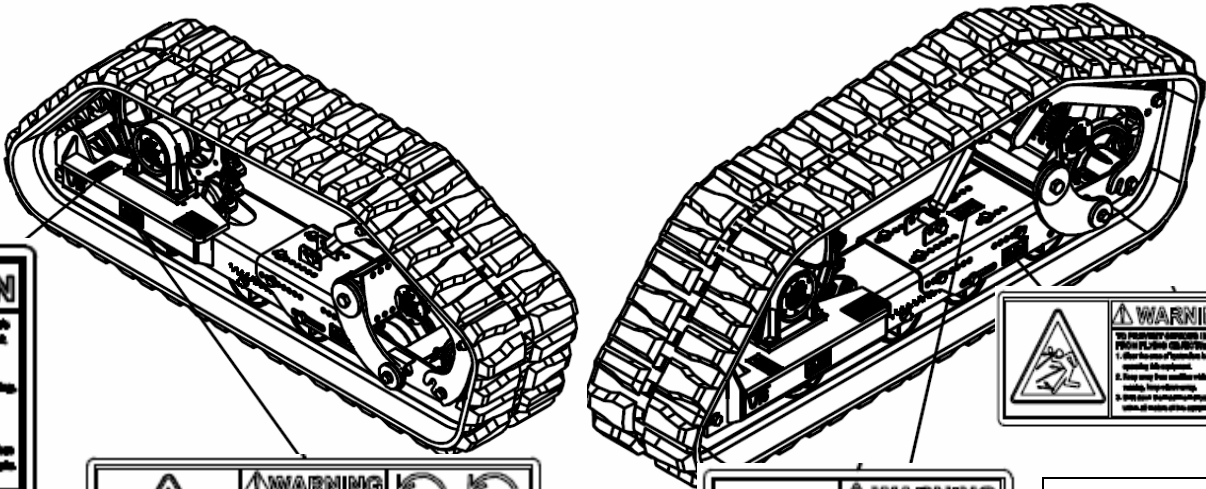
1

SAFETY

1-4 Warning Signs and Labels

There are several specific safety signs on your VTS. Their exact location and description of the hazard are reviewed in this section.

Please take the time to familiarize yourself with these safety signs.



Safety decal indicates:
CAUTION:
 - Read and understand the operator's manual before using this equipment
 - Stop engine, place all controls in neutral, set park brake, and remove ignition key before servicing, repairing, adjusting, or unplugging.
 - Keep hands and away from moving parts.
 - Make certain everyone is clear before operating the machine. Keep children, visitors, and untrained people away.



Safety decal indicates:
WARNING: To avoid severe injury.
 - Never reach arms or legs into a moving track. Stop engine, lower implements to the ground, place all controls in neutral, set park brake, remove ignition key and wait for all moving parts to stop before servicing, adjusting, repairing or unplugging.

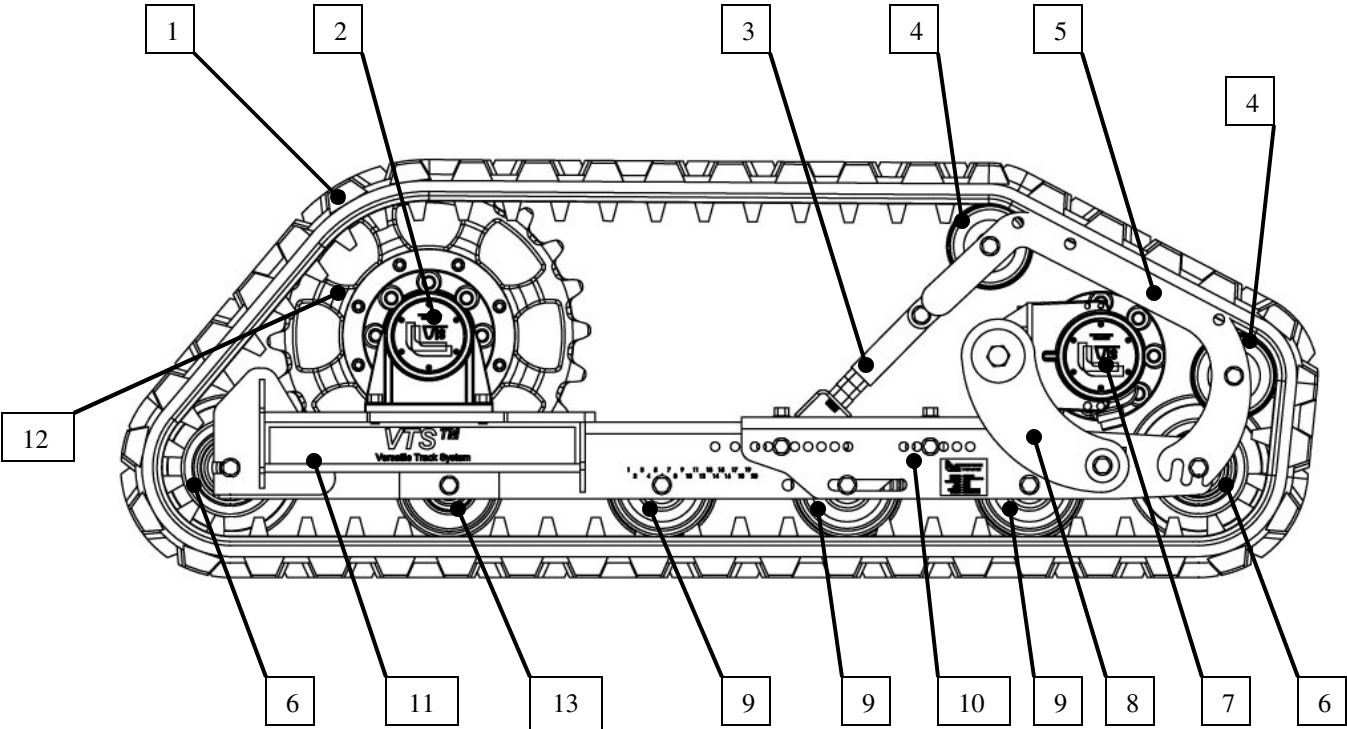


Safety decal indicates:
WARNING: Crush Hazard, To prevent serious injury from moving parts:
 Consult owner's manual or service manual before installing this equipment. Keep hands and feet away from moving suspension parts.



Safety decal indicates:
WARNING: To prevent serious injury from flying objects.
 - Clear the area of bystanders before operating this equipment.
 - Keep away from machine while it is running, keep others away.
 - Shut down the machine if anyone enters within 50 meters of this machine.

Nomenclature



Typical Example

- 1. Rubber Track
- 2. Rear Hub Assembly
- 3. Tension Adjustment Turnbuckle
- 4. Tension Roller
- 5. Tension Arm Assembly
- 6. Idler Assembly
- 7. Front Hub Assembly
- 8. Torsion Arm
- 9. Bogey Wheel
- 10. Front Tunnel Assembly
- 11. Rear Tunnel Assembly
- 12. Drive Sprocket
- 13. Split Bogey

2-1 Installing the VTS: Safety

CAREFULLY READ THE FOLLOWING CAUTIONS AND NOTES BEFORE YOU START YOUR INSTALLATION:

**CAUTION:**

1. Read the VTS installation procedure before starting installation. Failure to follow the installation instructions could cause equipment damage and/or void warranty. Failure to follow installation instructions could result in injury and/or death.
2. The installation of your VTS system includes the use of a forklift and/or mechanical hoist, read and understand the operation of this equipment before starting any VTS installation.
3. Always wear personal protective equipment any time work is performed on your VTS. This equipment should include safety glasses, ear protection, and appropriate work boots.

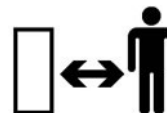


4. Visually inspect all equipment used in the installation of VTS.
5. The VTS is a heavy piece of equipment. Special precautions need to be taken to ensure the safety of all personnel. The VTS should be supported at all

times by equipment that is rated to carry the amount of weight. Use of equipment that is not rated for the weight of the VTS could result in injury and/or death.



6. When the VTS is being moved, all personnel should stand clear of the VTS.



7. Follow your skid steers manufacturer's operation manual and observe all safety precautions.

Your VTS Versatile Track System ® comes preset from the factory complete and ready to install on your skid steer.

INSTALLATION

2-2 Installing the VTS: Preparation

1. Raise and block the boom according to the manufacturer's instructions, (**Fig. 1**) allowing safe access to the front of the machine. Turn off machine when not using it for the installation process.

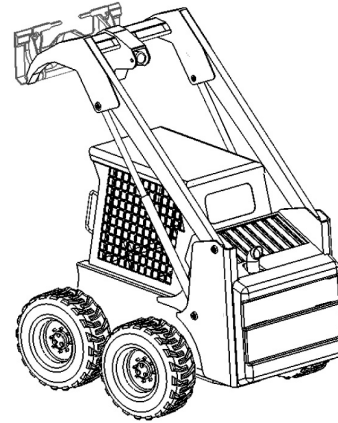


Fig. 1

2. Following your skid steer manufacturer's instructions, raise the skid steer until the center of the drive axles are a minimum of 22" off the ground. Using jack stands or equivalent, securely block the skid steer (**Fig. 2**)
3. Remove tires following your skid steer manufacturer's instructions.

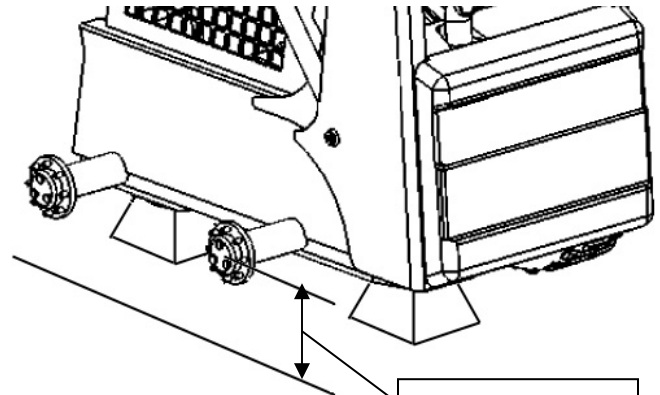


Fig. 2

22 in. (55.88 cm)
to the center of
the hub.

Note:

If wheel spacers are required they must be installed at this time. Please contact Loegering Mfg. if you are unsure if your machine requires wheel spacers.

2

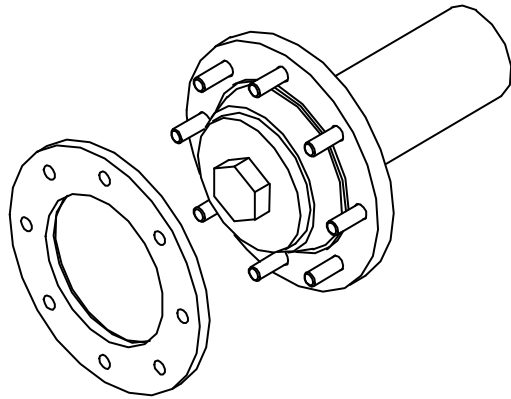
INSTALLATION

2-3 Installing Wheel Spacers



Safety Precautions:

1. Always wear appropriate eye, ear, hand, and foot protection while installing wheel spacers.
2. Ensure that the machine is secure on the jack stands before starting install of wheel spacers.

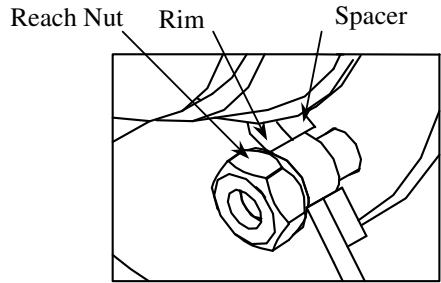


Installing Spacers without studs

1. Remove wheels and thoroughly clean the hub flange surface of all foreign materials including dirt, grease, loose paint, etc. Failure to remove all foreign material will cause the spacers to become loose resulting in damage to the spacer and/or studs.
2. Inspect spacers for any excessive paint or foreign material prior to installation.
3. Install spacers. Spacer should fit easily on wheel hub - if there is any interference, contact Loegering Mfg. Inc. before reinstalling wheels.
4. Reinstall wheels and torque nuts to the manufacturer's recommended specification.

Bobcat 963 and 970 machines: Reach nuts are supplied with the spacers, use them in lieu of the nuts removed from the machine. Save the nuts removed from the machine so that the wheels may be reinstalled when the spacers are removed.

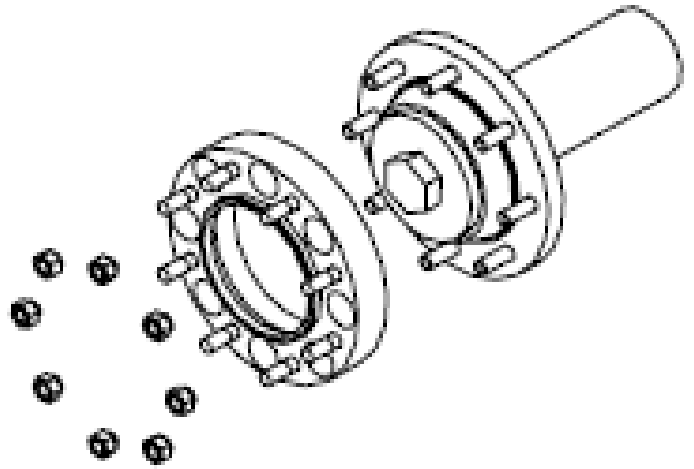
5. Failure to follow these instructions will void the warranty on the spacers.



Bobcat 963 and 970's

2-3 Installing Wheel Spacers**Installing Spacers with studs**

1. Remove wheels and thoroughly clean the hub flange surface of all foreign materials including dirt, grease, loose paint, etc. Failure to remove all foreign material will cause the spacers to become loose, which will result in damage to the spacer, studs and/or VTS.
2. Inspect spacers for any excessive paint or foreign material prior to installation.
3. Install spacers. Spacer should fit easily on wheel hub - if there is any interference, contact Loegering Mfg. before tightening nuts.
4. Tighten nuts evenly to allow spacer ring to center itself on tapered nuts.
5. **Torque 1/2" nuts 95 ft-lbs. (128.8 N m), 9/16" nuts 130 ft-lbs. (176.26 N m), and 5/8" nuts 190 ft-lbs (257.6 N m).**
5. Reinstall wheels or VTS and torque nuts to the skid steer manufacturer's recommended specification for installing wheels, and 190 ft/lbs (258.40 N m) for the VTS.
6. Failure to follow these instructions will void the warranty on the spacers.




2-4 Installing the VTS

1. Using a forklift or similar lifting device, lift the VTS at one of three places.
 - a. Below the track.
 - b. Below the tunnel, between the bogey wheels. (Preferred)
 - c. Below the top of track

IMPORTANT: Make sure the front of the skid steer's hubs and the front of the mating hubs on the VTS are clean. Excessive dirt, mud, gravel etc., will interfere with the installation.

2. Start by installing the VTS onto the front hub of the skid steer.
3. Align the front hub assembly. The front hub assembly will pivot forward approximately 3-4". Rotate the hub assembly forward and block it, turn the hub spindle until the spindle holes align with the studs on the skid steer hub.

 **Caution: While rotating the front hub ensure that hands and fingers remain clear of any pinch points.**



4. You may have to take the block out and lower and / or raise the hub assembly slightly in order to line up the spindle holes with the studs on the skid steer.

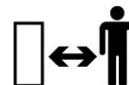
5. When the holes on the front spindle line up with the studs, slide the VTS onto the front hub.



Caution: Be sure that all personnel are clear of the area before moving the VTS onto the machine. Failure to do so could result in injury and/or death from being crushed in between the VTS and the machine.



6. Install as many wheel nuts as possible on the front hub assembly (3-4 typically) and tighten. **Note: If your machine is equipped with flange type wheel nuts you must replace them with 90° tapered wheel nuts. Failure to use 90° tapered wheel nuts may cause injury, damage to the lug studs, and/or void warranty.**
7. When using a fork lift, use the side shift capabilities to slide the VTS towards the rear of the skid steer until the rear sprocket lines up with the rear hub. Note: A hoist can also accomplish this step.
8. Have an operator start the skid steer and rotate the hub until the studs line up with the VTS. **Caution: Stay clear of the VTS while the skid steer is in operation.**



9. When the holes on the rear sprocket line up with the studs, slide the VTS onto the rear hub.

2-4 Installing the VTS



Caution: Be sure that all personnel are clear of the area before moving the VTS onto the machine. Failure to do so could result in injury and/or death from being crushed in between the VTS and the machine.

10. Install as many wheel nuts as possible, typically 3 or 4.
11. Have an operator start the skid steer and slowly rotate the hubs forward until all the wheel nuts can be installed.
12. Turn machine off in between rotations to install additional wheel nuts.

Note: Torque all wheel nuts to 190 ft/lbs (257.6 N m). Failure to properly torque wheel nuts can cause injury, damage to equipment and void the warranty.

13. Repeat the installation procedure for the other side.

14. Once both sides have been installed, follow the instructions in section 3 and check the tension on the track. Ensure that the tension is between 1” and 1.5” (2.54 to 3.81 cm).
15. Remove jack stands or blocks and lower the machine.
16. Check both sides for proper installation before using the machine.

IMPORTANT

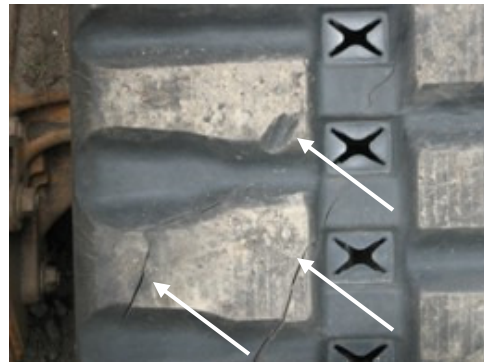
Before putting the skid steer with VTS into use, take the machine for a test drive, bring it back in and check the tension again. Also check the torque on the wheel nuts to ensure that all torques are correct.

2-5 Inspecting your VTS before each use.**INSPECT YOUR VTS
BEFORE EACH OPERATING
SESSION**

1. Check the rubber track for signs of wear. Check for any cracks, cuts, missing pieces, or excessive wear. (Fig. 1 & 2)

**Fig. 1**

2. Ensure that all bolts are tight and that none are missing.
3. Check for any damage to the metal components of the undercarriage. Look for cracks, abnormal wear, or bent components.
4. Visually inspect all tension rollers, bogey wheels, and idlers for signs of damage or excessive amounts of wear. (Fig. 3)
5. Inspect the sprocket for missing teeth, cracks, or excessive wear.

**Fig. 2****Fig. 3**

3-1 When Required Maintenance and Checks

Tracks check and adjust

- **Measuring Track Tension**
 - Lower skid steer bucket until the front of the VTS is off of the ground. (Fig 5)
 - Measure the distance from the inside edge of the track to the bottom of the bogey wheel. A properly adjusted track will have 1 to 1.5 inches (2.54 to 3.81 cm) of slack. (Fig 6)
 - **If more than 1.5" or 3.81cm the track needs to be tensioned.**

- **Adjusting Track Tension**
 - Lower skid steer bucket until the front of the VTS is off of the ground. (Fig 5)
 - Loosen the two ¾" tension arm bolts on the tension arm assembly. (Fig 7.)
 - **Important: Failure to loosen the tension arm mounting bolts (on both sides of the VTS) could result in bending the tension arm.**
 - Determine what style tensioner that you have. The two styles are the hexagon turnbuckle (Fig 7.) and the round weldment (Fig 8.) on the next page

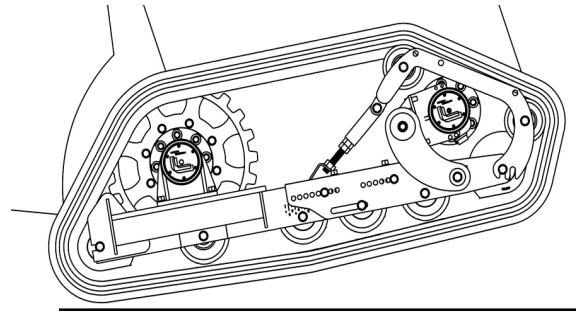


Fig. 5



Fig. 6

3-1 When Required Maintenance and Checks

- **When adjusting the Turnbuckle style tensioner.**
 - Use a 1 7/8" wrench to loosen the jam nut.
 - Turn hexagon adjuster shaft clockwise until proper tension of 1 to 1.5" (2.54 to 3.81 cm) is obtained.
 - Retighten the jam nut and lower the machine.
 - **Important: Retighten both 3/4" tension arm mounting bolts to 376 ft/lbs. (509.8 N m).**
- **When adjusting the weldment style tensioner.**
 - Use a 1 1/2" wrench to loosen the jam nut.
 - Turn the adjuster nut clockwise until the proper tension of 1 to 1.5" (2.54 to 3.81 cm) is obtained.
 - Retighten the jam nut and lower the machine.
 - **Important: Retighten both 3/4" tension arm mounting bolts to 376 ft/lbs. (509.8 N m).**

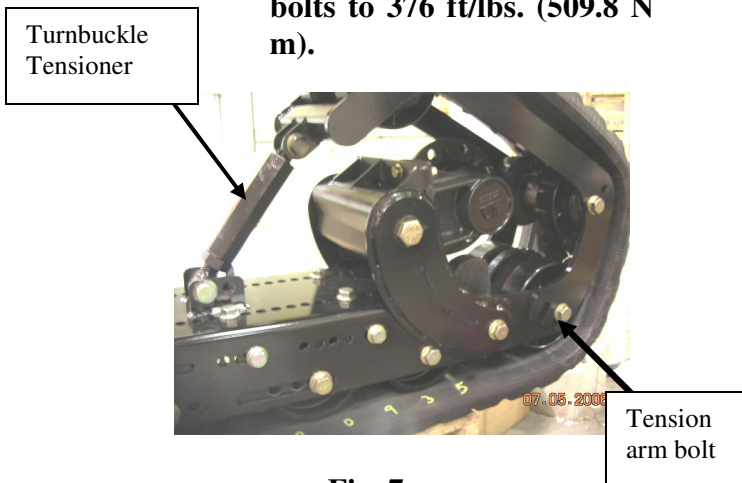


Fig. 7

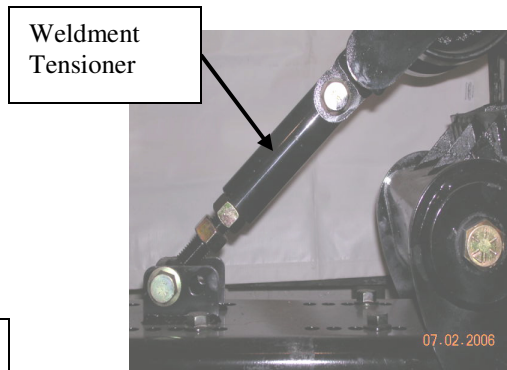


Fig. 8

IMPORTANT

It is recommended that the track tension is checked after 15 to 20 hours of operation on a new track. After the initial check, check your tension every 50 hours thereafter to ensure optimum performance of your VTS. If running on side hills, keep track tension at 1" (2.54 cm).

MAINTENANCE

3-1 When Required Maintenance and Checks

Rubber Track Inspection and Maintenance:

- If steel cord is exposed because of damaged rubber, replace the track with a new one immediately.
- When a break of a steel cord is detected, replace the track immediately. If you leave it as it is, the rubber track can break without expectation, and could cause a serious accident. (Fig. 1)
- If large cracks are noticed in the rubber track, contact Loegering for instruction.



Fig. 1

VTS Maintenance Schedule			
Item	Service Required	Interval	Notes
Rubber Tracks	Inspect	Daily	Look for Damage/Wear
Track Tension	Check	Daily	Adjust tension if needed
Front Hub	Inspect	Daily	Look for Damage/Wear
Rear Hub	Inspect	Daily	Look for Damage/Wear
Bogeys	Inspect	Daily	Look for Damage/Wear
Idlers	Inspect	Daily	Look for Damage/Wear
Sprocket	Inspect	Daily	Look for Damage/Wear
Tension Rollers	Inspect	Daily	Look for Damage/Wear
VTS Undercarriage	Clean Often (as needed)	Daily	Look for Damage
Bogey Bolts	Inspect	Daily	Look for loose bolts
Idler Bolts	Inspect	Daily	Look for loose bolts
Tension Roller Bolts	Inspect	Daily	Look for loose bolts
Undercarriage Bolts	Inspect	Daily	Look for loose bolts

3-2 Replacing the Hub or Torsion Tube; Safety.**Caution:**

- 1. The torsion tube and hub assembly can only be removed after the VTS has been removed from the machine.**
- 2. Follow the installation and removal instructions to complete VTS removal.**
- 3. Read and understand all instruction for torsion tube and hub removal before starting the removal.**
- 4. The assembly is a heavy object and needs to be removed using a hoist. Read and understand all manuals for the hoist that is to be used before starting removal process.**
- 5. Always use a hoist when handling the assembly.**
- 6. Wear all personal safety equipment while completing any service on the VTS. Safety glasses, ear protection, and proper work boots are required.**
- 7. The assembly creates a pinch point, use caution and keep hands and fingers clear of the pinch point when removing the assembly.**



3-3 Replacing the Hub or Torsion Tube

Note: VTS must be removed from machine before attempting to remove hub and torsion tube. Consult installing the VTS section for removal instructions.

1. Remove torsion arm.
 - a. Locate torsion arm without “up stop” arm.
Note: All VTS, except VTS for Bobcats, will have the torsion arm without the up stop arm toward the outside of the skid steer.
 - b. Using a 1 ½ socket remove the 1-14UNC x 2” bolt on the upper part of the torsion arm. Fig. 1
Note: This bolt is torqued at the factory to 750 ft/lbs. (1017 N m)
 - c. Using a 1-1/8” socket remove the ¾ x 2” bolt from the lower torsion arm on the opposite side.
2. Remove front hub assembly
 - a. Carefully lift the front hub assembly out of the frame.



3. Remove hub assembly. Fig 1

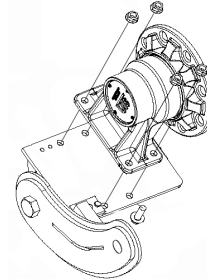


Fig. 1

- a. Using a ¾” socket and wrench remove the four ½ x 1.5” bolts and nuts that secure the hub to torsion tube
4. Install new hub assembly in the same position as the old hub. Fig. 1
 - a. Position hub on torsion tube and secure using ½ x 1.5” bolt and nuts.
Torque to 110 ft/lb. (149.14 N m)
 - b. Reinstall assembly onto the VTS.
5. Install VTS on skid steer per owners manual.
6. Adjust track tension per owners manual

Note: As of February 2007 the down stop assembly has been moved from the hub to the tunnel on 65+ & 86+ VTS. The rubber stop, part # 400540, will still be available for older hubs for a limited time however it is highly advised to switch to the new down stop for better performance. In addition, new replacement hub assemblies will no longer have holes for down stop assemblies and require the purchase of down stop assembly part # 600544. Please see next page for instruction.

3-4 Replacing the Down Stop.

1. On VTS installed on all machines except Bobcat position down stop on the tunnel cross brace, centered under the hub assembly, as shown in the **Figure 1 bullet A**, and secure with bolt & self locking nut included with assembly. On VTS installed on Bobcat machines position the down stop on the tunnel as shown in the **Figure 1 bullet B**.

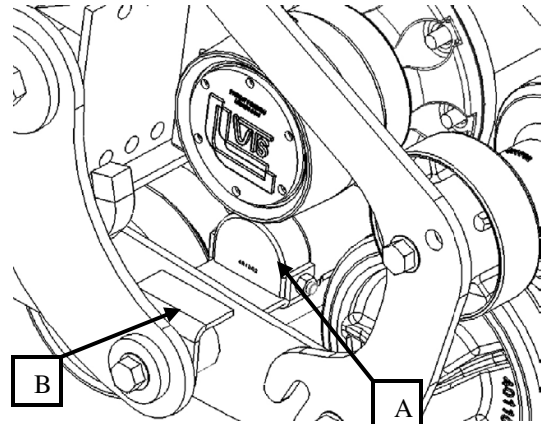
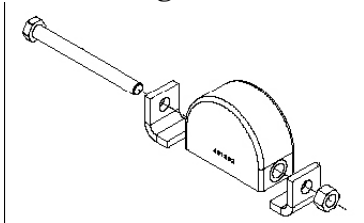


Fig. 1

Note: If the cross brace on the tunnel measures 3", the down stop will need to be trimmed .25" on each side. Please contact Loegering for instruction.

3-5 Replacing the Tension Arm Assembly; Safety.

Caution:

1. The tension arm assembly can only be removed after the VTS has been removed from the machine.
2. Follow the installation and removal instructions to complete VTS removal.
3. Read and understand all instruction for tension arm removal before starting the removal.
4. The assembly is a heavy object and needs to be removed using a hoist. Read and understand all

- manuals for the hoist that is to be used before starting removal process.
5. Always use a hoist when handling the assembly.
6. Wear all personal safety equipment while completing any service on the VTS. Safety glasses, ear protection, and proper work boots are required.
7. The assembly creates a pinch point, use caution and keep hands and fingers clear of the pinch point when removing the assembly.



3-5 Replacing the Tension Arm Assembly

1. Follow torsion arm and hub assembly removal instructions to VTS must be removed from machine, consult owners manual for removal instructions.
2. Before starting, note location of rollers and position of tension arm slot. Replace one side at a time using one side as a reference when reassembling.
3. Remove the torsion arm and hub assembly.
4. Remove tension roller assembly. (Fig.1 on previous page.)
 - a. Using a 1-1/8" x 1/2 drive socket loosen the two 3/4" bolts securing the tension arm assembly to the frame, do not remove these bolts.
 - b. Loosen the tension adjustment screw until it can be lifted out of the frame. Use a hoist to lift the front half of the track to provide clearance for the tension arm assembly to be removed.
5. Lift the tension roller assembly up and out.
6. Replacing tension rollers.
 - a. Note position of rollers before removing. If reconfiguring VTS or moving rollers to another position contact Loegering for a drawing for correct position.
 - b. Install roller assembly using two 3/4 x 1 1/2 gr. 8 flange bolts and torque to 376 ft/lbs (509.8 N m).
7. Tension arm assembly installation. Ref. Fig. 3
 - a. Using a hoist, lift the front half of track to provide clearance for the tension arm assembly.
 - b. Position the correct slot on the tension arm assembly over the bolts loosened in step 4.
Do not tighten bolts at this time; tighten bolts after track has been properly tensioned.
 - c. Position the adjuster screw into holder on front chassis. Note: If you can not get the adjuster screw into the holder it may be necessary to use a bottle jack or similar lifting device, to lift the tension arm assembly. Center the jack under the adjusting screw mounting brace or center under the upper tension roller (a cradle is required for this).
8. Install front hub assembly.
 - a. Extend adjuster fully to allow clearance for the hub assembly.
 - b. Slide assembly into the frame.

3-5 Replacing the Tension Arm Assembly

(Step 8 continued)

- c. Position torsion arm on assembly and secure using 1-14UNC x 2" Gr. 8 bolt on the upper arm and a 3/4 -10UNC x 2" Gr. 8 bolt on the lower. **Torque upper bolt to 750 ft/lbs. (1017 N m) and lower bolt to 376 ft/lbs (509.8 N m).**

Note: After the VTS has been reassembled and all bolts have been properly torqued, it can be reinstalled on the machine by following the instructions in section 2-2

3-6 Replacing the Rubber Track; Safety



DANGER: Please read all caution statements and notes before proceeding.

When elevated on the forks the VTS may work itself forward and could come off the forks. Frequently check to ensure the VTS is securely positioned on the forks.

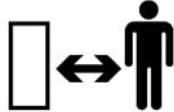
1. Replacing the track on your VTS system includes the use of a forklift and/or mechanical hoist, read and understand the operation of this equipment before starting any VTS track replacement.
2. Always wear personal protective equipment any time work is performed on your VTS. This equipment should include safety glasses, ear protection, and appropriate work boots.

3. Visually inspect all equipment used in the track replacement.
4. The VTS is a heavy piece of equipment. Special precautions need to be taken to ensure the safety of all personnel. The VTS should be supported at all times by equipment that is rated to carry the amount of weight. Use of equipment that is not rated for the weight of the VTS could result in injury and/or death.



3-6 Replacing the Rubber Track

5. When the VTS is being moved, all personnel should stand clear of the VTS.



6. Follow your skid steers manufacturer's operation manual and observe all safety precautions.
7. When lifting components of the VTS that weigh over 30 lbs. (13.6 kg) it may be necessary to use an approved hoist.

THE VTS MUST BE REMOVED FROM THE SKID STEER BEFORE YOU CAN PROCEED WITH THE TRACK REPLACEMENT

1. Use a forklift or similar device to pickup the VTS. For ease of taking off the old track and putting on the new track pick the VTS up from the inside (skid steer side) under the tunnel with the forks sticking out approximately 6 inches on the opposite side. Lift the VTS off the ground approximately 32 inches.
2. Replace one side at a time using the other side as a reference.

3. To assist in the installation of a new track the following items will assist in making the job easier and less time consuming: Forklift, scissor lift, 1 1/2 x 3/4 drive socket, 1 1/8 x 1/2 drive sockets, pump jack and hoist.
4. Follow instructions in section 3-3 to remove the torsion arm and hub assembly.
5. Follow instructions in section 3-5 to remove the tension arm assembly.
6. **Remove the Track**
Make sure the bottom of the track is up against the bottom of the bogeys to allow the slack to go to the front of the VTS.
 - a. With a pry bar move the rear sprocket clockwise this will move the slack in the track to the front of the VTS. (**Fig. 1**)

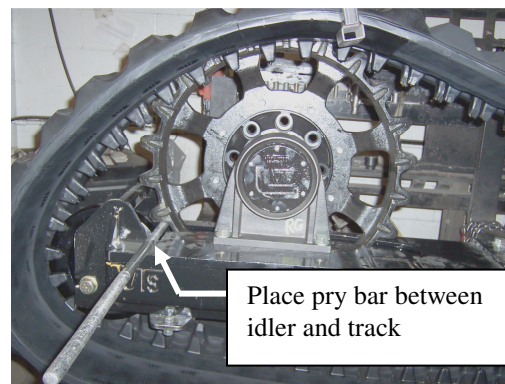


Fig. 1

3

MAINTENANCE

3-6 Replacing the Rubber Track

- 7. Lower the front of the track so it elongates. Place a pry bar between the front idler and the inside of the track and pry outwards so the idler pops out of the guide teeth. **(Fig. 2)**
- 8. Move to the rear of the VTS and place your hoist strap or chain in front of the sprocket, lift up the track with the hoist. **(Fig. 3)**
- 9. Using a pry bar, pry the track upwards until the sprocket is out of the Track Idler Guides.
- 10. Once the track is off the sprocket place a pry bar between the rear idler and the inside of the track and pry outward so the idler comes out of the Track Idler Guides. **(Fig. 3)**

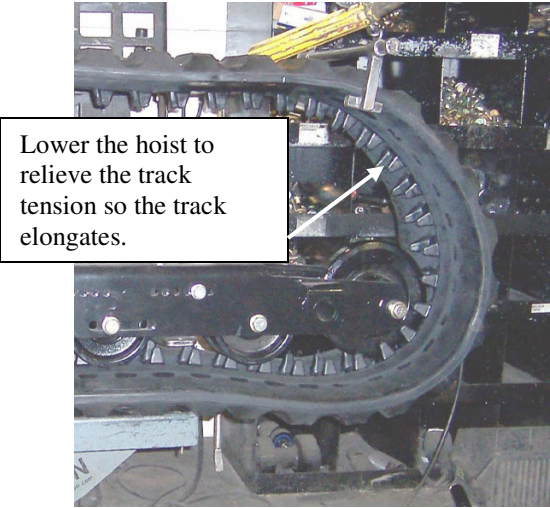


Fig. 2

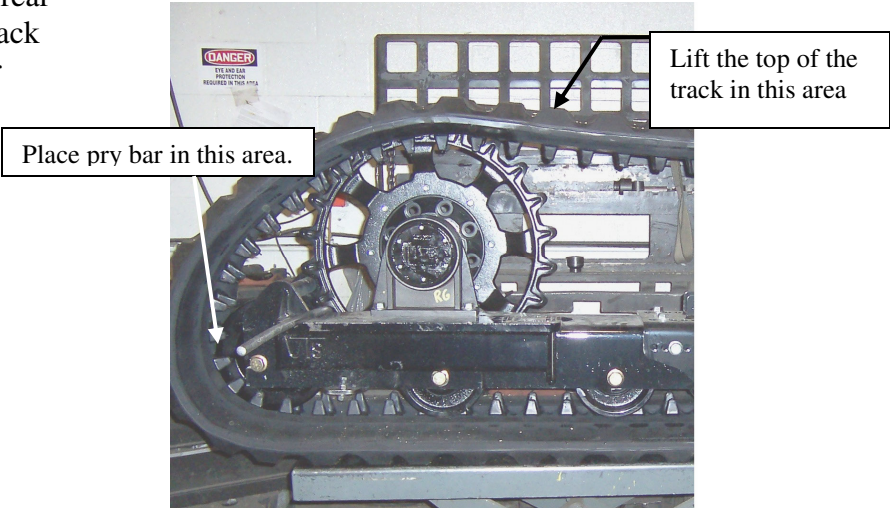


Fig. 3

3-6 Replacing the Rubber Track

Installing the new track

1. Pickup the new track with a hoist or similar device. Start at the rear of the VTS.

- a. Guide the rear idler into the Track Idler Guides. **Fig. 4**
- b. Use a scissors lift or similar device to lift up the bottom of the track until the track touches the bottom bogies. This elongates the track in order to get it over the sprocket and front idler.

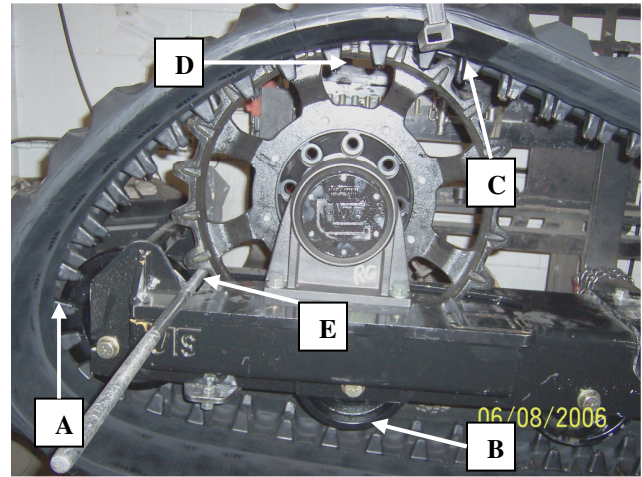


Fig. 4

- c. Lift the top of the track in front of the sprocket with a hoist or similar device. **Fig. 4**
- d. With a pry bar between the top of the sprocket and the track lift up on the track until the sprocket is in the Track Idler Guide. **Fig. 4**
- e. With a pry bar move the rear sprocket clockwise, this will move more slack to the front of the VTS.

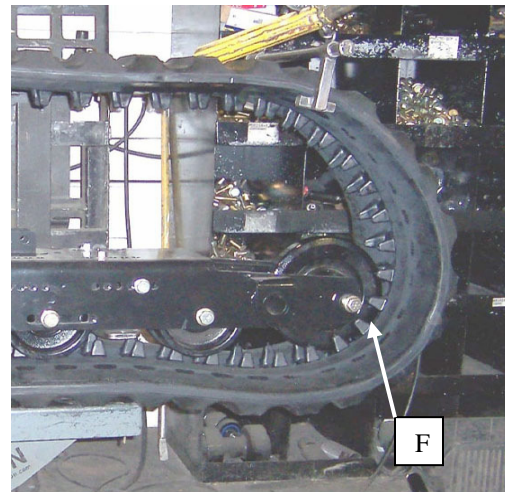


Fig. 5

Fig. 4. Lower the hoist to relieve the tension on the track.

- f. With a pry bar between the front idler and the track, pry outward until the front idler goes into the Track Idler Guides.

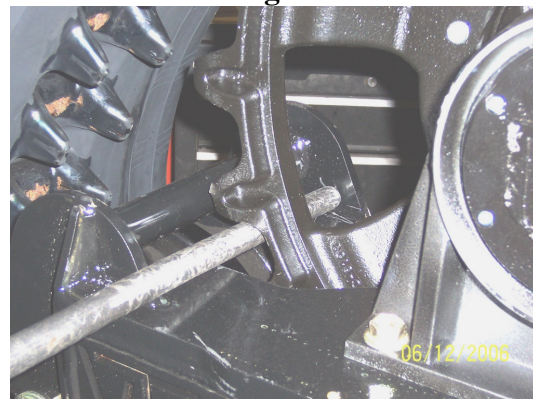
Fig. 5

2. Reinstall your tension arm assembly.
3. Reinstall the torsion arm and hub assembly.
4. Ensure that all bolts are torqued according to the torque diagram included with this manual.
5. Reinstall VTS on the machine using instructions in section 2-2.

3-6 Replacing the Rubber Track

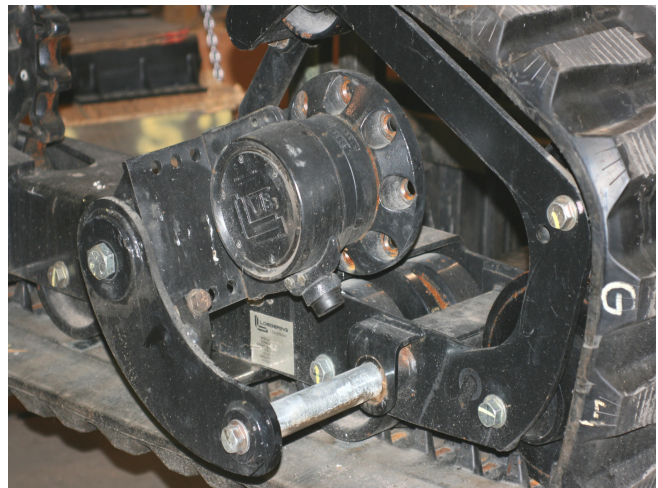
Replacing the rubber track by placing the undercarriage into the track.

1. Start with the track setting on the floor with the upper portion suspended by a hoist.
2. Use a forklift or similar lifting device to move the undercarriage into the track.
 - a. Lift the top of the track above the sprocket with a hoist or similar lifting device. (Fig. 1)
 - b. Approach the track at an angle so the rear idler can be placed in the track idler guide. (Fig. 1)
 - c. With a pry bar between the top of the sprocket and the track lift up on the track until the sprocket is in the Track Idler Guide.
 - d. Lower the track onto the sprocket. (Fig. 2.)
 - e. With a pry bar, rotate the sprocket towards the front of the VTS to move the slack to the front.
 - f. Lock the sprocket with the pry bar. (Fig. 3)

**Fig. 1****Fig. 2****Fig. 3**

3-7 Replacing the Rubber Track

- g. Use a pry bar to move the track so the front idler is in the track idler guide. (Fig. 4)
3. Reinstall your tension arm assembly. (Fig. 5)
4. Reinstall the torsion arm and hub assembly. (Fig. 6)
5. Reinstall VTS on the machine using instructions in section 2-2.

**Fig. 4****Fig. 5****Fig. 6****After the new track is installed,**

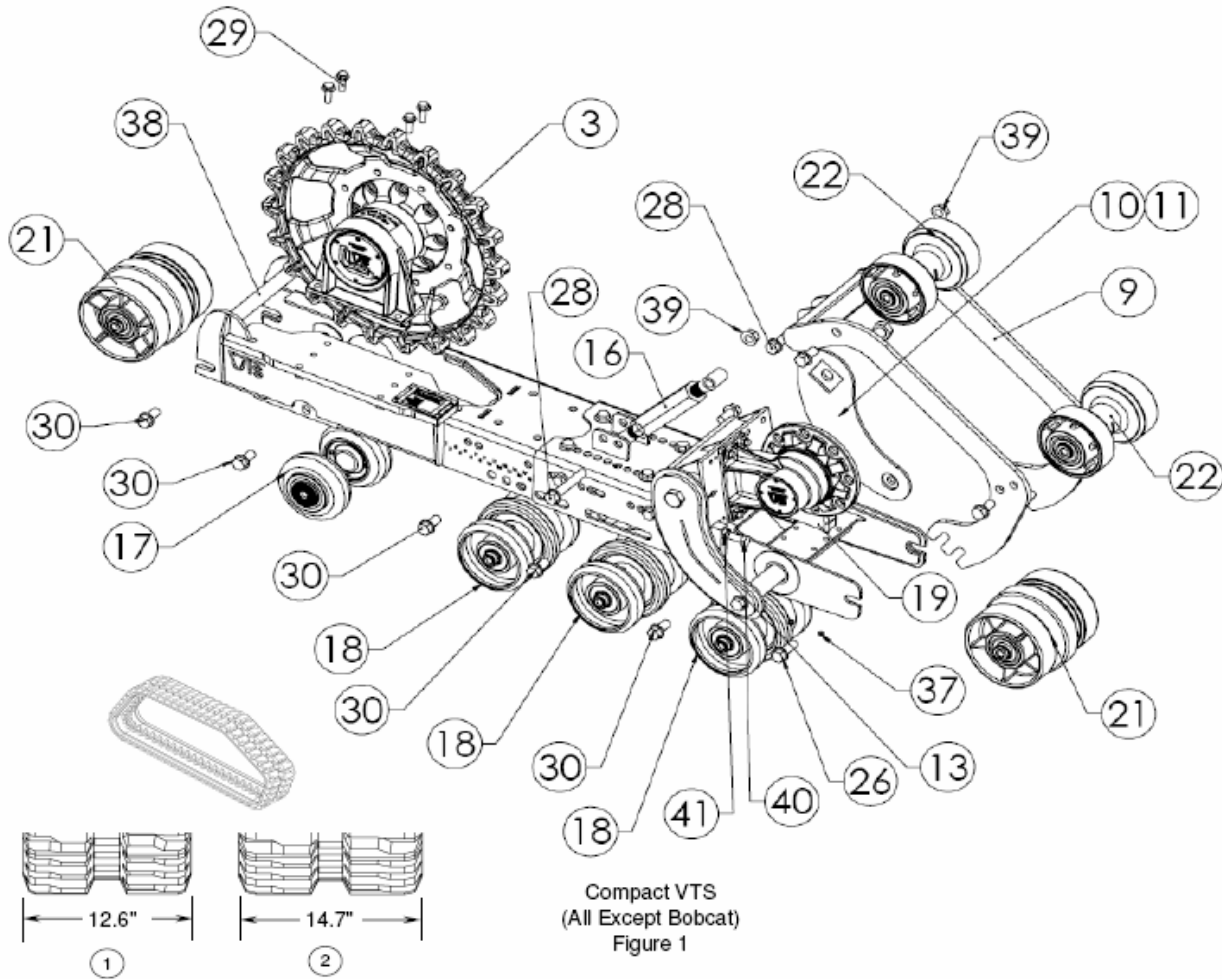
1. Ensure that all bolts are torqued according to the torque diagram included with this manual.
2. Ensure that all lug nuts are torqued to specification.
3. Check the track tension after the VTS is installed on the machine.
4. Check the track tension again after 15 to 20 hours of initial use.
5. Routinely check track tension at 50 hour intervals throughout the life of the track.

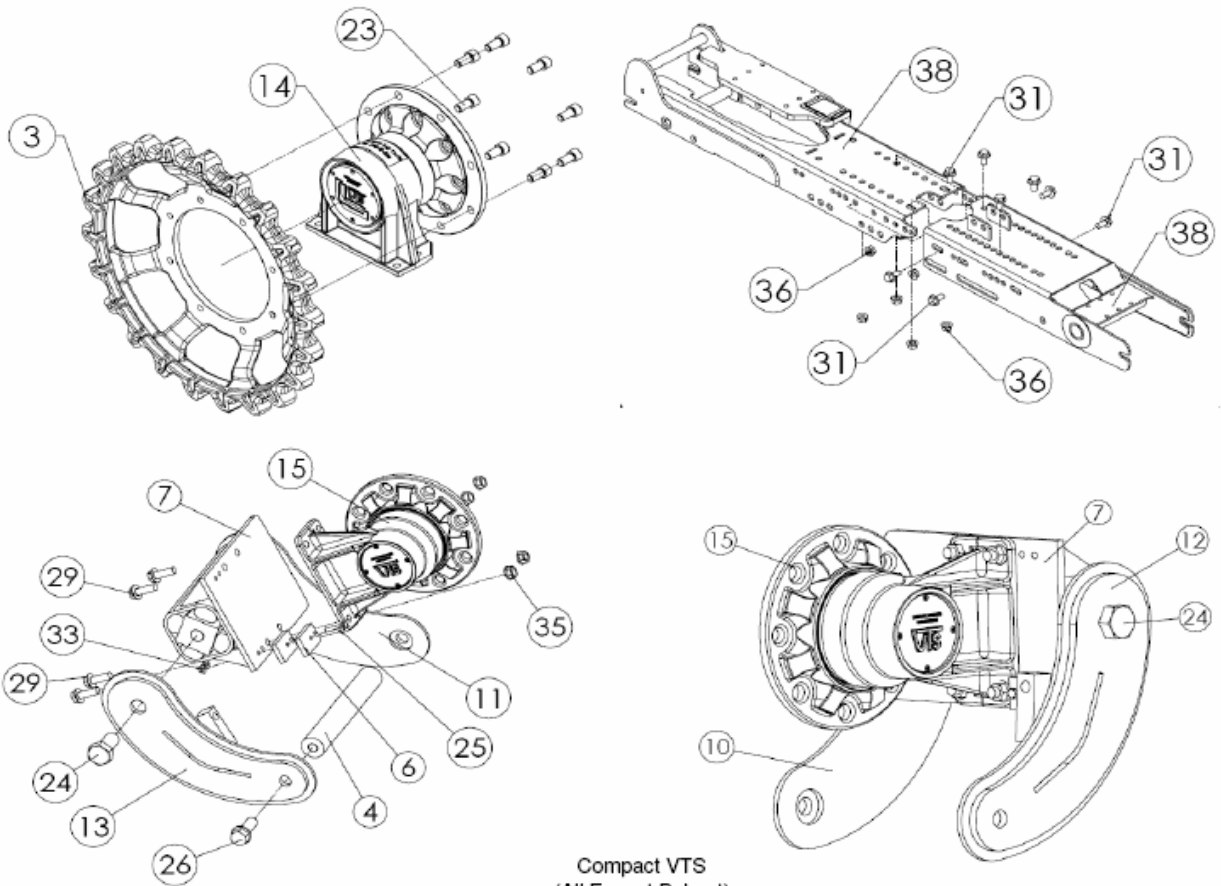
VTS Part 50+

Fig.	Item	Part Number	Description	Wt. lbs.	Wt. kgs.
1,3	1	401363	Track, Rubber, 50 Link, 12" Wide (Qty.1)	462	209.56
		401767	Track, Rubber, 51 Link, 12" Wide (Qty.1)	470	213.19
		401362	Track, Rubber, 52 Link, 12" Wide (Qty.1)	479	217.27
		401361	Track, Rubber, 54 Link, 12" Wide (Qty.1)	497	225.44
		401360	Track, Rubber, 56 Link, 12" Wide (Qty.1)	509	230.88
1,3	2	401364	Track, Rubber, 50 Link, 15" Wide (Qty.1)	476	215.91
		401347	Track, Rubber, 52 Link, 15" Wide (Qty.1)	491	222.71
		401346	Track, Rubber, 54 Link, 15" Wide (Qty.1)	509	230.88
		401345	Track, Rubber, 56 Link, 15" Wide (Qty.1)	524	237.68
2,4	3	400914	Sprocket, 22 Tooth, offset	89.00	40.37
	3a	401449	Sprocket, 22 Tooth, zero offset	89.00	40.37
2	4	401300	Shaft, Suspension, 11.18" Long	9.00	4.08
2,4	6	401301	Upstop Plate	1.00	0.45
2	7	500327	Torsion Tube, 11.18" Long	25.00	11.34
1,3	9	500299	Tension Arm	10.00	4.54
1,2,3,4	10	500300	Torsion Arm, Right	10.00	4.54
1,2,3,4	11	500303	Torsion Arm, Left	10.00	4.54
2,4	12	500301	Torsion Arm with upstop block, Left	11.00	4.99
2,4	13	500302	Torsion Arm with upstop block, Right	11.00	4.99
2,4	14	600538	Hub Assembly, Rear (4 screw end cap)	40.00	18.14
		601058	Hub Assembly, Rear (6 screw end cap)	40.00	18.14
2,4	15	600540	Hub, Front, Right, Assembly	40.00	18.14
		600782	Hub, Front, Left, Assembly	40.00	18.14
1,3	16	600546	Turnbuckle Assembly	8.00	3.63
1,3	17	600892	Bogey, Split Assembly, dust cover not included	30.00	13.61
		401405	Dust cover for 600892	1.00	0.45
1,3	18	600549	Bogey Assembly, dust cover not included	30.00	13.61
		401330	Dust cover for 600549	1.00	0.45
1	19	600781	Down Stop, Urethane, 2.25" thick	2.00	0.91
3	20	600680	Down Stop, Urethane, 1.5" thick (Bobcat only)	2.00	0.91
1,3	21	600716	Idler, Assembly, dust cover not included	61.00	27.67
		401425	Dust cover for 600716	1.00	0.45
1,3	22	600741	Tension Roller Assembly, needs dust covers	25.00	11.34
		401391	Dust cover for 600741	1.00	0.45
2,4	23	401075-8	Screw, 5/8-11 x 1.25", Gr. 8 Pltd. (Qty. 8)	2.00	0.91
1,2,3,4	24	400665	Bolt, 1"-14 x 2.00", Grade 8 Plated	1.00	0.45
2,4	25	PD0130-1.25CP	Bolt, 1/4"-20NC x 1.25", Grade 8 Plated	0.10	0.05
1,2,3,4	26	PD5210-2CP	Bolt, 3/4"-10NC x 2.00", Grade 8 Plated	0.20	0.09
1	27	PD0150-3.25CP	Bolt, 3/8"-16NC x 3.25", Grade 8 Plated	0.10	0.05
1,3	28	PD5210-4.5CP	Bolt, 3/4"-10NC x 4.5", Grade 8 Plated	0.20	0.09
1,2,3,4	29	PD5170-1.5CP	Bolt, Flange, 1/2"-13NC x 1.50", Grade 8 Plated	0.10	0.05
1,3	30	PD5210-1.5CP	Bolt, Flange, 3/4"-10NC x 1.50", Grade 8 Plated	0.20	0.09
2,4	31	PD5190-1.25CP	Bolt, Flange, 5/8"-11NC x 1.25, Grade 8 Plated	0.20	0.09
1,3	32	PD5210-3.5CP	Bolt, Flange, 3/4"-10NC x 3.50", Grade 8 Plated	0.30	0.14
2,4	33	PH5130-4CP	Nut, Flange, Lock, 1/4"-20NC, Grade 8 Plated	0.10	0.05

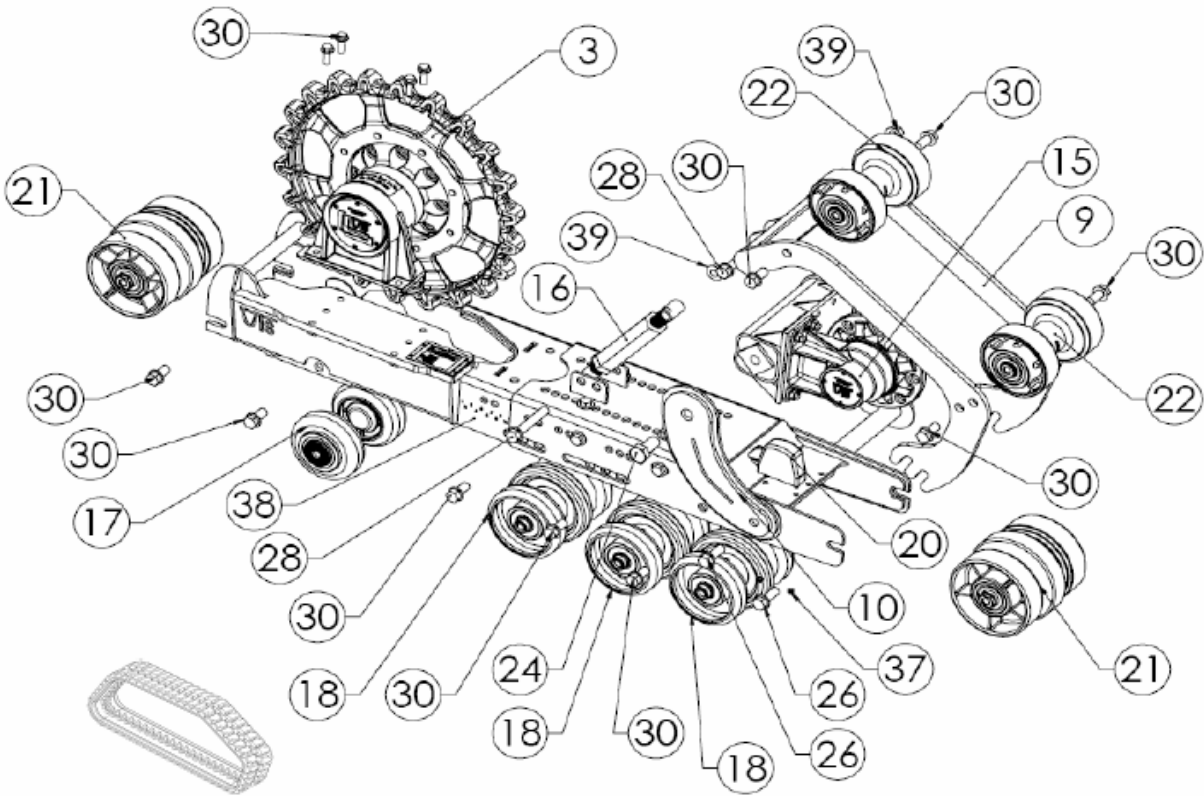
VTS Part 50+ (Continued)

1	34	PH0150-1CP	Nut, 3/8"-16NC, Grade 8 Plated	0.10	0.05
2,4	35	PH5170-4CP	Nut, Flange, Lock, 1/2"-13 Grade 8 Plated	0.10	0.05
1,2,3,4	36	PH5190-4CP	Nut, Flange, Lock, 5/8"-11NC, Grade 8 Plated	0.10	0.05
3	37	PHT140-4CP	Nut, Jam, Locking, 5/16"-18, (Bobcat only)	0.10	0.05
2,3	38	Tunnel	Call for prices.	-	
1,3	39	PH5210-4CP	Nut, Flange, Lock, 3/4"-10UNC, Grade 8 Plated	0.10	0.05
n/s		601089	Suspension lock out, (eliminates suspension)	5.00	2.27
1	40	PD0190-3CP	Bolt, 5/8"-11NC x 3.0", Grade 81.	0.30	0.14
1	41	PH0190-5CP	Nut, 5/8"-11NC Grade 8 Jam Nut	0.10	0.05

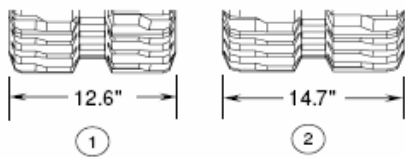


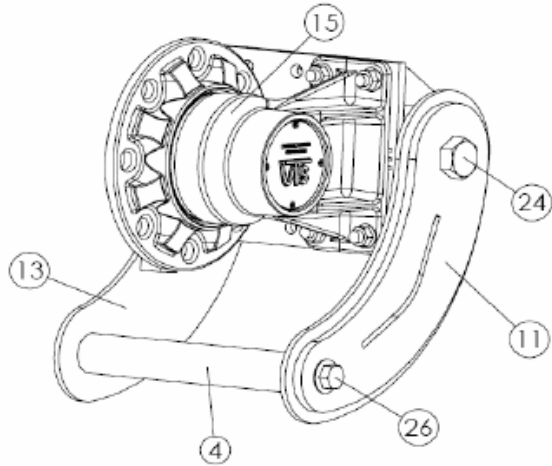
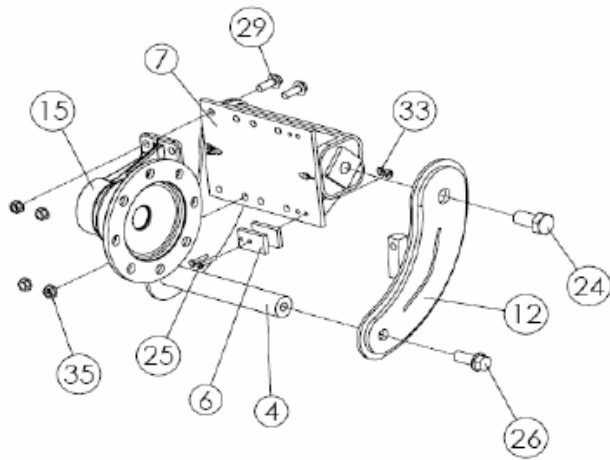
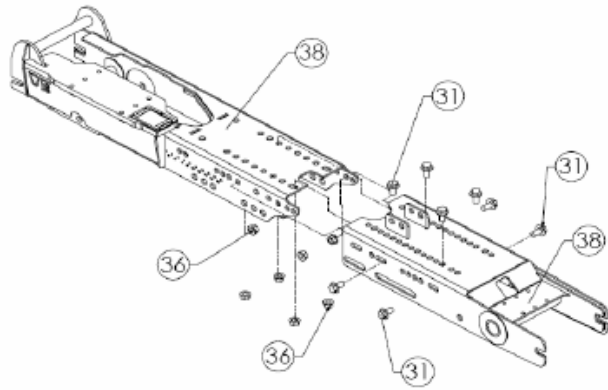
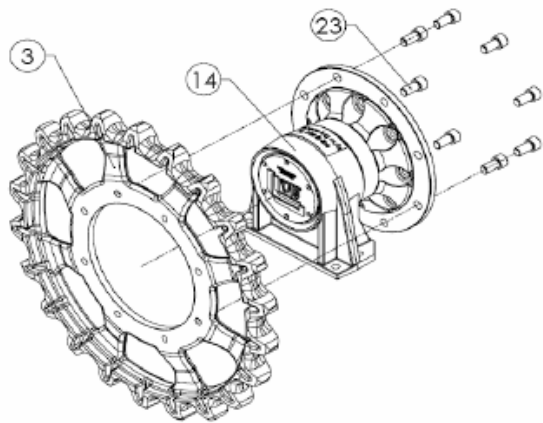


Compact VTS
(All Except Bobcat)
Figure 2



Compact VTS
(Bobcat only)
Figure 3





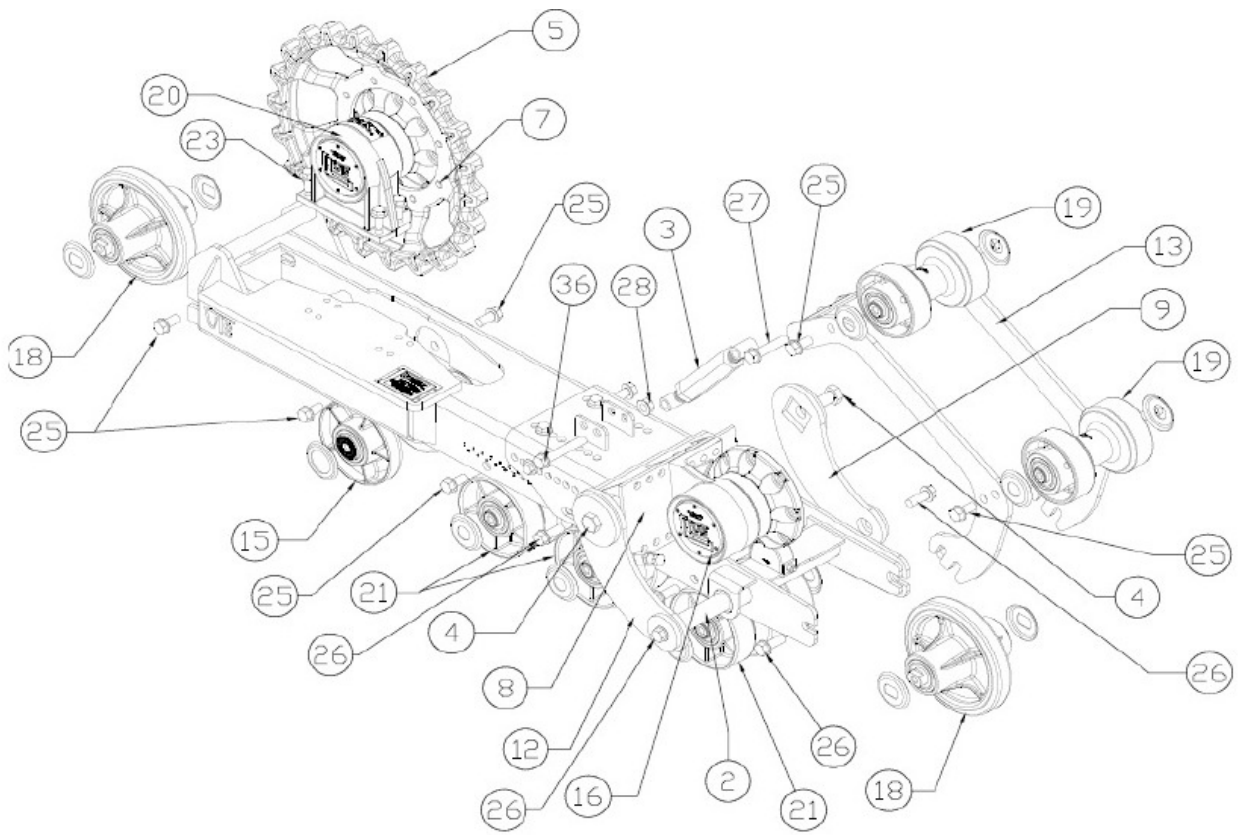
Compact VTS
(Bobcat Only)
Figure 4

VTS Part Prices 65+ and 86+

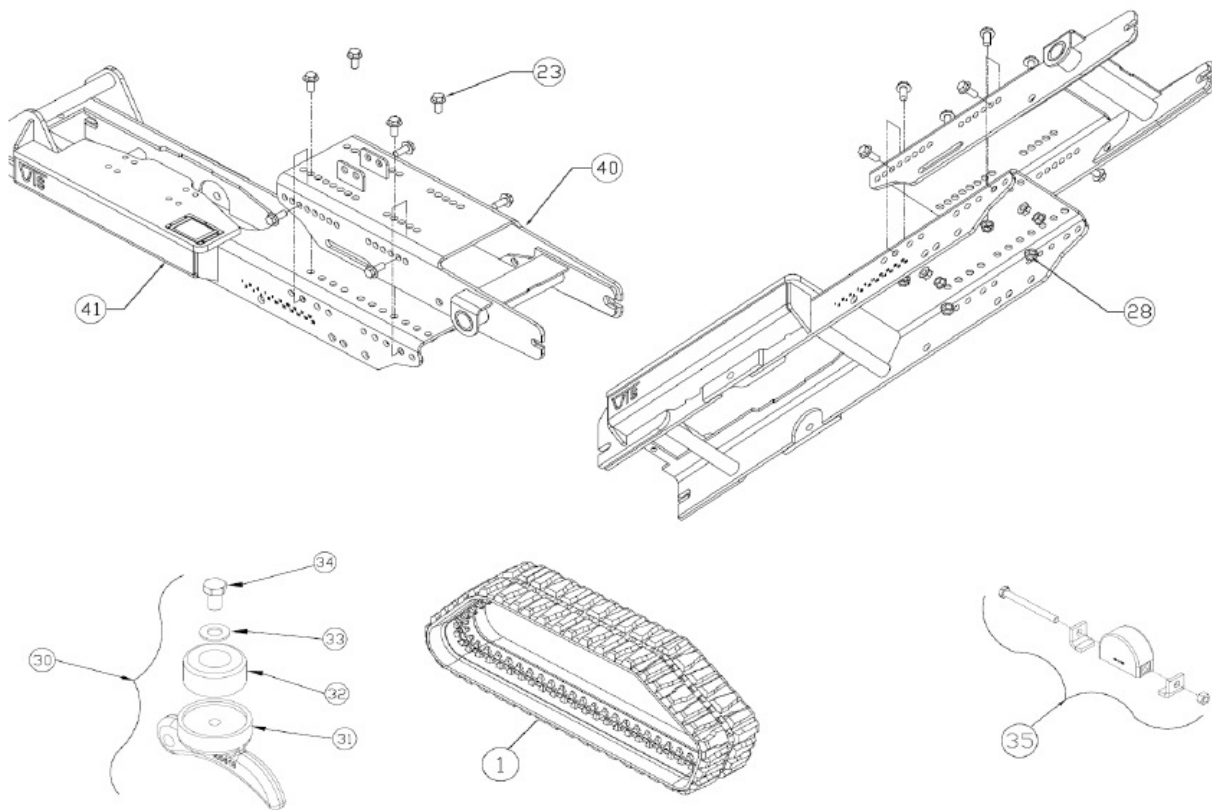
Fig.	Item	Part #	DESCRIPTION	Wt.#	Wt. kgs
2	1	400285	Track, Rubber, 56 Link, 18" Wide (Qty.1)	542	245.85
		401338	Track, Rubber, 58 Link, 18" Wide (Qty.1)	560	254.01
		401087	Track, Rubber, 59 Link, 18" Wide (Qty.1)	575	260.82
		400527	Track, Rubber, 60 Link, 18" Wide (Qty.1)	580	263.08
		401348	Track, Rubber, 63 Link, 18" Wide (Qty.1)	600	272.16
1	2	400297	Shaft, Suspension	9	3.86
1,4	3	600546	Turnbuckle Assy.	8	3.63
		601209	Turnbuckle Assy. For 63 link 86+ VTS	8	3.63
1,3	4	400665	Bolt, 1-14UNC x 2.00" Gr. 8 Plated	1	0.23
1	5	400914	Sprocket, 22 Tooth	89	40.14
3	6	401025	Plate, Up Stop	1	0.45
1	7	401075-8	Screw, Cap, 5/8-11UNC x 1.25" Gr. Plated	2.0	0.91
1,3	8	500057	Torsion Tube	42	19.05
		500486	Torsion Tube for 63 link VTS	43	19.50
1,3	9	500055	Torsion Arm	12	5.35
	10	601403	Kit, Adjustable Torsion Arm - Large Left	13	5.90
	10	500204	Torsion Arm, w/ Stop	13	5.99
1,3	11	500054	Torsion Arm,	12	5.35
	12	601402	Kit, Adjustable Torsion Arm - Large Right	13	5.90
	12	500203	Torsion Arm, w/ Stop	13	5.99
1,3	13A	500162	Arm, Tension	34	15.20
	13B	500278	Arm, Tension	34	15.20
	13C	500285	Arm, Tension	34	15.20
1	15	600458	Bogey, Split	17	7.71
		401405	Dust Cover for 600458 (1 required)	1	0.45
1	16	600459	Hub, Front, Right (Specify if for Bobcat)	66	29.94
		601263	Kit, Front right hub and downstop kit	69	31.30
	17	600460	Hub, Front, Left (Specify if for Bobcat)	66	29.94
		601262	Kit, Front left hub and downstop kit	69	31.30
			* Note	VTS prior to 02/07 req. down stop 600544, see item 75	
1	18	600439	Assembly, Idler Guide (Dust covers not included)	56	25.40
		401111	Dust Cover for 600439 (2 required)	0.5	0.23
1	19	600456	Assembly, Roller, Tension	38	17.24
		401118	Dust Cover for 600456 (2 required)	0.5	0.23
1	20	600461	Assembly, Rear Hub, (sprocket sold separately)	79.5	36.06
1	20	600159	Assembly, Rear Hub, for Bobcat	79.5	36.06
1	21	600457	Assembly, Bogey (Dust covers not included)	61.0	27.67
		401118	Dust Cover for 600457 (2 required)	0.5	0.23
3	22	PD5190-1.25CP	Bolt, Flange, 5/8" -11UNC x 1.25" Gr. 8 Plated	0.2	0.09
1	23	PD5190-1.5CP	Bolt, Flange, 5/8" -11UNC x 1.5" Gr. 8 Plated	0.2	0.09
2	24	PD0190-1.75CP	Bolt, Flange, 5/8" -11UNC x 1.75" Gr. 8 Plated	0.2	0.09
3	25	PD5210-1.5CP	Bolt, Flange, 3/4" -10UNC x 1.5", Gr. 8 Plated	0.2	0.09
1	26	PD5210-2CP	Bolt, Flange, 3/4" -10UNC x 2.0", Gr. 8 Plated	0.2	0.09
1	27	PD5210-3.5CP	Bolt, Flange, 3/4"-10UNC x 3.5", Gr. 8 Plated	0.2	0.09

VTS Part Prices 65+ and 86+

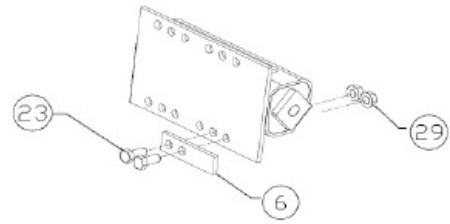
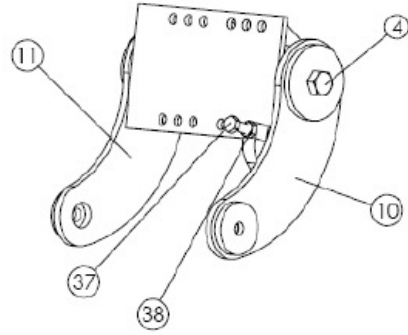
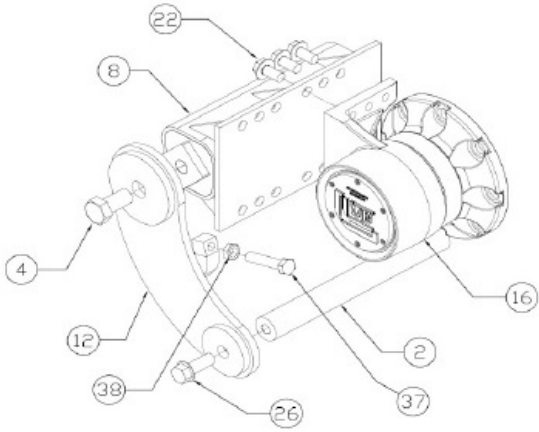
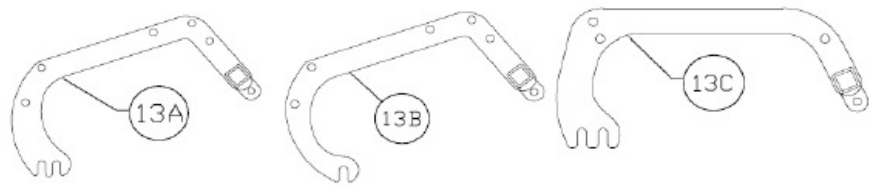
1	28	PH5190-4CP	Nut, Flange, Lock 5/8"-11UNC, Gr. 8 Plated	0.2	0.09
3	29	PH5210-4CP	Nut, Flange, Lock 3/4"-10UNC, Gr. 8 Plated	0.2	0.09
2	30	600182	No longer available - see item 35	-	
2	31	400616	No longer available - see item 35	-	
2	32	400540	Stop, Rubber	0.5	0.23
2	33	PJ0150-1BP	Washer, Flat, 3/8", Gr. 5 Plated	0.1	0.05
2	34	PD0150-.625CP	Bolt, 3/8"-16UNC x .625" Gr.8 Plated	0.1	0.05
2	35	600544	Down Stop Assy. (1 ea.)	3.0	1.36
1	36	PD5210-4.5CP	Flange Bolt 3/4-10NCx4.5 Gr. 8		
3	37	PD0190-3CP	Bolt 5/8-11NCx3.0 Gr. 8 Plated FI Thrd		
3	38	PH0190-5CP	Nut 5/8-11UNC Gr. 8 Jam Nut		
2	40		Weldment Telescoping Tunnel Front		
2	41		Weldment Telescoping Tunnel Rear		
4	42	600716	Rear Idler for 63 link VTS	61.0	27.67
		401425	Dust Cover for 600716	0.5	0.25
4	43	500431	Right Rear Tunnel		
		500429	Left Rear Tunnel		
n/s	n/s	401206-32	Nut, M16 x 1.5 Gr. 8, 90° Taper, Pkg. of 32	0.1	0.05
n/s	n/s	SN2302-8.0-1	Spacer, 1" 8 Hole, 9/16" x 1 7/8" studs w/nuts	15.0	6.80
n/s	n/s	PI0181-1.63C-32	Stud Kit for 1" spacer		
n/s	n/s	600890	Suspension Lockout All, 863 & 873 (2 Req. per machine)	5.0	2.27
n/s	n/s	600891	Suspension Lockout, Bobcat only (2 Req. per machine)	5.0	2.27
	n/s	500250	Screw, Adjust. 9" Long	3	1.36
		500235	Screw, Adjust. 11" long	3	1.36
		500337	Screw, Adjust, 14" long	3	1.36
	n/s	500338	Screw, Adjust, w/ tube end, 9" long	4	1.81
		500339	Screw, Adjust, w/ tube end, 11" long	4	1.81
n/s		500221	Tension, Adjuster	4	1.91
n/s		PH0250-1CP	Tension Nut, 1"-18UNC Gr. 8 Plated	0.2	0.09



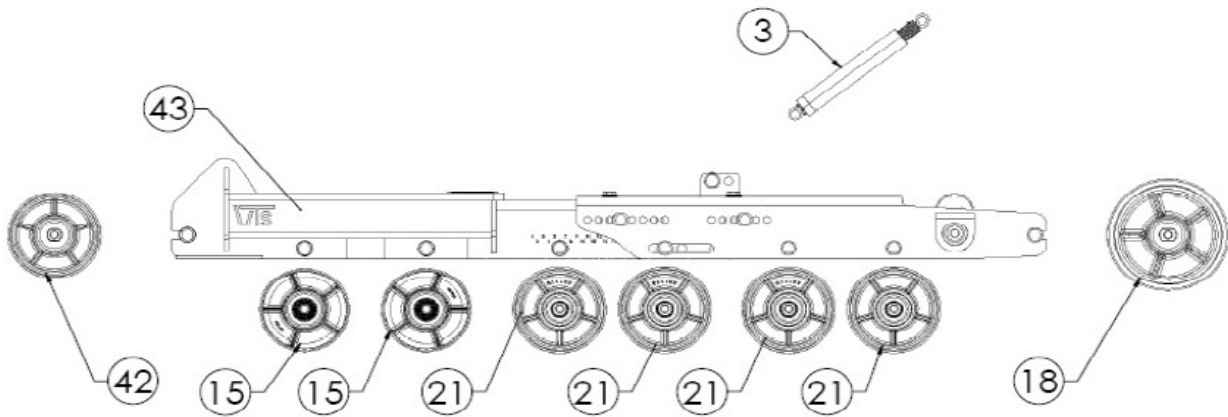
65+ Yellow Figure 1



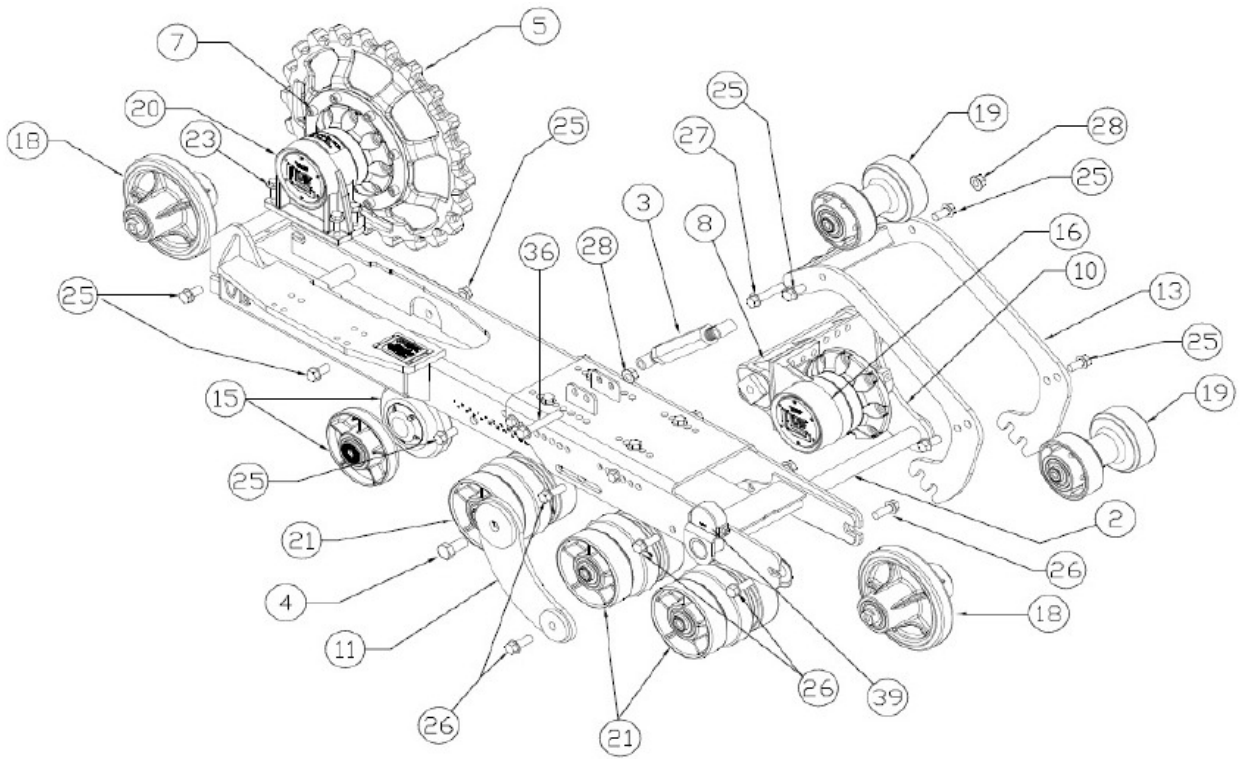
65+ Yellow Figure 2



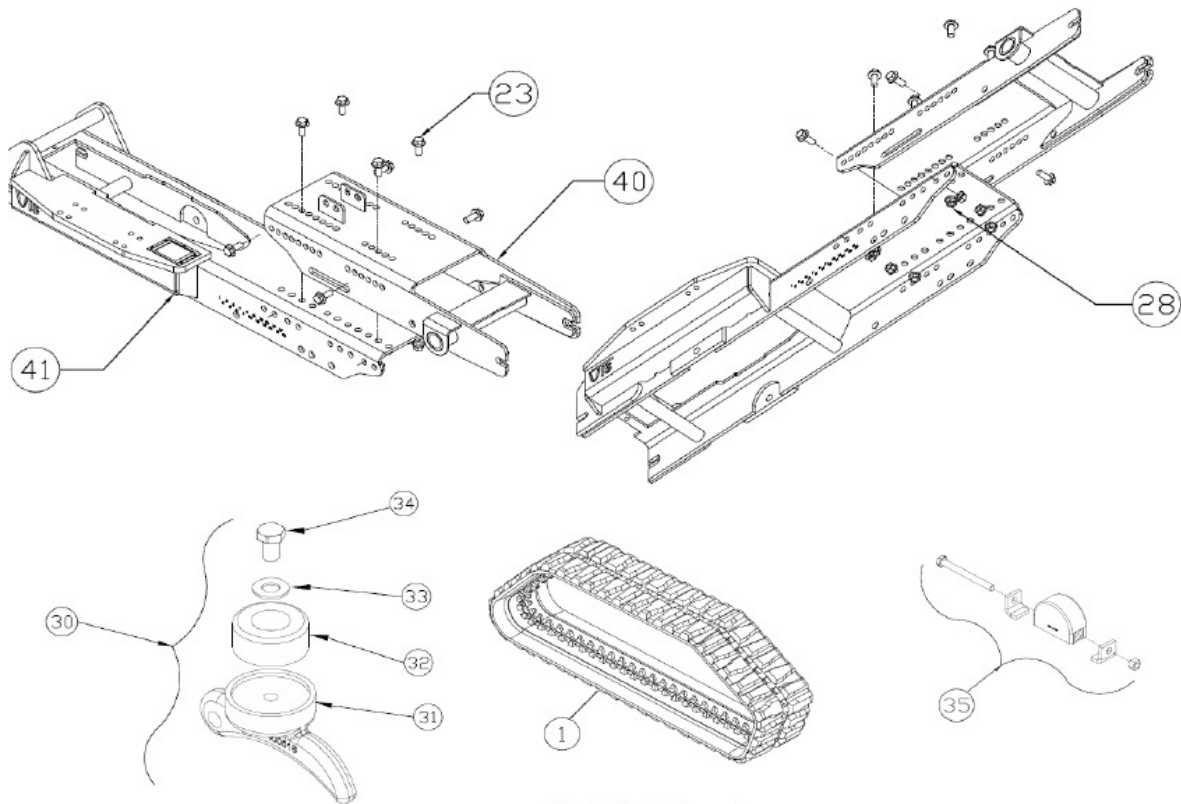
65+ Yellow Figure 3



86+ Yellow Figure 4

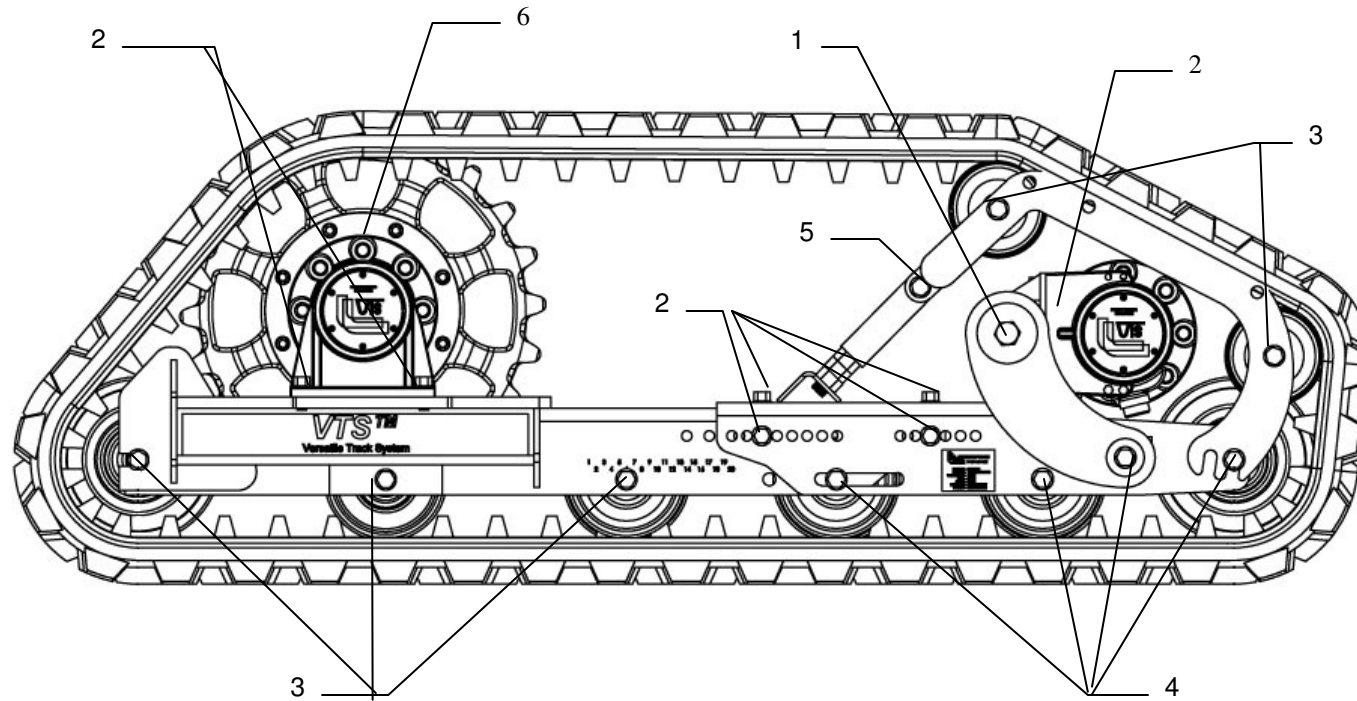


65+ Bobcat Figure 1



65+ Bobcat Figure 2

VTS Torque Specification Chart



Item	Description	Torque(US)	Torque(Metric)	Socket
1	1-14UNC x 2" Gr. 8	750 ft/lbs.	1017 N m	1½ "
2	5/8-11UNC x 1½" Gr. 8	211 ft/lbs.	286.1 N m	1-5/16"
3	3/4 -10UNC x 1½ Gr. 8	376 ft/lbs.	509.8 N m	1-1/8"
4	3/4 -10UNC x 2" Gr. 8	376 ft/lbs.	509.8 N m	1-1/8"
5	3/4 -10UNC x 3½ Gr. 8	376 ft/lbs.	509.8 N m	1-1/8"
6	5/8 Sprocket Cap screws	211 ft/lbs.	286.1 N m	



MATERIAL SAFETY DATA SHEET

Polytac(TM) EP-2

1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

Synonyms: Not Established
Formula: Mixture
Chemical Family: Hydrocarbon
CAS Number: Mixture
SAP Code: 1013026; 1013027; 1013028; 1013029; 1013030; 1033017
Product Code: 94250
MSDS Number: US422400
NFPA Ratings: Health 0, Flammability 1, Reactivity 0
HMIS Ratings: Flammability 1, Reactivity 0, Health 0
Intended Use(s): General Purpose grease for automotive, industrial and agricultural use

The intended use of this product is indicated above, if any additional use is known please contact us at the Technical Information number listed below.

Manufactured By:
 Phillips 66 Company
 A Division of Phillips Petroleum Company
 Bartlesville, Oklahoma 74004

Phone Numbers
Emergency: (918) 661-8118
Technical Information: (800) 786-0050
For Additional MSDSs: (918) 661-5974

2. COMPOSITION/INFORMATION ON INGREDIENTS

Chemical Specification and CAS #	Weight % in Product	ACGIH TLV	ACGIH Short Term Exposure Limit	ACGIH Ceiling Limits	ACGIH Skin Designation	OSHA Final PEL	OSHA - Final PELs - Ceiling Limits	OSHA - Final PELs - Skin Notation
Severely Hydroreated Naphthenic Oil 64742-52-5	< 36	NE	NE	NE	NE	NE	NE	NE
Base stock 64741-88-4	< 34	NE	NE	NE	NE	NE	NE	NE
Petroleum based lubricants 64742-54-7	< 34	NE	NE	NE	NE	NE	NE	NE
Solvent-Dewaxed Heavy Paraffinic Petroleum Distillates 64742-65-0	< 34	NE	NE	NE	NE	NE	NE	NE
Proprietary/Unknown ingredient	20	NE	NE	NE	NE	NE	NE	NE
Polyurea thickeners	< 8	NE	NE	NE	NE	NE	NE	NE

See Section 8 for additional Exposure Limits.

3. HAZARDS IDENTIFICATION

Emergency Overview

Non-Hazardous. Pressure Injection.

Potential Acute Health Effects

Eye Contact: May cause mild irritation.

Skin Contact: May cause mild irritation with prolonged or repeated contact.

Inhalation: No acute effects expected due to low vapor pressure.

Ingestion: Slightly toxic (LD50 > 5 gm/kg).

Subchronic and Chronic Effects:

No Known Applicable Information

Aggravated Medical Conditions: No Known Applicable Information

4. FIRST AID MEASURES

Eye Contact: Flush eyes with running water. If irritation or adverse symptoms develop, seek medical attention.

Skin Contact: Wash skin with soap and water. If irritation or adverse symptoms develop, seek medical attention.

Inhalation: Remove from exposure. If illness or adverse symptoms develop, seek medical attention.

Ingestion: If illness or adverse symptoms develop, seek medical attention.

Notes To Physician: For injection injuries, immediate medical treatment is required. Physicians may call the emergency number (918) 661-8118.

5. FIRE FIGHTING MEASURES

Flash Point: > 342F (>172C)

FP Method: COC, ASTM D-92

Ignition Temperature: Unknown

Flammable Limits (% by Volume in Air)

Lower Exposure Limit - Not Established

Upper Exposure Limit - Not Established

Fire Extinguishing Media: Carbon Dioxide, Dry Chemicals, Foam

Fire Fighting Procedures: Evacuate area and fight fire from a safe distance. Shut off source, if possible. Use NIOSH approved self-contained breathing apparatus and other protective equipment and/or garments described in Section 8 if conditions warrant. Use water spray to cool nearby containers and structures exposed to fire.

Fire and explosion hazards: Carbon oxides and various hydrocarbons forms when burned.

6. ACCIDENTAL RELEASE MEASURES

Sweep or gather up material and place in proper container for disposal or recovery.

7. HANDLING AND STORAGE

Avoid contact with eyes, skin or clothing. Avoid breathing vapors, mist, fume or dust. Use with adequate ventilation. Wear protective equipment and/or garments described in Section 8 if exposure conditions warrant. Wash thoroughly after handling. Launder contaminated clothing before reuse. Store in well-ventilated area. Store in closed container.

If pressure injected under the skin, can cause gangrene if not treated.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Eye Protection: Wear safety glasses.

Respiratory Protection: For concentrations exceeding an applicable exposure limit, use NIOSH approved air purifying respirator equipped with P95 filters, for particulate with time weighted average exposure limit not less than 0.05 mg/M3.

Skin Protection: Use gloves resistant to the material(s) contained in this product.

Ventilation: Use adequate ventilation to control concentrations below applicable exposure limits.

Other Personal Protection: Personal protection information shown in Section 8 is based upon general information as to normal uses and conditions. Where special or unusual uses or conditions exist, it is suggested that the expert assistance of an industrial hygienist or other qualified professional be sought.

Exposure Limits: OSHA PEL and ACGIH TLV for oil mists is 5 mg/m3

9. PHYSICAL AND CHEMICAL PROPERTIES

Physical State:	Semi-Solid
Appearance:	Green-colored semi-solid
Odor:	Mild
Odor Threshold (ppm):	Unknown
Boiling Point:	Not Established
Melting/Freeze Point:	Not Established
Vapor Pressure:	Not Established
Vapor Density (Air=1):	Not Established
Specific Gravity @ 20 C (Water=1):	1.0 @ 77F (25C)
Percent Volatile by Volume:	Not Established
Evaporation Rate (Butyl Acetate=1):	Not Established
Water Solubility:	Negligible
Viscosity:	>100 SUS @ 100F (38C)

10. STABILITY AND REACTIVITY

Stability: Stable

Hazardous Polymerization: Will Not Occur

Incompatibility (Materials to Avoid): Oxygen and strong oxidizing agents.

Hazardous Decomposition Products: Carbon oxides and various hydrocarbons are formed when burned.

11. TOXICOLOGICAL INFORMATION

Other Health Effects:

Pressurized injection of product under the skin can lead to seriously inflamed tissue. If left untreated injury can become gangrenous.

Prolonged and repeated exposure to oil mist poses a risk of pulmonary disease such as lung inflammation. This condition usually causes no symptoms.

Continuous skin contact with used motor oils has caused skin cancer in laboratory animals. Avoid prolonged skin contact with used motor oil.

These products may contain petroleum base oils which may be refined by various processes including severe solvent extraction, severe hydrocracking or severe hydrotreating. None of the oils require a cancer warning under the OSHA Hazard Communication Standard (29 CFR 1910.1200).

12. ECOLOGICAL INFORMATION

No data at this time.

13. DISPOSAL CONSIDERATIONS

Disposal should be made in accordance with federal, state and local regulations.

14. TRANSPORT INFORMATION

DOT Shipping Description:	Not Regulated
IMDG Shipping Description:	Not Regulated
ICAO/IATA Proper Shipping Name:	Not Regulated

15. REGULATORY INFORMATION

EPA SARA 311/312 (Title III Hazard Categories)

Acute Health:	No
Chronic Health:	No
Fire Hazard:	No
Pressure Hazard:	No
Reactivity Hazard:	No

Severely Hydrotreated Naphthenic Oil < 38 64742-52-5
Regulated Substance on TSCA Inventory: Listed
Canada - Domestic Substances List: Listed

Base stock < 34 64741-88-4
Regulated Substance on TSCA Inventory: Listed
Canada - Domestic Substances List: Listed

Petroleum based lubricants < 34 64742-54-7

Polytac(TM) EP-2 (US422400)

Page 5 of 5

Regulated Substance on TSCA Inventory: Listed
Canada - Domestic Substances List: Listed

Solvent-Dewaxed Heavy Paraffinic Petroleum Distillates < 34 64742-65-0
Regulated Substance on TSCA Inventory: Listed
Canada - Domestic Substances List: Listed

Proprietary/Unknown ingredient 20
Regulated Substance on TSCA Inventory: Listed

Polyurea thickeners < 8
Regulated Substance on TSCA Inventory: Listed

16. OTHER INFORMATION

Revision Summary: Section 3 - Format Change.

Preparer: Health, Environment and Safety Department
Date Prepared: 05/11/2001
Supersedes: 03/09/2001

Phillips Petroleum Company (references to Phillips Petroleum Company or Phillips includes its divisions, affiliates and subsidiaries) believes that the information contained herein (including data and statements) is accurate as of the date hereof. NO WARRANTY OF MERCHANTABILITY, FITNESS FOR ANY PARTICULAR PURPOSE OR ANY OTHER WARRANTY, EXPRESS OR IMPLIED, IS MADE AS CONCERNS THE INFORMATION HEREIN PROVIDED. The information provided herein relates only to the specific product designated and may not be valid where such product is used in combination with any other materials or in any process. Further, since the conditions and methods of use of the product and information referred to herein are beyond the control of Phillips, Phillips expressly disclaims any and all liability as to any results obtained or arising from any use of the product or such information. No statement made herein shall be construed as a permission or recommendation for the use of any product in a manner that might infringe existing patents.

LIMITED WARRANTY AND DISCLAIMER OF WARRANTIES

Loeering warrants its attachment against operational failures caused by defective material or workmanship, which occur during normal use within fifteen (15) months from the date of purchase or twelve (12) months from the date the product is first put into service, whichever is earlier. **Loeering does not warrant the track pad life due to the wide dependency on specific conditions.** Your sole remedy under this Warranty is repair or replacement of the attachment that are determined by Loeering to be defective in material or workmanship. Any modifications (welding, cutting, etc.) to the machine, attachment, or attachment accessories without proper authorization will void the warranty. Written authorization for any return of goods on a warranty claim must first be obtained from Loeering. All returns must be accompanied by a Returned Material Authorization Number (RMA#) and a written explanation of claimed defects with the exact circumstances of operational failure. Any products returned for warranty inspection must be shipped prepaid and will be returned freight collect. All costs of product removal and product installation are at the customer's expense. Loeering does not warrant that its attachment will meet your requirements, nor does it assume responsibility for costs and/or damages resulting from use. **THE ABOVE WARRANTY IS EXCLUSIVE AND IN LIEU OF AND TO THE EXCLUSION OF ALL OTHER WARRANTIES, WHETHER EXPRESS OR IMPLIED, INCLUDING THE IMPLIED WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE, AND NON-INFRINGEMENT. NO ORAL OR WRITTEN INFORMATION OR ADVICE GIVEN BY LOEERING MFG. INC., ITS EMPLOYEES, OR DEALERS SHALL ALTER, MODIFY, OR INCREASE THE SCOPE OF THE ABOVE WARRANTY OR CREATE ANY NEW WARRANTIES.** Some states do not allow the exclusion of implied warranties, so the above exclusion may not apply to you. In that event, any implied warranties are limited in duration to ninety (90) days from the date of delivery of our attachment. This Warranty gives you specific legal rights. You may have other rights, which vary from state to state.

LIMITATIONS OF REMEDIES

Loeering's entire liability and your exclusive remedies shall be repair or replacement of the attachment for any alleged breach, failure, or malfunction. Regardless of whether any remedy set forth herein fails of its essential purpose, in no event will Loeering be liable to you for any special, consequential, indirect, or similar damages, including any claimed damage to person (except in the case of consumer goods) or other property, any lost time, or lost profits arising out of the use or inability to use the attachment. Some states do not allow limitation or exclusion of liability for incidental or consequential damages, so the above limitation or exclusion may not apply to you.

VTS WARRANTY
Attachment A
Loeering Limited Warranty

Note the additional warranty information listed below in specific regards to the Loeering VTS. This attachment is a supplement to the Loeering Limited Warranty.

- The rubber track warranty is Pro-Rated (by the number of hours on the VTS system) for 12 months or 1000 hours whichever comes first after it is installed on the host machine or put into service. Hours are determined by warranty registration card, be sure to complete at time of purchase.
- System components are warranted for a period of 12 months or 1000 hours whichever comes first after it is installed on the host machine or put into service. The warranty covers defective material and/or workmanship. This does not cover the normal wear of components due to application and use. Hours are determined by warranty registration card, be sure to complete at time of purchase.
- Host machine specifications should not be exceeded with the use of the Loeering VTS. Consult your machine operator's manual for machine capacities and specifications.
- Proper track tension is essential to the normal wear of the Loeering VTS. Consult your VTS owner's manual for proper VTS track tension specifications.
- Loeering VTS rubber track is subject to cuts, tears, etc. when used in abrasive material. This will significantly decrease the life of your rubber track and articles such as gravel, demolition material, rebar, broken concrete, rocks, clearing debris, stumps, sand, etc. should be avoided for longer track life. The more abrasive your application, the less life you will see on your system components and rubber track.
- Loeering VTS rubber track is also subject to increased wear if used on concrete and asphalt, particularly during extreme heat. This application will also affect the life of your rubber track.
- Avoid abrupt turns on inclines to decrease the chance of derailing your rubber track from the system.
- Avoid abrupt turns to decrease the wear on the rubber track and the track assembly components.
- Loeering VTS should not be used in temperatures below -13° F.

Warranty only covers the replacement components if they are installed at an authorized Loeering VTS Dealer.

The Warranty Registration form must be filled out and sent to LOEGERING MFG. upon sale of the VTS System or at the time the VTS System is put into Service.

THE VTS SYSTEM IS NOT COVERED BY WARRANTY UNLESS THE WARRANTY REGISTRATION FORM IS SENT TO LOEGERING MFG.



Loeering
 15514 37th Street SE
 Casselton, ND 58012 USA
 Ph: 800-373-5441
 Fax: 701-347-4323

Warranty Registration Form

Please complete and return to Loeering to validate warranty.

Purchase Date:		Form Completion Date:	
Order #:			
Dealer Name:			
Contact Name:			
Address:			
City:		State:	Zip:
Phone Number:			
Fax Number:		Email Address:	
User Name:			
Contact Name:			
Address:			
City:		State:	Zip:
Phone Number:			
Fax Number:		Email Address:	
Part Number	Description	Serial Number	Model
Was there evidence of damage upon receipt?		Yes	No
If yes, explain:			
Tell us about the equipment you plan to use your new attachment on.			
Manufacturer:		Model:	Tire Size (tracks only):
* Hours of use on machine prior to installation of attachment: _____ Hours.			
* Hour information is very important to warranty resolution. Warranty may not be valid without completion of this section.			
Application description:			

