

**ESCO®**

# **Vertasys™ construction tooth system**

Installation and removal instructions



**WEHR**

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# Safety

## General safety information

The safety practices described in this manual are meant as guidelines for safe operation under most conditions and are meant to supplement any safety rules and/or laws that have been established at your worksite.

**⚠ WARNING:** Read this entire manual prior to conducting the maintenance and/or operational procedures described in this manual. Failure to follow these instructions could result in injury or death.

## Signal words

Throughout this manual are statements preceded by a special attention symbol: **⚠**. The symbol is used with the following signal words to attract your attention to information regarding safety issues.

**⚠ WARNING:** Indicates a hazardous situation which, if not avoided, could result in serious injury or death.

**⚠ CAUTION:** Indicates a hazardous situation which, if not avoided, could result in minor or moderate injury.

**⚠ NOTICE-DAMAGE ALERT:** Indicates information that should be acted upon to avoid significant equipment or machine damage that could result in unplanned downtime or maintenance.

Additional signal words that are not preceded by the attention symbol are:

**IMPORTANT:** Indicates information that possesses special significance to the maintenance and/or operational procedures.

**TIP:** Indicates information that may simplify the maintenance and/or operational procedures or make your job easier.

## Personal safety

**⚠ WARNING:** When performing the work described in these instructions, use all proper personal protection equipment to help avoid injury. Personal protection equipment that should always be worn when working on this equipment includes but is not limited to, hard hat, gloves, safety shoes, eye protection, hearing protection and fall protection that complies with regional, national and worksite requirements (e.g., OSHA, MSHA). To avoid injury to bystanders, inspect the immediate area around your worksite for personnel and keep everyone back at a safe distance while you complete your task.

## Additional safety procedures and important information

**⚠ WARNING:** Parts or components may inadvertently move or fall off during the procedures contained in this document. It is important to prevent parts from inadvertent movement or falling by fully securing all parts with an appropriately rated lifting device and rigging.

**⚠ WARNING:** **NEVER** stand under or have extremities (hands, arms, legs and feet) under a component that is being lifted or moved.

**⚠ WARNING:** **NEVER** use a hammer, sledge or similar tool to loosen, remove or install steel components. Striking hardened steel with a metal tool may result in dangerous flying metal shards.

**⚠ WARNING:** When positioning and assembling Vertasys™ tooth system components, keep hands, fingers and extremities clear of all pinch points between components

**⚠ NOTICE-DAMAGE ALERT:** All work instructions outlined in this document must be completed by qualified personnel to ensure the Vertasys™ tooth system performance is not compromised. If you have any questions or do not understand the information provided, stop all work and contact your ESCO representative.

**⚠ NOTICE-DAMAGE ALERT:** When working on the Vertasys™ tooth system, all welding or hot work must be performed in accordance with ESCO® Welding Procedures, literature number P6000GEN. For maintenance cycles, there may be a need to refer to ESCO® Supplemental Welding Procedures for Heavy Weld-on Adapters and Cast Corners, literature number P6002GEN.

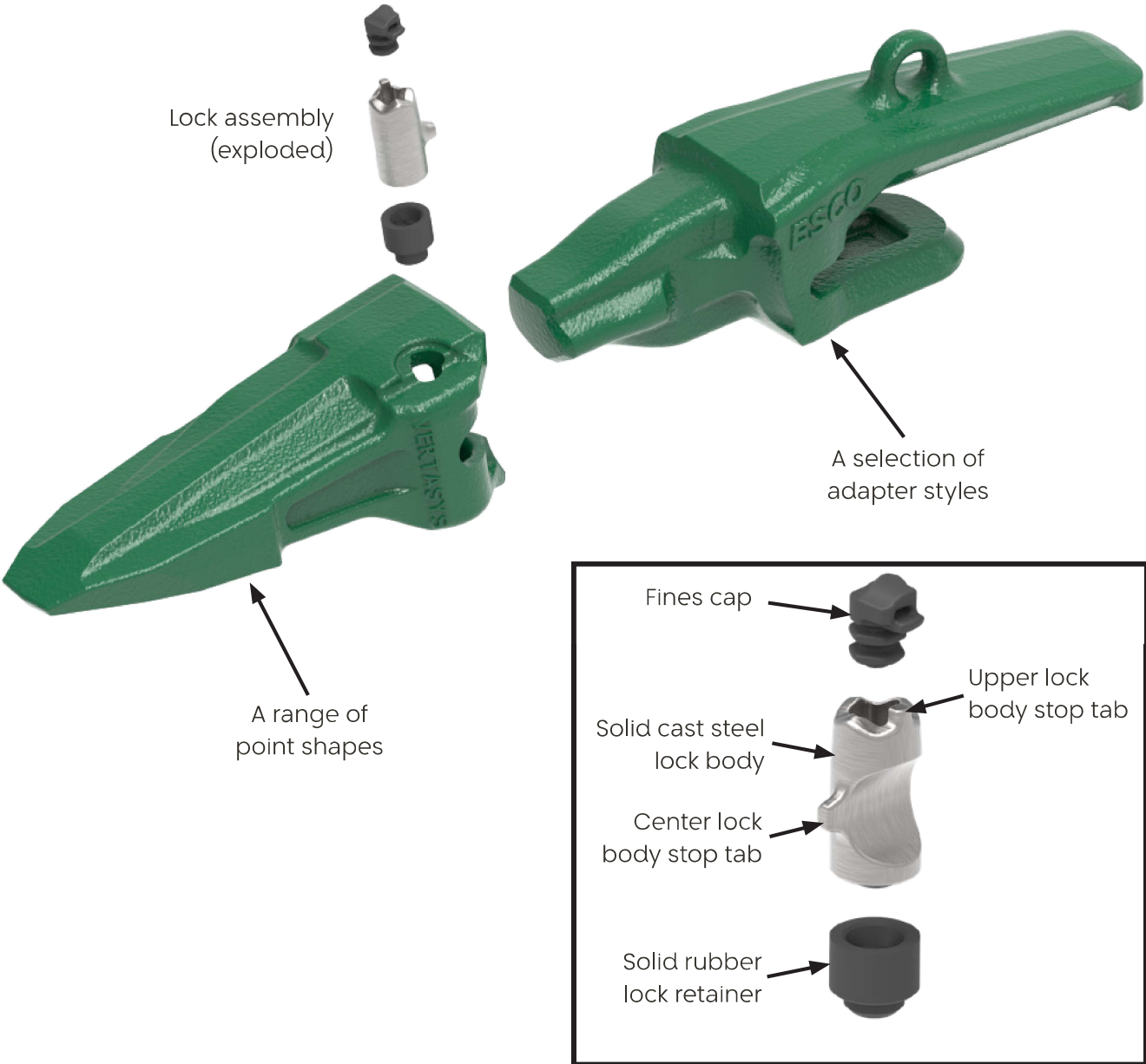
# Vertasys™ construction tooth system installation and removal instructions

## Introduction

The Vertasys™ tooth system was developed with extensive in-house and field testing to deliver unsurpassed performance in construction and aggregate applications. The innovative locking mechanism simplifies point installation and removal and provides exceptional point retention.

The Vertasys™ system consists of points with a unique vertical integrated lock and adapters to fit a range of machines and applications. Refer to the illustration below. If you need additional information or assistance, contact your ESCO representative.

**IMPORTANT:** The lock is integrated into the point but the illustration shows the lock externally for clarity.



Lock assembly components detail

## Point installation procedures

**⚠ WARNING:** Parts or components may inadvertently move or fall off during the procedures contained in this document. It is important to prevent parts from inadvertent movement or falling by fully securing all parts with an appropriately rated lifting device and rigging.

### Step 1

Prior to installing a point, be sure the adapter nose fit surfaces are cleaned of all impacted fines, dirt and other foreign material. If the adapters are used, inspect the nose fit surfaces for excess wear, peened surfaces, deformation or cracks. Refer to Figure 1.

Clean and inspect all  
nose fit surfaces



Figure 1

Adapter noses that have excess wear, peened surfaces or deformation should be repaired or replaced. If the adapter has any cracks it must be replaced prior to the machine going back into service to avoid unwanted downtime, part loss and damage to the bucket

**⚠ NOTICE-DAMAGE ALERT:** Failure to repair or replace damaged adapters may result in point or adapter breakage, point loss and unplanned machine downtime. Adapters with cracked noses must be replaced immediately to avoid part loss and bucket damage.

### Step 2

**IMPORTANT:** The integrated lock is shipped in the unlocked position with the concave feature of the lock body facing inward to line up with the rib on the side of the adapter nose. Verify the lock is in the unlocked position prior to installation in the event it was inadvertently moved.

Position the point in front of the nose with the integrated lock on the same side as the nose lock recess as shown in Figure 2a. Slide the point onto the nose until it is fully seated, Refer to Figure 2b.

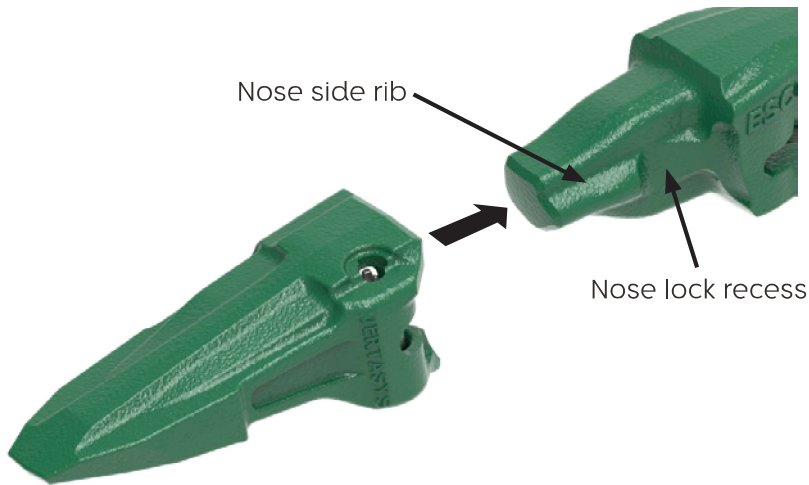


Figure 2a

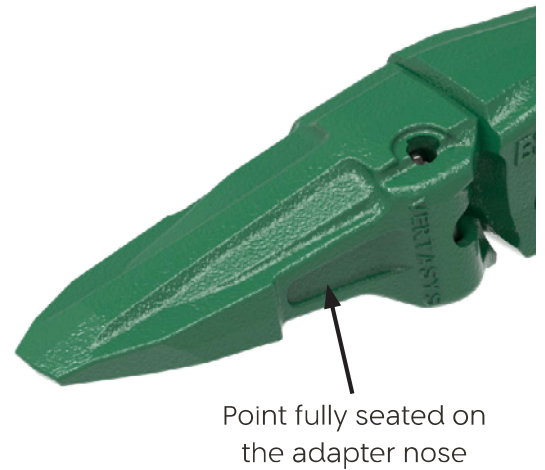


Figure 2b

### Step 3

Select the hex bit size from the chart below and using a ratchet, insert it into the top of the lock. Rotate it clockwise 90 degrees until it comes to a full stop. Refer to Figure 3a.

Vertasys™ Lock Size	Required Hex Bit Size	Minimum Hex Bit Length
VT30	10 mm	24 mm
VT35	12 mm	27 mm
VT40	12 mm	31 mm
VT45	17 mm	34 mm
VT55	19 mm	39 mm
VT60	19 mm	45 mm



Figure 3a

Visually check that the lock is fully seated by verifying the lock stop tab is in contact with the point side recess. There is also a small lock stop tab on the top of the lock that will make contact with the right-hand edge of the recess in the top hole of the point. Refer to Figure 3b. The point is not secured if the lock stop tab points to the rear of the point and the small lock top stop tab on the top of the lock contacts the left-hand edge of the recess. Refer to Figure 3c.

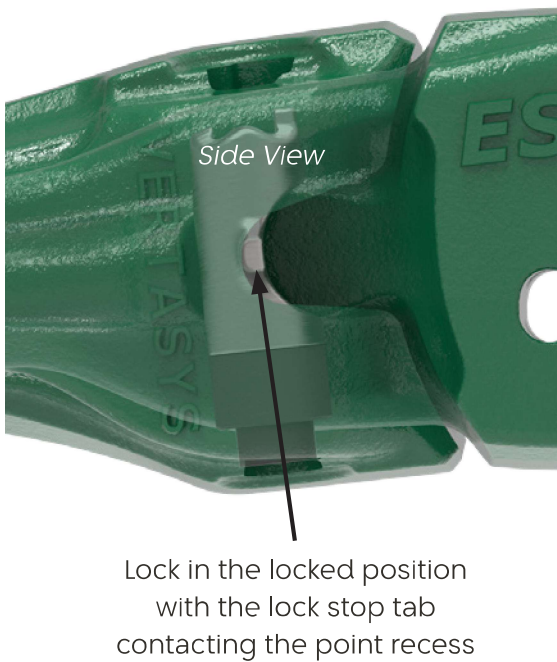
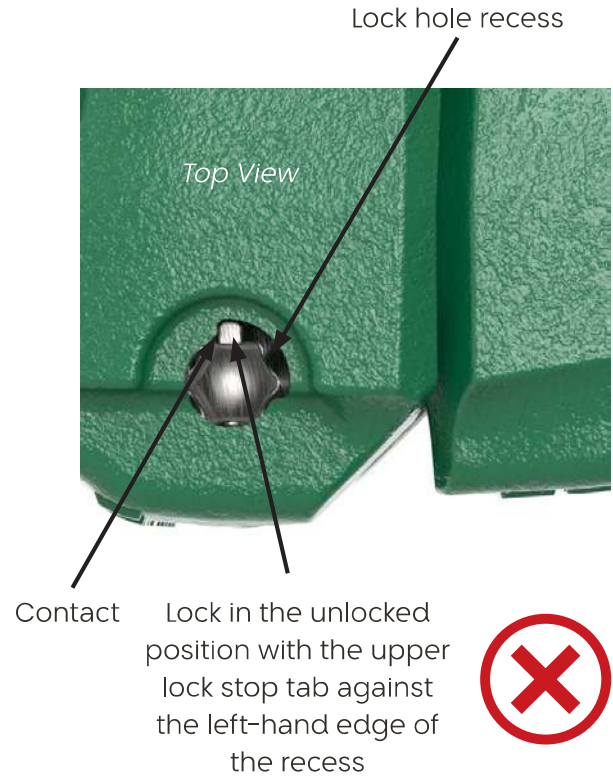
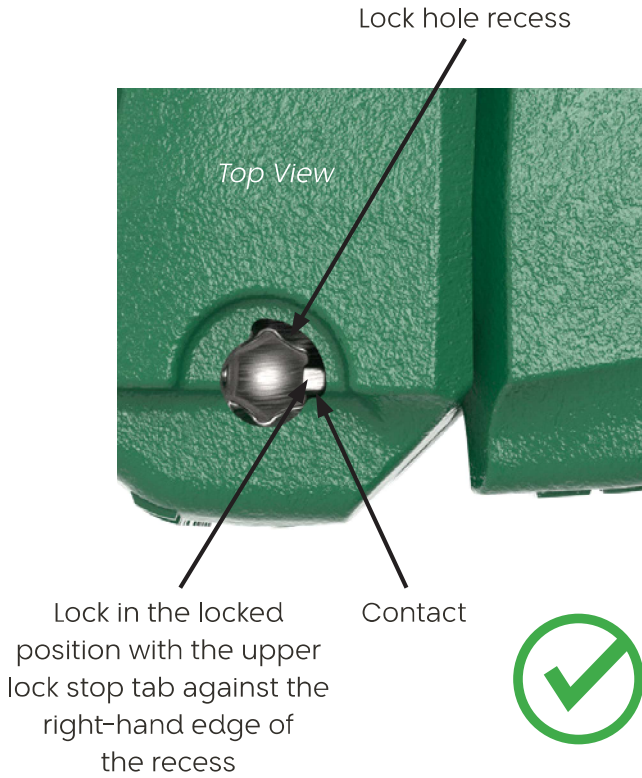


Figure 3b

Figure 3c

#### Step 4

Optional fines caps are available to keep dirt and debris from entering the top hex recess in the lock. The result is faster point removal by reducing the time needed to clean out impacted fines. Fines caps have an alignment tab on the side as shown in Figure 4a. The alignment tab fits into the recess in the top hole of the point as shown in red in Figure 4b. The fines cap tab will be to the left of the small lock stop tab on the top of the lock.

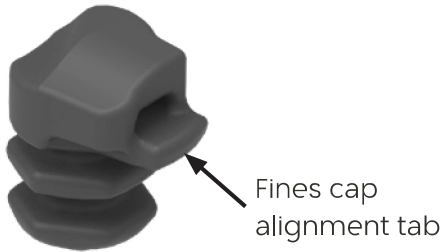


Figure 4a

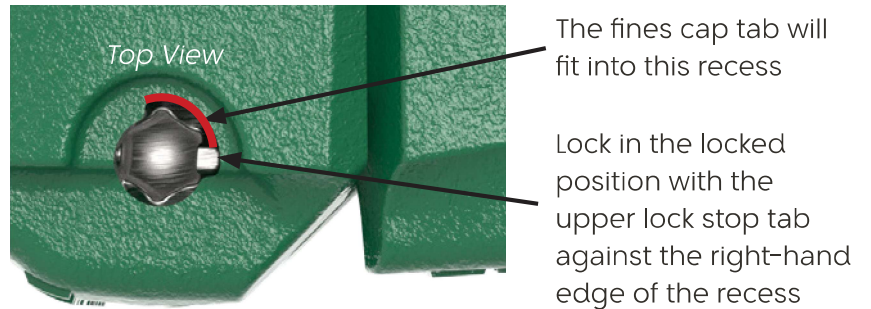


Figure 4b

Be sure the hex cavity in the top of the lock is free of material. Position the fines cap above the lock hex cavity with the alignment tab lined up with the recess shown in red in Figure 4b. Then push the fines cap down in the hex cavity until it is fully seated below the top surface of the point as shown in Figure 4c.

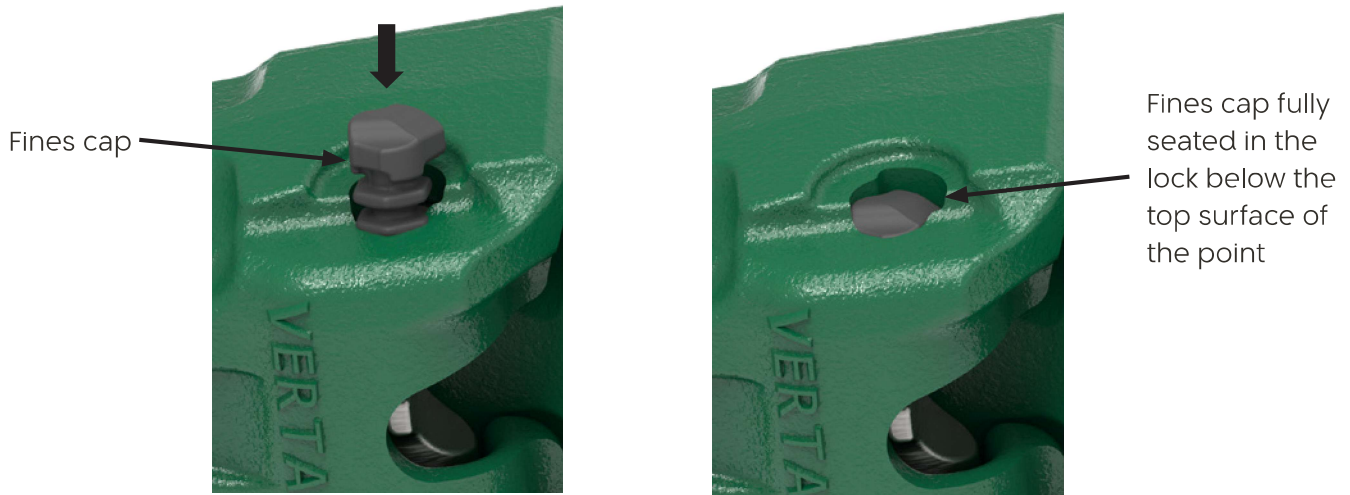


Figure 4c

**IMPORTANT:** *Fines caps must be ordered separately.*

Once all the points are installed and locked in position, the machine may be put back into service. ESCO highly recommends installation of fines caps, especially in applications with heavy impacted fines to reduce the downtime needed when replacing points.

## Point removal procedures

**⚠ WARNING:** Parts or components may inadvertently move or fall off during the procedures contained in this document. It is important to prevent parts from inadvertent movement or falling by fully securing all parts with an appropriately rated lifting device and rigging.

### Step 1

If there is a fines cap, clean around it and pry it out as shown in Figure 1a. Then make sure the hex cavity in the top of the lock is free of impacted fines and dirt. If there is not a fines cap in place, remove any impacted fines from around the top of the lock and the hex cavity. Refer to Figure 1b.

**TIP:** To assist with removal, there is a slot in the side of the fines cap to insert a pry tool as shown in Figure 1c.

Pry out the  
fines cap

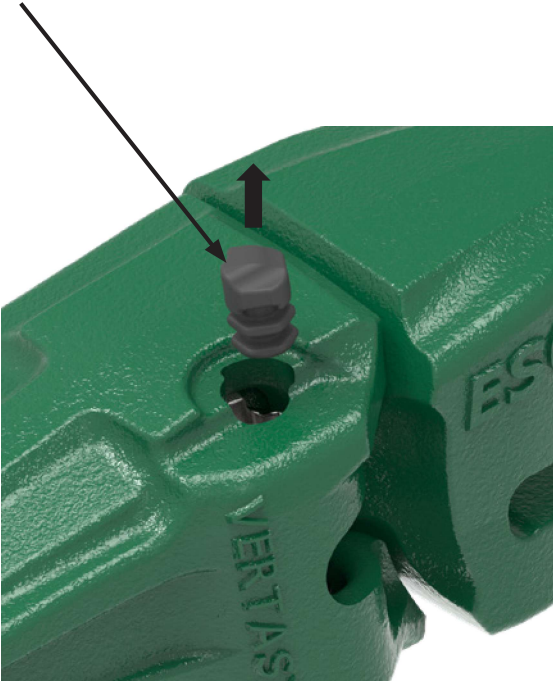
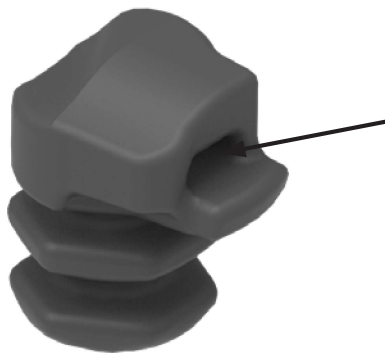


Figure 1a

Remove all impacted fines and dirt  
from around the top of the lock  
and hex cavity



Figure 1b



Slot for pry tool to be  
inserted to remove  
the fines cap

Figure 1c

**Step 2**

Select the hex bit size from the chart below and using a ratchet, insert it into the top of the lock. Rotate it counter-clockwise 90 degrees until it comes to a full stop. Refer to Figure 2.

Vertasys™ Lock Size	Required Hex Bit Size	Minimum Hex Bit Length
VT30	10 mm	24 mm
VT35	12 mm	27 mm
VT40	12 mm	31 mm
VT45	17 mm	34 mm
VT55	19 mm	39 mm
VT60	19 mm	45 mm



Figure 2

### Step 3

In some applications, impacted fines or other conditions may prevent immediate point removal. If the point is not easily removed, additional cleaning to remove impacted fines or other foreign materials can be helpful. Clean around the rear of the point and in the side lock area to remove as much material as possible and verify the lock is in the unlocked position. Refer to Figure 3a. If necessary, use a pry bar between the rear shoulder of the point and the adapter. Work both sides to help loosen the point. Refer to Figure 3b. DO NOT hammer on the hardened steel point.

**⚠ WARNING: NEVER use a hammer, sledge or similar tool to loosen, remove or loosen steel components. Striking hardened steel with a metal tool may result in dangerous flying metal shards.**



Figure 3a



Figure 3b

### Step 3

Once the point is loose, slide it off of the nose. Clean the adapter nose fit surfaces of all impacted fines, dirt and other foreign material. Inspect the nose fit surfaces for excess wear, peened surfaces, deformation or cracks. Refer to Figure 4.

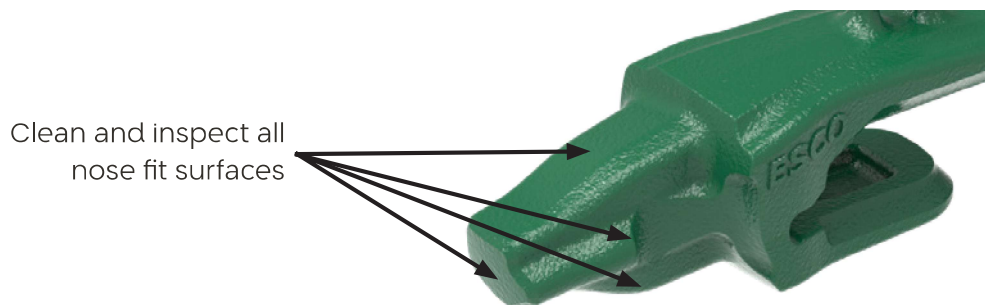


Figure 4

Adapter noses that have excess wear, peened surfaces or deformation should be repaired or replaced. If the adapter nose has any cracks it must be replaced prior to the machine going back into service to avoid unwanted downtime, part loss and damage to the bucket

**⚠ NOTICE-DAMAGE ALERT:** Failure to repair or replace damaged adapters may result in point or adapter breakage, point loss and unplanned machine downtime. Adapters with cracked noses must be replaced immediately to avoid part loss and bucket damage.

A world map in shades of blue with numerous small yellow dots scattered across the continents, representing global locations. The map is centered behind the company logo.

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