

S-Series Posilok[®]

Installation, Removal and Maintenance



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 may be in force in your area. Your safety and the safety of others results from putting into practice the correct operating procedures.

Read this entire manual prior to conducting the maintenance procedures described in this manual.

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 of special priority. Read the paragraphs carefully and make sure you understand their significance, especially the possible causes of injury or death.

▲WARNING: A statement preceded by "**WARNING**" is information that should be acted upon to prevent serious injury or death.

▲CAUTION: A statement preceded by "**CAUTION**" is information that should be acted upon to prevent machine or equipment damage.

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

IMPORTANT: A statement preceded by the word "**IMPORTANT**" is information that possesses special significance.

Tip: A statement preceded by "**Tip**" is information that is handy to know and may make your job easier.

Personal Safety

▲WARNING: When performing the work described in these instructions, always work safely and use proper safety equipment to help avoid injury. Always wear hard hat, gloves, safety shoes, eye protection, hearing protection and fall protection per regional, national and site requirements (e.g. OSHA, MSHA) when performing maintenance work. To avoid injury to others, keep bystanders well out of the way.



Table of Contents

Adapter Installation – S95 only	
Component Preparation	4
Install Pin	4
Install Adapter	4
Retighten Pin	5
Adapter Removal – S95 Only	
Adapter Installation – S110, S130 and S145	
Install Pin	6
Install Adapter	6
Retighten Pin	7
Adapter Removal with – S110, S130 and S145	
Retract Pin	7
Nose Rebuild – All Sizes	
Nose Fit	8
1. Nose End and Sides Rebuild	8
2. Nose Flats Rebuild	8
3. Rear Corner Rebuild	9
Lock Style Wear Cap Installation	
For use on Weld-on Bases	10
Lock Style Wear Cap Removal	
For Use on Weld-on Bases	11
Non-lock Style Wear Cap Installation	
For Use on Intermediate Adapters	11

IMPORTANT The recommended installation and removal tool is a socket drive with the appropriately-sized hex bit (refer to **Table 1**).

Do NOT use an air impact tool when installing the locking pins, as this may damage the pins, resulting in installation and removal problems.

An air impact tool may be used with caution during the *removal* process only.

System Size	Hex Bit
S95	14mm
S110	17mm
S130 & S145	19mm

Table 1

Adapter Installation with S95

Component Preparation

IMPORTANT: For S110, S130 or S145 sizes, go to pages 6 and 7.

Prior to installing the Posilok tooth system components:

- Thoroughly clean all bearing surfaces on the tooth base, adapter, and pin.
- Visually inspect top and bottom of tooth base for wear, refer to the nose rebuild section for acceptance standards.

Install S95 Pin

- For applications where soil fines pack and harden, it is recommended that the outer sleeve of the pin be covered in grease (see Pin Rebuild section).
- Place pin into adapter base.

Tip: Pin can be inserted from either side of base. Recommended corner positions should be installed from the inside.

- If pin is not fully retracted, use hex bit to turn head until pin body is flush with the end of the pin sleeve. **For S95PN pin only, retract by turning clockwise.**

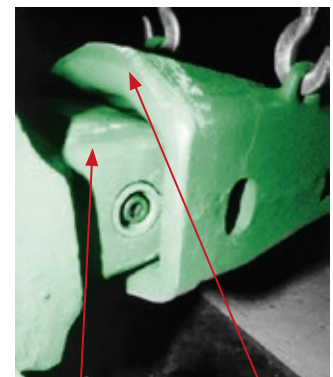


Install S95 Adapter

- Use appropriate lifting devices to position adapter onto tooth base until it solidly contacts end of base. For wear cap style, pre-assemble so that eye on tip can be utilized as shown.



Pre-assembled for easy lifting.

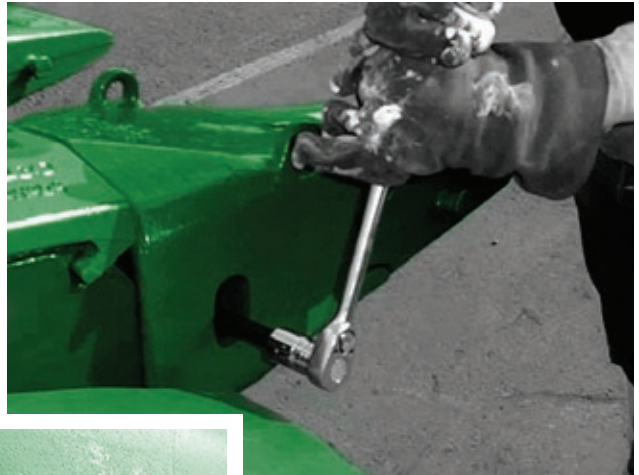


Adapter base

Posilok® base

Adapter Installation with S95 – Continued

- Using a 14 mm hex bit and a socket drive, **turn hex socket end of the S95RPN pin counterclockwise to extend the pin into the pin hole** in the opposite side of the adapter. Tighten to the recommended pin torque value indicated below.
- Insert the pin cap to prevent the pin hex socket from filling with soil fines. Cap should snap into place.



Retighten S95 Pin

Retighten the pin every 600 to 1200 hours of operating service depending on the severity of application.

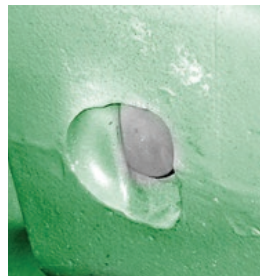
Recommended Pin Torque

(To assure adapter is fully installed).

Size S95: 120-150 ft-lb (160-200 nm).



Retracted



Extended

Adapter Removal for S95

Clean debris from adapter pin head slot and remove cap from pin head.

- **Retract Pin** – Insert 14 mm hex bit into the head of the S95 pin and **turn clockwise until the pin body is fully retracted**. Do not continue to turn after 'stop' is felt. The Sidewinder® pin is designed for operation with a ratchet wrench and should not normally require use of an air-impact wrench.

IMPORTANT: The Sidewinder pin is not usually removed from the nose hole during an adapter change-out. Remove only when there appears to be damage or the pin is due for maintenance.

- **Remove Adapter** – Use appropriate lifting devices to support and remove adapter. If soil fines resist adapter removal, use a pry bar between the back sides of the adapter and the side shoulders of the nose.

IMPORTANT: Remove worn out adapters directly after taking the bucket out of service, before soil fines harden in place.

▲WARNING: When performing the work described in these instructions, always work safely and use proper safety equipment to help avoid injury. Always wear hard hat, gloves, safety shoes, eye protection, hearing protection and fall protection per regional, national and site requirements (e.g., OSHA, MSHA) when performing maintenance work. To avoid injury to others, keep bystanders well out of the way.

Adapter Installation with S110, S130 and S145

Prior to installing the Posilok[®] tooth system components:

- Thoroughly clean all bearing surfaces on the tooth base, adapter, and pin.
- Visually inspect top and bottom of tooth base for wear, refer to the nose rebuild section for acceptance standards.

Install Pin

- For applications where soil fines pack and harden, it is recommended that the outer sleeve of the pin be covered in grease (see Pin Rebuild section).
- Place pin into adapter base.

IMPORTANT: For S110, S130, and S145 sizes, the end with hex socket must be inserted first.

Tip: Pin can be inserted from either side of base. Recommended corner positions should be installed from the inside.

- **If pin is not fully retracted, use hex bit to turn head until pin body is flush with the end of the pin sleeve. Retract pin by turning counterclockwise.**

Hex bit size: 17 mm for S110, 19 mm for S130 and S145.

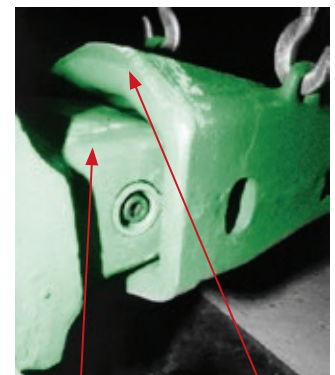


Install Adapter

- Use appropriate lifting devices to position adapter onto tooth base until it solidly contacts end of base. For wear cap style, pre-assemble so that eye on tip can be utilized as shown.



Pre-assembled for easy lifting.



Adapter base

Posilok[®] base

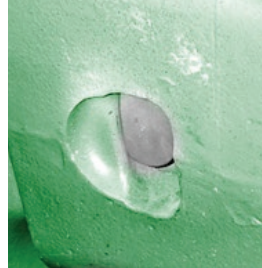
Adapter Installation with S110, S130 and S145 – Continued

Install Adapter

- **Using hex bit and socket drive, turn hex socket end of pin clockwise to extend the pin into the pin hole in the opposite side of the adapter.** Tighten to the specified torque value shown below.
- Insert the pin cap to prevent the pin hex socket from filling with soil fines. Cap should snap into place.



Retracted



Extended

Retighten Pin

Retighten the pin every 600 to 1200 hours of operating service depending on the severity of application.

Recommended Pin Torque (To assure adapter is fully installed).

Size S110: 150-190 ft-lb (200-260 nm) Sizes S130 and S145: 90-290 ft-lb (260-390 nm).

Adapter Removal with S110, S130 and S145

Clean debris from adapter pin head slot and remove cap from pin head.

- **Retract Pin – Insert Allen hex bit into the head of pin and turn counterclockwise until the pin body is fully retracted.** Do not continue to turn after 'stop' is felt. The Sidewinder® pin is designed for operation with a ratchet wrench and should not normally require use of an air-impact wrench.

IMPORTANT: The Sidewinder pin is not usually removed from the nose hole during an adapter change-out. Remove only when there appears to be damage.

- **Remove Adapter –** Use appropriate lifting devices to support and remove adapter. If soil fines resist adapter removal, use a pry bar between the back sides of the adapter and the side shoulders of the nose.

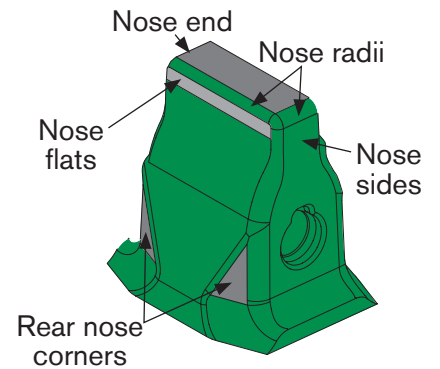
IMPORTANT: Remove worn out adapters directly after taking the bucket out of service, before soil fines harden in place.

▲WARNING: When performing the work described in these instructions, always work safely and use proper safety equipment to help avoid injury. Always wear hard hat, gloves, safety shoes, eye protection, hearing protection and fall protection per regional, national and site requirements (e.g., OSHA, MSHA) when performing maintenance work. To avoid injury to others, keep bystanders well out of the way.

Nose Rebuild – All Sizes

Nose Fit: The S-Series Posilok® tooth system is designed to operate with movement of the adapter on the nose. However, movement may become excessive over long term service because of nose wear. In this event, the nose can be rebuilt in the indicated areas with welding and grinding.

IMPORTANT: Perform Step 1 using the nose side template, Step 2 using the nose flats template, and step 3 using the 3D nose template.

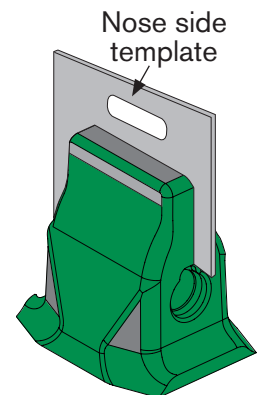


1. Nose End and Sides Rebuild

- Place the ESCO nose side template on the centerline of nose. Weld rebuild nose end surface and grind flat until gage ends align with front edge of pin hole.

Note: Refer to ESCO Weld Procedures P6000GEN. Weld stringer beads should run parallel to the nose width.

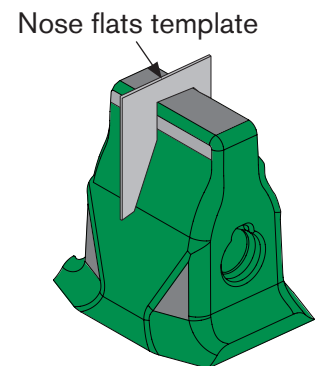
- Rebuild nose end radii as necessary.



2. Nose Flats Rebuild

- Place the ESCO nose flats template over the nose as shown. Weld buildup nose flats and radii, and grind flat until template contacts nose end.

CAUTION: Weld beads must be oriented parallel to the nose end.



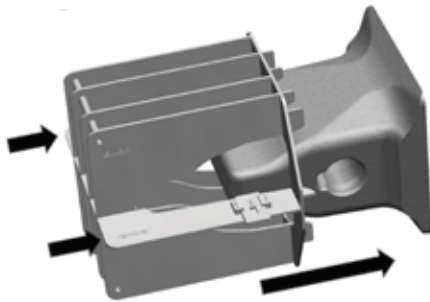
Nose Rebuild Continued

3. Rear Corner Rebuild

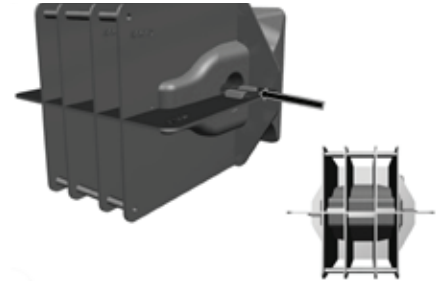
- Place the 3D nose template on the nose.
- Recheck the nose end, sides, and flats to ensure these areas do not need further build-up or grinding.
- Weld build-up rear corners of nose and grind flat until the 3D nose template makes contact on the nose end, the bayonets are aligned with the front of the keyslot, and the 3D template has little or no movement.
- Grind the rear nose corner weld smoothly into the rear shoulders.

Nose Size	Nose Side Template	Nose Flats Template	3D Nose Template
S95	WRT S95ST	WRT S95CT	WRT-S95-3D
S110	WRT S110ST	WRT S110CT	WRT-S110-3D
S130	WRT S130STA	WRT S130CTA	WRT-S130-3D
S145	WRT S145ST	WRT S145CT	WRT-S145-3D

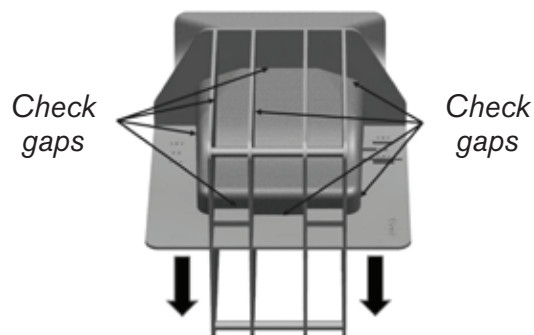
1. Slide gauge onto nose



2. Insert bayonets into pin cavity

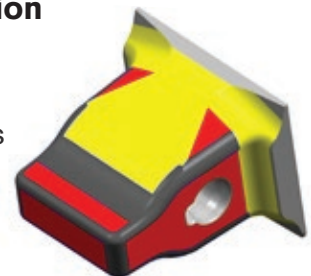


3. Pull gauge forward



4. Weldment fit instruction

- Primary fit areas
- Secondary fit areas
- Blend well



⚠ WARNING: When performing the work described in these instructions, always work safely and use proper safety equipment to help avoid injury. Always wear hard hat, gloves, safety shoes, eye protection, hearing protection and fall protection per regional, national and site requirements (e.g., OSHA, MSHA) when performing maintenance work. To avoid injury to others, keep bystanders well out of the way.

Lock Style Wear Cap Installation

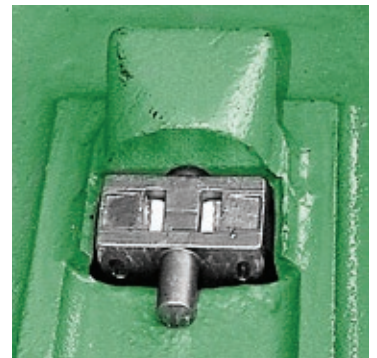
For Use on Weld-on Bases

Wear cap tabs, adapter tab slots, and lock recesses must be thoroughly cleaned. Inspect all components for damage. Replace any damaged parts.

- **Position Wear cap Lock** – First place the lock flat side down against the inside of the wear cap, adjacent to the lock opening. Slide it toward the wear cap lug. One of the lock shafts will enter the hole in the lug. Push the lock up tight against the lug. Then, using a drift placed in one of the lock pockets, tap the drift with a hammer to cause the lock to rotate halfway around, until the flat side of the lock is facing you and is lined up with the inside face of the wear cap.

IMPORTANT: Lock can rotate either way.

- **Wear cap Installation** – Place the wear cap on the adapter. The tabs on the inside of the wear cap fit into the tab slots in the adapter.
- **Lock Wear cap** – Use an ESCO lock removal tool (37V/57V) and hammer to rotate the lock to the locked position. If lock resists rotation, this indicates more cleaning of the adapter slots is required. When flat is facing out, the lock is in a locked position.



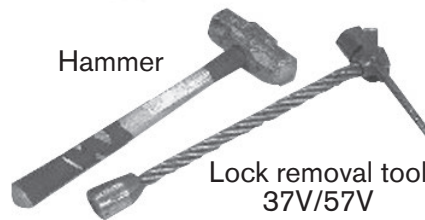
Rotate lock



Locked

Recommended Tools

Hammer



Lock removal tool
37V/57V

Lock Style Wear Cap Removal

For Use on Weld-on Bases

Clean debris from the gaps around the wear cap lock.

▲WARNING: Do not strike corners or edges with hammer.

- **Rotate Lock** – Use a drift and a 4-8 lb (2-4 kg) hammer to rotate the lock to the unlocked position. Use ESCO lock removal tool for safe and effective removal. It may be necessary to partially rotate the lock in both directions to break loose soil fines, before fully rotating it.

IMPORTANT: Lock must be rotated completely (180°) to release the wear cap.

- **Remove Wear cap** – Slide wear cap out of adapter slots. Use appropriate lifting devices to support and remove wear cap. It may be necessary to place a pry bar between the adapter and the rear inside face of the wear cap to lift and free it from soil fines.

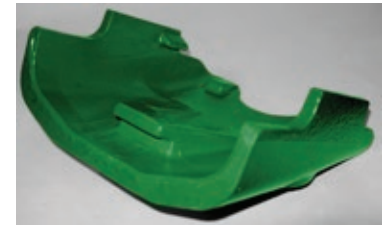


Non-lock Style Wear Cap Installation

For Use on Intermediate Adapters

Inspect all components for damage. Replace any damaged parts.

- Slide wear caps onto the adapter top and bottom surfaces, so that the wear cap rear central and two forward side tabs insert fully into the respective slots of the adapter.
- Install and pin the point.



Non-lock Style Wear cap Removal

- Drive out the point pin and remove the point.
- Slide the worn wear cap off the adapter.

IMPORTANT: If soil packs tightly between the wear cap and the adapter, it may be necessary to strike the flat sides of the wear cap several times with a dead blow hammer, to loosen it for removal.

▲WARNING: Do not strike corners or edges with hammer.



Front view new style of wear cap



Back view of wear cap

▲WARNING: When performing the work described in these instructions, always work safely and use proper safety equipment to help avoid injury. Always wear hard hat, gloves, safety shoes, eye protection, hearing protection and fall protection per regional, national and site requirements (e.g., OSHA, MSHA) when performing maintenance work. To avoid injury to others, keep bystanders well out of the way.



escocorp.com