

223-1200280-MAN

7T WLL Safe-T Lift® Jaw Liner Installation and Removal Manual



| Revision | Description | Prepared By | Reviewed By | Approved By | Approval Date |
|----------|----------------------------|-------------|-------------------|-------------------|---------------|
| 1 | Rebranding Amendments | R.Masser | F.van der Heijden | F.van der Heijden | 28/04/2016 |
| 0 | Issued for Use as Template | R.Masser | S.Arva | F.van der Heijden | 17/11/2015 |

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1.0 Purpose

The H-E Parts International Crushing Solutions (HEPICS) Safe-T Lift® assembly is designed for use with HEPICS jaw liners, cast with purpose-built lifting holes.

Safe-T Lift® assemblies are only suitable for use with HEPICS jaw liners that contain the correct lifting holes. If in doubt, contact HEPICS for clarification.

This manual is relevant to **7T WLL** HEPICS Safe-T Lift® assemblies however several sizes exist to accommodate different load ratings. The user should always ensure that the load rating for the assembly being used is suitable for the jaw liner being lifted.

2.0 Load Ratings and Certification

Regulatory requirements specify that all lifting gear must be tested and certified at a minimum of every twelve months.

The **3.5T WLL** load rating for each Safe-T Lift® hook is stamped on the item and the **7T WLL** load rating for the Safe-T Lift® assembly is stamped on the spreader beam. Validity of the test certification should be monitored by relevant site safety personnel and the items re-tested as required.

HEPICS is able to arrange re-certification on lifting assemblies by returning them to HEPICS when required, otherwise the responsibility lies with the customer/client only.

3.0 Storage

The assembly should be stored in a dry location and off the ground to prevent damage. A purpose-built rack that allows the assembly to hang from the centre lifting hole is recommended for this purpose.

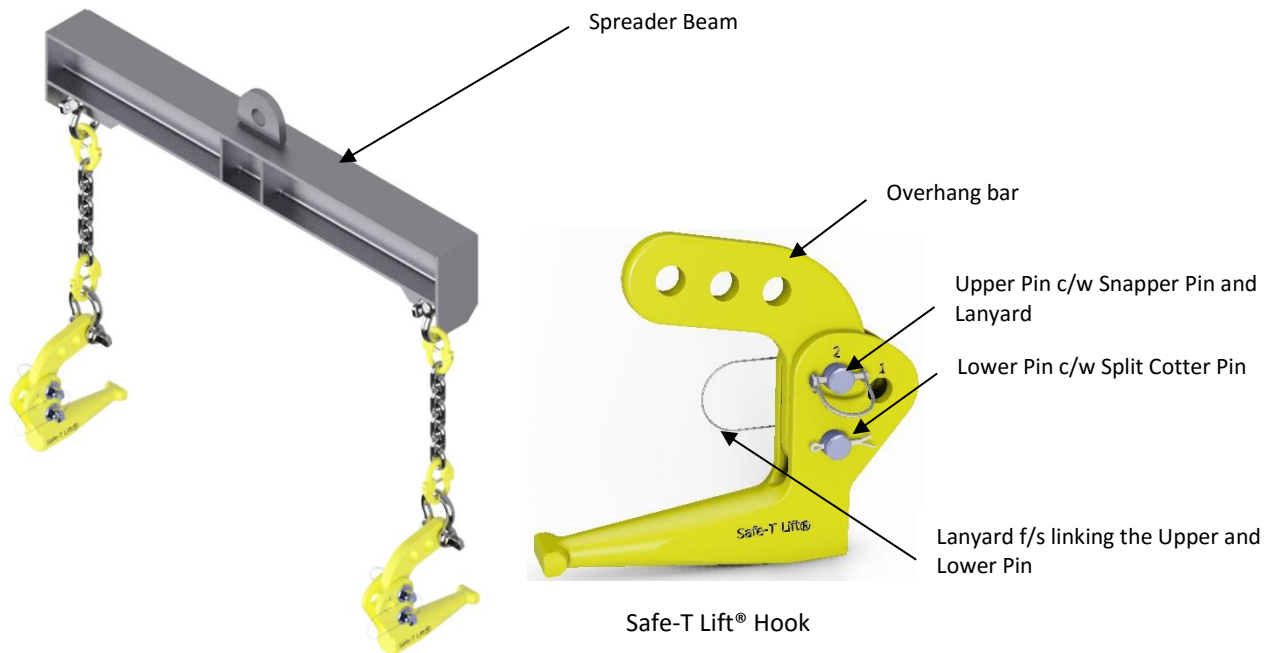
4.0 Job Safety Analysis (JSA) and Regulatory Requirements

Before commencing any work, a Job Safety Analysis should be performed that complies with regulatory and site requirements along with the completion of the Safe-T Lift® Check Sheet which is provided in Section 13.0 of this document.

As site conditions vary, the instructions outlined in this document should be used as guidelines only and should not take precedence to any job specific conditions identified in the JSA.

This manual details the specific use of the Safe-T Lift® assembly only. It is assumed that the user has read and understood this Installation and Removal Manual and is suitably trained and qualified in standard lifting practices and regulatory requirements governing these.

5.0 Description of Components



6.0 Pre-use Inspection

Before using the assembly, please ensure the Check Sheet (refer Section 13.0) has been completed. Before every lift, the following checks should be performed as a minimum, however further checks may be required to comply with site or regulatory requirements:

- Check that the configuration of the assembly is correct.
- Inspect all components for visible signs of wear, damage or overload. Chains and off-the-shelf lifting components such as hammerlocks should be checked in accordance with standard inspection practices.
- Inspect the Safe-T Lift® hooks for visible signs of damage. In particular, check for damage around the 'T' section of the Safe-T Lift®.

If any deficiencies are identified with the Safe-T Lift® or chain assemblies, the lifting device must not be used until the issues are rectified and the repaired assembly load tested to applicable regulatory requirements.

7.0 Spreader Beam

Safe-T Lift® assemblies are manufactured to suit specific jaw liners in operation at a particular site with each spreader beam designed to include two sets of holes on the lower side. Generally, the outer holes on the beam are for the fixed jaw liners and the inner holes are for the swing jaw liners, as identified in Section 5.0 .

8.0 Installing Jaw Liners

Before installing the new liners, ensure the crusher cavity is clear, existing liners are removed and that all relevant seating surfaces are cleaned.

New jaw liners are lifted into the crusher by using the **7T WLL** lifting assembly as follows:

1. With the jaw liner teeth facing upwards and the liner lying flat on the ground, remove the locking pin and pull the overhang bar backwards. Insert the Safe-T Lift® hooks into the lifting hole at 90 degrees to the liner teeth as shown below:



Note: Photo displayed are for illustration purposes only.

2. Turn the Safe-T Lift® 90 degrees so that the end of the Safe-T Lift® faces the outer end of the jaw liner, and re-insert the locking pin as shown below.

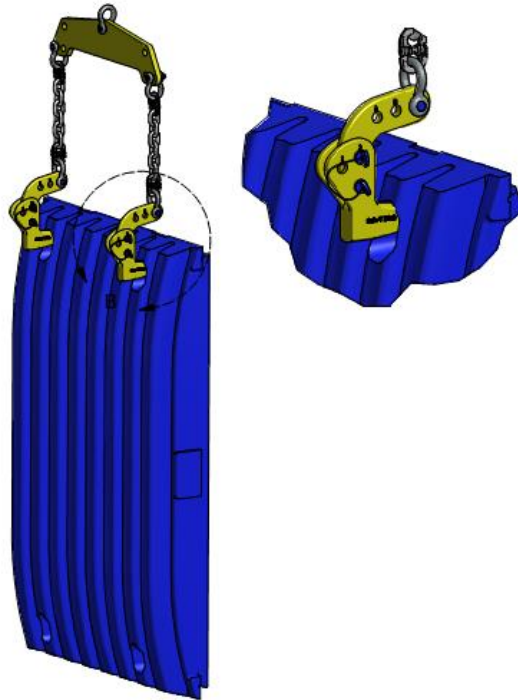


These holes allow the jaw liner to hang at different angles to facilitate liner installation. Typically, the front hole will allow the jaw liner to hang vertically.

Note: Photo displayed are for illustration purposes only.

3. Insert the second hook on the other side of the jaw liner in a similar manner.
4. Ensure that all chains and lifting components are not twisted and are suitable for lifting, and that the spreader beam is attached to a suitably rated lifting hook and crane.
5. Allow the crane to take up the slack in the chains before lifting the jaw liner off the ground.
6. Ensure that the Safe-T Lift® hooks are still parallel with the liner teeth during the lifting operation.

Note: The jaw liner should hang vertically (or at the jaw face angle) as shown below. If the angle is not correct, the jaw liner should be lowered to the ground, and the angle changed by using a different combination of holes on the Safe-T Lift® arrangement.



7. Lift the jaw liner into the crusher, complying with all applicable regulatory requirements for lifting.
8. Locate the jaw liner onto the seating wedge(s) of the crusher whilst ensuring that the jaw liner seating surface is in full contact with the lower wedge as per the OEM instructions for installing jaw liners.

*Note: **Do not** enter the crushing chamber prior to Step 9 being completed.*

9. Install a platform into the crushing chamber to hold the jaw liners against the jaw faces and to act as a work platform (if required).
10. Install the jaw bolts and jaw wedges as per the OEM's recommended procedure.
11. On larger machines, such as C160 and C200 one-piece jaws, the middle wedge has been replaced with a kidney nut assembly. Refer to Section 11.0 below for details of fitting the kidney nut assembly.
12. When the jaw liner is securely in place, the Safe-T Lift® hooks may be removed by reversing the procedure as outlined in steps 1-3 in a similar manner.
13. Insert rags or foam rubber into the lifting holes to reduce the risk of ore filling these holes. Blocked lifting holes are a safety concern and increases difficulty when reinstalling Safe-T Lift® hooks during the removal process of jaw liners.

9.0 Removing Jaw Liners

Removing jaw liners can be done by reversing the installation procedure (see Section 8.0), with a few additional checks required:

1. Install a safe work platform into the crushing chamber.
2. Before removing jaw bolts or wedges, clean any ore from between the jaw liner and crusher wall or cheek plates that may prevent the liner from being lifted out easily.

Note: Safe-T Lift® assemblies are not designed to assist with the removal of jammed liners and should not be used in such operations.

3. Remove the rags or foam from the lifting holes and clean thoroughly.
4. Check the lifting holes for damage and ensure that there is sufficient material remaining in the jaw liner to allow a safe lift.

Note: All HEPICS jaw liners are designed with a minimum thickness of 40mm from the bottom of the liner teeth to the recess of the lifting hole. If the tooth profile is still visible adjacent to the lifting hole, sufficient material is available to safely perform the lift. If the tooth profile is not visible, an Engineering evaluation should be performed to ensure that the lift can be done safely.

5. The jaw liner should be checked for damage to ensure that no cracking is present.
6. Inspect the Safe-T Lift® assembly as described in Section 6.0 .
7. Remove the jaw bolts and/or wedges as per the OEM recommendations.
8. Install the Safe-T Lift® hooks into the lifting holes as described in Section 8.0 .
9. Allow the crane to take up the slack in the chain whilst ensuring that the jaw liners are not jammed and that the chains are vertical before the lift.

Note: Safe-T Lift® assemblies are designed for the chains to be in the vertical orientation only.

10. Remove the platform from the crushing chamber and lift the jaw liner from the crusher.
11. When laying the jaw liner onto the ground, care should be taken to ensure that the Safe-T Lift® spreader beam remains above the top end of the jaw to prevent the hooks from turning.

10.0 Removing Jaw Liners where Lifting Holes are not suitable

The Safe-T Lift® assembly is only suitable for use with HEPICS jaw liners that have been manufactured with lifting holes to suit the Safe-T Lift® hooks. If the lifting holes (or lifting assembly) are not suitable for use, an alternative lifting arrangement must be used. Where site requirements allow, the jaw liners may be removed by welding suitably rated lifting lugs to the jaw liner. For HEPICS jaw liners, contact HEPICS for details of consumables to be used and required welding practices before proceeding.

11.0 Fitting Kidney Nut Assemblies

Kidney nut assemblies are used on some larger one-piece jaws, such as C160 and C200 as they provide improved safety against the jaw liners coming loose.

Note: The kidney nuts are fitted ONLY after the wedge is in place and secure, ensuring the liner is seated correctly.

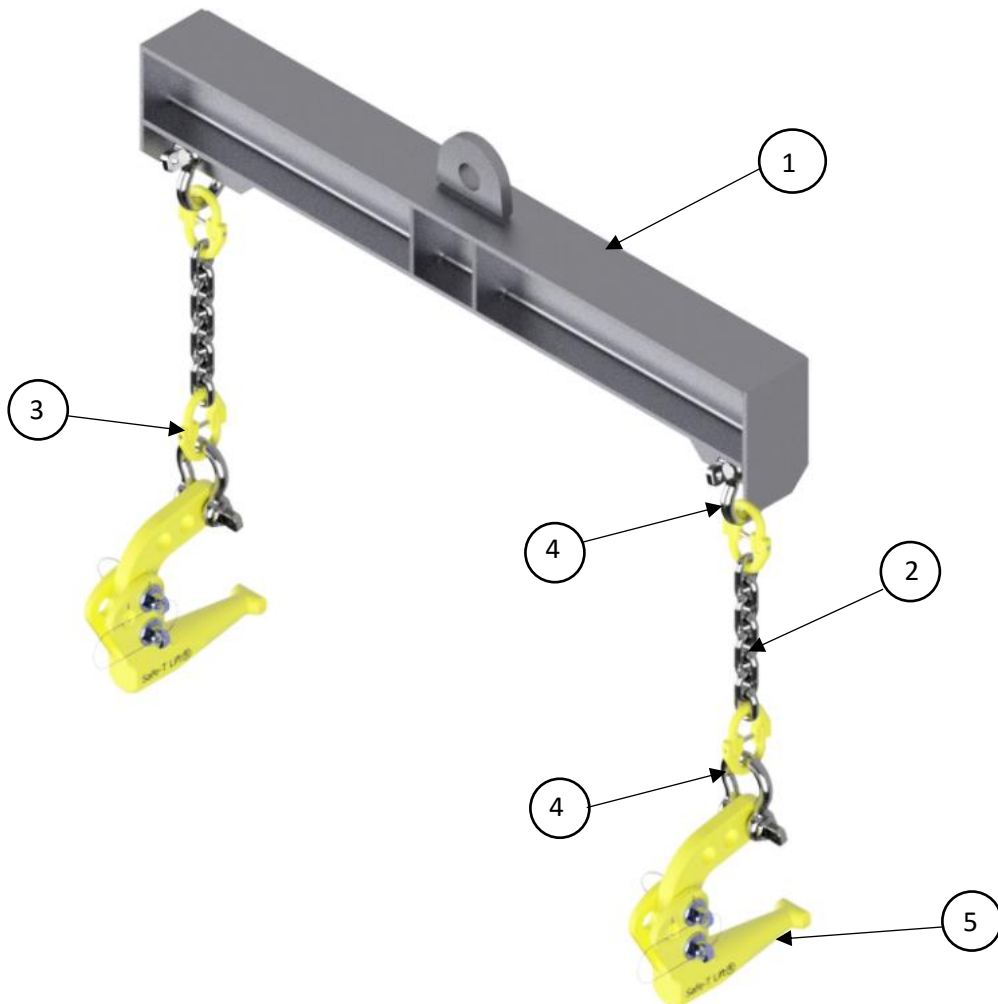
1. Insert the kidney nut into the hole from the front face of the jaw liner.
2. Insert the bolt from outside the crusher and screw into the kidney nut. Tighten using the hex end on the bolt.
3. Fit the locking nut(s) and flog tight.

Note: The instructions above are for general guidance only. Always follow the OEM recommendations for fitting kidney nut assemblies.

12.0 Parts List

For ordering purposes, a parts list and **7T WLL** lifting assembly is shown below:

| ITEM | PART NUMBER | DESCRIPTION | MASS | QTY |
|------|-----------------|------------------------------|---------|-----|
| 1 | 223-1200290-001 | C160 SPREADER BEAM | 69.6 kg | 1 |
| 2 | 591-5500220-000 | LIFTING CHAIN GRADE T | 1.9 kg | 2 |
| 3 | 591-5500230-000 | HAMMERLOCK | 0.9 kg | 4 |
| 4 | 591-5500260-000 | BOW SHACKLE GRADE 'S' | 2.4 kg | 4 |
| 5 | 100-1003600-000 | 3.5T WLL Safe-T LIFT® | 20 kg | 2 |



13.0 Check Sheet

| | Yes | No | N/A |
|---|--------------------------|--------------------------|--------------------------|
| 1 Ensure installation and removal manual has been reviewed | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 2 Check compliance of Safe-T Lift® assembly including the load rating | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 3 Ensure Safe-T Lift® assembly has been stored correctly | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 4 Has a JHA/JSA been completed for the task that is about to be undertaken | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 5 Carry out pre-use inspection: | | | |
| a) Ensure the load rating of Safe-T Lift® assembly is greater than the weight of the liners to be lifted | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| b) Check load test certification of the Safe-T Lift® assembly | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| c) Visually inspect 'T' Section of Safe-T Lift® for signs of wear, damage or overload | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| d) Visually inspect remaining components for signs of wear, damage or overload | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| e) Ensure all pins are in the correct locations as per Section 5.0 | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| f) Ensure pivot pins are fitted with suitable locking pins | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| g) Ensure locking pins are in good working order | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| h) Ensure lanyard is used to link both pins as described in Section 5.0 | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| i) Any other defects/damage or wear detected | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 6 Check Safe-T Lift® assembly is rigged correctly to suit desired lift | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 7 Ensure all relevant personnel understands the correct installation and removal methodology as outlined in this manual | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |

Comments:

| | | | |
|-------|-------------|-------|-------|
| Site: | Print name: | Sign: | Date: |
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