



Safety Clamps, Inc.

“Big Bite” Lifting Clamps

Operation, Maintenance, and Repair Manual

HL-Lock Model Clamp

Warning

Prior to operating your Safety Clamp, please ensure that All operators read and understand this manual.

Effective May 1, 2000

This manual supersedes all previous HL-Lock manuals.

Serial #'s _____
(Pair) _____
Model _____
Max. Rated Capacity
in Tons per Pair _____
Jaw Opening _____

Safety Clamps, Inc.

Repair Service Center

- ◆ Call 1-800-456-2809 for a Return Authorization Number.
- ◆ You will receive a written quote the same day we receive your Safety Clamp.
- ◆ Your Safety Clamp will be repaired, tested, recertified, painted, and shipped within 24 hours of authorization.
- ◆ We also perform quarterly, semiannual, and annual inspections and recertifications.
- ◆ It's that easy!

Call 1-800-456-2809 for more details!

Safety Clamps, Inc. HL-Lock Model

GENERAL INFORMATION

1. Always choose the proper clamp and rated capacity for the material to be lifted.
2. The “HL-Lock” model clamp is designed for horizontal lifting, and transferring of steel plate or bundles of steel plate.
3. The “HL-Lock” model clamps are used in pairs, sets of pairs, or in a tripod configuration (Fig. 1).
4. The rated capacity applies to one pair of lifting clamps with a top sling angle of up to sixty degrees (60°). As the top angle increases, the rated capacity of the clamps decreases proportionally (Fig. 3).
5. Make sure that the load to be lifted is properly balanced.
6. Visual inspections should be conducted before and after each use. Monthly inspections should be conducted by disassembling the clamp and thoroughly checking each part as described in this manual.

WARNING

1. The “HL-Lock” model should not be used to handle material with temperatures below 0° F or above 225° F. These temperature restrictions apply to both the ambient temperature and the temperature of the material to be lifted.
2. Do not use the “HL-Lock” model for vertical movement of materials.

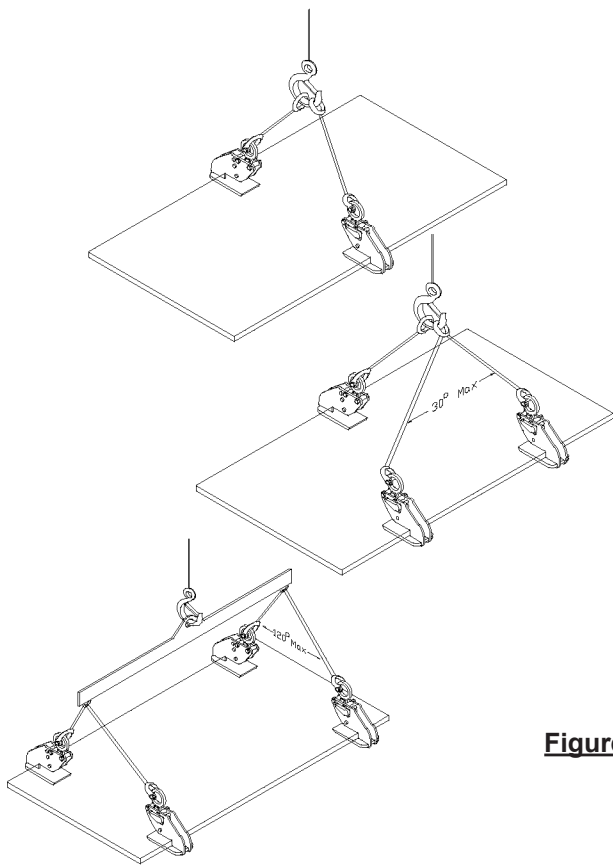


Figure 1

Safety Clamps, Inc. HL-Lock Model

3. Do not use clamps on materials with a hardness in excess of 420 Brinell. For materials with a hardness in excess of 420 Brinell, use the HL-Lock model with smooth gripping cams in stainless or bronze.
4. Do not lift plate with mill scale, grease, or any other coatings that may prevent gripping surface from making solid contact with plate.
5. Never lift or transfer material over or near people.
6. Never exceed ten degrees (10°) side loading (Fig. 2).
7. Never exceed a ninety degree (90°) angle between material and sling (Fig. 4).
8. Never lift material with the handle in the “open” position.
9. A spreader bar may be used with the slings perpendicular to the plate (Fig. 4).
10. Always use a sling to lift each clamp.
11. If a clamp has been overloaded or damaged in any way, take the clamp out of service until proper repairs and/or testing has been completed (see “Monthly Inspection” items 2 and 3 for description of overload symptoms).

BEFORE USE INSPECTION

1. All Safety Clamps should be inspected regularly for signs of wear and/or damage.
2. Be sure the clamp to be used is the proper clamp for the job. Check the rated capacity per pair (P.P.) and jaw opening stenciled on the clamp. Both should equal or exceed the requirements of the load to be lifted.

Safety Clamps, Inc. HL-Lock Model

3. Inspect gripping cams [SC-50 or SC-42, Fig. 1] for wear and/or damage. Make sure gripping surfaces are sharp and clean.
4. Inspect working parts and joints. Lubricate these regularly and make sure they move freely.
5. Inspect body, jaw opening, and lifting shackle for deformation, fractures, or any other damage.
6. Inspect lock spring (SC-61, Fig. 7) for tension. To do this, lock the clamp in the closed position and push in on the lifting shackle. There should be strong resistance to your pressure on the lifting shackle.
7. Make sure that all roll pins are securely in place.
8. Never use a clamp in need of repair.
9. If damage is identified or suspected, Safety Clamps, Inc. will inspect and repair your Safety Clamp for a nominal charge.

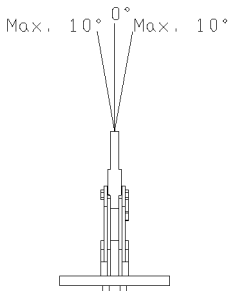


Figure 2: Never exceed ten degrees (10°) side loading with an “HL-Lock” model clamp.

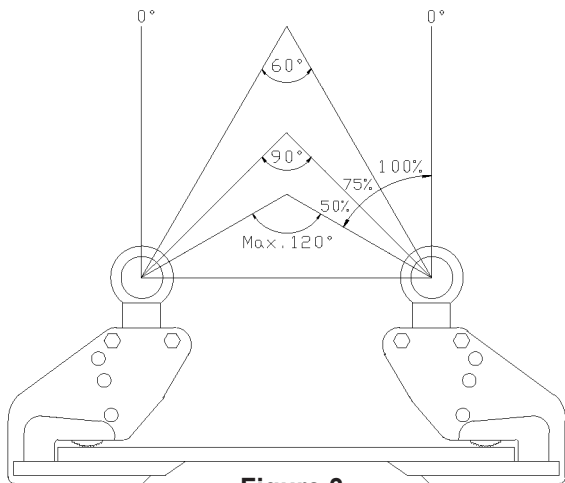


Figure 3

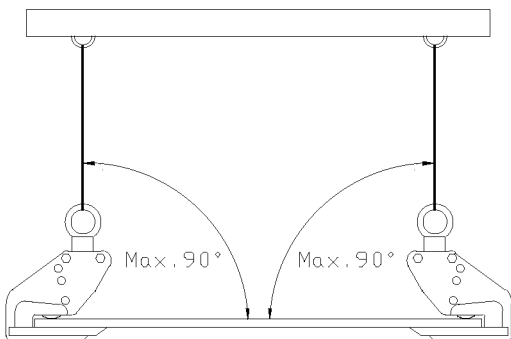


Figure 4

MONTHLY INSPECTION

Safety Clamps, Inc. recommends that all of its clamps be disassembled and thoroughly inspected at least once per month in accordance with the following procedures:

1. When disassembling a clamp, clearly label each part so that the clamp can be properly reassembled. Disassembly instructions are provided in the "Maintenance and Repair" section of this manual.
2. After disassembly, check for body deformation, fractures, and/or any other signs of damage in the body and/or parts. Check all drilled holes and shackle eye for roundness. Any elongation of holes, shackle eye, and/or a stretched jaw opening, is an indication that the clamp has been overloaded and should not be used.
3. Check pins and body bolts to ensure they are straight. Make sure they are not worn and/or damaged.
4. Inspect gripping cams [SC-50 or SC-42, Fig. 7] to make sure they are sharp and clean. Do not attempt to sharpen these. If gripping surfaces are worn and/or damaged, replace them with genuine Safety Clamps' parts.
5. All parts should be clean and free of dirt and debris.

WARNING

•Do not use any blasting or heating method to clean parts.

6. When replacing parts, use only genuine Safety Clamps' parts.

Safety Clamps, Inc. HL-Lock Model

7. After reassembling the clamp, ensure that all roll pins are in place, then lubricate all joints and make sure the clamp works freely and properly.

Remember, never use a clamp in need of repair. If in doubt about the condition of your clamp, Safety Clamps, Inc. will inspect and repair your Safety Clamp for a nominal charge.

HOW TO USE THE “HL-LOCK” MODEL CLAMP

1. Prior to use inspect the clamps in accordance with procedures provided under the section titled “Before Use Inspection” in this manual.
2. For the “**HL-Lock**” model Safety Clamp, open the jaw by releasing the locking handle down (A, Fig. 5), and pushing shackle (B) into the clamp and maintain this position manually until the clamp is placed onto the material.
3. Place the jaw of the lifting clamp around the material to be lifted. Make sure the clamps are positioned so the gripping surfaces are in full contact with the material and the clamps are square to the material.
4. Make sure the clamps are positioned so that the load is distributed equally and is balanced.
5. Secure the clamp in the “lock closed” position. Do this by raising the handle (A, Fig. 6) and pulling the shackle (B) away from the clamp. This will bring the gripping cams (C) down in the locked position against the material to be lifted.

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WARNING

- Never lift material with the handle in the “open” position.
 - Always use a sling to lift each clamp.
 - Never use an open-end hook to lift the clamp.
6. The clamps and material are now ready for transfer.
 7. Upon reaching the material's destination, lower the clamps and material to a secure position until the tension is relieved on the clamps.
 8. Repeat the process to open the clamps. This allows the user to remove the clamps from the material and use them again or store the clamps.

WARNING

- The “HL-Lock” model clamp should not be used to handle material with temperatures below 0° F or above 225° F. These temperature restrictions apply to both the ambient temperature and the temperature of the material to be lifted.
- Do not use clamps on materials with a hardness in excess of 420 Brinell. For materials with a hardness in excess of 420 Brinell, use the HL-Lock model with smooth gripping cams in stainless or bronze.
- Do not lift material with mill scale, grease, or any other coatings that may prevent gripping surface from making solid contact with plate.
- Never exceed ten degrees (10°) side loading with an “HL-Lock” model clamp (Fig. 2).
- Never lift or transfer material over or near people.

Safety Clamps, Inc. HL-Lock Model

- Never lift material with the handle in the “open” position.
- Always use a sling to lift each clamp.
- Never use an open-end hook to lift the clamp.
- If a clamp has been overloaded or damaged in any way, take the clamp out of service until proper repairs and/or testing has been completed (see “Monthly Inspection” items 2 and 3 for description of overload symptoms).

DISASSEMBLY AND REPAIR

Safety Clamps should always be inspected and operated in accordance with the appropriate section of this manual. If the clamp is suspected of being damaged during operation, or evidence of wear and/or damage is found during inspection, the clamp may be disassembled and repaired as follows:

DISASSEMBLY

1. When disassembling a clamp for inspection or repair, label each part so that the clamp can be reassembled properly.
2. To disassemble the “HL-Lock” model clamp:
 - a). Remove roll pins from the SC-54 pin and SC-37 pin (Fig. 7), and remove the SC-54 and SC-37 pins from the body.
 - b). Remove the roll pins from the lock assembly SC-65 (Fig. 7).
 - c). Pull the handle out and remove the lock (SC-65) and spring (SC-61) assemblies (Fig. 7).

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- d). **For model “HL-Lock” with a 2 ton rated lift capacity Per Pair**, remove the SC-35 pin and SC-50 gripping cam.
For all other rated lift capacities of the model “HL-Lock”, remove the SC-35 pin, SC-44 pin, and SC-42 gripping cams.
- e). Grip the lifting shackle SC-10 (Fig. 7) and pull inside assembly out of the top of the clamp.
- f). Remove the remaining pins from the inside assembly and separate the remaining parts.

REPAIR

1. Clean all parts to ensure they are free of dirt, and excess or gummed lubricants.

WARNING

•Do not use any blasting or heating method to clean parts.

2. Inspect the clamp components in accordance with instructions contained under the “Monthly Inspections” section of this manual.
3. If damaged components are found -

DO NOT

- Fix, straighten, or heat treat any part of a Safety Clamp.**
- Modify, weld, or change the clamp body or parts in any way.**

DO

- Replace any worn and/or damaged parts with genuine Safety Clamps’ parts.**
- If in doubt about the condition of your clamp, Safety Clamps, Inc. will inspect and repair your Safety Clamp for a nominal charge.**

Safety Clamps, Inc. HL-Lock Model

WARNING

Safety Clamps, Inc. uses materials which are of strength and hardness in excess of those used by many competitor clamp manufacturers. Using parts other than those provided by Safety Clamps, Inc. could cause the clamp to operate improperly, or reduce the strength of the clamp to below the clamps specified operating limits.

ASSEMBLY

To reassemble the “HL-Lock” Safety Clamps model:

1. Refer to the clamp diagram (Fig. 7) and reverse the disassembly process described on the previous pages.
2. Check that all roll pins are securely in place.
3. Lubricate all moving parts.
4. Make sure the clamp functions properly and that parts move freely without binding.

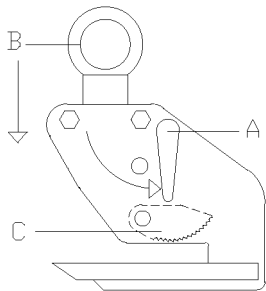


Figure 5

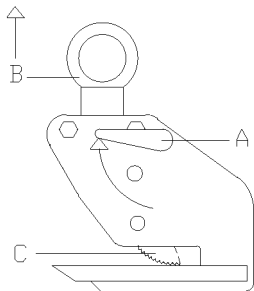
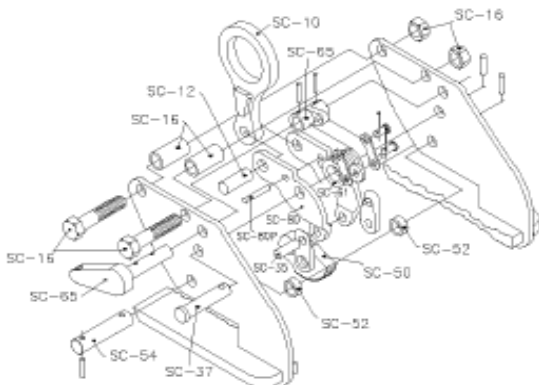


Figure 6

Safety Clamps, Inc. HL-Lock Model

Parts Numbers for 2 tons per pair Model HL-Lock:



Parts Numbers for 4, 6, and 8 tons per pair Model HL-Lock:

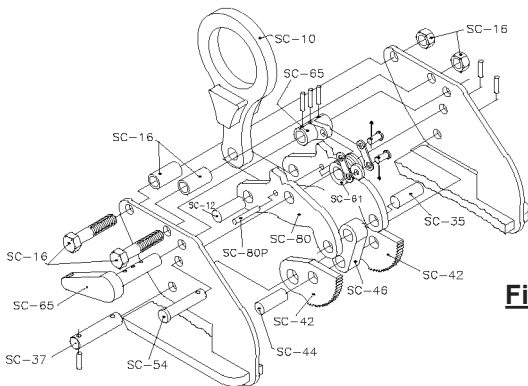


Figure 7

Notes



**“Big Bite” Lifting Clamps by
Safety Clamps, Inc.**
Established 1962

Call, Fax, or E-mail Us Today!

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Effective May 1, 2000

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