Safety Clamps, Inc.

"Big Bite" Lifting Clamps

Operation, Maintenance, and Repair Manual

VL-BC Model Clamp

Excludes all other VL Series Clamps

Warning

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

Effective June 1, 2001
This manual supersedes all previous VL-BC manuals.

Serial # _____
Model _____
Maximum Rated
Capacity in Tons _____
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!

GENERAL INFORMATION

1. Always choose the proper clamp and rated capacity for the material to be lifted.

2. The “VL-BC” model Safety Clamp is designed for lifting and stacking of beams and structural shapes.

3. The “VL-BC” model is capable of lifting, transferring, and stacking of steel beams in the “H” position when lifting eye is over the web and between the flanges (Fig. 2).

4. The “VL-BC” incorporates “lock open” and “lock close” features.

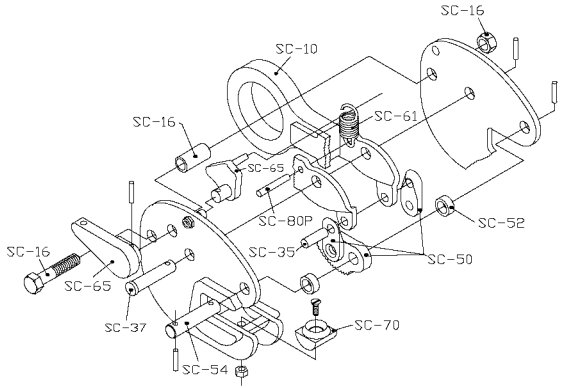
5. Never use the “VL-BC” model to lift plate material. The “VL-BC” model is designed to lift beam and channel.

6. Make sure that the load to be lifted is properly balanced.

7. Visual inspections should be conducted before and after each use. Monthly inspections should be conducted by disassembling the clamp and thoroughly checking each part.

8. Always store the clamp in the “lock open” position.

Parts Numbers for 1 ton Model VL-BC:



Parts Numbers for 2 and 4 ton Model VL-BC:

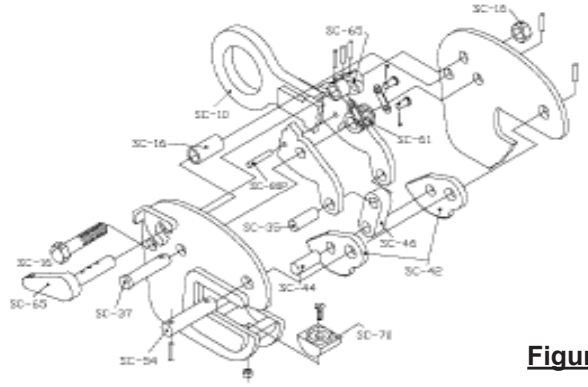


Figure 1

WARNING

1. The “VL-BC” 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.

2. Do not use clamps on materials with a hardness in excess of 420 Brinell.

3. Do not lift material with mill scale, grease, or any other coatings that may prevent gripping surface from making solid contact with plate.

4. Do not lift more than one beam or structure at a time.

5. Never exceed ten degrees (10^0) side loading with a “VL-BC” model clamp (Fig. 3).

6. Never lift or transfer material over or near people.

7. Never lift material with the handle in the “open” position (Fig. 5).

8. Always use a sling to lift the clamp. Always position clamps in line with the sling (Fig. 4).

9. Never use an open-end hook to lift the clamp.

10. 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 and jaw opening stenciled on the clamp. Both should equal or exceed the requirements of the load to be lifted.

3. Inspect gripping cams [SC-50 or SC-42, Fig. 1] and die [SC-70, 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. 1) for tension. To do this, lock the clamp in the closed position and push 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.

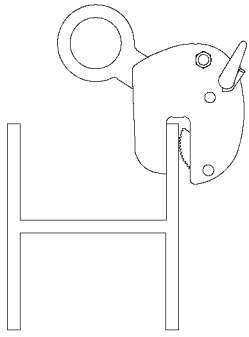


Figure 2

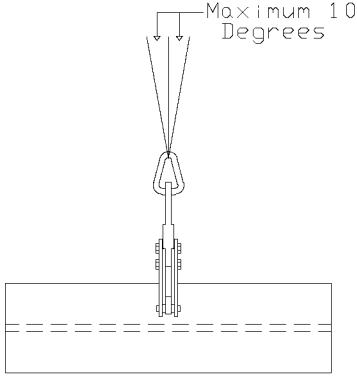


Figure 3: Never exceed ten degrees (10^0) side loading with a "VL-BC" model clamp.

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 for roundness. Any elongation of holes, shackle, 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. 1] and gripping die [SC-70, Fig. 1]. Make sure they are sharp and clean. Do not attempt to sharpen these yourself. If gripping surfaces are worn and/or damaged, replace them with genuine Safety Clamps' parts.

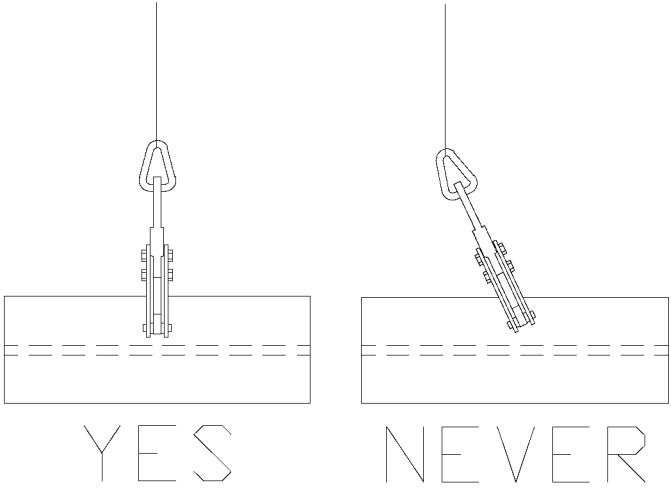
5. All parts should be cleaned and free of dirt and debris.

WARNING

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

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.



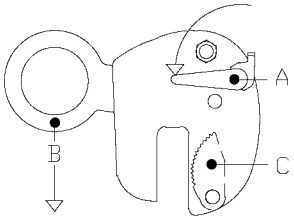


Figure 5

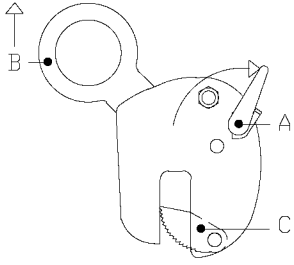


Figure 6

HOW TO USE THE "VL-BC" MODEL SAFETY CLAMPS

1. Prior to use inspect the clamp in accordance with procedures provided under the section titled "Before Use Inspection" in this manual.

2 For the "VL-BC" model Safety Clamp, open the jaw by releasing the locking handle down (A, Fig. 5), and pushing shackle (B) down until the lock engages and the gripping cams (C) are in the raised position clear of the jaw opening.

3. Place the jaw of the lifting clamp around the material to be lifted. Make sure the clamp is positioned so the gripping surfaces will be in full contact with the material. Center the clamp so the load is balanced when lifted.

4. When using more than one clamp to lift material, make sure clamps are positioned to share equal loads. Place the clamps on a straight line with the sling (Fig. 4).

5. Secure the clamp in the "locked closed" position. Do this by raising the handle (A, Fig. 6) until it is positioned against the stop (D) 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.

WARNING

- Never lift material with the handle in the "open" position (Fig. 5).
- Always use a sling to lift the clamp.
- Never use an open-end hook to lift the clamp.

6. The clamp and material are now ready for transfer.

7. Upon reaching the material's destination, lower the clamp and material to a secure position until the tension is relieved on the lifting shackle.

8. Repeat the process to open the clamp. This allows the user to remove the clamp from the material and use it again or store the clamp.

WARNING

- The "VL-BC" 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.

- Do not lift material with mill scale, grease, or any other coatings that may prevent gripping surface from making solid contact with plate.

- Do not lift more than one beam or structure at a time.

- Never exceed ten degrees (10^{o}) side loading with a "VL-BC" model clamp (Fig. 3).

- Never lift or transfer material over or near people.

- Never lift material with the handle in the "open" position (Fig. 5).

- Always use a sling to lift the clamp. Always position clamps in line with sling (Fig. 4).

- 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 "VL-BC" model Safety Clamp:
   a). Remove roll pins from the SC-54 pin and SC-37 pin (Fig. 1), and remove the SC-54 and SC-37 pins from the body.
   b). Remove the roll pins from the lock assembly SC-65 (Fig. 1).
   c). Pull the handle out and remove the lock (SC-65) and spring (SC-61) assemblies (Fig. 1).
   d). **For the model "VL-BC" with a 1 ton rated lift capacity**, remove the SC-35 pin and SC-50 gripping cams. **For the 2 and 4 ton rated lift capacities of the model "VL-BC"**, remove the SC-35 pin, SC-44 pin, and SC-42 gripping cams.
   e). Grip the lifting shackle SC-10 (Fig. 1) and pull inside assembly out of the back 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.

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 "VL-BC" model Safety Clamp:

1. Refer to the clamp diagram (Fig. 1) 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.

Notes

“Big Bite” Lifting Clamps by Safety Clamps, Inc.

Established 1962

Call, Fax, or E-mail Us Today!

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This manual supersedes all previous VL-BC manuals.