



**INSTRUCTION MANUAL**  
**VERTICAL PLATE CLAMP (WITH CHAIN)**  
**MODEL LPC (10, 20, 40, & 80)**



MODEL NO. \_\_\_\_\_  
SERIAL NO. \_\_\_\_\_

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We produce several models of vertical plate clamp so that our customers may select a product that satisfies specific requirements. Each unit conforms to the generalized specifications disclosed in this manual and fulfills our demanding standards for quality, safety and durability.

## SAFETY PRINCIPLES

Vestil Manufacturing Corp. recognizes the critical importance of workplace safety. Each person who **might** participate in the assembly, use, inspection or maintenance of the product must read this manual. **Read the entire manual and fully understand the directions BEFORE using or maintaining the clamp. If you do not understand an instruction, contact Vestil for clarification. Failure to adhere to the directions in this manual might lead to serious personal injury or even death.**

Vestil is **not liable** for any injury or property damage that occurs as a consequence of failing to apply the safe operation and maintenance procedures explained in this manual or that appear on labels affixed to the product. Failure to exercise good judgment and common sense may result in property damage, serious personal injury, or death, and are **not the responsibility of Vestil.**

This manual applies the hazard identification methods suggested for instruction manuals by the American National Standards Institute (ANSI) in ANSI standard Z535.6-2006. In accordance with ANSI guidelines, this manual identifies personal injury risks and situations that could lead to property damage with SIGNAL WORDS. These signal words announce an associated safety message. The reader must understand that the signal word chosen to identify a particular safety hazard conveys information about the seriousness of that hazard according to the following convention:

These symbols identify hazards that may result in personal injury

### **DANGER**

Identifies a hazardous situation which, if not avoided, **WILL** result in **DEATH** or **SERIOUS INJURY**. Use of this signal word is limited to the most extreme situations.

### **WARNING**

Identifies a hazardous situation which, if not avoided, **COULD** result in **DEATH** or **SERIOUS INJURY**.

### **CAUTION**

Indicates a hazardous situation which, if not avoided, **COULD** result in **MINOR** or **MODERATE** injury. Although Z535.6-2006 approves the use of "CAUTION" without an accompanying safety alert symbol (black equilateral triangle with yellow exclamation point) as an alternative to "NOTICE", this manual differentiates between hazards that pose a risk of personal injury and those that create mere property damage situations. **CAUTION appears exclusively in conjunction with the safety alert symbol to identify injury risks.**

### **NOTICE**

Identifies practices not related to personal injury, such as operation that could damage the clamp. No safety alert symbol (equilateral triangle enclosing an exclamation point) accompanies this signal word.

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# PRODUCT INTRODUCTION



Thank you for purchasing a Vertical Plate Clamp (“plate clamp” or simply “clamp”) made by Vestil Manufacturing Corporation (“Vestil”). Our plate clamps are durable, high-quality products that combine safety features and superior lifting capabilities. Despite the clamp’s relatively simple mechanisms, all personnel must familiarize themselves with the safe operation instructions provided in this manual.

We produce 4 types of vertical plate clamp with chain, the CPC-10, CPC-20, CPC-40, and the CPC-80. Each clamp is constructed from steel and has a powder coat finish. All models incorporate a heavy duty formed shackle for easy use with overhead hoists. The three models are distinguishable by lifting capacity, maximum thickness of the sheet material to be lifted, and the bale diameter (point of connection with the hoist) as indicated in the following table:

<b>Model</b>	<b>Maximum Plate Thickness (inches)</b>	<b>Maximum Rated Load (Pounds)</b>	<b>Shackle Opening (inches)</b>
CPC-10	0.6	1,000	2-1/4
CPC-20	0.8	2,000	3
CPC-40	1	4,000	3-3/4
CPC-80	1-3/16	6,600	5-1/4

Vestil Manufacturing Corp. created this manual to acquaint owners and users of our clamps with safe use and maintenance procedures. **Employers are responsible for instructing employees to use the product properly. Employees and any other persons, who might foreseeably use, install, or perform maintenance on the clamp, must read and understand every instruction before using the device. Persons who use the clamp should have access to the manual at all times, and in particular should consult the directions before each use. Contact Vestil for answers to any question you have after reading the entire manual.**

Although we strive to identify the foreseeable hazardous situations that could arise during use, this manual cannot address every conceivable danger. The end-user is ultimately responsible for exercising sound judgment at all times.

# SAFETY GUIDELINES

*Read the entire manual before you use the clamp for the first time and before each subsequent use. Refer to the manual for safe use and maintenance procedures described on p. 7-12. If questions remain after you finish reading the manual, contact Vestil for answers. DO NOT attempt to resolve any problems with the clamp unless you are certain that it will be safe to use afterwards. NEVER modify the product in any way without the express, written approval of Vestil.*

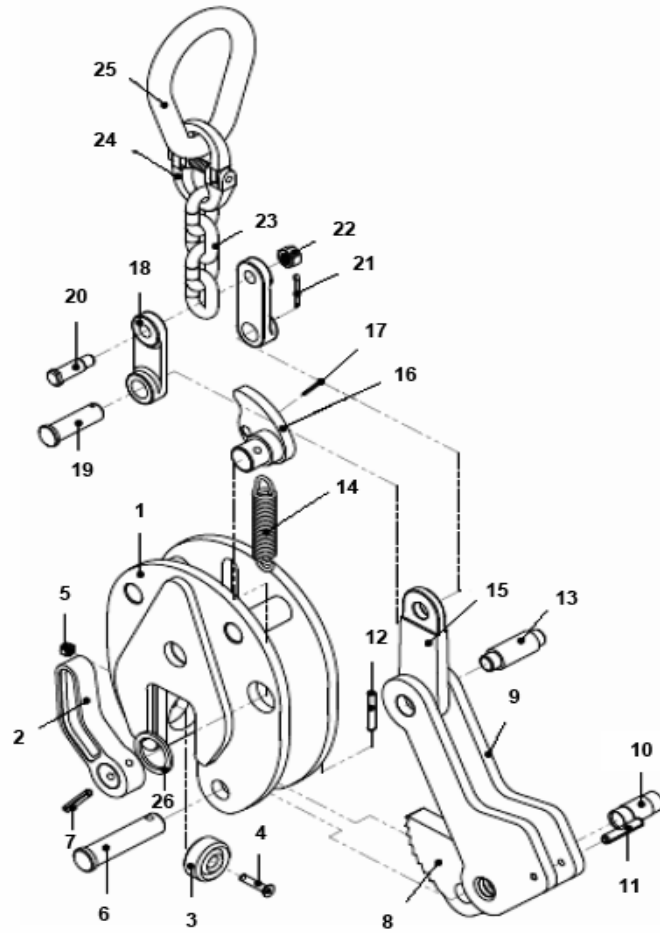
## **DANGER**

- **Electrocution Risk: DO NOT contact live electrical wires with the clamp or the load!**

## **WARNING**

- Consult the safety messages included in the manuals for your crane, trolley, hoist, and any other device used in conjunction with the clamp.
- **ALWAYS** inspect the plate clamp before each use according to the inspection procedures described in the most recent revision of ASME B30.20. B30.20 also recommends “frequent” and “periodic” inspections.
- Properly maintain the plate clamp according to the maintenance procedures on p. 11-12 of the manual. **Vestil developed these procedures to supplement the maintenance practices of ASME B30.20.**
- ALWAYS attach the plate clamp to a safety hook (i.e. a hoist that has a safety hook attached to the end of the chain or rope), or to a connection that includes safety mechanisms to prevent accidental or unintended detachment from the hoist. DO NOT use the device on a hoist hook that might accidentally or unintentionally release the clamp. DO NOT connect the clamp to a safety hook that does not function properly or that is damaged.
- DO NOT grip material that has any debris or surface contamination on it that might affect the quality of the connection between the clamp and the load. Remove all debris, such as oil, grease, water and dirt, before gripping the material with the plate clamp.
- BEFORE picking up the load, clear all debris, including fluids, from the path of travel if the job requires moving material to a new location. If moisture is present in the path of travel, absorb it before using the clamp.
- **Make sure that no person is in the travel path.**
- DO NOT remove or obscure any label. Verify the placement and legibility of all labels as shown in FIG. 2 on p. 12. If a label is damaged or unreadable, immediately contact Vestil for a replacement. DO NOT use the clamp UNLESS all labels are securely attached and readable.
- **DO NOT open the clamp while lifting or moving material.** BEFORE opening the clamp, be certain that the sheet material is fully supported by the ground or other surface, and is fully immobilized (can't fall over, roll, slide, or move in an uncontrolled manner). If a second person is needed to immobilize the material, find someone to help you. **DO NOT open the clamp while using it to lift or move sheet material.**
- DO NOT attempt an unbalanced lift. Before lifting a sheet of material, attach enough clamps to properly balance it. (See “Use Instructions,” p. 7-10 and specifically Step 5 on p. 8).
- DO NOT lift a sheet of material from the bottom of a stack. Only lift the top sheet of a stack.
- DO NOT lift a sheet from the side. ONLY attach the clamp to the top of a plate.
- DO NOT lift more than 1 sheet at a time. The clamp is designed to lift single sheets.
- DO NOT lift a sheet from a horizontal position. CPC's are vertical plate clamps, meaning that they should ONLY be used to lift a plate as shown in the, “Proper Vertical Lift” warning message of Step 3 on p. 7.
- DO NOT sit on or apply any weight or pressure to the material held by the clamp.
- **DO NOT attempt to lift material that weighs more than the rated load of the clamp.** ALWAYS make sure that the material weighs no more than the rated load of the clamp.
- DO NOT lift a load higher than necessary. (See “Use Instructions” on p. 7-10).
- DO NOT raise the load over your feet or any other part of your body.
- DO NOT use the clamp to lift material over people or to lift any apparatus that supports people, such as a work platform. The clamp is designed ONLY to lift sheet material.
- DO NOT get in front of or behind a suspended load while moving it. Always orient yourself so that the load is visible to you. You are less likely to be injured if the load remains within your sight at all times. Stand to one side of the load and hold onto the hoist's safety hook with one hand to stabilize the material as you move it to the desired location.
- DO NOT leave suspended material unattended. An unattended, suspended load creates a risk of injury to yourself and others. Always move the load to its desired location, set it down and properly immobilize it, and then disengage the clamp from the load. Disconnect the clamp from the hoist BEFORE leaving the work area.

**FIG. 1: Exploded Parts Diagram**



Part No.	Description	Quantity
1	Cover Assembly	1
2	Latch Lever	1
3	Cam	1
4	Heavy Bolt	1
5	Lock Nut	1
6	Axis Pin	1
7	Spring Pin	1
8	Gripper	1
9	Connecting Link	2
10	Gripper Pin	1
11	Spring Pin	1
12	Spring Pin	1
13	Move Pin	1
14	Spring	2
15	Plate	1
16	Wheel Assembly	1
17	Split Pin	1
18	Chain Plate	2
19	Connecting Link Pin	1
20	Pin	1
21	Split Pin	1
22	Lock Nut	1
23	Chain	4
24	Chain Link	1
25	Pear Link	1
26	Latch washer	1

## Use Instructions:

**NOTICE** The operating instructions in this manual are meant to **supplement** the operation recommendations of ASME standard B30.20.

Only trained, designated persons should use the plate clamp. "Designated person" means someone selected by his or her employer, or by a representative of the employer, as competent to use the plate clamp. Trainees under the direct supervision of a designated person may use the clamp. Maintenance persons and personnel who perform tests also may use the plate clamp when necessary for the performance of their employment duties.

**Step 1:** Perform a proper, "Every Lift" inspection as described in the most recent edition of ASME B30.20, BEFORE you connect the clamp to a hoisting device. Proceed to the next step ONLY IF the clamp passes the inspection and is deemed safe to use by designated inspection personnel.

**Step 2:** Connect the clamp to the hoisting device. Only connect the clamp to a safety hook to prevent accidental detachment from the hoist.



**Step 3:** Unlock the clamp by rotating the latch lever downwards (photo 1). Move the trolley to position the clamp above the sheet material. The sheet must balance when lifted, so position the clamp above the center of the sheet. The center of the sheet is indicated by a dashed line in photo 2.

**WARNING** DO NOT attempt a horizontal lift; only lift material vertically.

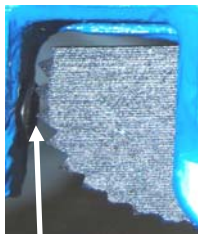
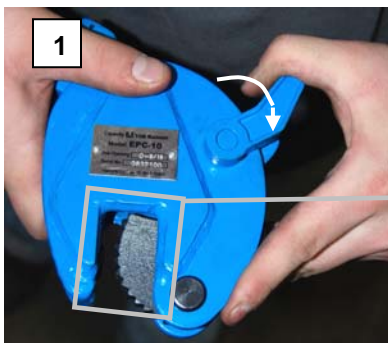
Proper  
Vertical  
Lift



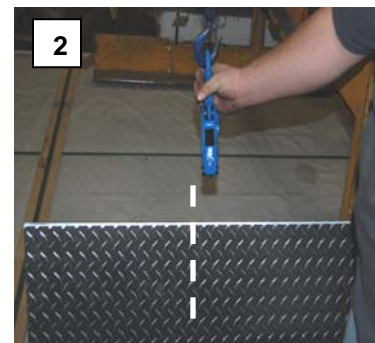
Improper  
Horizontal  
Lift



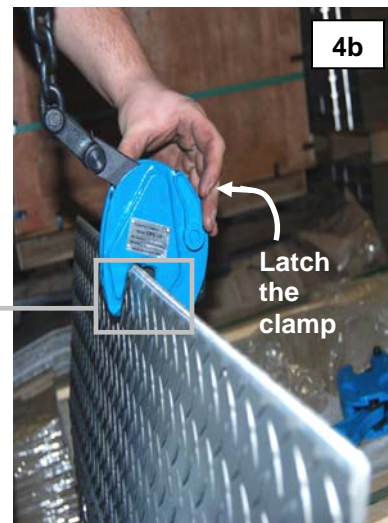
- All horizontal adjustments in the position of the clamp must be accomplished by moving the trolley. DO NOT push or pull the clamp so that the hoist chain/rope is not vertical. This is important because any deflection of the chain/rope from straight up-and-down will cause the load to swing when lifted. A swinging load may cause serious personal injuries.



The gripper (8) must contact the cam (3). If they do not, adjust the position of the gripper until contact is made.

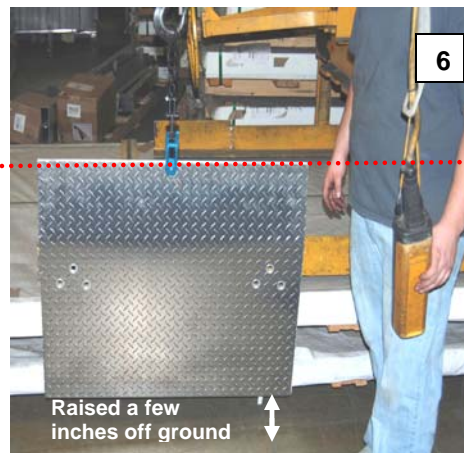


**Step 4:** Engage the sheet with the clamp. Press down firmly on the clamp until the top of the sheet material contacts the back of the clamp mouth (photos 4a & 4b). Lock the clamp by rotating the latch lever (2) upwards.

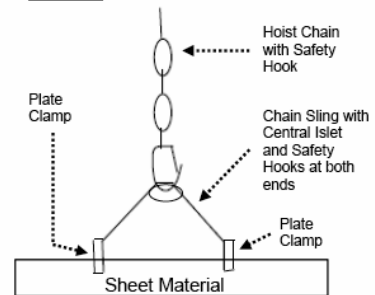


**Step 5:** Test the balance of the material in the clamp. Use the proper grasp technique shown in photo 5: grasp the chain plate at the point where it connects to the chain. This grip will help stabilize the sheet during the lift. Raise the load **a few inches off of the ground** or other supporting surface (see photo 6 below). The material is improperly balanced if it slides or hangs lower on one side. If improperly balanced, return the sheet to the ground or other supporting surface and immobilize it. Reposition the clamp to improve balance by moving the clamp slightly towards the end that hung lower during the test; then raise the object again to see if it is balanced. **DO NOT** proceed to the next step until the load is properly balanced. **DO NOT use the clamp if you cannot achieve a balanced hold; use a different lifting device to raise and move the sheet.**

- If a single clamp cannot balance the load, use a combination of two or more clamps. For instance, you could connect a chain sling to the hoist hook, and attach a plate clamp to each end of the sling via safety hooks. This setup is demonstrated in the “Use of 2 or More Clamps” diagram below. Afterwards, retest the balance of the sheet material according to the process described in Step 5. Raise the sheet material **ONLY** after achieving proper balance.



**Diagram: Use of 2 or More Clamps**



**This side of the sheet material hangs lower than the other. Return the material to the ground (or other supporting surface) and reposition the clamp by moving it closer to this end.**

**Step 6:** Lift the material. To raise the sheet, steady the clamp and load with the proper grasp. [Note: The photographs demonstrate the procedure as it applies to a lift using a single plate clamp. For combinations of two or more clamps, properly grasp the clamp attached to the back end of the sheet as shown in the “Properly Grasp the second clamp,” diagram next to photograph 8.]

Lift the load to approximately waist height. Continue to properly grasp the clamp. Walk slowly and move the load to a position above the desired location. **Refer to the “Warning” messages and follow the lifting rules below.**

**⚠WARNING** Review all “Safety Guidelines” on p.5 and always follow these “Lifting Rules” when using the clamp:

1. NEVER lift material over yourself or other persons. Inform persons in the area that you are going to use the clamp and make sure that all persons have cleared the area before lifting and moving material.

**⚠ WARNING** (continued from p. 8)

- DO NOT press down on the sheet material. Grasp ONLY the hoist hook while raising, lowering or moving material to a different location. Your grasp will stabilize the load.
- Always stand at arm's length to the side of the material** and properly grasp the clamp as shown in photo 7. If you must use two clamps to balance the load, grasp plate clamp #2. This is demonstrated in the, "Properly grasp the second clamp" diagram below. Make sure that your clothing, feet, and the rest of your body stay out from underneath the load. This stance allows the operator to exercise some control of the load and optimizes safety.
- The sheet must remain level during movement. Walk slowly to keep the load level. If the material has to be removed from a container or be lifted over an obstacle, use a different device if you will not be able to maintain the safe stance described in Rule 3.

If you use a motorized trolley:

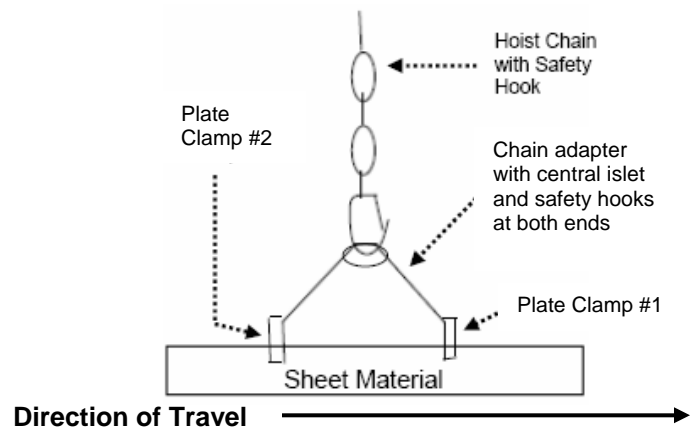
- DO NOT push or pull the clamp or the load. Allow the trolley to provide all movement. Your hold on the clamp is a means ONLY for stabilizing the load.

If you use a manual trolley:

- Properly grasp the clamp with one hand. DO NOT push or pull the sheet. Move the trolley with your hand that grasps the clamp. Walk slowly to keep the load level.



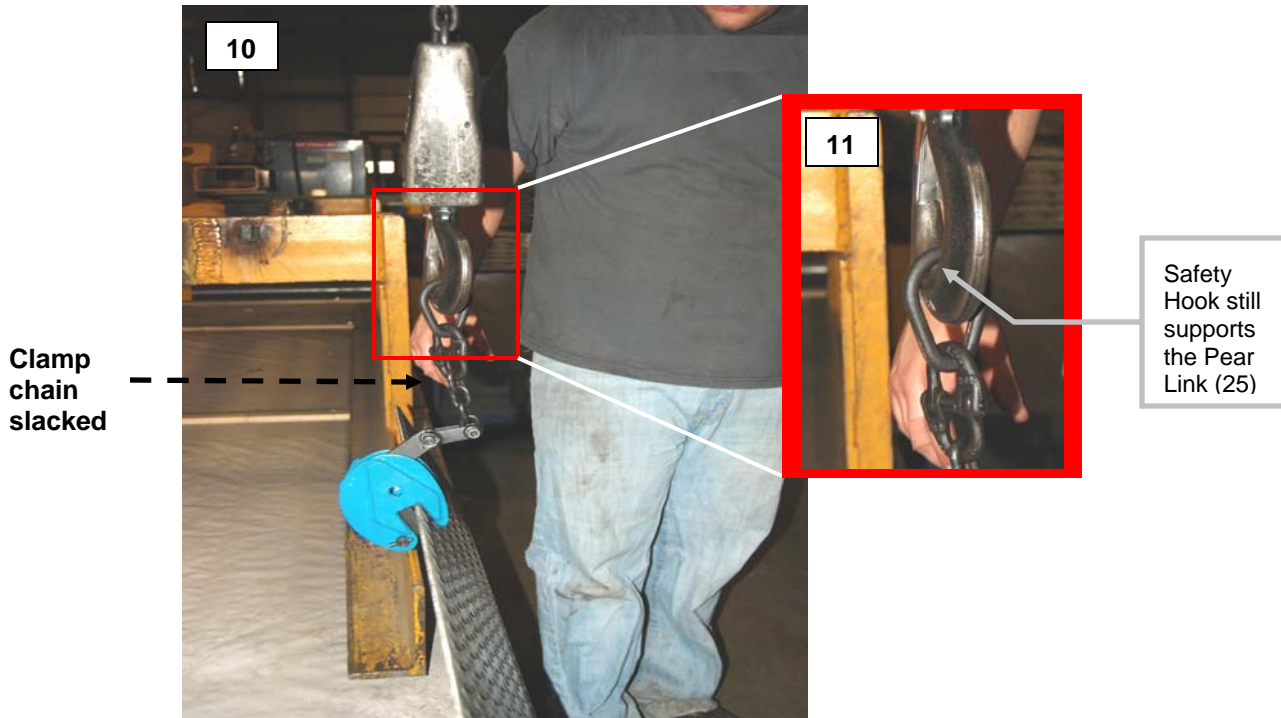
**Diagram: Properly grasp the second clamp**



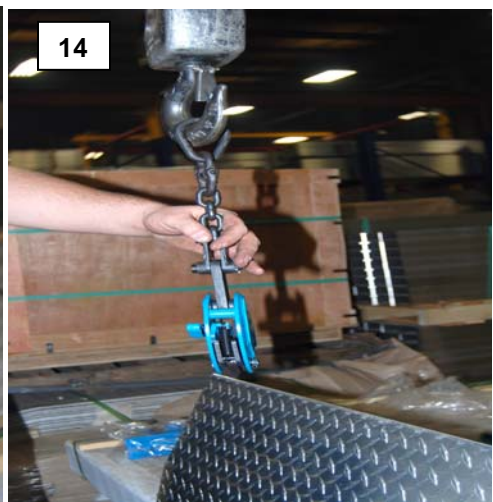
Step 8: Lower the material. Make sure that the load is not swinging or rotating. Slowly lower the hoist until the load contacts the ground or other supporting surface. Lower the load sufficiently to create slack in the clamp chain. The hoist hook and the pear link (item #25 in Fig. 1 on p. 6) should remain in contact (see Photos 10 and 11). DO NOT disconnect the clamp from the load until you appropriately immobilize the material to prevent it from rolling, falling over, or moving in an uncontrolled manner.

In the following photographs, the load is light and lacks dangerous projections that could cause injury. It can easily be controlled by the operator. **If you cannot control BOTH the clamp and sheet material without**

difficulty, find someone to help you. You should always use the procedures developed by your employer for safely handling material.



Step 9: Disengage the clamp. Rotate the latch lever to unlock the clamp (photos 12 & 13). You may need to wiggle the clamp gently to loosen connection between the gripper and the sheet. Pull the clamp free of the immobilized sheet; then disconnect the clamp from the hoist hook.



## **Maintenance and Inspections:**

A designated person must verify that the clamp complies with all regulations, codes, and standards that apply to “Under-the-Hook Lifting Devices” in the location where the clamp is *used*. The person(s) designated to conduct inspections **by your employer** must do so before the clamp is used for the first time, and EACH time it is installed for use.

### **Inspections:**

**NOTICE** The end-user is responsible for performing inspections as recommended in ASME B30.20. The standard categorizes inspections based on regularity of performance. Highlights of the recommended inspection procedures appear below. However, the full procedures written in the published standard must be followed.

**WARNING** DO NOT use a clamp that is structurally damaged. Structural damage includes, but is not limited to, bending, warping, cracking or other deformation of one or more of the pear link, gripper, cam, chain, spring(s) or spring pin(s), or connecting link (see FIG. 1 on p.6). Restore the clamp to normal operating condition **BEFORE** using it again.

Inspections Before & During EVERY lift: visual examination must be performed by the operator prior to AND during each lift. In particular, the *operator* should inspect for:

1. Debris on the load surfaces; AND
2. Condition and operation of the controls.

Frequent Inspections: the specific meaning of “frequent” varies from daily to monthly depending on the service classification (normal, heavy, severe, and special/infrequent) of the clamp. Definitions of the service classifications appear in ASME B30.20. The *operator* or other *designated person(s)* should visually inspect the clamp for:

1. Deformation, cracking, or excessive wear of any part of the clamp;
2. Operating mechanisms for conditions that interfere with proper function; AND/OR
3. Loose or missing fasteners, stops or nameplates.

Periodic Inspections: complete visual inspections performed AND recorded by a *qualified* person. The inspection should specifically look for:

1. Loose bolts or fasteners;
2. Excessive wear of friction pads, linkages, and other mechanical parts; AND/OR
3. Excessive wear at the points where the clamp connects to the hoist hook, and load support clevises or pins.

**Maintenance:** the end-user must implement a maintenance program to ensure the proper function and safety of the clamp. A qualified person may establish a program that is used in preference to the maintenance procedures described below. However, if you apply the procedure that follows, complete EVERY step each time maintenance is performed.

**WARNING** ONLY qualified persons may perform maintenance on the clamp. A qualified person is someone “who, by possession of a recognized degree in an applicable field or certificate of professional training, and experience, has successfully demonstrated the ability to solve or resolve problems relating to the subject matter [clamp] and work [use of the clamp].” See ASME B30.20-0.2-2003.

Step 1: All sources of power must be disconnected, locked out and tagged, “Out of Service.”

Step 2: Disconnect the clamp from the hoist hook and tag it, “Out of Service.”

Step 3: Perform all adjustments indicated as necessary during any inspection (every lift, frequent, or periodic).

Step 4: If other conditions exist which require new/replacement parts to repair, contact Vestil. Deformity, corrosion, rusting, or excessive wear of structural members warrants immediate replacement.

**WARNING** The reader should understand the significant difference between “Adjustments” and “Repairs,” and “Modifications”.

- An adjustment or repair refers to a simple correction that restores the clamp to normal operating condition, such as tightening loose fasteners, or removing debris from the surface of the clamp.

(Continued from p. 11)

- DO NOT use the clamp if adjustments and/or repairs are incomplete! Return the clamp to service ONLY after finishing all necessary repairs and adjustments.
- A modification is a change that alters the clamp from normal operating condition, like bending the structural members. **NEVER modify the clamp without the express, written approval of Vestil.** **Modifications may render the clamp unsafe to use.**

Step 5: Perform a periodic inspection, as recommended in ASME B30.20.

Step 6: Make a dated record of the repairs, adjustments and/or replacements made.

### **Markings:**

Only use the clamp if ALL labels are readable and undamaged. Contact Vestil for replacement labels.

**FIG. 2:** Product label placement



**Rated Load Tag**