SAFETYLIFTINGEAR.COM

Instructions for the safe use of Horizontal Plate Clamps

LIFTINGEAR.UK

Camlok® Lifting Clamps

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This information should be made available to the user of the equipment.

This document is issued in accordance with the requirements of the Health and Safety at Work etc Act 1974, amended March 1988. It outlines the care and safe use of HORIZONTAL PLATE CLAMPS and is based on section 22 of the LEEA Code of Practice for the Safe Use of Lifting Equipment. It should be read in conjunction with the requirements for general purpose slinging detailed in this document, the principles of which may be applied to the use of shackles either with or without slings.

The information is of a general nature only covering the main points for the safe use of Horizontal Plate Clamps It may be necessary to supplement this information for specific applications.

ALWAYS

- ☐ Store and handle plate clamps correctly.
- ☐ Inspect plate clamps and accessories before use and before placing in storage.
- ☐ Put the clamps on to the plate as far as they will go.
- ☐ Work within the angles and reeve in the manner for which the clamps are designed.
- ☐ Use two or more clamps in conjunction with a spreader if the plate to be lifted is likely to sag longitudinally.
- ☐ Take care to ensure that the plate is fully supported before attempting to release the clamps.

NEVER

- ☐ Use less than two horizontal plate clamps to lift a plate.
- ☐ Change the method of reeve.
- ☐ Exceed the maximum thickness for which the clamps are designed.
- ☐ Attempt to rotate from the horizontal to the vertical or vice versa.
- ☐ Obliquely load horizontal plate clamps unless they have been designed for that purpose.
- ☐ Force or wedge a hook into the eye of the clamp.

Selecting the Correct Plate Clamp

Horizontal plate lifting clamps are available in a range of capacities and designs. They may utilise a cam to grip the plate or have a plain toe and rely only on friction to hold the plate.

They are intended to be used in pairs with a common sling. Select the type of plate clamp to be used and plan the lift taking the following into account:

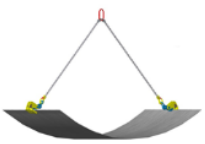
- ☐ Type of clamp – plain toe or cam.
- ☐ Capacity and plate thickness
- ☐ Type of sling.

Common types of Horizontal Plate Clamps

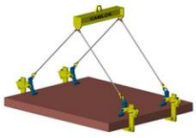
Basic clamp for use with a two-leg sling

Plate clamp with roller

Thin sheet plate clamp (Reverse teeth)



Adjustable plate clamp



Warning! Some types of clamp are designed to be used with an endless loop of chain and others are for use with a two-leg sling. Under no circumstances must an endless loop be substituted for a two-leg sling or vice versa as this will alter the geometry and therefore the gripping forces on which the clamps rely for their safe operation.

Storing and Handling Plate Clamps

Never return damaged or contaminated plate clamps to storage. They should be dry, clean and protected from corrosion.

Using Plate Clamps Safely

- ☐ Do not use defective plate clamps or accessories
- ☐ Always use horizontal plate clamps in pairs attached to the correct type, size and length sling for which they are designed.
- ☐ Position the clamps correctly.
- ☐ Place the clamps over the centre of gravity of the plate.
- ☐ If the plate is too long and tends to bend, use two or more pairs of clamps equally disposed about the centre of gravity to minimise the sag. Ensure the clamps face each other to balance the horizontal clamping forces.
- ☐ If the plates are likely to sag transversely clamps which grip the plate by a cam must be used.
- ☐ Care must be taken to ensure that no one clamp takes more than its SWL.
- ☐ Put the clamps onto the plate as far as they will go.
- ☐ Do not use clamps at an angle to the edge of the plate unless they are designed for the purpose.

In Service Inspection and Maintenance

Horizontal plate clamps should be cleaned and any moving parts lubricated at appropriate intervals, unless the suppliers' instructions indicate otherwise.

Store in a clean dry environment and protect from corrosion.

Regularly inspect plate clamps and in the event of any of the following defects refer to a competent person for thorough examination:

- ☐ Illegible markings.
- ☐ Wear.
- ☐ Damage or distortion to fixed and moving jaws.
- ☐ Frame opening out.
- ☐ Cracked, insecure, worn or bent pins, bolts etc.
- ☐ Corrosion.

WARNING! Teeth of jaws must not be resharpened or re-cut unless this has been specifically approved by the maker.

Further information can be found in the Code of Practice for the Safe Use of Lifting Equipment published by the Lifting Equipment Engineers Association and available as a free download on www.leeaint.com/downloads

GENERAL PURPOSE SLINGING PRACTICE

The following information is based on Section 1 – Appendix 1.5 of the LEEA Code of Practice for the Safe Use of Lifting Equipment. It should be read in conjunction with the instructions for the safe use given previously of which it forms an integral part and with any specific instructions issued by the supplier.

This information is of a general nature only covering the main points for the safe use of various types of slings for general lifting purposes.

ALWAYS

- ☐ Plan the lift, establish the weight of the load and prepare the landing area ensuring it will take the weight.
- ☐ Check slings and equipment are free of damage, use slings/slinging methods suitable for the load and protect slings from sharp edges and corners.
- ☐ Attach the sling securely to the load and appliance and position hooks to face outwards.
- ☐ Ensure the load is balanced and will not tilt or fall.
- ☐ Keep fingers, toes etc clear when positioning slings and landing loads.
- ☐ Ensure the load is free to be lifted.
- ☐ Make a trial lift and trial lower.

NEVER

- ☐ Use damaged slings or accessories.
- ☐ Twist, knot or tie slings.
- ☐ Hammer slings into position.
- ☐ Overload slings due to the weight of the load or the mode of use.
- ☐ Trap slings when landing the load.
- ☐ Drag slings over floors etc or attempt to pull trapped slings from under loads.
- ☐ Allow personnel to ride on loads.

Sling Configurations and Rating

Slings are available in single, two, three and four leg or endless form. In practice it will be found that chain, wire rope and fibre rope slings are available in any of these configurations, but that flat woven webbing is limited to single leg and endless while roundslings are only supplied in endless form. The maximum load a sling may lift in use will be governed by the slinging arrangement (mode of use) and may vary from the marked SWL. In the case of textile slings the SWL for the various modes of use is usually given on the information label. In other cases, it is necessary to multiply the marked SWL by a mode factor.

The following three simple rules will ensure that the sling is not overloaded. In some cases, this will mean that the sling will appear underutilised although this should not hinder the user. Where the maximum utilisation is required, reference should be made to the competent person who understands the factors involved and can perform the necessary calculations.

1. For straight lift never exceed the marked SWL and in the case of multi-leg slings the specified angle or range of angles
2. When using slings in choke hitch multiply the marked SWL by 0.8 to obtain the reduced maximum load the sling may lift (i.e., SWL-20%)
3. With multi leg slings when using less than the full number if legs, reduce the maximum load in proportion to the number of legs being used. Simply multiply the SWL by the number of legs being used as a proportion of the whole (e.g., using three legs of four is ¾ SWL, one of two is ½ SWL etc.)

Operator Training

Slings should only be used by trained operatives who understand the methods of rating and application of mode factors.

Safe Use of Slings

Good slinging practice must ensure that the load is as safe and secure in the air as it was on the ground and that no harm is done to the load, lifting equipment other property or persons.

Establish the weight of the load, ensure the lifting method is suitable and inspect the slings and attachments for obvious defects. Prepare the landing area making sure the floor is strong enough to take the load. Follow any specific instructions from the supplier.

Ensure the lifting point is over the centre of gravity. Any loose parts of the load should be removed or secured. Attach the slings firmly to the load onto lifting points or shackles etc. The sling must not be twisted, knotted or kinked in any way.

Use packing to protect the sling from damage and to protect the load.

Do not exceed the SWL or rated angle. Any choke angle must not exceed 120^{o} and any basket 90^{o}.

Do not hammer, force or wedge slings or accessories into position, they must fit freely.

When attaching more than one sling to the lifting appliance hook use a shackle to join the slings and avoid overcrowding the hook.

Use an established code of signals to instruct the crane driver.

Ensure the load is free to be lifted and not fixed down.

Check for overhead obstructions such as power lines.

Keep fingers, toes etc clear to ensure they do not get trapped.

Make a trial lift by raising the load a little to check for balance, stability and security., if not, lower and adjust the slinging arrangement.

Where appropriate use a tag line to control the load.

Except where special provision is made do not allow anyone to pass under or ride upon the load. Keep the area clear.

Make a trial set down, ensuring the slings will not become trapped and the load will not tip once the slings are released. Use supports which are strong enough to sustain the load without crushing.

Never drag slings across floors or attempt to a trapped sling from under a load.

Never use a sling to drag a load.

Place the hooks of free legs back onto the master link and take care to ensure that empty hooks do not become accidentally caught.

Never use slings in contact with chemicals or heat without the manufacturer's approval

Never use damaged or contaminated slings.

On completion of the lift return all equipment to proper storage.