



HURLEY PICKET ANCHOR SYSTEM OWNER'S MANUAL

IMPORTANT INFORMATION - PLEASE READ AND SAVE
Made in USA of US and foreign components

CMC Rescue, Inc.
6740 Cortona Drive,
Goleta CA 93117
USA

Pat. 9,133,594 B2
805-562-9120 / 800-235-5741
cmcpro.com
ISO 9001 Certified
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WARNING

- SERIOUS INJURY OR DEATH MAY RESULT FROM THE IMPROPER USE OF THIS EQUIPMENT.
- THIS EQUIPMENT HAS BEEN DESIGNED AND MANUFACTURED FOR USE BY EXPERIENCED PROFESSIONALS ONLY.
- DO NOT ATTEMPT TO USE THIS EQUIPMENT WITHOUT PRIOR TRAINING.
- THOROUGHLY READ AND UNDERSTAND ALL LABELS AND INSTRUCTIONS BEFORE USE.
- USE, INSPECT AND REPAIR ONLY IN ACCORDANCE WITH MANUFACTURER'S INSTRUCTIONS.

This manual is intended to serve as a reference document for the Hurley Anchor Picket System. This product and its accessories have not been certified by the manufacturer, nor by CMC. Use this product and its accessories at your own risk.

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Introduction

The Hurley Picket Anchor System is a portable anchor system and can be used for the following applications: personal fall restraint, work positioning, suspension, and rescue.

A portable anchor may be necessary when existing natural or manmade anchors are absent or insufficient.

The Hurley Picket Anchor System optimizes the pullout capacity of the system through its patented design and precision manufacture process. The breaking strength of the anchor plate and pickets are well in excess of 40 kN as individual components. When used in a system, the use of rope, webbing or slings will likely limit the breaking strength of the system. In addition, soil conditions will dictate the total holding strength of the system.

An understanding of all components to be used in the system, soil conditions, and a careful estimation of the load to be placed on the system is essential for safe operation.

Components

Anchor Plate

The Hurley Picket Anchor System anchor plate (Figure 1) is constructed of an aluminum alloy with an anodized coating. The plate consists of three precision-machined picket guide holes (A) and 2 strap/sling attachment points (B). The picket guide holes are spaced 12 inches apart (one-third of the recommended picket insertion depth) to maximize efficiency.

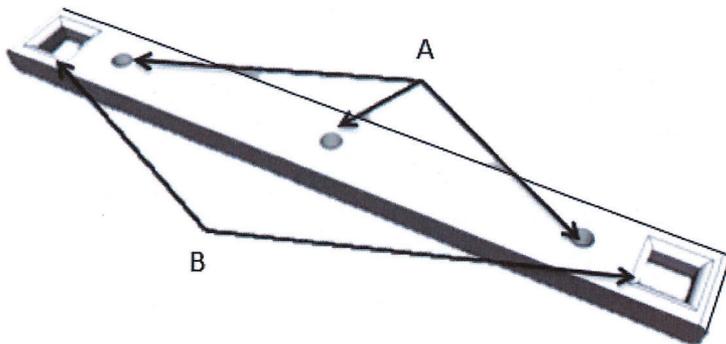


Figure 1

Components

Pickets

The Hurley Picket Anchor System comes with three 42-inch pickets (Figure 2). The pickets are constructed of a hardened steel alloy to withstand repeated installation and the lateral forces applied to them when the system is loaded. The pickets have a threaded end (A) for attaching the striking cap and eye nut and a tapered end (B) to drive into the soil.

Only pickets sold as part of the Hurley Picket Anchor System should be driven through the anchor plate. Using other pickets may result in lower holding capacity or may damage the anchor plate.

Do not drive pickets into soil without the striking cap properly installed.

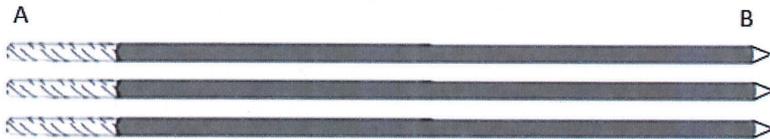


Figure 2

Striking Cap

The Hurley Picket Anchor System comes with one striking cap (Figure 3). The striking cap consists of a bolt (A), lock washer (B), and coupling nut (C).

The striking cap serves two functions when screwed properly onto the threaded end of each picket prior to picket driving: 1) protects the threaded end of pickets

Components

from sledgehammer damage; 2) increases the striking area for easier picket driving.

Do not force a striking cap over damaged picket threads.

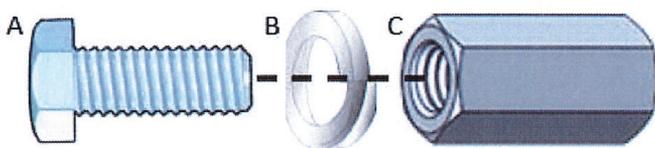


Figure 3

Eye Nut

The Hurley Picket Anchor System comes with one eye nut (Figure 4). Use the eye nut to extract pickets from the ground after system use. The bow of the eye nut is large enough to accommodate the tongue of a farm jack.

Do not force an eye nut over damaged picket threads.



Figure 4

Maintenance

The Hurley Picket Anchor System should be inspected before and after each use to ensure the integrity and safety of the plate, pickets and accessories. Each user should be trained to inspect and clean the system before using it.

The system should also undergo periodic cleaning and inspection in accordance with your department's policy for life safety equipment. It is recommended that the date and results of each inspection be recorded in the system's maintenance log (See Appendix C).

Use soap and water to remove any heavy dirt or foreign objects from the system. Avoid using any abrasives that may scratch the anodized surface of the plate. If needed, heavy deposits on the system may be removed with a stiff-bristled synthetic brush. Dry the system components with a towel or compressed air prior to returning to storage.

CMC is not responsible for any damage caused to plate, pickets or accessories of the system under any circumstance.

Anchor Plate

Picket holes in the anchor plate should be clean and free of debris before use. Inspections should be focused on attachment points, with particular attention paid to finding any of the following:

- Cracks
- Deep cuts
- Deformities
- Other signs of overloading or deterioration

Maintenance

Pickets

Pickets should be wiped clean of any dirt or debris before and after each use. Any nicks, burrs, or scratches on pickets should be filed with a hand file before inserting into the picket guide hole on the anchor plate.

Pickets should be assessed for straightness by rolling the pickets across a flat surface. Any deformities significant enough to cause binding between the plate and pickets should be retired and replaced.

The threaded end of pickets should be cleaned after each use with a damp rag and mild soap. Minor burrs or dents on the threads can be cleaned up or reformed with a hand file.

Threads of pickets should be inspected for any damage which could be the result of improper accessory installation, or picket driving without the striking cap. Do not force a striking cap or eye nut over damaged threads.

Striking Cap

The striking cap should be wiped clean of any dirt or debris before and after each use for best results and to avoid damaging threads in the cap or on the pickets. Minor burrs or dents on the threads can be cleaned up or reformed with a hand file.

Maintenance

Eye Nut

The eye nut should be wiped clean of any dirt or debris before and after use for best results and to avoid damaging threads in the nut or on the pickets. Minor burrs or dents on the threads can be cleaned up or reformed with a hand file.

Spare Parts

In the event a component of the system becomes damaged or is lost, a replacement can be procured through CMC. Please contact CMC for pricing and availability.

Installation

1. Select a location to install the Hurley Picket Anchor System. For best results, the area should be flat and free of rocks or other obstructions, and the soil should be dense and dry (see Appendix B).
2. Position the anchor plate so that the long axis of the plate is in-line with the load to be anchored or the change of direction (COD) to be used (Figure 5a). If using the Hurley Picket Anchor System as the COD, position the plate so that the long axis bisects the angle formed between the anchor and the load, i.e. the resultant (Figure 5b).

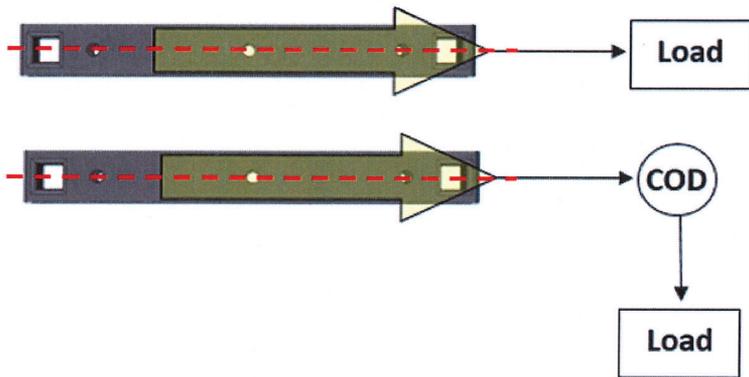


Figure 5a

Installation

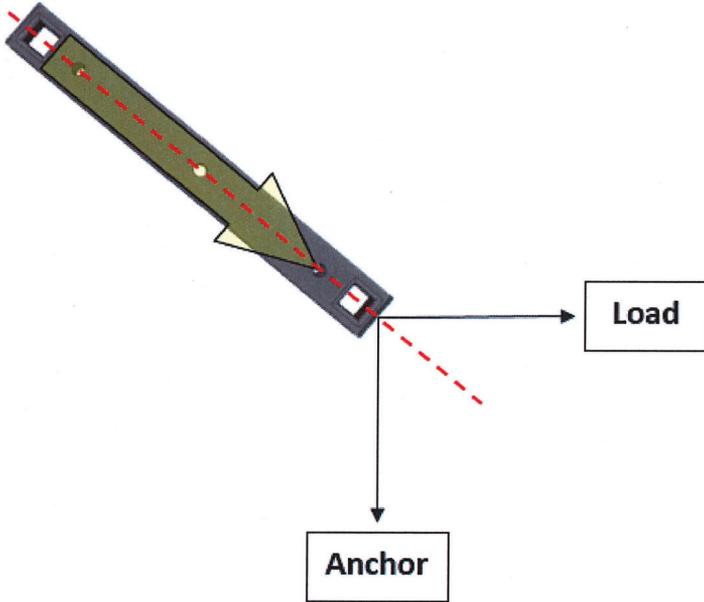


Figure 5b

3. Verify that the load is less than 45 degrees from the horizontal plane of the anchor plate (Figure 6). Attachment angles greater than 45 degrees can decrease the holding capability of the system.

Installation

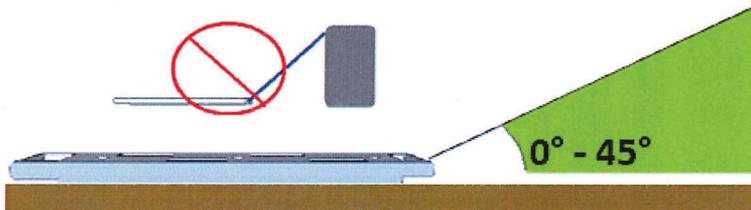


Figure 6

4. Reeve the anchor strap, webbing, flat strap, or round sling through the attachment point nearest the load before inserting pickets into picket guide holes on the anchor plate. Driving pickets into the ground first will make reeving the software difficult or impossible.
5. Screw the striking cap onto the threaded end of the first picket until the inside of the cap rests firmly on the picket end. Insert the picket into the picket guide hole nearest the load and drive the picket into the ground by striking the top of the cap with a hammer.

For maximum holding strength, drive pickets at least 36 inches below ground. About 6 inches of the picket should remain above-ground to allow for some plate movement when the system is loaded. See Figure 7.

Installation

Repeat for the other two pickets.

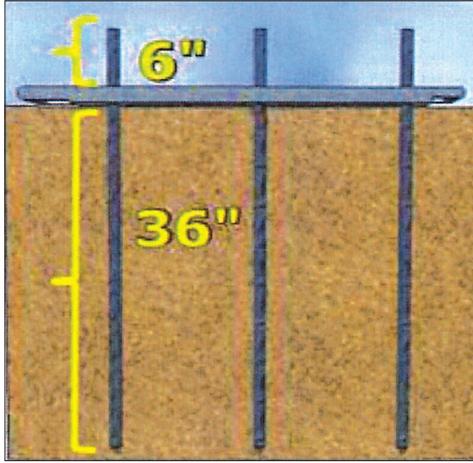


Figure 7

6. Apply load to the system in a controlled manner, watching for signs of soil failure such as excessive plate movement and/or soil upheaval.

Should any signs of failure exist, STOP. Consider placing two or more systems in series (see next section, Series Setup) or back-tie the plate to prevent further movement.

Series Setup

Place two or more systems in series to increase the holding strength when soil conditions are unfavorable or when the load exceeds the holding strength of one system.

1. Install the first system as described in the previous section, Installation.
2. Position the second anchor plate directly behind the first at a distance of at least 3 feet. Positioning the systems at least 3 feet apart will allow for sufficient tensioning between them.
3. Connect the two plates with an adjustable strap (recommended) or a static strap (Figure 8).

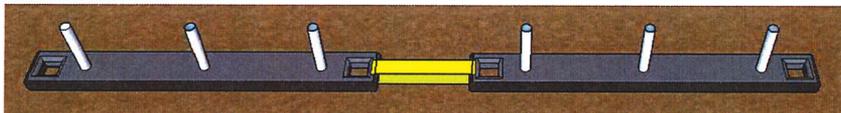


Figure 8

- I. Wrap the strap around the rear attachment point of the first anchor plate and then attach to the load-side attachment point of the second anchor plate.
- II. Pull tension on the second anchor plate to remove all slack.
- III. On the second anchor plate, install the first picket into the hole closest to the load (see Installation).

Series Setup

- IV. Verify that the second plate is in-line with the first plate and install the remaining pickets.

- V. If using an adjustable strap pre-tension the system and then apply load to the system.

Picket Removal

Pickets should be pulled in a straight upward direction to avoid damaging the pickets and picket guide holes on the anchor plate.

If at any time a pickets becomes noticeably more difficult to remove, ensure that the pickets is not binding on the plate. This is usually evidenced by the plate coming up with the picket. If this happens, press downw forcefully on the plate to reset the picket-plate angle.

The following methods may be used to remove pickets.

Recommended - Option 1: Eye nut and farm jack (Figure 9).

1. Screw the eye nut onto the threaded end of the first picket you want to remove.
2. Place the farm jack on top of the anchor plate and position so that the tongue of the farm jack is in the bow of the eye nut.
3. Operate the jack to remove the picket. Repeat for all pickets.

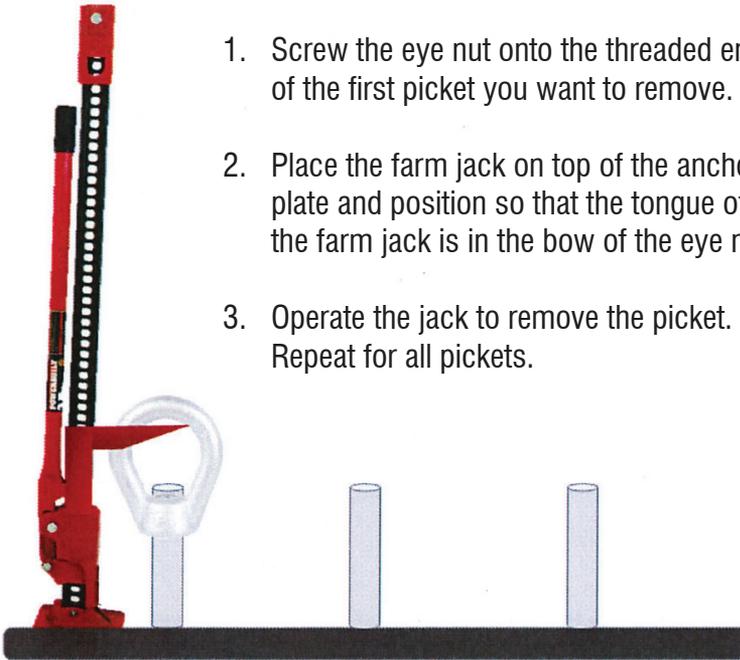


Figure 9

Picket Removal

Option 2: High point anchor and mechanical advantage system. This includes, but is not limited to, a tripod or folding ladder with a mini-pulley system, chain fall, or come-along.

Option 3: Picket or pry bar.

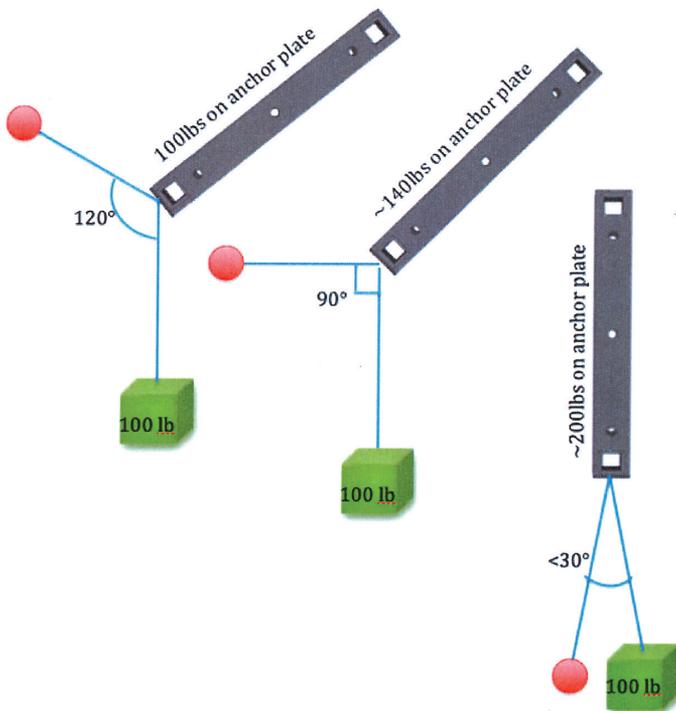
Insert the picket or pry bar into the hole of the eye nut. Two people should then rotate the picket or pry bar in a clock-wise direction. Lift the picket out in a straight upward direction.

Appendix A - Force Vectors

When the anchor and load do not line up, a change of direction (COD) may be needed. Depending on the angle produced by the COD, various forces are imparted on the COD anchor.

At 120 degrees, the force on the COD is equal to the weight of the load.
At 90 degrees, the COD sees a force equal to 1.4 times the weight of the load.

At <30 degrees, the COD sees a force up to 2 times the weight of the load.



Appendix B - Soil Guide

Local soil conditions will dictate the total holding strength of the anchor system. This guide is to be used as a reference only. It is up to the user to understand the soil types and conditions (including moisture level and cohesiveness) present in the area where the anchor system will be deployed and determine the impact on holding strength.

Soil Type

Hard: Very dense soil, not easily indented with thumbnail

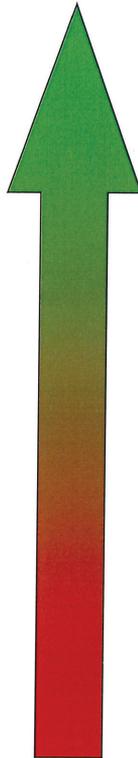
Very Stiff: Dense soil, easily indented by thumbnail

Stiff: Medium dense soil, easily indented with tip of thumb but not easily penetrated

Medium: Medium density soil, thumb can penetrate >1" with moderate effort

Soft: Loose soil, easily penetrated >1" with thumb

Very Soft: Non-cohesive large granules easily penetrated with minimal effort.



Maximum Strength

Dry

Hardpan

Cohesive

Granular

Cohesionless sands and silts

Wet

Minimum Strength

Appendix C - Maintenance Log

Hurley Picket Anchor System

Equipment Inspection and Maintenance Log		
Item _____ # _____		Date in Service _____
Brand/Model _____		Strength _____
Date	How Used or Maintained	Comments





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