

## Using the 8:1 Micro Hauler camming pulley system

### This system gives you an 8:1 mechanical advantage

- ◆ The 8:1 haul system is prerigged for your convenience. In the unlikely event it becomes unrigged, please refer to the diagram on page 3.
- ◆ Using a large steel or aluminum locking carabiner, attach the top end of the 8:1 Micro Hauler system to a substantial anchor (tripod, beam, etc). Lock the carabiner.
- ◆ Pull on the accessory cord that is attached to the cam to release the cam from holding the rope. *Note: It may be necessary to slightly pull on the tail end of the rope to disengage the cam from the rope using the cam's accessory cord.* The cam has a hole in it to allow it to be locked in the open position by removing the cam stop/open pin and reinserting it through the hole in the cam. This allows the rope to move freely through the system in both directions.
- ◆ Pull down on the steel carabiner that is attached to the lower pulley until it is low enough to clip into the load (stretcher, equipment, rescuer, etc). Holding the tail end of the rope lower the load to the bottom of the space in which you will be working.
- ◆ Re-engage the cam to the rope by releasing the accessory cord.
- ◆ After the patient or litter is attached to the lower pulley with the locking carabiner the load can be raised by pulling on the tail end of the rope.

*Note: The next series of steps are for advanced rescue techniques and are not necessary for most hauling needs.*

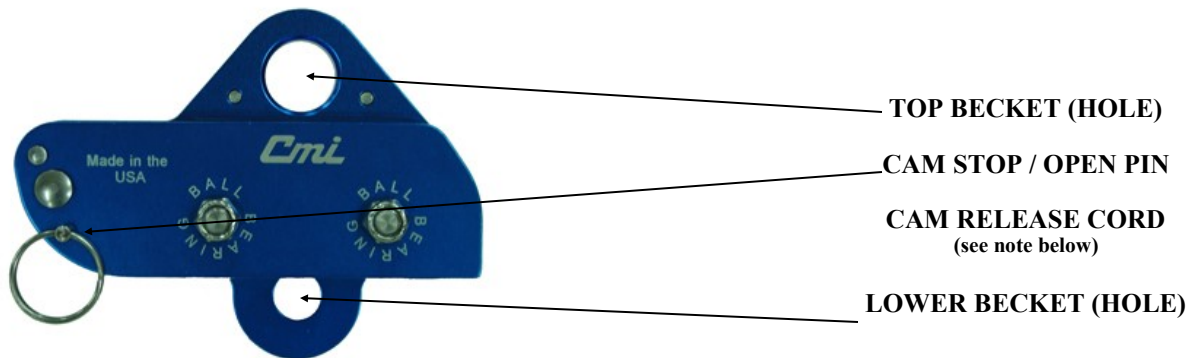
- ◆ *To make it easier to grip the rope, a handled CMI ascender can be used. Open the cam on the ascender and insert the tail end of the rope into the rope channel and re-engage the cam.*
- ◆ *To make raising the load even easier, attach a CMI 5 step Etrier to the bottom of the CMI ascender using a screw link or small locking carabiner. For your safety, attach the tie-in end of the etrier to the front D ring on your harness. The ascender should be attached to the second loop from the top of the etrier. Insert your foot into one of the steps of the etrier at the bottom. Push down with your foot. This will raise the load. Release the pressure on your foot and slide the handled ascender upward on the rope while raising your foot. Press down with your foot again. Repeat this action until the load has been raised to a point that you can remove it from the system*
- ◆ *Note: When hauling a rescue load long distances it will be necessary to change feet to prevent over tiring of the leg muscles. This technique makes it much easier to raise the load and prevents fatiguing your arm muscles which you will need to remove the load from the system.*
- ◆ The Micro Hauler can be used on a “piggyback” haul system rather than taking time to do a complicated Z rig. To do this, select a very strong anchor. Attach the upper end of the Micro Hauler to the anchor using a large steel locking carabiner. Attach a suitable rope gripping device (prusik, rope grab, etc) to the lower pulley.
- ◆ Attach the rope gripping device to the haul line. The haul line should be over an edge roller or suitable rope protective device at the edge of the hole/roof/cliff to prevent abrasion. The haul system will be horizontal. It is necessary to use prusiks or proper rope grabs on the haul line to allow resetting and safe rope management.
- ◆ It is always necessary to have a proper belay line (safety line) attached to a separate strong anchor in case the main anchor or other part of the system fails.
- ◆ To raise the load pull the lower pulley and rope grab towards the load/edge. Allow the cam to grab the rope. Pull on the tail end of the Micro Hauler rope. This will raise the load. When the pulleys come together, set the prusiks or rope grabs on the haul line. Release the tension on the Micro Hauler. Open the Micro Hauler cam. Slide the rope grab and lower pulley back towards the rescue load. Allow the rope grab to grip the haul line. Pull again on the tail end of the Micro Hauler unit until the pulleys come together. Repeat this action until the rescue load is up to a point where it can be managed by hand. Disconnect the load, treat and transport the patient.
- ◆ **Note:** When a rescue load is on the haul system do not completely open the cam. Use the cord that is attached to the cam to release it from the rope. This will prevent the rope from coming out of the channel. In case of an emergency, simply let go of the cord and the cam will engage the rope and stop the downward movement of the load.

## Maintenance of the Micro Hauler 8:1 System

- ◆ When the Micro Hauler or companion pulley becomes muddy, wash it with mild soap and water. Flush all soap and other residue with clean water and dry completely. Apply a small amount of oil to the pulley axles. Wipe away all excess oil. For greasy substances, clean with kerosene. Wipe away all excess before using.

## Getting Familiar with the CMI 8:1 Micro Hauler

### UPPER



*Note: Cam stop/ open pin is held in place with a retainer cord that is not shown in the picture. Cam release cord is attached to the cam and allows user to open the cam from below the unit. Cam release cord is not shown in the picture.*

**Minimum breaking strength of the 8:1 haul system body is 11,000 lbs.**

**Minimum breaking strength of the 8:1 lower tie in hole (becket) is 3,000 lbs. Due to the mechanical advantage of this unit, the becket will only see 1/8th of the load put on this unit. (example: 8000 pound load on unit = 1000 pounds on becket.)**

The average strength at which the rope slips through the cam using brand new NER VPC hybrid performance braid 8mm rope is 2340 lbs. It should be noted however, that other ropes and different diameters will produce different numbers at which the rope slips through the cam. VPC has a strong, lightweight core of Vectran and polyolefin surrounded by a durable UV-resistant polyester cover. VPC rope has a low elongation and provides excellent hand/grip. Minimum breaking strength of the VPC rope is 4000 lbs.

### LOWER

LOWER UNIT TIE IN HOLE



## Rigging the CMI 8:1 Double Micro Hauler

# Cmi

## 8:1 Hauling System

This shows the regular method of threading the Micro Hauler 8:1 hauling system; Thread according to the diagram for normal usage. *Note: Begin threading by starting at the cam and then proceed along one side of the micro hauler until you need to switch and cross over at the end opposite the cam and proceed threading back down the other side of the micro hauler. A figure 8 trace should be used to tie into the lower becket on the upper unit.*



**Note: The 8:1 micro hauler will work with 8mm to 3/8" rope.**

## **! FOR YOUR OWN SAFETY, PLEASE READ !**

- ◆ Any person using CMI equipment in any manner is personally responsible for learning the proper techniques through personal instruction by an instructor competent in all safety techniques and backup systems.
- ◆ There are no warranties which extend beyond the description on the face hereof. This product is sold "as is" without implied warranties of fitness or merchantability.
- ◆ CMI cannot be responsible in any way for the misuse of the equipment described herein.  
**Never Forget! Your life may depend upon your equipment.  
Inspect all equipment before every use!**

## **!WARNING!**

- ◆ Always know the maintenance and use history of your equipment
- ◆ The use of second hand equipment is **STRONGLY** discouraged
- ◆ You are responsible for your own actions and decisions
- ◆ Failure to follow these warnings increases the risk of injury or death
- ◆ Special training & knowledge are required to use this product
- ◆ Rock & ice climbing, caving and technical rescue are potentially hazardous by their very nature

# **CMI**

## **8:1**

# **MICRO HAULER**

CMI Corp.  
338 Mill Road, PO Box 535  
Franklin, WV 26807  
800-247-5901  
[www.cmigearusa.com](http://www.cmigearusa.com)