



Sold to

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Self-Rescue

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Self-Rescue – Introduction

Having a good knowledge of self-rescue skills is essential for any climber. The more effectively you are able to improve a poor situation (e.g; if you are able to escape the belay and descend with an injured partner to the ground, instead of waiting in the middle of the crag for assistance), the less risk is required of rescuers and the quicker you and your partner will receive help.

Your self-rescue skills should be accompanied by a solid understanding of first aid (not covered in this manual). We recommend attending a wilderness first aid course to brush up on your skills.

If you are capable of rescuing yourselves, you may not need to call for outside help at all, if that is even an option. Depending on the weather

and your position, a rescue may not be possible. Many remote areas do not even have a rescue service available.

The self-rescue techniques described in this manual are merely guidelines. Many of the techniques simply will not work in the pickle you actually find yourself in. For example; you cannot safely descend if there is nowhere to make a reliable anchor. You cannot safely escape the belay and rope solo to an injured leader if you have no gear to make an upwards pulling anchor. You will often have to use your creativity to find a solution that works for your particular situation.

Make a solid plan before attempting any kind of self-rescue and consider the additional risk it puts on you and your climbing partners.

In general, if you can't solve your problem by escaping the belay and setting up a tandem abseil for you and the injured climber, it is unlikely that you'll be able to effect a safe rescue. In this case, you should consider calling for help or leaving the situation (if possible) and going for help yourself.

However, leaving an injured partner alone adds a whole other set of problems to the equation. If it's possible to call for help (either using a phone or shouting to nearby climbers for assistance), this is usually by far the best thing you can do if you are not confident solving the problem with your current set of skills.

Escaping the Belay

The *belay escape* is a technique whereby the belayer frees themselves from the responsibilities of belaying. This fundamental skill is necessary for many rescue situations.

Situations when you may need to escape the belay include:

- If your partner needs hauling through a crux while following
- If you need to descend to your partner to give immediate first aid
- If your partner falls and is injured while leading
- If you need to detach yourself from the rope to get outside help

The Belay Escape – How it Works

Any safe version of the belay escape involves the same four checkpoints:

- 1) Get hands-free
- 2) Transfer climber's weight to anchor
- 3) Transfer climber's belay to anchor
- 4) Remove all excess prusiks, carabiners and knots

The belayer can detach from the rope completely if needed. The end result is a system which can be released under load and can be used again as a belay. Returning to belay mode is often needed once a rescue has begun.

The full belay escape system is described in this chapter. Depending on the situation, you may not need to complete all of the steps (e.g: the process is much simpler if your partner is able to un-weight the rope). However, it's important to know the complete system before taking shortcuts.

Three different methods are described. These cover belaying:

- 1) From your harness (anchor is within reach)
- 2) From your harness (anchor is out of reach)
- 3) Directly from the anchor (e.g: using guide mode)



The Belay Escape – First Considerations

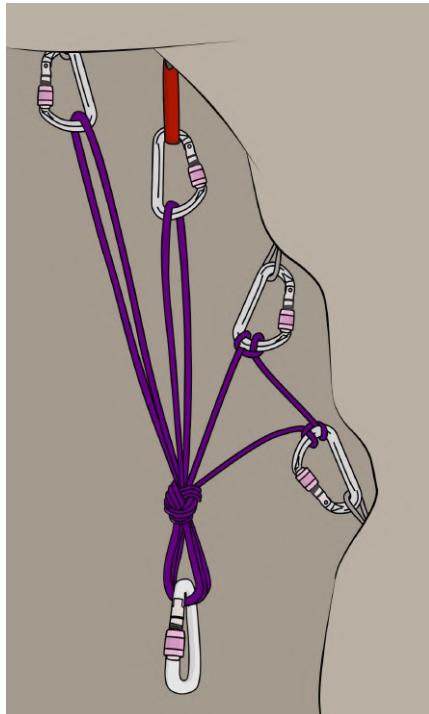
Before starting a belay escape, make sure it is the best course of action for the situation. Maybe a much simpler option exists, such as lowering your partner to a ledge, or getting them to prusik up.

Depending on the direction of loading and your course of action after escaping the belay, you may need to make your anchor stronger. Some rescue techniques (such as hauling) exert high forces on the anchor.

Beefing up the anchor is straightforward if you are belaying a second and there are protection points available within reach. With some creative sling craft and fine tuning, you may be able to equalize a few extra pieces to the belay.

If you are belaying a leader on a multi-directional anchor where there is only a single piece holding an upwards pull (example shown), you will need to add gear or build a new anchor before escaping the belay.

This is very difficult (or impossible) if the leader has the whole rack with them. However, you may be able to adjust the existing anchor pieces and cordelette to hold an upwards pull.



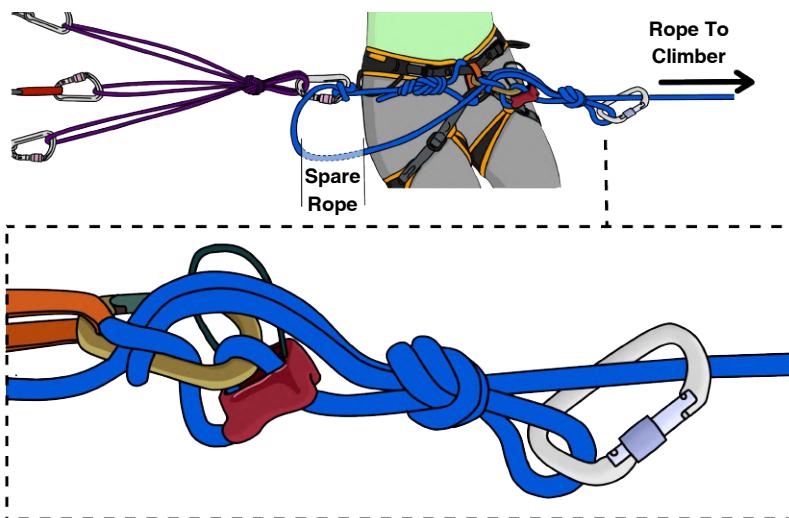
Make sure the anchor still protects you from a fall while you are adjusting pieces.

As a last resort, you might be able to rope solo (see page 113) or prusik (see page 116) a short distance to retrieve gear for backing up the anchor.

The Belay Escape – When Belaying from your Harness (Anchor within Reach)

Step 1

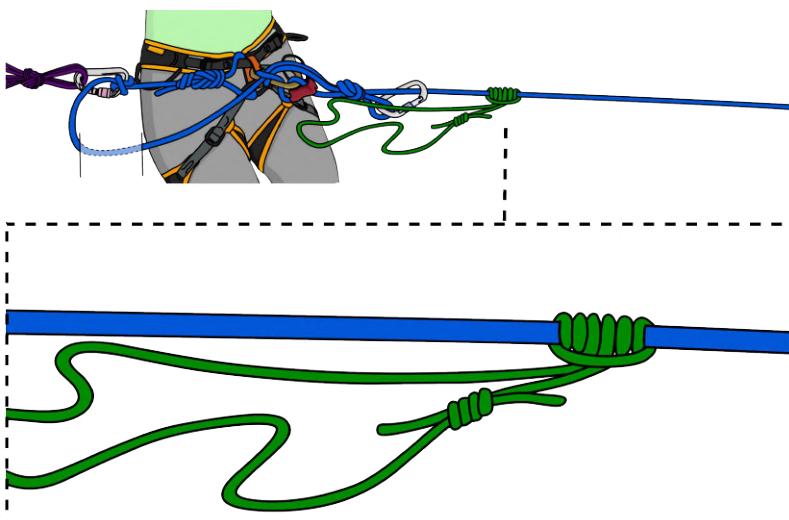
Get hands-free by tying off your belay device with a mule-overhand (see page 142).



Step 2

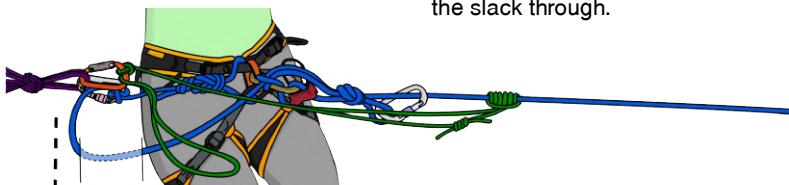
Tie a prusik hitch on the weighted rope with a long cordelette. Make sure the double fisherman's bend which joins the cord is close to the prusik hitch.

If you don't have a long cordelette, you could use a short prusik cord attached to 120cm sling.



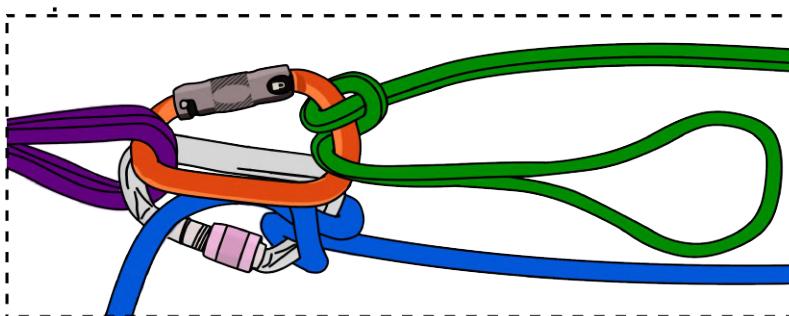
Step 3

Clip a screwgate to the master point of the anchor.



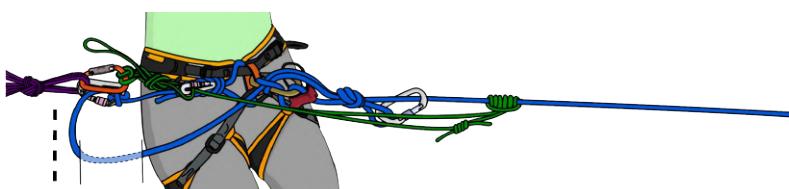
Step 4

Tie a munter hitch with the cordelette to the screwgate. Flip the munter so it's in the lowering position and pull all the slack through.



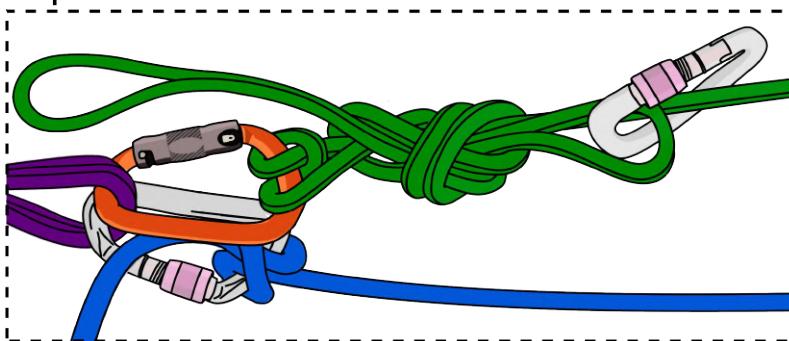
Step 5

Add a mule-overhand to the munter hitch on the cordelette (see page 141). This creates a munter-mule-overhand.



Step 6

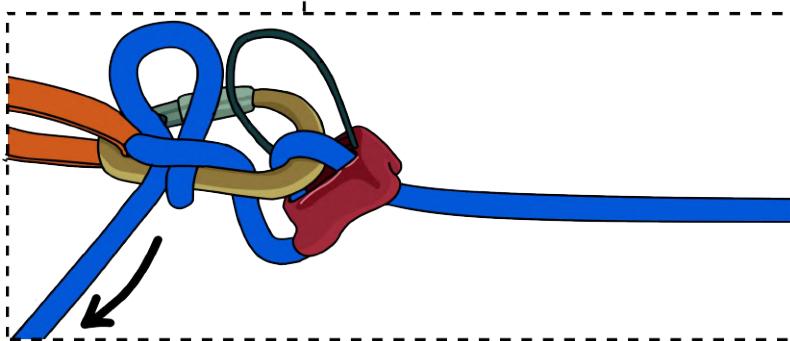
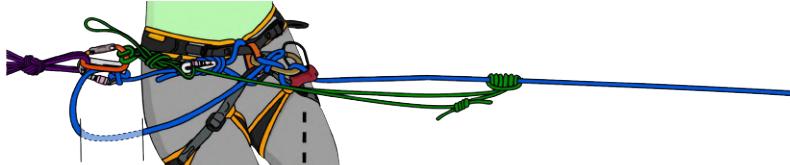
Slide the prusik along the rope towards the climber to take up any remaining slack in the cordelette.



Step 7

Carefully release your tied-off belay device and let a small amount of slack through so the climber's weight

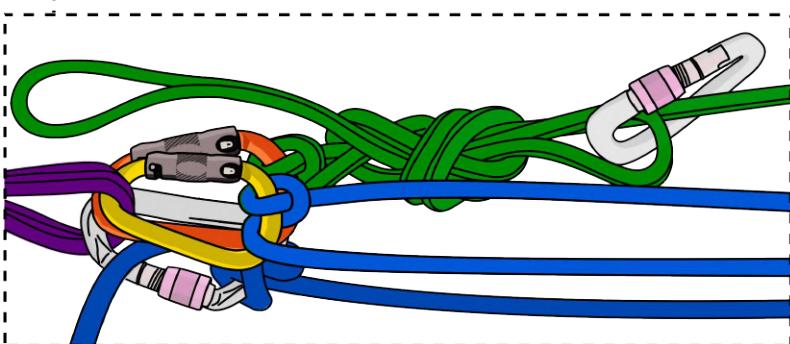
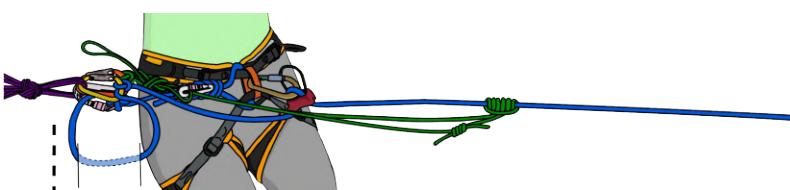
is transferred to the prusik. You are no longer hands-free, so keep one hand on the brake rope for the next 3 steps.



Step 8

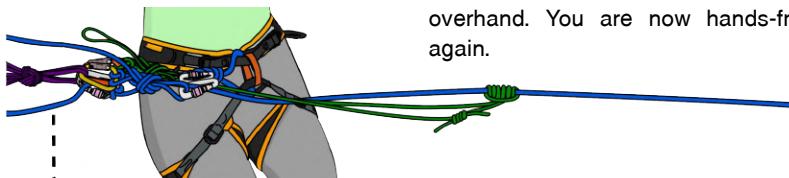
Attach a screwgate (yellow carabiner in this diagram) to the master point and tie a munter hitch on it with the

brake rope. Pull most of the excess rope through so there is just enough slack to remove your belay device.



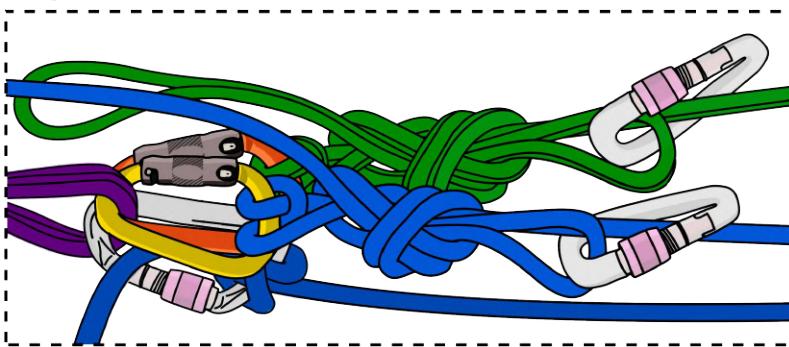
Step 9

Keeping hold of the munter's brake strand, remove your belay device.



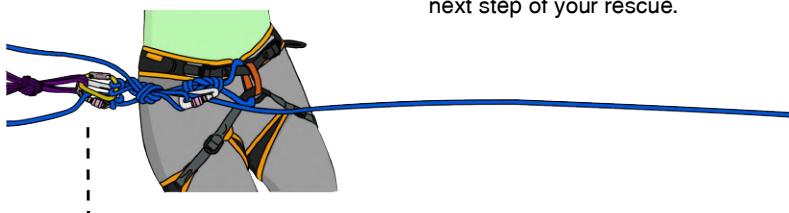
Step 10

Pull the extra slack through the munter hitch and flip it so it's in the lowering position. Finish the munter with a mule hitch and an overhand knot to make it a munter-mule-overhand. You are now hands-free again.



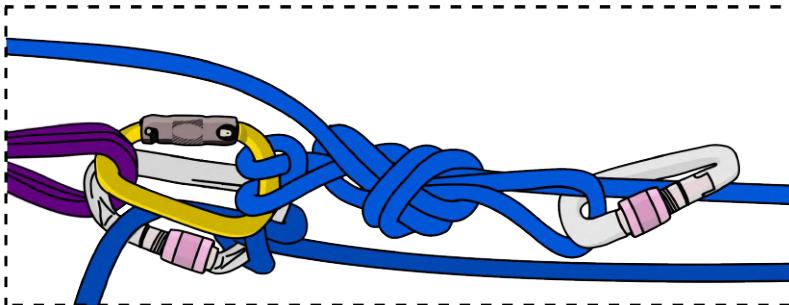
Step 11

Release the mule-overhand from the cordelette and use the munter to transfer the climber's weight from the cordelette to the rope.



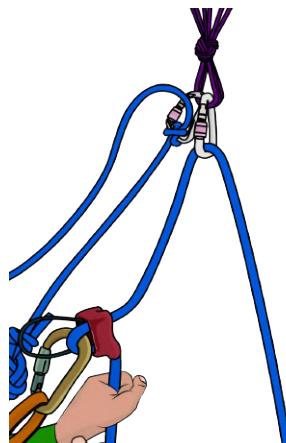
Step 12

Once the climber's weight is fully on the rope, remove the cordelette completely. You have now escaped the belay and can move on to the next step of your rescue.



Note

The same steps can be followed to escape the system if you are belaying from your harness and using a directional through the anchor.



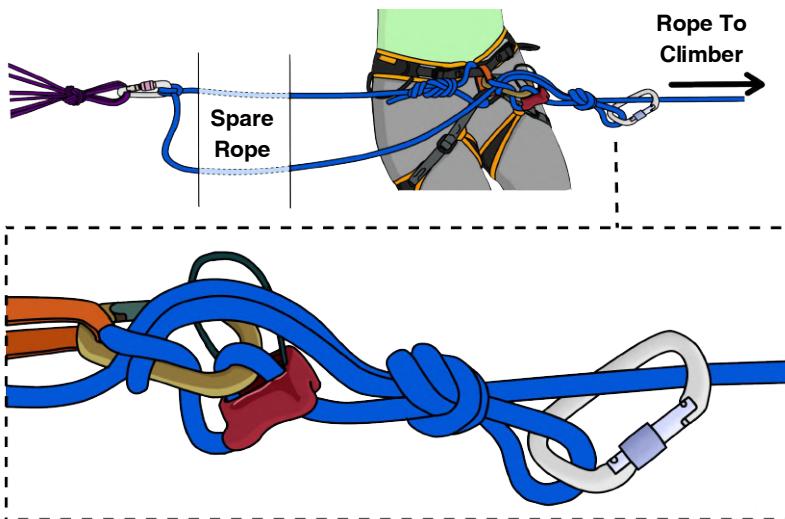
The Belay Escape – When Belaying from your Harness (Anchor out of Reach)

This method is great if you are far from the anchor and/or do not have a long cordelette available. The description below assumes that the

belayer is tied in to the end of the rope and then attached to the anchor with a clovehitch or figure-8 on a bight.

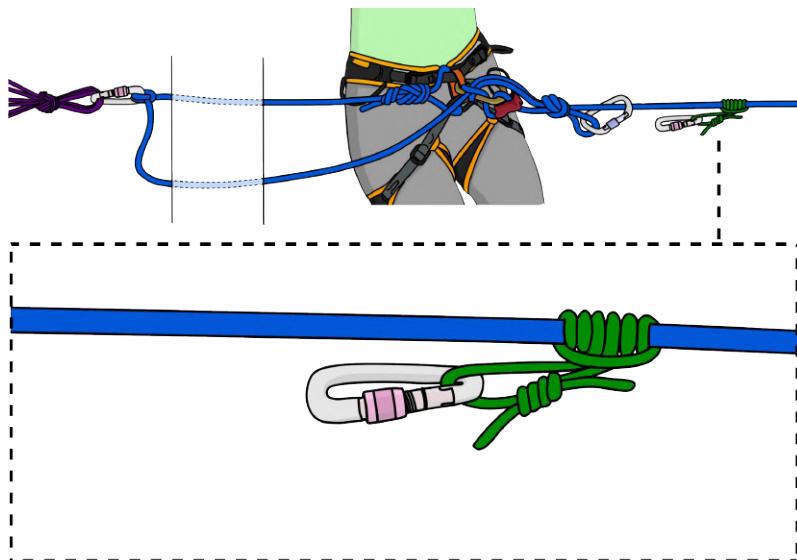
Step 1

Get hands-free by tying off your belay device with a mule-overhand.



Step 2

Fasten a prusik on the weighted rope as shown and attach a screwgate to it.

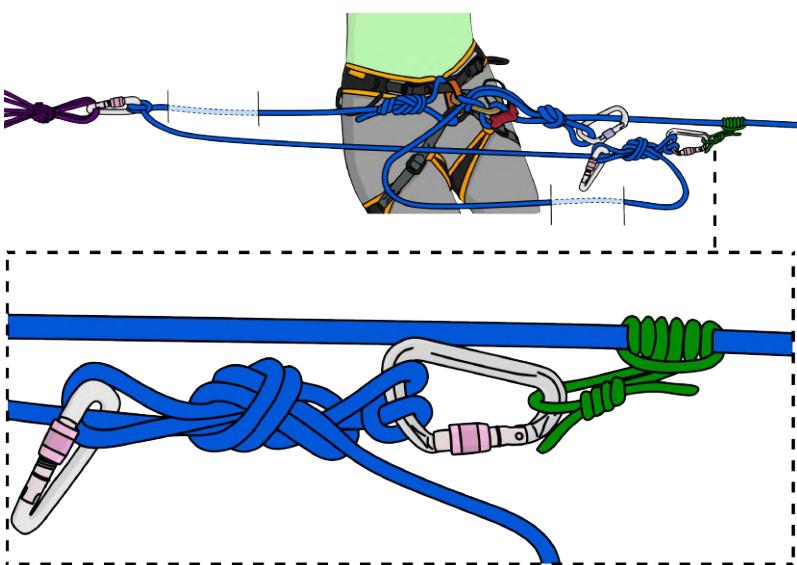


Step 3

Reach back to your tie-in at the anchor and grab the free end of your tie-in. If you can't reach, run through the rope stack until you get to it.

Step 4

Tie a munter-mule-overhand on the screwgate with this part of the rope.

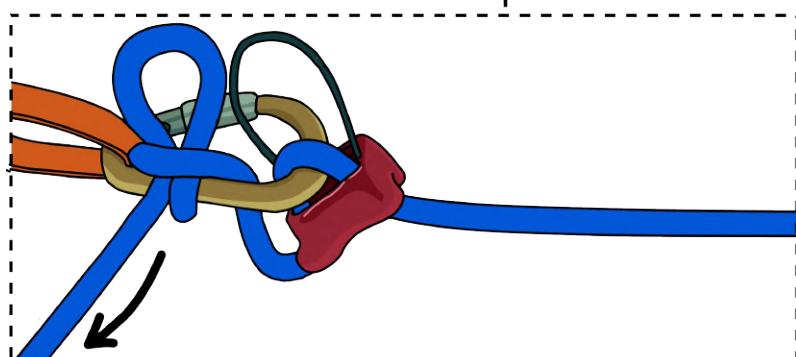
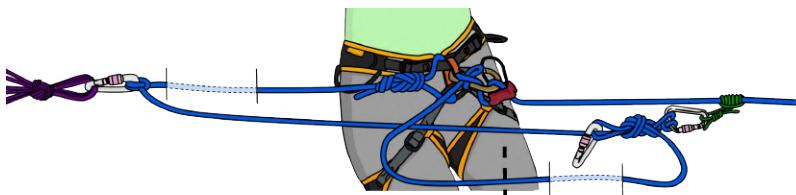


Step 5

Slide the prusik down the rope towards the climber to take out any excess slack.

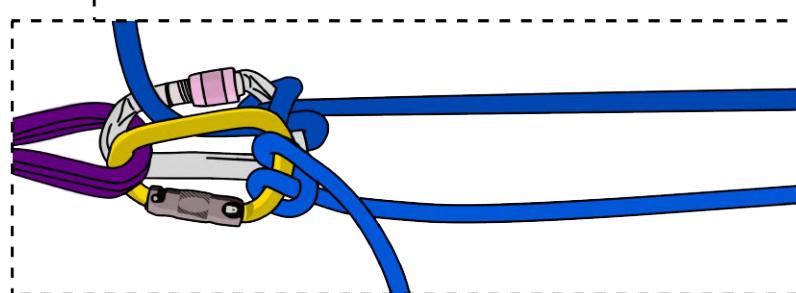
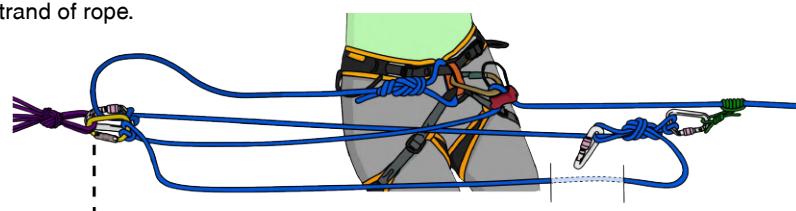
Step 6

Transfer the climber's weight onto the prusik by releasing your tied-off belay device. Be prepared for a bit of rope stretch before the prusik takes the weight. You are no longer hands-free, so keep one hand on the brake rope for the next 3 steps.



Step 7

Move back to the anchor and tie a munter hitch to it with the brake strand of rope.

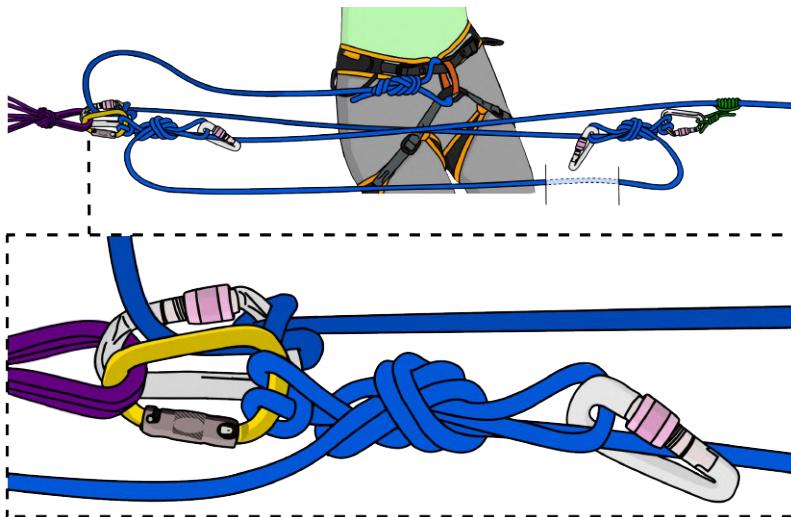


Step 8

Remove your belay device.

Step 9

Bring in the excess slack and finish the munter with a mule-overhand. You are now hands-free again.

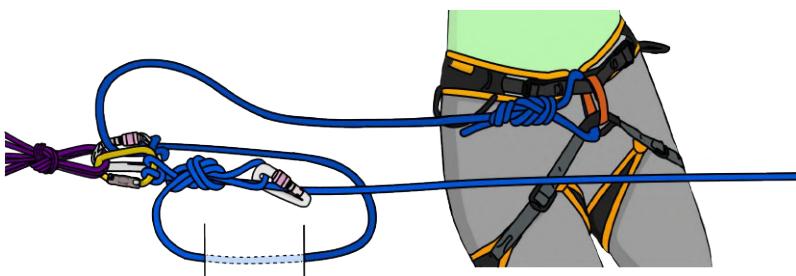


Step 10

Release the mule-overhand from the rope which is attached to the prusik. Use the munter to transfer the climber's weight from the prusik to the munter-mule-overhand on the anchor.

Step 11

Once the climber's weight has been transferred, you can remove the prusik and its munter hitch. You have now escaped the belay.

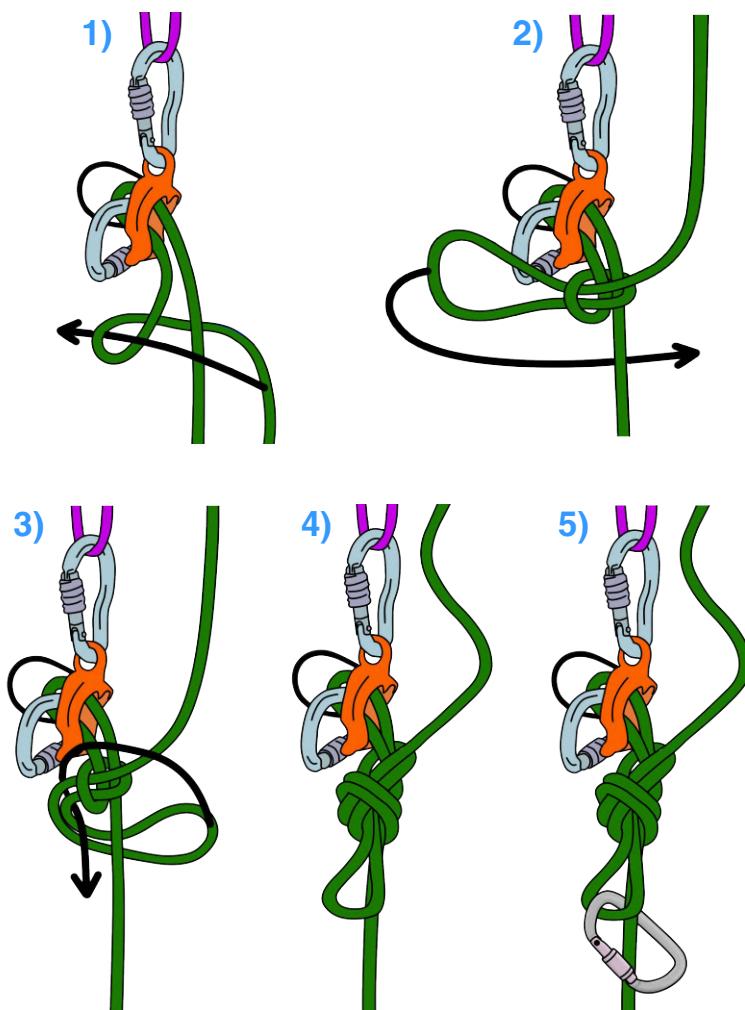


The Belay Escape – When Belaying Directly from the Anchor

When belaying directly from the anchor with a self-blocking belay device (such as an ATC in guide mode) or an assisted-braking belay device (such as a GriGri), you have already escaped the belay. These belay methods are not completely

hands-free — a light hand must be kept on the brake strand while belaying. Therefore, the only step remaining is to add a back-up.

Simply tie-off the device with a mule-overhand as shown below.



Hauling Your Partner

This section describes methods of hauling your partner up part of a climb. Times when you may need to set up a hauling system include:

- Assisting your partner through a short crux.
- If your partner falls while following a steep pitch and is left dangling in space.
- During a multi-pitch rescue of an injured climber, where descending would be more difficult or dangerous.

In most cases, it is easier for the

follower to prusik up the rope than it is for the leader to haul them. However, hauling may be the best option if they are injured or cannot use prusiks.

Warning — Unconscious Climber

Dragging a climber up a cliff may cause additional injuries. If the climber is unconscious, they should not be hauled unless directly attended. If a long or complicated haul is required, utilizing search and rescue professionals is usually the best course of action.

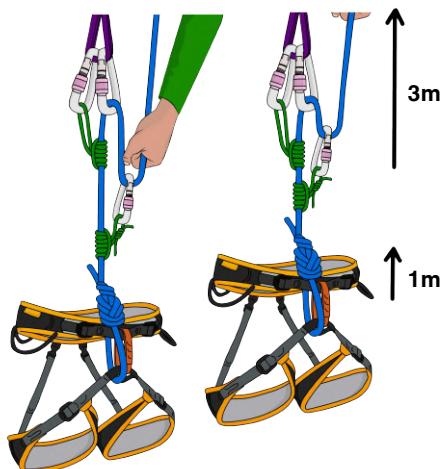
Mechanical Advantage

The hauling systems in this section are described using their mechanical advantage.

A 3:1 means that for every three meters of rope that you haul, your partner moves up one meter. With a 5:1, five meters of rope must be hauled to move your partner one meter. In theory, a 3:1 is three times easier than just pulling on the rope (1:1).

In reality, improvised hauling systems are fraught with inefficiencies, creating a significant difference between theoretical and actual mechanical advantage. This is primarily due to friction around carabiners and stretch in the rope (see page 107).

Taking this into consideration, a 3:1 setup is still a simple and effective solution for many situations.



Hauling Your Partner – Drop Line 1:1

Best Use

- Assisting your partner through a short crux near the top of a pitch.

Advantages

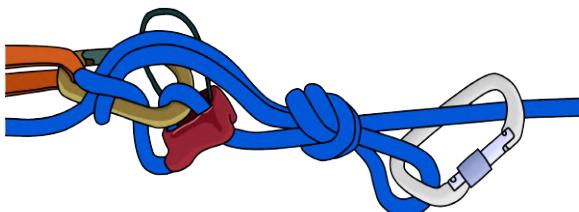
- Simple.

Disadvantages

- Only possible when the climber is less than 1/3 of the rope length from the belayer.
- Must be able to drop a rope to the climber easily. Getting your rope stuck will add more problems.

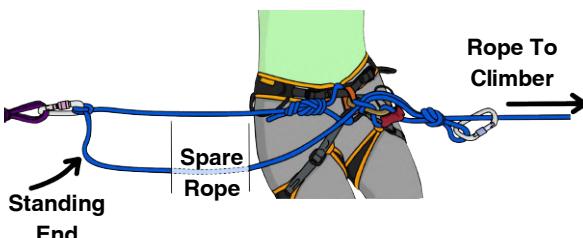
Step 1

Tie off your belay device (see page 142) so you can go hands-free.



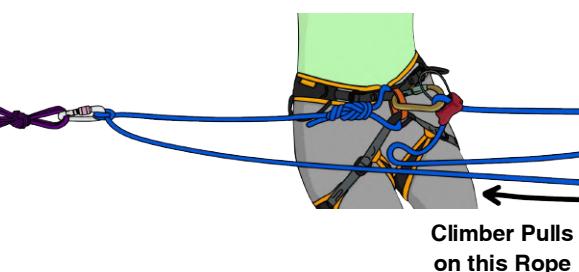
Step 2

Attach the standing end of the rope to the master point. Depending on your belay setup, it may already be attached



Step 3

Lower the rope stack to the climber.



Step 4

Release your tied off belay device. Your partner can now pull on the standing end of the rope while you belay them up — they do all the hard work! Make sure the climber pulls on the correct strand of rope. You could also pre-tie some loops in the rope so it is easier for them to pull.

Hauling Your Partner – Drop Line 2:1 / 3:1

Best Use

- Assisting your partner through a short crux near the top of a pitch when belaying in guide mode.

Advantages

- Simple.

Disadvantages

- Only possible when the climber is less than 1/3 of the rope length from the belayer.
- Must be able to drop a rope to the climber easily. Getting your rope stuck will add more problems.

Step 1

Attach a screwgate to the rope stack and lower it down to the climber.

Step 2

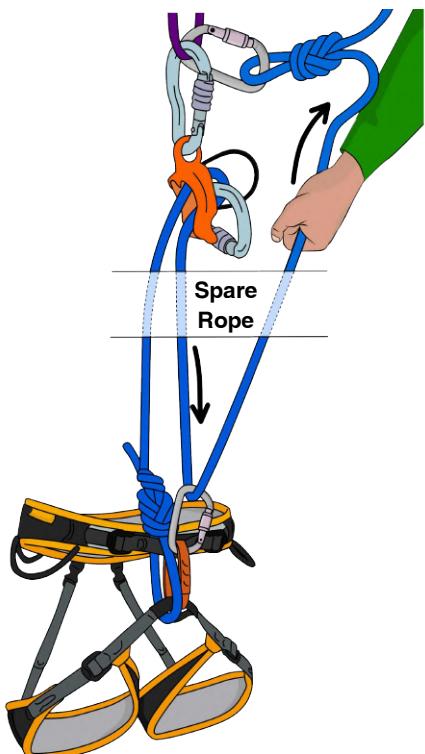
The climber clips this screwgate to their belay loop.

Step 3

Tie a back up knot (such as a figure-8) to the anchor. This back up knot should be adjusted every few meters.

Step 4

The climber pulls down (with a 2:1 advantage) while the belayer pulls up (with a 3:1 advantage).



Hauling Your Partner – Simple 3:1

Best Use

- Hauling your partner through a crux when passing the rope to them is not possible.

Advantages

- Only requires a few meters of rope to set up.

Disadvantages

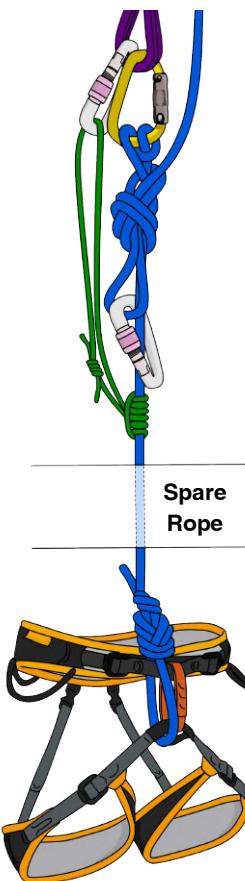
- The climber cannot assist.

Step 1

If belaying from your harness, you'll need to escape the belay (see page 85).

Step 2

Tie a prusik on the weighted rope and clip it to the master point with a screwgate (depending on how you escaped the system, you may already have this).



Step 3

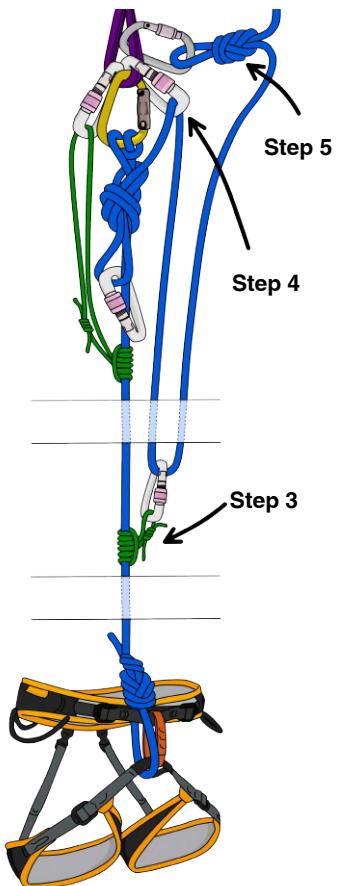
Tie another prusik on the weighted rope as far down as you can reach. Clip this to the loose brake strand with a screwgate (Use a pulley here if you have one).

Step 4

Connect the rope to the master point with a screwgate as shown.

Step 5

Tie a back up knot (such as a figure-8) in the slack rope and attach this to the anchor.



Step 6

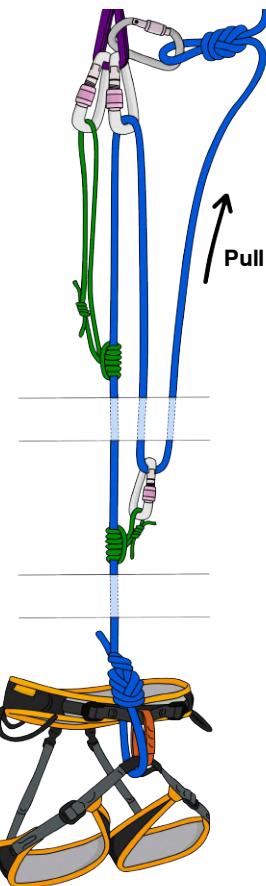
Transfer the load onto the upper prusik by slowly unfastening the munter-mule-overhand. Make sure you keep hold of the brake rope from now on.

Step 7

Remove the carabiner which the munter-mule-overhand was tied to. Pull in all slack.

Step 8

You are now ready to haul. Keep one hand over the upper prusik to maintain its position while pulling upwards on the rope. Make sure the prusik does not get sucked through the carabiner.



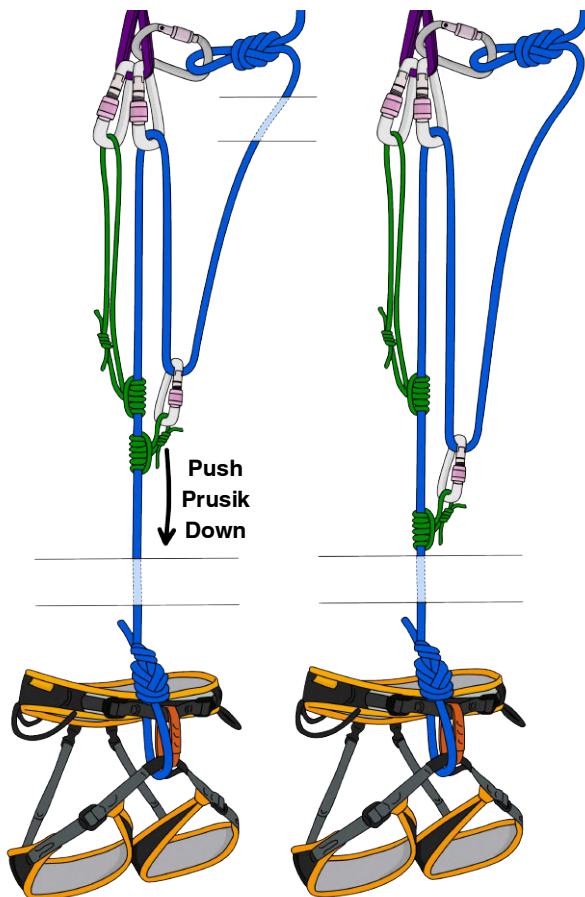
Step 9

The lower prusik will eventually join the upper prusik. At this point you will need to reset it. With the weight on the upper prusik, push the lower prusik down the rope as far as you can.

This would be a good time to adjust your back-up knot (tie a new one before untying the old one).

Step 10

Repeat steps 8 and 9 until your partner is able to continue climbing. At this point, re-attach your belay device and remove the prusiks.

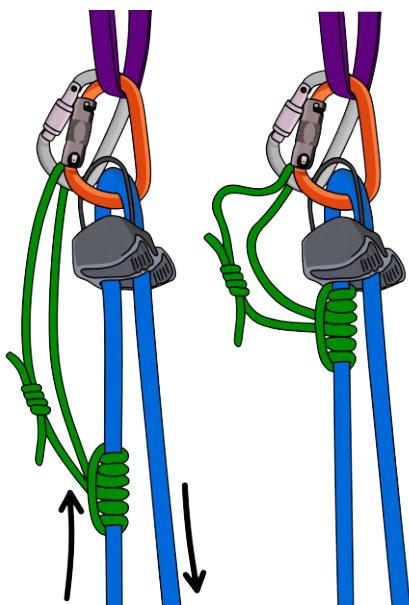


Hauling Your Partner – 3:1 Tips

Self-Sliding Prusik

If an ATC is available, you can add it to the master point during Step 4.

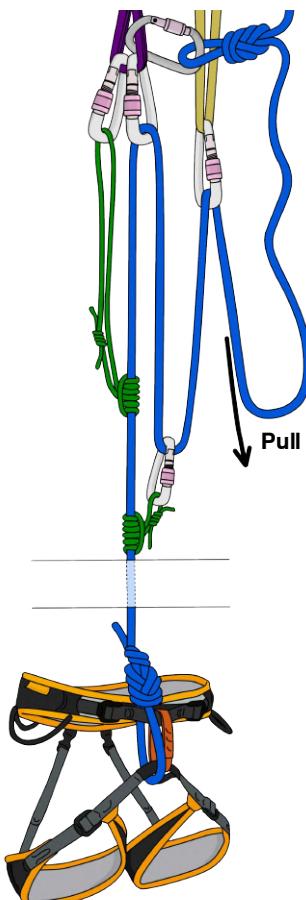
The ATC will not add friction, but it can help to prevent the upper prusik from getting sucked through the carabiner.



Downwards Hauling

If pulling upwards is difficult, you can re-direct the rope through the anchor to change the hauling direction. This will allow you to more easily put your weight into the haul.

The disadvantage is that it adds more friction to the system without adding any mechanical advantage.



Hauling Your Partner – 3:1 with Guide Mode

You can easily set up a 3:1 system if you are belaying directly from the anchor in guide mode.

Advantages

- Quick to set up. There is no need to escape the belay or attach the upper prusik.

Disadvantages

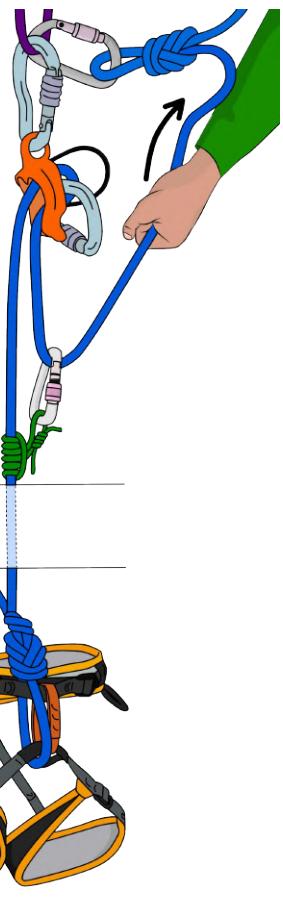
- Adds more friction to the system.

Step 1

Attach a prusik to the rope as previously described.

Step 2

You are now ready to haul.



Hauling Your Partner – 3:1 with a Garda Hitch

A garda hitch (see page 153) is an improvised ratchet pulley.

Advantages

- Eliminates the need for the upper prusik.

Disadvantages

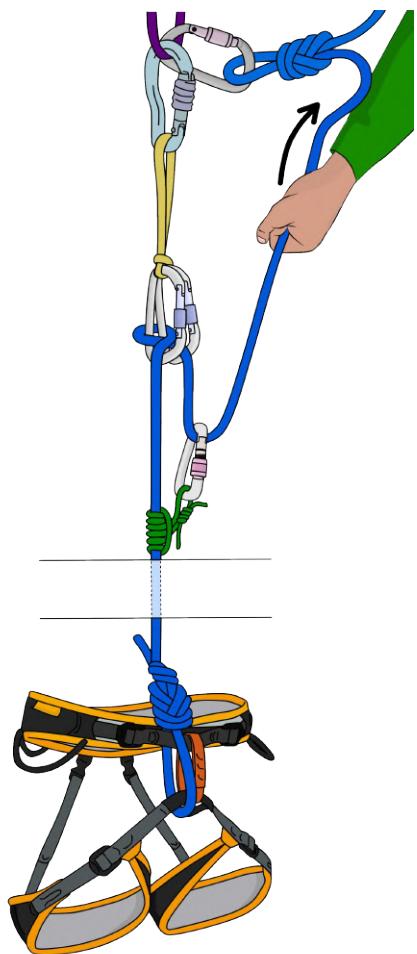
- Adds more friction to the system.
- The garda hitch is almost impossible to release when loaded. It is essentially a one-way hitch.

Step 1

Instead of tying a munter-mule-overhand when escaping the system, tie a garda hitch with a back-up as shown.

Step 2

Attach a prusik to the rope as previously described, and you are ready to haul.



Hauling Your Partner – 3:1 from Your Harness

The same system can be set up from your harness.

Advantages

- Can be used with many belay setups.
- No need to escape the belay.

Disadvantages

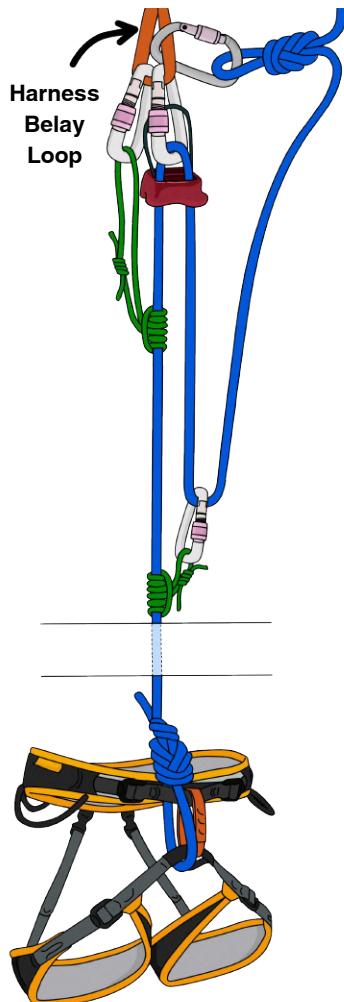
- The weight of the climber hanging from your harness can be uncomfortable.
- Your range of motion is restricted — pulling the rope and adjusting prusiks is much more difficult.

Step 1

Tie-off your belay device to get hands-free.

Step 2

Follow steps 2-10 of ‘Simple 3:1’ described on pages 99-101.



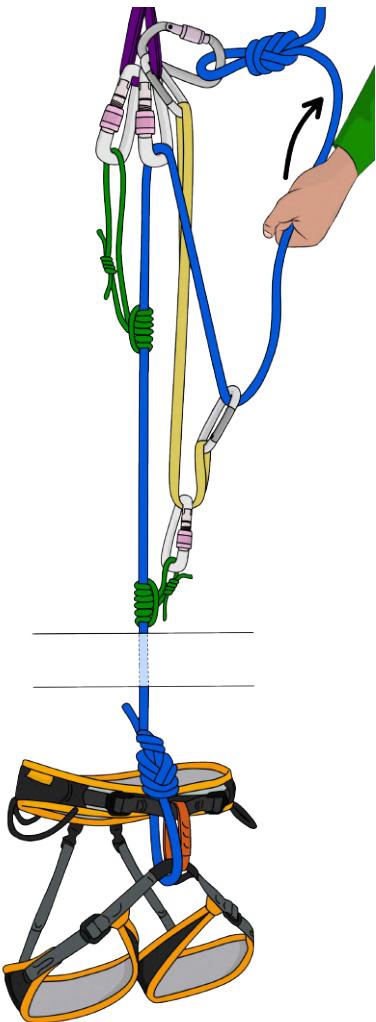
Hauling Your Partner – Adding More Advantage

Adding more mechanical advantage means easier but slower hauling. Endless variations are possible by

adding more prusiks, slings and carabiners. Two of the most common systems are shown below.

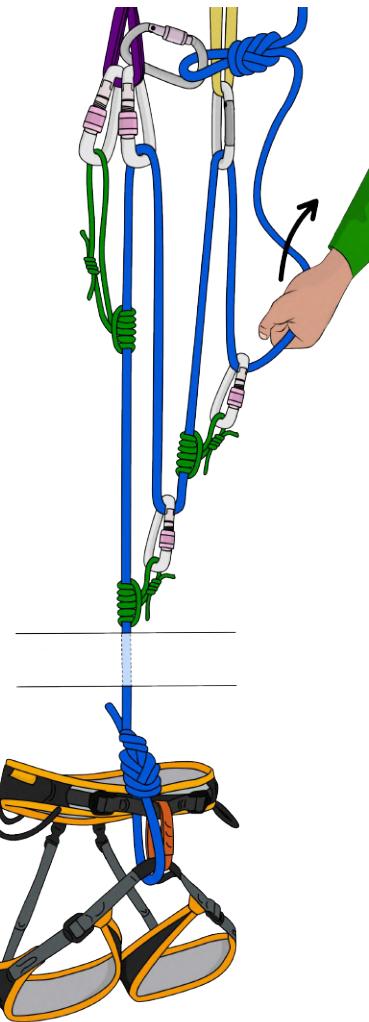
5:1 System

A 3:1 can be converted into a 5:1 by adding a sling and 2 carabiners.



9:1 System

A 3:1 can be converted into a 9:1 by adding 2 carabiners and a prusik.



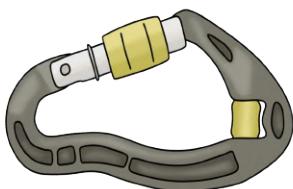
Hauling Your Partner – Forces, Friction and Efficiency

Forces on the Anchor

Mechanical advantage hauling systems place increased forces on your anchor. It may be wise to beef it up with more gear prior to hauling. If you continue hauling with something stuck (e.g: a prusik or carabiner gets caught in a crack), the forces on the anchor increase exponentially. Don't force the haul if it feels like something is stuck.

Carabiner and Pulley Efficiency

Pulleys significantly reduce friction in hauling systems, but are rarely taken on climbs because they are unlikely to ever get used. A good compromise is the DMM Revolver carabiner which features a tiny pulley. It reduces friction and can be used as a normal carabiner too.



Friction

More friction means harder hauling.

Friction is increased by:

- More weight on the rope
- More carabiners in the system
- Rope running over more surfaces

In a simple 3:1 setup, the weighted rope runs around 2 carabiners. This is the minimum number for a 3:1 haul, and therefore this system has the least friction.

Creating a 5:1 or a 9:1 may not necessarily make the haul easier, especially if your anchor is built on the ground and the rope is zigzagging over rough rock. Not only does this generate a lot of friction, it also means that you will have to haul five (or nine) meters of rope to get your partner one meter up. Depending on how far you can reach to reset the prusiks, you may only haul your partner a few inches between each reset. If set up on an awkward stance, it could literally take hours to haul a person half a rope length.

Hauling Your Partner – Summary

Keeping your system simple, straight and away from unnecessary friction will help much more than adding mechanical advantage to an inefficient system.

If you can throw some rope to your partner, the 'drop line' techniques will be quickest. If not, a 3:1 will be the next best option. It is often more efficient to pull harder on a 3:1 than it

is to add carabiners (and friction) to set up a 9:1. Only add more mechanical advantage if you need it.

Complicated belays and loose rock on belay ledges can add more problems than a hauling setup may solve. Consider alternative solutions (such as lowering your partner, or getting them to prusik up) before you set up a hauling system.

Retreating When Leading

Sometimes, a climb may prove to be too difficult, forcing you to retreat.

This is fairly straightforward if you:

- Can downclimb
- Can reach an anchor by french-freeing, aiding (see page 65) or penduluming (see page 61)
- Are less than half a rope length up a pitch

However, if you are more than half a rope length up a pitch, cannot downclimb or make a belay, you can still get down.

The Cost of Leaving Gear Behind

The following methods involve leaving your precious climbing gear behind. When deciding on which pieces or how many to leave, remember that the cost of climbing gear is far less than the cost of being seriously injured.

It is obviously very dangerous if the lower-off piece fails. Leave behind solid gear and worry about replacing it later. Depending on the location, it may be possible to retrieve your gear later by abseiling in from the top on a fixed rope and then prusiking out.

Mid-Pitch Retreat with a Single Rope

This method assumes that the gear you lower from is very reliable. It is recommended that you back up the

lower-off piece either by equalizing it with another or by leaving a couple of protection pieces below the top piece.

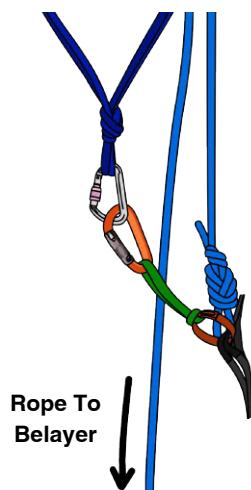
Step 1

Get lowered to a place where you can make an anchor.



Step 2

Attach to the anchor with a sling.



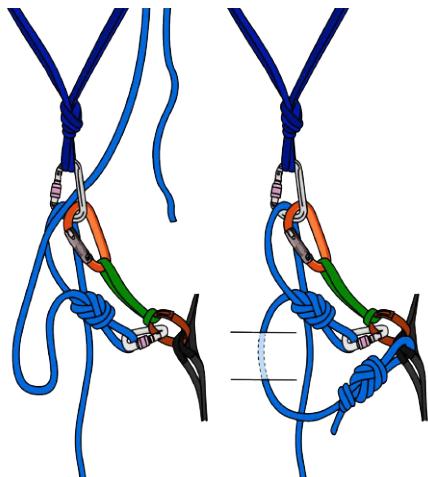
Step 3

Pull a bight of rope through the anchor, tie a figure-8 on a bight and attach it to your belay loop.



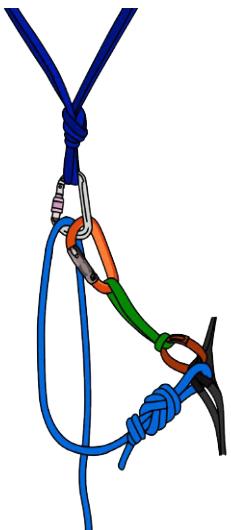
Step 4

Untie from the end of the rope, pull the rope through and re-tie back into the end.



Step 5

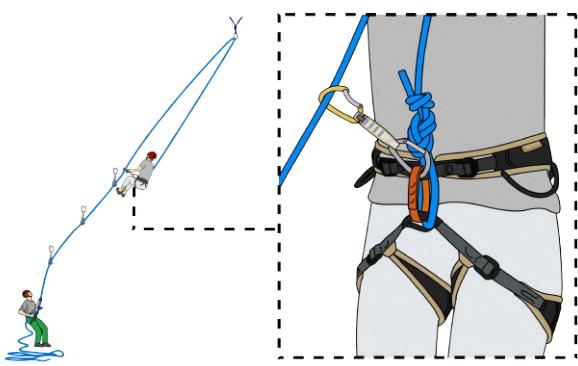
Remove the figure-8 on a bight and ask the belayer to take in the slack. If there is a huge amount of slack, consider tying intermediate knots while the slack is being taken in.



Step 6

Once the slack has been taken in, you can unclip your sling attachment and lower down to the belayer, or to another anchor to repeat the process.

If the route traverses or overhangs, make sure to lower down with a sling or draw attaching you to the rope. This prevents you from getting stranded. You'll have to clip past any gear that you are leaving.



Mid-Pitch Retreat with Two Ropes

If you are climbing with a lead rope and trailing another rope (e.g: a lightweight 'tag' rope for hauling or adding distance to your abseils), it is

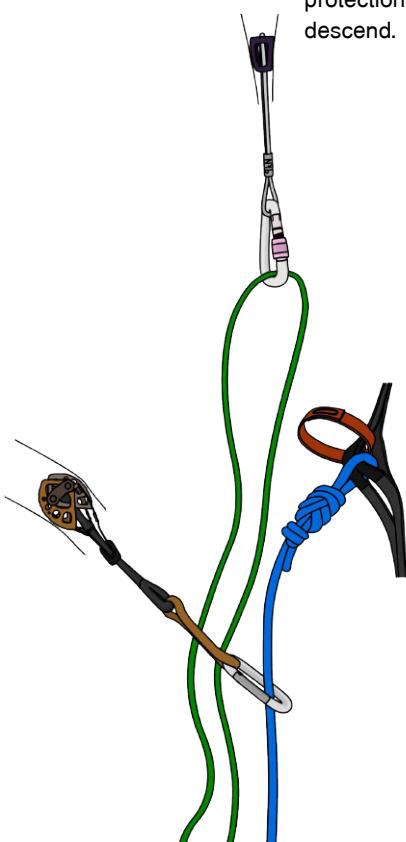
possible to use a different technique which is slightly safer (if you protected the pitch well) and means you can leave less gear behind.

Step 1

Clip the middle of the tag rope (green in this diagram) into your highest good piece of gear.

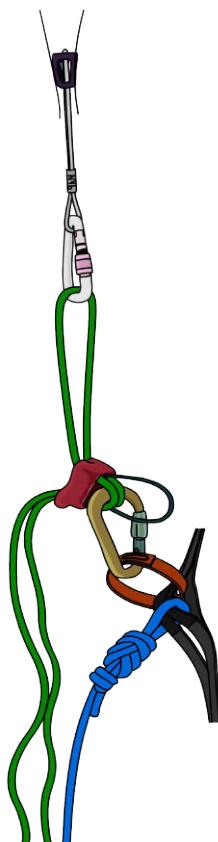
Step 2

Abseil on the tag rope while getting belayed down on the lead rope. If the top piece fails, you will be protected by the gear you placed on the lead rope. Remove this protection as you descend.



Step 3

This technique allows you to descend up to half the length of the tag rope. At this point, you will need to create an anchor and repeat the process.

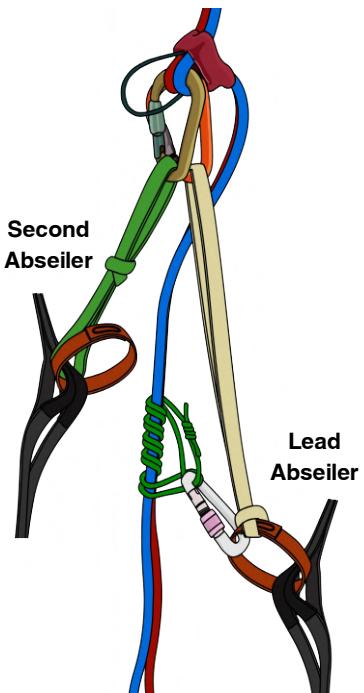


Tandem Abseiling

Tandem abseiling means two people descending with the same device. It is most useful when descending with an injured climber.

A simple tandem abseil setup:

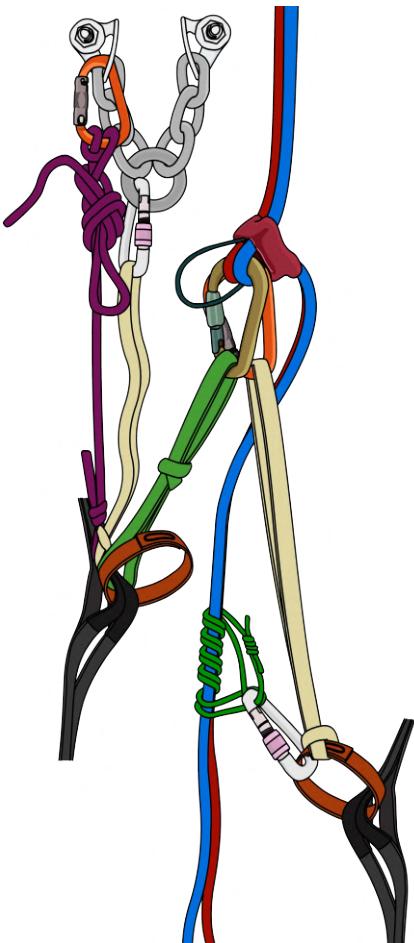
- 'Lead' abseiler is attached to a belay device with a 60cm sling girth hitched through their belay loop.
- Lead abseiler uses a prusik.
- Second abseiler is attached to the same belay device with a 60cm sling doubled through their harness. This allows the climbers to be staggered slightly.
- Both climbers are attached with separate screwgates to the belay device. The two carabiners add extra friction therefore making it easier to control the descent. This also allows each climber to be on independent systems.



Multiple Tandem Abseils

If your partner is incapacitated, you should attach them to each station with a releasable clip-in (such as a length of cord tied with a munter-mule-overhand), backed up with a sling. Pre-attach this to their harness before you begin the descent.

Because of the doubled weight, you might benefit from adding extra friction to the abseil (see page 34).



Chest Harness

You could make an improvised chest harness to keep your partner in a better position during the descent.

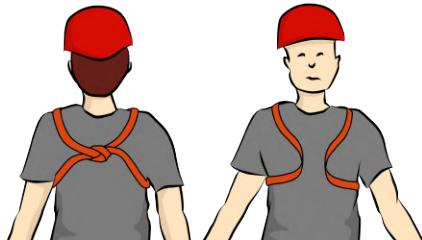
Step 1

Tie an overhand knot in the middle of a 120cm sling.



Step 2

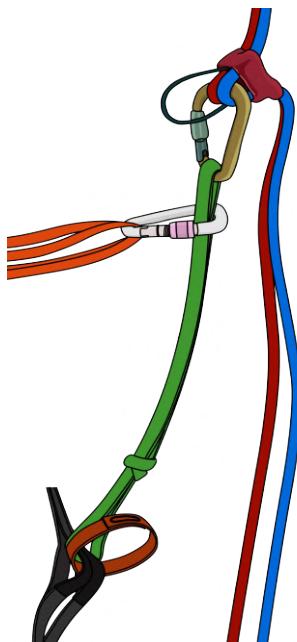
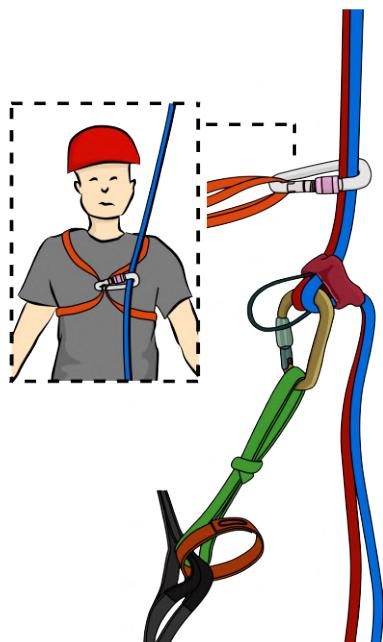
Insert your partner's arms into the loops, as if you were helping them put a jacket on.



Step 3

Clip the two ends of the sling around the abseil rope (no knot is needed — the carabiner should run freely down the ropes). An alternative is to clip the chest harness to your partner's abseil

sling. Be careful not to descend past your next abseil station — prusiking back up with an extra person hanging from your harness may be impossible.



Rope Soloing

Rope soloing is a technique where you belay yourself instead of being belayed by your partner. You can use this technique to lead or top rope belay. More complicated techniques are needed to solo an overnight alpine route or aid-solo a big wall. These skills are outside the scope of this book. Only the basic technique is described here.

Times when you may need to rope solo include:

- Climbing up to reach an injured leader after escaping the belay.
- Assisting an injured partner who cannot belay and when the easiest way out is up.

- Setting up a top rope anchor by yourself.

Rope Solo Devices

Devices exist which are specifically designed for rope soloing (such as the Silent Partner). Assisted braking belay devices (such as the GriGri) work to some extent, but are fairly unreliable for rope soloing and must be backed up with the technique described here anyway.

In keeping with the improvised character of self-rescue, we will assume that you don't have a rope solo device with you.

How To Rope Solo – The Basics

Step 1

Build a bomber, multi-directional anchor (a bolted anchor is best when first learning this technique) and tie one end of the rope to it. This anchor primarily needs to hold an upwards pull.

You can maintain the position of the anchor by tying a clove hitch to a separate piece of gear above the anchor as shown (other knots work too, such as the alpine butterfly, but the clove hitch is much easier to cinch tight).

Alternatively, you can use a prusik to maintain the anchor's position. Be aware that prusiks may slip when left on an unattended, moving rope like this. If it is critical that your anchor stays in position, use the clove hitch technique instead.



Step 2

Tie in to the other end of the rope.

Step 3

Stack the rope neatly so that it feeds out from both ends. The rope will feed out twice as fast from the anchor side than from your tie-in side, so factor this in when stacking.



Step 4

Pull a few meters of rope through from the anchor side and tie a clovehitch to a screwgate on your belay loop. This is your primary tie-in point.

Step 5

Tie another clovehitch a couple of meters further down the rope. This is your back-up.



Step 6

You are now ready to climb. As you ascend, place gear on the rope between your primary clovehitch and the anchor.

Step 7

You'll need to adjust your clovehitch just before the rope comes tight. Pull up a few meters of slack rope, tie another clovehitch, then remove the old one.

Remember that the extra slack from untying will add to the distance you can fall as well as the distance you can climb up. Re-tie the clovehitches as often as needed to keep yourself safe.

Alternative Rope Solo Method

The main reason to be tied into the end of the rope is so that it's impossible to become completely detached from the system.

Depending on your level of competence with rope soloing, you may choose to only be attached to the system via the clovehitches. This means you have less rope hanging from your harness and therefore less

chance of a loop getting caught on something out of reach below.

A good compromise is to carry the rope with you in a backpack while climbing. Tie into the end of the rope and stack it inside the backpack (your tie-in end is stacked at the bottom). Keep your backpack open so you can pull rope out easily while you climb.

Rope Soloing Dangers

Rope Management

One of the main difficulties of rope soloing is judging the amount of rope needed to get to the next gear placement or good stance. It's a hard balance between having enough rope to move up, and keeping fall potential to a minimum.

Dynamic Belay

Without a partner, you will not have a dynamic belay. This means more force is applied to your gear in a fall — another reason to place solid gear more frequently.

Stuck Ropes

Another common problem (especially on lower-angle terrain, or if it's windy) is getting a loop of rope stuck on something out of reach below.

Reducing Dangers

You can reduce these dangers by:

- Placing good gear more frequently than you normally would.
- Identifying upcoming gear placements before you reach them.
- Making sure you don't need to re-tie your clovehitches in the middle of a difficult move.
- Only climbing terrain you find easy.
- Having a sling pre-attached to your belay loop. This allows you to quickly clip in to a piece of gear — useful for getting your hands free to adjust knots.
- Managing your rope well. If your rope is likely to get stuck far below, you could carry it in coils on your harness (this works better higher up the pitch when there is less rope to deal with), or take it with you from the start in a small backpack.



Top Rope Self-Belaying

Other situations exist where you may need to self-belay up a rope above you. For example, if the rope above gets stuck when you're following a pitch. A solution would be to self-belay to the point where the rope is stuck.

In most situations like this, the rope remains still while you ascend. Simply climb up and tie backup knots as you go.

Depending on the situation, you may reach a point where you can be put on belay. In this case, you should adjust the backup knots while the belayer takes in rope. This ensures



that you do not create unnecessary fall potential while the rope is being taken in.

Prusiking up a Rope

This section explains how to ascend a rope using prusiks, assuming that you already know how to tie one (see page 148). Prusiking is most commonly needed if:

- You abseiled too far
- You abseiled the wrong way
- Your ropes get stuck after abseiling
- You fall while leading or following a steep pitch

Before You Prusik up a Rope

Only prusik up a rope which is properly attached to an anchor

Sounds obvious, but many accidents have happened because a climber was ascending a 'stuck' rope which suddenly came free.

Another fatal mistake is to ascend only one rope on a double rope abseil, hoping that the knot will remain jammed in the anchor. When under

load, even large knots can squeeze through carabiners and certain types of chains or rings.

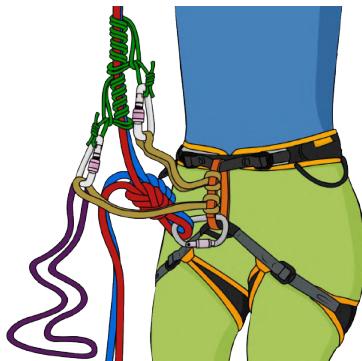
If you descended both ropes, you'll need to ascend both too. Remember that prusiks work equally well on one rope or two.

Always back up your prusiks

Prusiks are not full-strength attachment points.

Tie a back-up knot in any rope which you are ascending. Clip this knot to your belay loop and re-tie it frequently as you ascend.

Make sure to tie the new back-up knot before removing the old one.



How To Prusik up a Rope: The Standard Technique

Advantages

- Safe to use in almost any rope-ascending situation.

Disadvantages

- Often more strenuous than other methods, such as the slingshot (see page 119).

Step 1

Tie a back-up knot (clovehitch, overhand or figure-8 on a bight work well) in the slack rope(s) beneath you. Clip this knot to your belay loop with a screwgate. If you are ascending two ropes, make sure to tie back-ups in both of them.

If you are mid-abseil, simply weight your prusik and tie the back-up knots.

If you are abseiling without a prusik and dangling in space, you can wrap the rope around your leg at least three times, tie a prusik, release the rope from around your leg, weight the prusik and then tie the back-up knots.

Whatever you do, make sure to keep hold of the brake rope until you have tied the back-up knots.

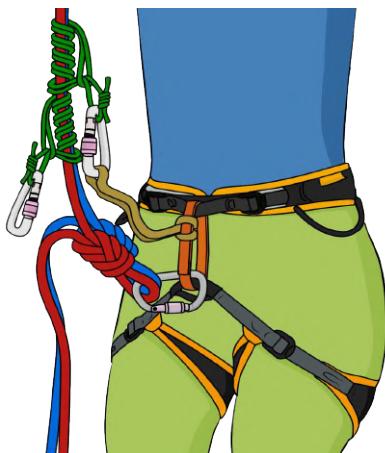
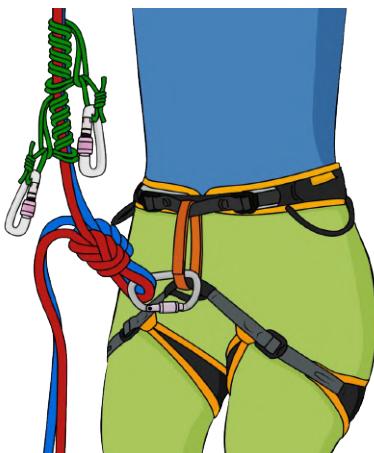


Step 2

Attach two prusiks (classic or klemheist types work well) to the rope(s) above you.

Step 3

Girth hitch a 60cm sling to your belay loop and clip it to the top prusik (if it's too long you can tie a knot to shorten it). Use screwgate carabiners for all connections. If you don't have enough screwgates, you can substitute two snapgates with gates opposite and opposed.

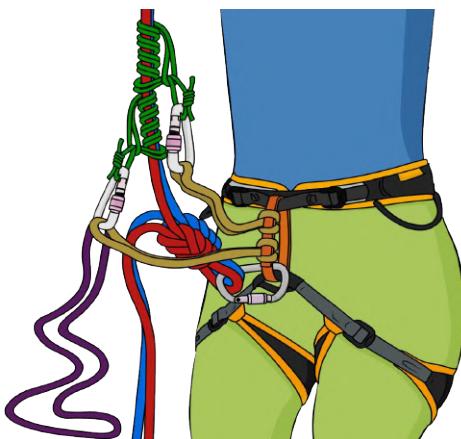
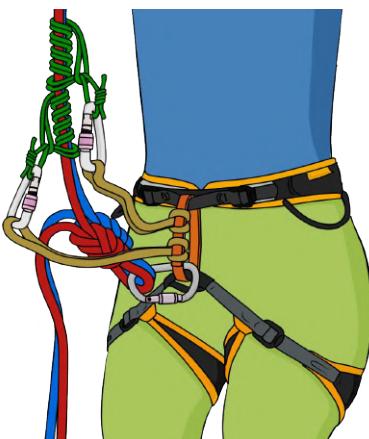


Step 4

Girth hitch another sling to your belay loop and clip it to the bottom prusik.

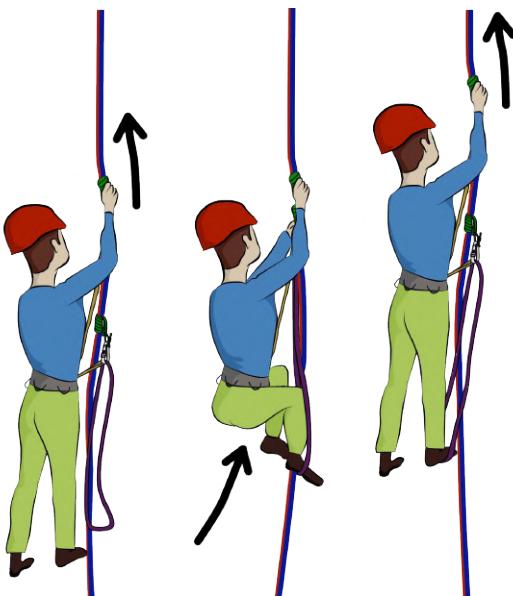
Step 5

Make a foot loop by clipping a long sling/piece of cord to the bottom prusik.



Step 6

Now the hard work begins. To ascend, push the top prusik up the rope as far as you can, then sit back in your harness to rest your weight on it.



Step 7

Slide the unweighted bottom prusik up the rope and stand in the foot loop. As you stand up, slide the now unweighted top prusik up the rope.

Step 8

Repeat this process, making sure to adjust the back-up knots as you ascend.

How To Prusik up a Rope: The Slingshot Technique

Advantages

- Less strenuous to ascend the rope than the standard technique (see page 117).

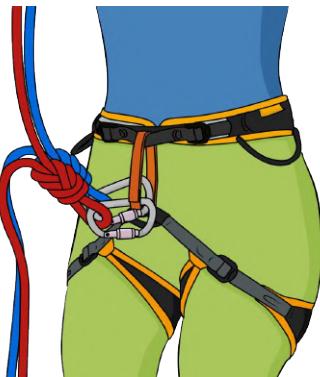


Disadvantages

- You can only use this technique when both strands of rope are within reach. For example, you cannot regain your high-point if you fall into space when leading or following a steep pitch.
- Difficult to set up mid-abseil if you can't un-weight the rope.
- Causes the rope to rub over the main anchor point. Never use this method if your rope is threaded through webbing, a sling or any fairly worn-out anchor point. The sawing action of this technique can cause the rope to cut the sling!

Step 1

Anchor yourself independently of the abseil ropes (if you're not already on the ground) and remove your belay device.



Step 2

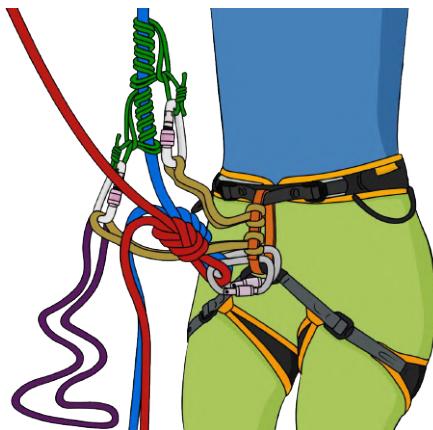
Tie a figure-8 on a bight in both strands of rope. Clip both of these to your belay loop, each with their own screwgate.

One of these will remain weighted as you ascend, the other is your back-up knot.

Step 3

Tie both prusiks on the side of the rope which has the knot joining the two ropes. Attach yourself to both prusiks and rig a foot loop as described on page 118.

If you anchored independently from the abseil ropes, you will need to detach yourself from the anchor at this point.

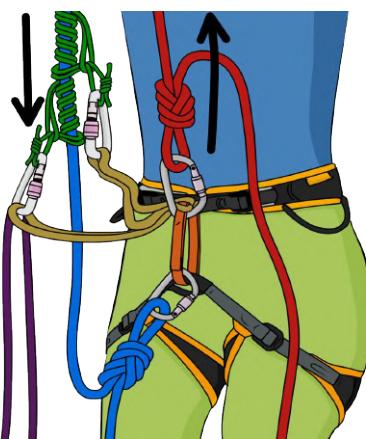


Step 4

Prusik up the rope, using the same technique described in steps 6 and 7 on the previous page.

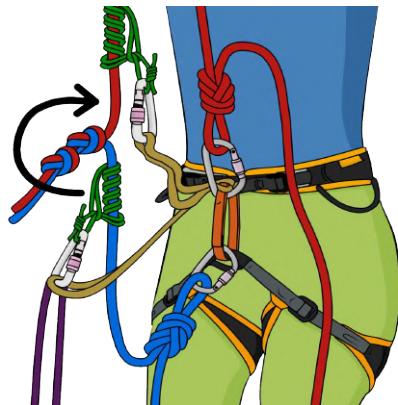
As you pull down on one side of the rope, the opposite side will pull up, assuming there isn't much friction at the anchor point. This makes the ascent easier, but slower, than using the standard method.

Re-tie your back-up knot as you ascend (on the blue rope). Make sure to get the right knot though — do not untie the weighted knot!



Step 5

In most cases, you'll have to pass the knot which joins the two ropes. Simply re-tie your prusiks past this knot one at a time.



How To Prusik up a Rope: Using an Extended Belay Device

Advantages

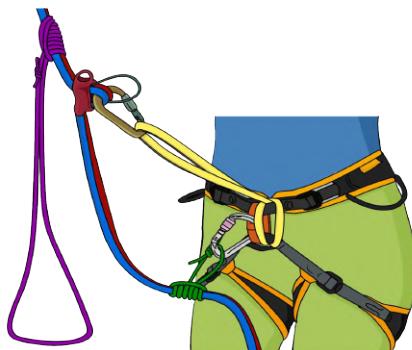
- Fairly quick to set up.

Disadvantages

- Only works if you are abseiling with an extended belay device which has a guide mode function.

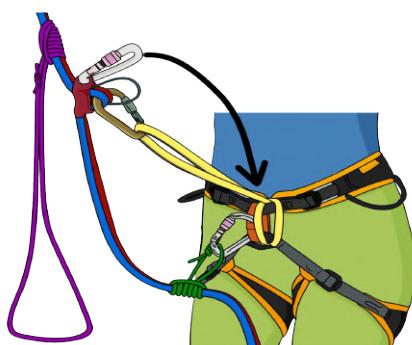
Step 1

Fasten a prusik knot (klemheist works well) around both ropes above your belay device with a long piece of 5mm or 6mm cord. This will be your foot loop. If you don't have a long piece of cord, just use a short one and attach a sling to it.



Step 2

Step into the foot-loop and stand up, taking the weight off your belay device. Make sure to keep hold of both brake ropes as you do this.

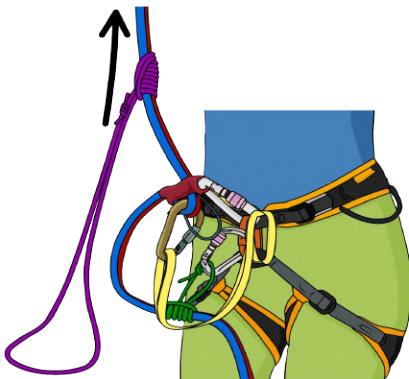


Step 3

Connect your belay loop to the auto-block hole on your belay device with a screwgate. Sit your weight onto your now auto-blocked belay device.

Step 4

Slide the top prusik up the rope and stand in the foot loop again to take the weight off your belay device.



Step 5

Pull the slack rope through your belay device and weight it again. Repeat as necessary.



Prusiking up a Rope – Summary

Knowing how to prusik up a rope is an essential skill for any trad climber. Having this knowledge can transform a potential epic into a mere inconvenience.

It is strenuous and awkward at first, and it may take a while to figure out the exact lengths of cord you need. But with a little practise, you will soon become a prusiking pro.

Sold to
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