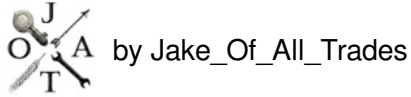




## DIY Pocket Monkii Suspension Trainer - the Most Portable Gym Ever



In my opinion, calisthenics are the best way to get a good workout and improve one's fitness. It's just fun, and a challenging way to move your body in creative ways. It requires no equipment, but if you want to expand the ways you can move and introduce resistance you can use a suspension trainer, which is a system of adjustable straps, handles, and an anchor point or two to achieve new angles and ranges of motion for calisthenic movements.

Currently, the best suspension trainers out there come from a brand called Monkii. They're currently on their third product iteration, called the Pocket Monkii, which strips away a lot of the features of previous versions to create an ultimate portable gym. It sets up on a door or branch in seconds and is an amazingly simple design, but has an awesome quality in its materials. It packs down into a case that literally fits in your pocket. You can check it out here if you're

interested: <https://monkii.co/>

I have made a DIY version of their previous product, the Monkii Bars 2, with an Instructable written up here: <https://www.instructables.com/id/DIY-Suspension-Tr...>

I am not any sort of spokesman for Monkii, but they recently contacted me to do a DIY version of their new Pocket Monkii. They appreciate the DIY spirit, and actually encourage people to make their own if they can't afford their products because they really just want people to get more active. They publish DIY guides for their products on their own site here: <https://monkii.co/pages/diy-how-to-make-your-own-m...>

This is a step-by-step guide for their new Pocket Monkii, enjoy!

### DIY POCKET MONKII



## Step 1: Video

Here is a video I made to document the entire project:

[//www.youtube.com/embed/VmCaO6seBZg](https://www.youtube.com/embed/VmCaO6seBZg)

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## Step 2: Materials and Tools

Here's what you'll need to get to make your own Pocket Monkii

### Materials

- 2 -10' Cam Buckle Tie Downs
  - Rated to hold at least your own body weight
- 12-18"- PVC Pipe
  - I used 3/4" diameter, but you can use whatever you like to fit your hands
  - 3 Lengths of 4-6" pipe depending on the width of your closed hand
- Thin Kevlar String for sewing
- 3 - 2" pieces Heat Shrink Tube
  - Use 1" diameter Heat Shrink with a 3:1 shrink ratio
- Small Carrying Case
  - I used a toiletry dopp bag
- Gorilla Tape (for grip)
- Foam Mounting tape (for cushion on the door anchor)

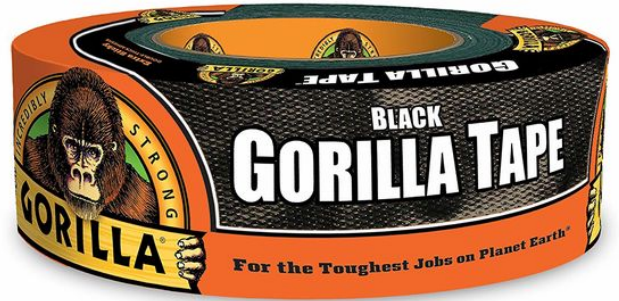
### Tools

- Scissors/Utility knife
- Hacksaw
- Heavy Duty sewing device (Stitching Awl, sewing machine, Sail needle, etc.)
- Heat gun or lighter
- Super Glue

Most items can be found at a hardware store and/or dollar store. All in all I spent about \$25 on these materials.

**Shopping List Link:** <http://a.co/1Yqx0rf>











 1 Remove the two cone needles	 2 Install the cone pin.	 3 Pass the line through the cone hole.
 4 Install the head.	 5 The length of the line is slightly longer than the length of the suture	 6 Pass the cone stitch through the front of the leather
 7 Pull the line out and the cone stitch back out.	 8 Cone stitch through the second hole	 9 Pass the line through the hole in the diagram
 10 Pull the thread tight and pull the needle back out	 11 Back as pictured	 12 Continue threading as shown in the picture

1. If you happen to have a stitching awl (EZ Stitch or Speedy Stitch device), the sewing bits will be a whole lot easier than with a sail needle. If you happen to have an industrial sewing machine you're in even better luck, but a stitching awl is a great tool for sewing webbing on the cheap. Use this diagram to learn how to use a stitching awl.

### Step 3: Design

#### Layout

The design of the Pocket Monkii is fairly simple. It consists of three lengths of nylon webbing from the tie-down straps. The first is roughly one foot long, and will go through the padded door stop and be secured to the anchor end of the cam buckle. Through the adjustable end of the cam buckle will be another length of webbing, which will be a four feet in length and have a small loop sewn on the end. Through this loop will be last length of webbing, which will be about 10 feet in length. On either end of this strap is a "Lower Triangle."

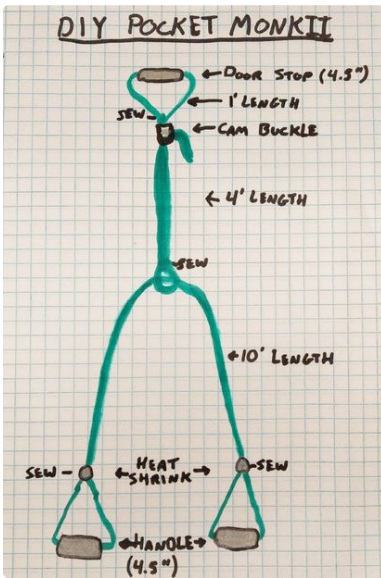
#### Lower Triangle

The Lower Triangle will be made by running the end of

the strap through a handle, then securing the end back onto the strap. The lower triangle will be roughly 18 inches of webbing.

#### Sewing

There will be four sewn joints: One on each Lower Triangle, one to create the loop on the adjustable strap, and one to close the fasten the door stop strap together. Each sewn joint will be sewn in a "Box X" pattern, which is just a box with an X inside. This is a very secure stitch that will prevent any slipping or pulling apart of the webbing. Each joint (except for the door stop strap) will be secured further with a bit of heat shrink tubing. This will protect the stitching and make everything look a bit better too



1. This is how the Box X stitch should look when it's done



## Step 4: Process - Cut, Sew, Shrink

### Handles/Door Stop

Cut the PVC into three lengths using a hacksaw. These should be cut to just slightly longer than the width of your closed hand. For me it was about 4.5". Two will be handles, and one will be the door stop. Use a utility knife to fillet out the inside edges of the ends of each piece; this will prevent rubbing and abrasion of the straps on those corners. Wrap the handles in a layer of Gorilla Tape. I find that Gorilla Tape works best, as it's extremely durable and offers a nice grip on the handles. Wrap a couple layers of foam tape on the door anchor, then wrap a layer of Gorilla Tape over top of that. This combination adds a good amount of protection for the door and creates a friction "bite" on the door that will prevent any slipping while moving around and exercising.

### Straps

Measure out and cut your 10', 4', and 1' lengths of strap. Cut off any tags or hooks attached to the straps when you got them, you just want strap material. When you make a cut, burn the edge of the strap immediately to prevent fraying; just take a flame to the end and just make sure you see a line of melted nylon form across the edge.

Thread two handles and two pieces of heat shrink through the 10' strap, slide a piece of heat shrink on the 4' strap, and slide the "anchor" end of the cam buckle and the door stop through the 1' piece.

### Sew

Create a Lower Triangle on one end of the 10' strap by setting a handle approximately six inches from the end of the strap, then bringing the strap end to the rest of the strap about six inches above the other end of the handle (see picture) Secure the strap end to the other side of the strap with a Box X stitch. Create a Lower triangle on the other end of the 10' strap in the same way

Create a small loop (about 3 inches in diameter) on one end of the 4' strap. Secure this loop with another Box X stitch. The other end of this strap will feed through the cam buckle (see picture)

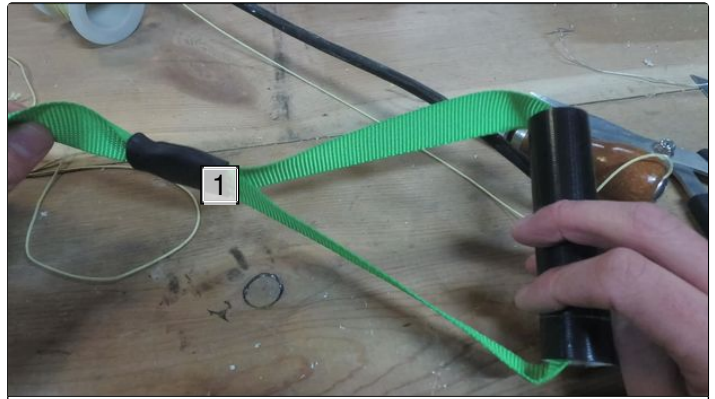
On the 1' strap with the cam buckle and door stop, simply sew the ends of the strap together with another Box X stitch to close the loop. When complete, slide the stitched joint into the body of the door stop to hide it.

### Shrink

Slide a piece of heat shrink over the stitches on the Lower Triangles and small loop. Shrink it down by applying even heat with a heat gun or lighter/torch from a distance. Be careful not to burn yourself or damage the straps or stitches.

### You should now have three separate pieces:

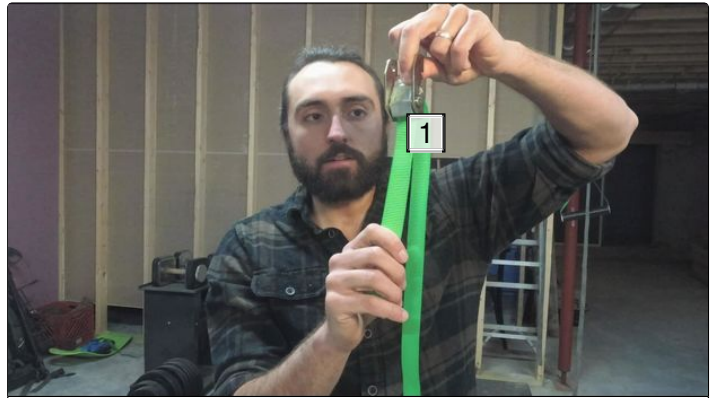
- The 10' strap with a Lower Triangle on either end
- The 4' strap with a loop on the end
- The 1' strap with the door stop and cam buckle



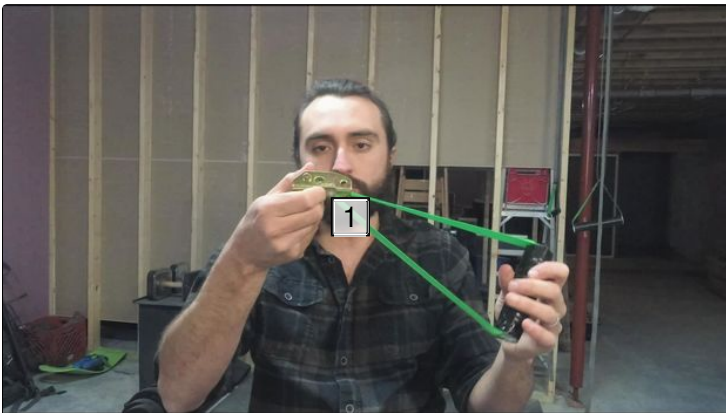
1. A finished Lower Triangle with heat shrink over the sewn joint



1. This is the loop on the end of the 4' strap, with heat shrink securing the sewn joint



1. The other end of the 4' strap feeds through the back of the cam buckle



1. The 1' strap feeds through the door stop and anchor end of the cam buckle

## Step 5: Assembly, Storage and Setup

### Assembly

Feed the 4' strap end (without the loop) through the back of the cam of the cam buckle, and pull the end through to your desired length. Feed the 10' strap through the loop on the 4' strap so that the loop bisects the 10' strap, and the Lower Triangles hang evenly when holding the whole system by the door stop.

### Storage

This system is fairly tangle-proof, as there is much less hardware and strap material flying around. You won't have to wind the straps or disassemble anything; the whole thing can be stuffed into the case of your choosing. I chose to go with a toiletry/Dopp bag, as it just fits with the travel theme of this system. You can use something like a pencil case or Nalgene bottle, or just fold the straps up and wrap an elastic around the handles or something, you can't really go wrong here.

### Door Setup

**IMPORTANT:** Make sure you are setting up on a door that opens away from you, in this way the force you apply on the Pocket Monkii will be pulling the door into the door jamb, and not into the open position.

Simply open the door, place the door stop at the top of the door on the side opposite from you, then close the door (see picture). Adjust the height of the handles by adjusting the strap going through cam buckle.

### Bar/Branch Setup

Wrap the anchor strap around the bar or branch and feed the straps through the loop of the anchor strap, tying the system in a Girth Hitch around the bar. Pull it tight, adjust the cam buckle strap, and you're good to go!

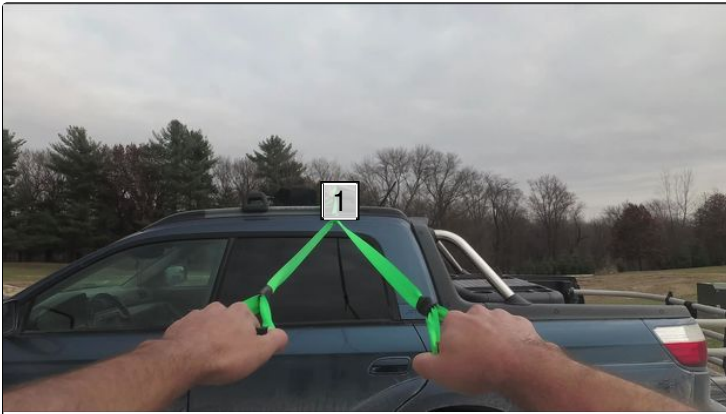


1. Everything fits in this Dopp kit with room to spare



1. Door Setup





1. Bar/Branch Setup

## Step 6: Get Wild!

You'll find you can do most of the same calisthenics exercises you were doing before, with added or reduced resistance based on the angle you perform the exercise, and with a level of instability that requires focus and core engagement.

The folks at Monkii have developed the Monkii App for free that walks you through tons of exercises with

the Pocket Monkii, give it a try!

**Have fun with these, get creative with your movements and challenge yourself!**

Thanks for reading, and enjoy!

