The ULTIMATE DIY Camera Slider

by Rideable Entertainment

Dear DIY Fans,

In this huge instructable I proudly present to you my version of an ***ULTIMATE DIY Camera Slider***. With this fancy tool, you will be able to get dynamic footage wherever you are. It is compact, lightweight and without any tools adjustable, so you can carry it wherever you need to get the shot.

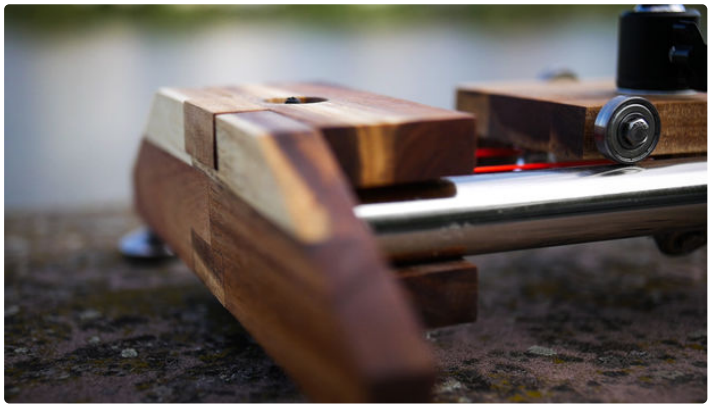
You can operate this slider either by hand, or by the the simplest motor, most of us DIY-Heads already have at home: ***a cordless screwdriver***.

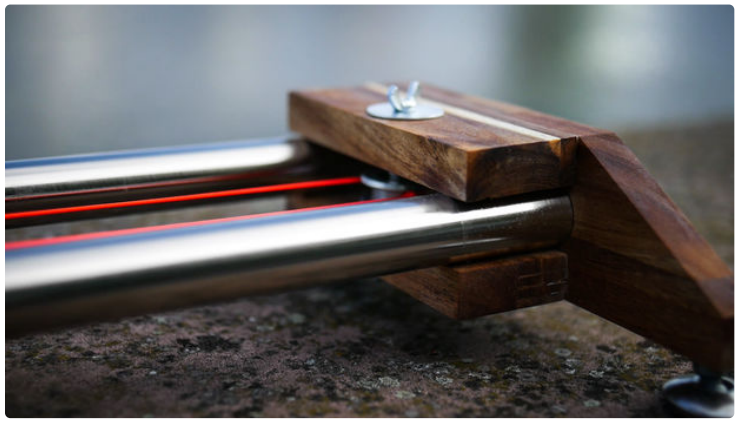
In my instructable I want to show you the hole building process and give you an exact explanation, why I decided to build it in this way, and what you might want to change, to make it fit your own individual needs.

I`ve made an atmospheric video, to guide you through the building process, give you an idea of what footage you can get out of it and what you have to do in post to make it epic.

This is my biggest project so far and I can`t wait to get your feedback. If you want to support me, please **vote for my slider** in the PHOTOGRAPHY CONTEST 2017and the WOODWORKING CONTEST 2017.

Thank you!





Step 1: DIY Video

Have a look at the major steps of the building process, get some inspiration and leave me some feedback, if you like it.

https://www.youtube.com/watch?v=uu0k2UuAs4g

Step 2: Prologue

Although I have spent many hours to make it as consumer friendly as possible, this slider is still "just perfect" for **MY** own personal preferences.
To be able to build **YOUR** own "ULTIMATE" Slider, you have to think about your personal needs, when it comes to your shooting style. Do you want to shoot on the go, or in one static place? Do you want to use a lightweight DSLM or maybe a heavier DSLR System? Do you need slow and constant motorized motions or is the natural motion by hand enough for you? And many more.

All I want to give you in this instructable, are ideas, which worked great for me and might work great for you as well.
If you find some awesome ways to improve certain things, please share it in a comment underneath this post or write me in a private message.

Step 3: Materials and Tools

In this section I want to point out, what tools and materials you will need for a specific purpose.
On the picture above you see the majority of the materials I used to produce my slider:

Tools:
- Wiper
- jigsaw
- cordless screwdriver

Special Tools:
-one thick drill bit, that matches the diameter of your steel pipe (for me 25 mm)
- another thick drill bit, that matches the outer diameter of the 608ZZ ball bearings (which are 22 mm)

(Both are accessible on ebay for ca. 10€)

Materials for the Framing:

- **1** wooden board from a DIY-Store (I chose "acacia" wood)
- **1**thread rod (Size **M5**)
- **4** flexible furniture feet

- **2** steel pipes (diameter of 3-5cm), that have the exact distance of your desired final slider length

Materials for the Slide:

- **3** Angle brackets with at least one longer hole on one side
- **1** double sided camera screw
- **6** ball bearings Type ***608ZZ*** (ca 5€ on ebay) and **6** hex bolts (ca. 4 cm long) and few nuts and a few wing-nuts (everything Size ***M5***), to create the slide wheels

(Useful Advice: Buy a few more to have some backup wheels. They will be easily exchangeable!)

Marterials for the motorized Mechanism:

- **3** ball bearings Type ***605ZZ*** and **1** more Type ***608ZZ,*** to create the motorized mechanism

- **A few** wide washers to glue them on both Types of bearings, that leave enough inner space not get touch the hex bolts

ATTENTION: If you want to create my wheel construction, you need to use these exact part Types! Other bolts will not match these bearings and other bearings will not match these bolts!. Both parts are internationally accessible on ebay for a small amount of money.

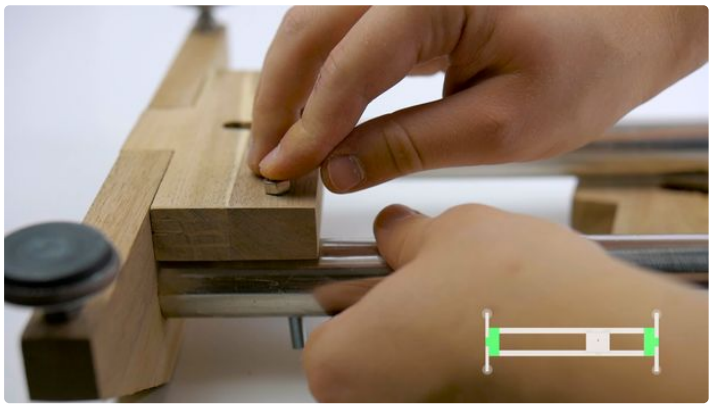
Step 4: Create the Framing

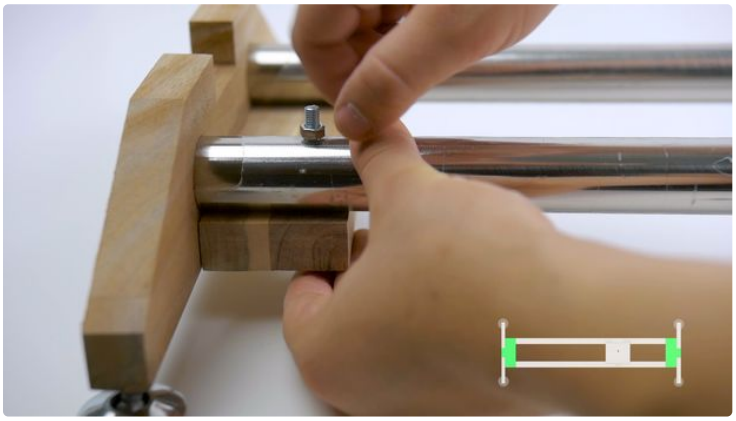
Start by sawing out the individual parts, (have a look at the first picture above) and give it a first rough sanding. Use my templates to get the exact dimensions. Download the free Templates here.

Then drill two holes on both side panels with your thick drill bit, that matches the diameter of your steel pipe.
I recommend not to drill all the way through but deep enough to give the pipes room to fit in. Then drill a hole in the edges of both side panels and screw in the flexible furniture feet.

Use some strings to keep the top and the bottom panel on place and drill a hole vertically, that is just thick enough, to match a peace of your M5 thread rod.

Saw off four peaces of the thread rod to fix the Bottom panels to the steal pipes. Make the top panels **attachable** by drilling matching holes on their bottom side.





Step 5: Create the Bearing-Wheels

In the internet I have found these ball bearings and figured out a simple way, to make smooth, inexpensive and exchangeable wheels out of it.

All you need is the 4 cm long **M5 hex bolt,** a matching nut and the **ball bearing Type 608ZZ**. As soon as you tighten up the nut the bearing will find its place in the center and you have simple wheel, that can be screwed in a desired peace of wood.

I realized, that these ball bearings are quite multifunctional, when it comes to its usablity. I used them to create the wheals for my slide and the mechanism, which allows me to drive my slider by a common cordless screwdriver.

I bought everything on ebay for a small amount of money. The shipping took a while, but the bearings work just fine, and it came out to be incredible inexpensive.

I am excited to use these bearings in upcoming projects as well.

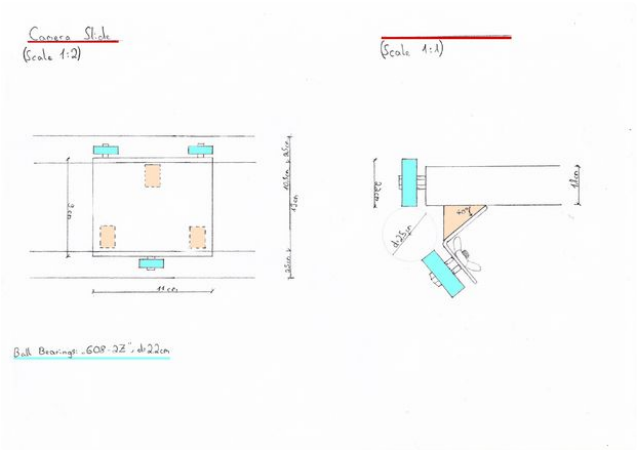
Step 6: Create the Slide

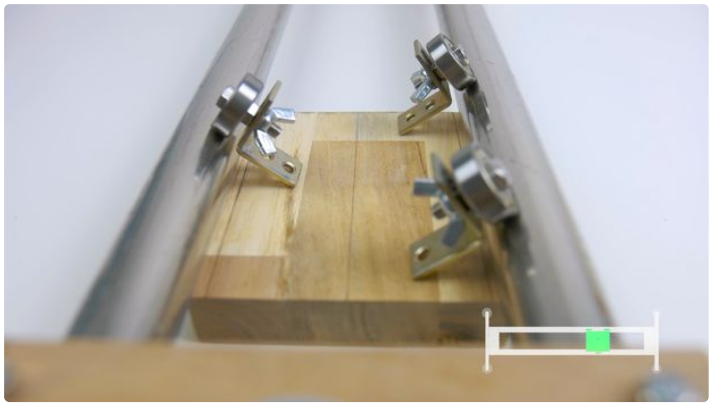
For the Camera slide, I decided to use three of those wheels on top and three more each on the opposite side in an angled position on the bottom, to keep the slider on track.
The basic idea is that a chair with three legs does never wiggle around, so it will allow maximum stability. It worked out pretty good for me.

Start be pre-drilling the three holes the side of your wooden slide plate, but do not screw them in for now.

Mark the place on top, where you want the fix the camera head. Create a flat hole to give your double sided camera screw some Space. Then pre-drill a smaller hole to be able to drill it in. Be careful to screw it in as even and tight as possible.

Now turn your slider on the backside. We will attach the bottom wheels with angle brackets and we have to figure out, how much space we need to lift it. Saw matching peaces out of wood and glue then screw them on place.
The angle brackets should have a longer hole on one side. The idea is having more some space to make the bottom wheels sit tighter or looser on the steep pipes. Use Wing nuts here to be able to fix it later on the go.





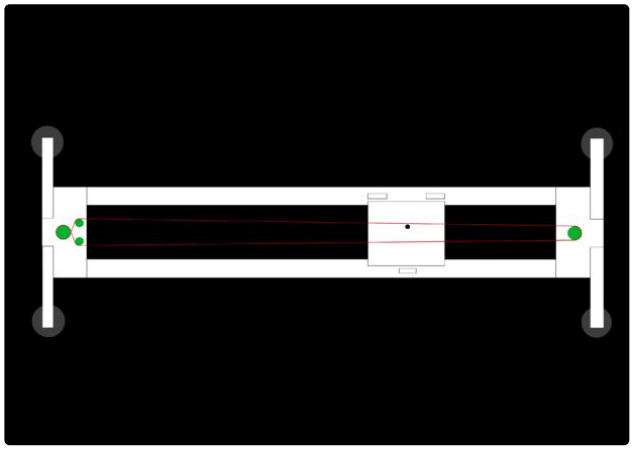
Step 7: Motorized or Not?

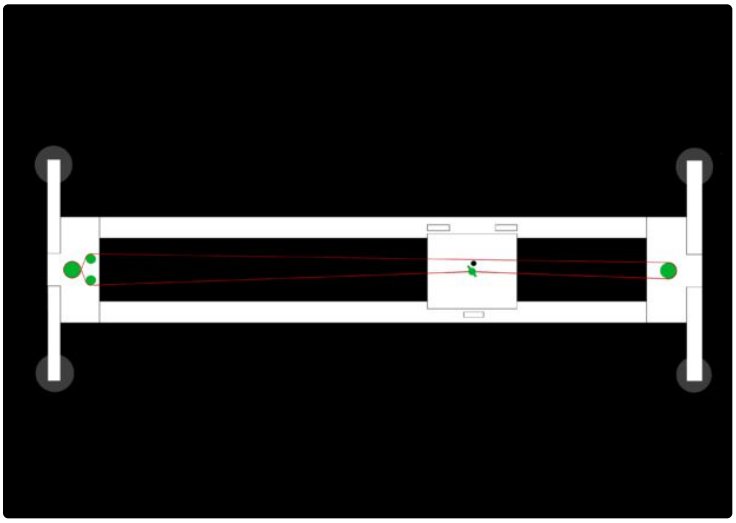
So at this stage of the building process you have a fully working camera slide, with which you can already get awesome recordings. But if you want some super slow and constant professional looking motions, you would need a motorized slider.

Lets motorize our slider with a simple mechanism, which can be produced without much money or special knowledge.

THE BEST MOTOR IS THE ONE MOST OF US ALREADY GOT HOME: A CORDLESS SCREWDRIVER.

The concept: one active bearing on one side, that I would accelerate with my cordless screwdriver and one passive bearing on the other side.

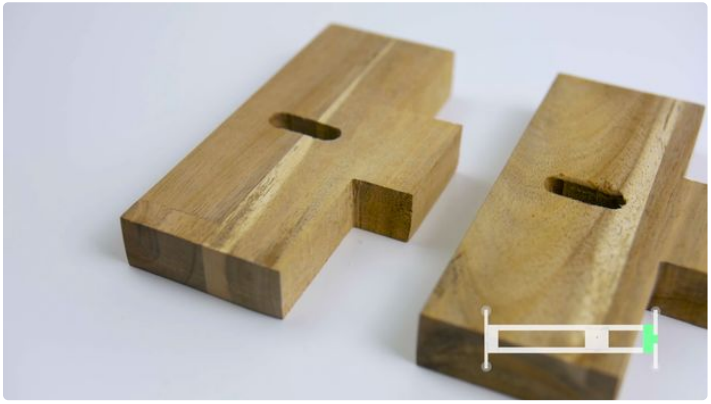


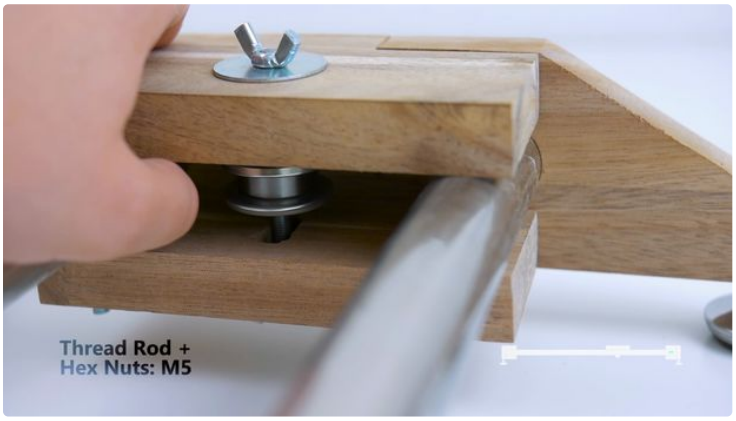


Step 8: Motorized Meachanism: PASSIVE Side

Lets start with the passive bearing. I took the top and the bottom panel and created a 2 cm long hole in the middle. This will provide some fixing range later.
Take one of your ball bearings Type 608ZZ and glue down a wide washers on each side, to keep the string in line later. Afterwards saw off a longer peace of your thread rod and fix the bearing tightly in mid-position with 2 nuts on each side. Stick it in between the long holes of the top and bottom panels on the passive side and fix everything with some more wide washer with wing nuts.

Useful advice: Whenever you start a new DIY Project, try to figure out what are the weak points. And avoid them, by creating room to make it adjustable. In case of the slider it`s pretty obviously all moving things, which means basically the slide itself and the string.
The string will get loose with time and with the 2 cm of room you created, you will be able to tighten up the string with the wingnuts on the go within a couple of seconds.
Keep in mind, the more time you spent to create those weak points the longer you will be able to have fun with personally created product.





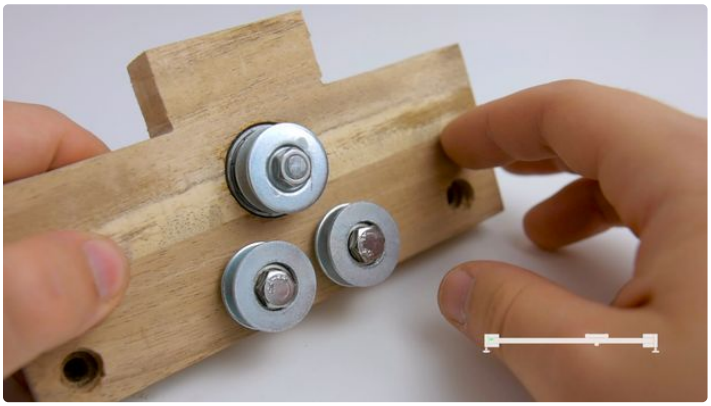
Step 9: Motorized Meachanism: ACTIVE Side

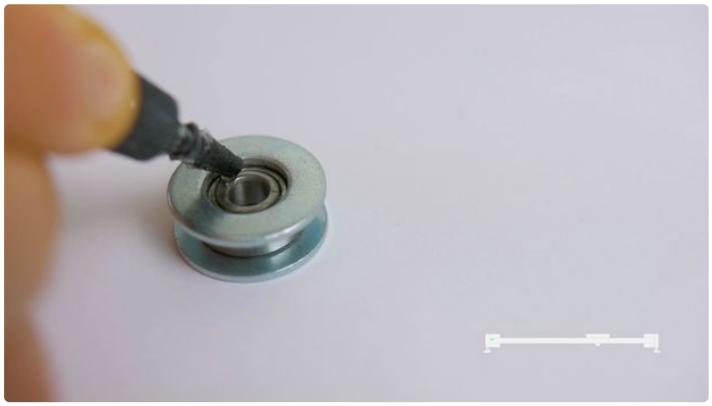
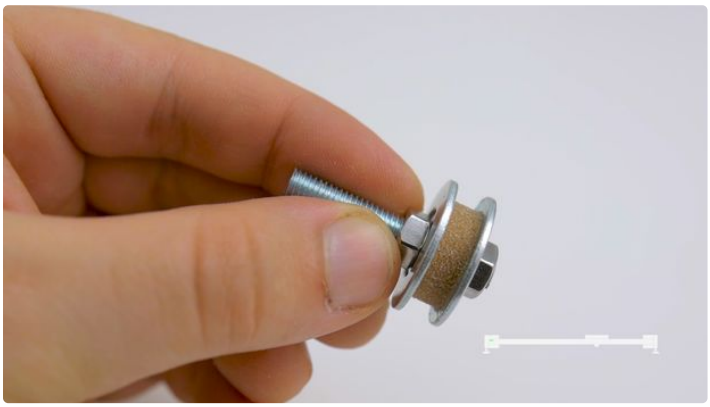
Lets switch over to the active side:

At first we need to use our thick drill bit, which matches the diameter of our 608ZZ bearing (22 mm), to drill a hole all the way through the Top Panel. We will create one working bearing exteriorly attached to the Top Panel and one fixed bearing, underneath that will drive the string. And everything connected by a shorter peace of the thread rod. So as soon as you will accelerate the thread rod with your cordless screwdriver, the fixed bearing at the bottom will drive the string for the slider.

To achieve maximum traction between the active bearing and the string, cut out a longer strip of sandpaper and attach it with some double sided duct tape.

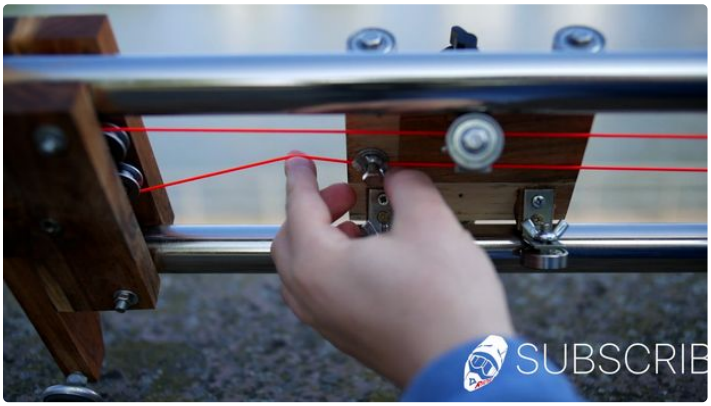
But we do have to overcome a practical issue: We need to coil the string one time around the bearing to get enough traction to drive the camera slide. But as soon as we start to accelerate the active bearing, the string will coil around itself. The solution are to more working bearings infront of the active bearing, to guide the string.




Step 10: Create a Quick Realase

In order to be able to switch between motorized and hand operated on the go, we need to create a quick release. All you need is another hex bolt and a wide washers (here: 2 glued together) and a wing nut. Pre-drill a hole on the bottom side in the middle part of the slide and screw in the hex bolt, but not all the way in. Now you have some space to put the sting underneath the washer and tighten or loosen it up on the go.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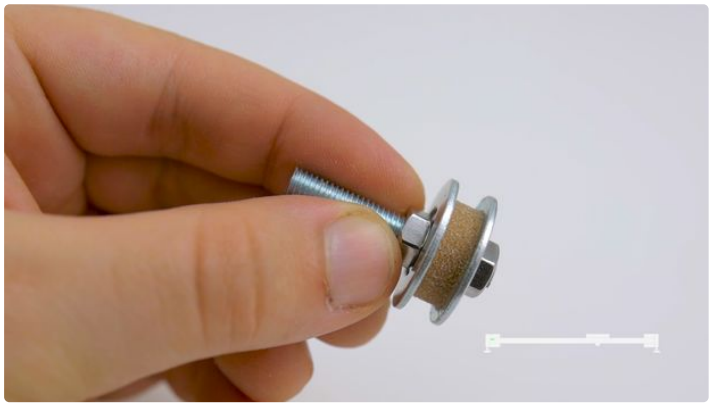
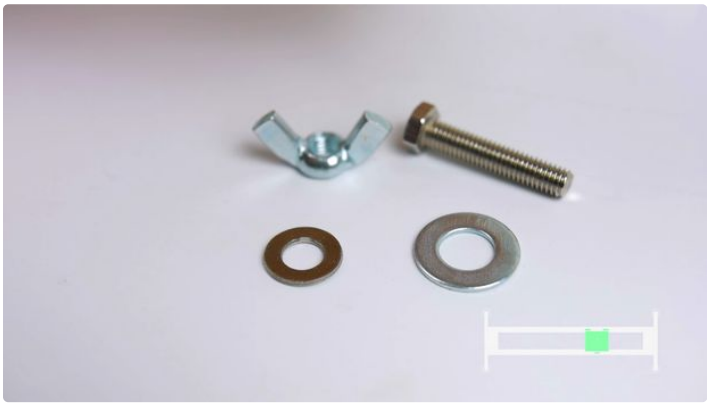




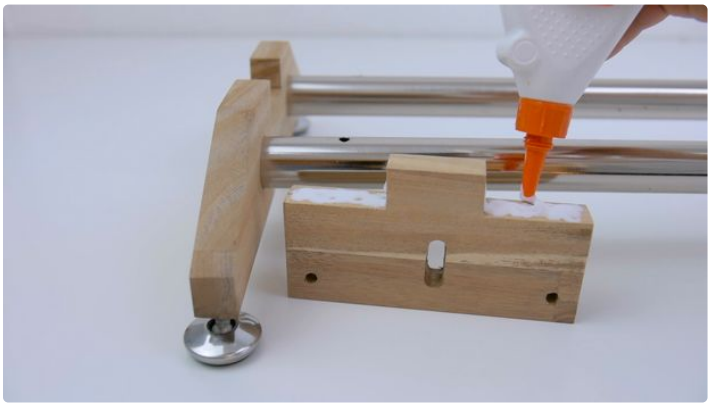
Step 11: Assembling and Finishing

We can finally glue everything together and fill tiny gaps with wood dust before you sanding it down, to create a smooth surface. I recommend glueing everything together except the Top Panel with the active bearing. Leave it attachable, just in case you want to exchange the string or a bearing wheel.

I screwed 2 camera mounting screws in the on both bottom panels, so I can mount it on top of two tripods. Finally use some wood oil to finish your Slider with some wood oil.

OILING QUICK GUIDE:1.
1. Make sure everything is sanded down perfectly.

Every scratch, tiny holes or any other mistakes will be more noticeable after oiling. So a fine sanding is necessary to get a descent result.
2. Use a towel to cover every part of the wood with a thick layer of wood oil.
3. Give the wood some time to soak the oil (10-15 minutes).
4. Then take the towel and wipe it dry, that their is no remaining oil moisture on the surface.
5. Give the wood 24 hours to completely dry out, before you bring it into service.





Step 12: Don`t Miss the Editing

MY MESSAGE:

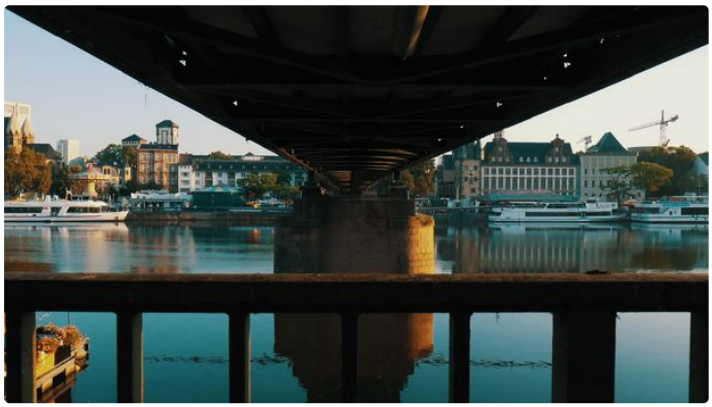
If you think about building a camera slider, you want to get your videos more professional looking. But I keep watching people online, who spend hours to create awesome sliders or steady cams, but have absolutely no idea, how to utilise it in a proper manner in their final video. Great videos are done in editing.
>>The slider itself is just a tool and will not do the job for you<<

1. Digitally stabilize it in your editing software. Don`t be afraid to use it, even in big hollywood films the majority of footage has been stabilized in post.

2. Add some color, for example by applying a LUT (Look up Table). If you don`t know, what it is. Search the internet for it. Trust me: it is worth it.

3. Use your slider scenes to support your desired atmosphere

Here is what I do with my Slider footage:



Step 13: THANK YOU

If you have made it to this step, I need to **thank you** for fully reading my biggest instructables post so far! I am sure there are a thousand different ways to get a nice slider, and this is what worked out perfect for me and might work out for you as well.

Anyway I hope I could deliver you some inspiration for your own DIY slider projects. If you got some cool ideas and feel like you want to share it with everyone, please leave a comment.

If you want to support me and future projects, please**subscribe to my Youtube channel**, check out my earlier project about a "DIY smart Monitor Stand" and leave me some comments.

Please send me a picture if you could successfully rebuild your version of an ULTIMATE Camera Slider.

NOTHING IS BETTER THAN HOMEMADE!
Rideable Entertainment


THANK YOU