



INSTRUCTIONAL PROJECT

D.I.Wire 2D Truss

Create your own truss

Intro

Learning how to build a truss is quick, easy and inexpensive. A great first project to learn how to use your D.I.Wire!

Estimated Time:
30 min

Level:
Beginner

Software needed

WireWare by Pensa Labs
Sample_Truss.svg
download at Pensa Labs
website

Tools and Materials needed

D.I.Wire Plus or Pro
Computer Mac OS or Windows PC
6' of 1/8" Galvanized Steel

Additional resources


10+ Plastic Clips by
Pensa Labs
Epoxy - optional

1. Material Setup




Open WireWare software and Home your D.I.Wire by clicking “Home” button. Select wire type “PLUS 125 Galvanized Steel”

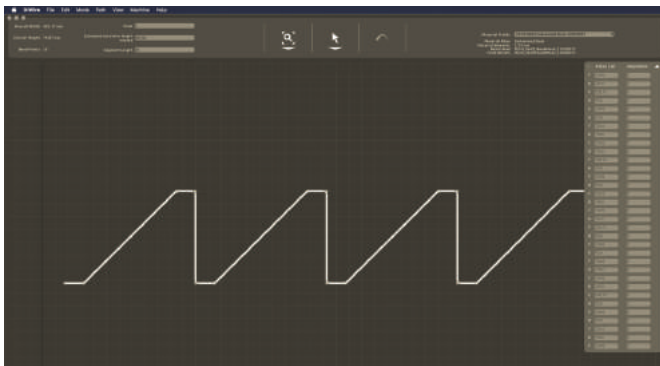
Select the type of wire material you will be bending in the drop-down menu in the upper right-hand corner.

 **Other wires:** Using wire from Pensa Labs means that the material has already been preloaded into the software. If you are using a different material, you must create a material profile to make proper bends. Learn more at www.pensalabs.com/support-wireware


2. Select file in WireWare


Download sample file from www.pensalabs.com/resources

 **Create your own truss:** Alternatively, you can create your own truss in by drawing in path mode (learn more at www.pensalabs.com/support-wireware) or use any vector based illustration application and export them as .svg file to import to WireWare. If you don't have Adobe Illustrator, we recommend using InkScape (free)



Select “Path Mode” on WireWare and navigate to the downloaded file location. Open *truss_sample.svg*. Leave SVG Import Scale to 1.0 and click “OK”


 **Set SVG Import Scale:** If your file isn't created at the scale you would like to bend, you can adjust the scaling through the Set SVG Import Scale. Typically, we recommend you create your vector files in a 1:1 ratio, actual scale.

 **Edit your truss on WireWare:** If you decide to create your own version of the truss, you can directly modify it in Path mode.

3. Load the wire



Feed the wire through the feed wheels into the bend head from the back of the machine

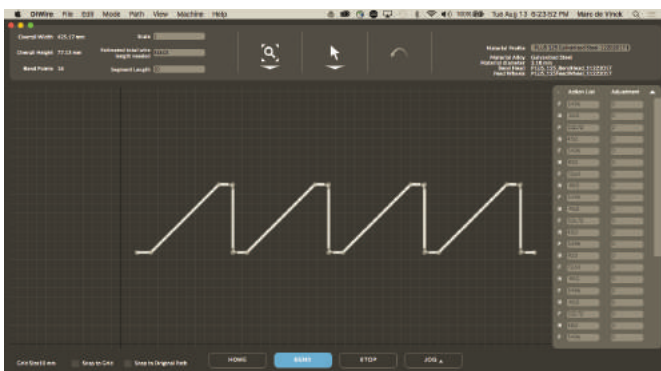
 **If you experience too much resistance:** Make sure that the wire is trimmed flush and there is not burr. Also, check that the feed wheels clamp force is not too high.



Stop right at the end of the bend head before the bend pins


You should only see the very tip of the wire prior to bending.

4. Bend the wire



Click “Bend” in Path Mode

D.I.Wire will start feeding the wire and making the appropriate bend

 **Keep in mind that you need room for the outfeed of the bent wire:** Make sure there is enough room not only in front of the bend head, but an equal amount of room on both sides as the wire will move back and forth

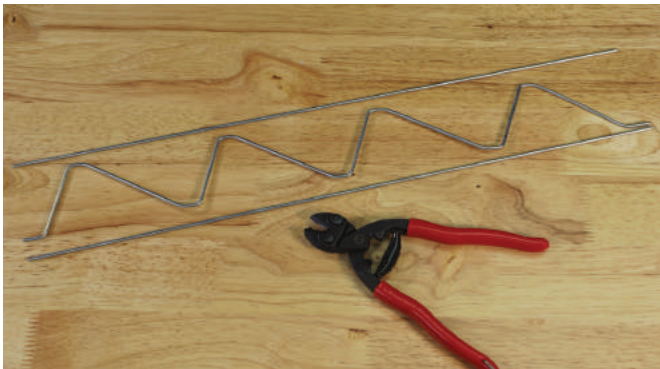
5. Trim the truss



Manually feed extra wire to the bended truss before cutting. Leave 1/2" extra wire on the truss and cut the wire

We will use this extra 1/2" for attaching the clips that will hold the truss together

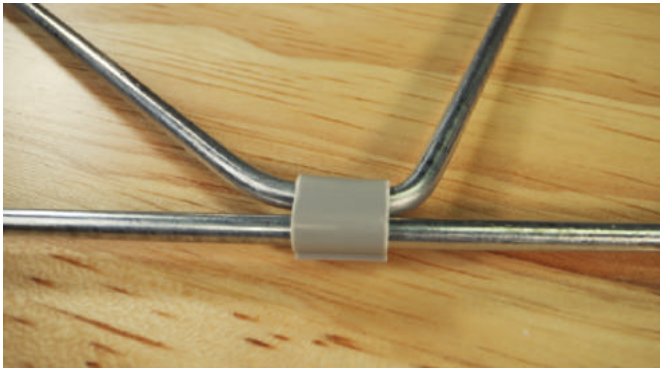
6. Cut two extra straight wire



Cut 2 lengths of straight wire to match the overall length of your bent truss

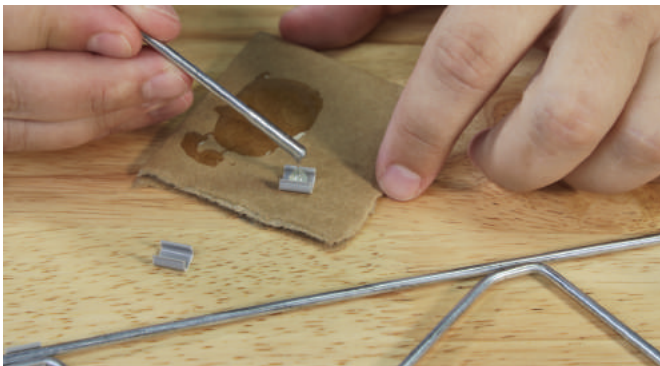
The exact length will vary depending on the dimensions of your truss. Having a little extra is better than being too short!

7. Assemble the truss




Get plastic clips. Snap the clips on at each flat location of the overall truss

In this example we will be using plastic clips, available at www.pensalabs.com, to hold it together. You will want to fit check the parts before gluing.




Fix clips in place with 5-minute epoxy at each connection for added rigidity

 **Use epoxy:** Mix a small batch of 2-part epoxy as per the manufacturer's directions. For a truss our size, we can mix enough for the entire assembly. Let it stand for few minutes. It will go together faster than it will take for the epoxy to harden.



Congratulations! You're all done!

Share your project on social media or send it to us by email!

 **Extra option:** 3D print a stand for your new truss, as seen on the picture. You can download the file we used at www.pensalabs.com/resources

More Projects

Find more instructional projects on our resources section our website www.pensalabs.com

Additional Resources

Instagram: www.instagram.com/pensalabs

Email hello@pensalabs.com

Website: www.pensalabs.com