How to Assembly E-GRAVER Kit

Step by step instructions to learn how to assembly the kit:

Assembly a kit was always the best way to learn how to construct something with all the difficulties that you will find during the process. Perhaps you have made plenty of designs but E-Graver kit gives you the opportunity to increase your skills on woodworking and metalworking.

E-Graver kit divided into three categories:

E-graver Complete kit : includes everything you need for and easy and quick CNC assembly (computer and software and spindle are not included).

E-graver Mechanical Parts: includes everything about the body of CNC.

E-graver Electronic Parts : includes everything about controlling and Engraving (drills ,collets are not included).

For The E-graver Mechanical parts assembly you will find into the pack:

22pcs Allen Flat Head screw 6mm X 25mm

8pcs Allen Flat Head screw 8mm X 25mm

6pcs Allen Head screw 6mm X 16mm

4pcs Allen Button Head screw 6mm X 20mm

4pcs Allen Flat Head screw 5mm X 16mm

5pcs Allen Head screw 5mm X 60mm

2pcs Allen Head screw 6mm X 50mm

6pcs Allen No Head screw 5mm X 12mm

28pcs Allen screw nut 6mm

8pcs Allen screw safety nut 5mm

8pcs Lock washers 5mm

6pcs Hexagon trapezoidal nuts 12mm

8pcs Seeger for linear motion bearings

4pcs Linear motion bearings LM16UU

4pcs Linear motion bearings LM12UU

2pcs Bearing adjustment flange

2pcs Nema23 motor mount.

2pcs Flexible coupling 6.35mm/8mm

1pcs Flexible coupling 6mm/5mm

4pcs 608zz Double Shielded Ball Bearing 8x22x7mm

1pcs 626zz Double Shielded Ball Bearing 6x19x6mm

4pcs Lubricating Bearing Bushing Sleeve 12mm x 14mm

2pcs TR12 x 3D Trapezoidal Lead Screw

1pcs TR10 x 3D Trapezoidal Lead Screw

2pcs Linear Motion Slide Shaft D10mm

2pcs Linear Motion Slide Shaft D12mm

2pcs Linear Motion Slide Shaft D16mm

The package includes also the pieces of wood already machined and ready to use.

2pcs Front and Back side of the machine.

1pcs Table of machine.

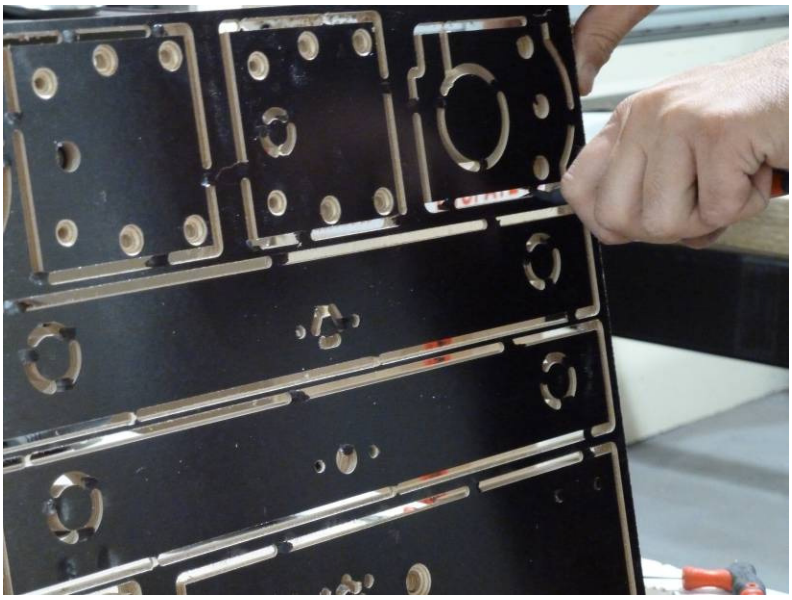
1pcs The board with all the other spare parts you will need for assembly.

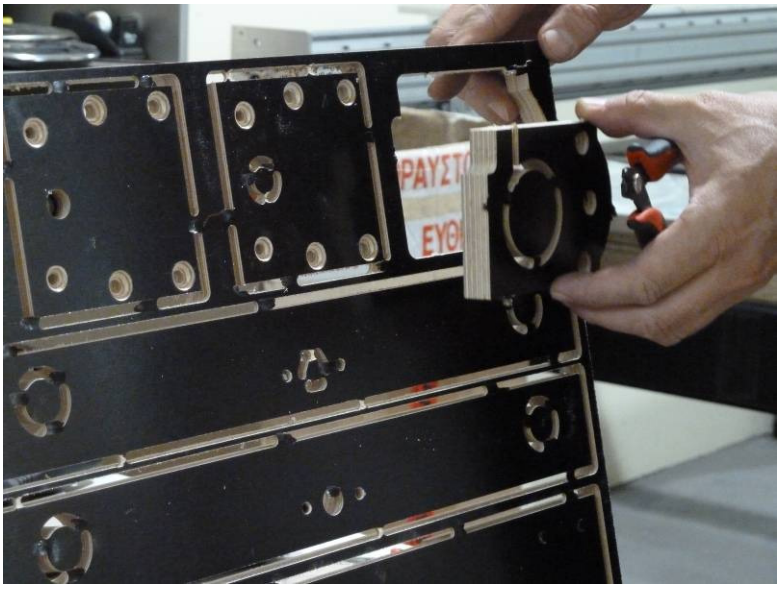
Let’s Start Build

First of all, the machine parts of wood are holding each other with tabs:

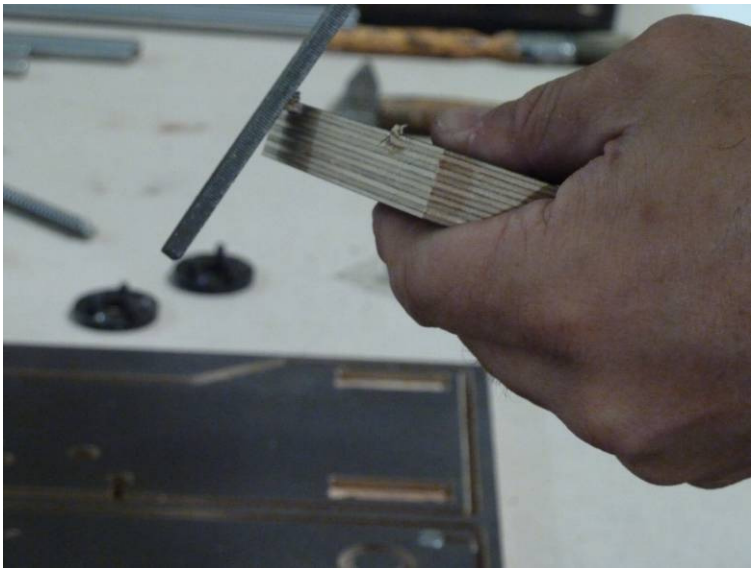
When you have to remove a part from position follow the procedure as shown below:

Cut the tabs:

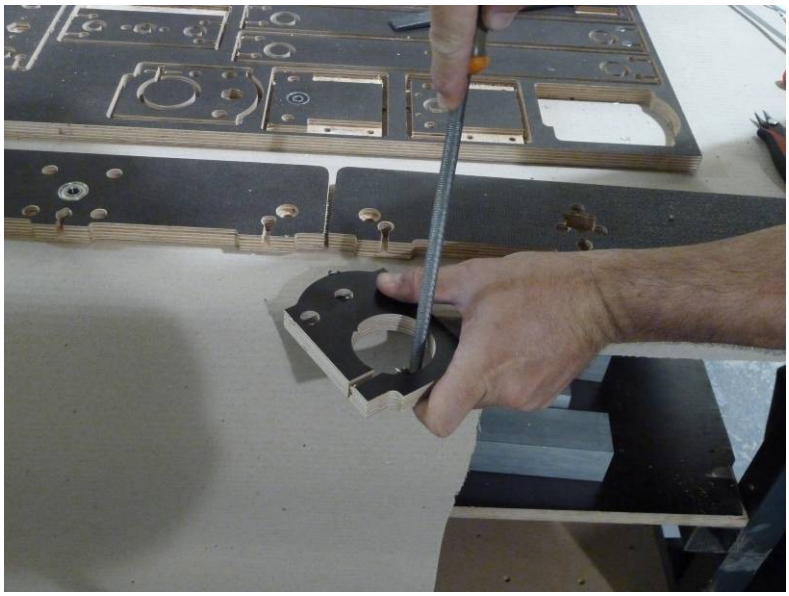


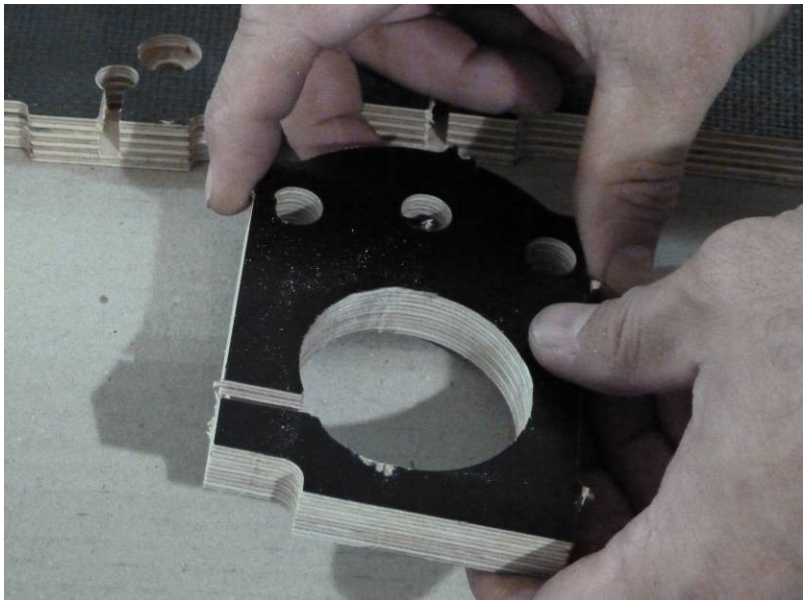


With a rasp or sandpaper remove the tabs:



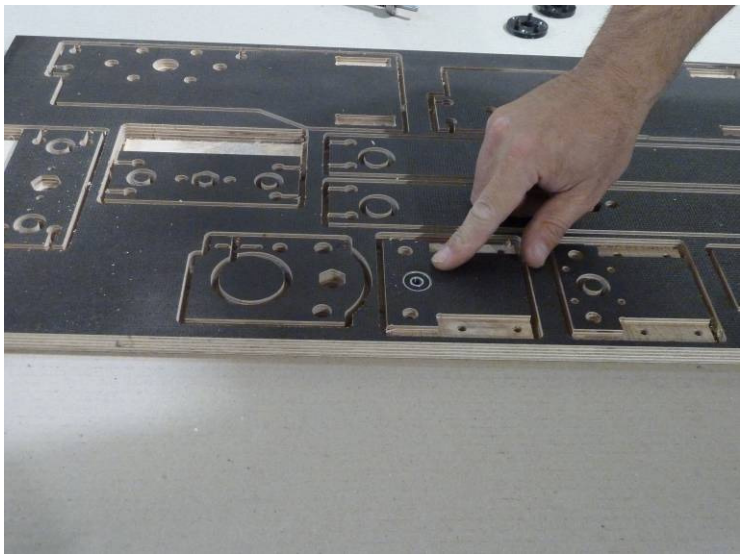
With a round rasp or sandpaper remove and the inner wood that is hold with the inner tabs:



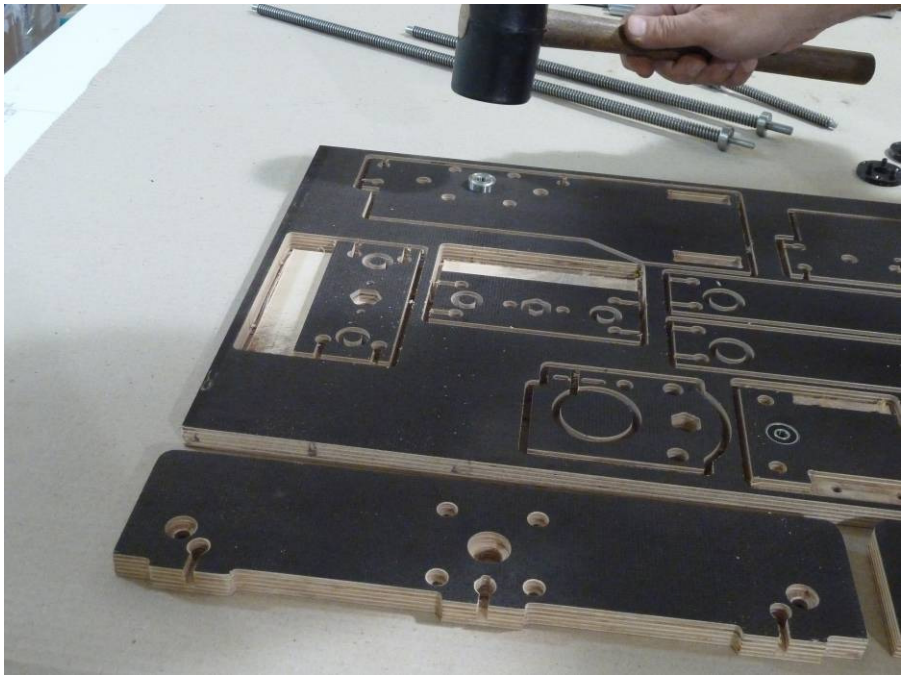


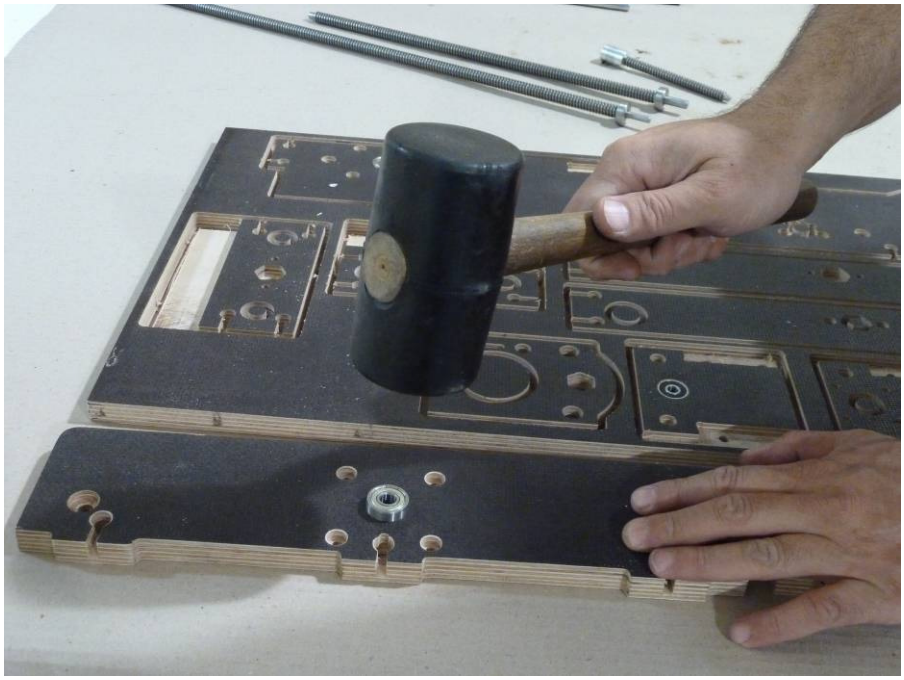
Start with the main body board and fill in the mechanical parts as shown below:

Fill in the Double Shielded Ball Bearings as shown



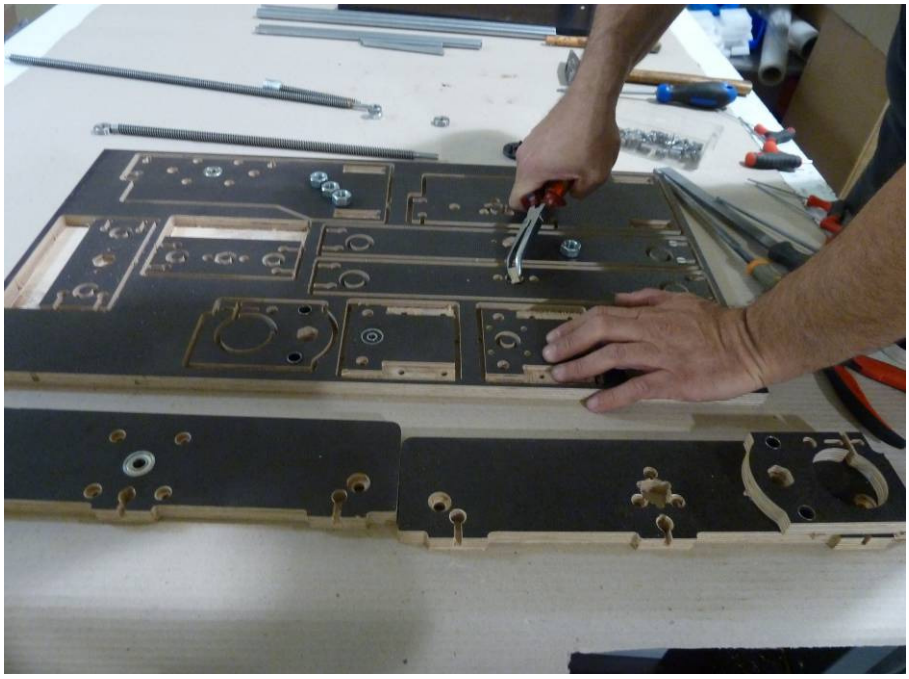
If it’s hard use a mallet tool



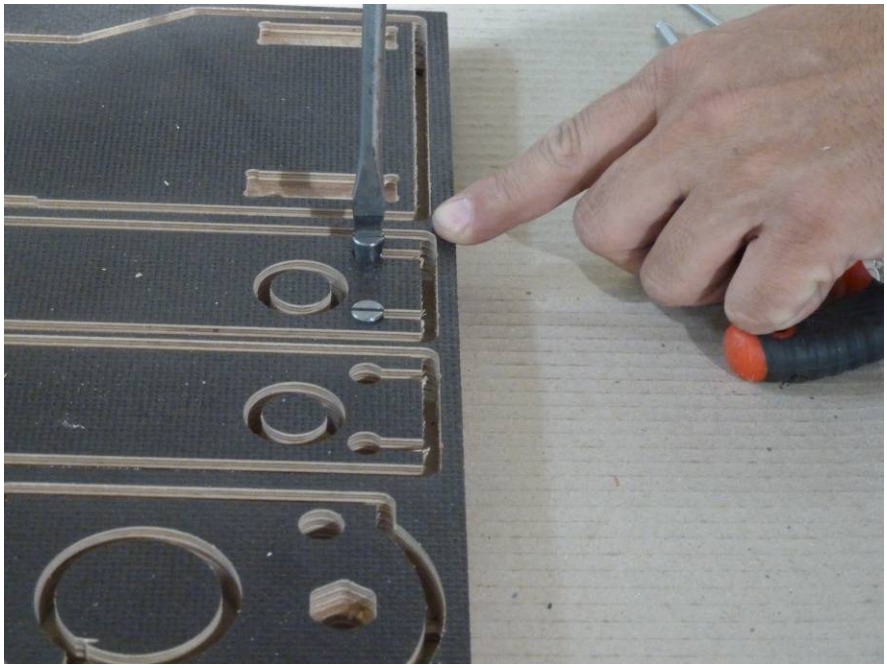


Fill in the Hexagon trapezoidal nuts 12mm also with the same way .

With a plier remove the rubbish wood that is holded with the tabs



The picture below shows you the 28pcs Allen screw nut 6mm installation:



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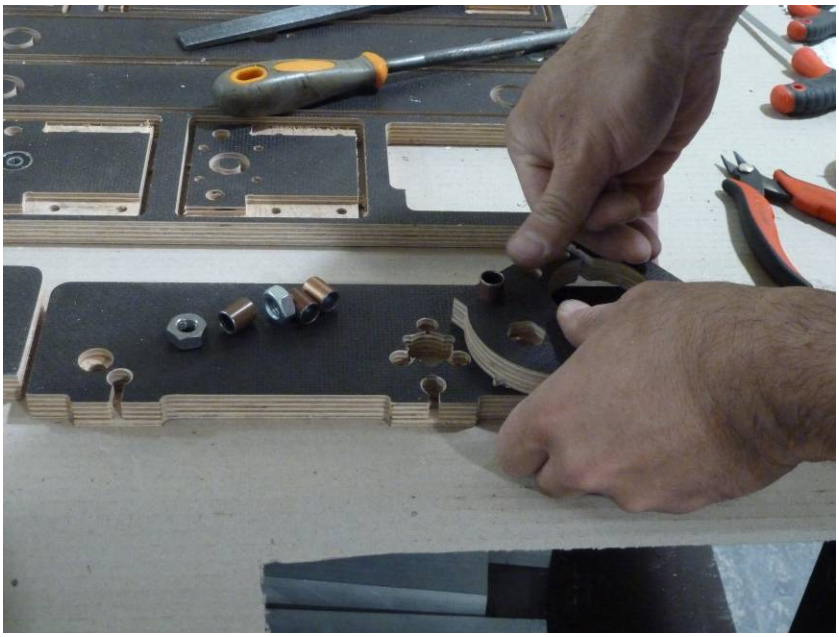
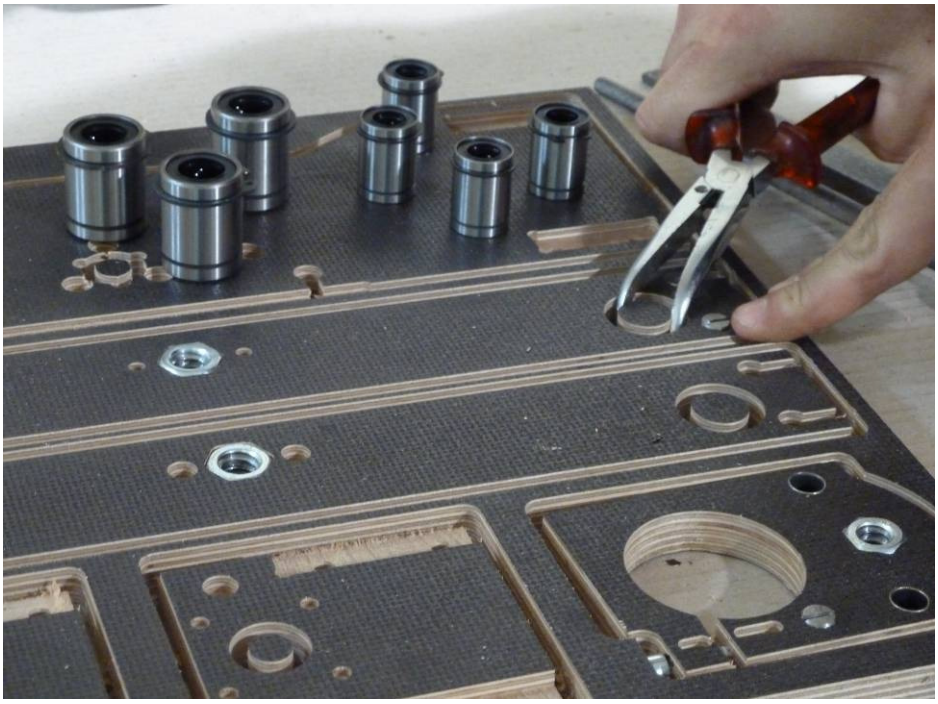
Install the Lubricating Bearing Bushing Sleeves:



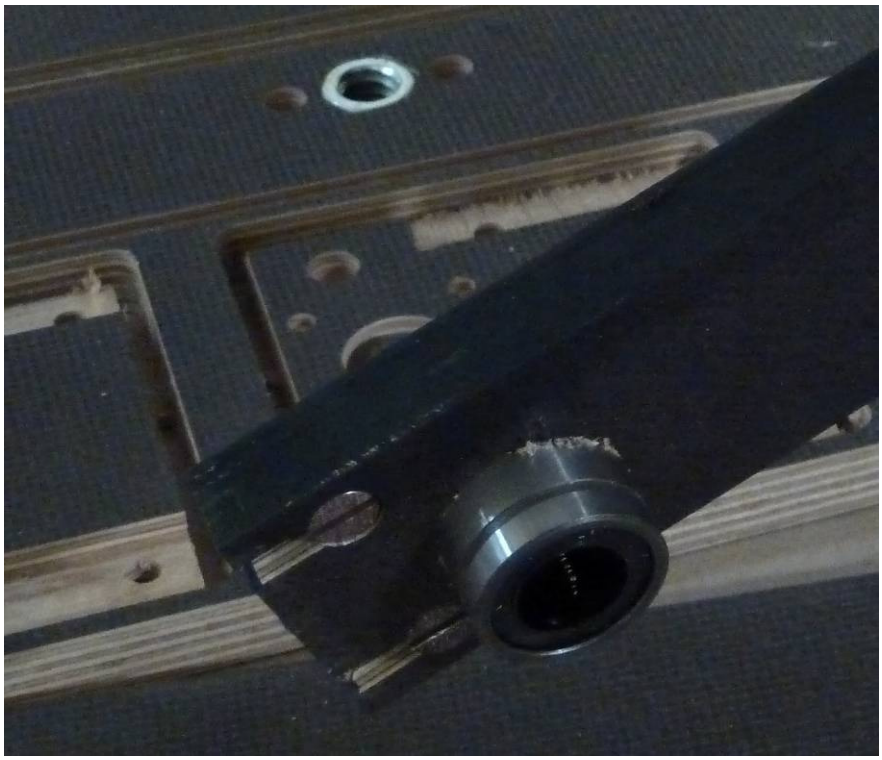
Now you have to set up the linear motion bearings .Remove the wood from the sockets of the bearings and with a rasp remove the remaining tabs.



Put on the linear motion bearings the seeger as you see below

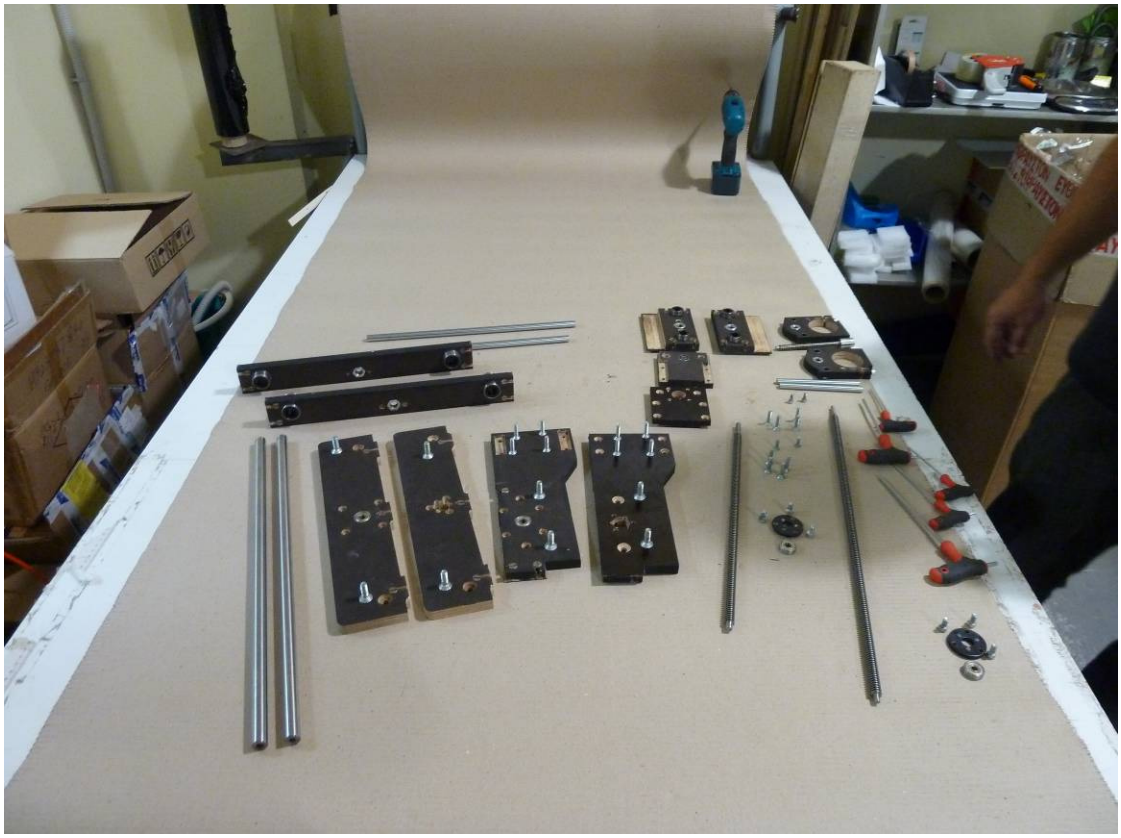
When you finish with seeger installation you have to put the linear motion bearings on their position. You have to take care with the way that linear motion bearings will set up. The side with the seeger must be at the bottom of

the wooden part and the side without seeger have to appear from the top side of the wooden part that you see on the photo below.

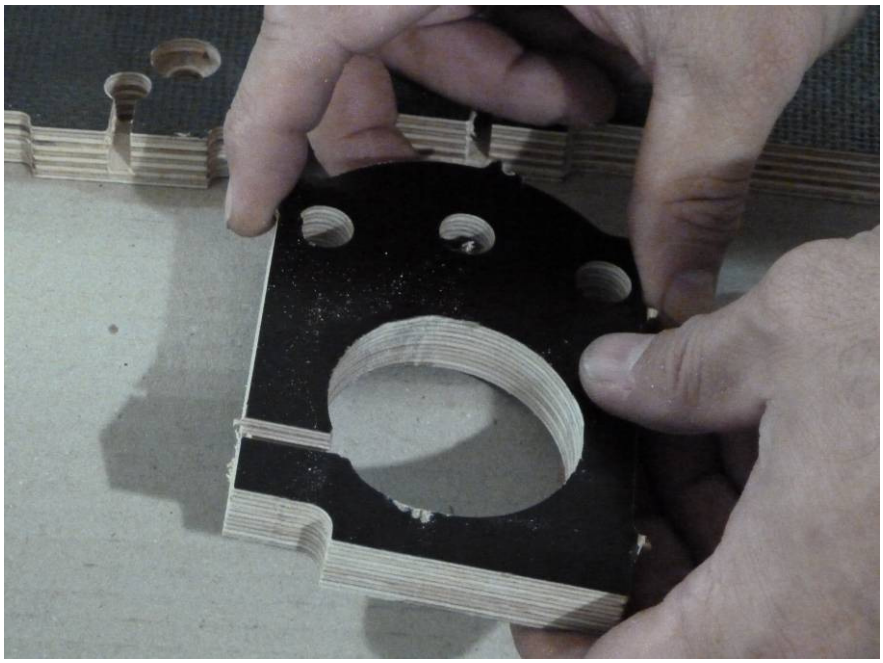


Install with this way all the linear bearings. The side without seeger has to be at the same side with the Allen screw nut.

At this point you have finish with the installation of the Bearing Bushing Sleeve , Allen screw nut 6mm , Hexagon trapezoidal nuts 12mm. Now you have to separate the E-graver parts and your kit has to look like this photo:



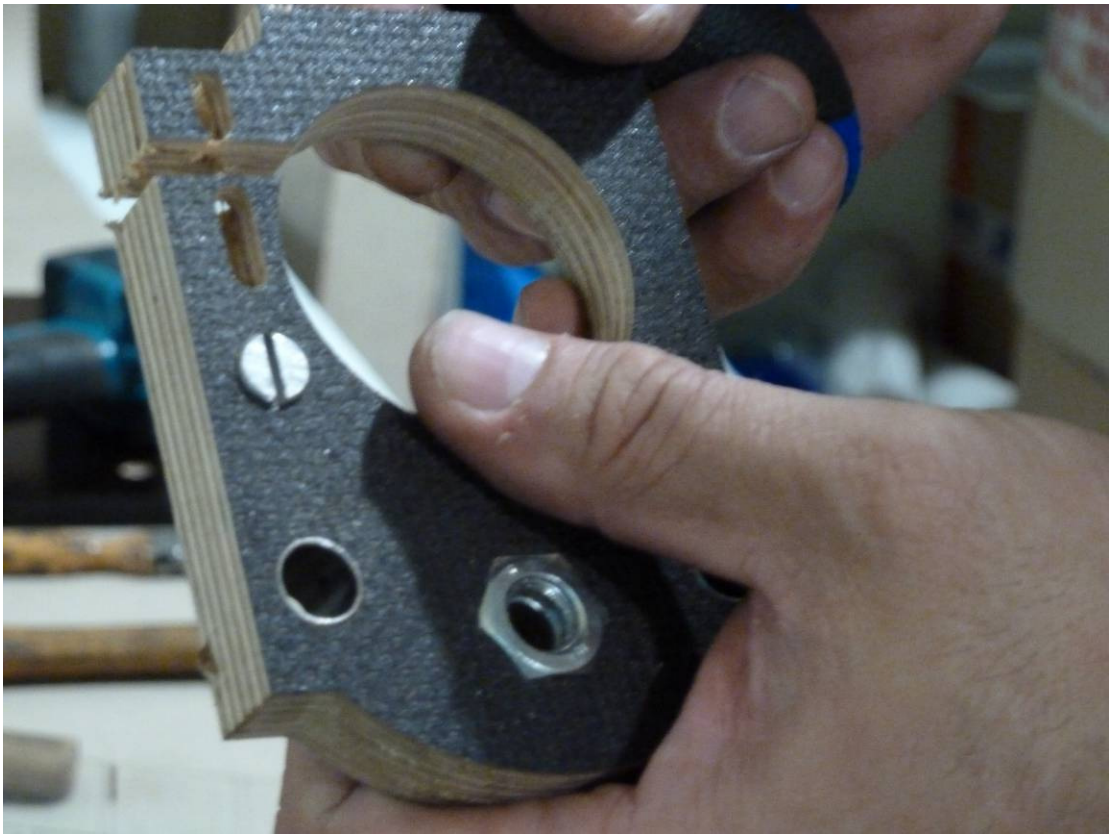
The next step requires a little bit of woodworking skills but don’t be afraid. The part that you have to drill is the spindle holder:



You have to use a drill driver and a drill with diameter 6mm and make a drill hole as you see:

Do the same in both two parts that you will find.

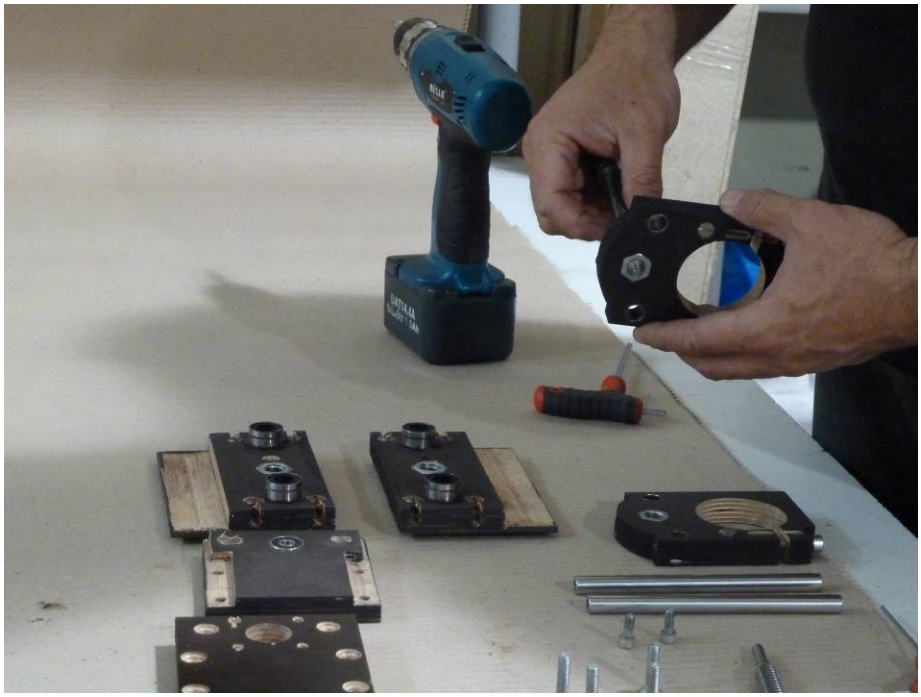
The result have to be like this:



With this small wood work we finish the basic installation of the metallic components to the wooden parts and now it’s time for assembling the kit.

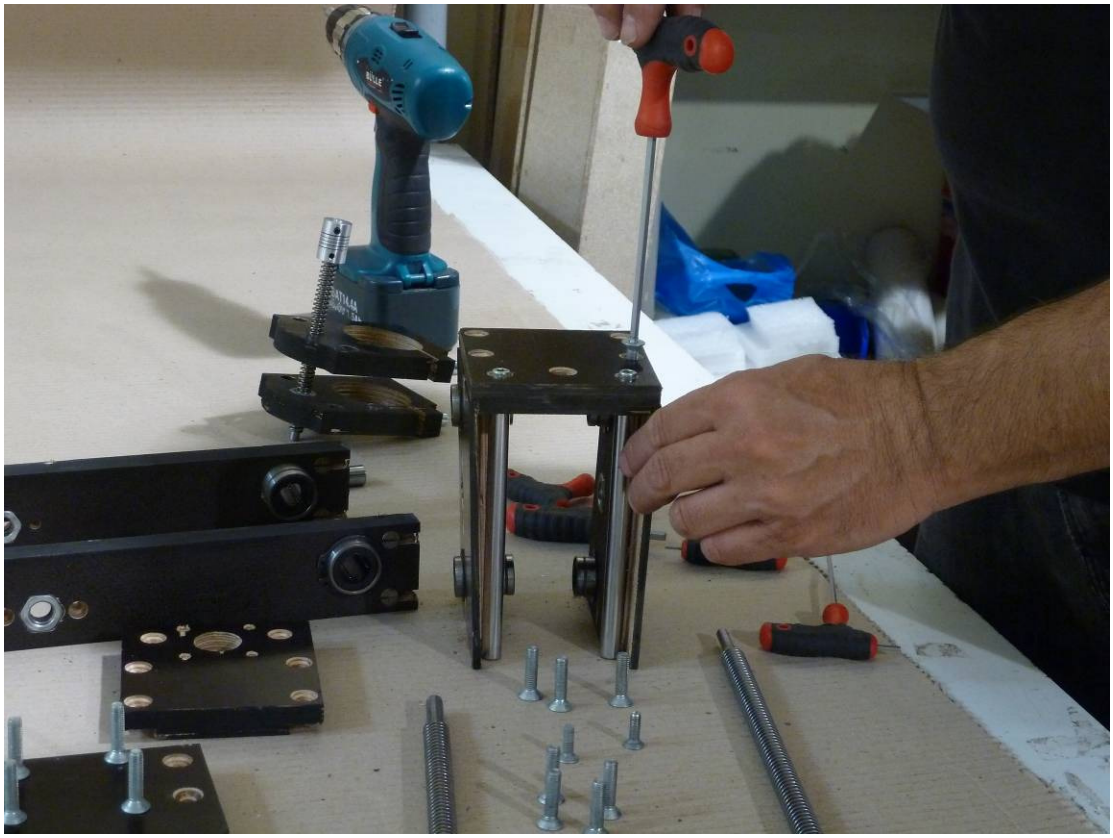
Let’s Start Assembling

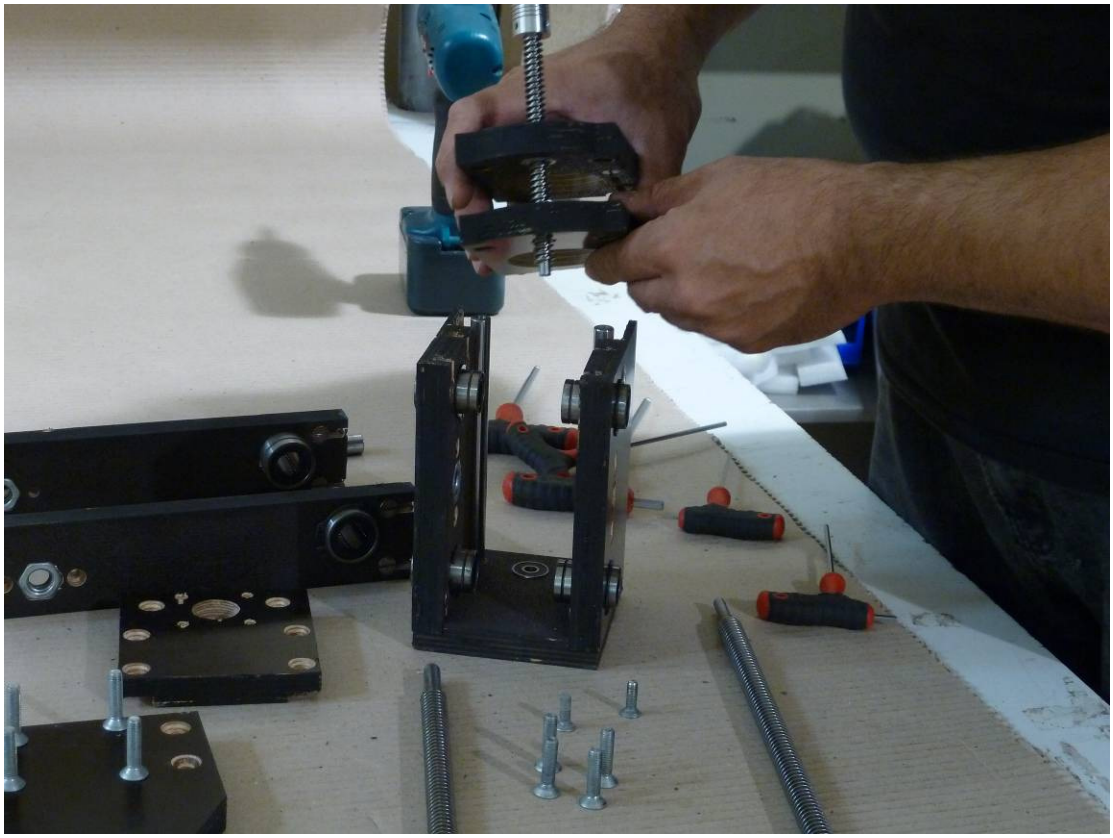
Screw the short trapezoidal lead screw to the trapezoidal nut.

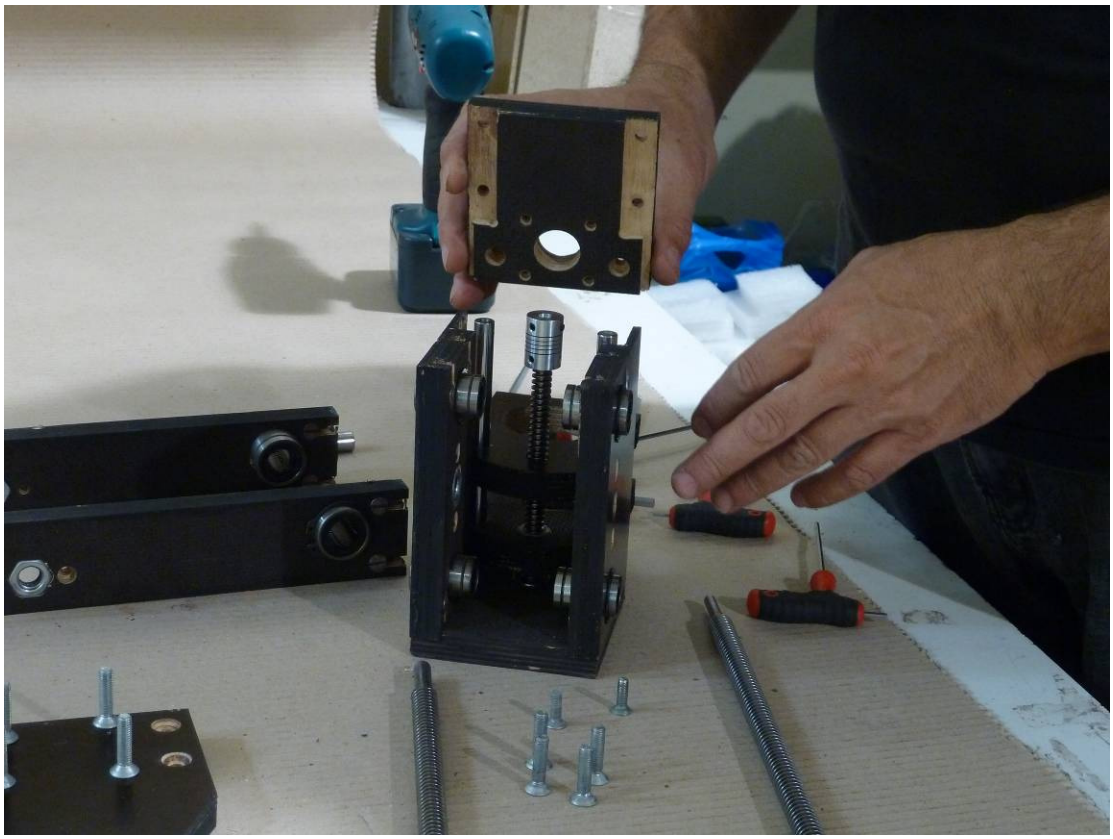


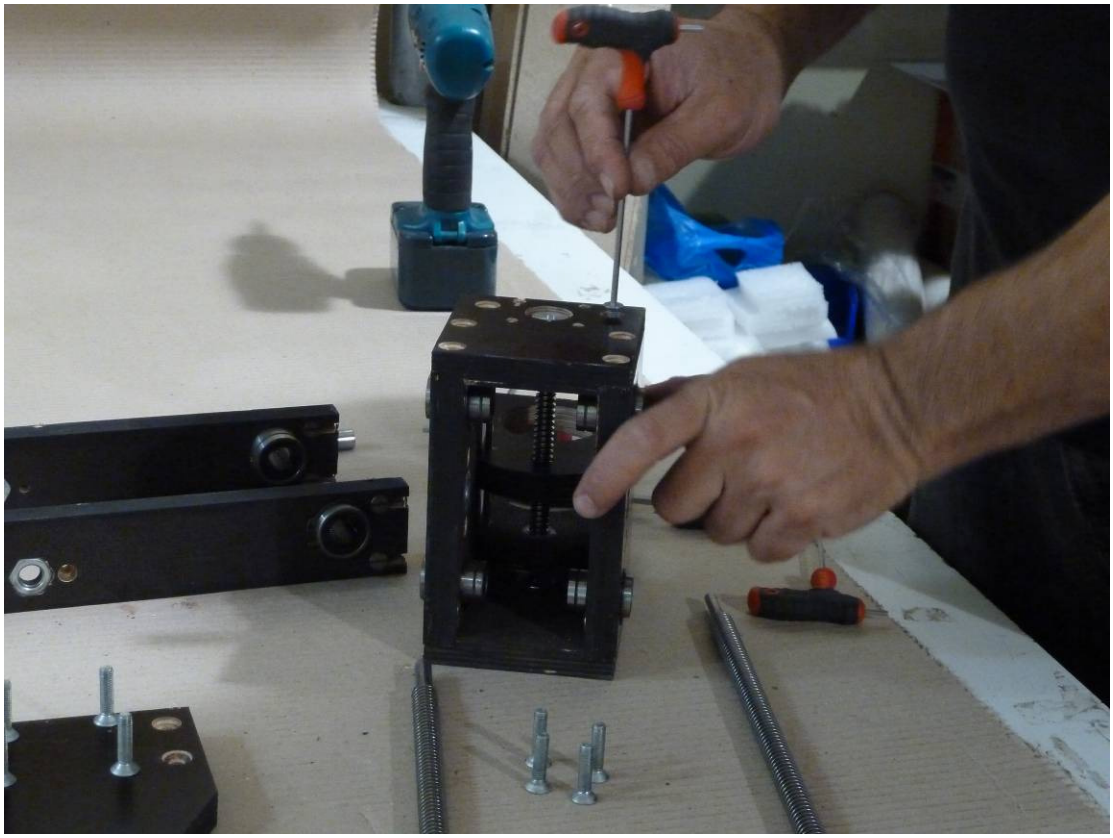
A few turns later screw the second part. The distance between them depends on the basic body of the spindle.

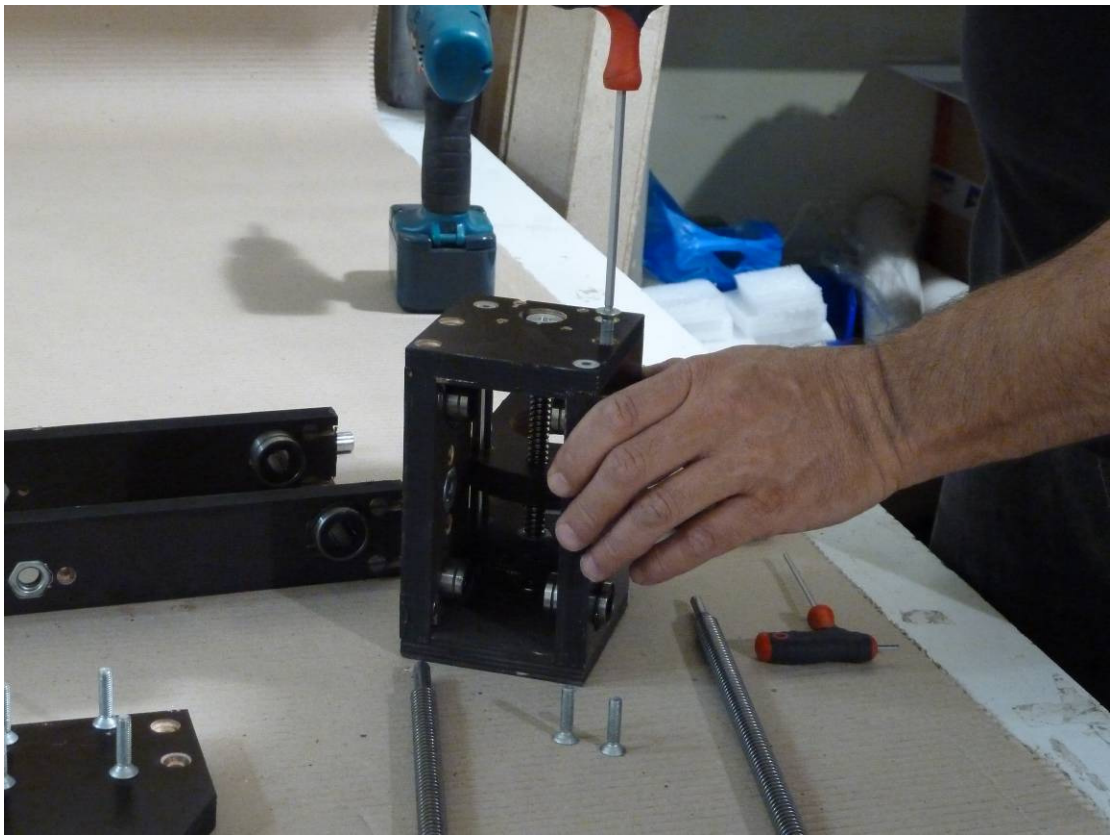
The next few photos shows you step by step the assembly of the z axis. Look carefully this procedure. You need the 2 pieces of linear motion slide shaft D10mm also:

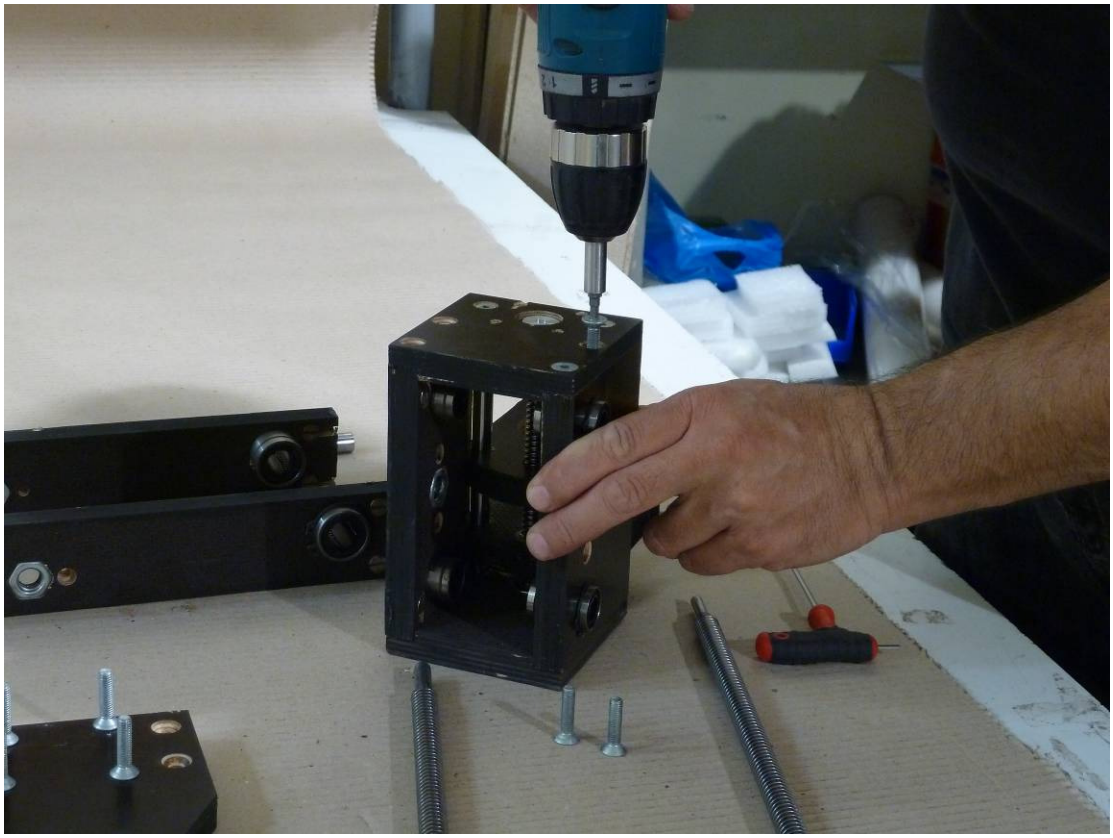




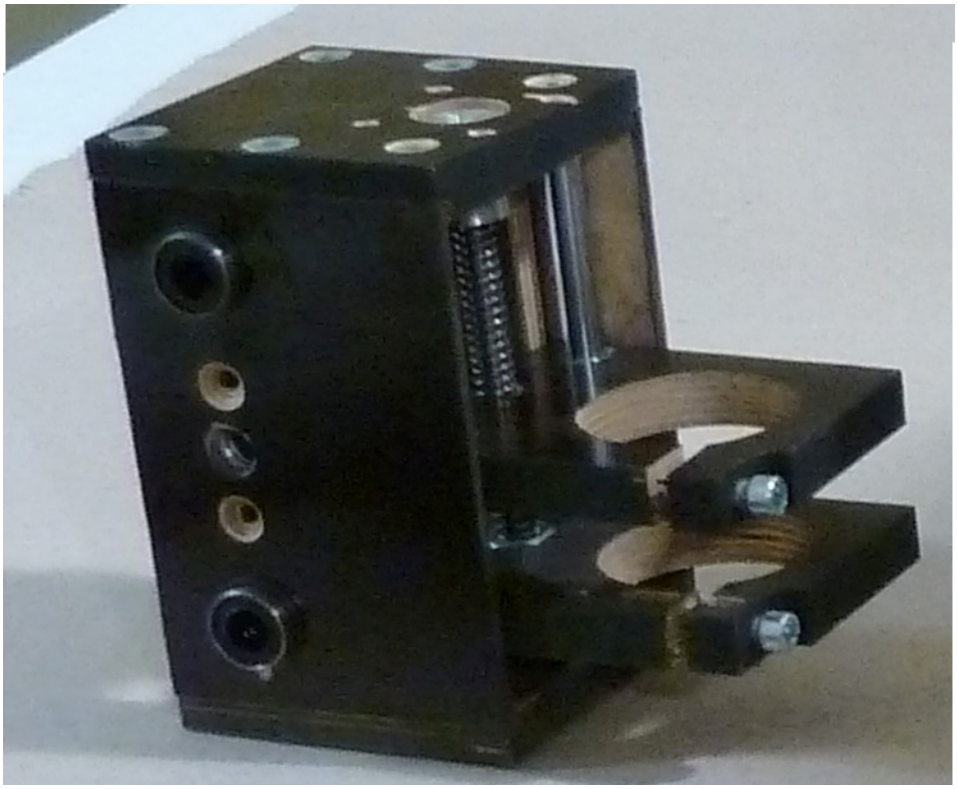






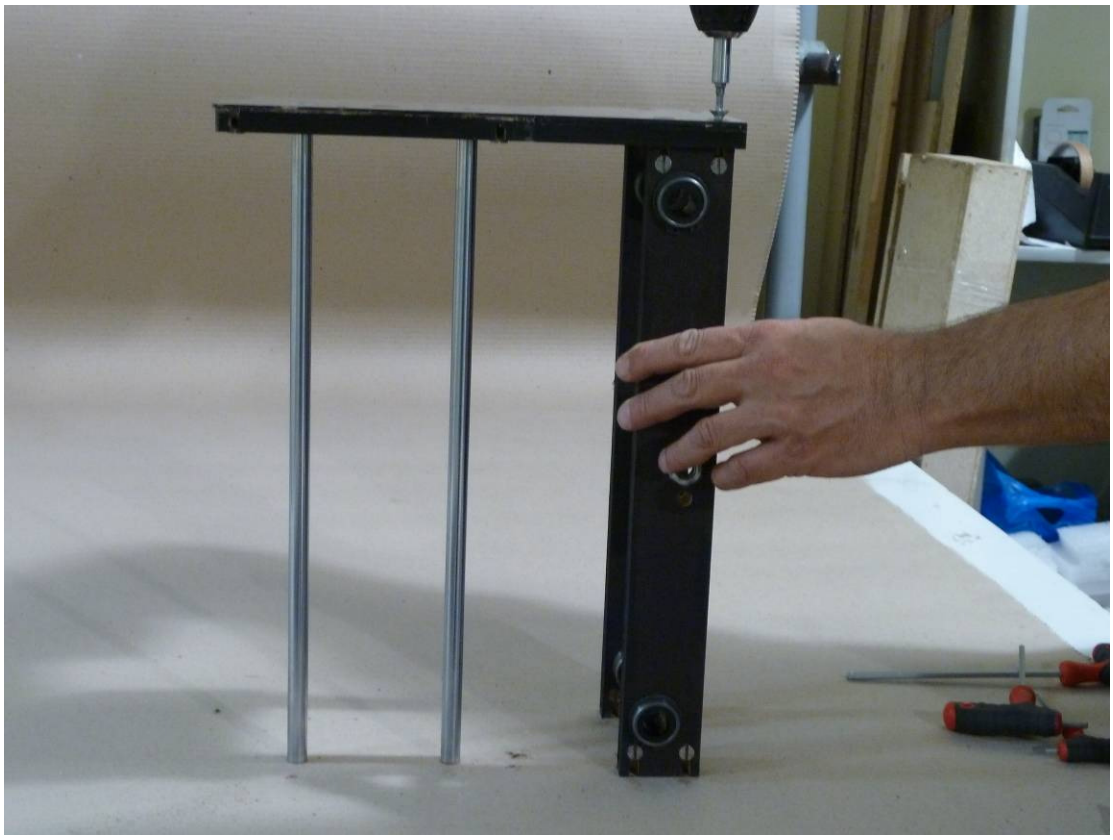


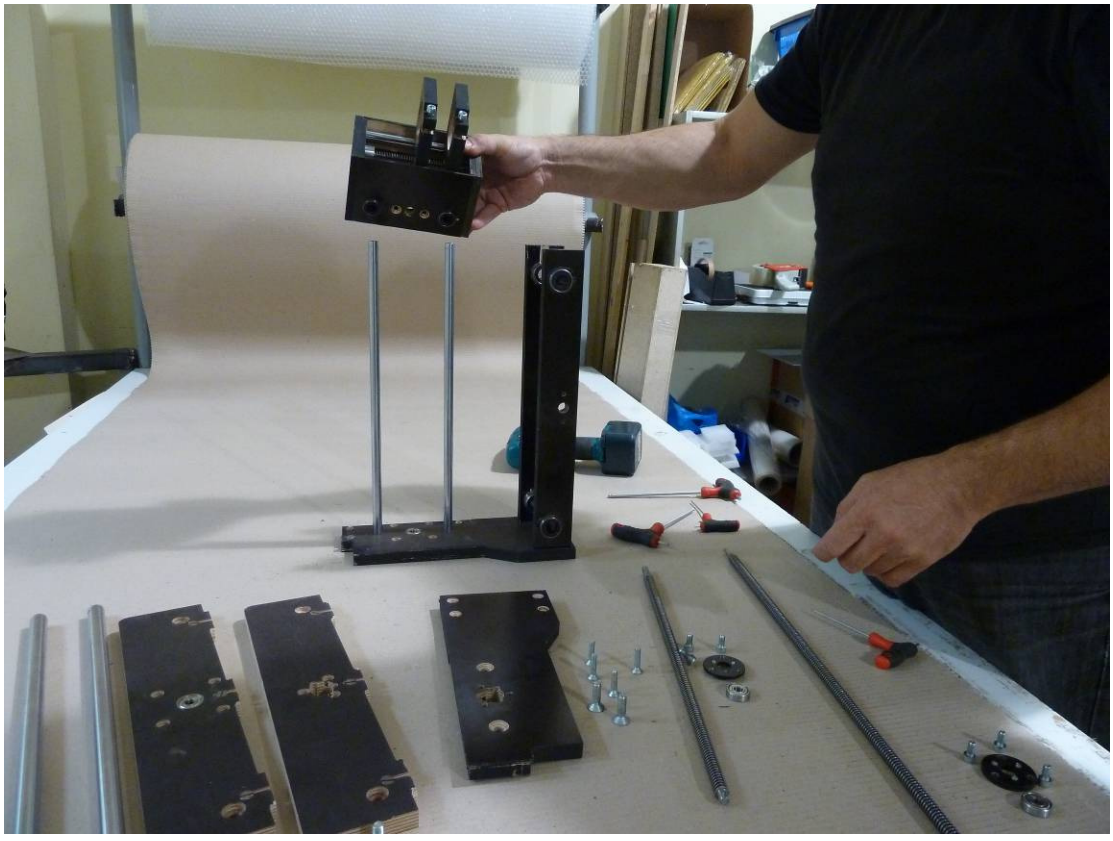
Your final z axis has to look like this:

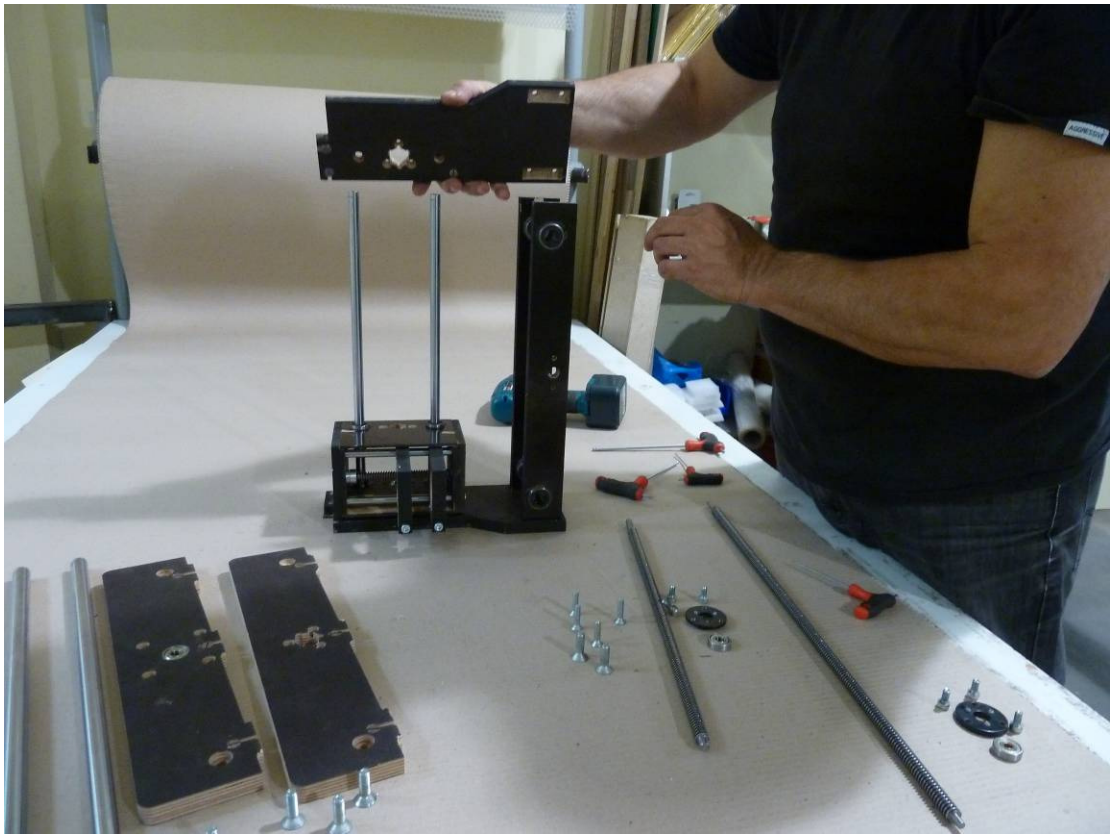


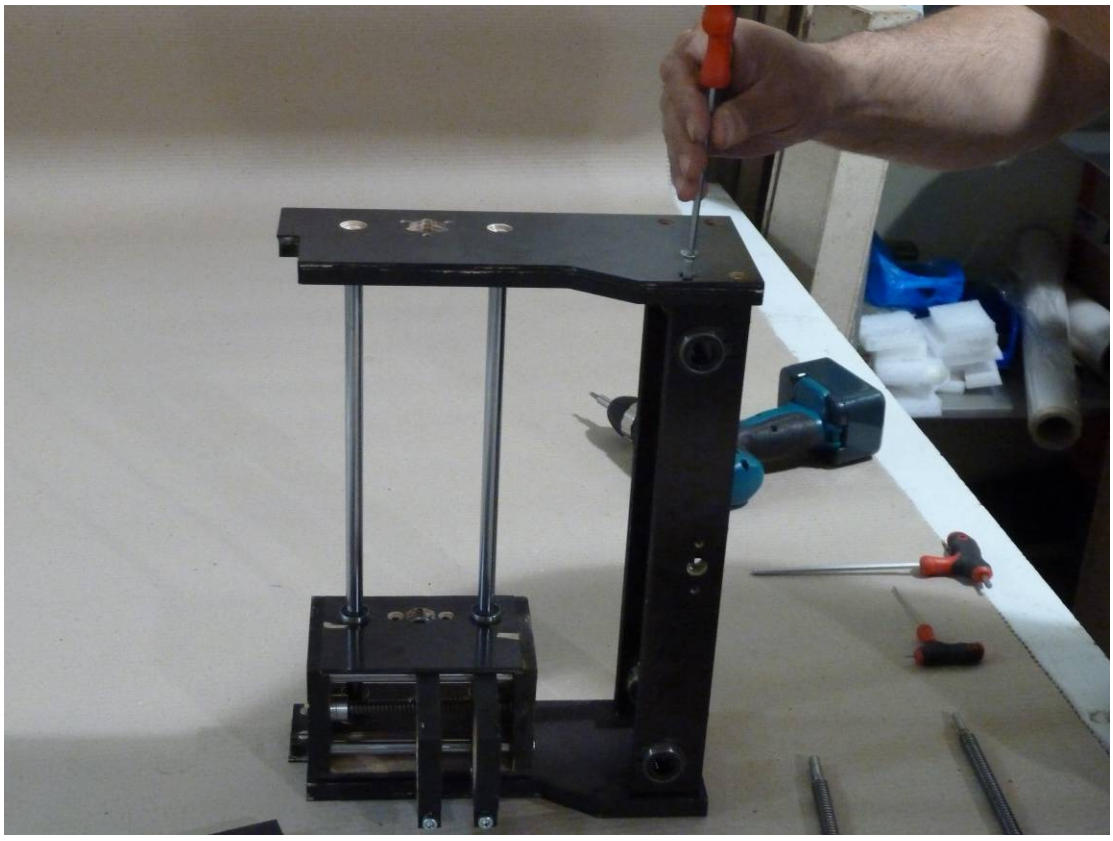
Next you have to assemble the main body of the E-Graver. Look carefully the next photo. The parts with the linear bearings have the trapezoidal nut. This nuts are asymmetrical. It means that the one side has bigger distance than the other. You have to put the parts as the photo below shows:

After this remark continue the assembly. You need the 2 pieces of linear motion slide shaft D12mm also:

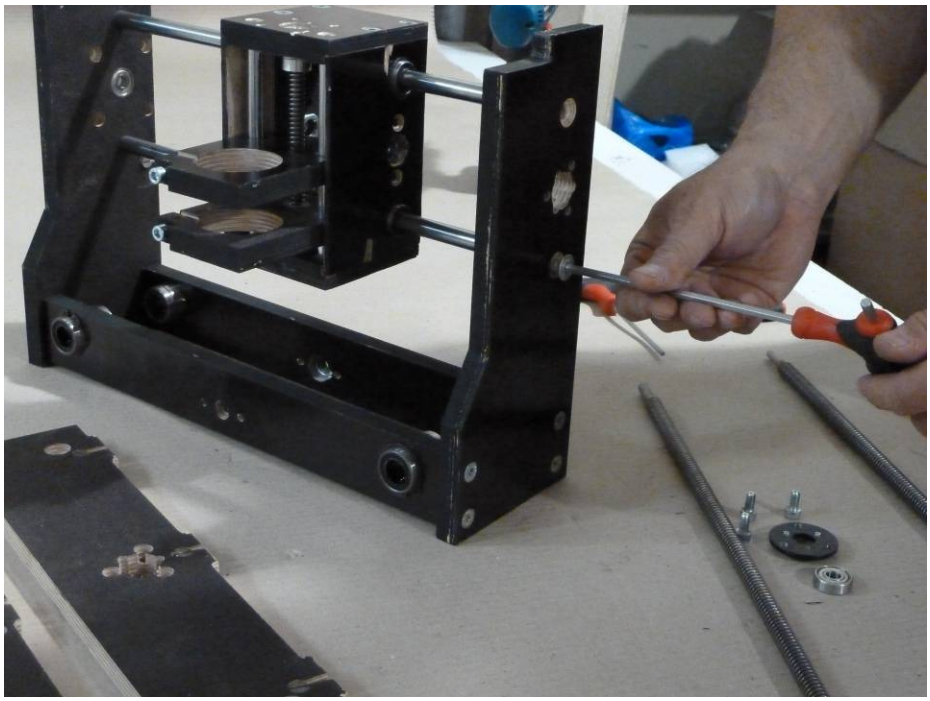




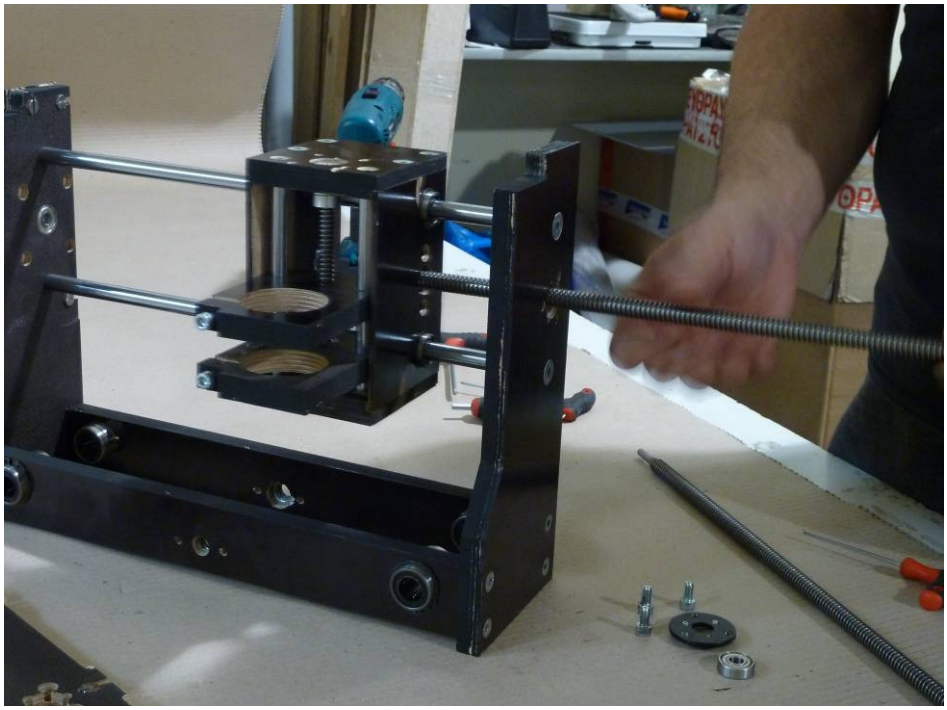




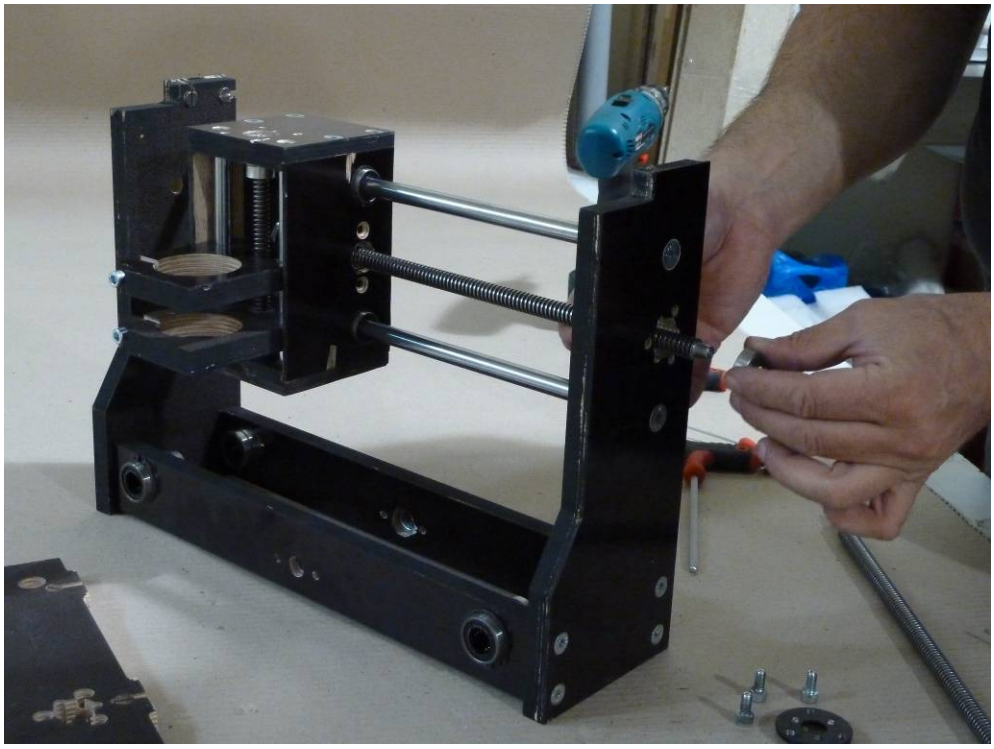
At this point you have almost finished with the Y axis and you have the Z axis inside.



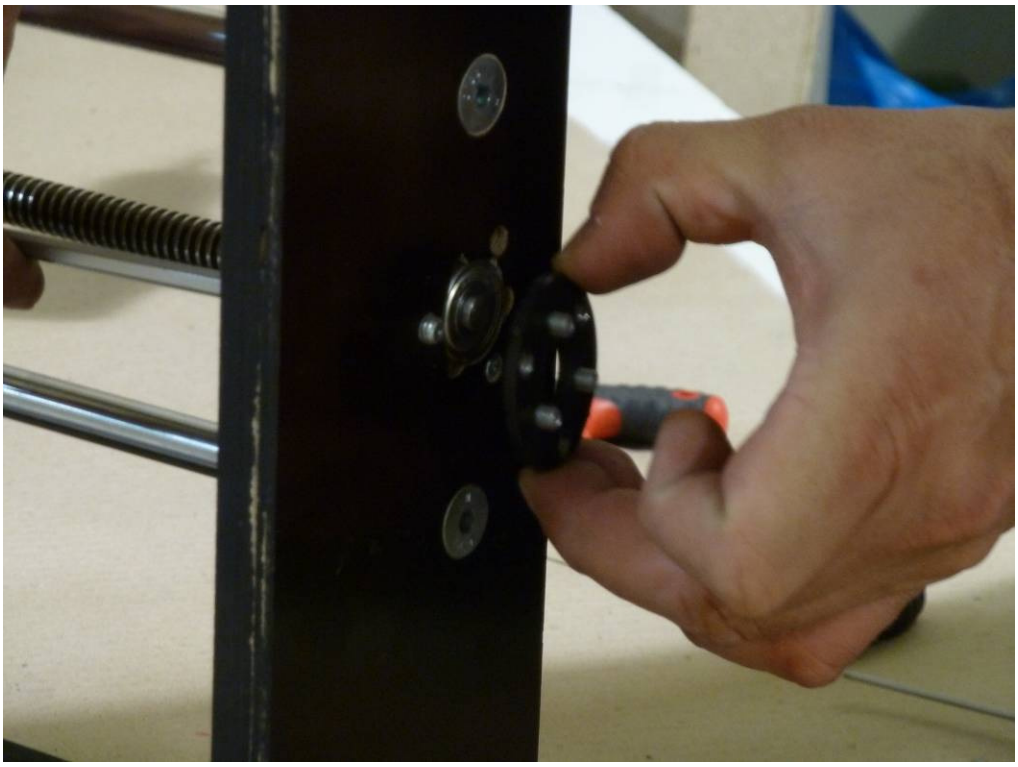
It’s time to screw the trapezoidal lead screw shaft of Y axis.



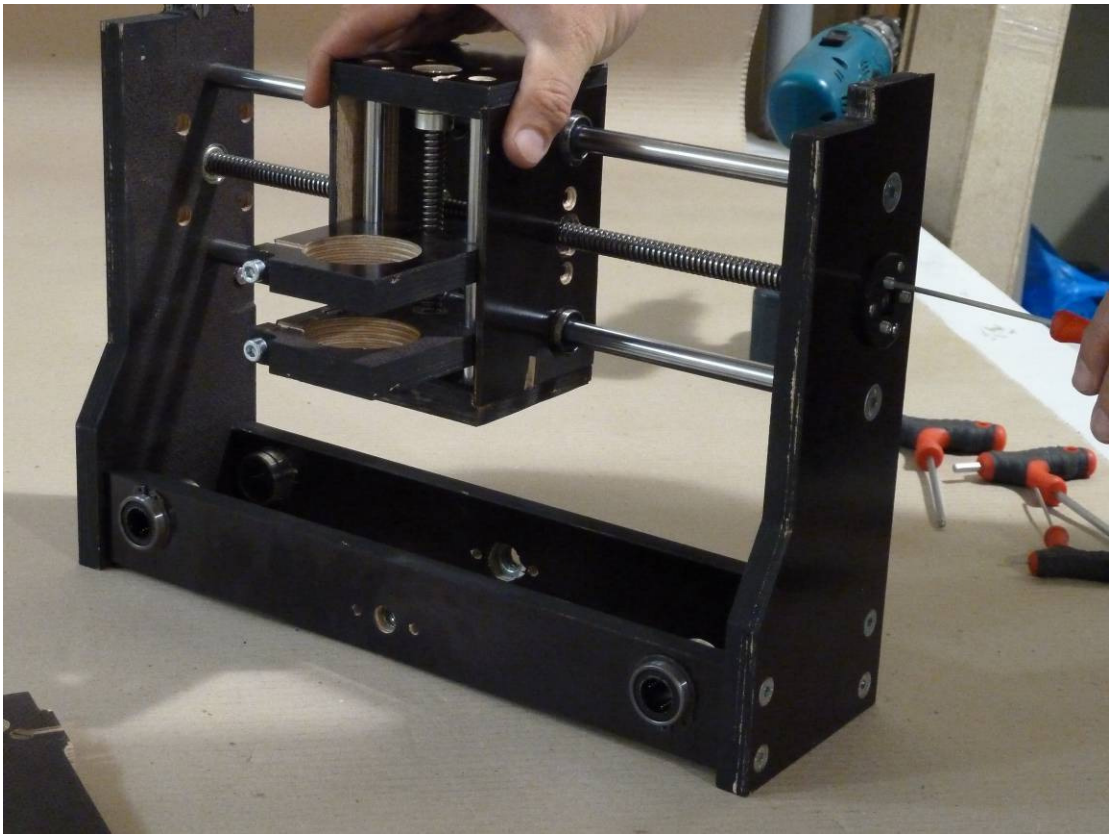
The trapezoidal lead screw locks into with a 608zz Double Shielded Ball Bearing 8x22x7mm and a Bearing adjustment flange.



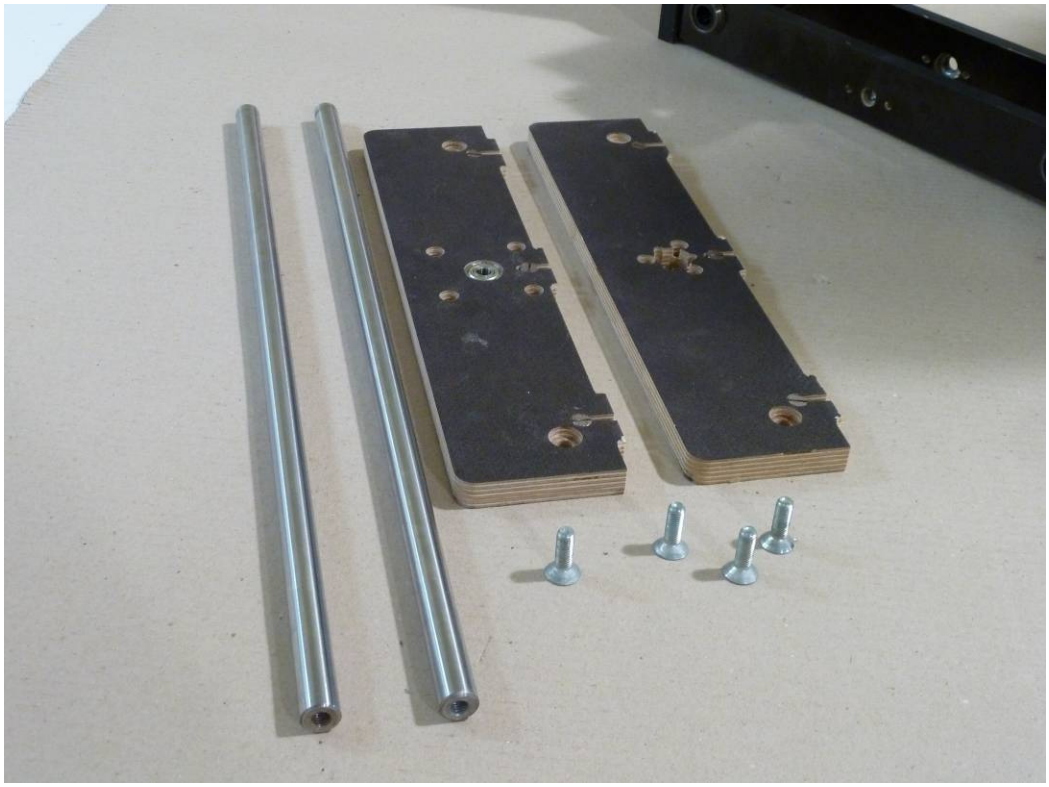
Allen Head screw 6mm X 16mm holds the flange from the inside.

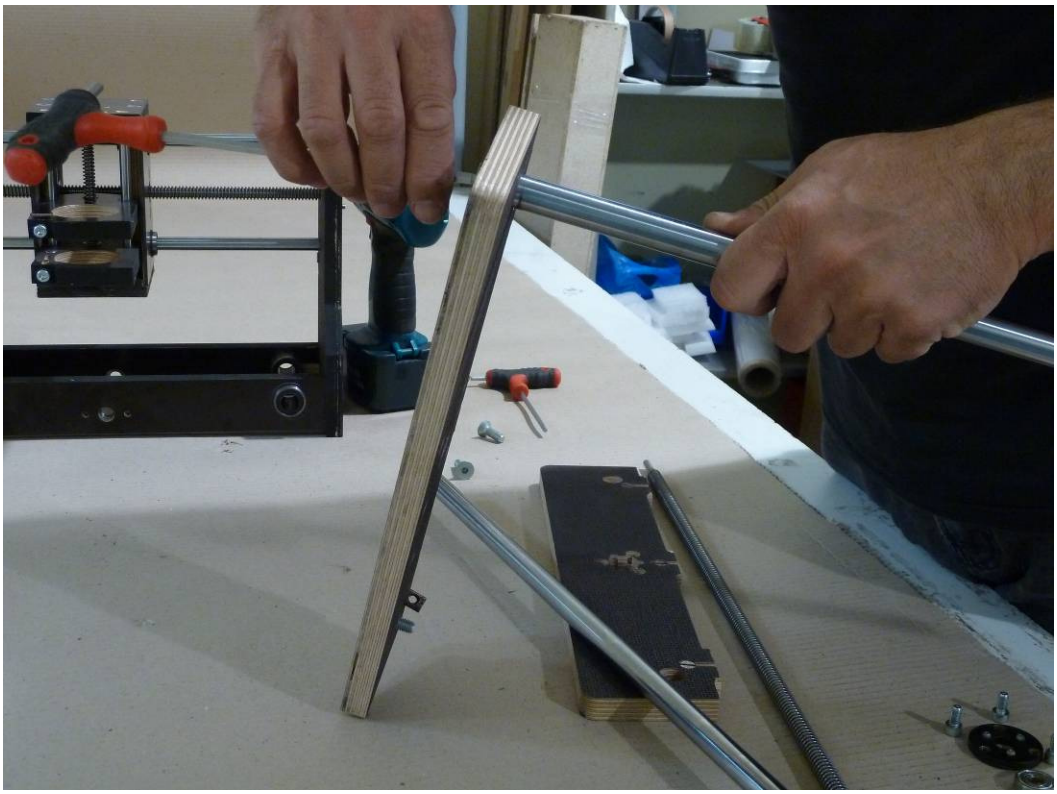


Three no head allen screws on the flange, regulate the 608zz Double Shielded Ball Bearing.

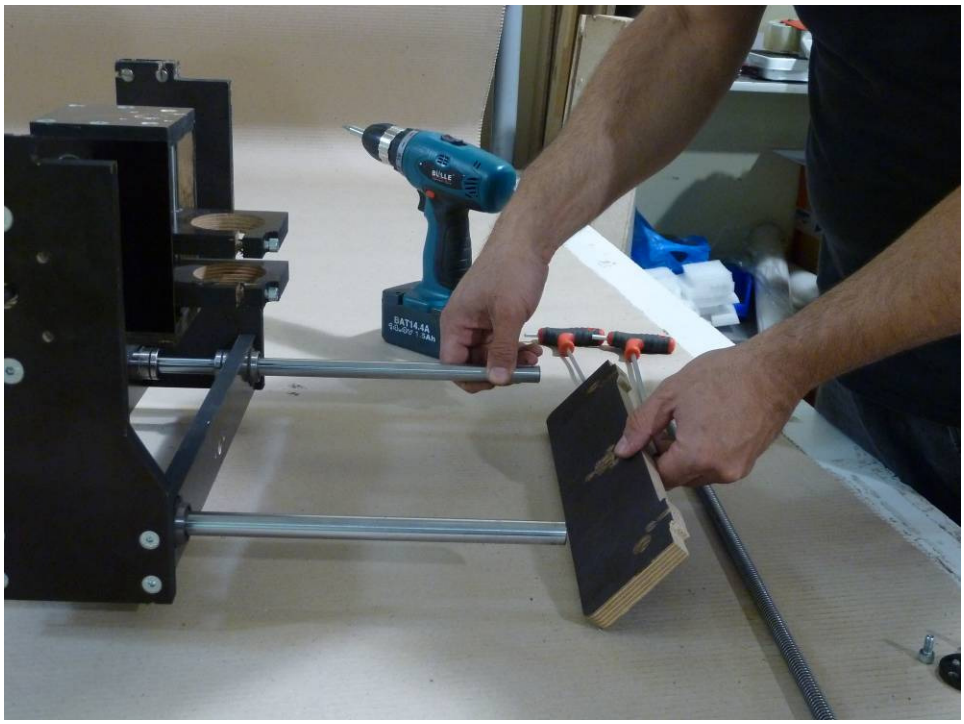


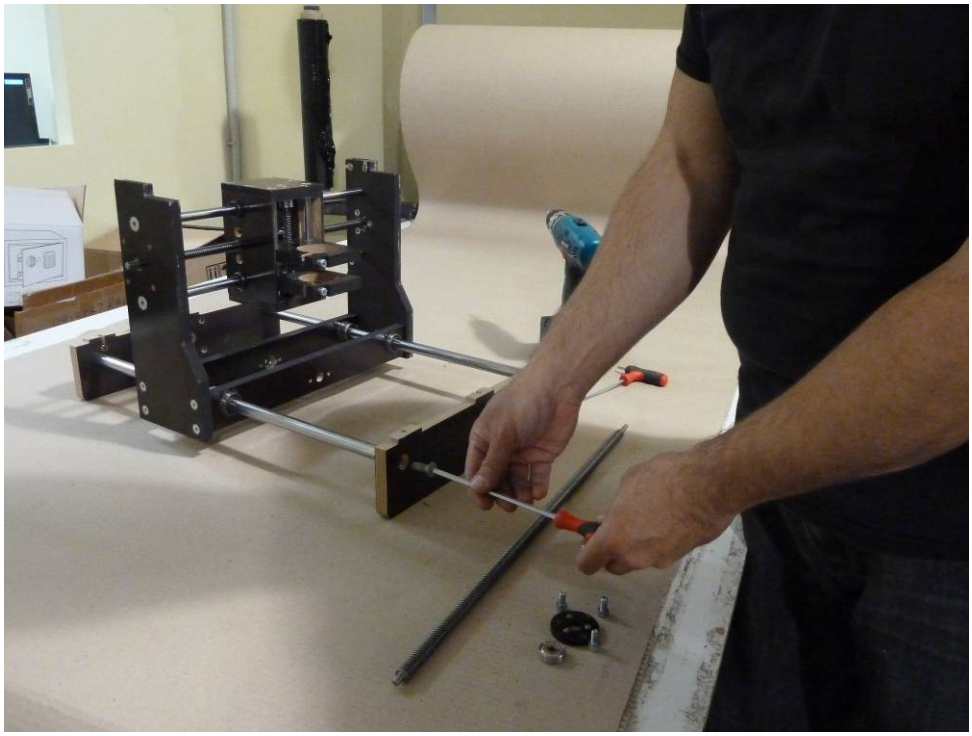
You have to assemble now the front and back of the kit. The parts that you need are 2 pieces of linear motion slide shaft D16mm, allen flat head screw 8mm X 25mm, and the front and back of the wooden parts.



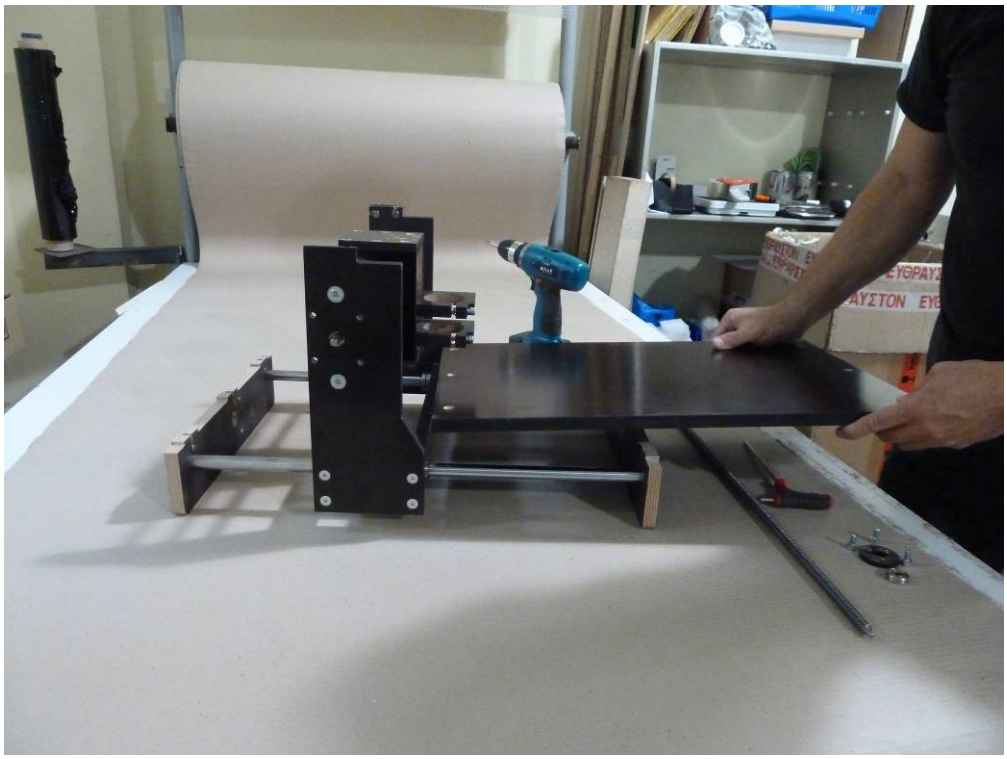


Get the part that fits on the stepper motor and make it the back part of the kit. The part that fits on the metal flange make it the front part.

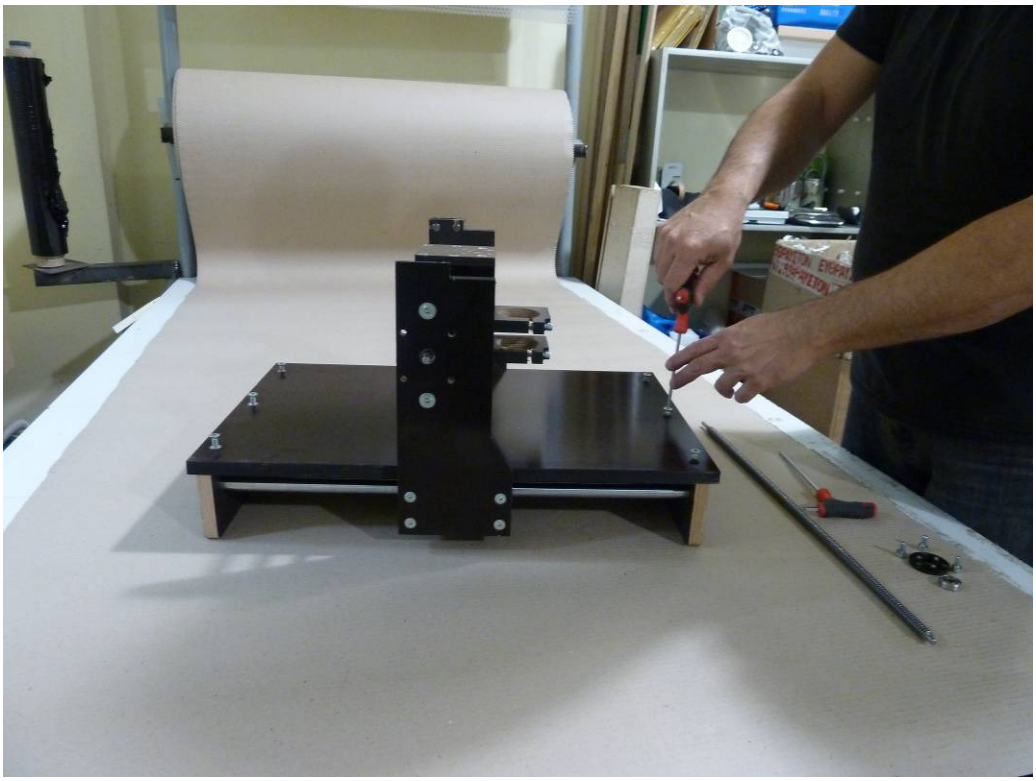




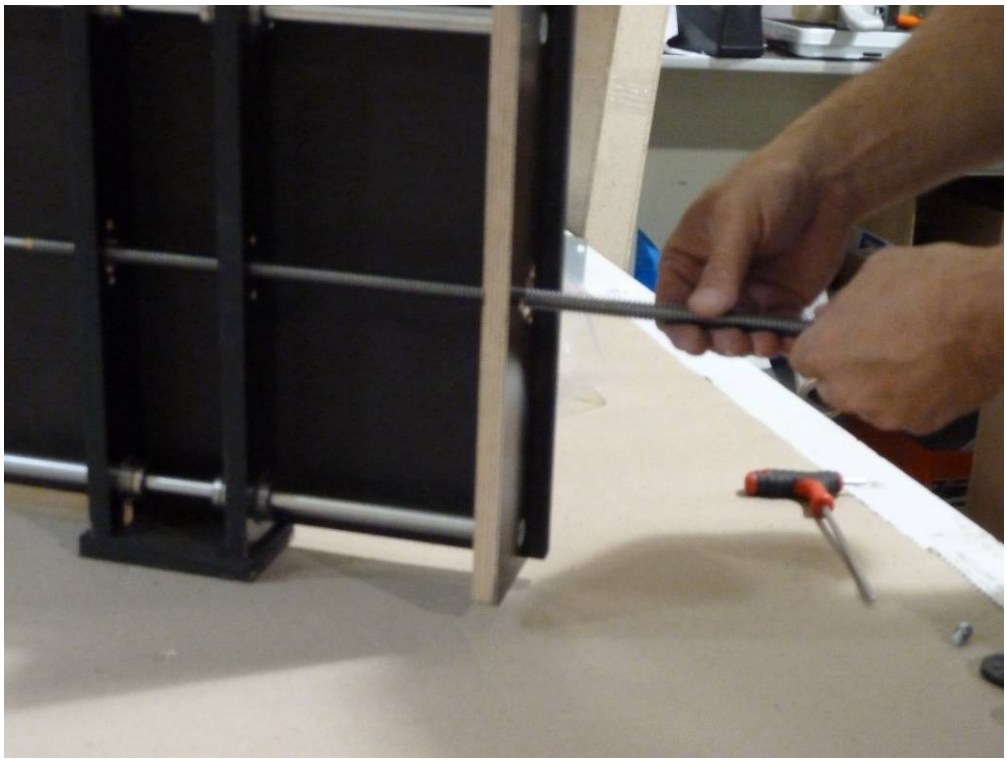
After the end of this procedure you have to put on the table of the kit.



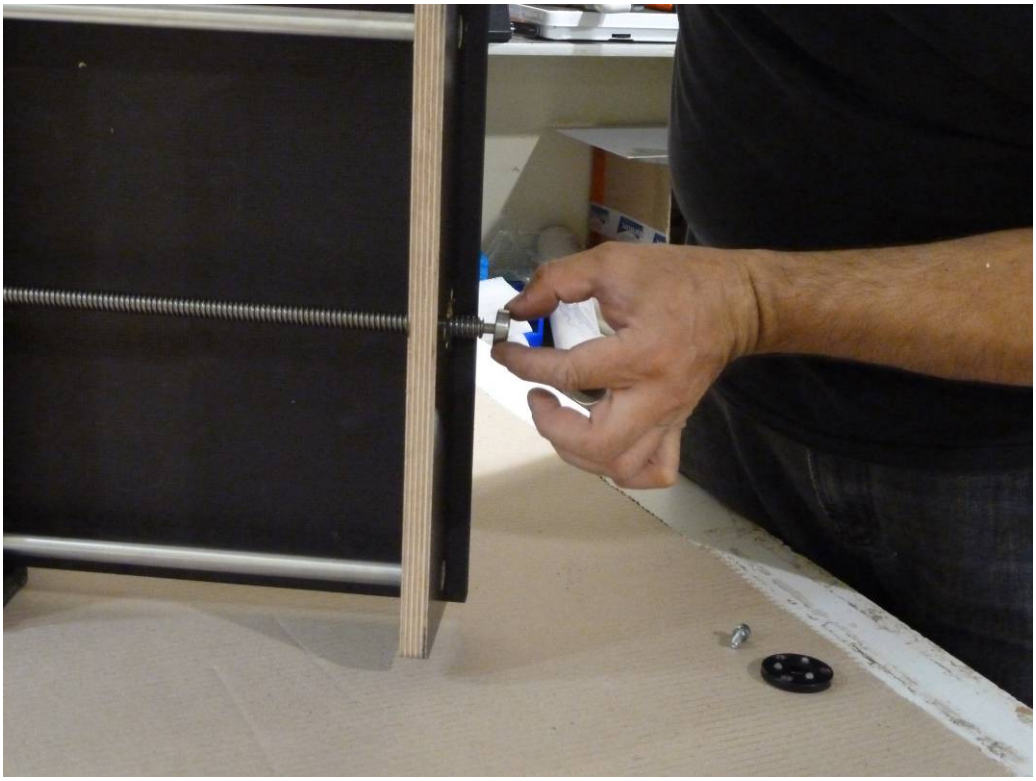
Screw the rest of the 6 allen flat head screw 6mm x 25mm



Screw the trapezoidal lead screw shaft of X axis.

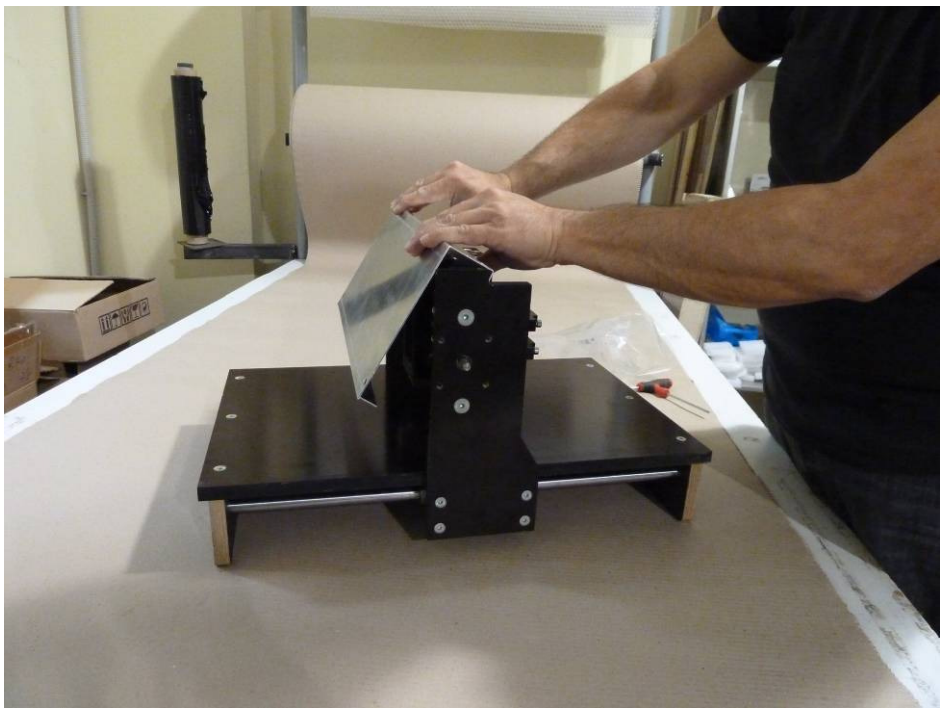


The trapezoidal lead screw locks into with a 608zz Double Shielded Ball Bearing 8x22x7mm and a Bearing adjustment flange

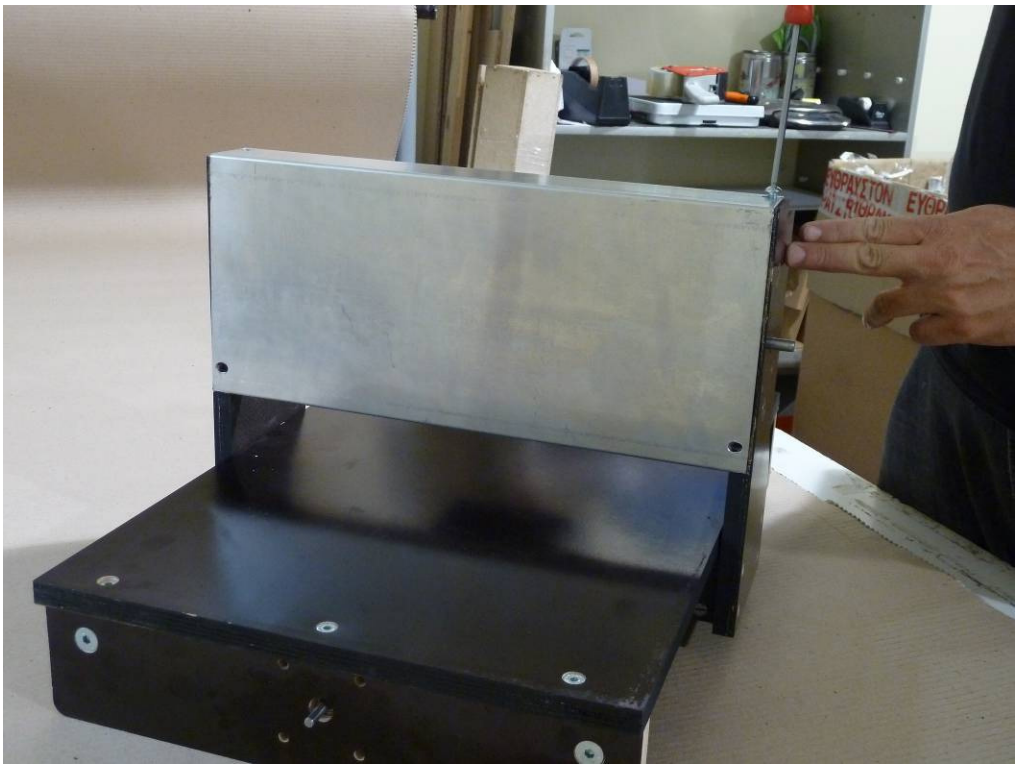


Adjust the X axis metal flange with the same way as you do with the Y axis metal flange.

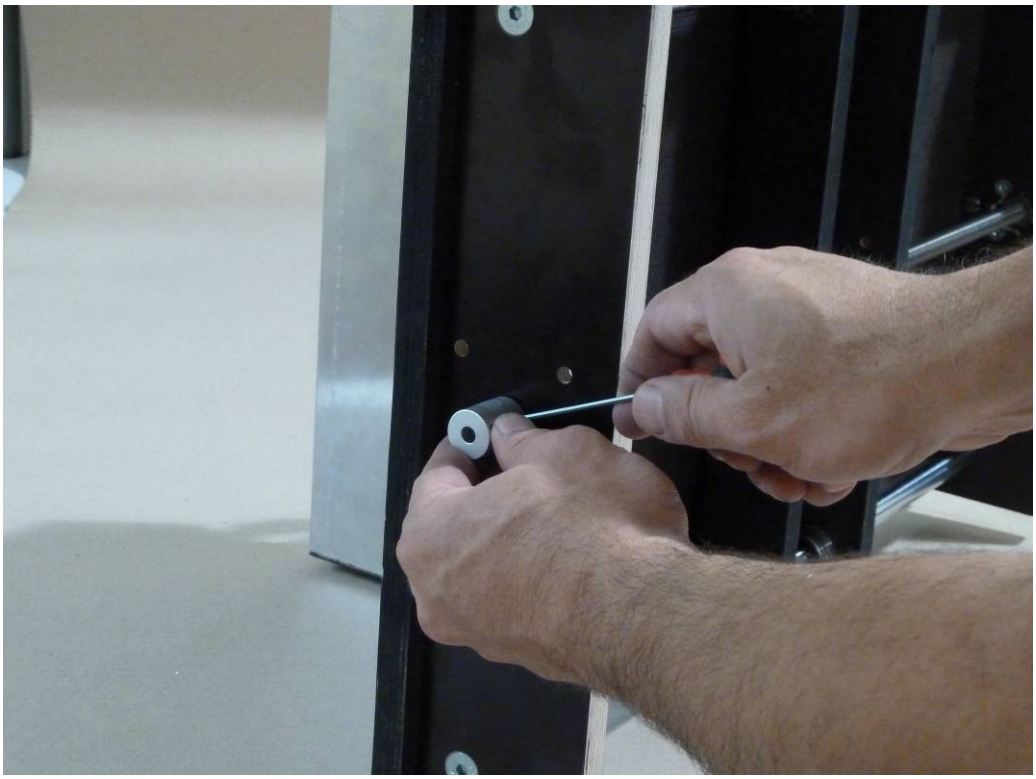
Put on the metal protection metal sheet.



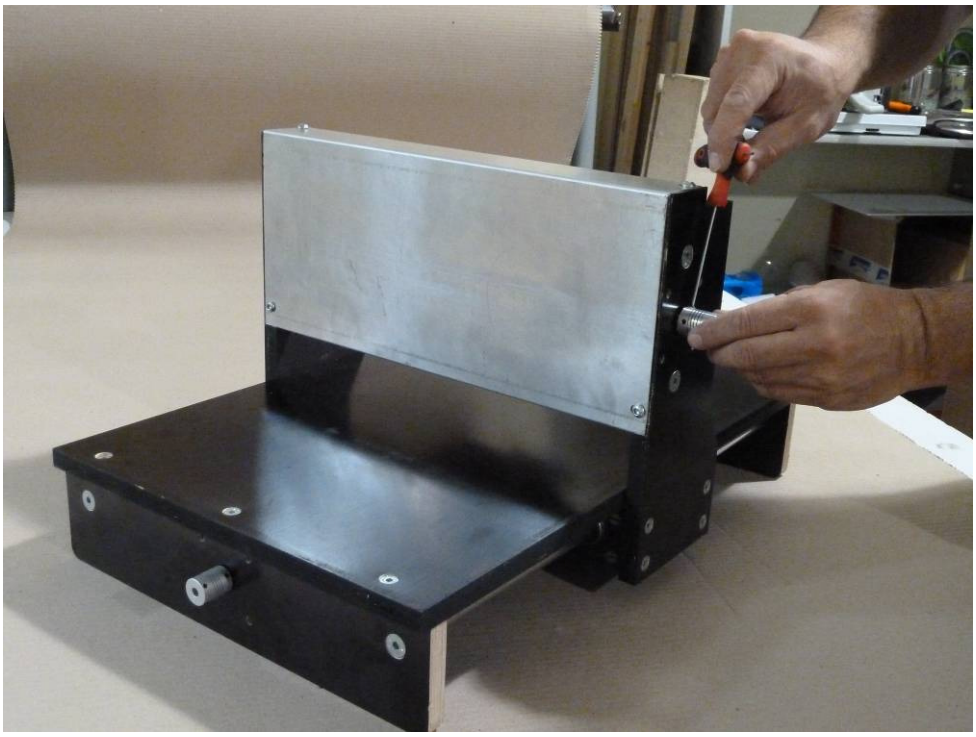
Screw with the 4 allen button head screws 6mm X 20mm.



Fulfill the installation with the coupling adjustment on X axis.



And Y axis.



Your Kit is almost done! The two motor mounts that include into the pack will be install on to the machine when you decide to assemble the **electronic parts of the Kit**!