



Before you begin on your journey, a word of caution.  
This machine can maim, burn, and electrocute you if you are not careful.  
Please do not become the first VORON fatality.  
There is no special Reddit flair for that.

**Please, read the entire manual before you start assembly.**

As you begin wrenching, please check our Social media channels for  
any tips and questions that may halt your progress.  
Most of all, good luck!  
**The XUNDA Team**

## TABLE OF CONTENT

[www.zopahuganda.com](http://www.zopahuganda.com)

## PART PRINTING SETTINGS AND GUIDELINES

The XundaTeam has provided the following print guidelines for you to follow in order to have the best chance at success with your parts. There are often questions about substituting materials or changing printing standards, but we recommend you follow these.

### 3D PRINTING PROCESS

Fused Deposition Modeling (FDM)

### INFILL TYPE

Grid, Gyroid, Honeycomb, Triangle or Cubic

### MATERIAL

ABS/ASA

### INFILL PERCENTAGE

Recommended: 40%

### LAYER HEIGHT

Recommended: 0.2mm

### WALL COUNT

Recommended: 4

### EXTRUSION WIDTH

Recommended: Forced 0.4mm

### SOLID TOP/BOTTOM LAYERS

Recommended: 5

## FILE NAMING

By this time you should have already downloaded our STL files from the Zopah website/ GitHub repository. You might have noticed that we have used a unique naming convention for the files. This is how to use them.

### PRIMARY COLOR

B\_Frame\_x1.stl

These files will have nothing at the start of the filename.

### ACCENT COLOR

[a]\_Tensioner\_x2.stl

We have added “[a]” to the front of any STL file that is intended to be printed with accent color. The parts are marked with a heart in the man-

### CLEAR / TRANSLUCENT

[c]\_Display\_screen\_x1.stl

Any file that begins with [c] is intended to be printed in a clear or translucent color that allows light to penetrate through it.

### QUANTITY REQUIRED

[a]\_Hex\_Bolt\_x3.stl

Any file that ends with “\_x#” is telling you the quantity of that part required to build the machine.

## STL FILE LIST

We have put together a comprehensive list of all the STL files used in this manual you can use this to keep track of parts you have printed, identify the names of printed parts, and/or reference where they are used in the body of this manual. Simply copy the document from the link and you can markup a local copy for yourself: <https://www.zopahuganda.com>.



<https://zopahuganda.com>

## HOW TO GET HELP

If you need assistance with your build, we're here to help. Head on over to our Social media platforms and post your questions. This is our primary medium to help Xunda Users and we have a great community that can help you out if you get stuck.



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[zopahug@gmail.com](mailto:zopahug@gmail.com)

## REPORTING AN ISSUE

Should you find an issue in the documentation or have a suggestion for an improvement please consider opening an issue on GitHub. When raising an issue please include the relevant page numbers and a short description; annotated screenshots are also very welcome. We periodically update the manual based on the feedback we get.

## THIS IS JUST A REFERENCE

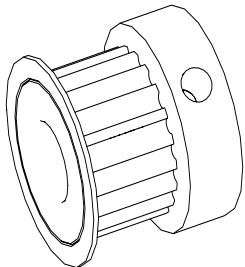
This manual is designed to be a simple reference manual. Building a Xunda can be a complex endeavour and for that reason we recommend downloading the CAD files off our Repository/ website if there are sections you need clarification on. It can sometimes be easier to follow along when you have the whole assembly in front of you.



<http://bit.ly/3XMdTpp>

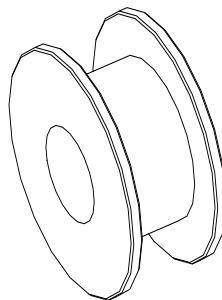
## HARDWARE - REFERENCES

[www.zopahuganda.com](http://www.zopahuganda.com)



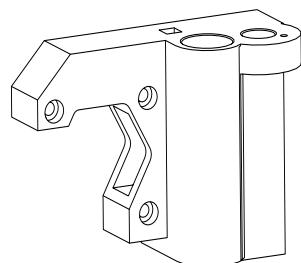
**PULLEY**

GT2 pulley used on the motion system of the Xunda



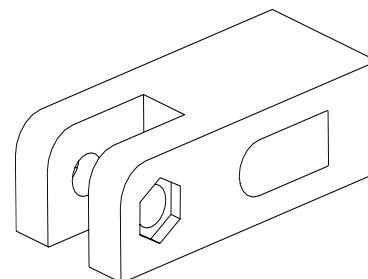
**BEARING**

Belt bearing used on the motion system of the Xunda at the opposite ends the motors



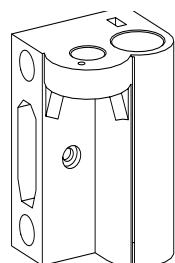
**PRINTED PART**

X-axis end motor holder used to hold the motor for the motion in the x-axis



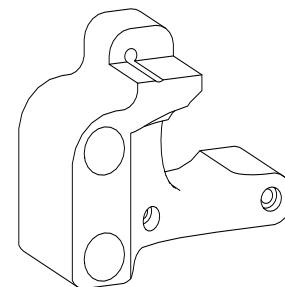
**Y-IDLER**

Y-idler is used to hold belt bearing for the motion in the y-axis



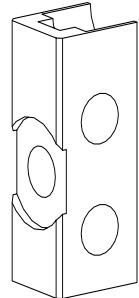
**PRINTED PART**

X-axis end idler used to hold the bearing for the x-axis belt



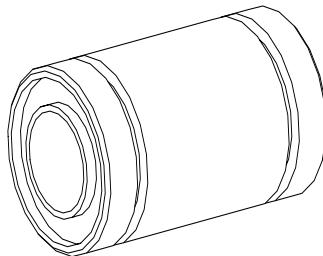
**MOTOR HOLDER**

The motor holds the y-axis motor used in the y-axis



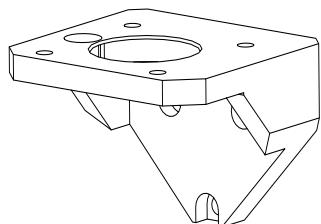
### Y-AXIS HOLDER

Y-axis holder is used to hold the threaded rods (tige 390mm and tige 220mm)



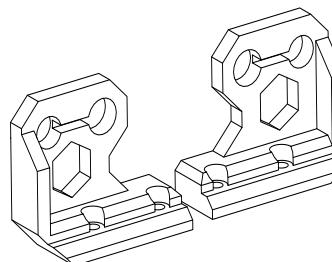
### LINEAR BEARING

Used on smooth rods to provide smooth motion in different axes. For example, motion for the extruder and the heating head



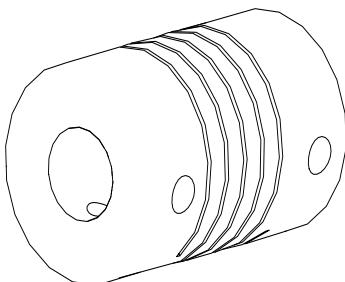
### MOTOR HOLDER

This is a printed part for holding the z-axis motor used for the z-motion



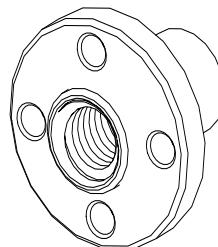
### TOP COVERS

Z-axis top covers hold the Trapezoidal and the smooth rods top ends to prevent vibration in the z-axis



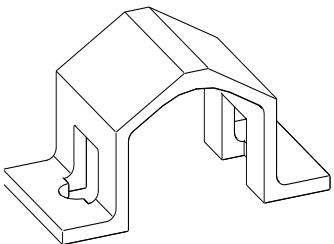
### FLEXIBLE COUPLER

The flexible coupler used for joining the trapezoidal rods to the z-axis motor shaft



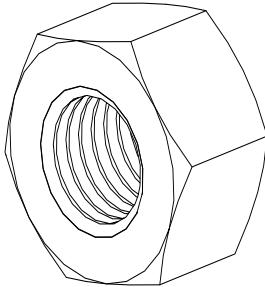
### TRAPEZOIDAL NUT

Used to attach the x-axis onto the Trapezoidal rods



## BEARING CLIP

The clips are used for holding the linear bearings for the bed



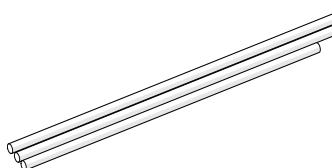
## HEX NUT

Hex nuts couple with bolts to create a tight, secure joint. You'll see these used in both M10 and M3 variants throughout this guide.



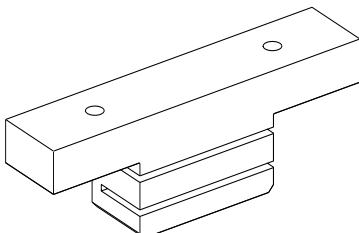
## THREADED RODS

These are used in all axes of motion of the xunda printer. They include, Trapezoidal lead(middle), Tige filete 390 (longest), and Tige filete 220 (shortest)



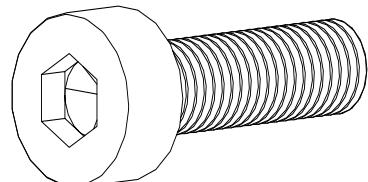
## SMOOTH RODS

Used in different axes for motion. For example, tige 370 for the E-axis, tige 350 for the Y-axis, and tige 320 for the Z-axis



## BELT HOLDER

The belt holder is used to hold the y-axis belt to the bed for motion

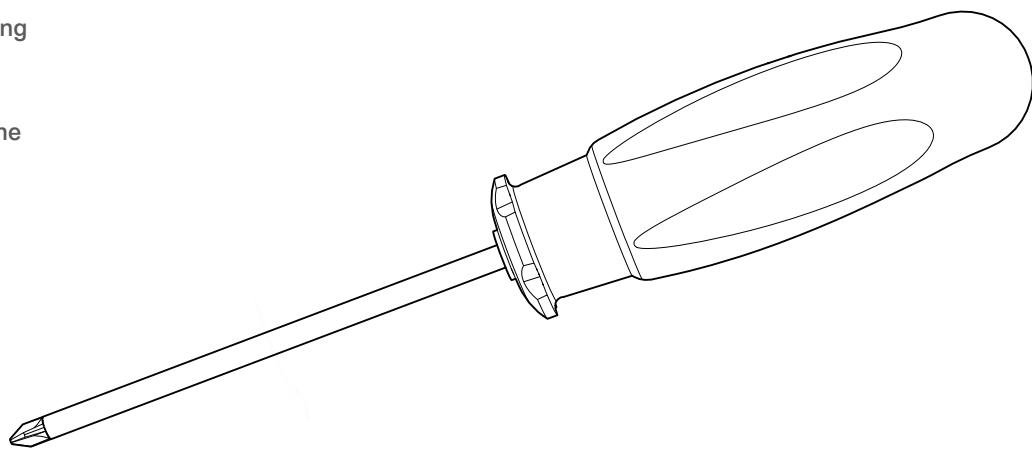


## SOCKET HEAD CAP SCREW (SHCS)

Metric fastener with a cylindrical head and hex drive. The most common fastener used on the

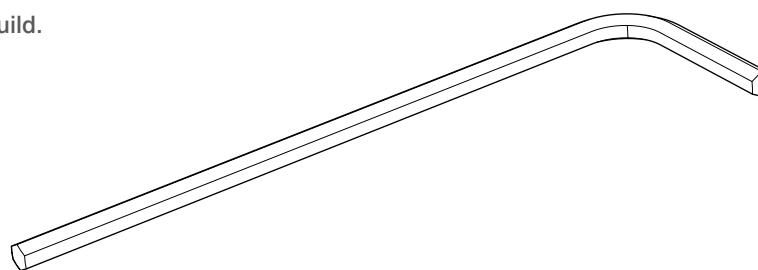
## CROSS SCREW DRIVER

This will be essential for tightening and loosening screws that hold various parts of the printer together. It's used extensively throughout the assembly process to secure components like the frame, motors, and electronics.



## HEX DRIVER

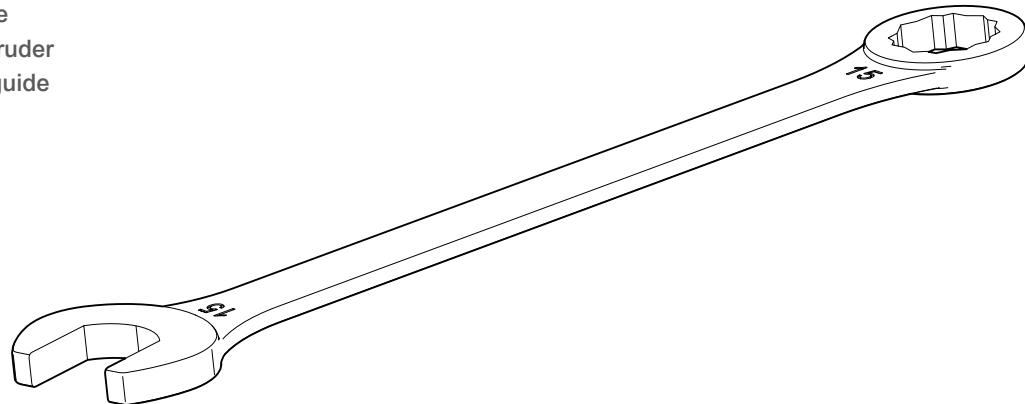
The 2mm hex driver will see a lot of use in this build. A quality driver is strongly recommended.



### WRENCH

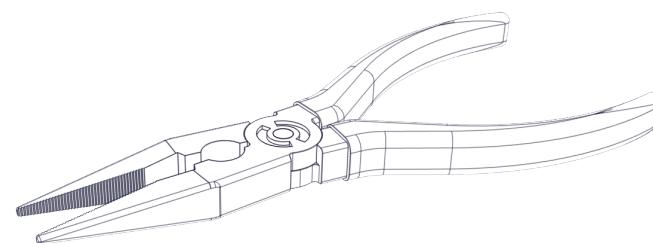
Used to secure nuts, particularly in assembling the frame and attaching components like the motors and bearings.

Can also be used to hold or adjust parts like the heater block or nozzle when fine-tuning the extruder assembly. The commonly used wrench in this guide is the 15mm size



### NEEDLE NOSE PLIER

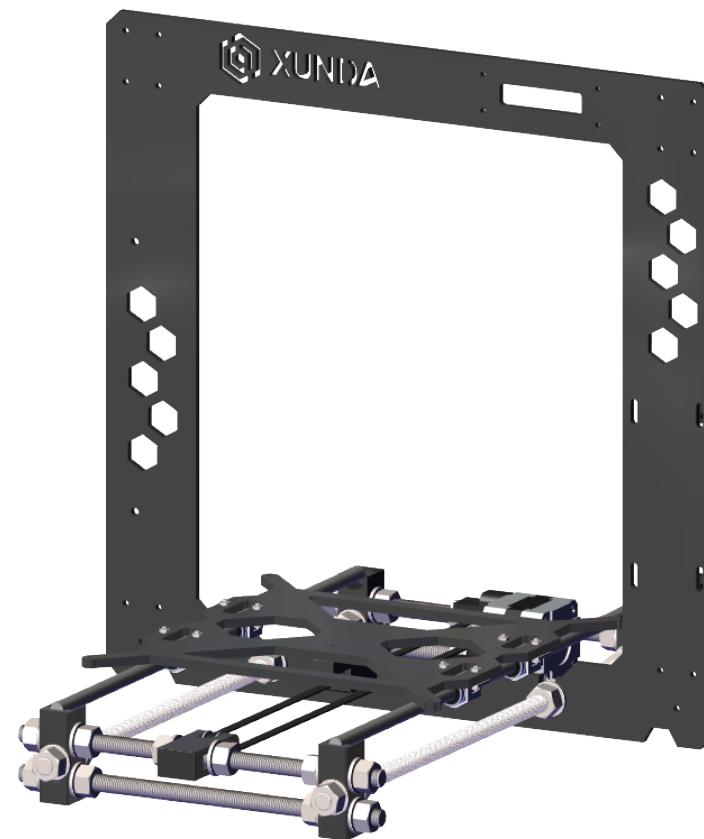
These are indispensable in assembling the printer for their precision in handling small components, wire management, and accessing tight spaces.





## Y-AXIS ASSEMBLY

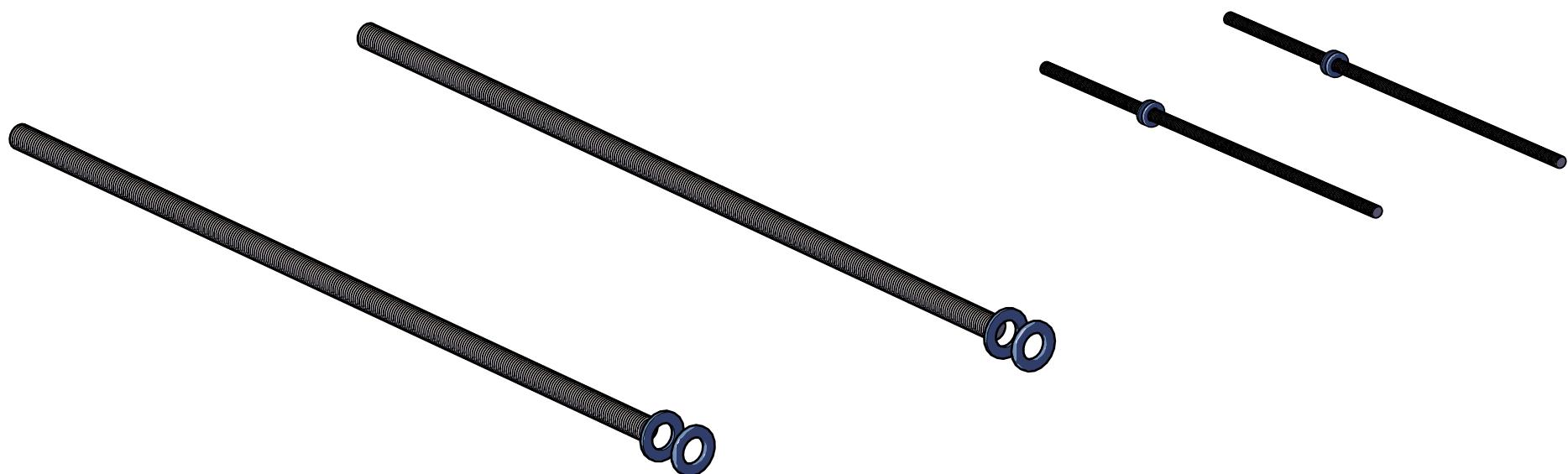
[www.zopahuganda.com](http://www.zopahuganda.com)



Washers x4

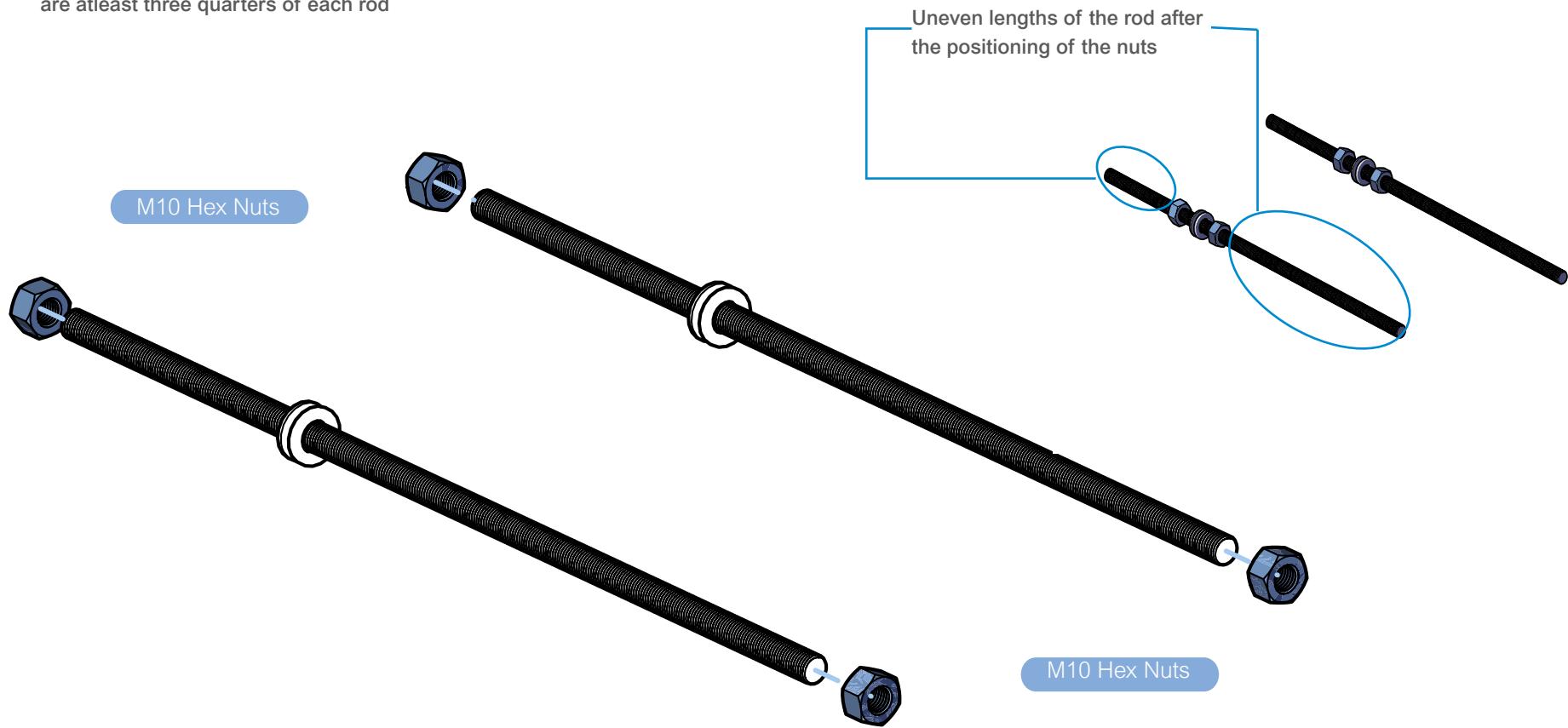
### POPULATING THREADED RODS

Depending on the size of the rods, tige filete (390mm),  
select washers and fit them on to the rods



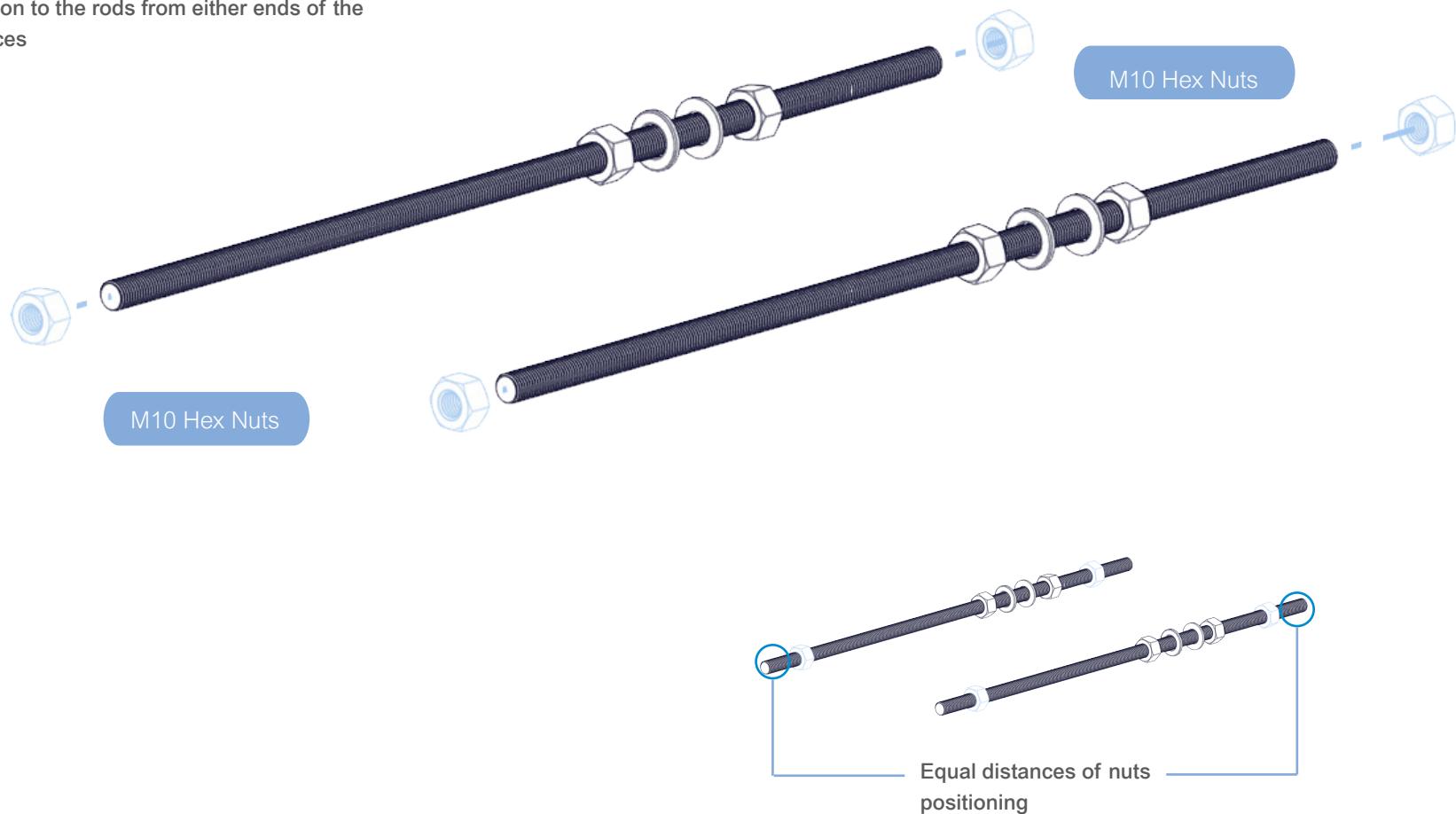
### POPULATING THREADED RODS

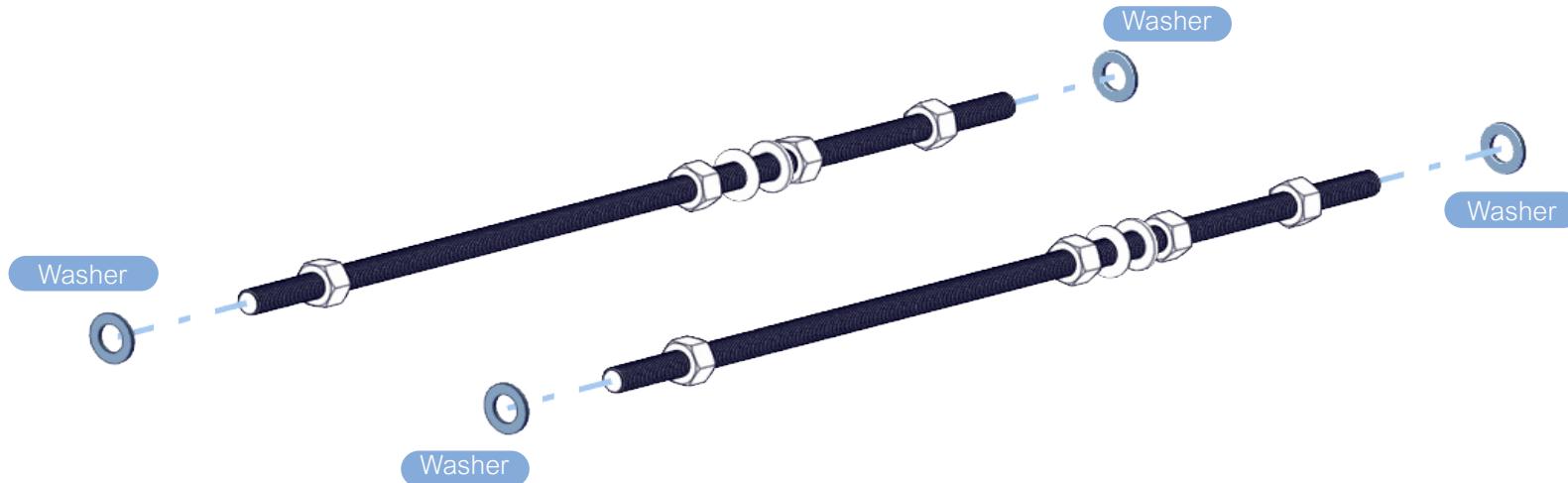
Insert M10 Hex nuts from both ends of the rods until they are atleast three quarters of each rod



### POPULATING THREADED RODS

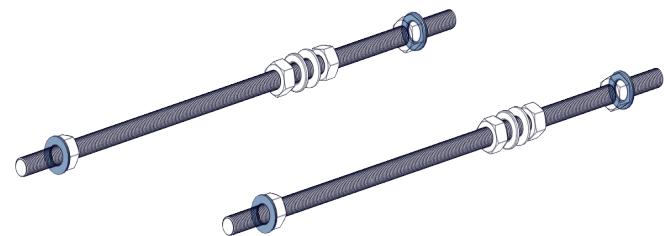
Insert M10 hex nuts on to the rods from either ends of the rods at equal distances





### POPULATING THREADED RODS

Now select four right size washers from the kit and insert them each from either ends of the rods

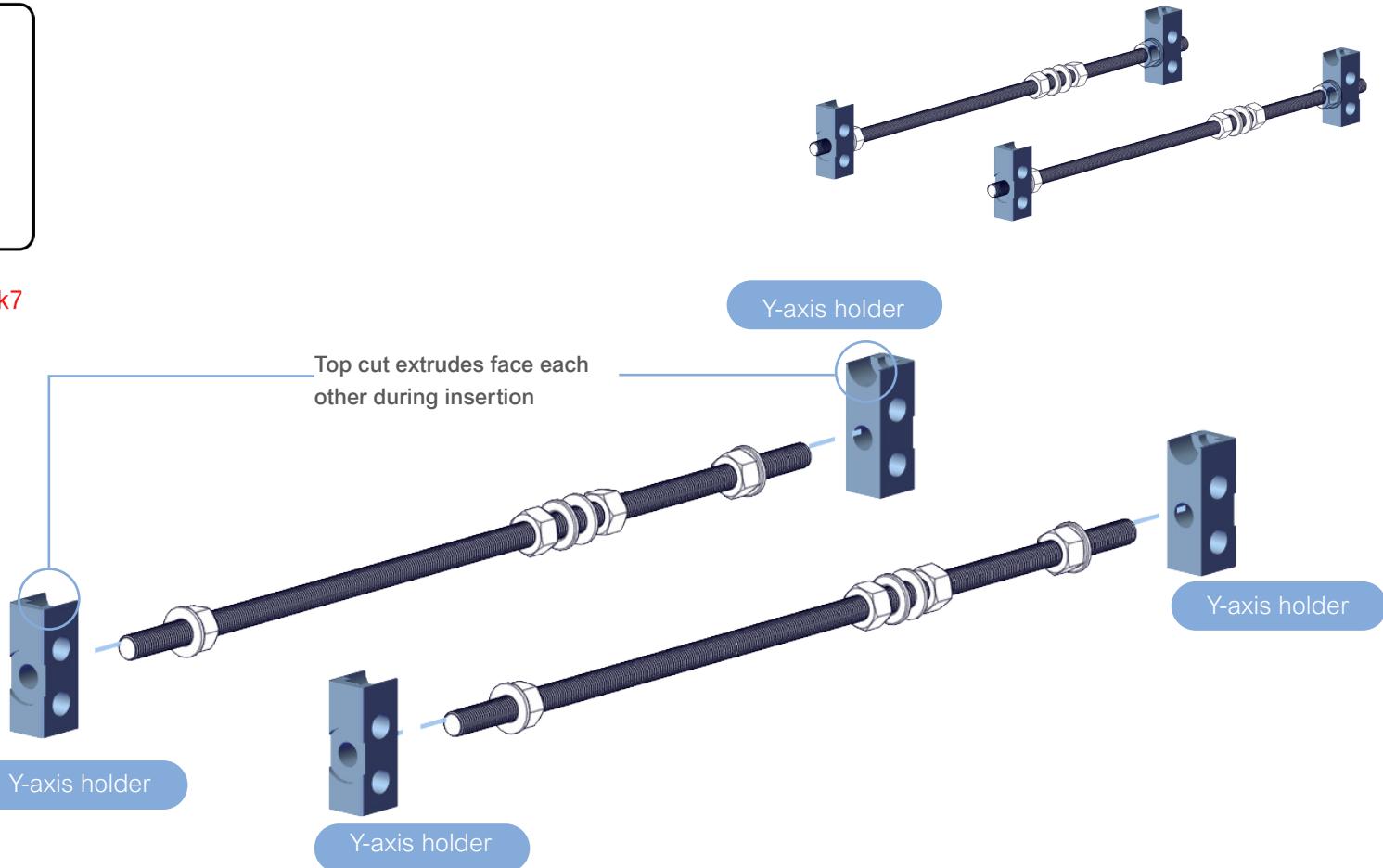


## Y-AXIS HOLDER MOUNTING

Mount y-axis holders each from the ends of the rods with each top cut extrude facing towards the rod

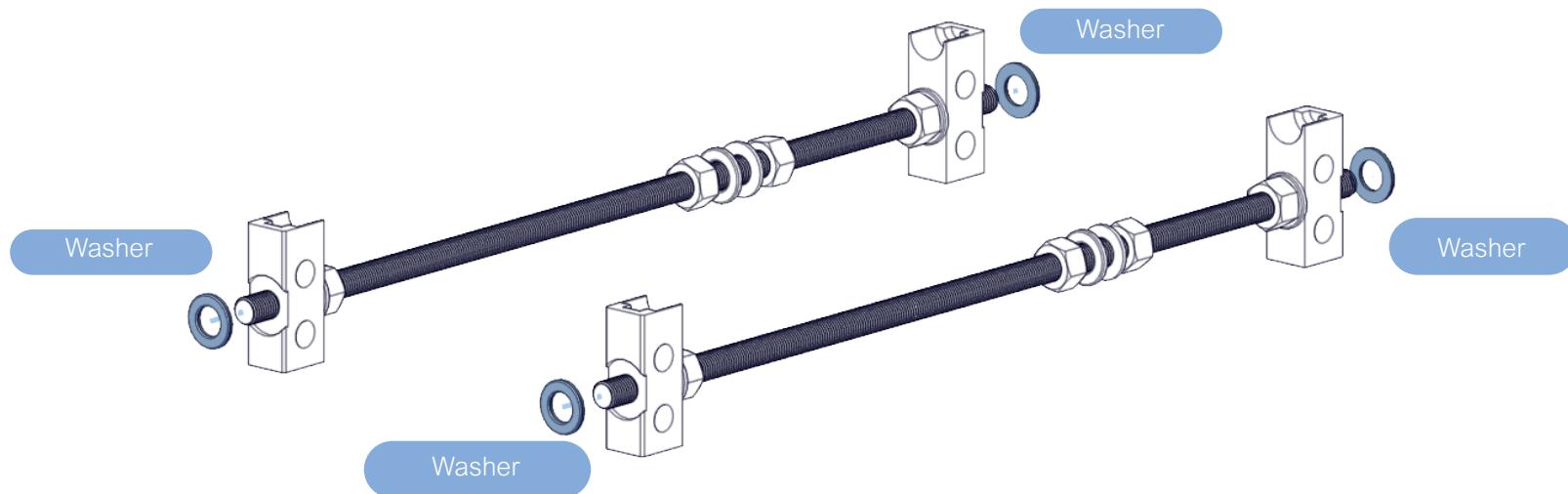
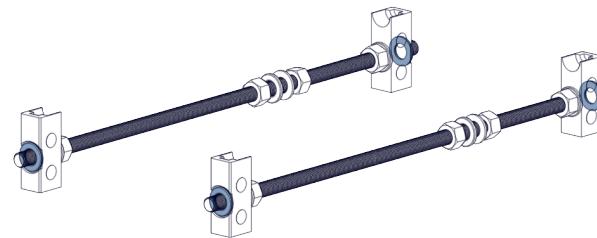


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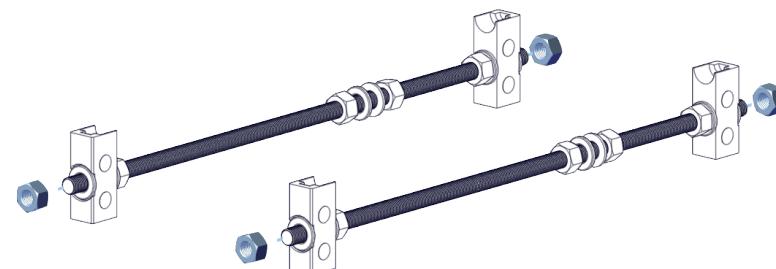


### Y-AXIS HOLDER TIGHTENING

Insert washers from each end of the rods onto the y-axis holders

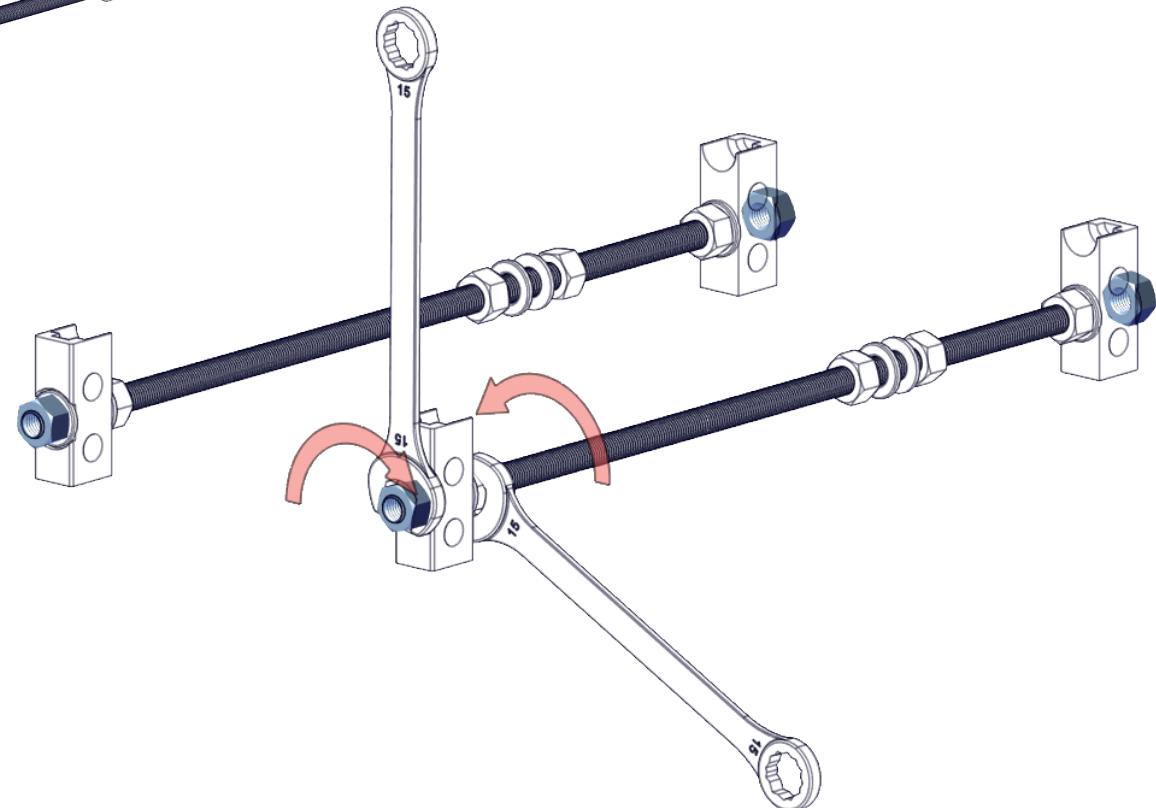


M10 Hex Nuts x4



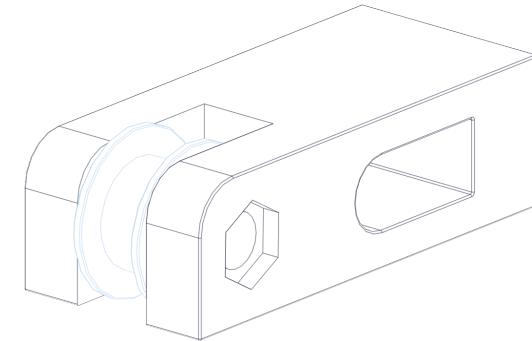
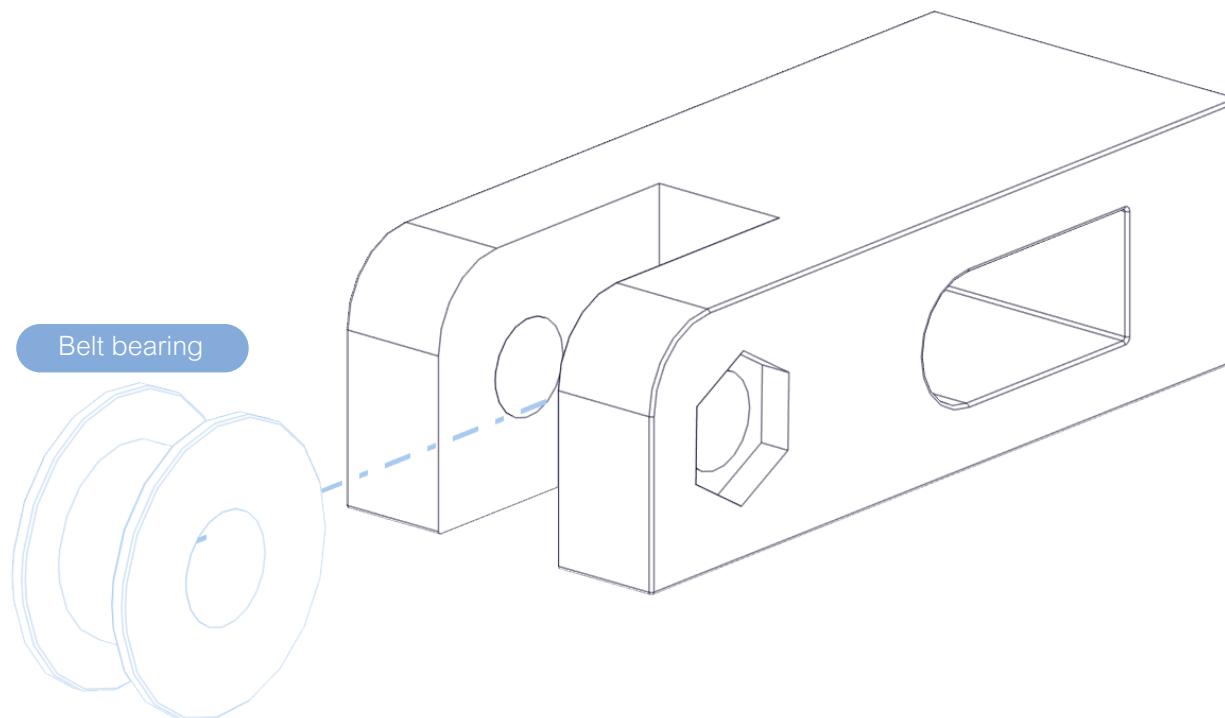
### Y-AXIS HOLDER TIGHTENING (...1A)

Secure the y-axis holders in place with M10 hex nuts using wrenches/ spanners



### ATTACHING THE BELT BEARING

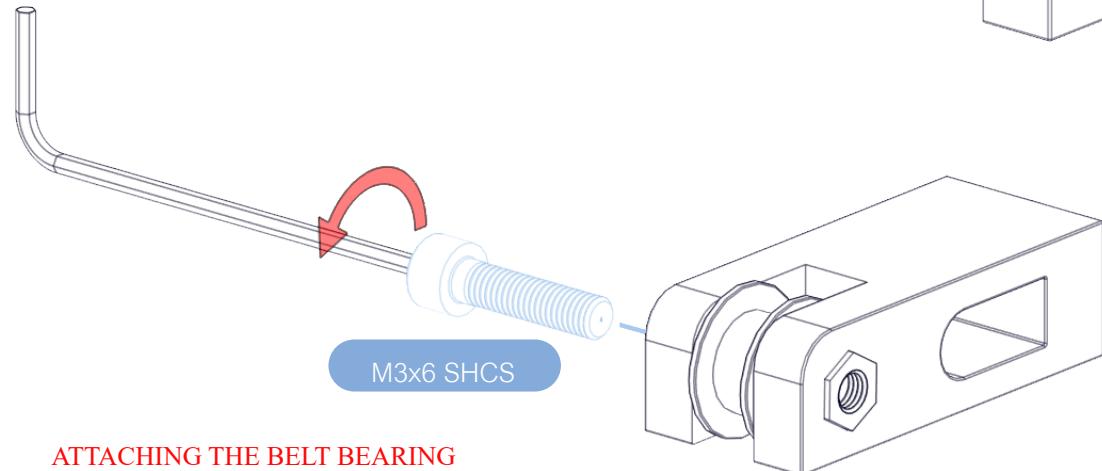
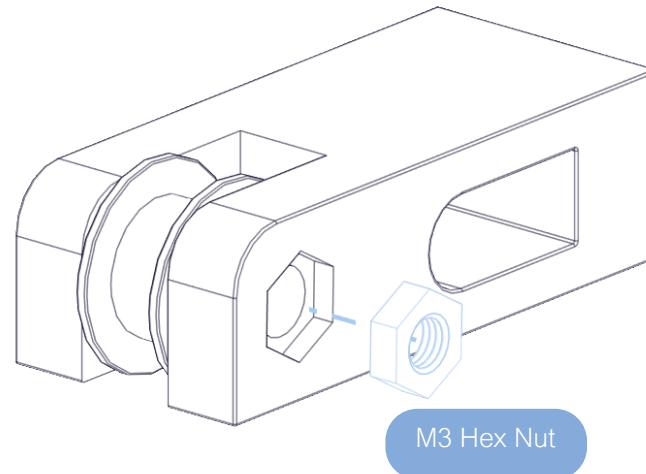
Insert the belt bearing into the hollow section of the belt idler. Ensure that it aligns with the bolt and nut holes on the idler



<https://bit.ly/42lrG7S>

### ATTACHING THE BELT BEARING

Insert M3 hex nut into the nut space on the y-axis idler



### ATTACHING THE BELT BEARING

Insert M3 SHCS into the bolt space on the y-axis idler

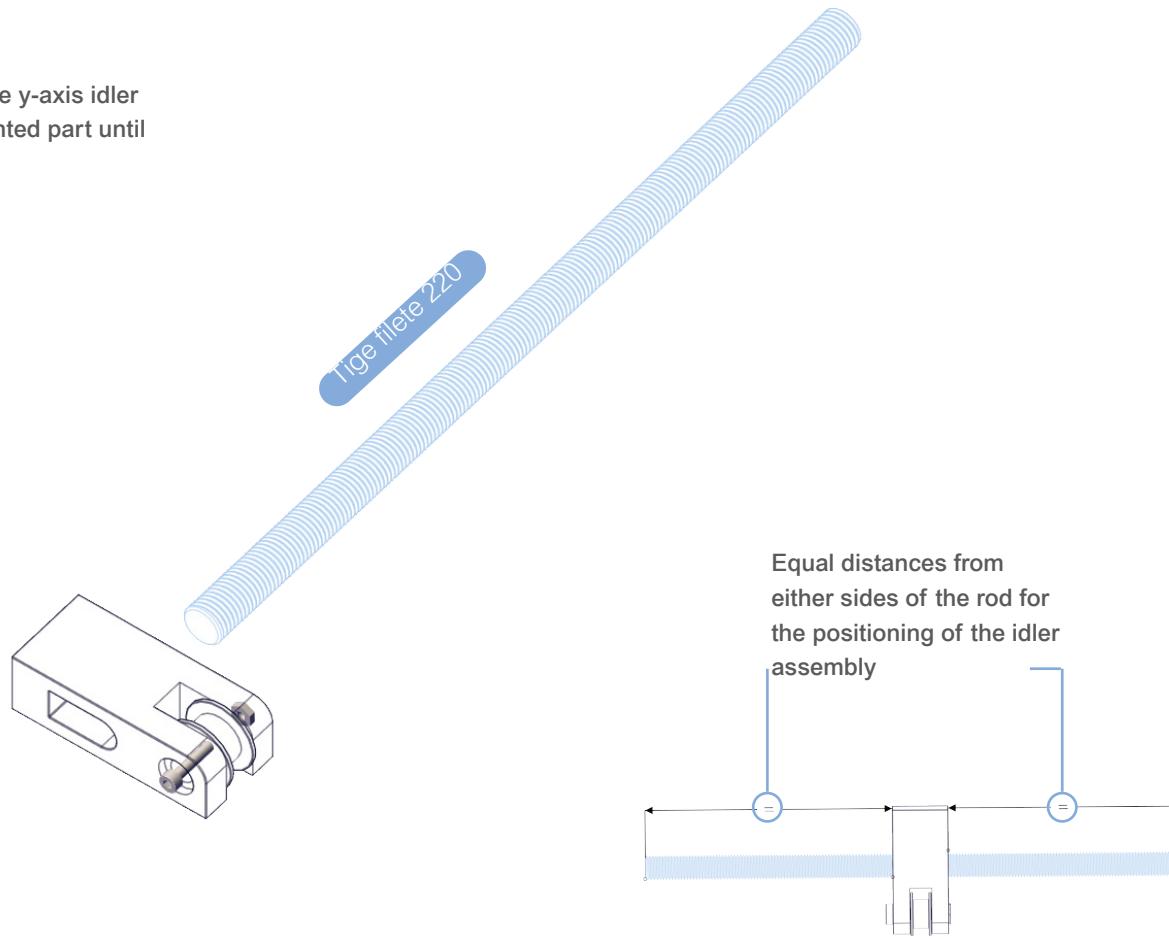


### TIGHTEN GENTLY

With the help of your index finger, rotate the belt bearing after securing it in place. This is aimed at making sure that the bearing rotates freely to ensure smooth movement of the belt during the Y-axis motion

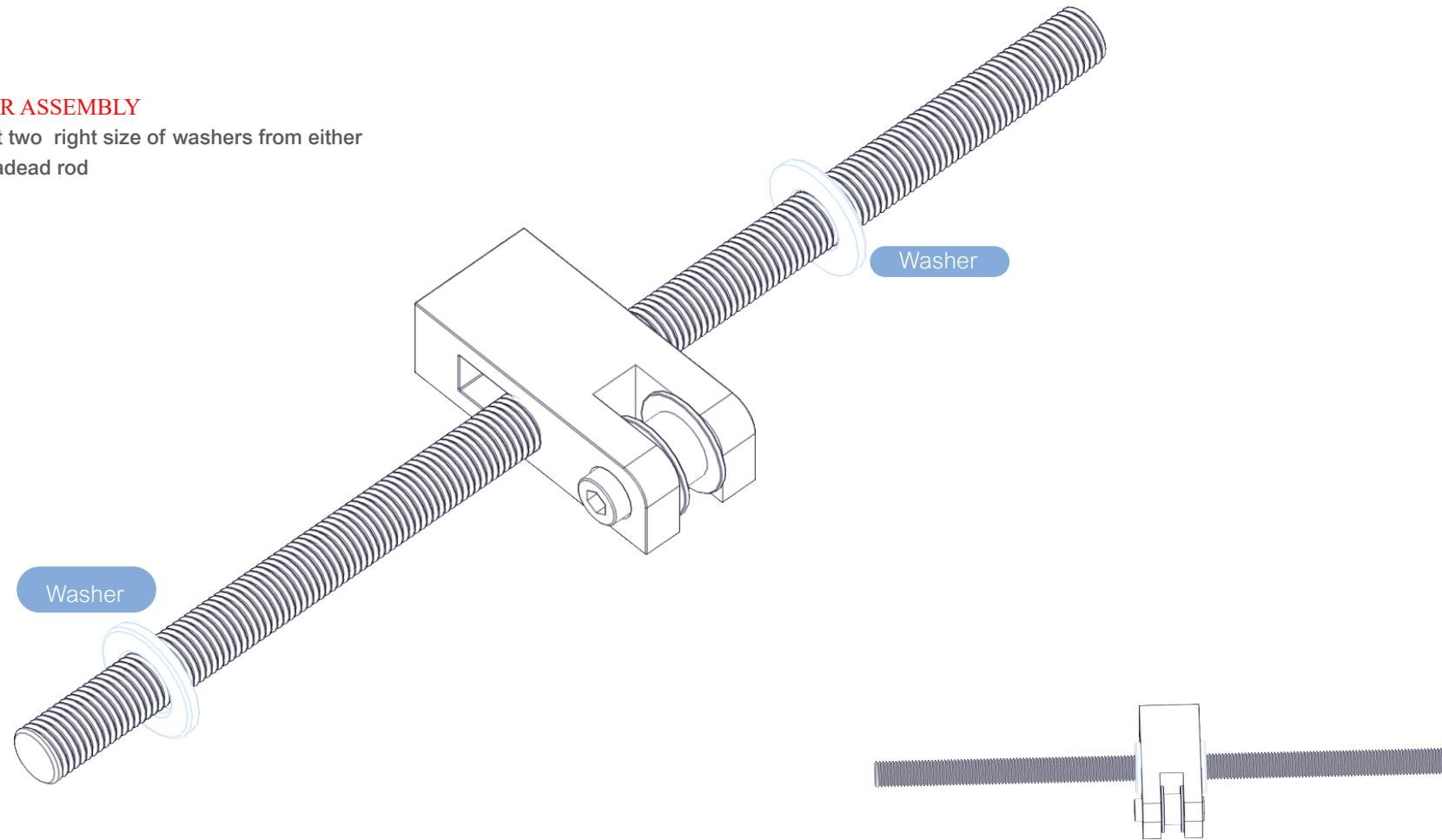
### THREADED ROD INSERTION

Gently slide the tige filete threaded rod into the y-axis idler assembly through the opening of the idler printed part until it's halfway.

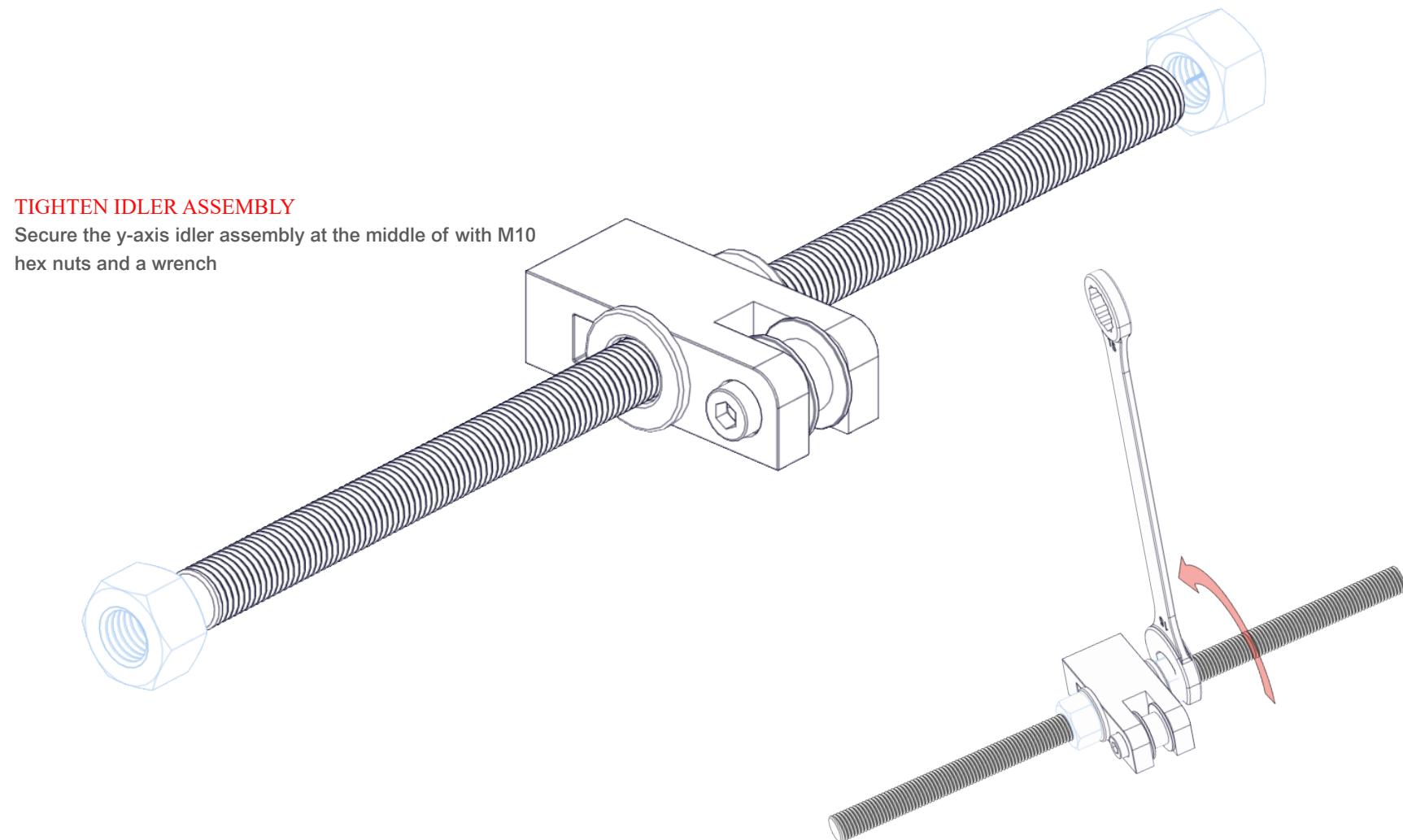


### TIGHTEN IDLER ASSEMBLY

Select and insert two right size of washers from either ends of the threadead rod



M10 Hex Nuts x2

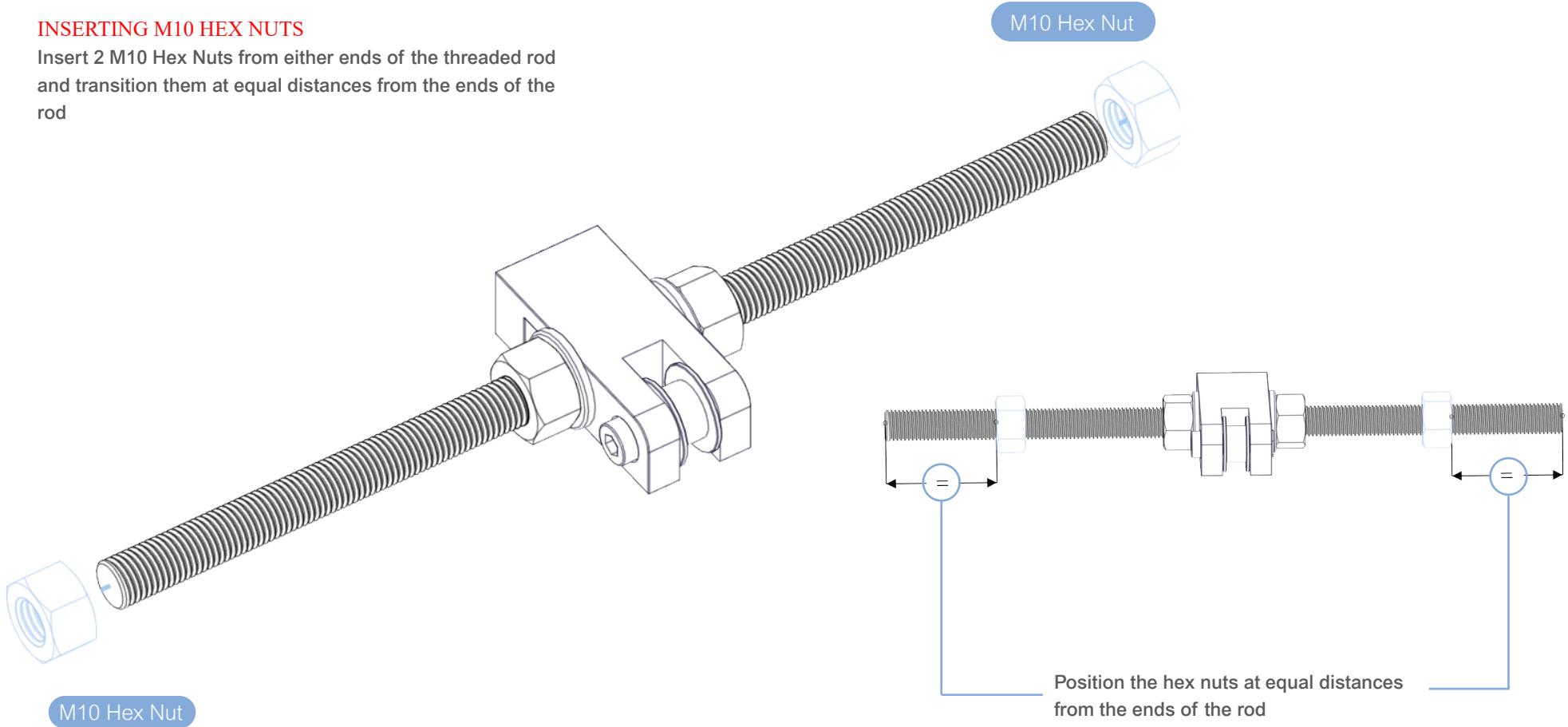


### TIGHTEN IDLER ASSEMBLY

Secure the y-axis idler assembly at the middle of with M10 hex nuts and a wrench

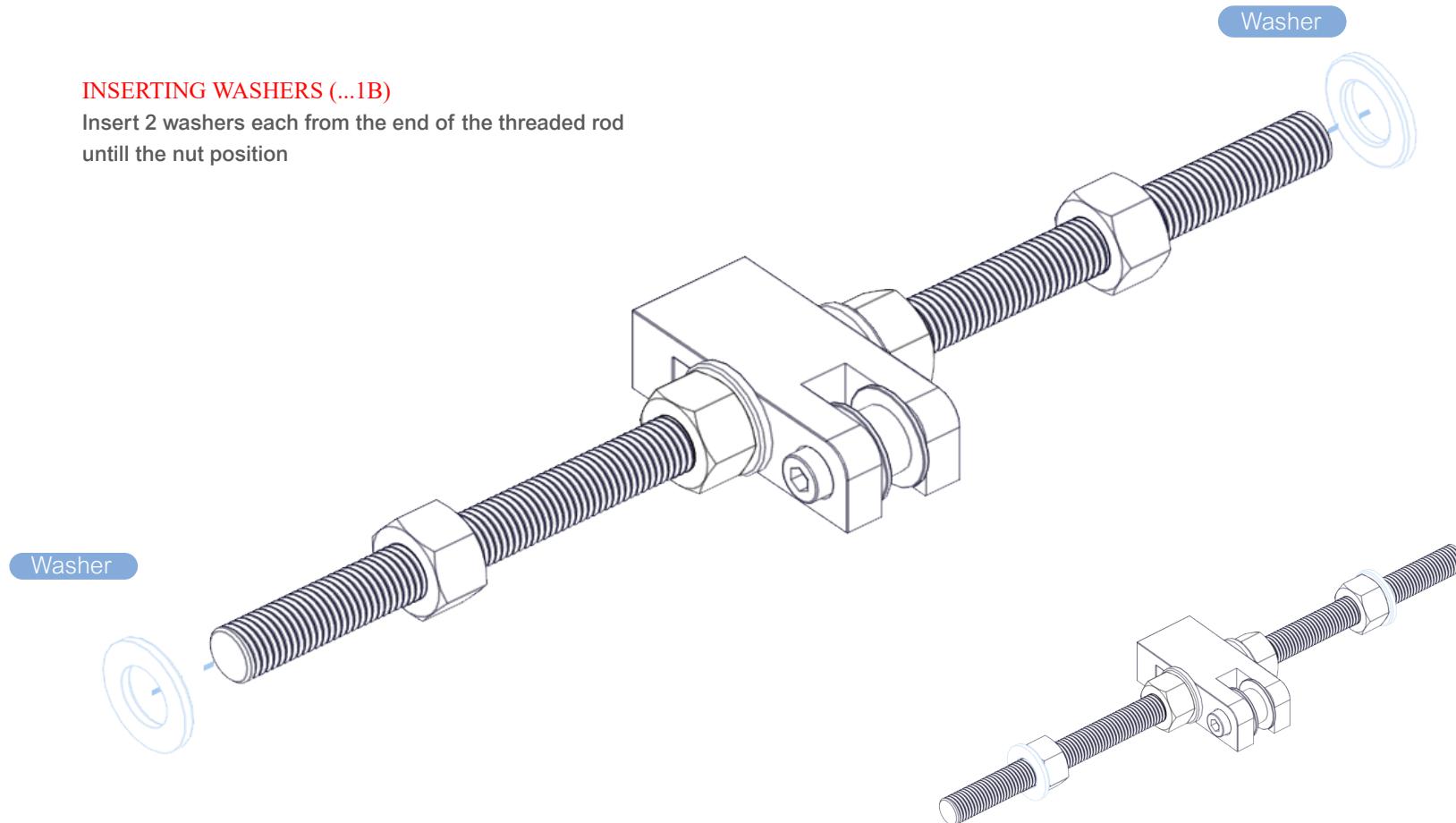
### INSERTING M10 HEX NUTS

Insert 2 M10 Hex Nuts from either ends of the threaded rod and transition them at equal distances from the ends of the rod



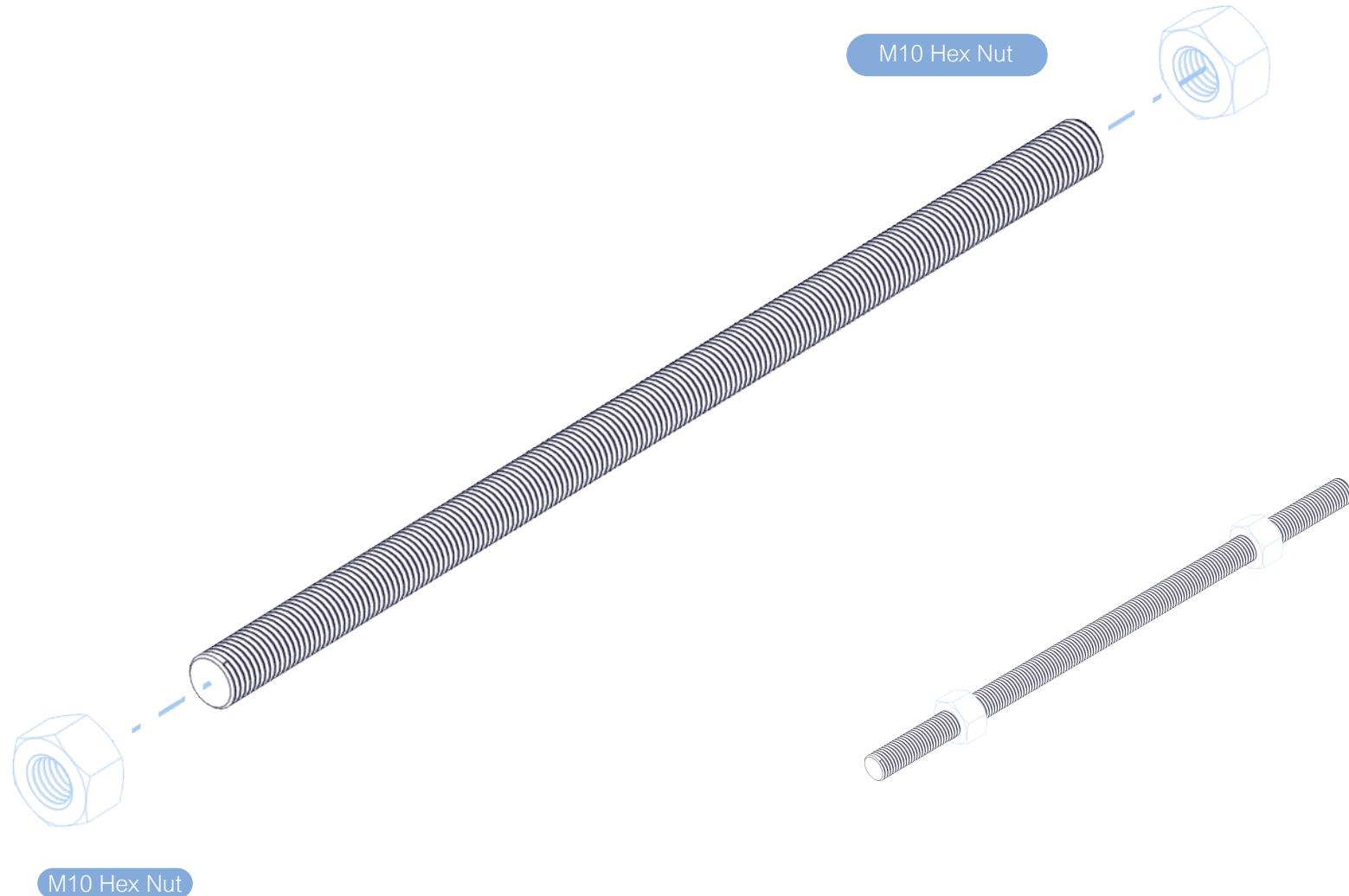
### INSERTING WASHERS (...1B)

Insert 2 washers each from the end of the threaded rod  
until the nut position



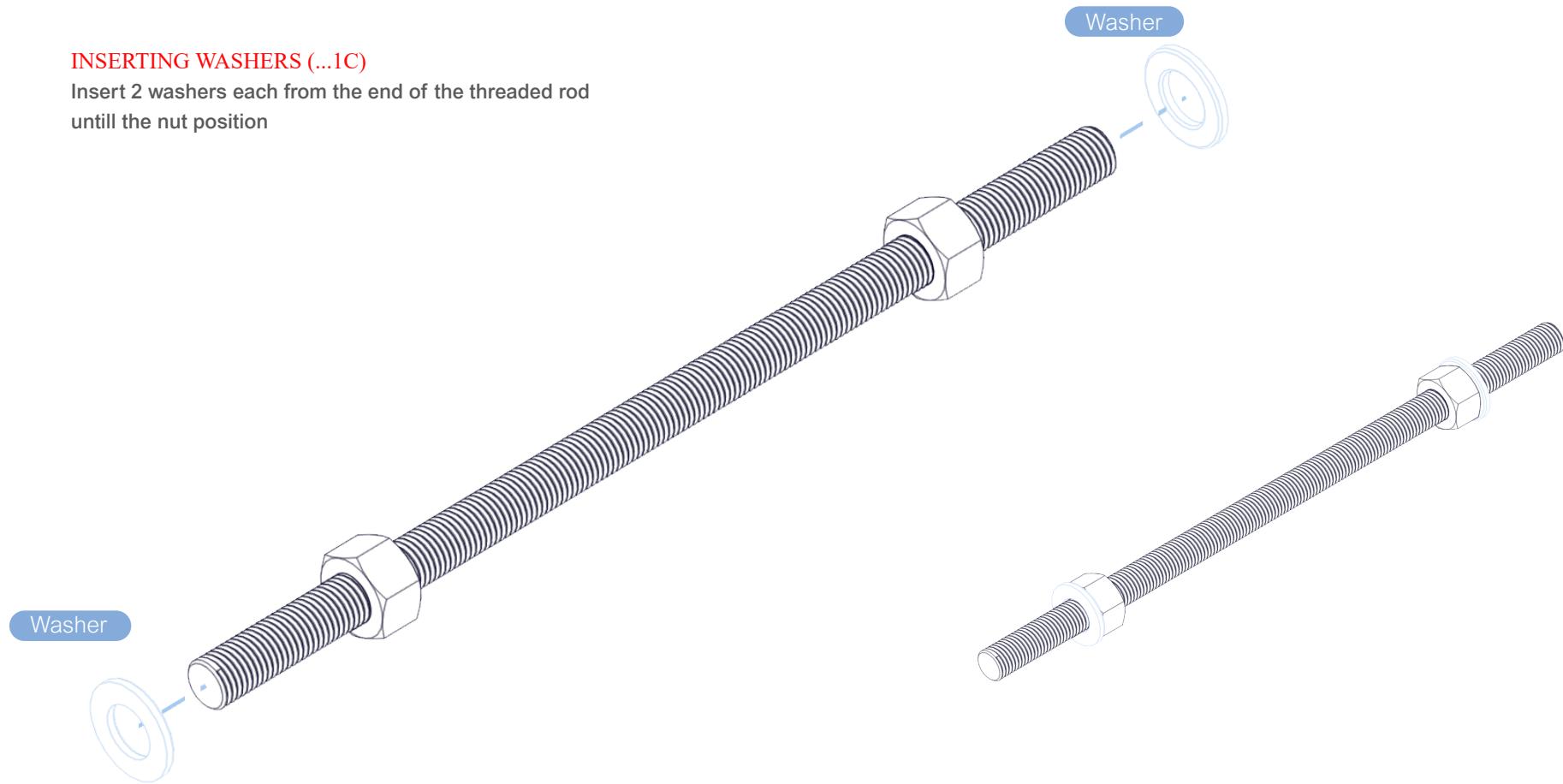
### INSERTING M10 HEX NUTS

Insert 2 M10 Hex Nuts from both ends of another tige filete  
220 at equal distances



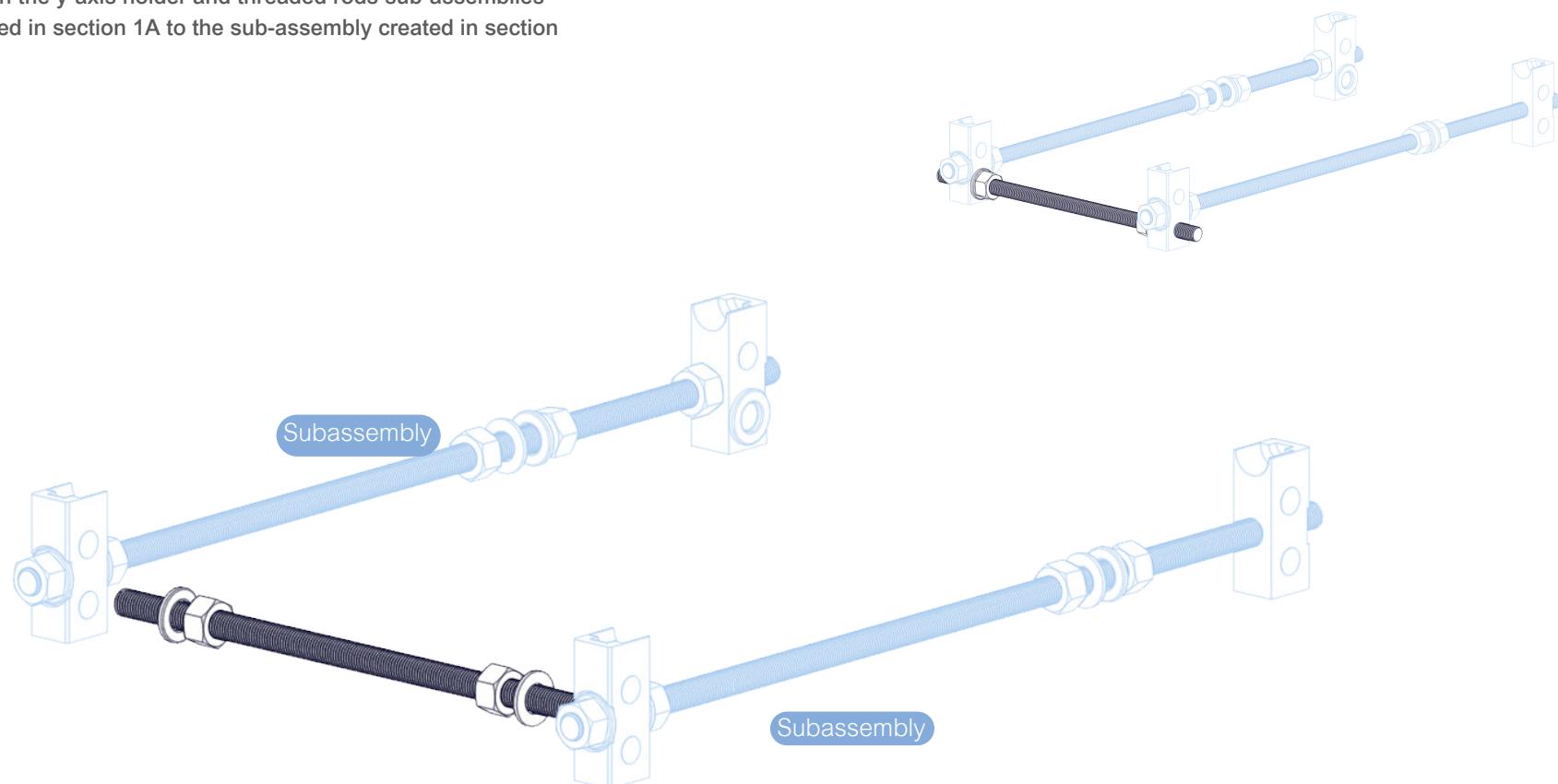
### INSERTING WASHERS (...1C)

Insert 2 washers each from the end of the threaded rod  
until the nut position



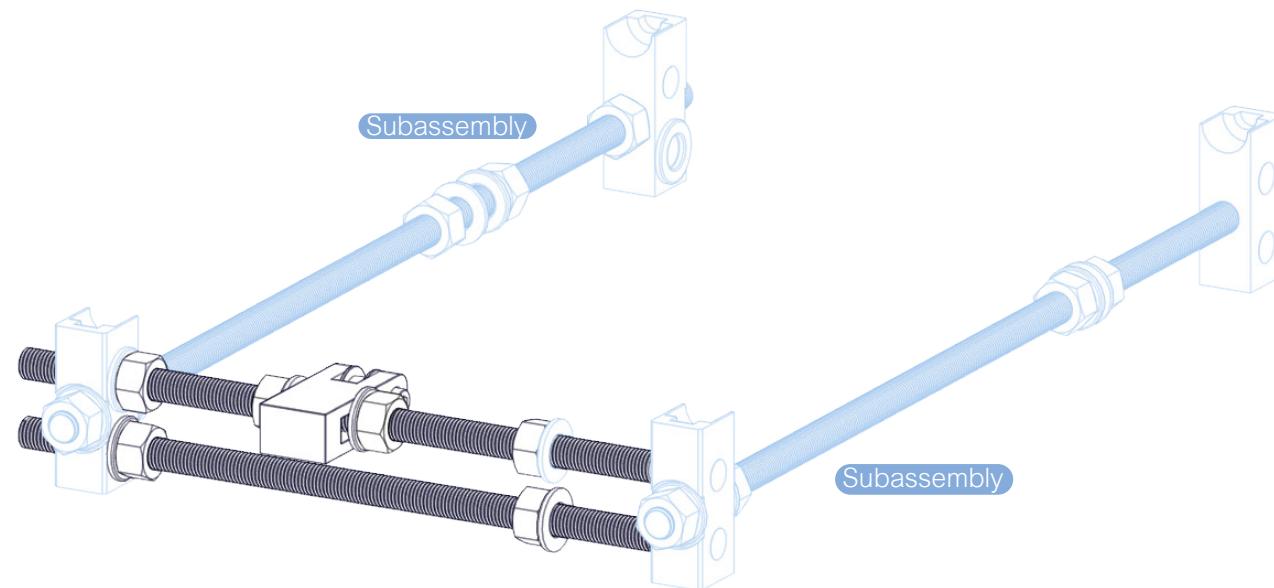
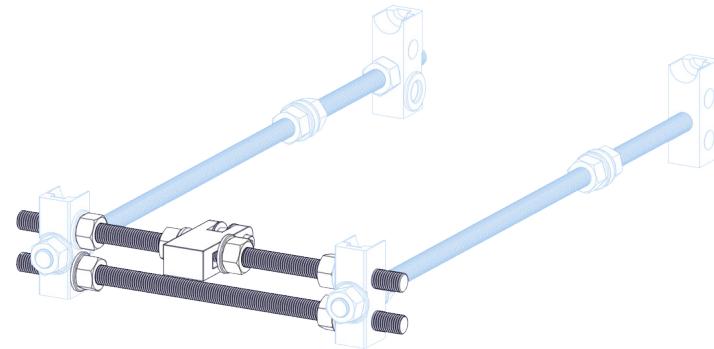
## ATTACHING SUB-ASSEMBLY

Attach the y-axis holder and threaded rods sub-assemblies created in section 1A to the sub-assembly created in section 1C



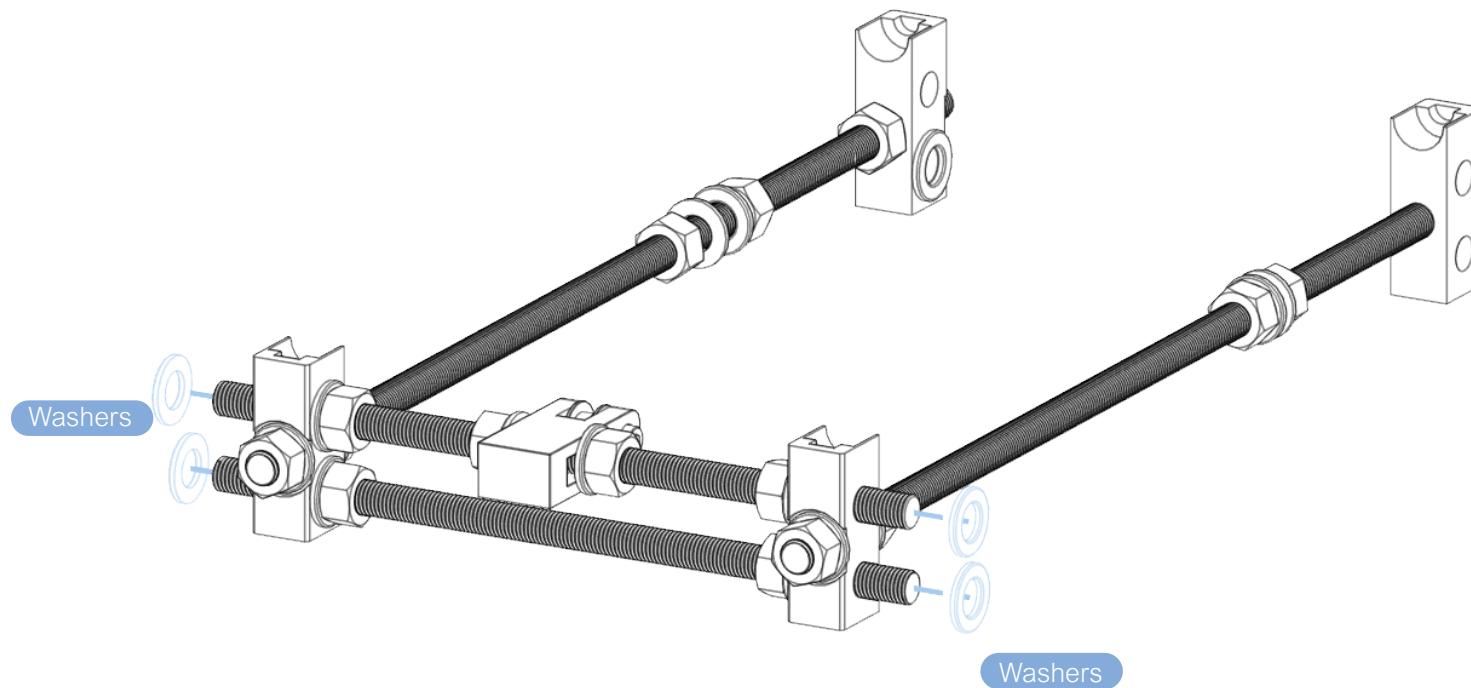
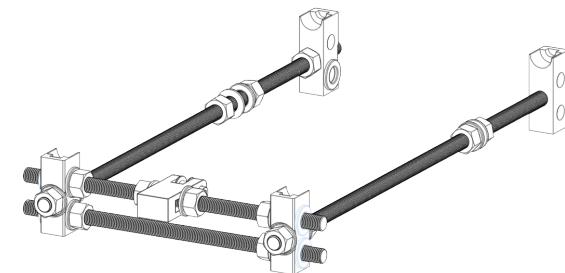
### ATTACHING SUB-ASSEMBLY

Attach the belt idler and threaded rod sub-assembly created in section 1B



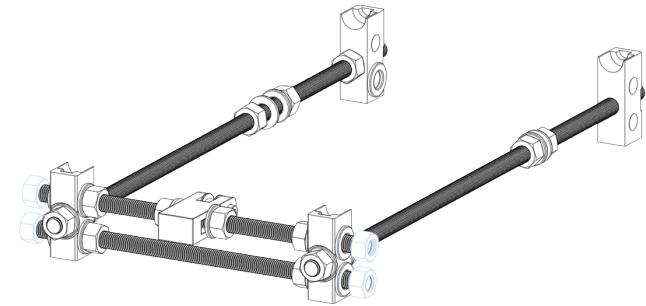
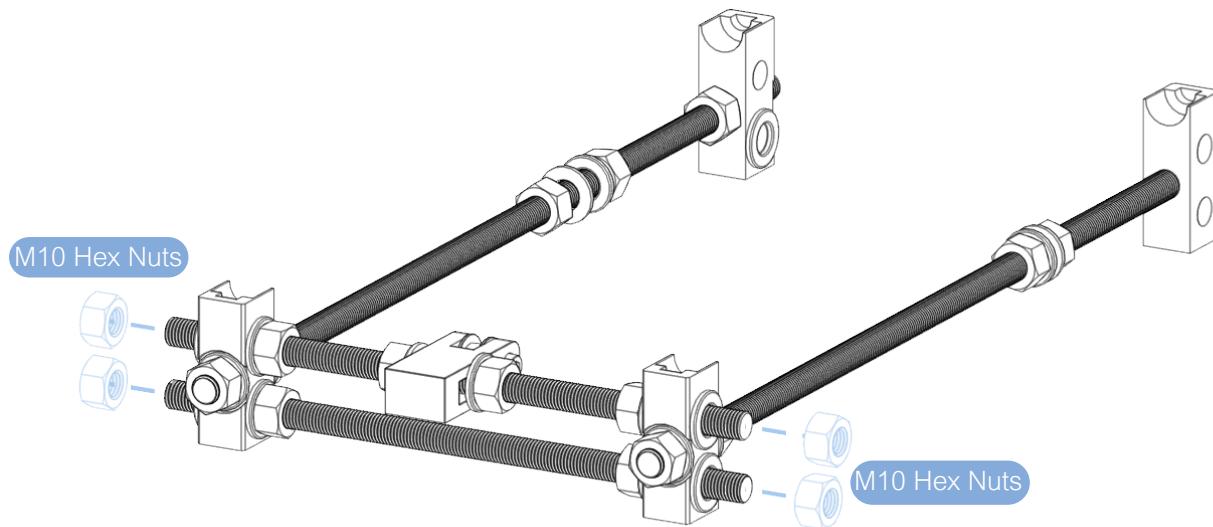
### INSERTING WASHERS

Insert washers from the end of each threaded rod until the y-axis holder surface



### INSERTING M10 HEX NUTS (...1D)

Insert 4 M10 Hex Nuts two from both ends of each tie filete 220 a few turns to of the nuts onto the rods

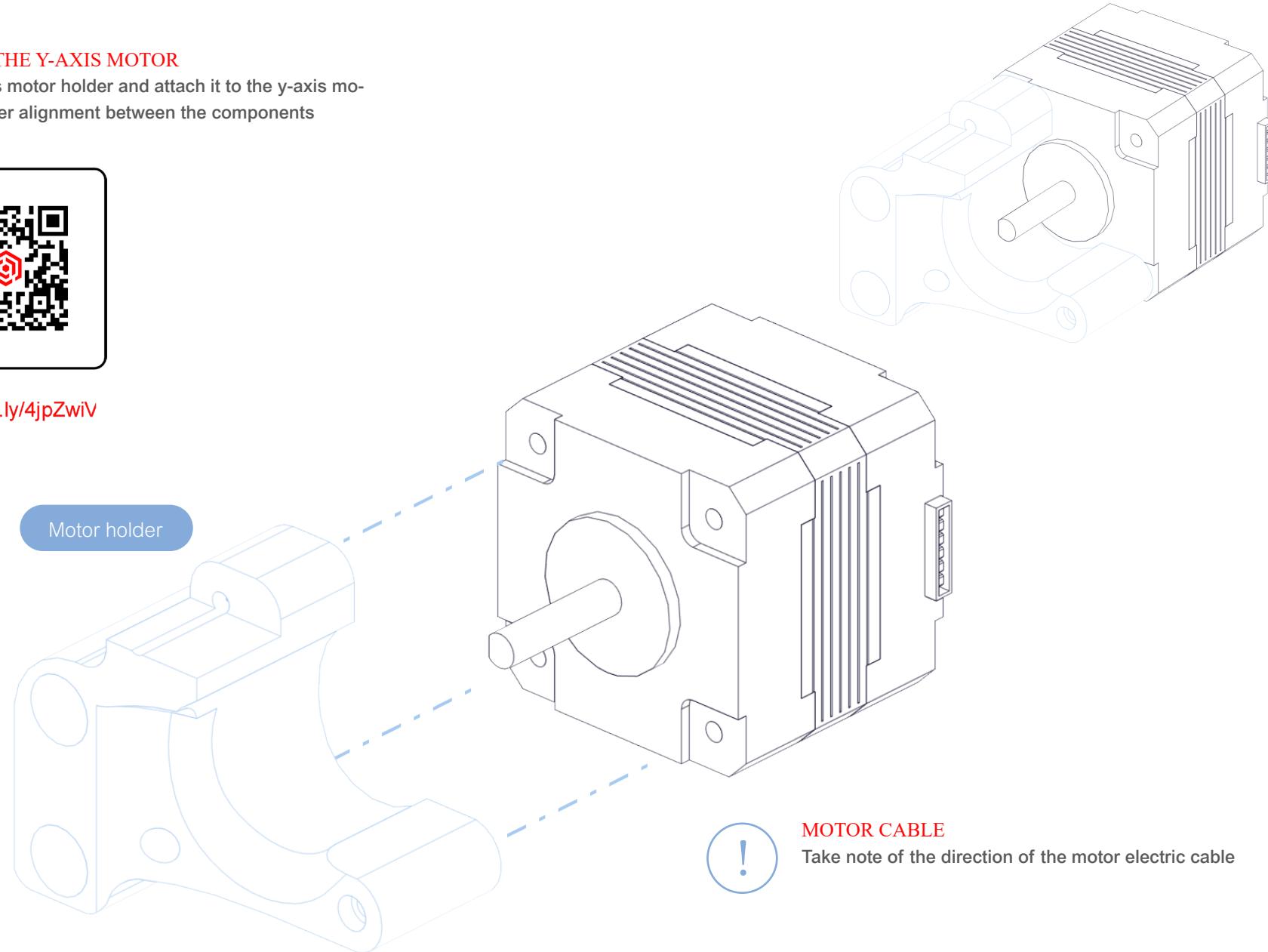


### PREPARING THE Y-AXIS MOTOR

Take the y-axis motor holder and attach it to the y-axis motor, make proper alignment between the components

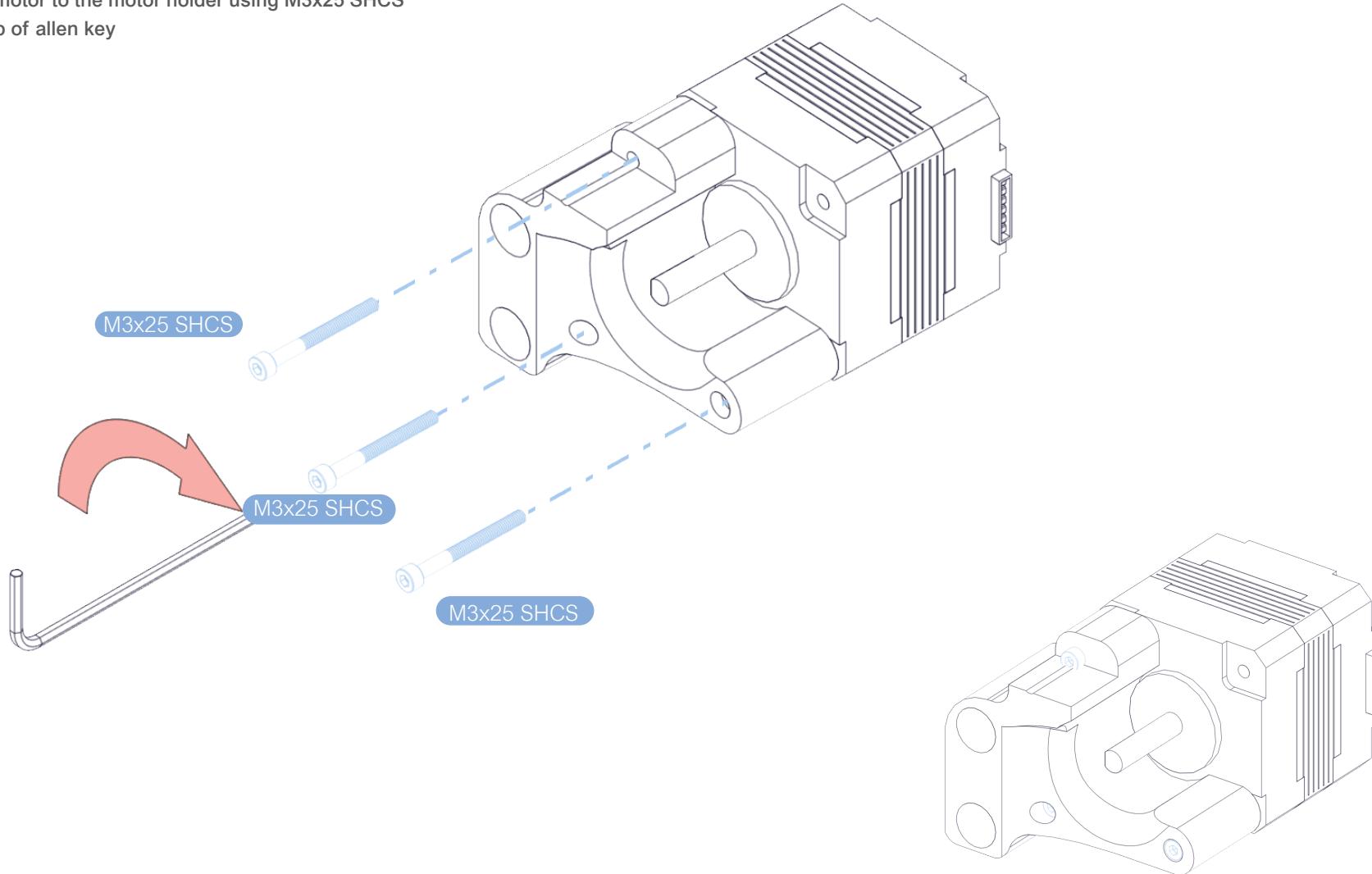


<https://bit.ly/4jpZwiV>



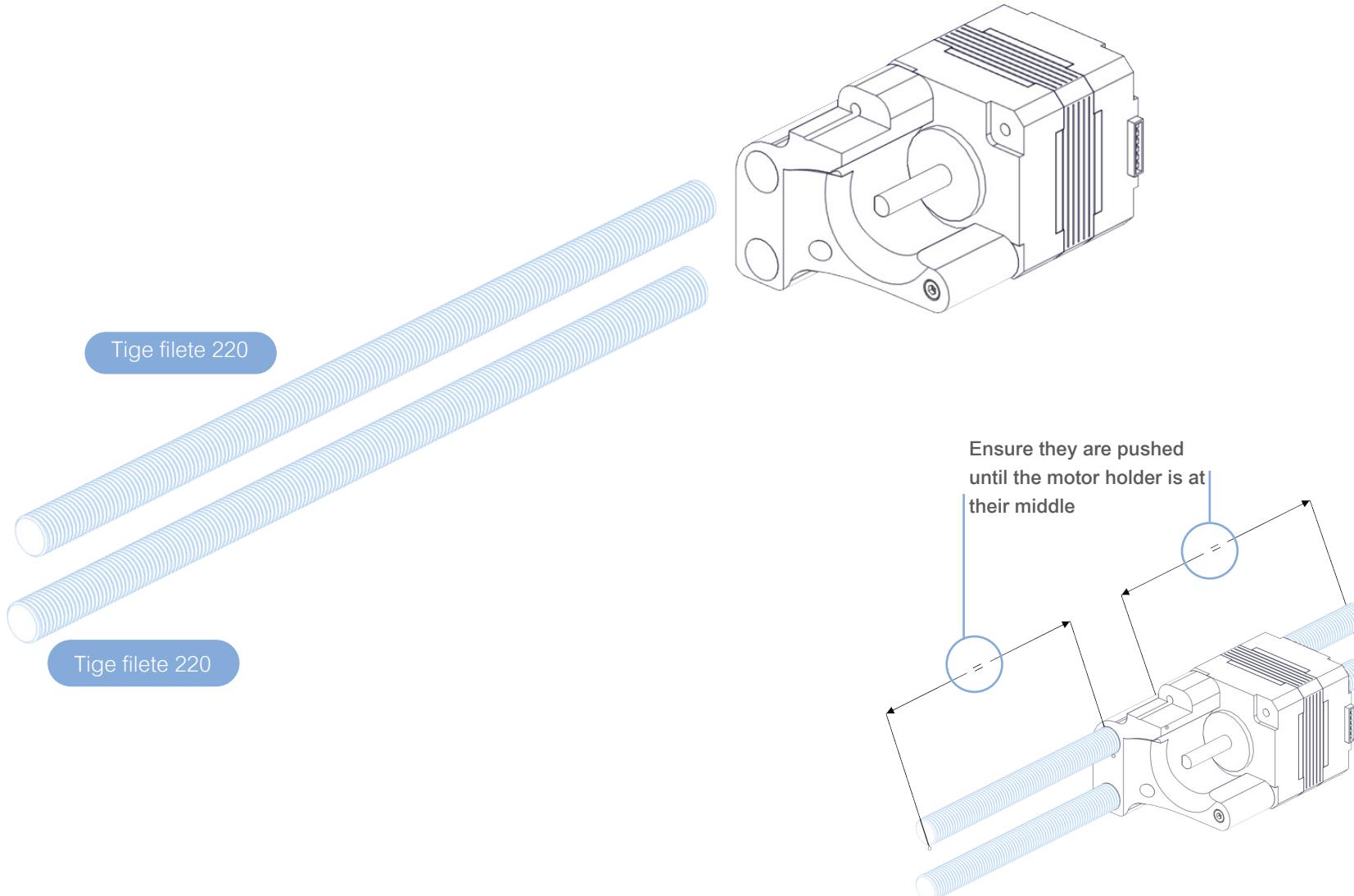
### PREPARING THE Y-AXIS MOTOR

Secure the motor to the motor holder using M3x25 SHCS  
with the help of allen key



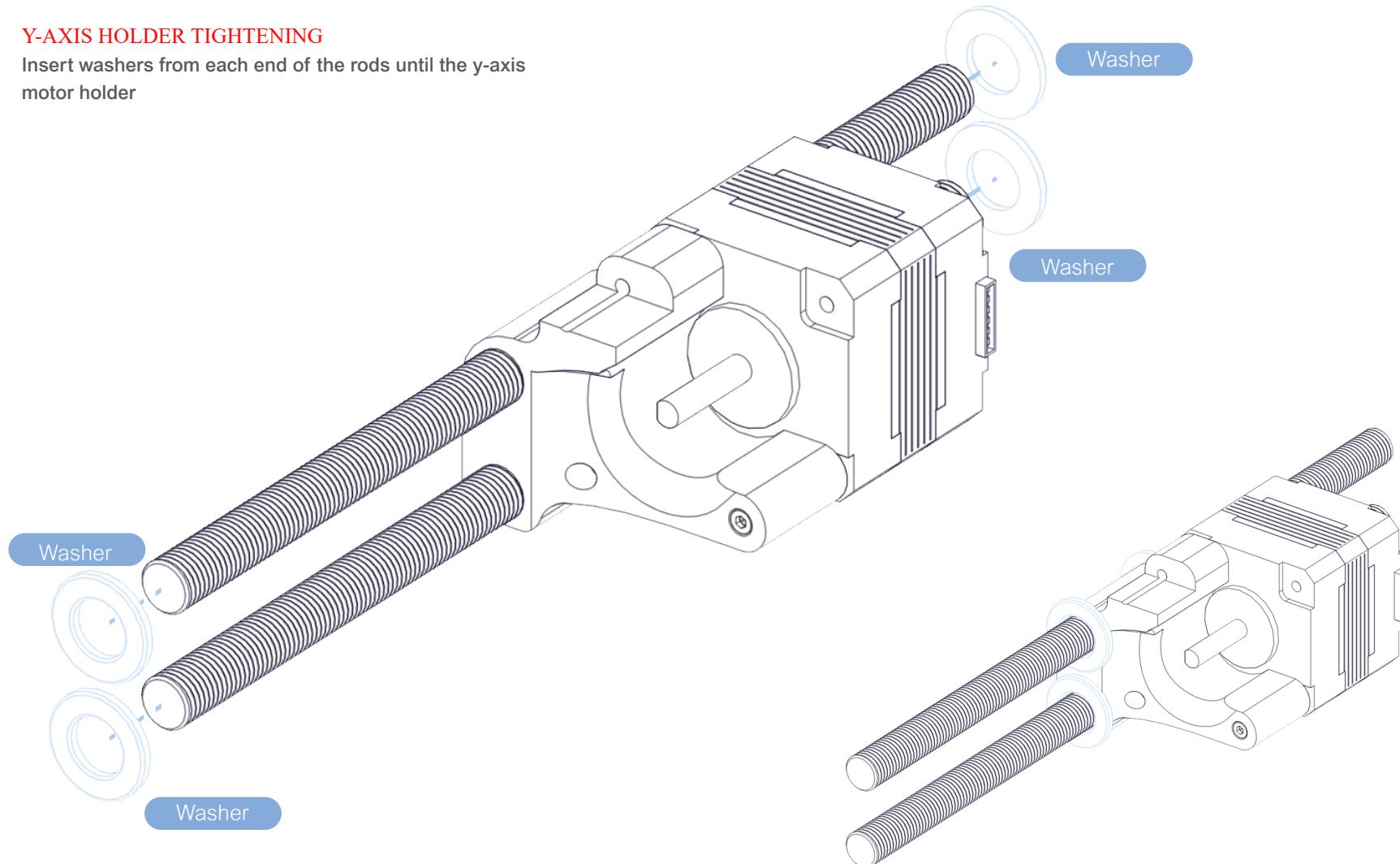
### PREPARING THE Y-AXIS MOTOR

Insert the remaining two threaded rods (tige\_filete 220)  
through the y\_motor holder holes



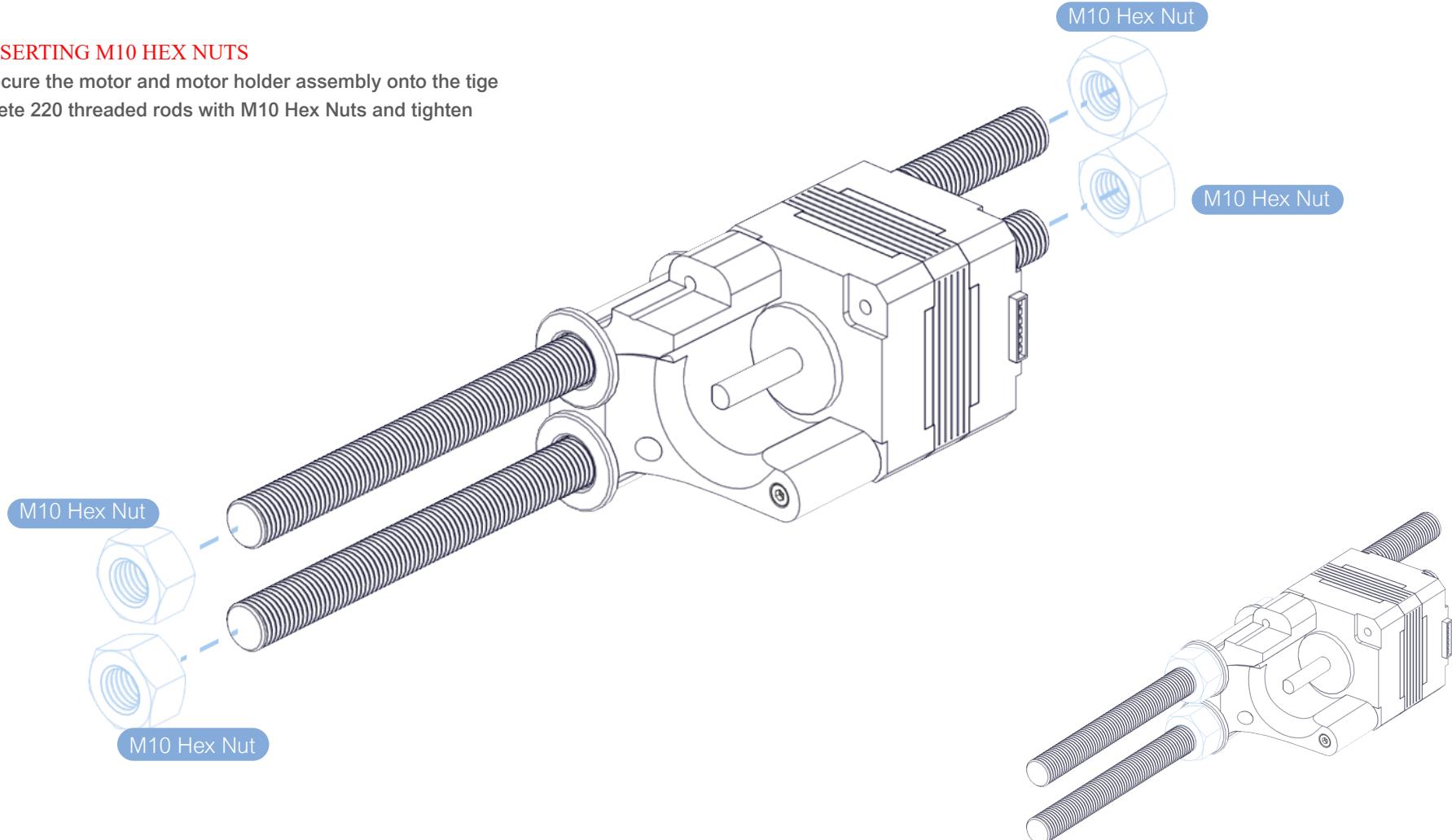
### Y-AXIS HOLDER TIGHTENING

Insert washers from each end of the rods until the y-axis motor holder



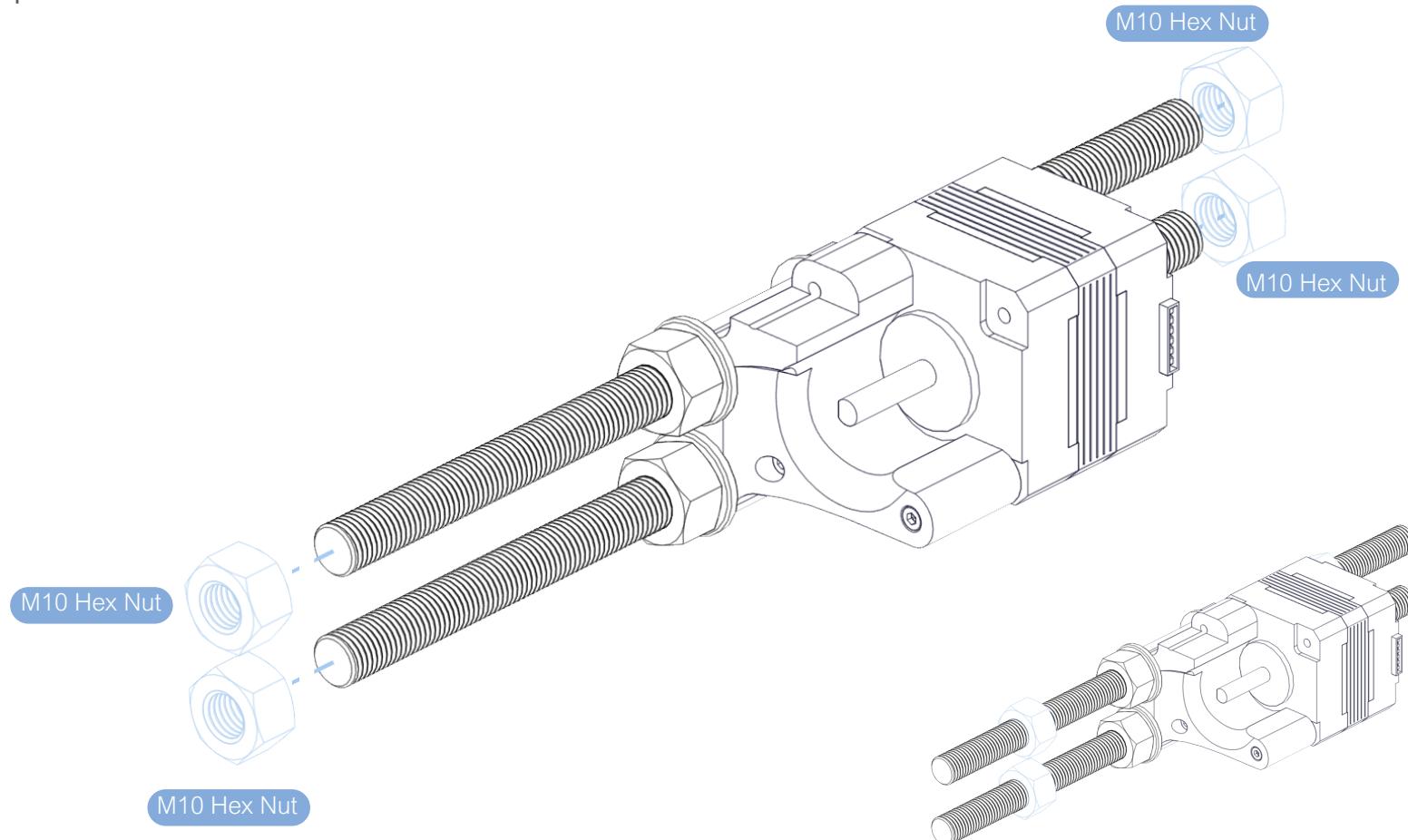
### INSERTING M10 HEX NUTS

Secure the motor and motor holder assembly onto the tie  
fillets 220 threaded rods with M10 Hex Nuts and tighten



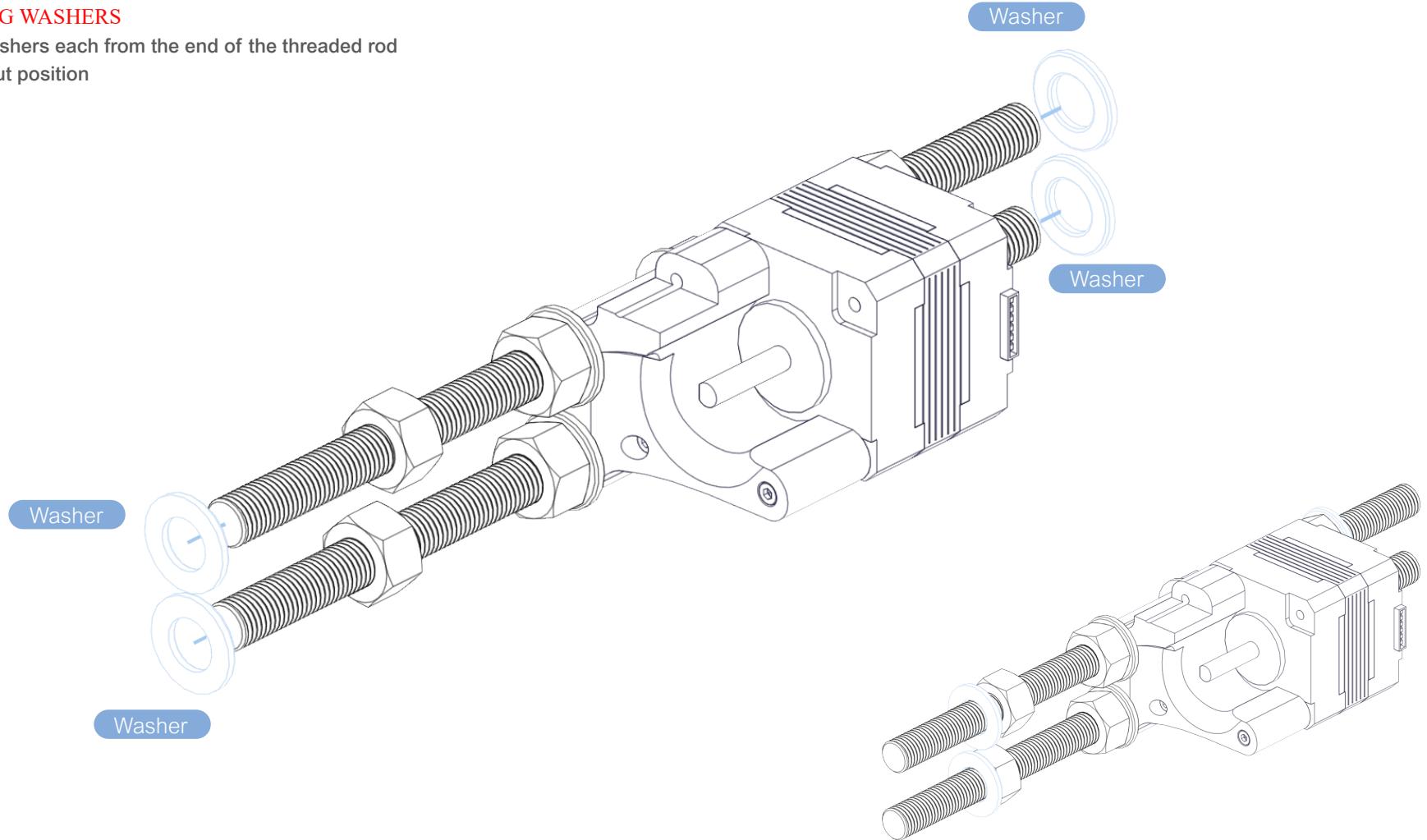
### INSERTING M10 HEX NUTS

Insert 4 M10 Hex Nuts two from both ends of each tige filete 220 at equal distances from the ends of the rods



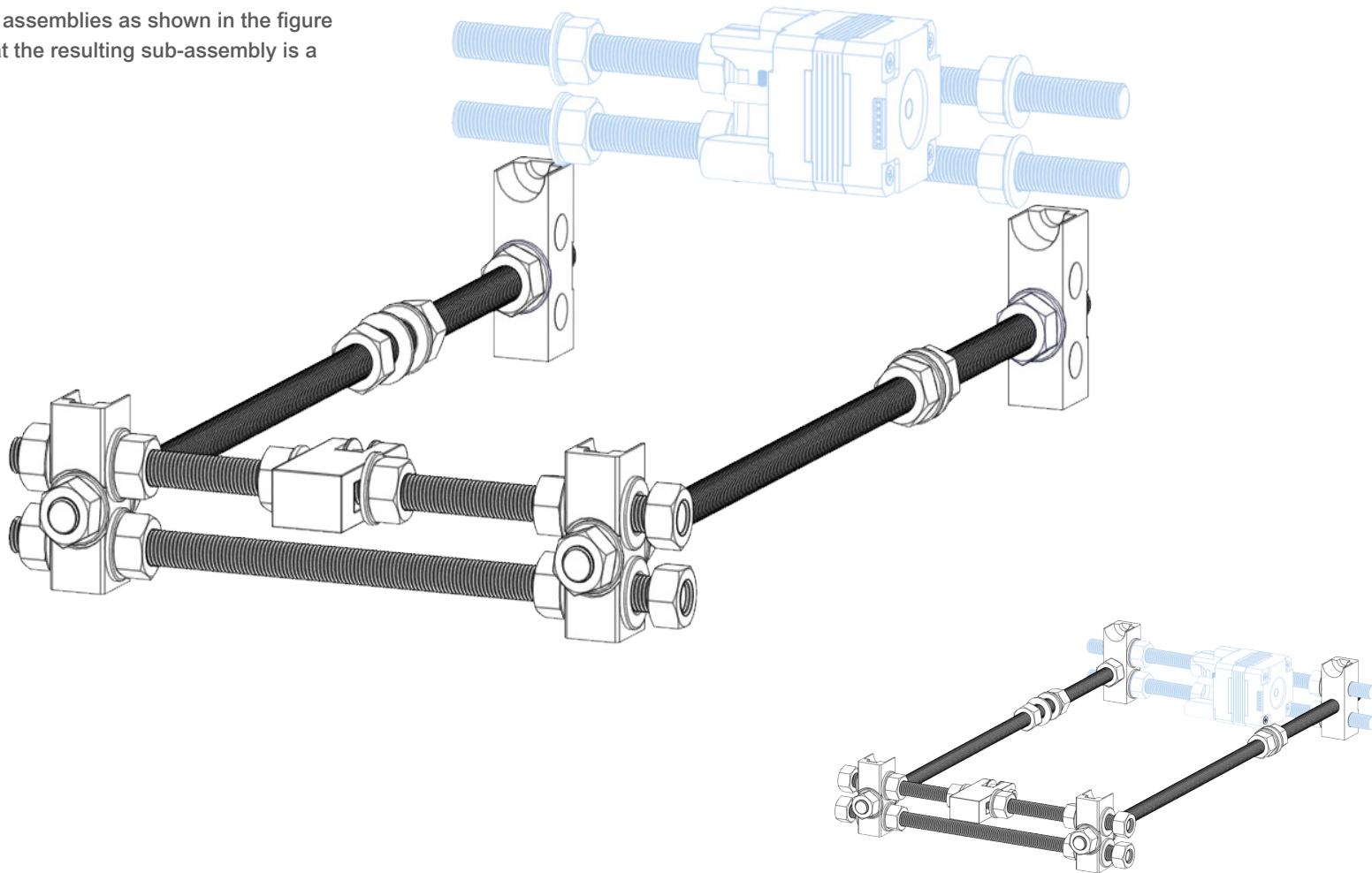
### INSERTING WASHERS

Insert 4 washers each from the end of the threaded rod  
until the nut position



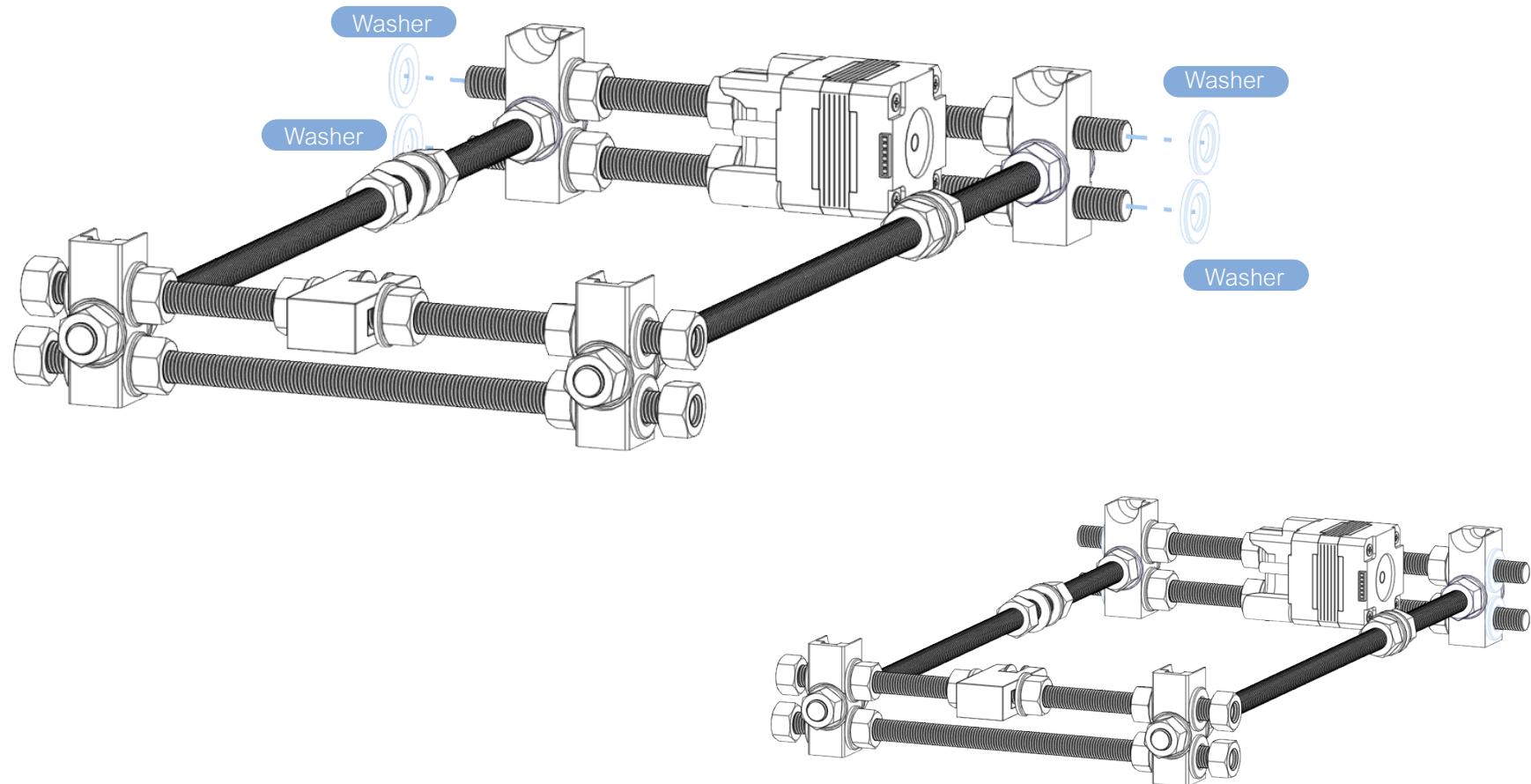
### MERGING THE SUB-ASSEMBLIES

Join the both sub assemblies as shown in the figure below. Ensure that the resulting sub-assembly is a perfect rectangle.



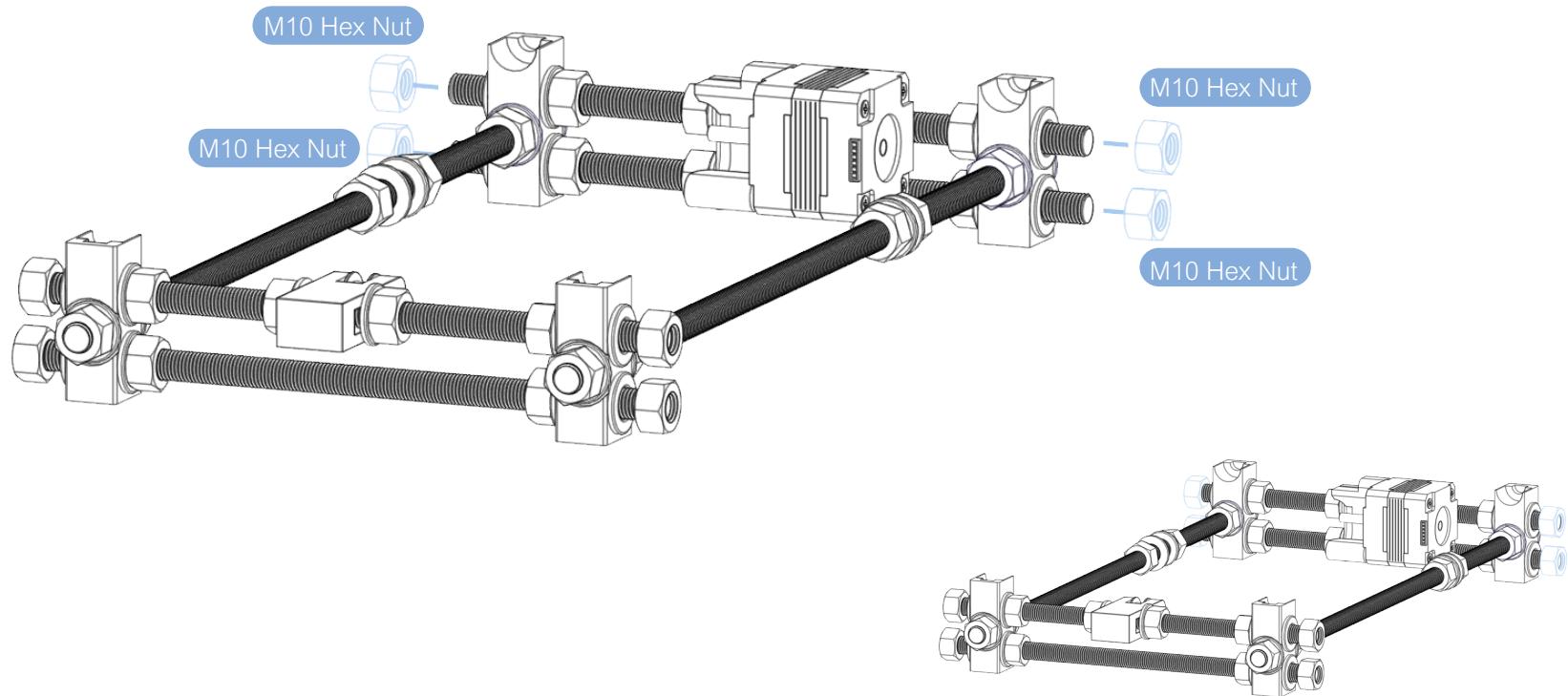
### INSERTING WASHERS

Insert 4 washers each from the end of the threaded rod  
until the y-axis holder surfaces



**INSERTING M10 HEX NUTS**

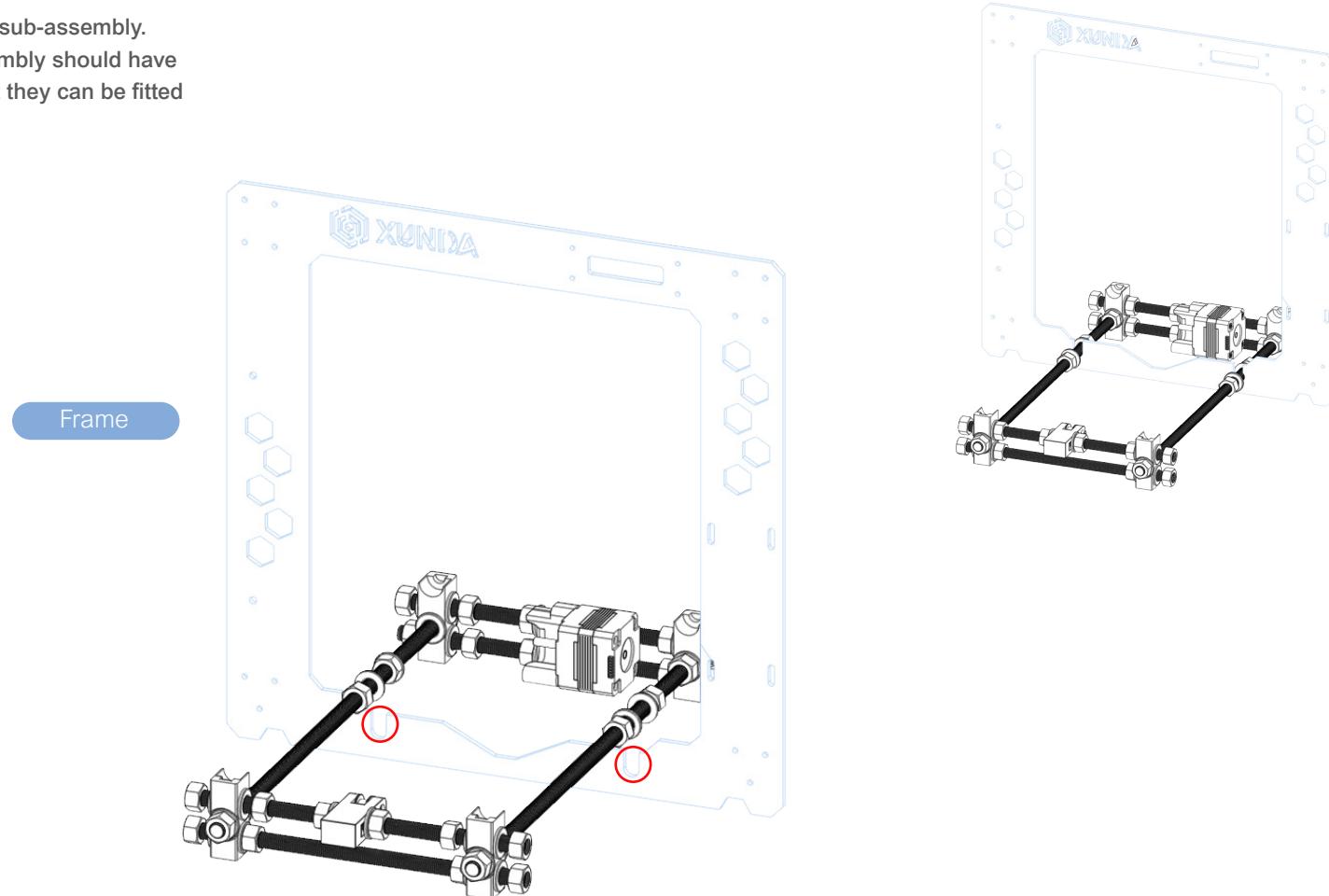
Insert 4 M10 Hex Nuts two from both ends of each tige  
filete 220 until the washer position



### ATTACHING THE FRAME

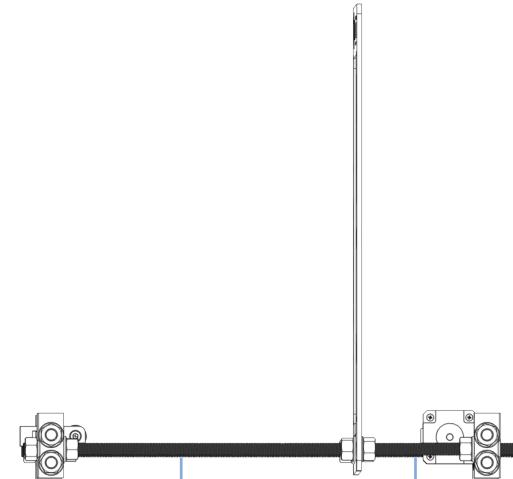
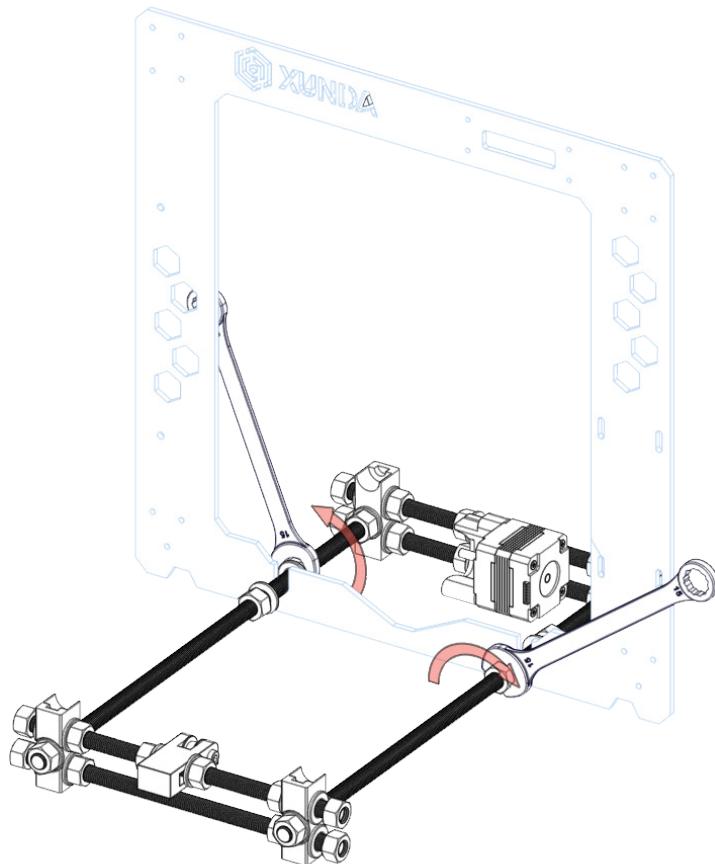
Attach the frame on to the created sub-assembly.

The threaded rods for the subassembly should have a distance between them such that they can be fitted into the open holes of the frame



### ATTACHING THE FRAME

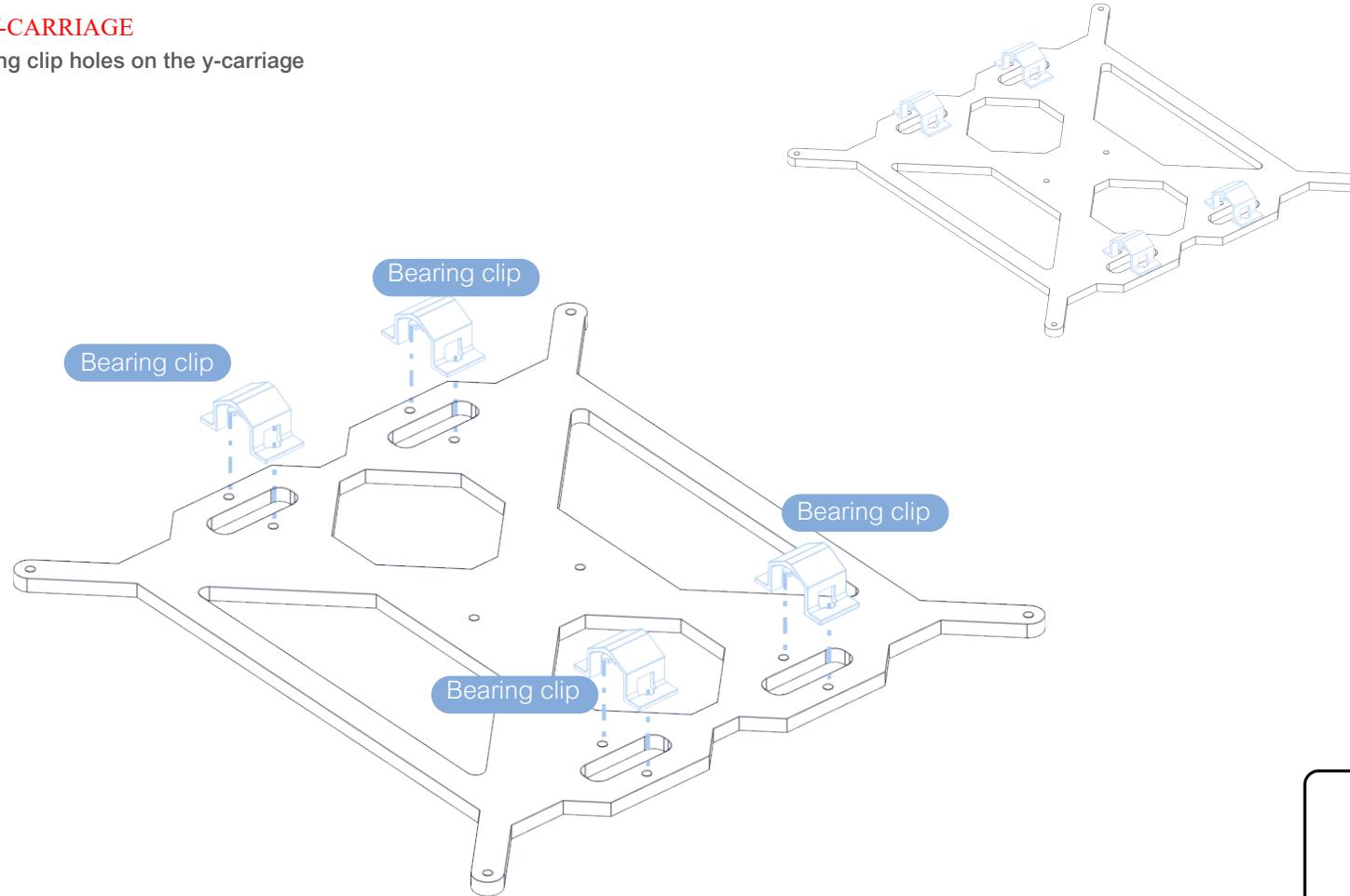
Secure the frame onto the threaded rods-y-axis holder sub-assembly using M10 Hex nuts with wrenches



Ensure that the frame is attached at uneven lengths of the theraded rods, with the front length longer than the behind length

## PREPARING THE Y-CARRIAGE

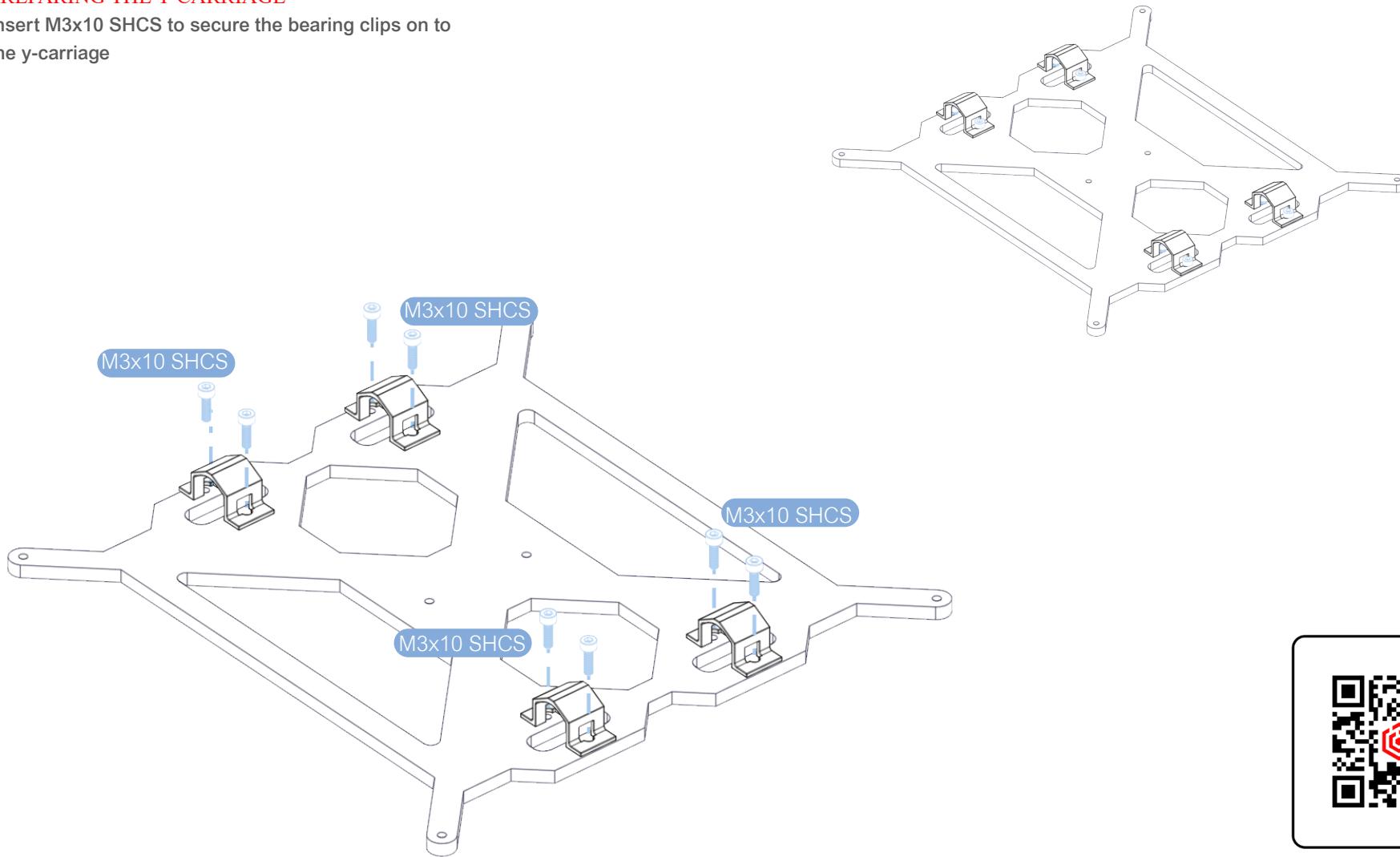
Spot the linear bearing clip holes on the y-carriage  
and align the clips



<https://bit.ly/4iX5WGe>

## PREPARING THE Y-CARRIAGE

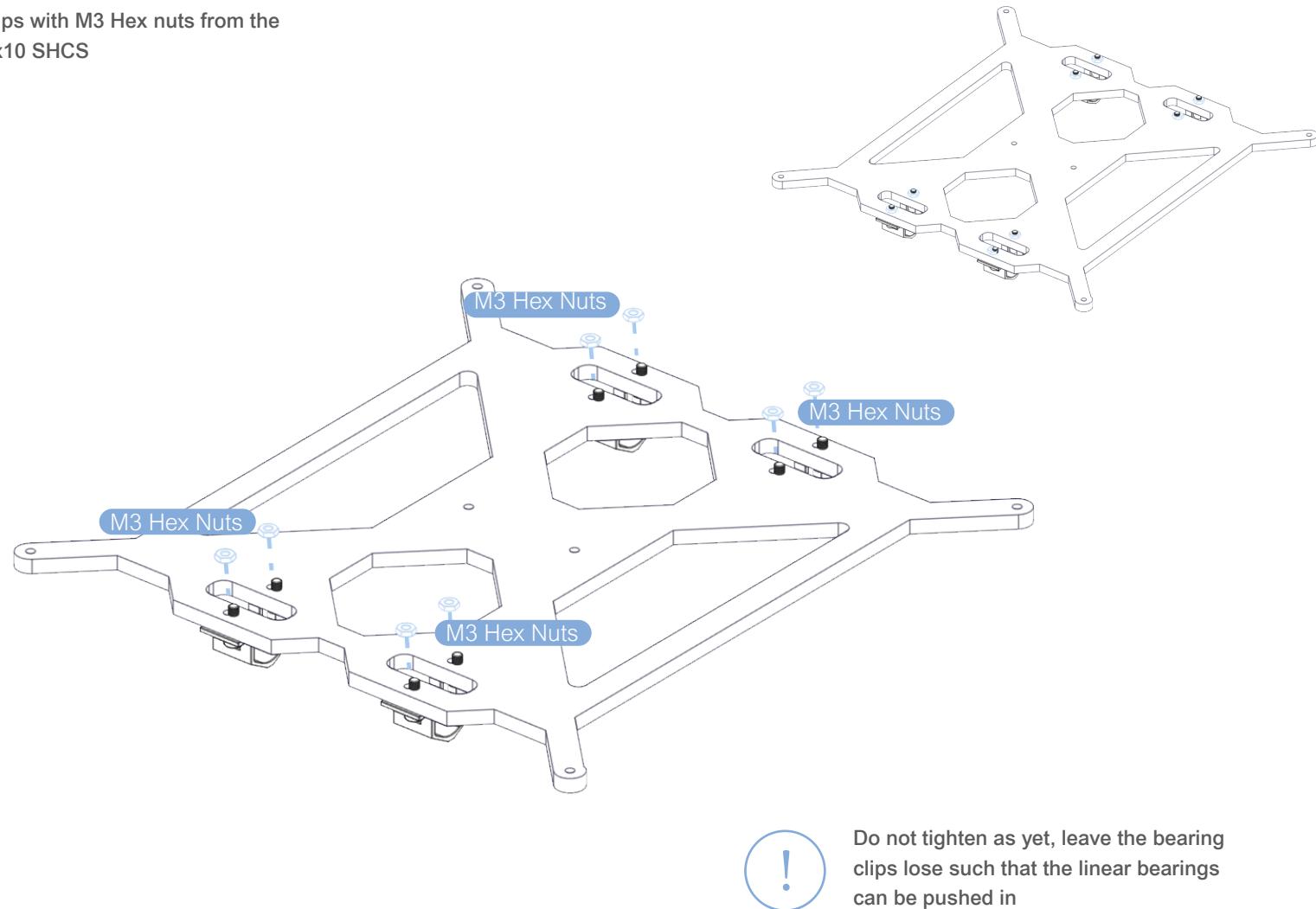
Insert M3x10 SHCS to secure the bearing clips on to the y-carriage



<https://shorturl.at/N9jeC>

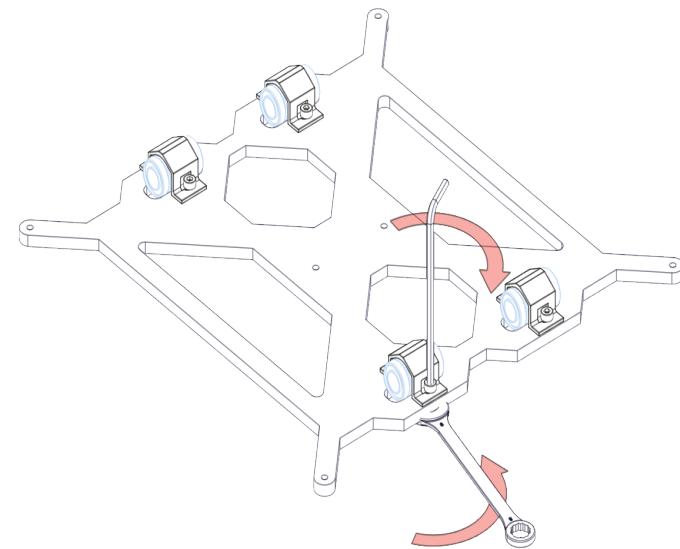
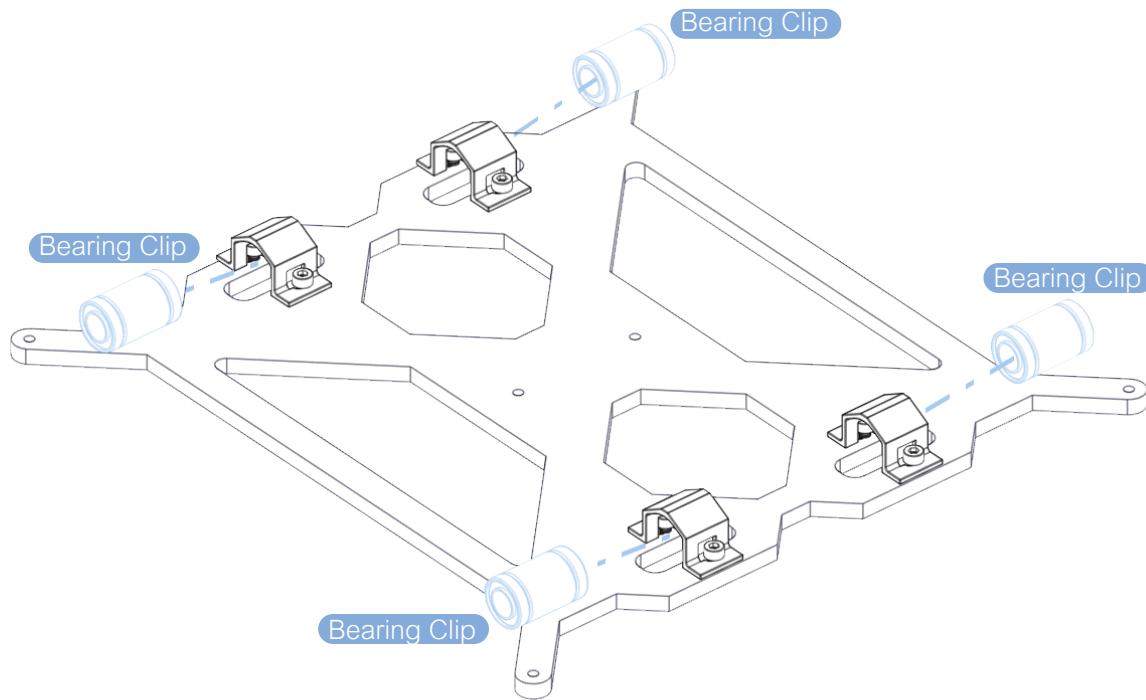
### PREPARING THE Y-CARRIAGE

Secure the bearing clips with M3 Hex nuts from the other ends of the M3x10 SHCS

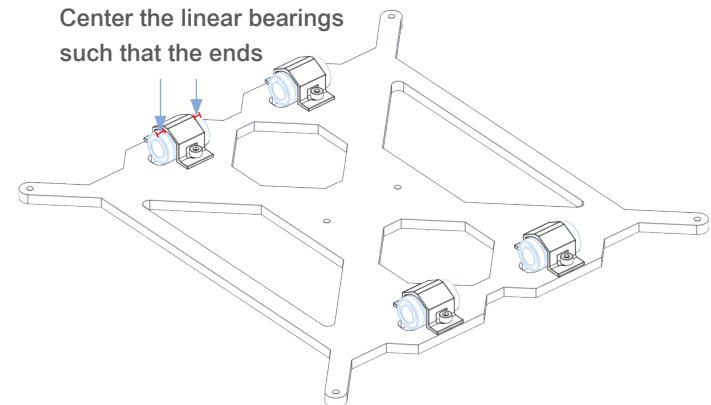


### PREPARING THE Y-CARRIAGE

Insert the linear bearings into the bearing clips.  
Secure the bearings by tightening the clips with the  
M3x10 SHCS and M3 Hex nuts

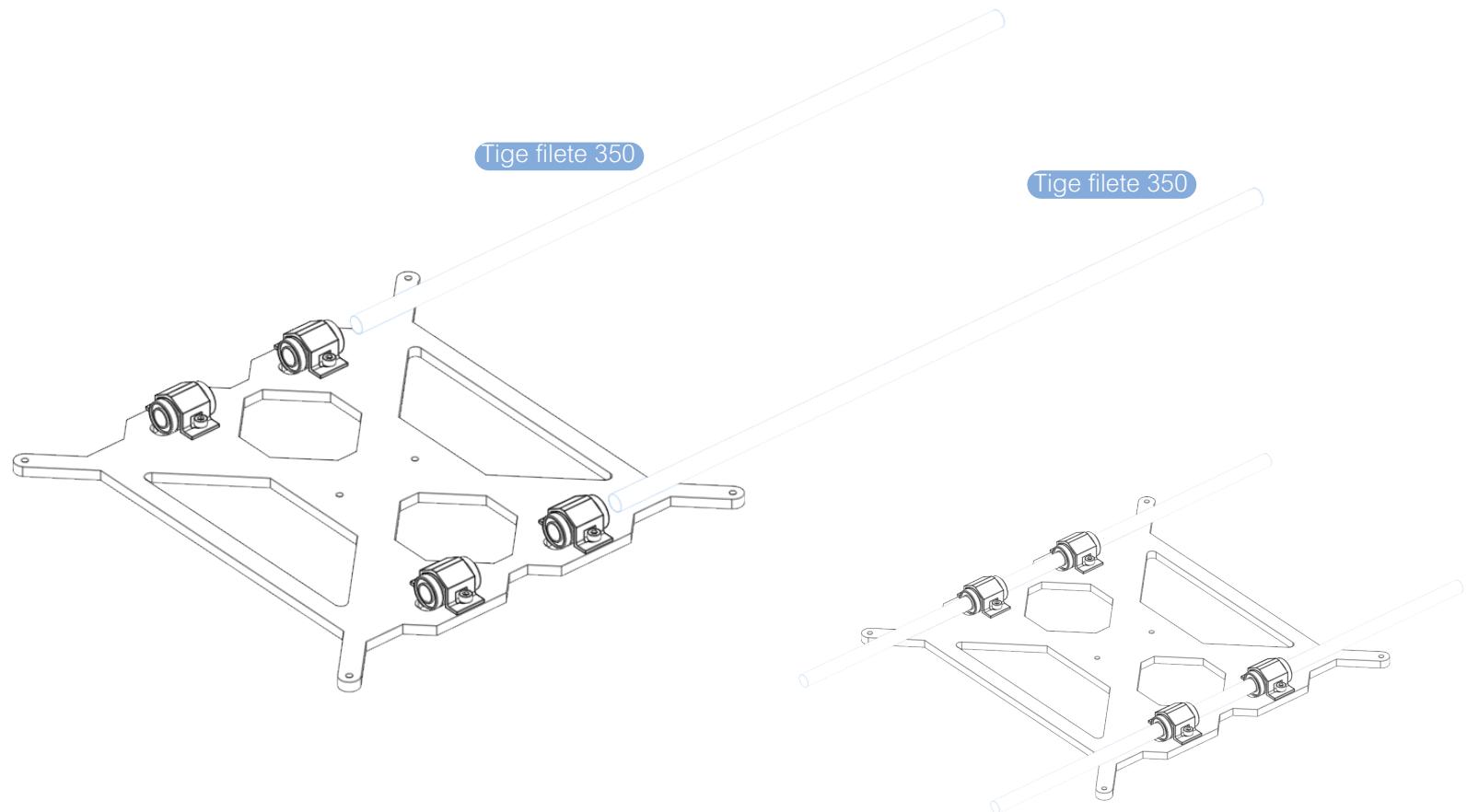


Center the linear bearings  
such that the ends



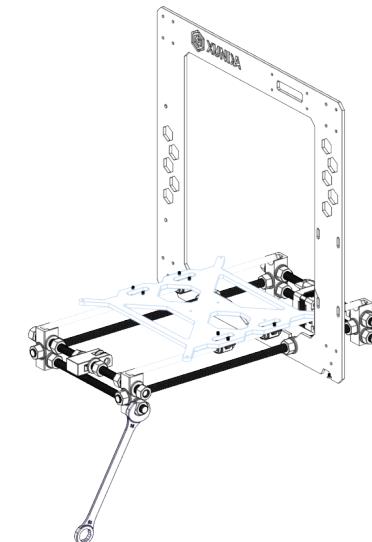
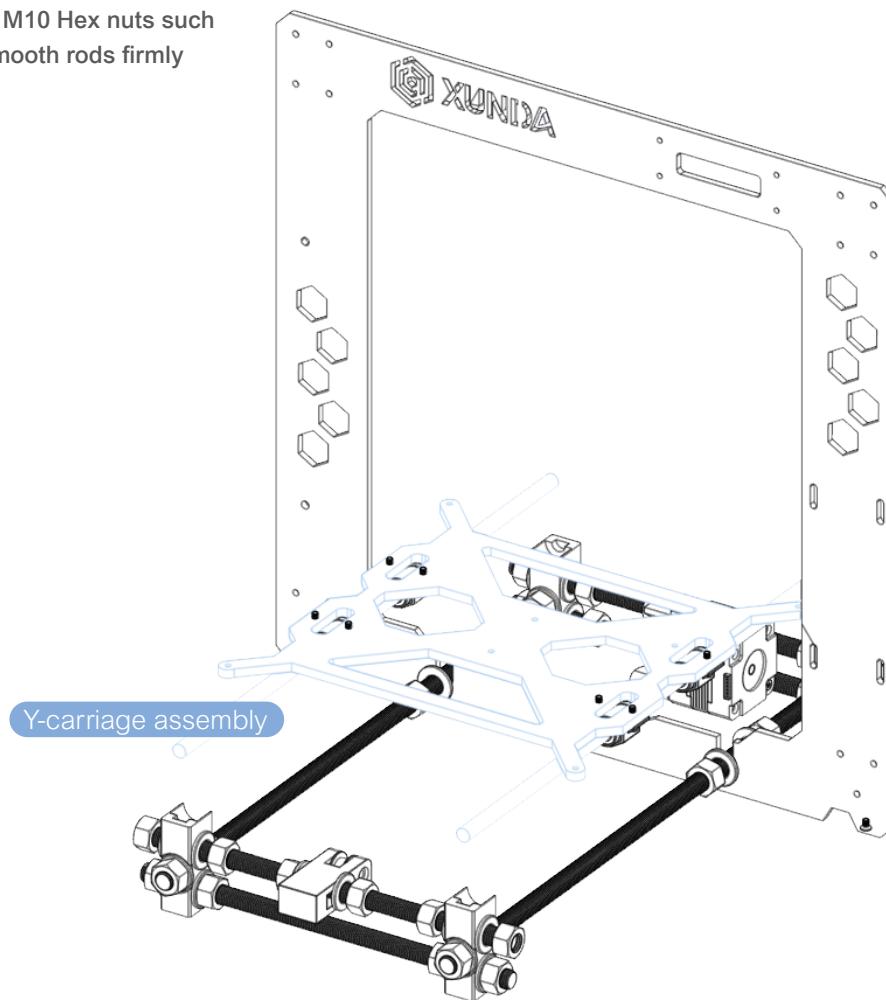
## PREPARING THE Y-CARRIAGE

Gently and steadily push two smooth rods (tige filete 350) through the linear bearings attached to the y-carriage



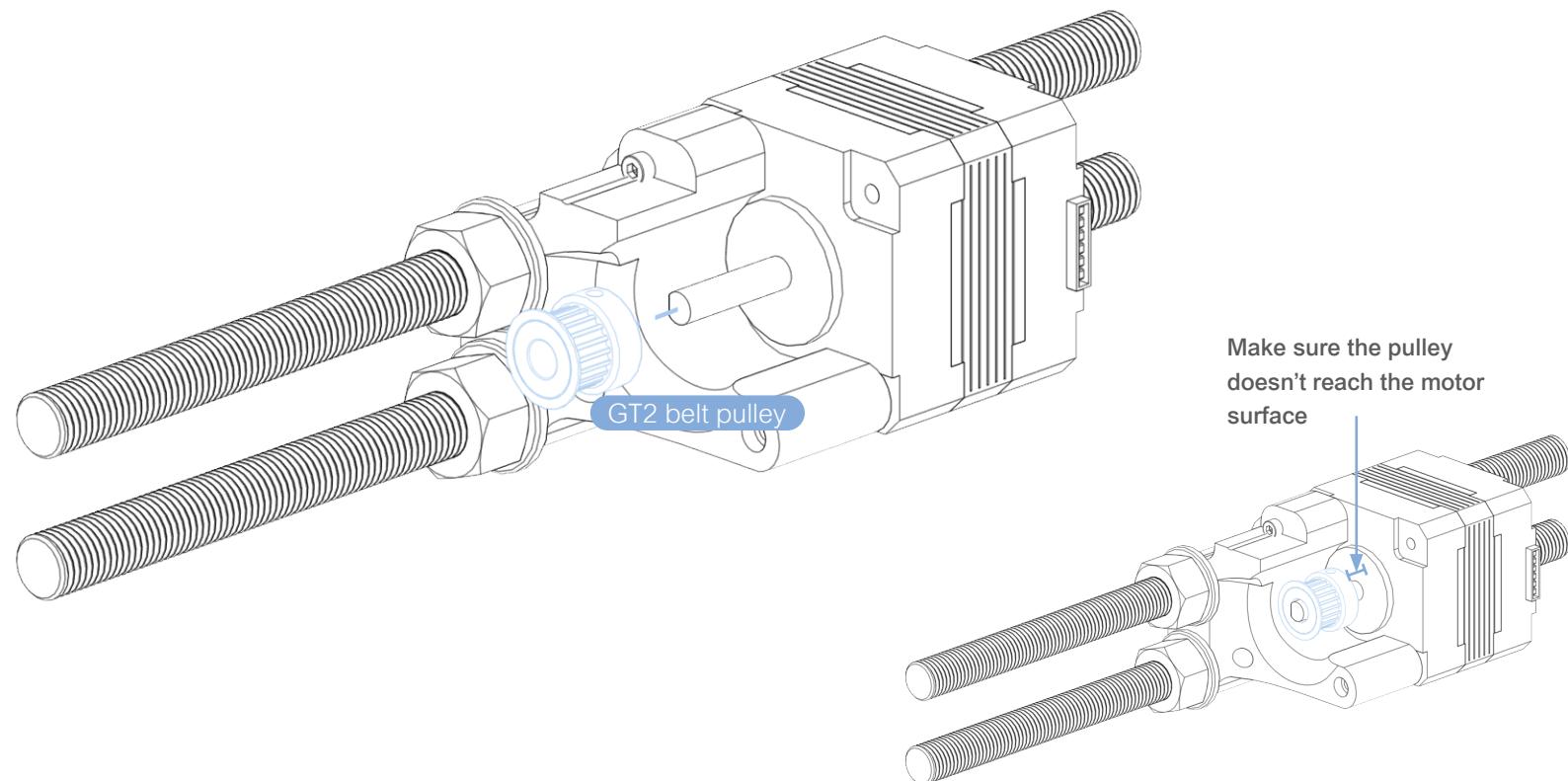
### MOUNTING THE Y-CARRIAGE

Mount the y-carriage assembly onto the threaded rods and frame assembly. Ensure the smooth rods (tige filete 350) ends fit into the y-axis holder top oval depression. Tighten the M10 Hex nuts such that y-axis holder hold the smooth rods firmly



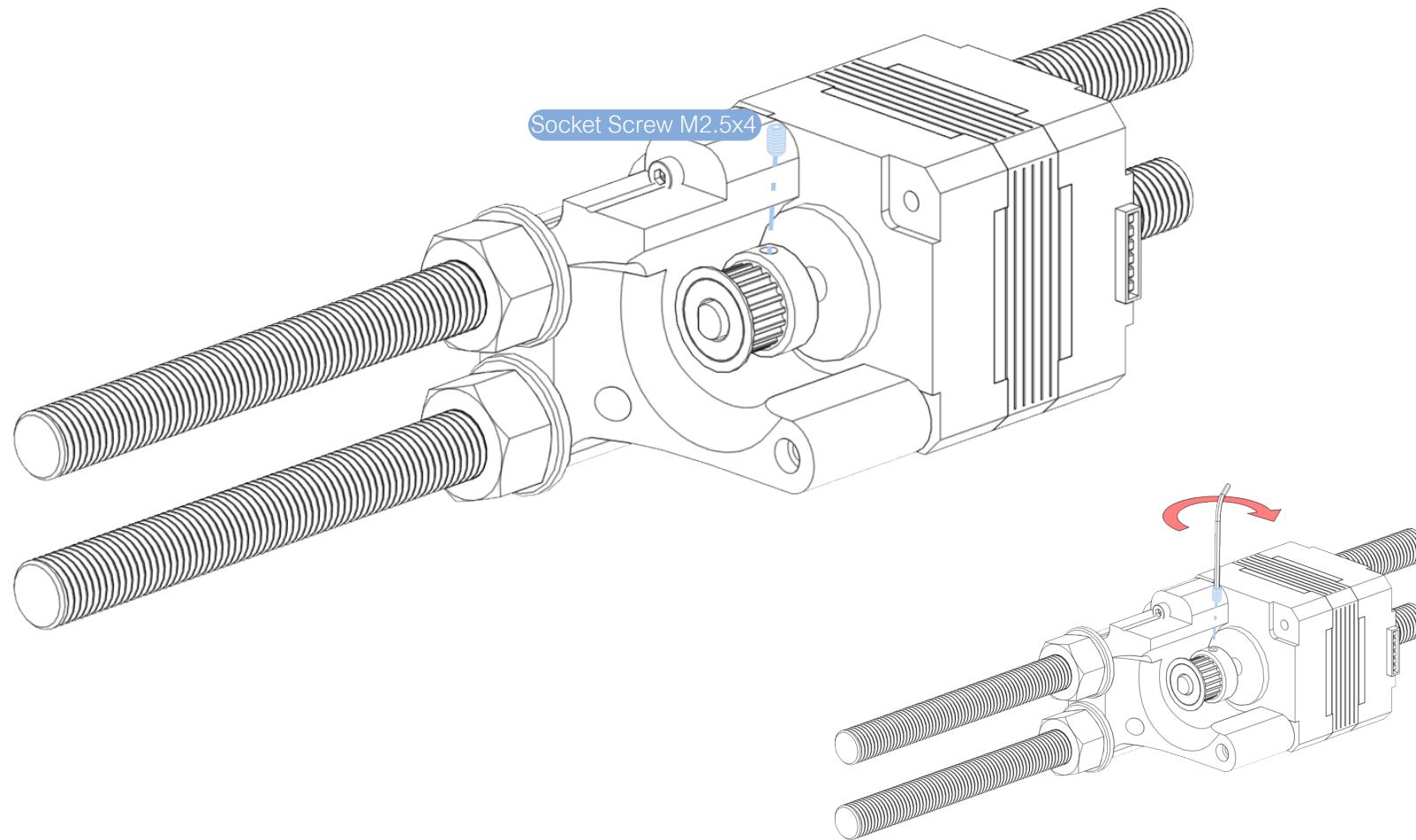
### MOUNTING THE BELT PULLEY

Align the GT2 belt pulley with the motor shaft as shown in the figure below. Push the belt pulley on to the motor shaft. The pulley should not touch the motor such that it rotates freely



### MOUNTING THE BELT PULLEY

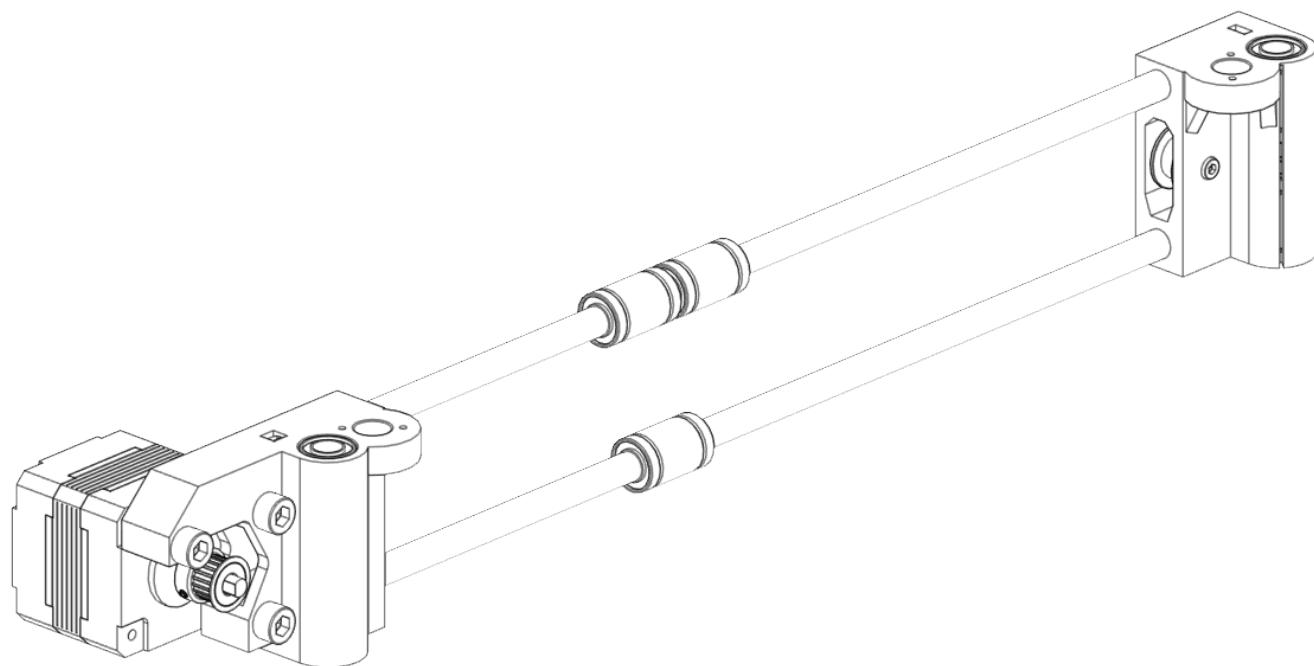
Secure the GT2 belt pulley on to the motor shaft with socket set screw M2.5x4 using allen key. Align the belt pulley with the belt bearing and then tighten the pulley.





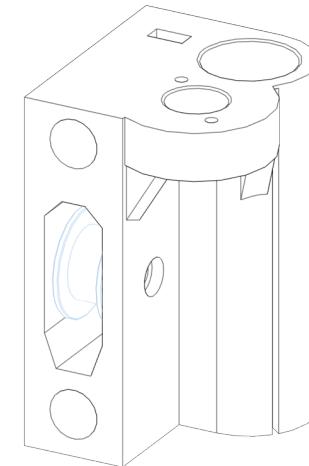
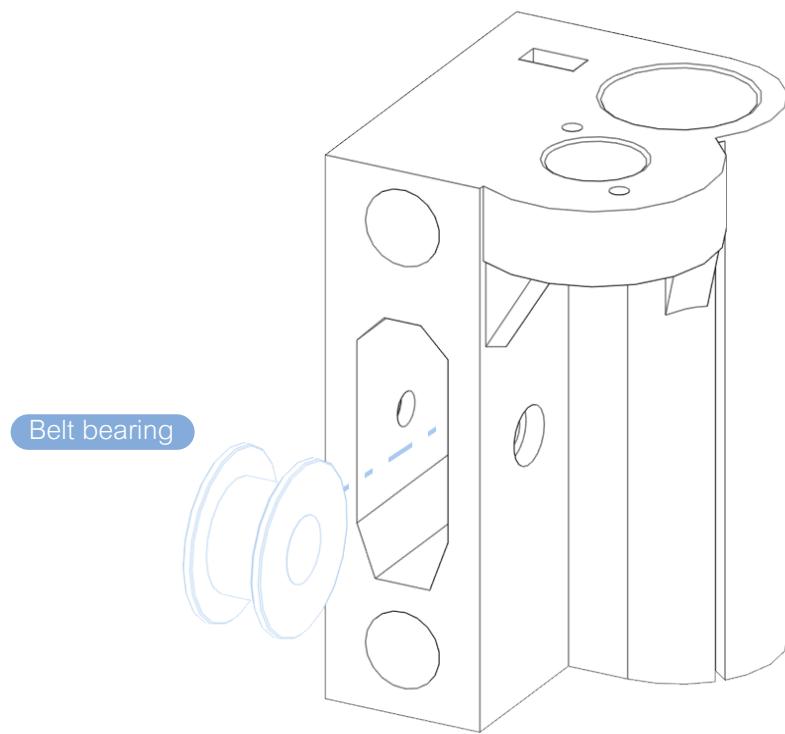
## X-AXIS ASSEMBLY

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### PREPARING THE X-END IDLER

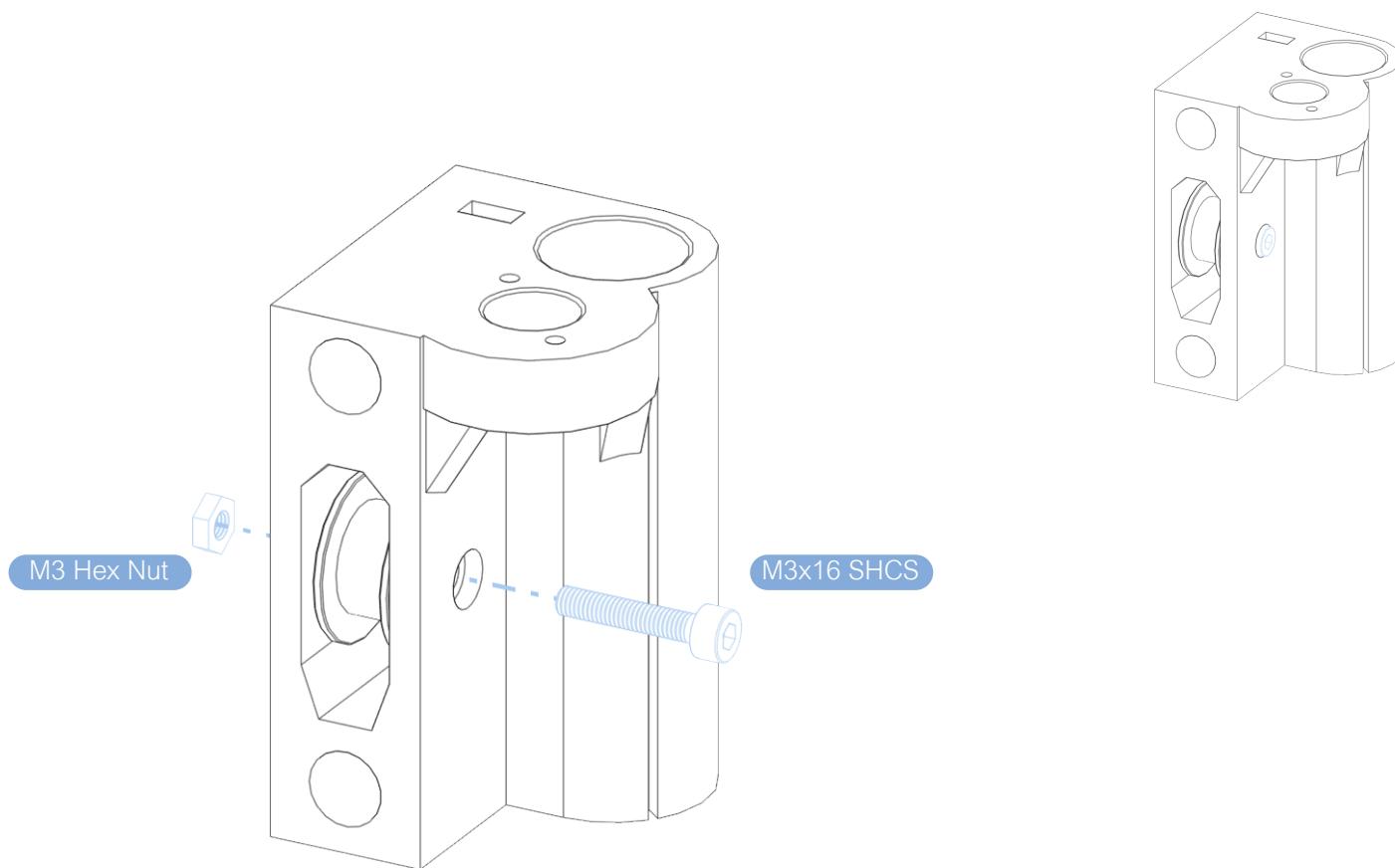
Align the belt bearing with the x-end idler and then push the bearing into x-end pocket as shown in the figures.



<https://shorturl.at/qSImI>

### PREPARING THE X-END IDLER

Secure the belt bearing to the x-end idler using M3x16 SHCS and M3 Hex nut with the help of allen key and wrench

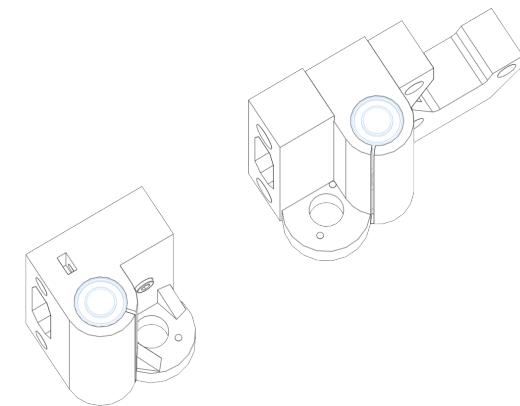
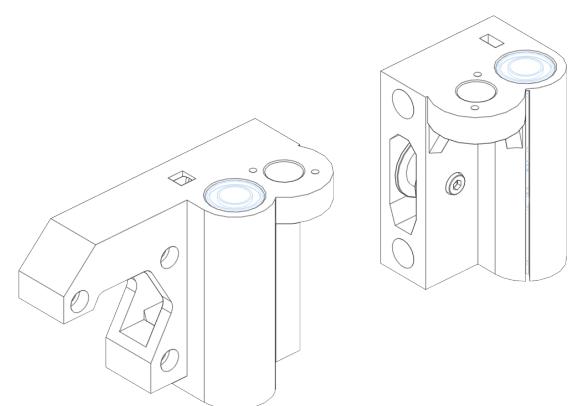
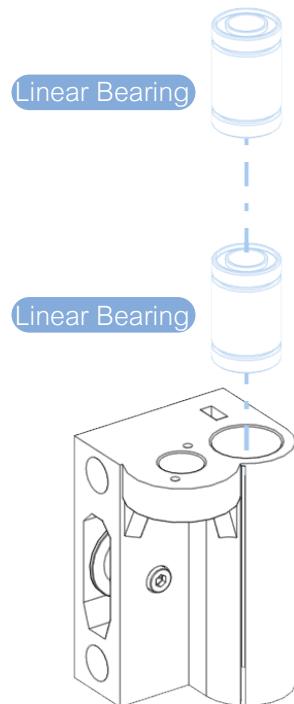
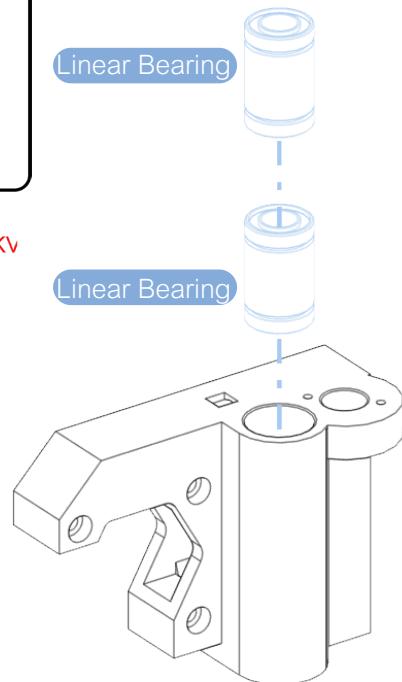


## INSERTING LINEAR BEARINGS

Take the x-end motor holder and the x-end idler, insert two linear bearing in each part as shown.

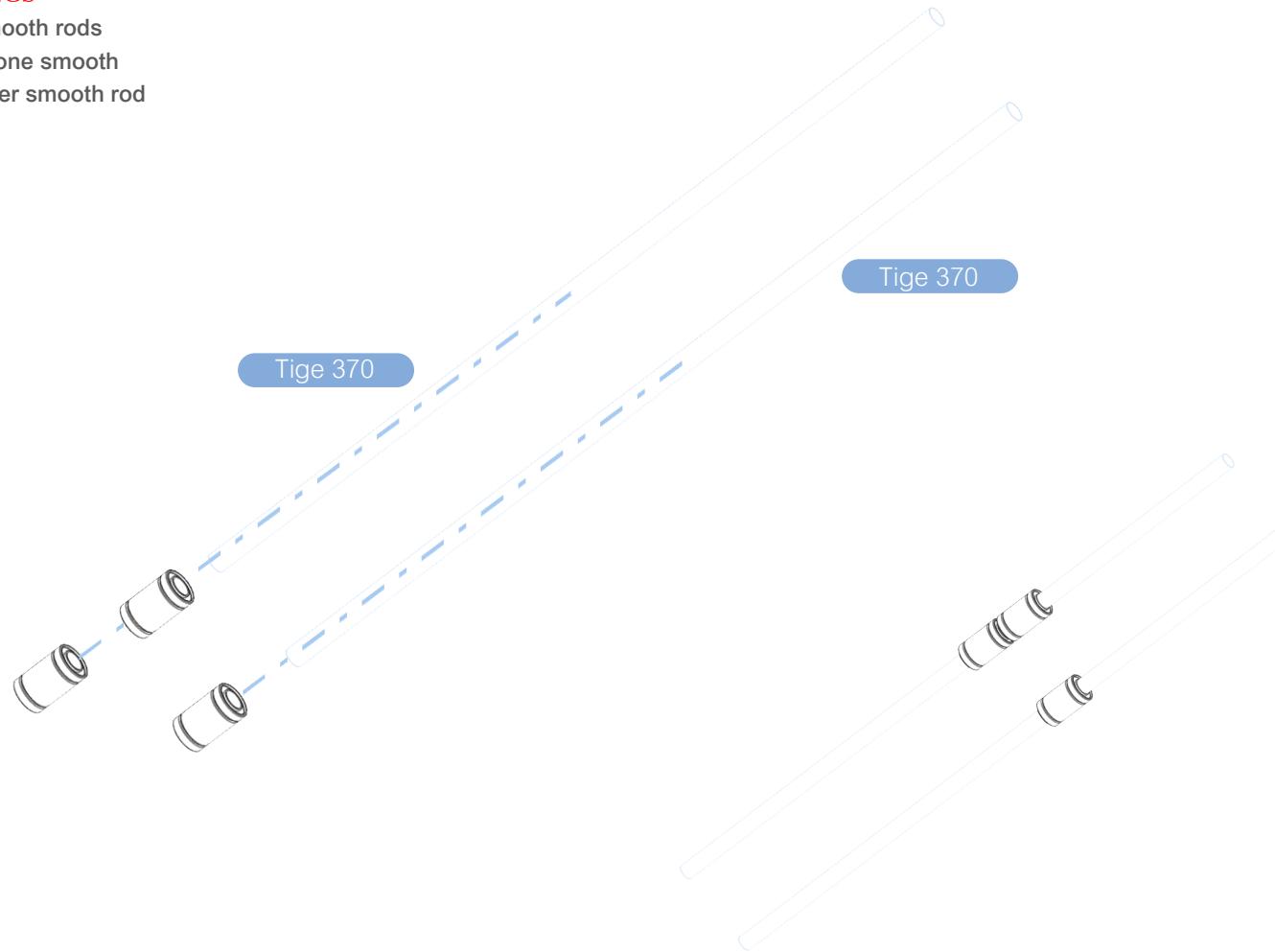


<https://shorturl.at/QAsKv>



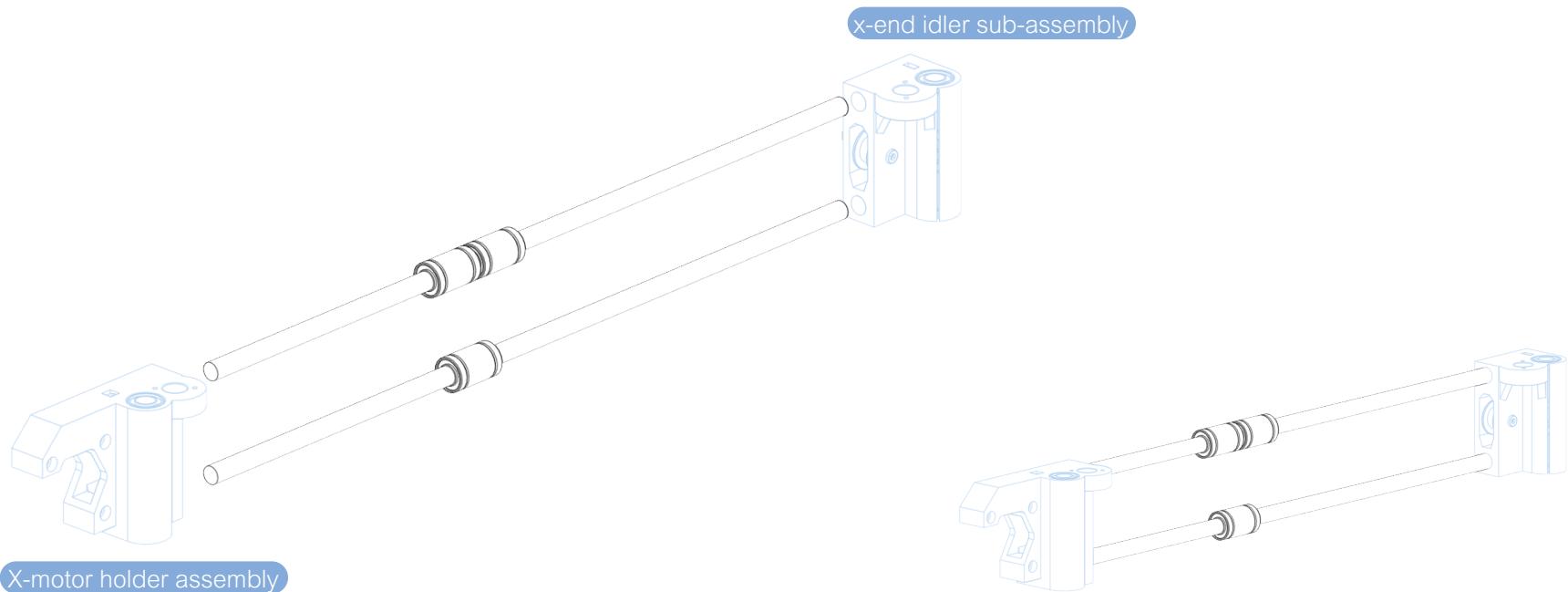
### INSERTING LINEAR BEARINGS

Insert 3 linear bearings on 2 smooth rods  
(tige 370), 2 linear bearings on one smooth  
rod and 1 linear bearing the other smooth rod



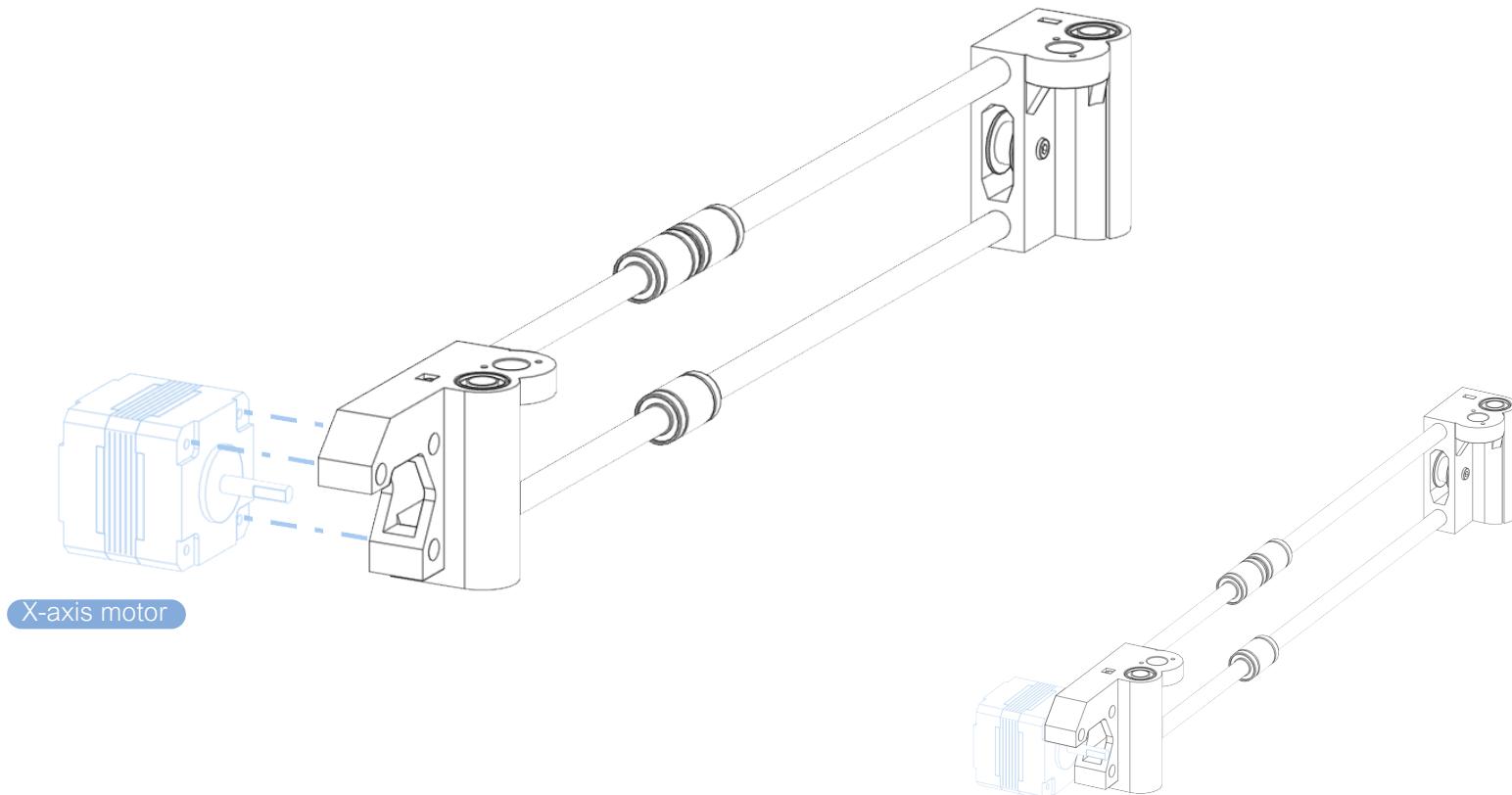
### MOUNTING THE SUB-ASSEMBLIES

Insert the smooth rods sub-assemblies into the printed parts sub-assemblies as shown. Take care of the directions of the the printed parts faces.



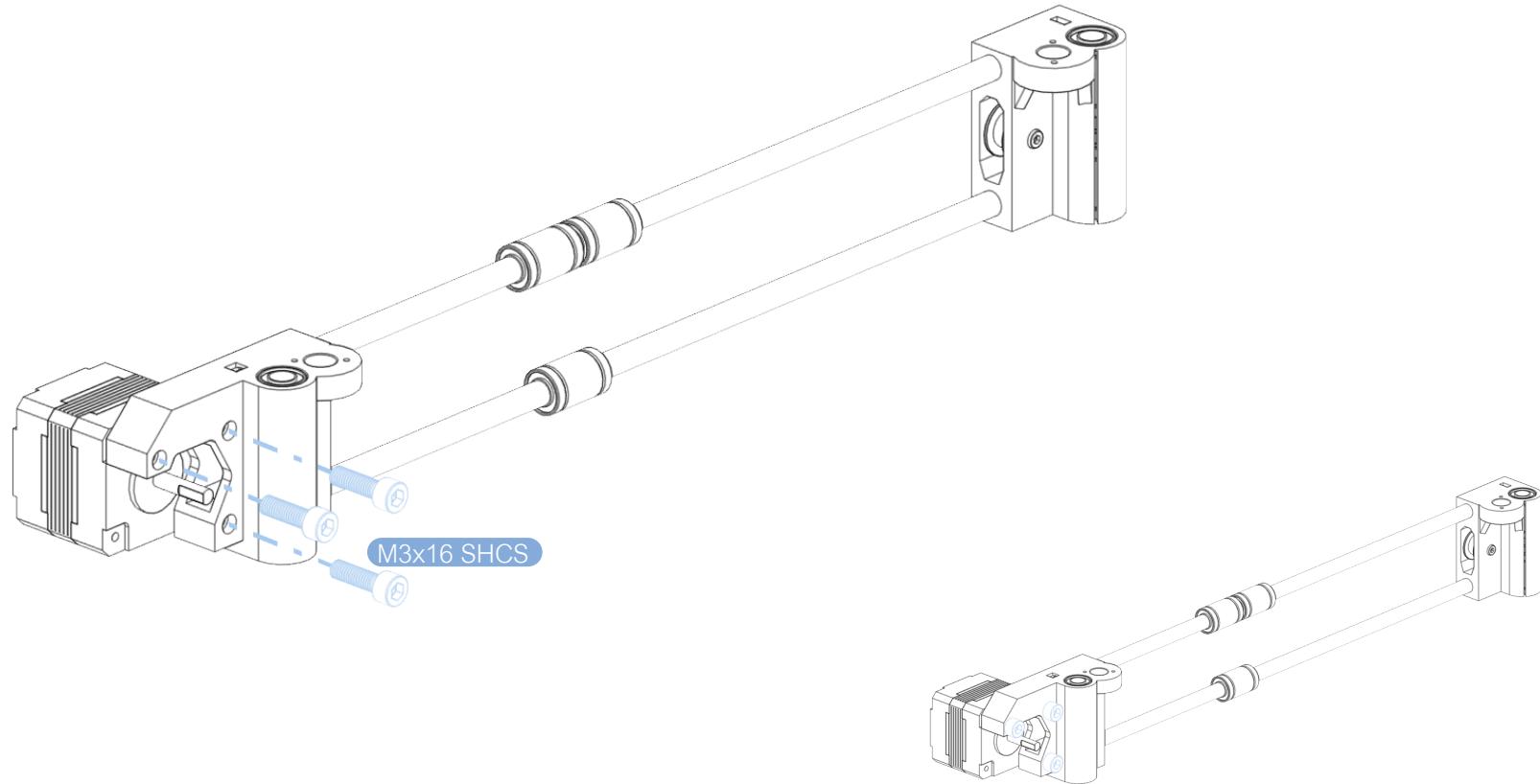
### MOUNTING X-AXIS MOTOR

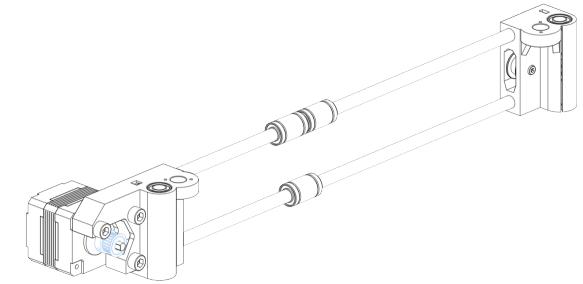
Take the x-axis motor and align its three bolt holes with the back side of the x-motor holder. It is good practice to make the motor cable port face down



### MOUNTING X-AXIS MOTOR

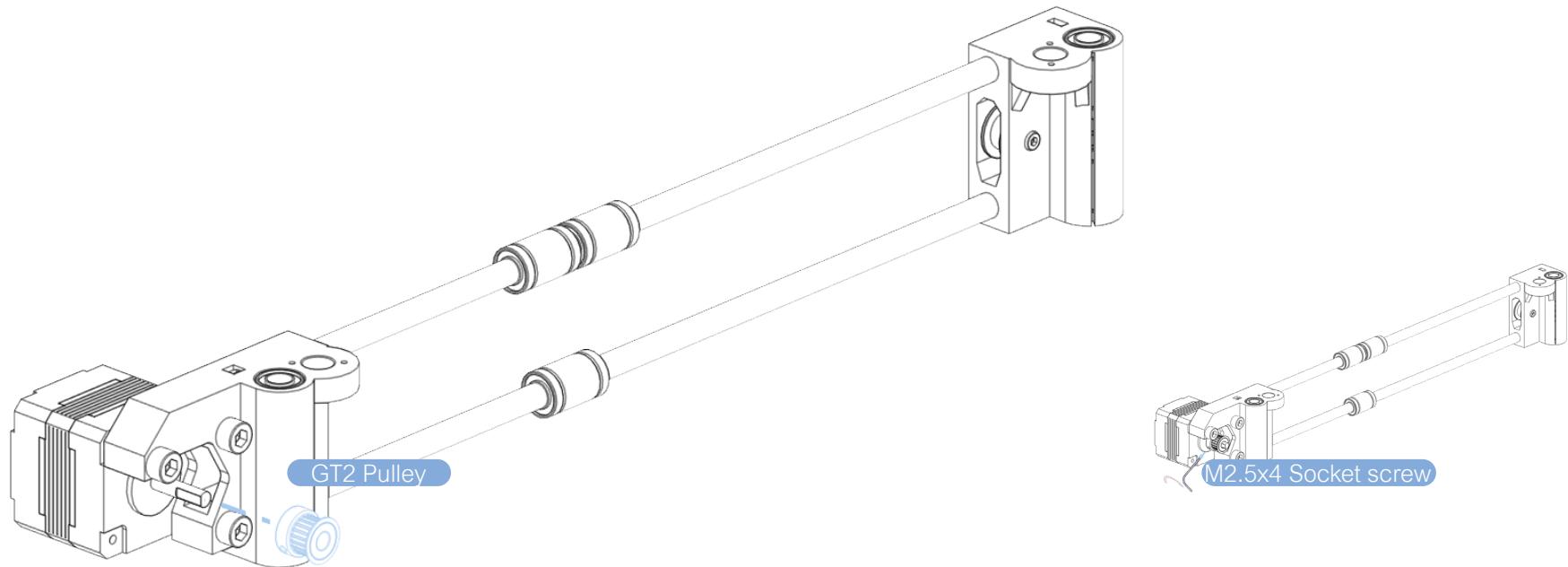
Secure the motor to the x-end motor holder using M3x16 SHCS with the help of allen keys





### MOUNTING BELT PULLEY

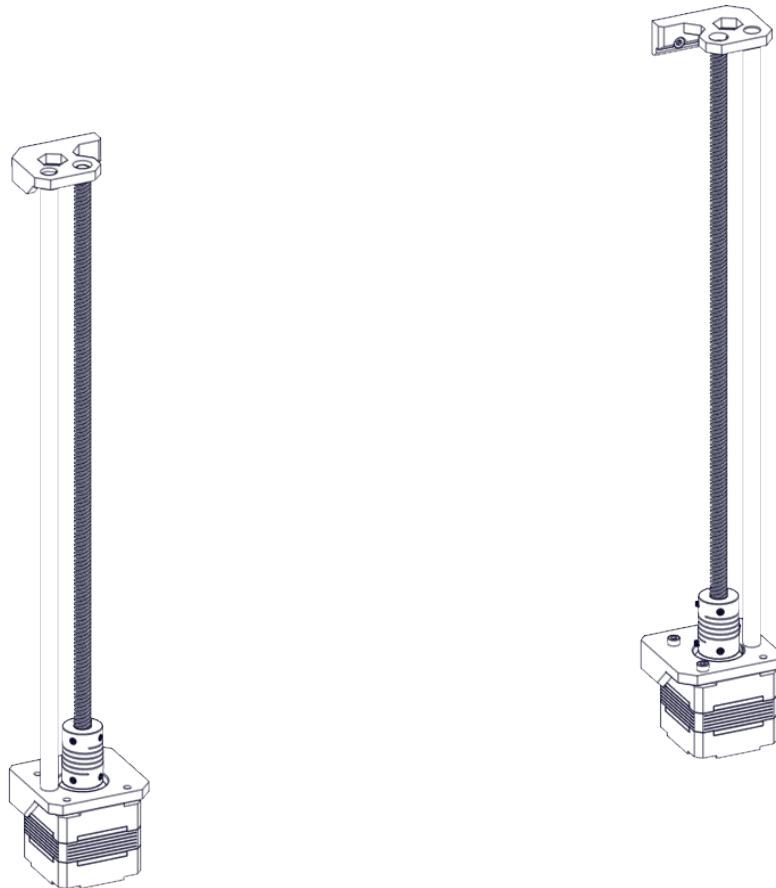
Take the GT2 pulley and align it with the motor shaft as shown. Push the pulley on to the shaft, align it with the belt bearing in x-end idler and secure it with M2.5x4 socket set screw





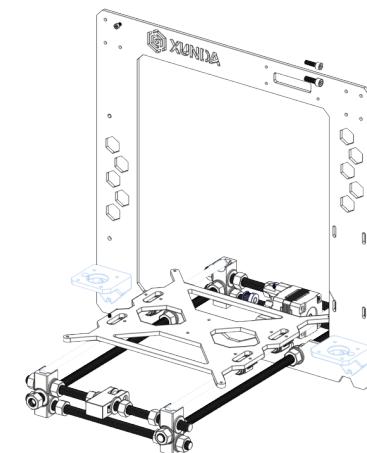
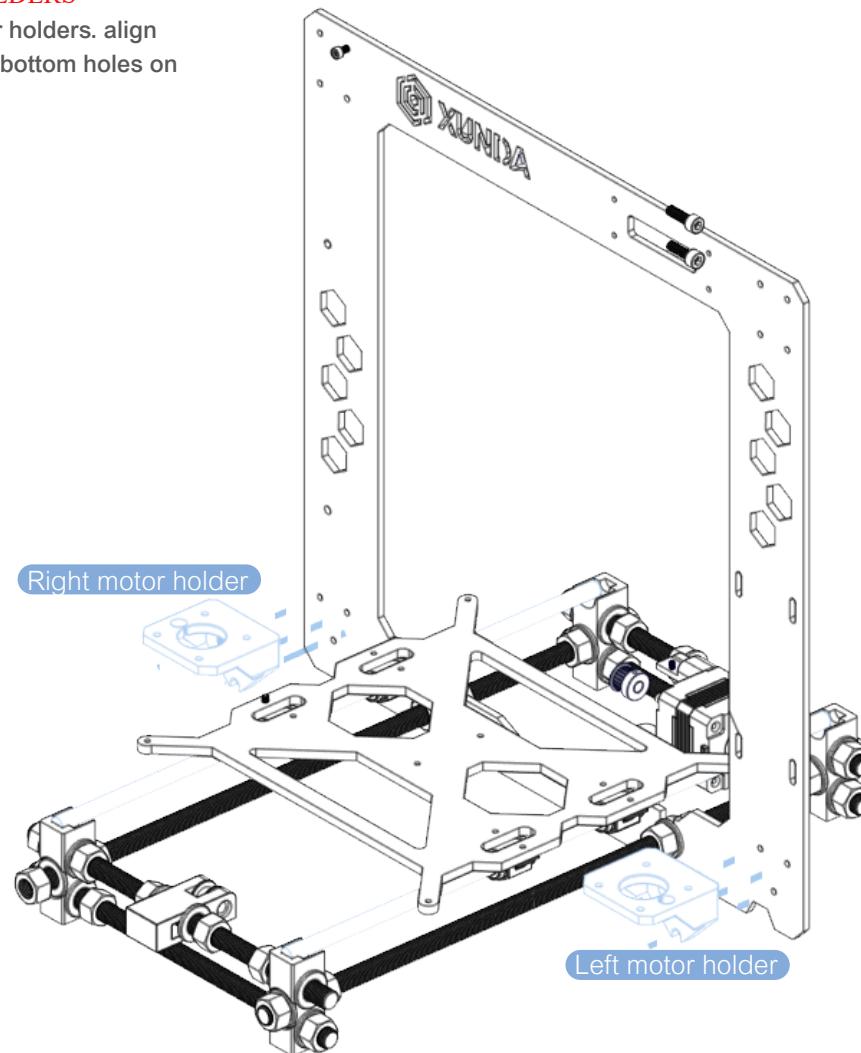
## Z-AXIS ASSEMBLY

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### MOUNTING Z-MOTOR HOLDERS

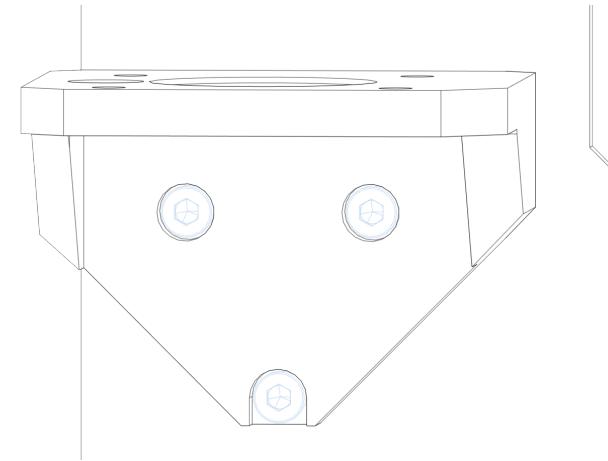
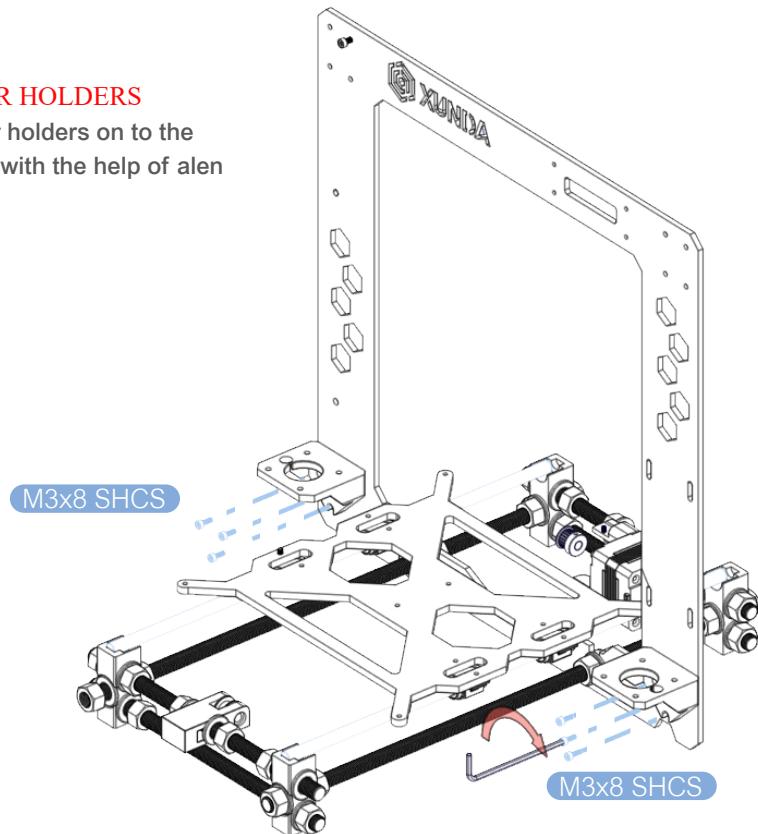
Take the right and left z-motor holders. align their three bolt holes with the bottom holes on the frame



<https://shorturl.at/HZi5V>

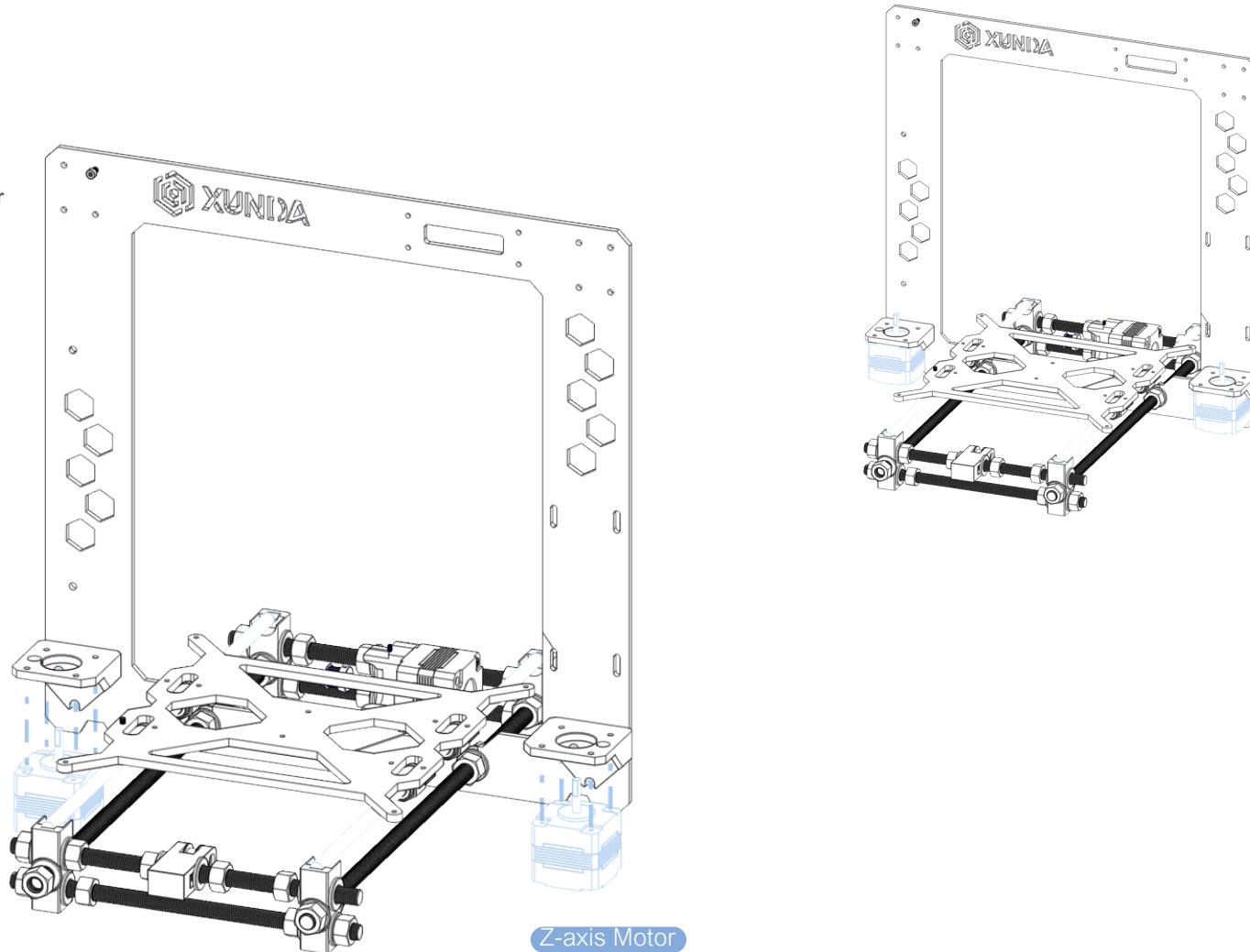
### MOUNTING Z-MOTOR HOLDERS

Secure the z-axis motor holders on to the frame with M3x8 SHCS with the help of allen keys



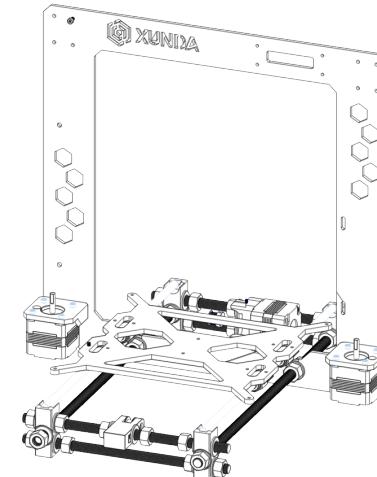
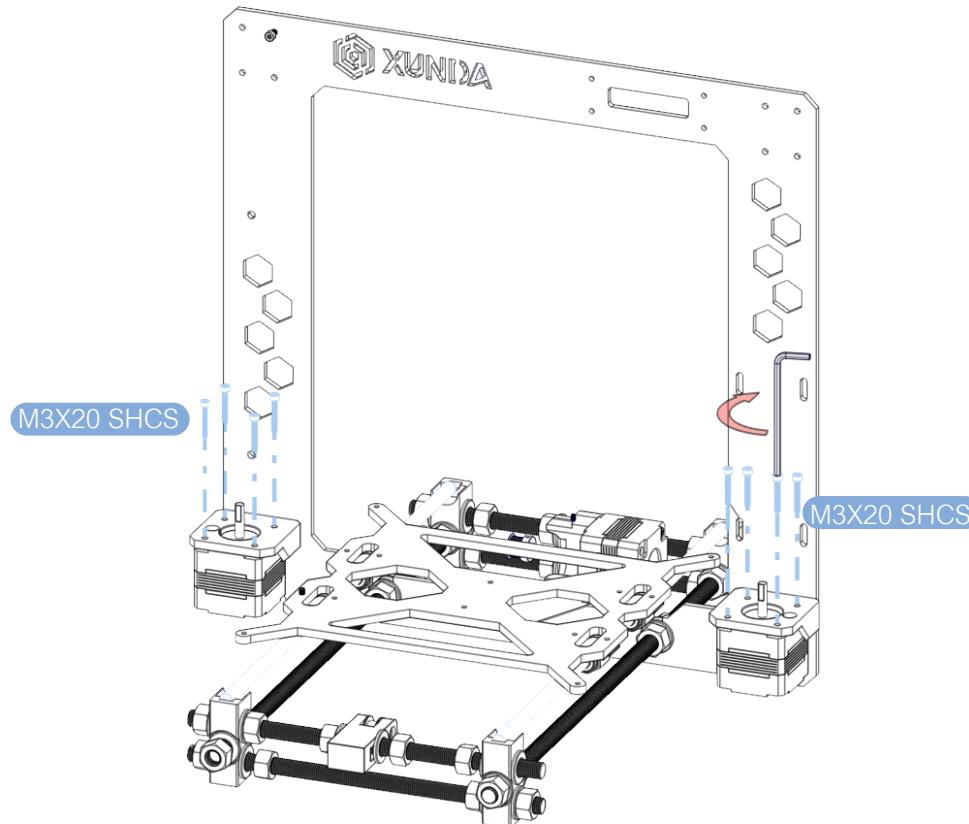
### MOUNTING Z-AXIS MOTORS

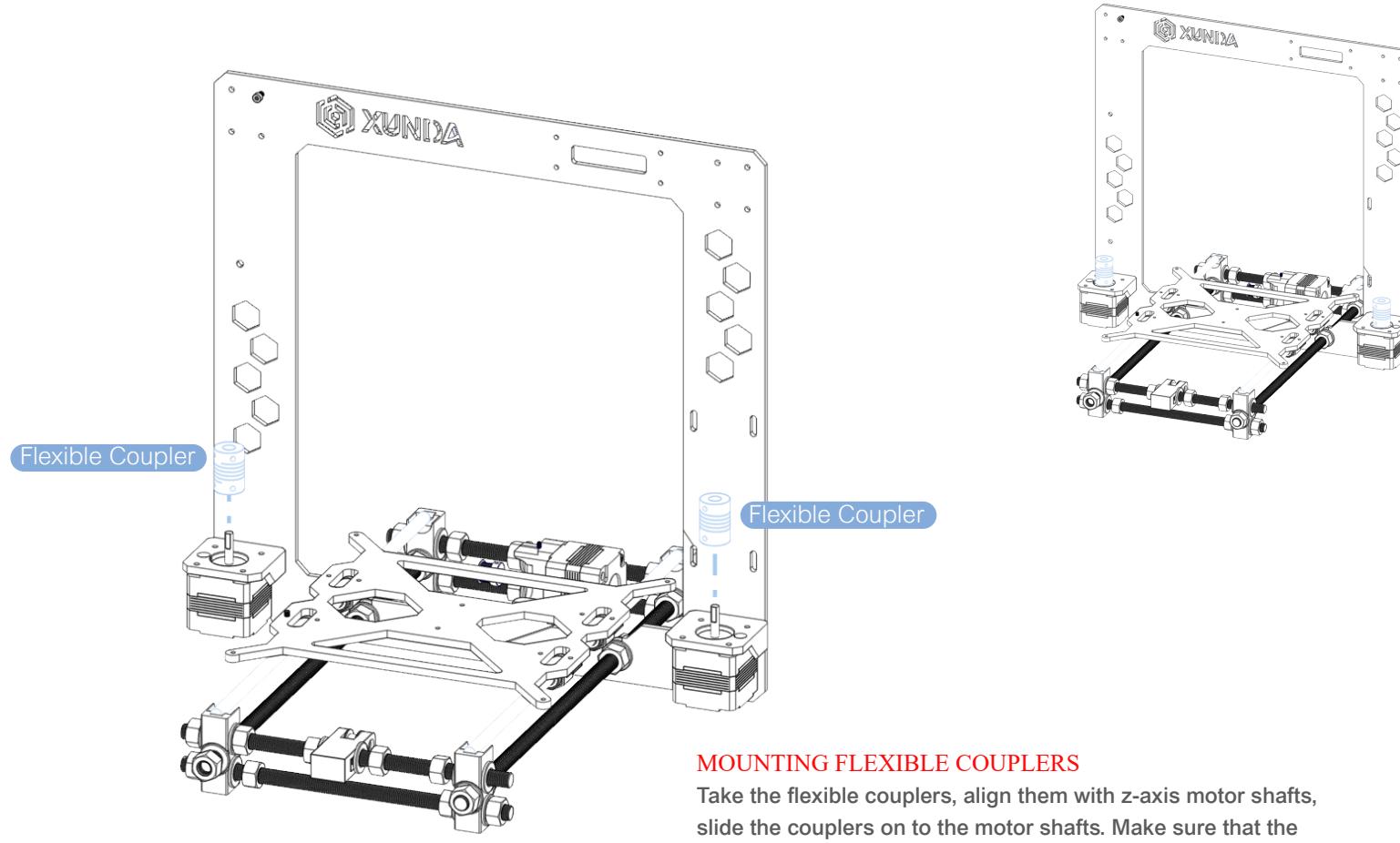
Take the z-axis motors and align the bolt holes on their top with those on the motor holders at the top

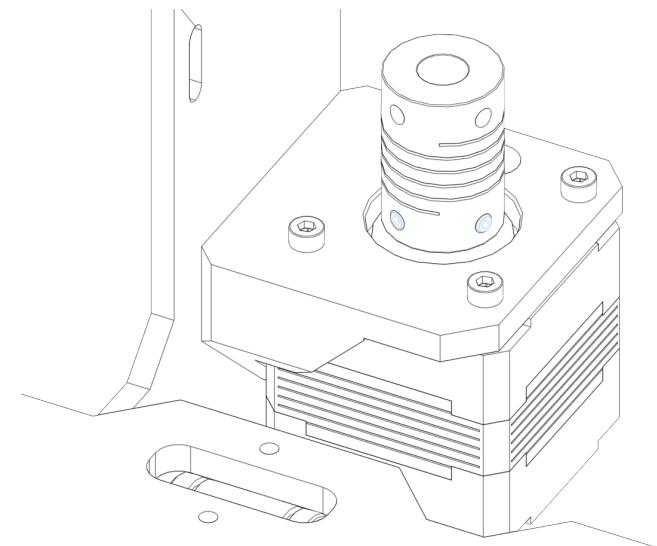
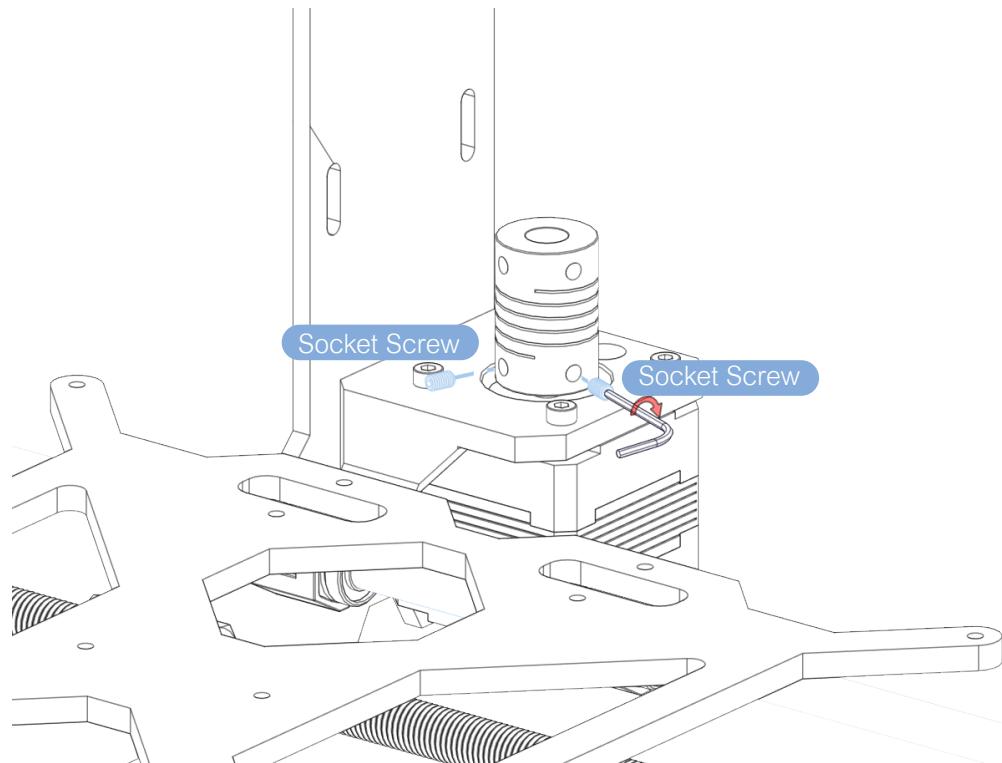


### MOUNTING Z-AXIS MOTORS

Secure the z-axis motors to the motor holders using M3x20 SHCS with the help os alen keys as shown in the figure



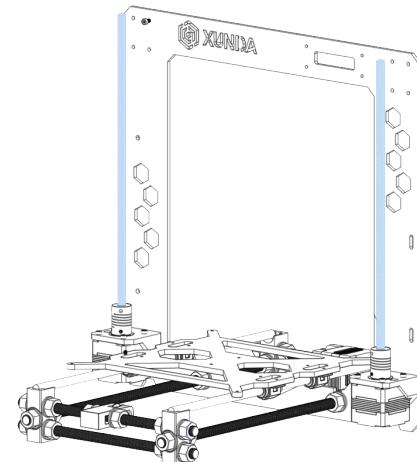
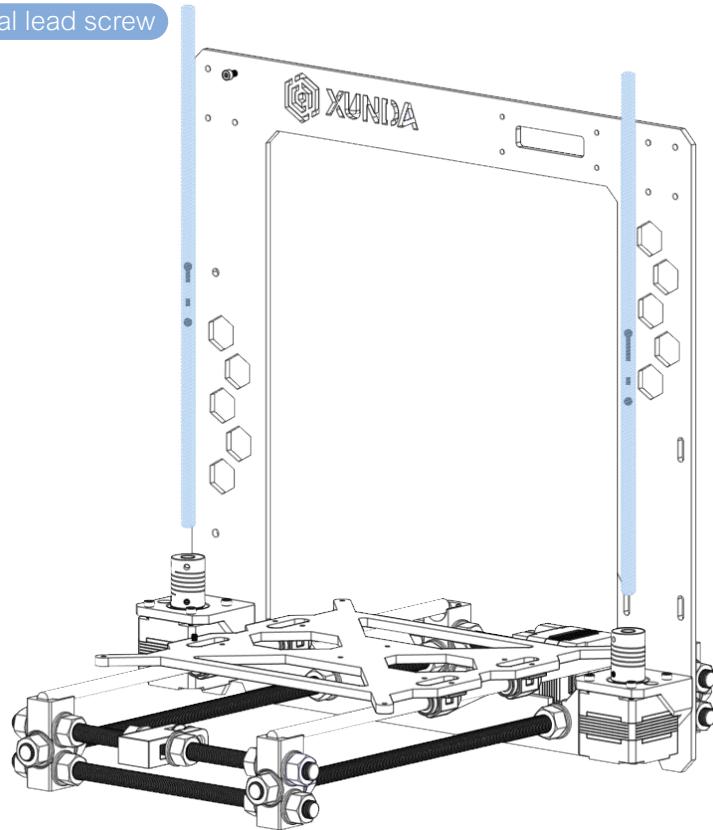




### MOUNTING FLEXIBLE COUPLERS

Secure the flexible couplers on to the motor shafts using M3x5  
Socket Set Screws with the help of alen keys

Trapezoidal lead screw

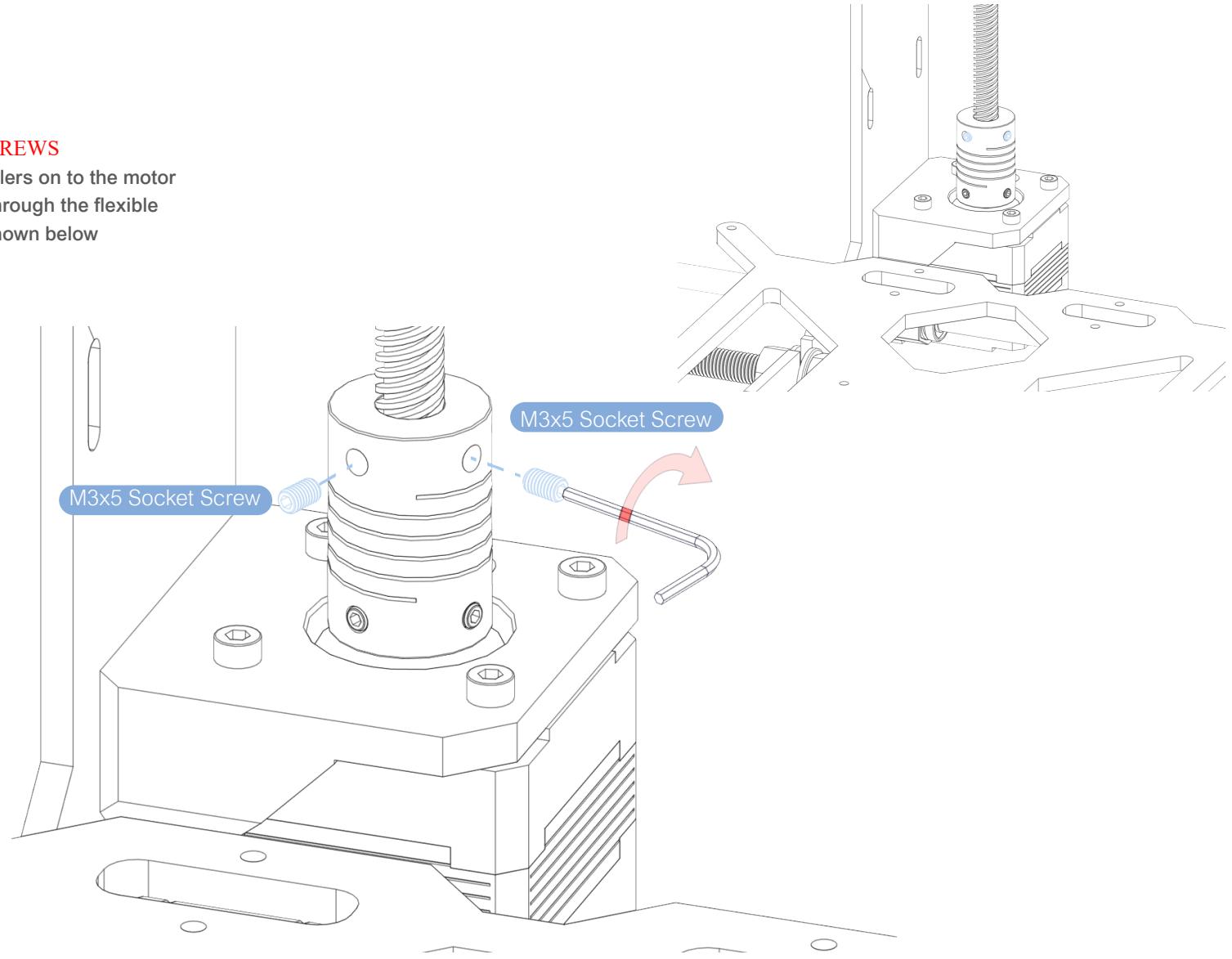


### INSERTING TRAPEZOIDAL LEAD SCREWS

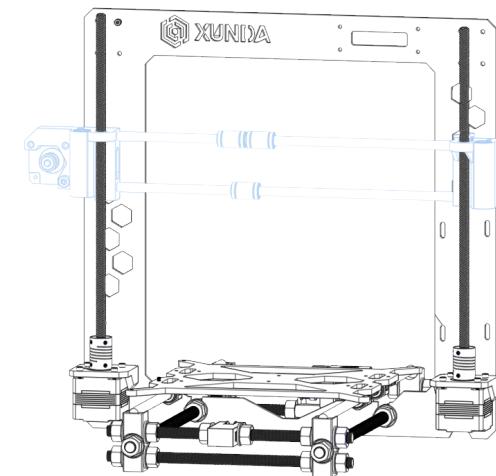
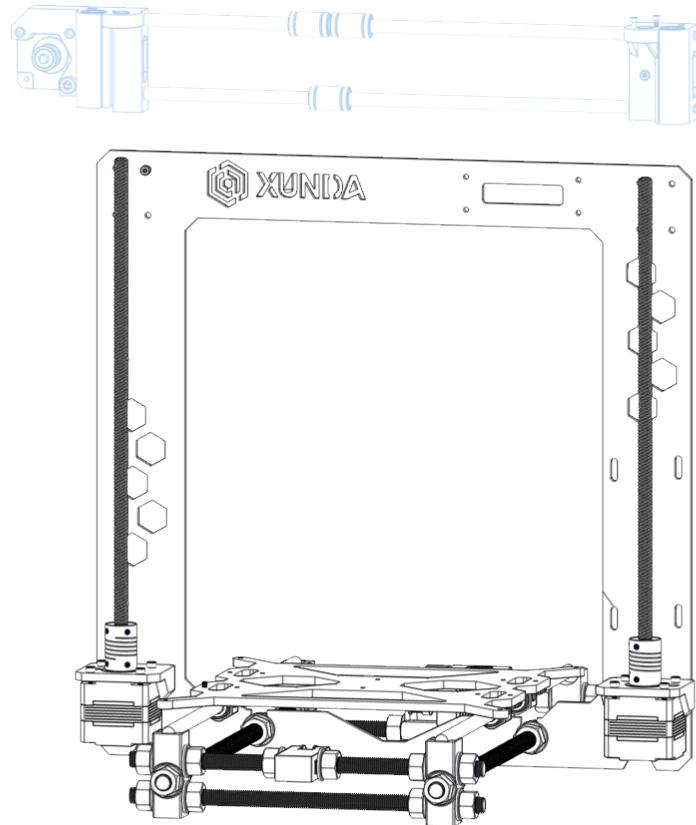
Take Trapezoidal lead screws, align them with flexible couplers and insert them into the flexible couplers in order to be joined to the motor shafts

### INSERTING TRAPEZOIDAL LEAD SCREWS

Secure the trapezoidal lead screws couplers on to the motor shafts using M3x5 Socket Set Screws through the flexible couplers with the help of allen keys as shown below



X-axis assembly

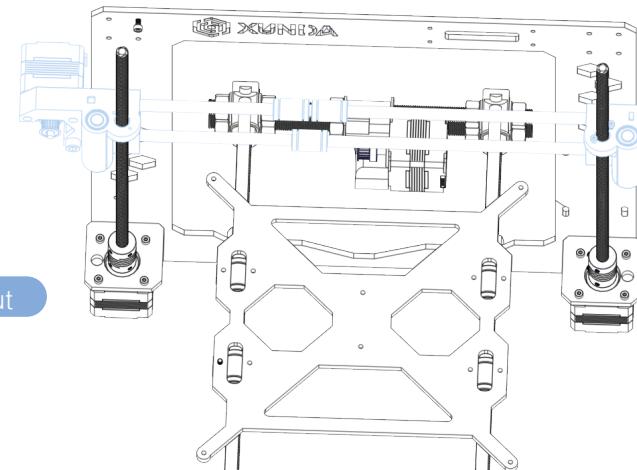
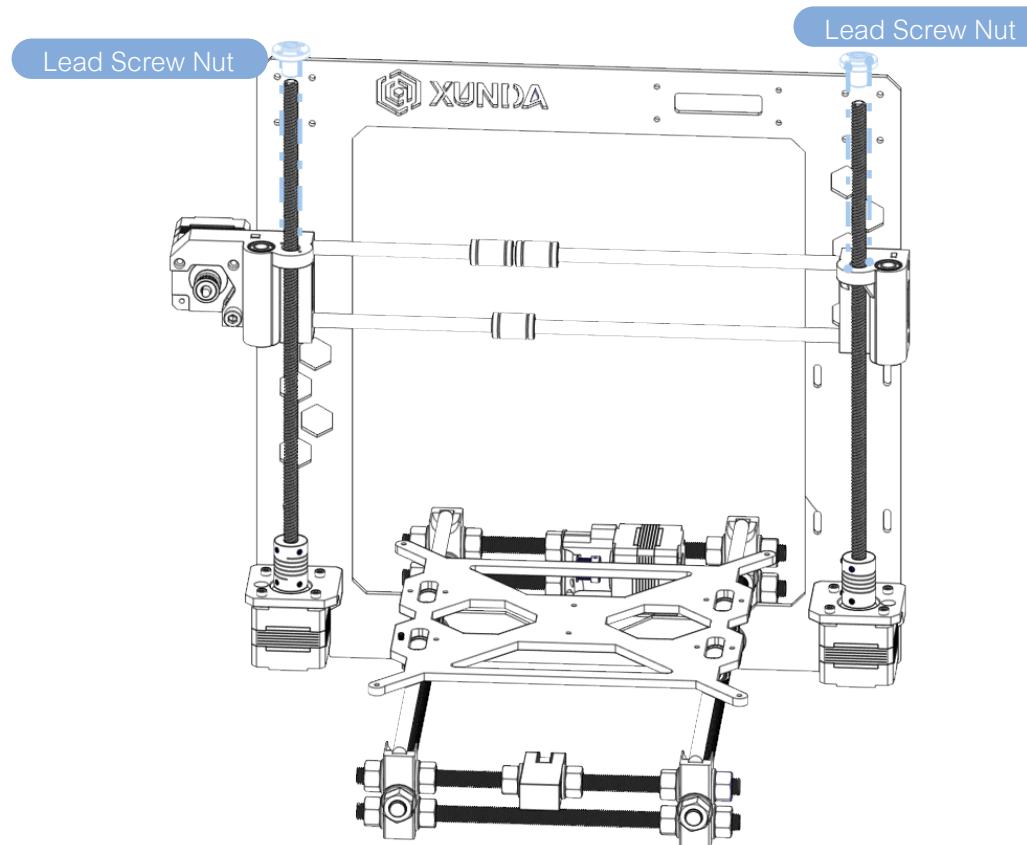


### MOUNTING X-AXIS ASSEMBLY

Align the x-axis assembly created before with the trapezoidal lead screws as show. Gently slide the x-axis down through the trapezoidal lead screws

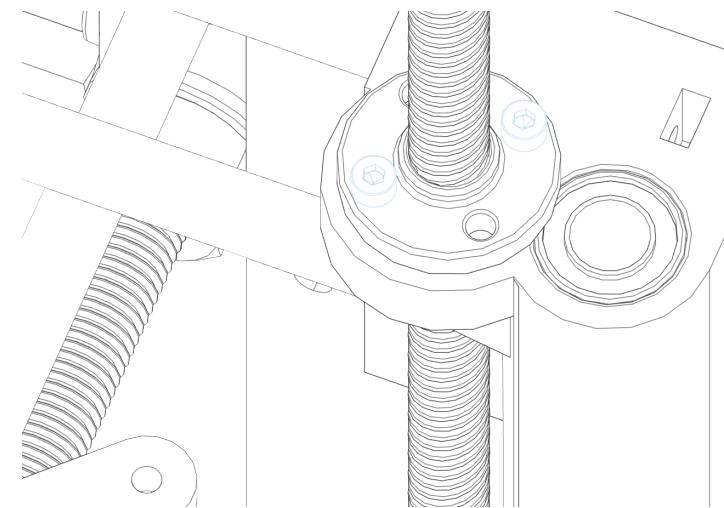
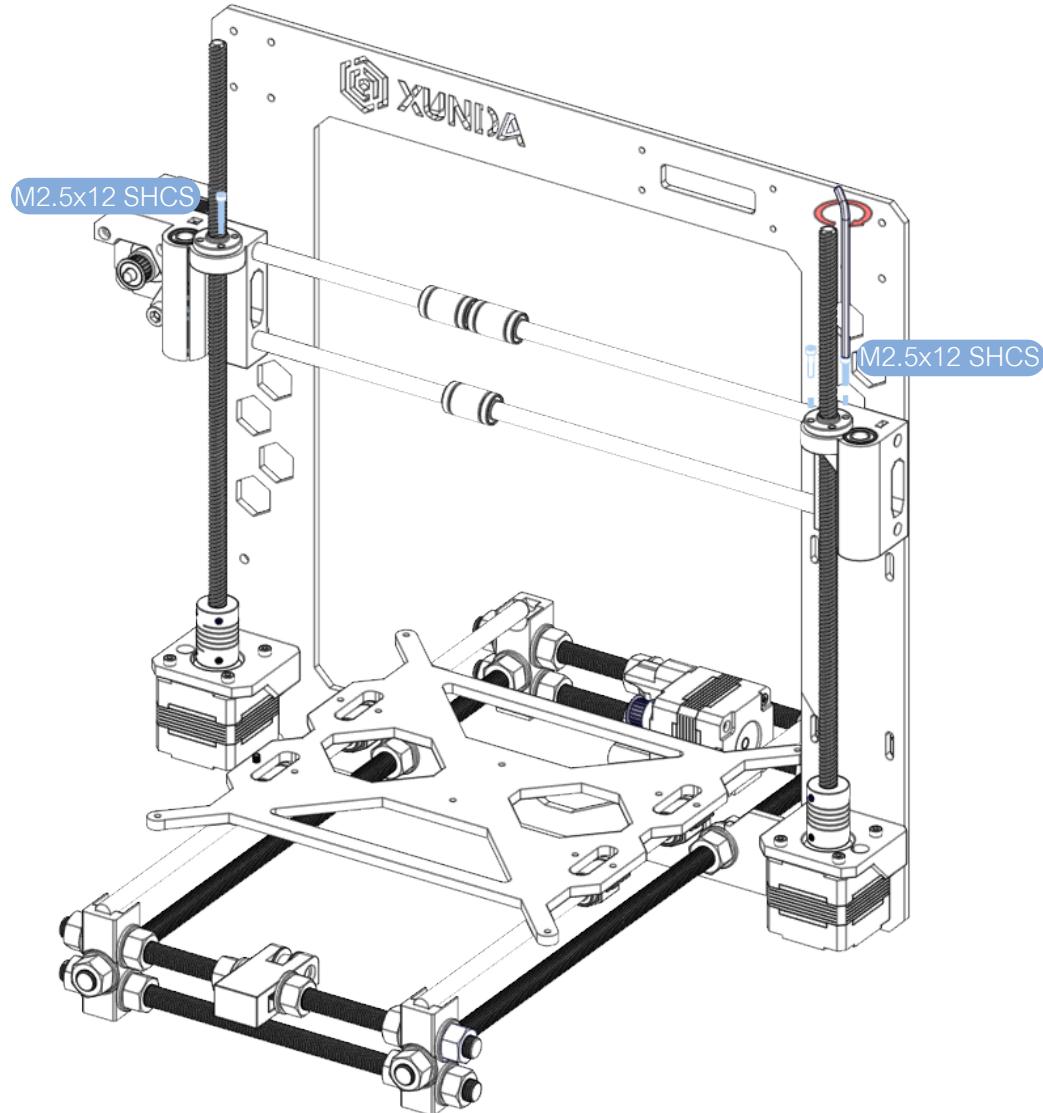
### MOUNTING X-AXIS ASSEMBLY

Take the trapezoidal lead screw nuts, slide them down the lead screws and align the bolt holes with those on the printed parts.



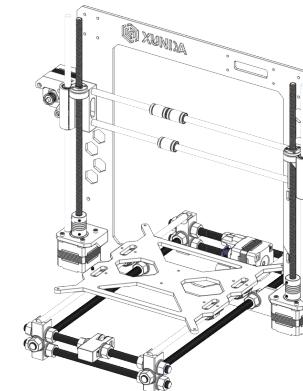
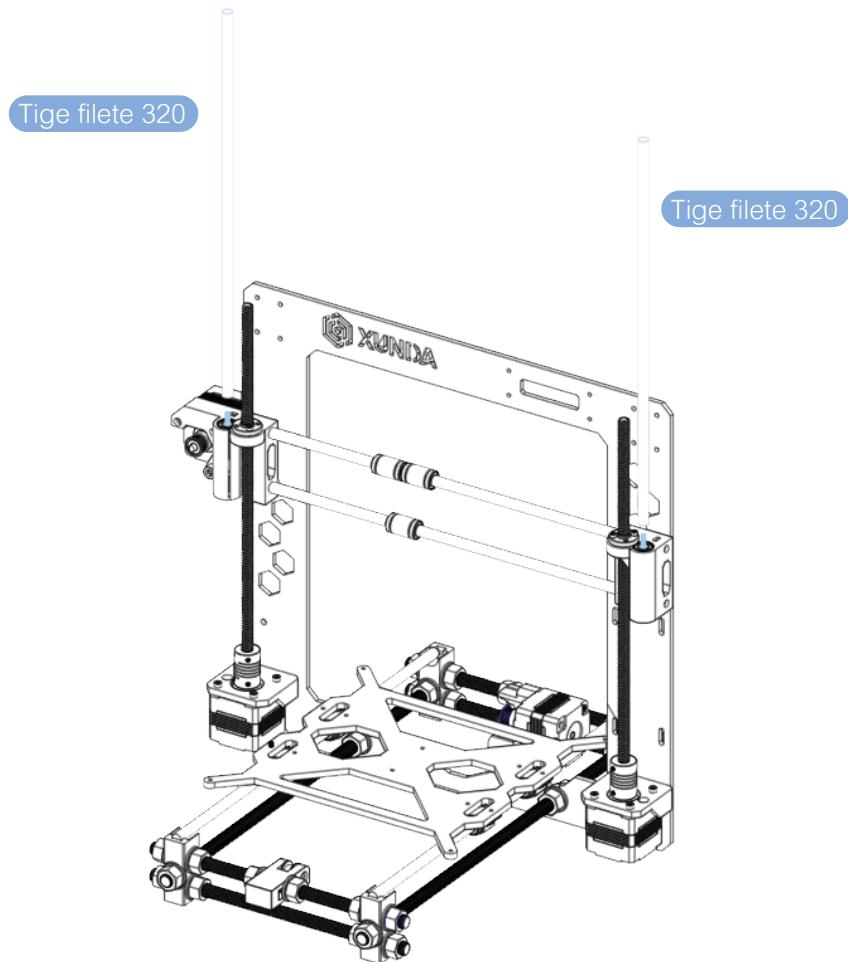
## Z-AXIS ASSEMBLY

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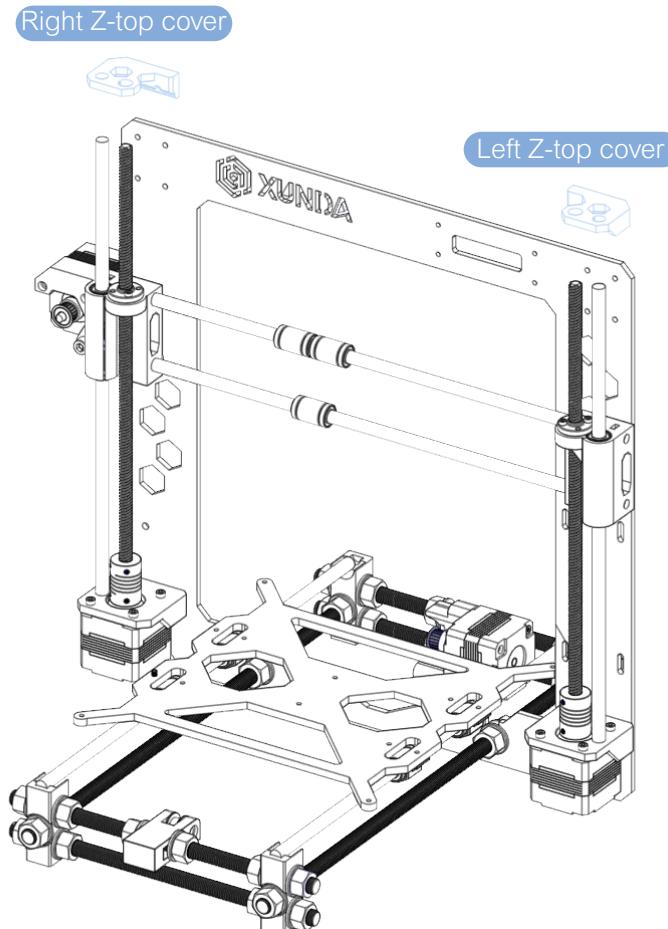
### MOUNTING X-AXIS ASSEMBLY

Secure the X-axis assembly using M2.5x12 SHCS through the lead screw nuts with the help of allen keys



### INSERTING SMOOTH RODS

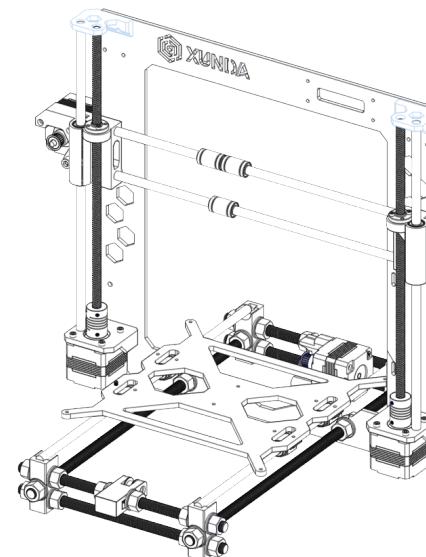
Slide the smooth rods (tige filete 320) through the linear bearings assembled in the printed parts until the motor top surface as shown in the figure.

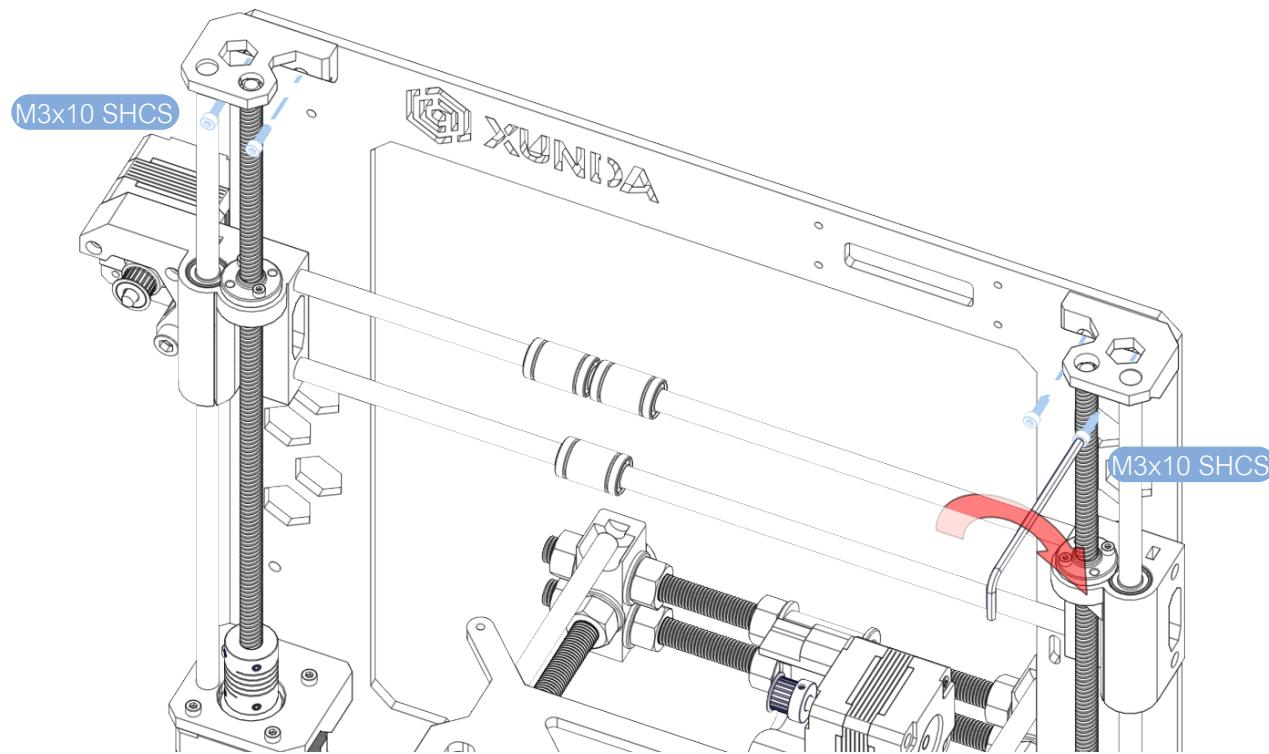


<https://shorturl.at/QlaOO>

### INSERTING Z-AXIS TOP COVERS

Take the z-top covers and align them with the trapezoidal lead screws and the smooth rods, fit them in at the top and their bolt holes made to align with the bolt holes at the frames





### INSERTING Z-AXIS TOP COVERS

Secure the z-top covers on to the frame using M3x10 SHCS with the help of alen keys. Ensure that both the trapezoidal lead screw and the smooth rods are paralell to each other and perpendicular to the x-axis

