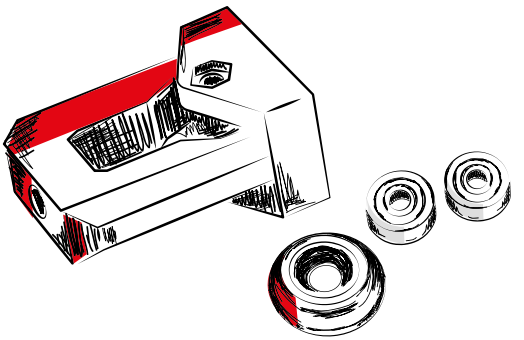
1

First steps



List of components – first steps

2 x Axial ball bearing B623ZZ

2 x Pulley axle X bearing B623ZZ printed part

2 x Pulley axle Y bearing B623ZZ printed part

1 x Axle X right printed part

1 x Axle X left printed part

1 x Axle X tensioner bearing B623ZZ printed part

1 x Axle X carriage A printed part

1 x Axle Y tensioner bearing B623ZZ printed part

1 x Axle Y end-stop printed part

1 x Fan support printed part

1 x LCD support printed part

1 x Hot-End safety cover printed part

17 x Nut M3 - DIN 934 class 8 black

2 x Nut M5 - DIN 934 class 8 black

*You will find the other components mentioned in these first steps in the Electronics box.

Kit Prusa i3 HEPHESTOS

Congratulations! From now on, you are part of the RepRap community.

At bq we have opted for a free model of 3D printer with the aim of making this technology more readily available to all sections of society. We have improved it with our own designs and with those of the community in order to make its assembly and use as easy as possible, without the need for advanced technical knowledge.

All you need is an idea, together with the desire to make that idea materialize. Your HEPHESTOS will take care of all the rest. We believe in a free and creative approach, whose only limitations are set by your own imagination.

We should like to thank you for choosing our Kit, and we invite you to share your experiences with us and with others, in order to participate in this very special community.

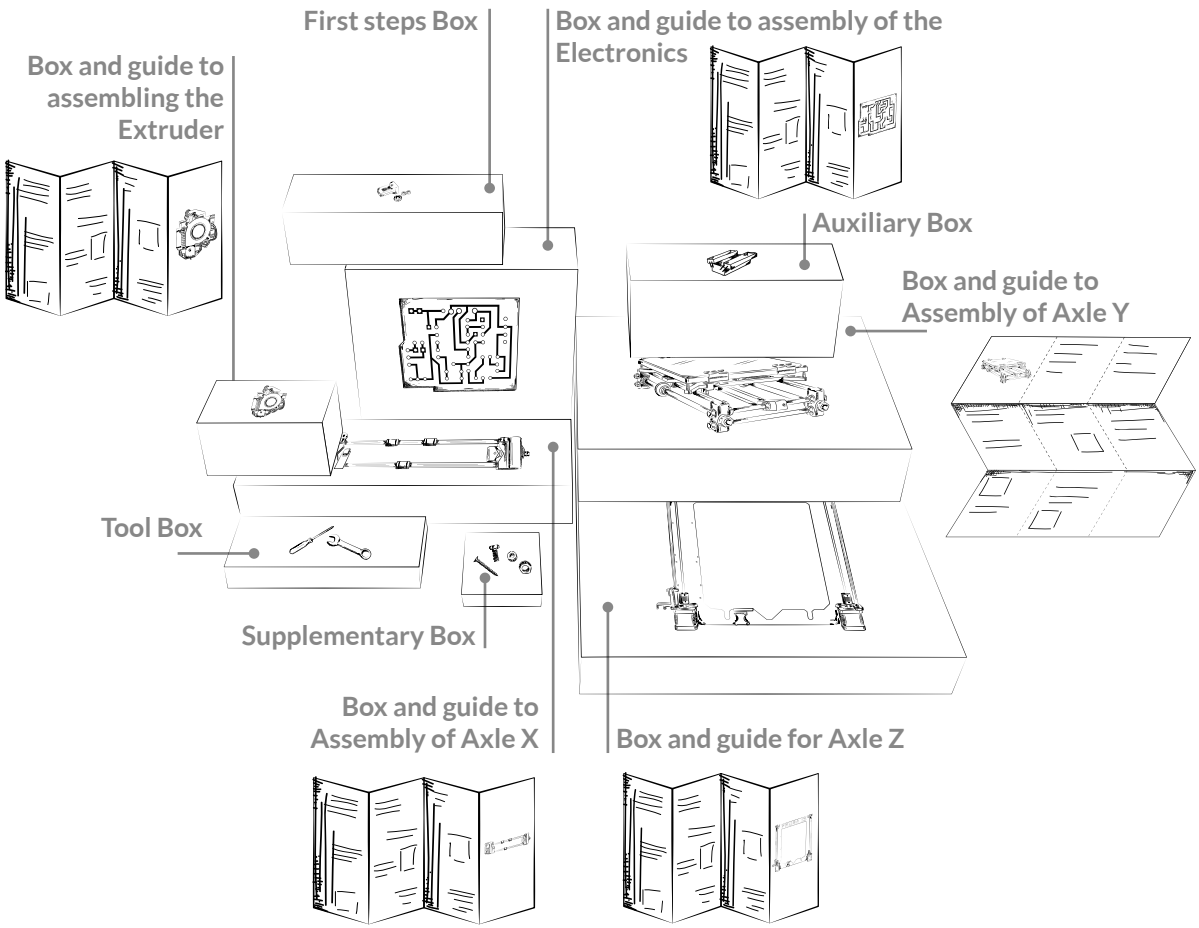
Welcome!

Visit bq.com/gb/products/prusa-hephestos.html

In this link you will find full information about Prusa i3 HEPHESTOS. Download 3D designs of the different parts and updatings of firmware, consult the 3D printing forum, play videos showing how to assemble your printer, etc.

Where to begin

Your Kit is comprised of the following boxes and guides:

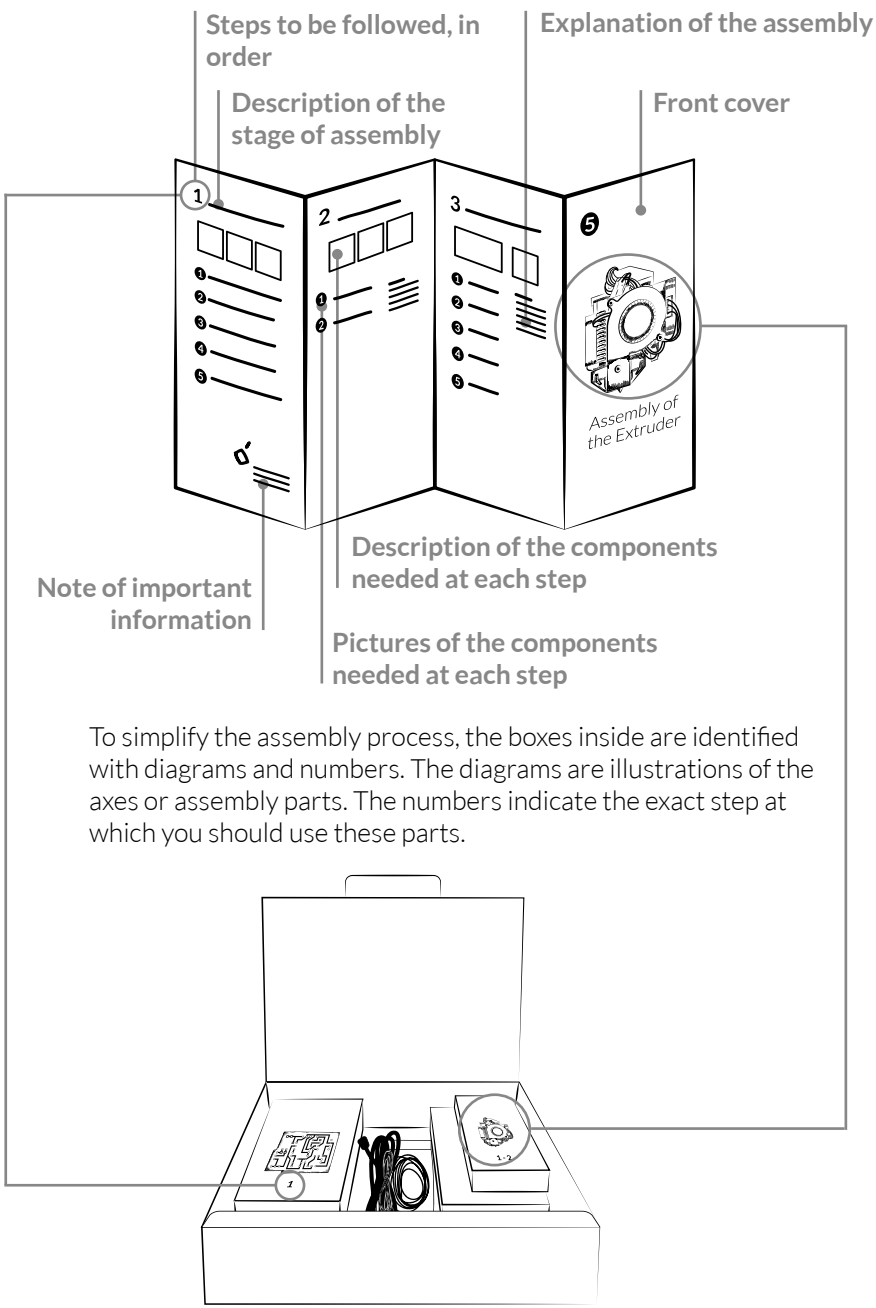


The Kit is divided into boxes and guides which facilitate the assembly of your Prusa i3 HEPHESTOS.

We suggest you follow the steps in the numerical order that appears on the front page of each guide.

Each box contains an illustration identifying the part, which follows the order on the cover page of the assembly manual.

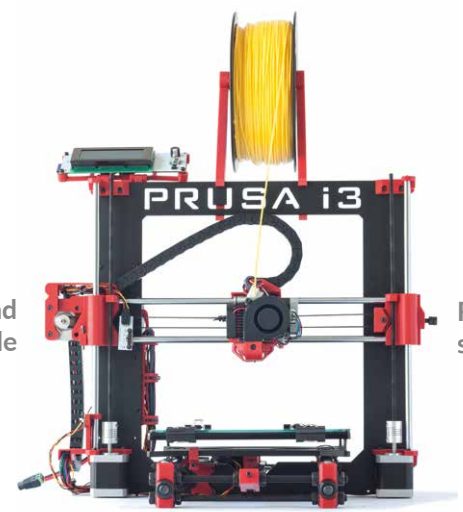
The guides help you to assemble your Prusa i3 HEPHESTOS:



To simplify the assembly process, the boxes inside are identified with diagrams and numbers. The diagrams are illustrations of the axes or assembly parts. The numbers indicate the exact step at which you should use these parts.

System of reference

Left-hand side

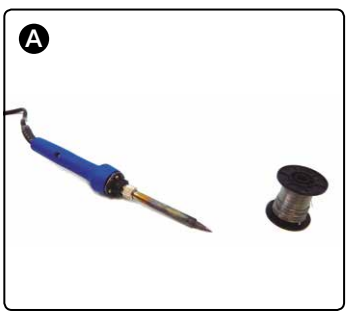


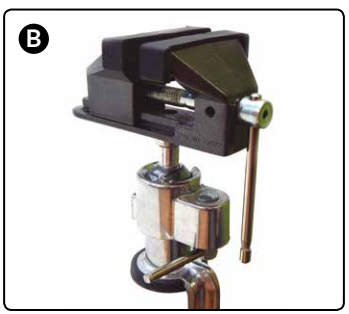
Right-hand side

Front view

During the assembly of your Prusa i3 HEPHESTOS we refer to the positions of the parts. Follow this diagram to position them correctly.

Necessary tools which are not included in the Kit

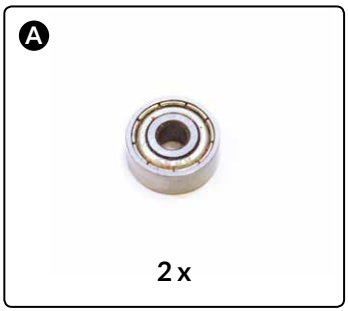


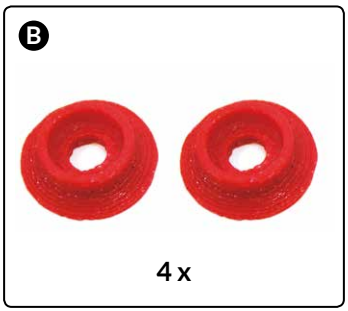


- A Soldering iron and tin
- B Vice
- C Metal file
- D Scissors

Steps prior to assembly

Preparation of the pulleys





A Axial ball bearing B623ZZ

B Pulley axle X and axle Y printed parts

Pulley in which the axial ball bearing is housed.

1.

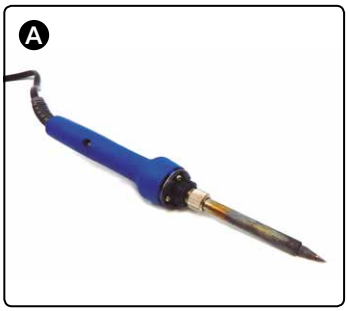
2.

3.

4.

File the edges of the pulley a little, so that the tensioner rotates smoothly inside it.

Fit the nuts

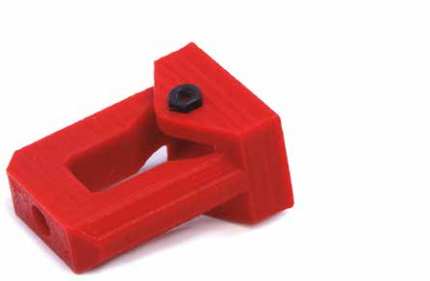


A Soldering iron
Not included.

*When fitting the nut, carefully press with the soldering iron (**3** and **4**); the part melts very easily.*
To avoid burns do not touch the nut after using the soldering iron.

1.

2.



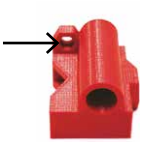
3.

4.

5.

6.

Right-hand axle X printed part



Part at the right-hand end of Axle X, where the belt tensioner is held.

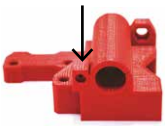
1 x Nut M5

Left-hand axle X printed part

Part at the left-hand end of Axle X, where the Nema 17 motor is held.

1 x Nut M5

Left-hand axle X printed part



Part at the left-hand end of Axle X, where the Nema 17 motor is held.

1 x Nut M3

Axle X tensioner bearing B623ZZ printed part

Tensioner of the Axle X belt where the axial ball bearing B623ZZ is housed together with the pulley.

1 x Nut M3

Axle X carriage A printed part

Carriage of Axle X where the extruder is held, adapted for the use of chains.

2 x Nut M3

Axle Y tensioner bearing B623ZZ printed part

Tensioner of the Axle X belt where the axial ball bearing B623ZZ is housed together with the pulley.

1 x Nut M3

Axle Y end of basic stroke printed part

Part located at the base of Axle Y and incorporating a screw with an M3 nut to adjust the total stroke of the axle. It is complemented by the part which holds the end-stop to the frame.

1 x Nut M3

Fan support printed part

50 x 50 mm Fan support, located above the electronics to cool them correctly.

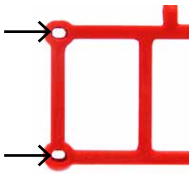
2 x Nut M3

Fan support printed part

50 x 50 mm Fan support, located above the electronics to cool them correctly.

2 x Nut M3

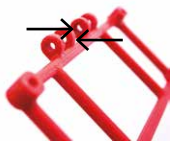
LCD panel support printed part



Support for the LCD panel. The hole for the nuts is longer than usual to help the nut to slide in and position itself correctly when the LCD panel is screwed in.

4 x Nut M3

LCD panel support printed part



Support for the LCD panel. The hole for the nuts is longer than usual to help the nut to slide in and position itself correctly when the LCD panel is screwed in.

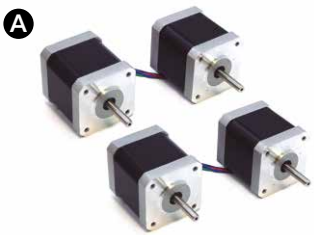
2 x Nut M3

Hot-End Safety cover printed part

This part covers the Hot-End to prevent the user from touching it when it's hot, thus avoiding burns.

1 x Nut M3

Preparation of the motors



4 x

1 x

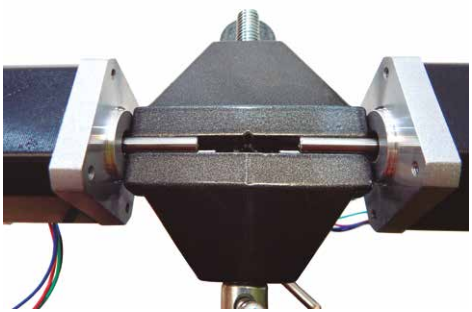
1 x

- **A** Nema 17 motor
- **B** Metal file (not included)
- **C** Vice (not included)

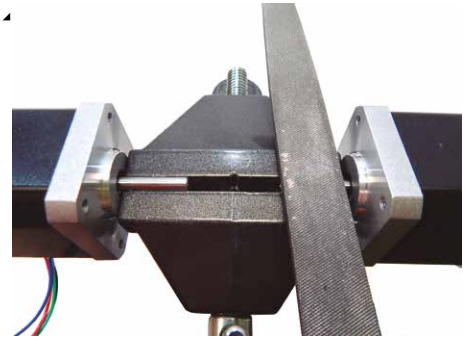
Assembly:

Flatten the axles of the motors so that, later, you will be able to grip the pulleys and flexible couplings.

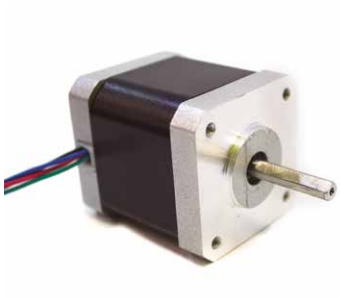
1.



2.

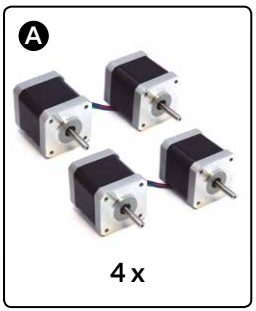


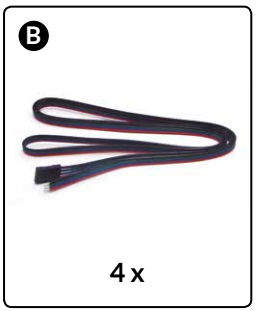
3.

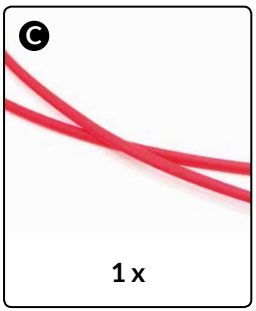


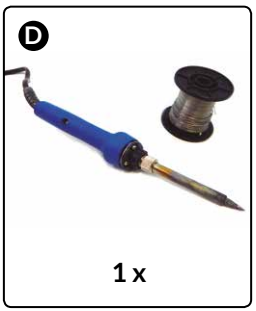
It is necessary to clamp two motors simultaneously to be able to tighten them strongly, without damaging their axles.

Preparation of the motors' cables









A Nema 17 motor

Nema 17 motor (2.5A 1.8 deg/step) with female connector.

B Cable for Nema 17 motor

Four-strand cable for Nema 17 bipolar step motor (2.5A 1.8 deg/step) with female connector.

C Shrinkable tube

Tube of Ø 2.5 x 500 mm.

D Soldering iron and tin (not included)

Motor	Total length of motor (cm)	Length of motor A (cm)	Length of extension B (cm)
X	85	30	55
Y	50	20	30
Z left	45	15	30
Z right	65	30	35

Total length of the cables (from the base of the motor to the end of the connector)

Assembly:

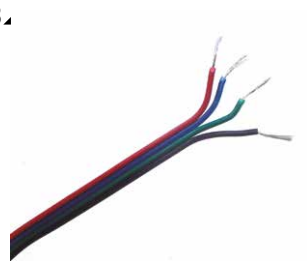
Cut four 2-cm lengths of shrinkable tubing for each of the motor's cables (**4**).

Prepare the motors of Axles X and Y before beginning to assemble the printer, and the motors of Axle Z after assembling it.

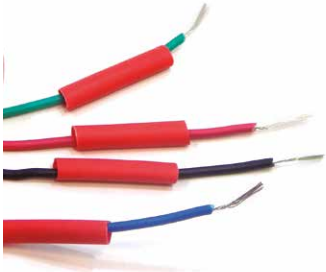
1.

2.

3.

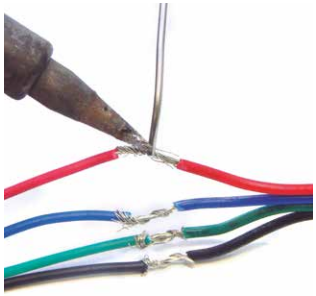


4.

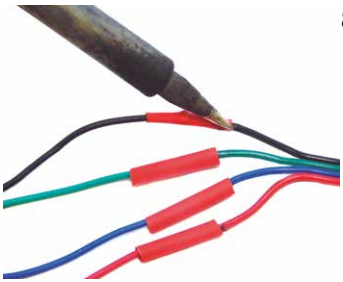


5.

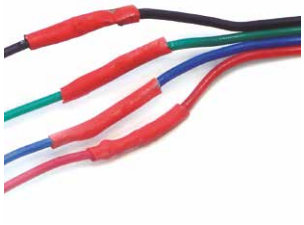
6.



7.



8.

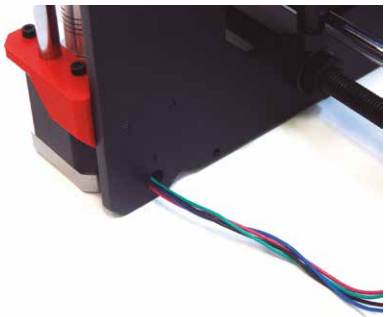


9.

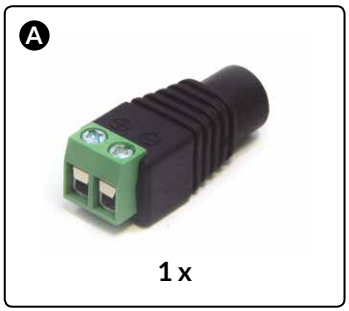
Before soldering the cables of the motors of Axle Z, pass the stripped cable through the hole in the frame.

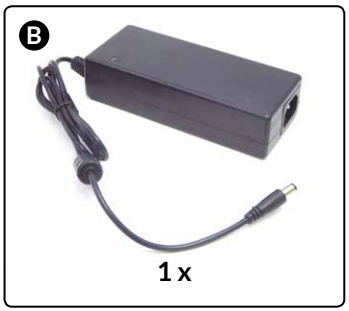
13.

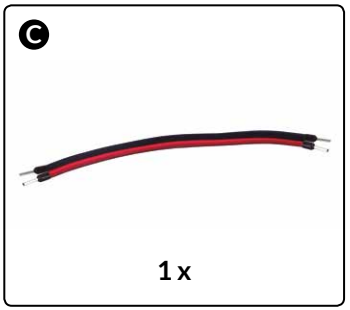
14.



Preparation of the power supply cable







A Adapter/connector Jack

Adapter/connector Jack 2.1 mm female and Ramps 1.4 with two terminals.

B 220 AC 12 DC 100W power supply

Supply with 1.10m cable, 100 W with connector Jack 2.1 mm (INPUT: 100-240V AC 1,8A 50-60Hz and OUTPUT: 12V DC 8.0A).

C 150 mm of flexible, two-strand, bi-colour cable of cross-section 1 mm²

1.

2.

3.

4.

Connect the red cable to the terminal with the ' + ' symbol and the black cable to the terminal with the ' - 'symbol.