

LEGO inspired

MAXI-Figure - Version 1

for Lego Enthusiasts

This started as a father and son project along with the challenge to design and build a 4:1 mini-figure which we called a MAXI-Figure. This is Version 1 in which we learnt some things about our design and how to improve him as the front chest plate and a few other elements need a little refining but this dude is cool and a great first design.



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1. Purchase your Parts

All parts are purchased directly from iMaterialise in Belgium and soon via Shapeways, though iMaterialise is a better price overall - please use the links below:

[iMaterialise](https://i.materialise.com/en/shop/search?query=maxi-figure)

<https://i.materialise.com/en/shop/search?query=maxi-figure>

These are the parts that you will be ordering to build a MaxiFigure:

- 1 x head
- 1 x waist
- 1 x set of arms
- 1 x chest & chest plate
- 1 x set of legs
- 1 x set of hands

When ordering you will have many choices of colours and a few more from iMaterialise. If you purchase more than 1 of something iMaterialise gives you a slightly better price.



You will also need the following hardware:

- 1 x M4 x 12mm Allen headed button screw & 1 x M4 Washer (Head to Body)
- 2 x M4 x 10mm Allen headed button screws & 2 x M4 Washers (Waist to Body)
- 2 x M4 x 12mm Allen headed button screws & 2 x M4 Washers (Arms to Body)
- 2 x M4 x 12mm Allen headed button screws (Legs to Waist)
- 2 x M4 x 20mm threaded rods / bolts with no heads / long grub screw (Hands to Arms)

You will also need the following Lego parts:

- 1 x 6x2 Lego plate
- 3 x 3x2 Lego Plate

You will also need the following tools:

- 2.5mm Allen key
- 4 x 0.7mm tap
- Tap wrench or a cordless drill to tap the holes
- A pair of side cutters
- Hobby Knife

Note: If you are in the US you can source metric bolts etc from places like or you can run an appropriate pilot drill through the holes and tap with an imperial thread and use imperial fasteners. This is something you do at your own risk as designed for metric hardware.

2. Part Preparation

Firstly 4 of the 6 parts are joined with little branches in which I tried to put in areas where once cut you would not see the internal print colour as everything is printed white and then dyed by the company. Also compared to home printers these are printed on high end machines and are solid filled and will be very robust once built. They are joined to save a little on printing costs.

These items that need to be separated are:

- Arms



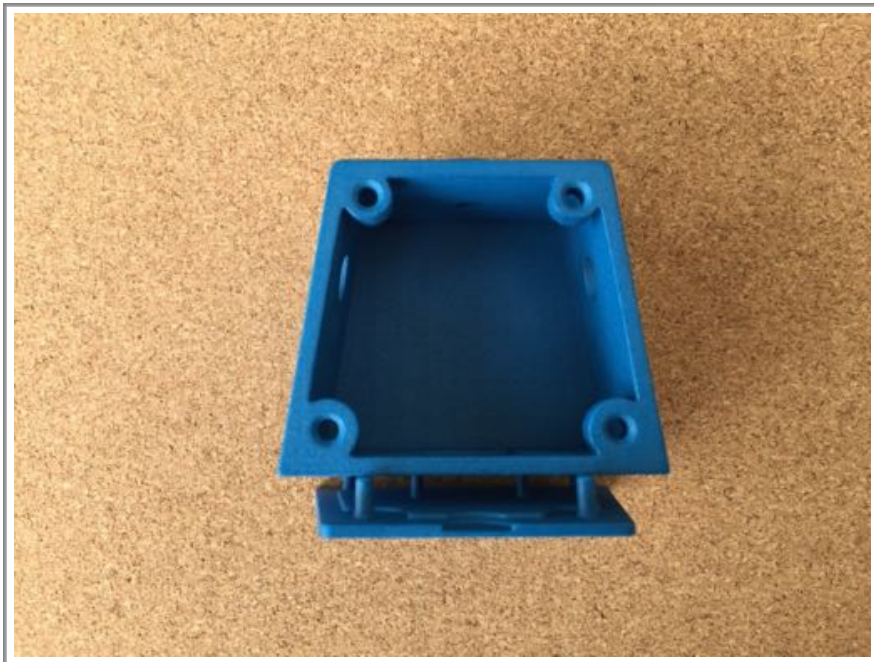
- Hands



- Legs

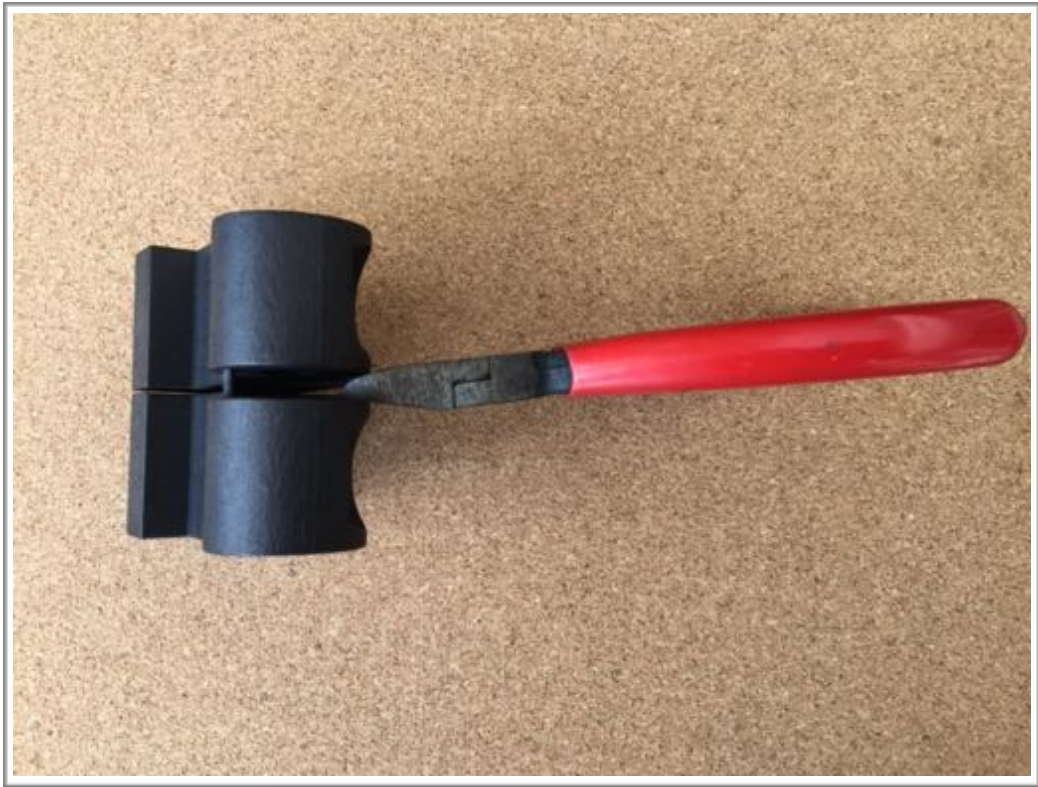


- Chest and Chest Plate



You will need some side cutters or a sharp hobby knife. Please adults perform any work with sharp tools - do not let kids handle sharp tools. Once separated use the sharp knife to remove the small joining branches. The following images showing this step.







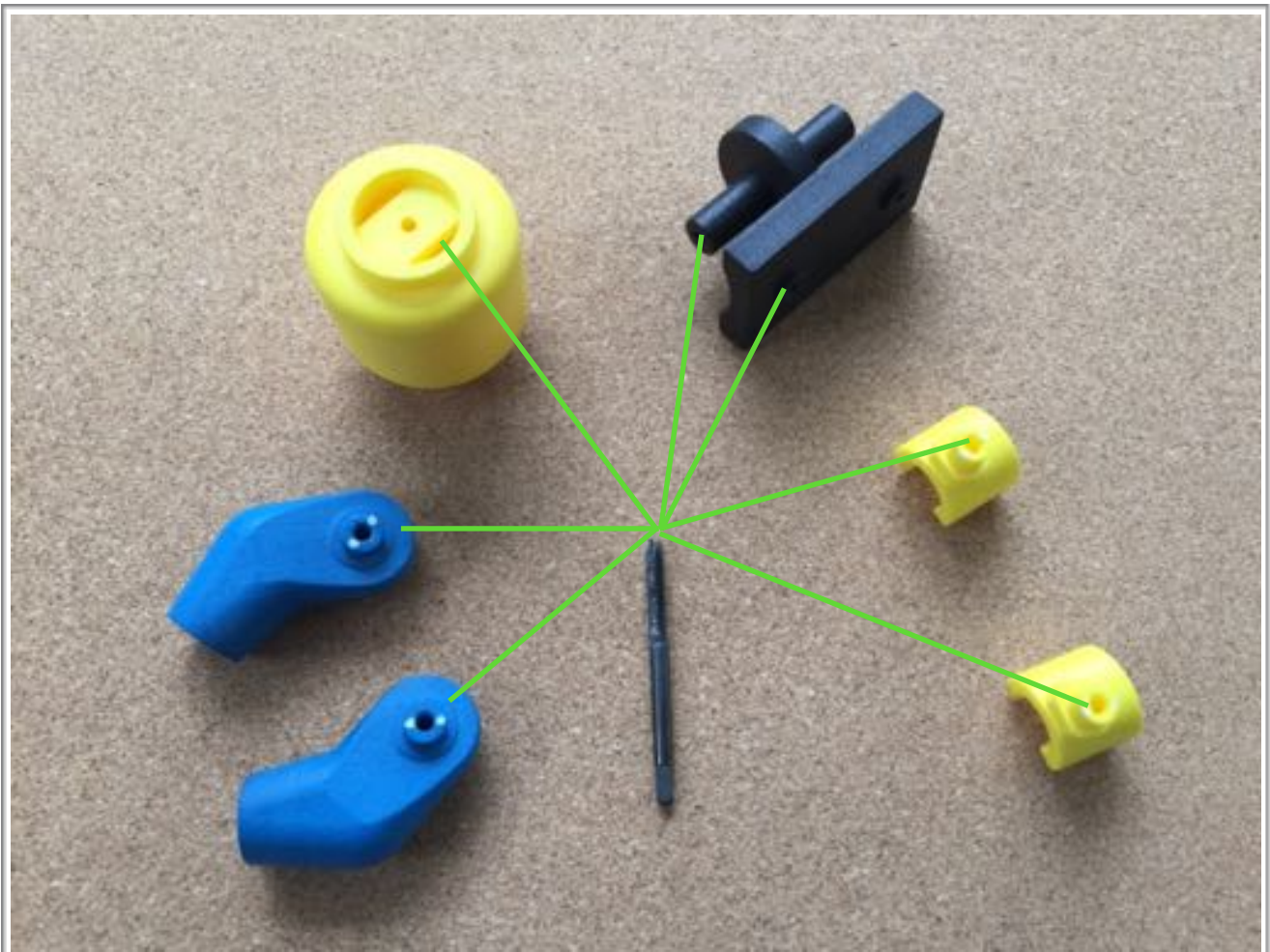




So after separating the parts we are ready to tap a few 4mm threads in the below shown locations:

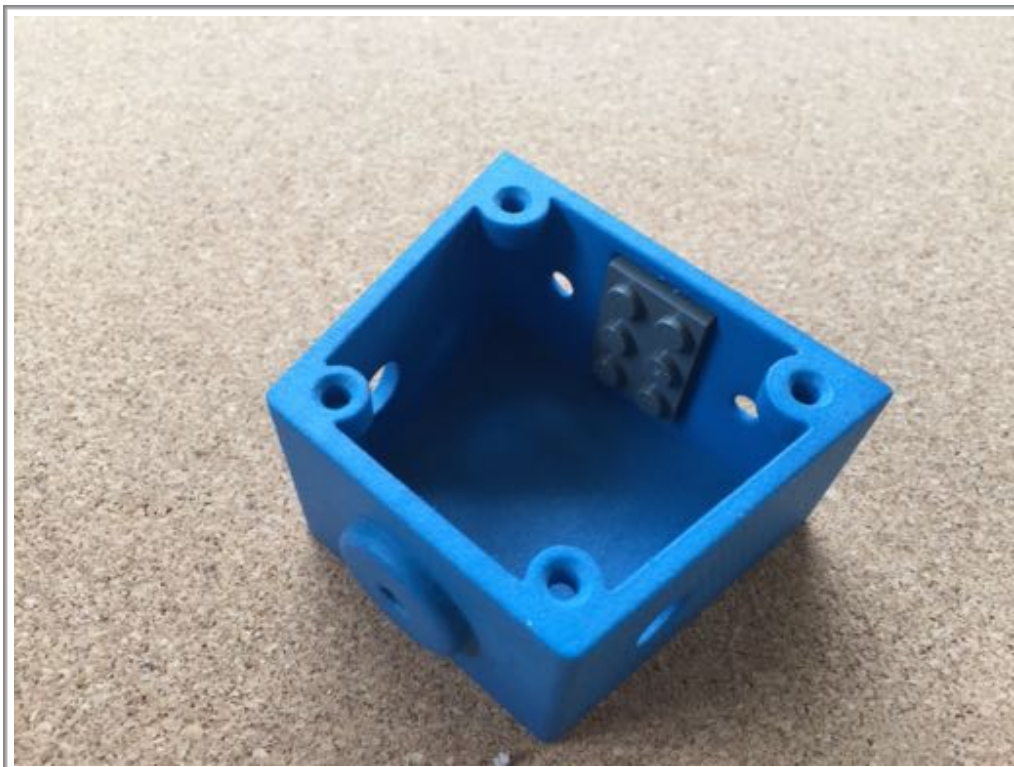
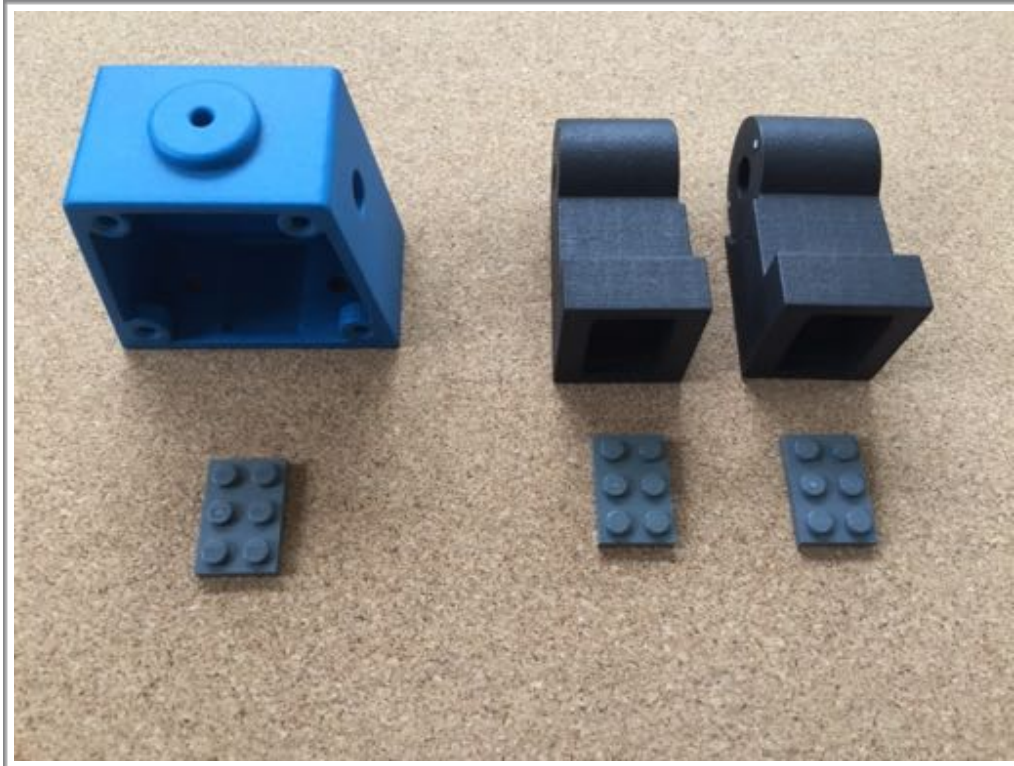
- Shoulder joints of arms
- Wrists of arms
- Head at the neck
- Leg joints of Waist
- Body to Waist
- Wrists of Hands

In total you need to tap a thread in 11 places.

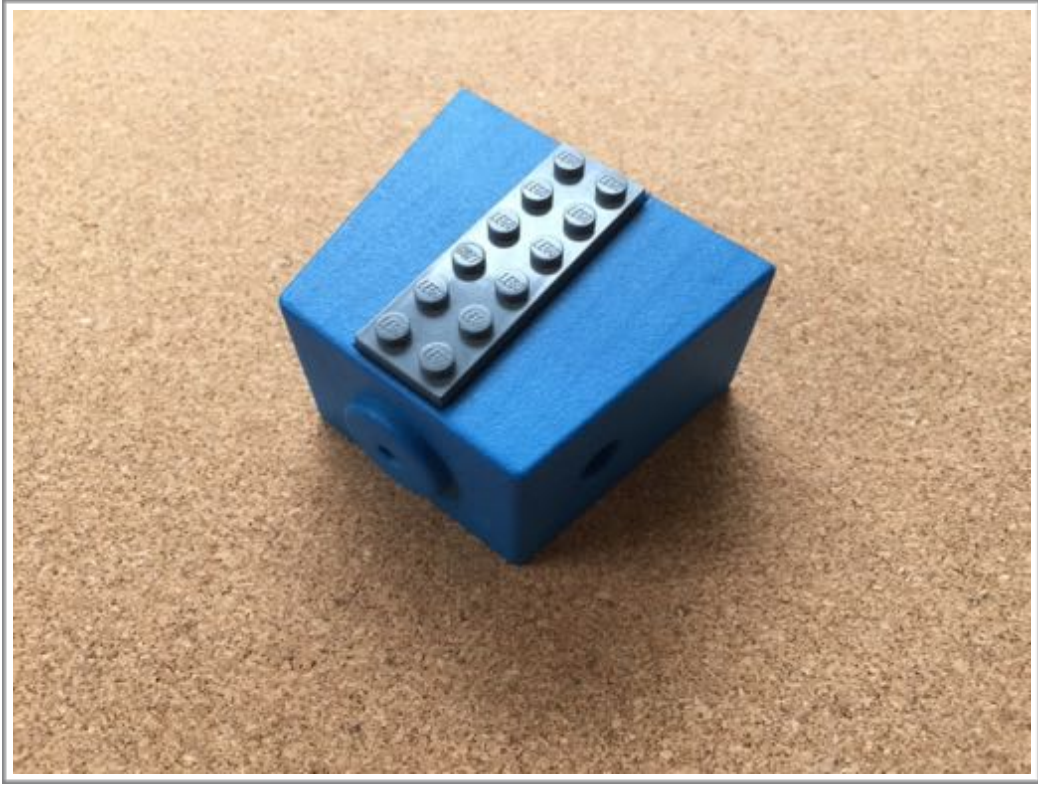


Then before assembling use either a 2 part epoxy glue or hot glue to glue in your lego plates. These plates will allow you to add accessories to your Maxi-figure like Jet Shoes, Back Pack or even a Mini-figure that is the controller of your Maxi-figure.

- 3x2 plate goes inside the body
- 3x2 plates go in the bottom of the feet
- 6x2 plate goes on the back of the body







Now it is assembly time:

- Screw the allen headed M4 thread rod / bolt without a head / long grip screw into the wrists of the arms with just approx 1mm sticking out
- Screw the hands onto the allen headed M4 thread rod sticking out of the wrists.

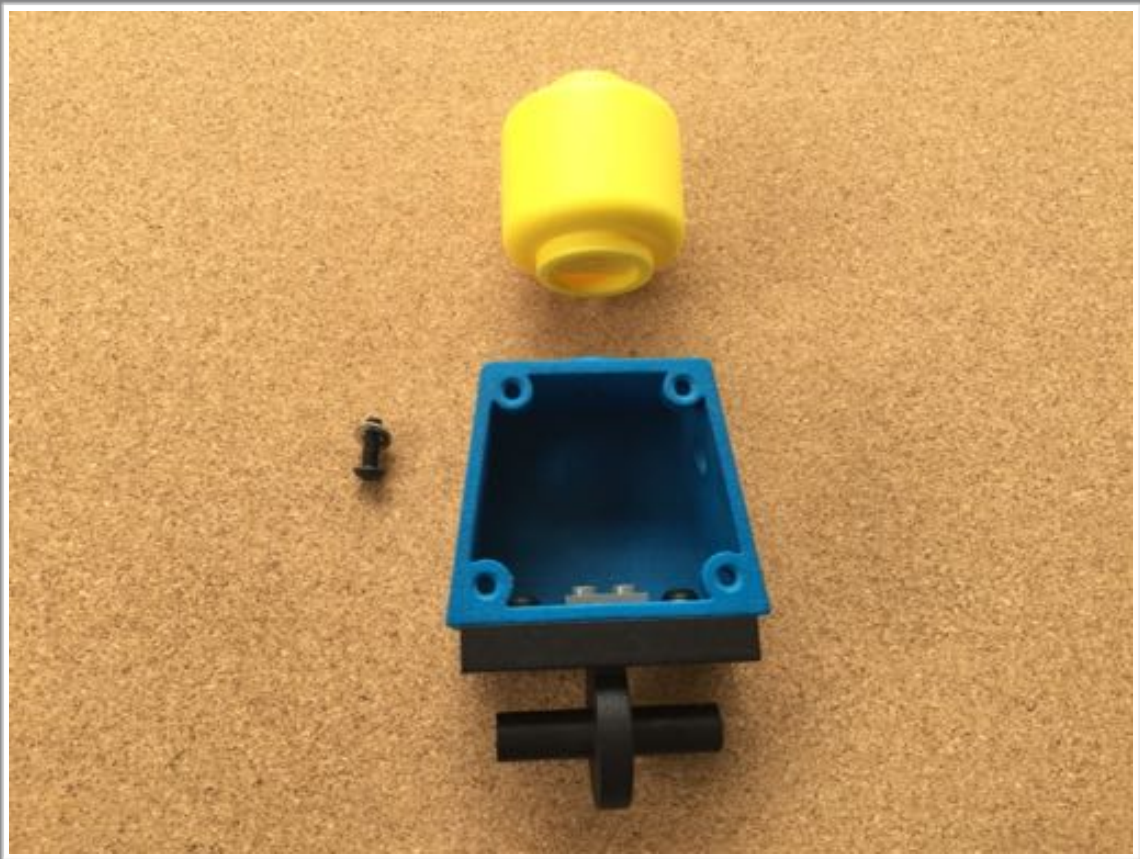




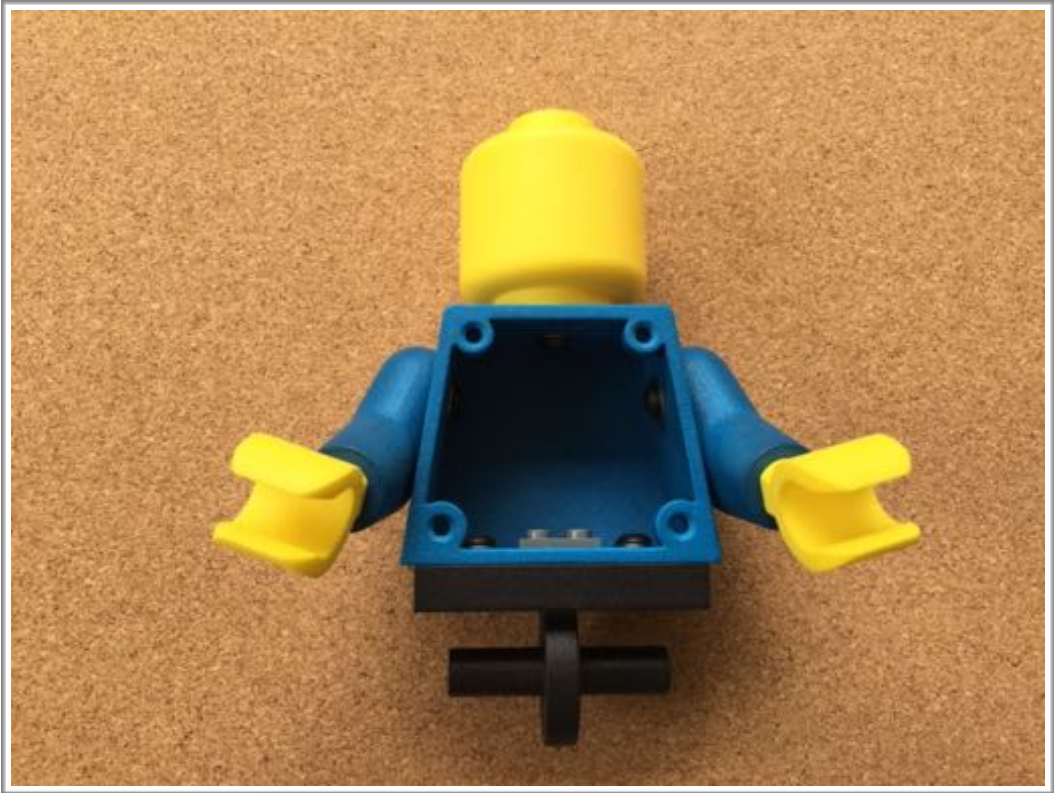
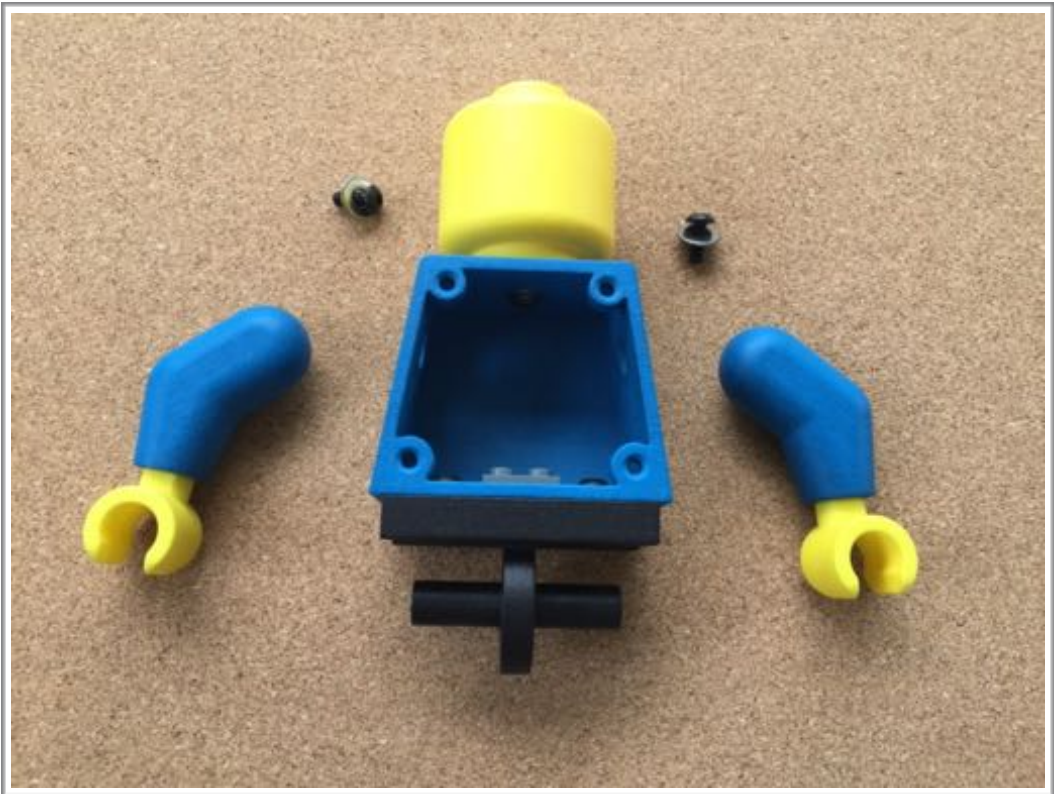
Now you are ready to fit theist to the body. The bolts are fitted through the body into the hips which is a little tricky to do but take your time and it is doable.



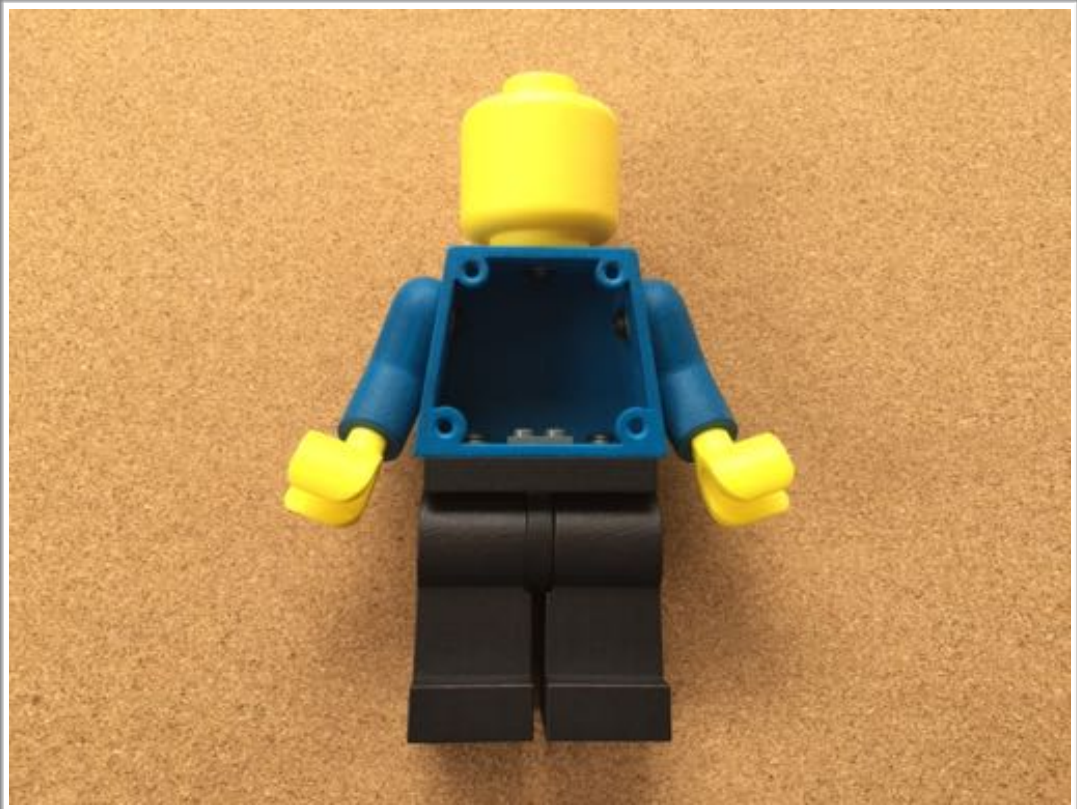
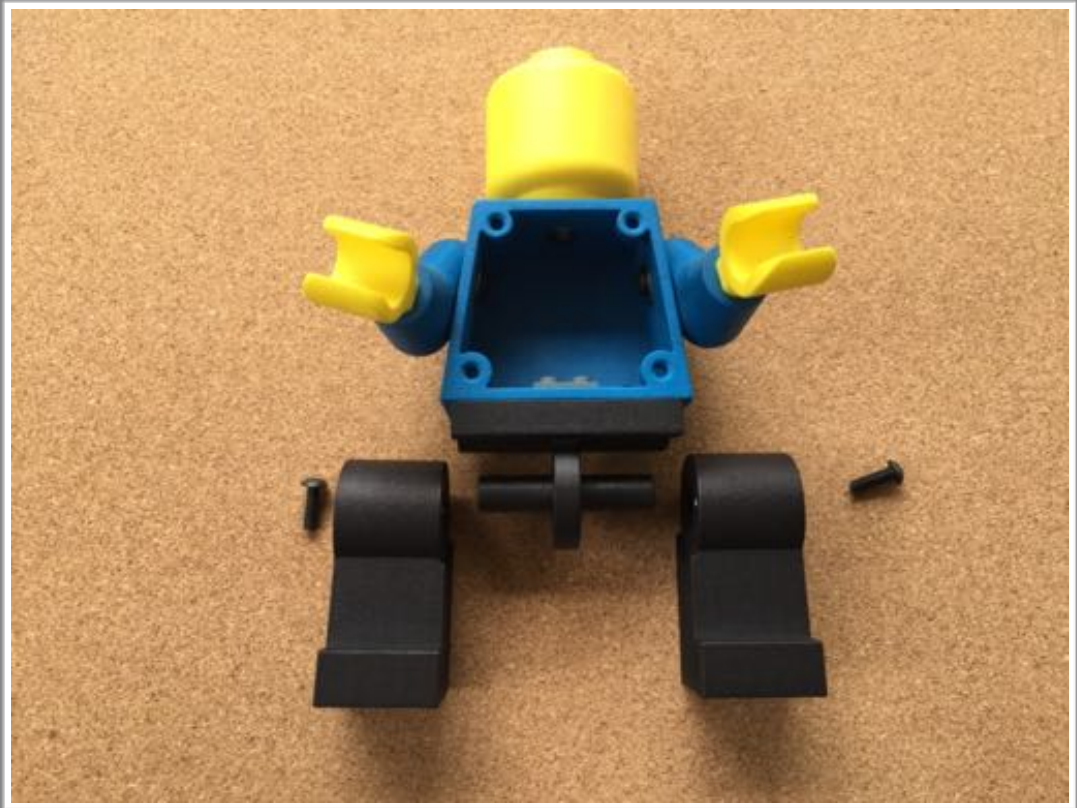
Next is fitting the head which also a little tricky as bolted from within the body up into the neck of the head.



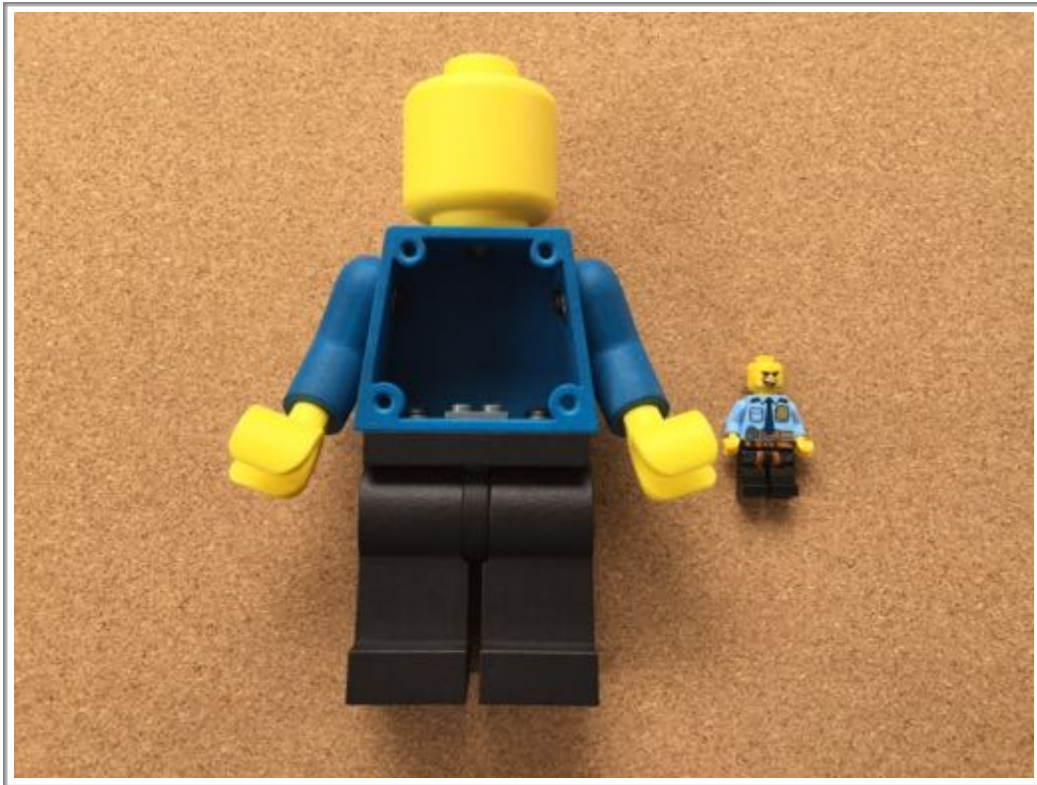
Now for fittings the arms to the body from inside the body.



Now time for the fitting the legs to the waist which is done from the out side.



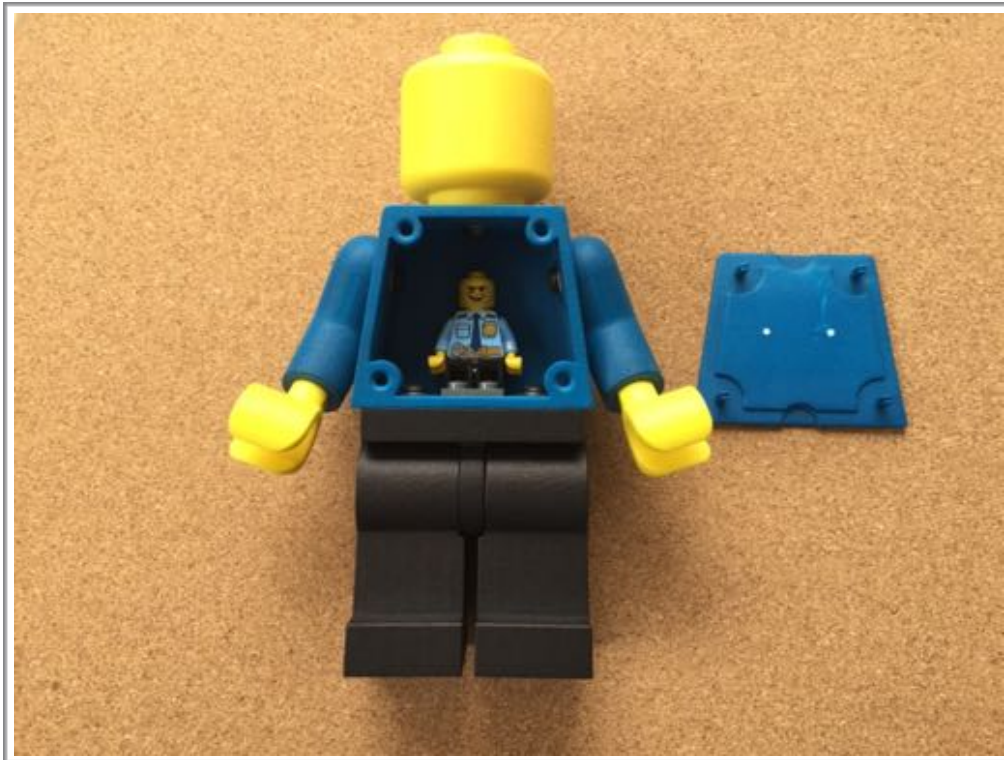
Here is the size comparison and why we chose the colours we did.



And your mini-figure can sit or stand on the plate inside the body.

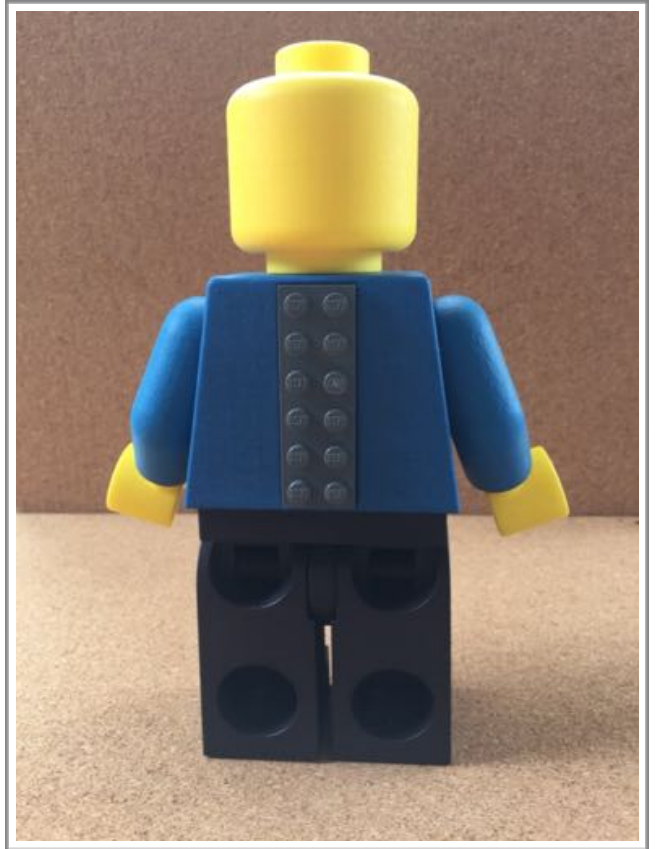


Lastly you can install the chest plate with the pins to the matching aligned holes in the chest. This component is not perfect and a tad loose. We plan to design a flip down chest plate on the version 2. And unfortunately you do see the pin marks on this part.



Here is the Maxi-figure in his completed state.





Version 2

We will be soon working on Version 2 but will take a number of months to create, get the parts, assemble and do a manual for. The items we hope to upgrade are:

- Slight improvements in the assembly - bolt access.
- Different chest plate mechanism.
- Hands to have adaptors to fit certain lego parts.
- Sticker for the head to show a face.
- And possibly a helmet of some sort.

We do specialise in pinball parts and this project was a fun one to share with people and maybe other people can enjoy the build and share with us your creations, colours, accessories to feet and back - send us some pictures to:

swinks.pinball@gmail.com

This is a Do It Yourself build so there is no return etc, but have fun and watch your kids play or Enjoy for yourself in you Lego Creations Display.

PRODUCT QUALITY DISCLAIMER:

All parts are made to the highest quality possible. All the parts are professionally 3D printed by Shapeways and iMaterialise using SLS nylon / MJF nylon processes with some minor print lines or which is part of the process.