Une image contenant objet

Description générée automatiquement *Ultrasonic sensor: Test bench’s Procedure*

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*Documentation Management*

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*Category of discipline:* **Engineering**

*Status:* **Draft**

***Approval table***

|  |  |  |  |
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*Change Record*

|  |  |  |
| --- | --- | --- |
| *Version* | *Date* | *Reason for change* |
| *1.0* | *4/03/2020* | Creation of document by Thomas Gouvernel & Florian Maley |
|  |  |  |

*Equipment required*

|  |  |
| --- | --- |
| ***K-12*** | Une image contenant noir, outil  Description générée automatiquement |
| ***Soldering iron*** | *How do you cut holes in plastic tubs? - Mushroom ...* |
| ***Crimping tool*** | *plumbing - What is the advantage of PEX pinch clamp vs ...* |
| ***Stripping pliers*** | *soldering - Why isn't stripping wires by burning with a ...* |
| ***Wire cutter*** | *Fabriquer ses anneaux de cotte de mailles | TROLLCALIBUR* |

*Equipements provided*

Une image contenant mur, intérieur, blanc

Description générée automatiquement

* ***20 flat washers***
* ***12 Nuts***
* ***2 Long threaded shaft***
* ***2 Short threaded shaft***
* ***4 Feet***
* ***1 Stepper motor***
* ***1 Base***
* ***1 Sliding base***
* ***1 Timing belt***

*Equipements provided*

*Une image contenant mur, intérieur, équipement électronique

Description générée automatiquement Une image contenant mur, équipement électronique, intérieur, appareil photo

Description générée automatiquement*

*Ultrasonic sensor*

*Temperature sensor*

Une image contenant équipement électronique, circuit

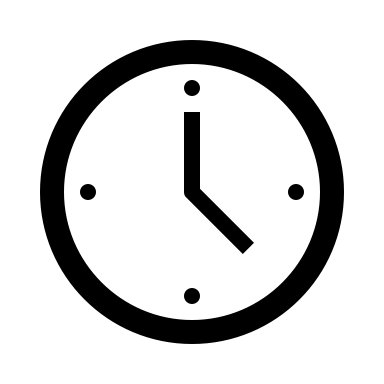
Description générée automatiquement *Une image contenant mur, équipement électronique, intérieur

Description générée automatiquement*

*PCB (Printed Circuit Board)*

*Arduino Uno board on the support*

***Assembly Procedure Step by Step***

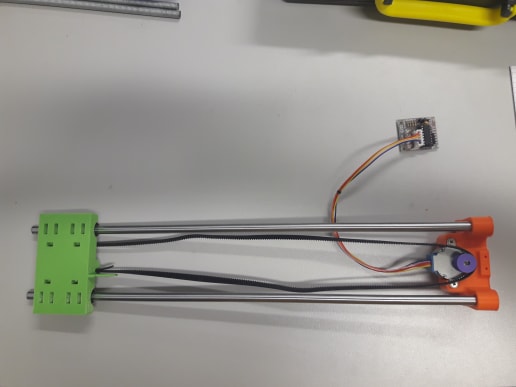
 *Estimated Time: 2H*

Une image contenant route

Description générée automatiquement

***Assembly Procedure Step 1/14***

1. *Slide the sliding base in the two shafts of the base*



***Assembly Procedure Step 2/14***

1. *Nest the two shafts in the red support, then anchor the timing belt between the pulley and the engine pulley*

Une image contenant intérieur, mur, plancher, assis

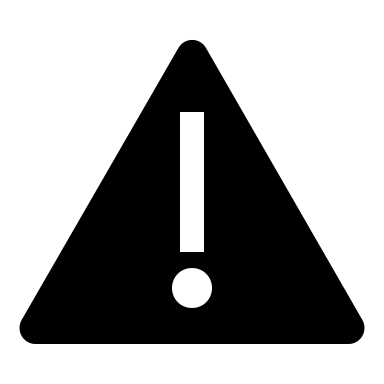
Description générée automatiquement

***Assembly Procedure Step 3/14***

1. *With the short thread shaft, go through the red support.*

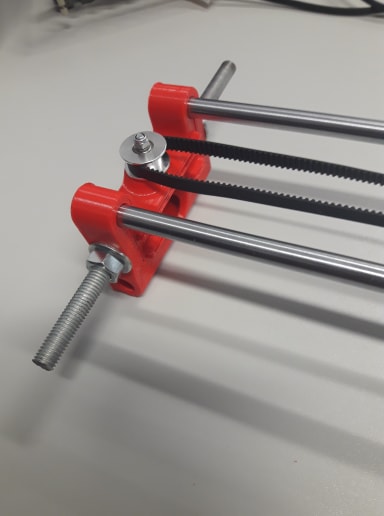
Une image contenant intérieur, mur, assis, rouge

Description générée automatiquement

**The thread shaft should be centered

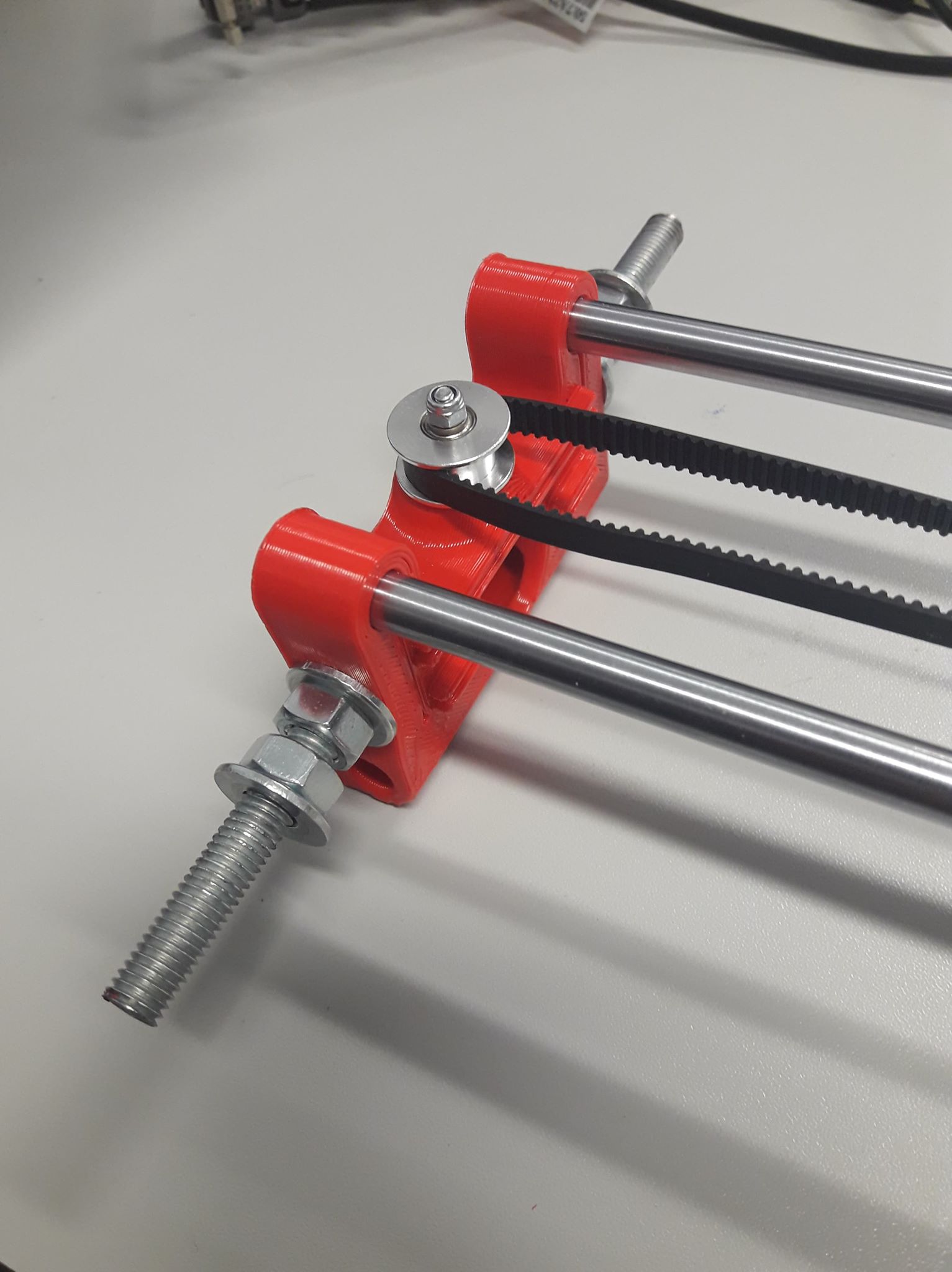
***Assembly Procedure Step 4/14***

1. *Add in this order, a flat washer and a nut on each side of the thread shaft.*



***Assembly Procedure Step 5/14***

1. *Then, in this order, add a nut and a flat washer on each side of the thread shaft.*



***Assembly Procedure Step 6/14***

1. *Add a foot on each side of the thread shaft and close it with a flat washer and a nut.*



***Assembly Procedure Step 7/14***

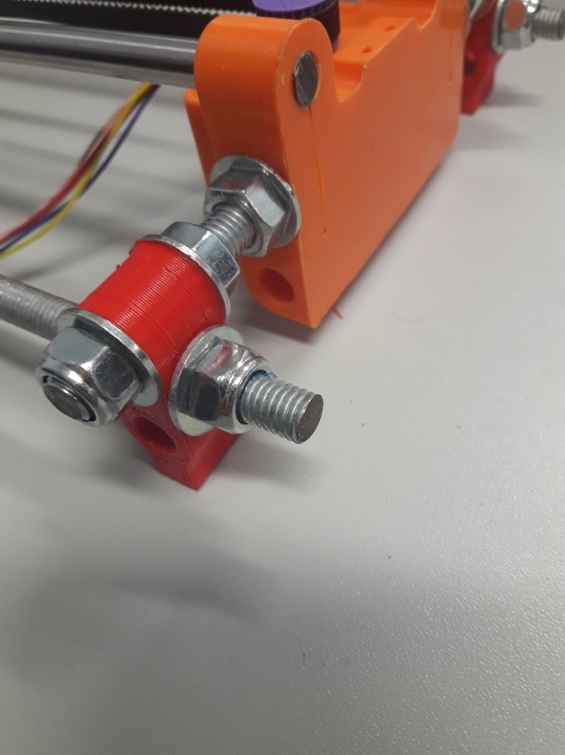
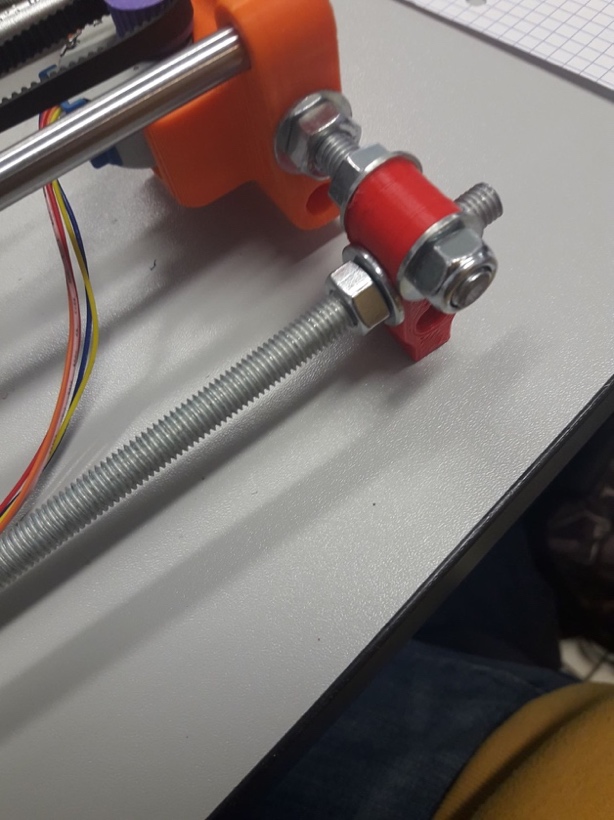
1. *Reproduce steps 1 at 6 on the other side of the test bench, the engine support.*

Une image contenant intérieur, table

Description générée automatiquement

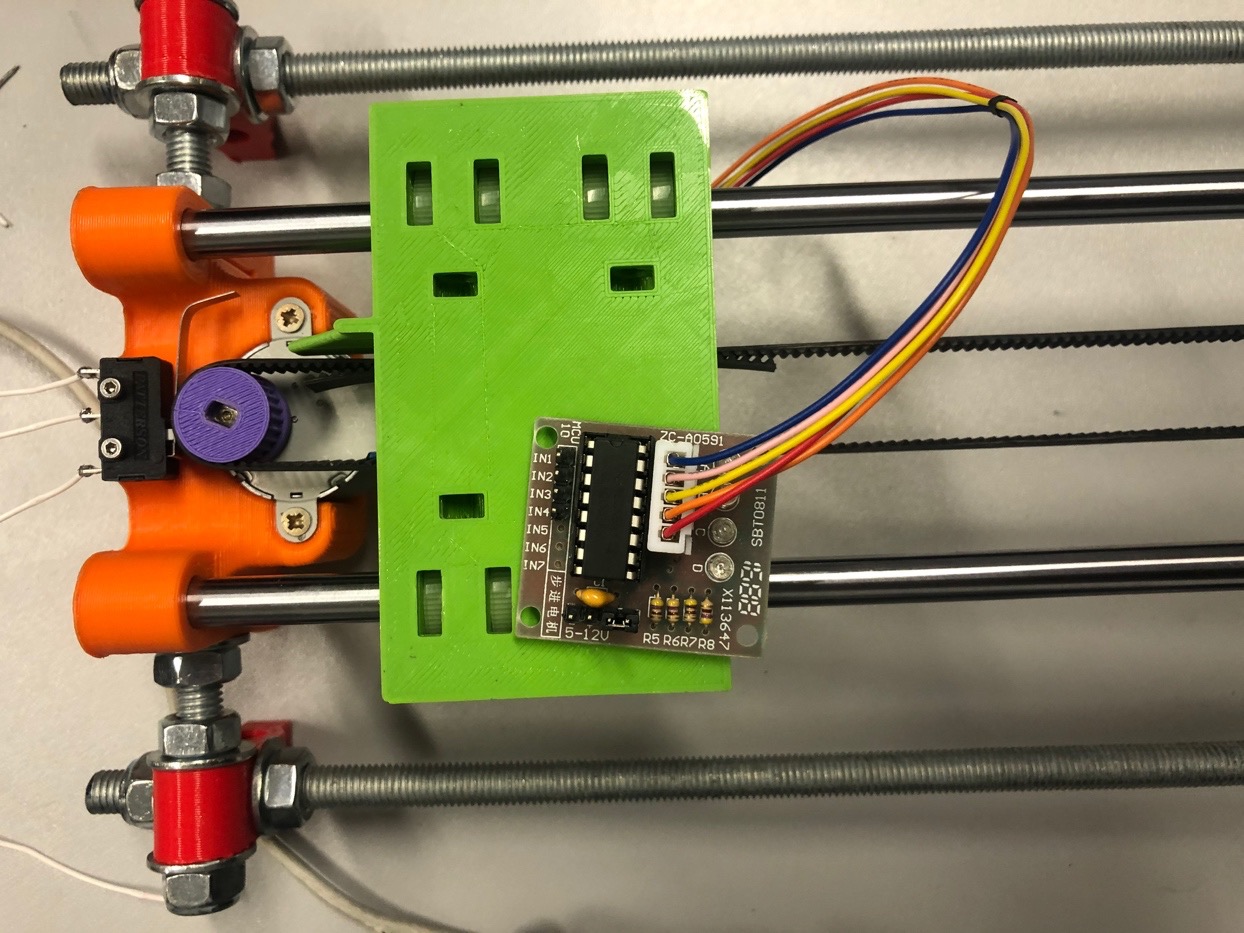
***Assembly Procedure Step 8/14***

1. *Link the two parts of the test bench: On the two lateral side of the test bench, slide a long thread shaft in the two opposite feet, then add in this order a flat washer and a nut.*



***Assembly Procedure Step 9/14***

1. *Connect the engine to the PCB*



***Assembly Procedure Step 10/14***

1. *With the wire cutter, cut 4 wires. Then use the stripping pliers on each extremity of wires.*

Une image contenant intérieur, mur, salle de bain

Description générée automatiquement

***Assembly Procedure Step 11/14***

1. *On only one extremity of wires, use the crimping tool. On the other extremity of wires, use the soldering iron to tin wire’s end*.

Soldering iron 330°C

Crimping tool

Une image contenant intérieur

Description générée automatiquement Une image contenant intérieur, mur, métal

Description générée automatiquement

***Assembly Procedure Step 12/14***

1. *When the 4 wires are crimpered, they must lock in the black connector with a distinct click.*

Une image contenant mur, bâtiment, intérieur

Description générée automatiquementUne image contenant intérieur, équipement électronique

Description générée automatiquement

***Assembly Procedure Step 13/14***

1. *Restart steps 10 at 12 and connect the second black connector to the ultrasonic sensor.*

Une image contenant équipement électronique

Description générée automatiquement

***Assembly Procedure Step 14/14***

1. *For finish, respect the wiring diagram.*

Une image contenant équipement électronique, circuit

Description générée automatiquement