Assembly instructional manual for Fairembo (mechanical part)

Prepration

Step 1 : Assemble all the holding parts with M4 nuts

Insert the M4 nuts into the nut pattern (indiqued by red arrow) of each components showed below, using a hammer or pressing by hand.

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| Name of components | Number of this components | Number of nuts needed |
| \*Guide stop | 2 | 4 |
| \*Guide support | 2 | 4 |
| \*Left Arduino holder | 1 | 1 |
| \*Right Arduino holder | 1 | 1 |
| \*Try Square | 8 | 8x3=24 |
| \*Wire positioning piece | 1 | 2 |
| \*Driver holder | 1 | 2 |
| \*Blade holder (bottom view) | 1 | 2 |

Sub-assembly

Step 2: Assemble the sub-assembly parts

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| Assembly of extruder mk8 with stepper motor Nema 17 | | |
| Components needed: Extruder mk8 kit, nozzle, bearing 625zz, Stepper motor M1 | | |
| Assembly view | Process | Result |
| \*Extruder base (bottom view) | \*Screw the nozzle into the hole by hand (indicated by red arrow) |  |
|  | \*Place the extruder base like image showed, and fix it together by machine screw (in extruder mk8 kit), using a screw driver |  |
| Bearing 625zz  Lever | \*Fix the Bearing 625zz (blue arrow) with lever by a Pan Head Screws (in extruder kit), using a screw driver  \*Fix the lever with stepper motor (red arrow) by a Socket Head Screw (in extruder kit), using a wrench hexagon |  |
|  | \*Place the cogwheel (in extruder kit) on the axe of the stepper motor (red arrow 1.)  \*Adjust the position until most part of the cogwheel’s teeth make contact with the bearing 625zz  \*Fix the cogwheel by 2 Set Screws (in extruder kit), using a wrench hexagon (red arrow 2.) |  |
|  | \*Insert the spring (in extruder kit) and 3 washers of M4 between lever and the base of extruder (framed in blue rectangle), and fix it by 2 screws (in extruder kit) manually  Attention: the bottom screw shouldn’t screw too much inside, leave at least 7.85mm outside! |  |

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| Assembly of blade holder | | |
| Components needed: Cylindrical bushing, Moving blade, Blade holder, Ball bearing 608zz, Spring, Blade, Blade Spring | | |
| Assembly view | Process | Result |
|  | \*Insert 4 cylindrical bushings to the 2 axial holes likes the red arrows from both front and behind manually  Attention: 2 cylindrical bushings for 1 axial hole! |  |
|  | \*Insert Ball bearing 608zz to the indicated blue zone |  |
|  | \*1. Insert the M6 screw with M6 washer through the center hole of bearing and blade holder  \*2. Fix the M6 locknut with M6 washer and M6 screw manually  Attention: Make sure that the M6 locknut is neither too tight, nor too loosened with M6 screw! |  |
|  | \*Put the blade spring like the image on the left and make sure the cylindrical part is central with spring |  |
|  | \*Put the blade on top of the blade holder and make sure the holes are central with the holes on top  \*Remain pressing manually on top of the blade like the image on the right  Attention: Blade should be placed in the right direction |  |
|  | \*At the same time, insert 2 M4 x 40 screws through the holes like image on the left  \*Screw those M4 screws tight using a wrench hexagon |  |

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| Assembly of cutting system | | |
| Components needed: Assembly of blade holder, Blade, Stepper motor 2, 2 Blade support springs, 2 Guide rod, Motor support plate, Cam, 2 Guide supports,2 Guide Stops | | |
| Assembly view | Process | Result |
|  | \*Insert each Guide rod to the hole of each Guide stop manually or using a hammer  Attention: make sure the rod is fix with guide rod tight |  |
|  | \*Insert manually each previous sub-assembly to each hole of blade holder’s assembly  Attention: make sure the the blade holder is in the right way |  |
|  | \*Insert manually 2 Blade support springs likes the image on the left (blue component) |  |
|  | \*Insert manually each Guide support likes the image on the left and adjust their position in the rod |  |
| \*Bottom view | \*Place the Motor support plate on top  \*Fix them together with 8 M4 x 12 screws and 8 M4 washers using a wrench hexagon  Attention: 1. Make sure the Motor support plate on top is facing in the right direction  2. Adjust the position of the Guide supports until their facing the right hole  3. There are 8 holes to fix in total (position indicated by blue arrows) | \*Top view |
| \*Top view | \*Place the Blade on top of the Motor support plate like the image on the left |  |
| \*Top view | \*Fix the Blade with the plate together by 2 M4 x 12 screws, 4 M4 washers and 2 M4 locknuts using a wrench hexagon  Attention: When fix them together, you should screw manually the locknuts to the screw first, then lock the locknut using a plier in place from bottom, and screw the M4 screw tight using a wrench hexagon from top | \*Bottom view |
|  | \*Mount the Stepper motor into the indicated hole(blue) manually |  |
|  | \*Fix the Stepper motor and Motor support plate with 4 M3 x 10 screws and 4 M3 Washers, using a wrench hexagon (Positions indicated by blue arrows) |  |
| Cam  HC Screw | \*Mount the cam into the axe of Stepper motor manually (red arrow)  \*Fix them together with a HC Screw M4 x 8, using a wrench hexagon (orange arrow)  Attention: The HC screw should aim to the flat surface on axe of Stepper motor |  |

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| Assembly of Structure (Box assembly) | | |
| Components needed: Front Plate, Back Plate, Right Plate, Left Plate, Right Plate, Inner Plate, Bottom Plate, Top Plate, Motor support Plate, High Magnet holder Plate, Front Magnet holder plate | | |
|  | Assemble Bottom Plate with Inner Plate, Right Plate |  |
|  | Assemble Top Plate, then Back Plate |  |