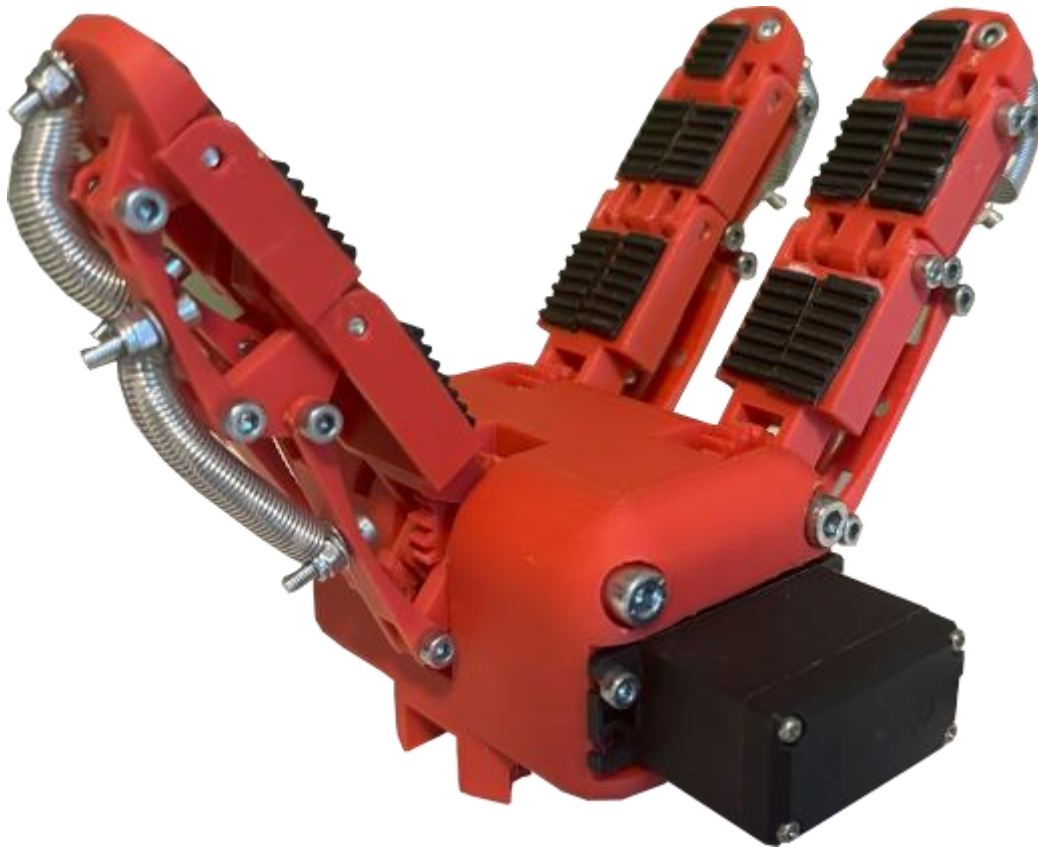


Assembly guide:

3 finger gripper



Version 1.0

Date: 26-7-2024



Revision:

REV	Date	Description
1	26-7-2024	First release



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1: Introduction

This document will describe how to assemble the 3-finger gripper for the robot arm Miko-1. Because this is the first version of Miko-1, there might be some imperfections. We will try to resolve these as soon as possible. We apologize for any inconvenience you may encounter. If you find any mistakes in this document, please let us know by emailing info@mikobots.com.

Instructions on how to use the robot arm Miko-1 and the tools can be found in the manual of the Miko-1 robot arm. This manual is not ready at the time of this document's release. Using the robot before you have read the Miko-1 manual is at your own risk.

To ensure the safe operation of the robot arm, you need to have sufficient knowledge of electronics. If you are unsure how to proceed, please do not attempt it and ask a professional.

All measurements in this document are in millimeters (mm) or specified otherwise.

This document is not finished, we share it so you can start buying the parts needed. The 3d files for the version with CAM are not ready yet, but the BOM stays the same.



2: Print files

In this chapter you will find all the parts that you need to print for the 3 finger gripper. We recommend using PETG filament because it has a higher glass transition temperature than PLA and is still easy to print.

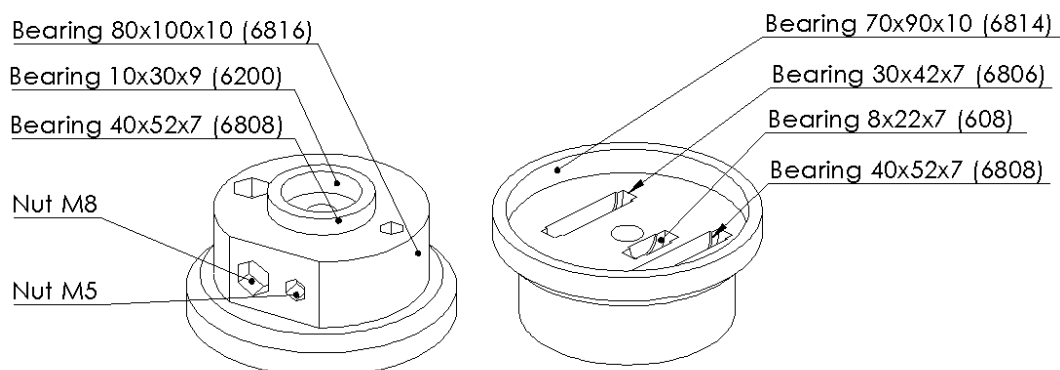
The general print settings that we have used for the parts are:

- Layer height: 0.2mm
- Walls: 3
- Infill: 20%

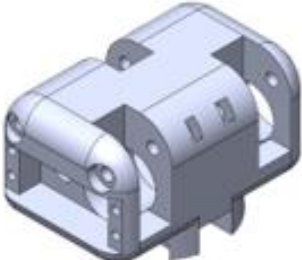
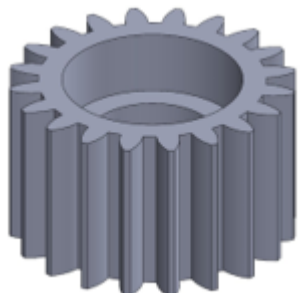
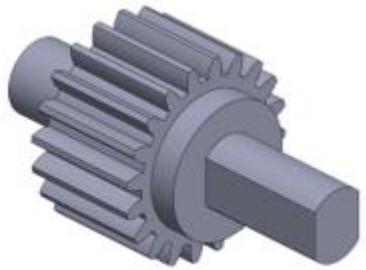
The tolerances used are as tight possible to achieve the best results. This means that sometimes you may need to use a little bit of force to assemble some parts. The given tolerance for certain parts, such as bearings, depends on the layer direction of the part. We have created a test part to check if your printer can print the parts with the given tolerances. If you encounter problems with the tolerance of any part, please let us know.

We will also release parts with larger tolerances if needed, as we want to ensure that almost every printer can print this robot arm.

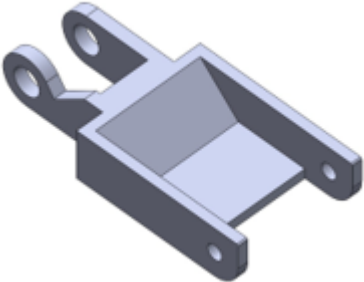
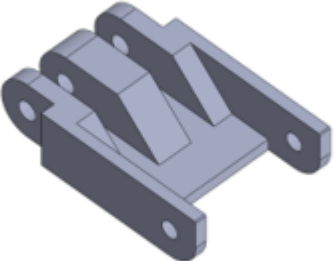

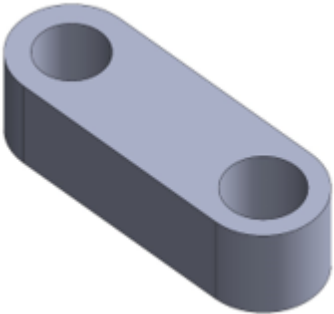
If you want access to the 3D files you will have to buy the digital files, or a kit.






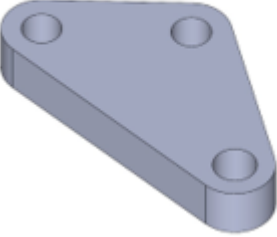


List 3d printed parts	
Name: Flex gripper	
Date: 26-7-2024	
Revision: 000	
	Art. name: FLEX_GRIPPER_01
	Revision: 000
	Quantity: 1
	Infill: 20%
	Walls:
	Comments:
	Art. name: FLEX_GRIPPER_02
	Revision: 000
	Quantity: 1
	Infill: 20%
	Walls:
	Comments:
	Art. name: FLEX_GRIPPER_03
	Revision: 000
	Quantity: 1
	Infill: 20%
	Walls:
	Comments:

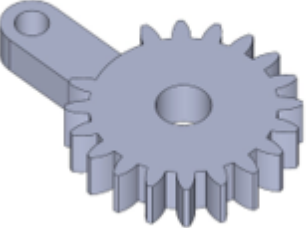
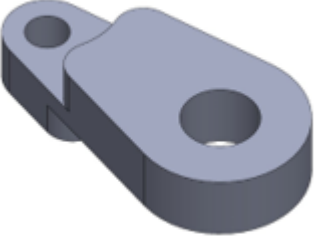



	<p>Art. name: FLEX_GRIPPER_04</p> <p>Revision: 000</p> <p>Quantity: 3</p> <p>Infill: 20%</p> <p>Walls:</p> <p>Comments:</p>
	<p>Art. name: FLEX_GRIPPER_05</p> <p>Revision: 000</p> <p>Quantity: 3</p> <p>Infill: 20%</p> <p>Walls:</p> <p>Comments:</p>
	<p>Art. name: FLEX_GRIPPER_06</p> <p>Revision: 000</p> <p>Quantity: 1</p> <p>Infill:</p> <p>Walls:</p> <p>Comments:</p>
	<p>Art. name: FLEX_GRIPPER_07</p> <p>Revision: 000</p> <p>Quantity: 3</p> <p>Infill: 20%</p> <p>Walls:</p> <p>Comments:</p>



	<p>Art. name: FLEX_GRIPPER_08</p> <p>Revision: 000</p> <p>Quantity: 6</p> <p>Infill: 20%</p> <p>Walls:</p> <p>Comments:</p>
	<p>Art. name: FLEX_GRIPPER_09</p> <p>Revision: 000</p> <p>Quantity: 3</p> <p>Infill: 20%</p> <p>Walls:</p> <p>Comments:</p>
	<p>Art. name: FLEX_GRIPPER_10</p> <p>Revision: 000</p> <p>Quantity: 6</p> <p>Infill: 20%</p> <p>Walls:</p> <p>Comments:</p>
	<p>Art. name: FLEX_GRIPPER_11</p> <p>Revision: 000</p> <p>Quantity: 3</p> <p>Infill: 20%</p> <p>Walls:</p> <p>Comments:</p>



	Art. name: FLEX_GRIPPER_12
	Revision: 000
	Quantity: 3
	Infill: 20%
	Walls:
Comments:	
	Art. name: FLEX_GRIPPER_13
	Revision: 000
	Quantity: 3
	Infill: 20%
	Walls:
Comments:	
	Art. name: FLEX_GRIPPER_14
	Revision: 000
	Quantity: 1
	Infill: 20%
	Walls:
Comments:	



3: BOM

In this chapter, you will find all the parts that you need to buy for the 3-finger gripper. If you see any mistakes or have any questions, you can email us at info@mikobots.com or ask the question in the Discord server. We have tried to provide a link to a shop for each component, but these links could change or become invalid. We will try to update the links regularly.

Please remember that you are solely responsible for ensuring the parts meet the safety requirements for your country.

If you don't want to source the components yourself, you can buy one of our kits. The kits will be available on our web shop in September/October 2024.

Before ordering the parts, it's recommended to first read the whole document.



Bill of materials (BOM)

Name 3 Finger gripper
Revision 000
Date 26-7-2024

Bearings

Name	QTY.	Description	shop
BEARING_01	2	Bearing 5x14x5 (605)	Link
BEARING_03	2	Bearing 8x22x7 (608)	Link

Electronics

Name	QTY.	Description	shop
ELECTRONICS_006	1	Servo 20kg 180deg	Link

Fasteners

Name	QTY.	Description	shop
DIN 912 M3x10	40	Hexagon socket Head Cap Screws M3x10	
DIN 912 M3x25	7	Hexagon socket Head Cap Screws M3x25	
DIN 912 M5x35	4	Hexagon socket Head Cap Screws M5x35	
DIN 912 M5x60	2	Hexagon socket Head Cap Screws M5x60	
DIN 125 M3	12	Washer M3	
ISO 4032 M3	16	Hexagon regular nut M3	
ISO 4032 M5	5	Hexagon regular nut M5	

Springs

Name	QTY.	Description	shop
SPRING_01	3	Tension spring $\varnothing 7$ L=50 DW=0.7	Link
SPRING_02	3	Tension spring $\varnothing 7$ L=38 DW=0.7	Link

Important note



- It is your own responsibility to ensure that the components meet the safety requirements in your country.
- For extra grip you could glue a piece of rubber or timing belt on the fingers




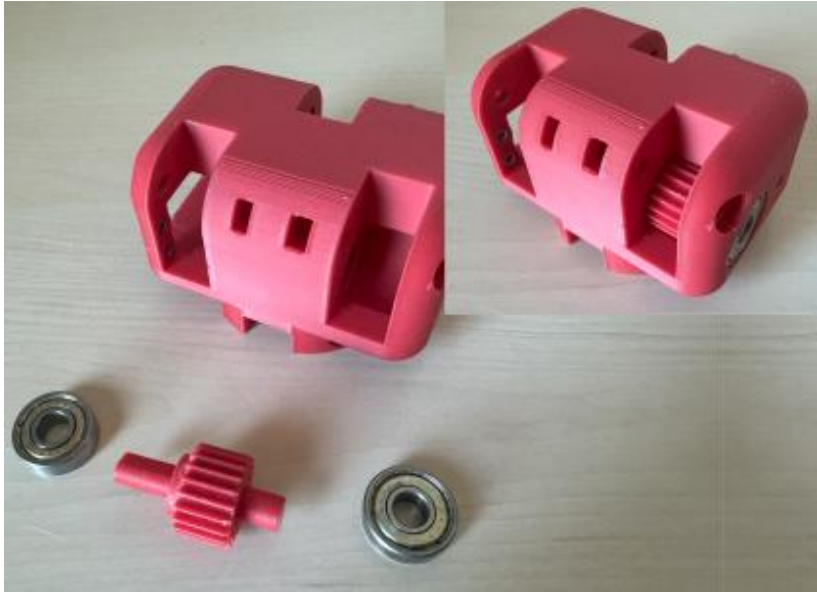
4: Assembly instructions

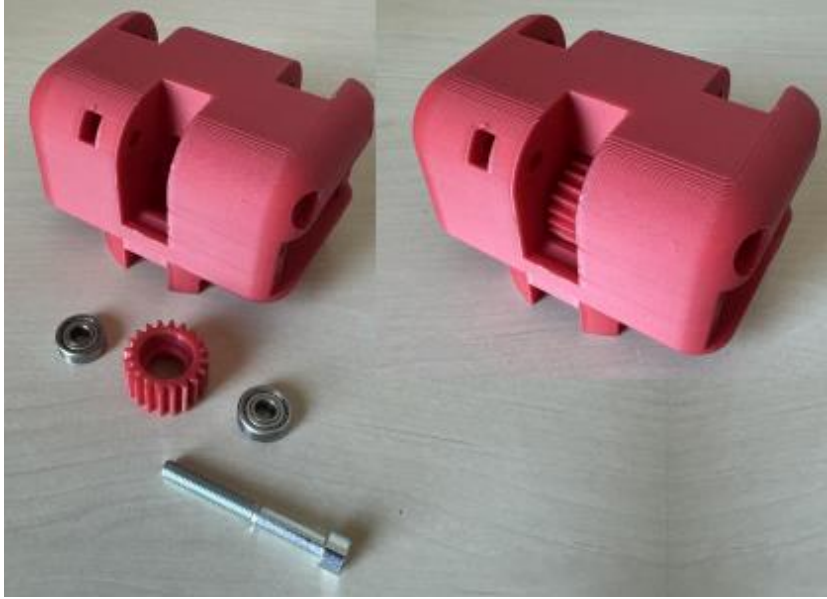

The instructions are written with care to include every step of the assembly process.

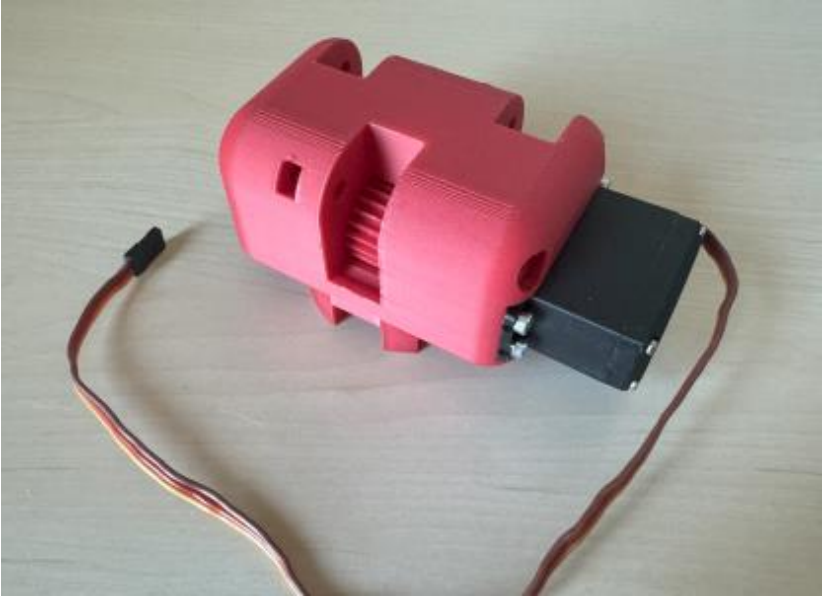
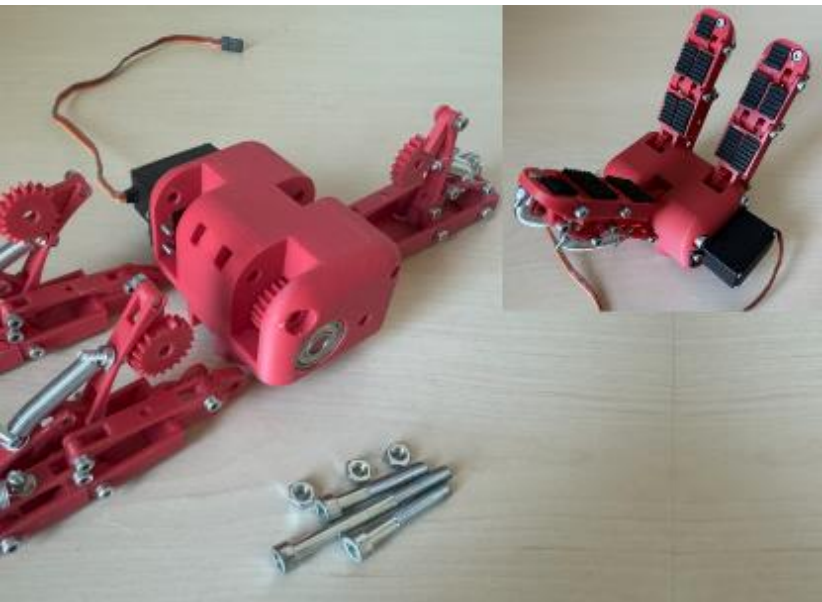
This chapter is not completely finished yet, and we will try to make some steps clearer for easier assembling.

Items		Step 1
3x	FLEX_GRIPPER_08	Make this assembly 3x 
3x	FLEX_GRIPPER_10	
3x	FLEX_GRIPPER_11	
3x	FLEX_GRIPPER_12	
9x	DIN 912 M3 x 10	
Items		Step 2
3x	SPRING_01	Make this assembly 3x 
6x	DIN 912 M3 x 10	
6x	Washer DIN 125 M3	
6x	ISO - 4032 - M3	

Items		Step 3
3x	FLEX_GRIPPER_07	Make this assembly 3x 
3x	FLEX_GRIPPER_08	
3x	FLEX_GRIPPER_09	
3x	FLEX_GRIPPER_10	
3x	FLEX_GRIPPER_13	
12x	DIN 912 M3 x 10	
Items		Step 4
3x	SPRING_01	Make this assembly 3x 
3x	DIN 912 M3 x 10	
3x	DIN 125 M3	
3x	ISO – 4032 - M3	

Items		Step 5
3x	FLEX_GRIPPER_04	<p>Make this assembly 3x</p> 
3x	FLEX_GRIPPER_05	
3x	FLEX_GRIPPER_06	
6x	DIN 912 M3 x 25	
3x	DIN 912 M3 x 10	
3x	DIN 125 M3	
3x	ISO - 4032 - M3	
Items		Step 6
1x	FLEX_GRIPPER_01	
1x	FLEX_GRIPPER_03	
2x	BEARING_03	

Items		Step 7
1x	FLEX_GRIPPER_02	
2x	BEARING_03	
1x	DIN 912 M5 x 60	
Items		Step 8
1x	ELECTRONICS_006	
1x	FLEX_GRIPPER_14	
1x	DIN 912 M3 x 25	

Items		Step 9
4x	ISO 4032 M3	
4x	DIN 912 M3 x 10	
Items		Step 10
2x	DIN 912 M5 x 35	
1x	DIN 912 M5 x 60	
3x	ISO 4032 M5	