MiKoBots

Assembly guide:

Standard gripper

Version 1.0

Date: 26-7-2024

Revision:

REV	Date	Description
1	26-7-2024	First release

Index

1: Introduction

This document will describe how to assemble the standard 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.

2: Print files

In this chapter you will find all the parts that you need to print, for the standard 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:
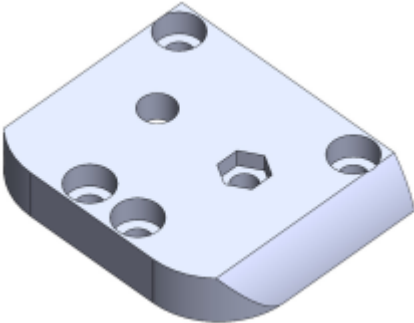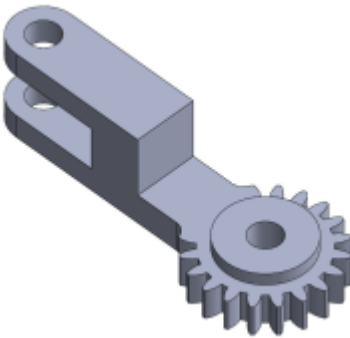
- Layer height: 0.2mm
- Walls: 3
- Infill: 20%

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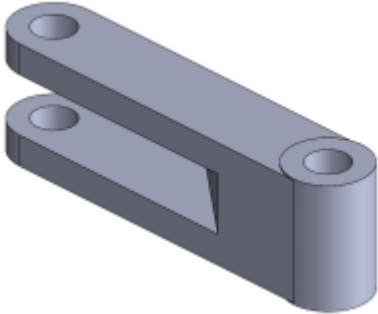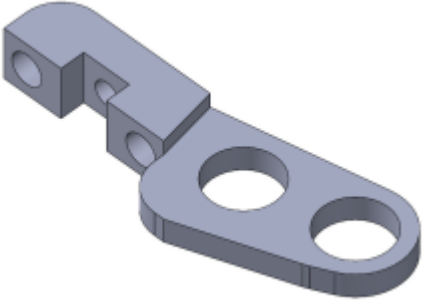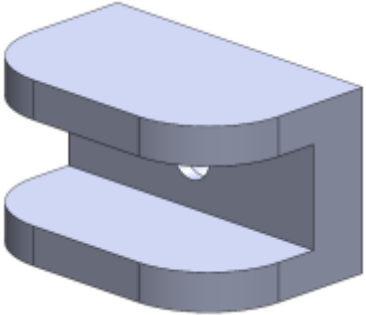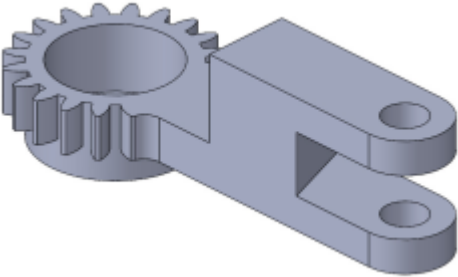
If you want access to the 3D files you will have to buy the digital files, or a kit.
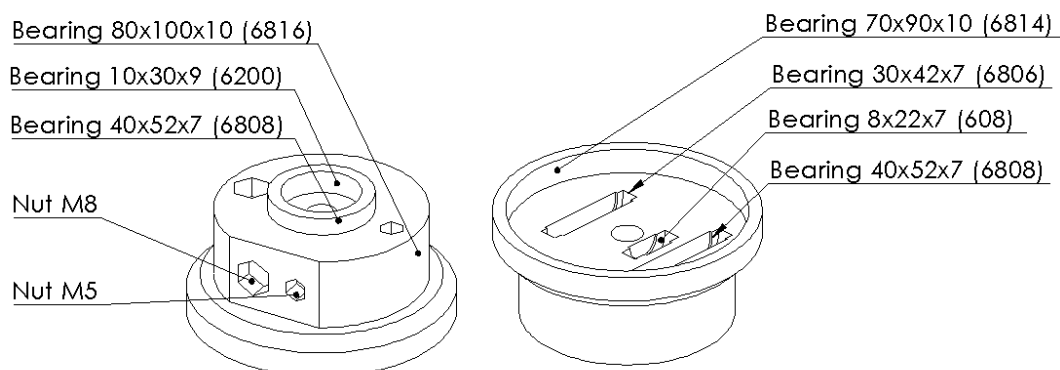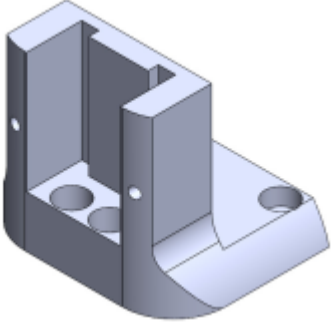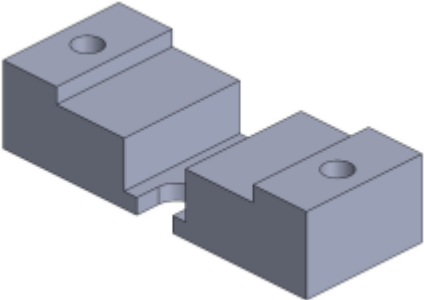
List 3d printed parts

Name: Standard gripper	
Date: 26-6-2024	
Revision: 000	

	Art. name: STANDARD_GRIPPER_01
	Revision: 000
	Quantity: 1
	Infill: 20%
	Walls: 2
	Comments:
	Art. name: STANDARD_GRIPPER_02
	Revision: 000
	Quantity: 1
	Infill: 20%
	Walls: 2
	Comments: Not needed if you are using the CAM
	Art. name: STANDARD_GRIPPER_03
	Revision: 000
	Quantity: 1
	Infill: 20%
	Walls: 2
	Comments:

	Art. name: STANDARD_GRIPPER_04
	Revision: 000
	Quantity: 2
	Infill: 20%
	Walls: 2
	Comments:
	Art. name: STANDARD_GRIPPER_05
	Revision: 000
	Quantity: 2
	Infill: 20%
	Walls: 2
	Comments:
	Art. name: STANDARD_GRIPPER_06
	Revision: 000
	Quantity: 2
	Infill: 20%
	Walls: 2
	Comments:
	Art. name: STANDARD_GRIPPER_07
	Revision: 000
	Quantity: 1
	Infill: 20%
	Walls: 2
	Comments:

	Art. name: STANDARD_GRIPPER_08
	Revision: 000
	Quantity: 1
	Infill: 20%
	Walls: 2
	Comments: Only needed if you are using the CAM
	Art. name: STANDARD_GRIPPER_09
	Revision: 000
	Quantity: 1
	Infill: 20%
	Walls: 2
	Comments: Only needed if you are using the CAM

3: BOM

In this chapter, you will find all the parts that you need to buy for the standard 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	Standard gripper
Revision	000
Date	26-7-2024

Bearings

Name	QTY.	Description	shop
BEARING_01	5	Bearing 5x14x5 (605)	Link

Electronics

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

Fasteners

Name	QTY.	Description	shop
DIN 912 M3x10	5	Hexagon socket Head Cap Screws M3x10	
DIN 912 M4x25	2	Hexagon socket Head Cap Screws M4x25	
DIN 912 M5x20	5	Hexagon socket Head Cap Screws M5x20	
DIN 912 M5x35	4	Hexagon socket Head Cap Screws M5x35	
DIN 125 M3	1	Washer M3	
DIN 125 M5	8	Washer M5	
ISO 4032 M3	4	Hexagon regular nut M3	
ISO 4032 M4	6	Hexagon regular nut M4	
ISO 4032 M5	7	Hexagon regular nut M5	

Springs

Name	QTY.	Description	shop
SPRING_01	4	Spring OD=5,5 L=15 WD=0.6	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
1x	ELECTRONICS_006	
1x	STANDARD_GRIPPER_01	
4x	DIN 912 M3 x 10	
4x	ISO 4032 M3	

Items		Step 2
2x	STANDARD_GRIPPER_01	
4x	BEARING_01	

Items		Step 3
1x	STANDARD_GRIPPER_03	
1x	STANDARD_GRIPPER_04	
2x	DIN 912 M5 x 20	
4x	DIN 125 M5	
2x	ISO 4032 M5	

Items		Step 4
1x	STANDARD_GRIPPER_03	
1x	STANDARD_GRIPPER_04	
2x	DIN 912 M5 x 20	
4x	DIN 125 M5	
2x	ISO 4032 M5	
1x	BEARING_01	

Items		Step 5
1x	DIN 912 M3 x 10	Use part STANDARD_GRIPPER_08 if you want to use the CAM
1x	DIN 125 M3	

Items		Step 6
1x	DIN 912 M5 x 20	
1x	ISO 4032 M5	

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Items		Step 7
2x	DIN 912 M5 x 35	
2x	ISO 4032 M5	

Items		Step 8
1x	STANDARD_GRIPPER_06	
2x	DIN 912 M4 x 25	
6x	ISO 4032 M4	
4x	SPRING_03	

Items	Step 9
	Do this steps only if you are using the CAM