

# Assembly guide:

## Vacuum tool



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 vacuum tool 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](mailto: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 vacuum tool. We recommend using PETG filament because it has a higher glass transition temperature than PLA and is still easy to print.

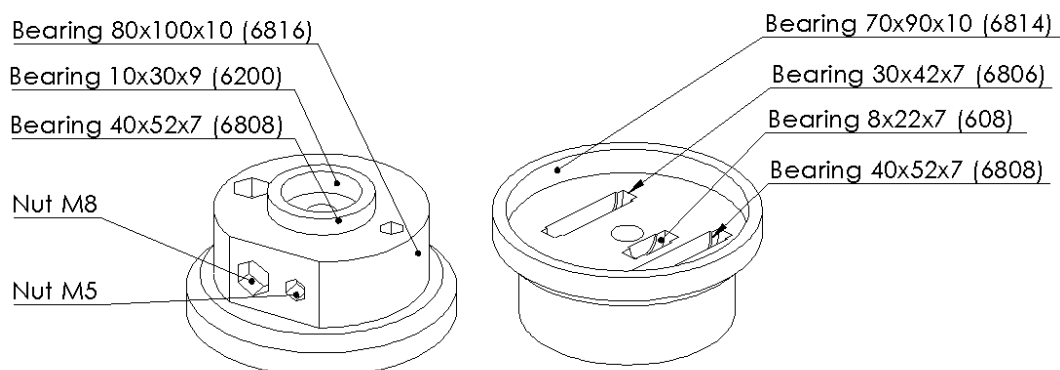
The general print settings that we have used for the parts are:

- Layer height: 0.2mm
- Walls: 2
- Infill: 20%

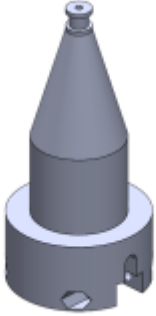
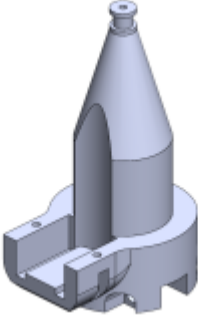
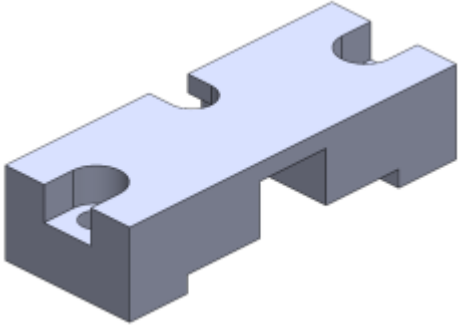
The tolerances used are as tight possible to achieve the best results. This means that sometimes you may need to use a little bit of force to assemble some parts. The given tolerance for certain parts, such as bearings, depends on the layer direction of the part. We have created a test part to check 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.





<b>List 3d printed parts</b>	
<b>Name:</b> Vacuum tool	
<b>Date:</b> 26-7-2024	
<b>Revision:</b> 000	
	<b>Art. name:</b> VACUUM_TOOL_01
	<b>Revision:</b> 000
	<b>Quantity:</b> 1
	<b>Infill:</b>
	<b>Walls:</b>
	<b>Comments:</b>
	<b>Art. name:</b> VACUUM_TOOL_02
	<b>Revision:</b> 000
	<b>Quantity:</b> 1
	<b>Infill:</b>
	<b>Walls:</b>
	<b>Comments:</b>
	<b>Art. name:</b> VACUUM_TOOL_02
	<b>Revision:</b> 000
	<b>Quantity:</b> 1
	<b>Infill:</b>
	<b>Walls:</b>
	<b>Comments:</b>



### 3: BOM

In this chapter, you will find all the parts that you need to buy for the vacuum tool. If you see any mistakes or have any questions, you can email us at [info@mikobots.com](mailto: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** Vacuum tool  
**Revision** 000  
**Date** 23-7-2024

### Electronics

Name	QTY.	Description	shop
ELECTRONICS_011	1	Vacuum pump 24V model VN-T1	<a href="#">Link</a>

### Fasteners

Name	QTY.	Description	shop
DIN 912 M4x16	4	Hexagon socket Head Cap Screws M4x16	
DIN 912 M5x35	2	Hexagon socket Head Cap Screws M5x35	
ISO 4032 M4	4	Hexagon regular nut M4	
ISO 4032 M5	2	Hexagon regular nut M5	

### Vacuum

Name	QTY.	Description	shop
VACUUM_01	1	Suction cup Ø25 DP	<a href="#">Link</a>
VACUUM_02	1	Suction cup Ø15 DP	<a href="#">Link</a>
VACUUM_03	1,5m	Hose Ø6x4	<a href="#">Link</a>

### Important note

It is your own responsibility to ensure that the components meet the safety requirements in your country.






## 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.

**See how to connect the vacuum pump in the assembly guide of the IO box.**

Items		Step 1
1x	VACUUM_TOOL_01	
1x	VACUUM_02	
1x	VACUUM_03	
Items		Step 2
		