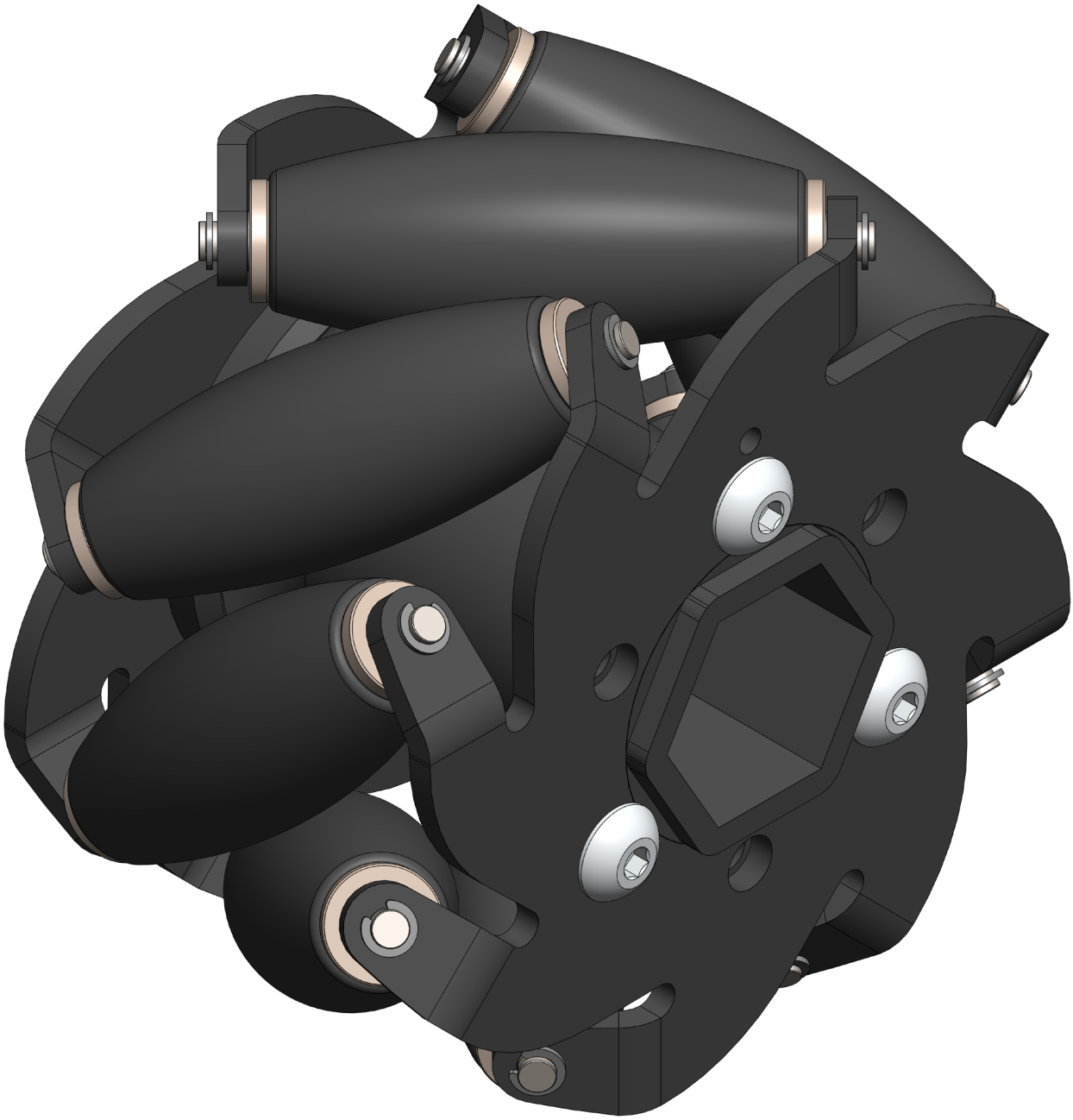
Mecanum Wheel (2" OD, 1/2" Hex Bore)- User Guide
(Rev 1)



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What is the Mecanum Wheel (2”OD, 1/2” Hex Bore)?

After many years of using various mecanum wheels in the 2” range WCP set out to create a super robust design. The version is the HD version featuring formed steel plates and molded components with grippy silicone rubber rollers.

We created this product due to 1323 struggling with off the shelf mecanum’s in 2016 and 2017. During 1323’s 2019 championship run, they had issues picking up balls from the edges and desperately needed something to fill the void and be heavy duty.

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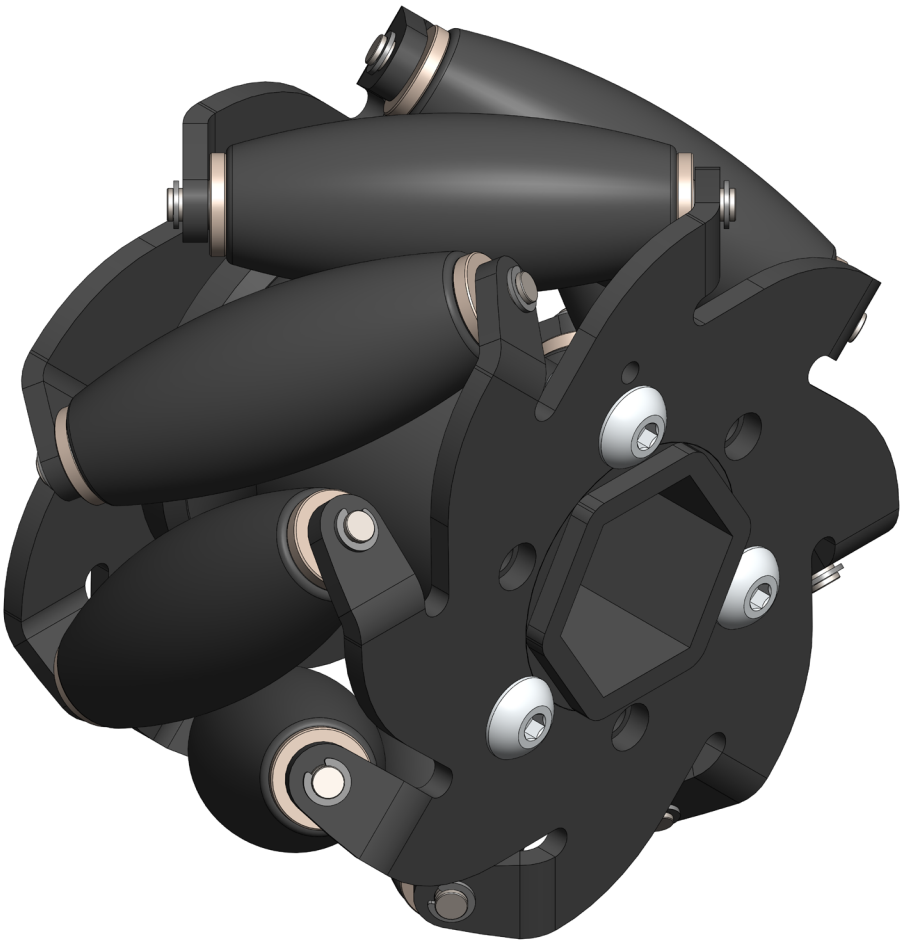
Recommended Tools

Picture	Name
	Phillips #1 Screwdriver

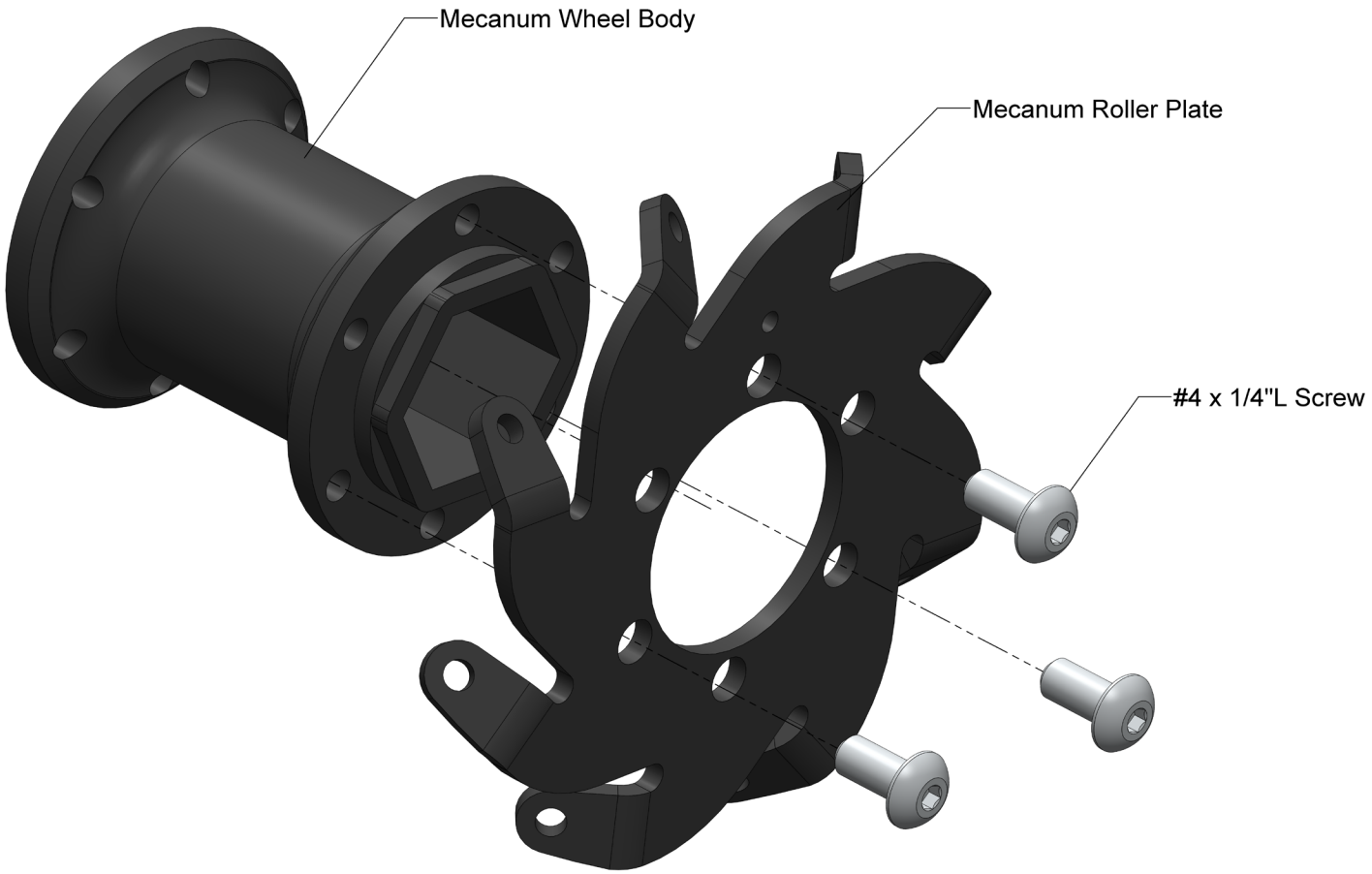
Assembly Instructions

Assembly instructions for the left and right hand versions of the mecanum are the same. Use the opposite hand set of plates for the opposite hand version.



Step 1

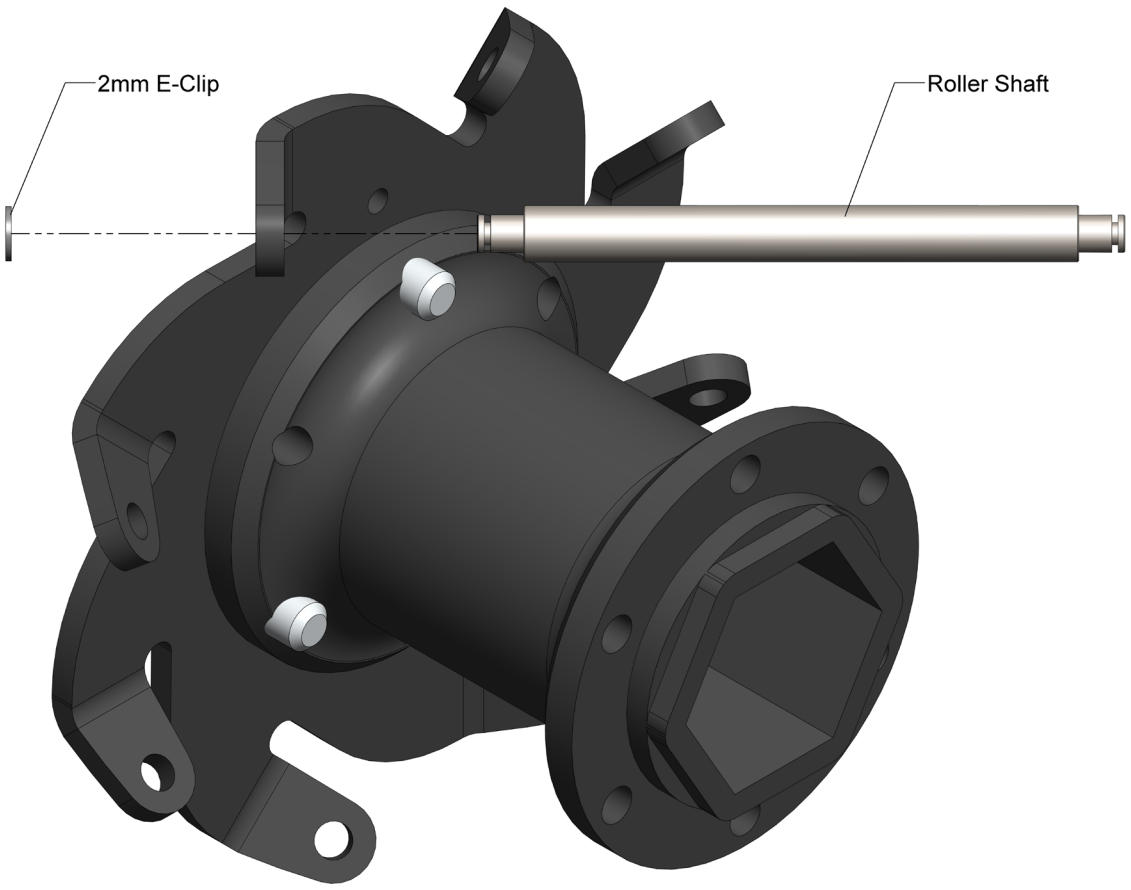
Use a minimum of 3 #4 x 1/4”L thread forming screws to attach one half of the roller plate to the wheel body.



Step 2

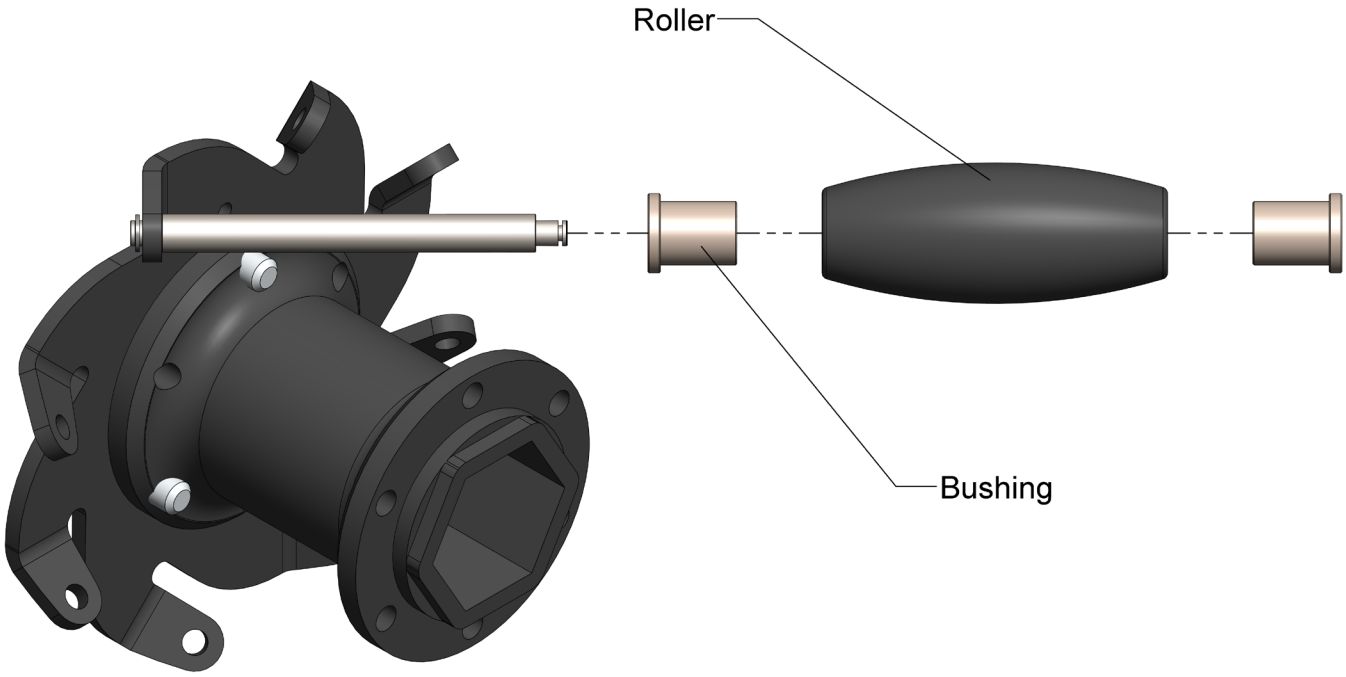
Insert roller shaft into hole in the roller plate. Repeat this for all 8 rollers.

Note: The snapring may be used to hold the shaft in place during assembly but is not required. Ommitting the snapring will not affect the performance of the final mecanum.



Step 3

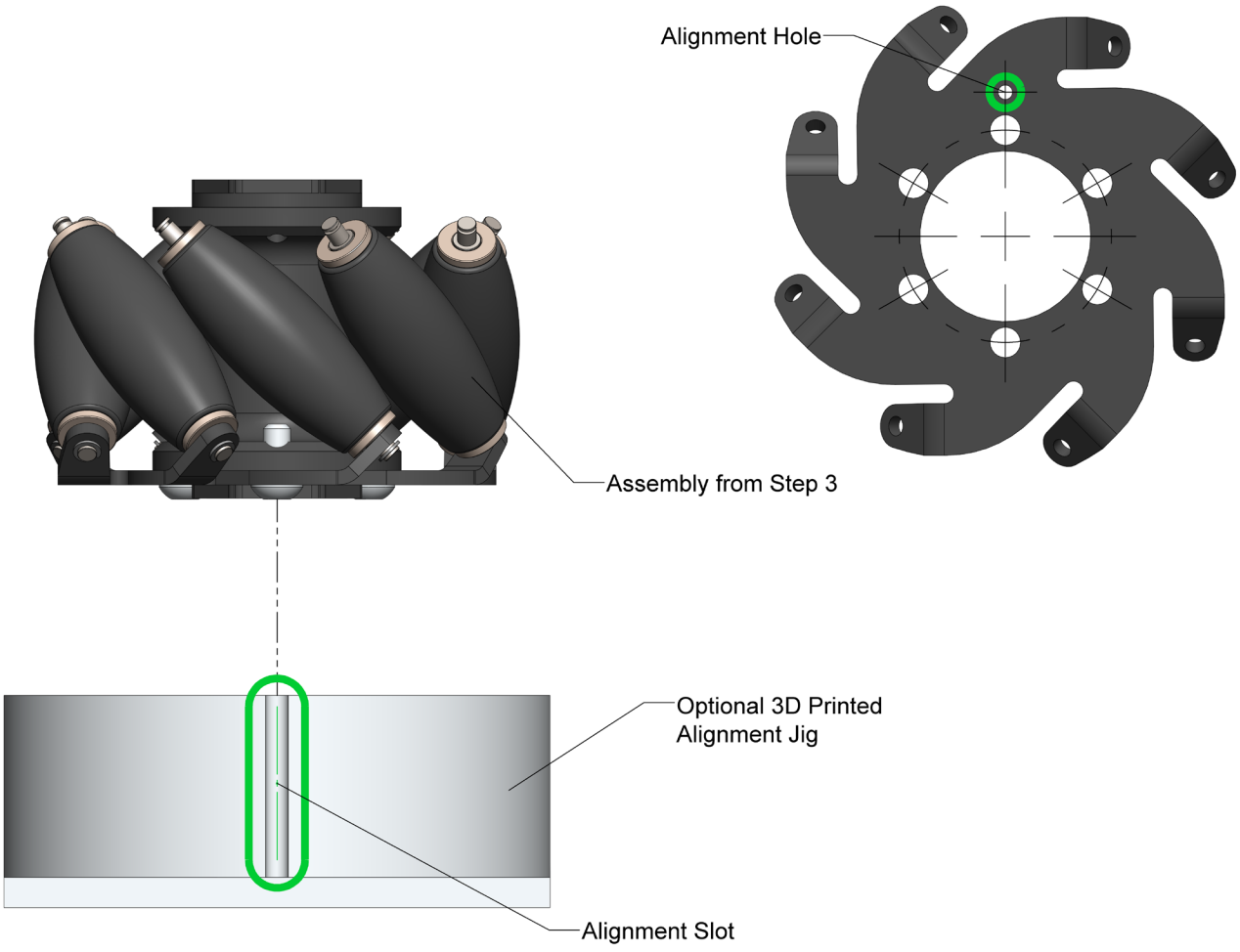
The roller and bushings will come pre-assembled. Slide this assembly onto each roller shaft.



Step 4

Note: This step is optioinal if you do not have the ability to 3D print the jig. The mecaum can be assembled without the jig but may take slightly longer.

Align the hole highlighted in green with the slot in the jig that is highlighted in green. Slide mecanum into the jig.

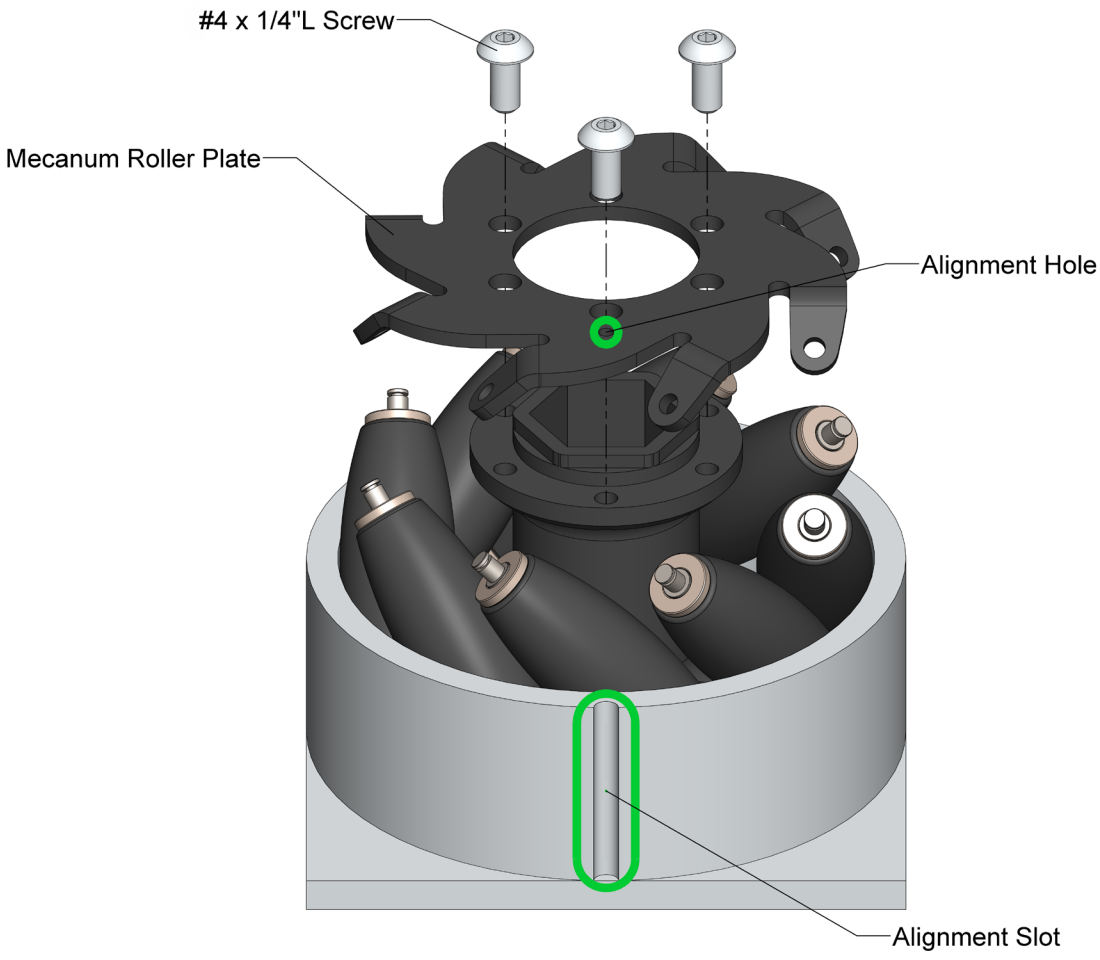


Step 5

We recommend getting one pin into the roller plate and then working your way aroung the wheel getting the pins in. Once all pins are in use a minimum of 3 #4 screws to attach plate.

Note: Be sure to allign the alignment hole with the alignment slot in the jig or alignment hole in the opposite plate if not using the jig.

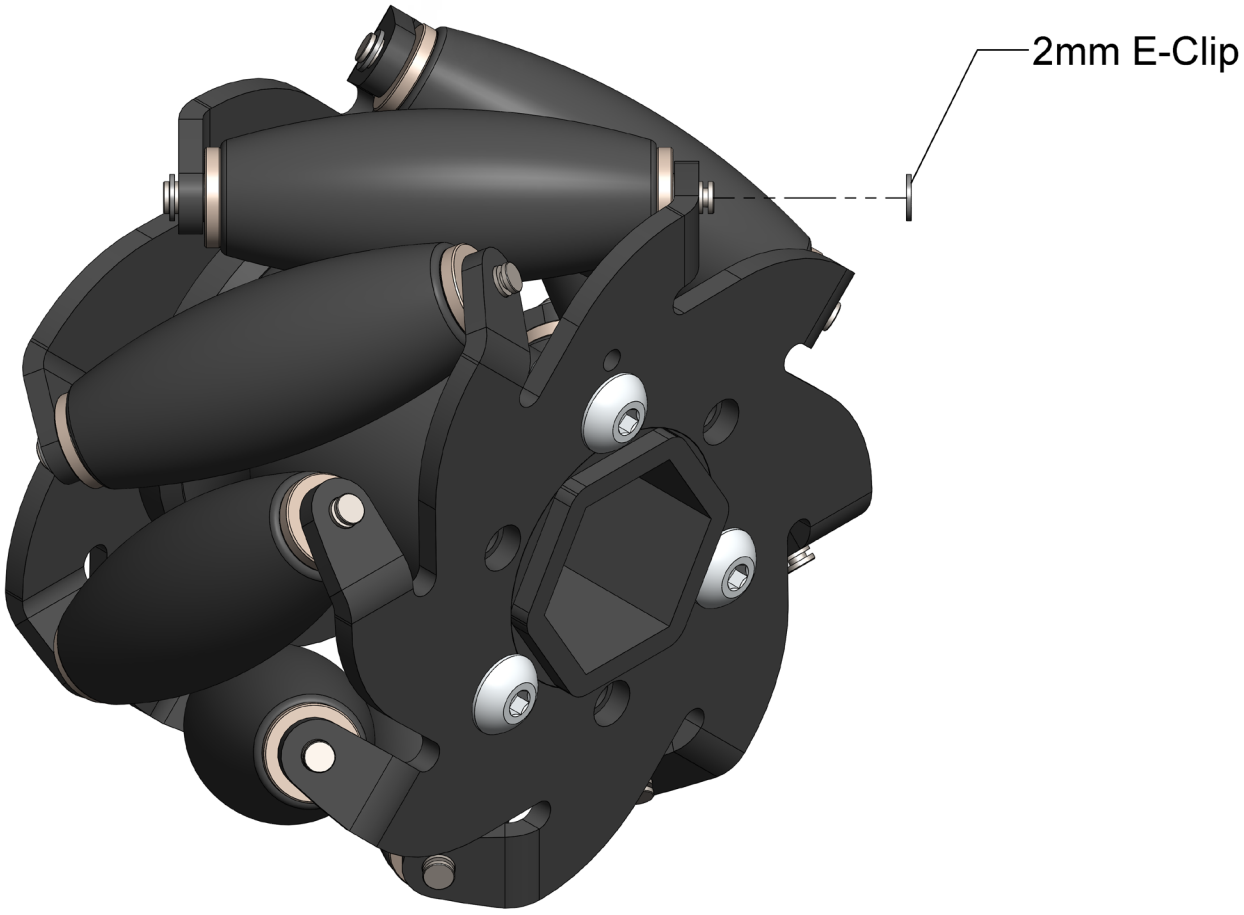
Disclaimer: Be sure to have both alignment holes align or the plates will not line up properly with the pins and assembly will not be possible.



Step 6

This step may be ommitted if you do not want to add the snaprings.

Note: Not recommended to put this on. But its optional, this is up to the user. 1323 assembled these mecanums with and without any snaprings. Both sets performed the same.



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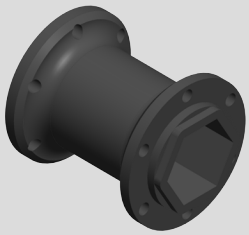
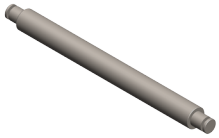
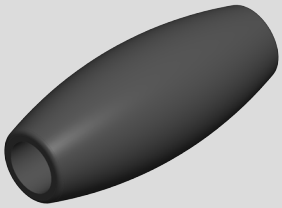
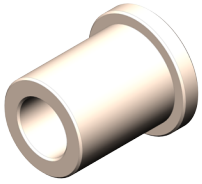
Kit Contents

Picture	Name	QTY	Kit
	Mecanum Roller Plate (Left or Right)	2	Base Kit
	Roller Body	1	Base Kit
	Roller Pin	8	Base Kit
	Roller	8	Base Kit
	Roller Bushing	16	Base Kit

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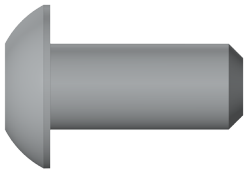
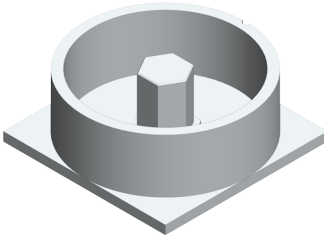
Picture	Name	QTY	Kit
	#4 Thread Forming Screws (McMaster P/N 97975A120)	6	Base Kit

Optional Accessories

Picture	Name	QTY
	External E-Clip (2mm) (20-Pack) (WCP-0227)	1

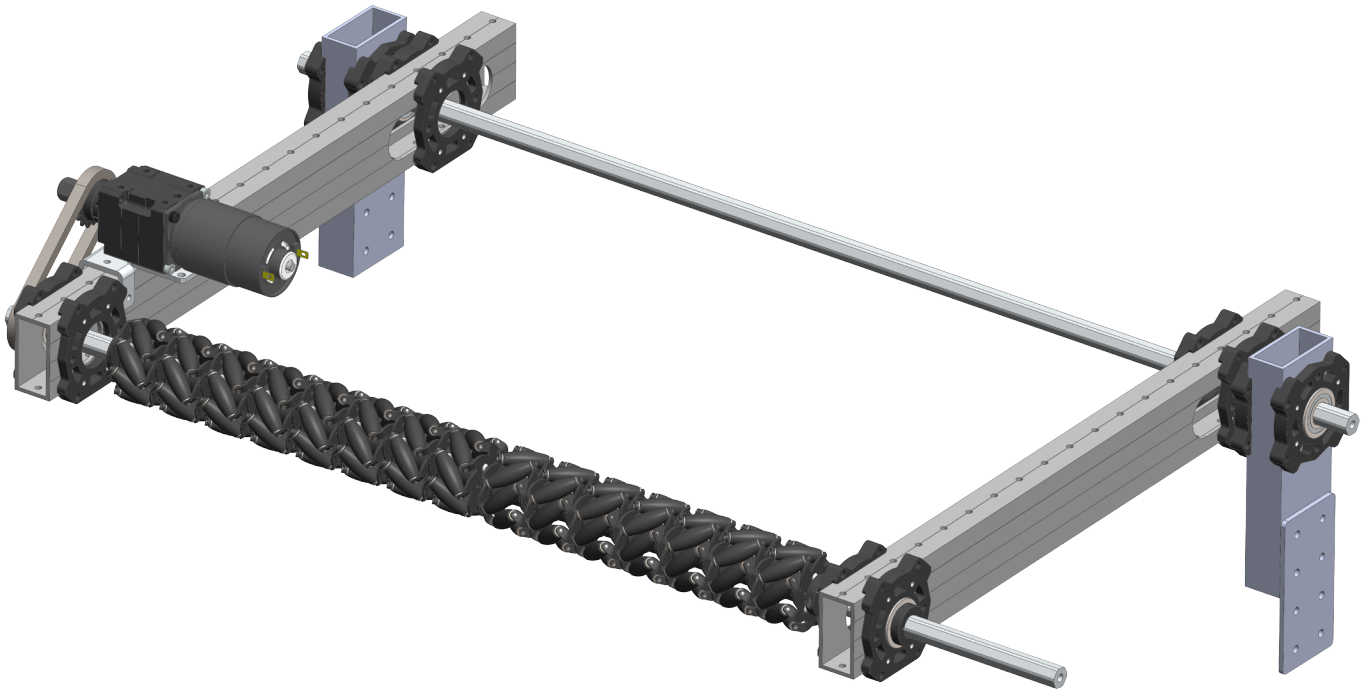
3D Printable Components

Picture	Name	QTY
	Alignment Jig	1

Application Example - Basic Mecanum Intake

Recommended speed for the intake is roughly 2000 RPMs.

The Versa Blocks on the pivot allow teams to slide the intake in and out to adjust the location of the roller on the game object.



FAQ

Q: What is the recommeneded spacing between the mecanums?
A: This is dependent on the game object size. For example, testing on the 2020 game object showed that 1/2” gap was about the maximum allowable gap. Other game objects may allow larger spaces between mecanums.

Revision Table

Revision Date	Revision #	Description
1/14/2020	1.1	First revision created.