

# **BobsCNC**

**Unleash Your Creativity**



## **Revolution**

### **Chuck Accessory Kit**

## **Assembly Manual**

Rev. 0.4

# The Revolution Series CNC Router. Welcome to the Family.

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Every product we design and manufacture opens new and exciting opportunities for innovation. The new Adjustable Chuck with Pass-Through Tail Stock makes it possible to machine pieces that are longer than 24 inches with the Revolution Rotary Axis CNC.

Before beginning the assembly, take a few moments to review the manual. Be sure to have the recommended tools on hand.

Thank you for being part of the BobsCNC family. It's time to...  
Unleash Your Creativity!

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**Safety is the First Priority. Always wear proper protective equipment and use "safety sense" when assembling and operating your Revolution Rotary Axis Router.**

## Information/Warning Boxes

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	<b>CAUTION</b> Indicates a possible risk of injury that can result from failure to follow this instruction
	<b>WARNING</b> Indicates the possible damage to the machine, its components, the work piece, or injury that can result from failure to follow this warning.
	<b>DANGER</b> Indicates a serious risk of bodily harm, injury and death. This is a serious warning and should not be ignored. Any work must be carried out with extreme caution.
	<b>TIPs</b> Contains helpful information, shortcuts, and hints to simplify assembly and make machine operation easier and safer.

# Safety Precautions and Warnings

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**Revolution Series CNC Router has a 110 v. Power Supply and uses bits that spin at 30,000 rpm with cutting edges that are sharp and hazardous. The operator must understand the potential hazards and is responsible to take appropriate safety precautions before operating the Router.**

- Only use extension cords rated for 20 amps plugged into a dedicated outlet.
- Inspect the machine before every use for maintenance issues: loose fasteners, belts, etc.
- Do not operate the machine with dull or damaged router bits.
- Always unplug machine after each use and when cleaning the router or changing router bits.
- Remove rings, bracelets, watches, necklaces before using the machine.
- Wear snug fitting clothing and/or roll up long sleeves to prevent snagging.
- Use appropriate personal protective equipment (PPE) when operating machine including safety glasses and hearing protection.
- Keep hands, hair and clothing away from the moving parts of the machine.
- Do not operate the machine when under the influence of alcohol or prescription medications.
- Make certain the workpiece is clamped securely in place before starting the machine.
- Never leave the machine running unattended.
- Children must be supervised by adults when operating the machine.
- Do not operate the machine in the presence of flammable materials.
- Keep floors clean, dry, and free of debris to eliminate slip and/or trip hazards.
- Have a suitably rated fire extinguisher on hand when the machine is in operation.

# Getting Started

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## Required Tools:

A pair of long nose pliers

#2 Phillips screwdriver

A Hammer for the press fit pins

A 7mm wrench

A 7mm socket and ratchet

Power drill with 5/32" bit for drilling mounting holes for the Pass-Through Tail Stock

LOCTITE 242™ thread lock (fingernail polish can be used as a substitute)

A set of Metric and SAE hex wrenches

## Assembly Recommendations:

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Use a clean, unobstructed work area for assembling your Pass-Thru Chuck.

All Screws (unless noted) should be installed snug, then rotated 1-2 ½ turns.

Apply LOCTITE to all M4 X 30 mm machine screws that are used to secure plywood pieces except for the 4 screws used to attach the Adjustable Headstock to the Longworth chuck on Page 31

Painting, or applying stain with a clear coat will provide extra protection to the wood components

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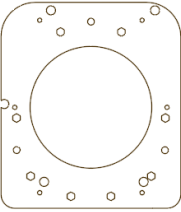
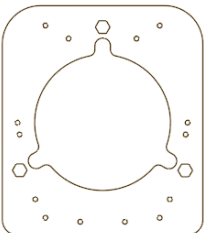
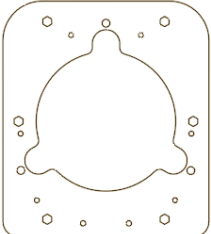


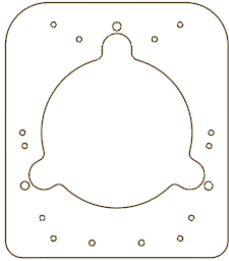





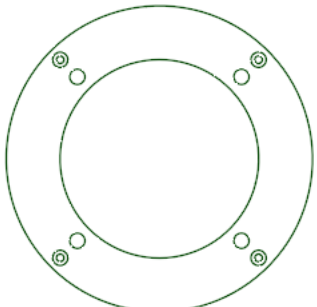
**CAUTION** This kit contains numerous small components that pose a choking risk for small children and pets. Keep kit pieces in a secure location out of the reach of small children and pets.

## Pass-Through Tail Stock Assembly

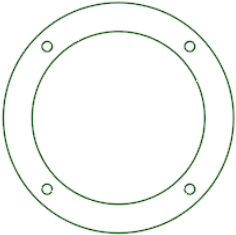
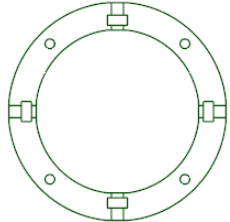
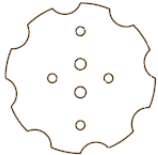
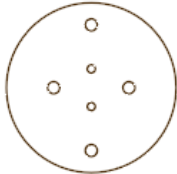
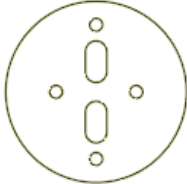
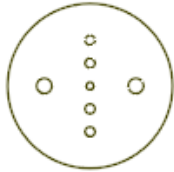
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### Pass Through Wood Components

Part #	Description	Qty	Photo
PT1	Back Plate	1	
PT2	M6 Spacer	1	
PT3	Middle Spacer	1	
		1	

PT4	M4 Spacer		
PT5	Bottom Guide	1	
PT6	Top Guide	2	
PT7	Small Slide Arm	3	
PT8	Medium Slide Arm	3	
PT9	Large Slide Arm	3	
R1	Flange Mount	1	



R2	Spacer	1	
R3	Clamp Ring	2	
Q1	Longworth Adapter	1	
Q2	Spacer	1	
Q3	Chuck Face	1	
Q4	Material Mount	4	
DR1	Drill Guide	1	

## Required Hardware

Part #	Description	Qty	Photo
H38	M4 X 30 Machine Screws	18	
H15	M4 Nut	14	
H47	M4 Locknut	4	
H59	M6 X 25 Machine Screw	12	
H18	M6 Locknut	9	
H60	M6 Nut	3	
H2	5/16 X 2 1/2 Machine Screw	4	
H67	5/16 X 1 3/4 Machine Screw	4	
H5	5/16-18 Nut	4	
H61	Hardened Washer	34	
ZD3	626-2RS Bearing	9	
H21	1/4-20 Threaded Insert	4	
H9	1/4-20 X 2" Machine Screw	4	
H79	1/4 X 1 1/2 Steel Pin	4	
H57	Bearing Retainer Washer	4	

# The Pass-Through Tail Stock Assembly

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**Step 1** Insert eight M4 Nuts in the hex shaped holes in the PT1 Back Plate as shown.



**Step 2**

Align the PT2, M6 Spacer, on top of the PT1, Back Plate, and insert three M6 Nuts in the hex shaped holes as shown.



**Step 3**

Align the PT3 plate, Middle Spacer, on top of the PT2 plate, M6 Spacer, and insert six M4 nuts in the hex shaped holes as shown.





**Step 4** Align the PT4 plate, M4 Spacer, on top of the PT3 Assembly as shown.



**Step 5**

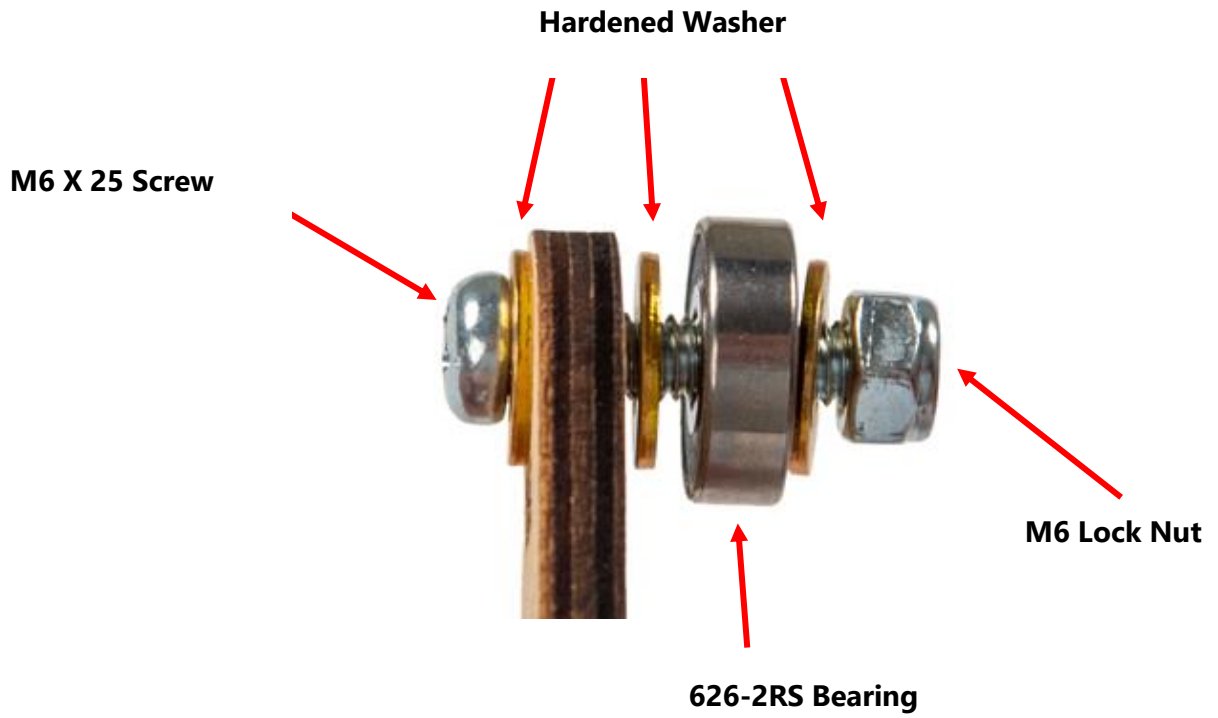
Align the PT5, Bottom Guide, and both PT6, Top Guides, to the Jaw Guide Assembly. Secure with eight M4x30 screws as shown.







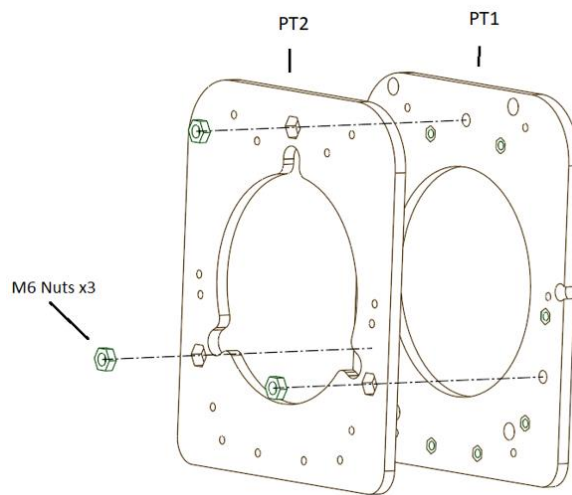
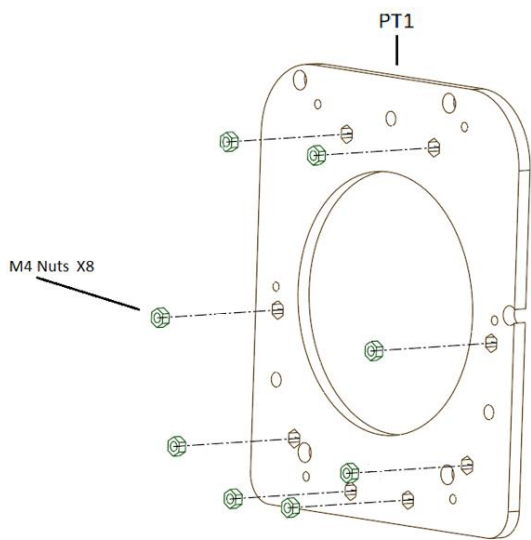
**Step 6** Assemble the PT7, PT8, PT9 ,Slide Arms, (3 Sm., 3 Med., 3Lg.) with the hardware shown. Tighten screws.



## Step 7

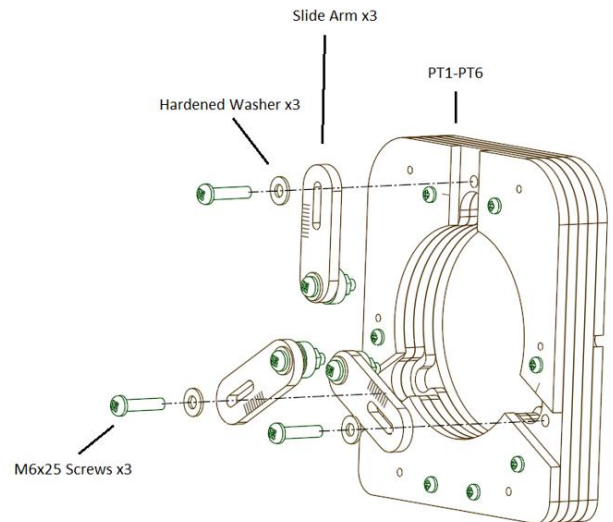
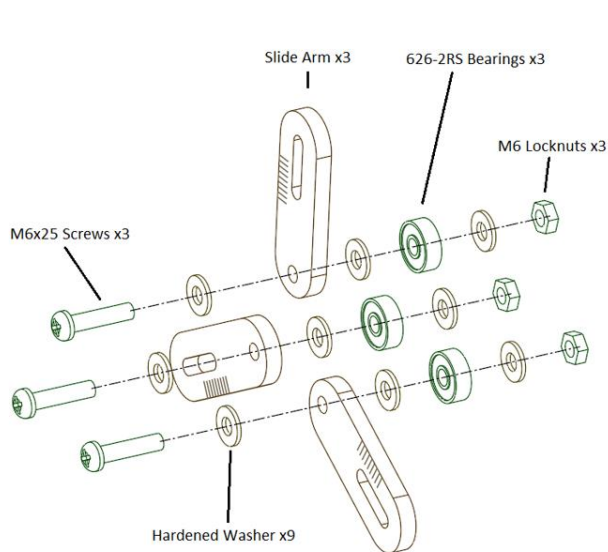
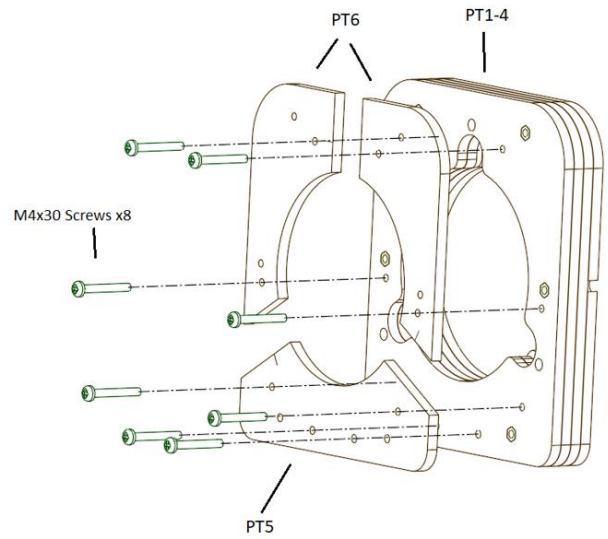
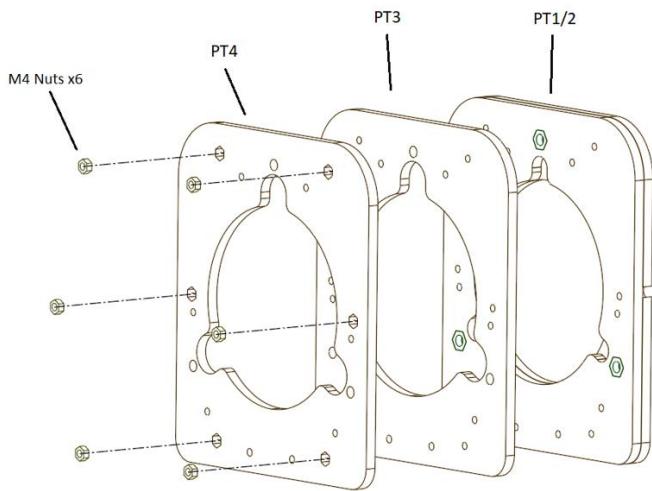
Attach the Slide Arm Assemblies Sets (either small, medium or large depending on the work piece being passed through) to the Pass-Through Tail Stock Assembly and secure each with one M6 X 25 Screw and hardened washer. Use the gauge marks to center the workpiece between the three Slide Arm Bearings.





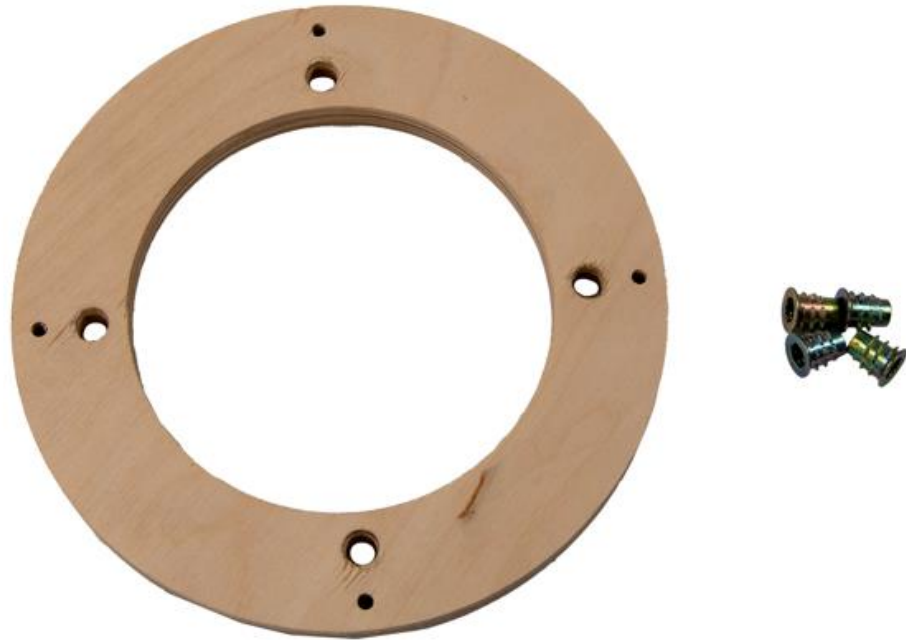
# Pass-Through Tail Stock Exploded Diagrams

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# The Adjustable Head Stock Assembly

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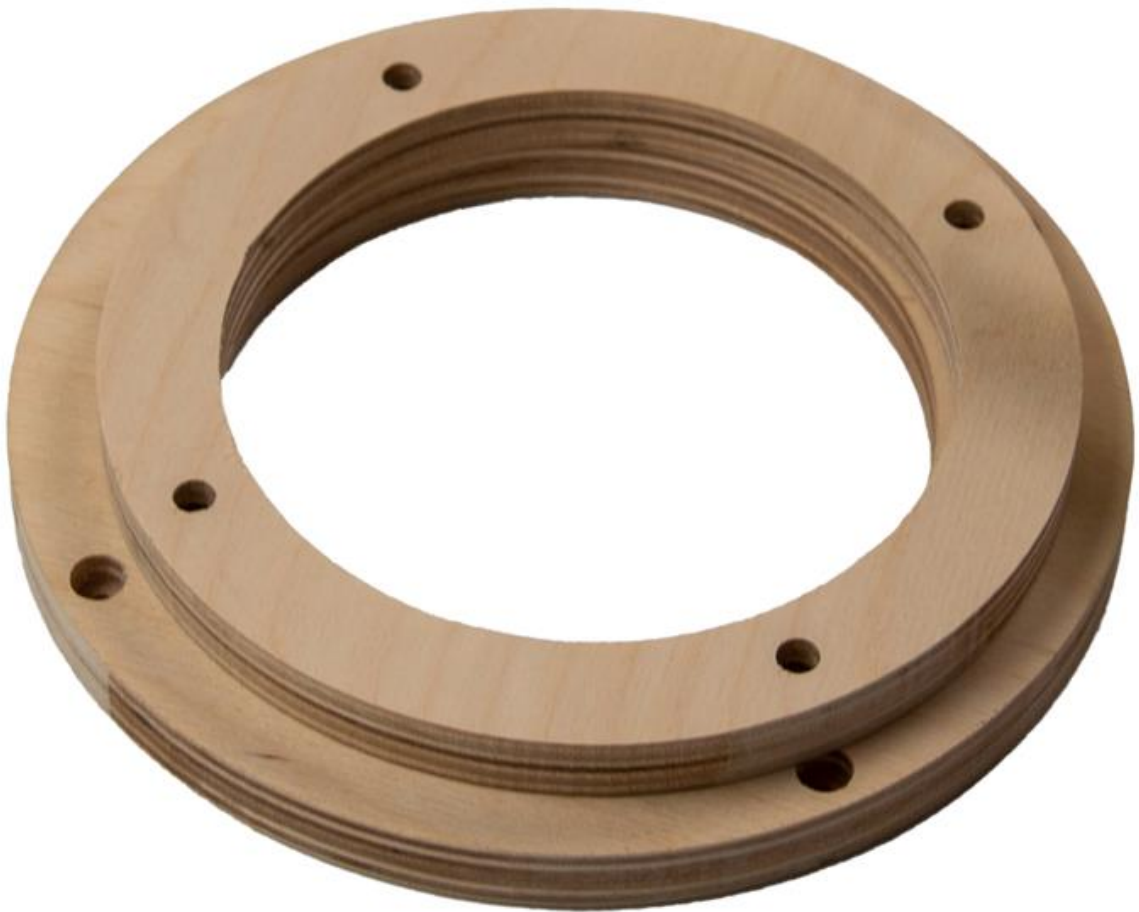
**Step 1** Insert four 1/4 X 20 threaded inserts in the backside of the R1, Flange Mount.





**Step 2**

Flip the Flange Mount over and align the R2, Spacer Plate, on top of the R1, Flange Mount, keeping the holes centered over the threaded inserts. NOTE: The bottom plate needs to show the counterbored holes as face up.



### Step 3

Align the four 5/16 Nuts in the hex slots, as shown, in one of the R3, Clamp Rings and cover with the second R3 Clamp Ring so that the nuts are secured between the Rings.

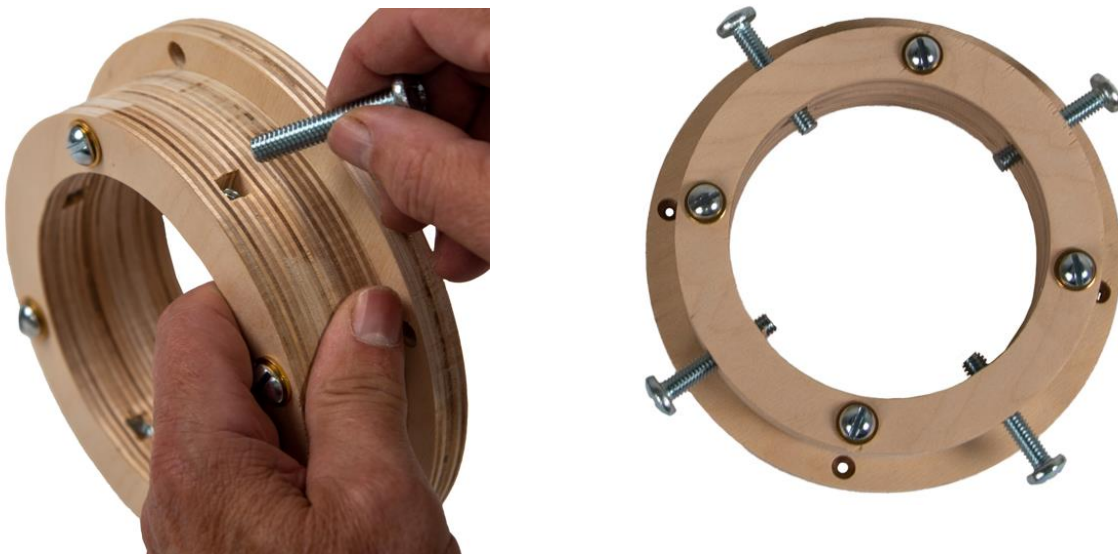




**Step 4** Thread the four  $\frac{1}{4}$  - 20 x 2 inch Screws with Hardened Washer through each ring into the threaded inserts in the R1 Flange Mount.



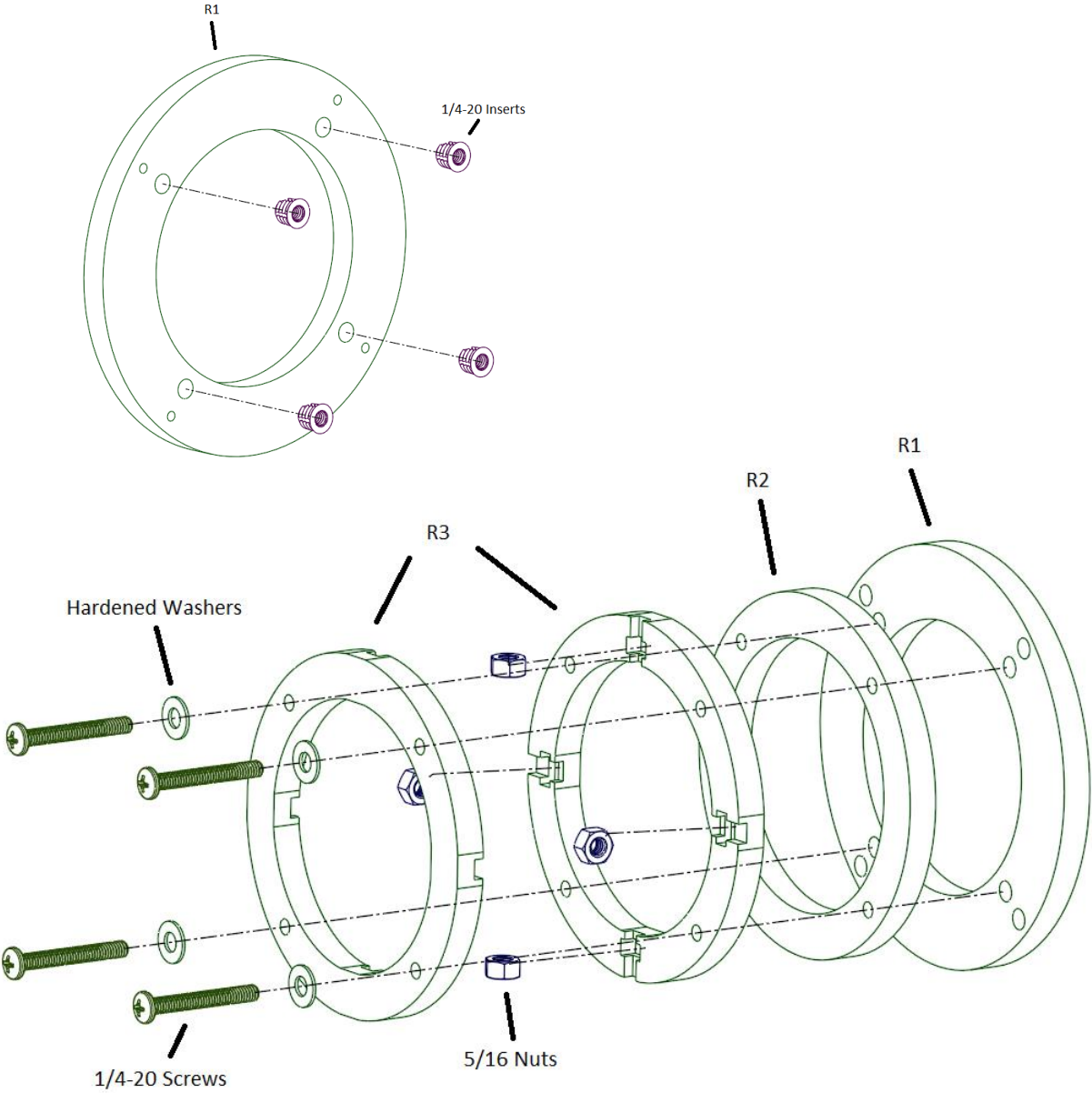
**Step 5** Thread the four  $\frac{5}{16}$  X 2  $\frac{1}{2}$ " Machine Screws through  $\frac{5}{16}$  nuts in the R3, Clamp Ring. There are two bolt lengths for different sizes of stock.



# Adjustable Head Stock

## Exploded Diagram

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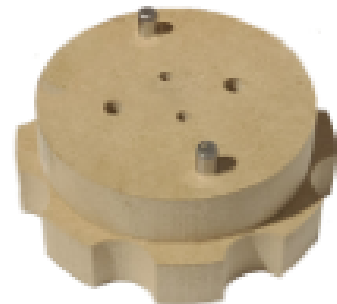
# Quick Chuck Assembly

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- Step 1** Carefully insert the two  $\frac{1}{4}$  X  $1\frac{1}{2}$  steel pins into the outer holes of the Q1, Longworth Adapter as shown. Lightly tap them until they are fully seated.



- Step 2** Align the holes of the Q2 Spacer over the seated pins and carefully tap the pieces together as shown.



**Step 3**

Align the holes of the Q3, Chuck Face, over the exposed ends of the seated pins and insert the remaining two pins in the outer holes. Carefully tap the pieces together as shown. These pins will extend out approximately 1/4 inch.



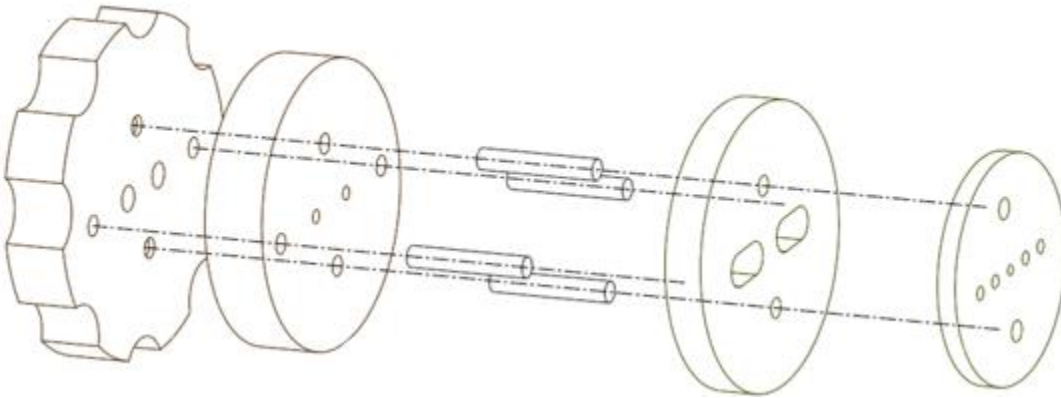
**Step 4**

The exposed pins will be inserted into the Q4 Material mount.



# Quick Chuck Exploded Diagram

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# Attaching the Quick Chuck

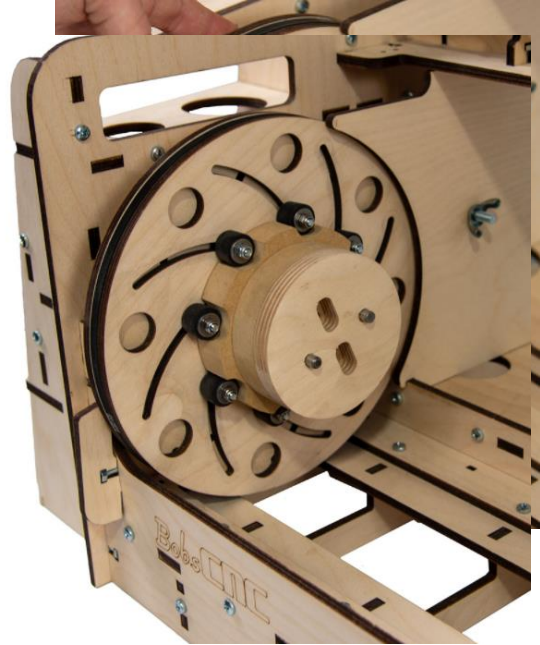
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**Step 1** Loosen the Longworth Grippers.





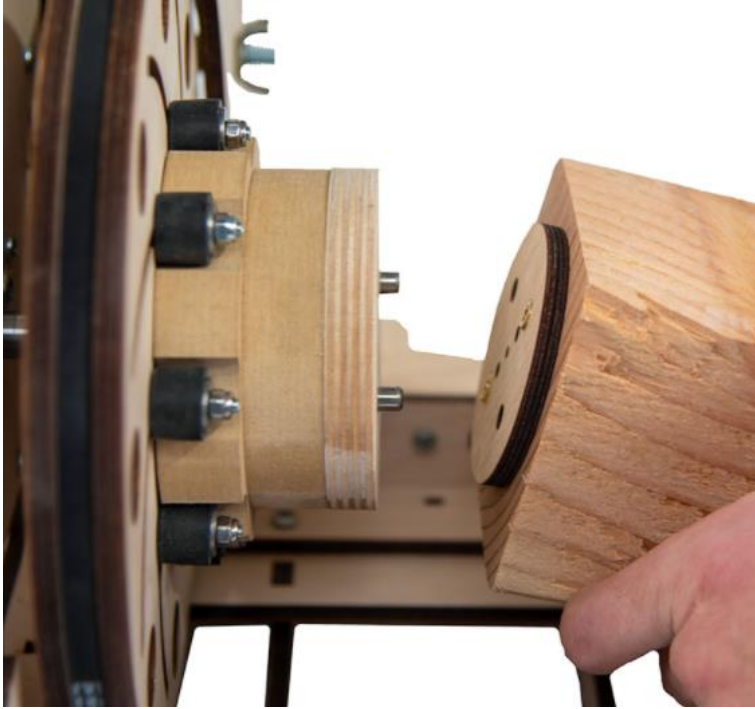
**Step 2** Align and tighten the Grippers, to hold the Quick Chuck in position as shown.



**Step 3** Center the Material Mount and secure with wood screws (not included).



**Step 4** Align the mounting pins with the attached Q4, Material Mount, and secure with Tail Stock as shown.





# Attaching the Pass-Through Tail Stock

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**Step 1** Remove Tail Stock.



**Step 2** Use the DR1 Drill Guide to drill mounting holes using a 3/16" diameter drill bit.



**Step 3** Align the mounting holes in the Pass-Through Tail Stock with the newly drilled holes and secure with six M4 X 30 Screws and Nuts. Insert the screw from the outside of the Gantry Assembly as shown.



Finished installation of Pass Through Tail Stock, outside view.

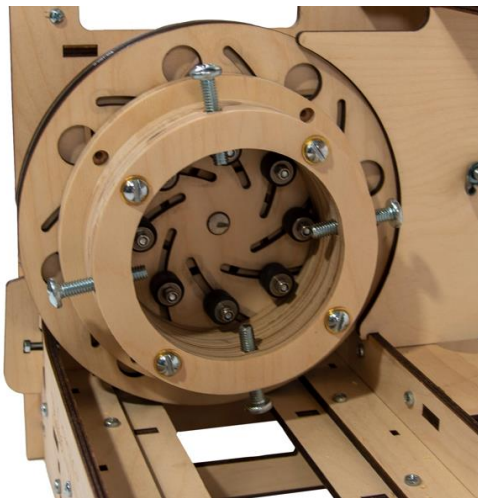
# Attaching the Adjustable Head Stock

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**Step 1** Move the Longworth Grippers toward the center as shown.



**Step 2** Align the mounting holes on the Adjustable Chuck with the slots in the Longworth Chuck. Attach and secure with four M4 X 30 Screws, Washers and Locknuts.





Side view of installed Adjustable Head Stock