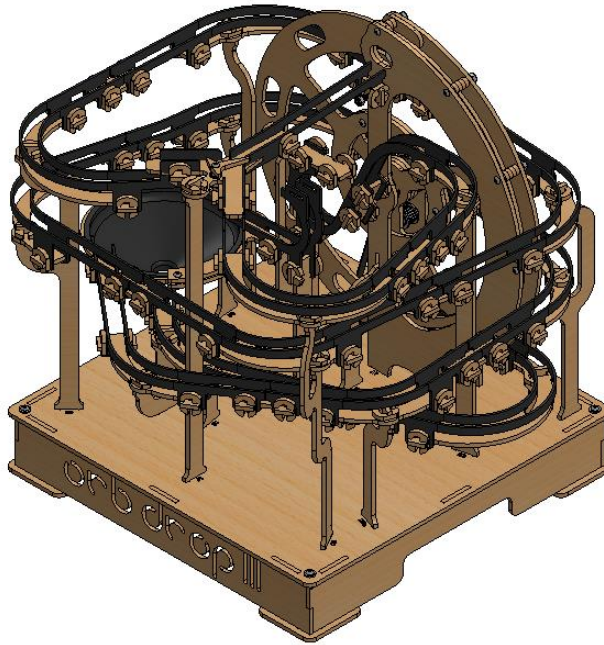


Orb Drop 3

Assembly Instructions



BY SPINPAL

Orb Drop 3 Wood/Plastic		
Component		Qty.
Auto A1-A17		17
Base B1-B6 (4x B6)		9
Curves C1-C17 (2x C6b, No C4, No C5)		17
Rails R1-R17		32
Rail Connectors RC, RCb		13
Spacers (10 extra)		40
Supports S1-S16 (2x S7, No S12, S13, S14, S15)		13
Twists (20 extra)		~180

Orb Drop 3 Hardware		
Component		Qty.
Wood Sheets – 1, 2, 3, 4, 5		5
Plastic Sheets – 6, 7		2
1/2" Steel Balls		6
2" #4-40 Screw		5
1" #4-40 Screw		15
5/8" #4-40 Screw		1
3/8" #4-40 Screw		13
#4-40 Lock Nut		40
#4-40 T-Nut		1
#4 Washer		27
3/8" #2 Wood Screw		1
Aluminum Spacer (3/16" OD)		3
GM3 - Gear Motor 3 - 90 degree		1
Rocker Switch		1
3xAA Battery Holder		1
Male to Male Jumper Wire, 3.9"		1
Alligator Clips		4
400mm x 6mm GT2 Belt		1
Idler Pulley		1
Motor Pulley 20T		1
Wheel Pulley 20T		1
Funnel 4"		1
1/16" Hex L-Key		1
Nail File		1

LED Light Kit		
Component		Qty.
RGB LED Strip		2
Male to Male Jumper Wire, 11.8"		2

Leveling Kit		
Component		Qty.
2-1/4" #4-40 Screw		4
Round Base Weld Nut #4-40		4
Rubber Bumper		4
Bubble Level		1

Power Adapter Kit		
Component		Qty.
USB 2.0 Male to DC 5.5x2.1mm Jack		1
DC Power Jack Adapter Connector		1

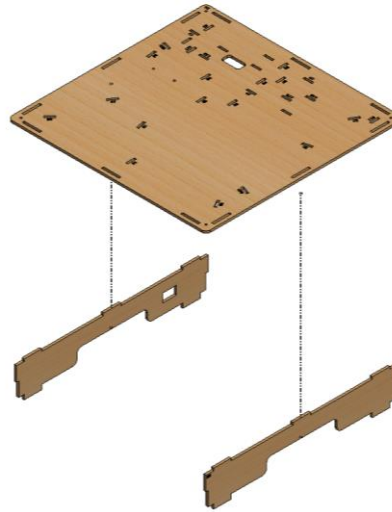
Orb Drop Stout		
Component		Qty.
Wood Main Plate		2
Wood Top Plate		2
Bearing		1
3/8" #2 Wood Screw		8
1/2" Steel Balls		8
Aluminum Standoff #8-32 x 5/16		1
#8-32 x 0.75" Threaded Stud		1
Black Thumb Nut #8-32		2

Step 1 - Base

Prior to assembly, punch out all wood/plastic pieces on all sheets and separate into groups of like components

- A. Insert Base Sides B2 and B3 into Base Top B1
- B. Insert Base Front/Back B4 and B5 into Base Top B1
- C. Insert (4) Base Corners B6 on Base
- D. Secure Base using (4) 2" #4 Screws, (4) Washers, and (4) Lock Nuts

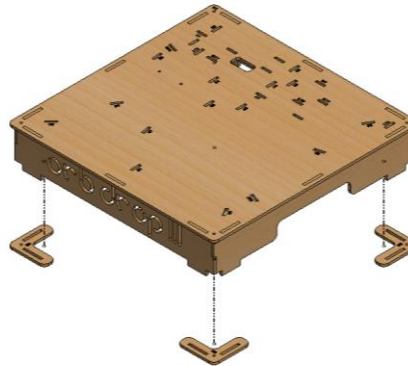
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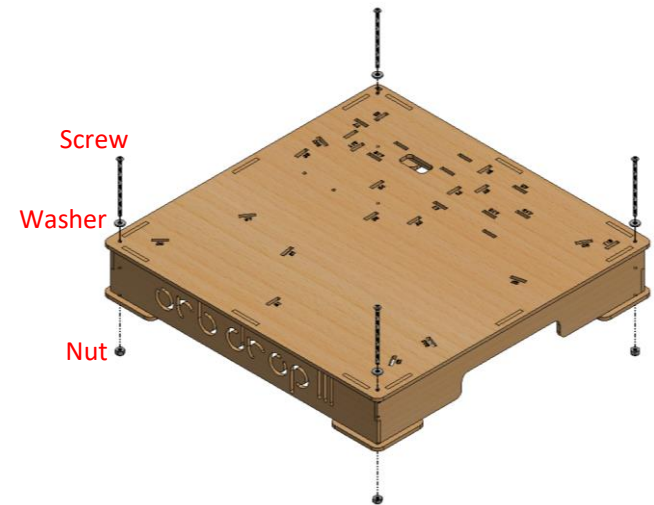
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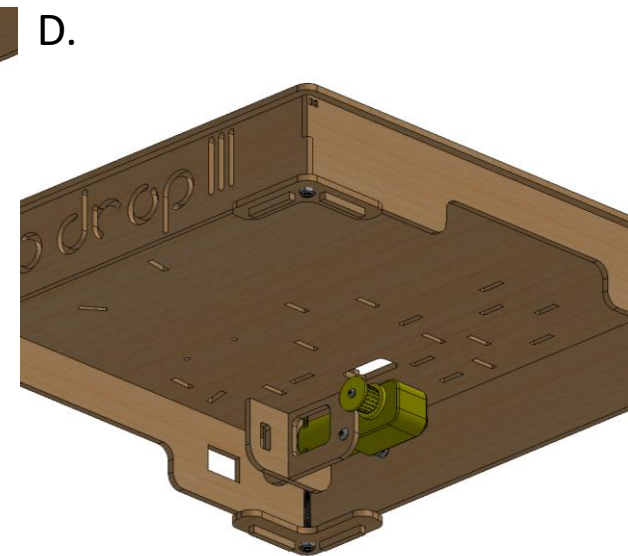
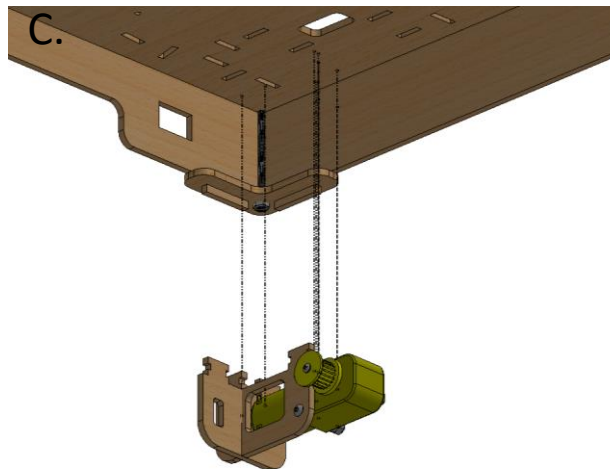
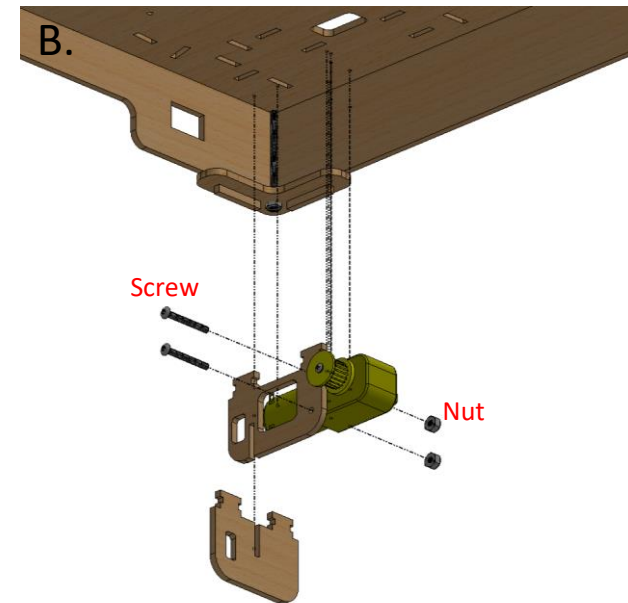
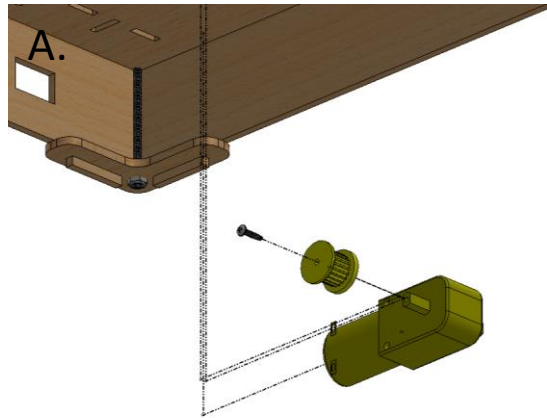


D.



Step 2 - Motor

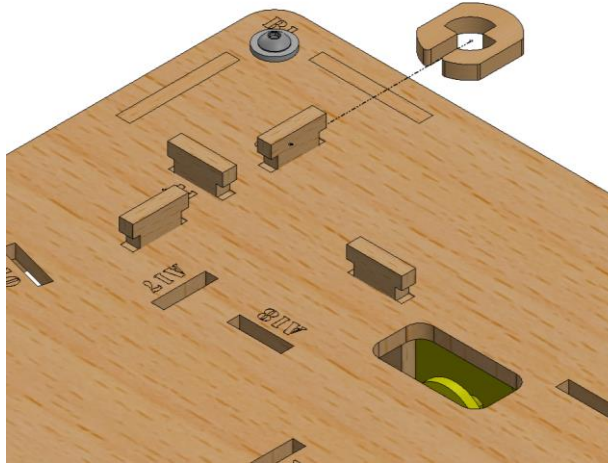
- A. Press on Yellow 20T Motor Pulley and Secure using 3/8" #2 Wood Screw
- B. Attach Gear Motor to Motor Mount A1 using (2) 1" #4 Screws and (2) Lock Nuts
- C. Slide Motor Support A2 over A1 using the slots to align
- D. Attach Motor Assembly to Base, use the A1/A2 labels on the Base to align



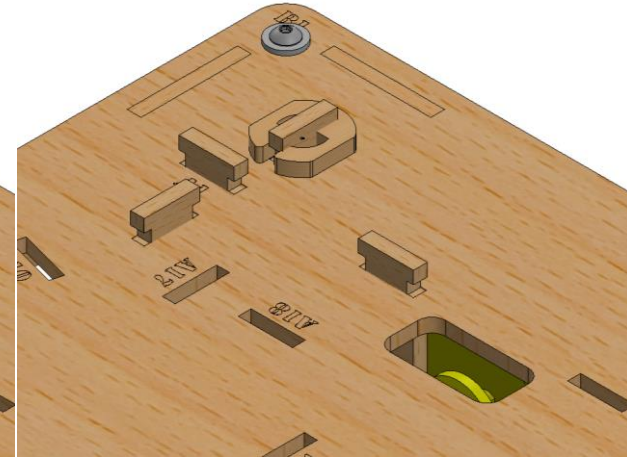
Step 2 - Motor

- E. Slide Twist over post from the side
- F. Ensure the Twist is seated up against the post
- G. Rotate the Twist 90 degrees to secure, note the Twist will only rotate one direction
- H. Add the remaining (3) Twists to the other posts

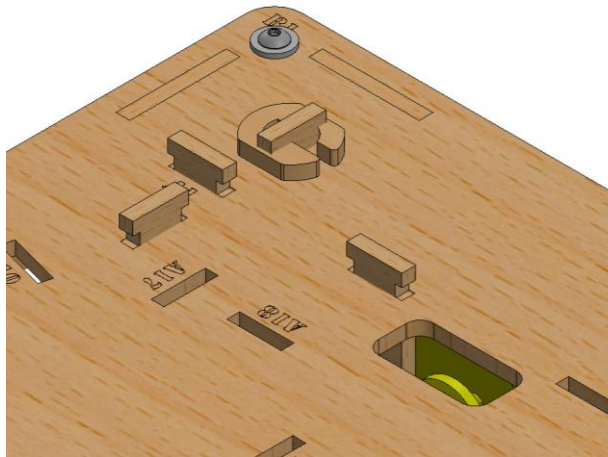
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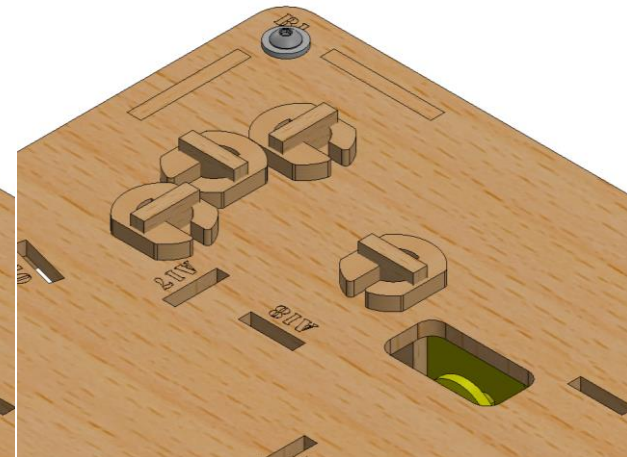
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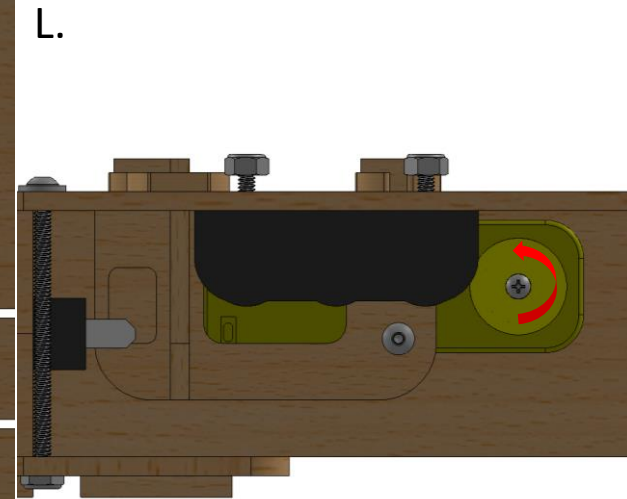
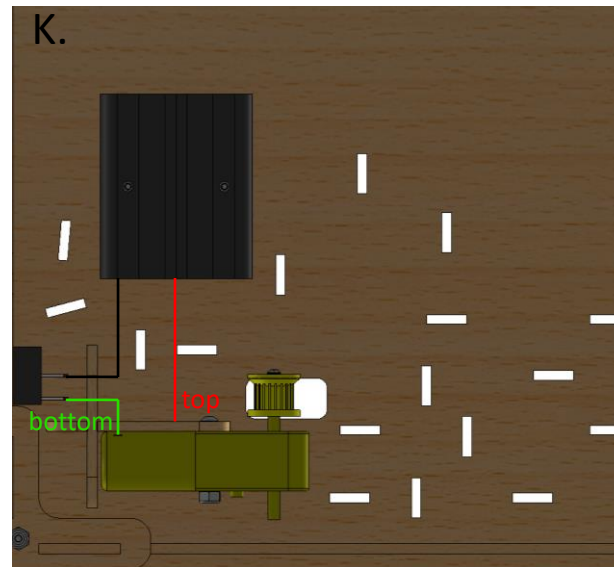
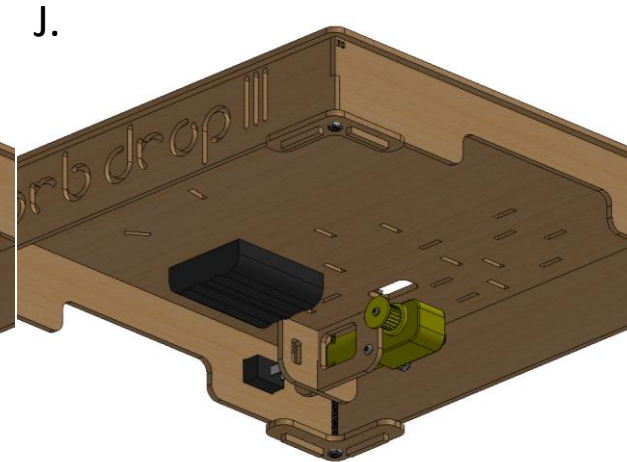
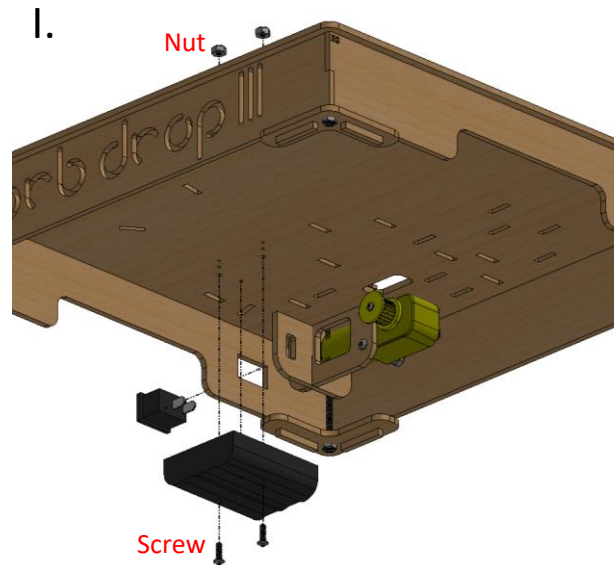


H.



Step 2 - Motor

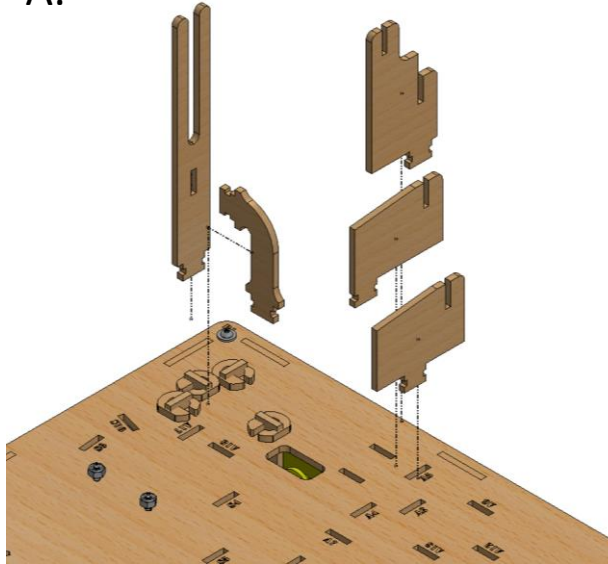
- I. Attach Battery Holder to Base using (2) 3.8" #4 Screws and (2) Lock Nuts
- J. Attach Rocker Switch to Base by pressing into left side opening
- K. Attach Black Wire from Battery Holder to Front Rocker Switch Post using an Alligator Clip, Attach Red Wire From Battery Holder to Top Side of Motor using an Alligator Clip, Attach one side of 3.9" Jumper Wire to Rear Rocker Switch Post using an Alligator Clip, Attach other side of 3.9" Jumper Wire to Bottom Side of Motor using an Alligator Clip
- L. Add (3) AA Batteries to Holder, Flip Rocker Switch to ensure the Yellow 20T Motor Pulley is spinning Counterclockwise



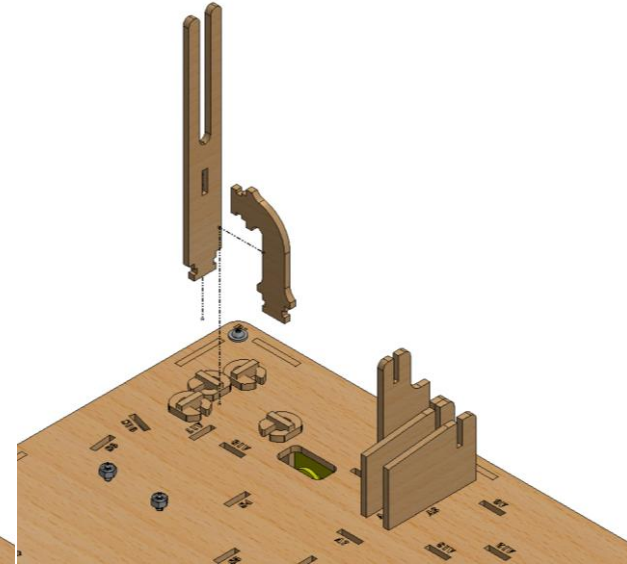
Step 3 - Lift

- A. Insert A3 and A4 into Base using labels to align
- B. Insert A5 into Base using labels to align, Secure A3, A4, A5, with (3) Twists
- C. Insert A17 into side of A16, Secure with Twist
- D. Insert A16 and A17 into Base using labels to align, Secure with (3) Twists to underside posts

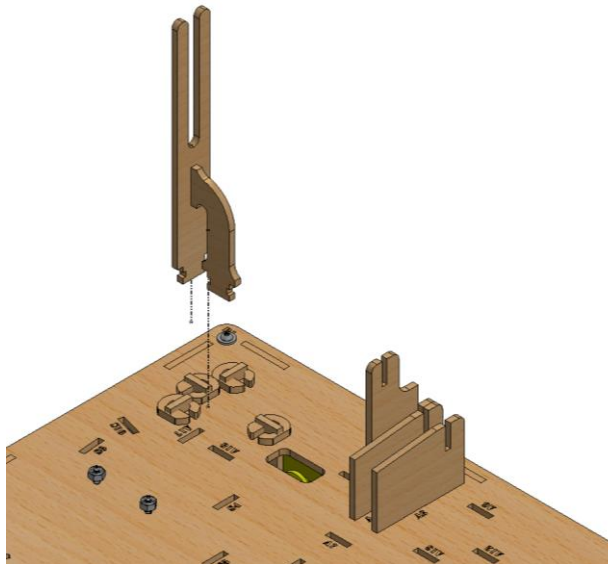
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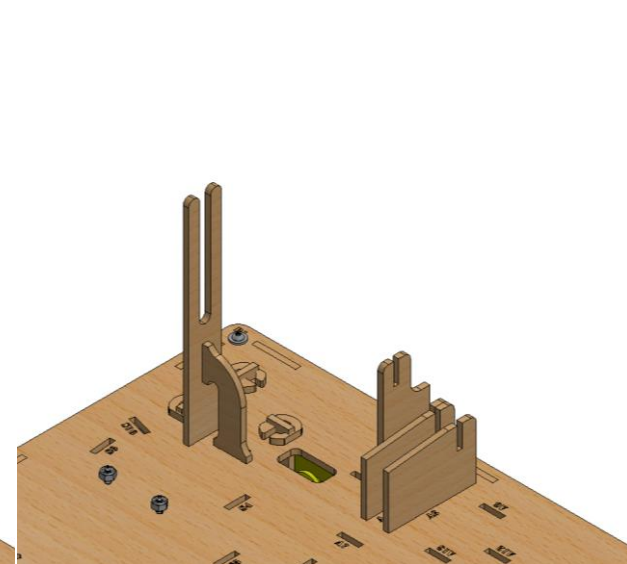
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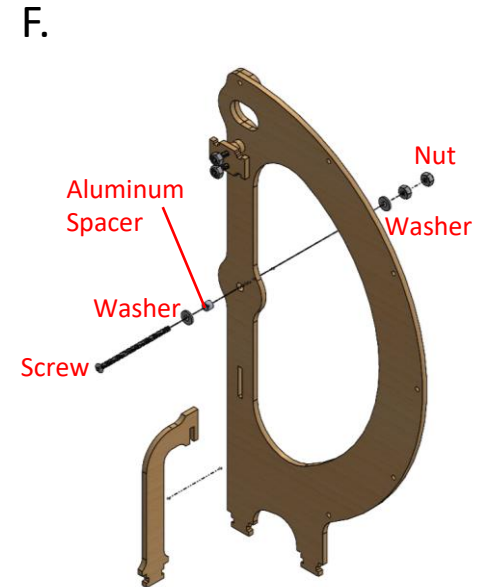
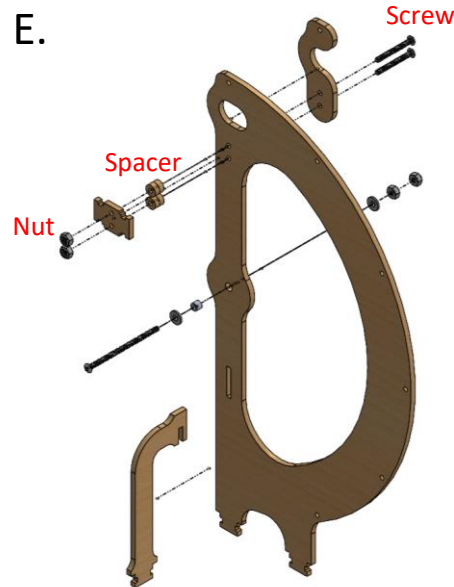


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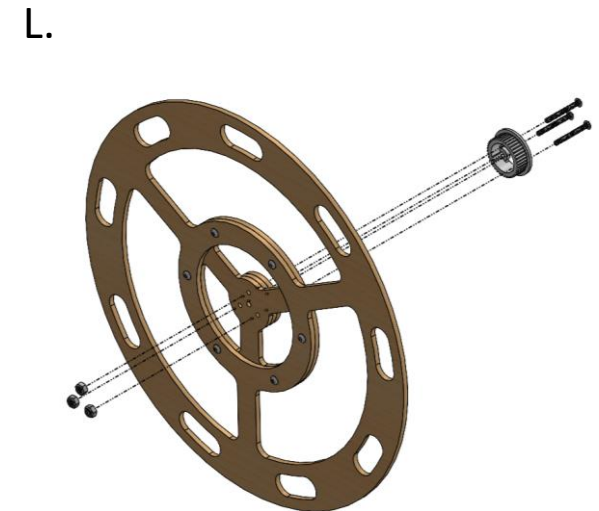
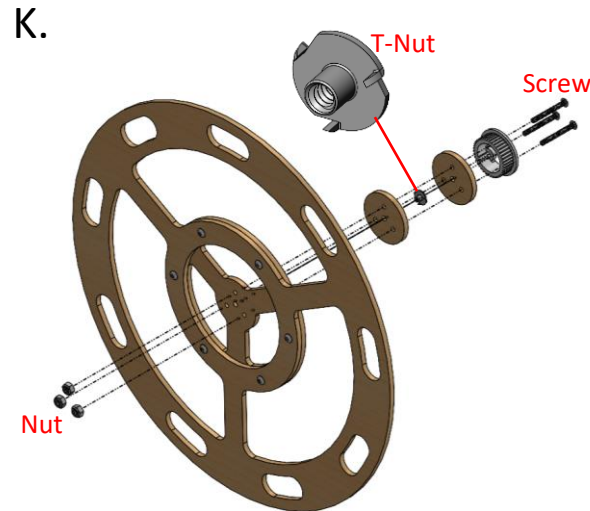
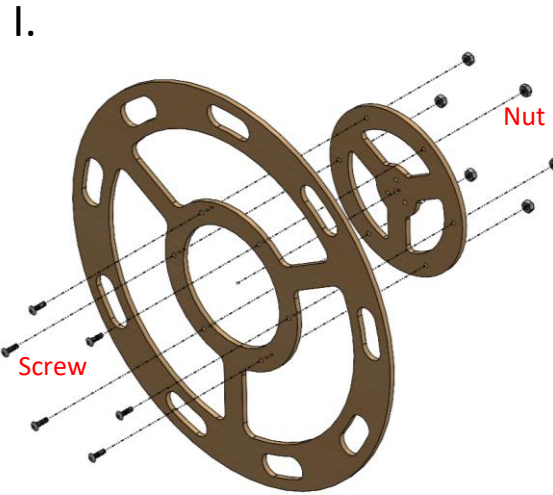
Step 3 - Lift

- E. Attach A1 to A7 using (2) 1" #4 Screws
- F. Add (2) Spacers to each Screw, then add RCb and (2) Lock Nuts
- G. Add (1) Washer and (1) Aluminum Spacer to a 2" #4 Screw, Insert Screw into A7, then secure using (1) Washer and (2) Lock Nuts to the other side
- H. Insert and lower A8 Support into A7, set A7 Front Support Subassembly aside



Step 3 - Lift

- I. Hold A10 to back side of A9
- J. Secure A10 and A9 using (6) 3/8" #4 Screws and (6) Lock Nuts
- K. Press #4 T-Nut into A11 using a hammer to secure, Sandwich T-Nut with another A11
- L. Add White 40T Wheel Pulley to both A11s and secure using (3) 1" #4 Screws and (3) Lock Nuts



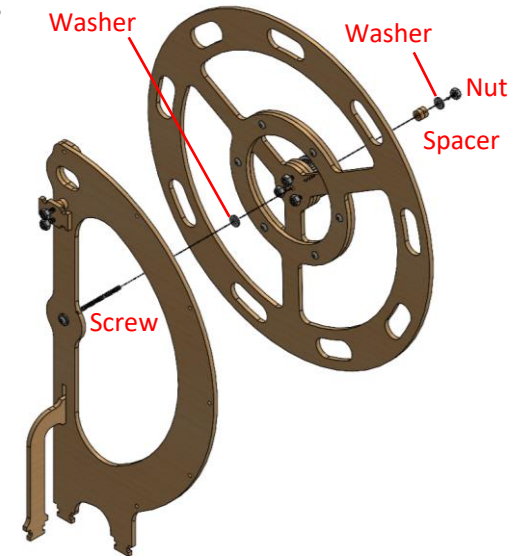
Step 3 - Lift

- M. Completed A9 Wheel Subassembly
- N. Add a Washer to Screw of the A7 Front Support Subassembly, then screw on the A9 Wheel Subassembly by threading on T-Nut added previously
- O. Secure using (2) Spacers, (1) Washer, and (1) Lock Nut
- P. Insert (6) 1" #4 Screws into front of A7/A9 Subassembly

M.



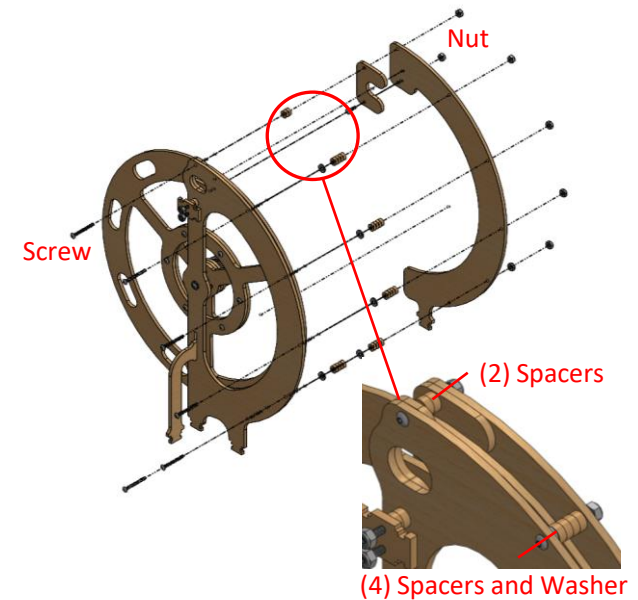
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O.

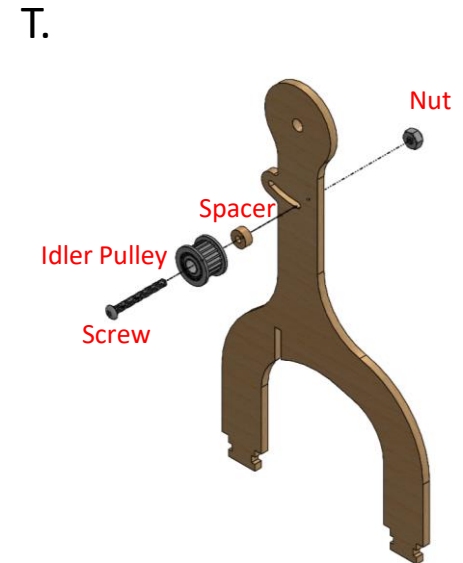
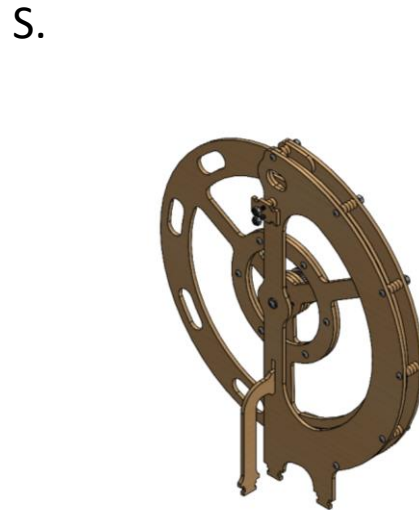
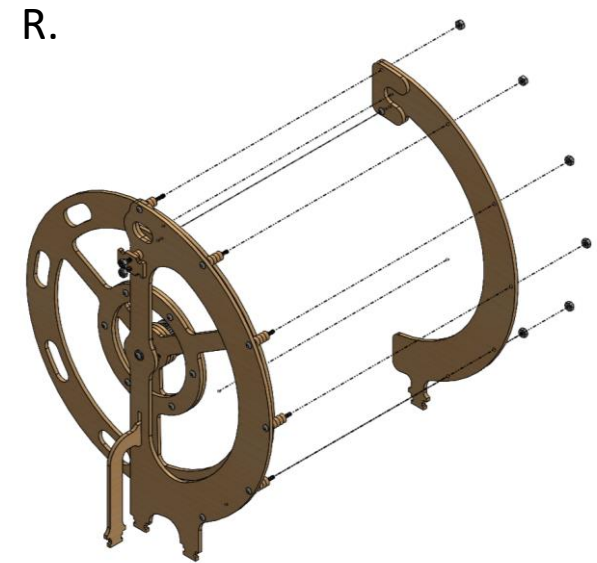
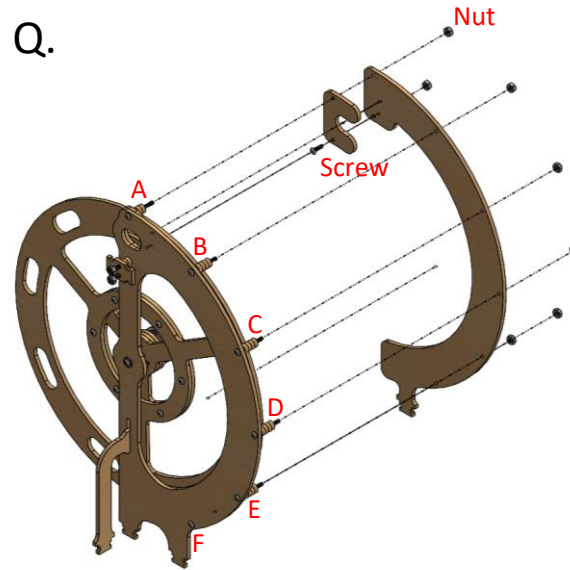


P.



Step 3 - Lift

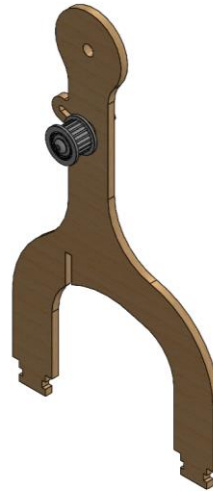
- Q. Add (2) Spacers to Screw A, and add (1) Washer and (4) Spacers to Screw B, C, D, E, and F
- R. Secure A14 to front of A13 using (1) 3/8" #4 Screw and (1) Lock Nut through the bottom hole only
- S. Secure A13 to A7/A9 Subassembly using (6) Lock Nuts
- T. Attach Idler Pulley and Spacer to front of A12 radial slot using (1) 1" #4 Screw and (1) Lock Nut



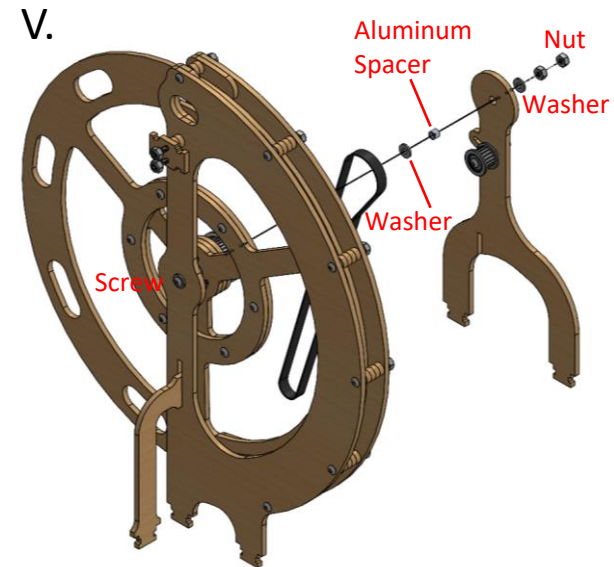
Step 3 - Lift

- U. Do not fully tighten the Idler Pulley so tension can be adjusted on the Belt
- V. Add Belt to White 40T Wheel Pully, Add (1) Washer then (1) Aluminum Spacer A7/A9/A13 Subassembly Screw
- W. Add A14 Rear Support Subassembly to A7/A9/A13 Subassembly and Secure using (1) Washer and (2) Lock Nuts
- X. Completed Lift Assembly

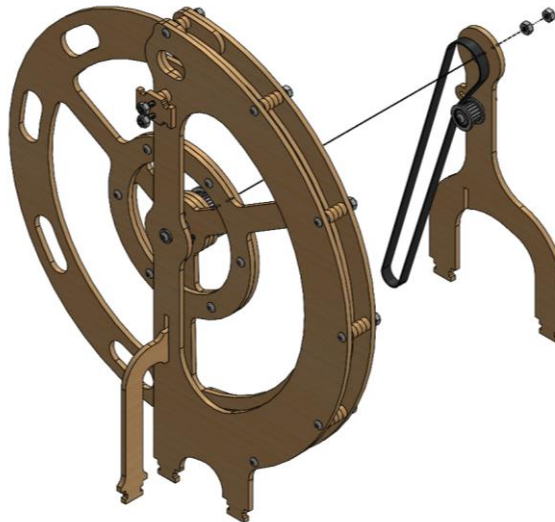
U.



V.



W.

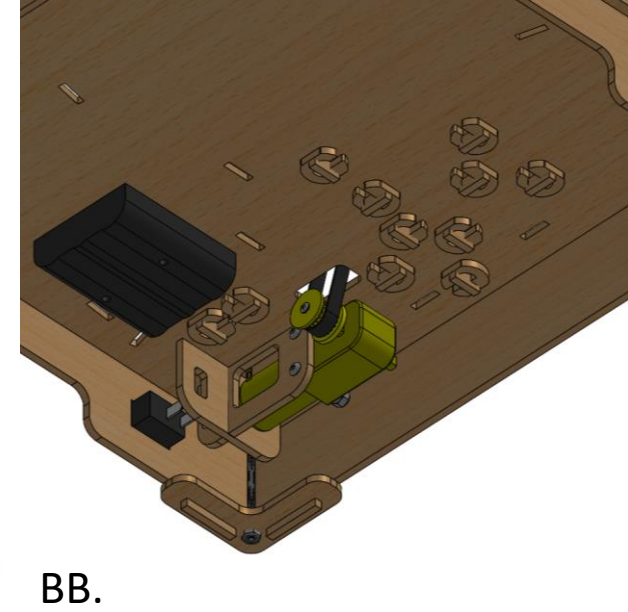
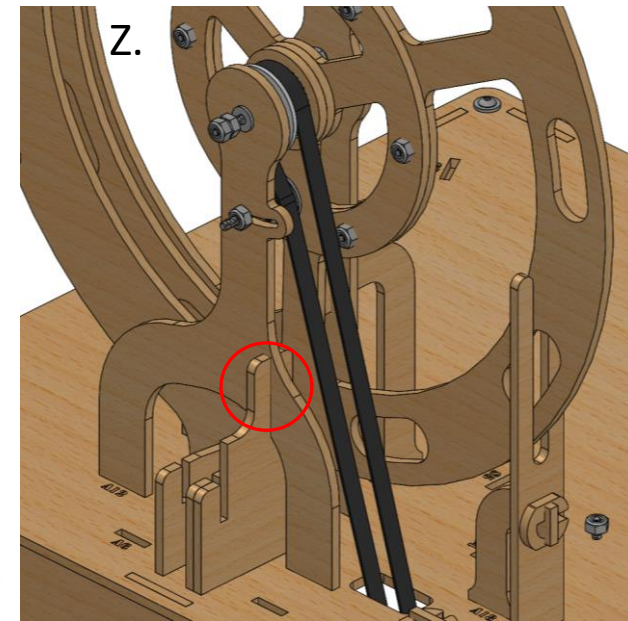
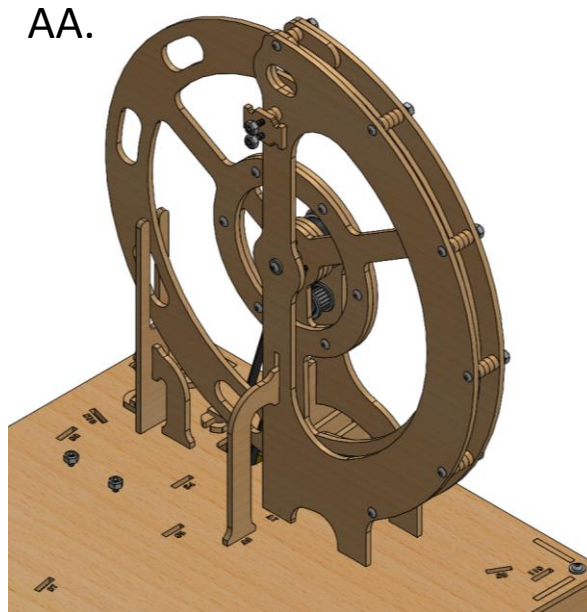
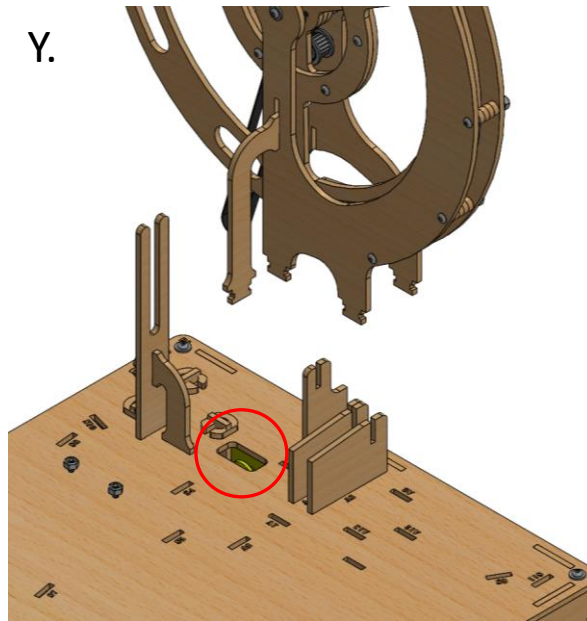


X.



Step 3 - Lift

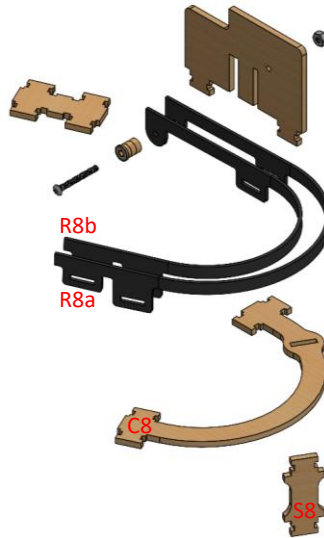
- Y. Lower Lift Assembly on to Base, First insert the Belt through the Base opening and wrap the Belt around the Yellow 20T Motor Pulley,
- Z. Slide A14 into A5 slot then insert (6) posts into Base using the labels to align
- AA. Lift Assembly fully seated
- BB. Add (6) Twists to underside posts, Press Idler Pulley against Belt to add tension then tighten down, Flip the Rocker Switch and test the Lift



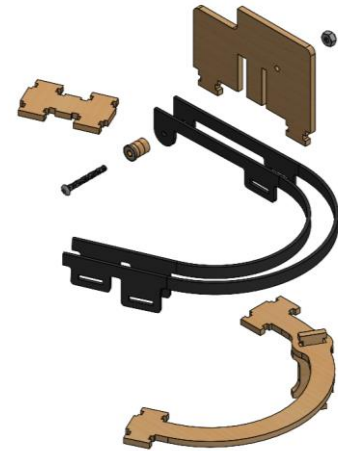
Step 4 - Rail 8

- A. Assemble Rail 8, Rail and Curve labels will always be positioned up the track, Support labels will always align with the labels on the Base
- B. Insert Support S8 into Curve C8 and secure with a Twist
- C. Add Curve C8 to Rail R8a/R8b, R8a is longer and is located on the outside of the curve, secure with (4) Twists
- D. Add Rail Connector RC to Rail R8a/R8b and secure with (2) Twists

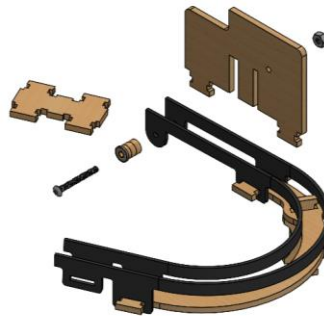
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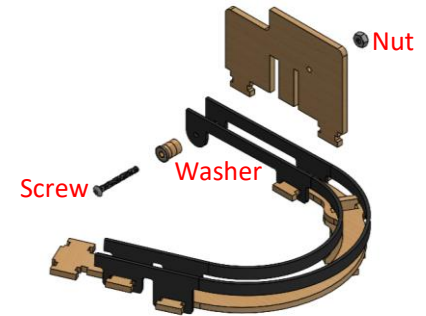
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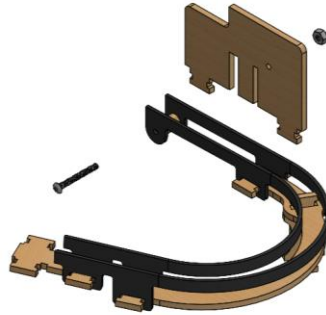
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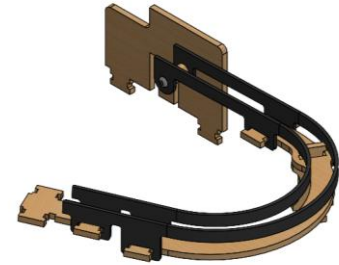
Step 4 - Rail 8

- E. Insert (3) Spacers and (1) Washer in between Rail 8a and 8b
- F. Insert (1) 1" #4 Screw through R8b, (3) Spacers, (1) Washer, R8a and A6, Secure using (1) Lock Nut
- G. Insert (2) A6 posts and (1) S8 post into Base using the labels to align
- H. Secure using (3) Twists to underside posts

E.



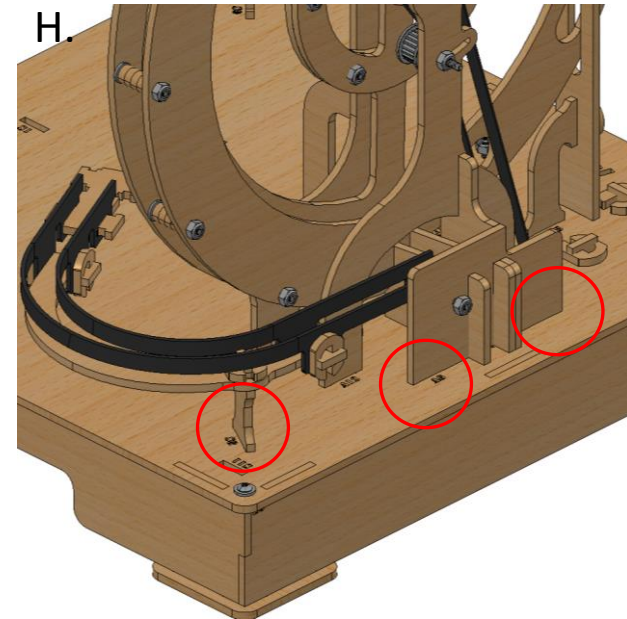
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G.



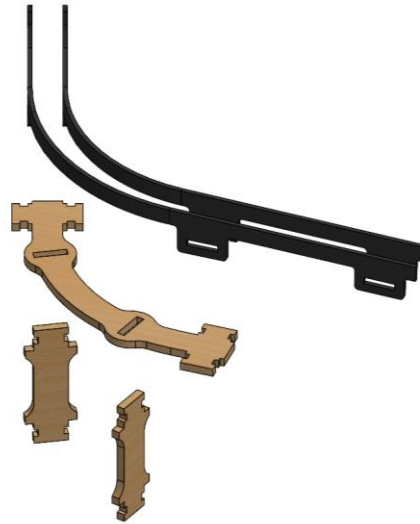
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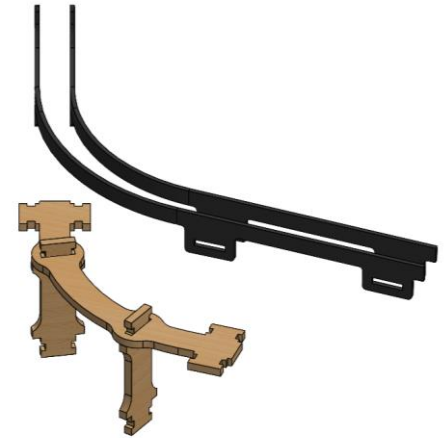
Step 5 - Rail 7

- A. Assemble Rail 7
- B. Insert (2) Support S7 into Curve C7 and secure with (2) Twists
- C. Add Curve C7 to Rail R7a/R7b, R7a is longer and is located on the outside of the curve, secure with (4) Twists
- D. Add Rail 7 Assembly to Rail 8 Rail Connector RC, Insert (2) S7 posts into Base using the labels to align, Secure using (2) Twists to underside posts

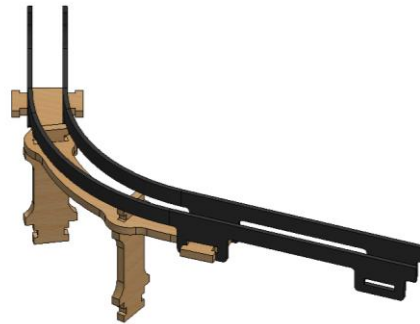
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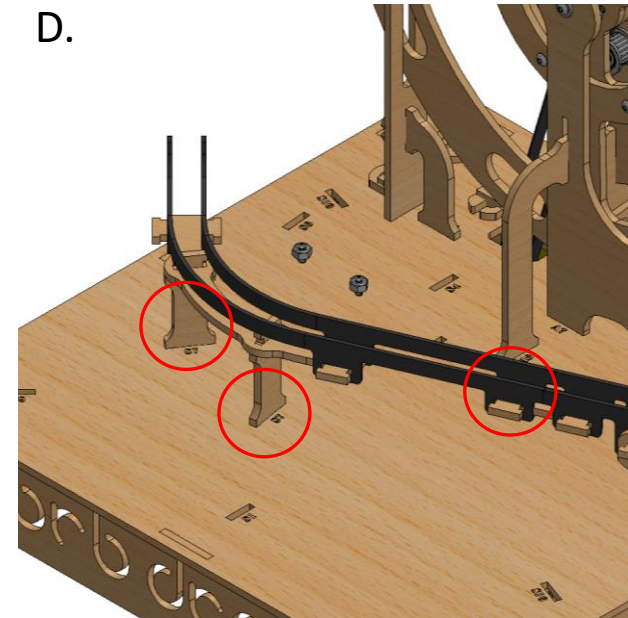
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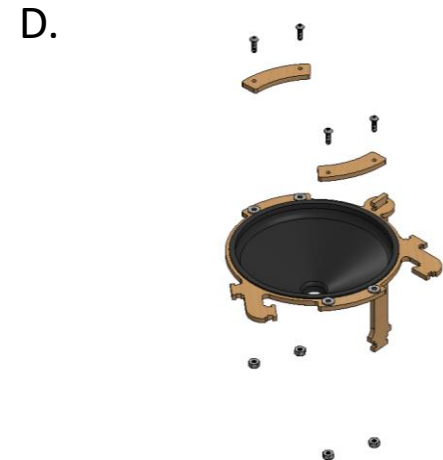
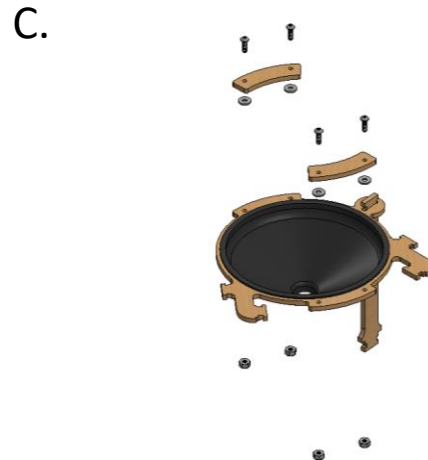
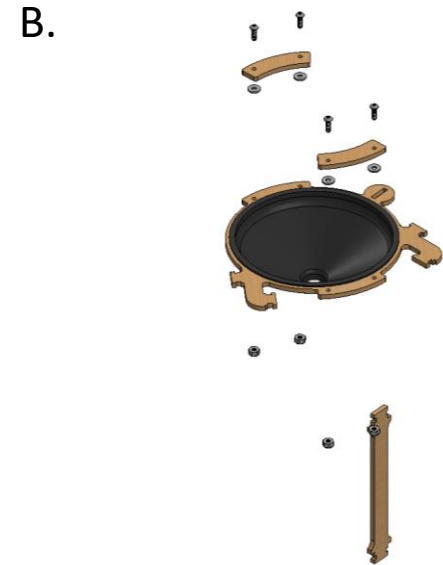


D.



Step 6 - Funnel

- A. Assemble Funnel (Rail 6)
- B. Insert Funnel into Curve C6 by aligning (3) tabs
- C. Insert Support S6 into Curve C6 and secure with (1) Twist
- D. Place (4) Washers over holes in Curve C6



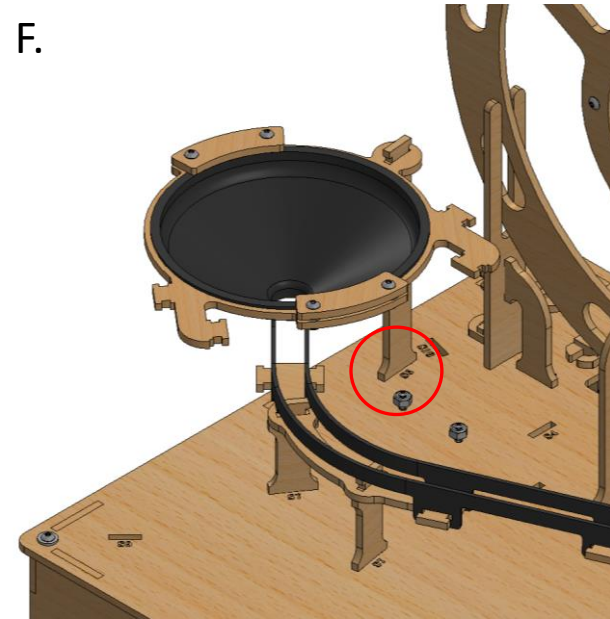
Step 6 - Funnel

- E. Secure (4) Washers and Funnel using (4) 3/8" #4 Screws and (4) Lock Nuts
- F. Insert (1) S6 post into Base using the labels to align, Secure using (1) Twists to underside post

E.



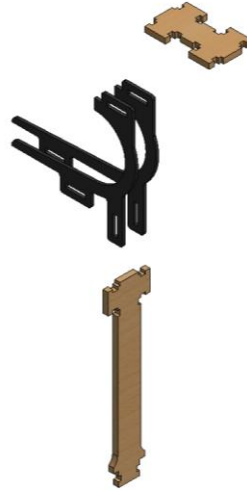
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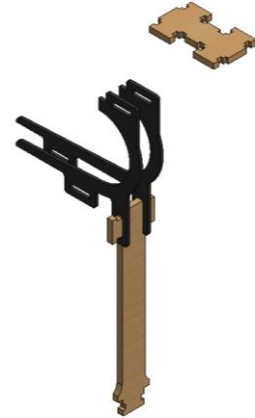
Step 7 - Rail 5

- A. Assemble Rail 5
- B. Insert Support S5 in between both Rail R5s and secure with (2) Twists
- C. Add Rail Connector RC to Rail R5s and secure with (2) Twists
- D. Add Rail 5 Assembly to Curve C6, Insert (1) S5 post into Base using the labels to align, Secure using (1) Twist to underside post

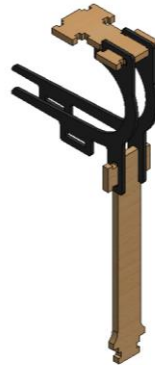
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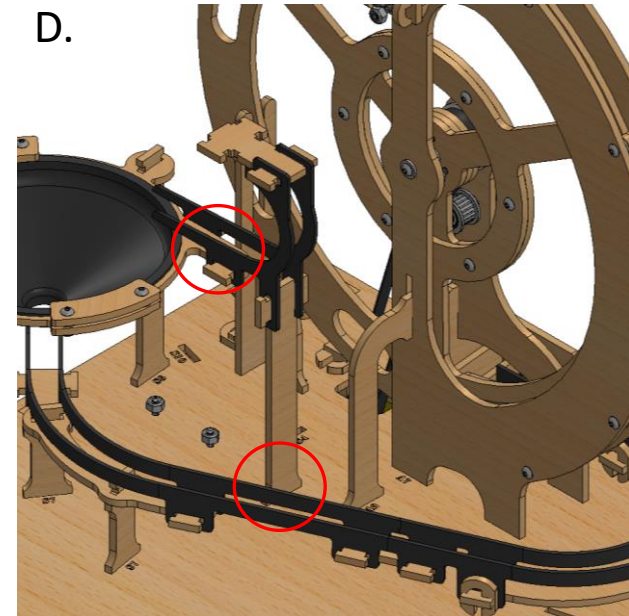
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C.



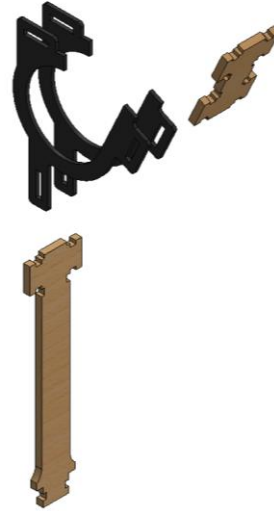
D.



Step 8 - Rail 4

- A. Assemble Rail 4
- B. Insert Support S4 in between both Rail R4s and secure with (2) Twists
- C. Add Rail Connector RC to Rail R4s and secure with (2) Twists
- D. Add Rail 4 Assembly to Rail 5 Rail Connector RC using (2) Twists, Insert (1) S4 post into Base using the labels to align, Secure using (1) Twists to underside posts

A.



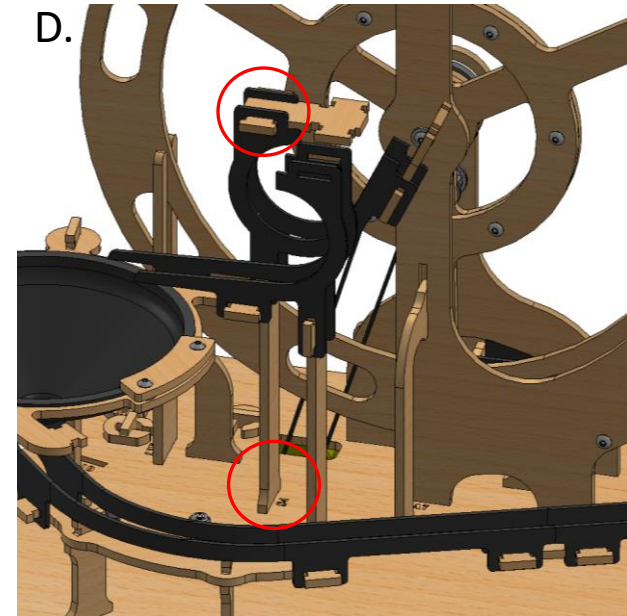
B.



C.



D.



Step 9 - Rail 3

- A. Assemble Rail 3
- B. Insert Support S3 into Curve C3 and secure with (1) Twist
- C. Add Curve C3 to Rail R3a/R3b, R3a is longer and is located on the outside of the curve, secure with (4) Twists, Add Rail Connector RC to Rail R3a/R3b and secure with (2) Twists
- D. Add Rail 3 Assembly to Rail 4 Rail Connector RC using (2) Twists, Insert (1) S3 post into Base using the labels to align, Secure using (1) Twist to underside post

A.



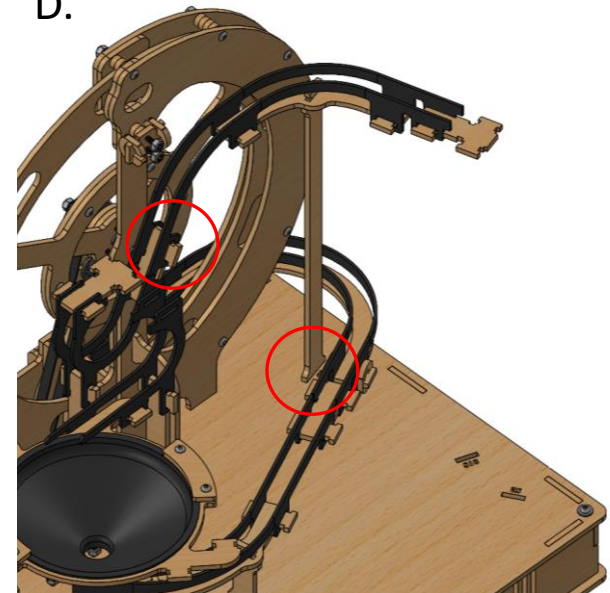
B.



C.



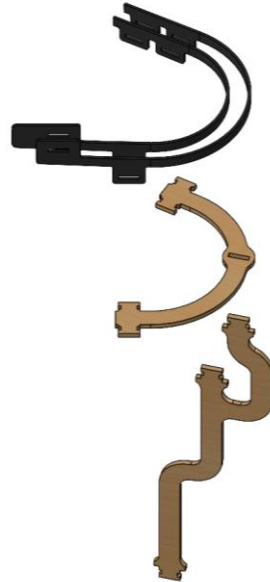
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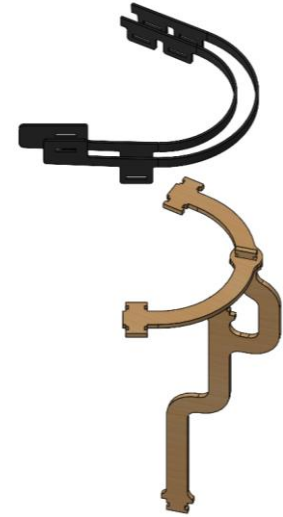
Step 10 - Rail 2

- A. Assemble Rail 2
- B. Insert top post of Support S2 into Curve C2 and secure with (1) Twist
- C. Add Curve C2 to Rail R2a/R2b, R2a is located on the outside of the curve, secure with (4) Twists
- D. Add Rail 2 Assembly to Rail 3 Rail Connector RC, Insert (1) S2 post into Base using the labels to align, Secure using (1) Twist to underside post

A.



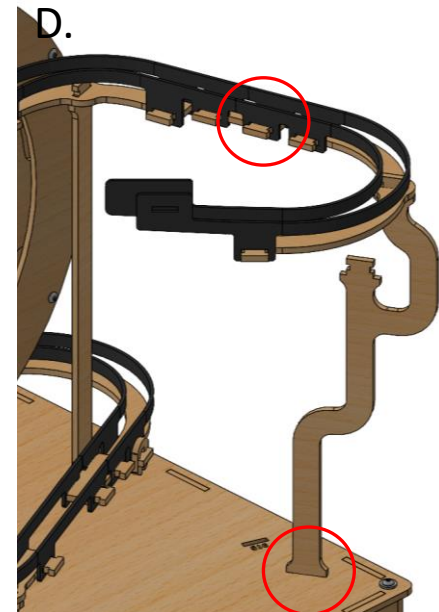
B.



C.

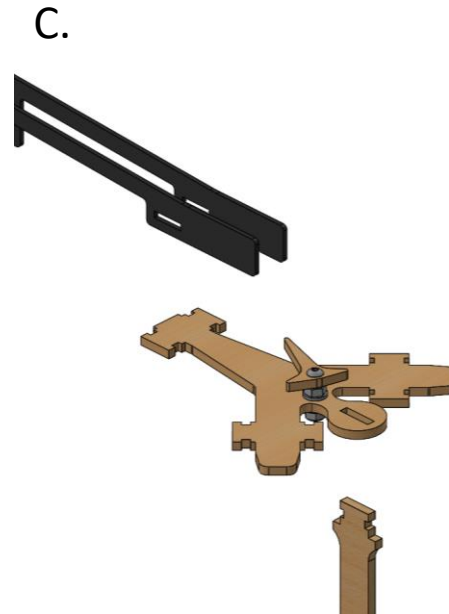
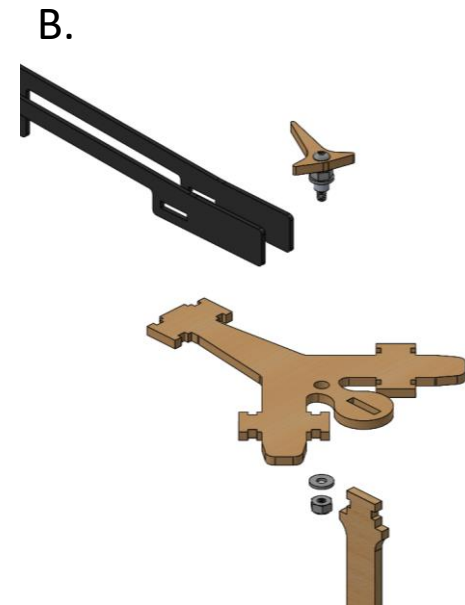
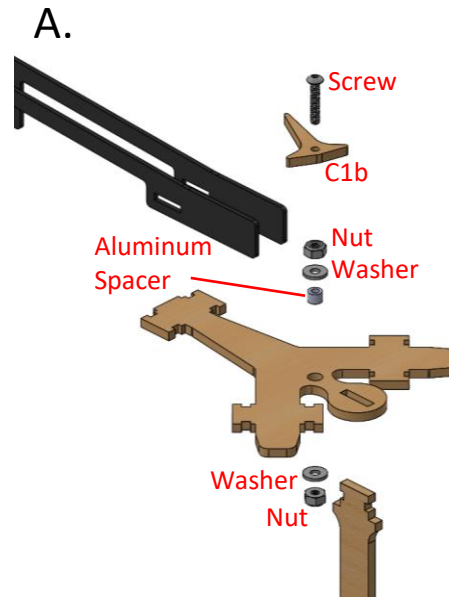


D.



Step 11 - Rail 1

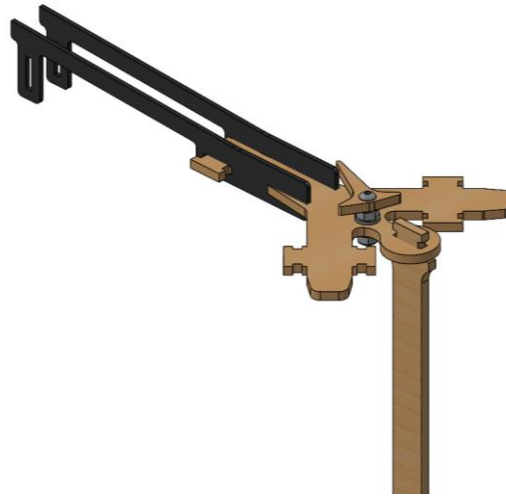
- A. Assemble Rail 1
- B. Insert (1) 1" #4 Screw into Curve C1b, add (1) Lock Nut, (1) Washer, and (1) Aluminum Spacer to Screw
- C. Insert C1b Assembly into Curve C1, Secure using (1) Washer and (1) Lock Nut
- D. Insert Support S1 into Curve C1 and secure with (1) Twist



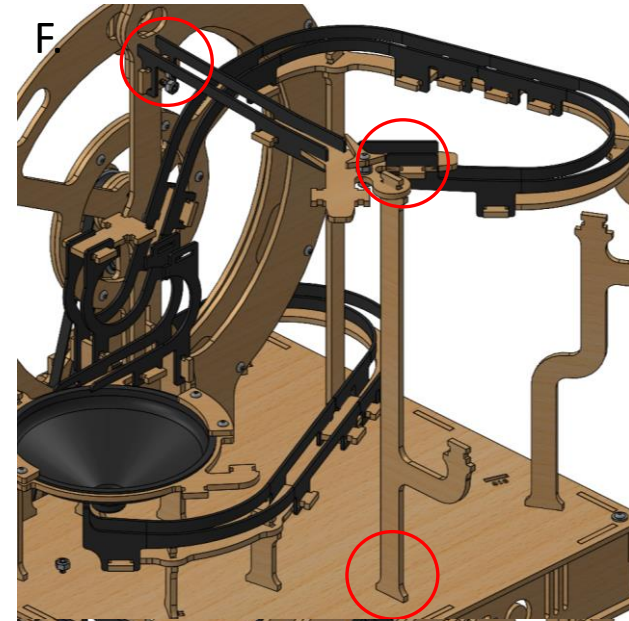
Step 11 - Rail 1

- E. Add Curve C1 to Rail R1s, and secure with (2) Twists, the end of the R1s will flare outward, ensure C1b stays located in between R1s so it can switch the orbs
- F. Add Rail 1 Assembly to beginning of Rail 2 using (2) Twists, then attach beginning of Rail 1 to RCb using (2) Twists, Insert (1) S1 post into Base using the labels to align, Secure using (1) Twist to underside post
- G. Ensure Rail 1 Assembly is installed correctly and Twists from previous steps are all installed above and below the base
- H. Test the first run by adding Orbs to Rail 8 and turn on your Orb Drop 3

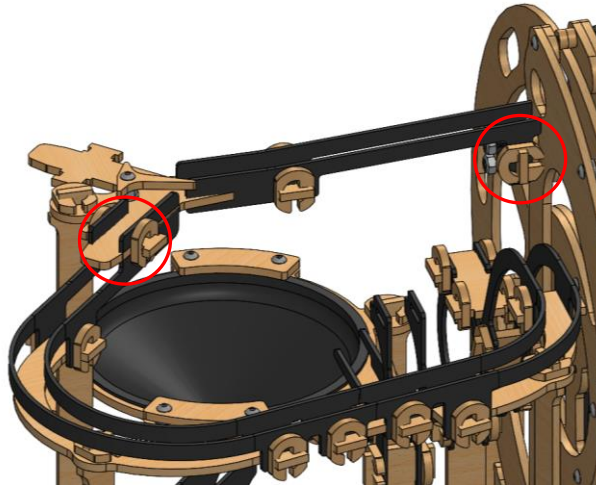
E.



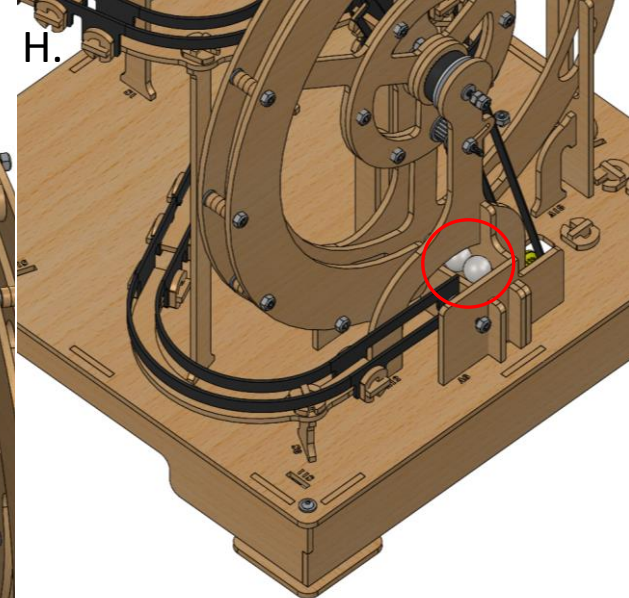
F.



G.



H.



Step 12 - Rail 9

- A. Assemble Rail 9
- B. Insert top post of Support S9 into Curve C9 and secure with (1) Twist
- C. Add Curve C9 to Rail R9a/R9b, R9a is located on the outside of the curve, secure with (4) Twists, Add Rail Connector RC to R9a/R9b using (2) Twists
- D. Add Rail 9 Assembly to Curve C1 using (2) Twists, Insert (1) S9 post into Base using the labels to align, Secure using (1) Twist to underside post

A.



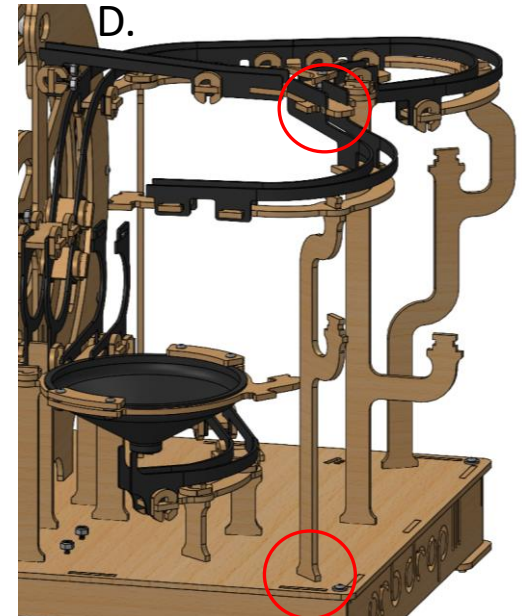
B.



C.



D.



Step 13 - Rail 10

- A. Assemble Rail 10
- B. Insert top post of Support S10 into Curve C10 and secure with (1) Twist
- C. Add Curve C10 to Rail R10a/R10b, R10a is located on the outside of the curve, secure with (4) Twists, Add Rail Connector RC to R10a/R10b using (2) Twists
- D. Add Rail 10 Assembly to Rail 9 Rail Connector RC using (2) Twists, Insert (1) S10 post into Base using the labels to align, Secure using (1) Twist to underside post

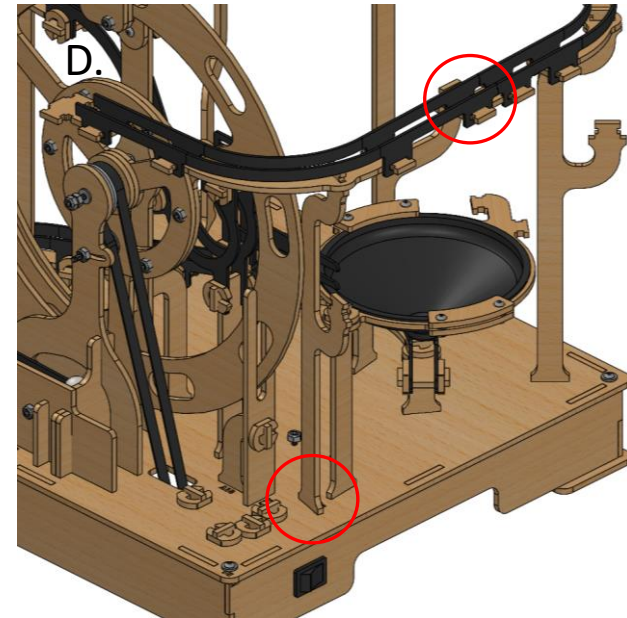
A.



B.

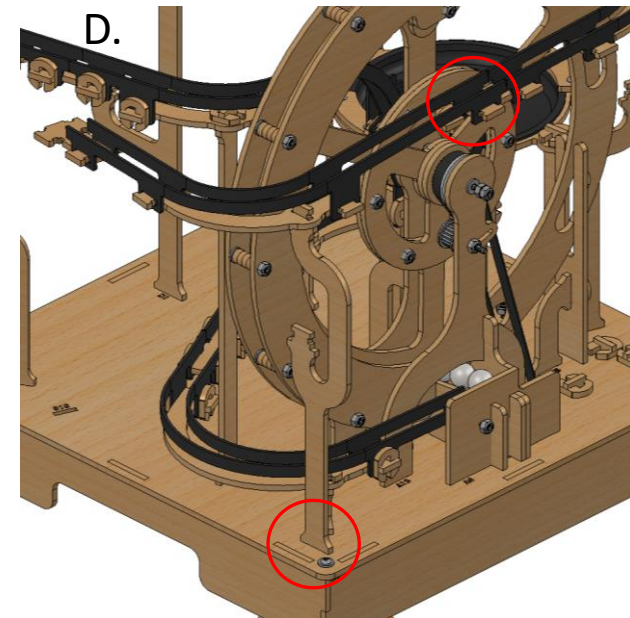
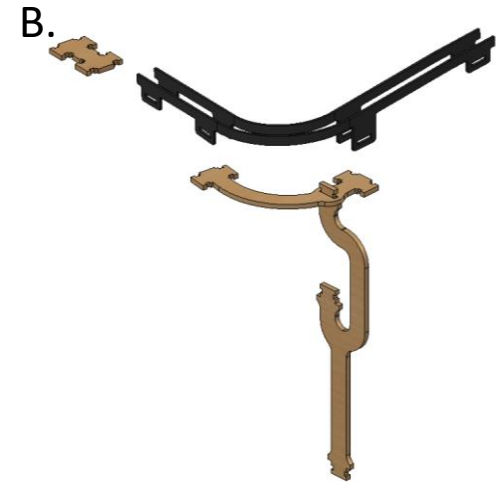
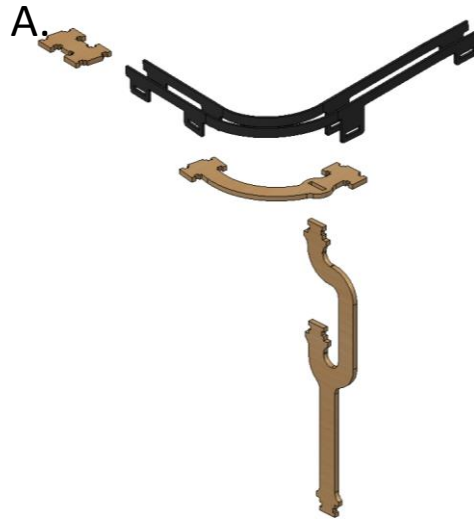


C.



Step 14 - Rail 11

- A. Assemble Rail 11
- B. Insert top post of Support S11 into Curve C11 and secure with (1) Twist
- C. Add Curve C11 to Rail R11a/R11b, R11a is located on the outside of the curve, secure with (4) Twists, Add Rail Connector RC to R11a/R11b using (2) Twists
- D. Add Rail 11 Assembly to Rail 10 Rail Connector RC using (2) Twists, Insert (1) S10 post into Base using the labels to align, Secure using (1) Twist to underside post



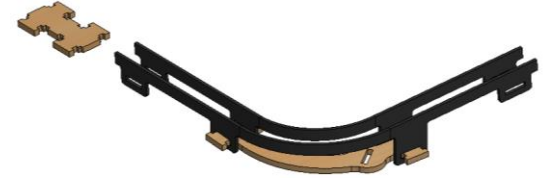
Step 15 - Rail 12

- A. Assemble Rail 12
- B. Add Curve C12 to Rail R12a/R12b, R12a is located on the outside of the curve, secure with (4) Twists
- C. Add Rail Connector RC to R12a/R12b using (2) Twists
- D. Add Rail 12 Assembly to Rail 11 Rail Connector RC using (2) Twists, Connect Curve 12 to bottom post of Support S2 and secure with (1) Twist

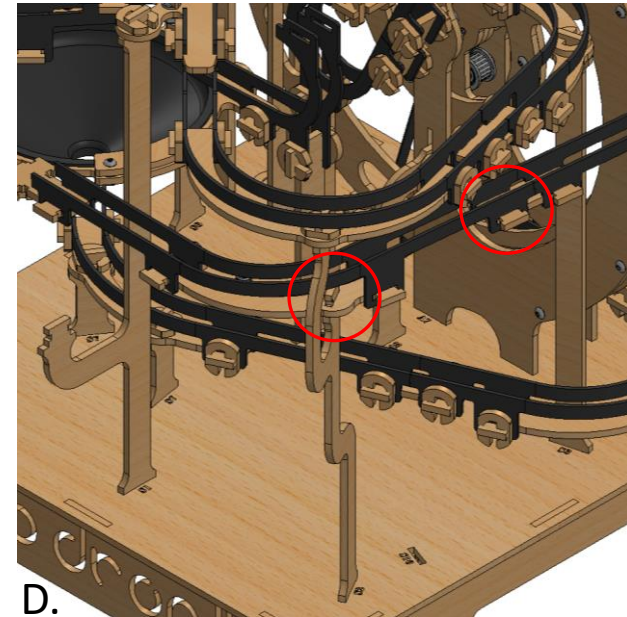
A.



B.



C.



D.

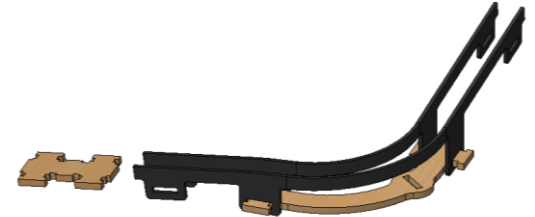
Step 16 - Rail 13

- A. Assemble Rail 13
- B. Add Curve C13 to Rail R13a/R13b, R13a is located on the outside of the curve, secure with (4) Twists
- C. Add Rail Connector RC to R13a/R13b using (2) Twists
- D. Add Rail 13 Assembly to Rail 12 Rail Connector RC using (2) Twists, Connect Curve 13 to bottom post of Support S9 and secure with (1) Twist

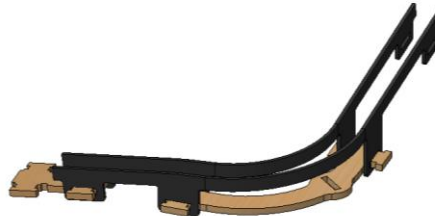
A.



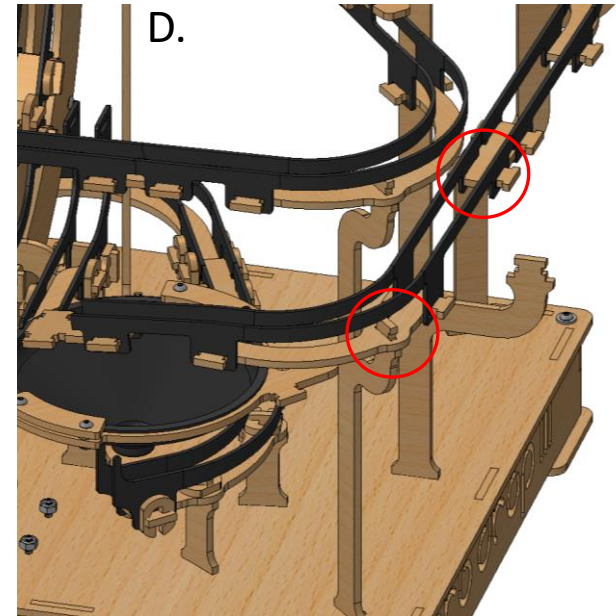
B.



C.



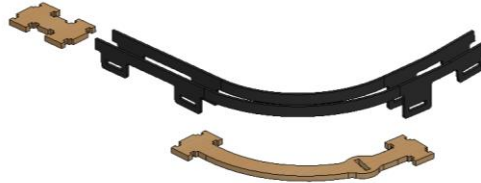
D.



Step 17 - Rail 14

- A. Assemble Rail 14
- B. Add Curve C14 to Rail R14a/R14b, R14a is located on the outside of the curve, secure with (4) Twists
- C. Add Rail Connector RC to R14a/R14b using (2) Twists
- D. Add Rail 14 Assembly to Rail 13 Rail Connector RC using (2) Twists, Connect Curve 14 to bottom post of Support S10 and secure with (1) Twist

A.



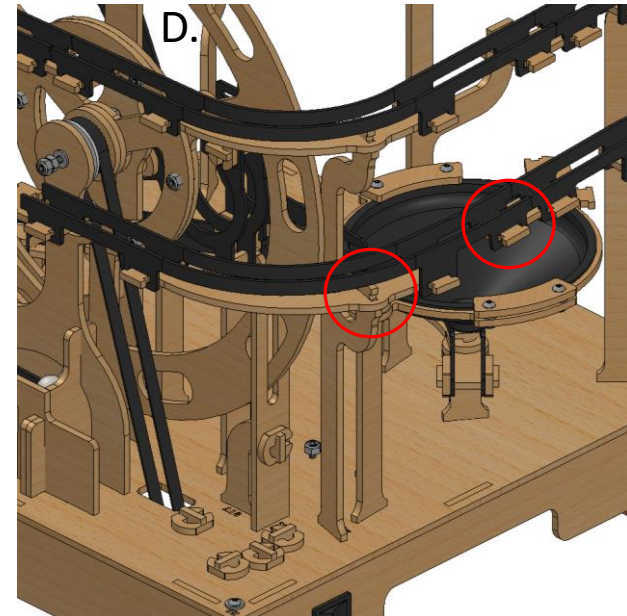
B.



C.



D.



Step 18 - Rail 15

- A. Assemble Rail 15
- B. Add Curve C15 to Rail R15a/R15b, R15a is located on the outside of the curve, secure with (4) Twists
- C. Add Rail Connector RC to R15a/R15b using (2) Twists
- D. Add Rail 15 Assembly to Rail 14 Rail Connector RC using (2) Twists, Connect Curve 15 to bottom post of Support S11 and secure with (1) Twist

A.



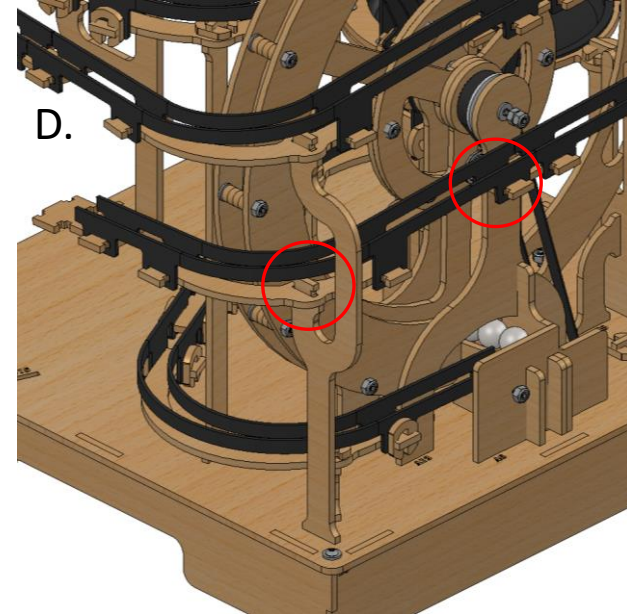
B.



C.



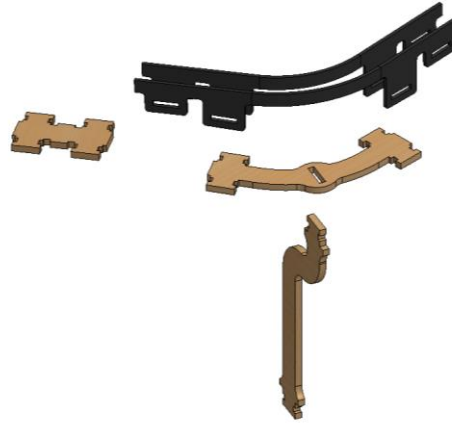
D.



Step 19 - Rail 16

- A. Assemble Rail 16
- B. Insert top post of Support S16 into Curve C16 and secure with (1) Twist
- C. Add Curve C16 to Rail R16a/R16b, R16a is located on the outside of the curve, secure with (4) Twists, Add Rail Connector RC to R16a/R16b using (2) Twists
- D. Add Rail 16 Assembly to Rail 15 Rail Connector RC using (2) Twists, Insert (1) S16 post into Base using the labels to align, Secure using (1) Twist to underside post

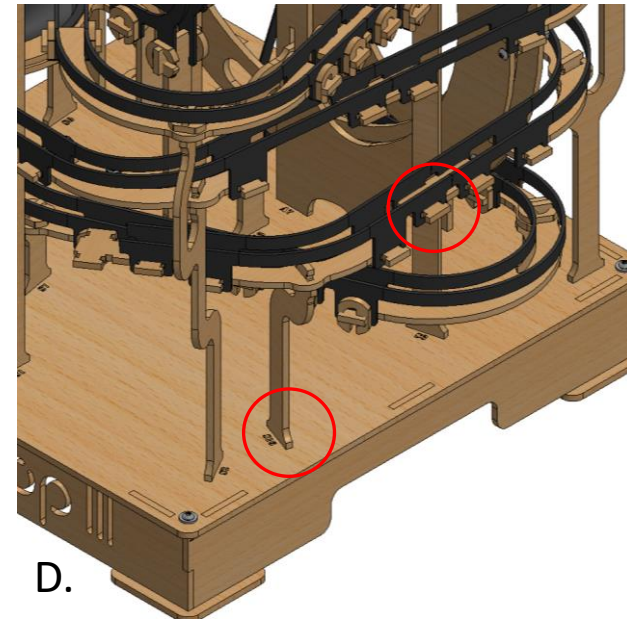
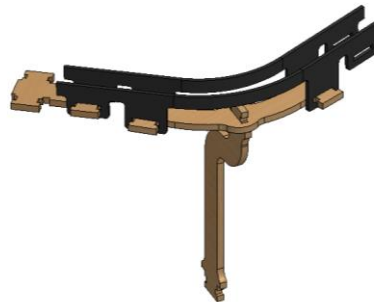
A.



B.



C.



D.

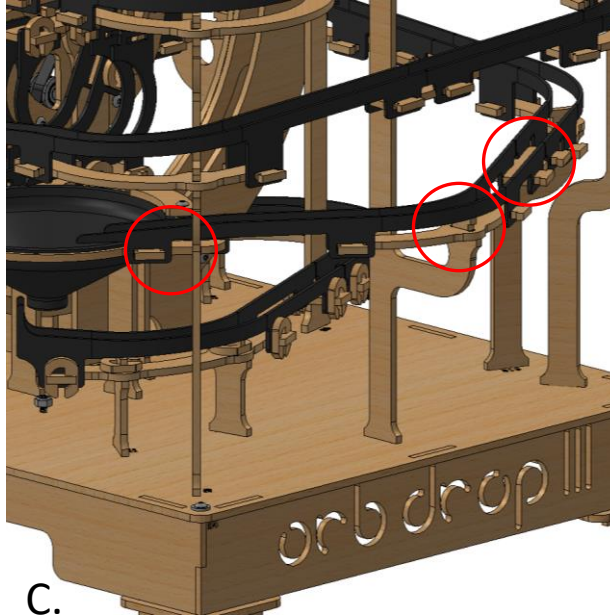
Step 20 - Rail 17

- A. Assemble Rail 17
- B. Add Curve C17 to Rail R17a/R17b, R17a is located on the outside of the curve, secure with (4) Twists
- C. Add Rail 17 Assembly to Rail 16 Rail Connector RC using (2) Twists, Connect Curve 17 to bottom post of Support S1 and secure with (1) Twist, Connect end of Rail 17 Assembly to Curve C6
- D. **Congratulations your Orb Drop 3 is complete!**

A.

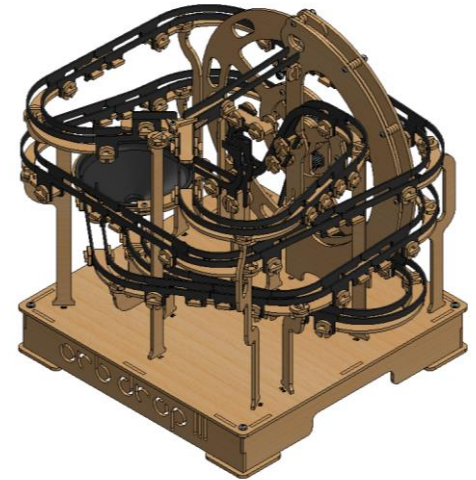


B.



C.

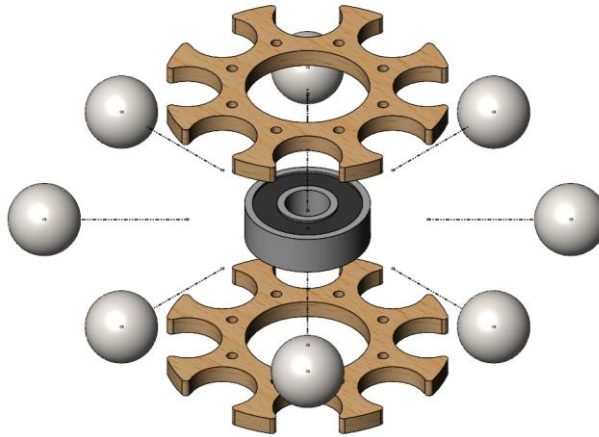
D.



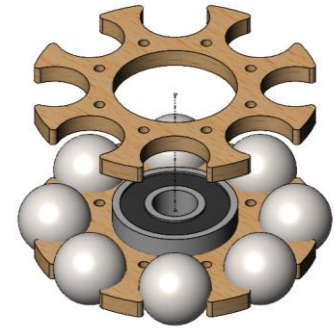
Orb Drop Stout

- A. Assemble Orb Drop Stout
- B. Press Bearing into center of Main Plate 1, Add (8) Orbs to Main Plate 1
- C. Press center of Main Plate 2 onto Bearing
- D. Secure Top Plate 1 to Main Plate 1 using (4) 3/8" #2 Wood Screws

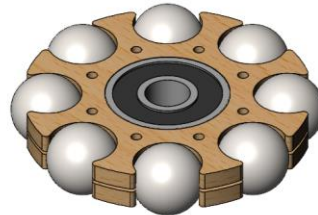
A.



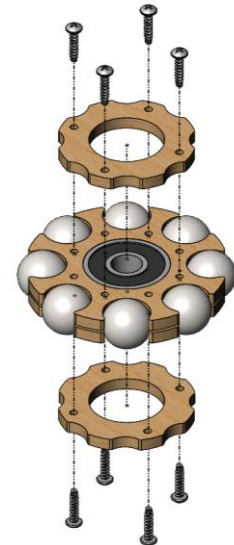
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C.



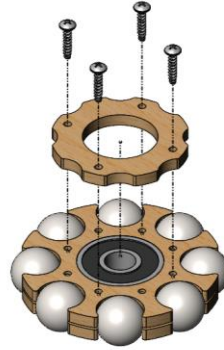
D.



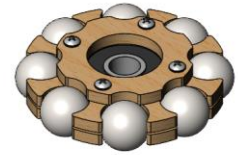
Orb Drop Stout

- E. Top Plate 2 holes should be rotated 90 degree from Top Plate 1 holes to ensure (4) new holes are used
- F. Secure Top Plate 2 to Main Plate 2 using (4) 3/8" #2 Wood Screws
- G. Add (1) #8 Stud, (1) Aluminum Spacer, and (2) #8 Thumb Nuts to Bearing
- H. **Congratulations your Orb Drop Stout is complete!**

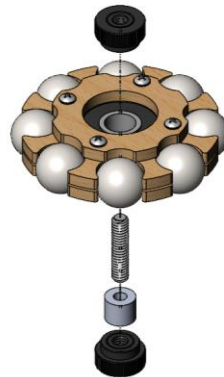
E.



F.



G.



H.

