

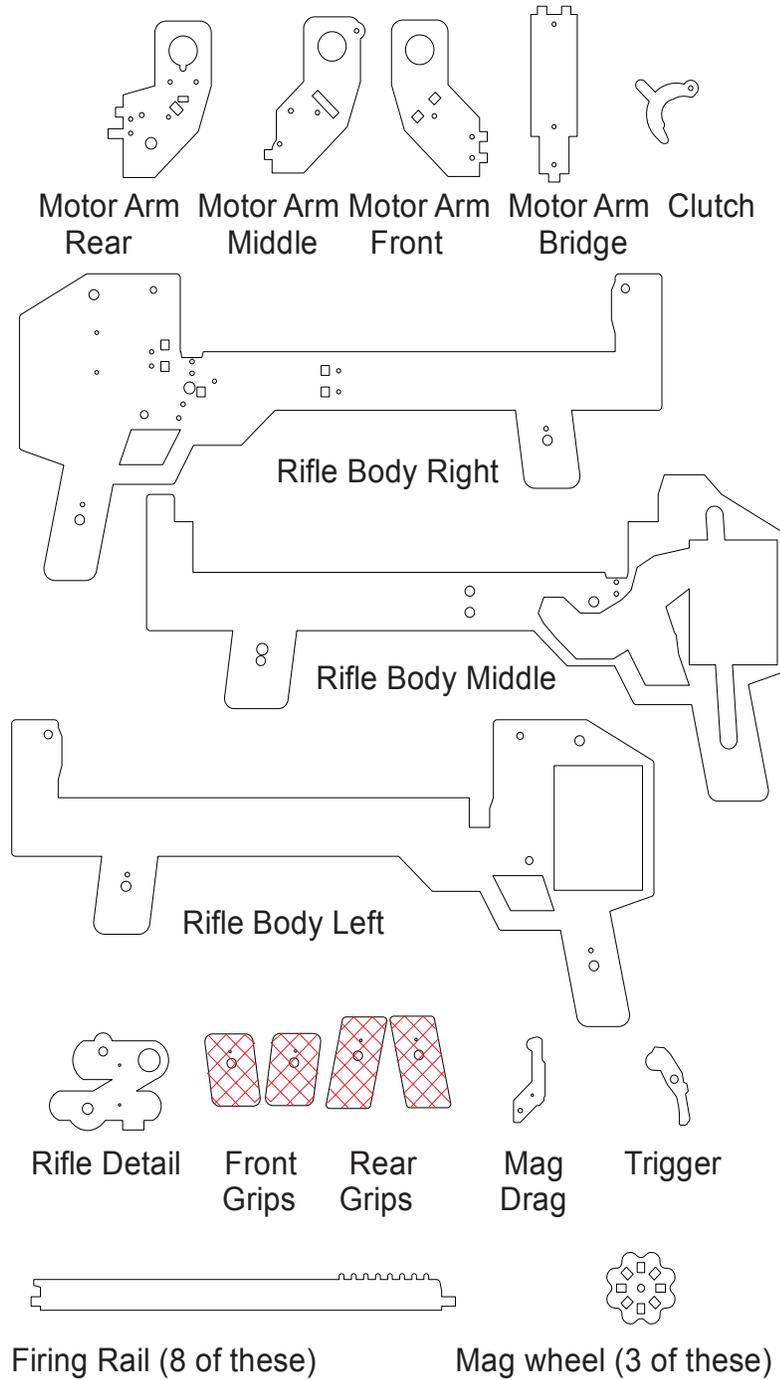
Assembly Instructions for RbmG (Rubber Band Machine Gun)

Version 9

Parts list: Below are diagrams of the parts included in the kit. Drawings are drawn for clarity, and are not to scale.

Laser Cut Parts:

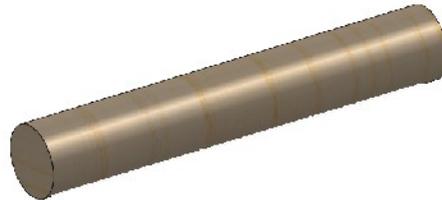
Laser Cut Wood Parts



Dowel for magazine axle: (3/16 inch diameter (5mm) x 12 7/8" (33 cm) length)



Dowel for motor "drum": (3/4 inch diameter (19mm) x 4 1/4 inch (10.1 cm))



Contents of the Hardware Bag:



Switch
(1x)



Chicago screw 7/8" 22mm (2x)



Chicago screw 1/2" 12mm (3x)



Lock washer (6x)



Angle bracket (8x)



Washer (3x)



Wood Screw (10x)



Screws 4-40 3/8 inch (9.5mm) (19x)



3/4 inch (19mm) (4x)



1 1/4 inch (32mm) (2x)



1 1/2 inch (38mm) (1x)



Nut 4-40 (6x)



Spring (1x)

Contents of Other Parts Bag:



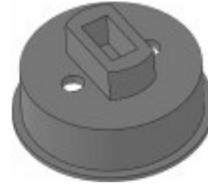
Battery Holder
(1x)



Motor
(1x)



Dowel(2 1/2")
(6.3cm) (1x)



Motor Coupling
(1x)



U bracket
(1x)



Spade
Connectors
(2x)



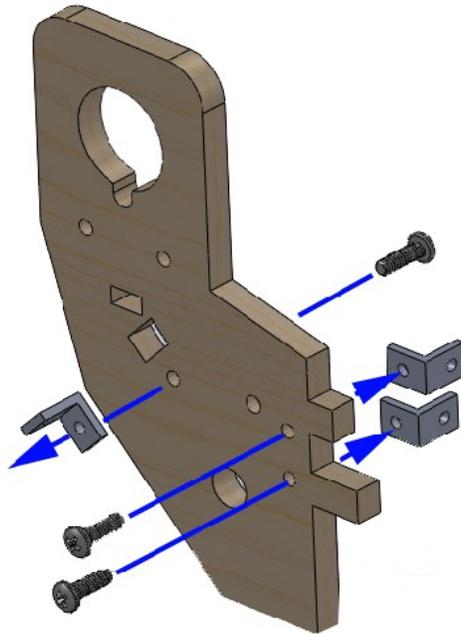
Butt
Connectors
(1x)



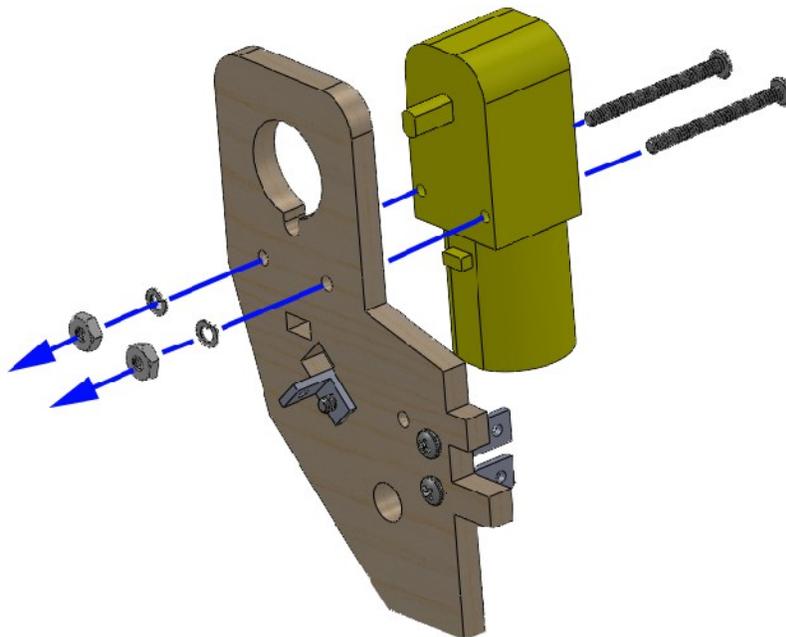
String
(1x)

Assembly Steps

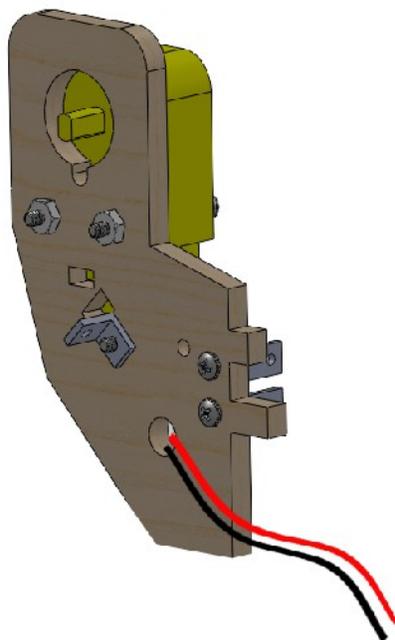
Step 1 – Locate 3 angle brackets. Note that one side is shorter than the other. Using three (3) 3/8” (9.5mm) screws, attach the angle brackets with the short side onto the Motor Arm Rear wood part



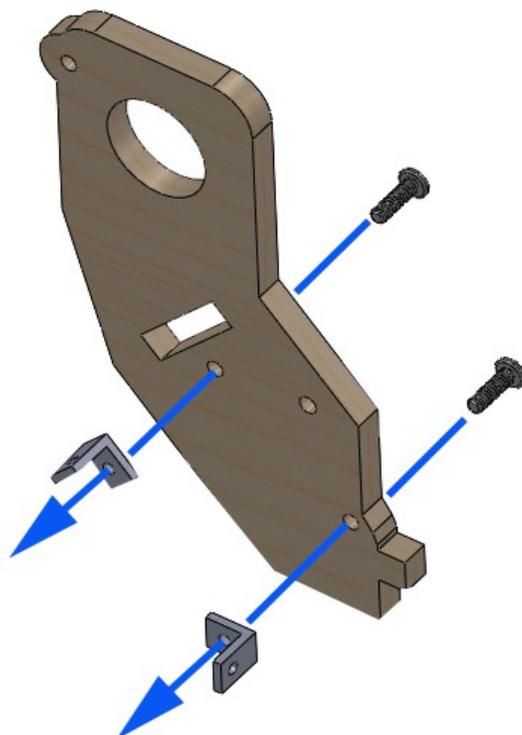
Step 2 – Install the motor onto rear motor arm using two (2) 4-40 nuts, lock washers and 1 ¼ inch (32mm) screws.



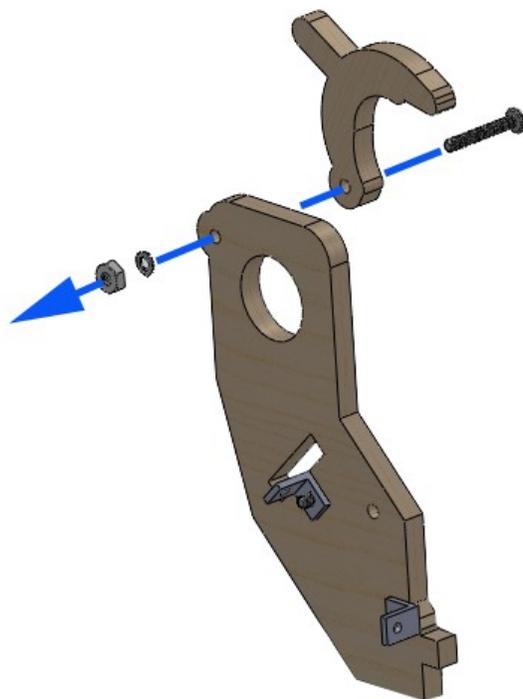
Step 3 – Run motor wires through the round hole in rear motor arm



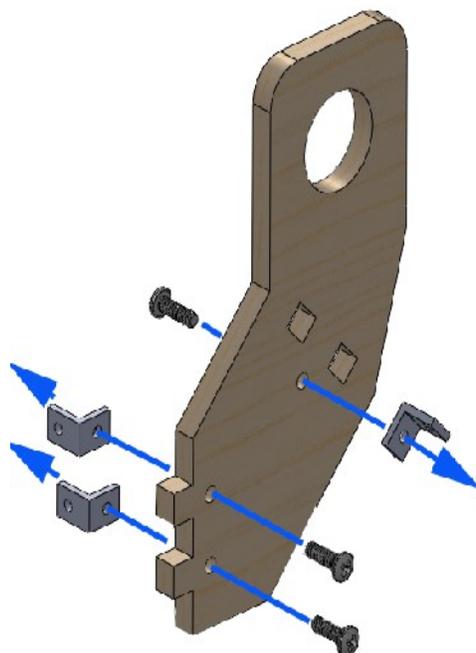
Step 4 – Assemble middle motor arm with two angle brackets, short side, and two (2) 3/8 inch (9.5mm) long screws



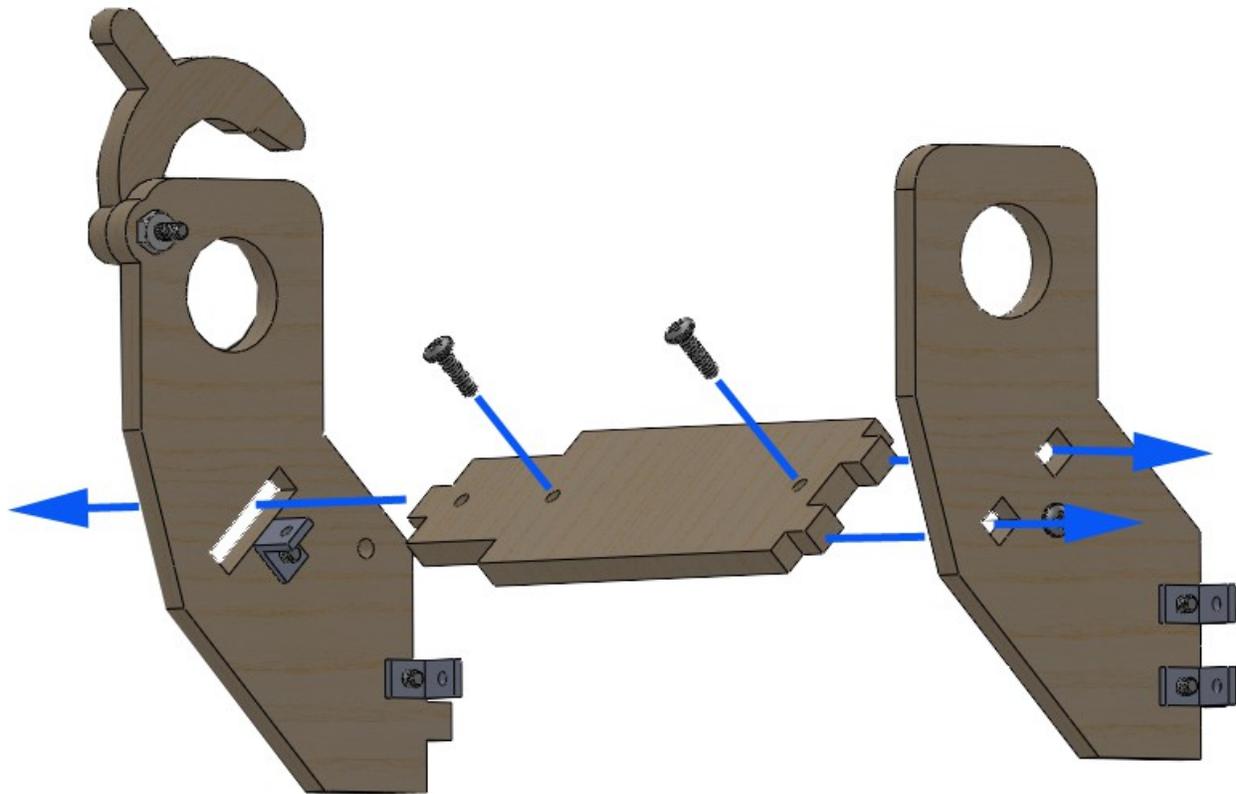
Step 5 – Install the clutch onto the middle motor arm with 4-40 nut, lock washer and $\frac{3}{4}$ inch (19mm) screw.



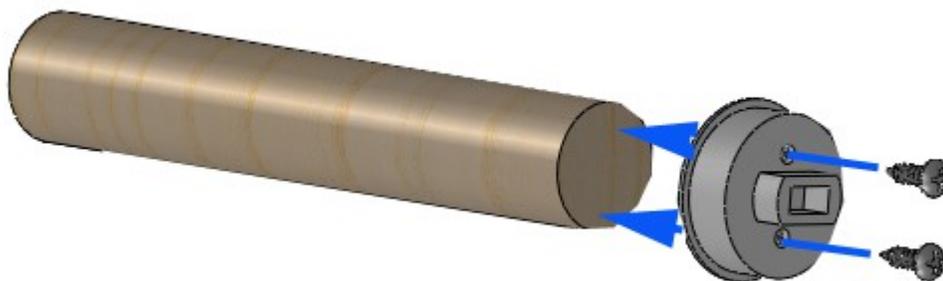
Step 6 – Assemble front motor arm with three (3) angle brackets on short side and $\frac{3}{8}$ inch (9.5mm) screws



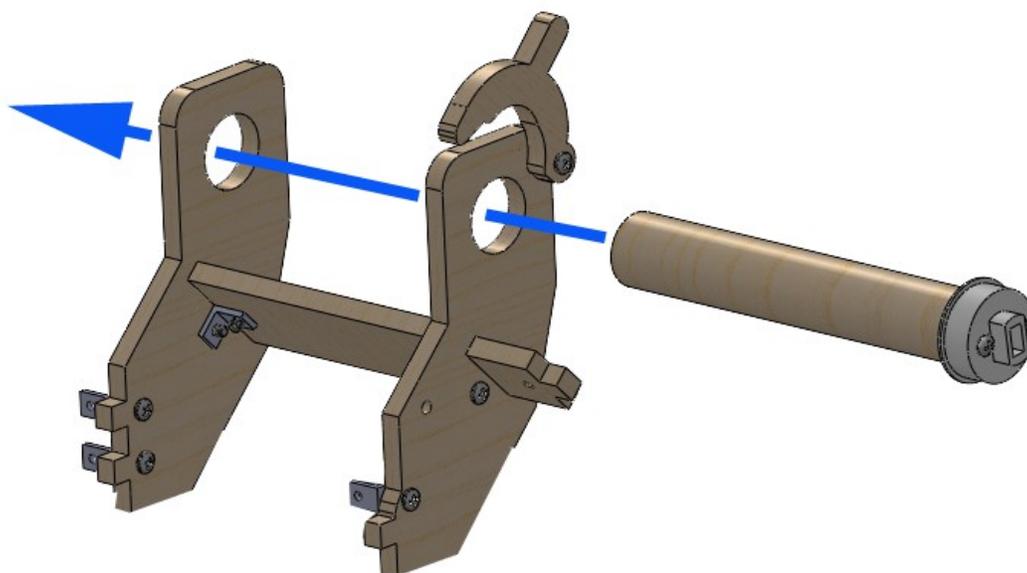
Step 7 – Assemble the middle to front motor arm using the motor arm bridge, using two (2) 3/8 inch (9.5mm) screws through the bridge into the angle brackets on other side.



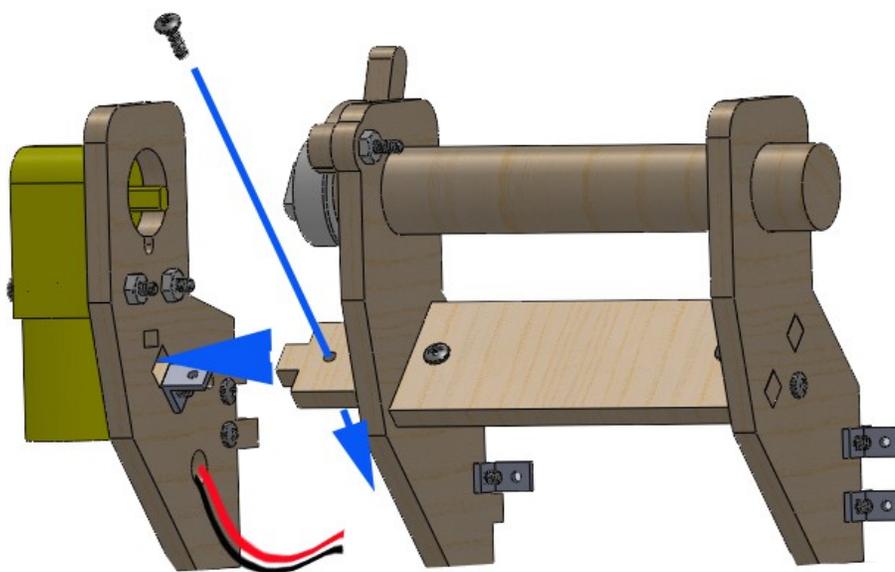
Step 8 – Mount the motor coupling onto the motor drum dowel with two (2) wood screws. This takes some force. To make simpler, you can pre-drill holes into the dowel end face using the motor coupling holes as a template.



Step 9 – Slide drum into the middle/front motor arm assembly

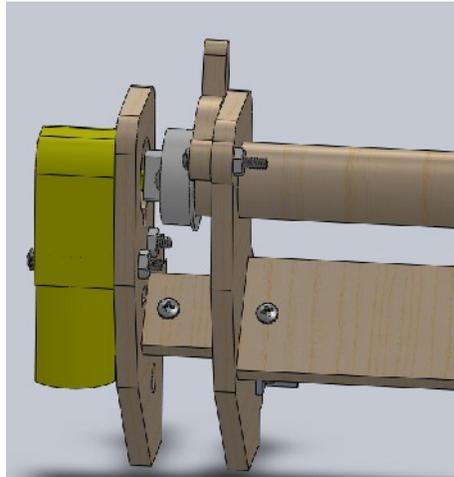
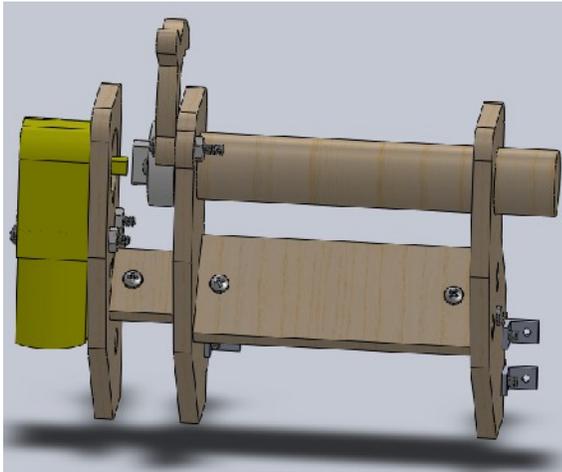


Step 10 – Attach mid/front arm assembly to the rear motor arm with a 4-40 3/8 inch (9.5mm) screw. Fit motor coupling on the motor then slide the clutch down to hold drum in place onto motor.

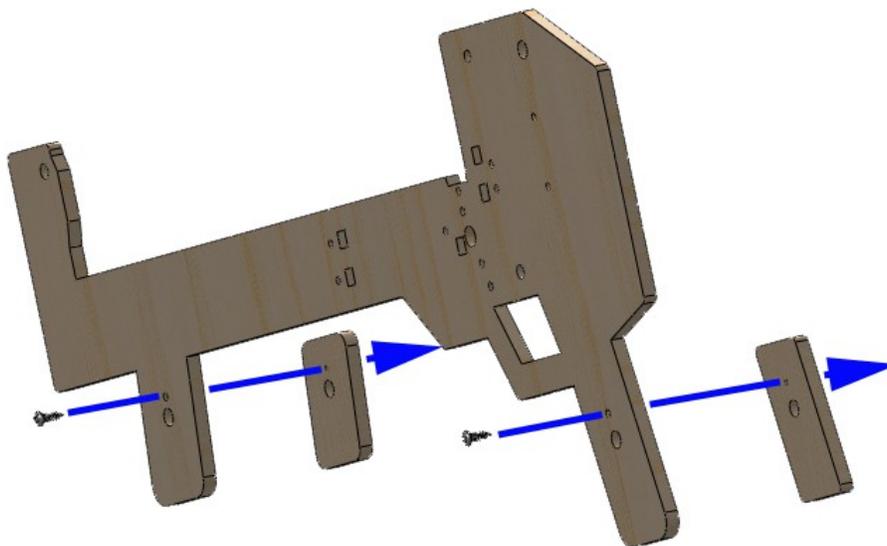


Motor **NOT** engaged in this image. Clutch is raised

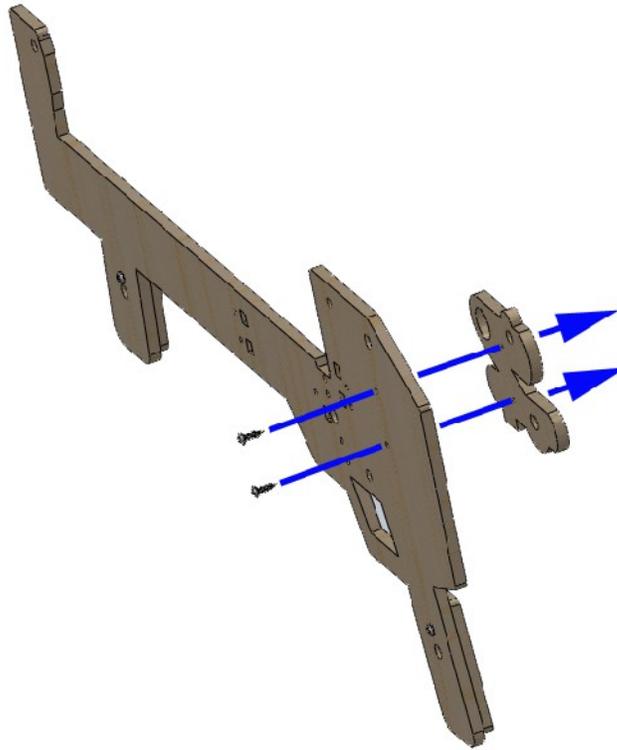
Motor **IS** engaged here. Clutch is down



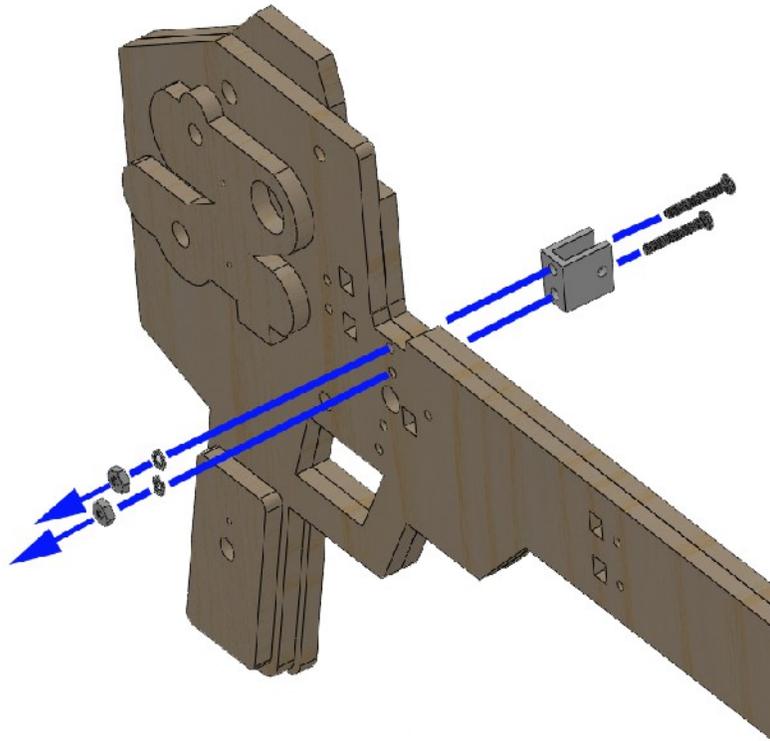
Step 11 – Install grips, front and rear onto the right rifle body using a wood screw. Repeat for left rifle body



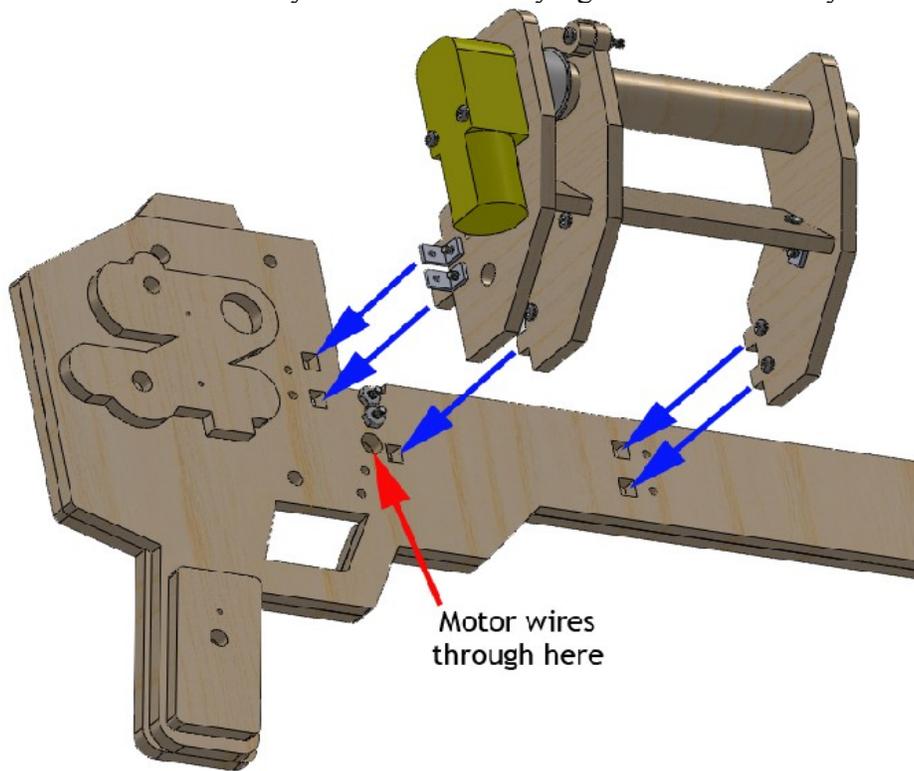
Step 12 - Install the rifle detail to right rifle body using two (2) wood screws



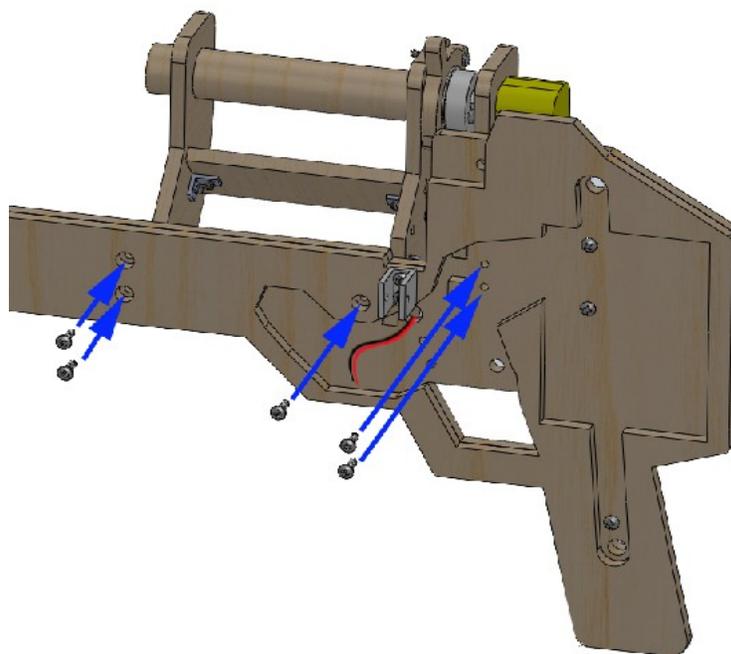
Step 13 – Stack the middle rifle body onto the right rifle body and install the U bracket as shown using two (2) 4-40 ¾ inch (19mm) screws, nuts and locking washers.



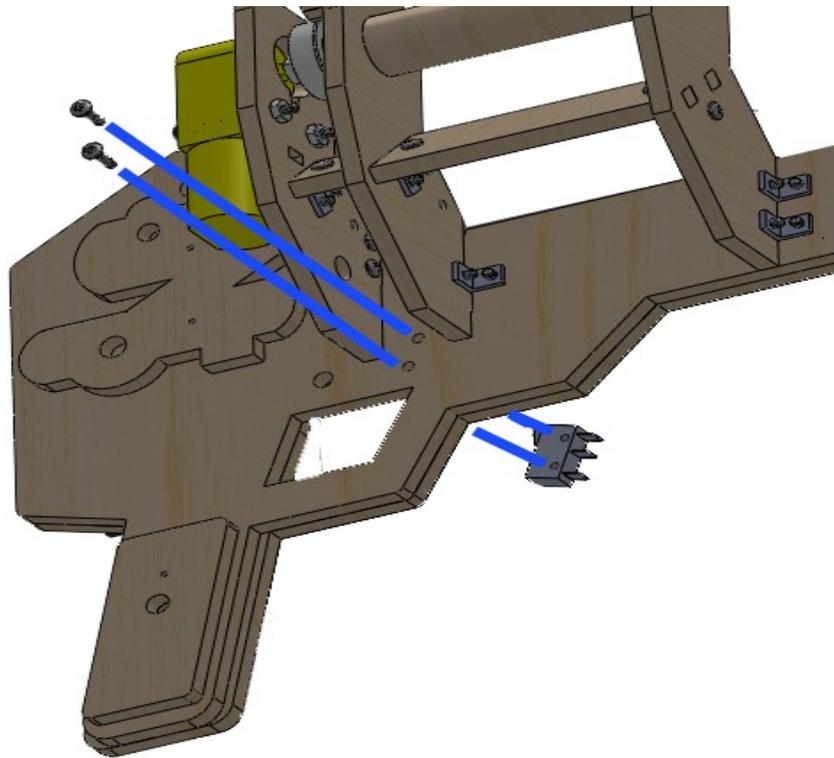
Step 14 – Insert the motor arm assembly onto the rifle body right/middle assembly



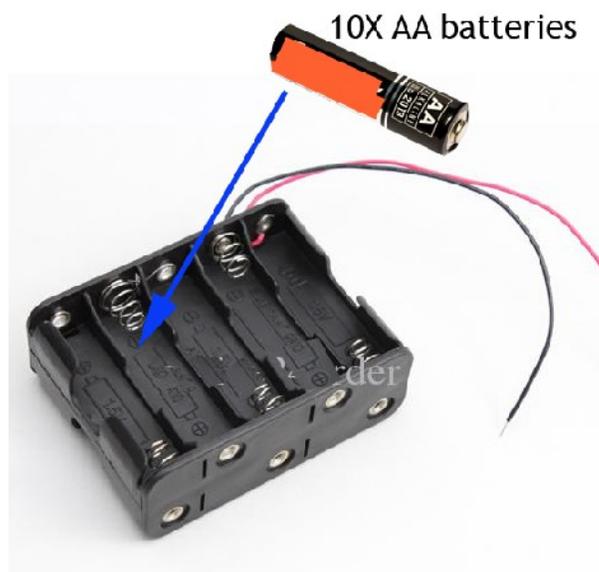
Step 15 – Attach motor arm assembly permanently using five (5) 4-40 3/8 inch (9.5mm) screws into the angle brackets on other side and insert motor wires through round hole in right rifle body.



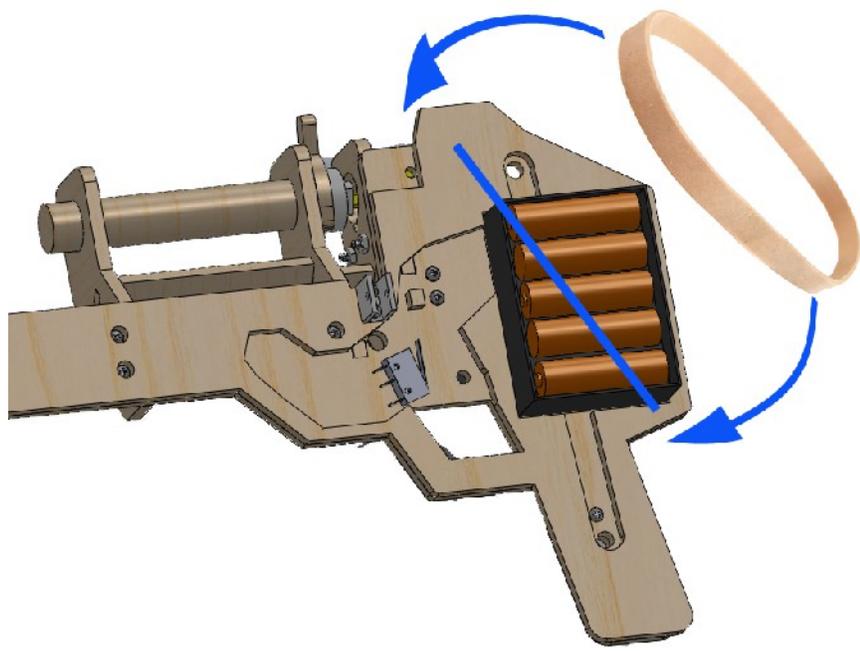
Step 16 – Install the switch using two (2) 3/8” (9.5mm) screws. No nuts are necessary. The holes in the switch are slightly smaller than the screws, so the act of installing them creates threads in the switch plastic.



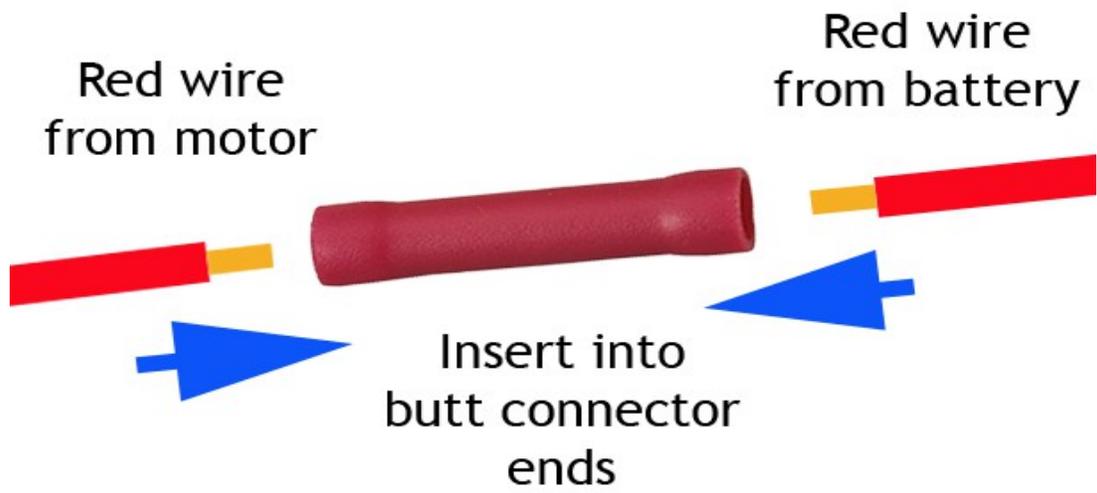
Step 17 – Install ten (10) AA batteries into the battery holder



Step 18 – Lay the battery holder into recess of middle rifle body as shown. Temporarily attach using large rubber band to hold in place.



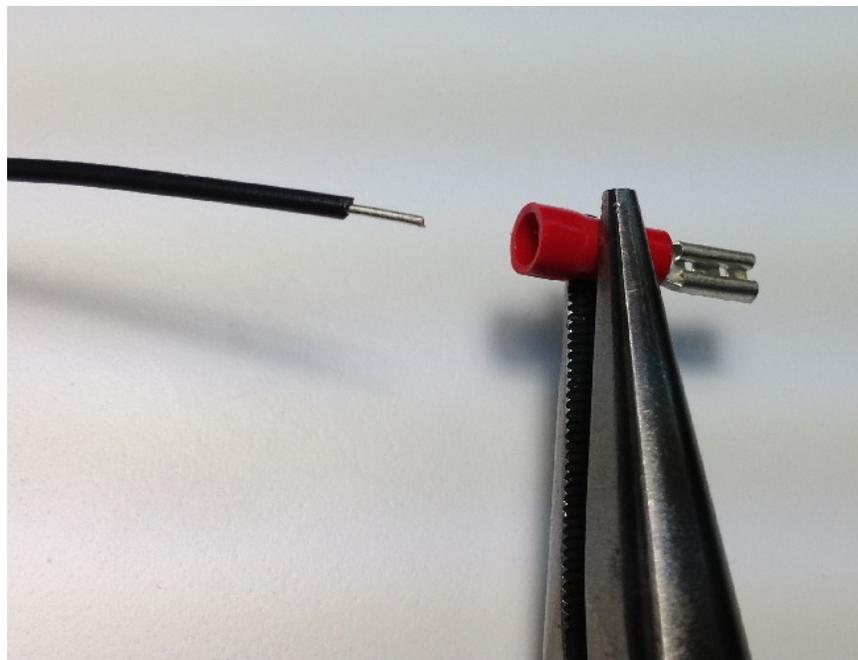
Step 19 – Insert battery holder red wire and motor red wire into opposite ends of butt connector.



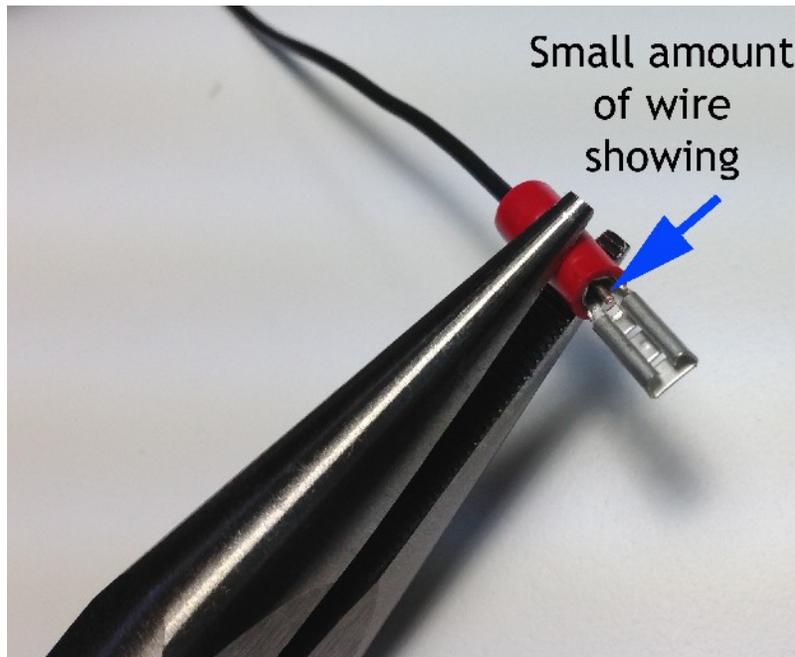
Step 20 – Carefully hold wires in place as you crimp the butt connector using pliers. Press firmly then test. If the wires are not held in place you can pry apart the butt connector using a small screwdriver and try again. Worst case, if you can't make the butt connector work, you can discard it and simply twist the wires together and cover the bare wires with tape.



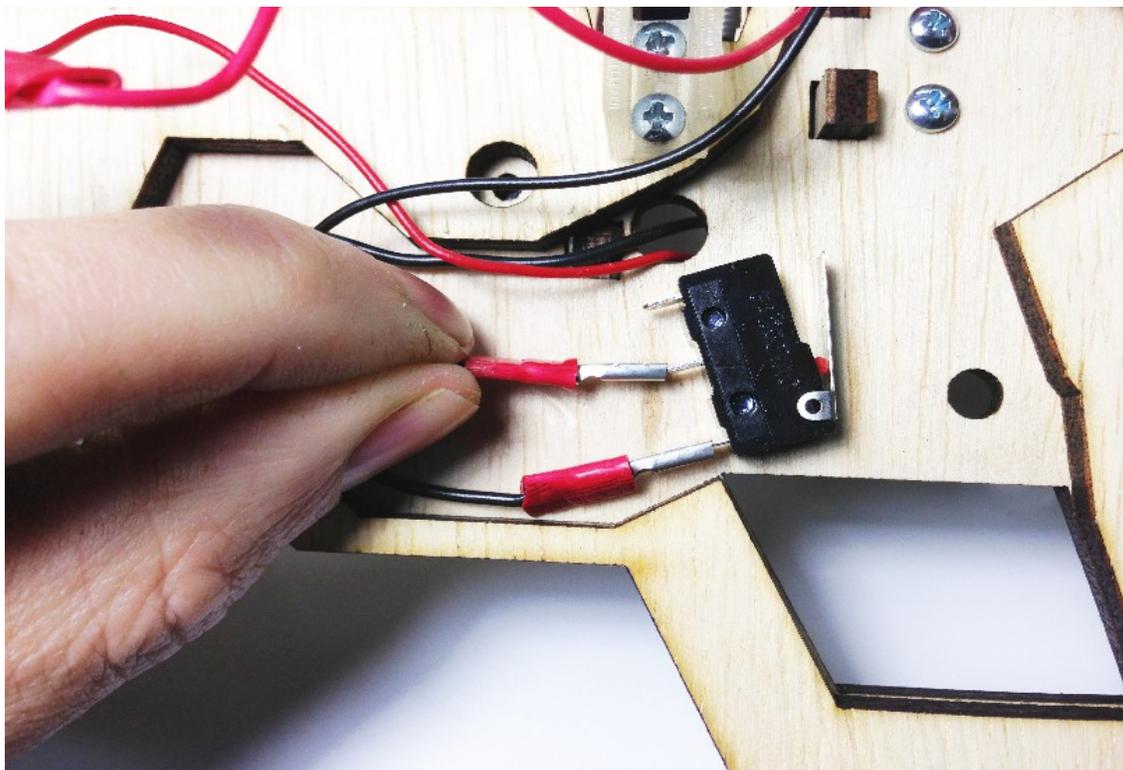
Step 21 – Insert the motor black wire into a spade connector and crimp thoroughly. Check at the other end and be sure that a small amount of wire is visible. See illustration for step 21.



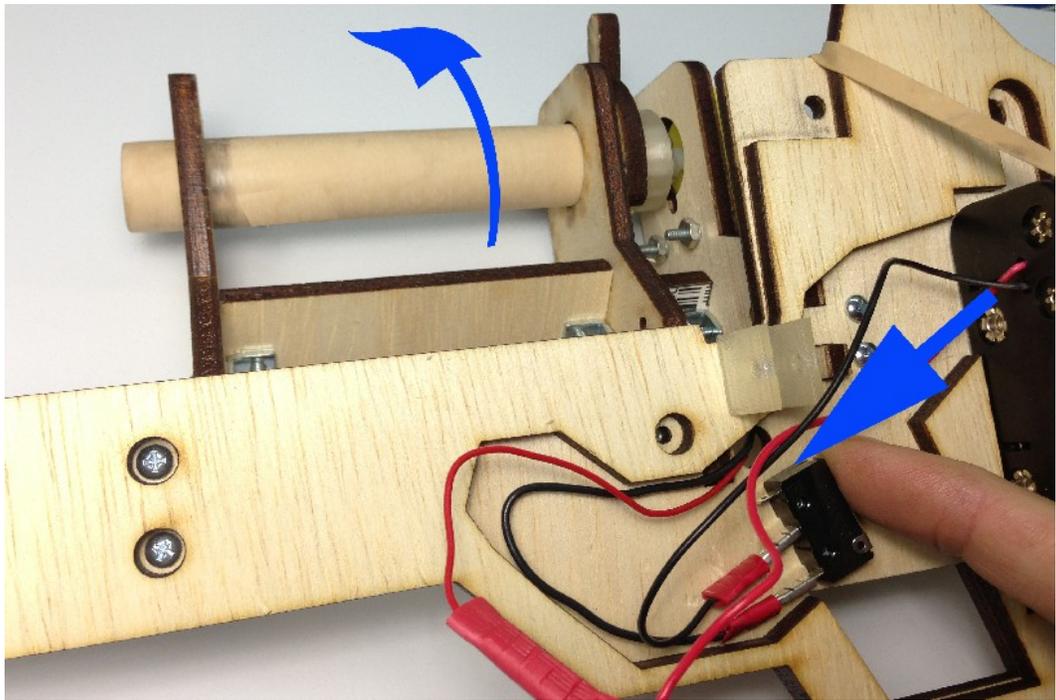
Step 22 – Insert the battery holder black wire into a spade connector and crimp thoroughly.



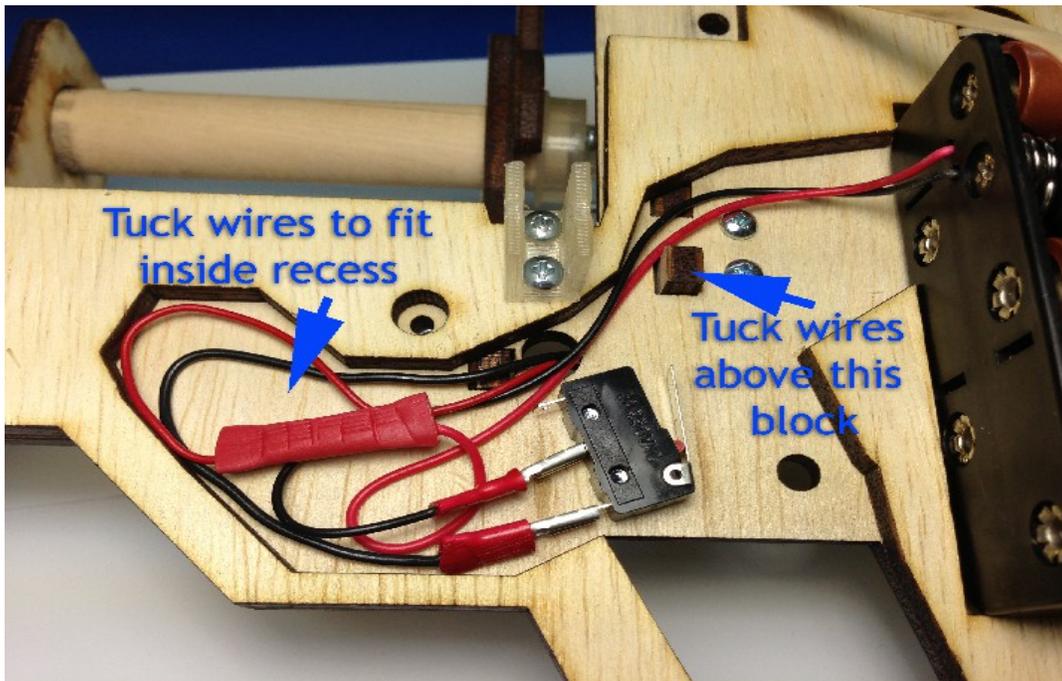
Step 23 – Slide the spade connectors onto the two switch terminals shown. The connectors can be in any order, but must be on the correct switch terminals.



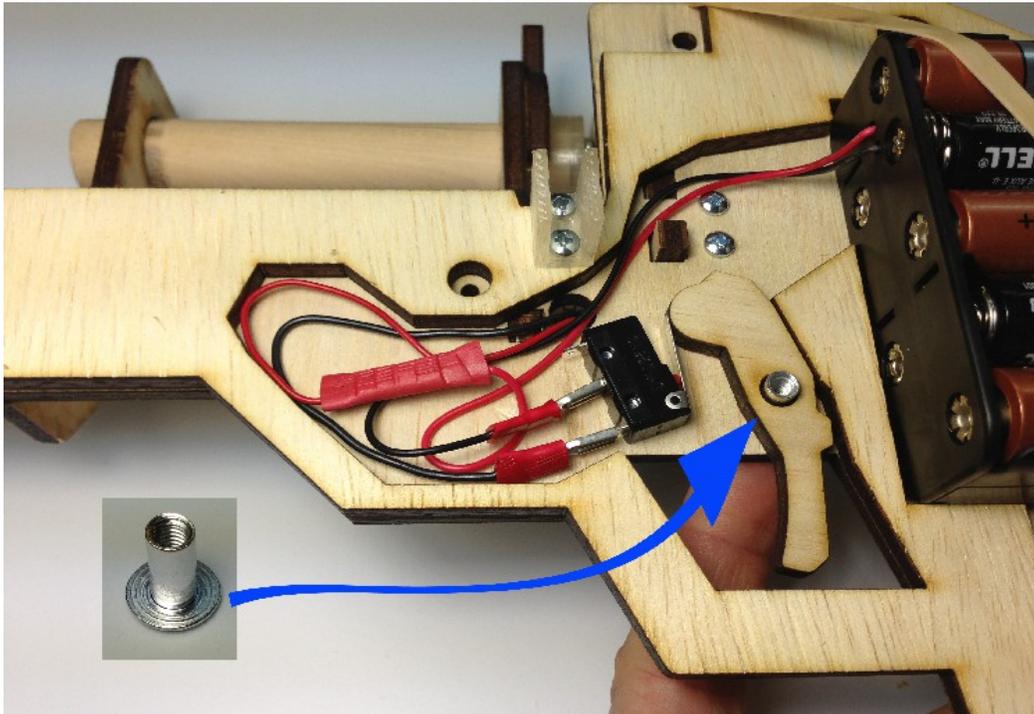
Step 24 – Test the switch operation. When you press the switch, the motor should turn the drum clockwise (top moves away from you). If it does not operate, check your connections and that batteries are inserted correctly.



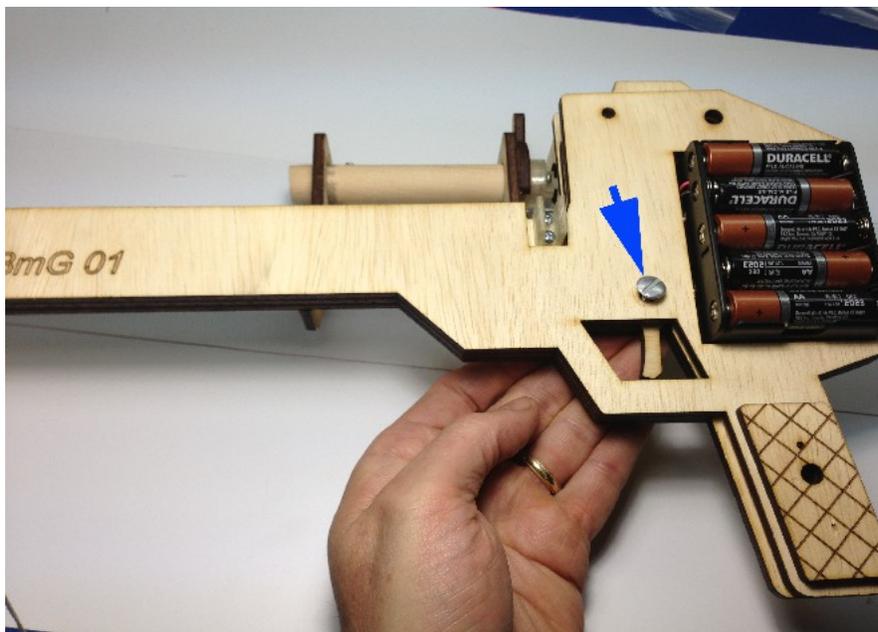
Step 25 – Tuck wires above the block near the trigger, and other loose wires into the rifle body recess as shown. All wires must be contained inside the recess. Optionally, you can use tape to hold the wires down.



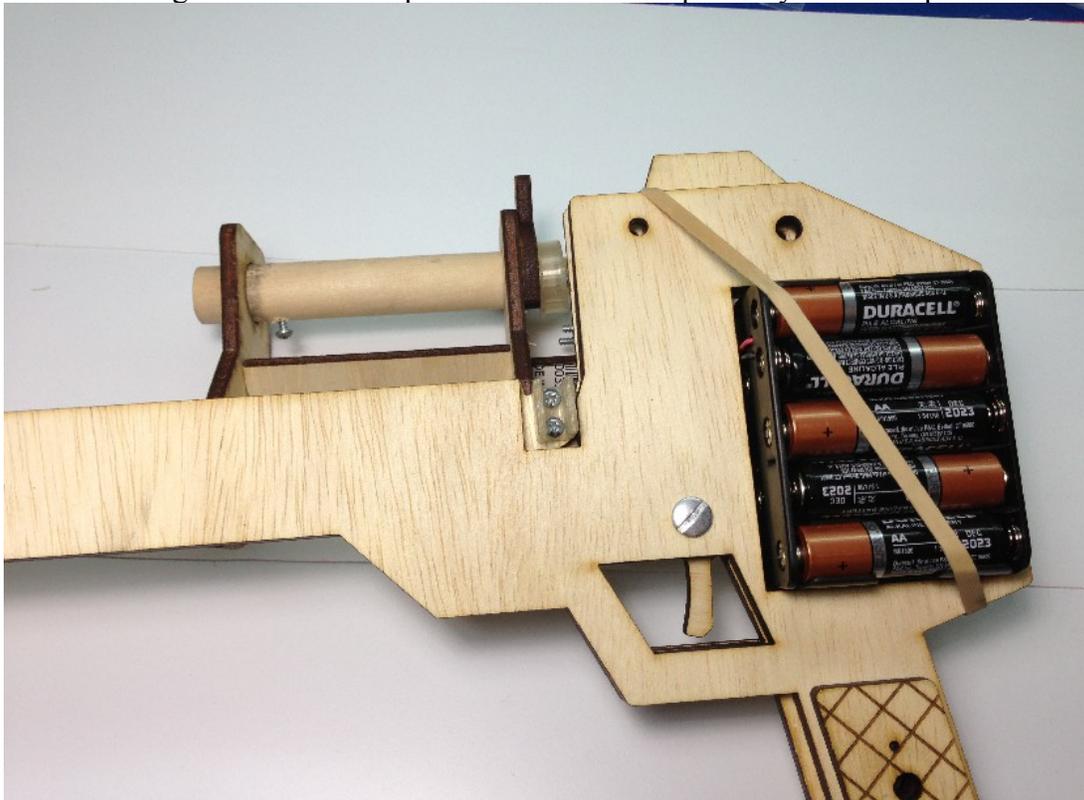
Step 26 – Insert a ½ inch (12mm) Chicago Screw barrel into the right/middle rifle body assembly, then place the trigger onto the barrel. **Remove the rubber band from the battery holder.**



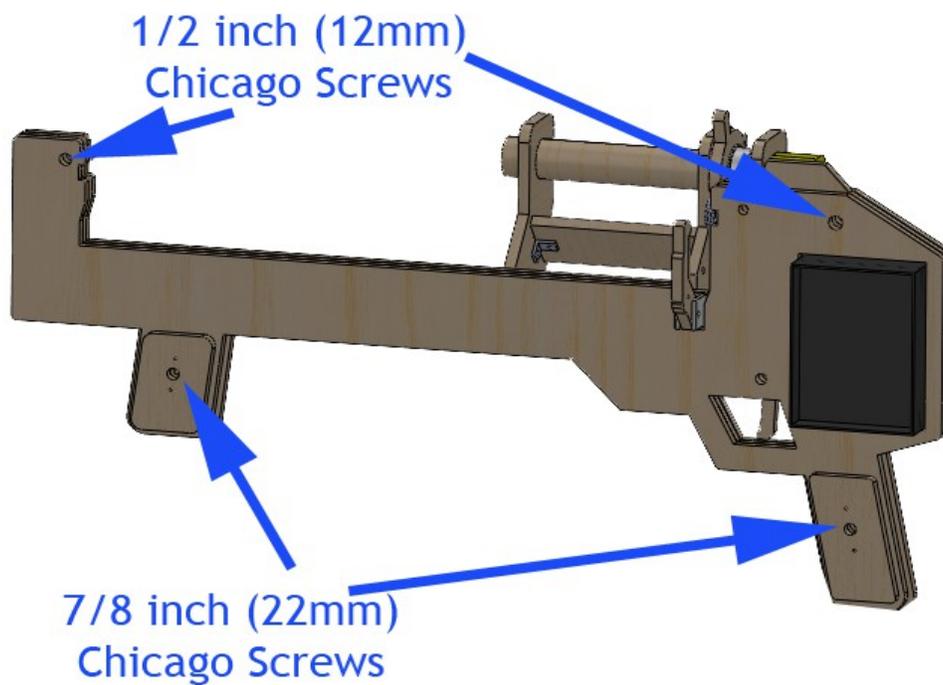
Step 27 – Hold the Chicago Screw barrel with your finger and place the left rifle body part. Fasten with the screw (male) portion of the Chicago screw.



Step 28 – Place the large rubber band in place as shown to keep battery holder in place



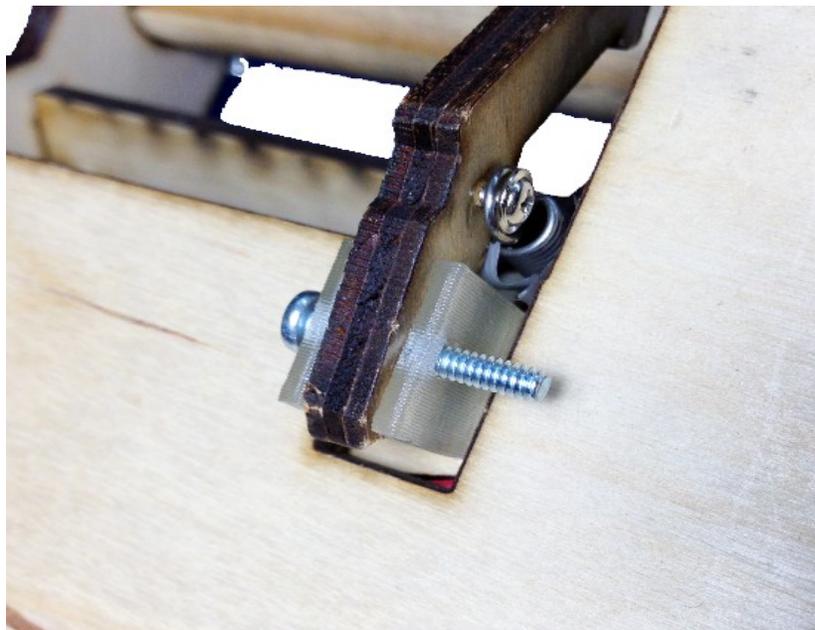
Step 29 – Add two (2) remaining 1/2 inch (12mm) long Chicago screws in rifle body and two (2) 7/8 inch (22mm) long Chicago screws into the grips.



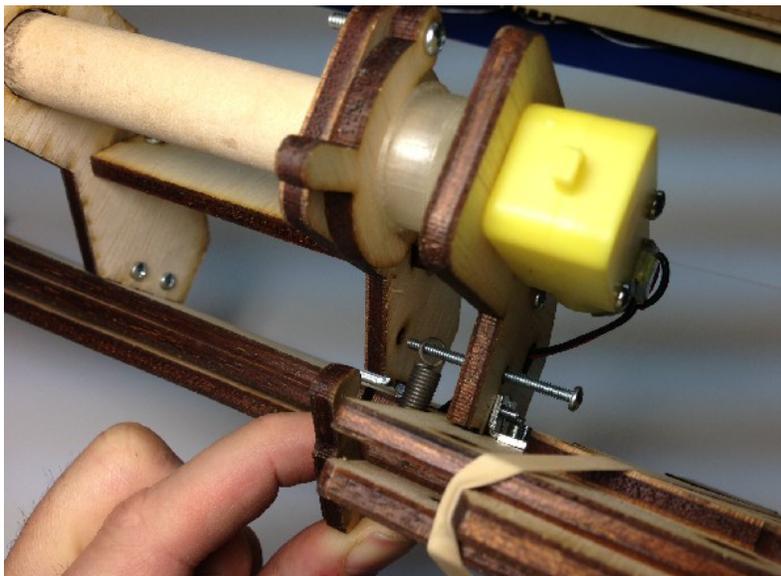
Step 30 – Attach one end of the spring to the mag drag part as shown using a wood screw.



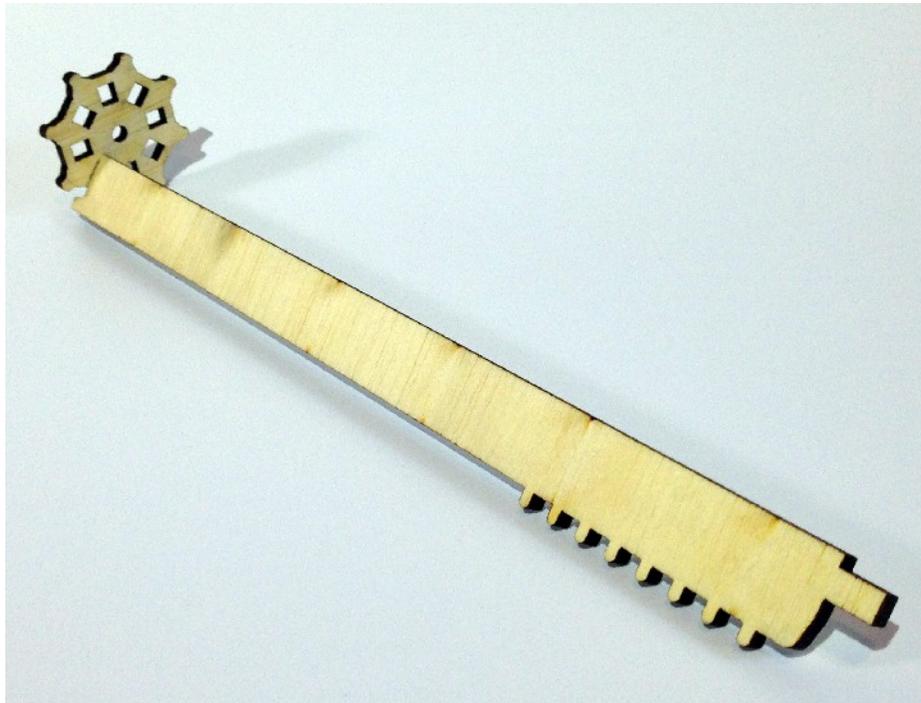
Step 31 – Install the mag drag into the U bracket using $\frac{3}{4}$ inch (19mm) long 4-40 screw. The bracket is sized to where the walls will act as a nut, so a hex nut is not necessary here.



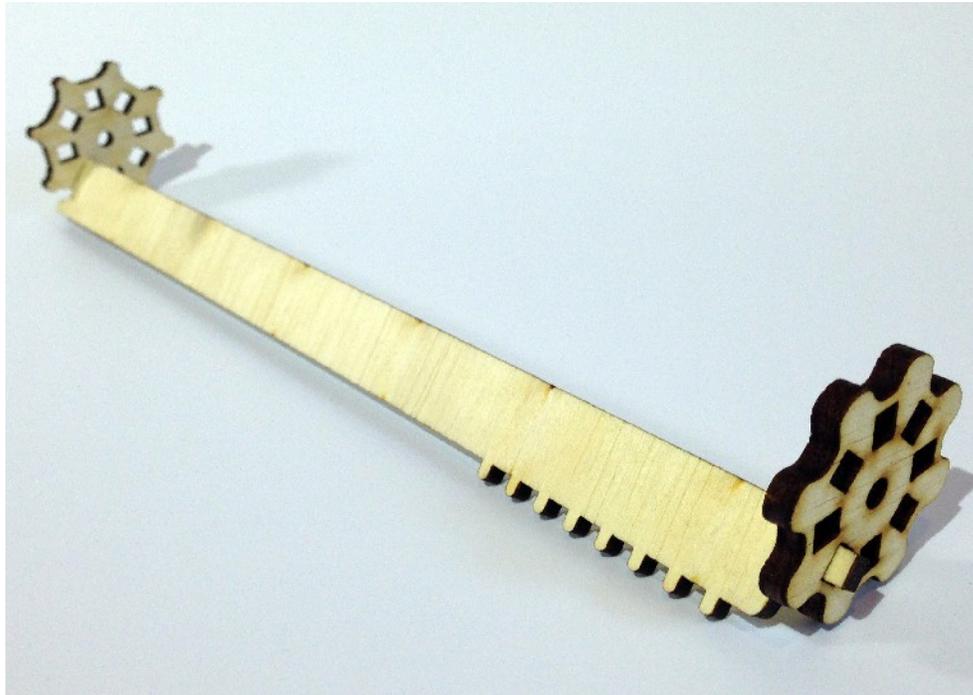
Step 32 – Insert the 1 ½ inch (38mm) screw into the rear motor arm, sliding it through the other end of the spring, and through hole in the middle motor arm. Fasten with nut and locking washer.



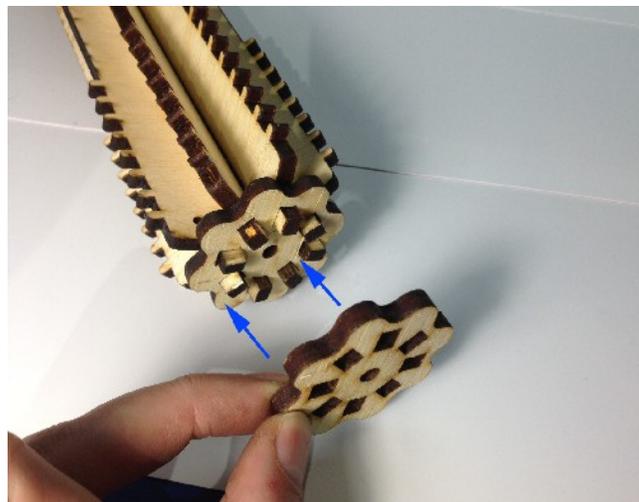
Step 33 – Assemble the magazine by placing the magazine wheel with pointy ends onto a firing rail piece as shown. Note that the loading studs go to outside of the mag wheel.



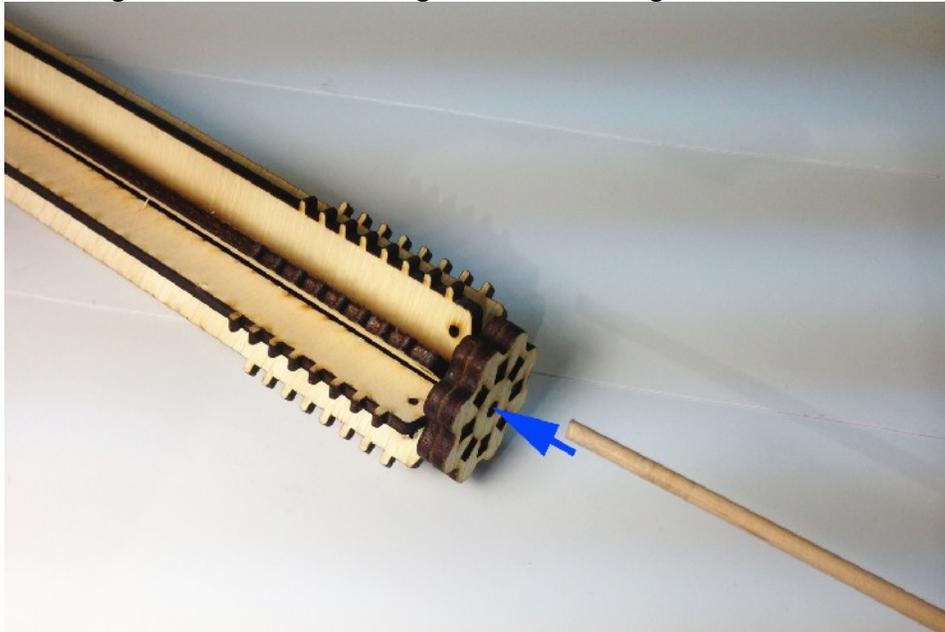
Step 34 – Add a rounded edge magazine wheel on the other end. Keep this mag wheel loose as you add the other firing rails. You can slide the rails in and out of the first mag wheel to keep it all together as you insert rails.



Step 35 – Add all 8 firing rails and finish by fitting the mag wheel down, and then adding the third mag wheel. For best results, glue the parts of the magazine assembly and let glue dry overnight. You can use without gluing in short term, but when you can add wood glue or Gorilla glue to make the assembly solid.



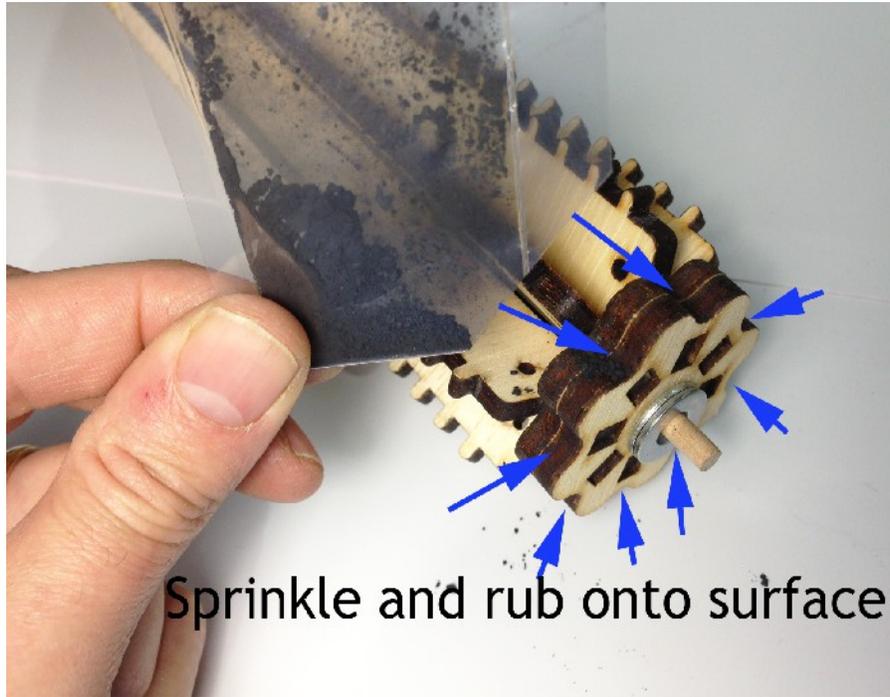
Step 36 – Insert the magazine axle dowel through the holes in mag wheels



Step 37 – Add the washers as shown. Two washers on the front (only one pointy end mag wheel) and one on the rear (end that has two mag wheels).



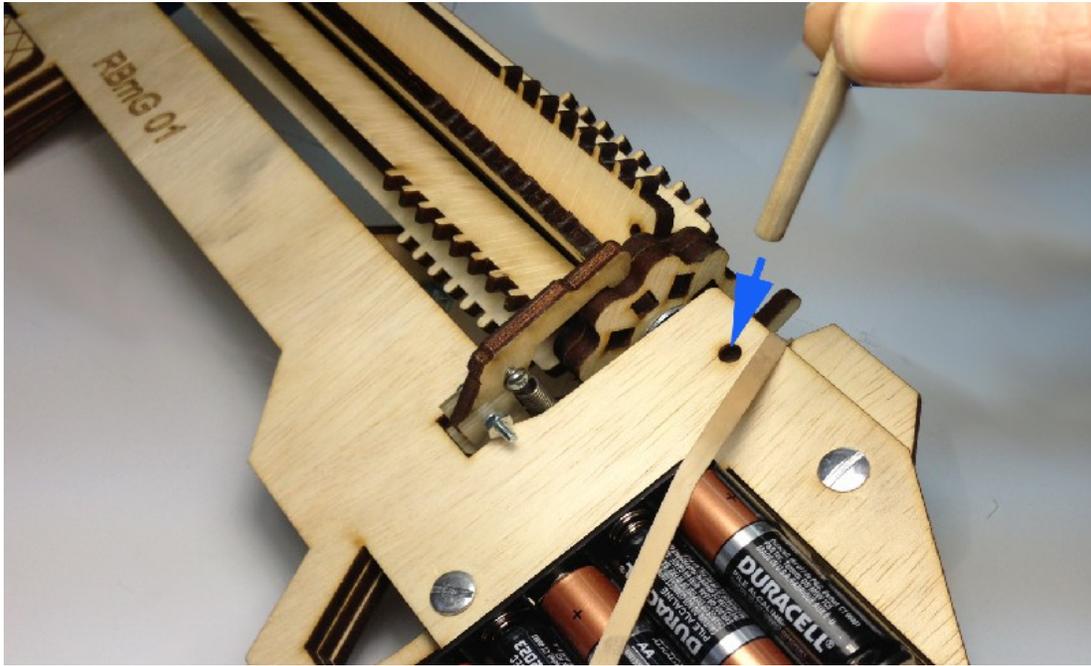
Step 38 – Apply powdered graphite to the two rear mag wheels only. None is needed on the front mag wheel. The graphite is needed to reduce friction. Also apply graphite to the mag drag rounded part. Wash your hands after you do this as the graphite will leave stains on the wood where you handle it.



Step 39 – Insert the magazine assembly into the rifle body. You will have to pull the mag drag out to allow the magazine to drop into place.



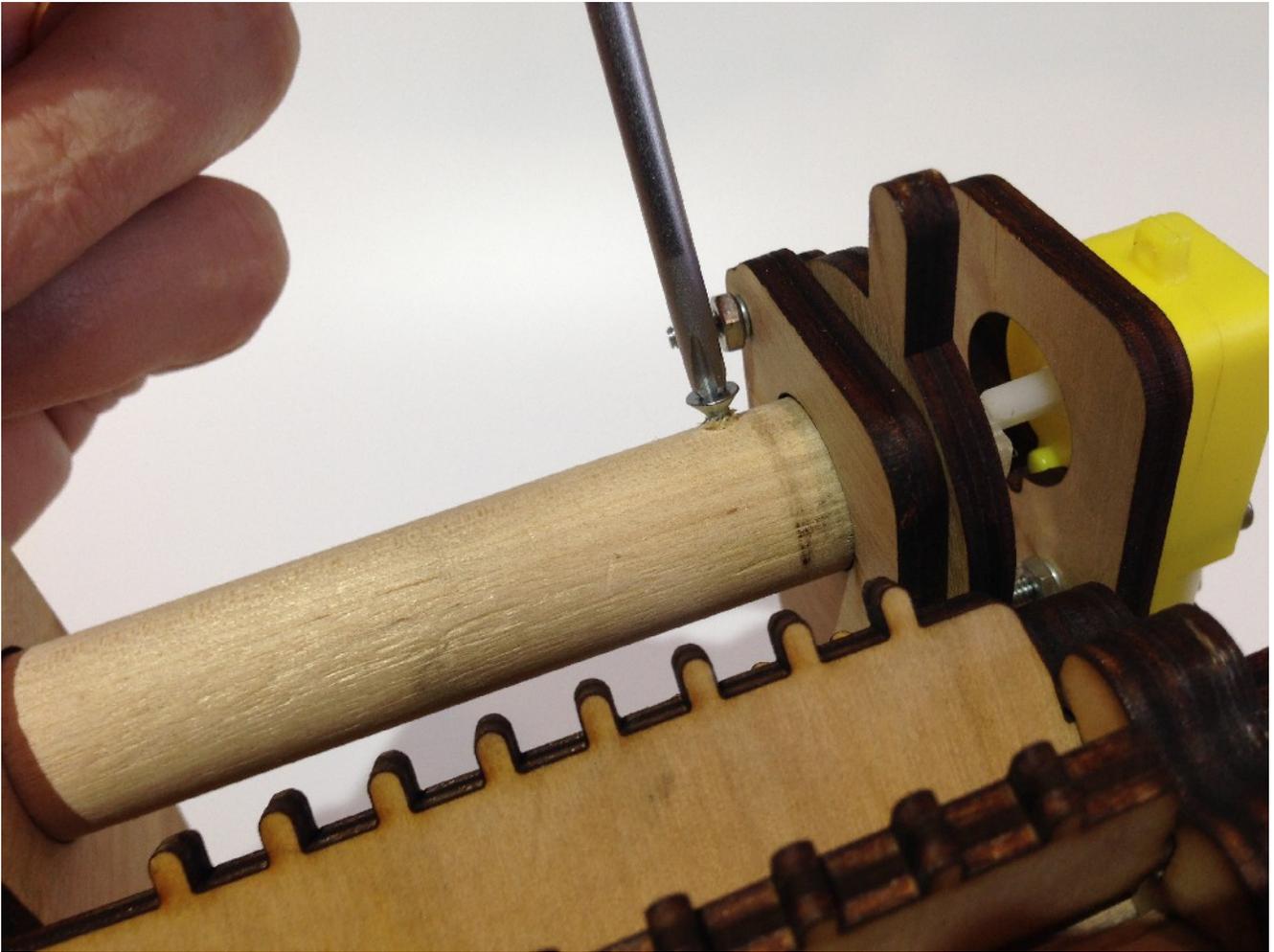
Step 40 - Fasten the magazine into the rifle body using the 2 ½ inch (6.3cm) long wood dowel as shown.



Step 41 – Uncoil the string, ensuring there are no knots along its length. Then tie a figure eight knot into each end to make a loop about ¼ inch (6mm) in diameter.



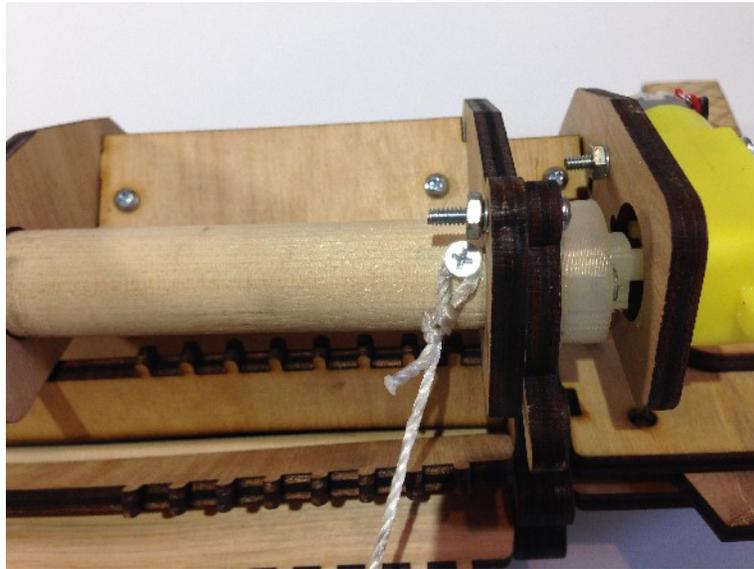
Step 42 – Install a wood screw into the drum dowel's surface about ½ inch (12mm) from the front motor arm face. Tighten the screw so that there is about 1/8 inch (3mm) gap between the screw head and the dowel surface. Optionally, you can pre-drill a hole into the dowel to make this easier. If you drill, make the pre-drill hole with a 3/32" (2.5mm) drill bit about 0.15 inch (4mm) deep.



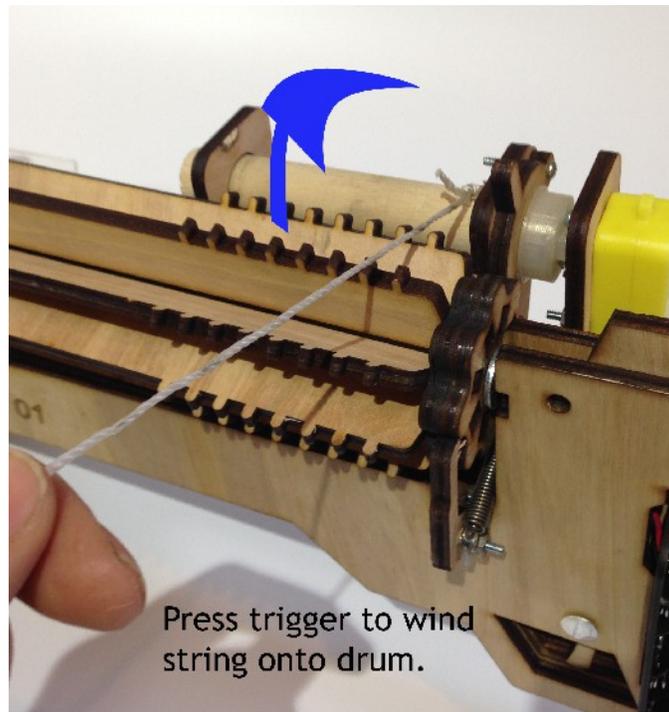
HOW TO LOAD THE RbmG for the First Time

You have to install the string onto the RBmG in order to fire for the first time, but thereafter the loading procedure is the same. First, let's install the string.

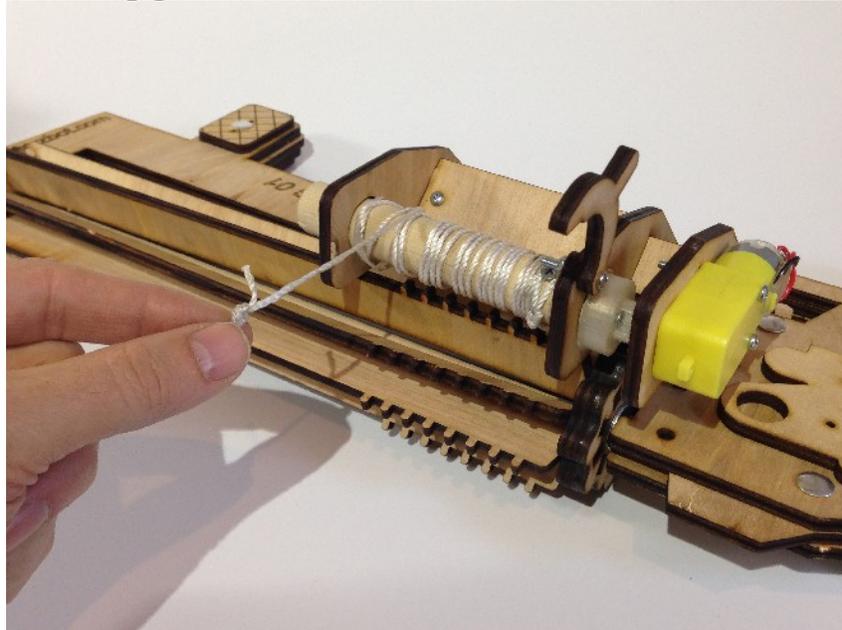
- 1) Place loop of string onto the drum dowel's screw.



- 2) Pull trigger to wind the string onto the drum dowel. Feed the string so that it rolls onto the dowel toward the other end.

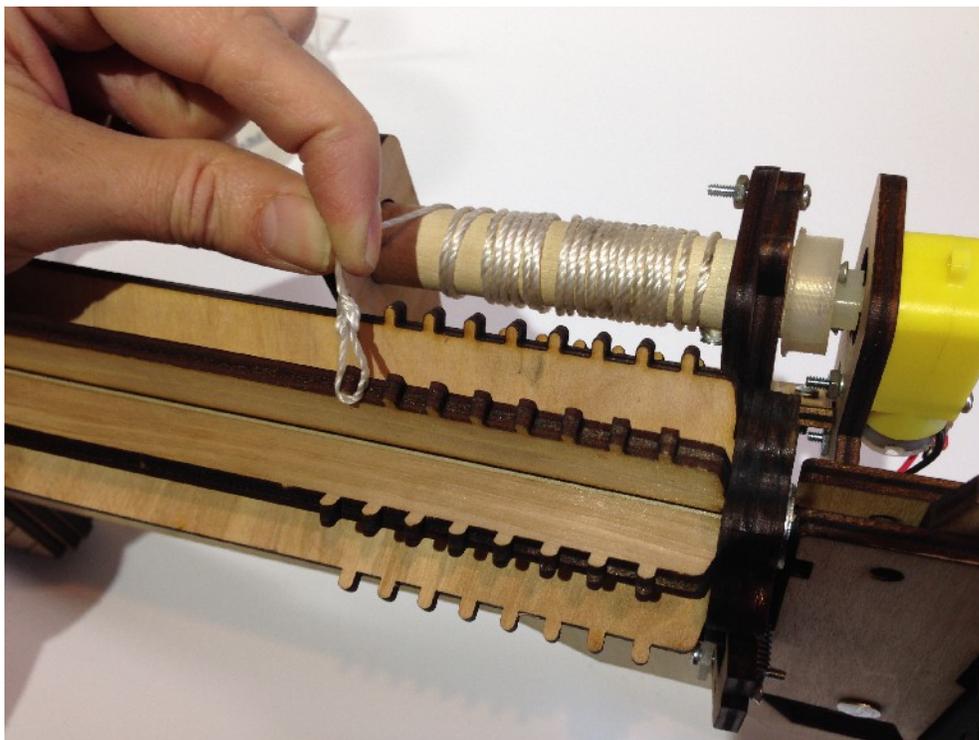


3) Every time you fire the RBmG, it will look like this. Follow the standard loading procedure below each time from now forward.

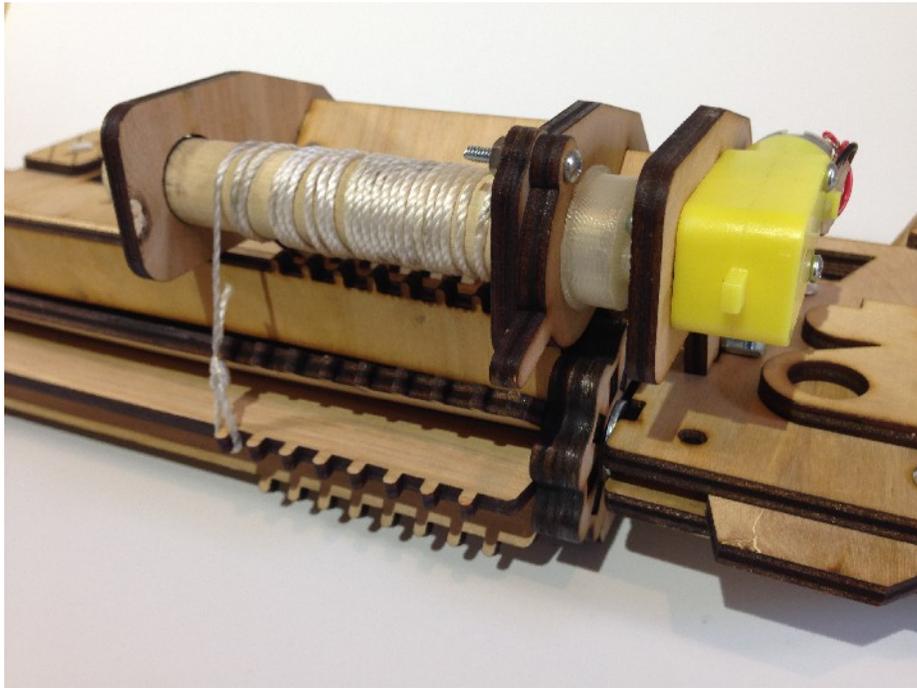


Standard Loading Procedure

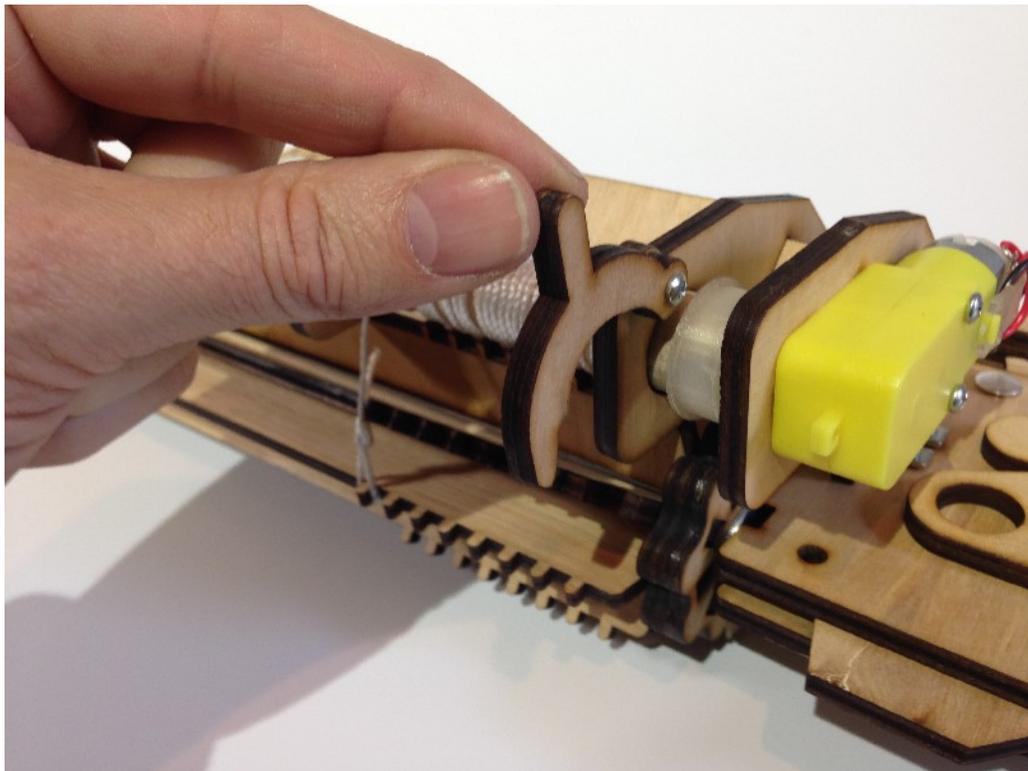
A – Place the string loop onto a loading stud at front of the magazine.



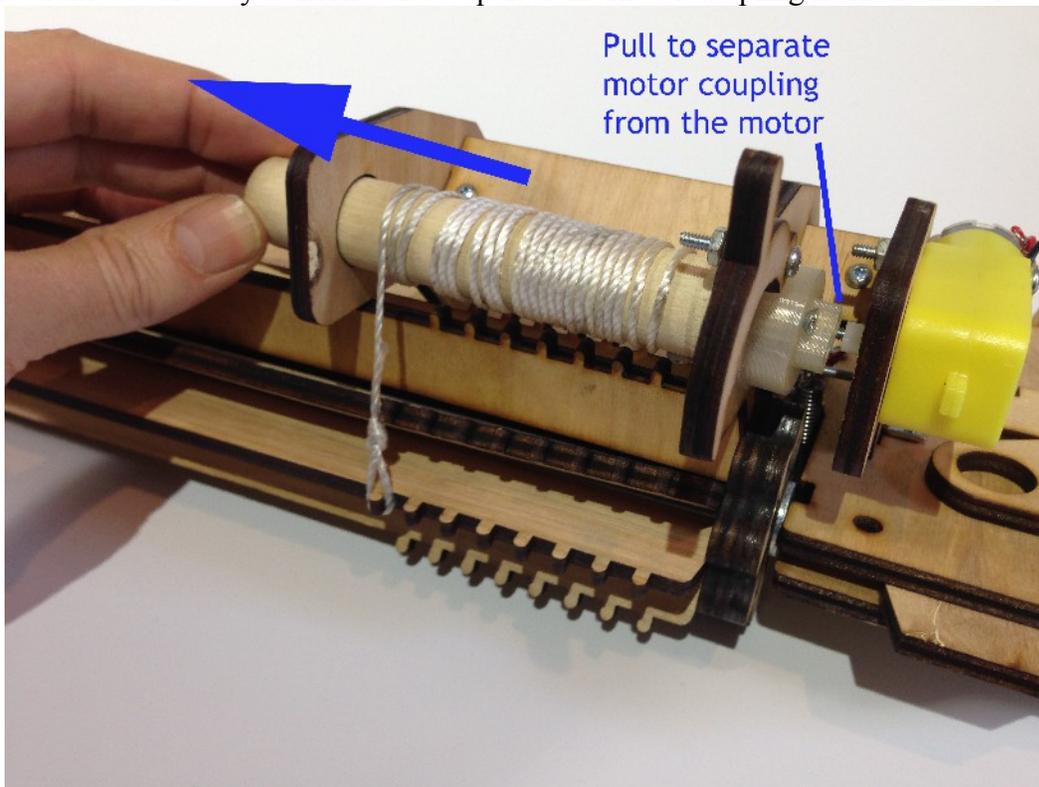
B – Rotate the magazine top toward you to take up slack in the string. The mag drag should lift easily if you have applied graphite to the surface of the mag wheels.



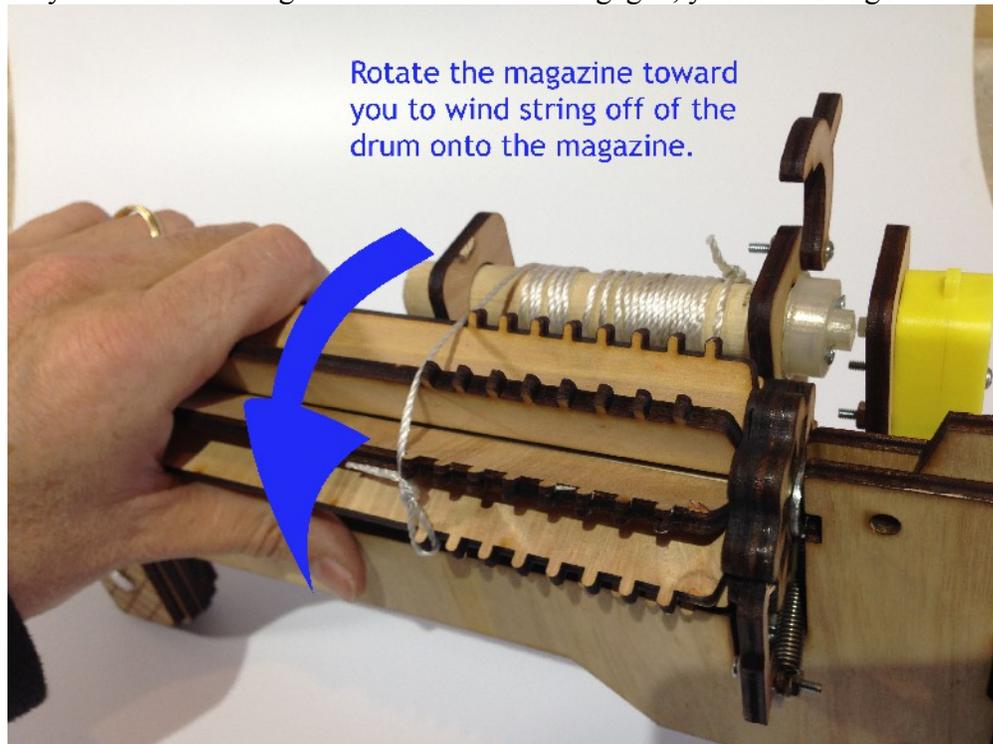
C – Lift the clutch lever



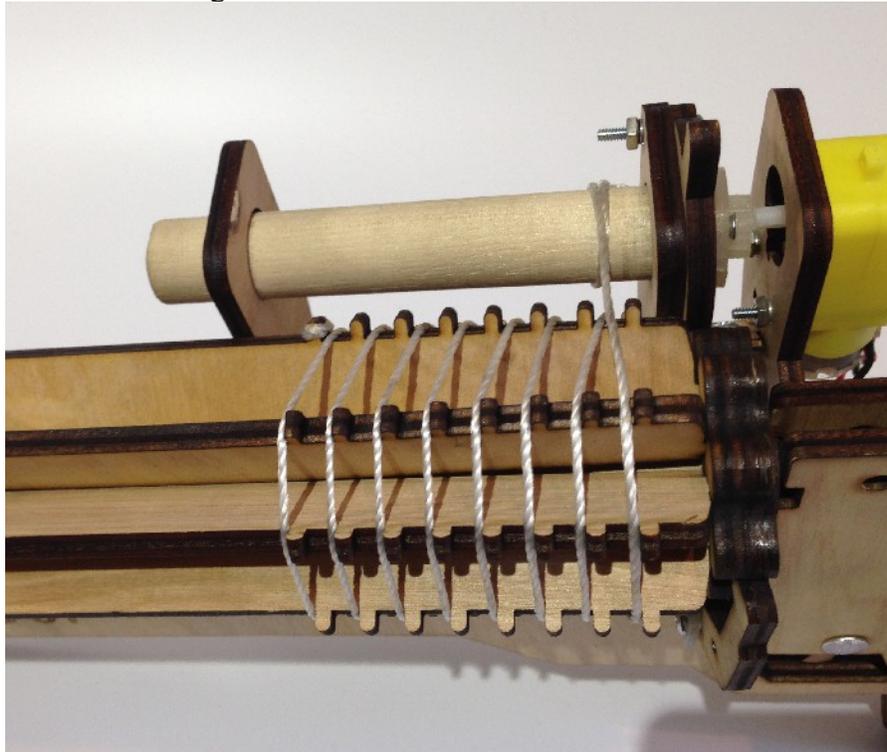
D – Pull the drum dowel away from motor to separate the motor coupling from the motor.



E – Rotate the magazine by hand back toward you so that the string unwinds from the drum onto the mag wheel. This should require little force. Be careful to keep the motor coupling separated from the motor. If you try to wind the string back with the motor engaged, you can damage the motor.



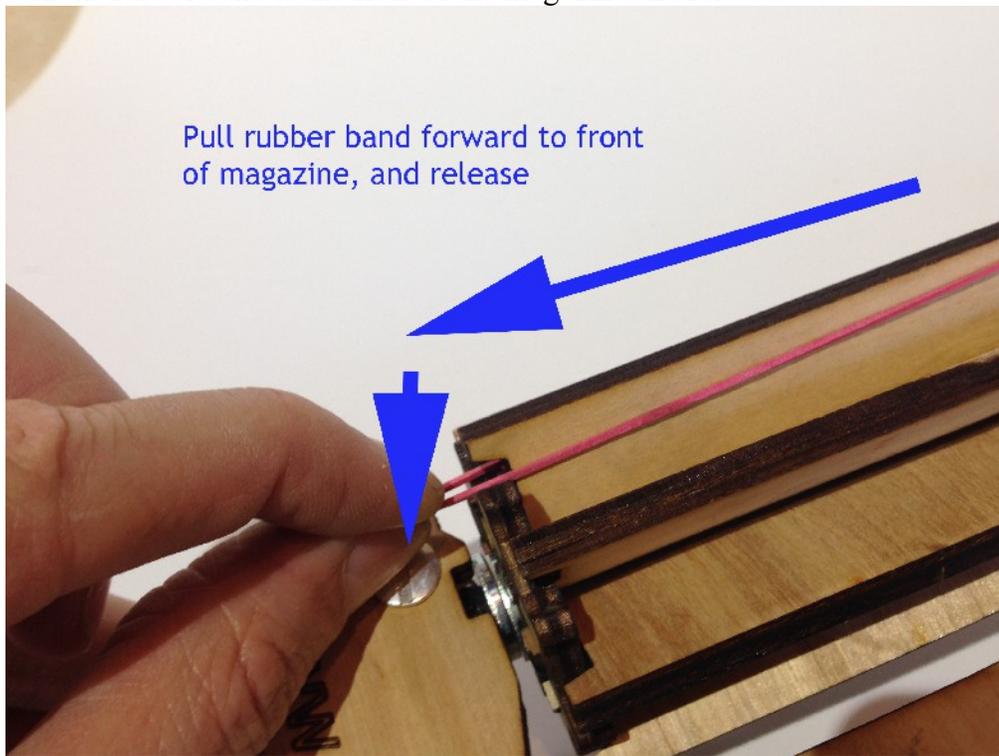
F – Continue to wind, feeding the string into the next row of studs after you wind a full turn, until the string is fully wound onto the magazine.



G – Place a rubber band onto a loading stud at front of the magazine. You may find it helpful to hold the rubber band onto the loading stud with your thumb.



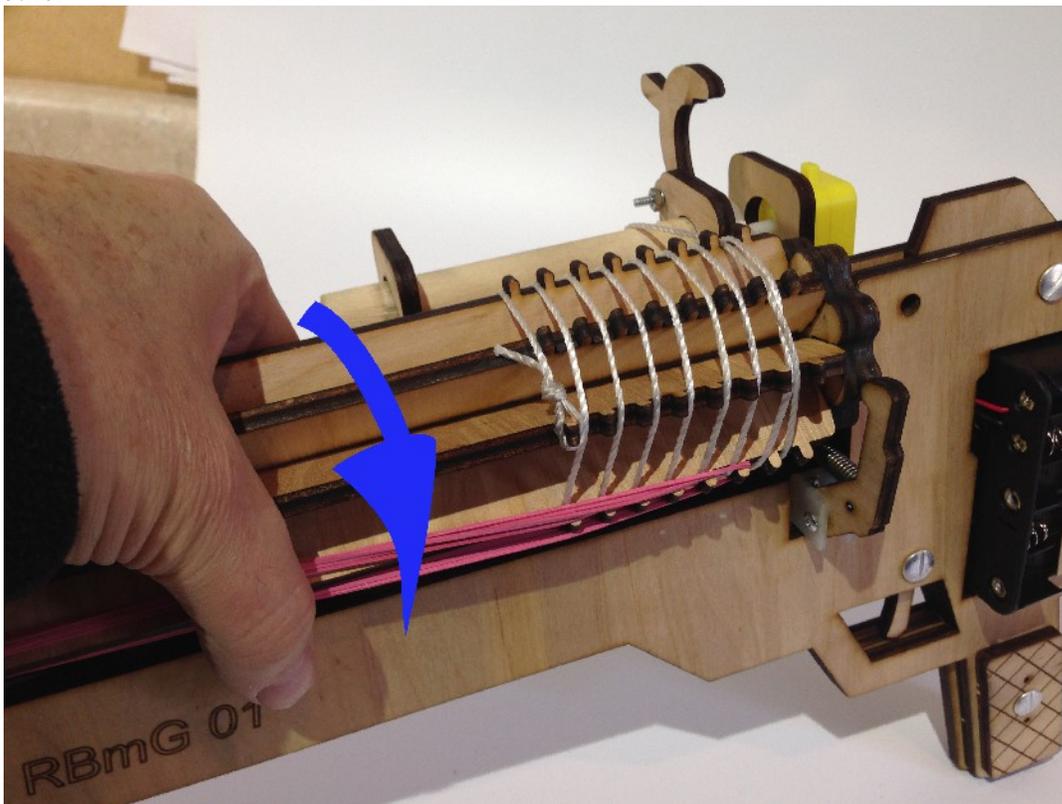
H – Then stretch the rubber band to the front of the magazine and release.



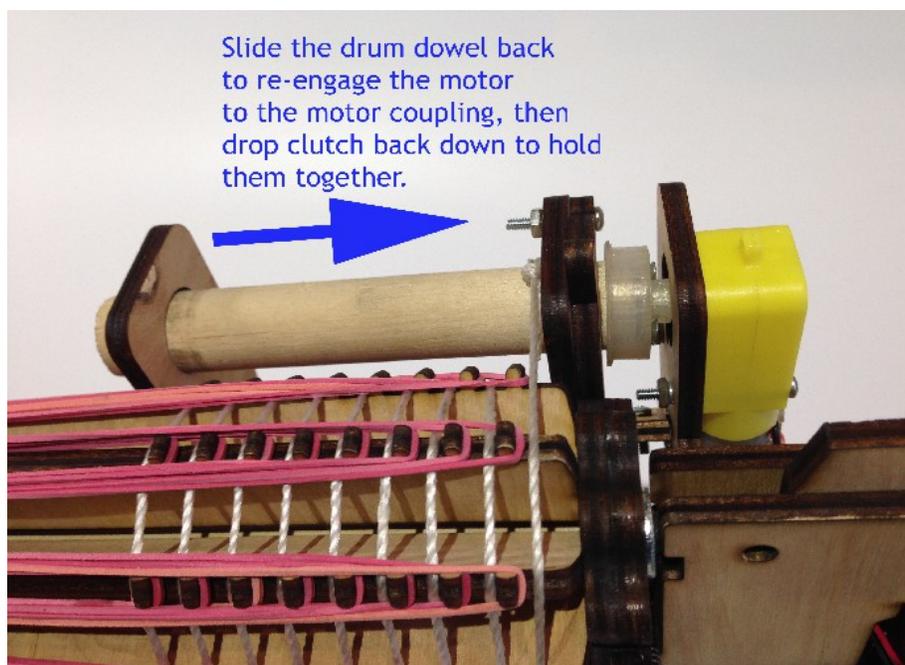
I – Repeat loading rubber bands on the same firing rail, loading from front of the rail to the back.



J – Load the firing rails that you can reach, then you will have to rotate the magazine so that you can reach the other



K – When you have loaded all rubber bands, slide the drum dowel back to re-engage with the motor. Drop the clutch into place to keep the motor and motor coupling connected. You are now ready to fire.



HOW TO FIRE THE RBmG

Hold the RBmG with two hands. Dominant hand on rear grip, other hand on front grip. You can use only one hand for more cool factor. Point the RBmG front at your target and pull the trigger. You can fire bursts by pressing and releasing the trigger, or hold the trigger down for full “rock and roll” mode.

The RBmG fires by the motor rotating the drum, which winds string onto the drum. As the string is wound, it is unwound from the magazine. As the string is wound off the mag, it is pulled taut, lifting the rubber band off of the loading stud. When the string has unwound completely from the magazine, it will come off the firing stud and spin freely on the drum.

Rubber bands getting stuck? - If a rubber band fails to fly all the way off the magazine, it is generally because you did not load it onto the rail properly. But if this does happen, don't worry. You can continue firing and then load it more carefully next time.