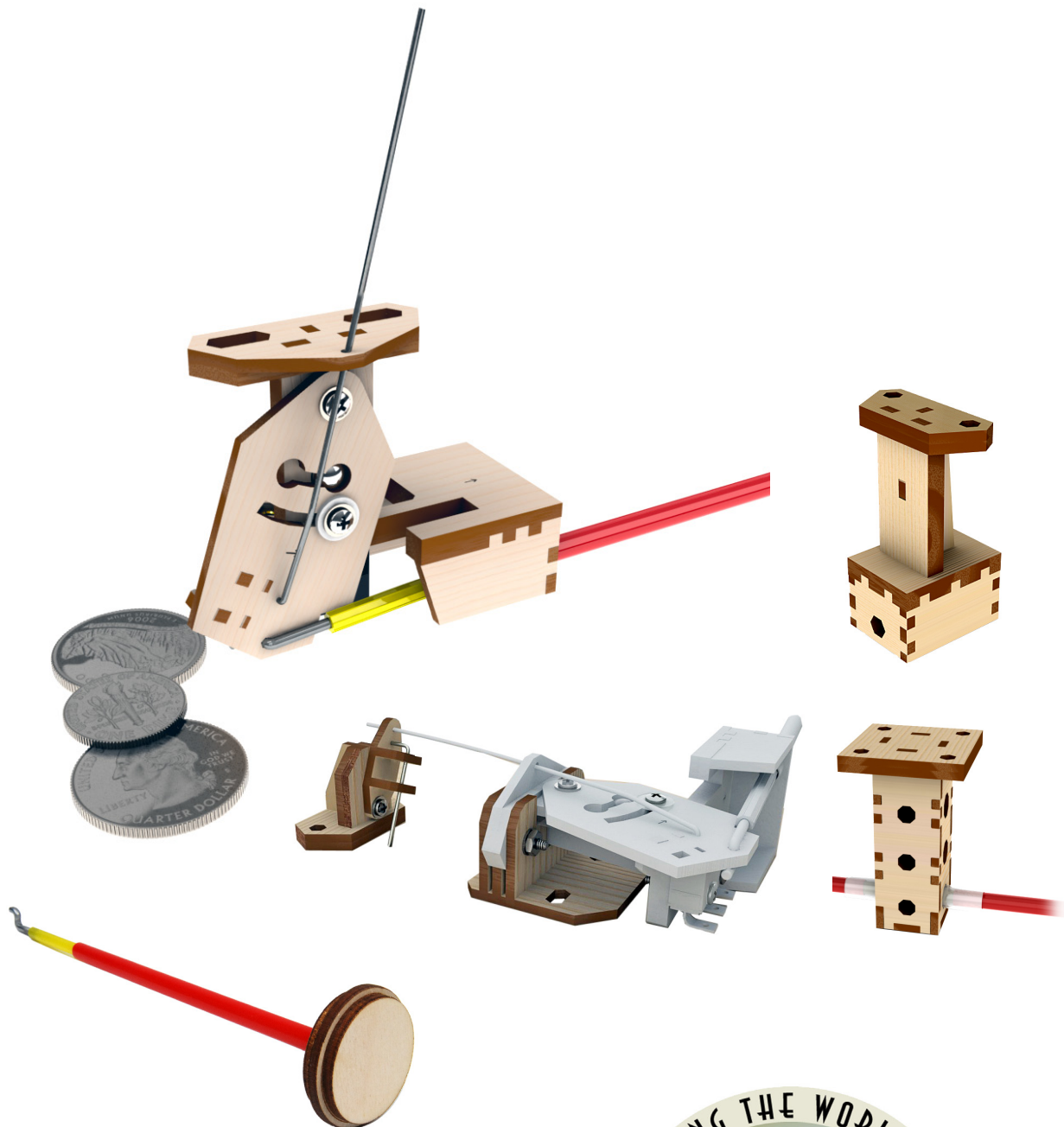


# Assembly Instructions For The BullFrog Manual Turnout Control & Accessories



Since 2003

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Fast Tracks was born out of my frustration with building accurate and reliable turnouts by hand. I just felt that there had to be a better way. So after a lot of experimenting and trial and error I came up with a solution that worked so well, that I decided to offer track assembly fixtures for sale to other model railroaders.

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Again, thank you for your purchase. And please do not hesitate to contact me if you have any questions or problems with your product. I will do my best to reply within one business day.

Tim Warris & the staff of Fast Tracks  
[service@fast-tracks.net](mailto:service@fast-tracks.net)  
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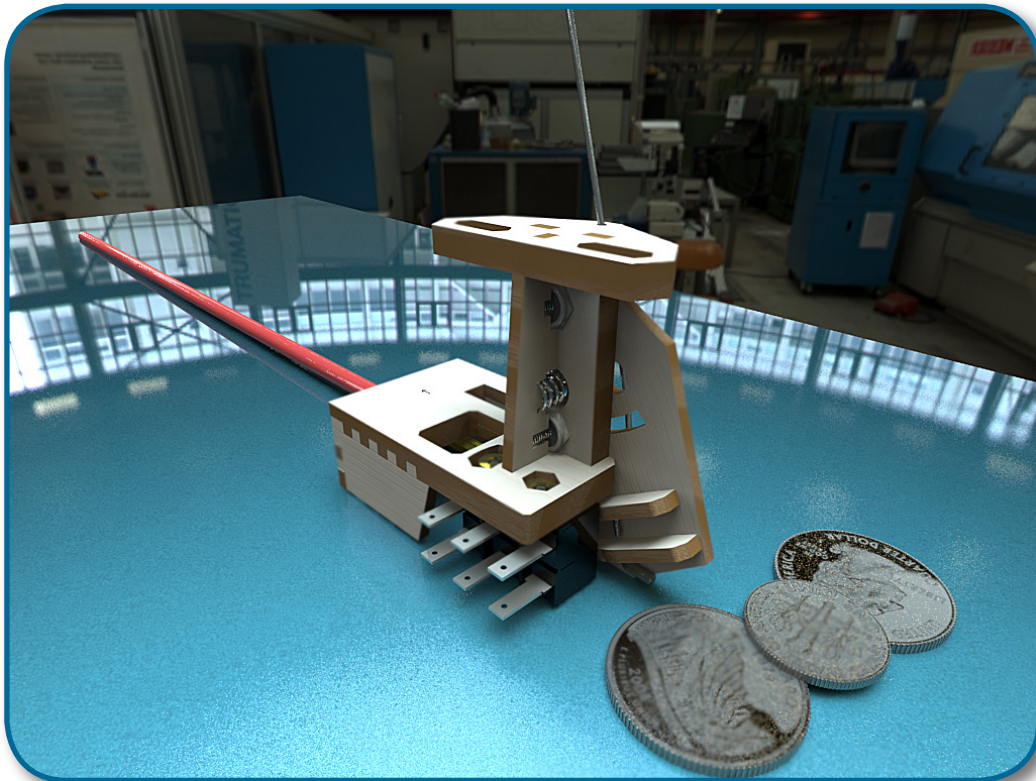
## **Assembling The BullFrog Turnout Control**

Assembling a BullFrog is fairly straight forward and after the first one or two should only take about 10 to 15 minutes. Unlike fine scale modeling, there is no need to fuss with looks, however it is very important that you ensure that all of the parts are fully seated and sitting straight and square in relation to each other.

A detailed video demonstrating how to assemble the BullFrog is also available on the DVD that was included with your order, or on our website at [www.fast-tracks.net/videos](http://www.fast-tracks.net/videos)

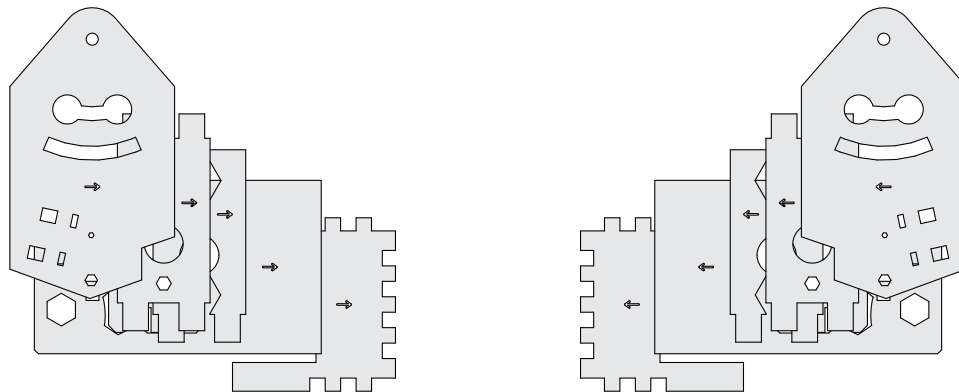
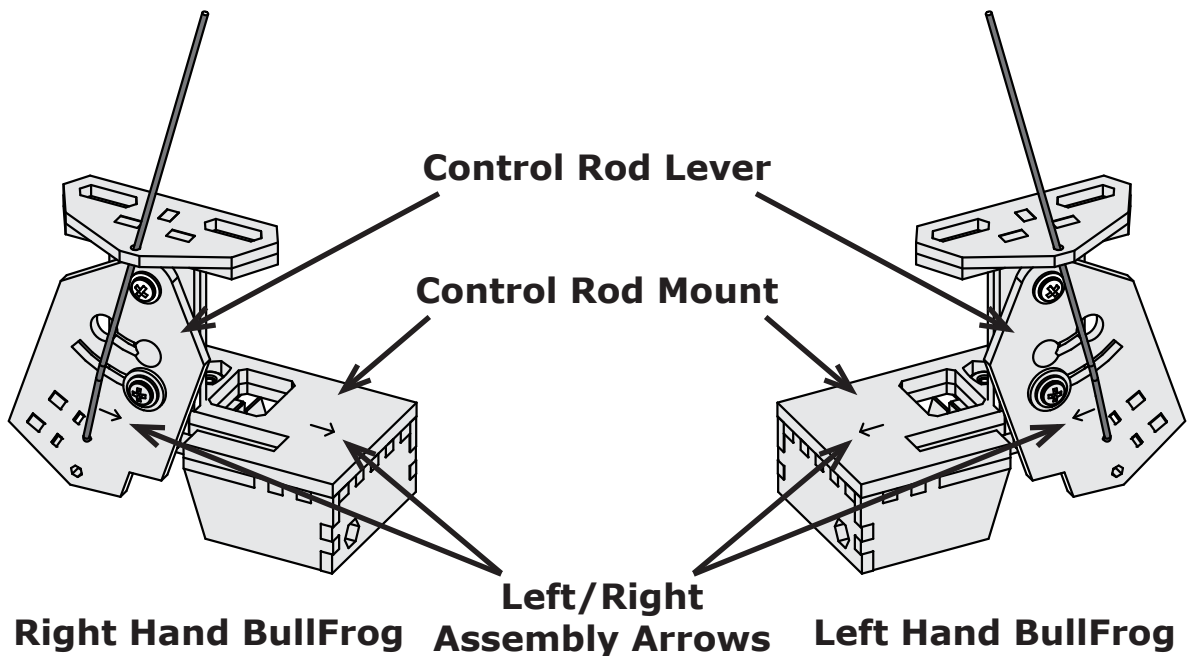
### **Tools & Supplies You will Need**

You only need a couple of simple tools and supplies to build the BullFrog.



## Left vs. Right

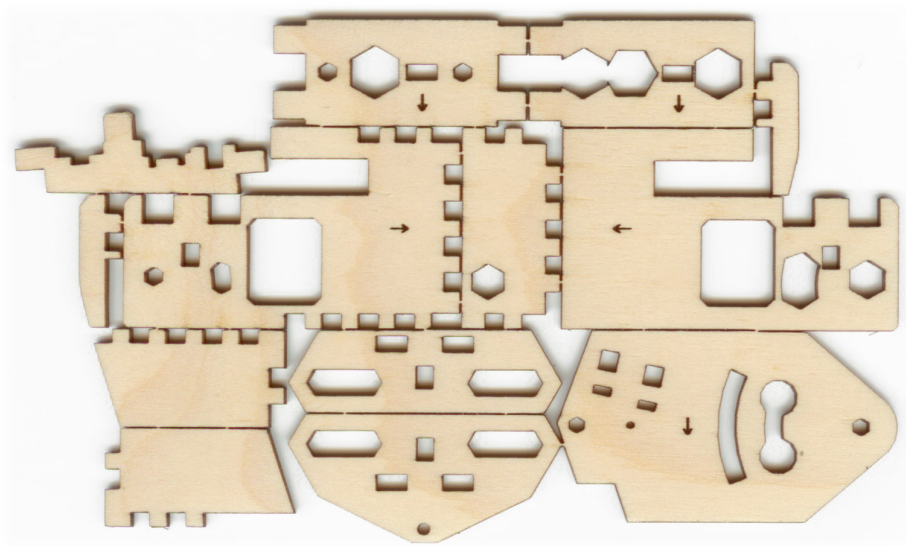
The BullFrog can be built with the control rod mount to the left or to the right side. The difference is subtle, but can be important if you need to fit the machine in a very tight location. We recommend that you build one first and then test fit it onto various locations of your layout to determine how many left and right versions you will need. 90% of the time it will not really matter, but if you have a tight spot, having the control rod mount on the left or right can mean the difference between the BullFrog fitting or not.



To build a BullFrog with the control rod mount to the right, be sure that all of the parts with the engraved arrows point to the right when looking at the front of the control rod lever. To build a BullFrog with the control rod mount to the left, be sure they are all pointing left.

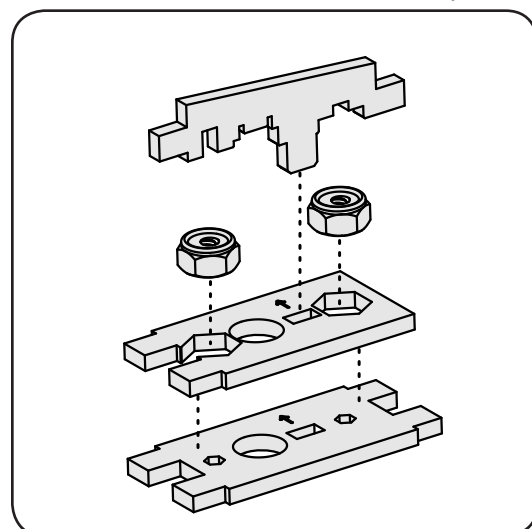
## Assembling The BullFrog

Start by carefully breaking apart all of the pieces as shown below.



Following Steps 1 to 4 on the right, assemble all wood pieces with white glue being sure that the tabs are seated tightly and squarely into the mating part.

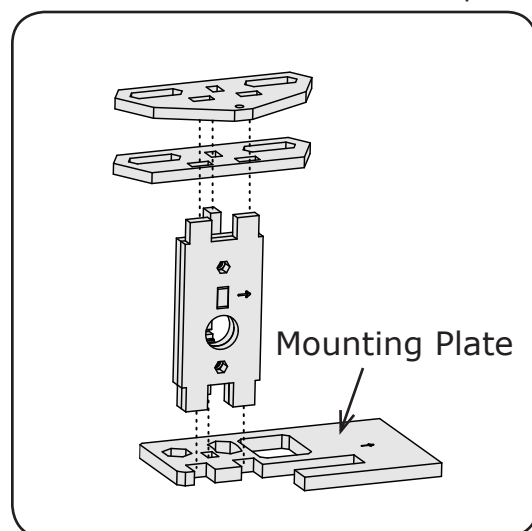
Step 1



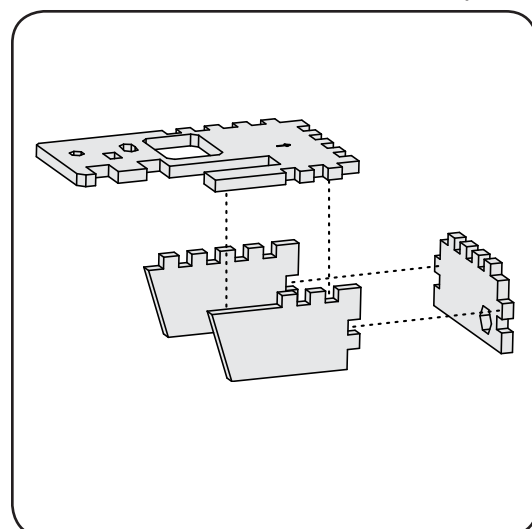
### Using The TadPole Remote Mount?

If you plan to use the TadPole remote control rod mount then you need to use a different mounting plate then shown in Step 2. After you have completed Step 1, go to the Tad-Pole assembly instructions on page 11 of this document and follow the instructions there. When you are finished come back and continue on with Step 5 on page 6.

Step 2

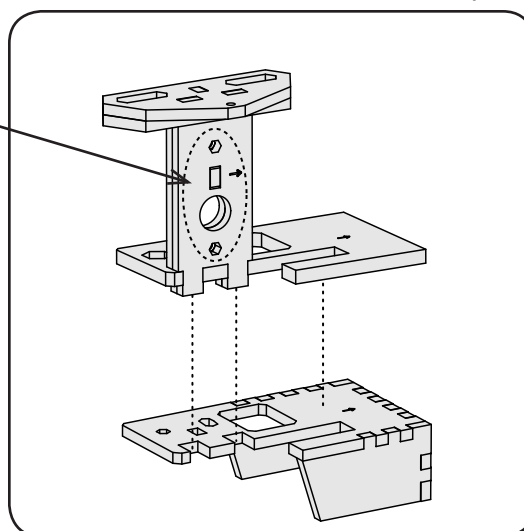


Step 3



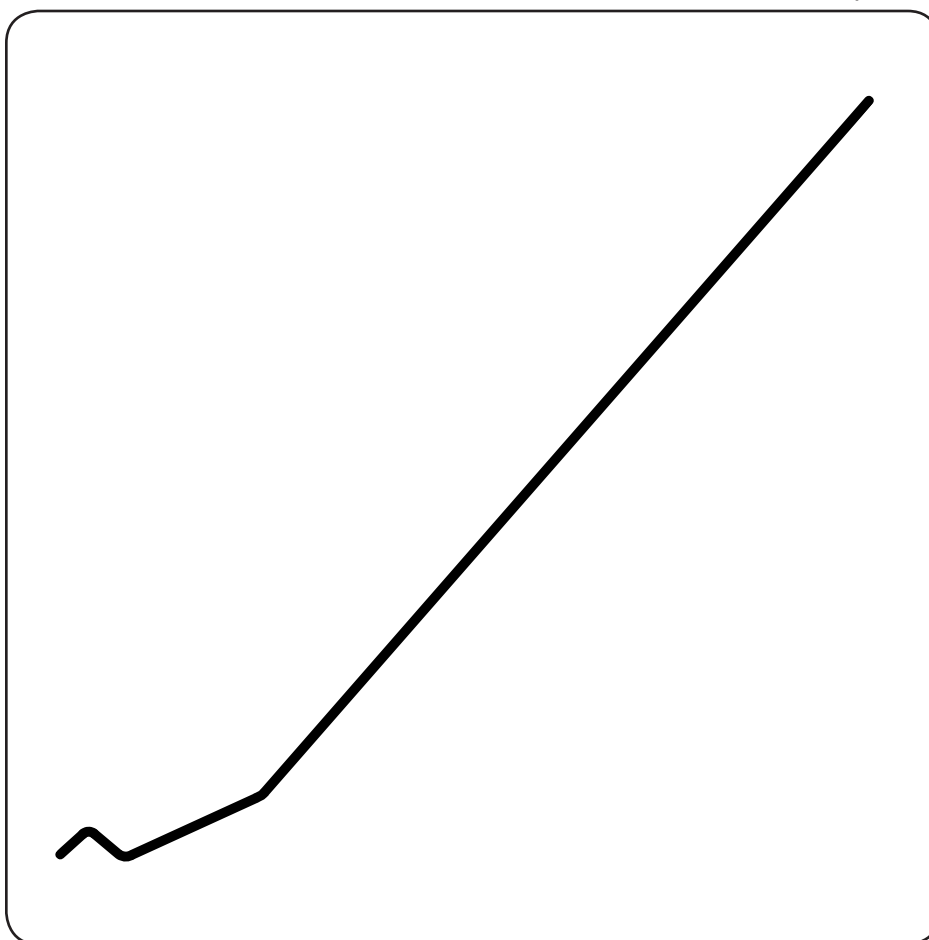
Step 4

Rubbing a bit of candle wax on this area will help the switch move smoothly.



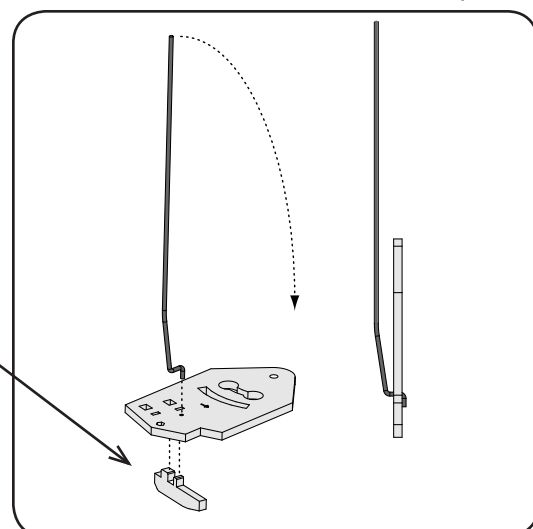
Bend the switch wire to match the shape of the full sized pattern below.

Step 5



## Step 6

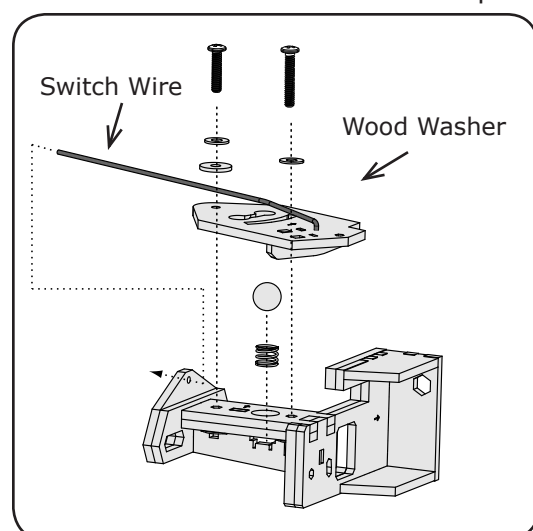
If you will be using the second microswitch, then glue on the second microswitch activation cam below this one.



## Step 7

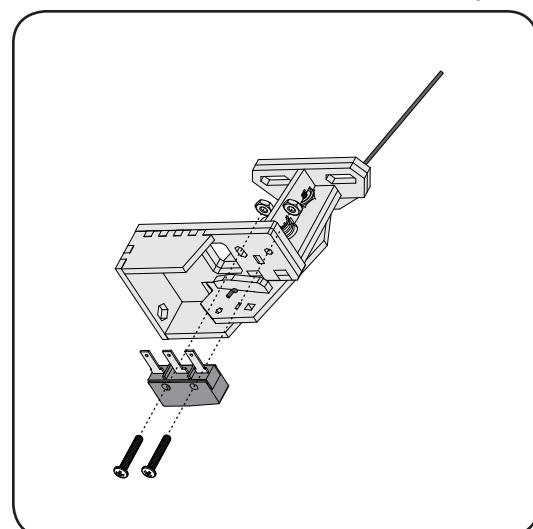
Insert the switch wire through the top of the machine, tighten the control rod lever mounting screws until snug, and then loosen them just enough so that the control rod lever moves back and forth smoothly.

For smoother operation rub a bit of candle wax onto the surfaces of the wood washer.

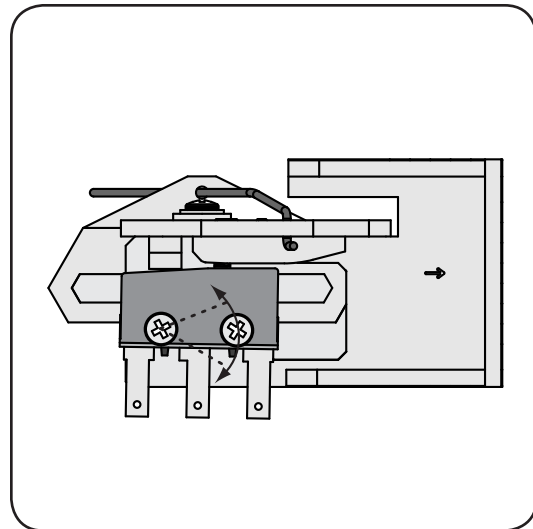


## Step 8

Install the microswitch, but leave it loose so you can adjust it in the next step.



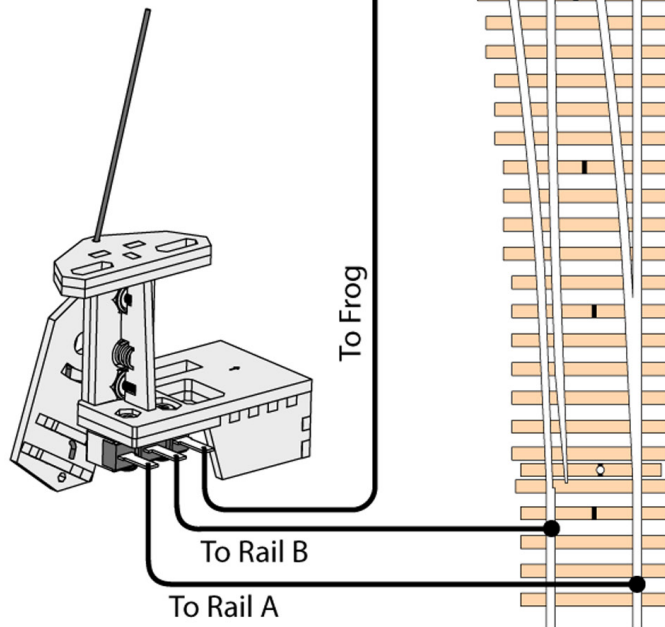
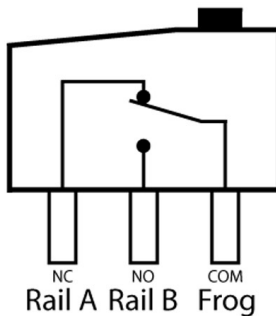
Adjust the microswitch until the cam activates the switch when the control rod lever is over top of the microswitch. You will hear the switch 'click' when the control rod lever is moved back and forth.



## Wiring The Power Routing Switch

We always recommend that you use the power routing microswitch to power your turnout frogs.

To wire the frog, simply follow the diagram to the right, soldering wires to the switch and to the points on your turnout shown in this diagram.



## The TadPole Remote Control Rod Mount

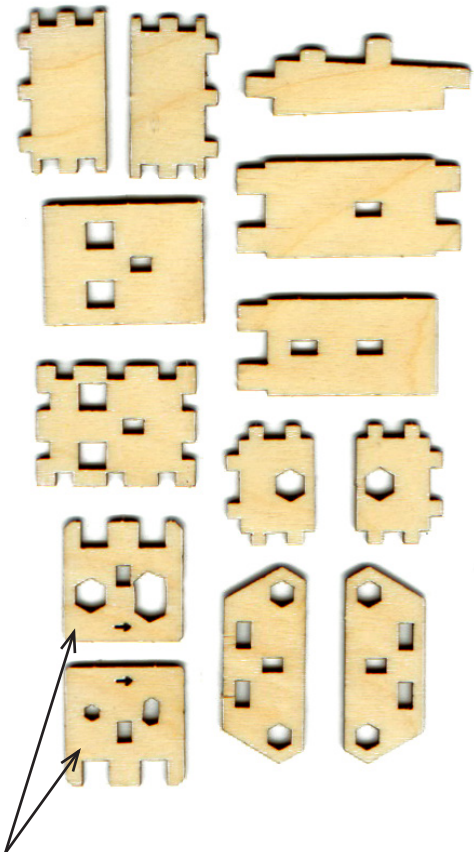
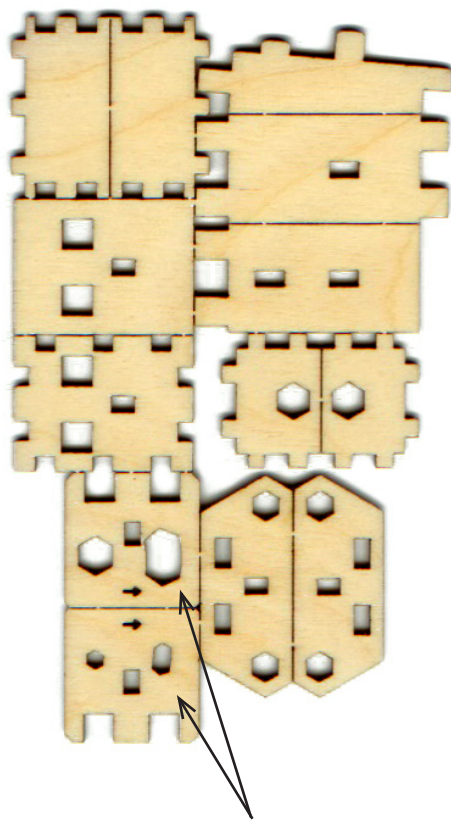
The TadPole provides a way of offsetting the control rod mount away from the BullFrog. This makes the overall size of the BullFrog considerably smaller so that you can fit it into tighter locations. The TadPole also allows you to mount the BullFrog in locations that are hard to reach with a control rod. You can even mount the TadPole around a corner from the BullFrog!

To use the BullFrog with the TadPole remote mount, you need to build the BullFrog using the plain base that is included with the TadPole kit as shown on page 11.



### **Assembling The TadPole**

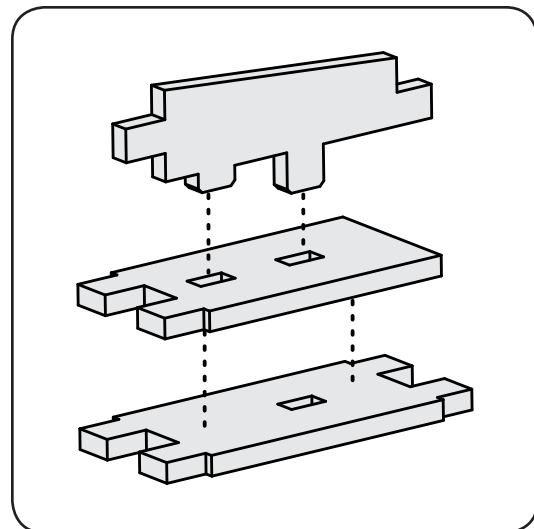
Start by carefully breaking apart all of the pieces as shown below.



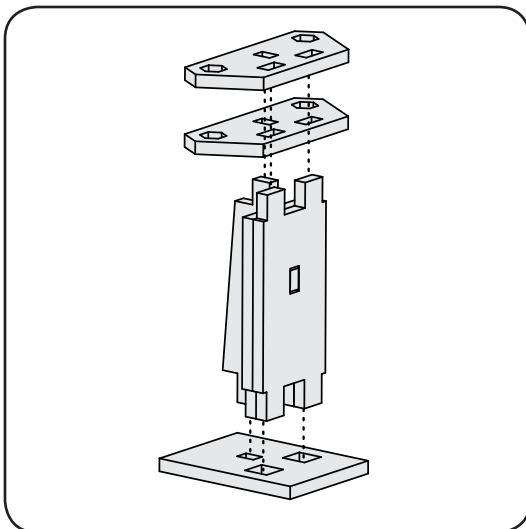
BullFrog Mounting Plates  
Used in the **BullFrog Step 2** on page 11.

Following Steps 1 to 4 on the right, assemble all wood pieces with white glue being sure that the tabs are seated tightly and squarely into the mating part.

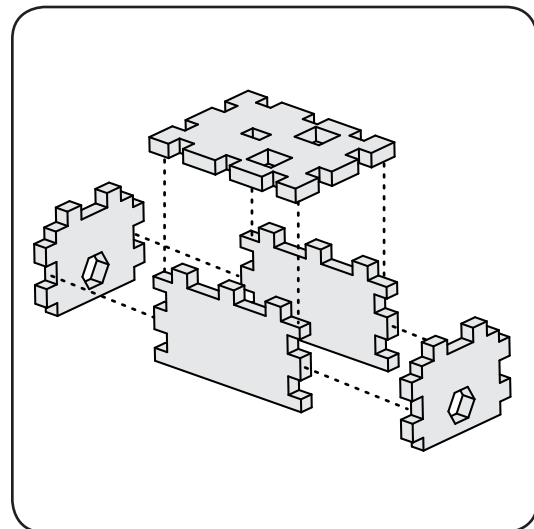
Step 1



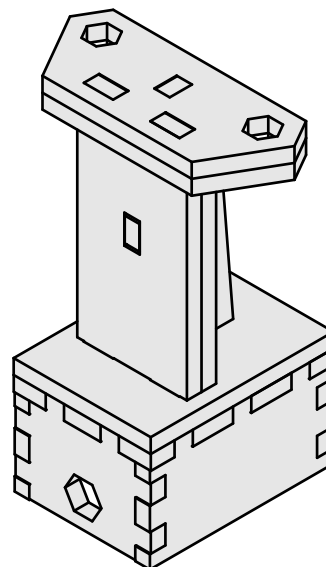
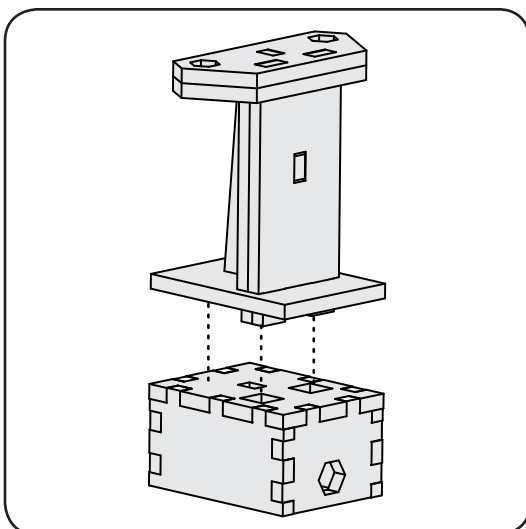
Step 2



Step 3



Step 4

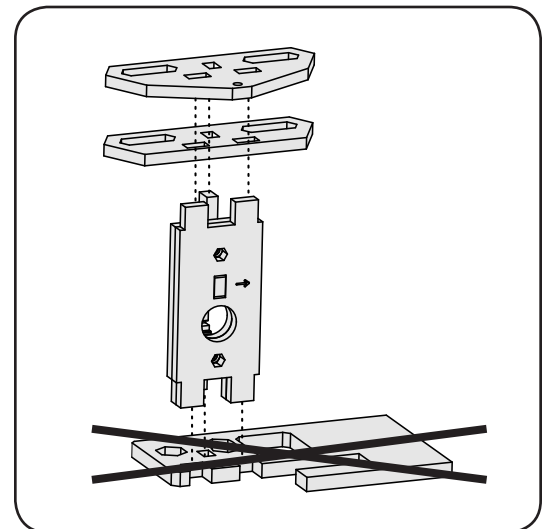


## Special BullFrog Assembly Instructions

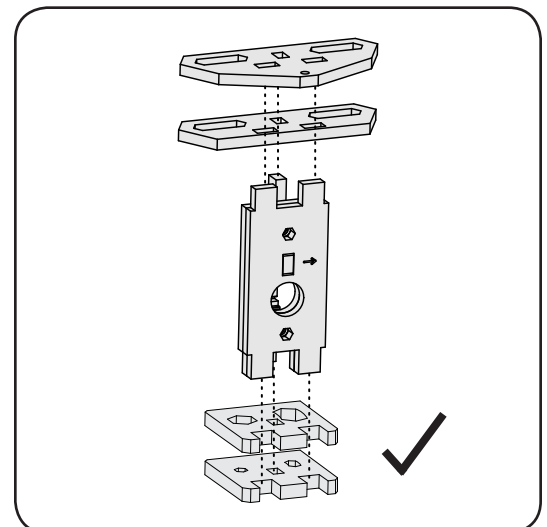
To use the TadPole with the BullFrog, you need to assemble the BullFrog without the control rod mount shown in Step 2 on page 5. Instead, install the two bottom plates that are included on the TadPole parts fret as shown on the TadPole parts drawing on page 9.

**Do Not** install the control rod mounting plate or remaining control rod mounting parts as shown in the BullFrog Step 2 image on page 5 and in the image to the right.

Instead, install the two bottom plates supplied on the TadPole fret as shown in the Alternate BullFrog Step 2 to the right, and then continue with Step 5 of the BullFrog assembly instructions on page 6.

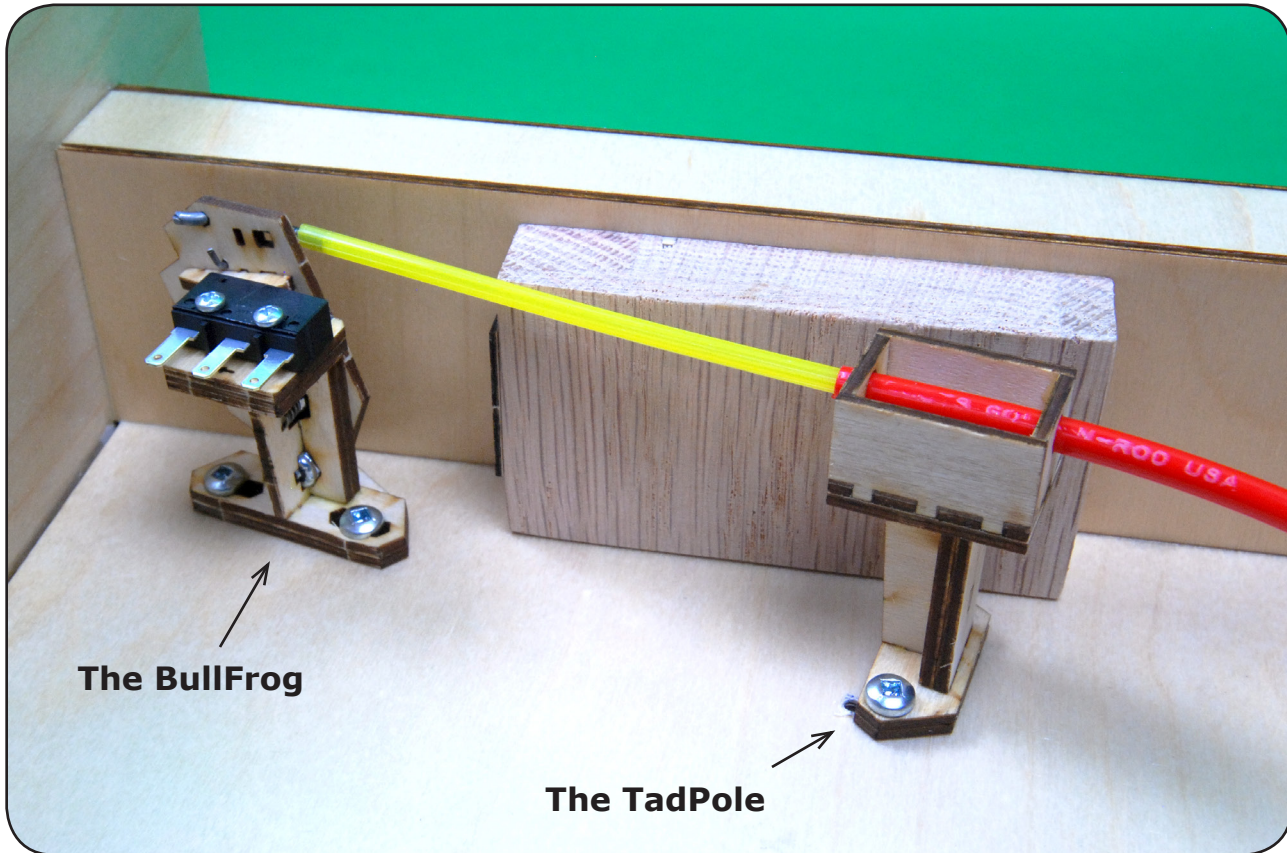


Alternate BullFrog Step 2



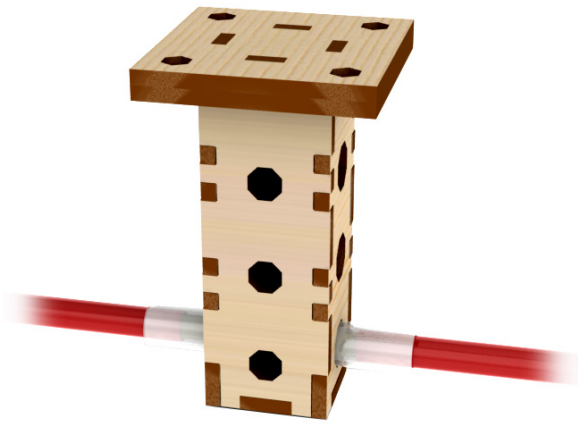
## TadPole Mounting

You can mount the TadPole several inches away from the BullFrog. Insert the outer control rod into the hole in the bottom and then connect the inner control rod to the BullFrog as shown below.



## **The Control Rod Hanger/Joiner**

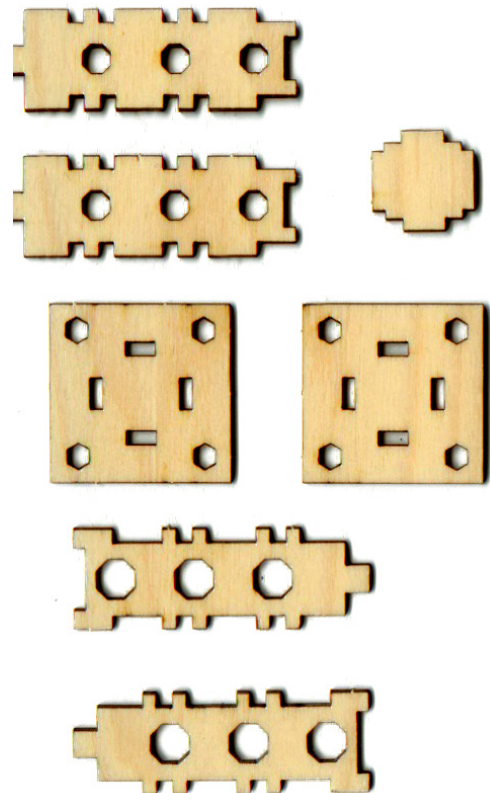
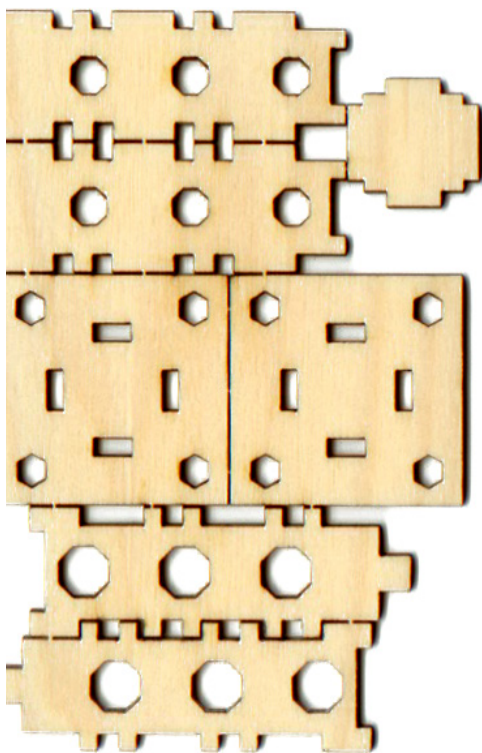
The Control Rod Joiner/Hanger is a dual purpose part that is used to join control rods together or for hanging lengths of control rod under your layout. The hanger is designed with two different sizes of holes. One set is used for holding two joined control rods with a joiner sleeve. The other set is used to simply hold the control rod under the layout. We recommend that you use at least one hanger for every 18" of control rod.



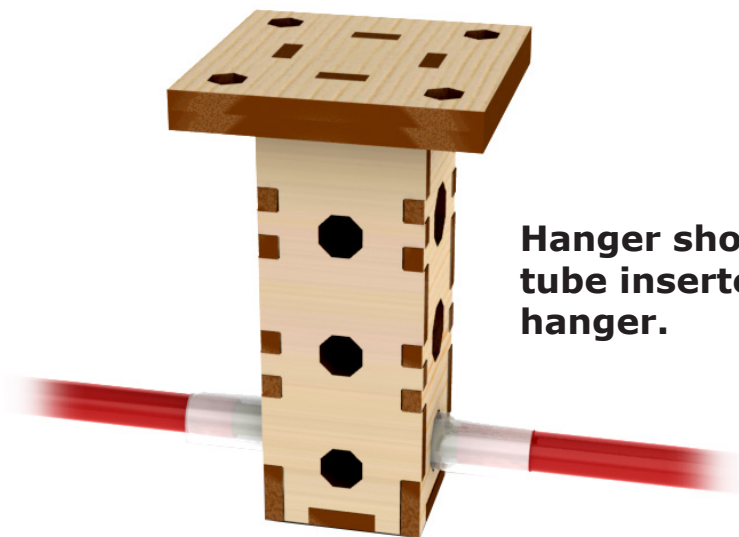
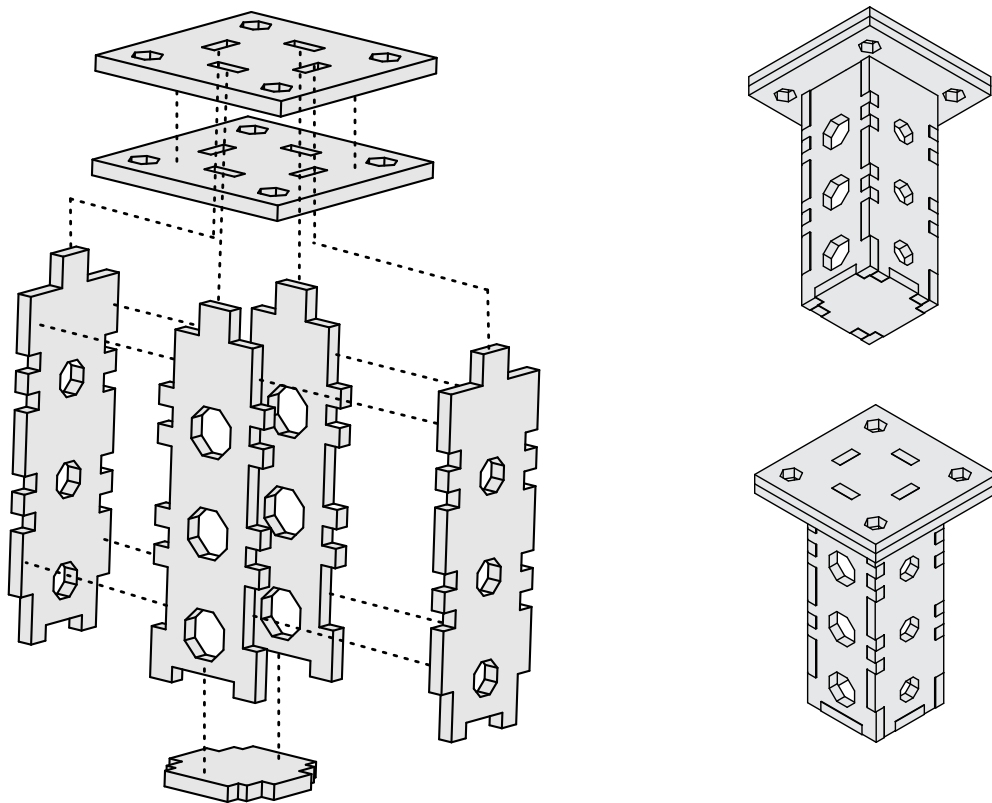
When used as a joiner, the joiner/hanger makes it easy to join two lengths of control rods together to create a single rod. Multiple joiner/hangers can be used to create a control rod up to 40 feet long. (Depending on the number of bends in the run.)

### **Assembling The Control Rod Hanger/Joiner**

Start by carefully breaking apart all of the pieces as shown below.



Following diagram below, assemble all wood pieces with white glue being sure that the tabs are seated tightly and squarely into the mating part.



**Hanger shown with joiner tube inserted through the hanger.**

**The outer red rods are inserted into the joiner tube.**



**The inner yellow rods are joined together with the threaded rod supplied with the joiner/hanger kit.**

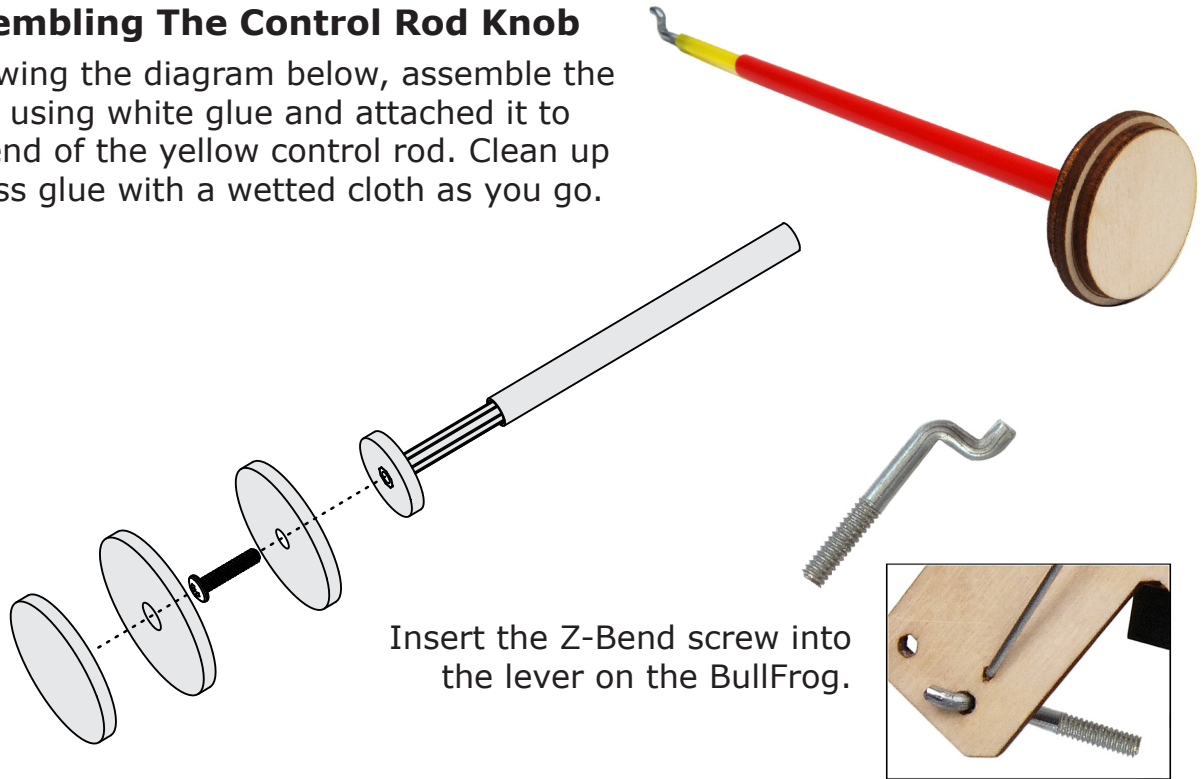


## The Control Rod Kit (18" & 36")

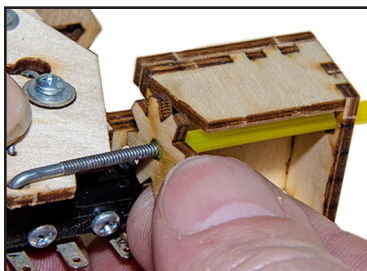
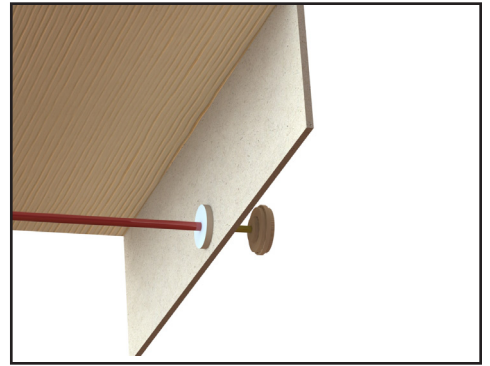
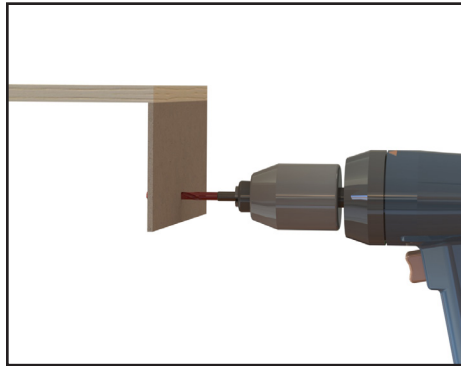
The control rod kit includes all of the parts that you need to connect one Bull-Frog turnout control to your control panel with a knob.

### **Assembling The Control Rod Knob**

Following the diagram below, assemble the knob using white glue and attached it to the end of the yellow control rod. Clean up excess glue with a wetted cloth as you go.



Mount the control rod to your front panel by drilling a 3/16" hole in the panel then glue the Control Rod Bushing in place on the front and back of the panel. The red control rod is then inserted into the bushings and glued in place.



Finally, fasten the inner yellow control rod to the BullFrog by using the special control rod 'wrench' to screw the control rod onto the Z -Bend screw.

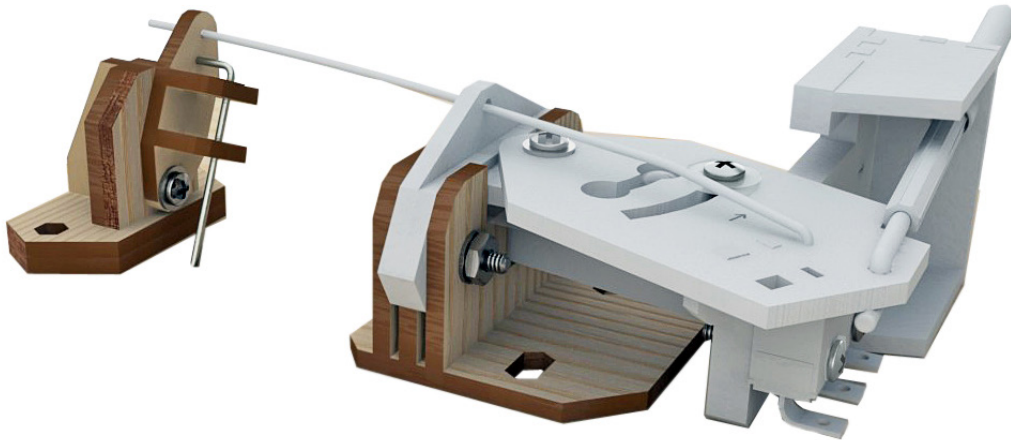
The wrench makes it easy to screw the control rod into the Z-Bend screw by fitting tightly over the splines of the control rod.

# **The Sidewinder**

## **Horizontal Mounting Kit**

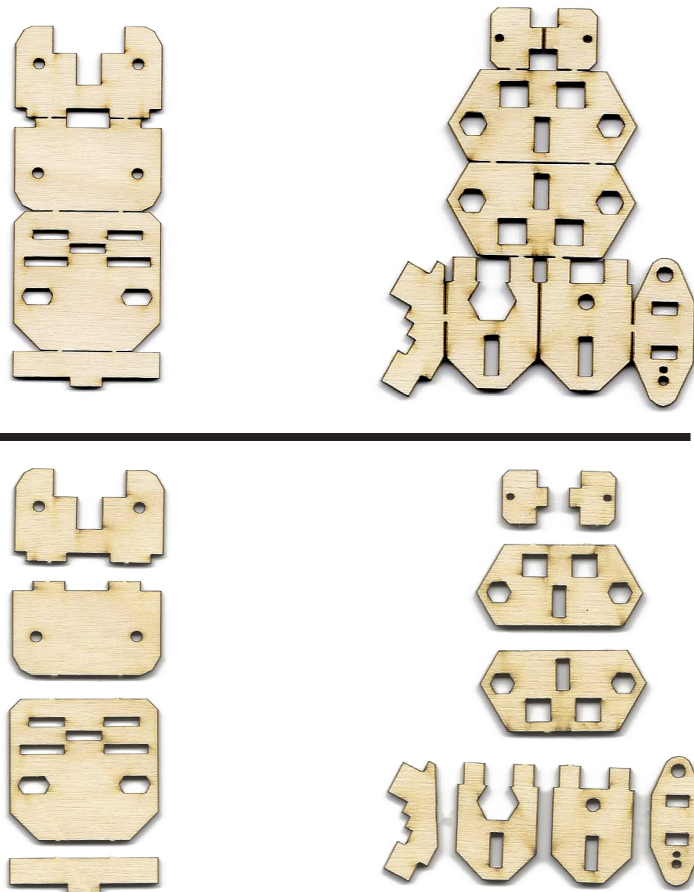
The SideWinder BullFrog Horizontal Mounting Kit allows a BullFrog Switch Machine\* to be mounted sideways, reducing the space needed to just 1-1/8"

*\*BullFrog Switch Machine not included*



## **Assembling The TadPole**

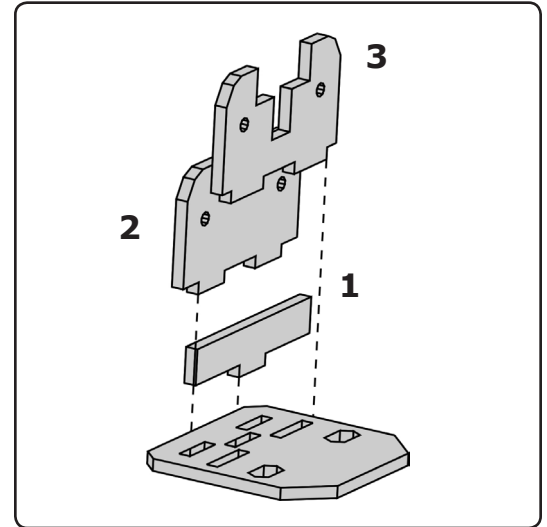
Start by carefully breaking apart all of the pieces as shown below.



## Building the Mounting Platform Sub-Assembly

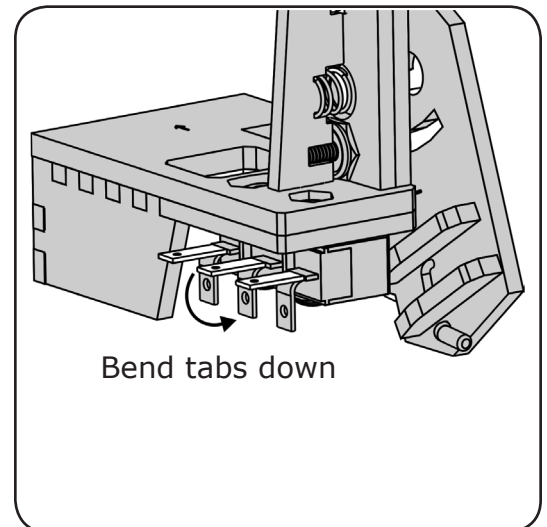
### Step 1

Assemble all wood pieces with white glue in the order shown, being sure that the tabs are seated tightly and squarely into the mating part.



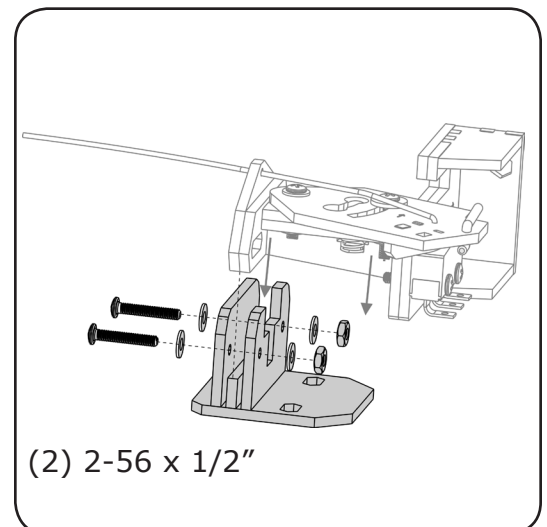
### Step 2

To mount the BullFrog Switch Machine horizontally, the tabs of the microswitch need to be bent 90 degrees down toward the bottom of the machine as shown below.



### Step 3

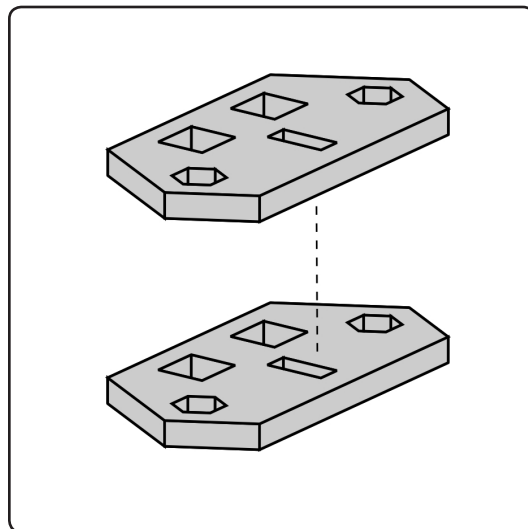
Slide a pre-built BullFrog Switch Machine into the Mounting Platform and secure in place with the 2-56x1/2" bolts, washers and nuts.



## Building the Lever Sub-Assembly

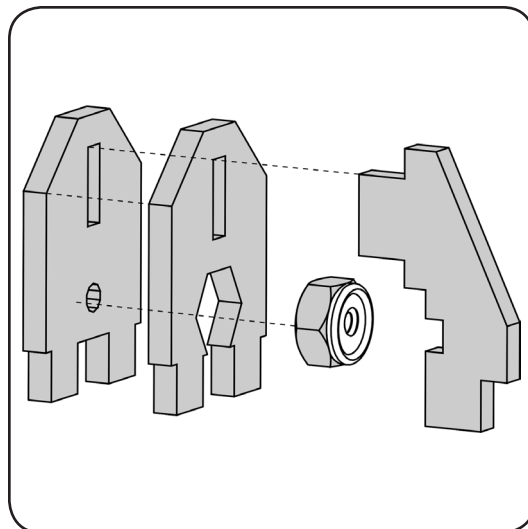
Glue two top halves together with wood glue. Align the outer edges.

Step 4



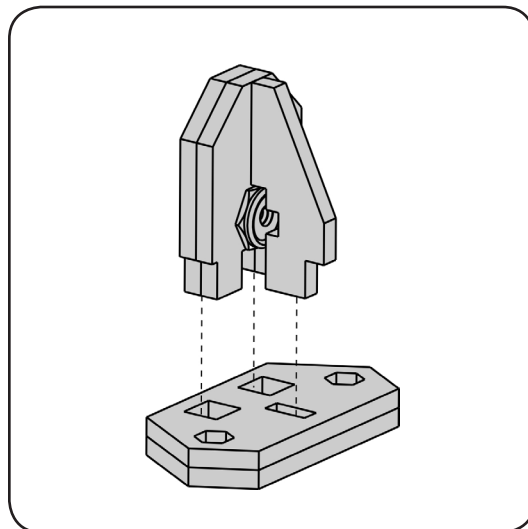
Glue the two uprights together. Insert the 2-56 self locking nut into the pocket before gluing the rear support in place.

Step 5



Glue the completed upright post in place.

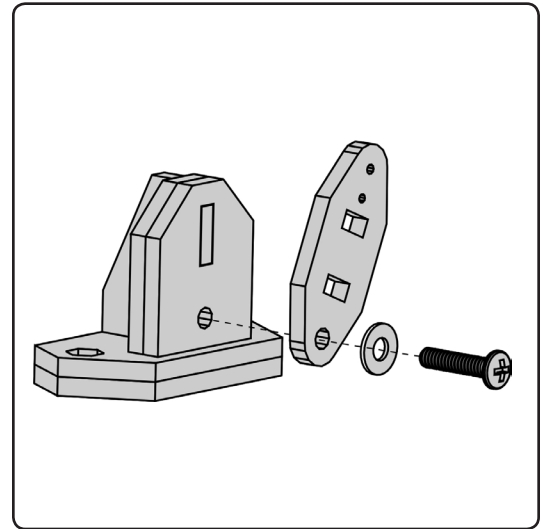
Step 6



#### Step 7

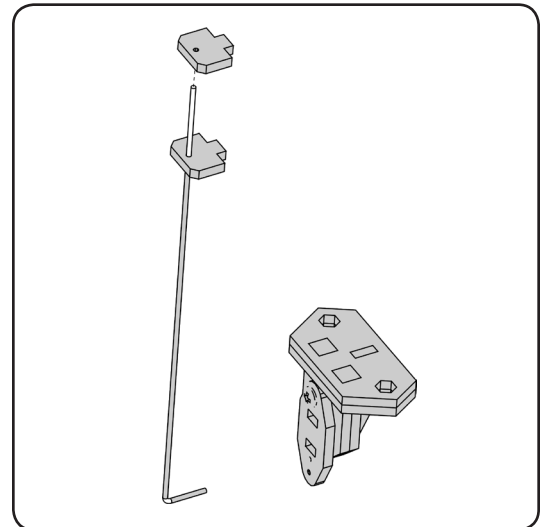
Tighten the screw until snug and then loosen just enough so that the lever moves smoothly.

For smoother operation, rub candle wax onto the moving surfaces.



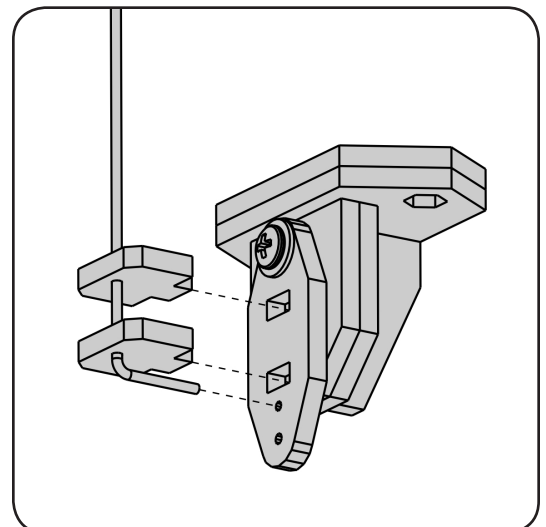
#### Step 8

Slide the two wire brackets down onto the throwbar wire.



#### Step 9

Insert the throwbar wire into the hole in the lever while gluing the wire brackets into the pockets. Test that the lever can rotate freely.



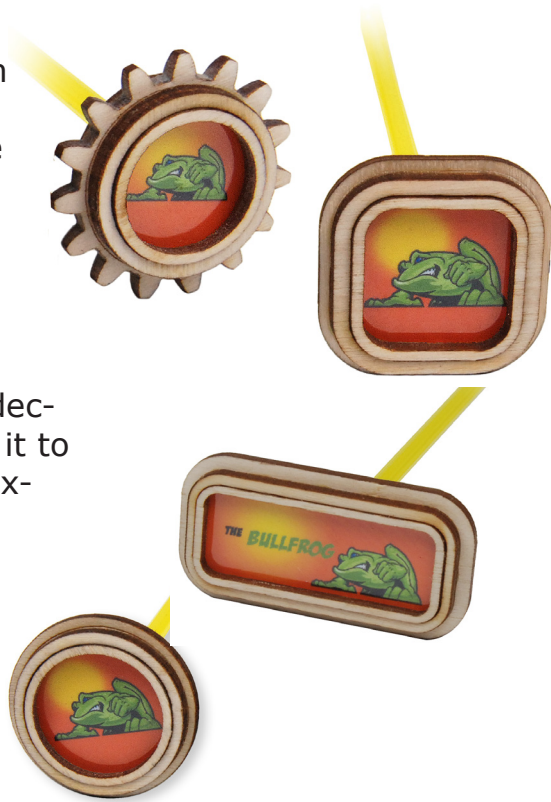
## **Decorative Knobs**

In addition to the plain knob that comes with the control rod kit, you can also purchase decorative knobs that include a clear acetate front so you can insert your own label into the knob.

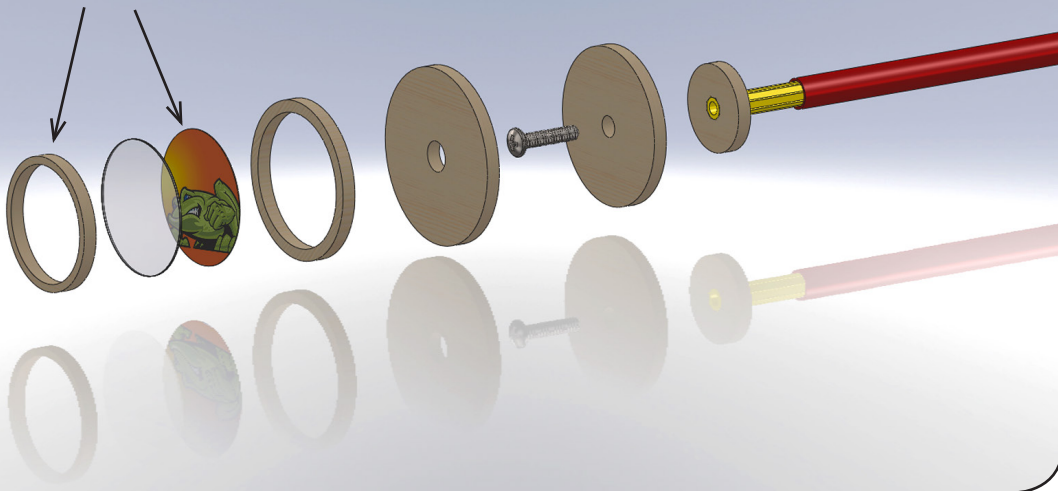
### **Assembling The Decorative Control Rod Knobs**

Following the diagram below, assemble the decorative knobs using white glue and attached it to the end of the yellow control rod. Clean up excess glue with a wetted cloth as you go.

Be sure to insert your own label before inserting the final retainer ring. While it is possible to remove the retainer ring to replace the label, it can sometimes be a very tight fit.



**Insert your own label before you press in the retainer ring.**



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