

## Mast Signal Instructions Z-Scale, N-Scale & HO-Scale

### Before Starting

**PREPARING BRASS** The easiest way to remove the brass parts from the sheet they are produced on, is to use rail nippers. The brass is soft and won't affect their future cutting ability. This will reduce or eliminate the amount of filing to smooth the edge. The next best way is with small sharp diagonal cutters that will fit into the small areas between the part and the sheet holding them. *You should always use a file to remove the balance of the tie. This will ensure a perfect fit.*

**GLUING BRASS** Instant super glues, Cyanoacrylate, CA for short, are very prominent in model building today. They will work perfectly with brass, and they are instant. We recommend a thick CA glue such as "**Zap-A-Gap**" from Pacer Technology. As I have also been building R/C airplanes for over 33 years, I have many airplanes built entirely with CA glue and I can tell you that the wood will break before the glue joint. So it is great stuff! Besides being almost instant, thick CA glues will help create a small fillet and fill small gaps when applied to the inside of joints. Using a toothpick to apply the CA glue works really well for getting the glue into the interior areas and controlling the amount of glue used.

**SOLDERING BRASS** Although you can use CA glues to hold the brass parts together, solder is still preferred by some modelers. For soldering you will need a small soldering iron (30-50 watts) with a good tip, some liquid flux (Tix Flux is best), and some electrical solder. Plug the iron in and let it warm up for several minutes. Be sure you've got a place to set it down where the heat won't damage anything. Get a clean rag to keep handy for wiping the tip should you get more solder on than necessary. "Tin" the tip by applying solder to it so that the whole tip has been covered with a thin film of solder. Leave the coil of solder so that some solder is uncoiled and sticking out so you can touch the tip or the iron to it without holding the coil of solder. Join the pieces as follows: position the two pieces to be joined and hold one of them with one hand (the other piece will be resting on the work surface). With the free hand, apply some flux to the area that will be soldered, then pick up the hot iron, hold it on the solder and let the solder flow on the tip, touch the tip to the area where the flux is for just a few seconds while the solder flows off the tip and into the joint. The solder will cool and harden almost as soon as the iron is removed. Use waste pieces of brass to experiment with if you are not familiar with soldering. Remove excess solder with a file, clean the assembly in warm soapy water before painting.

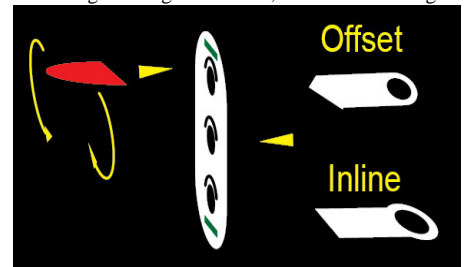
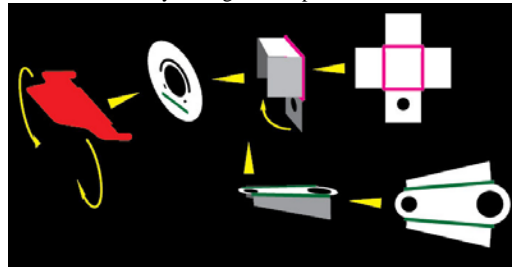
**PAINTING BRASS** Wash your completed assembly in warm soapy water. If it is really messed up with flux etc. you can clean it with a lacquer thinner first. After the paint is applied it helps to bake it in an oven for a few hours at 150°. This will set the paint to the brass as well as allowing you to paint over parts of it without the first coat dissolving as you spread on the second coat. *Do NOT bake the model if you used CA glue for construction.* One nice thing about painting on brass, if you don't like the paint job you can use paint remover to get rid of it and start again without hurting the brass.

### Step #1 – Assembling the Targets

Both Type D and Searchlight Targets have sunshields that must be rolled into a curvature that will go into the slot above the LED hole on the target. Use a brass rod or tube to create the curvature. Rolling the shade between the tube/rod and your fingers will produce the desired effect. Following the diagrams below, assemble the Target.

Type "D" Targets can be assembled such that the Target is either offset from the Mast Center or inline to the center by using the appropriate standoff.

Searchlight Targets have a positionable Arm that allows the builder to place the target in any manner. Ensure the bottom hole in the LED Cover aligns with the smaller hole on the Arm.



### Step #2 – Building the Mast

Begin by deciding if you are going to build a one or two platform Mast Signal. Cut the provided Mast tubing to 1.25" for Z-Scale, 1.75" for N-Scale or 2.75" for HO-Scale. Secure the Mast Stairs to the Mast 30 scale inches below the top of the Mast. Bend Stairs at location shown. Attach Upper Platform to Stairs at location shown. Once completed, secure Upper Platform to Mast. If placing LED's into the Targets, use a Dremel Tool and make a small opening in the Mast Tube below the Stair attach point. Secure a Target to the Mast directly above the Stair attach point.

Depending on the prototype modeled and on whether you are installing multiple targets, you will need to secure the second target either above or below the Middle Support. Secure the second target (if applicable) and the Middle Support in the proper order. If placing LED's into the Targets, use a Dremel Tool and make a small opening in the Mast Tube below the Middle Support attach point. Secure the Lower Support or Platform as required.

