Modify and Installing Operating Target Switch Stands

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**Base Modification**

1. Start with NJ International NP type Switch Stands
2. Remove target and post by pulling and twisting on target to break the solder loose. It may take some time.
3. We need to add a base plate to be able to fasten the stand later.
4. File base of stand to remove paint.
5. Cut .010” thick brass to the width of the stand approx. (.150”) X 4” long. This extra length allows for spike to fasten on one side of base and a handle to use while machining on the other side of base which will be cut off later.
6. Solder stand to brass strip.
7. Drill .040” holes for spikes. Drill .033” hole for target post.
8. Cut off long brass handle. File and shape as you like.

**Target Post Modification**

1. Cut target post from .030” brass rod to 10 ho scale feet.
2. Drill .032” hole on one end of long .010” brass strip to make bell crank.
3. Solder brass rod to hole in this strip. Be sure to keep rod square with brass strip.
4. File and clean solder joint.
5. Using a micrometer measure .094” to center of hole for switch throw bar. Center punch. Drill a .022” hole. This measurement is very critical as it determines the length of throw to turnout.
6. Cut off long brass handle. File and shape as you like. Bell crank must be small enough to clear the mounting cribbing.

**Mounting**

1. Cribbing to be ho scale wood 8 X 10’s X 6’, to be mounted flat and level, ho scale 2’ 3” between, and butted tight to the ties.
2. Paint cribbing to your liking.
3. Mount switch stand assembly at ho scale 5’ -0” from outside of rail to center of switch stand mounting holes. Use an N.M.R.A. gauge to verify proper spacing between target and rail. **Tip** = Consider orientation of target & allow more clearance if near a curve or if running long (85’) cars, to allow for overhang.
4. Make switch throw bar out of a length of .020” brass rod (length will vary a little).
5. Drill a .022” hole in end of the turnout throw bar if needed.
6. Install throw bar from Bell crank to the hole in the throw bar on the turnout. **Tip** = If you bend the ends a bit past 90 degrees, it will lift the rod up off of the other parts & eliminate binding.
7. Once connected move points back and forth to make sure it moves freely.
8. Glue on target. Targets are ho scale 19”round. **Tip** = Use Heavy Consistency Super Glue and once partially dry, adjust as needed. Be careful to not get too much glue on the target post or you will glue it to the base and it will not rotate.
9. Cut off top of target post if needed. Mainline targets are 6’ – 2” tall, and yard targets are as low as you can go, to the top of the switch stand.
10. Paint target to your Railroad color.

**General Tips**

Keep all clearance in all holes as small as you can. If the holes are loose, you will lose the affect.

We have installed 200 switch stands at the P.S.M.R.E., and they are almost maintenance free.

**“Be Patient!!! “**

**Material list**

1. N.J. International Switch Stand **#1916 Standard Type**, www.**njinternational.com**/ Ph (480) 219-4135
2. Switch stand base and bell crank = 10” X 4” X .010” Sheet Brass. **Tip** = Cut to width of .150” in a sheer.
3. Target post = .030” X 10 ho scale feet brass rod.
4. Switch throw bar = .020” X (length to be determined) brass rod.
5. Target = .010” X 19 ho scale inches diameter sheet brass.
6. Cribbing = 8” X 10” X 6’ ho scale wood (Northeastern Scale Lumber).

**List of tools**

* Digital micrometer
* Medium file
* Needle nose pliers – small
* Sharp side cutter
* Center punch (to mark holes)
* Dremel tool
* Solder , soldering iron
* Paste flux
* Standard HO scale NMRA gauge
* Steel 40 scale feet flat ruler
* Set of mini drill bits, .020” - .040”
* Pin vise for small drill bits
* Small tweezers
* Red target paint
* Heavy consistence superglue
* Good lighting and a magnifying visor