Using The PointForm Tool To Build Frog & Switch Points

Builders Guide

HELPING THE WORLD BUILD BETTER RAILROADS

FAST TRACKS

Fast Tracks Builders Guide UG10

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This document has been designed to be printed on both sides of the paper and bound using spiral or cerlox binding.

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This document was last updated on April 27, 2012

Thank You For Buying Fast Tracks Products!

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.

I have spent a lot of time 'sweating the details' and have worked hard to produce the highest quality product possible. If you are not 100% satisfied with your Fast Tracks product, or are not getting the results that you expected, then please contact me directly at service@fast-tracks.net and I will try and help you out, or arrange to refund your money.

If you are happy with your Fast Tracks product, then please tell your friends! Despite our hyper-linked and over-connected society, I still rely mostly on satisfied customers and word of mouth to promote my products.

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We also maintain an online discussion forum about Fast Tracks products on our website at www.handlaidtrack.com/forums. There you will find a host of information & advice from myself and other customers. Why not drop by and tell us how you are making out with your hand laid track project?

I also publish a personal blog on the Internet at www.bronx-terminal.com. I regularly post images, videos and comments about the progress I am making with my personal projects, so stop buy and have a look!

Also, Fast Tracks is on Facebook! If you are a Facebook user, join our Fast Tracks page as I frequently update it with what is going on here during the day.

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
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Using The Fast Tracks PointForm Tool

The Fast Tracks Point Form is a dual-purpose tool that allows you to construct precise fitting frog and switch points. This Builders Guide will detail how to construct both types of points and will show you how to get the most from your PointForm tool.

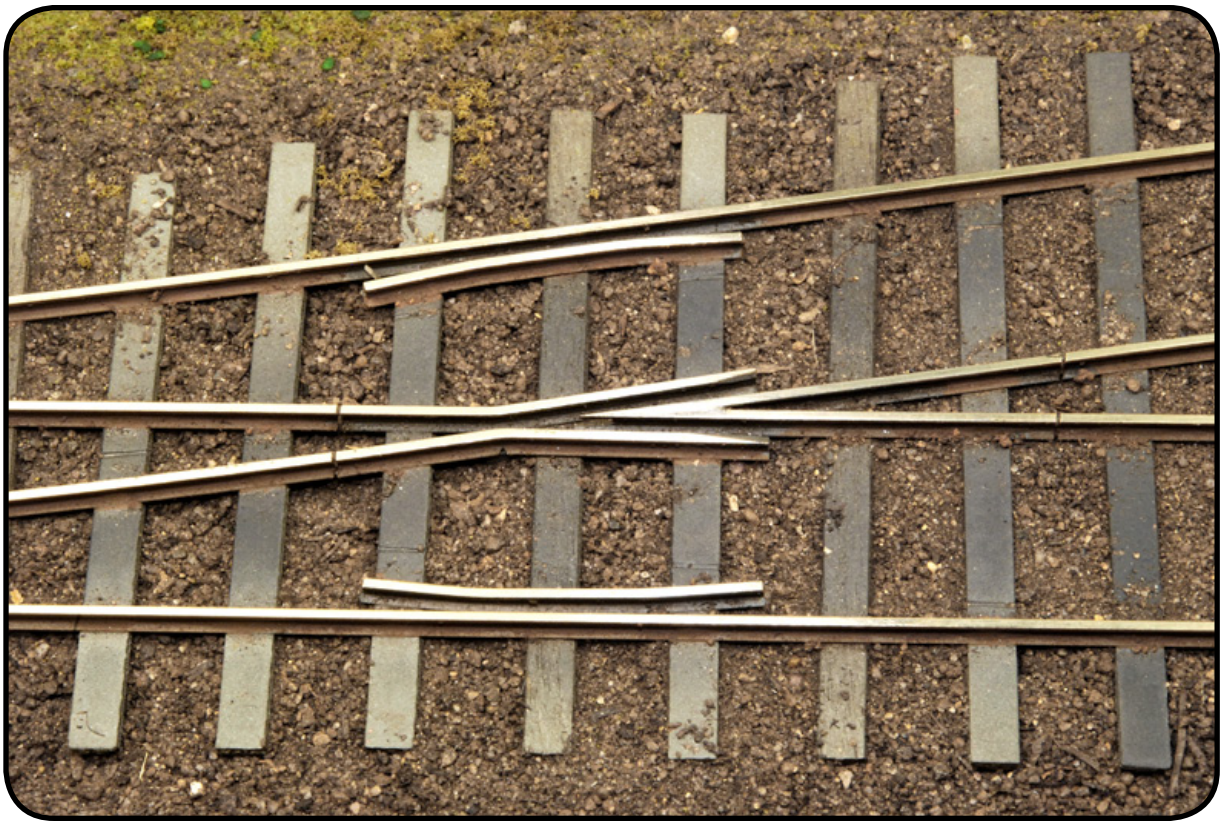
This guide has been divided into two sections. The first section will cover the creation of frog points, while the second section (Page 8) will detail switch point construction. While the creation of frog and switch points using the PointForm tool is similar, there are subtle but important differences. So we encourage you to study this document carefully before you begin.

We have also produced a video that demonstrates how to use the PointForm tool. The video is included on the DVD that you received with your order, or you can watch it on our website at www.handlaidtrack.com/videos.

NMRA Compliancy & MMR Certification

Turnouts built with Fast Tracks tools and following the instructions provided in this document and in our videos will be NMRA compliant.

Fast Tracks tools may be used to construct trackwork for your Civil Engineering certificate, however you should always confirm NMRA compliancy by checking the turnout using your NMRA track gauge.



Section 1 - Filing A Frog Point

The PointForm clamps the rail at a precise angle while you file the exposed section of rail away. The result will be set of symmetrically shaped point rails that will produce a very long and sharp frog point that is critical to a smooth running turnout.

We recommend that you only use a hand file to file points in the PointForm tool. Using a power sander or other types of power tools will prematurely wear out the tool. When used with a hand file, a PointForm tool will last for a lifetime of frog point construction.

To begin insert a length of rail into the end of the PointForm tool marked "Frog". The rail is inserted upside down with the bottom of the rail facing the top of the tool. (Image 1)

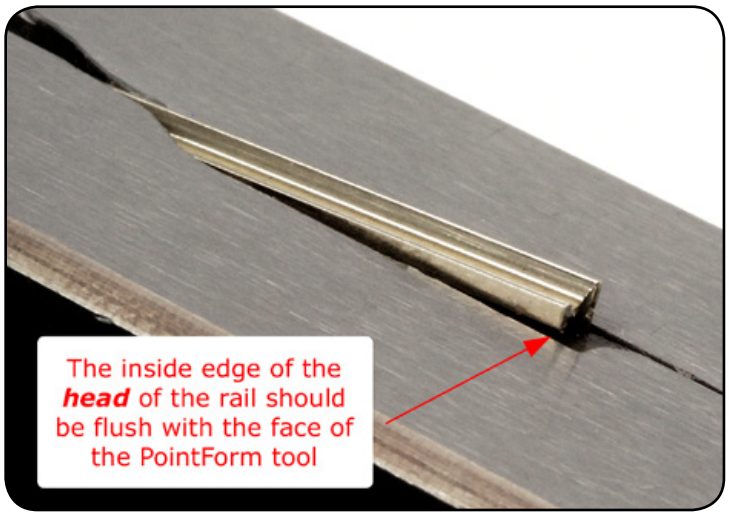
Image 1

Click The Images For A Larger View!

If you are viewing this document on your computer, and you have access to the internet, click on any image for a larger, high resolution version.

Image 2

Adjust the rail so that it protrudes from the side of the tool so that the inside edge of the *head* of the rail is flush with the side of the PointForm tool. (Image 2)



Apply a bit of pressure to the rail to ensure that it is sitting tight against the side of the PointForm tool. (Image 3) (Image 4) (Image 5)

Only a small amount of rail should protrude outside of the tool. If the rail is too far forward, the frog will end up being weak and flimsy. If the rail is too far back, the frog point will end up blunt.

Learning how to position the rail in the tool can take a bit of practice, so you may want to experiment with some scrap pieces of rail first. The end result should be a sharp point that looks similar to the images shown in Image 9 on page 6.

Image 3

Image 4

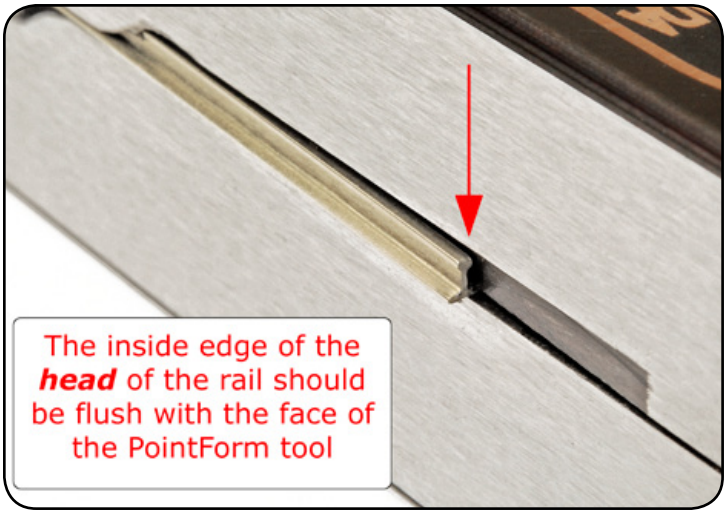


Image 5

Once the rail is clamped into place, hold the PointForm tool firmly in one hand and file the protruding rail flush with the edge of the Point-Form tool.

File toward the end of the rail in long smooth strokes. Filing toward the end of the rail will prevent the file from catching the end of the rail and bending it. Filing in long, even strokes along the entire length of the tool will help to keep the wear on the face even. (Image 6)

A good quality, sharp 10" file is essential to get good results. Use your old, dull files for stirring paint.

When completed, the rail should be completely flush with the edge of the PointForm tool. (Image 7) You can tell when the rail is filed flush by the feel of the file against the surface of the PointForm. As soon as you 'feel' this change, stop filing.

Repeat these steps to form the opposite frog point rail. (Image 8)

There may be a slight burr along the edges of the rail when you remove it from the tool. This can be easily removed with a light pass of a file or fine sandpaper.

Image 6

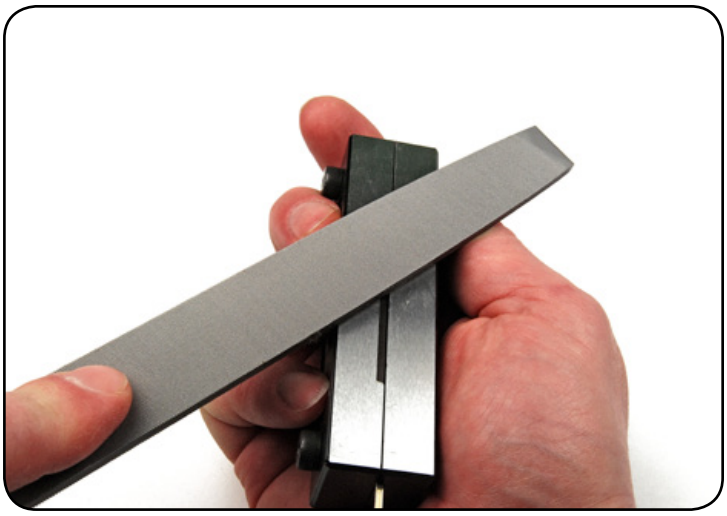


Image 7

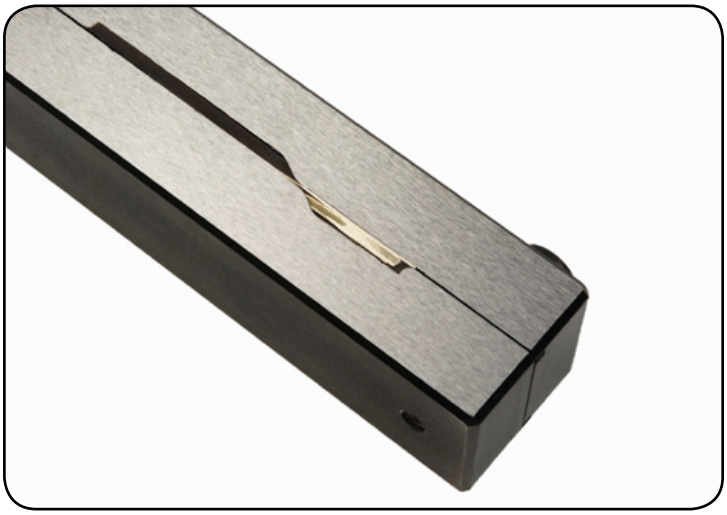
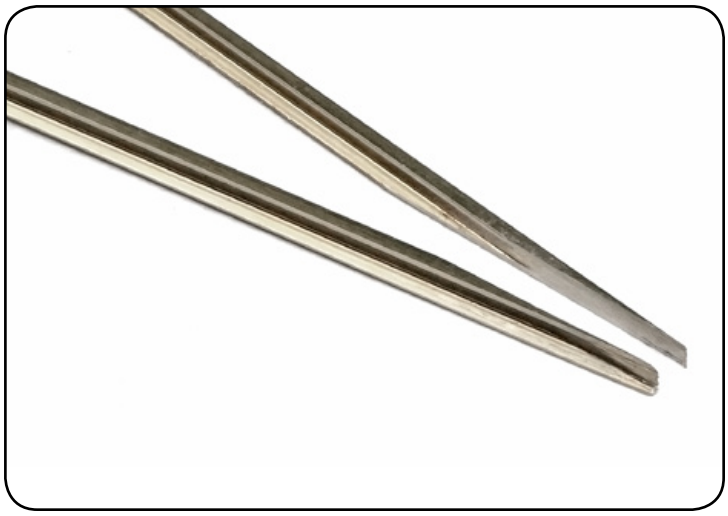


Image 8

When you are finished, you should have two frog points that are mirror images of each other, and are ready to be soldered together. (Image 9)

Image 9



If you are using a Fast Tracks assembly fixture to build trackwork, simply insert the two point halves into the frog point grooves in the fixture. Slide the two pieces forward until they both meet. Do not push the rails farther into the fixture then necessary as they will want to "roll over". (Image 10)

Image 10

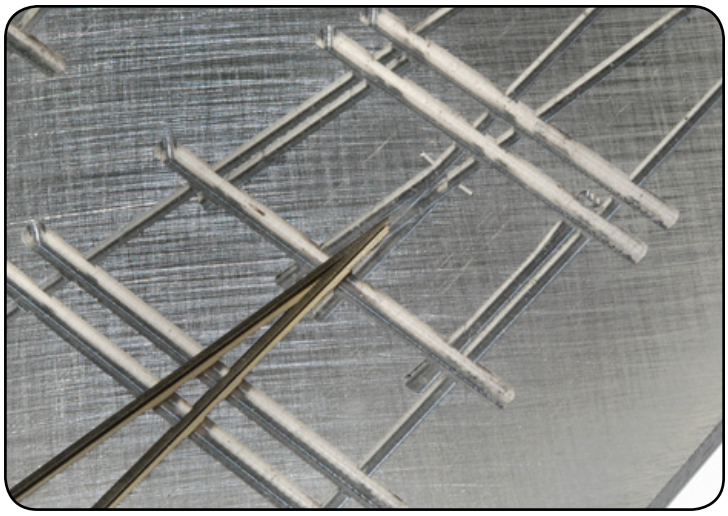
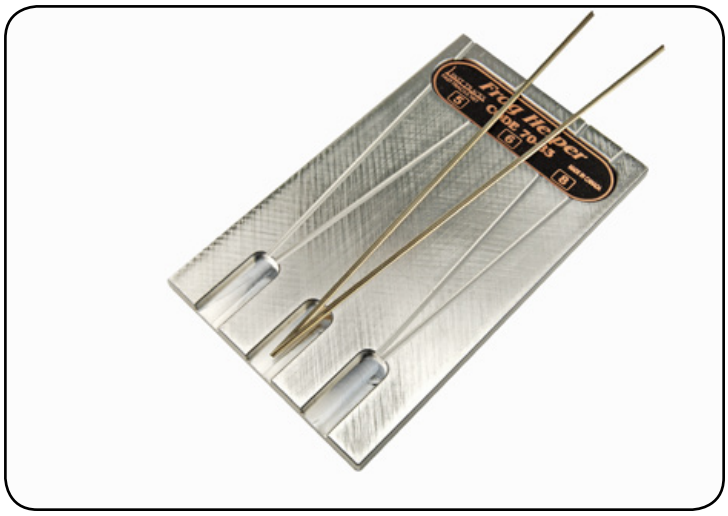


Image 11



The process is similar if you are using the Frog Helper tool to build frog points. Simply slide the two rails into the tool until the ends just touch. Again, be careful not to slide the rails too far forward. (Image 11)

Once the points are in place in the assembly fixture or Frog Helper tool, apply a small amount of flux to the top of the rail and solder the two halves together. Keep the iron on the rails for a few extra seconds to allow the solder to flow down between the halves ensuring a solid bond.

Remove the finished frog from the fixture and lightly file any excess solder from the top of the rail and polish with some fine (400 grit or finer) sandpaper.

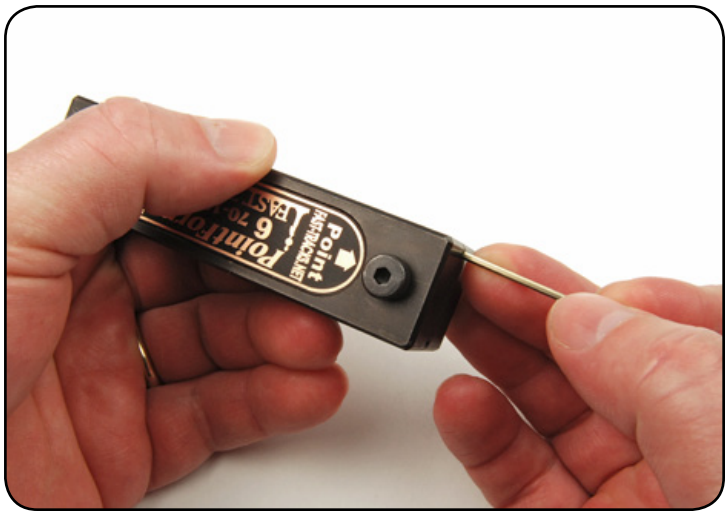
That's it! The frog point is complete and ready to install.

Section 2 - Filing The Switch Points

The process for forming switch points is similar to frog points, the rail is clamped in place and the protruding rail is filed flush with the edge of the tool. Again, locating the rail precisely into the tool is important and may take a few tries to get it correct.

Insert a length of rail into the end of the PointForm tool marked "Point". Ensure that the length of rail is long enough to form both the switch points and the closure rail. You may want to refer to page 28 of the Building Turnouts Builders Guide for more detail on this step. (Image 12)

Image 12



Holding the rail tight against the edge of the PointForm tool, locate the rail into position. (Image 13)

Image 13

Position the rail so that the inside edge of the head of the rail is against the edge of the PointForm tool. (Image 14) (Image 15)

With the rail firmly clamped in place, file the rail flush to the edge of the PointForm tool. To reduce wear on the tool, file using long, even strokes along the entire edge of the tool. (Image 16)

Image 14

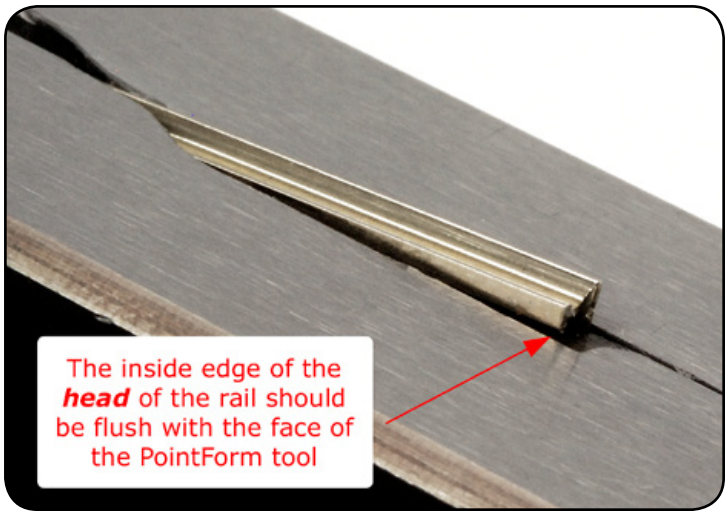


Image 15

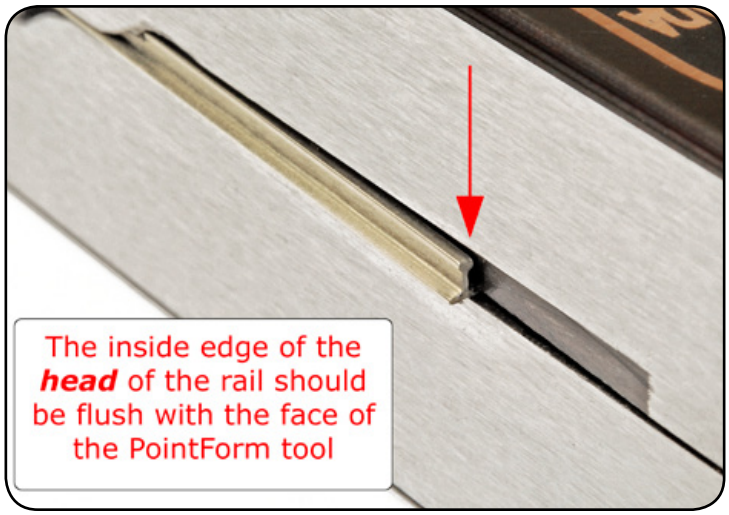
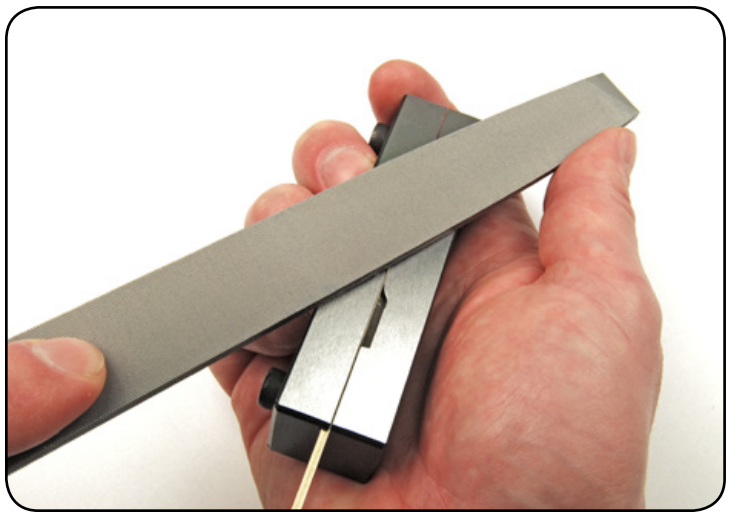


Image 16



The completed rail should be perfectly flush with the edge of the tool. (Image 17)

A properly formed switch point will have a smooth, long taper ending with a sharp point. (Image 18) (Image 19)

Image 17

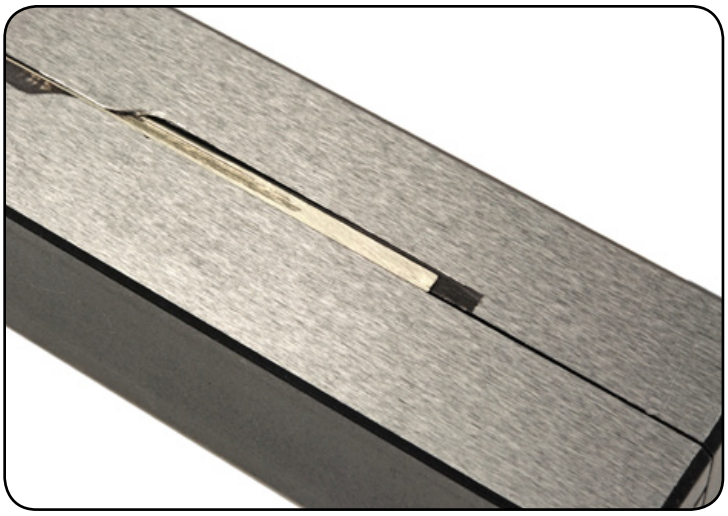
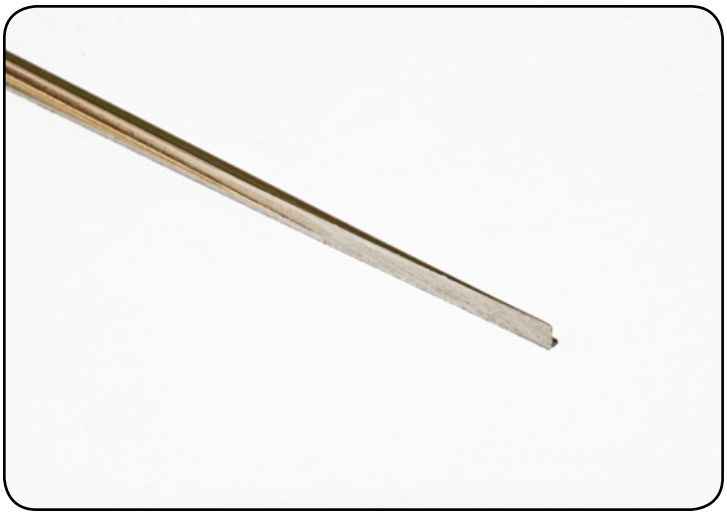


Image 18

Image 19



Occasionally the rail may want to split at the end where the taper forms the sharpest point. This typically happens if the rail is positioned too far forward in the tool. (Image 20)

A point like this can still be used, it simply needs to be trimmed back a bit after you take it out of the tool. You can trim the split off the end of the points with no problem, but this method should not be used if you are making frog points.

To fix a split point, remove the rail from the tool and carefully bend the thin end of the point back with your fingernail. (Image 21) It will stop flexing at the location where there is enough material to properly support the point. (Image 22)

Image 20

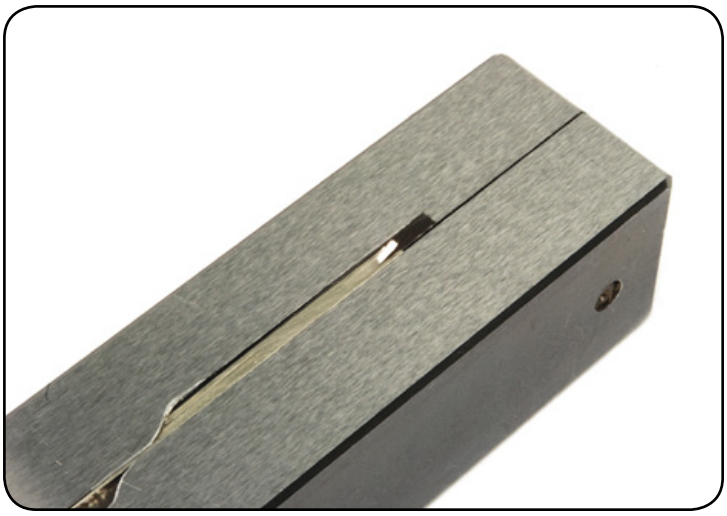


Image 21

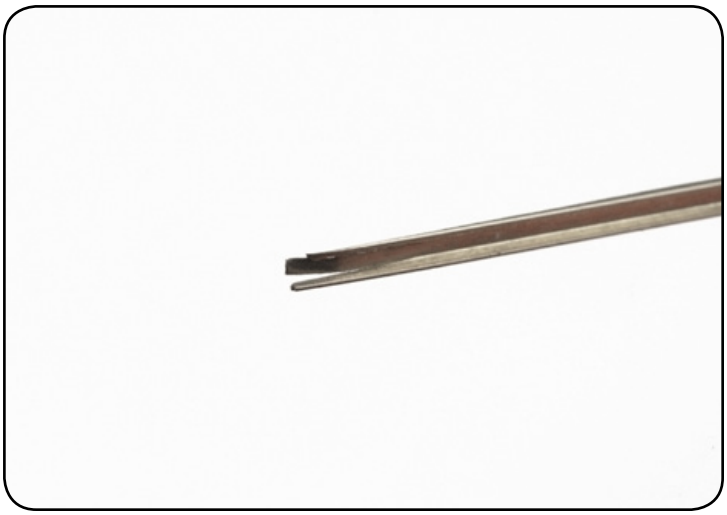
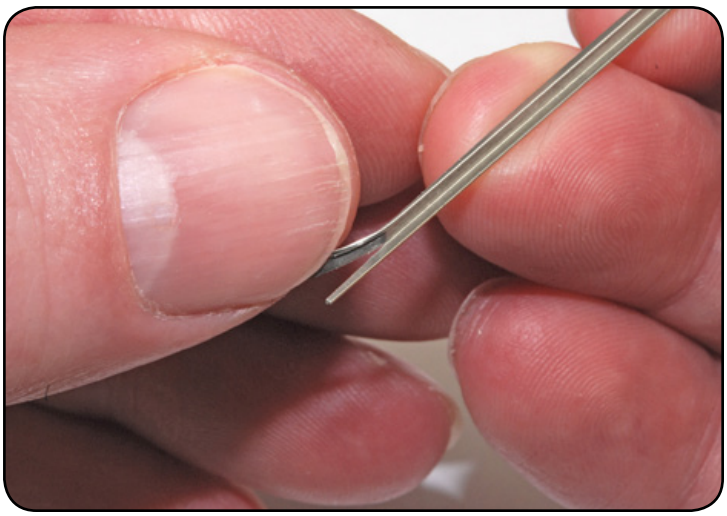


Image 22



Now using rail cutters, trim the switch point back to where the lose material forms the bend. (Image 23)

What will be left is an accurately formed switch point that is strong enough for reliable operation. (Image 24)

Clean up the inside edge of the point with a file. It should be flat and free of any burrs. (Image 25) (Image 26)

Image 23

Image 24

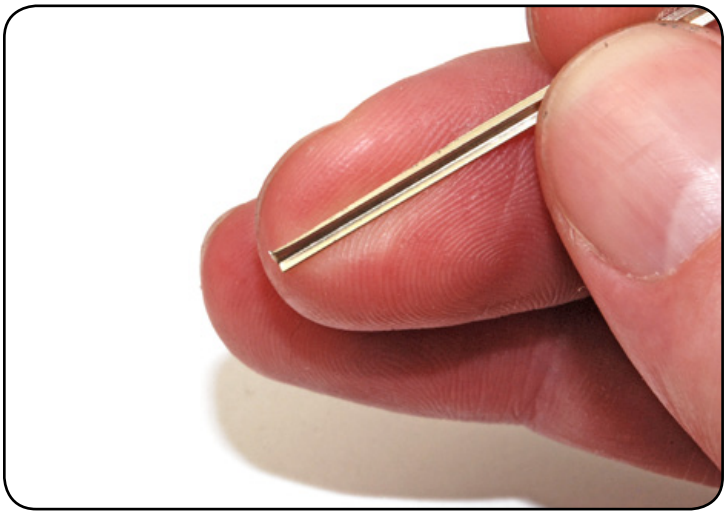


Image 25

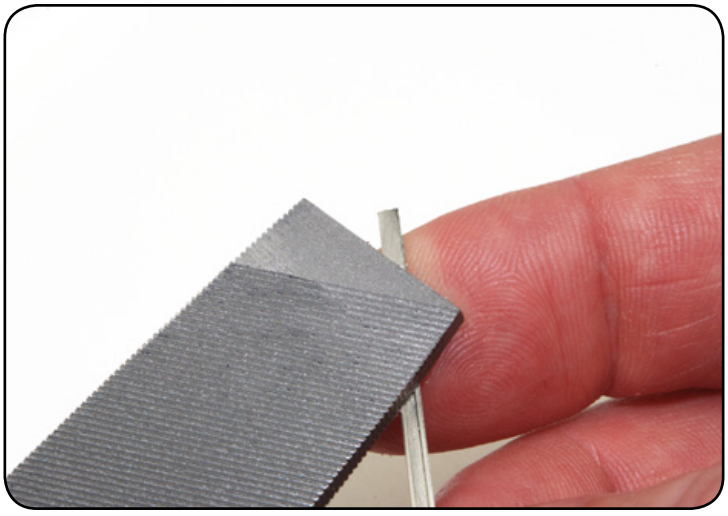


Image 26

With a bit of practice producing flawless switch points will be a snap!