



Small Shop - Big Results In-House Keytop Replacement (With that Outsourced Look) – part 2

By Chuck Behm
Central Iowa Chapter

You wouldn't think the simple process of applying glue to keytops could be problematic. At least, that's what I thought several years back when my daughter, then a music major at Iowa State, came home on a weekend asking for work (of the paying variety) in the shop. Having a set of keytops on the bench waiting for the new ivorine, I suggested that she apply the glue, after which I would show her how to put them together. "Any tips on gluing?" she asked. "Two coats on the wood, one on the underside of the ivorine," was all I thought I needed to tell her. Then I was off to work on a repinning job in another area of the shop.

Fifteen minutes later, she opened the door to the room I was working in, a look of consternation on her face. "Dad, I need help!" That was an understatement. She had glue on her fingers, on the bench, on several paper towels, and, worst of all, on the tops of some of the ivorine keys. The glue I use (contact cement) reacts with the keytop material. You can't just wipe it off. You must sand it off. Since that produces a dished out portion of the keytop, I discard the keytop, and use another from an extra set.

Gluing replacement keytops should be an easy job, if precise techniques are followed. The following steps will save you going through the trial and error of discovering them on your own. Assuming that you've followed the steps for preparing the surface of the key in last month's installment, we will proceed from that point.



Photo 1: Applying the first coat of glue to top of keystick.

Technicians use various adhesives to glue keytop material. Since I began recovering keys with plastic keytops in the 1970's, I've used nothing but contact cement. I find it to be very satisfactory – not once in the three decades worth of keytop jobs that

I've done has a keytop separated from the wooden keystick. In fact, when the work is done correctly, attempting to pry the top off will result in the wood splitting rather than the glue joint separating. (Applying heat via an iron will allow for removal if necessary). Contact cement, if used haphazardly however, can be a sticky mess, as my daughter found out. Use it correctly, however, it should be problem free. (Note: Other adhesive options will be dealt with in the advanced series of articles).

One big advantage of contact cement is in the immediacy of the bonding that takes place. When the two coated surfaces are joined, ivorine to wood, pressure applied for a few moments in a vise completes the bond. No lengthy clamping is necessary. For economy's sake, buy contact cement by the quart, and transfer it to a smaller bottle (both available at most any hardware store) that come with a brush for use in working on keytops. When the small bottle is nearly empty, fill it with fresh adhesive from the quart can.

To begin, start on the bass side of the keyboard, remove A0 and brush on a healthy layer of contact cement to the top of the keystick, as in photo 1 above, and to the front, as in photo 2 below. Replace each key back in the keyframe to dry for a half hour to an hour. Once the first coat has dried to the point of being tacky, but not sticky, go back to the beginning of the keyboard. Try to be neat, but with the wooden key, a small amount of glue on the sides doesn't present a problem - it will be filed off later.



Photo 2: Apply glue to the front of the keystick.

At this point, contact cement needs to be applied to the plastic keytops themselves. (The choice as to the type of key to use has hopefully been made before this, either by the customer or by you. Keytops are available in both white and off-white. Additionally, I offer the traditional glossy and also a satin [steel-wooled] finish. I carry samples of the four available options for the customer to choose from.) Removing several octaves of chosen keytops from the box, arrange them in order face up. I put the keytops on plywood squares that hold an octave each (Photo 3). This way, an octave of keys at a time may easily be picked up and moved to the spot at which you are applying the glue. Also, it's easier to keep track of where you're at, and not pick up the wrong keytop, when each set goes from A to G (or C to B).



Photo 3: Plywood squares hold an octave of keytops.

With the first key from an octave set, begin by hold the key, as shown in Photo 4, by the tail end with your left hand. Removing the brush from the bottle, make sure there is not too much glue on the brush and stem. Scrape off excess glue from the brush stem and to an extent from the brush itself back into the bottle. Then, apply glue to the inside of the keyfront, making sure to work glue into the corner between the front and top of the key. Work from the inside of the surface out towards the edges without dragging the brush heavily over the edge. Feather the brush off the edge to avoid having glue run onto the outer surface. This is paramount, as glue on the finish surface ruins the keytop unless cleaned off immediately.



Photo 4: Begin gluing with the inside of the keyfront.

Next, set the brush down on the bottle with the stem lying side to side across the top of the bottle (instead of reinserting the brush fully into bottle and overloading it again with glue). With your right hand free, take the end of the tail, and swivel the keytop so

that the front is pointing to your left. Grasp the keyfront with the thumb and third finger of your left hand, as shown in Photo 5. Unless you've managed to slop glue over the bottom of the keyfront, you will not get any glue on either your thumb or fingers using this method. Keeping the glue off your fingers means that glue will not end up on the finish surface of the keytops.



Photo 5: The weight of the key rests on your third finger.

Now, dip the brush lightly into the bottle, scrape off enough of the excess to keep the glue from dripping off the end of the brush, and apply adhesive to the underside of the keytop, as shown in Photo 6. Again, feather the glue towards the outer edge of the surface, while avoiding scraping the brush heavily over the edge. Make sure that your coverage is complete out to the end of the tail.



Photo 6: Applying glue to the underside of the keytop.

With the application of glue complete, carefully set the key back in place on the plywood square, this time with the underside of the key up, as in Photo 7. If time will permit, glue all the keys in this manner. If time is limited, having the keys divided up by

octaves provides a convenient stopping point. (Don't apply cement to more keytops than you can put together within several hours, as the effective time of the glue is limited.)



Photo 7: Lining up your ducks.

Once practiced at this technique, you will find that you never get glue on your fingertips, or on the finish surface of the keys. It really is quite easy, and you get into a rhythm while working – it goes quickly. When everything has an application of glue, the keys that you worked on first should be ready to join together. Touch the glue surface lightly with your finger. It should be tacky, not wet. If the surfaces are at all wet, go for a cup of coffee, then come back.

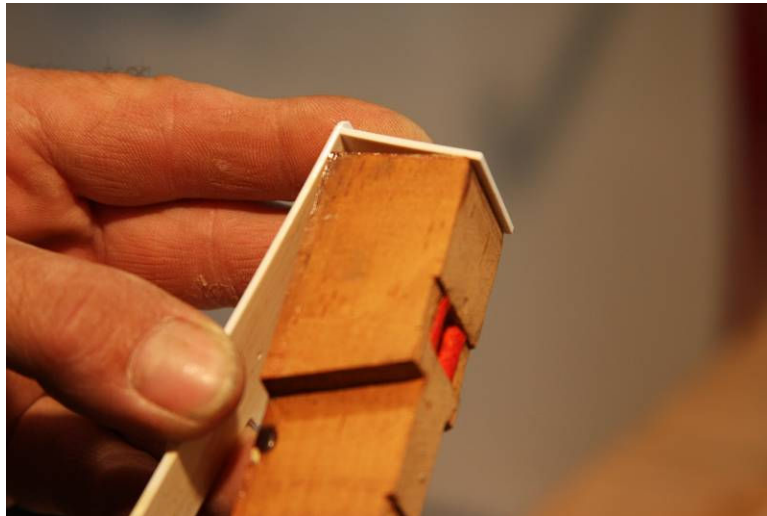


Photo 8: Contact!

Taking the keystick in your right hand, and the corresponding keytop in your left, (double-checking to make sure you have the right one!) hold the keytop positioned at an angle above the keystick, as shown in Photo 8. Touch the two pieces together first at the bottom of the keyfront, then fold the keytop down onto the wooden keystick. The corner of the keytop and the upper corner of the keystick should come together tightly. If not,

before pressing tightly together, carefully lift the keytop off of the keystick, and try again for a better placement. Check to make sure the ivorine and the wooden keystick line up from side to side (no wood showing under the ivorine). If a slight adjustment is needed, push the ivorine in the correct direction before pressure has been applied to the bond.



Photo 9: Press down firmly.

With the keytop correctly positioned on the keystick, secure the front first by placing the key on the bench as in Photo 9, and pressing down hard. Most likely, there will be an excess of keyfront material extending below the bottom of the key. The **best** way to remove the bulk of this excess is to **butt the key against the dog of your vise, and to use a coarse file (Photo 10)**. Stop before the material is flush with the wood, as you will use a **fine file in the final stage** for a clean appearance. **Caution – Don't use the side of a grinding wheel for this operation. According to Mike Morvan, "Grinding wheels are made to grind ferrous metals, anything else has the potential to clog the wheel and it could shatter." Better safe, than sorry.**



Photo 10: Filing off the excess.

The final step of the process is to insert the key into your wood vise (have the faces lined with cork to prevent damage to the surface of the keytop). Cinch the vise down tightly, as in Photo 11, and pick up the next keystick and keytop to join together. Go through the same process, and as soon as you've filed off the excess material from the bottom of the keyfront, remove the first key out of the vise, replace it in the keyframe, and put in the next key in the vise. Get into the rhythm of the process, and this step of the procedure will go very quickly.



Photo 11: Squeeze firmly.

In next month's installment, we'll file and buff the keytops for a factory-like appearance. You will be proud of the results you've achieved. Until then, keep the shop work coming in.

Chuck Behm is the owner of River City Piano Restorations in Boone, Iowa. He can be contacted at behmpiano@gmail.com.