CyanoAcrylate Glue
Ed McMorrow $ Scott Craven
9/16/2019

Loctite has a number of different brands for plastic, metal, rubber, & medical applications. If your fingers bond together, don't try to pull them apart. Instead, roll & wiggle it; vegetable oil helps. Skin can remain glued together for about four days. The glue has to be fresh. Wikipedia has an excellent article on CA Glue. In 1951 Eastman Kodak invented the glue. In 1982 they stumbled on a substance that worked. In 1942 B.F. Rich patented a formula for gun sites. It sold in 1958 as Eastman 910. They demonstrated bonding two surfaces and lifting 2000 pounds. Since it is an acrylic polymer like plexiglass, it would stick to the bowl, so a mold would have to be made of something else.

Tuning Pins

Pin tightener was around for years. It would work for a brief time and then would turn to mush. Treating tuning pins with two drops of thin CA glue will tighten a pin. If you can keep a needle from getting moist and keep it full it will work; leave it empty or dry and it will harden quickly. Ed uses a very thin plastic tube on a cap with a pointed end.

When restringing a grand with tuning pins that are fine, remove the string, bring the pins up a little higher than we cant it to go. Flip the piano upside down, put something between the action and the pin-block, and fill the holes with CA Glue. The pins will feel fantastic. There is a better tuning pin feel when the bottom is tighter than the top. When doing the final turn of the pin during tuning, we are making the final tortional bend of the pin to neutralize the position. Doing a flexural flagpole bend in the pin is crushing the wood fibers. However, eventually the wood fibers will push back and will undo the tuning. With glue in the bottom, the touch is tighter and not touchier. It helps with accuracy. The strings we tune our temperament with are generally more solid than the outside strings. To get those strings closer, we need a tortional bend, twisting it into position.

Sandpaper shims work great. Even they can be treated with CA glue. Swabbing the pin holes with epoxy does not tune as well; it feels a bit mushy. CA Glue is strongest for adhesive purposes when two thin applications are put together. In tuning pin holes we are using the glue as a filler. Thread-Lock maintains a good friction. It is hard to make the friction equal in all sets of pins, so we are depending on friction from the twisting allows the equalization. When the pin returns to its static point, the difference is small. The goal is to make the piano stay in tune, so using the glue as a filler definitely helps. Ed waits about a day for it to set up. It cures in 20 seconds but takes 24 hours to set up. We're not looking for adhesive strength; we want friction. We could tune shortly afterward if necessary.

Screw Holes

CA Glue can be used to size screw holes. Put baking soda in the gap, and then add CA Glue. Traveling paper and Titebond works well for filling stripped screw holes as well. For slightly sloppy screw holes that are not stripped, glue size them with CA. Just wet the surface and let it soak down in. Let it dry. Add a drop of glue to a loose let-off screw. Some people use leather with CA glue. The West system epoxy works. Wax the screw, clean out all the gunk in the flange, remove the cloth, raise the glue a bit, put the glue in, straight and in line, and wait overnight.

Repairing sides of keys, first clean the oil off. Put some runny super glue on the sides, let it dry, then sand it. Because it's clear, it doesn't show. Loctite makes a flexible CA glue with a filler in it. If someone replaced a set of keys and the key tops stick out over the edge of the wood, glue some paper onto the side of the key, let it dry, then sand it. CA glue buffs up well.

Bridge Pins

To make bridge pins tight, Scott used to use Q-Tips to mop it up, but the white smoke was irritating. Cotton and wool or even leather will react when they get hot. The glue will heat them up. Put a small drop at the bass of each bridge pin works well. It is better to remove the strings when doing this. Make sure not to let the glue get near where the string contacts the pin. Apply just one drop on the side of the pin opposite from the string side.

Ed decided to go from nickel to copper bridge pins. He experimented and put water into the pin holes then pushed the pins in. Overnight the wood swelled up tight., The next day he glue sized the holes with CA and let it dry. Then he pulled them out and inserted the copper pins. He also finished the notches with CA glue. The Asian bridge pins are shorter; they are ¾" but the holes are drilled for 1"; these longer holes weaken the wood.

Ivories and Key Tops

Using Acrylikey, put a piece of plastic on the iveroy, cut the double-stick adhesive away from where you want the repair, and fill the gap between the key and the two pieces of plastic and fill with Acyrlikey. When it hardens, there is only a small amount of residue to remove. Higher viscosity it thickers and the drops will be thicker. Use the thinnest glue as possible – thinner than water.

CA glue will fill chips in plastic keys. Sand it and buff it and it looks good. Do polyester repairs with CA. When you rub the front of an ivory top and you hear the paper sound because it is partially unglued, put a thin drop in the crack and let it run in.

Scot preferred CPVE glue, but it is no longer available. Roger uses RueGlue for plastics. Gorilla brand super glue works for ivory key tops; it has a rubberizing agent in it so it doesn't go brittle. The color is clear. Regular super glue gets brittle over time and the keys will pop off. Apply the glue in a rectangle or spiral on the back of the key top, slide it on the keystick to smooth the glue across the entire surface, pull it off and place it back on and hold it for about twenty seconds. Clean the joints, put a little CA in the joint to prevent dirt from getting in the crack. Joe wears surgical gloves

Case Finish Repairs

On a polyester finish where the color is there, add CA glue to fill the hole and polish it since it's transparent. For separated polyester, wick it in and clamp it. Thin 2000 will fill a hairline crack on polyester; then sand and buff. Another alternative would be to cut a trough and fill it, but that makes it worse. Luthiers and guitar builders will put it in the fret grooves, guitar nuts with a filler and then re-cut the notches, fill cracks, and more.

Action Parts

Wick the glue into clicking parts. Repair broken shanks. CA does not work on felt or leather. When repining a flange with an over-sized birds-eye hole, glue-size it with CA, come back and push the pin in and it will hold.

Shelf-Life

Once a tube has been open, it might last a month. Un-opened it will last about a year. Purchase from hobby stores rather than grocery stores or hardware stores, because hobby stores sell more so the glue is fresher. Few glues print the expiration dates, but some do. Accelerators are a hydroxyl base, which adds some base ions and will last a long time. Because it goes on

quickly, it gets hot and makes smoke. It will sometimes bubble a bit and will get white. Don't use much.

Surface Prep

For surface-prep, don't have any oil. Ed does not like the gel glue because it grabs and doesn't give enough time for adjustments. Ed holds the hammer perfectly in place and then wicks the glue in. Don't touch it until it dries. There will be no glue collars.

Water makes the cyanoacrylate kick., Breath on it, or wet one piece and put the glue on the other piece. Wet the travel paper. When putting an ivory on, follow up with a wet rag or Q-tip around the perimeter. When gluing felt on with wood glue, put one drop of super glue in to hold the other glue; the other glue will accelerate the superglue.