

# PIANO TECHNICIANS Journal

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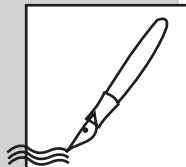
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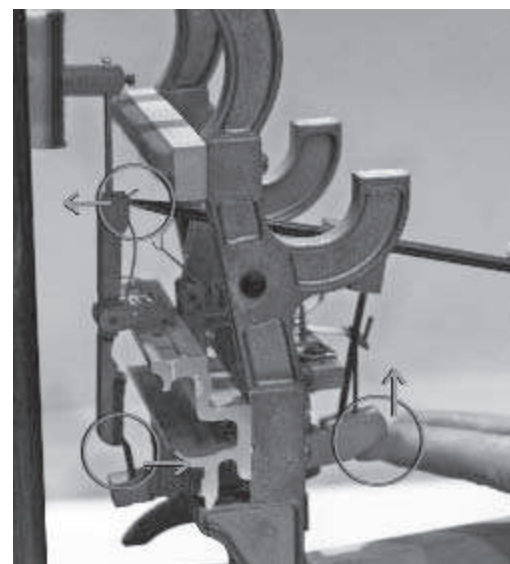
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# Steps to a Quality Piano Refinishing, Part 5

## Rubbing the Finish

By Kevin E. Hancock  
Washington, DC Chapter

We have finally made it to the home stretch. With the finish carefully built up on the piano (see Part 4 of this series, in the December 2006 issue of the *Piano Technicians Journal*) and plenty of curing time behind us, it is time to rub out the finish. Many folks attended our sessions at the Institute in Rochester last July and had fun learning how to use the rubbing process to remove imperfections and make the finish look glorious.

A hand-rubbed finish has characteristics that are as unique to the eye as to the touch. It feels like silk and possesses a unique sheen that varies depending on the angle of view and light reflection. A properly rubbed finish sets the highest standard for fine finishing. If done improperly, the rubbing of a finish can actually accentuate the imperfection in a coating. For example, rubbing a topcoat that was not properly built up or sanded will make it look worse.

Rubbing a finish consists of applying a series of abrasions to the finish in progression from somewhat fine to extremely fine in order to achieve a particular effect. There are many sequences and materials that can be used to achieve similar effects or sheens. Traditionally, pumice and rotten stone were the preferred abrasives to rub out a finish. While these materials still are held in high regard, there are a few alternative techniques and materials that you should consider to rub your finish. These other options include specialty sandpapers, in-line sanders, buffers, random-orbit sanders with special pads and bonnets, synthetic abrasive pads like ScotchBrite™ and abralon® (a product in which the abrasive grains are bonded to a fabric surface and layered onto a foam center and a grip backing), abrasive holders, and many specialty compounds and polishes.

Every refinisher has a preferred approach to rubbing out a finish. Choose the tools and methods that work best for you. The important part is to do each step thoroughly. Trying to fix “the previous stage performed incorrectly” with too fine a material will leave you with less than satisfactory results and wear out your arms.

### Start with Fine Sandpaper

The rubbing sequence starts with a sanding grit coarse enough to remove surface irregularities such as finish shrinkage, dust nibs, and orange peel. This can be done with a number of different abrasives, but remember that the scratches made in this step will need to be removed

completely with a finer grit to bring the surface to its final sheen. This is the stage where you want to get the surface as flat as possible as efficiently as possible.

Start by sanding the finish with 500- or 600-grit papers with a sanding block. I start with dry paper because I can see my progress without having to dry a wet surface. The 3M™ 216U Gold resin bond papers are excellent sandpapers for this step. They tend to be quite aggressive and leave deep scratches, so use the grit that will remove the surface imperfections effectively without leaving scratches that are

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Photos 1 (TOP) and 2 (ABOVE) — Use a National Detroit 1100 in-line sander with 500-grit paper to cut the surface and remove any dust and finish shrinkage.

## Rubbing the Finish

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too deep to be removed with the next grit.

Be careful not to cut through the finish, especially on or near the edges. Use your fingers as a guide to keep from rubbing over the edges. When you first prepare the raw wood for a finish (see Part 3 of this series in the July 2006 *Journal*), lightly sand the edges of the wood with 150- or 180-grit paper, rounding them over to remove sharp corners. When spraying each coat of finish, spray around the piece's entire perimeter before spraying the rest of the surface. This builds more finish near the edges and you will be less likely to sand or rub through later. Also, as you sand between coats, lightly sand the edges in only one or two strokes with 320- or 400-grit sandpaper.

Once the finish has been cut down to a uniform dead flat sheen, and all the grain shrinkage and orange peel is



*Photos 3 and 4 — With a cork block and 500-600-grit paper, sand the surface to a completely flat sheen. Finish the sand paper sequence with 800 and thoroughly sand out the coarser scratches.*

*Photos 5 (TOP), 6 (MIDDLE), and 7 (ABOVE) — With the 00 Liberon steel wool, rub out the 800-grit scratches and bring the finish to a satin sheen. With the 0000 wool, continue to rub with water and a rubbing lubricant. Wool wax is a nice lubricant, but Murphy's Oil Soap also works quite well.*



Photos 8 (top), 9 (middle), & 10 (above) — Clean off the rubbing dirt and residue with a good cleaner/polish like Guardsman. Admire the beautiful finish you have created.

completely eliminated, move to the next higher grit of sandpaper. If you start rubbing with 500-grit, move up to 600-grit on your second round and remove the 500-grit scratches thoroughly. Once this step is completed, consider what final sheen is required in order to determine how thoroughly the 600-grit scratches need to be removed. If you intend to bring the final sheen to a semi-gloss sheen, the 600-grit scratches need to be completely removed with 800-grit paper. An even higher grit is needed if you plan on a high-polish sheen. If you plan on a satin final sheen, it is fine to cut the 500 scratches with 600 and stop there before rubbing with steel wool.

### Steel Wool

There are many types and qualities of steel wool. Some brands are made up of short shreds of steel wool and have a different texture from one area to the next. This variation in texture of the wool can cause the look of your rubbed piece to be inconsistent and streaky. The best quality wool I have found is made by Liberon. It is simply the finest grade of wool with continuous and consistent strands in the roll. The grade 00 (or “two-ought”) is equivalent to most other manufacturers’ grade-0000 wool. Simply removing the 800-grit scratches and haze with Liberon 00 wool achieves a very pretty satin sheen finish. If you follow this with Liberon 0000-wool, you can rub a cured finish to a very nice semi-gloss sheen.

Start with dry wool and hold it flat in the palm of your hand, rubbing in the direction of the 600-800-grit paper sanding scratches. Using dry wool allows you to gauge the progress of scratch removal. Rub with the palm of your hand, not your fingers.

Be sure to rub in a straight line. The “windshield wiper” effect is a very common problem when rubbing large surfaces like piano lids. Use one hand over the other as a pressure and steering guide for your rubbing. Try to lock your arm and rub with full body movement instead of your shoulder and elbow.

Creating a uniform sheen over a large surface can be a problem, especially blending the two to three inches at the edge in to the middle of the board. Rub the edges thoroughly with short strokes and then blend the whole surface with long straight strokes from one end to the other, going with the grain. Keep the same pressure from the beginning to the end of the stroke. Allow your long strokes to swipe past the end of the wood, rather than change directions and start back the other way.

After dry rubbing, rub with wool and water. The final rubbing should be done with a fresh piece of wool lubri-

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## Rubbing the Finish

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cated with water and wool wax (lanolin) rubbing lubricant. Murphy's Oil Soap also works well as a lubricant. In your final rub, remember to use long continuous strokes and keep your movement in a straight line.

### Machine Rubbing

Using in-line rubbing machines can dramatically reduce the time, labor, and body fatigue associated with rubbing out a finish. One very important consideration in selecting these machines is air power. These machines must have ample air to perform properly. The air demands of the average in-line sander run from 60-100 PSI with a consumption of 7CFM and can run as much as 18CFM and more. This means that the average five horsepower, 60-gallon compressor would have to run continuously just to keep up with the larger rubbing machines. If you are thinking about purchasing an in-line machine you should consult with their product representative to learn more about the equipment's air requirements.

Random-orbit sanders can be equipped to aid in cutting and polishing a piano finish. Mirka's abrilon® pads are very

fine abrasives that can be used in sequences such as those discussed above to achieve very nice results. (Check them out on the web at [www.mirka-usa.com/products/brands/abralon.htm](http://www.mirka-usa.com/products/brands/abralon.htm).) These materials can be used to prepare the surface for either a final hand rubbing with steel wool or in preparation for buffing to a high-polish sheen with a buffer, rubbing compounds, and polishes.

### The Next Time

In the next part, we will discuss the final assembly of the project including:

#### *Assembly and Detailing: Part 6*

- Felt fallboard, cloth the music-desk track, bellyman felt
- Polish hinges, casters, and pedals
- Wood and leather buttons, caster cups
- Pedal lyre detailing
- Air out and dust soundboard
- Paint or shellac underside of case
- Finish back sides of parts
- The checklist before delivery ☑



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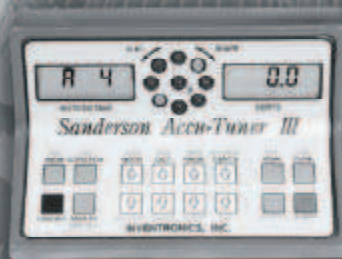
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