

Using the Festool RAS 115 Rotary Sander To Strip Two Window Sills

By Matthew Schenker

Introduction

In 1999, my wife and I bought a circa-1920 house. Even now, seven years later, there are still lots of projects to do, some extensive and some rather simple. Of course, anyone who owns an old house knows that even simple projects have a way of becoming tedious and messy. For example, in my house there are a number of wood surfaces that need to be stripped of old paint and other finishes, a job that usually results in foul chemical odors, or at the very least, lots of dust, debris, and backaches.

The Challenge. In the kitchen, two window sills were looking pretty bad. Previous owners of the house apparently just added new layers of paint right over the old ones, and now, seven or eight layers later, the sills were dirty and worn, and they had uneven paint cover. The photos below show you what the two sills looked like:



The window sills each measure about 3 ½” deep by 43” long. They needed to be stripped down to raw wood, then repainted. There are two main ways I know of to accomplish this job: use a chemical stripper, or sand the finish off. I have previously used both methods when stripping old doors and floors. As anyone who has done this kind of work can attest, chemical strippers are hazardous to your health and their odors linger for days in your home. If you try to avoid chemicals and sand off the old finish, it is a backbreaking job that creates an incredibly dusty mess.

I decided a couple of years ago that I would avoid chemical strippers whenever possible. That means sanding became my method of choice. But I could not quite find a sander that truly excelled at stripping. Even powerful sanders, like belt sanders, seemed to take a long time to remove the finish, and they are a challenge to keep level so you don't gouge the wood. For this project, I wanted something better I have used before. If possible, I wanted to plow right through all the old layers of paint, and, at the same time, I wanted good control of the sander during the process. Because the window sills are in the kitchen, another goal was to limit the amount of dust and debris.

Choosing a Sander. I decided to try the Festool RAS 115 rotary sander. Below is an image of this sander, as seen on Festool's Web site:



Festool describes the RAS 115 as a tool designed specifically for stripping, citing its power, torque, control, low weight, and efficient dust collection. It seemed to have just the right combination of attributes. My window sill project would be a test of the RAS 115's effectiveness.

Getting Acquainted with the RAS 115

I was eager to begin sanding. But when the RAS 115 arrived, I realized right away that it has some unusual traits, and I wanted to take some time to become familiar with it before diving in.

Below is a shot of the everything that Festool delivers with the RAS 115. It comes packaged in one of Festool's "Systainer" containers (Systainer 2):



RAS 115 Sanding Discs. This sander comes with a set of sanding discs. One of the discs is more like a scouring pad. The discs are the hook-and-loop style most woodworkers have become accustomed to (Festool's proprietary term is "StickFix"). The RAS 115 uses 4 ½" sanding discs. Festool offers three varieties of sanding discs with grits ranging from 24 to 180.

The RAS 115 sanding discs do not have holes. This is quite different from sanding discs used in most sanders today. That is because dust collection on the RAS 115 is unusual. In just a moment, I will explain all about the RAS 115's dust-collection method.

The photos below show two sanding discs for the RAS 115. On the left is a 36-grit sanding disc (from Festool's "Rubin" line). On the right is the "scouring pad" type disc. Both of these were included in the delivery of the RAS 115:



The Sanding Pad. The RAS 115 sander is delivered with a soft sanding pad. Festool offers both hard and soft replacement pads as accessories.

The "Vacuum Zone" Dust-Collection Method. There is a good reason the RAS 115 sanding discs do not have holes. The sander churns up coarse debris (chips of paint and old finish, and even small chunks of wood), as well as fine dust. Therefore, the RAS 115 needs a different dust-collection method. You could say that the RAS 115 does "debris collection" rather than "dust collection," and this requires more than just a set of holes.

The RAS 115 has what I call a "vacuum zone" along the edge of the sanding pad – an open suction area about 3/16" wide. To direct the debris into the vacuum zone, the RAS 115 has a brush on the sanding head that forms a kind of "debris-catching wall." By aligning the brush correctly, the operator causes the debris to get caught in the vacuum zone, where it is then sucked up into the dust collector. (For this project, I had the RAS 115 hooked up to a Festool CT 22 dust extractor.) If the brush gets worn out, it can be replaced (Festool sells standard brushes for the RAS 115, as well as metal brushes). Later in this review, I describe how the brush and vacuum zone work during actual sanding.

The photo below shows the sanding pad of the RAS 115, the brush, and the vacuum zone.



Here is a close-up of the vacuum zone:



During sanding, the operator can change the location of the brush and the vacuum zone by rotating the hand grip. This allows you to find the best position for the brush and vacuum zone, which will change depending on the job you are doing. The handle also serves as a grip during sanding.

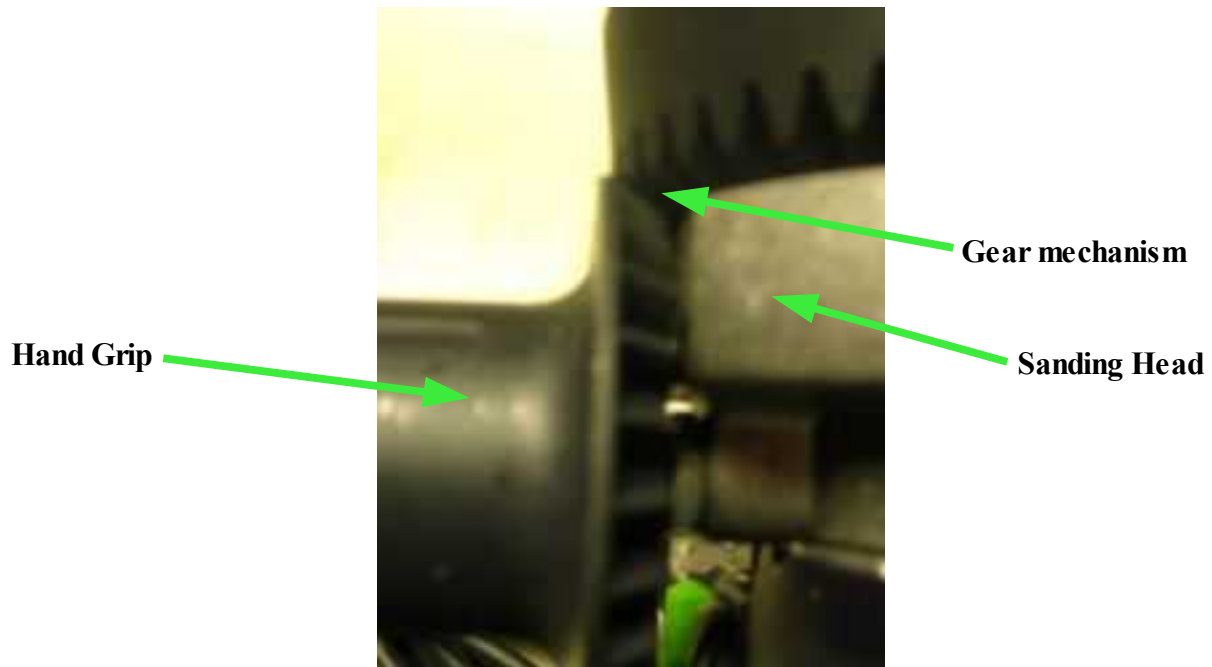
The photos below illustrate how the brush and vacuum zone get adjusted for different positions. With a quick turn of the hand grip, I made an adjustment from the 12:00 position to the 3:00 position:



The photos above show just three of the possible positions. By continuing to turn the handle, the brush and vacuum zone can be positioned anywhere along the perimeter of the sanding pad.

A gear-like mechanism meshes the hand grip with the sanding head to rotate the brush and vacuum zone. The teeth of the gears are made of sturdy plastic. They stay out of the way during sanding and remain unclogged, maintaining smooth adjustments. This kind of detail shows me that the engineers at Festool were thinking about how the tool will actually be used.

Below is a close-up of the gear mechanism (the sander is upside down in the photo):



During sanding, with the brush and vacuum zone aimed in the correct position, debris gets sent to the dust collector. The RAS 115 has an oval dust chute in the rear that hooks up easily to a hose. It accepts Festool's 1" (27 mm) hose, which stays comfortably out of the way during sanding.



Removing the Sanding Pad and Sanding Head. Both the sanding pad and the entire sanding head can be removed from the RAS 115. The sanding head is removed by flipping a lever from left to right. Below left, the lever is in the “loose” position so the sanding head can be removed. Below right, the lever is in the “tight” position to lock the sanding head:



To remove the sanding pad, press and hold a button on the top of the sander and turn the pad until it spins loose. The pad comes out and goes back in very smoothly, held tight on a threaded shaft. The photos below show the sanding pad being removed:



Extra hand grip. The RAS 115 comes with an extra hand grip, which can be attached to the right of the sander. The extra hand grip is attached by removing a cap on the side of the sander and threading the handle into place.

The photos below show the cap being removed to install the extra hand grip:



With the extra hand grip installed, you gain more control of the sander. Here is a shot of the RAS 115 with the standard hand grip (left) and extra hand grip (right):



For my window-sill project, I ran the sander without the extra hand grip, and I had excellent control. But for other, more difficult operations, the extra hand grip might be welcomed.

Speed Control. The RAS 115 has variable speeds (from 1,500 to 4,000 RPM), selected with a dial from 1 to 6. The RAS 115 speed control is located in the rear of the machine, above the power cord. Below is a photo showing the speed setting I used to strip paint from the window sills:



Power Switch. The power switch on the RAS 115 is a large slider type that is easy to see and grasp. Slide it forward to turn the sander on; just press it in and the power cuts out quickly. Here's a shot of the RAS 115 power switch:



Using the RAS 115

After getting acquainted with the RAS 115, I was ready to tackle my window sills. I installed a 36-grit sanding pad and hooked the RAS 115 to my CT 22 dust extractor. For this project, I used Festool's "Rubin" sanding discs.

Brush and Vacuum Zone. I set the speed to about 3 (see photo on previous page). Then I placed the sander down on the window sill and flipped the power switch on. The sander went to work. At first, I had to learn how to adjust the brush and vacuum zone to catch all the debris flying off the window sill. But after a couple of minutes, I got the hang of it. In a short time, I developed a fairly natural method of sanding while occasionally moving the brush and vacuum zone.

Dust Collection. I have used a number of Festool sanders, and all of them have incredible dust collection – near 100% in some cases. The RAS 115 does not collect dust as efficiently as other Festool sanders. My unscientific estimate is that it grabs perhaps 90% of the light dust and about 75% of the coarse debris. It is difficult to compare this sander's dust collection with other sanders, however, because it collects both dust and debris. The Rotex, for example, is not usually called upon to handle such coarse material.

Here's what I found: when I was done sanding with the RAS 115, I did not see any light dust in the air, or on other surfaces in the kitchen. I did not see any light dust in my hair or in my nostrils (a crude but effective test of how well a sander collects fine dust). There was a fair amount of coarse debris on the floor, but the RAS 115 far surpasses the belt sander I have previously used to remove old finishes.

Material Removal. Being familiar with Festool's Rotex sanders (both the RO 125 and RO 150 models), I expected good power from the RAS 115. But I did not know it would be quite *this* powerful! The RAS 115 is very aggressive. Festool describes the RAS 115 as having a “high torque,” and you can feel it biting away at the surface material. In a short time, it took off numerous layers of paint. I could see various colors appearing and disappearing – 85 years of old finish vanishing right before my eyes! In less than 20 minutes, I had both window sills sanded down completely to raw wood. This is beyond what I was expecting, and a pleasant discovery. The RAS 115's power made up for the lower rate of dust collection. But this kind of power does suggest that the operator must take it easy with the RAS 115. The sander should be operated at the lowest effective speed setting. As I mentioned earlier, I ran it at speed 3, about the half-way mark. The operator should apply little or no downward pressure while sanding

Festool's Rubin sanding discs were terrific for this kind of work, and I was able to remove all paint from both window sills with two 36-grit discs. One disc got worn down; the second disc still has good grit left on it and can be used again.

Rotary Motion. As the name implies, the RAS 115 is a “rotary” sander, not a “random-orbit” sander. The sanding pad simply spins in a circular (rotary) motion. By contrast, the sanding pad on a random-orbit sander spins, while simultaneously doing smaller circles (think of planets circling around the sun while also rotating in their smaller orbits). Rotary motion is more aggressive. Combined with its higher torque, the rotary motion of the RAS 115 removes material very quickly. In my test, it definitely hogged off old paint much faster than I have ever seen with my random-orbit sanders, or even from another sander running in rotary mode.

Control. The high torque means that it takes a fair bit of concentration to control the RAS 115, as it occasionally tries to pull in one direction or another. But I found that by holding onto the handle and *not pushing too hard*, the sander went where I wanted it to go. It is really worth emphasizing that the operator should not push this sander. I had the greatest success by just allowing the weight of the machine give me all the pressure I needed to strip away all the old paint. I even used the RAS 115 on the rounded edges of the window sills.

The RAS 115 is very well balanced, remaining level against the surface throughout the operation. Although this was my first time using the RAS 115, I saw no gouges in the wood. It only took a couple of minutes for me to feel very confident using this sander. It has a comfortable weight (about 5 lbs.), and I did not sense any fatigue lifting it or moving the sander across the surface.

Sanding Near an Edge, and Using the Smaller Sanding Discs. The RAS 115 sander gets closer to an edge than other round-pad sanders I have used. It was a pleasant surprise to find that I could get right up to where the vertical portion of the window meets the sill.

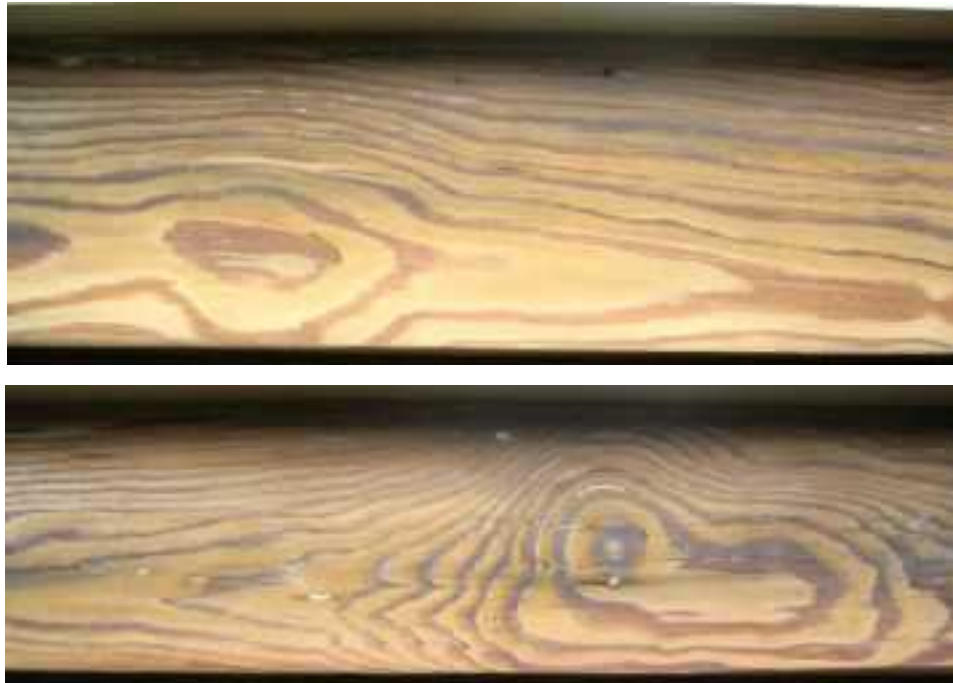
Because it uses smaller, 4 ½” sanding discs (as compared with 5” or even 6” discs available on other sanders), I could gain better control on the relatively narrow surfaces of the window sills. I did not feel I was sacrificing anything with the smaller discs, since the RAS 115 works so aggressively. This logic would hold up even on surfaces much wider than a window sill. In fact, with a sander this powerful, it is probably better to cover a slightly smaller area at one time.

Ear and Eye Safety. As with most powerful sanders, the Festool RAS 115 is quite loud. It is definitely a good idea to wear ear protection while running it. Because there is a chance of an occasional piece of flying or ricocheting debris hitting you at high velocity, I strongly suggest wearing eye protection while running this sander.

The Results

When I was done sanding, I stood back and looked at the window sills. For such a powerful sander, grinding away at 36-grit, the first thing that surprised me was what it *did not do*. The sander left no swirl marks in the wood, and it left no gouges. Even at a low grit, with its pure rotary motion, the RAS 115 left the wood quite level and smooth. It made me smile to see clean wood and to run my fingers over the newly stripped surfaces.

The two photos below show what the sills looked like immediately after all the paint was stripped away at 36-grit:



Check back to page 1 to do a before-and-after, and you will see why I was so happy with the results I could achieve in under 20 minutes!

With all the paint stripped off, turned to two other Festool sanders in my tool arsenal. I used my DX 93 Delta sander to get into the corners. Then I switched to my ES 150/5 random-orbit sander, briefly going over the sills with 50-, 80-, and 150-grit paper. All told, including set-up, actual sanding, clean-up, and returning the tools to the shop, the entire stripping job for both sills took under 45 minutes. I filled some of the grain, then I was ready to prime and paint.

Conclusions

At first, I was a bit unsure about the unusual nature of the RAS 115 rotary sander: the size of the sanding discs, the handling, and most of all the unusual nature of its dust collection system. But it only took a few minutes for me to become adept at using the brush and the vacuum zone system of the RAS 115, and in very little time I had complete confidence in the sander. I have to admit that I even began to enjoy removing the old paint off those window sills. This has to be about the first time I ever used the words “enjoy” and “removing old paint” in the same sentence!

To put it concisely, the RAS 115 takes down material *extremely fast*. It is far more powerful than any random-orbit sander I have used, and more powerful than other sanders with a rotary mode. In power, it is like a belt sander. But it offers more visibility and control, and somewhat better dust collection, than a belt sander.

I learned when using the RAS 115 that the operator should trust the machine to do the work. It is counterproductive to push down while running this sander. To take down material quickly and evenly, and to avoid gouging, I relied just on the weight and balance of the machine. In addition, it is better to run the sander at a slower speed (I stripped all the paint from the window sills using a setting of about 3 on a scale of 1 to 6). This not only helps with control, it also prevents the paint or other finish from gumming up the sanding disc due to excessive heat from the sanding motion.

There are a number of stripping jobs that still need to be done in my old house – lots of doors and trim with 85-year-old stain, floors and stairs with worn paint, and more. I now feel confident that I have a tool that will allow me to do stripping relatively easily and quickly, and without using chemicals. Instead of dreading these jobs, I'm actually looking forward to them.

* * * *

For Further Information

Below are links to Festool's USA Web site describing the tools mentioned in this review:

[RAS 115 Rotary Sander](#)

[CT22 Dust Extractor](#)

[DX 93 Delta Sander](#)

[Rotex RO 125](#)

[ETS 150/5 Random-Orbit Sander](#)