

Adjustable Flexibility Sanders

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Street Rodder Magazine - July, 2000

When you've been around street rods and custom cars for some time, you become more and more attuned to the subtle details that differentiate the very finest cars from the pretty good cars. One of the key areas where you can clearly see this distinction is in the quality of the finish bodywork and paint. Once you know what to look for, it is very easy to see if any shortcuts were taken in either of these areas, since the results speak for themselves. The hallmark of truly excellent paint and finish bodywork is having all the panels on the car smooth and blemish free, without any minute deviations in their luscious smoothness. The best car finishes have an optically pure, almost glass-like finish that can only be achieved by reaching perfection in each stage of the process.

Sanding is one of the most important steps in preparation for paint. Good painters and bodymen spend countless hours carefully sanding plastic filler and primer to get the surfaces prepared for the finish coats. Sanding blocks and boards have been around almost forever, and people usually give little thought to them. The standard sanding board for plastic filler is 2-3/4" wide and 16" long, and the rubber blocks used for primer and color sanding are 2-3/4" wide and either 5 or 8" long. Virtually every paint job you'll see has been prepared with these simple tools, but people seldom give the humble sanding block much thought. It's literally as simple as a brick!

The only problem with traditional sanding blocks and boards is that they are flat, and very few automobile panels are truly flat. They nearly always have some contour, and the more contour the panel has, the less contact area a stiff sanding board or block will have on the surface. The best painters and bodymen compensate for this with skillful use of the standard boards and blocks, but now there is a new family of sanders on the market that makes it much easier to attain these superlative surfaces.

John Wheeler, an inventive young street rodder from Minnesota, started re-thinking the whole concept of sanding boards and blocks. His general premise was that a sander needs some flexibility. Obviously, the more crowned a panel is, the more flexibility you need. The problem is that if a sander has too much flexibility, it's not well suited to low-crown panels. John started thinking of ways to create sanders that could be adjusted to increase or decrease their stiffness. He created a long series of prototypes; the first ones he made of metal, trying out different ways of controlling their stiffness. He finally came upon a simple but extremely effective method of providing the adjustment he sought. His sheetmetal sanders had a lower plate (the surface that the sandpaper attached to), and upper plate, and a series of lateral sheetmetal spacers that connected them. His solution to the adjustability problem was making holes in all the spacers, so

solid steel rods of differing diameters could be slipped through them. With no rods at all, the sander has the greatest flexibility. By adding one or more rods, the sander becomes stiffer. Also, the larger the diameter of the rods, the stiffer the sander. It was a simple solution, but it proved so effective he was surprised he hadn't thought of it sooner.

After more months of development, John got the idea of using urethane foam as a backing, and a relatively thin baseplate made of stainless steel. This has several advantages. First, the foam is much more comfortable to grip than the sheetmetal prototypes were. Second, there are many different formulations of urethane foam available, and he found he could greatly alter the properties of the sanders by using softer or harder foam. Third, the stainless baseplate provides a firm backing for attaching sandpaper to and allows the sander to bend uniformly as it flexes over a panel. After making many sanders from different densities of foam, he experimented with adding rubber to the urethane. This had the unexpected effect of creating a double-density effect in the foam, making coarse-cell foam in the center of the sander, but leaving softer foam for the outer casing. This combination has the best of both worlds—the rigidity of the hard foam coupled with the comfortable grip of the softer foam. After some more experimentation, he found a way to apply a tough urethane outer skin that makes the sanders even more durable.

Sandpaper can be attached to the sanders in three ways. The easiest for dry sanding is to buy rolls of sandpaper with an adhesive backing. To use regular sandpaper or wet and dry sandpaper, you can use spray adhesive or double-stick tape to hold the paper to the sander. John prefers using a special 1/16" thick foam-center tape made by 3M.

He also experimented with different shapes for the grip, finally settling on a very broad top surface with an undercut all around, making it easy to grip and comfortable to use for long periods. With countless prototypes fabricated and tested, he began to think he had a viable product on his hands. Everyone who tried the sanders loved them, reporting that they made quick work of smoothing surfaces to perfection. If more flexibility was required, you could achieve it by simply removing one or more of the stiffening rods. With no rods at all, the sanders are so flexible that they can easily sand a surface as rounded as a '40 Ford fender, making uniform contact from end to end! This is something no other sander can do, and the results are striking. The goal of block sanding is to generate a surface that is continuous, eliminating any little hills and valleys. The larger the contact surface of the sandpaper, the easier it is to eliminate the tiniest deviations. And if you want the ultimate paint job, the name of the game is eliminating tiny deviations!

After much experimentation, John has brought the sanders to market in three lengths: 9, 21, and 36 inches. In each length, there are three styles: The least expensive style, designated "F", is soft foam throughout; a more durable style, designated "FE," has

a dense foam center covered with a soft foam backing; and the top of the line is the "FES." which has the double-density foam inside with a tough urethane skin on the surface, giving the sander the ultimate in durability. The urethane foam is closed-cell, so it doesn't absorb water.

When we first got wind of these new sanders, we were eager to see how well they worked. We enlisted the help of Johnny Vasko, who owns The House of Chop in Santa Cruz, CA, to put them to the test. Johnny is making quite a name for himself with the outstanding body work and custom paint jobs that come out of his shop.

Johnny immediately saw the potential of these new tools and put them to work on several shop projects. In the photos, he is prepping a '40 Chevrolet convertible for paint, and he found the Adjustable Flexibility Sanders to be a fantastic tool for refining both plastic filler and primer. Follow along with the photos and you'll see Johnny and his crew put the sanders through their paces.