

## Kustom Corner

A Monthly Column by Mark Prosser

For months now we've been talking about painting. It is a subject near and dear to me as you know. You only get one chance to make a first impression right? Everyone knows the first thing you see on a car or bike is the paint job and then the interest builds to check out the rest of it. And after careful inspection what's the question they ask? Wow who painted it? It's a good question and one that is my business blood so I do appreciate it but here is the kicker. No one ever asks the question wow who did the metal work, who designed it, who spent the last year getting that hot rod ready to paint? After all, the actual paint job took only a matter of hours.

Though my business right now it based around painting, metal has been part of my life for longer than paint. So I'd like to talk about metal in this article for a change. We might as well get started with the term "Custom Fabrication" the term that has been worn out by anyone with a mig welder a can of filler and a rake. Sheet metal fabrication is a very common term used by a lot of folks. Sticking two pieces of metal together with a Mig welder and packing it full of plastic filler is common practice of some "fabricators" now days.

Have you ever heard of the term "metal shaping", do you know what a power hammer is? How about a Pullmax machine, bead roller, English wheel, shinker/stretchers, planish hammers? Do you know what a hammer form is, how to make one and use it. Do you know what "metal finishing" is? How about Buck construction? I know these tools and terms might be new to you and maybe not, but understanding the tools, what their capable of, and learning how to use them is the art of "metal shaping".

You can basically do 3 things with sheet metal, you can weld/cut it, you can shrink it and you can stretch it. Every wild ass tank you see is just a combination of cutting/welding, shrinking and stretching. The more "shape" (curves and crowns) something has the harder it is to make. When we talk of curves, reverse curves, compound curves and compound reverse curves we are talking about shrinking and stretching the metal. This is a process of permanently deforming the molecules of the metal and it is irreversible. This is the difference between "shaping" and "forming" metal. Forming is bending and folding metal and it can simply be put back to its original shape with a little work. Most "fabricators" are simply forming metal not shaping it. I see so many full blown custom bikes with wild paint jobs, huge motors and tires and the sheet metal is pretty simple and basic with big points and sharp edges but they don't have much "shape".

It started with the auto industry when they didn't have 100 ton presses punching out 10,000 parts a day. There was a time where cars were built by hand. The tools used to do this were most commonly a power hammer, pull max and English wheels. There are metal "shapers" out there that still build hand built cars. You say how can a hotrod cost upward of a million dollars? Have you ever thought of a car being completely hand built? I mean everything! From a flat piece sheet metal!

The bike and car builders that haven't spent the time to learn this art are really cutting themselves short of capabilities. Most of them aren't trying to screw anyone they just don't understand how to build on that level.

Here is a problem especially with bikes. When we weld, metal shrinks, and when it shrinks it causes deformation (warping) there are some precautions like heat dams and small welds but it will still shrink. Mig welding will cause the least distortion because

it is instant heat. The problem with Mig welding is the weld is too hard to hammer on with a dolly to stretch the metal back where it needs to be. Mig welds can crack!

You see lots of Tig welding and that is for several reasons the biggest being it's ability to be hammered on, it's ability to be stretched and it's deep penetration characteristics. It is also a ductile weld.

We stretch metal back into shape after welding by hammering with a dolly. This process is called "hammer welding" We can also take this a large step further and actually work the metal until it requires no plastic filler, yes it can be so nice that no filler is required! This long and tedious process is called "Metal Finishing" It requires a good understanding of hammer and dollies crown combinations and is very time consuming. If you want to see a perfect example of "metal finishing" go to Fullerhotrods.com and look at the TEXAS T bike. It is cleared aluminum no filler any where!

Plastic filler is the best product out there; the problem is how people use it. I laugh at people that say, "I don't want any filler in it". Hate to tell you this folks but every brand new car out there has factory filler in it. The other option is lead. people say I want an all metal car, no filler. Well, lead isn't metal folks, it's lead! I also do leading for those persistent customers that want it completely original. LEAD does have it's place in the custom industry, but a very small place. Those absolutely perfect and straight show bikes and cars you see all have filler in them. It is impossible to make metal that flat and smooth with out filler. I can take a brand new sheet of any metal and look down it and see waves and imperfections. Plastic filler is mostly used as a crutch for poor metal work, and here is the problem with bikes.

When people make a tank and weld it together and they don't understand the process, the only alternative is to use filler. The amount of area covered with filler isn't the problem; it's the thickness of it that causes problems. We all know about the nasty vibrations of a V-Twin motor, (front to back and up and down) especially when it's a hard mounted big inch motor. MIG welds and thick filler cannot handle the vibration of the beast! Eventually it will crack.

I saw a bike built by a high profile builder from down south in my buddies shop. 360 rear tire, air ride, 23 front wheel, 10 ft long, 147 in procharged S&S with a wicked nasty blue and tribal paint job. Guy paid \$90,000 for the bike and had it for two years and that sucka was covered from head to toe with cracks in the filler! Just frickin terrible and that is the problem happening with the custom world. Another "custom fabricator" I know in Wyoming build a very cool pro street custom a few years back, made the tank and MIG welded it because " he'd been doing it this way his for 20 years" Put a very cool custom paint job on it and began riding it. The next summer the welds started cracking and began pissing fuel onto the motor and the dam thing caught on fire! Don't get me wrong the custom industry is full of very talented and successful builders, same with the custom car

side of the house, but unfortunately there are many more who don't really understand the craft. So if you're going to have something built by a "custom fabricator" do some research and check out their work, try to see it before it's in primer and ask questions. The design and construction method are very important in the build process. The metal is the foundation of any great project. Please realize there is more to that awesome paint job than just the paint, but the paint won't last if the substrate isn't there. I am set up for paint work in my shop right now. If you need metal work please feel free to call and discuss it. I've been Metal Shaping for several years now and have worked around some very talented "shapers". If you're interested in learning the craft there are some DVD's out there by a guy named RON COVELL. I've done his seminars three times along with Fae Butlers seminars. His DVD's are pretty informative for beginning shapers. Well talk more about the specific tools I mentioned, welding processes and other metal "fabrication" topics. Remember winter is the best time for getting work done. Reserve some time now for that paint job you've been wanting and we'll get it in. until next month get some miles on that sucka!

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