

I was asked by a very prominent individual to write an article on exhaust pipes. So thoughts just BLEW up in my head about how I was going to do that. Because I have that no holds barred attitude I figured it would be a good time to express some feeling on this topic and let some of you know what makes up a good exhaust.

In the process of that I also want to touch base on the marketing of exhaust pipes and the BULLSHIT some company's pull to make you believe their pipes are the best thing since the evolution of the aftermarket breasts. This by ALL MEANS is not an assault on these companies, I sell a lot of exhaust's.

What this article is meant to do is educate the consumer and be able to tell if someone is pulling their leg and what to look for in choosing an exhaust system for their needs. Because let's face it, I need to prove our products work like stated or I lose sales. Shouldn't all company's work like that?

So let's start out with what makes a good exhaust System.

Construction - The foundation of any good exhaust should start with materials heavy enough and strong enough to take the heat and abuse of vibration and mounting. Thick, heavy (relative) materials allow good welds and excellent strength in areas of the brackets, supports and also keeps the exhaust note from being tinny or hollow sounding.

Finishes - Everything from chrome to ceramics to paint and even the occasional wraps should be designed to take the heat and the abuse of light scuffing of boots and clothing. If any of these are substituted for inferior products it won't take long before you have an ugly set of pipes that the coating flakes off, Blues or becomes frayed or unraveled. The finish is a key element in a quality pipe as it is also the majority of cost in producing an exhaust. Once the finish is compromised it's time for new pipes.

Quality - this is something everyone can see, when you line up a bunch of different pipes its easy to see the ones with the best quality. The quality of the pipe comes in many areas that include the construction, finish and from my experience the sound and power. A quality pipe will normal give you the big three, PERFORMANCE-APPEARANCE AND SOUND. That is the benchmark for which I always preach however the reality of getting all three with all the models of bikes seems to always have a compromise so years ago I added the phrase, "Pick 2 out of 3 and be happy."

Performance - Believe it or NOT this is where most pipe manufactures or now the trendy thing of Re-Coring comes up short. A performance pipe will be one that maximizes the power of the camshaft. PERIOD!!! What's that mean? Typically the cam is the limiting factor for most street builds on a Victory. If the cam profile is worth a maximum of 100 RWHP than a good performance pipe with adequate intake should yield that power level, if not the performance is suffering as a result of the exhaust.

OK, so now we're going to get into some good topics. This is where I love to be as an engine builder, designer and tuner. I don't express myself in these areas unless I know I am in complete control of the topic or subject and that anyone that would oppose or question it will surely be defeated. It's sinister sometimes. Haha. I'm going to tell you what some pipe builders dont want you to hear.

So what would make me an expert in the field of exhausts relating to Victory? WELP, we've built the highest hp Victory's ever, we build the highest Hp Victory street motors ever and we've built all the exhaust systems on those bikes along with dyno testing and comparing just about every system built for these bikes. Now I can build an exhaust and I can throw it on a bike and see some nice numbers than I

can go claim we build the best exhaust's out there. But what gets missed is comparing my exhaust with everyone else's exhaust because you may have hit the highest number on the dyno but when compared to the competition you find yours is 15 ft lbs of torque lower at 2800 rpm's, OUCH! That's the meat & potatoes of riding right there. So for the last 12 years we've offered a service for the new pipe builders out there and that service is this. Send us a set of your pipes unfinished so you know were not going to sell them for profit and we will test them and give the maker an unbiased result of their work. Many have done this and a few have not. IMO If you're going to make a claim on your product that it produces more power than anyone else's and yet you won't have it tested by an unbiased expert than what are you saying.....really? SO the next time you go to buy an exhaust based on performance ask the company if they have ever had Lloyd test there pipes. Now I've tested probably 95% of the pipes currently available for a Victory and not all the information I've gathered is released. Even after I've done testing for the pipe company's I explain that same rule. Why? Exhausts are the only product I sell that isn't based on its ability to produce the highest HP for everyone. There are more items to concern ourselves with most of the time than power alone...

Not to give any secrets away but when you own a Dyno, a flow bench, mig, tig and heli-arch welders then have all the cutters and fixtures and tooling to make just about anything you can make alot of shit that doesn't work. However every once in a while you make something that does, now that's the stepping stone of being on the way to learning and we've defiantly made alot of shit that didn't work! So much that I can look at an exhaust and knowing what's inside the motor & tell whether it will work or not. One of the key components to building a "HIGH PERFORMANCE" exhaust system is knowing what Cam shaft specs are being used. Now knowing that isn't the full picture, you have to know what works as a camshaft and not all motors like the same specs of cams. Example: What works in a Harley or a Small Block Chevy or a Briggs & Stratton will NOT work in a Victory!

Most exhausts built are built on the premise that it fits the bike..... and ok it looks good..... and then maybe we start it up and it sounds good. How many do you think actually change the pipes once built because they test them and then make modifications to produce more power??? Not many. Now change 1 component of the motor and that pipe doesn't work like it did before. Example: We install pipe A on a stock cammed motor and it produces the best Hp and Tq across the board than any other pipe. We change out the cams for a set of VM1's and the same pipe now suffers greatly on the bottom end and loses 20 ft lbs of torque @ 2800 rpm's. So you see that exhaust design is more specific as changes are made over stock. The reason for that is the stock cams now a days are very small "emissions" cams, they have little to no overlap, low duration figures, low lift numbers and none aggressive ramp profiles which all relates to high intake and exhaust velocity's at low to mid-range RPM's. This is why a proper exhaust can maximize the power of the cam and that scenario is the easiest to build a pipe for.

Wouldn't it be great to have a test bike and ask all the exhaust makers that build product for that model to send a set for evaluation on a stock cam and then VM1 cammed bike. Have the test to include...

Construction and quality review before install

Sound tone, quality and Db testing during the install

Dyno graphed comparisons

Overall rating comparing the three above with cost factored in

Now that would be fun and very informative. Chances are though you wouldn't find anyone to do it willingly.

THE BLACK ART OF PIPE BUILDING

I use to read this quote while thumbing through my favorite car mags years ago and thought WOW I wish I could understand that someday as if there was a magical and mysterious method to it. Now a days my thoughts on that have since changed and it's not magical but there is some trial and error to a good system. As mentioned previously about camshafts, you don't build a pipe for the bike, you build a pipe for the cam. Once you do that you can see a real difference in the power levels being achieved. Now that's not to say that the only way to build a pipe is to build it solely to the cam but the cam specs do play a very large role in the process. Why? Well I am going to assume that when you build a motor that you have thoroughly thought out the build process and have consulted with someone whom knows what works. Therefore when you put the whole package together it is just that, A PACKAGE with internals meant to work together to create the best overall power and the heart of that build is the cam, with all the other parts matched to its ability to perform well together. Then you build the exhaust.

Ok Now let's do a role reversal, let's build a cam to suit the exhaust. Gee is that even possible? That is EXACTLY what we did with the VM1 and VM1-HP cams. We made them to work with the stock head pipes and exhaust because I knew that replacing those wasn't a good option and they are a pretty good design to boot for the Vision and X models. If you ever see a claim about a full aftermarket system making more power than the stock system with a good slip-on please disregard that as being fiction because as of this writing there isn't an exhaust that can beat the stock heads pipes and I don't care if it has 12 steps to the pipe, that it's made out of Inconel and a chrome cut out girl riveted to the end of it. (that statement is primarily for the Touring models)

RE-CORED PIPES

In my outline of this article I was asked to touch on the topic of Re-Cored pipes. There are allot of people doing this now a days and I guess it would be good reading for someone to final put some info out there about the process. Re-Cored pipes are in a nut shell a stock pipe/ Slip-on that is used for the housing to make the purchase a different sound/performance increase cost less for the purchasing individual. The hardest and more costly of part of building pipes is the outer shell so by using an existing stock outer shell you automatically have a cost savings involved. I use to do them myself back in 2000-2001 and was probably the first to start that process but motor jobs overwhelmed pipe jobs and I stopped doing it.

Is it a good process? That depends on who's doing it. I've seen some bad ideas get welded into a stock core and I've seen some good ones. It all boils down to the baffles diameter, length and perforation as being biggest contribution to whether it will work or not. An exhaust baffle isn't as complex as some make it out to be. It's BACKPRESSURE in the simplest sense and I don't care if you shove potatoes up your pipes to get back pressure as long as you get the correct amount. Because baffles don't need to be complex there's no reason to pay hundreds of dollars for baffles alone unless of course they can also hum you and your spouse's favorite wedding tune or you just got taken by excellent marketing and lack of delivery. I know some of those high priced baffles actually turned your ride from a dog to a rocket and your thoughts of them are incredible. Give me .24 cents and a welder and I could give you the same results. Re-cores can be a cost savings and still produce good power levels or they can be a waste of

money and more aggravation if the right one isn't chosen. Re-Cores just like manufactured slip-ons can make or break the power you want and can also create a tuning nightmare if not properly designed.

To sum things up...

Not all (very few) pipes score high marks in all categories (Construction, Finish, Quality, Performance)

A good pipe with your stock motor won't necessarily be good once you add/change/enhance the motor.

When shopping for a pipe, first consider what works with your motor's configuration. A consumer should consult someone who understands the properties of different pipes and how it works with their motor.

Some pipe manufacturers are really just selling Sound and Appearance, research before buying.

Re-cores can fall in the same category as manufactured pipes when it comes to their performance and sound.

-- Lloyd Greer, Lloydz Motor Works, LLC