

## CALL OF THE WILD PONIES

**O**ne of the most asked questions we get at MRT is, "How can I make my Mustang sound like a tough muscle car, you know, like a wild pony not a tamed refined breed?" Boy, as easy as this question sounds, the answer is not always straightforward. There are now, literally, so many different exhaust products out there that selecting the right one can be very difficult, but this month, we'll attempt to help guide you through the maze.

Mustang exhausts can usually be divided into the following sub components: headers (exhaust manifolds), mid-pipe (H or X-type) and the cat or axle back (basically the mufflers and tips). From there, the exhaust system you choose for your car is down largely to price, performance and signature sound.

Today, pricing of exhaust systems is often as varied as the products themselves, but in the end, pricing is usually determined by material and manufacturing methods—key drivers in what you actually pay for in the end. The most expensive material choice for exhaust components is 304 Stainless Steel, which provides the highest quality and most longevity. Lower grade steel, called 409 Stainless Steel is commonly used. This still has a good, moderate quality level and although it will rust over time, it holds up much better than mild or aluminized steel—which can deteriorate in a matter of months and is used for lower cost exhaust components.

Price is also influenced by the method of manufacturing used to bend the exhaust tubing itself. When designing an exhaust system, the tube diameter should remain constant through a bend to ensure the exhaust gasses pass through the bend with as little effort as possible. CNC (Computer Numerical Control) bending—the most precise bending method—produces the cleanest, most uniform bends for the final exhaust piping. When looking at a complete exhaust system, the type of headers can also tell you the overall level of quality. The best ones on the market are often made from 304 stainless and will often feature jet or ceramic coating to promote efficiency and prevent discoloring.

Performance is most often measured in terms of horsepower and torque. Horsepower is great for bragging rights, but its torque you feel every time you step on the gas pedal. In many V8 applications (like Mustangs) most of the engine's torque occurs over a fairly wide spread RPM range, whereas horsepower normally peaks at a very high RPM point and then only for a short duration, so you don't experience peak horsepower that often in most driving situations.

When it comes to torque, most engines produce more 'functional' torque when a small amount of backpressure is present in the system, like on a stock Mustang with a catted H-Pipe. Horsepower, however, is usually increased when very little backpressure is present. In most cases, street driven cars need at least some backpressure for good mid-range 'streetable' performance—one reason why I personally like to use high flow cats on any Mid-pipe system we offer – remaining emissions compliant is another factor. The Mid-pipe section of your exhaust system is the biggest source of backpressure and therefore the biggest contributor to overall torque and performance.

One widely held myth is that Cross X-type Pipes make more

power than H-pipes do! NOT TRUE. There are entire fluid dynamics lessons that support the fact. At MRT, we have tested nearly every combination of X-type and H-pipe configurations and have found that the tube diameter, catalyst selection and bend of the piping all contribute to performance. As long as the system is designed with a cross-over between the left and right side exhaust tube, overall performance will be very similar, regardless of configuration. Up front, choosing a well designed set of headers, such as equal length long tubes will provide you with the best performance, but in most cases, especially when it comes to modular engine Mustangs, many enthusiasts tend to go with shorty headers, trading off slightly lesser performance gains for ease of installation.

One last thing we should mention is 'signature sound.' The exhaust note is one of the biggest reasons why people choose to upgrade their exhaust system and different configurations result in different sounds, caused by the type of mid-pipe and mufflers. H-pipes produce a deeper, throatier 'wild horse' sound, while X-type mid pipes produce a higher pitch 'angry bumble bee' exhaust note. Muffler choices come in every size and shape imaginable, so pick a muffler that minimizes the 'body boom' or 'drone' that can often occur around 2000 RPM as it can drive you crazy. In the end, take your time when looking for an exhaust system—the right combination of headers, mid-pipe and mufflers will give your Mustang the 'personality' you are looking for. And remember, you're always welcome to contact the professional staff at MRT to help you find the configuration that's right for you and your pony!



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