

THE EXTRA MILE

Engine Building and Power Techniques

BY SCOTT SEHR



Absolutely. The Most Motor For Your Money! *Guaranteed*

Go With The Flow

Cylinder head flow rate is often a topic of discussion in performance circles today. The flow rate of a set of cylinder heads is directly related to the horsepower potential of an engine but other components must be taken into consideration in choosing or modifying a set of heads. Before you lay down your hard earned dollars for a set of heads it's important to do your homework. As is so often the case we need to know how an advertised flow rate was established. Most heads are flow rated at 28" of water pressure but not all. The manufacturer decides what pressure their heads are to be rated at and whether to measure before or after the heads are modified to improve the rate of flow. It's not always about port size as much as the design of the ports and runners that limit the potential. Fuel is heavier than air so at every turn, the air makes the turn but the fuel wants to continue in a straight line and tends to fall out of suspension. In this situation we end up with good air flow but poor fuel air ratios reaching the cylinders. It's very important to do the homework so you know what you are getting or to work with a machinist that you trust will get you the right part for your application.

The camshaft and induction system play an important part in cylinder head selection. If a particular head will flow great with

.650" valve lift and your camshaft only has .550" lift, you aren't going to get the numbers you expect or the performance you were looking for. By the same token, if your intake is too small it will limit the flow rate. If there is too much port volume you may be giving up too much in velocity. Other factors affecting flow rates are port volume, short turn and long turn radii, valve guide design, bowl and valve seat expansion, wall friction and port shape to name just a few. Certain areas can be massaged to improve performance in high lift or low lift applications. Perhaps the most overlooked factor in cylinder head design is velocity. This is especially important in a naturally aspirated engine. If you don't have the cubic inches or the rpms to warrant high flowing heads, it would be counterproductive to go in that direction. More isn't always better.

Here at Sehr we pride ourselves in taking the time to ask the questions and getting the information to build your engine for the way you intend to use it. It's no accident that we choose the head, camshaft, intake, carb and exhaust to maximize performance in the rpm range you intend to use your engine at. We will also tell you if your current heads can be modified to meet your performance needs or if your or if you would be better served with an aftermarket part. It's really easy to spend a lot of money porting out a set of stock heads and not get much in return; we'll keep you from making that mistake.

Whether you are looking for something that will pull a little stronger on the street or pick up a 10th on the strip, Sehr Performance can get you where you want to go and eliminate the guesswork.



Ported and Polished Intake Ports



Ported and Polished Exhaust Ports