

CNC Heads

CNC Heads have developed an extensive range of CNC engineered gas flowed cylinder heads for European and Japanese engines. These heads are developed exclusively for circuit racing, rallying and fast road applications.

We have invested heavily in a state of the art development facility which enables us to develop the very best prototype heads and manufacture each head with 100% accuracy. Our simulation and manufacture process allows us to guarantee flow on every head we produce and give a predicted BHP. All our heads have been tested on our engine dyno facility to verify our power predictions.

The end result is a head which performs exactly as we predict. Each cylinder in the head exactly matches the others in the head. Each head we produce gives the exceptional flow we claim which is why we publish our flow figures and many other cylinder head specialists do not.

Prototype development.

We have over 20 years of experience in developing racing cylinder heads. We use the latest Superflow flow bench and PortFlow Analyzer software to measure and analyse flow. This is supported by sophisticated software which allows us to simulate a full engine build with all the known parameters such as valve size, bore, stroke, piston speed, target max revs and many more. Simulation is a vital tool to measure changes made in the head and set a target power output for the engine. Typically a new head will take weeks of meticulous development work before it is considered ready for production.

Replication.

Gas flowing a cylinder head used to be a very hit and miss affair. Fundamentally it is a labour intensive, highly skilled but manual process. By manual processes alone it is near impossible to produce a series of heads with identical flow characteristics. Another factor is ensuring each cylinder in the head has the same flow, ensuring a balanced engine and maximum power output. We utilise digital scanning technology to precisely measure the dimensions of the new cylinder head. These form a pattern which our CNC machines can follow to manufacture the new head.



Ford Pinto– CNC Engineered Gas Flowed Cylinder Head.

Introducing our new gas flowed cylinder head for the Ford Pinto engine. Demand remains strong for the popular classic engine as fitted to the Ford RS2000 and many other Ford and Lotus vehicles.

We have given this head the full treatment by creating a new big valve version. We have achieved an impressive 30% increase in inlet flow and 21.4% increase in exhaust. Using this head we have built engines producing up to 210BHP. This can give a new lease of life to these great engines and make a significant competitive advantage when racing or rallying.



Fundamentally, what ever other modifications you make to an engine, they will always be restricted by the flow of the existing head. Customers who are ready to take the performance of their engine to the next level should seriously consider a quality gas flowed cylinder head with guaranteed flow characteristics. Not only will it improve the existing state of the engine but will also benefit further tuning if required.

A CNC Heads cylinder heads offers:

- The best flow available as a result of extensive R&D. This is the key. Our heads are fully developed racing specification, gas flowed cylinder heads.
- Developed and manufactured in the UK with full 12 month guarantee and support.
- Installation and tuning advice is available.
- Fully tested from flow bench to Engine Dyno to race track.
- Absolute accuracy guaranteeing claimed flow for each head and cylinder (giving full power balance across the head)
- A genuine price breakthrough offering custom gas flow engineering at production run prices.
- By any measure, price/performance ratio is extremely good and should appeal to racers and road enthusiasts alike.

Manufacture.

Taking a standard head as a start point, our 3 and 5 axis CNC machines begin work to machine the new head. We manufacture to very fine tolerances and a single head can take up to 16 hours to re-profile the ports. Valve seats are given special treatment on our Newen CNC valve seat cutting machine which ensures the very best valve seating possible. The end result is a head which gives 99% of the flow we achieved on the initial prototype. The final 1% is achieved with manual, hand finishing of the ports.

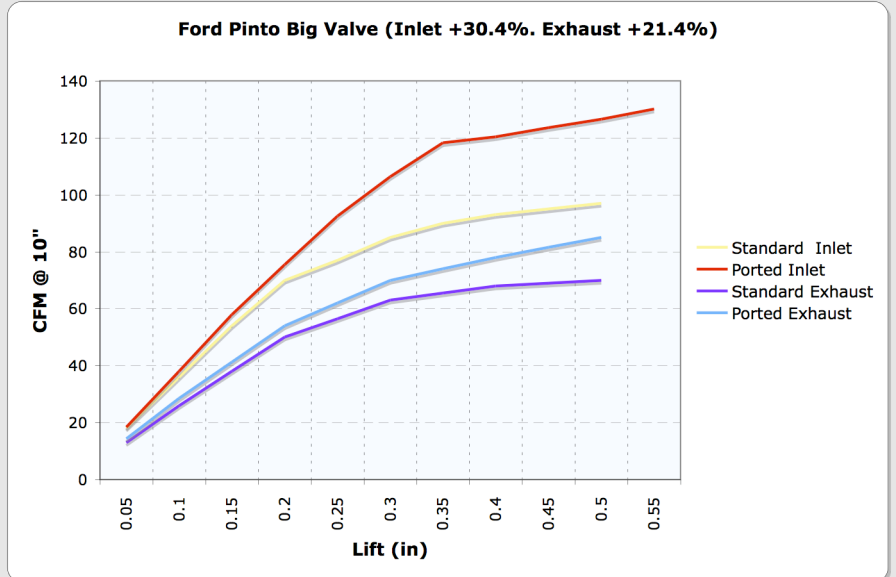
Quality control.

The first heads produced are measured on the flow bench again to check flow. We also fit the head to a new engine build to check predicted power output on our in-house engine dynamometer. Often heads are developed for customer race engines. Dyno results are used to modify our simulation models. We also carry out random flow measurements on production runs as part of our quality control procedure. As a result we are able to guarantee the flow and power capabilities of our heads.

Results.

With this process, our customers have achieved superb competition results at very reasonable cost. Using CNC production techniques has enabled a price and quality breakthrough in this area of race engine building. Considering the performance potential and quality of our heads, they represent superb value for money.

See below for more details of our measured flow for this head. Unlike many gas flow engineering firms we publish all our flow stats. This is because we are 100% sure we can deliver this flow to the customer on every head and cylinder. We also give predicted power output based on our unique simulation to dyno testing development lifecycle.



Vital statistics		
Standard Inlet	Ported Inlet	% change
97 CFM	126.5 CFM	30.41%
Standard Exhaust	Ported Exhaust	% change
70 CFM	85 CFM	21.43%
Predicted BHP	210 BHP @7800 RPM	
Torque	141 ft/lbs @7800 RPM	
Piston Speed	3887 ft/min	

CUSTOM CAMSHAFTS : With all of our gas flowed heads we also provide a custom made camshaft service. These camshafts are designed to optimise the flow characteristics of our heads. They can also be specifically designed to deliver the power characteristics you require for your specific application. Your existing camshaft will work with our heads, however, if you want to get the most from one of these heads or you have a particular power characteristic you are looking for, we recommend that you consider our custom camshafts.

For further details on CNC Heads , our manufacture process and our extensive range of Gas Flowed Cylinder Heads, visit our website : <http://www.cncheads.co.uk>. Or you can Email us on sales@cncheads.co.uk

We are happy to discuss customer requirements and give support and advice on the use of our heads. We are experienced race engine builders and can offer many more services from component sales through to full engine build.

We look forward to hearing from you..