



Edelbrock engineers test a cylinder head "flow box" on our SuperFlo SF-1020 flow bench.



The flow box is a plastic model of one intake port, one exhaust port and one combustion chamber. This cross section is created using 3-dimensional computer software and then produced using Stereolithography. Testing a flow box allows our engineers to make the changes needed for optimum performance before taking the next step to more costly and time consuming aluminum prototypes.

EDELBROCK STAINLESS STEEL VALVES

Technical Specification

Edelbrock stainless steel valves are one piece forgings manufactured of 21-4N; an austenitic steel material composed with a nominal 21% chromium content and 4% nickel. They are heat treated through a solution aging process that assures hardness range between 32 and 38Hrc and high ductility - enough to bend a valve in a vise more than 90° without breaking it! The valve tips are composed of .100" hard welded martensitic steel that is heat treated to 52Hrc for high impact strength at high rpm's. The valve stem is treated with a porous chrome finish to provide hardness and oil retention. The unique process leaves microscopic holes that fill with engine oil for improved lubrication of the valve stem and guide, reducing wear at the guide inner surface. The finished product is a high-quality, stainless steel valve designed to last in a high horsepower performance application.

AN IMPORTANT NOTE ABOUT VALVE SPRING RATES

Valve spring rates and camshafts must be compatible to avoid valve float and severe engine damage. Edelbrock Performer and Performer RPM complete heads are equipped with valve springs that are compatible with Edelbrock camshafts for safe operations within the specified RPM ranges. When using other camshafts, consult the cam manufacturer for recommended spring rates.

PLEASE NOTE:

Valve springs supplied on Performer & Performer RPM heads are designed for use with Performer RPM cams up to 6500 rpm. Valve lifts exceeding Performer RPM specs or engine speeds greater than 6500 rpm require springs that match your cam. Excessive valve lift or engine speeds higher than 6500 rpm will void the warranty on these heads.

COMPARING FLOW DATA

When comparing airflow numbers between heads, there are several things to consider. These are general guidelines... not absolutes... but guidelines that should be considered when purchasing cylinder heads.

1. You may not be getting "apples-to-apples" comparison.

Flow bench measurements are only useful and accurate when done carefully and on a calibrated bench. Proper alignment of the head with the bore is required to simulate exact geometry of the engine. Accurate lift measurements are also required. Finally, atmospheric conditions are needed to interpret the data. As a result, you may not be getting an "apples-to-apples" comparison when comparing numbers from different benches.

2. Bigger is not always better!

A large port doesn't always mean more power. This is especially true with street heads and in some cases, race heads. Velocity is just as important as flow. A smaller port volume generally equates to higher velocity for better street performance. The speed of the mixture determines how tightly the combustion chamber is packed. The more tightly packed the combustion chamber, the more pressure is developed when the mixture is ignited, pushing the piston with more force for more power. For example: A large port and a big flow number at 0.600" lift means low velocity (especially off-idle to 3500 rpm) and results in less throttle response. For the street, velocity is the key to overall performance.

3. Compare peak flow and low lift flow.

Cylinder head buyers have a tendency to only consider peak flow numbers. It's important to look at all the flow numbers, from .100" to peak, in order to determine the performance level of a head.

4. Type of valve influences flow.

The type of valves used will influence how well a port flows. A valve with an undercut stem is less of a restriction to flow and will allow a port to flow more, filling the cylinder better and producing more power.

5. Consider this fact for street applications.

Generally, in a street application, the smaller the valve diameter, the better the velocity and flow will be with the correctly sized port. This holds true for both the intake and the exhaust ports. When you can equal the flow of a larger port and larger valve with a smaller port and smaller valve, you have a much more efficient port, which will generally make more power and use less fuel.

6. What's the pressure differential?

The pressure differential that a head is flowed at dramatically affects the results. All Edelbrock heads are flowed at 28" of water, which more closely represents what an engine will see. Beware of companies flowing heads at anything less than 28" of water, because that is not a valid comparison with Edelbrock heads.

Cylinder Heads	Installed Ht.	Rates	Coil Bind	Maximum RPM
51899, 60179, 60229, 60259, 60269, 60279, 60289, 60299, 60329, 60359, 60379, 60399, 60519, 60579, 60599, 60719, 60739, 60759, 60779, 60859, 60879, 60899, 60909, 60979, 60989, 60999, 61779, 61899, 602579, 608979	1.800"	1.800" = 120 lbs. 1.219" = 320 lbs.	1.130"	Performer cams: 5500 rpm Performer RPM cams: 6500 rpm
51259, 61939, 61969, 77019	1.800"	1.800" = 138 lbs. 1.200" = 326 lb.	1.140"	6500 rpm
51929, 60069, 60079, 60119, 60929, 60139, 61629, 61909	1.885"	1.900" = 115 lbs. 1.400" = 280 lbs.	1.160"	Performer cams: 5500 rpm Performer RPM cams: 6500 rpm
51459, 51559, 60459, 60479, 60499, 60559, 60669, 60679, 604719, 617569	1.975"	1.975" = 125 lbs. 1.475" = 310 lbs.	1.160"	Performer cams: 5500 rpm Performer RPM cams: 6500 rpm
51589, 77189, 77589, 77619	1.900"	1.900" = 145 lbs. 1.300" = 380 lbs.	1.130"	8000 rpm
77199, 77599, 77629	1.900"	1.900" = 210 lbs. 1.300" = 490 lbs.	1.170"	8000 rpm
61669	1.950"	1.950" = 235 lbs. 1.250" = 610 lbs.	1.170"	7500 rpm
61409, 77409, 77459	2.000"	2.000" = 250 lbs. 1.150" = 800 lbs.	1.070"	8000 rpm