How It Works

In order to understand how the merge collector works, you must first know why one exhaust system can generate more torque and horsepower than another. The ability of a header/exhaust system to maintain exhaust gas velocity has a tremendous impact on realizing maximum torque and horsepower. Any significant changes in the system, such as baffles (mufflers) or collectors, will have an impact on exhaust gas velocity. The large area change seen at the transition from the primary tube to the collector causes an immediate reduction in exhaust gas speed. This reduction in speed decreases the efficiency of the system, thereby reducing scavenging ability. Scavenging ability is the key factor by which an exhaust system is evaluated. The more efficient the system, the more air/fuel mixture that can be pulled into the combustion chamber. Obviously, the greater quantity of air/fuel mixture that can be burned, the more torque and power potential the engine has.

The construction of a merge collector is such that the change in area at the primary tube to collector transition point is minimized. This gradual transition allows the exhaust gas to maintain as much velocity as possible. Maintaining gas velocity is the key to allowing the exhaust system to reach its efficiency potential.

Merge collectors significantly improve the efficiency of the exhaust system. If your combination has been optimized to a header with standard collectors, it's possible to over scavenge when adding merge collectors. Over-scavenging will normally decrease torque and horsepower when compared to your optimized, previous setup. We recommend dyno testing to arrive at the final camshaft combination when using this style of collector. If you need that last little edge and are willing to do the testing required to realize the potential gains, merge collectors are one of the most economical ways to gain significant amounts of torque and horsepower in the entire engine combination.