TECHNICAL 4.8, 5.3, 6.0, 8.1

GM "DRY" *(Direct Port)* vs "WET" *(Manifold)* INJECTION

No one does it better than Kenne Bell. Some kits may look the same, but there are differences. We don't merely plug a sensor in a tailpipe and read the air fuel ratio or exhaust temp. That approach only indicates the AVERAGE of 8 cylinders. Since an 8 cylinder engine is, in reality, eight (8) individual one (1) cylinder engines, we look at air fuel ratio in ALL of the cylinders as both lean and rich ones can cause problems i.e. detonation, loss of power, excessive cylinder wear and reduced plug life.

We supply 8 new balanced oversize direct port fuel injectors for all 4.8, 5.3, 6.0 and 8.1 kits - and for good reasons. They are absolutely necessary to maintain the original GM "dry" (air only) manifold design concept. Note: GM manifolds were NEVER designed for both fuel and air - only air! It's absolutely impossible to evenly distribute fuel through GM's "dry" manifold. Note how consistent the "dry" AF ratios are with a minuscule 3% variation in only 3 cylinders as compared to a "wet" concept.

Our testing clearly verified that injecting the additional fuel required for supercharging into the front of the intake manifold resulted in huge, dangerous and power robbing variations in air fuel ratio under wide open throttle/boost. The fuel puddled and collected in all the wrong places in the manifold cavities, plenum and runners. It should then be obvious why Kenne Bell prefers to inject every drop of additional fuel directly into the head ports via our 8 new oversize "Marine" injectors (50% more fuel for 50% more power) supplied in every kit. Some dry manifold designs work well with auxiliary injectors. GM manifolds simply do not.

AIR FUEL RATIO COMPARISON*
("Dry" vs "Wet" Manifold Injection)

"DRY" - 8 larger direct port injectors. "WET" - 2 auxiliary injectors dumping fuel into the inlet manifold.

CYLINDERS	1	2	3	4	5	6	7	8
"DRY" AF RATIO	11.0	11.3	11.1	11.3	11.0	11.0	11.0	11.3
% LEAN or RICH	-	3% rich	1% rich	3% rich	-	-	-	3% rich
"WET AF RATIO	12.0	12.9	11.4	10.2	10.2	11.6	10.7	10.6
% LEAN or RICH	17% lean	26% lean	11% lean	-	-	14% lean	5% lean	4% lean

***Tests conducted with Horiba air fuel ratio sensor in all 8 header pipes**

SUMMARY *("Dry vs "Wet" flow)* GM ENGINES

✓*11.0-11.3 ratios are ideal for supercharged engines. No question about that.*
✓*11.4-11.6 ratios are marginally lean and prone to detonation.*
✓*12-12.9 ratios are dangerously lean and should be avoided.*
✓*Ratios lower than 11.0 are too rich and cause those cylinders to lose power (10.2 reduces power 5% over 11.0).*
✓*All 8 cylinders must have even fuel distribution for best power and reliability. Ask any good engine tuner.*

In addition to the superior dry flow manifold concept, the Kenne Bell GM kits have several more distinct advantages even when compared to other Twin Screw kits.

ENGINE & TRANSMISSION CALIBRATION

Re-calibrating the stock engine and transmission for supercharging is the most difficult part of kit design. Kenne Bell kits simply "download" the revised Kenne Bell supercharger calibration into the stock computer. Others cut and splice up to 10 wires to attach a "piggyback" engine management system box and wiring to override or "trick" the stock computer. It's these little "tricks" that render the temperature gauge inoperative when the engine sees boost. We prefer to work with the factory computer, keep the stock gauges in operation and leave the wiring as is.

EFFICIENCY

All Kenne Bell GM superchargers incorporate the latest most efficient rotor profile designs by Autorotor, the oldest and most respected manufacturer of Twin Screw superchargers. A cooler, denser air charge makes for more HP potential and lower supercharger parasitic losses.

CONSTRUCTION

To compliment the upscale image of the Kenne Bell kits, all superchargers are constructed of durable billet aluminum. Others use the cheaper castings.