

Ladies and Gentlemen, let me introduce you to, the carburetor.

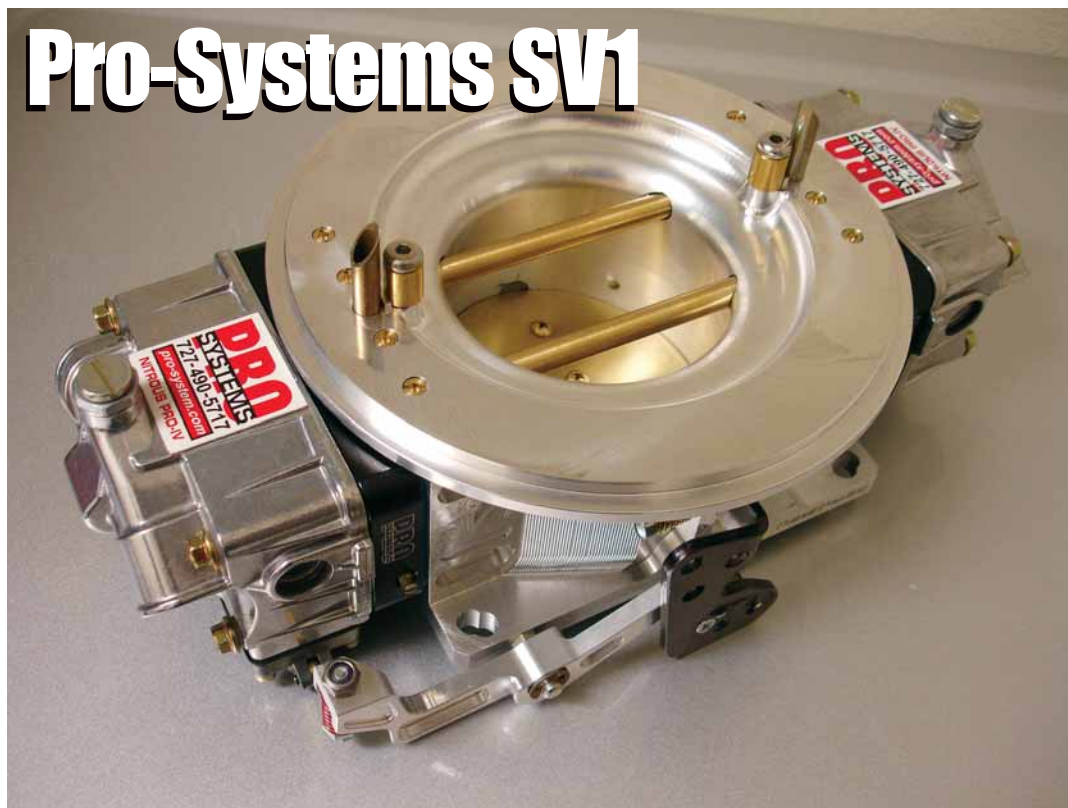
Not since the 4500 series carburetor was introduced in 1969 has there been such an exciting advancement in carburetor design. Sure there has been an occasional development in traditional design and a few totally different style carburetors that never really became mainstream but I believe the new Pro-Systems SV1 from the genius of Patrick James, may just change carbs forever. With just a quick glance you instantly notice the gaping hole of a main body. You could lose household pets and small children down one of these bad boys. It appears to be simply a 4500 with the main body replaced by a huge single throttle body with some spray bars, however there is in fact quite a bit of complex technology at work here with this new beast. I had a little talk with Patrick James and had him explain what makes this design work and how it came about.

"Stay with me a minute on this and you'll get the whole picture of this revolutionary design and the nuclear reactor that started it all."

Pro Systems was involved in a project to help cure a condition called "flopping". It is a condition that is encountered in nuclear reactors where the water that cools the pipes that creates the energy encounters a transfer of its flow in a side to side random motion. In other words, the flow of water is not traveling in a predictable pattern of movement, it is chaotic and unpredictable.

You see, anytime that a round surface has a fluid pass by its shape, this fluid (or air in this case) "flops" back and forth in a random motion. This is

Pro-Systems SV1



undesirable for both nuclear reactors and carburetors. In a nuclear reactor this creates excessive turbulence in the cooling operation and requires more energy to move the water. In a carburetor, this creates cylinder to cylinder random distribution issues and excessive drag at higher air flow rates. This was the discovery many years earlier when Pro Systems, MOPAR and Larry Morgan worked together to test various booster shapes. The round tube was the best way to atomize the fuel, but the flopping issue needed to be resolved so it could be used effectively. To make a long story short, once Pro Systems developed the combined shapes and ultimately the cure for this condition in the nuclear reactor project, they realized it could be applied to a carburetor to cure the same issue.

Now with the condition corrected, the tube style booster can be put to work and it opens up a vast world of change in the future of carburetion. The SV1 carburetor was a direct result of these projects. Bischoff Engine Service was the first to fire up and dyno test the SV1 and when compared to a very well tuned in EFI system, the SV1 came out on top. But the SV1 isn't solely about horsepower. Modern day carburetors are

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tough competitors and have had decades to fine tune this parameter and their sole focus has been those numbers. The SV1 records great horsepower numbers, but, as we all know there is even more to look at in this big picture world we live in today.

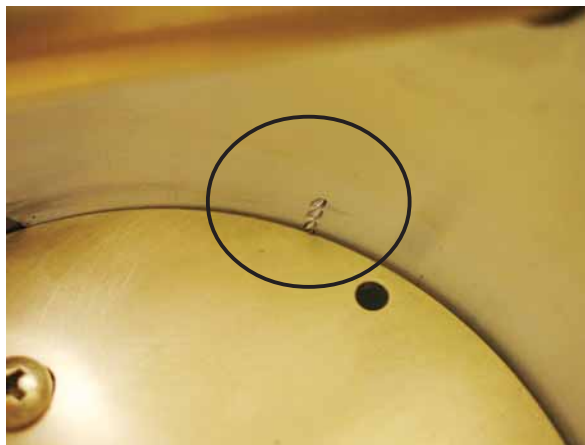
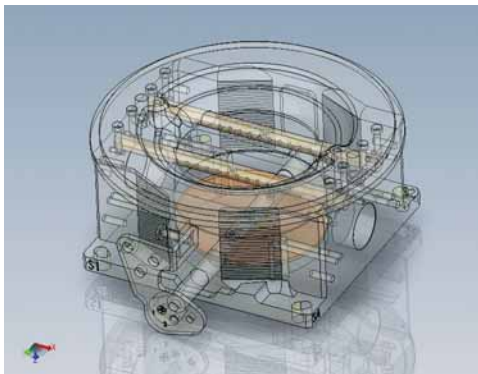
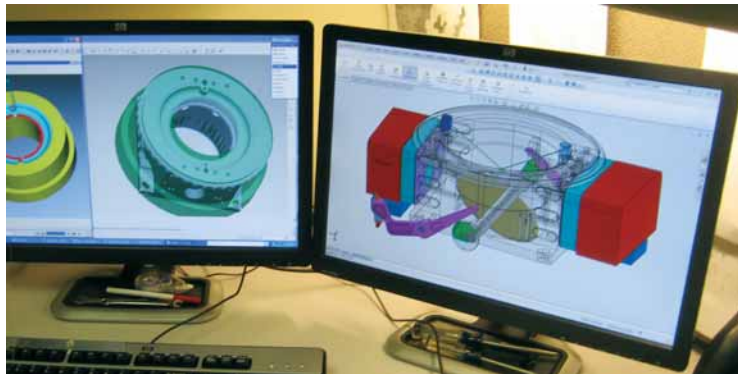
In modern day carburetors the throttle blade blocks are the boosters' signal generating center. Now, until the blade reaches it's wide open throttle position, the fuel is required to go around the blade and the signal generating air speed is routed away from the boosters center. On the SV1, it's exactly the opposite. The moment the blade begins to open the high amounts of vacuum under the blade race along the wall of the venturi, this air speed is immediately communicated to the boosters edge. In the SV1 the whole booster generates signal, so this air speed along the edge instantly primes the

metering system and introduces fuel into the venturi at a very high rate of speed and this velocity shears the fuel instantly upon introduction.

Pro Systems was using a version of this form of communication in their DT series Nitrous PRO IV carburetors for many years. But this extreme

Patrick utilized computer aided drafting software during the stages of fitment and development of the SV1. On the right, a 3D rendering of the new SV1 main body gives us an inside look at the port layout.

LEFT - The squirter is a single fogger style that sprays across the venturi to better atomize the fuel. RIGHT - The transfer slots are actually ports which better atomize the fuel compared to a slot. You can also see the extremely high quality machining. Notice how the transfer ports get larger as the holes go up higher in the venturi. This supplies more fuel as is required when the blade opens.



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design in the SV1 allows a more maximized version of this technology to be employed.

That's not the only benefit. As the blade continues to the wide open throttle position, more and more of the booster is exposed and more fuel is pulled from the edge outward toward the center to continue the acceleration/atomization process. Once the blade is fully in the wide open throttle position the whole booster is exposed to velocity changes and the blade does not impede this communication. In other words, the blade is not located under the boosters center, so when you shift gears or engage the nitrous system or the throttle stop, the booster can respond faster as the air velocity change does not have to "fill in" around an imposing blade. Keeping in mind that all of this happens in fractions of a second.

In racing these days, that's how critical we are of performance levels. Modern day data acquisition exposes these weaknesses and as a result new discoveries are made.

But wait, there's more. The SV1 design is low, so you get great hood clearance. The air bleeds and venturi tubes have been moved way back, far from the venturis edge compared to other designs. Now the vent tubes can be lower and the air bleeds are more effective. This is due to the use of a single blade to offer a better overall layout of the carburetor. This single blade also gives the design unbelievably high levels of available cfm flow rates.



The SV1 main bodies are made from a single chunk of high quality aluminum. Here you see a pallet of partially machined billets waiting to go on to the next step in becoming the worlds baddest carbs. RIGHT - Here we have some finished mains, ready to be assembled. One of them could be on its way to adorn a competitors bullet.

On a standard 4150 intake manifold, versions are available that can flow over 1250 real cfm!! At this point, the smallest SV1 flows 1100! This makes it the largest 4150 series carburetor in the world. It will bolt onto both a 4150 and Dominator intake with no adapters required and it uses all standard Holley style gaskets and seals. So no specials jets or gaskets are required. However, 1250 cfm is not the limit, this monster can be bored out to flow up to 2600 cfm when bolted on a Dominator intake manifold. So you guessed it, it is now the largest carburetor in the world period, with no asterisks.

The performance levels are certainly admirable but the design features are previously unheard of. So the SV1 may go down in history as being one of those revolutions in technology that changed the way we look at carburetors in the modern day, and for decades to come. Imagine big cube monster motors able to run on a single carb! For all those that believe the carburetor is on it's way out to be replaced with modern fuel injection, this may thwart your plans. I was planning on just throwing my old trusty 25 year old Dominator on the RPM project car, but honestly, now I'm having second thoughts.

To learn more about the Pro Systems SV1 visit www.prosystems racing.com or call (727)490-5717



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