# Mod Man 'Indy's Big Topper'

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**A BETTER MOUSETRAP HAS ALWAYS BEEN A PART OF RACING'S HERITAGE.**

Indeed, even in the factory production environment, time spent on the science of how and why things work resulted in better products. The reality for most of us when it came to induction adjustments for the street scene was figuring out (usually by the seat of our pants) how we believed our engine wanted its fuel. When you get into the deeper part of design, looking at ram tuning, manifold depth, air dam spacing, and other factors, it is often up to the manufacturer to ascertain the best structure for that particular intake application.

However, the drawback was always that you needed to buy another entire intake if you chose to change to a different format or series of carbs (though some tunnel ram applications offered top structures to make this swap). Indy Cylinder Heads, the mad scientists of the Mopar aftermarket, came up with a solution that makes you want to smack your head with your hand when you realize its simplicity.

"We do a lot of testing, so we change intakes all the time," says Russ Flagle, the former heavy manufacturing machinery designer who founded Indy. "I realized that every aftermarket square-bore carb base mount is virtually the exact same distance apart. What we did was design a good single-plane intake that could take interchangeable tops. Now, instead of changing the entire intake, you merely swap that top plate and add the studs for the carbs you want to use, bolt the carbs onto the design, and you're ready to go."

The result was the new Mod Man intake manifold, first produced to do conversions of late-model Hemi engines to carburetion, and now available or in development for most popular Mopar engines. The Mod Man base is a truly unique single plane design that features a flush-milled top, large open plenum, and short runners. Unconventional? By some standards, people often equate that larger area with potential pitfalls. Russ had found the opposite to be true.

"The Mod Man is a departure from the norm," he says. "People don't realize that the larger plenum area acts as a reserve for volume. You can look at CFM numbers from the carb or carbs, but our tests showed that both the original Hemi and the new modern Hemi both liked the larger plenum and the shorter runner. The issue of air/fuel volume below the carb or injector is just as critical as CFM or flow numbers. So this design works as good or better as any other single plane for those applications on the market right now."

During the development phase, Flagle continued to consider those volume numbers in relation to the Chrysler engine environment. When a port or head is flowed on a flow bench, data can be accumulated, but the lab is a far cry from the dynamic environment a race engine exists in. Russ chuckles that a flowbench shows air flow, but doesn't take into account the reality that the valve is opening and closing rapidly.

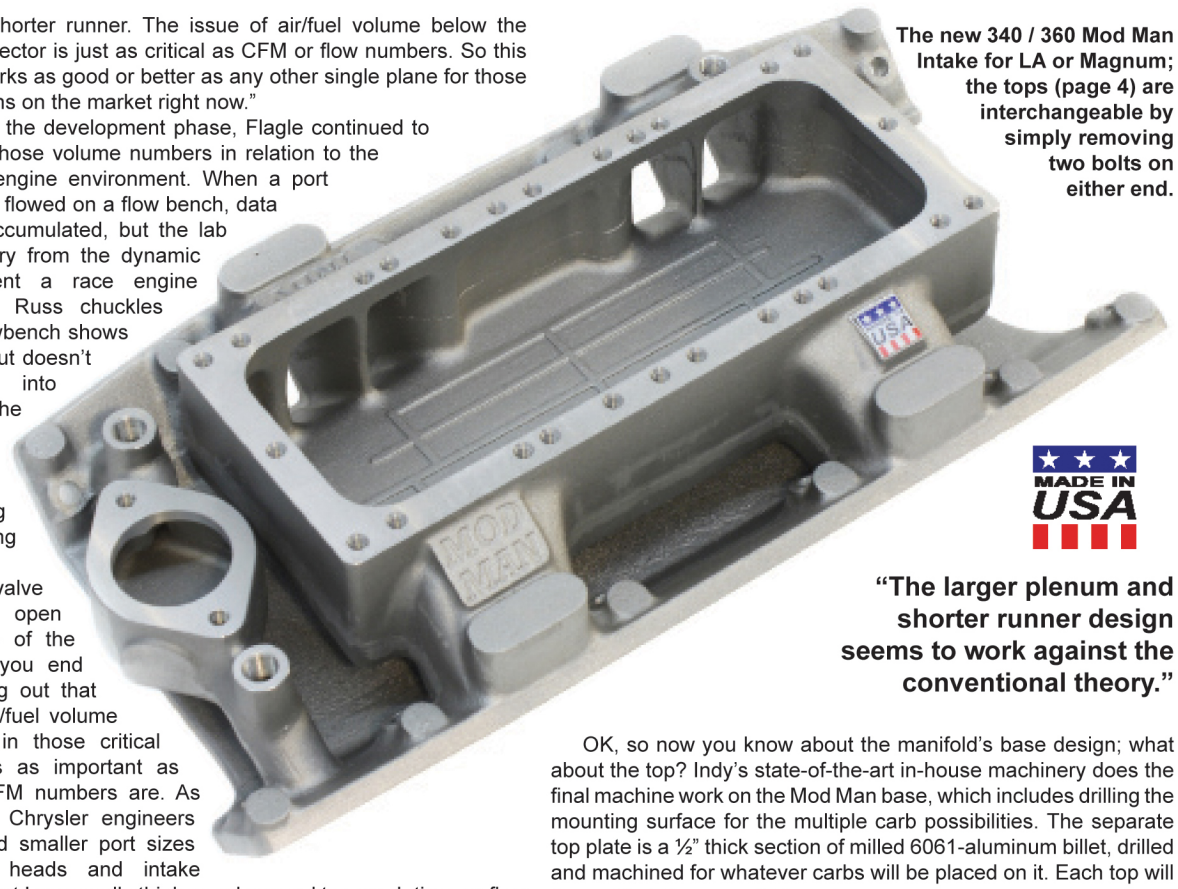
"That valve is only open about 1/4 of the time, so you end up figuring out that overall air/fuel volume available in those critical periods is as important as overall CFM numbers are. As designed, Chrysler engineers often used smaller port sizes on their heads and intake runners. But I personally think people spend too much time on flow bench numbers and runner air speed; that volume signal is often overlooked but we see our results right on the dyno."

The hard choice for OEM engineering was between a theoretically stronger signal that pulls fuel into the cylinder at low RPM, and having enough fuel make sure the engine was happy throughout the RPM range; if you have too much volume, the air signal will be too weak for an efficient intake charge. Nonetheless by creating that large plenum area, a universally-available quantity of air/fuel becomes available to whichever cylinder needs it most when that cylinder's intake valve opens.

**Mod Man Test - 6.1 426 Hemi w/ 2x4 Top Edelbrock 600 Carbs**

| RPM | Trq | HP |
|---|---|---|
| 4000 | 505.9 | 385.3 |
| 4100 | 504 | 393.4 |
| 4200 | 506.7 | 405.2 |
| 4300 | 508.5 | 416.3 |
| 4400 | 511.2 | 428.3 |
| 4500 | 511.7 | 438.5 |
| 4600 | 516.9 | 452.7 |
| 4700 | 521.2 | 466.4 |
| 4800 | 518.1 | 473.5 |
| 4900 | 521.4 | 486.4 |
| 5000 | 532.9 | 507.3 |
| 5100 | 537.3 | 521.7 |
| 5200 | 539.4 | 534.1 |
| 5300 | 543.0 | 548.0 |
| 5400 | 547.2 | 562.6 |
| 5500 | 550.9 | 576.9 |
| 5600 | 547.3 | 583.5 |
| 5700 | 549.1 | 595.9 |
| 5800 | 545.8 | 602.7 |
| 5900 | 549.4 | 617.1 |
| 6000 | 548.2 | 626.3 |
| 6100 | 545.8 | 633.9 |
| 6200 | 547.6 | 646.4 |
| 6300 | 543.7 | 652.1 |
| 6400 | 535.3 | 652.3 |

**Pictured below is the 415 Magnum Crate Engine with the Magnum Mod Man Intake with Edelbrock Carbs. See page 12 for more details. 6-Pack Upgrade Available.**


**The new 340 / 360 Mod Man Intake for LA or Magnum; the tops (page 4) are interchangeable by simply removing two bolts on either end.**

MADE IN USA

**"The larger plenum and shorter runner design seems to work against the conventional theory."**

OK, so now you know about the manifold's base design; what about the top? Indy's state-of-the-art in-house machinery does the final machine work on the Mod Man base, which includes drilling the mounting surface for the multiple carb possibilities. The separate top plate is a ½" thick section of milled 6061-aluminum billet, drilled and machined for whatever carbs will be placed on it. Each top will fit any Mod Man manifold made.

"You know, when guys begin to dyno-test, one of the first things they want to change is the carb height by using a manifold spacer," says Russ. "My understanding after watching this is that what an engine really is asking for is more volume. In fact, with our tunnel rams on the bigger engines, we actually have spacers that allow the entire plenum top to be raised in 1/2-inch increments. So again, the larger planum / shorter runner design seems to work against the conventional theory."

The top of each Mod Man plate is machined to the specific carb gasket and mounting size, and the bottom of the plate features millwork that accentuates the signal to the carb itself. From below, the plate features cutouts for each individual bore opening and is tapered outward into the plenum, creating a stronger signal then a simple flat section would do. Also, the surrounding area is milled away from each opening area in the base, which may help ensure that the strongest air signal is pulling fuel and air into the plenum and toward the cylinder without turbulence since the bore's edge air is drawn away from that opening.

The Mod Man can be had in configurations for various four-barrels, Six Pack, and dual quad applications. In the bigger displacement environment (over 400 cid), results seem to show the more fuel (bores) available, the better, though jetting and orifice size still play a critical role as always in optimizing how that metered fuel enters the engine. For high-tech multi-bore throttle body applications, the Mod Man seems to be an optimal solution when keeping the entire outfit under an air cleaner.

One other issue to consider is the economy aspect of the Mod Man; your investment in one base gives you the critical component, and you can purchase tops based on your testing or racing needs. For Indy, this also helps them offer a universal intake design for each engine, bringing down the cost on what is sometimes an expensive out-of-pocket investment required when doing shorter runs of intake casting with individualized tops; these saving can be passed down to you.

After spending the time with Russ to grasp the Mod Man, Ken Lazzari showed us the hard numbers off the dyno on their development testing, using a stroked 6.1/426 Hemi. We were impressed…

**Technical Article by Geoff Stunkard featured in *Mopar Enthusiast Magazine* January 2010**