

## Making Slant Six Sense

Written by Dan Foley on May 22, 2018

Hey, it's sad to say, but the old-reliable Slant Six in bone-stock form isn't anywhere near the performance standards of a modern six- or four-cylinder engine. When we put our '66 Dart GT on the road two and half years ago after a 20-year hibernation, we came to realize just how sluggish the old leaning tower of power is in this day and age. Foot to the floor and not going anywhere is a scary experience with today's tailgaters wanting to run you off the road. Most newfangled econoboxes have a large performance advantage over our underpowered '66 Slant Six Dart. We desperately needed to do something to add performance and efficiency to our slow-going six to be compatible on today's roads, which are jammed with impatient drivers.



We considered adding the '73-'80 Mopar electronic distributor with the vacuum advance unit and the required wiring, plus voltage regulator to run it. Personally, I don't care for the look of the '70s-style voltage regulator on a vintage '60s Mopar. On occasion we speak with Steve Davis of Performance Distributors, well known for its Davis Unified Ignition systems. We mentioned to Steve there's a need for a Tri-Power ignition for all of those sluggish Slant Sixes out there with points-type distributors. Through the years, we've used and tested PD's reliable Tri-Power and/or DUI ignition on small- and big-block engine alike, with great results over points and other electronic distributors. Now for the good news: Performance Distributors is now producing a Tri-Power ignition for the Slant 6. We couldn't wait to try out this new ignition and ditch our points-type distributor forever!

Also released at the same time from PD were Slant 6 Livewires ignition wire sets. These 8mm spiral core, low-resistance, high-temp wires will deliver the additional voltage from the Tri-Power Ignition to the spark plugs. Stock suppressor-type wires wouldn't be able to handle the extra firepower coming from the high-voltage Inferno coil. After installing this new electronic ignition, amazingly, the idle increased by 600 rpm (from 700 to 1,300 rpm) at the same 10 degrees of initial timing. We readjusted both the idle set and fuel mixture screws on the stock 1-barrel Holley carburetor for 600 rpm. Right away we noticed a smoother idle, and blipping the carburetor lever showed much quicker throttle response. Our testdrive revealed a big-time improvement in acceleration and driveability. Also, there's no more hesitation, dead spot, or fear of stalling while driving and warming up the engine to regular operating temperature. This Tri-Power ignition is a hands-down winner over the antiquated points-type ignition.

We also spoke with Sam Davis at TTI Exhaust about a high-flow 2 1/2-inch exhaust for an early A-Body ('63-'66). Our cobbled-up 1 3/4-to-2-inch exhaust was choking our poky six-cylinder. On all Slant 6 engines, the exhaust manifold outlet is 2 1/4 inches. On our engine the exhaust flange had a small 1 7/8 hole with a 1 3/4-inch pipe inside of the flange. Besides the major restriction at the manifold to exhaust pipe flange, the stock-type, low-flow muffler is also choking the leaning six-cylinder from exhaling. We knew a high-flow 2-1/2 inch exhaust would show a major improvement in performance. In just a couple of month's time, TTI came to the rescue for the Slant 6-powered, early A-Body enthusiast.

Before installing the new TTI high-flow exhaust, we decided to take a 45-minute highway ride to Tune Time Performance in Lakewood, New Jersey, for baseline dyno testing. With the new Tri Power ignition, the Dart was able to fearlessly cruise with the highway traffic at 70-75 mph — no thanks to the 2.94 gearing in the 7 1/4 rear-end. Prior performance with the points-type ignition was so anemic we were afraid to take the Dart onto the highway. The '66 Slant 6 A-Body was strapped-down to TTP's Mustang Dynamometer. After spinning the rollers, we all laughed at the pitiful numbers the silly six produced: 63 rwhp at 2,900 rpm and 110 lb-ft at 2,900 rpm. More pulls were made at different timing settings. It seemed our leaning powerhouse ran best with the baseline timing setting of 10 degrees initial and 35 degrees total. We saw power drop with either retarding or advancing the timing from the baseline setting.

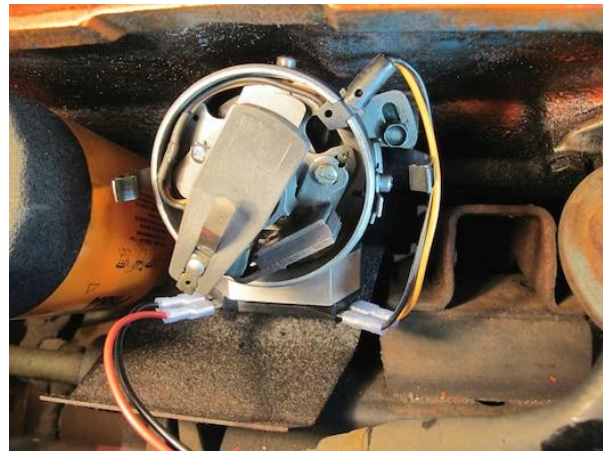
In our home garage we installed the new TTI high-flow mandrel-bent 2 1/2-inch exhaust. The TTI Exhaust package includes all the hardware, gaskets, clamps, and hangers for an easy DIY installation. As always, we were impressed how well TTI Exhaust fits with good clearance for a rattle-free exhaust system. Testdriving demonstrated how relieved the engine became with the new exhaust. The powerband improved remarkably right from low-speed to high-speed driving conditions. Now, with it running so much stronger and smoother, we couldn't wait to drive the now Leaning-Tower-of-Power back to the chassis dyno.

Back on the Tune Time Performance dyno revealed we picked up 9 rwhp and 10 lb-ft at peak. Maximum peak horsepower moved up from 2,900 to 3,500 rpm. Peak torque stayed at 2,900 to 3,000 rpm. Each pull was made from 2,500 to 4,200 rpm. At 4,000 rpm the TTI Exhaust helped the six produce over 22 more horsepower (see the dyno graph). That extra high-rpm power is felt out on the highway right where it was needed. Now that our Slant 6-powered Dart can keep up with today's traffic, next time we'll try porting the cylinder head and shaving it .080 inch. We're hoping to get another 20-plus rwhp out of the "buzzin'-half-dozen."

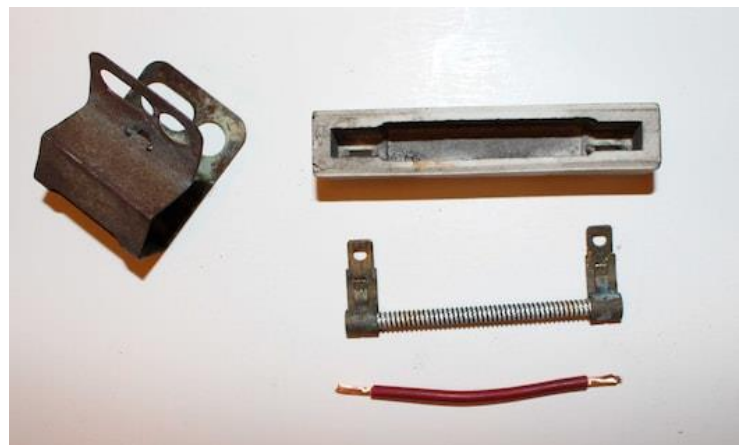
Our subject Slant 6 resides in a '66 Dart GT with factory A/C. After a 20-year hibernation, we put it on the road in 2015. Performance was so sluggish by today's standards; we desperately needed to improve its get-up-and-go. Performance Distributors juiced up the ignition, and TTI's unrestrictive exhaust teamed up to deliver a big-time performance improvement to our leaning six-cylinder.



The weak-spark, points-type distributor had to go. Recently, Performance Distributors developed this Tri-Power ignition for the Slant 6. This electronic distributor features a Dyna Mod (HEI-style, four-pin module) with higher dwell for increased spark duration and voltage. It's teamed with a high-voltage Inferno coil to jolt the Slant 6's performance significantly (PN 70620, \$309). The Livewires are spiral wound core suppressor wires for low resistance and maximum voltage to the plugs (PN C9082, \$95).



With the rotor facing the 7 o'clock position we swapped out the points for the PD Tri-Power electronic distributor. Notice the Dyna Mod module in place of the vacuum advance unit. This strong-spark ignition improves response so much that the vacuum advance unit isn't needed anymore. PD uses a tried-and-true Sun distributor machine to dial-in a smooth advance curve for your combination.



The Inferno coil (left) is part of the Tri-Power ignition package. It's designed to deliver more voltage to the plugs and outperform a stock coil. We mounted it in the stock location using the original coil bracket.

Electronic ignitions need more voltage to perform properly. The ballast resistor was designed to cut back the voltage 4 to 5 volts to save the points from burning out. Most electronic ignition's instructions recommend you to bypass the ballast resistor for more voltage to go to the coil. Here's how we do it. The ballast is removed and a 10-gauge wire is put in its place.



Now direct alternator voltage can go to the coil (13.5 versus 8 volts with resistor) with the ballast resistor trick seen here that nobody will see or notice.



Here's a before-and-after look of the stock points and the PD Tri-Power electronic ignition. Most folks will only see the cool-looking Livewires ignition wires. You'll feel an immediate difference the first time you step on the gas pedal. Easier starting, better throttle response, driveability, economy, and no more points and condenser to change. With much stronger and smoother performance, our confidence of pulling out and flowing into today's traffic was restored.



Now with no fear to take the Dart out on the highway, we made the 45-minute trip to Tune Time Performance for baseline chassis dyno testing. There, the Slant 6 made a measly 63 rwhp at 2,900 and 110 lb-ft at 2,900 rpm. Different timing settings from the 10 degrees initial advance didn't show us any horsepower gains.



We couldn't wait to rid our six of its restrictive, cobbled-up 1 3/4 to 1 7/8 to 2-inch exhaust system. Here it's obvious the new TTI Exhaust, 2 1/2-inch front pipe will outflow the puny pipe our Dart came equipped with.



Notice some muffler shop used a flange with a too-small 1 7/8-inch opening, miss-matched for the exhaust manifold's 2 1/4-inch exit. They sandwiched a 1 3/4-inch pipe into the too-small flange. Notice the exhaust pattern on the flange showing the blockage/restriction of exhaust flow. The TTI flange has a 2 1/4-inch opening; it's twice as thick for better gasket seal, plus the step to the 2 1/2-pipe also increases exhaust flow.



Look at the exhaust pipe size difference. The bigger diameter exhaust pipe will help the previously choked-up engine exhale easier. When the pistons don't have such a tough time pumping out the exhaust, that's how less pumping losses create power gains.



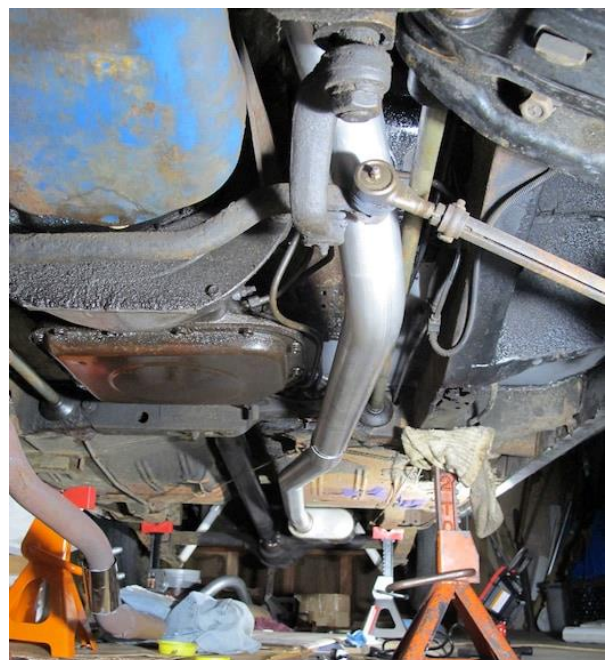
Good clearance and exhaust fitment is always a given with TTI Exhaust products.



The intermediate pipe slid right onto the front exhaust pipe.



It's easy to see how badly the exhaust shop bent the smallish/restrictive exhaust.



When the Dart was up on jack stands, the junk exhaust would rub the driveshaft. The TTI high-flow exhaust looks and fits well, while providing good ground clearance.

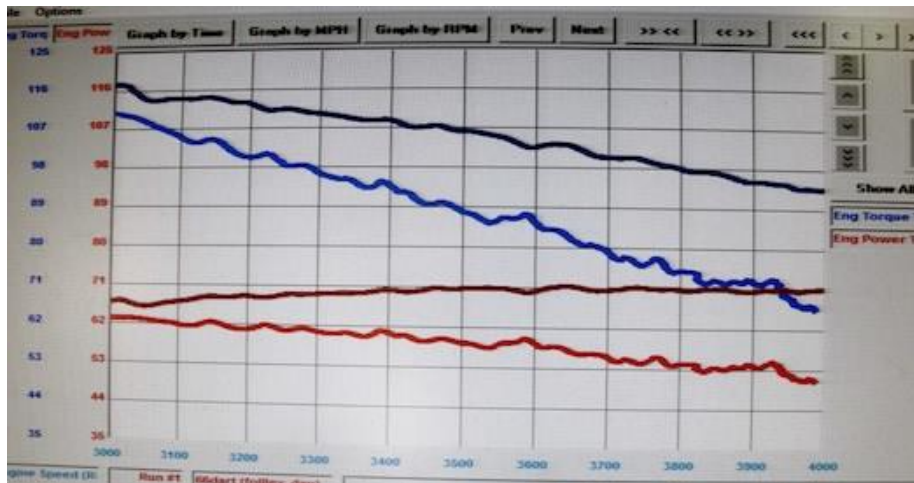


The tiny tailpipe could in no way help the exhaust exit easily. The mandrel-bent TTI 2 1/2-inch tailpipe will increase flow significantly.

After lining up the tailpipe into position, we were able to use an existing hole in the frame rail to install the bolt included with tailpipe hanger bracket. No drilling necessary in our situation. The hanger bracket is rubber isolated to soak up any exhaust vibration.



It's always amazing how well TTI's precision mandrel-bent exhaust products fit. This new early A-Body Slant 6 exhaust systems) includes all the hardware, hangers, and muffler (DynoMax Super Turbo, Ultra-Flo or Flowmaster) of your choice. We went with the Ultra-Flo. The gains in performance are well worth the price for this long-lasting, high-flow and quality exhaust system.



Power gains were felt immediately after installing TTI's high-flow exhaust. Our 225ci Slant 6 felt much stronger and smoother from a dead stop or rolling at any cruising speed. Back on the Tune Time Performance dyno we saw peak gains of 9 rwhp at 3,500 (72 rwhp) and 10 lb-ft at 2,900 rpm (120 lb-ft). At 4,000 rpm the Leaning Tower gained as much as 22 rwhp! We highly recommend these bolt-ons to any Slant 6 with a stock ignition and 2-inch or smaller exhaust.

## Sources

Performance Distributors - Memphis, TN 38132 (901) 396-5782 [www.performancedistributors.com](http://www.performancedistributors.com)

TTI Exhaust & Headers - Corona, CA 92880 (951) 371-4878 [www.ttiexhaust.com](http://www.ttiexhaust.com)

Tune Time Performance - Lakewood, NJ 08701 (732) 349-7800 [www.tunetimeperformance.com](http://www.tunetimeperformance.com)