

Installation of Flo-Tek 190cc CNC Cylinder Heads on a 347ci Smallblock Ford

Black Sheep Offroad Racing - Matt Taylor

I recently had the opportunity to build a pretty stout 347W engine. This engine replaced a 410W that was in my Ultra4 Legends car. My goal for this build was simple: reliable power, instant throttle response, and sticking (loosely) to a budget.

For Ultra4 offroad racing, fuel injection is a must, so I knew I needed to keep EFI. As diehard Ford guy, I wasn't about to go LS. Ford Windsor engines are beef, have gobs of low end torque, and are pretty reliable into the 500's on power if built right. That said, what needed to go was the stock computer, distributor, and the engine needed to be able to BREATHE.

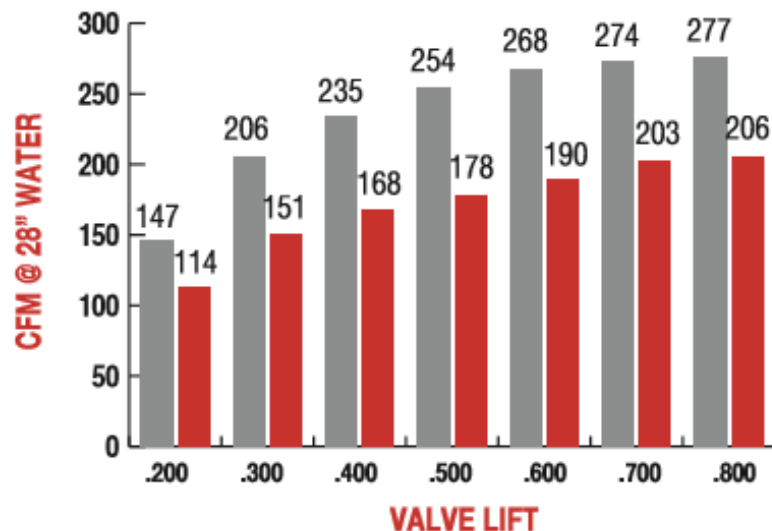
The combination I ended up with is:

- DSS Racing "Level 20" 347ci shortblock with forged internals and main support system
- Flo-Tek 190cc CNC heads
- Ported Ford GT40 intake w/ 75mm throttle body
- 42lb/hr injectors
- MS3Pro engine management w/ LS coilpacks and crankshaft position sensor

In this article, I want to focus on the cylinder heads. I chose the Flo-Tek heads because I had previously installed a set of their 180cc heads on a 5.0L engine build for my 1977 Bronco. When I saw they released a 190cc CNC heads, I was anxious to try them out! After some research, I found that the GT40 intake from the Ford Explorer could be ported to nearly match the flow numbers below on the cylinder heads. After porting, the average flow of my intake was 257 CFM. The lowest flowing port was 249CFM...slightly less than the heads flow. My intake valve lift is 0.572" and I'm running hydraulic roller lifters. I could gain a little more with a better intake, but I was really curious what you could get from the GT40 since they're a dime a dozen.

Small Block Ford 190cc Flow Chart

■ Intake
■ Exhaust



My engine prior to the installation of the Flo-Tek heads:



Engine with the heads installed:



Pictures of the heads as received from Flo-Tek:



Very professional and clean CNC finish work:









Run File	Max Power	Max Torque	Fat
RunFile_009.drf	217.91	247.40	
RunFile_008.drf	215.85	243.62	
RunFile_003.drf	193.96	225.30	



Yeah, I know what you are thinking! Pfft....217hp. What????

217hp after 37" tires. After a 1 ton drivetrain. After 35 spline axle shafts. After ¼" wall thickness driveshafts. After an aftermarket transercase. After a C6 transmission with a non-lockup torque converter. After a full belt drive with 2 alternators to power fans, and pumps to keep stuff ice cool and a steering pump powerful enough to steer the 37" tires through boulders.

Did I also mention it was in all-wheel drive?

I'm happy. It's putting out somewhere around 475hp at the flywheel. A reliable engine with torque to get me through the rocks and enough power to keep me going 90+ mph in the desert.

Thanks Flo-Tek: Ron, Susan, Shawn, and Missy!



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