

# ECONOMY EXHAUST SYSTEM

*Rush's budget pipes give us a 3 hp and 5 ft-lbs. of torque gain! Then we got another 3 ft-lbs. with a Vigilante tuner!*

**I** Our 2013 Police Special Electra Glide is up on Rob's dyno with the baseline runs completed and the entire stock exhaust system removed, as well as its tranny mounting bracket. The rear mount of the right floorboard has also been removed and its front mount loosened.

**E**XTRACTING MORE POWER FROM YOUR HARLEY'S ENGINE costs money. Sometimes a lot of money. We've all heard the various rules concerning dollars spent to horsepower gained to make a modification worthwhile. It's time to test those theories on our 2013 Police Special Electra Glide and let you decide for yourself.

Whatever your favorite equation is, there's no arguing with the rear wheel power output we discovered after bolting on a Rush Racing Products' Touring Eco Friendly 2-into-1-into-2 exhaust system (REC17-FS/\$599.95). This system reuses your stock crossover pipe and heat shields but uses an improved header design with a more efficient airflow pattern. The kit also comes with a pair of slash-down, 3-1/2" slip-on mufflers that use a 2-1/4" baffle. The chrome Rush mufflers fit and

match perfectly with the stock heat shields. If you'd like to keep your stock mufflers, or choose something different, the headers alone are available for \$299.95.

As you know, our Police Special previously got treated to a RC Components

## TOOLS NEEDED

- Blue Loctite
- Anti-seize
- Glass cleaner
- 10mm Allen
- 1/4" Allen
- 5/16" Allen
- 12mm x 1.25
- 18mm x 1.5 tap
- 9/16" (or 14mm) wrench
- 5/16" nutdriver
- 15mm socket
- 1/2" socket
- 9/16" socket
- 9/16" deep socket
- Snap ring pliers (large)
- Torque wrench (ft-lbs.) ■



CAPTIONS AND PHOTOS BY CHRIS MAIDA



**2** Rob starts the install by running a 12mm x 1.25 tap through two of the O<sub>2</sub> sensor bungs and an 18mm x 1.5 tap through the other two O<sub>2</sub> bungs on the new system, since it comes with both setups.

TruFlo air intake system (page 80). With both of the performance mods completed, we turned to Superchips for its Vigilante EZ tuner for Harleys (#5841/\$299). Of the three tuning maps we had for a Rush exhaust system, the

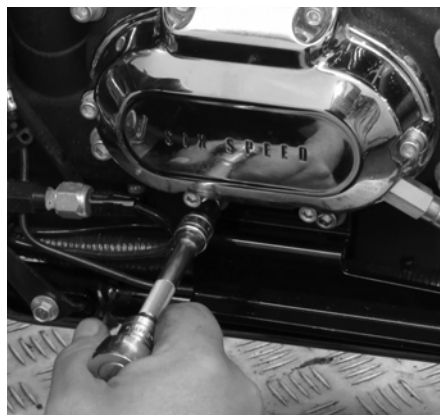
maps for Rush's Big Louie mufflers gave us the best power numbers. The Vigilante is perfect for performance intake and exhaust upgrades and doesn't require any dyno tuning, calibrating, or tuning skills. You can change up just about any

aspect of your stock tune including rpm limit, deceleration popping, and the factory throttle delay.

One issue of *Motorcycle Bagger* and all three legs of the standard initial performance tripod later, and we've seriously



**3** After putting a little anti-seize on them (but not on their bulbs), Rob installs the stock O<sub>2</sub> sensors (white in the front pipe, black in the rear) using a 9/16" (or 14mm) wrench. He torques them to 30-44 ft-lbs.



**6** Rob then installs the Rush-supplied tranny mounting bracket to the stock location using the stock hardware, blue Loctite, and a 1/4" Allen. He torques the bolts to 13-18 ft-lbs.



**9** He now slips the stock carriage bolt through the Rush-supplied clamp, which is already on the front header, and positions the clamp so its mounting tabs are under the Rush tranny bracket.



**4** Rob then swaps the stock header flanges and retaining clips from the stock system to the new Rush header using large snap ring pliers.



**7** Rob now positions the Rush header pipes and clamps on the engine.



**10** Rob secures the clamp to the bracket using the stock nut and a 9/16" deep socket. He'll torque the nut to 20-25 ft-lbs. after the entire system is installed.



**5** After putting a little anti-seize on them, Rob installs the Rush-supplied plugs into the O<sub>2</sub> sensor bungs we're not using for this bike. Rob torques them to 30-44 ft-lbs. using a 10mm Allen.



**8** Rob then uses a 1/2" socket and the stock nuts to loosely secure the Rush header system to both heads. He'll torque the nuts to 100-120 in-lbs. after the entire exhaust system is installed.



**11** Rob now installs the stock rear cylinder crossover pipe and clamp onto the new Rush headers. He had to spread open the end of the stock pipe slightly to get it to go onto the Rush system.



warmed over our 2013 police bike's Twin Cam 103. Eight additional rear wheel horsepower and 8 additional ft-lbs. of torque, all hitting right where you want it on the dyno chart. And the best part: our police bike isn't looking or sounding so

government official anymore. In fact, it's probably not even street legal in California. How's that for irony?

As with the RC Components air cleaner, we did the Rush exhaust and Superchips upgrade with Rob at Rob's

Dyno in Gardner, Massachusetts. His shop handles all the installation and dyno tuning needs you can think of for Harley-Davidsons and all bike brands. Follow along, step-by-step, to see our up-and-up bagger become a mean hog.



**12** Rob wraps the stock tranny pan clamp around the stock crossover pipe and secures it using blue Loctite, the stock bolt, and a 1/2" socket. He'll torque this bolt to 14-18 ft-lbs. after the entire system is installed.



**15** Rob loosely secures the Rush muffler to the stock saddlebag mount using the stock bracket and hardware, blue Loctite, and a 1/2" socket. He'll torque the bolts to 96-144 in-lbs. after the entire system is installed.



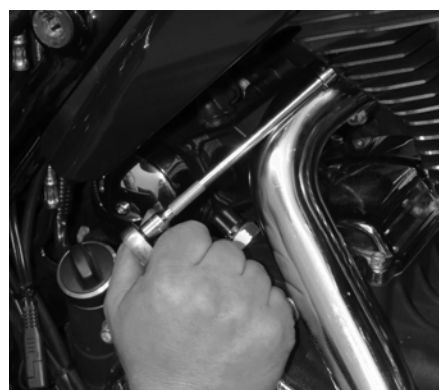
**17** After making the left muffler protrude from the back of the bike as much as the right muffler, Rob snugs its bolts down using a 1/2" socket.



**13** Rob now just snugs down the stock crossover clamp using a 15mm socket. He'll torque this to 60-65 ft-lbs. after the entire system is installed.



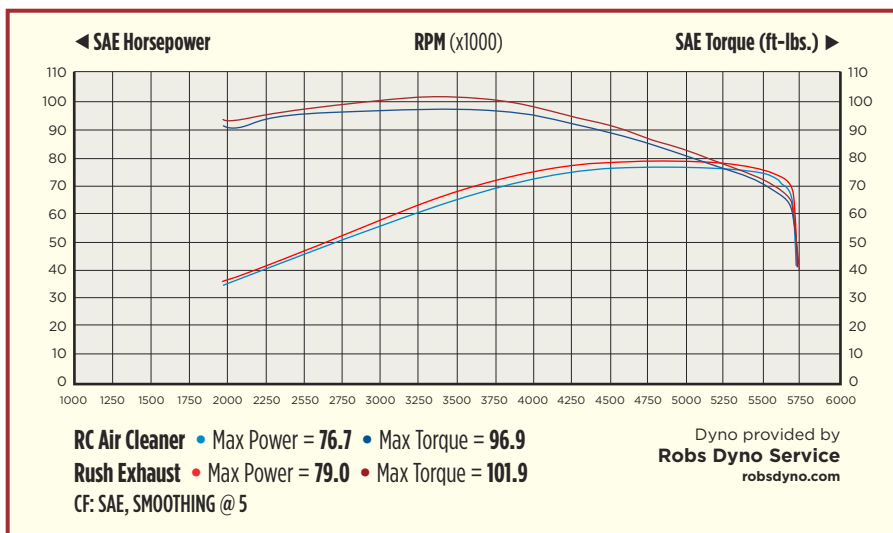
**16** Rob now reinstalls the stock heat shield to the stock crossover pipe using a 5/16" nutdriver and the stock clamps.



**18** Rob now tightens down all the hardware he left loose, starting at the heads. He then wipes the entire system down with glass cleaner to remove all grease and fingerprints.



**14** After slipping the stock muffler clamp over the new Rush muffler, Rob slips it onto the front header pipe and just snugs the clamp. He'll torque the clamp to 38-43 ft-lbs. after the entire system is installed.





**19** Rob now reinstalls the other two stock heat shields using a 5/16" nutdriver and the stock clamps. He then wipes down the heat shields with glass cleaner to remove his fingerprints.



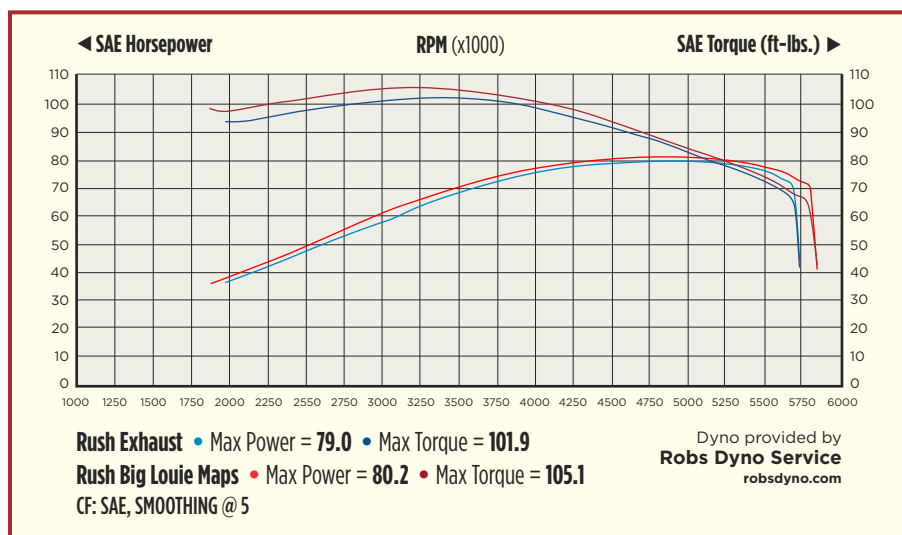
**21** Rob reattaches the rear mount of the right front floorboard using the stock hardware, blue Loctite, and a 5/16" Allen. He torques both the front and rear mount bolts to 36-42 ft-lbs.



**22** Rob now selects one of the Rush air/fuel tuner maps available for this system and loads it using a Superchips Vigilante EZ module. We went with the Big Louie slip-ons maps.



**20** After routing their wires away from all hot or moving parts, Rob reattaches both O<sub>2</sub> sensors to the bike's main wiring harness: white to white, black to black.



**23** Here's how the new system looks! MB

#### SOURCES

**ROB'S DYNO SERVICE**  
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RobsDyno.com

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