MGS EXHAUST SYSTEM

We gained 5 ft-lbs. of torque down low!

A DISPLACEMENT OF 103″ GIVES A LOT OF ROOM FOR performance enhancements on a stock Twin Cam engine. Back in the day, blowing a 74″ Shovelhead out to 103″ was an option only for those who could rebuild their own motors, or afford to have someone do it. Often. As engine technology and metallurgy improved, the potential for making larger, more powerful, dependable engines grew. During that time, engines also became more environmentally compliant and noise-accommodating. A society-conscious TC 103 is just what you get when you walk into the dealership and pick up a Big Twin, like this 2012 Street Glide.

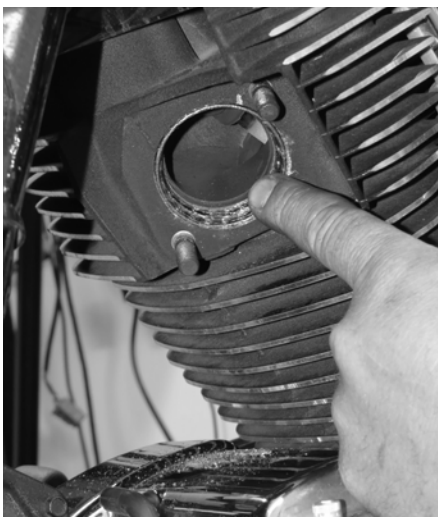
Like many of our readers, soon after taking possession, the owner of this bike installed a high-performance air cleaner, which bumped the engine's power output up nicely. With the stock displacement Twin Cam purring, it's time to get those hot exhaust gases out as efficiently as cool air is being fed in. For that we turned to MGS Custom Bikes based out of Lancaster, California, for a high-performance exhaust system that would complement the air cleaner

1 Our 2012 Street Glide is up on Rob's dyno. The baseline runs have been done, and its stock exhaust is removed. The right floorboard rear mount has been disconnected, and the front one is very loose.

CAPTIONS AND PHOTOS BY CHRIS MAIDA

TOOLS NEEDED

- Blue Loctite
- Anti-seize
- Muffler cement
- 12mm x 1.25mm tap
- 18mm x 1.25mm tap
- 5/16" nutdriver
- Pick tool
- Flat-bladed screwdriver
- Large snap ring pliers
- 3/16" Allen
- 1/4" Allen
- 1/2" wrench
- 9/16" wrench
- 1/2" socket
- Torque wrench (in-lbs.)
- Torque wrench (ft-lbs.)

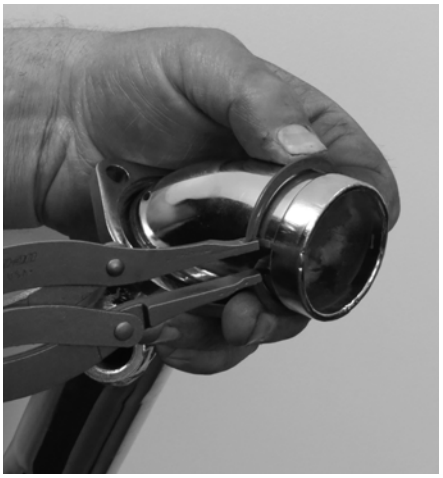


2 Rob starts by removing the old gaskets from both heads using a pick tool. He then installs new H-D gaskets using just his fingers.

3 After removing the forward starter mounting bolt, Rob installs the MGS-supplied L-bracket using the stock bolt and flat washer, blue Loctite, and a 1/4" Allen. He just snugs the bolt for now.

4 The MGS-supplied tranny bracket gets attached to the stock tranny bracket using the stock bolt and flanged locknut, and a 9/16" wrench. Rob just snugs the nut for now.

5 Rob uses a 12mm x 1.25mm tap on the small hole for the O_2 sensor and a 18mm x 1.25mm tap on the larger one, which is for an O_2 sensor not used on this bike. He then installs the supplied plug in the bung he's not using.



6 Rob then swaps the stock exhaust flanges and clips over from the old header system to the new MGS one using a large transmission snap ring pliers (Snap-on #SRP5C).

7 Rob can now install the stock front sensor into the new MGS front header pipe using a little anti-seize (don't get it on the sensor bulb) and a 1/2" wrench. He torques the sensor to 30 ft-lbs.

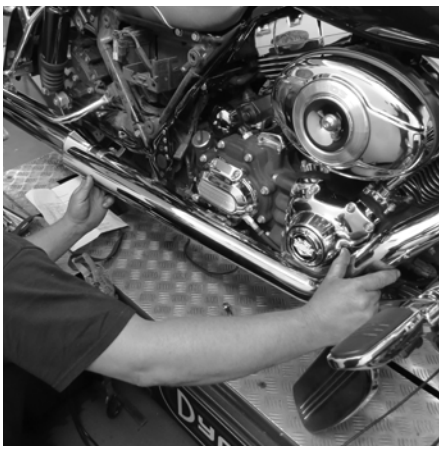
8 Rob now attaches the front header to the front head using the two stock nuts and a 1/2" socket. He leaves the nuts loose for now.

9 He then attaches the other end of the front header to the MGS tranny mount using the MGS-supplied clamp and a 5/16" nutdriver or a flat-bladed screwdriver.

10 Rob slips the MGS-supplied muffler clamp over the end of the muffler. He then coats the inside of the muffler end and the end of the front header with muffler cement.

11 Rob slips the muffler onto its header and secures the end of the muffler to the saddlebag bracket using the stock hardware, stock bar, blue Loctite, and a 1/2" socket.

12 Rob then slips the MGS-supplied heat shield clamps into their clips in the front header shield. He positions the head of the clamps so he can access them from below and yet have them hidden behind the pipe.



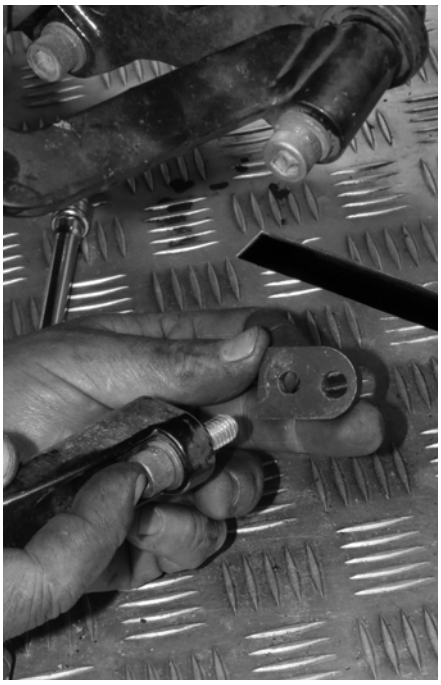
13 Rob now positions the heat shield onto the front header but does not tighten the clamps down yet.

14 Starting at the front head, Rob tightens the flange nuts to 100-120 in-lbs. He then tightens the tranny clamp to 20-25 ft-lbs. The MGS muffler clamp gets tightened to 38-43 ft-lbs. last using a 3/16" Allen.

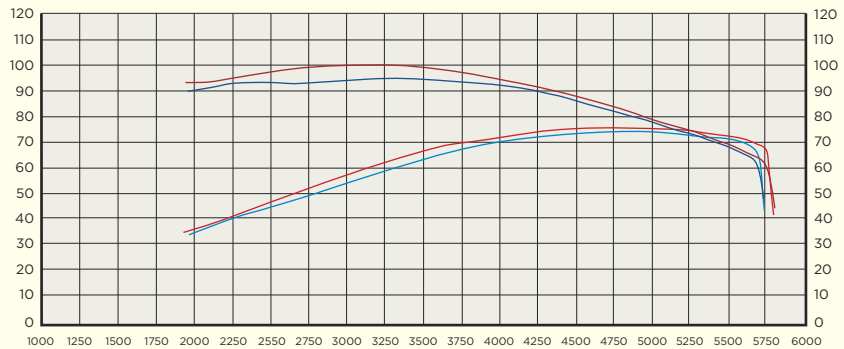
already on our Street Glide. MGS sent its complete True Duals system in chrome (#MGSTDC/$899) with black slash tips. This is a good-looking, true dual system. The chrome finish is stunning, and the slanted black caps look great with the extended fender on our Street Glide (or if you have a custom-stretched fender and bags). But this MGS system is really all about performance. The head pipes have a stepped design that has been proven on racetracks and dynos around the world. The 16-gauge pipes go from 1-3/4″ at the heads to 1-7/8″, then to 2″ at the end. Full-coverage heat shields cover everything up to look smooth and save your boots. Rounding out the system are a set of 4″ MGS mufflers with 2-1/4″ rifled baffles and torque inversion cones.

We also chose to install a TechnoResearch DirectLink Flash Tuner to nail down the proper air and fuel mixtures. This EFI tuner is able to adjust spark advance, redline, and a whole host of other calibration tables values. You also get real-time fuel table and spark table cell tracing capability. The DirectLink is

15 With the head of the heat shield clamps positioned so he can access them from below, Rob uses a 5/16" nutdriver to torque the clamps to 20-40 in-lbs.



16 To move the floorboard away from the front header pipe, Rob slips a MGS-supplied spacer (there's a front and rear one) over the MGS-supplied longer floorboard front and rear bracket bolts.



Baseline • Max Power = **74.3** • Max Torque = **94.7**
MGS Exhaust • Max Power = **75.7** • Max Torque = **99.7**
CF: SAE, SMOOTHING @ 5

Dyno provided by
Robs Dyno Service
robsdyno.com

17 After he puts some blue Loctite onto the end of both bolts, Rob secures the floorboard to the frame using a 1/4" Allen. He torques the bolts to 30-35 ft-lbs.

18 Rob then sets up the rear MGS header in the same way as he did the front one, including installing the MGS-supplied O_2 sensor plug into the sensor bung he is not using for this bike, using an 8mm Allen.

19 Rob then attaches the rear header, which already has its heat shield installed, to the rear head using the two stock nuts and a 1/2" socket. He leaves the nuts loose for now.

an easy unit to use since there are no wires or modules to change or install. The DirectLink Flash Tuner communicates directly to the stock EFI module.

While the final torque numbers may be impressive, don't think this system is just for the drag strip and setting off car alarms. This is a true bagger system, and MGS designed it to have a calm, low rumble at idle and cruising rpm. But get on the throttle, and let's just say you'll never have to worry about being heard.

Adding the complete MGS exhaust system to our 2012 Street Glide yielded 1.4 hp and 5 ft-lbs. of torque bringing this machine's total to 75.7 hp and 99.7 ft-lbs. of torque. And the torque curve strikes beautifully in that optimal, low-down bagger range. That's also where the difference in horsepower between the before-and-after dyno chart lines is the greatest, too.

We did this project at Rob's Dyno Service in Gardner, Massachusetts, with the dyno master himself spinning the wrenches. Take a look at how smooth the dyno lines are. We definitely went to the right place. If adding significant

amounts of torque and horsepower to the lower end of your powerband excites you, check out the following step-by-step install to make it happen on your own ride.

20 Rob now assembles the rear cylinder's exhaust system the same way he did the front setup. He again leaves all the hardware loose for now.

21 After torquing the two rear flange nuts to 100-120 in-lbs., Rob secures the rear header to the MGS L-bracket he attached to the starter in Step 3 using the MGS-supplied clamp and a 5/16" nutdriver.

22 After routing their harnesses away from any hot or moving parts, Rob reattaches the connectors for the front (white) and rear (black) O_2 sensors.

23 Rob then tightens all the hardware just like he did for the front pipe and makes sure the mufflers protrude from the rear of the bike the same distance. Here's how the exhaust system looks on the bike. **MB**

SOURCES

MGS EXHAUST
661/951-9878
MGSCustomBikes.com

ROB'S DYNO SERVICE
978/895-0441
RobsDyno.com

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motorman