

# XR1200 Stage I

## FTF wakes up their XR



Dan Pike and Scott Settimo of FTF Cycles.

For those of you who view the Sportster as a girl's bike, think again! Since its inception in 1957, it has been a performance-based model with a long history of racing success. Anyone who's had a Sportster knows a well tuned Sporty can out run the best of them and the XR1200 is no exception.

The XR designation carries with it a responsibility to remain true to Harley's racing heritage. Just sticking these letters on the side of a machine not worthy of wearing the crown would be considered sacrilege to anyone aware of the XR history. Does the XR1200 live up to that heritage? We believe it does. Not only is its claimed 90 horsepower the highest of any Sportster offered in the history of the Motor Company, but it also offers many upgrades over previous models that any performance minded rider would be happy to have. A completely redesigned en-

gine with a 10:1 compression ratio, an improved oiling system featuring oil cooling around the exhaust ports, an air box style intake coupled to a downdraft throttle body, a 43mm inverted front end, a 40% stiffer swing arm, quality Nissin brakes, and so on make this machine anything but standard.

Aesthetically, the XR1200 pays homage to the flat track XR750 with its gritty street tracker appearance but it also captures the modern look of a street fighter—stripped down, all business, and ready to pounce.

But the question is, can you take this already impressive machine and bring it to new levels? Of course! There's always room for improvement. Our goal is to transform this XR1200 into a best of all worlds machine, keeping in mind all of the aspects of the sport of motorcycling: part utility vehicle, lane splitting commuter, sport tourer and weekend racer. We believe it's the perfect

platform for an economical daily driver that is competitive. Follow along with us over several installments as our shop takes this XR through some dramatic changes, unleashing its full potential.

We picked up our stock XR1200 still in the box. Once it arrived at the shop, we uncrated it, prepped it and broke it in per manufacturer's recommendations. We changed the fluids, substituting stock juices with Amsoil synthetics, and proceeded to put it through its paces. First we paid a visit to Russ at RAW Motorsport in Swansea, MA, for some baseline dyno runs. The stock bike did fairly well, putting out 84 HP @ 7000 rpm and 66 ft./lbs. of torque coming on as early as 3800 rpm.

We were impressed with the fact that this motor, unlike most stock H-Ds, was able to breathe up to its 7000 rpm redline, but it was obvious that some tuning

could help smooth out an erratic torque curve. There was a substantial lean spot between 2500 and 3500 rpms robbing us of some serious power. Next stop was to the local drag strip for some quarter-mile testing. Scott was able to consistently pilot the XR1200 down the strip at a cool 12.6 @ 104 mph. Not bad for out of the box, but we can do better.

We are going to begin our work on the heart of the machine by improving engine performance. The EPA has done a great job of keeping the air clean, but in doing so has tightened the leash on manufacturers, stifling the horsepower available to us out of the box. It's in there, and we want it.

We need to get more air and fuel through this motor without killing fuel mileage. The factory air cleaner is much larger than the typical Sportster's and is efficient enough to move the necessary air in at this point. At the other end, the factory muffler is holding us back a bit so we're going to replace it with a D&D Bobcat 2:1 exhaust system. This system was developed in conjunction with the engineering department at the University of Texas and offers a better mid range than much of the competition. The factory ECM maintains its desired air fuel ratio due to the closed loop fuel injection system that monitors the expended gases through the use of oxygen sensors.

This allows the ECM to constantly make changes to the fuel and timing adjustments to optimize efficiency. For the performance minded, there are two basic problems with the stock set up. The ECM's base map is trying to maintain an air fuel ratio that is too lean when demanding power (creating excessive heat) and its narrow band sensors can't read at the levels we want to see for maximum power tuning.

The part that answers the call is the ThunderMax ECM with Autotune courtesy of Zippers. Unlike the "piggy back" systems that alter a stock computer's adjustments and often only run in open loop, the ThunderMax allows the user to remove the sock ECM and O2 sensors and replace them with a true stand alone closed loop system equipped with wide band O2's and total adjustability. Because it is a replacement system, it also negates the need to find a home for any add on components.

Although our installation is pretty straightforward, it's a good idea to get a manual if you are going to do this work on your own. Read it over to familiarize yourself with the procedures and see if any special tools are needed. In this case, a 7/8" crows foot comes in handy but the rest of the install can be managed with basic hand

*continued*



Project XR, fresh out of the box—literally.



D&D exhaust system, Zippers ThunderMax.

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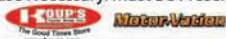
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tools and a laptop. When installing after-market components, be sure to read the instructions *before* you begin.

First disconnect the battery and remove the ECM fuse, then unplug the O2 sensors and remove the exhaust. I prefer to replace the factory exhaust gaskets with flat James Gaskets units. The cone-shaped exhaust gaskets can pinch and leave a restriction in the air stream, robbing you of power. Install the D&D header and then the muffler, leaving the hardware hand tight. We tighten the exhaust starting at the heads and work our way back so there is no undue stress at the exhaust ports, ensuring a good seal.

While I'm swapping the exhaust, Scott gets busy removing the seat and tail section. Before we get too far ahead of ourselves, it's time to download the SmartLink software. Next we disconnect the ECM plug and remove the rear splashguard, remove the stock ECM from the splashguard, and replace it with the Zippers ThunderMax unit. Install the splashguard paying particular attention to cable routing; we don't want any pinched wires. Route the O2 sensors and install as recommended by Zippers. Smear dielectric grease on all connectors (provided in the ThunderMax kit.) Plug in the O2 connectors, auto tune connector, and ECM connector. Next hook up the battery and install the ECM fuse.

Our ThunderMax came with the correct map installed for our application. If you are starting from scratch, you'll need to select and download a map at this point. Now we're ready to initialize the unit and, after a few ignition and run cycles per the instructions, the XR barks to life with a surprisingly different tone. With our computer linked to the ECM we monitor the engine via the "Show Gauges" function, start the engine, and enable the "IAC Auto" function. Allow this to run until head temp reaches 275-degrees. Now we unlink the software, remove the communication cable and replace our tail section—and our machine is ready to ride.

How did we do? That remains to be seen. We're not ready to visit Russ, our dyno operator, just yet. We've still got a lot more in store for this machine. So after a quick test drive to make sure all systems are go, it's back on the rack for more improvements. Did someone say cams? Stay tuned! **IW**

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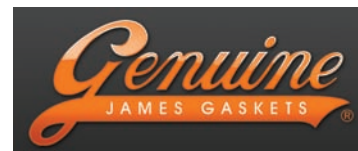
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