NOISE vs. POWER

Which pipe is the strong, silent type for Honda's 250 trail thumper?

By the staff of Dirt Bike

We're not here to lecture you. We're not your parents, and frankly we don't even know if you're a nice person. But we're presuming that you know that the loud bike is the biggest enemy of open riding area and that if dirt bikes are to survive they must become more quiet.

That's why quiet pipes are a big issue in the off-road world. Everyone knows that the new Honda CRF250X trail bike can be made faster with a full-race exhaust system, along with air-box modifications. What we don't know is the amount of trade-off required—how much noise is worth how much power? That's why we gathered these new sound-aware systems and tested them on the trail, on the track, on the dyno and against the sound meter. For each part of the test, we enlisted the help of the top experts in the industry.
SOUND: Sound testing was performed by Chris Real of Chemhelp. Chris has been involved with sound testing for over 20 years and now conducts seminars to train industry and government officials on how to perform accurate tests. If you need advice or information on the topic of sound, contact him at (908) 481-0083.

HORSEPOWER: Charlie Tisser performed all the dyno testing at K&N Air Filters in Riverside, California. Since K&N has no vested interest in any pipe maker we're grateful for the use of the company's expertise.

FIELD TESTING: Once results are sent of the pants observations from TB test riders, we used a loop at Glen Helen raceway that included motocross and off-road elements. The rider comments and ratings are made without regard to dyno or sound results.

BIKE PREP: The bike was our Honda CRF250X, freshened up and outfitted with fresh Dunlops. Eric Ompa of American Honda prepared the machine for the ordeal. It used the standard airbox with the snorkel in place. More performance can be had with extensive airbox modification, but testing revealed that this added an average of three dB to the sound output of each pipe. We did rejet the CRF richer for all the pipes, we used a NCV-VQ needle in the third position, a 42 pilot and a 130 main. This works well with the standard pipe and adds a little fuel to grow on. It should be noted that each pipe might benefit from fine-tuning, and that the settings we used were a compromise by necessity.

The results are here for you to peruse. We just offer facts, we tell you how they perform and how loud they are. We haven't come up with any contrived scoring system assigning penalty points for extra decibels. That's for you to decide.

STOCK HONDA

CONSTRUCTION: The stock system is steel with a stainless outer shell. It incorporates a removable baffle, but the spark arrester remains in place when the baffle is removed. The system is not designed to operate without the spark arrester, even though it can be removed with three bolts.

PERFORMANCE: With the baffle in place, the bike is no powerhouse, but it has surprisingly strong low-rpm performance. With the baffle removed, the bike gains slight power on the bottom and the top, but is essentially the same in the middle.

RIDER RATING: Baffle in: C. Baffle out: C
WEIGHT: Tail section: 6.30 lb., headpipe: 1.86 lb.
SOUND, BALLENG IN: 87.72 dB @ 4500 rpm.
SOUND, BALLENG OUT: 94.06 dB @ 4500 rpm
PRICE: Standard issue with motorcycle.
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FMF Q
CONSTRUCTION: Aluminum outer shell with stainless tubing. The mount is a wrap-around strap with a rubber cushion that is somewhat awkward to install. There is no removable baffle and the system was tested with the stock headpipe.
PERFORMANCE: Test riders report that the FMF slip-on system has less low-rpm response than stock (baffle in or out). It makes up for it on top with more overrev. The riders also report that it's much less noisy than the stocker with no baffle. It's interesting that this was the original quiet pipe and it still rates the best according to the sound meter.
RIDER RATING: B-
WEIGHT: 5.94 lb. (tail section only)
SOUND: 89.55 dB @ 4500 rpm
PRICE: $329.95

PRO CIRCUIT TYPE 496
CONSTRUCTION: Aluminum outer shell with fixed top mount. Stainless tubing. There is no removable baffle and the system was tested with the stock headpipe.
PERFORMANCE: Very rideable with no dead zones. More overall performance than FMF or White Bros. Not as much top or bottom as Dr. D. or Yoshimura. We've tried the Type 496 in the past and found that it would struggle to pass a 96 dB sound test. We were surprised to find that the CRF250X version was very quiet and passed the sound test with flying colors. Even test riders commented on the pipe's low noise output and the sound meter concurred.
RIDER RATING: B
WEIGHT: 5.37 lb. (tail section only)
SOUND: 81.27 dB @ 4500 rpm
PRICE: $399.95
**WHITE BROS. E2**

**CONSTRUCTION:** Forged aluminum shell with a seamlesse end cap and a fixed top mount. Stainless tubing. The baffle can be removed and replaced with a competition ring, but it loses its spark arrestor because the fluted stainless-steel screen is connected to the baffle. This system was tested with the stock head pipe.

**PERFORMANCE:** Similar power to the stock pipe with the stock baffle removed, but with more top end and more over-rev. We also tested the E2 with its baffle removed and found that it had more hit and revved faster. Overall performance gain was slight, though, perhaps because of the airbox restrictions of the stock CRF.

**RIDER RATING:** B-

- **WEIGHT:** 5.40 lb. (tail section only)
- **SOUND, BAFFLE IN:** 93.38 dB
- **SOUND, BAFFLE OUT:** 97.57 dB
- **PRICE:** $399.00

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**YOSHIMURA PRO SB SERIES**

**CONSTRUCTION:** Similar to Yoshimura's full race series, with titanium tubing and aluminum sleeve. The SB series differs because of a removeable baffle and a straight mid-pipe. This system comes with a titanium head pipe and cannot be run with the stock head pipe.

**PERFORMANCE:** Most top end power of all the pipes tested. Also excellent bottom and mid. At high rpm, the Yosh pipe is still making power when the bike's rev limiter cuts in. This was the only pipe that wasn't happy with our jetting—it had a slight hitch off the bottom. With the baffle removed, power gain was only slight. More could probably be had with airbox modification.

**RIDER RATING:** A

- **WEIGHT:** Tail section: 4.17 lb. Headpipe: 1.22 lb.
- **SOUND, BAFFLE IN:** 94.49 dB
- **SOUND, BAFFLE OUT:** 98.90 dB
- **PRICE:** $750

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Special thanks to DIRTBIKE magazine for utilizing Chemhelp's technical services for reporting accurate and unbiased information.
DR. D

CONSTRUCTION: Titanium tubing that is stepped to change diameter. The aluminum sleeve has a fixed top mount. This is Dr. D’s full-race system with a baffle installed. The baffle can be cut to varying lengths, changing sound output (ours was tested at full length). This system comes with a stepped head pipe and cannot be used with the stock head pipe.

PERFORMANCE: Most mid-range and bottom-end power of all the pipes tested. On top, the power is similar to the Yoshimura system, but begins to taper off before the rev limiter comes into play. This system ran very hot. In fact, the baffle distorted with the heat and bonded itself to the pipe—it was no longer removable after 15 minute of riding, so we were unable to sound test the unbaffled pipe.

RIDER RATING: A

WEIGHT: Tail: 5.38 lb. Head: 1.03 lb.

SOUND, BAFFLE IN: 92.13

PRICE: $460 plus $39.95 baffle.

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